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With innovative solutions and tool designs for internal machining, the KOMET GROUP holds a leading market role worldwide. Our developments for drilling, boring, tapping and reaming contribute enormously to our customers' success.

Compass – focusing on the demands of internal machining

This new Compass catalog opens up the whole world of KOMET internal machining for you. Over more than 700 pages, in easy to view format, you will find the complete drilling program, the relevant adapters and the appropriate extensive insert program, divided according to materials and machining applications.

The concise catalog is complete with technical descriptions, areas for use and machining and application examples.

Chapter

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4 Fine Boring



5 Easy Special™



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ABS®, HSK, KomLoc® clamping system**

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Adapters – Perfecting the Interface

With our most comprehensive program of Tool Adapters, we have the perfect solution for your requirement.

The Results:

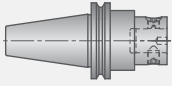
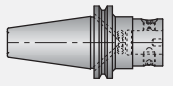
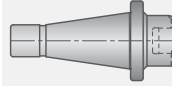
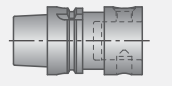
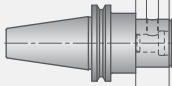
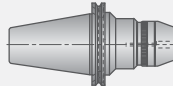
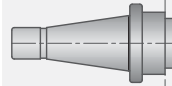
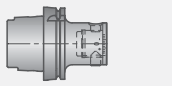
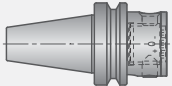
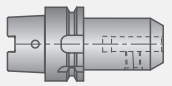
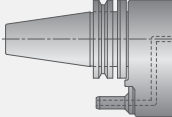
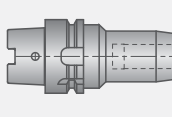
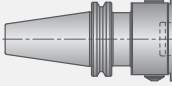
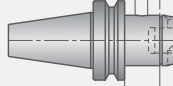
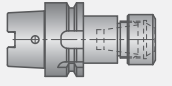
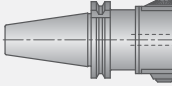
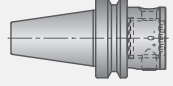
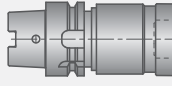
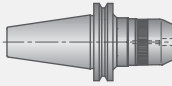
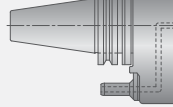
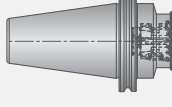
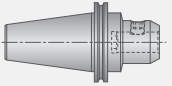
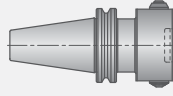
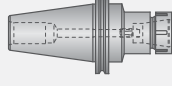
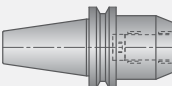
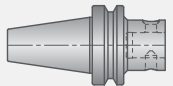
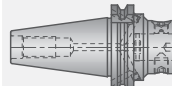
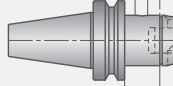
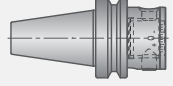

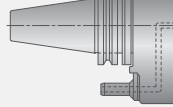
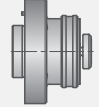
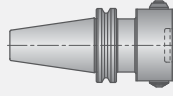
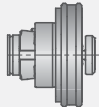
- Highest tool change accuracy
- Perfect static rigidity
- High radial rigidity
- Fast tool change
- Ideal dimensions
- Reduced tool weight

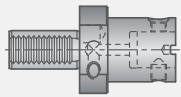
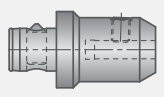
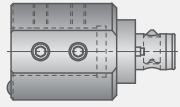

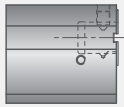
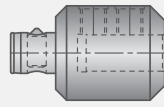

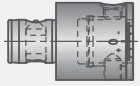
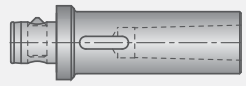

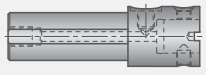
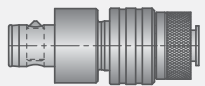
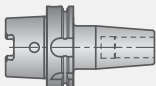

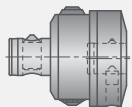
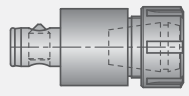
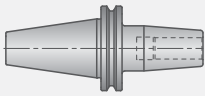


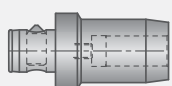
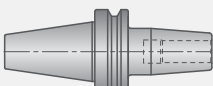
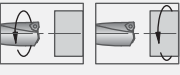
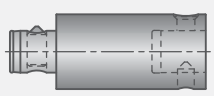
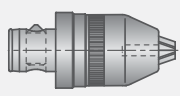
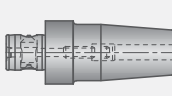
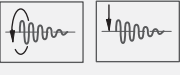
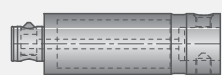
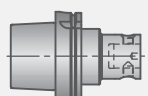
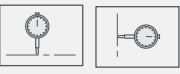
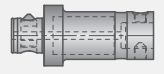
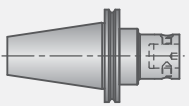
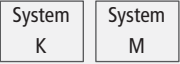

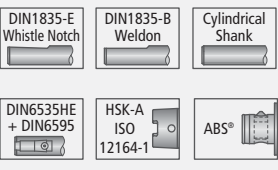


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Adapter Program Overview

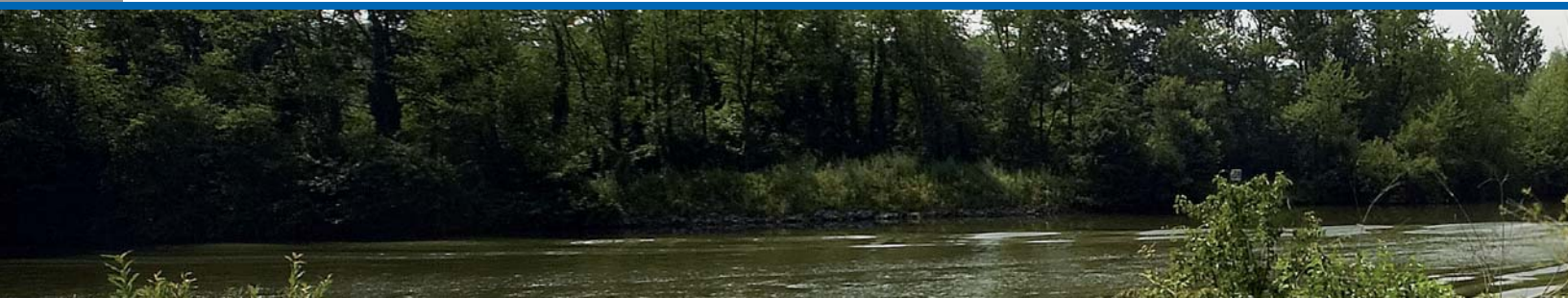
Taper Shank Holder		Taper Shank Holder		Taper Shank Holder		HSK Adapter	
CAT		MORI-SEIKI		NMTB			
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Adapter	ABS® Tool Holder	ABS® N Clamping Unit for Turning Tool	Symbol
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ABS® Lightweight Reducer 1.59 			KomLoc® HSK Clamping System Example 
			Tool Connection Example 

Taper Shank Holders

CAT

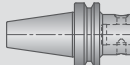
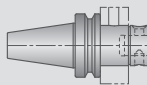
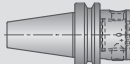
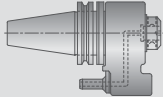

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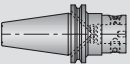
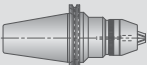


BT

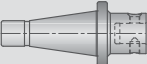

Page

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for Coolant Glands · with ABS® Connection		1.10
Eccentric Holder with ABS®		1.12
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Integral MV Micro-adjustable Drill Holder with ABS® Connection		1.14

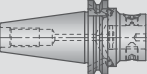
MORI-SEIKI

with ABS® Connection		1.9
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NMTB

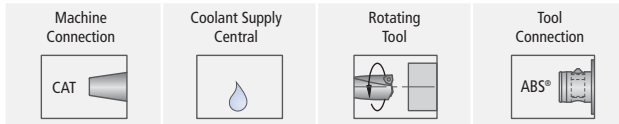
with ABS® Connection		1.11
for Coolant Glands · with ABS® Connection		1.11

DIN 69871 AD/B

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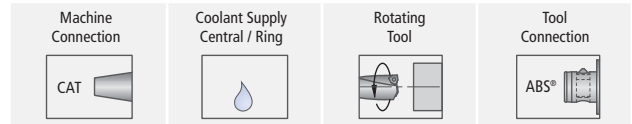
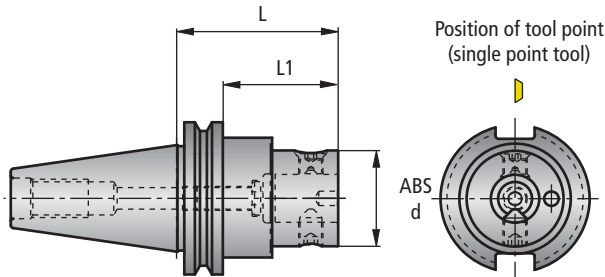


CAT



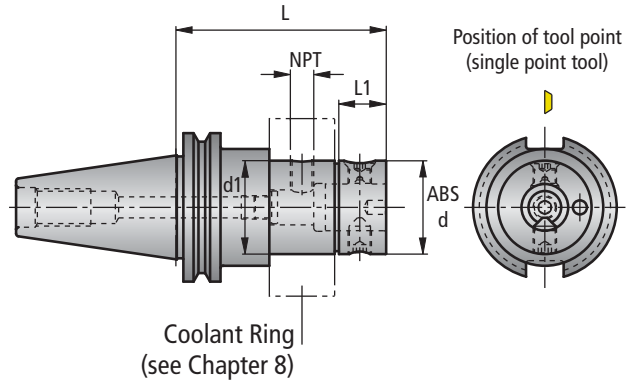
Taper Shank Holder with ABS® Connection

for through spindle coolant



Taper Shank Holder with ABS® Connection

for use with KR D / KRSD Coolant Glands



ABS®						
CAT	Description	Order No.	ABS d	L	L1	
40	ABS 25CAT40	A52 10120	25	2.362	1.612	2.00
	ABS 32CAT40	A52 10130	32	2.362	1.612	2.20
	ABS 40CAT40	A52 10140	40	2.362	1.612	2.45
	ABS 50CAT40	A52 10150	50	2.953	2.203	2.75
	ABS 50CAT40 EXT	A52 10180	50	5.512	4.762	
	ABS 63CAT40	A52 10160	63	3.543	2.793	3.50
45	ABS 25CAT45	A52 10220	25	2.362	1.612	3.30
	ABS 32CAT45	A52 10230	32	2.362	1.612	3.55
	ABS 40CAT45	A52 10240	40	2.362	1.612	4.40
	ABS 50CAT45	A52 10250	50	2.362	1.612	5.10
	ABS 63CAT45	A52 10260	63	3.346	2.596	6.20
	ABS 80CAT45	A52 10270	80	3.937	3.187	
50	ABS 25CAT50	A52 10320	25	2.362	1.612	3.20
	ABS 32CAT50	A52 10330	32	2.362	1.612	6.20
	ABS 40CAT50	A52 10340	40	2.362	1.612	6.40
	ABS 50CAT50	A52 10350	50	2.362	1.612	7.05
	ABS 50CAT50 EXT	A52 10400	50	6.299	5.549	
	ABS 63CAT50	A52 10360	63	3.150	2.400	7.70
	ABS 80CAT50	A52 10370	80	3.937	3.187	10.00
	ABS 100CAT50	A52 10380	100	4.921	4.171	15.00
60	ABS 125CAT50	A52 10390	125	5.709	4.959	23.50
	ABS 63CAT60	A52 10460	63	3.150	2.400	16.70
	ABS 80CAT60	A52 10470	80	3.150	2.400	22.00
	ABS 100CAT60	A52 10480	100	3.937	3.187	31.00
ABS 125CAT60	A52 10490	125	5.512	4.762	33.00	

Delivery:

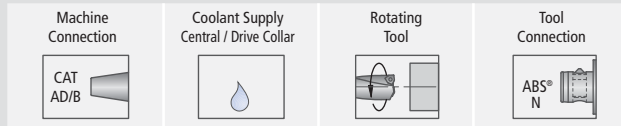
Taper shank holders supplied without retention knob.
Plug screw, ABS® Replacement parts see Chapter 8.

ABS®								
CAT	Description	Order No.	ABS d	Coolant ring d1	L	L1	NPT	
40	ABS 40CAT40KR	A52 10640	40	40	3.740	0.913	1/8	3.30
	ABS 50CAT40KR	A52 10650	50	50	3.740	0.906	1/8	3.55
	ABS 63CAT40KR	A52 10660	63	70	4.330	1.437	1/8	4.10
45	ABS 40CAT45KR	A52 10740	40	40	3.937	1.110	1/8	5.50
	ABS 50CAT45KR	A52 10750	50	50	3.937	1.102	1/8	5.95
	ABS 63CAT45KR	A52 10760	63	70	4.134	1.280	1/8	7.90
50	ABS 40CAT50KR	A52 10840	40	40	3.937	1.110	1/8	7.50
	ABS 50CAT50KR	A52 10850	50	50	3.937	1.102	1/8	8.80
	ABS 63CAT50KR	A52 10860	63	70	4.331	1.476	1/8	10.80
	ABS 80CAT50KR	A52 10870	80	80	4.331	1.476	1/8	11.65
	ABS100CAT50KR	A52 10880	100	100	5.118	2.244	3/8	15.00

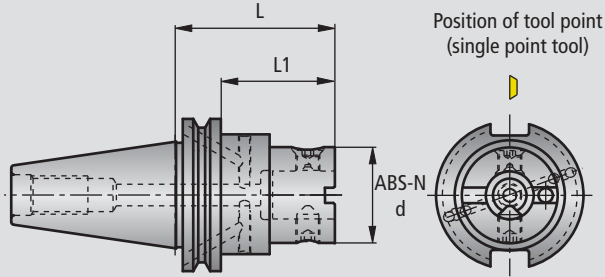
Delivery:

Taper shank holders supplied without retention knob and coolant ring.
Plug screw, ABS® Replacement parts see Chapter 8.

CAT AD/B



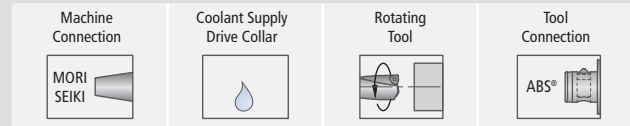
Taper Shank Holder with ABS® -NConnection



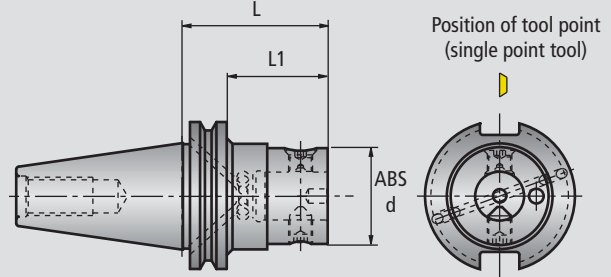
ABS® N						
CAT	Description	Order No.	ABS-N d	L	L1	lbs
40	ABS 50N-CAT40 AD/B	A52 51150	50	2.953	2.203	2.75
	ABS 63N-CAT40 AD/B	A52 51160	63	3.543	2.793	3.50
50	ABS 50N-CAT50 AD/B	A52 51350	50	2.362	1.612	7.05
	ABS 63N-CAT50 AD/B	A52 51360	63	3.150	2.400	7.70
	ABS 80N-CAT50 AD/B	A52 51370	80	3.937	3.187	10.00

Delivery:
Taper shank holders complete without retention knob.
Plug screw, ABS® Replacement parts see Chapter 8.

MORI SEIKI



Taper Shank Holder with ABS® Connection

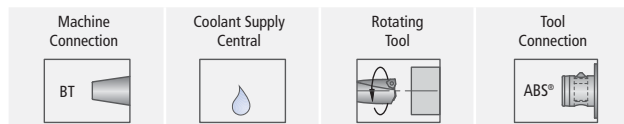


ABS®						
MORI SEIKI	Description	Order No.	ABS d	L	L1	lbs
40	ABS 25CAT40MS	A52 50120	25	2.362	1.612	
	ABS 32CAT40MS	A52 50130	32	2.362	1.612	
	ABS 40CAT40MS	A52 50140	40	2.362	1.612	
	ABS 50CAT40MS	A52 50150	50	2.953	2.203	
	ABS 63CAT40MS	A52 50160	63	3.543	2.793	
	50	ABS 32CAT50MS	A52 50330	32	2.362	1.612
ABS 40CAT50MS		A52 50340	40	2.362	1.612	
ABS 50CAT50MS		A52 50350	50	2.362	1.612	
ABS 63CAT50MS		A52 50360	63	3.150	2.400	
ABS 80CAT50MS		A52 50370	80	3.937	3.187	
ABS 100CAT50MS		A52 50380	100	4.921	4.171	

Delivery:
Taper shank holders complete without retention knob.
Plug screw, ABS® Replacement parts see Chapter 8.

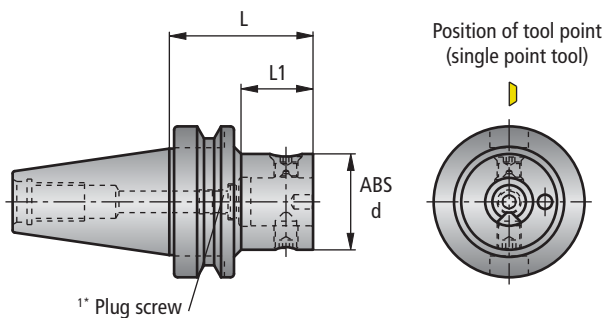


BT



Taper Shank Holder with ABS® Connection

for through spindle coolant



Note: With internal coolant supply, the plug screw should be removed from the coolant hole.

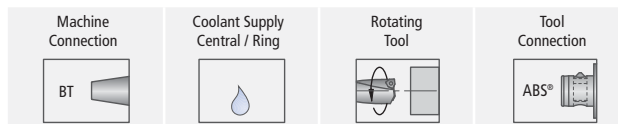
1* If necessary replace with sealing screw/seal.

ABS®						
BT	Description	Order No.	ABS d	L	L1	
30	ABS 25 BT30	A55 00060	25	1.575	0.552	
	ABS 32 BT30	A55 00070	32	1.969	0.945	
	ABS 40 BT30	A55 00080	40	1.969	1.023	
35	ABS 40 BT35	A55 00040	40	1.969	1.024	3.0
	ABS 50 BT35	A55 00050	50	2.165	1.220	3.1
40	ABS 25 BT40	A55 00120	25	2.362	0.984	2.40
	ABS 32 BT40	A55 00130	32	2.362	1.299	2.49
	ABS 40 BT40	A55 00140	40	2.362	1.299	2.67
	ABS 50 BT40	A55 00150	50	2.362	1.299	2.84
	ABS 63 BT40	A55 00160	63	2.756	1.693	3.70
50	ABS 32 BT50	A55 00330	32	2.756	0.945	8.29
	ABS 40 BT50	A55 00340	40	2.756	0.945	8.51
	ABS 50 BT50	A55 00350	50	2.756	0.945	8.97
	ABS 63 BT50	A55 00360	63	3.150	1.457	9.55
	ABS 80 BT50	A55 00370	80	3.937	2.441	11.95
	ABS100 BT50	A55 00380	100	4.331	2.835	15.10

Delivery:

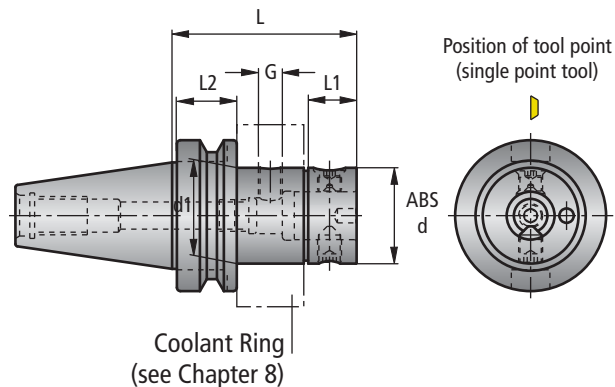
Taper shank holders complete with plug screw less retention knob.

Plug screw, ABS® Replacement parts see Chapter 8.



Taper Shank Holder with ABS® Connection

for use with KR D / KRSD Coolant Glands



Short Version

ABS®								
BT	Description	Order No.	ABS d	Coolant ring d1	L	L1	G	
40	ABS 40BT40KR	A55 00640	40	40	3.543	1.307	M10	3.50
	ABS 50BT40KR	A55 00650	50	50	3.543	1.299	M10	3.50
50	ABS 50BT50KR	A55 10850	50	50	4.134	0.945	M10	10.00
	ABS 63BT50KR	A55 10860	63	70	4.528	1.319	M10	12.50
	ABS 80BT50KR	A55 10870	80	80	4.724	1.516	M10	14.00

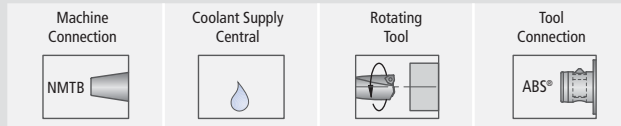
Long Version

ABS®								
BT	Description	Order No.	ABS d	Coolant ring d1	L	L1	L2	
40	ABS 40BT40KR	A55 10640	40	40	4.134	1.299	1.575	3.97
	ABS 50BT40KR	A55 10650	50	50	4.134	1.299	1.575	4.52

Delivery:

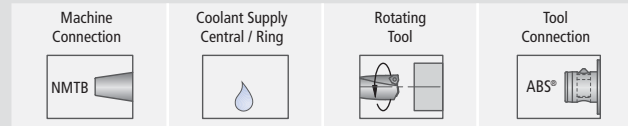
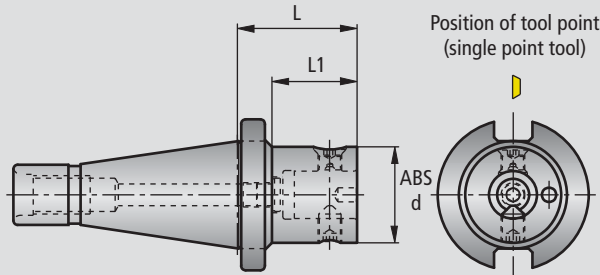
Taper shank holders supplied without retention knob and coolant ring.

Plug screw, ABS® Replacement parts see Chapter 8.



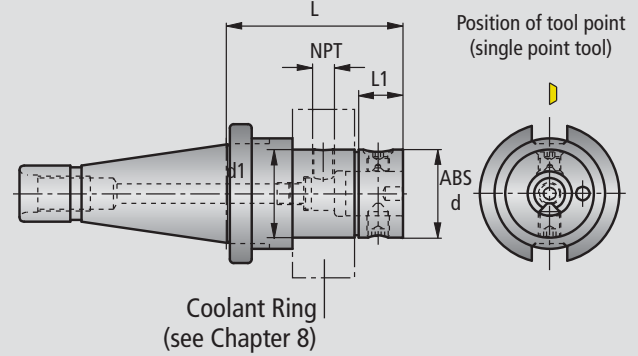
Taper Shank Holder with ABS® Connection

for through spindle coolant



Taper Shank Holder with ABS® Connection

for use with KR / KRSD Coolant Glands



ABS®						
NMTB	Description	Order No.	ABS d	L	L1	lbs
40	ABS 40NMTB40	A71 50140	40	1.969	1.067	2.5
	ABS 50NMTB40	A71 50150	50	1.969	1.146	2.5
	ABS 63NMTB40	A71 50160	63	3.150	2.327	4.5
50	ABS 40NMTB50	A71 50340	40	2.362	0.945	7.5
	ABS 50NMTB50	A71 50350	50	2.362	0.945	7.5
	ABS 63NMTB50	A71 50360	63	2.756	1.339	8.5
	ABS 80NMTB50	A71 50370	80	3.150	2.555	10.0

Delivery:

Taper shank holders supplied without retention knob. Plug screw, ABS® Replacement parts see Chapter 8.

ABS®								
NMTB	Description	Order No.	ABS d	Coolant ring d1	L	L1	NPT	lbs
50	ABS 50NMTB50KR	A71 50850	50	50	3.740	1.024	1/8	9.0
	ABS 63NMTB50KR	A71 50860	63	70	4.134	1.398	1/8	10.5
	ABS 80NMTB50KR	A71 50870	80	80	4.331	1.594	1/8	12.0

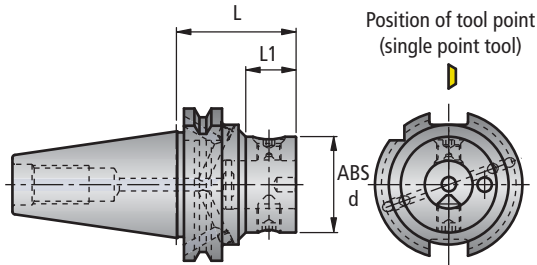
Delivery:

Taper shank holders supplied without retention knob and coolant ring. Plug screw, ABS® Replacement parts see Chapter 8.

DIN 69871 AD/B

Machine Connection DIN 69871 AD/B	Balancing Note (Chapter 9) Pre-balanced Q6.3 8,000 RPM	Coolant Supply Central / Drive Collar	Rotating Tool	Tool Connection ABS®
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Taper Shank Holder with ABS® Connection



ABS®						
ISO	Description	Order No.	ABS d	L	L1	
40	ABS 50 ISO40-AD/B	A50 55150	50	1.969	1.181	2.43
	ABS 63 ISO40-AD/B	A50 55160	63	3.543	2.756	4.52
50	ABS 40 ISO50-AD/B	A50 55340	40	2.362	0.787	7.28
	ABS 50 ISO50-AD/B	A50 55350	50	2.362	0.866	7.28
	ABS 63 ISO50-AD/B	A50 55360	63	2.362	1.142	7.43
	ABS 80 ISO50-AD/B	A50 55370	80	2.756	1.969	8.62
	ABS 100 ISO50-AD/B	A50 55380	100	4.528	3.740	12.61
	ABS 125 ISO50-AD/B	A50 55390	125	5.709	4.921	

Delivery:

Taper shank in version B complete with change kit, seal screw and seal ring less retention knob.

Balancing Note:

Tool Holders or adapters, such as the one show above, are supplied as a balanced unit. No allowance has been made for items used with the unit such as boring tools, milling cutters, inserts, and etc.

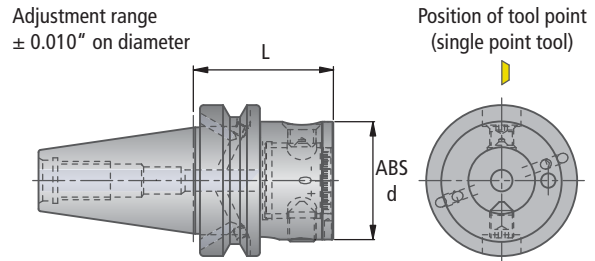
When used at high speeds, we recommend a precision balancing of entire assembly prior to use.

Replacement Parts			
ISO	Change kit Order No.	Seal screw Order No.	Seal ring Order No.
40	L02 30920	5504100810	5694100811
50	L02 30940	5504101215	5694101215

CAT / BT

Machine Connection CAT / BT	Coolant Supply Drive Collar	Adjustable	Rotating Tool	Tool Connection ABS®
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Eccentric-Taper Shank Holder with ABS® Connection



ABS®					
CAT / BT	Description	Order No.	ABS d	L	
CAT 40	ABS 50 CAT 40 AD/B EH	A52 11151	50	2.953	
CAT 40	ABS 63 CAT 40 AD/B EH	A52 11160	63	3.543	
CAT 50	ABS 50 CAT 50 AD/B EH	A52 11351	50	2.362	
CAT 50	ABS 63 CAT 50 AD/B EH	A52 11360	63	3.150	
BT 40	ABS 50 BT 40 AD/B EH	A55 56150	50	2.362	2.82
BT 50	ABS 50 BT 50 AD/B EH	A55 56350	50	2.756	8.69

Delivery:

Eccentric taper shank drill holder complete without retention knob.

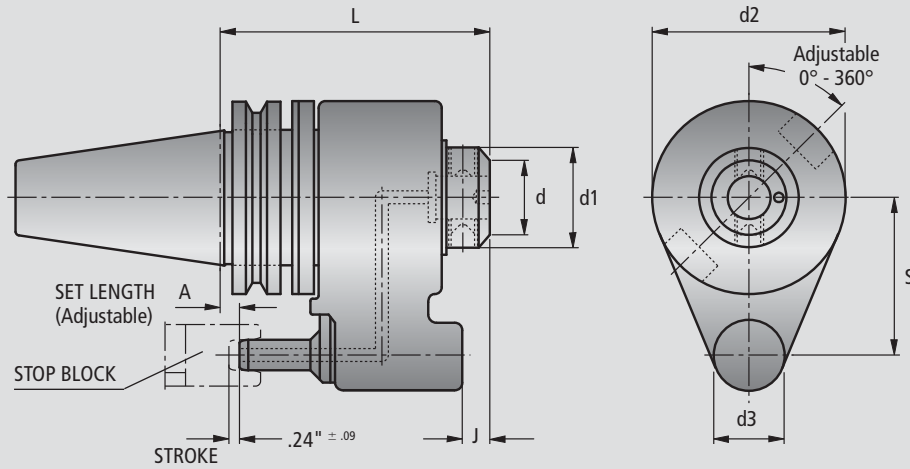
Note:


Additional ABS® sizes and machine connections are available upon request.

Replacement Parts		
CAT / BT	Adjustment Key Order No.	Change Kit Order No.
CAT 40	1804300028	
CAT 50	1804300028	
BT 40	1804300028	L02 30920
BT 50	1804300028	L02 30940



Taper Shank Holder with ABS® Connection



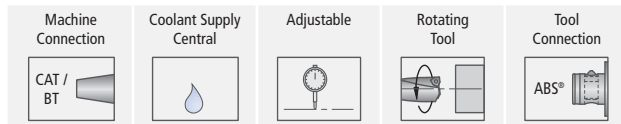
ABS®											
CAT / BT	Description	Order No.	ABS d	L	A	d1	d2	d3	S	J	
CAT 40	ABS 50 CI/CAT 40	A52 20550	50	5.512	0	2.551	3.86	1.38	2.56	0.590	12.50
CAT 50	ABS 50 CI/CAT 50	A52 20950	50	5.512	0	2.551	3.86	1.38	3.15	0.590	17.00
CAT 50	ABS 63 CI/CAT 50	A52 20960	63	5.709	0	2.551	3.86	1.38	3.15	0.787	17.10
BT 40	ABS 50 CI/BT 40	A55 10550	50	5.709	0.24	2.551	3.86	1.38	2.56	0.511	12.50
BT 50	ABS 50 CI/BT 50	A55 10950	50	6.102	0.59	2.551	3.86	1.38	3.15	0.551	19.30
BT 50	ABS 63 CI/BT 50	A55 10960	63	6.299	0.59	2.551	3.86	1.38	3.15	0.748	19.10

Delivery:
Taper shank holder complete with coolant reducer, less stop block, mounting hardware and retention knob.

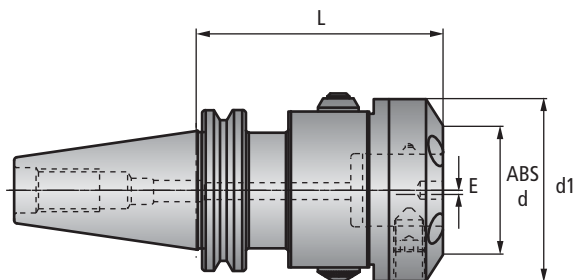
Note:
Coolant must be filtered.
For stop block dimensions and mounting information, see Chapter 8.

- Improved hole making with better chip control.
- Faster feeds and speeds.
- Longer tool life.
- Up to 5000 RPM and maximum 285 PSI coolant pressure
- Enables deep hole operations.
- Suitable for use with carbide drills for improved productivity.
- Provides better control of work piece tolerance due to reduced heat.

CAT / BT



Integral Drill Holder for ABS® Connection



ABS®						
CAT / BT	Description	Order No.	ABS d	d1	L	E
CAT 40	CAT 40MV-ABS 50	M01 06030	50	2.756	3.622	0.059
CAT 50	CAT 50MV-ABS 50	M01 06040	50	2.756	3.622	0.059
BT 40	BT 40MV-ABS 50	M01 06110	50	2.756	3.622	0.059

Delivery:

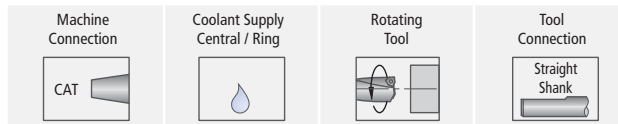
Integral drill holder complete without retention knob.
ABS® Replacement parts see Chapter 8.

Note:

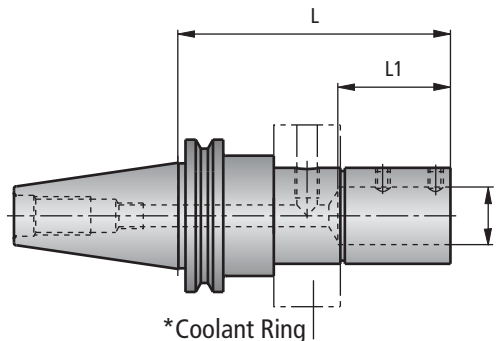
The ABS® seal cannot be fitted into the M01 Micro Adjustable Holder

Accurate adjustment with micro-adjustable spindle

- Maximum adjustment range .125" on diameter
- Scale divisions .001" on diameter
- Rigid clamping of head after adjustment achieved by means of 4 clamping screws on face



Integral Drill Holder for Straight Shank Connection



Important!

KUB IT HD Drills used with these holders must be cut off at notch on shank!

CAT	Description	Order No.	d1	L	L1	lbs
50	ZWH 1.250 CAT 50	A05 00310	1.250	4.913	3.075	9.0
50	ZWH 1.500 CAT 50	A05 00320	1.500	4.913	3.159	10.1

Delivery:

Integral drill holder complete without retention knob.

Note:

Other shank sizes are available on request.

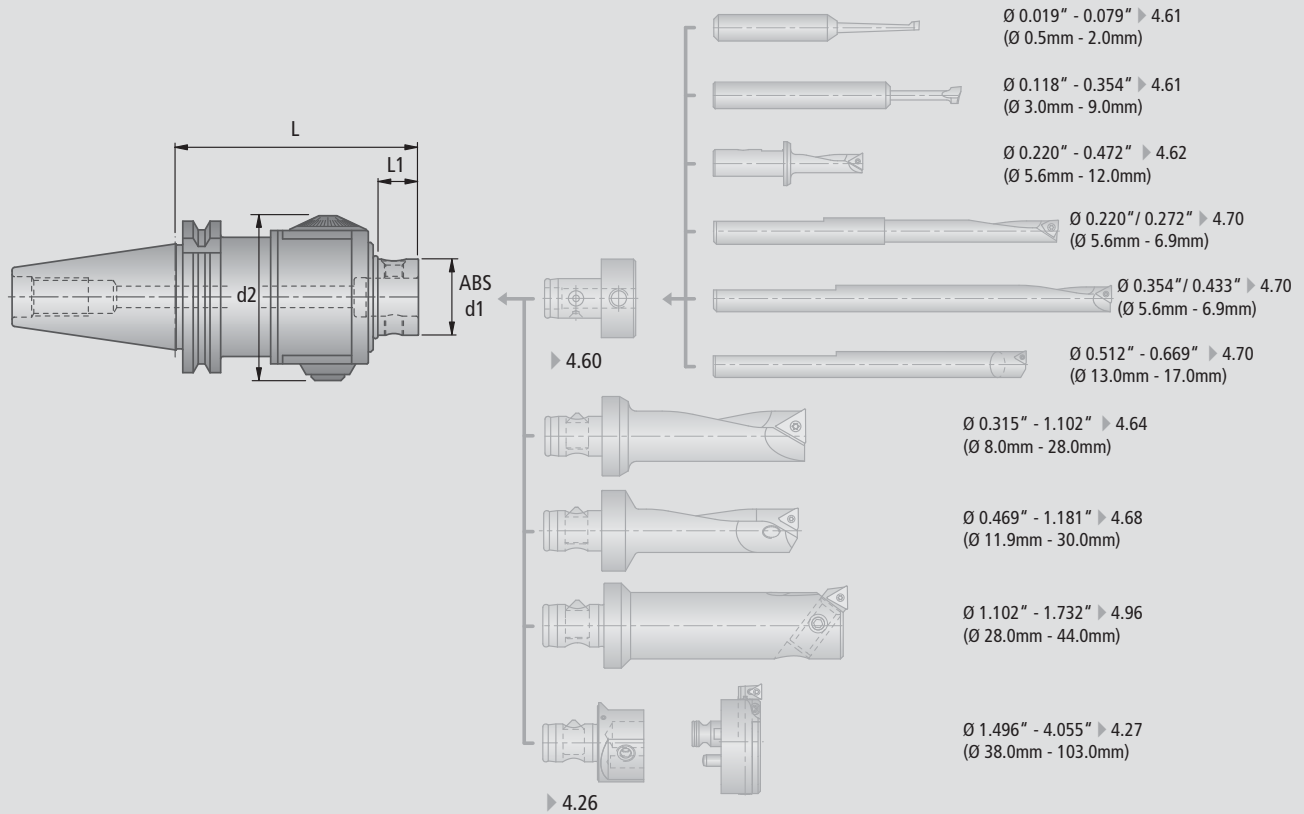
*** Please use the coolant ring KRD 60 (L0100021) on page 8.41**



Machine Connection 	Coolant Supply Central 	Adjustable 	Rotating Tool 	Tool Connection
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Integral Micro-adjustable Boring Head M020 (KFK)

radial adjustment of 0.0001" (0.002mm) per graduation on diameter, using vernier scale



CAT	Description	Order No.	ABS d1	d2	Adjustment	L	L1	
40	CAT 40 KFK1-Z-ABS 32	M02 07200	32	2.692	0.157	3.740	0.635	
50	CAT 50 KFK1-Z-ABS 32	M02 07210	32	2.756	0.157	3.740	0.635	

Delivery:
Integral micro-adjustable boring head complete without retention knob.
ABS® Replacement parts see Chapter 8.

The micro-adjustable head balanced in zero position

Boring Range:

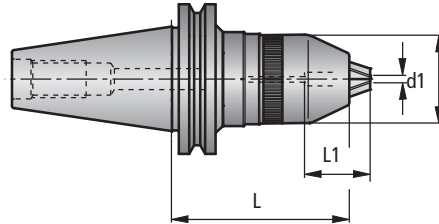
$$D_{min} = D$$

$$D_{max} = D1(2 \times S)$$

CAT



Integral Mill Drill Chuck CAT



(...) = mm

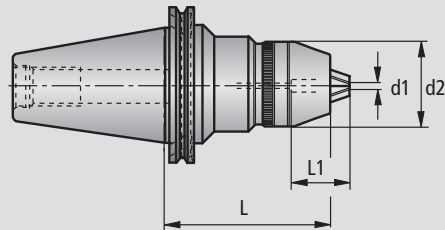
CAT	Description	Order No.	L	d1	d2	L1	lbs
40	KMDC 0.5-13 CAT40	A34 60010	4.331 (110)	0.020-0.512 (0.5-13)	1.949 (49.5)	1.142 (29)	4.5
	KMDC 3-16 CAT40	A34 60020	4.331 (110)	0.118-0.630 (3-16)	2.047 (52)	1.142 (29)	4.7
50	KMDC 0.5-13 CAT50	A34 60050	4.331 (110)	0.020-0.512 (0.5-13)	1.949 (49.5)	1.142 (29)	9.1
	KMDC 3-16 CAT50	A34 60060	4.331 (110)	0.118-0.630 (3-16)	2.047 (52)	1.142 (29)	9.2
	KMDC 12-20 CAT 50	A34 60070	4.567 (110)	0.472-0.787 (12-20)	2.480 (63)	1.575 (40)	10.3

Delivery:

Integral mill drill chuck complete with hex socket wrench, interchangeable seals and seal changing tool less retention knob.



Integral Mill Drill Chuck CAT MS



(...) = mm

CAT MS	Description	Order No.	L	d1	d2	L1	
40	KMDC 3-16 CAT 40 MS	A34 60080	4.331 (110)	0.118-0.630 (3-16)	2.047 (52)	1.142 (29)	4.7
50	KMDC 3-16 CAT 50 MS	A34 60090	4.331 (110)	0.118-0.630 (3-16)	2.047 (52)	1.142 (29)	9.2

Delivery:

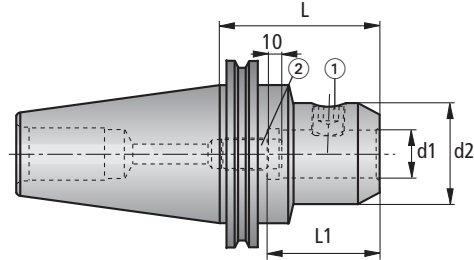
Integral mill drill chuck complete with hex socket wrench, interchangeable seals and seal changing tool less retention knob.

CAT



Integral FWD Precision Tool Holder for Straight Shank Connection

(Metric)



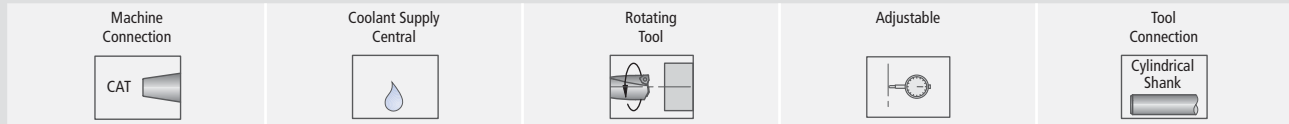
All dimensions are in mm

CAT	Description	Order No.	d1	d2	L	L1	lbs	Replacement Parts	
								Clamping Screw	Adjusting Screw
								Order No.	Order No.
40	CAT 40 FWD 10MM	A25 56820	10	28	50	40		N00 70310	N00 71130
	CAT 40 FWD 12MM	A25 56830	12	42	50	45		N00 70370	N00 71230
	CAT 40 FWD 14MM	A25 56840	14	42	50	45		N00 70370	N00 71320
	CAT 40 FWD 16MM	A25 56850	16	48	63	48		N00 70400	N00 71410
	CAT 40 FWD 18MM	A25 56860	18	48	63	48		N00 70400	N00 71410
	CAT 40 FWD 20MM	A25 56870	20	52	63	50		N00 70450	N00 71500
	CAT 40 FWD 25MM	A25 56880	25	52	90	56		N00 70450	N00 71500
50	CAT 50 FWD 10MM	A25 66820	10	28	63	40		N00 70310	N00 71130
	CAT 50 FWD 12MM	A25 66830	12	42	63	45		N00 70370	N00 71230
	CAT 50 FWD 14MM	A25 66840	14	42	63	45		N00 70370	N00 71320
	CAT 50 FWD 16MM	A25 66850	16	48	63	48		N00 70400	N00 71410
	CAT 50 FWD 18MM	A25 66860	18	48	63	48		N00 70400	N00 71410
	CAT 50 FWD 20MM	A25 66870	20	52	63	50		N00 70450	N00 71500
	CAT 50 FWD 25MM	A25 66880	25	52	80	56		N00 70450	N00 71500

Delivery:

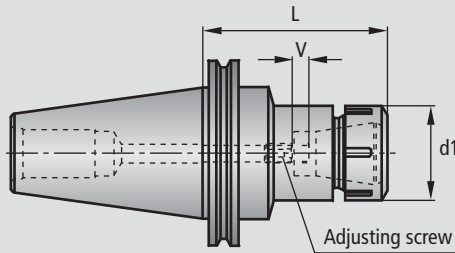
Integral precision tool holder complete with clamping and adjusting screws, less hex socket type wrench and retention knob.

- Total Runout ≤ 0.01 mm.
- A 2° tilted clamping screw secures tool from being pulled out of the chuck.
- Central coolant supply through Adjusting Screw.
- Length axially adjustable.



Integral Collet Holder

Externally Adjustable - SZV



*Dimension "L" depends on clamping range of collet

CAT	Description	Order No.	d1	L*	V		Replacement Parts				
							Collet nut		Spanner wrench		Max. collet nut clamping torque (ft-lbs)
							Description	Order No.	Description	Order No.	
40	CAT 40 SZV/ER 32	A05 80350	1.969	3.500	0.402		KC/ER 32	5280601032	E 32	L05 02050	120
50	CAT 50 SZV/ER 32	A05 80450	1.969	3.500	0.472		KC/ER 32	5280601032	E 32	L05 02050	120

Delivery:

Integral collet holder complete with collet nut, short adjusting screw with hole, less collet, spanner wrench and retention knob.

- For clamping tools with cylindrical shank up to 3/4" (20mm) diameter
- Concentricity between taper and tool shank $\cong 0.0006"$ (0.015mm)
- Axial adjustment via side adjustable rack and pinion system without removal of tool

Note:

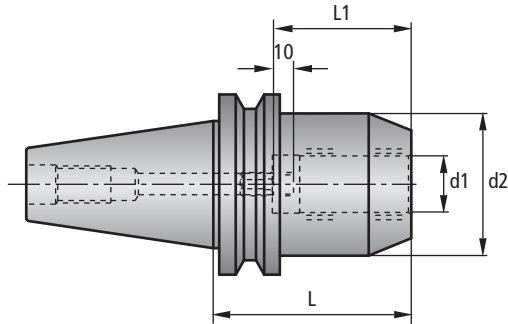
Please see pages 1.72 - 1.79 for the selection of collets, collet nuts and seal disks

CAT



Integral Hydraulic Clamping Chuck

(Inch)



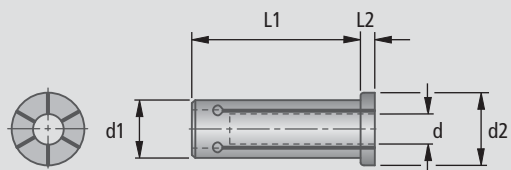
CAT	Description	Order No.	d1	d2	L	L1	lbs	Replacement Parts	
								Adjusting Screw	
								Description	Order No.
40	CAT40 .250	A25 56710	.250	1.752	2.520	1.457		FWD M6X1X16	N00 71050
	CAT40 .375	A25 56720	.375	1.752	2.520	1.673		FWD M10X1X18	N00 71230
	CAT40 .500	A25 56730	.500	1.752	2.520	1.870		FWD M10X1X18	N00 71230
	CAT40 .625	A25 56740	.625	1.752	2.520	2.067		FWD M10X1X18	N00 71230
	CAT40 .750	A25 56750	.750	1.752	2.520	2.067		FWD M10X1X18	N00 71230
50	CAT50 .250	A25 66710	.250	2.752	3.189	1.457			
	CAT50 .375	A25 66720	.375	2.752	3.189	1.673			
	CAT50 .500	A25 66730	.500	2.752	3.189	1.870			
	CAT50 .625	A25 66740	.625	2.752	3.189	1.870			
	CAT50 .750	A25 66750	.750	2.752	3.189	2.067			
	CAT50 1.000	A25 66760	1.000	2.752	3.189	2.402			
	CAT50 1.250	A25 66770	1.250	2.752	3.189	2.559			

Delivery:

Integral hydraulic clamping chuck complete with adjusting screw, less hex socket type wrench and retention knob.

- Total Runout < 0.0002"
- Completely enclosed pressure system, sealed against dirt and coolant
- Central coolant supply through Adjusting Screw
- Length axially adjustable

Reducer Bushing for Hydraulic Clamping Chucks



with flange grooves for peripheral coolant

Reducer Bushing (Inch)						
Order No.	d	d1	d2	L1	L2	lbs
L01 13400	.250	.750	.980	2.00	0.78	
L01 13410	.312					
L01 13420	.375					
L01 13430	.437					
L01 13440	.500					
L01 13450	.625					

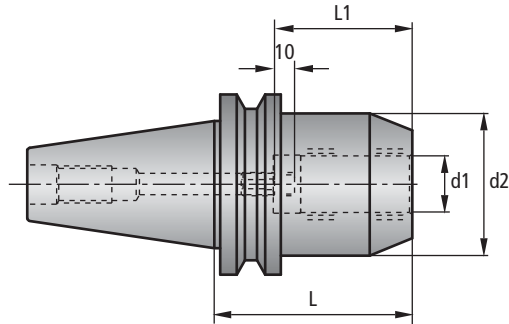
Gauge Pin	
Order No.	d1
L00 00080	6
L00 00090	8
L00 00100	10
L00 00110	12
L00 00130	16
L00 00070	20
L00 00160	32

Cylindrical Brush	
Order No.	d1
4779116206	6
4779116208	8
4779116210	10
4779116212	12
4779116216	16
4779116220	20
4779116232	32

CAT



Integral Hydraulic Clamping Chuck (Metric)



All dimensions are in mm

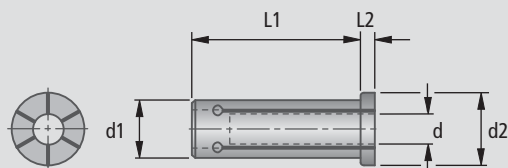
CAT	Description	Order No.	d1	d2	L	L1	lbs	Replacement Parts	
								Adjusting Screw	
								Description	Order No.
40	CAT40 10 mm	A25 56620	10	44.5	64	42.5		FWD M6X1X16	N00 71050
	CAT40 12 mm	A25 56630	12	44.5	64	47.5		FWD M10X1X18	N00 71230
	CAT40 14 mm	A25 56640	14	44.5	64	47.5		FWD M10X1X18	N00 71230
	CAT40 16 mm	A25 56650	16	44.5	64	52.0		FWD M10X1X18	N00 71230
	CAT40 20 mm	A25 56670	20	44.5	64	52.5		FWD M10X1X18	N00 71230
50	CAT50 10 mm	A25 66620	10	69.9	64	42.5			
	CAT50 12 mm	A25 66630	12	69.9	64	47.5			
	CAT50 14 mm	A25 66640	14	69.9	64	47.5			
	CAT50 16 mm	A25 66650	16	69.9	64	52.5			
	CAT50 20 mm	A25 66670	20	69.9	64	52.5			
	CAT50 25 mm	A25 66680	25	69.9	64	61.0			
	CAT50 32 mm	A25 66690	32	69.9	64	65.0			

Delivery:

Integral hydraulic clamping chuck complete with adjusting screw, less hex socket type wrench and retention knob.

- Total Runout < 0.005 mm
- Completely enclosed pressure system, sealed against dirt and coolant
- Central coolant supply through Adjusting Screw
- Length axially adjustable

Reducer Bushing for Hydraulic Clamping Chucks



with flange grooves for peripheral coolant

All dimensions are in mm

Reducer Bushing (Metric)						
Order No.	d	d1	d2	L1	L2	lbs
L01 13290	3	12	19	45	2	0.22
L01 13300	4					
L01 13310	5					
L01 13320	6					
L01 13330	8					
L01 13260	3	20	29	50.5	2	0.22
L01 13270	4					
L01 13280	5					
L01 13200	6					
L01 13210	8					
L01 13220	10					
L01 13230	12					
L01 13240	14					
L01 13250	16					
L01 13500	6					
L01 13510	8					
L01 13520	10					
L01 13530	12					
L01 13540	14					
L01 13550	16					
L01 13560	18					
L01 13570	20					
L01 13580	25					

Gauge Pin	
Order No.	d1
L00 00080	6
L00 00090	8
L00 00100	10
L00 00110	12
L00 00130	16
L00 00070	20
L00 00160	32

Cylindrical Brush	
Order No.	d1
4779116206	6
4779116208	8
4779116210	10
4779116212	12
4779116216	16
4779116220	20
4779116232	32





Spindle Adapter Flange

ABS® VFS · with ABS® Connection

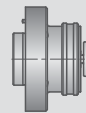


1.26

HSK Adapter Flange with KomLoc® Clamping System

Adapter Flange

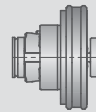
HSK-RVF
HSK-RVFW, Adjustable



1.28 – 1.31

Built-in Flange

HSK-REF
HSK-REFW, Adjustable



1.32– 1.35

KomLoc® HSK-Clamping System

Detail information for KomLoc® HSK-Clamping System is available on Chapter 8.

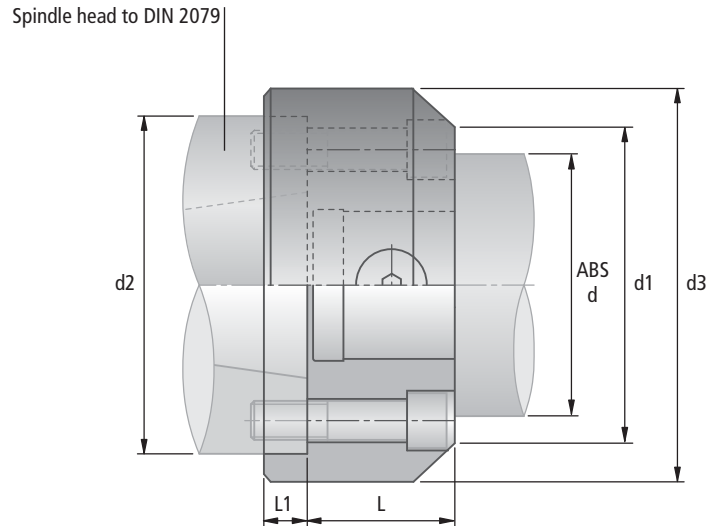


Spindle Flange Adapter



with ABS® Connection

This adapter flange does not have key slots.
Drive keys on spindle head must be removed



ISO	Description	Order No.	ABS d	d1	d2	d3	L	L1	
30	ABS32 VFS30	A01 01130	32	2.756	2.749	3.543	0.945	0.433	2.51
	ABS40 VFS30	A01 01140	40				1.102		2.73
	ABS50 VFS30	A01 01150	50				1.260		3.13
	ABS63 VFS30	A01 01160	63				1.575		3.77
40	ABS40 VFS40	A01 01240	40	3.150	3.499	4.331	1.102	0.472	4.45
	ABS50 VFS40	A01 01250	50				1.260		4.74
	ABS63 VFS40	A01 01260	63				1.575		5.73
	ABS80 VFS40	A01 01270	80	3.937	3.499	4.331	1.732		0.472
50	ABS50 VFS50	A01 01450	50	4.724	5.062	5.906	1.260	0.669	10.08
	ABS63 VFS50	A01 01460	63				1.575		11.51
	ABS80 VFS50	A01 01470	80				1.732		12.46
	ABS100 VFS50	A01 01480	100				2.205		14.38
	ABS125 VFS50	A01 01490	125	5.512	5.062	6.299	2.835		0.669

Delivery:
Spindle adapter flange complete.



Features of the new system

- Simple and low cost spindle contour
- Minimum number of extremely sturdy components
- Maximum clamping force
- Specially designed for high speed machining (HSC)
- Internal coolant supply
- Practical ejector function

Applications

There are numerous occasions that require manual clamping of hollow taper shank (HSK) tools. The new KOMET HSK clamping system is used throughout transfer lines, machining centers, turning lathes, multi-head machines and pre-setting devices.

- Direct mounting on multi-head machines and short boring spindles
- Spindle mounted and location adapter flanges are available
- Adapters for extension and reduction

Using the KomLoc® HSK-Clamping System

Operation of the KomLoc® clamping system is quite simple by the turn of a hexagonal key. A low draw-in moment automatically produces a sturdy and effective clamping action. In addition, an axial movement or turning of the locking ring prevents dirt and chips from penetrating into the clamping mechanism.

HSC (High Speed Cutting) Ability

The new KomLoc® clamping system is predestined to be utilized at high cutting speeds due to the radial expanding effect of the clamping action. The clamping cartridge is designed to be completely symmetrical in rotation.

Coolant supply

Internal coolant supply is introduced by two coolant hoses which form a cage with the ejector and the distributor. This cage is supported on floating bearings and produces a seal for a coolant pressure of $p > 30\text{psi}$

Application details

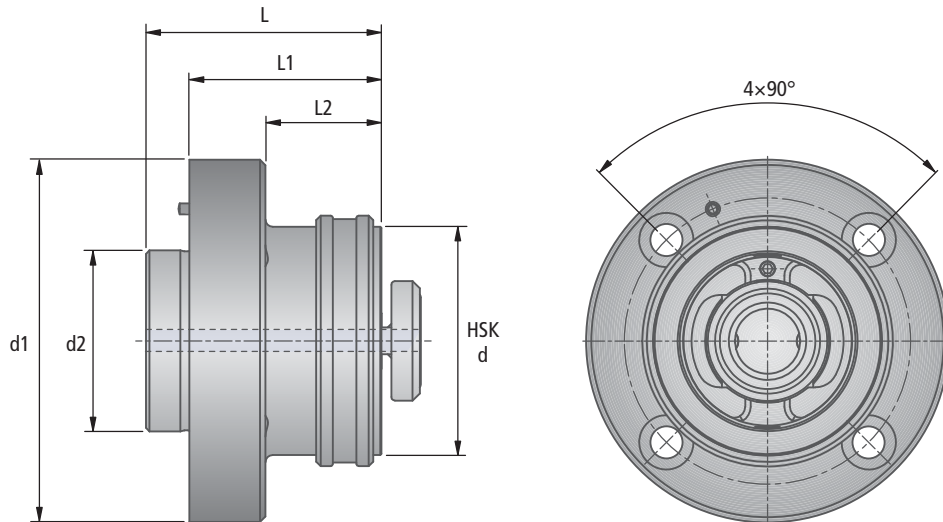
The clamping adapter ensures an excellent transmission of the bending and torsion moments by maintaining the correct draw-in moments and clamping forces. The direction of these moments is not affected by the position of the clamping cartridge.

HSK-RVF Adapter Flange

Machine Connection Machine Spindle	Coolant Supply Central	Rotating Tool	Adjustable	KomLoc® HSK-Clamping System K	Tool Connection HSK-A ISO 12164-1	Tool Connection HSK-C ISO 12164-1
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KomLoc® HSK-Clamping System K

Radially adjustable on the machine spindle with adjusting screw



(..) = mm

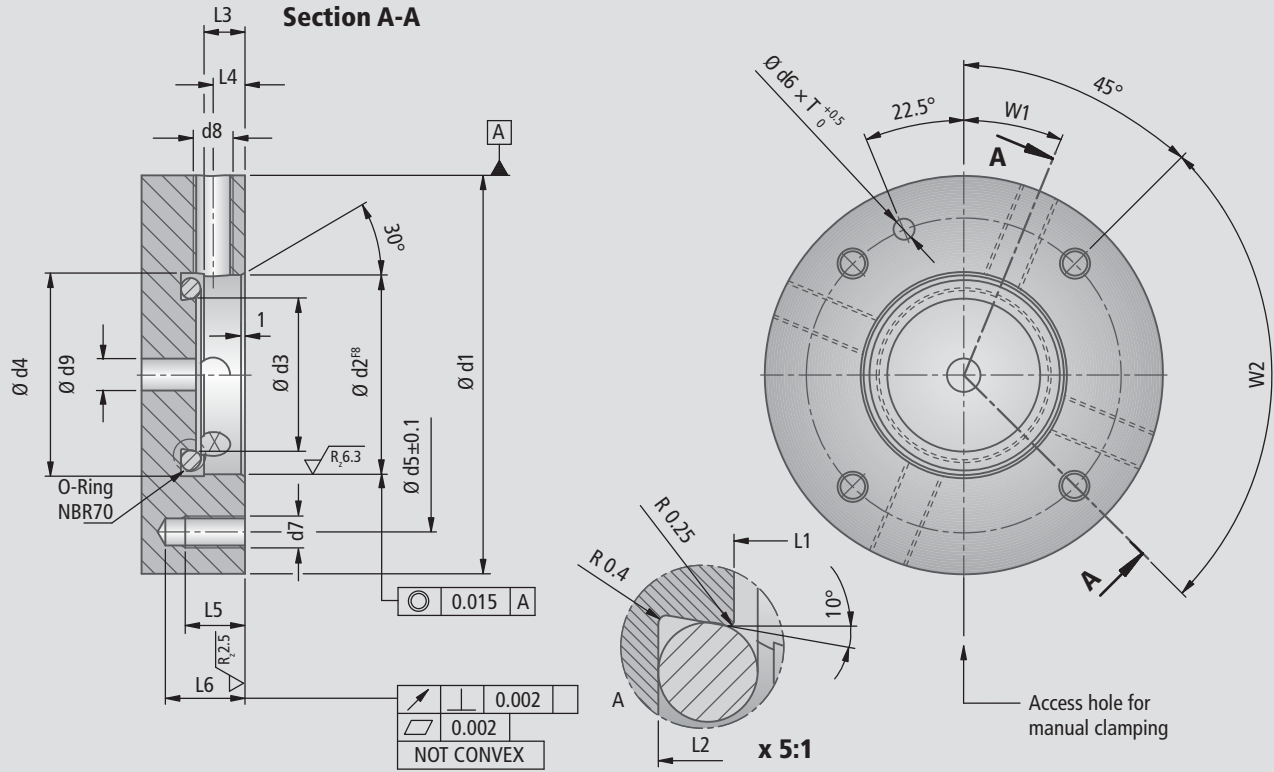
Description	Order No.	HSK d	d1	d2	L	L1	L2	lbs	Replacement Parts		Accessories	
									KomLoc Clamping device	Seal ring, shifting	Clamping screw DIN 912	
									Order No.	Order No.	Description	Order No.
HSK-40 RVF	A08 51031	40	2.756 (70)	1.378 (35)	1.669 (42.4)	1.28 (32.5)	0.827 (21)	1.15	L07 01040	L07 01440	M6x20-12.9	55011 06020
HSK-50 RVF	A08 61031	50	3.150 (80)	1.575 (40)	2.087 (53)	1.693 (43.0)	1.024 (26)	2.14	L07 01050	L07 01450	M6x20-12.9	55011 06020
HSK-63 RVF	A08 71031	63	3.937 (100)	1.969 (50)	2.559 (65)	2.087 (53.0)	1.260 (32)	4.06	L07 01060	L07 01460	M8x25-12.9	55011 08025
HSK-80 RVF	A08 81030	80	4.606 (117)	2.362 (60)	3.339 (84.8)	2.866 (72.8)	1.772 (45)	7.98	L07 01070	L07 01470	M8x35-12.9	55011 08035
HSK-100 RVF	A08 91030	100	5.512 (140)	3.150 (80)	4.173 (106)	3.701 (94)	1.969 (50)	15.66	L07 01080	L07 01480	M10x45-12.9	55011 10045

Delivery:

Adapter flange complete with KomLoc® clamping device and locking ring. Please order clamping screw separately.

Note:

Please use the wiper to clean the taper and the contact face

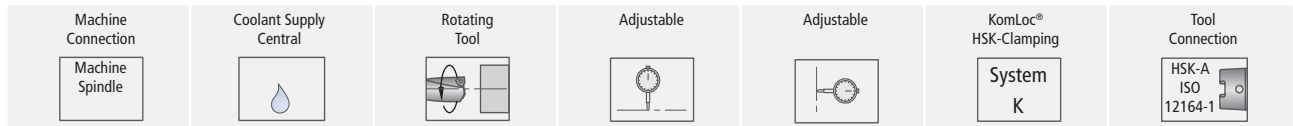


(..) = mm

for Flange Adapter	d1	d2	d3	d4	d5	d6	d7	d8	d9	L1	L2	L3	L4	L5	L6	T	W1	W2	O-Ring
A08 51031	2.756 (70)	1.378 (35)	1.122 (28.5)	1.417 (36)	2.087 (53)	.197 (5)	M6	M8X1	.197 (5.0)	.406 (10.3)	.488 (12.4)	.327 (8.3)	.276 (7.0)	.551 (14)	.709 (18)	.138 (3.5)	0°	4X90°	28X3
A08 61031	3.150 (80)	1.575 (40)	1.201 (30.5)	1.614 (41)	2.480 (63)	.197 (5)	M6	M8X1	.236 (6.0)	.406 (10.3)	.524 (13.3)	.327 (8.3)	.276 (7.0)	.551 (14)	.709 (18)	.138 (3.5)	0°	4X90°	30X4
A08 71031	3.937 (100)	1.969 (50)	1.516 (38.5)	2.008 (51)	3.110 (79)	.197 (5)	M8	M10X1	.315 (8.0)	.484 (12.3)	.634 (16.1)	.406 (10.3)	.315 (8.0)	.591 (15)	.787 (20)	.138 (3.5)	0°	4X90°	38X5
A08 81030	4.606 (117)	2.362 (60)	1.870 (47.5)	2.402 (61)	3.780 (96)	.236 (6)	M8	M10X1	.402 (10.2)	.484 (12.3)	.634 (16.1)	.406 (10.3)	.315 (8.0)	.709 (18)	.866 (22)	.177 (4.5)	0°	4X90°	47X5
A08 91030	5.512 (140)	3.150 (80)	2.559 (65)	3.189 (81)	4.685 (119)	.236 (6)	M10	M10X1	.472 (12)	.484 (12.3)	.634 (16.1)	.406 (10.3)	.315 (8.0)	.787 (20)	1.024 (26)	.177 (4.5)	22.5°	8X45°	65X5

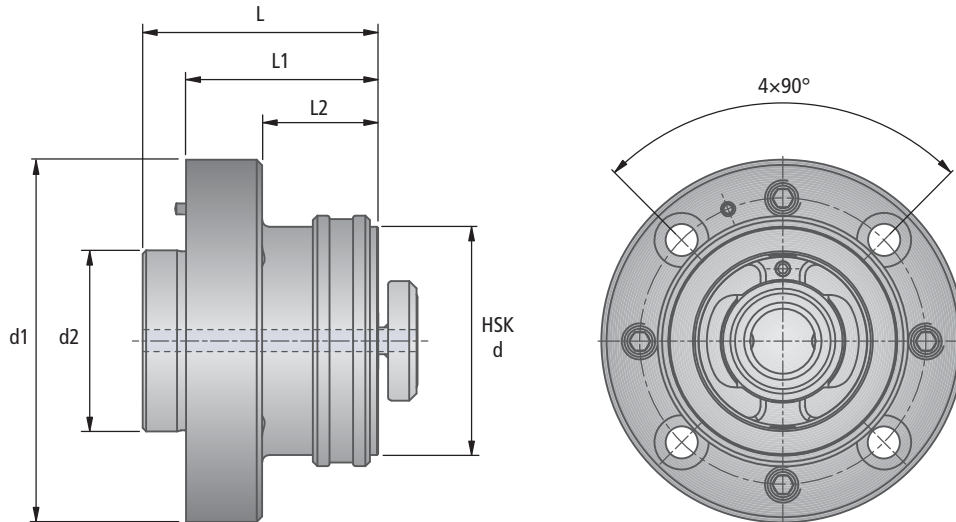
KOMET Drawing No. : N49 13470

HSK-RVFW Adapter Flange - Adjustable



KomLoc® HSK-Clamping System K

Radially adjustable on the machine spindle with adjusting screw
 Fine adjustment in face run-out by adjusting screw in adapter flange



(..) = mm

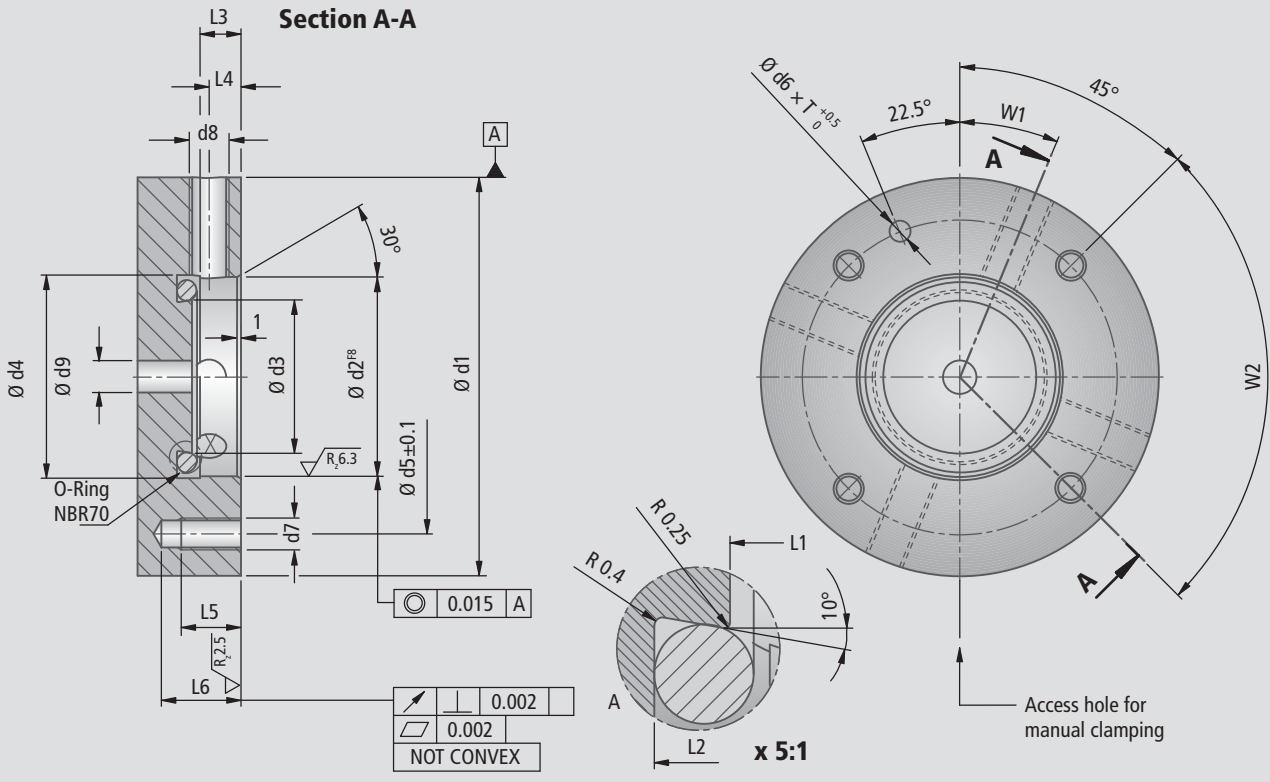
Description	Order No.	HSK d	d1	d2	L	L1	L2	lbs	Replacement Parts				Accessories	
									KomLoc Clamping device	Seal ring, shifting	Disc	Threaded Pin	Clamping screw DIN 912	
									Order No.	Order No.	Order No.	Order No.	Description	Order No.
HSK-40 RVFW	A08 52030	40	2.756 (70)	1.378 (35)	1.669 (42.4)	1.28 (32.5)	0.827 (21)	1.15	L07 01040	L07 01440	L02 30960	N00 70250	M6x20-12.9	5501106020
HSK-63 RVFW	A08 72030	63	3.937 (100)	1.969 (50)	2.559 (65)	2.087 (53.0)	1.260 (32)	4.06	L07 01060	L07 01460	L02 30960	N00 70320	M8x25-12.9	5501108025
HSK-80 RVFW	A08 82030	80	4.606 (117)	2.362 (60)	3.339 (84.8)	2.866 (72.8)	1.772 (45)	7.98	L07 01070	L07 01470	L02 30960	N00 70330	M8x35-12.9	5501108035

Delivery:

Adapter flange complete with KomLoc® clamping device, locking ring, disc and threaded pin. Please order clamping screw separately.

Note:

Please use the wiper to clean the taper and the contact face







(..) = mm

for Flange Adapter	d1	d2	d3	d4	d5	d6	d7	d8	d9	L1	L2	L3	L4	L5	L6	T	W1	W2	O-Ring
A08 52030	2.756 (70)	1.378 (35)	1.122 (28.5)	1.417 (36)	2.087 (53)	.197 (5)	M6	M8X1	.197 (5.0)	.406 (10.3)	.488 (12.4)	.327 (8.3)	.276 (7.0)	.630 (16)	.787 (20)	.138 (3.5)	0°	4X90°	28X3
A08 72030	3.937 (100)	1.969 (50)	1.516 (38.5)	2.008 (51)	3.110 (79)	.197 (5)	M8	M10X1	.315 (8.0)	.484 (12.3)	.634 (16.1)	.406 (10.3)	.315 (8.0)	.591 (15)	.787 (20)	.138 (3.5)	0°	4X90°	38X5
A08 82030	4.606 (117)	2.362 (60)	1.870 (47.5)	2.402 (61)	3.780 (96)	.236 (6)	M8	M10X1	.402 (10.2)	.484 (12.3)	.634 (16.1)	.406 (10.3)	.315 (8.0)	.709 (18)	.866 (22)	.177 (4.5)	0°	4X90°	47X5

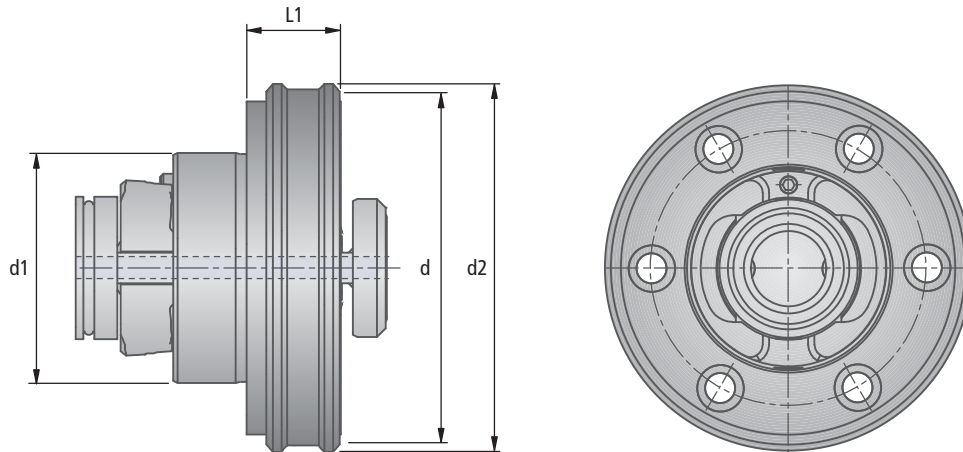
KOMET Drawing No. : N49 13470

HSK-REF Built-in Flange


Machine Connection Short Spindle DIN 69002	Coolant Supply Central 	Rotating Tool 	Adjustable 	KomLoc® HSK-Clamping System K	Tool Connection HSK-A ISO 12164-1 
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KomLoc® HSK-Clamping System K

Radially adjustable on the machine spindle with adjusting screw



(..) = mm

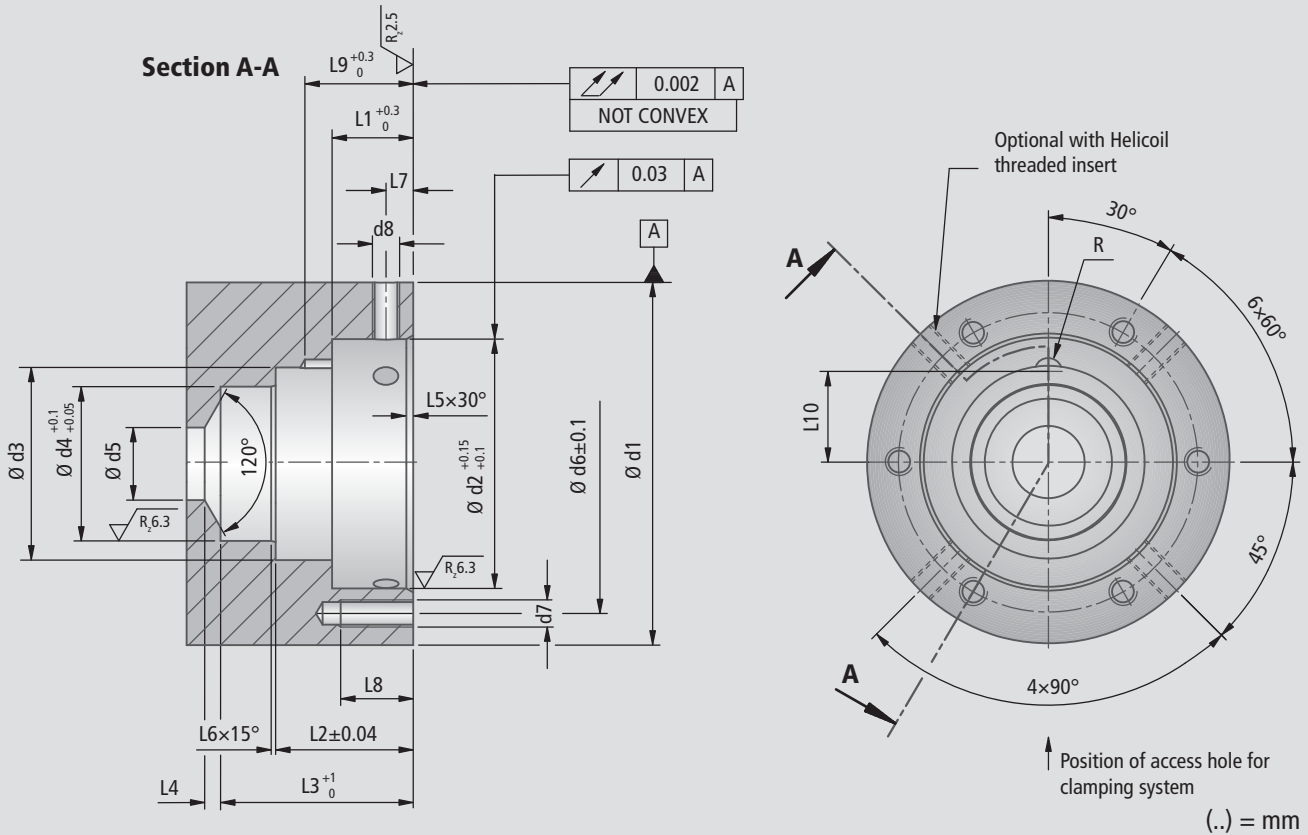
Description	Order No.	HSK d	d1	d2	L1	 lbs	Replacement Parts			Accessories	
							KomLoc Clamping device Order No.	Seal ring, turning Order No.	Ball pressure screw Order No.	Clamping screw DIN 912 Description Order No.	
HSK-50 REF	A08 61060	50	1.654 (42)	2.724 (69.2)	.689 (17.5)	1.19	L07 01050	L07 01761	N10 30739	M5x20-12.9	5501105020
HSK-63 REF	A08 71060	63	2.165 (55)	3.465 (88)	.886 (22.5)	2.47	L07 01060	L07 01771	N10 30740	M6x30-12.9	5501106030
HSK-80 REF	A08 81060	80	2.677 (68)	4.331 (110)	1.083 (27.5)	4.83	L07 01070	L07 01780	N10 30741	M8x35-12.9	5501108035
HSK-100 REF	A08 91060	100	3.465 (88)	5.394 (137)	1.181 (30)	9.04	L07 01080	L07 01790	N10 30742	M10x1x40-12.9	5501110042

Delivery:

Built-in flange complete with KomLoc® clamping device and locking ring.
Please order clamping screw separately

Note:

Please use the wiper to clean the taper
and the contact face



for Built-in Adapter	d1	d2	d3 ^{+0.5}	d4	d5	d6	d7	d8	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	R
A08 61060	2.480 (63)	1.654 (42)	1.299 (33)	1.024 (26)	.394 (10)	2.047 (52)	M5	M5	.591 (15)	.974 (24.75)	1.398 (35.5)	.118 (3)	.059 (1.5)	.039 (1)	.197 (5)	.472 (12)	.724 (18.4)	.610 (15.5)	.098 (2.5)
A08 71060	3.150 (80)	2.165 (55)	1.673 (42.5)	1.339 (34)	.630 (16)	2.598 (66)	M6	M6	.705 (17.9)	1.195 (30.35)	1.673 (42.5)	.138 (3.5)	.059 (1.5)	.039 (1)	.236 (6)	.630 (16)	.941 (23.9)	.787 (20)	.118 (3)
A08 81060	3.937 (100)	2.677 (68)	2.079 (52.8)	1.654 (42)	.630 (16)	3.228 (82)	M8	M8	.957 (24.3)	1.583 (40.2)	2.256 (57.3)	.157 (4)	.079 (2)	.059 (1.5)	.315 (8)	.709 (18)	1.295 (32.9)	.976 (24.8)	.138 (3.5)
A08 91060	4.921 (125)	3.465 (88)	2.598 (66)	2.087 (53)	.787 (20)	4.173 (106)	M10X1	M8	1.354 (34.4)	2.142 (54.4)	2.992 (76)	.177 (4.5)	.079 (2)	.079 (2)	.315 (8)	.984 (25)	1.669 (42.4)	1.236 (31.4)	.177 (4.5)

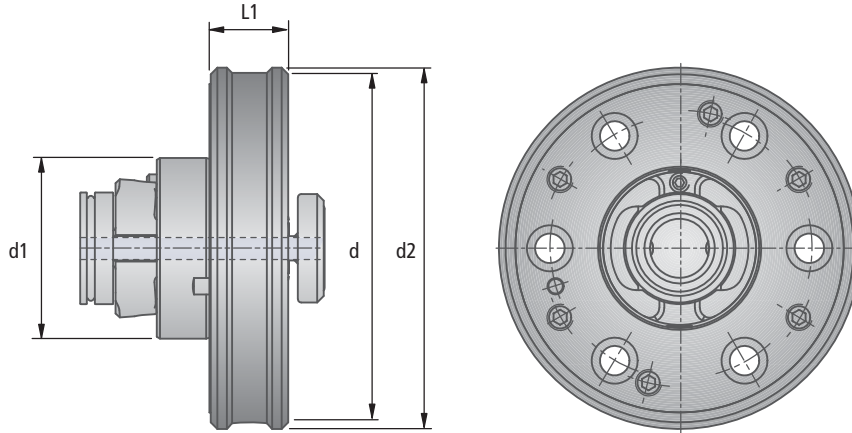
KOMET Drawing No. : N49 13460

HSK-REFW Built-in Flange - Adjustable

Machine Connection Short Spindle DIN 69002	Coolant Supply Central	Rotating Tool	Adjustable	Adjustable	KomLoc® HSK-Clamping System K	Tool Connection HSK-A ISO 12164-1
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KomLoc® HSK-Clamping System K

Radially adjustable on the machine spindle with adjusting screw
Fine adjustment in face run-out by adjusting screw in adapter flange



(..) = mm

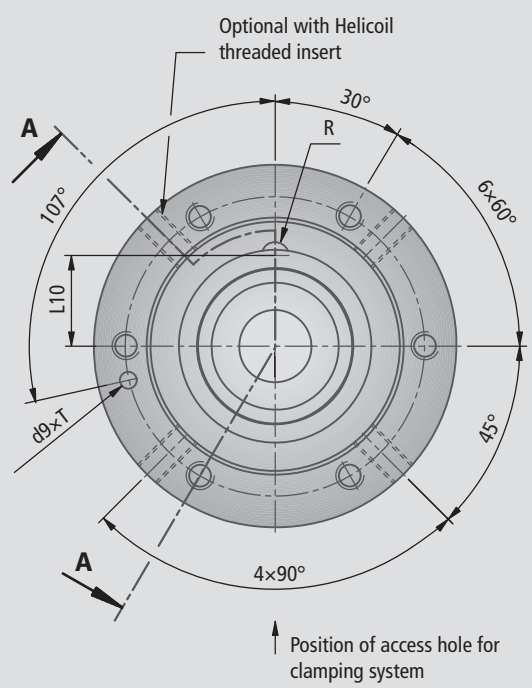
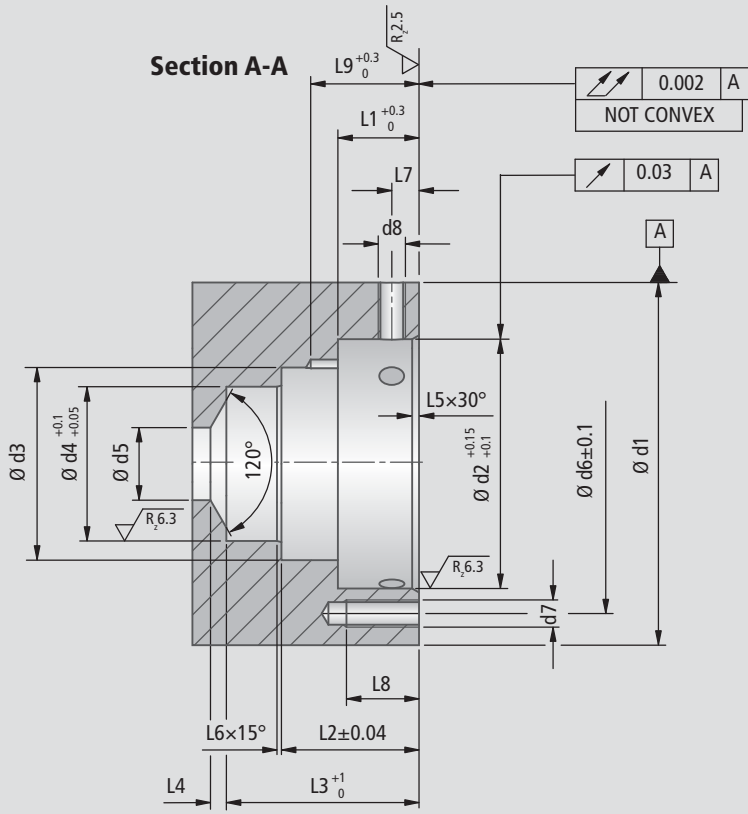
Description	Order No.	HSK d	d1	d2	L1	lbs	Replacement Parts					Accessories
							Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
HSK-40 REFW	A08 72060	100	2.165 (55)	4.331 (110)	.945 (24)	3.84	L07 01060	L07 01780	N10 30741	L02 30960	N00 70270	5501108035 (M8X35-12.9)

Delivery:

Built-in flange complete with KomLoc® clamping device, locking ring, disc and threaded pin. Please order clamping screw separately.

Note:

Please use the wiper to clean the taper and the contact face



(..) = mm

for Built-in Adapter	d1	d2	d3 ^{+0.5}	d4	d5	d6	d7	d8	d9	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	R	T
A08 72060	3.937 (100)	2.165 (55)	1.673 (42.5)	1.339 (34)	.630 (16)	3.110 (79)	M8	M6	0.217 (5.5)	.650 (16.5)	.742 (28.85)	1.614 (41)	.138 (3.5)	.059 (1.5)	.039 (1)	.236 (6)	.984 (25)	.882 (22.4)	.787 (20)	.118 (3)	.394 (10)

KOMET Drawing No. : N49 13460

HSK Adapter

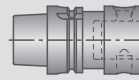


- The modern connection between the machine spindle and the cutting tool is the HSK (Hollow Shank) system
- The HSK is standardized per ISO 12164
- The main feature of the HSK connection is the taper and face contact.
- **HSK provides following essential advantages:
Highest tool changing accuracy, high static rigidity, high radial rigidity, compatible with high-speed machines, shorter tool change times.**
- The version HSK-A is used with automatic tool changers with machining centers, turn/mill centers and other cutting tool machines.
- HSK-A can also be used on machines with manual tool change.
- KOMET is offering the additional HSK versions on request (see Chapter 8).



**Adapter**

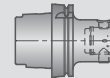
with ABS® / ABS® N Connection



1.38

Eccentric Adapter

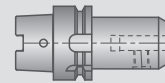
with ABS® Connection



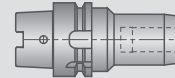
1.38

Precision Tool Holder

HSK-A FWD



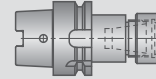
1.39

Hydraulic Chuck

1.40 – 1.41

Collet Holder

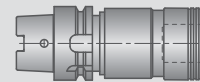
HSK-A SZV



1.42

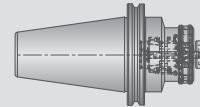
Tapping Chuck

HSK-A GWF



1.43

HSK with integrated KomLoc® HSK-Clamping System

CAT - HSK Adapter

1.44

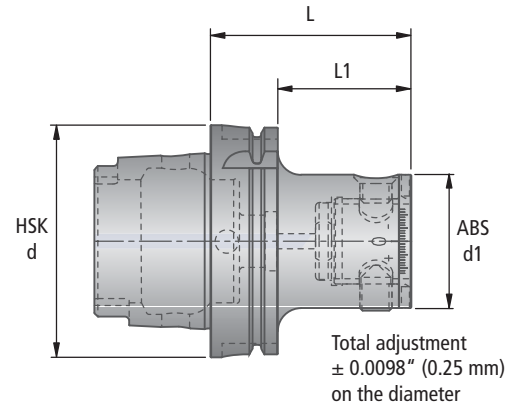
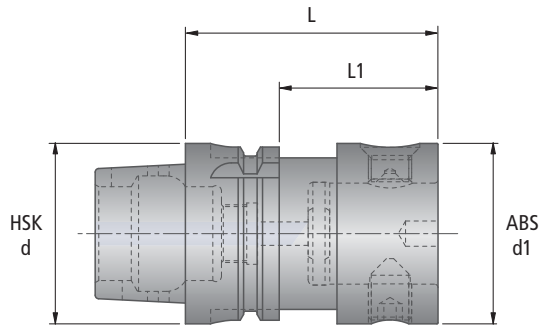


HSK-A

Machine Connection	Balancing Note (Chapter 9)	Coolant Supply Central	Rotating Tool	Rotating Workpiece	Tool Connection
HSK-A ISO 12164-1	Pre-balanced Q6.3 10,000 RPM				ABS®

Machine Connection	Coolant Supply Central	Rotating Tool	Rotating Workpiece	Adjustable	Tool Connection
HSK-A ISO 12164-1					ABS®

Adapter with ABS® Connection



* for Fine boring application only (..) = mm

ABS®						
Description	Order No.	HSK d	ABS d1	L	L1	
HSK-A32-ABS25	A06 00120	32	25	1.575 (40)	0.787 (20)	0.35
HSK-A32-ABS32	A06 00130		32	2.165 (55)	1.378 (35)	0.55
HSK-A40-ABS25	A06 10120	40	25	1.772 (45)	0.984 (25)	0.55
HSK-A40-ABS32	A06 10130		32	1.772 (45)	0.984 (25)	0.66
HSK-A40-ABS40	A06 10140		40	2.165 (55)	—	0.88
HSK-A50-ABS25	A06 20121	50	25	1.969 (50)	0.945 (24)	0.99
HSK-A50-ABS32	A06 20131		32	1.969 (50)	0.945 (24)	
HSK-A50-ABS40	A06 20141		40	2.362 (60)	1.339 (34)	
HSK-A50-ABS50	A06 20151		50	2.756 (70)	—	1.74
HSK-A63-ABS25	A06 30120		63	25	1.969 (50)	0.945 (24)
HSK-A63-ABS32	A06 30130	32		1.969 (50)	0.945 (24)	1.65
HSK-A63-ABS40	A06 30140	40		2.362 (60)	1.339 (34)	2.21
HSK-A63-ABS50	A06 30150	50		2.756 (70)	1.732 (44)	2.69
HSK-A63-ABS50*	A06 30220	50		1.654 (42)	—	1.70
HSK-A63-ABS63	A06 30160	63		3.150 (80)	—	3.62
HSK-A63-ABS80	A06 30170	80		3.937 (100)	—	5.51
HSK-A80-ABS25	A06 40120	80	25	2.165 (55)	1.142 (29)	2.54
HSK-A80-ABS32	A06 40130		32	2.165 (55)	1.142 (29)	2.95
HSK-A80-ABS40	A06 40140		40	2.559 (65)	1.535 (39)	3.00
HSK-A80-ABS50	A06 40150		50	2.953 (75)	1.929 (49)	3.53
HSK-A80-ABS63	A06 40160		63	3.346 (85)	2.323 (59)	4.85
HSK-A80-ABS80	A06 40170		80	3.740 (95)	—	6.59
HSK-A100-ABS25	A06 50120		100	25	2.362 (60)	1.22 (31)
HSK-A100-ABS32	A06 50130	32		2.362 (60)	1.22 (31)	5.07
HSK-A100-ABS40	A06 50140	40		3.150 (80)	2.008 (51)	5.40
HSK-A100-ABS50	A06 50150	50		3.150 (80)	2.008 (51)	5.91
HSK-A100-ABS63	A06 50160	63		3.150 (80)	2.008 (51)	6.64
HSK-A100-ABS80	A06 50170	80		3.543 (90)	2.402 (61)	8.16
HSK-A100-ABS100	A06 50180	100		3.937 (100)	—	10.47

(..) = mm

ABS®						
Description	Order No.	HSK d	ABS d1	L	L1	
HSK A 63 - ABS50 EH	A06 36730	63	50	2.756 (70)	1.024 (26)	2.49
HSK A 100-ABS50 EH	A06 56730	100	50	3.150 (80)	1.142 (29)	5.73

Replacement Parts				
for HSK Size	Adjustment Key Order No.	Order No.	Order No.	Order No.
63	1804300028	5139100063	1802101063	5291102926
100	1804300028	5139100080	1802101080	5291103636

Delivery:

Eccentric adjusting holder complete.
Please order coolant supply connection and key separately (see Chapter 8).

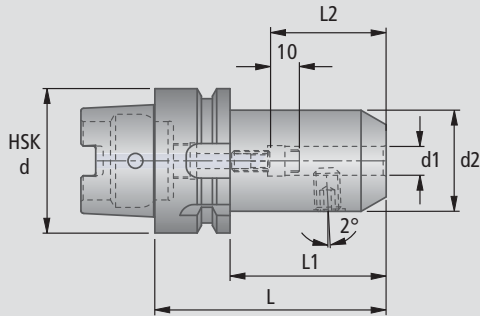
Delivery: Adapter fitted complete. Please order coolant supply connection and key separately .
1.38



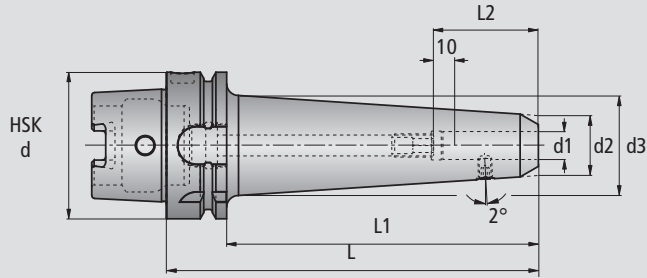
Machine Connection 	Balancing Note (Chapter 9) Pre-balanced Q6.3 10,000 RPM	Total Runout $\leq 5 \mu\text{m}$	Coolant Supply Central 	Rotating Tool 	Rotating Workpiece 	Tool Connection Straight Shank
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FWD Precision Tool Holder (Metric)

Short Version



***Long Version**



2° tilted clamping screw secures tool from being pulled out of the chuck

All dimensions are in mm

Description	Order No.	HSK d	d1	d2	d3	L	L1	L2	lbs	Replacement Parts		
										Clamping screw	Adjusting screw	
										Order No.	Qty.	Order No.
HSK-A63-FWD06	A06 30600	63	6	25		80	54	36	1.81	N00 70210	1	N00 71000
HSK-A63-FWD08	A06 30800		8	28		80	54	36	1.98	N00 70260	1	N00 71050
HSK-A63-FWD10	A06 31000		10	35		80	54	40	2.18	N00 70310	1	N00 71120
HSK-A63-FWD12	A06 31200		12	42		90	64	45	2.65	N00 70370	1	N00 71270
HSK-A63-FWD14	A06 31400		14	44		90	64	45	2.65	N00 70370	1	N00 71270
HSK-A63-FWD16	A06 31600		16	48		100	74	48	3.44	N00 70400	1	N00 71420
HSK-A63-FWD18	A06 31800		18	50		100	74	48	3.53	N00 70400	1	N00 71420
HSK-A63-FWD20	A06 32000		20	52		100	74	50	3.68	N00 70450	1	N00 71510
HSK-A63-FWD25	A06 32500		25	65		110	84	56	5.07	N00 70510	2	N00 71510
HSK-A63-FWD32	A06 33200		32	72		110	84	60	5.12	N00 70550	2	N00 71510
*HSK-A63-FWD06-160	A06 34060	63	6	22	33	160	134	36		N00 70200	1	N00 71000
*HSK-A63-FWD08-160	A06 34080		8	24	35	160	134	36		N00 70210	1	N00 71050
*HSK-A63-FWD10-160	A06 34100		10	25	39	160	134	40		N00 70210	1	N00 71120
*HSK-A63-FWD12-160	A06 34120		12	26	43	160	134	45		N00 70210	1	N00 71270
*HSK-A63-FWD14-160	A06 34140		14	28	44	160	134	45		N00 70260	1	N00 71270
*HSK-A63-FWD16-160	A06 34160		16	30	45	160	134	48		N00 70260	1	N00 71420
*HSK-A63-FWD18-160	A06 34180		18	32	46	160	134	48		N00 70260	1	N00 71420
*HSK-A63-FWD20-160	A06 34200		20	34	50	160	134	50		N00 70260	1	N00 71510
*HSK-A63-FWD25-160	A06 34250		25	65	65	160	134	56		N00 70510	2	N00 71510
*HSK-A63-FWD32-160	A06 34320		32	72	72	160	134	60		N00 70550	2	N00 71510

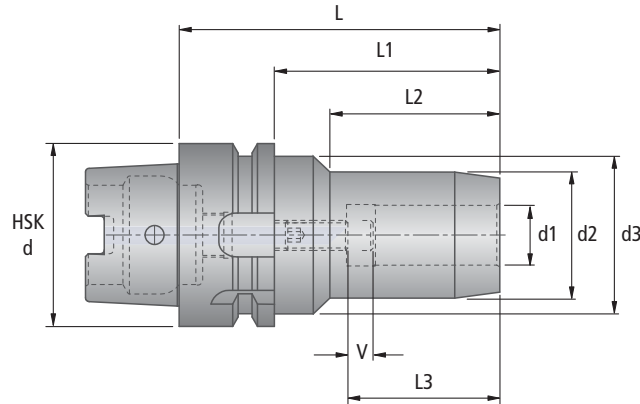
Delivery:

Precision tool holder complete with clamping screw and adjusting screw. Please order coolant supply connection and key separately (see Chapter 8).

HSK-A

Machine Connection HSK-A ISO 12164-1	Balancing Note (Chapter 9) HSK-A50 / HSK-A63 Pre-balanced Q6.3 15,000 RPM	Balancing Note (Chapter 9) HSK-A100 Pre-balanced Q6.3 12,000 RPM	Total Runout $\leq 3 \mu\text{m}$	Coolant Supply Central	Rotating Tool	Tool Connection Straight Shank
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Hydraulic Chuck (Metric)



Closed System:

The system is fully sealed. No dirt, coolant, lubricants or chips can penetrate.

Maximum RPM:

Dependent on the HSK size of the hydraulic chuck and can be used up to $n = 50,000$ RPM in a fine balanced version.

All dimensions are in mm

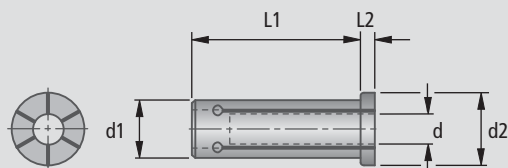
Description	Order No.	HSK d	d1	d2	d3	L	L1	L2	L3	V		Replacement Parts	
												Adjusting screw	
												Description	Order No.
HSK-A50- D12	A06 23530	50	12	32	40	86.5	60.5	43.5	47.5	10		M10X1X12	N00 71800
HSK-A50- D20	A06 23570		20	42	60	91.5	65.5	49.5	52.5	10		M16X1X14	N00 71550
HSK-A63-D 6	A06 33500	63	6	26	50	71.5	45.5	24.5	37.5	10	1.63	M5X12	N00 71020
HSK-A63-D 8	A06 33510		8	28	50	71.5	45.5	25.5	37.5	10	1.83	M6X12	N00 71070
HSK-A63-D10	A06 33520		10	30	50	81.5	55.5	35.5	42.5	10	1.83	M8X1X12	N00 71730
HSK-A63-D12	A06 33530		12	32	50	86.5	60.5	41.5	47.5	10	2.51	M10X1X12	N00 71800
HSK-A63-D14	A06 33540		14	34	50	86.5	60.5	41.5	47.5	10	1.83	M10X1X12	N00 71800
HSK-A63-D16	A06 33550		16	38	50	91.5	65.5	48.0	52.5	10	2.32	M12X1X12	N00 71860
HSK-A63-D18	A06 33560		18	40	50	91.5	65.5	48.5	52.5	10	2.01	M12X1X12	N00 71860
HSK-A63-D20	A06 33570		20	42	50	91.5	65.5	49.5	52.5	10	2.54	M16X1X14	N00 71550
HSK-A100-D 6	A06 53500	100	6	26	50	74.5	43.5	24.5	37.5	10	5.03	M5X12	N00 71020
HSK-A100-D 8	A06 53510		8	28	50	74.5	43.5	25.5	37.5	10	5.03	M6X12	N00 71070
HSK-A100-D10	A06 53520		10	30	50	88.0	59.0	35.5	42.5	10	5.29	M8X1X12	N00 71730
HSK-A100-D12	A06 53530		12	32	50	93.0	64.0	41.5	47.5	10	5.05	M10X1X12	N00 71800
HSK-A100-D14	A06 53540		14	34	50	93.0	64.0	41.8	47.5	10	5.40	M10X1X12	N00 71800
HSK-A100-D16	A06 53550		16	38	50	101.5	72.5	47.5	52.5	10	5.71	M12X1X12	N00 71860
HSK-A100-D18	A06 53560		18	40	50	101.5	72.5	48.5	52.5	10	5.76	M12X1X12	N00 71860
HSK-A100-D20	A06 53570		20	42	50	101.5	72.5	45.0	52.5	10	6.77	M16X1X14	N00 71550
HSK-A100-D25	A06 53580		25	57	63	108.0	79.0	52.0	61.0	10	7.81	M16X1X14	N00 71550
HSK-A100-D32	A06 53590		32	64	75	111.0	82.0	61.0	65.0	10	6.17	M16X1X14	N00 71550

More HSK-sizes are available on request

Cutting tool shank tolerance:
h6 from 6 to 32 mm diameter

Delivery:Hydraulic chuck fitted complete with adjusting screw.
Please order coolant supply connection and key separately (see Chapter 8).

Reducer Bushing for Hydraulic Clamping Chucks



with flange grooves for peripheral coolant

All dimensions are in mm

Reducer Bushing (Metric)						
Order No.	d	d1	d2	L1	L2	lbs
L01 13290	3	12	19	45	2	0.22
L01 13300	4					
L01 13310	5					
L01 13320	6					
L01 13330	8					
L01 13260	3	20	29	50.5	2	0.22
L01 13270	4					
L01 13280	5					
L01 13200	6					
L01 13210	8					
L01 13220	10					
L01 13230	12					
L01 13240	14					
L01 13250	16					
L01 13500	6	32	39	60.5	3	0.66
L01 13510	8					
L01 13520	10					
L01 13530	12					
L01 13540	14					
L01 13550	16					
L01 13560	18					
L01 13570	20					
L01 13580	25					

Gauge Pin	
Order No.	d1
L00 00080	6
L00 00090	8
L00 00100	10
L00 00110	12
L00 00130	16
L00 00070	20
L00 00160	32

Cylindrical Brush	
Order No.	d1
4779116206	6
4779116208	8
4779116210	10
4779116212	12
4779116216	16
4779116220	20
4779116232	32

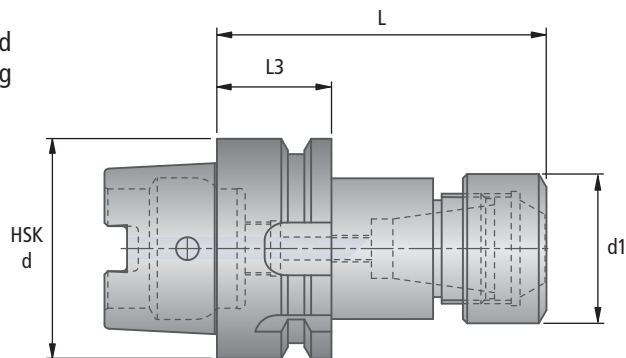
HSK-A SZV

Machine Connection HSK-A ISO 12164-1	Balancing Note (Chapter 9) Pre-balanced Q6.3 10,000 RPM	Coolant Supply Central	Rotating Tool	Rotating Workpiece	Tool Connection Straight Shank
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Collet Holder

High concentricity with ground thread on holder and clamping nut.

Axial adjustment.



Description	Order No.	HSK d	d1	L	L3	Clamping range	lbs	Accessories			
								Spanner wrench Order No.	Description	Adjusting screw with hole Order No.	without hole Order No.
HSK-A50-SZV/ER16	A06 23400	50	28	96.4–100	26	0.5 – 10.0	1.10	L05 02020	M16×20	5104916025	N00 70450
HSK-A50-SZV/ER32	A06 23430		50	96.5–100	26	2.0 – 20.0	2.65	L05 02050	M16×20	5104916025	N00 70450
HSK-A63-SZV/ER16	A06 33400	63	*SW25	96.4–100	26	0.5 – 10.0	2.65	–	M5×8	N00 71900	N00 71910
HSK-A63-SZV/ER20	A06 33410		35	96.5–100	26	1.0 – 13.0	1.92	L05 02030	M6×12	N00 71070	N00 71940
HSK-A63-SZV/ER25	A06 33420		42	96.5–100	26	1.0 – 16.0	2.27	L05 02040	M8×1×14	N00 71970	N00 71980
HSK-A63-SZV/ER32	A06 33430		50	96.5–100	26	2.0 – 20.0	3.00	L05 02050	M10×1×14	N00 71280	N00 71240
HSK-A63-SZV/ER40	A06 33440		63	116.5–120	26	3.0 – 26.0	3.88	L05 02060	M12×1×18	N00 71330	N00 71340
HSK-A63-SZV/ER16-160	A06 34500		*SW25	156.4–160	26	0.5 – 10.0	2.54	–	M5×8	N00 71900	N00 71910
HSK-A63-SZV/ER25-160	A06 34520		42	156.5–160	26	1.0 – 16.0	3.02	L05 02040	M8×1×14	N00 71970	N00 71980
HSK-A100-SZV/ER16	A06 53400		100	*SW25	96.4–100	29	0.5 – 10.0	4.41	–	M5×8	N00 71900
HSK-A100-SZV/ER20	A06 53410	35		96.5–100	29	1.0 – 13.0	4.83	L05 02030	M6×12	N00 71070	N00 71940
HSK-A100-SZV/ER25	A06 53420	42		96.5–100	29	1.0 – 16.0	5.18	L05 02040	M8×1×14	N00 71970	N00 71980
HSK-A100-SZV/ER32	A06 53430	50		96.5–100	29	2.0 – 20.0	5.51	L05 02050	M10×1×14	N00 71280	N00 71240
HSK-A100-SZV/ER40	A06 53440	63		116.5–120	29	3.0 – 26.0	6.62	L05 02060	M12×1×18	N00 71330	N00 71340
HSK-A100-SZV/ER16-160	A06 54500	*SW25		156.4–160	29	0.5 – 10.0	5.29	–	M5×8	N00 71900	N00 71910
HSK-A100-SZV/ER25-160	A06 54520	42		156.5–160	29	1.0 – 16.0	5.87	L05 02040	M8×1×14	N00 71970	N00 71980

Note: *SW25 = Wrench size 25 mm

for Collet size	Replacement Parts		Accessories	
	Collet nut ① Order No.	Collet nut ② for seal disc Order No.	Collet nut ③ with bearing Order No.	Collet nut ④ with bearing for seal disc Order No.
ER16	5120000316	5120000416	5280703016	5280701016
ER20	5120000320	5120000420	5280703020	5280701020
ER25	5120000325	5120000425	5280703025	5280701025
ER32	5120000332	5120000432	5280703032	5280701032
ER40	5120000340	5120000440	5280703040	5280701040

Note:

Please see pages 1.72 – 1.79 for the complete selection of collets and seal discs.

The seal discs will contain coolant pressures up to 2,000 PSI.

Delivery:

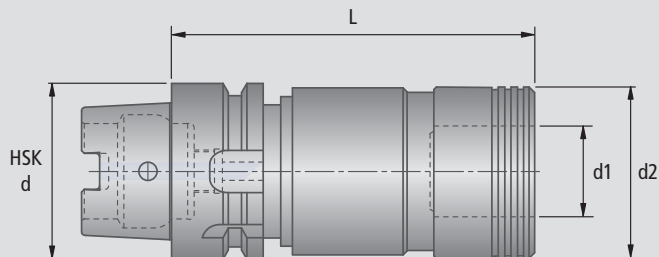
Collet holder complete with collet nut①.

Please order separately: hook spanner, collet, adjusting screw and coolant supply connection and key. (see Chapter 8).

Machine Connection 	Coolant Supply Central 	Rotating Tool 	Tool Connection Tapping Holder
------------------------	----------------------------	-------------------	------------------------------------

Tapping Chuck

- Quick change tapping chuck with length compensation for pressure and tension.



(..) = mm

Description	Order No.	HSK d	d1	d2	L	Length compensation for pressure and tension	
HSK-A50GWF19-IK	A06 23700	50	0.748 (19)	1.535 (39)	3.76 (95.5)	15	2.21
HSK-A50GWF31-IK	A06 23710		1.220 (31)	2.362 (60)	5.118 (130)	20	4.19
HSK-A63GWF19-IK	A06 33700	63	0.748 (19)	1.535 (39)	3.839 (97.5)	15	2.54
HSK-A63GWF31-IK	A06 33710		1.220 (31)	2.362 (60)	5.118 (130)	20	4.85

Delivery:

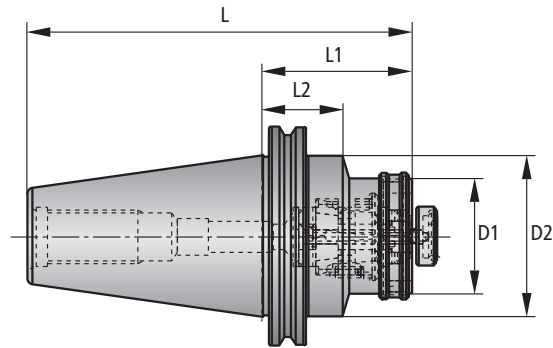
Tapping chuck complete.
Please order coolant supply connection and key separately (see Chapter 8).

Note:


Please see pages 1.66 – 1.69 for the complete selection of tapping holders.

Machine Connection CAT	Balancing Note (Chapter 9) Pre-balanced Q6.3 15,000 RPM	Coolant Supply Central	Rotating Tool	KomLoc® HSK-Clamping System K	Tool Connection HSK-A ISO 12164-1	Tool Connection HSK-C ISO 12164-1
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CAT - HSK Adapter KomLoc® HSK-Clamping System K



(..) = mm

Description	Order No.	HSK d	d1	L	L1	L2		Replacement Parts			
								KomLoc® Clamping device Order No.	Seal ring, shifting Order No.	Clamping screw Description Order No.	
HSK A/C40-CAT 50	A08 51920	40	2.750 (69.85)	6.362 (161.6)	2.362 (60)	1.378 (35)		L07 01040	L07 01440	M 5X 5	5505605050
HSK A/C50-CAT 50	A08 61920	50	2.750 (69.85)	6.559 (166.6)	2.559 (65)	1.378 (35)		L07 01050	L07 01450	M 6X 5	5505606050
HSK A/C63-CAT 50	A08 71920	63	2.750 (69.85)	6.756 (171.6)	2.756 (70)	1.378 (35)		L07 01060	L07 01460	M 8X 6	5505608060
HSK A/C80-CAT 50	A08 81920	80	2.750 (69.85)	7.149 (181.6)	3.150 (80)	1.378 (35)		L07 01070	L07 01470	M10X 8	5505610080
HSK A/C100-CAT 50	A08 91920	100	2.750 (69.85)	9.905 (251.6)	5.906 (150)	1.378 (35)		L07 01080	L07 01480	M12X10	5505612100

Note:

Please use the wiper to clean the taper and the contact face

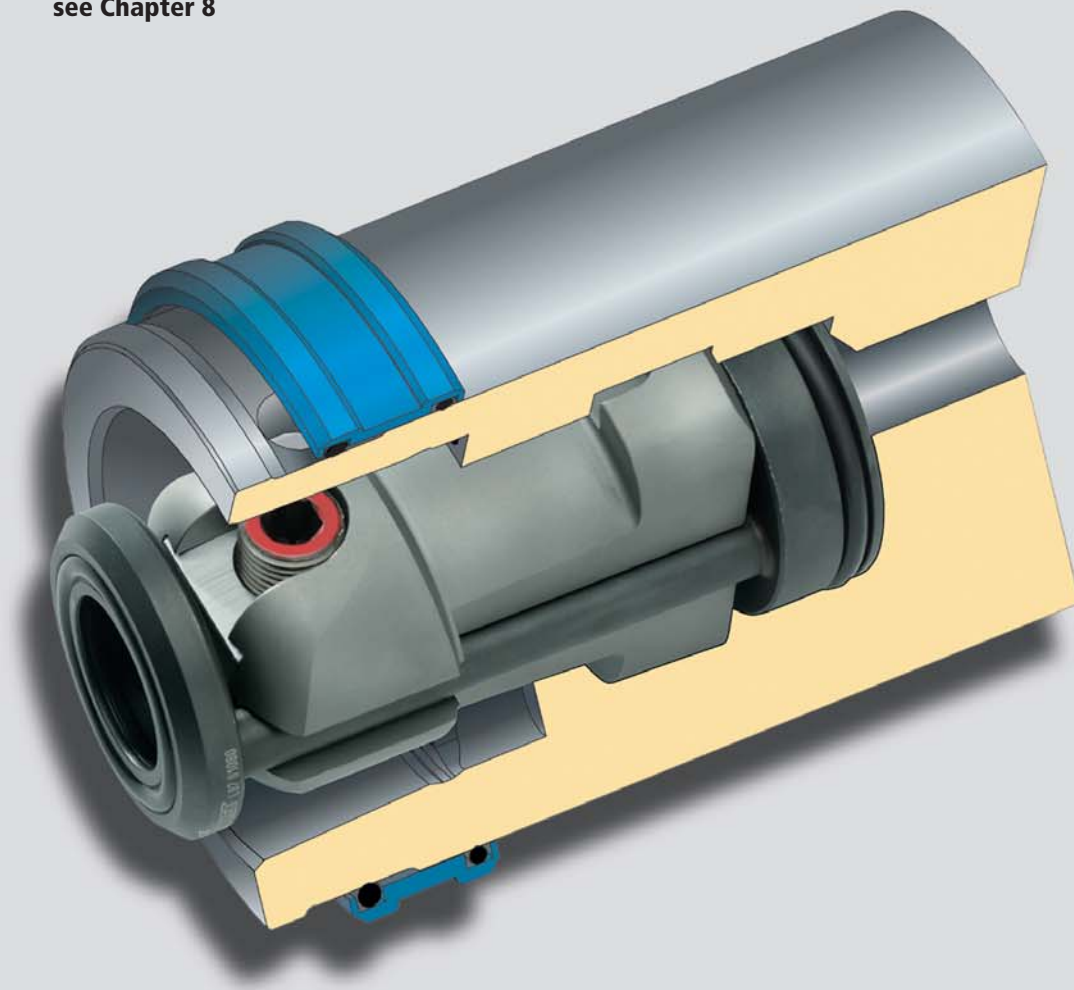
Delivery :

Adapter complete less retention knob.
Please order coolant supply connection and key separately (see Chapter 8).



**HSK with integrated
KomLoc® HSK-Clamping System**

For more detailed information
see Chapter 8

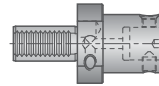


ABS® / ABS® N Adapters

Page

NC-VDI Clamping Unit

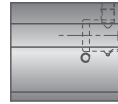
ABS® N NC · with ABS® N Connection



1.48 – 1.49

Clamping Unit for Various Machine Tools

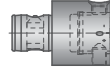
MAZAK / OKUMA / MORI-SEIKI · with ABS® N Connection



1.50 – 1.53

Eccentric Adjusting Holder

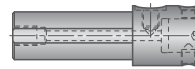
with ABS® Connection



1.54

TC Round Shank Adapter

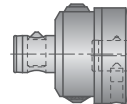
ABS® N TC · with ABS® N Connection



1.55

Micro-adjustable Drill Holder

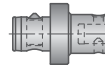
ABS® MV · with ABS® Connection



1.56

Reducer

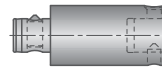
with ABS® / ABS® N Connection



1.57

Extension

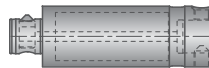
with ABS® / ABS® N Connection



1.58

Lightweight Extension / Reducer

with ABS® Connection



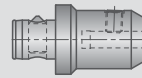
1.59





Precision Tool Holder

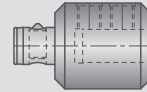
ABS® FWD



1.60 – 1.61

End Mill Holder

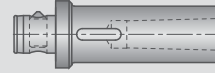
ABS® EMH / ABS® HWD



1.62 – 1.63

Morse Taper Adapter

ABS® HMK



1.64

Quick-change Tapping Chuck Holder

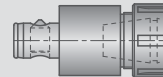
ABS® GWF



1.65 – 1.69

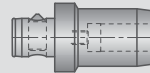
Collet Holder

ABS® SZV



1.70 – 1.79

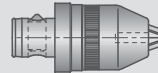
Hydraulic Chuck



1.80 – 1.83

Short Mill Drill Chuck

ABS® KMDC / ABS® NCB

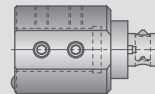


1.84

ABS® N Clamping Units for Turning Tools

Clamping Unit for Straight Shank Boring Bars

ABS® N -BA · with ABS® N Connection



1.85

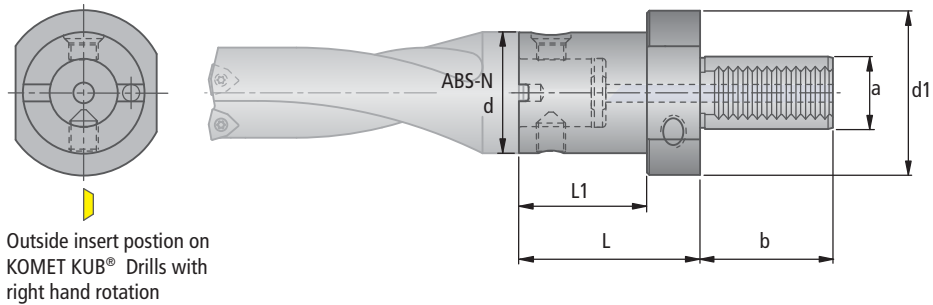


NC-VDI



Clamping Unit with ABS® N Connection

ABS® N -NC..10
for KUB® Drills



ABS® N								
Description	Order No.	ABS-N d	L	L1	a	b	d1	lbs
ABS 50N NC3010	A01 10151	50	60	38	30	55	68	2.93
ABS 50N NC4010	A01 10251	50	60	38	40	63	83	4.16
ABS 63N NC4021	A01 10261	63	70	48				5.17
ABS 50N NC5021	A01 10351	50	65	35	50	78	98	6.73
ABS 63N NC5021	A01 10361	63	75	45				7.72

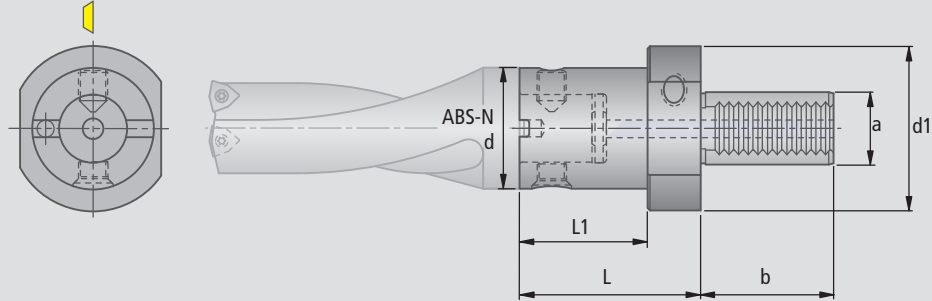
Note:
when adjusting the KUB® drill in + X direction, use this adapter



**Clamping Unit
with ABS® N Connection**

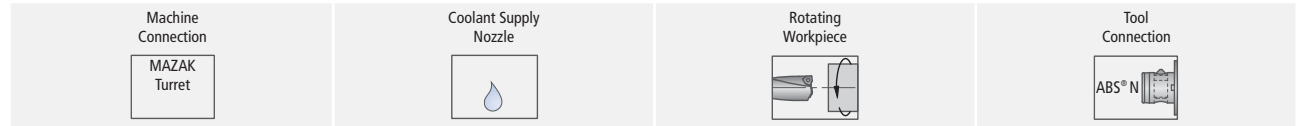
ABS® N -NC..20
for KUB® Drills

Outside insert position on
KOMET KUB® Drills with
right hand rotation



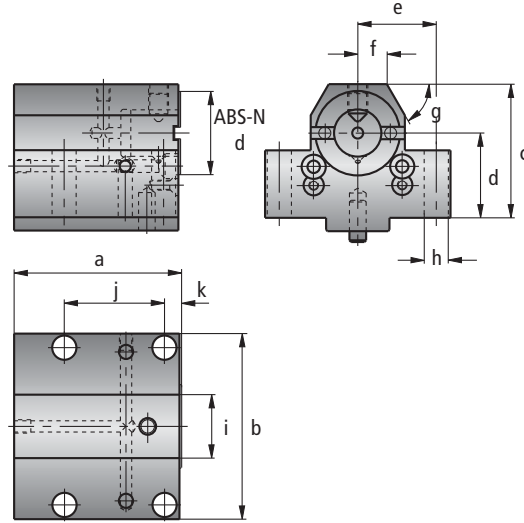
ABS® N								
Description	Order No.	ABS-N d	L	L1	a	b	d1	lbs
ABS 50N NC3020	A01 11152	50	60	38	30	55	68	2.93
ABS 50N NC4020	A01 11252	50	60	38	40	63	83	4.16
ABS 63N NC4020	A01 11262	63	70	48				5.17
ABS 50N NC5020	A01 11352	50	65	35	50	78	98	6.73
ABS 63N NC5020	A01 11362	63	75	45				7.72

Note:
when adjusting the KUB® drill in + X direction, use this adapter



Clamping Unit with ABS® N Connection

for MAZAK QT15N, QT18N Machines, Qualified



(..) = mm

ABS® N														Replacement Parts			
Description	Order No.	ABS-N d	a	b	c	d	e	f	g	h	i	j	k	l	Coolant nozzle plug Order No.	Screw Order No.	ABS Hardware Order No.
ABS 50N MAZAK QT15N, QT18N CLAMPING UNIT	A01 21350	50	3.950 (100.33)	4.375 (111.12)	3.156 (80.16)	2.000 (50.8)	1.852 (47.03)	0.686 (0.750)	60°	0.354 (9)	1.496 (38)	2.360 (59.94)	0.403 (10.24)	-	N00 80320	5502300612	N00 15280
ABS 63N MAZAK QT15N, QT18N CLAMPING UNIT	A01 21360	63	3.950 (100.33)	4.375 (111.12)	3.240 (82.3)	2.000 (50.8)	1.852 (47.03)	0.750 (19.05)	60°	0.354 (9)	1.496 (38)	2.360 (59.94)	0.403 (10.24)	-			

Note:

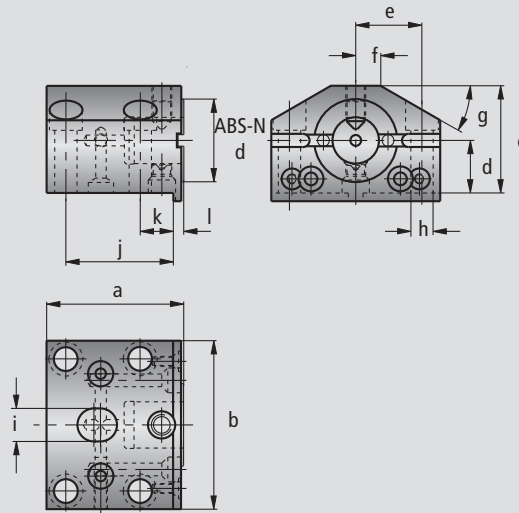
We supply ABS® -N clamping unit for all types of machine on request (Please state machine type when ordering).



Machine Connection OKUMA Turret	Coolant Supply Nozzle	Rotating Workpiece	Tool Connection ABS [®] N
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Clamping Unit with ABS[®] N Connection

for Okuma Cadet, Okuma LB15, and Okuma LB25 Machines, Qualified



(..) = mm

ABS [®] N														Replacement Parts			
Description	Order No.	ABS-N d	a	b	c	d	e	f	g	h	i	j	k	l	Coolant nozzle plug	Screw	ABS Hardware
															Order No.	Order No.	Order No.
ABS 50N OKUMA CADET LB15, LB25 CLAMPING UNIT	A01 25050	50	3.268 (83)	4.016 (102)	2.549 (64.75)	1.250 (31.75)	1.575 (40)	0.591 (15)	30°	0.531 (13.49)	0.787 (20)	2.559 (65)	0.787 (20)	0.250 (6.35)	N00 80320	5502300612	N00 15280
ABS 63N OKUMA CADET LB15, LB25 CLAMPING UNIT	A01 25060	63	3.268 (83)	4.016 (102)	2.549 (64.75)	1.250 (31.75)	1.575 (40)	0.591 (15)	30°	0.531 (13.49)	0.787 (20)	2.559 (65)	0.787 (20)	0.250 (6.35)			

Also fits on following machines:

- Haas
- Dawoo

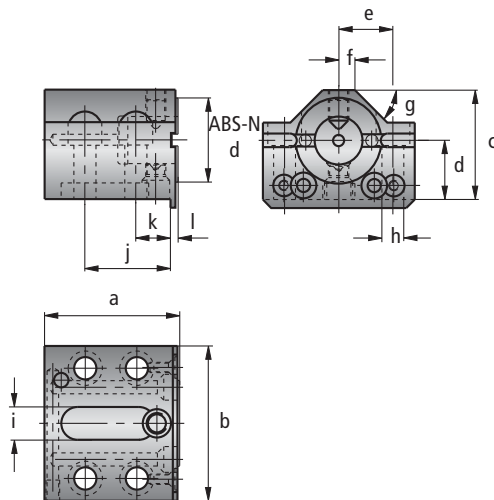
Note:

We supply ABS[®] -N clamping unit for all types of machine on request (Please state machine type when ordering).



Clamping Unit with ABS® N Connection

for Mori-Seiki SL15, ZL15 Machines, Qualified



(..) = mm

ABS® N														Replacement Parts			
Description	Order No.	ABS-N d	a	b	c	d	e	f	g	h	i	j	k	l	Coolant nozzle plug Order No.	Screw Order No.	ABS Hardware Order No.
ABS 50N MORI-SEIKI SL15, ZL15 CLAMPING UNIT	A01 24050	50	3.111 (79.02)	3.542 (89.97)	2.543 (64.59)	1.378 (35)	1.262 (32.05)	0.375 (9.52)	45°	0.511 (12.98)	0.750 (19.07)	2.013 (51.14)	0.827 (21)	0.159 (4.03)	N00 80320	5502300612	N00 15280

Note:

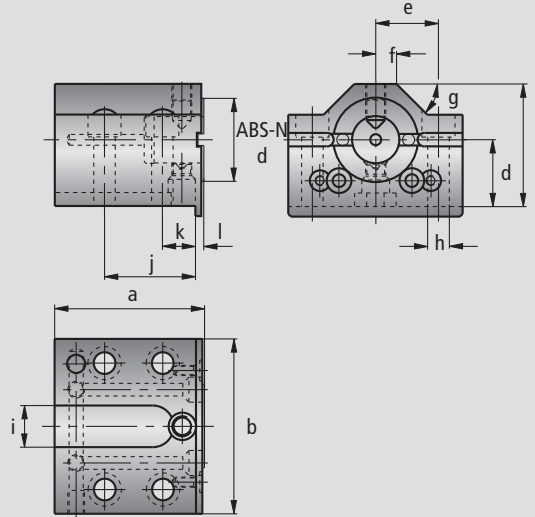
We supply ABS® -N clamping unit for all types of machine on request (Please state machine type when ordering).



Machine Connection OKUMA Turret	Coolant Supply Nozzle 	Rotating Workpiece 	Tool Connection ABS [®] N
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Clamping Unit with ABS[®] N Connection

for Mori-Seiki SL20/25, ZL20/25 Machines, Qualified

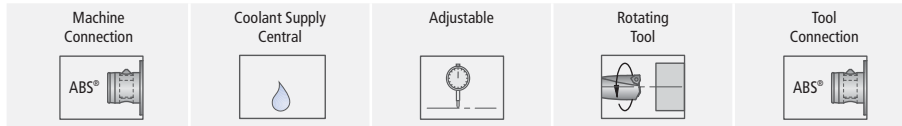


(..) = mm

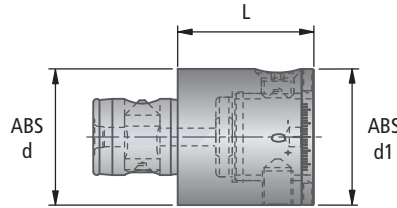
ABS [®] N														Replacement Parts			
Description	Order No.	ABS-N d	a	b	c	d	e	f	g	h	i	j	k	l	Coolant nozzle plug	Screw	ABS Hardware
															Order No.	Order No.	Order No.
ABS 50N MORI-SEIKI SL20/25, ZL20/25 CLAMPING UNIT	A01 24150	50	3.543 (89.99)	4.132 (104.95)	2.905 (73.78)	1.575 (40)	1.495 (37.97)	0.500 (12.70)	45°	0.511 (12.98)	0.985 (25.02)	2.161 (54.89)	0.785 (19.94)	0.200 (5.09)	N00 80320	5502300612	N00 15280
ABS 63N MORI-SEIKI SL20/25, ZL20/25 CLAMPING UNIT	A01 24160	63	3.543 (89.99)	4.132 (104.95)	2.905 (73.78)	1.575 (40)	1.495 (37.97)	0.500 (12.70)	45°	0.511 (12.98)	0.985 (25.02)	2.161 (54.89)	0.785 (19.94)	0.200 (5.09)			

Note:

We supply ABS[®] -N clamping unit for all types of machine on request (Please state machine type when ordering).




**Eccentric Adjusting Holder
with ABS® Connection**

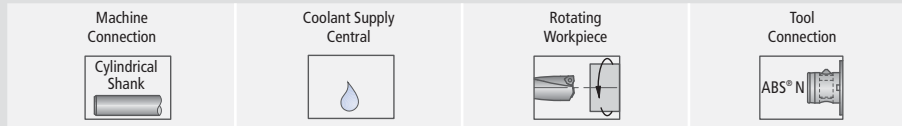


Total adjustment
± 0.0098" (0.25 mm)
on the diameter

(..) = mm

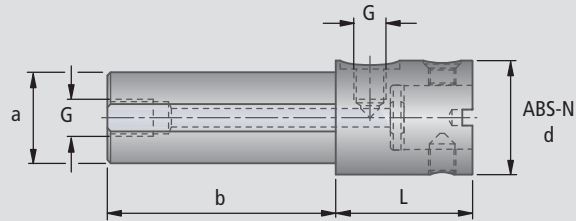
Description	Order No.	ABS d	ABS d1	L		Adjustment Key
						Order No.
ABS 50 V 50 EH	A20 00620	50	50	1.969(50)	5.258	1804300028

Delivery:
Eccentric holder complete with adjustment key.



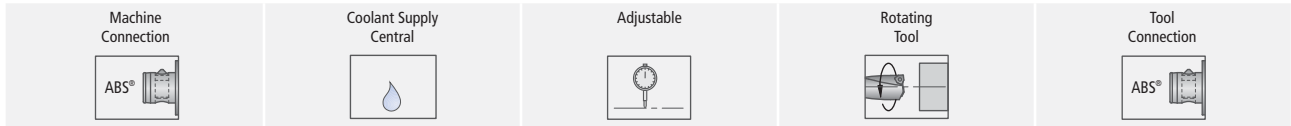
**TC-Round Shank Adapter
with ABS® N Connection**

ABS® N -TC

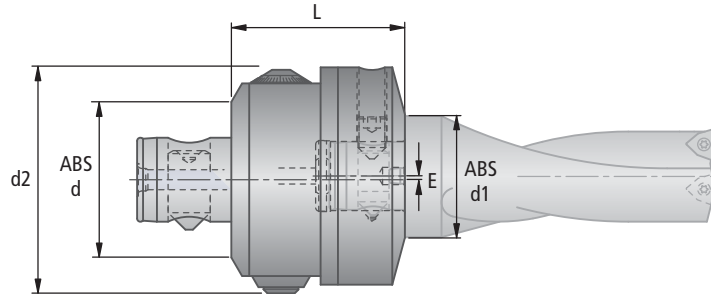


ABS® N							
Description	Order No.	ABS-N d	L	a	b	G	
ABS 50N TC1.25-2.5	A01 17551	50	1.750	1.250	2.500	1/4NPT	2.10
ABS 50N TC1.5-2.5	A01 17051	50	1.750	1.500	2.500	1/4NPT	2.38
ABS 50N TC2-4	A01 17151	50	1.688	2.000	4.674	1/4NPT	3.05
ABS 63N TC2-4	A01 17161	63	2.000		4.559		7.10
ABS 80N TC2-4	A01 17171	80	2.500		4.256		8.74
ABS 50N TC2.5-5	A01 17251	50	1.688	2.500	5.674	1/4NPT	7.43
ABS 63N TC2.5-5	A01 17261	63	2.000		5.559		8.74
ABS 80N TC2.5-5	A01 17271	80	2.500		5.258		10.50
ABS 100N TC3-5	A01 17381	100	3.250	3.000	5.293	1/4NPT	23.16

Other shank designs can be supplied on request.



Micro-Adjustable Drill Holder with ABS® Connection (Inch and Metric)

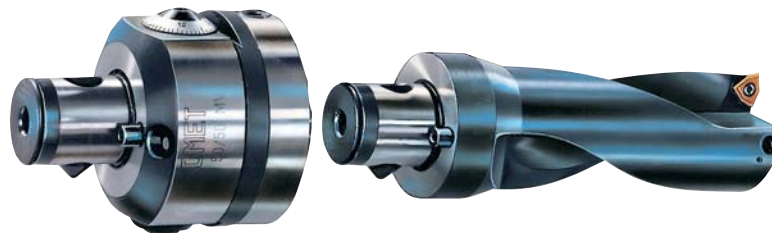


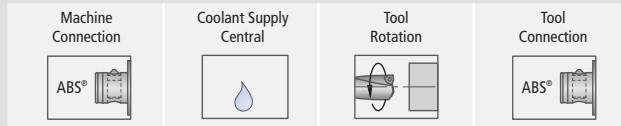
All dimensions are in mm

ABS® (Inch)							
Description	Order No.	ABS d	ABS d1	d2	L	E	lbs
ABS 50/50-MV Z	M01 05000	50	50	2.756	2.244	0.059	3.55
ABS 63/50-MV Z	M01 05010	63	50	3.465	2.756	0.059	6.15
ABS 63/63-MV Z	M01 05020	63	63	3.465	2.756	0.059	6.15

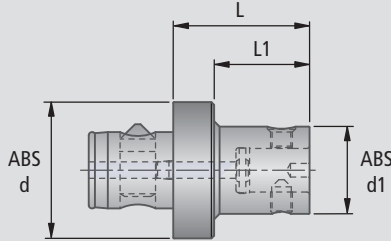
ABS® (Metric)							
Description	Order No.	ABS d	ABS d1	d2	L	E	lbs
ABS 50/50-MV	M01 00000	50	50	70	57	1.5	3.29
ABS 63/50-MV	M01 00010	63	50	88	70	1.5	6.62
ABS 63/63-MV	M01 00020	63	63	88	70	1.5	6.36

- Accurate adjustment with micro-adjustable spindle
- Maximum adjustment range .125" (3mm) on diameter
- Scale divisions .001" (0.02mm) on diameter
- Rigid clamping of head after adjustment achieved by means of 4 clamping screws on face
- **Note:** The ABS® seal cannot be fitted into the M01 Micro adjustable holder





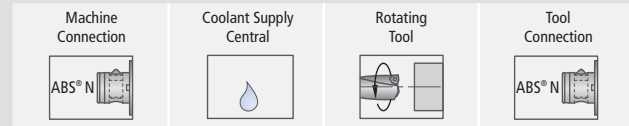
Reducer with ABS® Connection



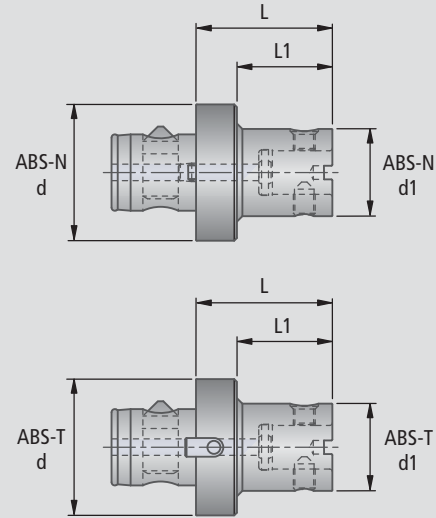
ABS®						
Description	Order No.	ABS d	ABS d1	L	L1	lbs
ABS 32-R 25	A20 10120	32	25	1.575	1.181	0.40
ABS 40-R 32	A20 10230	40	32	1.575	1.102	0.66
ABS 40-R 25	A20 10220	40	25	1.575	1.102	0.57
ABS 50-R 40	A20 10340	50	40	1.969	1.378	1.37
ABS 50-R 32	A20 10330	50	32	1.969	1.378	1.17
ABS 50-R 25	A20 10320	50	25	1.969	1.378	1.04
ABS 63-R 50	A20 10450	63	50	2.362	1.575	2.54
ABS 63-R 40	A20 10440	63	40	2.362	1.575	2.32
ABS 63-R 32	A20 10430	63	32	2.362	1.575	2.07
ABS 63-R 25	A20 10420	63	25	2.362	1.575	1.90
ABS 80-R 63	A20 10560	80	63	2.362	1.378	4.43
ABS 80-R 50	A20 10550	80	50	2.362	1.378	4.08
ABS 80-R 40	A20 10540	80	40	2.362	1.378	3.88
ABS 80-R 32	A20 10530	80	32	2.362	1.378	3.68
ABS100-R 80	A20 10670	100	80	3.150	1.969	9.06
ABS100-R 63	A20 10660	100	63	3.150	1.969	8.16
ABS100-R 50	A20 10650	100	50	3.150	1.969	7.39
ABS125-R100	A20 10780	125	100	3.937	1.969	18.87
ABS125-R 80	A20 10770	125	80	3.937	1.969	17.66
ABS125-R 63	A20 10760	125	63	3.937	1.969	16.80
ABS125-R 50	A20 10750	125	50	3.937	1.969	16.36
ABS125-R 40	A20 10740	125	40	3.937	1.969	15.84

Delivery:
Reducer complete.

Other lengths available on request.



Reducer with ABS® N / ABS® T Connection



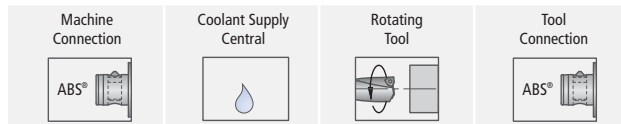
ABS® N / ABS® T						
Description	Order No.	ABS-N d	ABS-N d1	L	L1	lbs
ABS 50N-R 40	A20 20340	50	40	1.969	1.378	1.37
ABS 50N-R 32	A20 20330	50	32	1.969	1.378	1.17
ABS 50N-R 25	A20 20320	50	25	1.969	1.378	1.04
ABS 63T-R 50	A20 21450	63	50	2.362	1.772	2.54
ABS 63N-R 50	A20 20450	63	50	2.362	1.575	2.54
ABS 63N-R 40	A20 20440	63	40	2.362	1.575	2.32
ABS 80T-R 63	A20 21560	80	63	2.362	1.772	4.43
ABS 80N-R 63	A20 20560	80	63	2.362	1.378	4.43
ABS 80N-R 50	A20 20550	80	50	2.362	1.378	4.08
ABS 80N-R 40	A20 20540	80	40	2.362	1.378	3.88
ABS100N-R 80	A20 20670	100	80	3.150	1.969	9.06
ABS100N-R 63	A20 20660	100	63	3.150	1.969	8.16
ABS100N-R 50	A20 20650	100	50	3.150	1.969	7.39

Delivery:
Reducer complete.

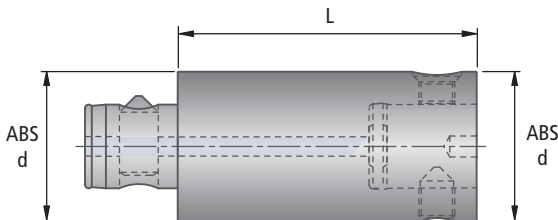
Other lengths available on request.



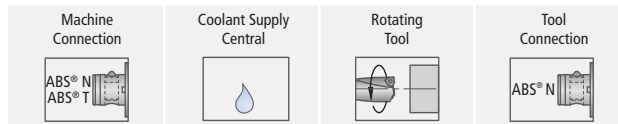
ABS®



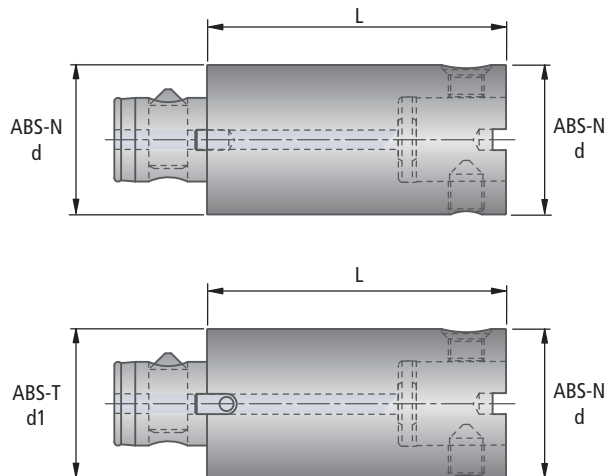
Extension with ABS® Connection



ABS® N / ABS® T



Extension with ABS® N / ABS® T Connection



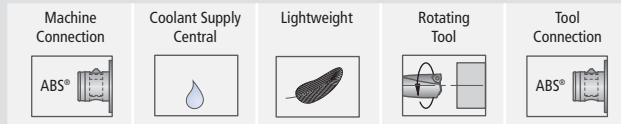
ABS®				
Description	Order No.	ABS d	L	lbs
ABS25-V60	A20 00220	25	2.362	0.49
ABS25-V45	A20 00020	25	1.772	0.35
ABS32-V70	A20 00230	32	2.756	0.93
ABS32-V50	A20 00030	32	1.969	0.64
ABS32-V35	A20 00530	32	1.378	0.44
ABS40-V90	A20 00240	40	3.543	1.85
ABS40-V60	A20 00040	40	2.362	1.15
ABS40-V40	A20 00540	40	1.575	0.79
ABS50-V150	A20 00150	50	5.906	4.90
ABS50-V100	A20 00250	50	3.937	3.22
ABS50-V65	A20 00050	50	2.559	2.07
ABS50-V50	A20 00550	50	1.969	1.57
ABS63-V190	A20 00160	63	7.480	9.86
ABS63-V125	A20 00260	63	4.921	6.48
ABS63-V85	A20 00060	63	3.346	4.34
ABS63-V60	A20 00560	63	2.362	3.02
ABS80-V240	A20 00170	80	9.449	20.20
ABS80-V125	A20 00270	80	4.921	10.39
ABS80-V85	A20 00070	80	3.346	6.95
ABS80-V70	A20 00570	80	2.756	5.69
ABS100-V160	A20 00280	100	6.299	20.88
ABS100-V125	A20 00080	100	4.921	16.23
ABS100-V85	A20 00580	100	3.346	10.91
ABS125-V200	A20 00290	125	7.874	41.81
ABS125-V160	A20 00090	125	6.299	33.36

Delivery:
Extension complete.

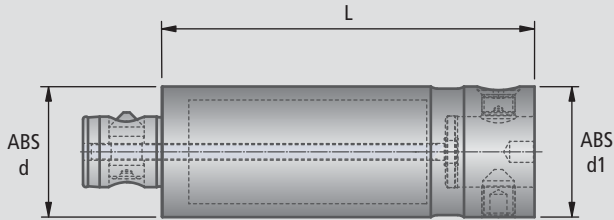
ABS® N					
Description	Order No.	ABS-N d	ABS-T d1	L	lbs
ABS 25N-V60	A20 05620	25		2.362	0.49
ABS 25N-V45	A20 05420			1.772	0.35
ABS 32N-V70	A20 05630	32		2.756	0.93
ABS 32N-V50	A20 05430			1.969	0.64
ABS 32N-V35	A20 05830			1.378	0.44
ABS 40N-V90	A20 05640	40		3.543	1.85
ABS 40N-V60	A20 05440			2.362	1.15
ABS 40N-V40	A20 05840			1.575	0.79
ABS 50T-V150	A20 05750	50	50	5.906	4.90
ABS 50T-V100	A20 05651			3.937	3.22
ABS 50N-V65	A20 05450	50		2.559	2.07
ABS 50N-V50	A20 05850			1.969	1.57
ABS 63T-V190	A20 05760	63	63	7.480	9.86
ABS 63T-V125	A20 05661			4.921	6.48
ABS 63N-V85	A20 05460			63	
ABS 63N-V60	A20 05860	2.362	3.02		
ABS 80T-V240	A20 05770	80	80	9.449	20.24
ABS 80T-V125	A20 05671			4.921	10.39
ABS 80N-V85	A20 05470	80		3.346	6.95
ABS 80N-V70	A20 05870			2.756	5.69
ABS100N-V160	A20 05680	100		6.299	20.88
ABS100N-V125	A20 05480			4.921	16.23
ABS100N-V85	A20 05880			3.346	10.91

Delivery:
Extension complete.

Note:
For optimum torque drive we recommend the use of ABS®-T extensions



Lightweight Extension with ABS® Connection



ABS®					
Description	Order No.	ABS size d	ABS size d1	L	lbs
ABS63-V125-LB	A20 01060	63	63	4.921	4.19
ABS63-V190-LB	A20 01160			7.480	5.73
ABS80-V170-LB	A20 01070	80	80	6.693	8.82
ABS80-V240-LB	A20 01170			9.449	11.69
ABS100-V200-LB	A20 01080	100	100	7.874	16.10
ABS100-V300-LB	A20 01180			11.811	21.39

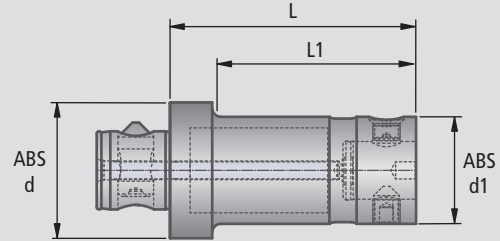
Delivery:
Extension complete.

Features

- Weight reduced up to 45%
- Stable application conditions
- Steel construction - i.e. hardened faces guarantees long tool life



Lightweight Reducer with ABS® Connection



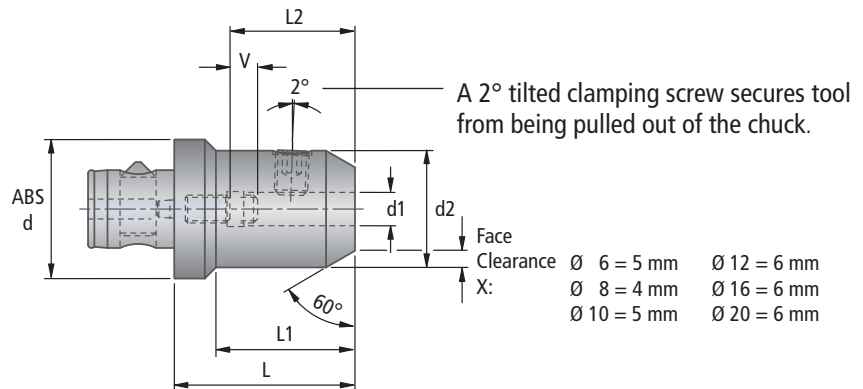
ABS®						
Description	Order No.	ABS size d	ABS size d1	L	L1	lbs
ABS80-R63-LB	A20 11560	80	63	5.709	4.724	6.17
ABS100-R80-LB	A20 11670	100	80	6.299	5.118	11.03

Delivery:
Reducer complete





Precision Tool Holder (Metric)



All dimensions are in mm

Description	Order No.	ABS d	d1	d2	L	L1	L2	V	lbs	Replacement Parts		
										Clamping Screw ①		Adjusting Screw ②
										Order No.	Qty.	Order No.
ABS25 FWD6	A30 10601	25	6	25	55	–	36	10	0.21	N00 70210	1	N00 71000
ABS25 FWD8	A30 10801	25	8	28	55	–	36	10	0.25	N00 70260	1	N00 71050
ABS25 FWD10	A30 11001	25	10	35	60	–	40	10	0.41	N00 70310	1	N00 71100
ABS32 FWD6	A30 20601	32	6	25	55	40	36	10	0.25	N00 70210	1	N00 71000
ABS32 FWD8	A30 20801	32	8	28	55	40	36	10	0.29	N00 70260	1	N00 71050
ABS32 FWD10	A30 21001	32	10	35	60	–	40	10	0.43	N00 70310	1	N00 71110
ABS32 FWD12	A30 21201	32	12	42	65	–	45	10	0.65	N00 70370	1	N00 71210
ABS40 FWD6	A30 30601	40	6	25	55	35	36	10	0.34	N00 70210	1	N00 71000
ABS40 FWD8	A30 30801	40	8	28	55	35	36	10	0.38	N00 70260	1	N00 71050
ABS40 FWD10	A30 31001	40	10	35	60	45	40	10	0.48	N00 70310	1	N00 71120
ABS40 FWD12	A30 31201	40	12	42	65	–	45	10	0.68	N00 70370	1	N00 71220
ABS40 FWD16	A30 31601	40	16	48	70	–	48	10	0.91	N00 70400	1	N00 71400
ABS50 FWD6	A30 40601	50	6	25	55	30	36	10	0.53	N00 70210	1	N00 71000
ABS50 FWD8	A30 40801	50	8	28	55	30	36	10	0.57	N00 70260	1	N00 71050
ABS50 FWD10	A30 41001	50	10	35	60	40	40	10	0.66	N00 70310	1	N00 71130
ABS50 FWD12	A30 41201	50	12	42	65	50	45	10	0.81	N00 70370	1	N00 71230
ABS50 FWD16	A30 41601	50	16	48	70	55	48	10	1.01	N00 70400	1	N00 71410
ABS50 FWD20	A30 42001	50	20	52	75	–	50	10	1.20	N00 70450	1	N00 71500
ABS50 FWD25	A30 42501	50	25	52	75	–	50	10	1.13	N00 70450	1	N00 71500
ABS63 FWD10	A30 51001	63	10	35	60	35	40	10	0.96	N00 70310	1	N00 71130
ABS63 FWD12	A30 51201	63	12	42	65	45	45	10	1.08	N00 70370	1	N00 71230
ABS63 FWD16	A30 51601	63	16	48	70	48	48	10	1.27	N00 70400	1	N00 71410
ABS63 FWD20	A30 52001	63	20	52	75	50	50	10	1.43	N00 70450	1	N00 71500
ABS63 FWD25	A30 52501	63	25	65	80	56	56	10	2.00	N00 70510	1	N00 71500
ABS80 FWD16	A30 61601	80	16	48	70	50	48	10	1.80	N00 70400	1	N00 71430
ABS80 FWD20	A30 62001	80	20	52	75	52	50	10	1.98	N00 70450	1	N00 71520
ABS80 FWD25	A30 62501	80	25	65	80	60	58	10	2.50	N00 70510	1	N00 71600
ABS80 FWD32	A30 63201	80	32	72	90	70	60	10	3.02	N00 70550	1	N00 71650

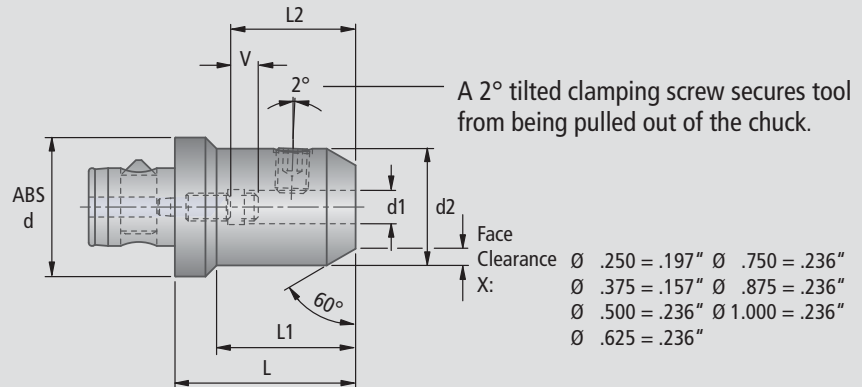
Delivery:

Precision tool holder complete with ABS hardware, clamping and adjusting screws and hex socket type wrenches.



Machine Connection ABS®	Total Runout ≤ 10µm	Coolant Supply Central	Rotating Tool	Tool Connection Straight Shank
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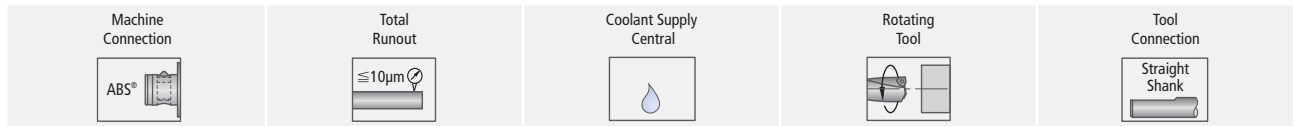
Precision Tool Holder (Inch)



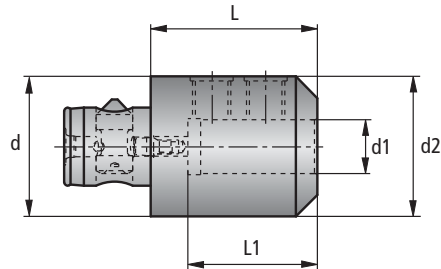
Description	Order No.	ABS d	d1	d2	L	L1	L2	V	lbs	Replacement Parts		
										Clamping Screw ①	Adjusting Screw ②	
										Order No.	Qty.	Order No.
ABS32 FWD .250	A31 22501	32	.250	.984	2.165	1.575	1.457	.394	0.61	N00 70210	1	N00 71000
ABS32 FWD .375	A31 23751	32	.375	1.102	2.165	1.575	1.457	.394	0.67	N00 70260	1	N00 71100
ABS32 FWD .500	A31 25001	32	.500	1.654	2.559	-	1.811	.394	1.54	N00 70350	1	N00 71300
ABS40 FWD .250	A31 32501	40	.250	.984	2.165	1.378	1.457	.394	0.81	N00 70210	1	N00 71000
ABS40 FWD .375	A31 33751	40	.375	1.102	2.165	1.378	1.457	.394	1.21	N00 70260	1	N00 71100
ABS40 FWD .500	A31 35001	40	.500	1.654	2.559	-	1.811	.394	1.61	N00 70350	1	N00 71130
ABS40 FWD .625	A31 36251	40	.625	1.654	2.559	-	1.811	.394	1.58	N00 70350	1	N00 71130
ABS50 FWD .250	A31 42501	50	.250	.984	2.165	1.181	1.457	.394	1.26	N00 70210	1	N00 71000
ABS50 FWD .375	A31 43751	50	.375	1.102	2.165	1.181	1.457	.394	1.33	N00 70260	1	N00 71100
ABS50 FWD .500	A31 45001	50	.500	1.654	2.559	1.968	1.811	.394	1.91	N00 70350	1	N00 71310
ABS50 FWD .625	A31 46251	50	.625	1.654	2.559	1.968	1.811	.394	1.85	N00 70350	1	N00 71310
ABS50 FWD .750	A31 47501	50	.750	1.890	2.756	2.165	1.929	.394	2.30	N00 70400	1	N00 71410
ABS50 FWD .875	A31 48751	50	.875	2.047	2.953	-	2.008	.394	2.80	N00 70450	1	N00 71500
ABS50 FWD1.000	A31 40001	50	1.000	2.047	2.953	-	2.008	.394	2.66	N00 70450	1	N00 71500

Delivery:

Precision tool holder complete with ABS hardware, clamping and adjusting screws and hex socket type wrenches.



End Mill Holder (Inch)



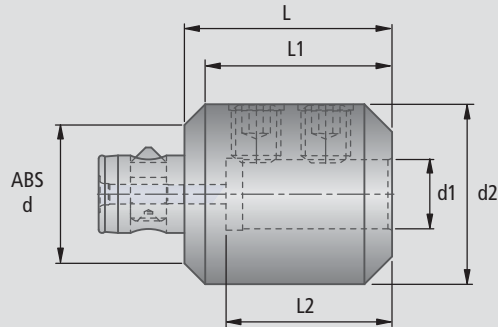
Description	Order No.	ABS d	d1	d2	L	L1		Replacement Parts	
								Clamping Screw Description	Hex Socket Wrench Description
ABS 50-EMH .375	A32 41010	50	.375	1.125	2.000	1.812	1.18	3/8" - 16	3/16"
ABS 50-EMH .500	A32 41020	50	.500	1.125	2.000	1.900	1.13	7/16" - 14	7/32"
ABS 50-EMH .625	A32 41030	50	.625	1.969	2.625	2.188	2.35	9/16" - 12	1/4"
ABS 50-EMH .750	A32 41040	50	.750	1.969	2.625	2.313	2.31	5/8" - 11	5/16"
ABS 50-EMH .875	A32 41050	50	.875	1.969	2.625	2.313	2.19	5/8" - 11	5/16"
ABS 63-EMH1.000	A32 51060	63	1.000	2.480	3.000	2.563	3.98	3/4" - 10	3/8"
ABS 63-EMH1.250	A32 51070	63	1.250	2.480	3.000	2.563	3.68	3/4" - 10	3/8"
ABS 80-EMH1.500	A32 61080	80	1.500	2.480	3.600	2.895	5.19	3/4" - 10	3/8"
ABS100-EMH2.000	A32 71100	100	2.000	3.937	4.921	3.429	16.22	1" - 14	9/16"

Delivery: End mill holder complete with ABS hardware, clamping screws and hex socket wrench.




Machine Connection 	Total Runout 	Coolant Supply Central 	Rotating Tool 	Tool Connection 
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End Mill Holder (Metric)

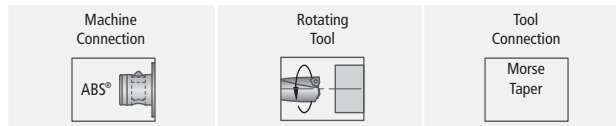


All dimensions are in mm

Description	Order No.	ABS ABS-N d	d1	d2	L	L1	L2		Replacement Parts	
									Order No.	Qty.
ABS50-HWD 6	A32 40010	50	6	25	45	27	40	0.51	N00 70210	1
ABS50-HWD 8	A32 40020	50	8	28	45	27	40	0.49	N00 70260	1
ABS50-HWD10	A32 40030	50	10	35	55	37	44	0.62	N00 70310	1
ABS50-HWD12	A32 40040	50	12	42	65	50	49	0.81	N00 70370	1
ABS50-HWD14	A32 40080	50	14	44	65	50	49	0.85	N00 70370	1
ABS50-HWD16	A32 40050	50	16	48	65	50	52	0.94	N00 70400	1
ABS50-HWD18	A32 40090	50	18	50	65	65	52	0.98	N00 70400	1
ABS50-HWD20	A32 40060	50	20	52	65	65	54	1.03	N00 70450	1
ABS50-HWD25	A32 40070	50	25	65	75	75	60	1.7	N00 70510	2
ABS63-HWD10	A32 50030	63	10	35	55	37	44	0.88	N00 70310	1
ABS63-HWD12	A32 50040	63	12	42	65	50	49	1.02	N00 70370	1
ABS63-HWD14	A32 50100	63	14	44	65	50	49	1.06	N00 70370	1
ABS63-HWD16	A32 50050	63	16	48	65	50	52	1.15	N00 70400	1
ABS63-HWD18	A32 50110	63	18	50	65	50	52	1.21	N00 70400	1
ABS63-HWD20	A32 50060	63	20	52	65	45	54	1.26	N00 70450	1
ABS63-HWD25	A32 50070	63	25	65	75	75	60	1.86	N00 70510	2
ABS63-HWD32	A32 50080	63	32	72	80	80	64	2.25	N00 70550	2
ABS80-HWD16	A32 60050	80	16	48	65	45	52	1.51	N00 70400	1
ABS80-HWD18	A32 60110	80	18	50	65	45	52		N00 70400	1
ABS80-HWD20	A32 60060	80	20	52	65	45	54	1.84	N00 70450	1
ABS80-HWD25	A32 60070	80	25	65	75	55	60	2.41	N00 70510	2
ABS80-HWD32	A32 60080	80	32	72	80	66	64	2.62	N00 70550	2

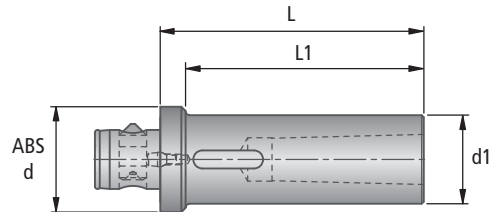
Delivery: End mill holder complete with ABS hardware, clamping screws and hex socket wrench.

ABS® HMK



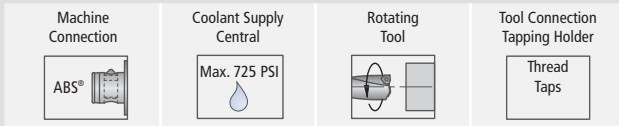
Morse Taper Adapter

Holders with central coolant supply are available upon request



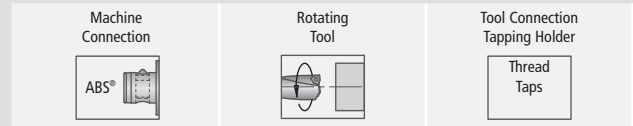
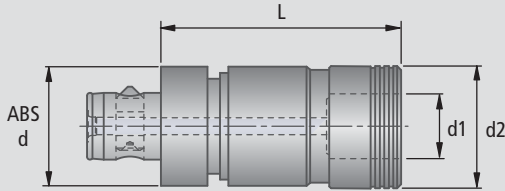
ABS®							
Description	Order No.	ABS d	d1	Taper Size DIN228	L	L1	lbs
ABS 50-HMK1	A34 14020	50	0.787	MK 1	3.543	3.071	0.99
ABS 50-HMK2	A34 14030	50	1.181	MK 2	4.134	3.661	1.52
ABS 50-HMK3	A34 14040	50	1.417	MK 3	4.921	4.449	2.11
ABS 63-HMK4	A34 15050	63	1.890	MK 4	5.906	5.315	4.09

Delivery:
Adapter complete

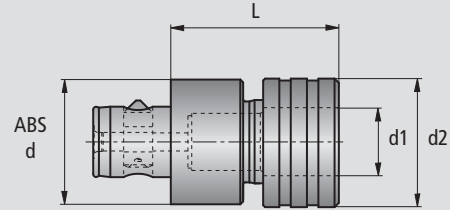


Quick-change Tapping Chuck Holder with Coolant Supply

- Quick change tapping chuck with length compensation for pressure and tension.



Quick-change Tapping Chuck Holder without Coolant Supply

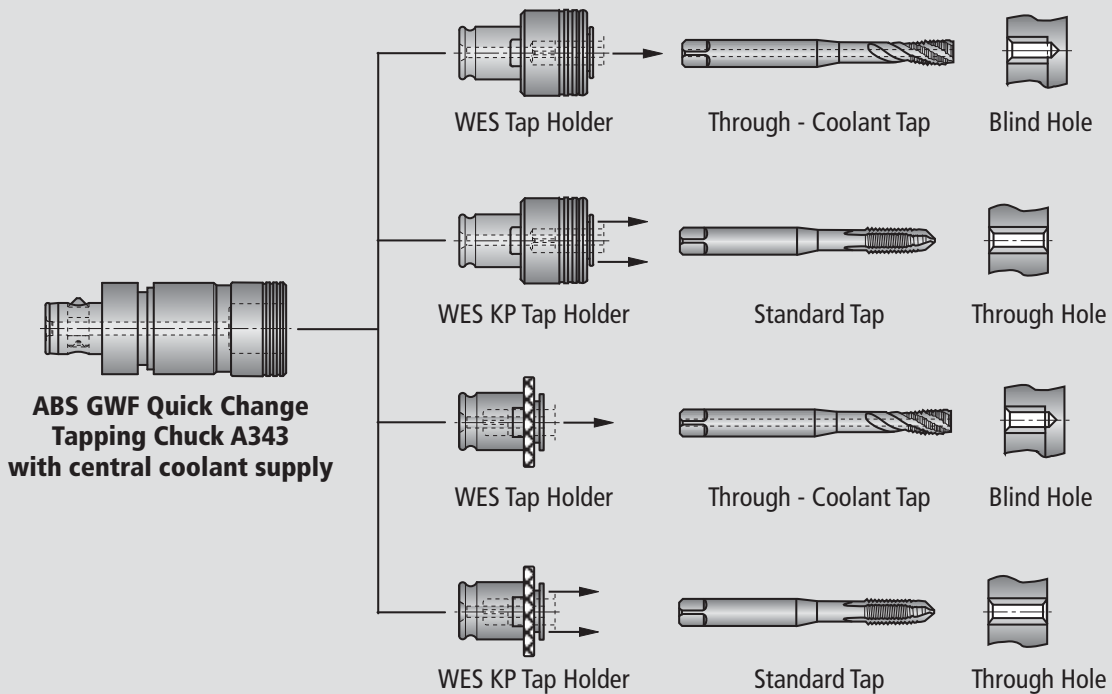


ABS®							
Description	Order No.	ABS d	d1	d2	L	Length compens. for pressure and tension	
ABS 32-GWF19-IC	A34 32060	32	0.748	1.535	2.717	0.295	1.01
ABS 40-GWF19-IC	A34 33060	40	0.748	1.535	2.874	0.295	1.21
ABS 50-GWF19-IC	A34 34060	50	0.748	1.535	2.835	0.295	1.50
ABS 50-GWF31-IC	A34 34070	50	1.220	2.362	3.858	0.394	3.30
ABS 63-GWF31-IC	A34 35070	63	1.220	2.362	4.370	0.394	3.63
ABS 63-GWF48-IC	A34 35080	63	1.890	3.386	6.299	0.689	10.34

ABS®							
Description	Order No.	ABS d	d1	d2	L	Length compens. for pressure and tension	
ABS 50-GWF19	A34 34020	50	0.748	1.417	2.756	1.614	1.45
ABS 50-GWF31	A34 34030	50	1.220	2.087	4.016	3.189	2.75

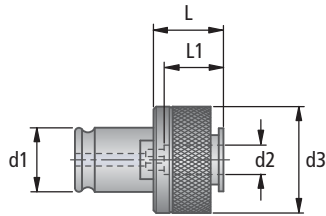
Delivery:
Quick change tapping chuck complete with ABS hardware, less tapping holders.

Delivery:
Quick change tapping chuck complete with ABS hardware, less tapping holders.



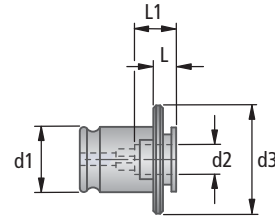
Tapping Holder WES (Inch)

- adjustable torque control
- for use with ABS GWF quick change tapping chucks
- for through tool coolant taps



Tapping Holder WE (Inch)

- for use with ABS GWF quick change tapping chucks
- for through tool coolant taps



* For torque setting information contact the Application Engineering Department

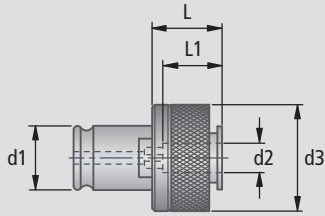
for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1	Permissible torque(ft. lbs.)
0 – 6	WES 1 B-6-.141	A34 810000141		.141	.109				1.1
8	WES 1 B-8-.168	A34 810000168		.168	.130				1.7
10	WES 1 B-10-.194	A34 810000194		.194	.152				2.2
12	WES 1 B-12-.220	A34 810000220		.220	.165				2.5
1/4	WES 1 B-1/4-.255	A34 810000255		.255	.191				4.3
5/16	WES 1 B-5/16-.318	A34 810000318	.748	.318	.238	1.26	.98	.67	4.2
3/8	WES 1 B-3/8-.381	A34 810000381		.381	.286				10.8
7/16	WES 1 B-7/16-.323	A34 810000323		.323	.242				17.0
1/2	WES 1 B-1/2-.367	A34 810000367		.367	.275				25.0
9/16	WES 1 B-9/16-.429	A34 810000429		.429	.322				29.0
1/8 ss	WES 1 B-1/8P-.313 Pipe	A34 810000313		.313	.234			-	4.0
1/8 ls	WES 1 B-1/8PLS-.438 Pipe	A34 810000438		.438	.328				4.0
5/16	WES 2 B-5/16-.318	A34 820000318		.318	.238				7.2
3/8	WES 2 B-3/8-.381	A34 820000381		.381	.286				10.8
7/16	WES 2 B-7/16-.323	A34 820000323		.323	.242				17.0
1/2	WES 2 B-1/2-.367	A34 820000367		.367	.275				25.0
9/16	WES 2 B-9/16-.429	A34 820000429		.429	.322				29.0
5/8	WES 2 B-5/8-.480	A34 820000480		.480	.360			1.18	36.0
11/16	WES 2 B-11/16-.542	A34 820000542	1.220	.542	.406	1.97	1.34		40.0
3/4	WES 2 B-3/4-.590	A34 820000590		.590	.442				53.0
13/16	WES 2 B-13/16-.652	A34 820000652		.652	.489				57.0
7/8	WES 2 B-7/8-.697	A34 820000697		.697	.523				69.0
1/4 p	WESR2 B-1/4P-.562 Pipe	A34 820000562		.562	.421				11.0
3/8 p	WESR2 B-3/8P-.700 Pipe	A34 820000700		.700	.531			.83	14.0
1/2 p	WESR2 B-1/2P-.687 Pipe	A34 820000687		.687	.515				32.0
13/16	WES 3 B-13/16-.652	A34 830000652		.652	.489				57.0
7/8	WES 3 B-7/8-.697	A34 830000697		.697	.523				69.0
15/16	WES 3 B-15/16-.760	A34 830000760		.760	.570				76.0
1	WES 3 B-1-.800	A34 830000800		.800	.600			1.73	94.0
1 1/8	WES 3 B-1 1/8-.896	A34 830000896	1.889	.896	.672	2.83	1.77		126.0
1 1/4	WES 3 B-1 1/4-1.021	A34 830001021		1.021	.766				144.0
1 3/8	WES 3 B-1 3/8-1.108	A34 830001108		1.108	.831				188.0
3/4 p	WESR3 B-3/4P-.906 Pipe	A34 830000906		.906	.679			.98	42.0
1 p	WESR3 B-1P-1.125 Pipe	A34 830001125		1.125	.843				81.0

for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1
0 – 6	WE 1-6-.141	A34 860500141		.141	.109			
8	WE 1-8-.168	A34 860600168		.168	.130			
10	WE 1-10-.194	A34 860700194		.194	.152			
12	WE 1-12-.220	A34 860800220		.220	.165			
1/4	WE 1-1/4-.255	A34 860900255		.255	.191			
5/16	WE 1-5/16-.318	A34 861000318	.748	.318	.238	1.181	.276	.669
3/8	WE 1-3/8-.381	A34 861100381		.381	.286			
7/16	WE 1-7/16-.323	A34 861200323		.323	.242			
1/2	WE 1-1/2-.367	A34 861300367		.367	.275			
9/16	WE 1-9/16-.429	A34 861400429		.429	.322			
1/8 ss	WE 1-1/8P-.313 Pipe	A34 865100313		.313	.234			
1/8 ls	WE 1-1/8PLS-.438 Pipe	A34 865200438		.438	.328			
5/16	WE 2-5/16-.318	A34 871000318		.318	.238			
3/8	WE 2-3/8-.381	A34 871100381		.381	.286			
7/16	WE 2-7/16-.323	A34 871200323		.323	.242			
1/2	WE 2-1/2-.367	A34 871300367		.367	.275			
9/16	WE 2-9/16-.429	A34 871400429		.429	.322			
5/8	WE 2-5/8-.480	A34 871500480		.480	.360			
11/16	WE 2-11/16-.542	A34 871600542	1.220	.542	.406	1.890	.433	1.181
3/4	WE 2-3/4-.590	A34 871700590		.590	.442			
13/16	WE 2-13/16-.652	A34 871800652		.652	.489			
7/8	WE 2-7/8-.697	A34 871900697		.697	.523			
1/4 p	WER2-1/4P-.562 Pipe	A34 875300562		.562	.421			
3/8 p	WER2-3/8P-.700 Pipe	A34 875400700		.700	.531			
1/2 p	WER2-1/2P-.687 Pipe	A34 875500687		.687	.515			
13/16	WE 3-13/16-.652	A34 881800652		.652	.489			
7/8	WE 3-7/8-.697	A34 881900697		.697	.523			
15/16	WE 3-15/16-.760	A34 882000760		.760	.570			
1	WE 3-1-.800	A34 882100800		.800	.600			
1 1/8	WE 3-1 1/8-.896	A34 882200896	1.889	.896	.672	2.756	.551	1.732
1 1/4	WE 3-1 1/4-1.021	A34 882301021		1.021	.766			
3/8 p	WER3-3/8P-.700 Pipe	A34 885400700		.700	.531			
1/2 p	WER3-1/2P-.687 Pipe	A34 885500687		.687	.515			
3/4 p	WER3-3/4P-.906 Pipe	A34 885600906		.906	.679			
1 p	WER3-1P-1.125 Pipe	A34 885701125		1.125	.843			



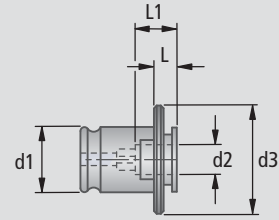
Tapping Holder WES (Metric)

- adjustable torque control
- for use with ABS GWF quick change tapping chucks
- for through tool coolant taps



Tapping Holder WE (Metric)

- for use with ABS GWF quick change tapping chucks
- for through tool coolant taps



* For torque setting information contact the Application Engineering Department

All dimensions are in mm

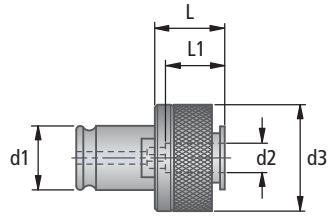
All dimensions are in mm

for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1
M 3	WES 1 B M3	A34 911000350	19	3.5	2.7	32	25	17
M 4	WES 1 B M4	A34 911200450		4.5	3.4			
M 5	WES 1 B M5	A34 911400600		6.0	4.9			
M 6	WES 1 B M6	A34 911500600		6.0	4.9			
M 8	WES 1 B M8	A34 911600600		6.0	4.9			
M 10	WES 1 B M10	A34 911700700		7.0	5.5			
M 12	WES 1 B M12	A34 911800900		9.0	7.0			
M 8	WES 2 B M8	A34 921600800		31	8.0			
M 10	WES 2 B M10	A34 921701000	10.0		8.0			
M 12	WES 2 B M12	A34 921800900	9.0		7.0			
M 14	WES 2 B M14	A34 921901100	11.0		9.0			
M 16	WES 2 B M16	A34 922001200	12.0		9.0			
M 18	WES 2 B M18	A34 922101400	14.0		11.0			
M 20	WES 2 B M20	A34 922201600	16.0		12.0			
M 14	WES 3 B M14	A34 931901100	48		11.0	9.0	72	45
M 16	WES 3 B M16	A34 932001200		12.0	9.0			
M 18	WES 3 B M18	A34 932101400		14.0	11.0			
M 20	WES 3 B M20	A34 932201600		16.0	12.0			
M 22	WES 3 B M22	A34 932301800		18.0	14.5			
M 24	WES 3 B M24	A34 932401800		18.0	14.5			
M 27	WES 3 B M27	A34 932502000		20.0	16.0			
M 30	WES 3 B M30	A34 932602200		22.0	18.0			
M 33	WES 3 B M33	A34 932702500		25.0	20.0			

for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1
M 3	WE 1 M3	A34 961000350	19	3.5	2.7	30	7	17
M 4	WE 1 M4	A34 961200450		4.5	3.4			
M 5	WE 1 M5	A34 961400600		6.0	4.9			
M 6	WE 1 M6	A34 961500600		6.0	4.9			
M 8	WE 1 M8	A34 961600600		6.0	4.9			
M 10	WE 1 M10	A34 961700700		7.0	5.5			
M 12	WE 1 M12	A34 961800900		9.0	7.0			
M 8	WE 2 M8	A34 971600800		31	8.0			
M 10	WE 2 M10	A34 971701000	10.0		8.0			
M 12	WE 2 M12	A34 971800900	9.0		7.0			
M 14	WE 2 M14	A34 971901100	11.0		9.0			
M 16	WE 2 M16	A34 972001200	12.0		9.0			
M 18	WE 2 M18	A34 972101400	14.0		11.0			
M 20	WE 2 M20	A34 972201600	16.0		12.0			
M 14	WE 3 M14	A34 981901100	48		11.0	9.0	70	14
M 16	WE 3 M16	A34 982001200		12.0	9.0			
M 18	WE 3 M18	A34 982101400		14.0	11.0			
M 20	WE 3 M20	A34 982201600		16.0	12.0			
M 22	WE 3 M22	A34 982301800		18.0	14.5			
M 24	WE 3 M24	A34 982401800		18.0	14.5			
M 27	WE 3 M27	A34 982502000		20.0	16.0			
M 30	WE 3 M30	A34 982602200		22.0	18.0			
M 33	WE 3 M33	A34 982702500		25.0	20.0			

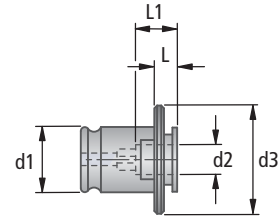
Tapping Holder WES KP (Inch)

- adjustable torque control
- for use with ABS GWF quick change tapping chucks
- for standard taps



Tapping Holder WE KP (Inch)

- for use with ABS GWF quick change tapping chucks
- for standard taps



* For torque setting information contact the Application Engineering Department

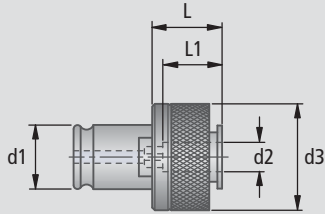
for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1	Permissible torque(ft. lbs.)
0-6	WES 1 B KP-6-.141	A37 810500141		.141	.109				1.1
8	WES 1 B KP-8-.168	A37 810600168		.168	.130				1.7
10	WES 1 B KP-10-.194	A37 810700194		.194	.152				2.2
12	WES 1 B KP-12-.220	A37 810800220		.220	.165				2.5
1/4	WES 1 B KP-1/4-.255	A37 810900255	.748	.255	.191	1.26	.98	.67	4.3
5/16	WES 1 B KP-5/16-.318	A37 811000318		.318	.238				7.2
3/8	WES 1 B KP-3/8-.381	A37 811100381		.381	.286				10.8
7/16	WES 1 B KP-7/16-.323	A37 811200323		.323	.242				17.0
1/2	WES 1 B KP-1/2-.367	A37 811300367		.367	.275				25.0
5/16	WES 2 B KP-5/16-.318	A37 821000318		.318	.238				7.2
3/8	WES 2 B KP-3/8-.381	A37 821100381		.381	.286				10.8
7/16	WES 2 B KP-7/16-.323	A37 821200323		.323	.242				17.0
1/2	WES 2 B KP-1/2-.367	A37 821300367		.367	.275				25.0
9/16	WES 2 B KP-9/16-.429	A37 821400429		.429	.322			1.18	29.0
5/8	WES 2 B KP-5/8-.480	A37 821500480	1.220	.480	.360	1.97	1.34		36.0
3/4	WES 2 B KP-3/4-.590	A37 821700590		.590	.442				53.0
7/8	WES 2 B KP-7/8-.697	A37 821900697		.697	.523				69.0
1/4 p	WESR2 B KP-1/4P-.562 Pipe	A37 825300562		.562	.421				11.0
3/8 p	WESR2 B KP-3/8P-.700 Pipe	A37 825400700		.700	.531			.83	14.0
1/2 p	WESR2 B KP-1/2P-.687 Pipe	A37 825500687		.687	.515				32.0
13/16	WES 3 B KP-13/16-.652	A37 831800652		.652	.489				57.0
7/8	WES 3 B KP-7/8-.697	A37 831900697		.697	.523				69.0
15/16	WES 3 B KP-15/16-.760	A37 832000760		.760	.570				76.0
1	WES 3 B KP-1-.800	A37 832100800		.800	.600			1.73	94.0
1 1/8	WES 3 B KP-1 1/8-.896	A37 832200896	1.889	.896	.672	2.83	1.77		126.0
1 1/4	WES 3 B KP-1 1/4-1.021	A37 832301021		1.021	.766				144.0
1 3/8	WES 3 B KP-1 3/8-1.108	A37 832401108		1.108	.831				188.0
1/2 p	WESR3 B KP-1/2P-.687 Pipe	A37 835500687		.687	.515				32.0
3/4 p	WESR3 B KP-3/4P-.906 Pipe	A37 835600906		.906	.679			.98	42.0
1 p	WESR3 B KP-1P-1.125 Pipe	A37 835701125		1.125	.843				81.0

for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1
0-6	WE 1KP-6-.141	A37 860500141		.141	.109			
8	WE 1KP-8-.168	A37 860600168		.168	.130			
10	WE 1KP-10-.194	A37 860700194		.194	.152			
12	WE 1KP-12-.220	A37 860800220		.220	.165			
1/4	WE 1KP-1/4-.255	A37 860900255	.748	.255	.191	1.181	.276	.669
5/16	WE 1KP-5/16-.318	A37 861000318		.318	.238			
3/8	WE 1KP-3/8-.381	A37 861100381		.381	.286			
7/16	WE 1KP-7/16-.323	A37 861200323		.323	.242			
1/2	WE 1KP-1/2-.367	A37 861300367		.367	.275			
5/16	WE 2KP-5/16-.318	A37 871000318		.318	.238			
3/8	WE 2KP-3/8-.381	A37 871100381		.381	.286			
7/16	WE 2KP-7/16-.323	A37 871200323		.323	.242			
1/2	WE 2KP-1/2-.367	A37 871300367		.367	.275			
9/16	WE 2KP-9/16-.429	A37 871400429		.429	.322			
5/8	WE 2KP-5/8-.480	A37 871500480		.480	.360			
11/16	WE 2KP-11/16-.542	A37 871600542	1.220	.542	.406	1.890	.433	1.181
3/4	WE 2KP-3/4-.590	A37 871700590		.590	.442			
13/16	WE 2KP-13/16-.652	A37 871800652		.652	.489			
7/8	WE 2KP-7/8-.697	A37 871900697		.697	.523			
1/4 p	WER2KP-1/4P-.562 Pipe	A37 875300562		.562	.421			
3/8 p	WER2KP-3/8P-.700 Pipe	A37 875400700		.700	.531			
1/2 p	WER2KP-1/2P-.687 Pipe	A37 875500687		.687	.515			
13/16	WE 3KP-13/16-.652	A37 881800652		.652	.489			
7/8	WE 3KP-7/8-.697	A37 881900697		.697	.523			
15/16	WE 3KP-15/16-.760	A37 882000760		.760	.570			
1	WE 3KP-1-.800	A37 882100800		.800	.600			
1 1/8	WE 3KP-1 1/8-.896	A37 882200896	1.889	.896	.672	2.756	.551	1.732
1 1/4	WE 3KP-1 1/4-1.021	A37 882301021		1.021	.766			
1 3/8	WE 3KP-1 3/8-1.108	A37 882401108		1.108	.831			
1/2 p	WER3KP-1/2P-.687 Pipe	A37 885500687		.687	.515			
3/4 p	WER3KP-3/4P-.906 Pipe	A37 885600906		.906	.679			
1 p	WER3KP-1P-1.125 Pipe	A37 885701125		1.125	.843			



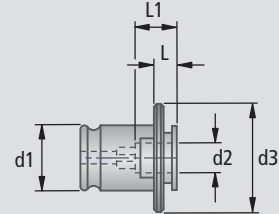
Tapping Holder WES KP (Metric)

- adjustable torque control
- for use with ABS GWF quick change tapping chucks
- for standard taps



Tapping Holder WE KP (Metric)

- for use with ABS GWF quick change tapping chucks
- for standard taps



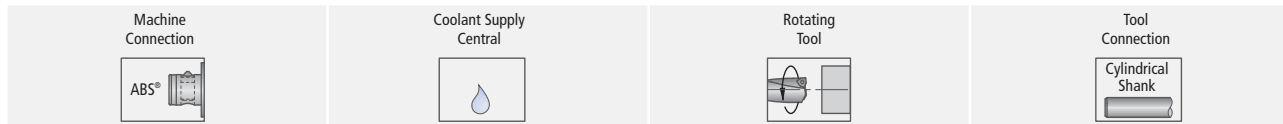
* For torque setting information contact the Application Engineering Department

All dimensions are in mm

All dimensions are in mm

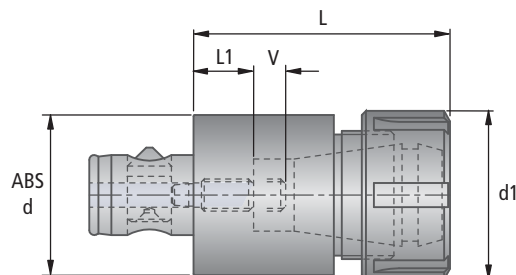
for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1
M 4	WES 1 B KP M4	A37 911200450	19	4.5	3.4	32	25	17
M 5	WES 1 B KP M5	A37 911400600		6.0	4.9			
M 6	WES 1 B KP M6	A37 911500600		6.0	4.9			
M 8	WES 1 B KP M8	A37 911600600		6.0	4.9			
M 10	WES 1 B KP M10	A37 911700700		7.0	5.5			
M 12	WES 1 B KP M12	A37 911800900		9.0	7.0			
M 8	WES 2 B KP M8	A37 921600800	31	8.0	6.2	50	34	17
M 10	WES 2 B KP M10	A37 921701000		10.0	8.0			
M 12	WES 2 B KP M12	A37 921800900		9.0	7.0			
M 14	WES 2 B KP M14	A37 921901100		11.0	9.0			
M 16	WES 2 B KP M16	A37 922001200		12.0	9.0			
M 18	WES 2 B KP M18	A37 922101400		14.0	11.0			
M 20	WES 2 B KP M20	A37 922201600		16.0	12.0			
M 14	WES 3 B KP M14	A37 931901100		48	11.0			
M 16	WES 3 B KP M16	A37 932001200	12.0		9.0			
M 18	WES 3 B KP M18	A37 932101400	14.0		11.0			
M 20	WES 3 B KP M20	A37 932201600	16.0		12.0			
M 22	WES 3 B KP M22	A37 932301800	18.0		14.5			
M 24	WES 3 B KP M24	A37 932401800	18.0		14.5			
M 27	WES 3 B KP M27	A37 932502000	20.0		16.0			
M 30	WES 3 B KP M30	A37 932602200	22.0		18.0			
M 33	WES 3 B KP M33	A37 932702500	25.0		20.0			

for Tap size	Description	Order No.	d1	d2	shank □	d3	L	L1				
M 3	WE 1 KP M3	A37 961000350	19	3.5	2.7	30	7	17				
M 4	WE 1 KP M4	A37 961200450		4.5	3.4							
M 5	WE 1 KP M5	A37 961400600		6.0	4.9							
M 6	WE 1 KP M6	A37 961500600		6.0	4.9							
M 8	WE 1 KP M8	A37 961600600		6.0	4.9							
M 10	WE 1 KP M10	A37 961700700		7.0	5.5							
M 12	WE 1 KP M12	A37 961800900		9.0	7.0							
M 14	WE 1 KP M14	A37 961901100		11.0	9.0							
M 6	WE 2 KP M6	A37 971500600		31	6.0				4.9	48	11	30
M 8	WE 2 KP M8	A37 971600800			8.0				6.2			
M 10	WE 2 KP M10	A37 971701000			10.0				8.0			
M 12	WE 2 KP M12	A37 971800900			9.0				7.0			
M 14	WE 2 KP M14	A37 971901100	11.0		9.0							
M 16	WE 2 KP M16	A37 972001200	12.0		9.0							
M 18	WE 2 KP M18	A37 972101400	14.0		11.0							
M 20	WE 2 KP M20	A37 972201600	16.0		12.0							
M 14	WE 3 KP M14	A37 981901100	48	11.0	9.0	70	14	44				
M 16	WE 3 KP M16	A37 982001200		12.0	9.0							
M 18	WE 3 KP M18	A37 982101400		14.0	11.0							
M 20	WE 3 KP M20	A37 982201600		16.0	12.0							
M 22	WE 3 KP M22	A37 982301800		18.0	14.5							
M 24	WE 3 KP M24	A37 982401800		18.0	14.5							
M 27	WE 3 KP M27	A37 982502000		20.0	16.0							
M 30	WE 3 KP M30	A37 982602200		22.0	18.0							
M 33	WE 3 KP M33	A37 982702500		25.0	20.0							



Collet Holder

- high concentricity with ground thread on holder and collet nut
- axial adjustment



ABS®								Replacement Parts			
Description	Order No.	ABS d	d1	Dimension depends on clamping range of collet L	L1	Adjustment Range V	lbs	Collet Nut		Maximum collet nut clamping torque (ft. lbs.)	Spanner Wrench Order No.
								without bearing ① Order No. ER	with bearing Order No. ERB		
ABS25 SZV/ER16	A33 11120	25	1.102	1.378–1.535	.354	.157	.33	5120000316	5280703016	40	L05 02020
ABS32 SZV/ER20	A33 12130	32	1.339	1.890–2.047	.551	.315	.66	5120000320	5280703020	60	L05 02030
ABS40 SZV/ER25	A33 13141	40	1.654	2.362–2.520	.630	.315	1.21	5120000325	5280703025	75	L05 02040
ABS50 SZV/ER32	A33 14151	50	1.969	2.716–2.874	.669	.236	1.98	5120000332	5280703032	100	L05 02050
ABS63 SZV/ER40	A33 15161	63	2.480	3.071–3.228	.866	.315	3.64	5120000340	5280703040	125	L05 02060
ABS80 SZV/ER50	A33 16171	80	3.150	3.780–4.094	1.024	.315	7.06	5280603050	–	175	L05 02070

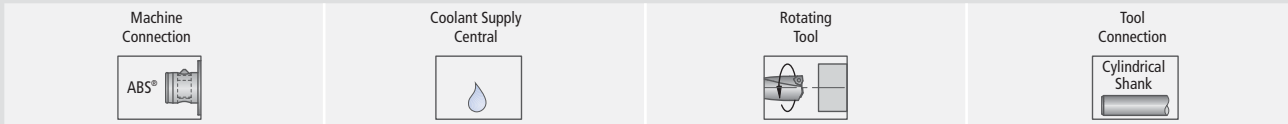
Delivery:

Collet holder complete with collet nut ① and short adjustment screw ②, less collet and spanner wrench

Note:

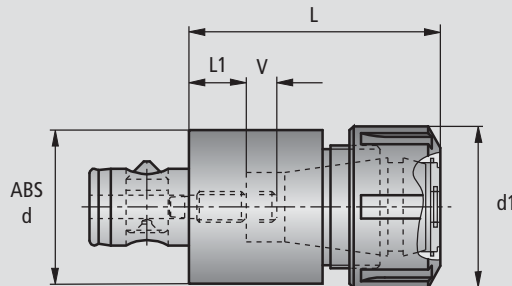
Collets shown on pages 1.72 - 1.79 all use the same collet holder. Only the collet nut (and seal disc) is different. The collet nuts may be interchangeable depending on application.

Adjusting Screw				② Short adjustment screw with hole			Short adjustment screw without hole			Long adjustment screw with hole		
	for Collet Holder	d	SW mm	Order No.	L	d1	Order No.	L	d1	OrderNo.	L	d1
ABS25 SZV/ER16	M 5	2	N00 71900	.315	.102	N00 71910	.315	–	N00 71020	.472	.102	
ABS32 SZV/ER20	M 6	2.5	N00 71070	.472	.126	N00 71940	.472	–	N00 71050	.630	.126	
ABS40 SZV/ER25	M8X1	4	N00 71970	.551	.217	N00 71980	.551	–	N00 71150	.787	.217	
ABS50 SZV/ER32	M10X1	5	N00 71280	.551	.256	N00 71240	.551	–	N00 71250	.866	.256	
ABS63 SZV/ER40	M12X1	6	N00 71320	.709	.295	N00 71330	.709	–	N00 71350	1.102	.295	
ABS63 SZV/ER50	M16X1	8	N00 71520	.827	.393	–	–	–	–	–	–	



Collet Holder

- high concentricity with ground thread on holder and collet nut
- axial adjustment



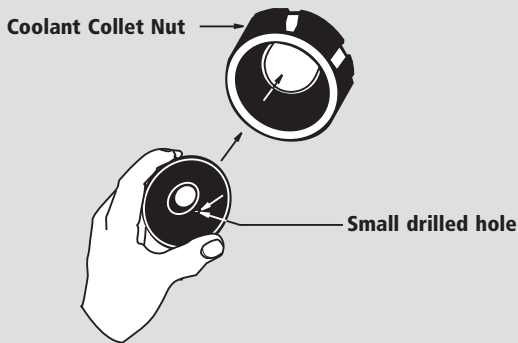
ABS®								Replacement Parts			
Description	Order No.	ABS d	d1	Dimension depends on clamping range of collet L	L1	Adjustment Range V	lbs	Collet Nut		Maximum collet nut clamping torque (ft. lbs.)	Spanner Wrench Order No.
								without bearing ① Order No. ERC	with bearing Order No. ERBC		
ABS25 SZV/ERC16	A33 11300	25	1.102	1.575–1.732	.354	.157	.33	5120000416	5280701016	40	L05 02080
ABS32 SZV/ERC20	A33 12310	32	1.339	2.087–2.244	.551	.315	.66	5120000420	5280701020	60	L05 02090
ABS40 SZV/ERC25	A33 13320	40	1.654	2.464–2.622	.630	.315	1.21	5120000425	5280701025	75	L05 02040
ABS50 SZV/ERC32	A33 14330	50	1.969	2.799–2.957	.669	.236	1.98	5120000432	5280701032	100	L05 02050
ABS63 SZV/ERC40	A33 15340	63	2.480	3.150–3.307	.866	.315	3.64	5120000440	5280701040	125	L05 02060

Delivery:

Collet holder complete with collet nut ① and short adjustment screw ②, less collet and spanner wrench

Note:

The DS/ER Seal Discs found on pages 1.78 - 1.79 are to be used with the ERC or ERBC type nut and will contain pressures up to 2,000 PSI. These collet nuts / seal discs not only keep the coolant contained, but also serve to keep chips out of the collet clamping area.

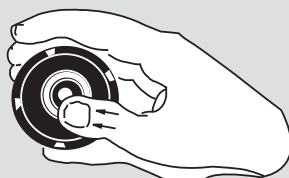


Seal Disk Assembly

- A – Locate the inside hole of the seal disc and the small drilled hole on the opposite face (see diagram).
- B – Insert the seal disk into the center of the coolant nut and apply even pressure until the disk is properly seated into the nut. The drilled hole should be visible when you look at the inside of the nut.

Note:

Be sure that the drilled hole is free of dirt.



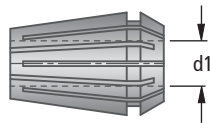
Seal Disk Removal

- A – To remove the disc, simply press on the outside of the disc evenly, until it snaps out.

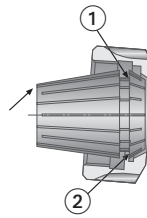
Collet - Inch / Metric

Regular Style Precision

for use with ABS® SZV Collet Holders



Mounting Instruction



A – Place collet inside collet nut and rotate the nut to engage with the extractor eccentric ring ② snap or locate in collet groove ①.

B – Once you have engaged the collet nut and collet together, you may mount them into the collet holder or machine spindle.

Description	Order No.	d1
ER 16/ 1.0 – 0.5	A33 52000 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 52000 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 52000 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 52000 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 52000 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 52000 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 52000 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 52000 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 52000 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 52000 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 52000 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 52000 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 52000 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 52000 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 52000 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 52000 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 52000 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 52000 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 52000 1000	.394 – .354" (10.0 – 9.0mm)
ER 20/ 1.0 – 0.5	A33 53000 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 53000 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 53000 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 53000 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 53000 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 53000 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 53000 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 53000 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 53000 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 53000 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 53000 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 53000 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 53000 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 53000 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 53000 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 53000 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 53000 0900	.354 – .315" (9.0 – 8.0mm)

Description	Order No.	d1
ER 20/ 9.5 – 8.5	A33 53000 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 53000 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 53000 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 53000 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 53000 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 53000 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 53000 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 53000 1300	.512 – .472" (13.0 – 12.0mm)
ER 25/ 1.0 – 0.5	A33 54000 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 54000 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 54000 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 54000 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 54000 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 54000 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 54000 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 54000 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 54000 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 54000 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 54000 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 54000 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 54000 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 54000 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 54000 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 54000 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 54000 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 54000 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 54000 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 54000 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 54000 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 54000 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 54000 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 54000 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 54000 1300	.512 – .472" (13.0 – 12.0mm)
13.5 – 12.5	A33 54000 1350	.531 – .492" (13.5 – 12.5mm)
14.0 – 13.0	A33 54000 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 54000 1450	.571 – .531" (14.5 – 13.5mm)

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

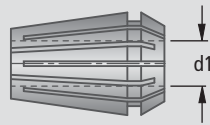
Clamping capacity:

Collet types ER16, ER20, ER25, ER32 and ER40 have a clamping range of .0394 inch (1.0 mm). Collet type ER50 has a clamping range of .0787 inch (2.0 mm).

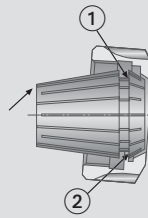
Collet - Inch / Metric

Regular Style Precision

for use with ABS® SZV Collet Holders



Mounting Instruction



A – Place collet inside collet nut and rotate the nut to engage with the extractor eccentric ring ② snap or locate in collet groove ①.

B – Once you have engaged the collet nut and collet together, you may mount them into the collet holder or machine spindle.



Description	Order No.	d1
ER 25/ 15.0 – 14.0	A33 54000 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 54000 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 54000 1600	.630 – .591" (16.0 – 15.0mm)
ER 32/ 2.0 – 1.0	A33 55000 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 55000 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 55000 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 55000 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 55000 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 55000 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 55000 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 55000 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 55000 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 55000 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 55000 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 55000 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 55000 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 55000 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 55000 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 55000 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 55000 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 55000 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 55000 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 55000 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 55000 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 55000 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 55000 1300	.512 – .472" (13.0 – 12.0mm)
13.5 – 12.5	A33 55000 1350	.531 – .492" (13.5 – 12.5mm)
14.0 – 13.0	A33 55000 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 55000 1450	.571 – .531" (14.5 – 13.5mm)
15.0 – 14.0	A33 55000 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 55000 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 55000 1600	.630 – .591" (16.0 – 15.0mm)
16.5 – 15.5	A33 55000 1650	.650 – .610" (16.5 – 15.5mm)
17.0 – 16.0	A33 55000 1700	.669 – .630" (17.0 – 16.0mm)
17.5 – 16.5	A33 55000 1750	.689 – .650" (17.5 – 16.5mm)
18.0 – 17.0	A33 55000 1800	.709 – .669" (18.0 – 17.0mm)

Description	Order No.	d1
ER 32/ 18.5 – 17.5	A33 55000 1850	.728 – .689" (18.5 – 17.5mm)
19.0 – 18.0	A33 55000 1900	.748 – .709" (19.0 – 18.0mm)
19.5 – 18.5	A33 55000 1950	.768 – .728" (19.5 – 18.5mm)
20.0 – 19.0	A33 55000 2000	.787 – .748" (20.0 – 19.0mm)
ER 40/ 3.0 – 2.0	A33 56000 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 56000 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 56000 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 56000 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 56000 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 56000 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 56000 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 56000 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 56000 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 56000 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 56000 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 56000 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 56000 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 56000 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 56000 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 56000 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 56000 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 56000 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 56000 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 56000 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 56000 1300	.512 – .472" (13.0 – 12.0mm)
13.5 – 12.5	A33 56000 1350	.531 – .492" (13.5 – 12.5mm)
14.0 – 13.0	A33 56000 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 56000 1450	.571 – .531" (14.5 – 13.5mm)
15.0 – 14.0	A33 56000 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 56000 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 56000 1600	.630 – .591" (16.0 – 15.0mm)
16.5 – 15.5	A33 56000 1650	.650 – .610" (16.5 – 15.5mm)
17.0 – 16.0	A33 56000 1700	.669 – .630" (17.0 – 16.0mm)
17.5 – 16.5	A33 56000 1750	.689 – .650" (17.5 – 16.5mm)
18.0 – 17.0	A33 56000 1800	.709 – .669" (18.0 – 17.0mm)
18.5 – 17.5	A33 56000 1850	.728 – .689" (18.5 – 17.5mm)

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

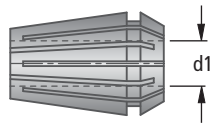
Clamping capacity:

Collet types ER16, ER20, ER25, ER32 and ER40 have a clamping range of .0394 inch (1.0 mm). Collet type ER50 has a clamping range of .0787 inch (2.0 mm).

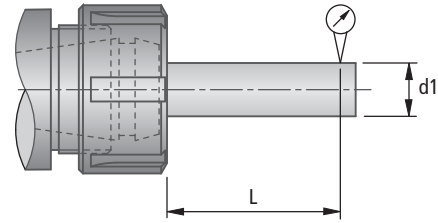
Collet - Inch / Metric

Regular Style Precision

for use with ABS® SZV Collet Holders



Accuracy indication of regular style collets



Description	Order No.	d1
ER 40/ 19.0 – 18.0	A33 56000 1900	.748 – .709" (19.0 – 18.0mm)
19.5 – 18.5	A33 56000 1950	.768 – .728" (19.5 – 18.5mm)
20.0 – 19.0	A33 56000 2000	.787 – .748" (20.0 – 19.0mm)
20.5 – 19.5	A33 56000 2050	.807 – .768" (20.5 – 19.5mm)
21.0 – 20.0	A33 56000 2100	.827 – .787" (21.0 – 20.0mm)
21.5 – 20.5	A33 56000 2150	.846 – .807" (21.5 – 20.5mm)
22.0 – 21.0	A33 56000 2200	.866 – .827" (22.0 – 21.0mm)
22.5 – 21.5	A33 56000 2250	.886 – .846" (22.5 – 21.5mm)
23.0 – 22.0	A33 56000 2300	.906 – .866" (23.0 – 22.0mm)
23.5 – 22.5	A33 56000 2350	.925 – .886" (23.5 – 22.5mm)
24.0 – 23.0	A33 56000 2400	.945 – .906" (24.0 – 23.0mm)
24.5 – 23.5	A33 56000 2450	.965 – .925" (24.5 – 23.5mm)
25.0 – 24.0	A33 56000 2500	.984 – .945" (25.0 – 24.0mm)
26.0 – 25.0	A33 56000 2600	1.024 – .984" (26.0 – 25.0mm)
27.0 – 26.0	A33 56000 2700	1.063 – 1.024" (27.0 – 26.0mm)
28.0 – 27.0	A33 56000 2800	1.102 – 1.063" (28.0 – 27.0mm)
29.0 – 28.0	A33 56000 2900	1.142 – 1.102" (29.0 – 28.0mm)
30.0 – 29.0	A33 56000 3000	1.181 – 1.142" (30.0 – 29.0mm)
ER 50/ 6.0 – 5.0	A33 57000 0600	.236 – .197" (6.0 – 5.0mm)
8.0 – 6.0	A33 57000 0800	.315 – .236" (8.0 – 6.0mm)
10.0 – 8.0	A33 57000 1000	.394 – .315" (10.0 – 8.0mm)
12.0 – 10.0	A33 57000 1200	.472 – .394" (12.0 – 10.0mm)
14.0 – 12.0	A33 57000 1400	.551 – .472" (14.0 – 12.0mm)
16.0 – 14.0	A33 57000 1600	.630 – .551" (16.0 – 14.0mm)
18.0 – 16.0	A33 57000 1800	.709 – .630" (18.0 – 16.0mm)
20.0 – 18.0	A33 57000 2000	.787 – .709" (20.0 – 18.0mm)
22.0 – 20.0	A33 57000 2200	.866 – .787" (22.0 – 20.0mm)
24.0 – 22.0	A33 57000 2400	.945 – .866" (24.0 – 22.0mm)
26.0 – 24.0	A33 57000 2600	1.024 – .945" (26.0 – 24.0mm)
28.0 – 26.0	A33 57000 2800	1.102 – 1.024" (28.0 – 26.0mm)
30.0 – 28.0	A33 57000 3000	1.181 – 1.102" (30.0 – 28.0mm)
32.0 – 30.0	A33 57000 3200	1.260 – 1.181" (32.0 – 30.0mm)
34.0 – 32.0	A33 57000 3400	1.339 – 1.260" (34.0 – 32.0mm)

d1	d1*	TIR**
.236" (6 mm)	.039" – .063" (1.0 – 1.6 mm)	.0006" (0.015 mm)
.394" (10 mm)	.063" – .118" (1.6 – 3.0 mm)	.0006" (0.015 mm)
.630" (16 mm)	.118" – .236" (3.0 – 6.0 mm)	.0006" (0.015 mm)
.984" (25 mm)	.236" – .394" (6.0 – 10.0 mm)	.0006" (0.015 mm)
1.575" (40 mm)	.394" – .709" (10.0 – 18.0 mm)	.0008" (0.020 mm)
1.969" (50 mm)	.709" – 1.024" (18.0 – 26.0 mm)	.0008" (0.020 mm)
2.362" (60 mm)	1.024" – 1.339" (26.0 – 34.0 mm)	.0010" (0.025 mm)

Note:

* Tool shank diameter d1 must not be greater than collet nominal dimension d1 (risk of fracture)

** These indications refer to the collets with collet holder.

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

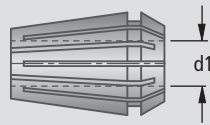
Clamping capacity:

Collet types ER16, ER20, ER25, ER32 and ER40 have a clamping range of .0394 inch (1.0 mm). Collet type ER50 has a clamping range of .0787 inch (2.0 mm).

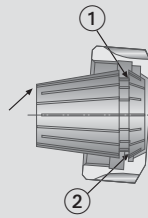
Collet - Inch / Metric

Ultra Style Precision

for use with ABS® SZV Collet Holders



Mounting Instruction



- A – Place collet inside collet nut and rotate the nut to engage with the extractor eccentric ring ② snap or locate in collet groove ①.
- B – Once you have engaged the collet nut and collet together, you may mount them into the collet holder or machine spindle.



Description	Order No.	d1
ER16 UP 1.0 – 0.5	A33 52010 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 52010 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 52010 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 52010 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 52010 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 52010 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 52010 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 52010 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 52010 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 52010 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 52010 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 52010 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 52010 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 52010 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 52010 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 52010 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 52010 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 52010 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 52010 1000	.394 – .354" (10.0 – 9.0mm)
ER20 UP 1.0 – 0.5	A33 53010 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 53010 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 53010 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 53010 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 53010 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 53010 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 53010 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 53010 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 53010 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 53010 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 53010 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 53010 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 53010 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 53010 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 53010 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 53010 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 53010 0900	.354 – .315" (9.0 – 8.0mm)

Description	Order No.	d1
ER20 UP 9.5 – 8.5	A33 53010 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 53010 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 53010 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 53010 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 53010 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 53010 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 53010 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 53010 1300	.512 – .472" (13.0 – 12.0mm)
ER25 UP 1.0 – 0.5	A33 54010 0100	.039 – .020" (1.0 – 0.5mm)
1.5 – 0.8	A33 54010 0150	.059 – .031" (1.5 – 0.8mm)
2.0 – 1.0	A33 54010 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 54010 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 54010 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 54010 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 54010 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 54010 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 54010 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 54010 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 54010 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 54010 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 54010 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 54010 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 54010 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 54010 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 54010 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 54010 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 54010 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 54010 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 54010 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 54010 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 54010 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 54010 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 54010 1300	.512 – .472" (13.0 – 12.0mm)
14.0 – 13.0	A33 54010 1350	.531 – .492" (13.5 – 12.5mm)
13.5 – 12.5	A33 54010 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 54010 1450	.571 – .531" (14.5 – 13.5mm)

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

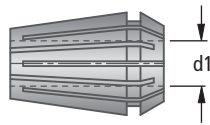
Clamping capacity:

Collet types ER16UP, ER20UP, ER25UP, ER32UP and ER40UP have a clamping range of .0394 inch(1.0 mm).

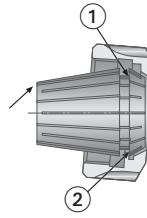
Collet - Inch / Metric

Ultra Style Precision

for use with ABS® SZV Collet Holders



Mounting Instruction



A – Place collet inside collet nut and rotate the nut to engage with the extractor eccentric ring ② snap or locate in collet groove ①.

B – Once you have engaged the collet nut and collet together, you may mount them into the collet holder or machine spindle.

Description	Order No.	d1
ER25 UP 15.0 – 14.0	A33 54010 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 54010 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 54010 1600	.630 – .591" (16.0 – 15.0mm)
ER32 UP 2.0 – 1.0	A33 55010 0200	.079 – .039" (2.0 – 1.0mm)
2.5 – 1.5	A33 55010 0250	.098 – .059" (2.5 – 1.5mm)
3.0 – 2.0	A33 55010 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 55010 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 55010 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 55010 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 55010 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 55010 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 55010 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 55010 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 55010 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 55010 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 55010 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 55010 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 55010 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 55010 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 55010 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 55010 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 55010 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 55010 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 55010 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 55010 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 55010 1300	.512 – .472" (13.0 – 12.0mm)
13.5 – 12.5	A33 55010 1350	.531 – .492" (13.5 – 12.5mm)
14.0 – 13.0	A33 55010 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 55010 1450	.571 – .531" (14.5 – 13.5mm)
15.0 – 14.0	A33 55010 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 55010 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 55010 1600	.630 – .591" (16.0 – 15.0mm)
16.5 – 15.5	A33 55010 1650	.650 – .610" (16.5 – 15.5mm)
17.0 – 16.0	A33 55010 1700	.669 – .630" (17.0 – 16.0mm)
17.5 – 16.5	A33 55010 1750	.689 – .650" (17.5 – 16.5mm)
18.0 – 17.0	A33 55010 1800	.709 – .669" (18.0 – 17.0mm)

Description	Order No.	d1
ER32 UP 18.5 – 17.5	A33 55010 1850	.728 – .689" (18.5 – 17.5mm)
19.0 – 18.0	A33 55010 1900	.748 – .709" (19.0 – 18.0mm)
19.5 – 18.5	A33 55010 1950	.768 – .728" (19.5 – 18.5mm)
20.0 – 19.0	A33 55010 2000	.787 – .748" (20.0 – 19.0mm)
ER40 UP 3.0 – 2.0	A33 56010 0300	.118 – .079" (3.0 – 2.0mm)
3.5 – 2.5	A33 56010 0350	.138 – .098" (3.5 – 2.5mm)
4.0 – 3.0	A33 56010 0400	.157 – .118" (4.0 – 3.0mm)
4.5 – 3.5	A33 56010 0450	.177 – .138" (4.5 – 3.5mm)
5.0 – 4.0	A33 56010 0500	.197 – .157" (5.0 – 4.0mm)
5.5 – 4.5	A33 56010 0550	.217 – .177" (5.5 – 4.5mm)
6.0 – 5.0	A33 56010 0600	.236 – .197" (6.0 – 5.0mm)
6.5 – 5.5	A33 56010 0650	.256 – .217" (6.5 – 5.5mm)
7.0 – 6.0	A33 56010 0700	.276 – .236" (7.0 – 6.0mm)
7.5 – 6.5	A33 56010 0750	.295 – .256" (7.5 – 6.5mm)
8.0 – 7.0	A33 56010 0800	.315 – .276" (8.0 – 7.0mm)
8.5 – 7.5	A33 56010 0850	.335 – .295" (8.5 – 7.5mm)
9.0 – 8.0	A33 56010 0900	.354 – .315" (9.0 – 8.0mm)
9.5 – 8.5	A33 56010 0950	.374 – .335" (9.5 – 8.5mm)
10.0 – 9.0	A33 56010 1000	.394 – .354" (10.0 – 9.0mm)
10.5 – 9.5	A33 56010 1050	.413 – .374" (10.5 – 9.5mm)
11.0 – 10.0	A33 56010 1100	.433 – .394" (11.0 – 10.0mm)
11.5 – 10.5	A33 56010 1150	.453 – .413" (11.5 – 10.5mm)
12.0 – 11.0	A33 56010 1200	.472 – .433" (12.0 – 11.0mm)
12.5 – 11.5	A33 56010 1250	.492 – .453" (12.5 – 11.5mm)
13.0 – 12.0	A33 56010 1300	.512 – .472" (13.0 – 12.0mm)
13.5 – 12.5	A33 56010 1350	.531 – .492" (13.5 – 12.5mm)
14.0 – 13.0	A33 56010 1400	.551 – .512" (14.0 – 13.0mm)
14.5 – 13.5	A33 56010 1450	.571 – .531" (14.5 – 13.5mm)
15.0 – 14.0	A33 56010 1500	.591 – .551" (15.0 – 14.0mm)
15.5 – 14.5	A33 56010 1550	.610 – .571" (15.5 – 14.5mm)
16.0 – 15.0	A33 56010 1600	.630 – .591" (16.0 – 15.0mm)
16.5 – 15.5	A33 56010 1650	.650 – .610" (16.5 – 15.5mm)
17.0 – 16.0	A33 56010 1700	.669 – .630" (17.0 – 16.0mm)
17.5 – 16.5	A33 56010 1750	.689 – .650" (17.5 – 16.5mm)
18.0 – 17.0	A33 56010 1800	.709 – .669" (18.0 – 17.0mm)
18.5 – 17.5	A33 56010 1850	.728 – .689" (18.5 – 17.5mm)

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

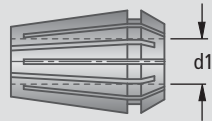
Clamping capacity:

Collet types ER16UP, ER20UP, ER25UP, ER32UP and ER40UP have a clamping range of .0394 inch(1.0 mm).

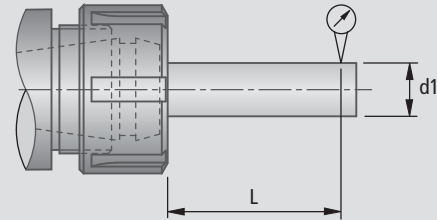
Collet - Inch / Metric

Ultra Style Precision

for use with ABS® SZV Collet Holders



Accuracy indication of ultra precision collets



Description	Order No.	d1
ER40 UP 18.5 – 17.5	A33 56010 1850	.728 – .689" (18.5 – 17.5mm)
19.0 – 18.0	A33 56010 1900	.748 – .709" (19.0 – 18.0mm)
19.5 – 18.5	A33 56010 1950	.768 – .728" (19.5 – 18.5mm)
20.0 – 19.0	A33 56010 2000	.787 – .748" (20.0 – 19.0mm)
20.5 – 19.5	A33 56010 2050	.807 – .768" (20.5 – 19.5mm)
21.0 – 20.0	A33 56010 2100	.827 – .787" (21.0 – 20.0mm)
21.5 – 20.5	A33 56010 2150	.846 – .807" (21.5 – 20.5mm)
22.0 – 21.0	A33 56010 2200	.866 – .827" (22.0 – 21.0mm)
22.5 – 21.5	A33 56010 2250	.886 – .846" (22.5 – 21.5mm)
23.0 – 22.0	A33 56010 2300	.906 – .866" (23.0 – 22.0mm)
23.5 – 22.5	A33 56010 2350	.925 – .886" (23.5 – 22.5mm)
24.0 – 23.0	A33 56010 2400	.945 – .906" (24.0 – 23.0mm)
24.5 – 23.5	A33 56010 2450	.965 – .925" (24.5 – 23.5mm)
25.0 – 24.0	A33 56010 2500	.984 – .945" (25.0 – 24.0mm)
25.5 – 24.5	A33 56010 2550	1.004 – .965" (25.5 – 24.5mm)
26.0 – 25.0	A33 56010 2600	1.024 – .984" (26.0 – 25.0mm)

d1	d1*	TIR**
.236" (6 mm)	.039" – .063" (1.0 – 1.6 mm)	.0004" (0.010 mm)
.394" (10 mm)	.063" – .118" (1.6 – 3.0 mm)	.0004" (0.010 mm)
.630" (16 mm)	.118" – .236" (3.0 – 6.0 mm)	.0004" (0.010 mm)
.984" (25 mm)	.236" – .394" (6.0 – 10.0 mm)	.0004" (0.010 mm)
1.575" (40 mm)	.394" – .709" (10.0 – 18.0 mm)	.0006" (0.015 mm)
1.969" (50 mm)	.709" – 1.024" (18.0 – 26.0 mm)	.0006" (0.015 mm)
2.362" (60 mm)	1.024" – 1.339" (26.0 – 34.0 mm)	.0008" (0.020 mm)

Note:

* Tool shank diameter d1 must not be greater than collet nominal dimension d1 (risk of fracture)

** These indications refer to the collets with collet holder.

Note:

When the collet is compressed to more than 50% of its clamping range, the next size smaller collet should be used to optimize concentricity as shown in the table.

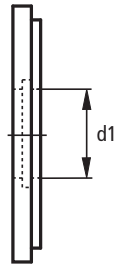
Clamping capacity:

Collet types ER16UP, ER20UP, ER25UP, ER32UP and ER40UP have a clamping range of .0394 inch(1.0 mm).

Seal Disc - Inch / Metric

Seal Disc

for use with ABS® SZV Collet Holders
using IC/ER or KC/ER type nut



Description	Order No.	d1
DS/ER 16/ 3.5 – 3.0	5280616035	.1377 – .1181" (3.5 – 3.0mm)
4.0 – 3.5	5280616040	.1574 – .1377" (4.0 – 3.5mm)
4.5 – 4.0	5280616045	.1771 – .1574" (4.5 – 4.0mm)
5.0 – 4.5	5280616050	.1968 – .1771" (5.0 – 4.5mm)
5.5 – 5.0	5280616055	.2165 – .1968" (5.5 – 5.0mm)
6.0 – 5.5	5280616060	.2362 – .2165" (6.0 – 5.5mm)
6.5 – 6.0	5280616065	.2559 – .2362" (6.5 – 6.0mm)
7.0 – 6.5	5280616070	.2755 – .2559" (7.0 – 6.5mm)
7.5 – 7.0	5280616075	.2952 – .2755" (7.5 – 7.0mm)
8.0 – 7.5	5280616080	.3149 – .2952" (8.0 – 7.5mm)
8.5 – 8.0	5280616085	.3346 – .3149" (8.5 – 8.0mm)
9.0 – 8.5	5280616090	.3543 – .3346" (9.0 – 8.5mm)
9.5 – 9.0	5280616095	.3740 – .3543" (9.5 – 9.0mm)
10.0 – 9.5	5280616100	.3937 – .3740" (10.0 – 9.5mm)
DS/ER 20/ 3.5 – 3.0	5280620035	.1377 – .1181" (3.5 – 3.0mm)
4.0 – 3.5	5280620040	.1574 – .1377" (4.0 – 3.5mm)
4.5 – 4.0	5280620045	.1771 – .1574" (4.5 – 4.0mm)
5.0 – 4.5	5280620050	.1968 – .1771" (5.0 – 4.5mm)
5.5 – 5.0	5280620055	.2165 – .1968" (5.5 – 5.0mm)
6.0 – 5.5	5280620060	.2362 – .2165" (6.0 – 5.5mm)
6.5 – 6.0	5280620065	.2559 – .2362" (6.5 – 6.0mm)
7.0 – 6.5	5280620070	.2755 – .2559" (7.0 – 6.5mm)
7.5 – 7.0	5280620075	.2952 – .2755" (7.5 – 7.0mm)
8.0 – 7.5	5280620080	.3149 – .2952" (8.0 – 7.5mm)
8.5 – 8.0	5280620085	.3346 – .3149" (8.5 – 8.0mm)
9.0 – 8.5	5280620090	.3543 – .3346" (9.0 – 8.5mm)
9.5 – 9.0	5280620095	.3740 – .3543" (9.5 – 9.0mm)
10.0 – 9.5	5280620100	.3937 – .3740" (10.0 – 9.5mm)
10.5 – 10.0	5280620105	.4133 – .3937" (10.5 – 10.0mm)
11.0 – 10.5	5280620110	.4330 – .4133" (11.0 – 10.5mm)
11.5 – 11.0	5280620115	.4527 – .4330" (11.5 – 11.0mm)
12.0 – 11.5	5280620120	.4724 – .4527" (12.0 – 11.5mm)
12.5 – 12.0	5280620125	.4921 – .4724" (12.5 – 12.0mm)
13.0 – 12.5	5280620130	.5118 – .4921" (13.0 – 12.5mm)
DS/ER 25/ 3.5 – 3.0	5280620135	.1377 – .1181" (3.5 – 3.0mm)

Description	Order No.	d1
DS/ER 25/ 4.0 – 3.5	5280625040	.1574 – .1377" (4.0 – 3.5mm)
4.5 – 4.0	5280625045	.1771 – .1574" (4.5 – 4.0mm)
5.0 – 4.5	5280625050	.1968 – .1771" (5.0 – 4.5mm)
5.5 – 5.0	5280625055	.2165 – .1968" (5.5 – 5.0mm)
6.0 – 5.5	5280625060	.2362 – .2165" (6.0 – 5.5mm)
6.5 – 6.0	5280625065	.2559 – .2362" (6.5 – 6.0mm)
7.0 – 6.5	5280625070	.2755 – .2559" (7.0 – 6.5mm)
7.5 – 7.0	5280625075	.2952 – .2755" (7.5 – 7.0mm)
8.0 – 7.5	5280625080	.3149 – .2952" (8.0 – 7.5mm)
8.5 – 8.0	5280625085	.3346 – .3149" (8.5 – 8.0mm)
9.0 – 8.5	5280625090	.3543 – .3346" (9.0 – 8.5mm)
9.5 – 9.0	5280625095	.3740 – .3543" (9.5 – 9.0mm)
10.0 – 9.5	5280625100	.3937 – .3740" (10.0 – 9.5mm)
10.5 – 10.0	5280625105	.4133 – .3937" (10.5 – 10.0mm)
11.0 – 10.5	5280625110	.4330 – .4133" (11.0 – 10.5mm)
11.5 – 11.0	5280625115	.4527 – .4330" (11.5 – 11.0mm)
12.0 – 11.5	5280625120	.4724 – .4527" (12.0 – 11.5mm)
12.5 – 12.0	5280625125	.4921 – .4724" (12.5 – 12.0mm)
13.0 – 12.5	5280625130	.5118 – .4921" (13.0 – 12.5mm)
13.5 – 13.0	5280625135	.5314 – .5118" (13.5 – 13.0mm)
14.0 – 13.5	5280625140	.5511 – .5314" (14.0 – 13.5mm)
14.5 – 14.0	5280625145	.5708 – .5511" (14.5 – 14.0mm)
15.0 – 14.5	5280625150	.5905 – .5708" (15.0 – 14.5mm)
15.5 – 15.0	5280625155	.6102 – .5905" (15.5 – 15.0mm)
16.0 – 15.5	5280625160	.6299 – .6102" (16.0 – 15.5mm)
DS/ER 32/ 3.5 – 3.0	5280632035	.1377 – .1181" (3.5 – 3.0mm)
4.0 – 3.5	5280632040	.1574 – .1377" (4.0 – 3.5mm)
4.5 – 4.0	5280632045	.1771 – .1574" (4.5 – 4.0mm)
5.0 – 4.5	5280632050	.1968 – .1771" (5.0 – 4.5mm)
5.5 – 5.0	5280632055	.2165 – .1968" (5.5 – 5.0mm)
6.0 – 5.5	5280632060	.2362 – .2165" (6.0 – 5.5mm)
6.5 – 6.0	5280632065	.2559 – .2362" (6.5 – 6.0mm)
7.0 – 6.5	5280632070	.2755 – .2559" (7.0 – 6.5mm)
7.5 – 7.0	5280632075	.2952 – .2755" (7.5 – 7.0mm)
8.0 – 8.5	5280632080	.3149 – .2952" (8.0 – 8.5mm)

Seal Disc application:

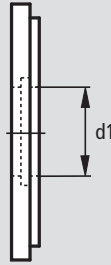
The DS/ER Seal Discs are to be used with the IC/ER or KC/ER type nut and will convert a standard holder to a sealed coolant through holder that will contain pressures up to 2,000 PSI. The DS/ER discs have a sealing range of .020" (0.5 mm) per disc and not only keep the coolant contained, but also serve to keep chips out of the collet clamping area.

Seal Disc - Inch / Metric



Seal Disc

for use with ABS® SZV Collet Holders
using IC/ER or KC/ER type nut

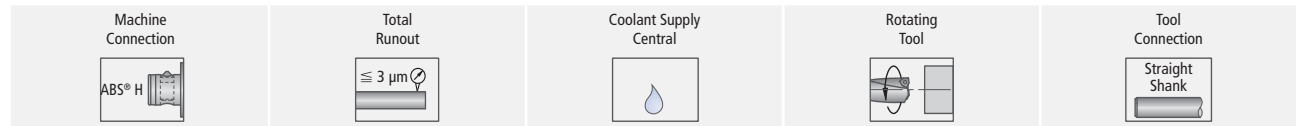


Description	Order No.	d1
DS/ER 32/ 8.5 – 8.0	5280632085	.3346 – .3149" (8.5 – 8.0mm)
9.0 – 8.5	5280632090	.3543 – .3346" (9.0 – 8.5mm)
9.5 – 9.0	5280632095	.3740 – .3543" (9.5 – 9.0mm)
10.0 – 9.5	5280632100	.3937 – .3740" (10.0 – 9.5mm)
10.5 – 10.0	5280632105	.4133 – .3937" (10.5 – 10.0mm)
11.0 – 10.5	5280632110	.4330 – .4133" (11.0 – 10.5mm)
11.5 – 11.0	5280632115	.4527 – .4330" (11.5 – 11.0mm)
12.0 – 11.5	5280632120	.4724 – .4527" (12.0 – 11.5mm)
12.5 – 12.0	5280632125	.4921 – .4724" (12.5 – 12.0mm)
13.0 – 12.5	5280632130	.5118 – .4921" (13.0 – 12.5mm)
13.5 – 13.0	5280632135	.5314 – .5118" (13.5 – 13.0mm)
14.0 – 13.5	5280632140	.5511 – .5314" (14.0 – 13.5mm)
14.5 – 14.0	5280632145	.5708 – .5511" (14.5 – 14.0mm)
15.0 – 14.5	5280632150	.5905 – .5708" (15.0 – 14.5mm)
15.5 – 15.0	5280632155	.6102 – .5905" (15.5 – 15.0mm)
16.0 – 15.5	5280632160	.6299 – .6102" (16.0 – 15.5mm)
16.5 – 16.0	5280632165	.6496 – .6299" (16.5 – 16.0mm)
17.0 – 16.5	5280632170	.6693 – .6496" (17.0 – 16.5mm)
17.5 – 17.0	5280632175	.6890 – .6693" (17.5 – 17.0mm)
18.0 – 17.5	5280632180	.7087 – .6890" (18.0 – 17.5mm)
18.5 – 18.0	5280632185	.7283 – .7087" (18.5 – 18.0mm)
19.0 – 18.5	5280632190	.7480 – .7283" (19.0 – 18.5mm)
19.5 – 19.0	5280632195	.7677 – .7480" (19.5 – 19.0mm)
20.0 – 19.5	5280632200	.7874 – .7677" (20.0 – 19.5mm)
DS/ER 40/ 3.5 – 3.0	5280633035	.1377 – .1181" (3.5 – 3.0mm)
4.0 – 3.5	5280633040	.1574 – .1377" (4.0 – 3.5mm)
4.5 – 4.0	5280633045	.1771 – .1574" (4.5 – 4.0mm)
5.0 – 4.5	5280633050	.1968 – .1771" (5.0 – 4.5mm)
5.5 – 5.0	5280633055	.2165 – .1968" (5.5 – 5.0mm)
6.0 – 5.5	5280633060	.2362 – .2165" (6.0 – 5.5mm)
6.5 – 6.0	5280633065	.2559 – .2362" (6.5 – 6.0mm)
7.0 – 6.5	5280633070	.2755 – .2559" (7.0 – 6.5mm)
7.5 – 7.0	5280633075	.2952 – .2755" (7.5 – 7.0mm)
8.0 – 7.5	5280633080	.3149 – .2952" (8.0 – 7.5mm)
8.5 – 8.0	5280633085	.3346 – .3149" (8.5 – 8.0mm)

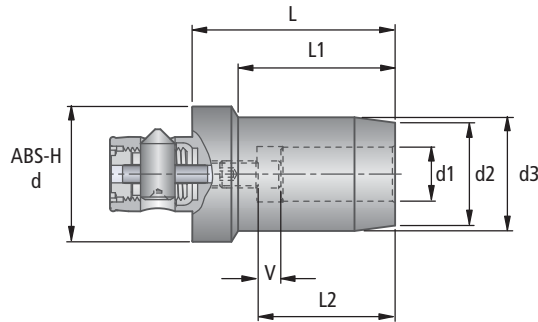
Description	Order No.	d1
DS/ER 40/ 9.0 – 8.5	5280633090	.3543 – .3346" (9.0 – 8.5mm)
9.5 – 9.0	5280633095	.3740 – .3543" (9.5 – 9.0mm)
10.0 – 9.5	5280633100	.3937 – .3740" (10.0 – 9.5mm)
10.5 – 10.0	5280633105	.4133 – .3937" (10.5 – 10.0mm)
11.0 – 10.5	5280633110	.4330 – .4133" (11.0 – 10.5mm)
11.5 – 11.0	5280633115	.4527 – .4330" (11.5 – 11.0mm)
12.0 – 11.5	5280633120	.4724 – .4527" (12.0 – 11.5mm)
12.5 – 12.0	5280633125	.4921 – .4724" (12.5 – 12.0mm)
13.0 – 12.5	5280633130	.5118 – .4921" (13.0 – 12.5mm)
13.5 – 13.0	5280633135	.5314 – .5118" (13.5 – 13.0mm)
14.0 – 13.5	5280633140	.5511 – .5314" (14.0 – 13.5mm)
14.5 – 14.0	5280633145	.5708 – .5511" (14.5 – 14.0mm)
15.0 – 14.5	5280633150	.5905 – .5708" (15.0 – 14.5mm)
15.5 – 15.0	5280633155	.6102 – .5905" (15.5 – 15.0mm)
16.0 – 15.5	5280633160	.6299 – .6102" (16.0 – 15.5mm)
16.5 – 16.0	5280633165	.6496 – .6299" (16.5 – 16.0mm)
17.0 – 16.5	5280633170	.6693 – .6496" (17.0 – 16.5mm)
17.5 – 17.0	5280633175	.6890 – .6693" (17.5 – 17.0mm)
18.0 – 17.5	5280633180	.7087 – .6890" (18.0 – 17.5mm)
18.5 – 18.0	5280633185	.7283 – .7087" (18.5 – 18.0mm)
19.0 – 18.5	5280633190	.7480 – .7283" (19.0 – 18.5mm)
19.5 – 19.0	5280633195	.7677 – .7480" (19.5 – 19.0mm)
20.0 – 19.5	5280633200	.7874 – .7677" (20.0 – 19.5mm)
20.5 – 20.0	5280633205	.8071 – .7874" (20.5 – 20.0mm)
21.0 – 20.5	5280633210	.8268 – .8071" (21.0 – 20.5mm)
21.5 – 21.0	5280633215	.8465 – .8268" (21.5 – 21.0mm)
22.0 – 21.5	5280633220	.8661 – .8465" (22.0 – 21.5mm)
22.5 – 22.0	5280633225	.8858 – .8661" (22.5 – 22.0mm)
23.0 – 22.5	5280633230	.9055 – .8858" (23.0 – 22.5mm)
23.5 – 23.0	5280633235	.9252 – .9055" (23.5 – 23.0mm)
24.0 – 23.5	5280633240	.9449 – .9252" (24.0 – 23.5mm)
24.5 – 24.0	5280633245	.9646 – .9449" (24.5 – 24.0mm)
25.0 – 24.5	5280633250	.9843 – .9646" (25.0 – 24.5mm)
25.5 – 25.0	5280633255	1.0039 – .9843" (25.5 – 25.0mm)
26.0 – 25.5	5280633260	1.0236 – 1.0039" (26.0 – 25.5mm)

Seal Disc application:

The DS/ER Seal Discs are to be used with the IC/ER or KC/ER type nut and will convert a standard holder to a sealed coolant through holder that will contain pressures up to 2,000 PSI. The DS/ER discs have a sealing range of .020" (0.5 mm) per disc and not only keep the coolant contained, but also serve to keep chips out of the collet clamping area.



Hydraulic Chuck (Inch)



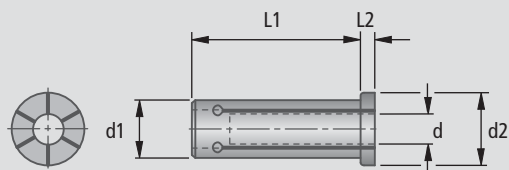
ABS® H										Replacement Parts	
Order No.	ABS-H d	d1	d2	d3	L	L1	L2	V	lbs	Adjusting Screw	
										Description	Order No.
A32 33050	40	.250	.866	1.02	2.16	1.37	1.45	0.394	1.30	M5X12	N00 71000
A32 33060		.375	1.02	1.18	2.36	1.61	1.61	0.394	0.92	M8X1X16	N00 71120
A32 33070		.500	1.10	1.25	2.55	1.85	1.81	0.394	1.01	M10X1X18	N00 71220
A32 43080	50	.250	.866	1.02	2.16	1.29	1.45	0.394	1.17	M5X16	N00 71000
A32 43090		.375	1.02	1.18	2.36	1.53	1.61	0.394	1.32	M8X1X16	N00 71120
A32 43100		.500	1.10	1.25	2.55	1.75	1.81	0.394	1.23	M10X1X18	N00 71230
A32 43110		.625	1.33	1.49	2.75	2.02	1.92	0.394	1.34	M14X1X19	N00 71410
A32 43120		.750	1.49	1.65	2.95	2.28	2.00	0.394	1.32	M16X1X21	N00 71500
A32 43130		.875	1.81	2.04	2.95	2.28	2.00	0.394	1.32	M16X1X21	N00 71500

Delivery:

Hydraulic chuck with adjusting screw.

- **Axial adjustment:** Adjustment is made by the ABS® -H spigot with a hexagonal key.
- **Coolant:** Internal central coolant supply onto cutting edge.
- **ABS® -H tool connection:** ABS® -H, the ABS® variation for use where greater concentricity is required, is fully compatible with the ABS® standard program. During the clamping operation, the design of the ABS® -H compensates for play in the connection.
- **Closed system:** The system is fully sealed. No dirt, coolant, lubricants or chips can penetrate.
- **Accuracy:** Maximum long-term concentricity and repeatability of $\leq 3 \mu\text{m}$. Because of evenly distributed application of the cutting edges, low wear and good operational safety. Tool life can often be increased more than four times.
- **Reducer sleeve:** Using slotted reducer sleeves several shank diameters can be clamped with one expanding chuck.
- **Spindle speed:** If the spindle speed exceeds 15,000 RPM, the tool and the hydraulic chuck must be balanced.
- **Maintenance free**

Reducer Bushing for Hydraulic Clamping Chucks

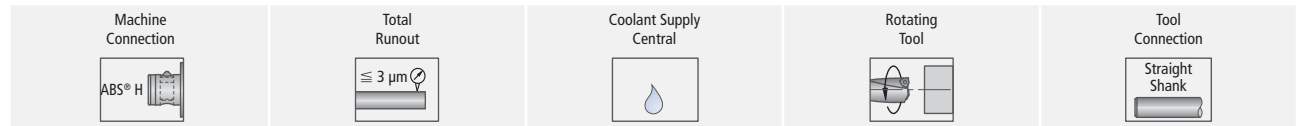


with flange grooves for peripheral coolant

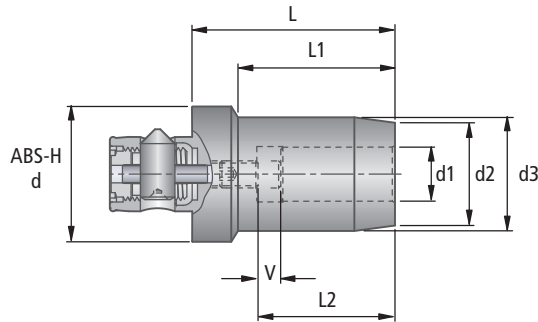
Reducer Bushing (Inch)						
Order No.	d	d1	d2	L1	L2	lbs
L01 13400	.250	.750	.980	2.00	0.78	
L01 13410	.312					
L01 13420	.375					
L01 13430	.437					
L01 13440	.500					
L01 13450	.625					

Gauge Pin	
Order No.	d1
L00 00080	6
L00 00090	8
L00 00100	10
L00 00110	12
L00 00130	16
L00 00070	20
L00 00160	32

Cylindrical Brush	
Order No.	d1
4779116206	6
4779116208	8
4779116210	10
4779116212	12
4779116216	16
4779116220	20
4779116232	32



Hydraulic Chuck (Metric)



All dimensions are in mm

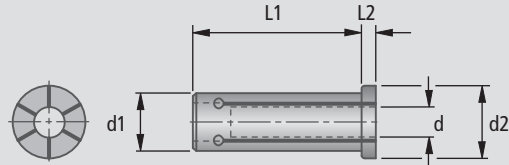
ABS® H										Replacement Parts	
Order No.	ABS-H d	d1	d2	d3	L	L1	L2	V	lbs	Adjusting Screw	
										Description	Order No.
A32 32050	40	6	22	26	55	35	37	10	0.59	M5X12	N00 71020
A32 32060		8	24	28	60	36	37	10	0.42	M6X12	N00 71070
A32 32070		10	26	30	65	41	42	10	0.46	M8X1X12	N00 71730
A32 32080		12	28	32	65	47	47	10	0.43	M10X1X12	N00 71800
A32 42110	50	6	22	26	55	33	37	10	0.53	M5X12	N00 71020
A32 42120		8	24	28	55	33.5	37	10	0.60	M6X12	N00 71070
A32 42130		10	26	30	65	39	42	10	0.56	M8X1X12	N00 71730
A32 42140		12	28	32	65	44.5	47	10	0.61	M10X1X12	N00 71800
A32 42150		14	30	34	65	46	47	10	0.60	M12X1X12	N00 71860
A32 42160		16	34	38	70	51.5	52	10			N00 71450
A32 42170		18	36	40	70	52	52	10	0.75		N00 71450
A32 42101		20	38	42	75	58	52	10	0.80	M16X1X16	N00 71540

Delivery:

Hydraulic chuck with adjusting screw.

- **Axial adjustment:** Adjustment is made by the ABS® -H spigot with a hexagonal key.
- **Coolant:** Internal central coolant supply onto cutting edge.
- **ABS® -H tool connection:** ABS® -H, the ABS® variation for use where greater concentricity is required, is fully compatible with the ABS® standard program. During the clamping operation, the design of the ABS® -H compensates for play in the connection.
- **Closed system:** The system is fully sealed. No dirt, coolant, lubricants or chips can penetrate.
- **Accuracy:** Maximum long-term concentricity and repeatability of $\leq 3 \mu\text{m}$. Because of evenly distributed application of the cutting edges, low wear and good operational safety. Tool life can often be increased more than four times.
- **Reducer sleeve:** Using slotted reducer sleeves several shank diameters can be clamped with one expanding chuck.
- **Spindle speed:** If the spindle speed exceeds 15,000 RPM, the tool and the hydraulic chuck must be balanced.
- **Maintenance free**

Reducer Bushing for Hydraulic Clamping Chucks



with flange grooves for peripheral coolant

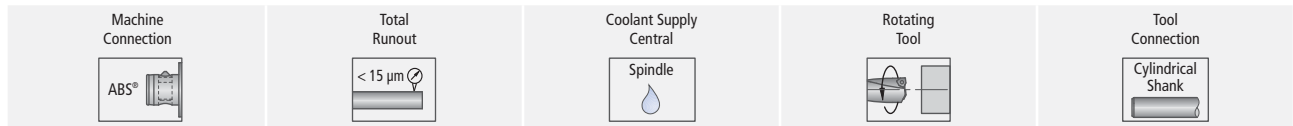
All dimensions are in mm

Reducer Bushing (Metric)						
Order No.	d	d1	d2	L1	L2	lbs
L01 13290	3	12	19	45	2	0.22
L01 13300	4					
L01 13310	5					
L01 13320	6					
L01 13330	8					
L01 13260	3	20	29	50.5	2	0.22
L01 13270	4					
L01 13280	5					
L01 13200	6					
L01 13210	8					
L01 13220	10					
L01 13230	12					
L01 13240	14					
L01 13250	16					
L01 13500	6					
L01 13510	8					
L01 13520	10					
L01 13530	12					
L01 13540	14					
L01 13550	16					
L01 13560	18					
L01 13570	20					
L01 13580	25					

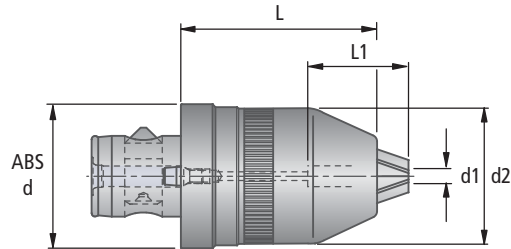
Gauge Pin	
Order No.	d1
L00 00080	6
L00 00090	8
L00 00100	10
L00 00110	12
L00 00130	16
L00 00070	20
L00 00160	32


Cylindrical Brush	
Order No.	d1
4779116206	6
4779116208	8
4779116210	10
4779116212	12
4779116216	16
4779116220	20
4779116232	32

ABS® KMDC / NCB



Short Mill Drill Chuck

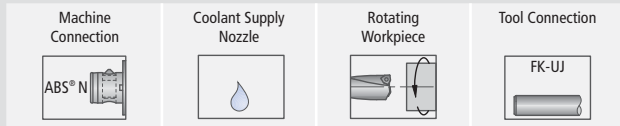


ABS®							
Order No.		ABS d	Clamping Range d1	d2	L	Clamping Depth L1	
ABS50 KMDC 0.5-13N	A34 24020	50	0.020 – 0.512	2.264	3.740	1.142	3.60
ABS50 KMDC 0.5-13C	A34 24021		0.020 – 0.512	1.949	3.740	1.142	3.40
ABS50-NCB1	A34 24030		0.020 – 0.512	1.929	3.740	1.142	3.43
ABS50-NCB2	A34 24040		0.118 – 0.630	2.047	3.740	1.142	3.52
ABS63 KMDC 3-16C	A34 25031	63	0.118 – 0.630	2.047	3.740	1.142	4.00

Delivery:

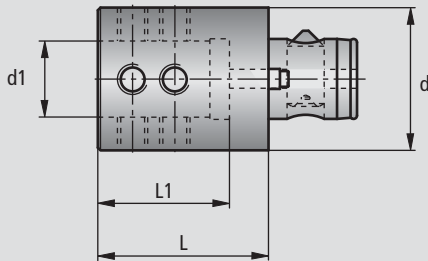
Short drill chuck complete with hex socket wrench, interchangeable seals and seal changing tool.

- the max. spindle speed of the A 342 short drill chucks is **6,500 RPM**
- A balanced version is available on request with a max. spindle speed of **20,000 RPM**
- higher clamping force (also suitable for milling)



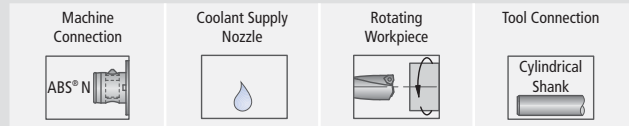
Clamping Unit with ABS® N Connection

ABS® N -BA-FK-UJ
for FK-UJ boring bars



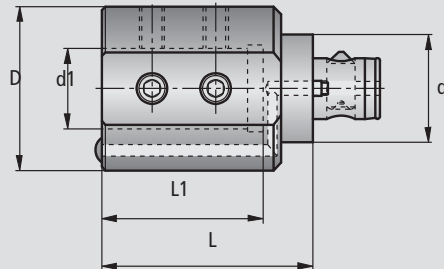
(..) = mm

ABS® N					
Description	Order No.	ABS-N d	d1	L	L1
ABS 50N BA FK1UJ-16	A35 14061	50	0.630 (16)	1.969 (50)	1.614 (41)



Clamping Unit with ABS® N Connection

ABS® N -BA
for straight shank boring bars



(..) = mm

ABS® N						
Description	Order No.	ABS-N d	d1	D	L	L1
ABS 50N BA .250	A35 04311	50	0.250	1.417 (36)	1.378 (35)	0.709 (18)
ABS 50N BA .312	A35 04321	50	0.312	1.417 (36)	1.378 (35)	0.709 (18)
ABS 50N BA .375	A35 04331	50	0.375	1.496 (38)	1.575 (40)	0.866 (22)
ABS 50N BA .500	A35 04341	50	0.500	1.575 (40)	1.772 (45)	1.063 (27)
ABS 50N BA .625	A35 04351	50	0.625	1.732 (40)	1.969 (50)	1.299 (33)
ABS 50N BA .750	A35 04361	50	0.750	1.890 (48)	2.362 (60)	1.595 (40.5)
ABS 50N BA 1.000	A35 04371	50	1.000	2.087 (53)	2.756 (70)	1.929 (49)
ABS 50N BA 1.250	A35 04381	50	1.250	2.677 (68)	3.346 (85)	2.461 (62.5)

Replacement Parts		
Coolant Nozzle		Coolant Nozzle Wrench
Description	Order No.	Order No.
M10×1.5	N00 80080	L05 04030

THERMOGRIP® Thermal Expansion System



Features of the Thermal Expansion System

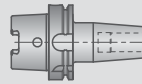
- rapid thermal expansion and shrinkage
- maximum clamping forces can be achieved
- longer tool life and spindle life
- good surfaces due to high rigidity produced by tool clamping
- good bending and radial rigidity even with long overhangs
- narrow chuck design
- clamping for solid carbide and HSS tools for shank tolerance h6, $\lt; \text{Ø } 6 \text{ h5}$ to DIN 6335 and DIN 1835 possible with the same chucks
- by using a special heat resistant steel and a special heat treatment process the chucks have particularly good durability and stable form
- chuck concentricity $\leq 3 \mu\text{m}$
- used for extremely high spindle speeds



Shrinker® is a registered trademark of Tooling Innovations, Dana Point, CA.

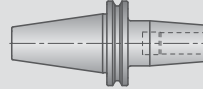


HSK-A Thermal Expansion Chuck



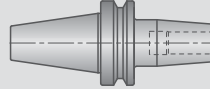
1.88

CAT-Standard Thermal Expansion Chuck



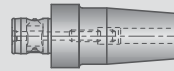
1.89 – 1.90

BT-Standard Thermal Expansion Chuck



1.91

ABS® Thermal Expansion Chuck



1.92

Measuring Adapter

1.93

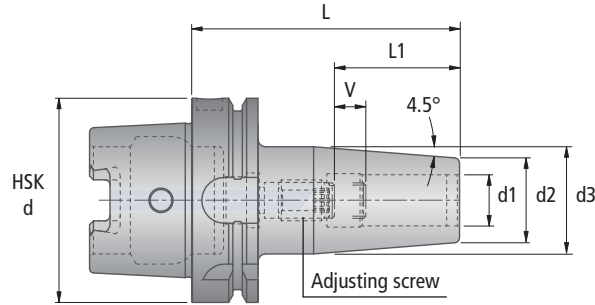
Technical Information

1.94 – 1.95



Machine Connection 	Balancing Note (Chapter 9) Pre-balanced Q6.3 18,000 RPM	Balancing Note up to HSK80 Pre-balanced Q6.3 12,000 RPM	Coolant Supply Central 	Rotating Tool 	Tool Connection Cylindrical Shank 	Tool Connection Weldon Shank
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Thermal Expansion Chuck - Short (Metric)



All dimensions are in mm

Description	Order No.	HSK d	d1	d2	d3	L	L1	V	lbs	Replacement Parts	
										Adjusting screw	
										Description	Order No.
HSK-A63-T6	A06 36040	63	6	21	27	80	36	10	1.76	M5/SW2.5	N00 72000
HSK-A63-T8	A06 36050		8	21	27	80	36	10	1.76	M6/SW3	N00 72010
HSK-A63-T10	A06 36061		10	24	32	85	42	10	1.98	M8×1/SW4	N00 72050
HSK-A63-T12	A06 36071		12	24	32	90	47	10	1.98	M10×1/SW5	N00 72060
HSK-A63-T14	A06 36081		14	27	34	90	47	10	2.16	M10×1/SW5	N00 72060
HSK-A63-T16	A06 36091		16	27	34	95	50	10	1.98	M12×1/SW6	N00 72070
HSK-A63-T18	A06 36101		18	33	42	95	50	10	2.51	M12×1/SW6	N00 72070
HSK-A63-T20	A06 36111		20	33	42	100	52	10	2.60	M16×1/SW8	N00 72080
HSK-A63-T25	A06 36121		25	44	53	115	58	10	3.81	M16×1/SW8	N00 72080
HSK-A63-T32	A06 36131		32	44	53	120	58	10	3.66	M16×1/SW8	N00 72080

Tool shank tolerance

h5 for shanks < 6 mm
 h6 for shanks ≥ 6 mm

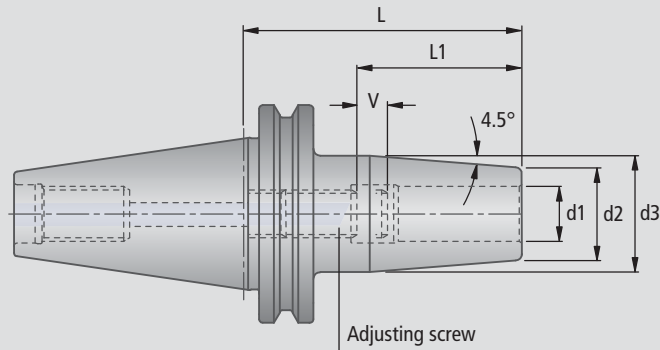
Delivery:

Thermal expansion chuck complete. Please order coolant supply connection and key separately (Chapter 8).



Machine Connection 	Balancing Note (Chapter 9) Pre-balanced Q6.3 15,000 RPM	Coolant Supply Central 	Rotating Tool 	Tool Connection Cylindrical Shank 	Tool Connection Weldon Shank
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Thermal Expansion Chuck - Short (Metric)



All dimensions are in mm

Description	Order No.	CAT	d1	d2	d3	L	L1	V		Replacement Parts	
										Adjusting screw	
										Description	Order No.
CAT 40 T 6- 95	A25 56040	40	6	20	27	95	36	10		M5×18 SW2.5	N00 72000
CAT 40 T 8- 95	A25 56050		8	20	27	95	36	10		M6×20 SW3	N00 72010
CAT 40 T10- 95	A25 56060		10	24	32	95	42	10		M8×20 SW4	N00 72020
CAT 40 T12- 95	A25 56070		12	24	32	95	47	10		M8×20 SW4	N00 72020
CAT 40 T14- 95	A25 56080		14	27	34	95	47	10		M8×20 SW4	N00 72020
CAT 40 T16- 95	A25 56090		16	27	34	95	50	10		M12×20 SW6	N00 72030
CAT 40 T18- 95	A25 56100		18	33	42	95	50	10		M12×20 SW6	N00 72030
CAT 40 T20- 95	A25 56110		20	33	42	95	52	10		M16×20 SW8	N00 72040
CAT 40 T25-100	A25 56120		25	44	53	100	58	10		M16×20 SW8	N00 72040
CAT 50 T 6- 95	A25 66040	50	6	20	27	95	36	10		M5×18 SW2.5	N00 72000
CAT 50 T 8- 95	A25 66050		8	20	27	95	36	10		M6×20 SW3	N00 72010
CAT 50 T10- 95	A25 66060		10	24	32	95	42	10		M8×20 SW4	N00 72020
CAT 50 T12- 95	A25 66070		12	24	32	95	47	10		M8×20 SW4	N00 72020
CAT 50 T14- 95	A25 66080		14	27	34	95	47	10		M8×20 SW4	N00 72020
CAT 50 T16- 95	A25 66090		16	27	34	95	50	10		M12×20 SW6	N00 72030
CAT 50 T18- 95	A25 66100		18	33	42	95	50	10		M12×20 SW6	N00 72030
CAT 50 T20- 95	A25 66110		20	33	42	95	52	10		M16×20 SW8	N00 72040
CAT 50 T25-105	A25 66120		25	44	53	105	58	10		M16×20 SW8	N00 72040
CAT 50 T32-100	A25 66130		32	44	53	105	58	10		M16×20 SW8	N00 72040

Tool shank tolerance

h5 for shanks < 6 mm

h6 for shanks ≥ 6 mm

Delivery:

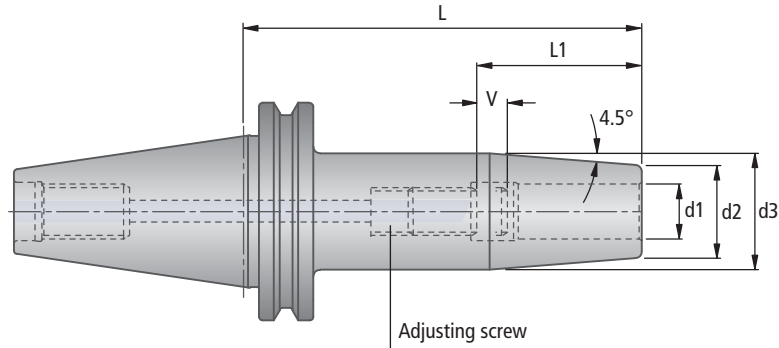
Thermal expansion chuck complete. Retention knobs not included (Chapter 8).



Note : With coolant supply through spindle, use retention knob with through hole. To close off central coolant hole, use retention knob without through hole.

Machine Connection CAT	Balancing Note (Chapter 9) Pre-balanced Q6.3 15,000 RPM	Coolant Supply Central	Rotating Tool	Tool Connection Cylindrical Shank	Tool Connection Weldon Shank
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Thermal Expansion Chuck Long (Metric)



All dimensions are in mm

Description	Order No.	CAT	d1	d2	d3	L	L1	V	lbs	Replacement Parts	
										Adjusting screw	
										Description	Order No.
CAT 40 T 6-160	A25 56240	40	6	20	32	160	36	10		M5x18 SW2.5	N00 72000
CAT 40 T 8-160	A25 56250		8	20	32	160	36	10		M6x20 SW3	N00 72010
CAT 40 T10-160	A25 56260		10	24	34	160	42	10		M8x20 SW4	N00 72020
CAT 40 T12-160	A25 56270		12	24	34	160	47	10		M8x20 SW4	N00 72020
CAT 40 T14-160	A25 56280		14	27	42	160	47	10		M8x20 SW4	N00 72020
CAT 40 T16-160	A25 56290		16	27	42	160	50	10		M12x20 SW6	N00 72030
CAT 40 T18-160	A25 56300		18	33	51	160	50	10		M12x20 SW6	N00 72030
CAT 40 T20-160	A25 56310		20	33	51	160	52	10		M16x20 SW8	N00 72040
CAT 40 T25-160	A25 56320		25	44	60	160	58	10		M16x20 SW8	N00 72040
CAT 50 T 6-160	A25 66240	50	6	20	32	160	36	10		M5x18 SW2.5	N00 72000
CAT 50 T 8-160	A25 66250		8	20	32	160	36	10		M6x20 SW3	N00 72010
CAT 50 T10-160	A25 66260		10	24	34	160	42	10		M8x20 SW4	N00 72020
CAT 50 T12-160	A25 66270		12	24	34	160	47	10		M8x20 SW4	N00 72020
CAT 50 T14-160	A25 66280		14	27	42	160	47	10		M8x20 SW4	N00 72020
CAT 50 T16-160	A25 66290		16	27	42	160	50	10		M12x20 SW6	N00 72030
CAT 50 T18-160	A25 66300		18	33	51	160	50	10		M12x20 SW6	N00 72030
CAT 50 T20-160	A25 66310		20	33	51	160	52	10		M16x20 SW8	N00 72040
CAT 50 T25-160	A25 66320		25	44	60	160	58	10		M16x20 SW8	N00 72040

Tool shank tolerance

h5 for shanks < 6 mm

h6 for shanks ≥ 6 mm

Delivery:

Thermal expansion chuck complete. Retention knobs not included (Chapter 8).

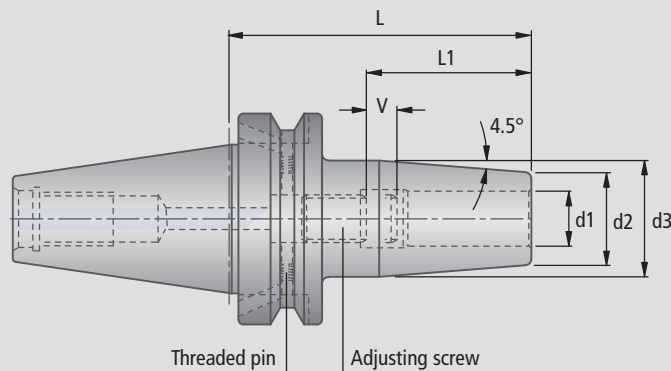


Note : With coolant supply through spindle, use retention knob with through hole. To close off central coolant hole, use retention knob without through hole.



Machine Connection BT	Balancing Note (Chapter 9) Pre-balanced Q6.3 15,000 RPM	Coolant Supply Central / Drive Collar	Rotating Tool	Tool Connection Cylindrical Shank	Tool Connection Weldon Shank
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Thermal Expansion Chuck (Metric)



All dimensions are in mm

Description	Order No.	BT	d1	d2	d3	L	L1	V	lbs	Replacement Parts		
										Adjusting screw		Threaded pin
										Description	Order No.	Order No. Description
BT 40-T 6-AD/B- 90	A25 86040	40	6	20	27	90	36	10	2.54	M5/SW2,5	N00 72000	N00 70140 M5x5
BT 40-T 8-AD/B- 90	A25 86050		8	20	27	90	36	10	2.54	M6/SW3	N00 72010	
BT 40-T10-AD/B- 90	A25 86060		10	24	32	90	42	10	2.69	M8x1/SW4	N00 72050	
BT 40-T12-AD/B- 90	A25 86070		12	24	32	90	47	10	2.67	M10x1/SW5	N00 72060	
BT 40-T14-AD/B- 90	A25 86080		14	27	34	90	47	10	2.78	M10x1/SW5	N00 72060	
BT 40-T16-AD/B- 90	A25 86090		16	27	34	90	50	10	2.71	M12x1/SW6	N00 72070	
BT 40-T18-AD/B- 90	A25 86100		18	33	42	90	50	10	3.04	M12x1/SW6	N00 72070	
BT 40-T20-AD/B- 90	A25 86110		20	33	42	90	52	10	2.98	M16x1/SW8	N00 72080	
BT 40-T25-AD/B-100	A25 86120		25	44	53	100	58	10	3.95	M16x1/SW8	N00 72080	
BT 40-T32-AD/B-100	A25 86130		32	44	53	100	58	10	3.75	M16x1/SW8	N00 72080	

Tool shank tolerance

h5 for shanks < 6 mm
h6 for shanks ≥ 6 mm

Delivery:

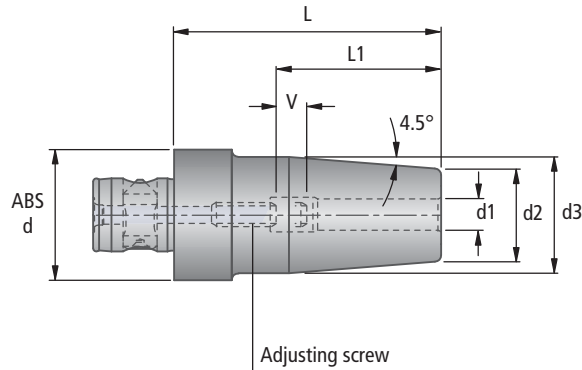
Thermal expansion chuck complete. Retention knobs not included (Chapter 8).



Note : With coolant supply through spindle, use retention knob with through hole. To close off central coolant hole, use retention knob without through hole.

Machine Connection ABS®	Balancing Note (Chapter 9) Pre-balanced Q6.3 15,000 RPM	Coolant Supply Central	Rotating Tool	Tool Connection Cylindrical Shank	Tool Connection Weldon Shank
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Thermal Expansion Chuck (Metric)



All dimensions are in mm

Description	Order No.	ABS d	d1	d2	d3	L	L1	V	lbs	Replacement Parts		
										Adjusting screw		
											Description	Order No.
ABS32-T 6	A32 26040	32	6	21	27	70	36	10	0.71	M5/SW2.5	N00 72000	
ABS32-T 8	A32 26050		8	21	27	70	36	10	0.66	M6/SW3	N00 72010	
ABS32-T10	A32 26061		10	24	32	70	42	10	0.82	M8×1/SW4	N00 72050	
ABS32-T12	A32 26071		12	24	32	80	47	10	0.88	M10×1/SW5	N00 72060	
ABS40-T 6	A32 36040	40	6	21	27	70	36	10	0.88	M5/SW2.5	N00 72000	
ABS40-T 8	A32 36050		8	21	27	70	36	10	0.86	M6/SW3	N00 72010	
ABS40-T10	A32 36061		10	24	32	70	42	10	0.97	M8×1/SW4	N00 72050	
ABS40-T12	A32 36071		12	24	32	80	47	10	1.06	M10×1/SW5	N00 72060	
ABS40-T14	A32 36081		14	27	34	80	47	10	1.17	M10×1/SW5	N00 72060	
ABS40-T16	A32 36091		16	27	34	90	50	10	1.28	M12×1/SW6	N00 72070	
ABS50-T 6	A32 46040	50	6	21	27	75	36	10	1.41	M5/SW2.5	N00 72000	
ABS50-T 8	A32 46050		8	21	27	75	36	10	1.39	M6/SW3	N00 72010	
ABS50-T10	A32 46061		10	24	32	80	42	10	1.54	M8×1/SW4	N00 72050	
ABS50-T12	A32 46071		12	24	32	80	47	10	1.50	M10×1/SW5	N00 72060	
ABS50-T14	A32 46081		14	27	34	80	47	10	1.61	M10×1/SW5	N00 72060	
ABS50-T16	A32 46091		16	27	34	85	50	10	1.57	M12×1/SW6	N00 72070	
ABS50-T18	A32 46101		18	33	42	85	50	10	1.96	M12×1/SW6	N00 72070	
ABS50-T20	A32 46111		20	33	42	90	52	10	1.98	M16×1/SW8	N00 72080	
ABS63-T 6	A32 56040	63	6	21	27	80	36	10	2.12	M5/SW2.5	N00 72000	
ABS63-T 8	A32 56050		8	21	27	80	36	10	2.09	M6/SW3	N00 72010	
ABS63-T10	A32 56061		10	24	32	80	42	10	2.21	M8×1/SW4	N00 72050	
ABS63-T12	A32 56071		12	24	32	85	47	10	2.25	M10×1/SW5	N00 72060	
ABS63-T14	A32 56081		14	27	34	85	47	10	2.36	M10×1/SW5	N00 72060	
ABS63-T16	A32 56091		16	27	34	85	50	10	2.32	M12×1/SW6	N00 72070	
ABS63-T18	A32 56101		18	33	42	90	50	10	2.76	M12×1/SW6	N00 72070	
ABS63-T20	A32 56111		20	33	42	90	52	10	2.67	M16×1/SW8	N00 72080	
ABS63-T25	A32 56121		25	44	53	95	58	10	3.55	M16×1/SW8	N00 72080	
ABS63-T32	A32 56131		32	44	53	95	58	10	3.18	M16×1/SW8	N00 72080	

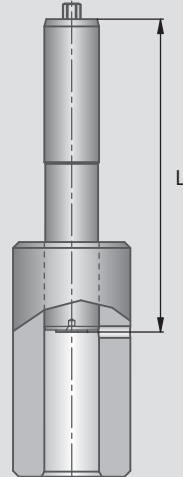
Delivery:
Thermal expansion chuck complete.

Tool shank tolerance
h5 for shanks < 6 mm
h6 for shanks ≥ 6 mm



Measuring Adapter

for pre-length adjustment of tools prior to the shrinking process



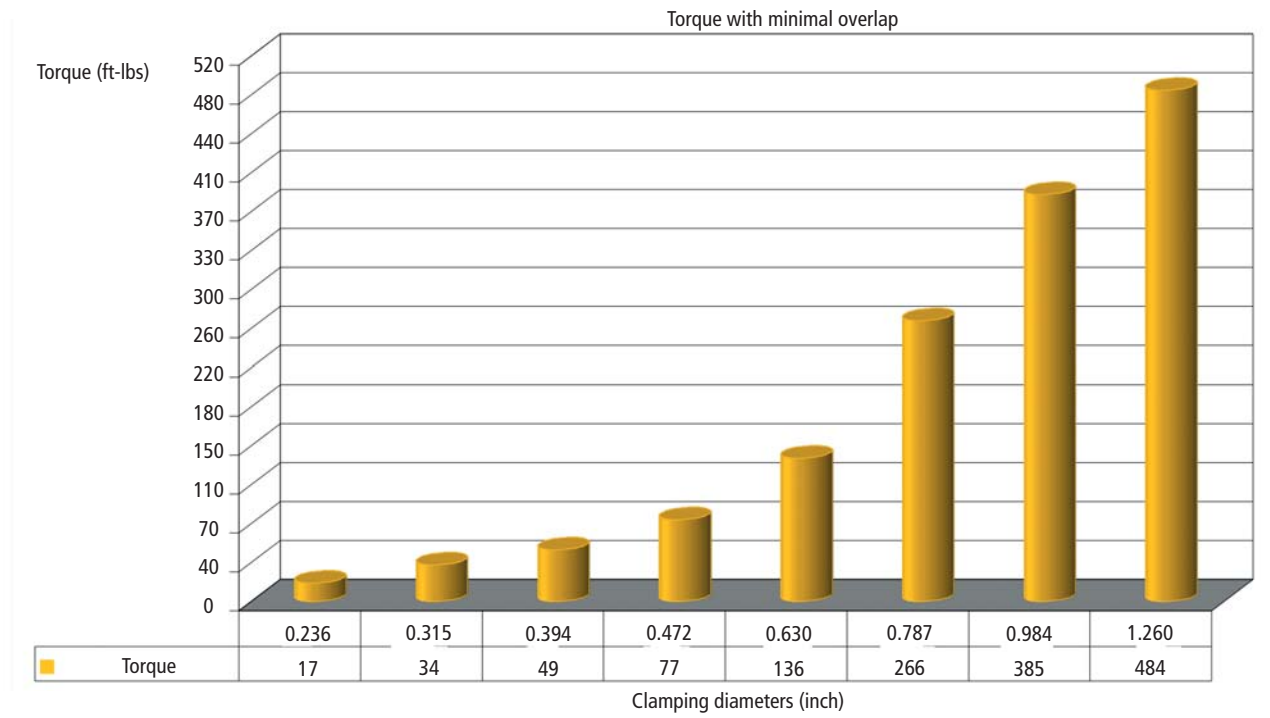
Description	Order No.	SW	L
TM 6	L05 09430	2.5	80 mm
TM 8	L05 09440	3	80 mm
TM 10	L05 09450	4	80 mm
TM 12	L05 09461	5	80 mm
TM 14	L05 09471	5	80 mm
TM 16	L05 09480	6	80 mm
TM 18	L05 09490	6	80 mm
TM 20	L05 09500	8	80 mm
TM 25	L05 09510	8	80 mm
TM 32	L05 09520	8	80 mm
TM 0.250	L05 09770	2.5	3.150 in.
TM 0.312	L05 09780	3	3.150 in.
TM 0.375	L05 09790	4	3.150 in.
TM 0.437	L05 09800	4	3.150 in.
TM 0.500	L05 09810	4	3.150 in.
TM 0.562	L05 09820	4	3.150 in.
TM 0.625	L05 09830	6	3.150 in.
TM 0.750	L05 09840	8	3.150 in.
TM 0.875	L05 09850	8	3.150 in.
TM 1.000	L05 09860	8	3.150 in.
TM 1.250	L05 09870	8	3.150 in.

for Thermogrip thermal expansion chuck Ø 12 mm and 14 mm with M8 / SW4 set screw

Description	Order No.	SW	L
TM 12	L05 09460	4	80 mm
TM 14	L05 09470	4	80 mm

Technical Information

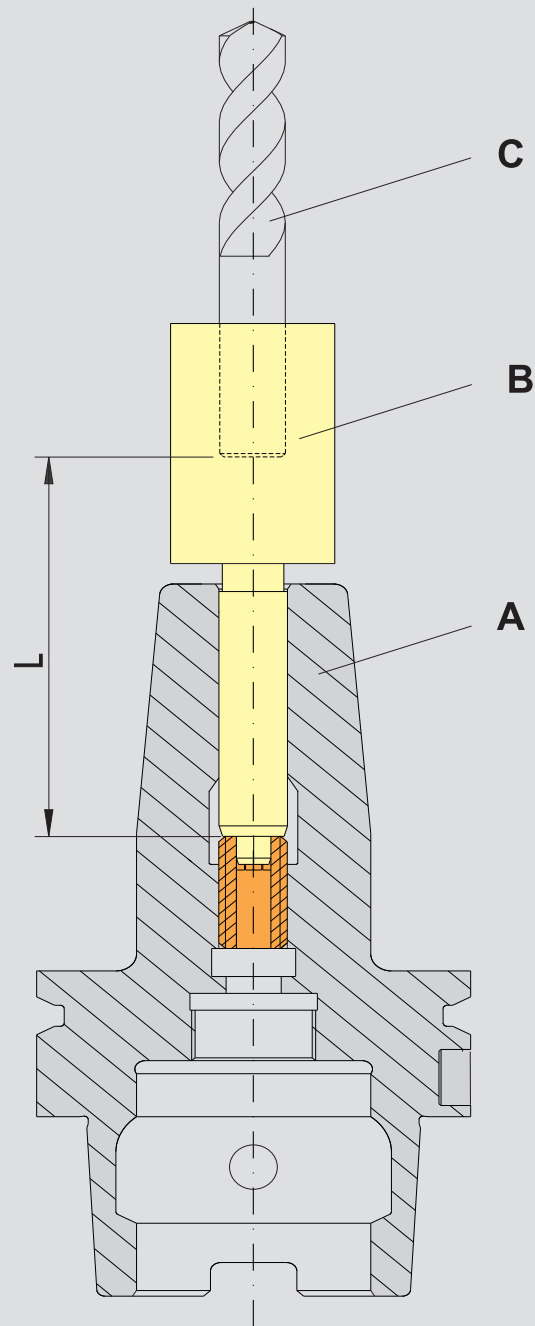
Clamping force for thermal expansion connection





Length setting the tools

The length setting is carried out before the thermal expansion process using a measuring adapter (B). This is inserted into the chuck (A) with the tool (C); by turning the adapter, the tool length is defined with an adjustment screw, allowing for the dimension L. Finally the adaptor is removed and the tool fitted by thermal expansion.



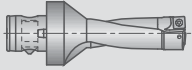
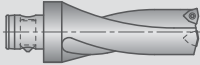
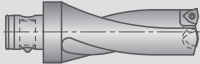


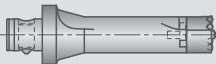


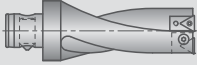

Drilling



Setting a New Trend in Solid Metal Drilling with KUB®-Indexable Insert Drills

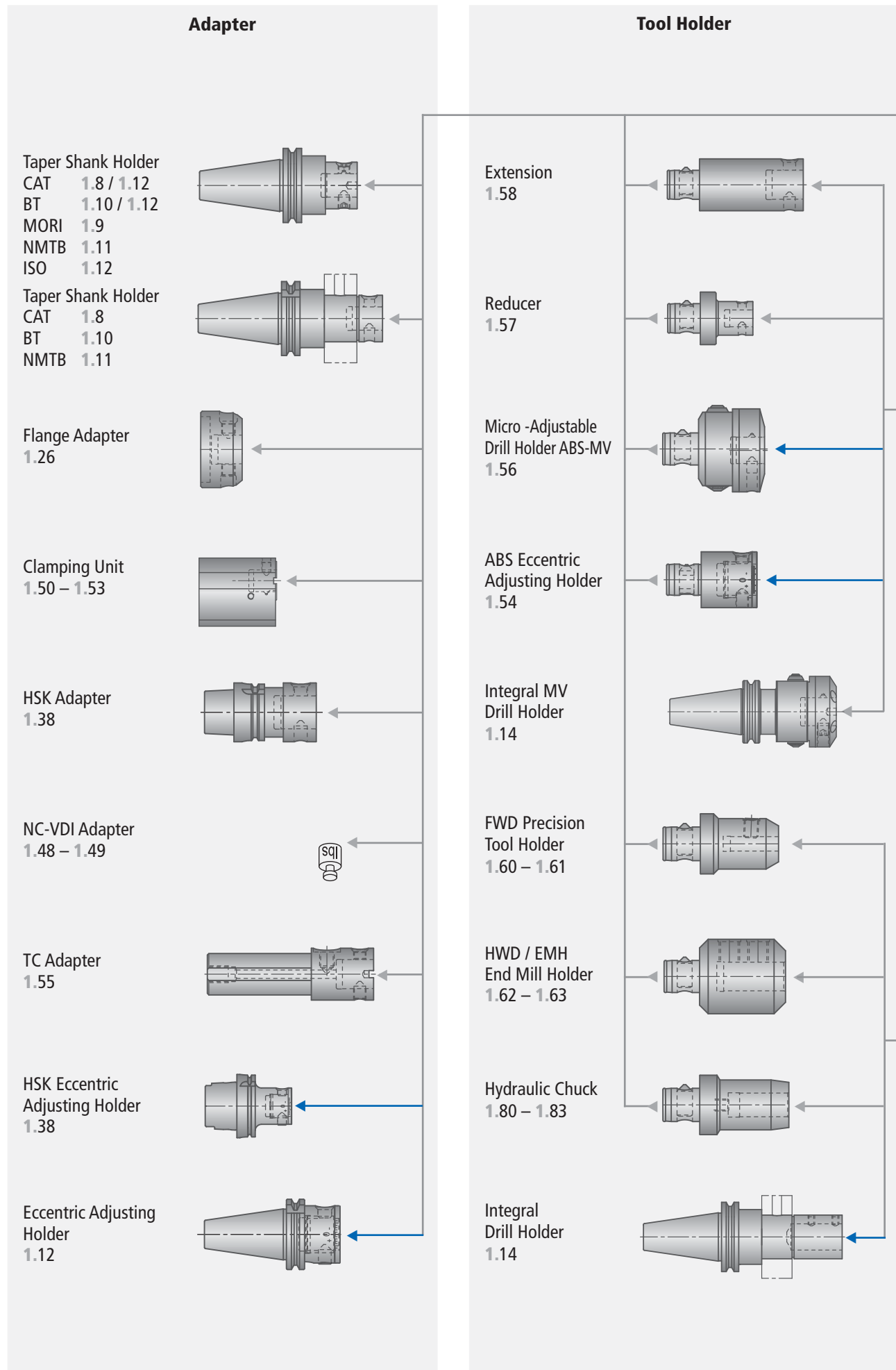
During the 1970's, we entered into an absolute virgin territory of solid metal drilling with the development of KUB® drills. Since then, the KUB® indexable insert drill family has evolved into a major leading concept in hole making. With the utilization of newest generation in high performance carbide and coatings specially designed for the KUB® drills, the possibilities are endless.



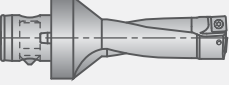
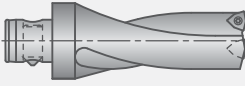
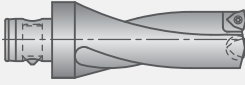
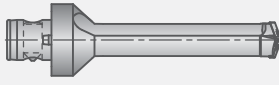

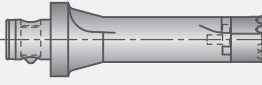

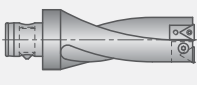
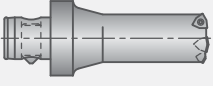
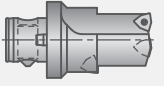
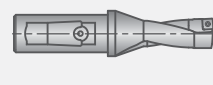
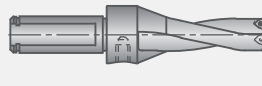
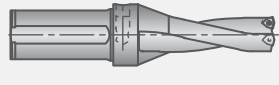
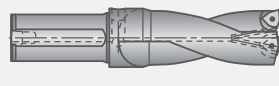
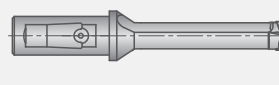

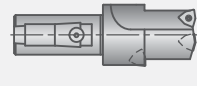
Program Summary		2.4 – 2.5
Drill Selection Guide		2.6 – 2.7
KUB Quatron®		2.8 – 2.27
KUB Trigon®		2.28 – 2.47
KUB® Drill		2.48 – 2.57
KUB Duon®		2.58 – 2.81
KUB Centron®		2.82 – 2.94
KUB Centron®		2.92 – 2.95
KUB® Drill V464		2.96 – 2.98
Solid Carbide Drill KC5 / KC7		2.100– 2.109
Flat Bottom Boring Tool		2.110 – 2.111
Stack Plate Drill		2.112



Program Summary



Drill

			Page
	KUB Quatron®	Ø 0.562"-2.500" (Ø 14-65 mm)	2.10 – 2.17
	KUB Trigon®	Ø 0.562"-1.750" (Ø 14-44 mm)	2.30 – 2.37
	KUB® Drill	Ø 1.781"-3.250" (Ø 38.5-82 mm)	2.50 – 2.53
	KUB Duon®	Ø 0.697"-1.413" (Ø 17.3-36.2 mm)	2.60 – 2.79
	KUB Centron®	Ø 0.787"-2.520" (Ø 20-64 mm)	2.84 – 2.91
	KUB Centron®	Ø 2.559"-3.189" (Ø 65-81 mm)	2.92 – 2.93
	KUB® V464	Ø 3.150"-6.102" (Ø 80-155 mm)	2.96 – 2.97
	Flat Bottom Tool	Ø 1.457"-2.520" (Ø 37-64 mm)	2.110 – 2.111
	Stackplate Drill	Ø 0.551"-3.228" (Ø 14-82 mm)	2.112
	Easy Special™	Ø 0.562"-1.750" (Ø 14-44 mm)	Chapter 5
	KUB Quatron®	Ø 0.562"-1.750" (Ø 14-44 mm)	2.18 – 2.25
	KUB Trigon®	Ø 0.562"-0.750"	2.40– 2.41
	KUB Trigon®	Ø 0.562"-1.750"	2.42– 2.45
	KUB® Drill	Ø 1.812"-3.250"	2.54 – 2.55
	KUB Duon®	Ø 0.697"-1.413" (Ø 17.3-36.2 mm)	2.60 – 2.79
	KC5 / KC7	Ø 0.1181"-0.7874" (Ø 3.0-20.0 mm)	2.104 – 2.109
	Easy Special™	Ø 0.472"-1.750" (Ø 12-44 mm)	Chapter 5



Drill Selection Guide

Ø inch (mm)	L / D	Drilling										
		Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
0.562 - 2.500 ±0.008 (14.0 - 65.0 ±0.2)	2 × D	●	●	●	●	●	●	●	●	●	●	●
0.562 - 2.500 ±0.008 (14.0 - 65.0 ±0.2)	3 × D	●	●	●	●	●	●	●	●	●	●	●
0.562 - 1.750 ±0.008 (14.0 - 44.0 ±0.2)	4 × D	●	●	○	○	●	●	●	●	●	●	●
0.562 - 1.750 ±0.004 (14.0 - 44.0 ±0.1)	2 × D	●	●	●	●	●	●	●	●	●	●	●
0.562 - 1.750 ±0.004 (14.0 - 44.0 ±0.1)	3 × D	●	●	●	●	●	●	●	●	○	●	●
0.562 - 1.750 ±0.004 (14.0 - 44.0 ±0.1)	4 × D	●	●	●	○	○	○	○	○	○	○	●
1.781 - 3.250 ±0.008 (38.5 - 82.0 ±0.2)	2 × D	●	●	●	●	●	●	●	●	●	●	●
1.781 - 3.250 ±0.008 (38.5 - 82.0 ±0.2)	3 × D	●	●	●	●	●	●	●	●	●	●	●
0.697 - 1.413 ±0.004 (17.3 - 36.2 ±0.1)	5 × D	●	●	●	○	●	●	○	●	●	○	○
0.787 - 2.520 ±0.004 (20.0 - 64.0 ±0.1)	9 × D	●	●	●	○	○	○	○	○	○	○	○
2.559 - 3.189 (65.0 - 81.0)	up to 9 × D	●	●	●	○	○	○	○	○	○	○	●
3.150 - 6.102 (80.0 - 155.0)	6 × D	●	●	●	○	○	○	○	○	○	○	●
1.457 - 2.520 ±0.020 (37.0 - 64.0 ±0.5)	6 × D	○	●	○	○	○	○	○	○	○	●	●
0.551 - 3.228 (14.0 - 82.0)	2 × D	●	●	●	○	●	●	●	●	●	○	○
0.551 - 3.228 (14.0 - 82.0)	3 × D	●	●	●	○	●	●	●	●	●	○	○
0.1142 - 0.6299 (2.9 - 16.0)	2-5 × D	●	●	●	○	○	○	○	○	○	○	○
0.562 - 1.750 (14.0 - 44.0)	1.5 - 4 × D	●	●	●	●	●	●	●	●	●	●	●



Coolant		MQL		Drill	Workpiece Material						Connection	
through	flood	through	flood		Carbon Steel Alloy Steel P	Stainless Steel M	Cast Iron Ductile Iron K	Non-ferrous Metals N	Super Alloy Titanium Alloy S	Hardened Steel H	ABS®	Straight shank
●	◐	●	◐	KUB Quatron®	●	●	●	●	●	○	2.10	2.18
●	◐	●	◐		●	●	●	●	●	○		
●	◐	●	◐		●	●	●	●	●	○		
●	◐	●	◐	KUB Trigon®	●	●	●	●	●	○	2.30	2.40
●	◐	●	○		●	●	●	●	●	○		
●	○	●	○		●	●	●	●	○	○		
●	◐	◐	◐	KUB® V13 / V57	●	●	●	●	●	○	2.50	2.54
●	○	◐	○		●	●	●	●	●	○		
●	○	●	○	KUB Duon®	●	●	●	●	○	○	2.60	2.60
●	○	○	○	KUB Centron®	●	●	●	●	○	○	2.84	
●	○	○	○	KUB Centron®	●	●	●	●	○	○	2.92	
●	○	○	○	KUB® Drill V464	●	○	●	●	○	○	2.96	
●	◐	◐	○	Flat Bottom Tool	●	●	●	●	○	○	2.110	
●	◐	◐	○	Stackplate Drill	●	◐	●	◐	○	○	2.112	
●	○	◐	○		●	◐	●	◐	○	○		
●	○	●	○	KC5 / KC7	●	◐	●	◐	○	○	2.104	
●	◐	◐	○	Easy Special™	●	●	●	●	●	○	Chapter 5	

KUB Quatron®

Drilling without compromising

High stability and efficiency
through the use and positioning of the square inserts.

Better chip evacuation and reduced flute erosion
through special tool body surface treatment.

For difficult drilling conditions
such as uneven casting surfaces, hardened steel surfaces and interrupted cut.

Outstanding drilled hole quality
with reduction in exit marks.

Reduced tooling costs
through four cutting edges with specially selected substrates and coatings.

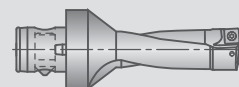
Inside and outside inserts
same insert with the same coating is used, same insert screws.

In-between diameters
for example: U10 71940 (Ø19.4 mm 2 X D)





Drilling **2xD, 3xD, 4xD** · Ø .562" - 2.500" (Ø 14 - 65 mm)
 right hand
 with ABS® Connection



2.10 – 2.17

Drilling **2xD, 3xD, 4xD** · Ø .562" - 1.750" (Ø 14 - 44 mm)
 right hand
 with Straight Shank



2.18 – 2.25

Cutting Recommendations
 Alternative Inserts

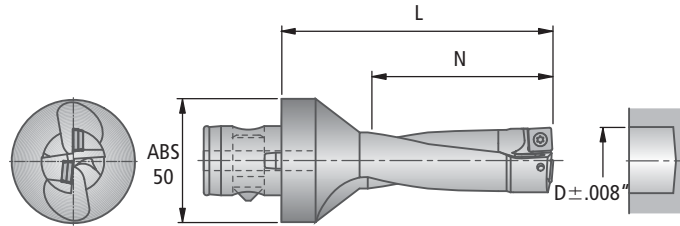
2.26

2.27



KUB Quatron® Ø 0.562" – 1.281"

with ABS® Connection
right hand, Inch



D	*D plus maximum radial offset	ABS d	2×D				3×D			
			Order No.	N	L	lbs	Order No.	N	L	lbs
0.562	0.581	50	U10 71432	1.181	2.559	0.99	U11 51432	1.772	3.150	1.04
0.593	0.612	50	U10 71510	1.260	2.638	1.01	U11 51510	1.890	3.268	1.04
0.625	0.644	50	U10 71590	1.260	2.638	1.01	U11 51590	1.890	3.268	1.04
0.656	0.675	50	U10 71670	1.339	2.717	1.01	U11 51670	2.008	3.386	1.06
0.687	0.706	50	U10 71750	1.417	2.795	1.04	U11 51750	2.126	3.504	1.06
0.703	0.722	50	U10 71790	1.417	2.795	1.04	U11 51790	2.126	3.504	1.08
0.718	0.737	50	U10 71820	1.496	2.874	1.04	U11 51820	2.244	3.622	1.08
0.750	0.769	50	U10 71910	1.575	2.953	1.06	U11 51910	2.362	3.740	1.10
0.765	0.784	50	U10 71940	1.575	2.953	1.06	U11 51940	2.362	3.740	1.10
0.781	0.800	50	U10 71980	1.575	2.953	1.08	U11 51980	2.362	3.740	1.13
0.812	0.831	50	U10 72060	1.654	3.031	1.08	U11 52060	2.480	3.858	1.15
0.828	0.847	50	U10 72100	1.654	3.031	1.10	U11 52100	2.480	3.858	1.15
0.843	0.862	50	U10 72140	1.732	3.110	1.12	U11 52140	2.598	3.976	1.16
0.875	0.894	50	U10 72220	1.811	3.189	1.13	U11 52220	2.717	4.094	1.23
0.906	0.925	50	U10 72300	1.811	3.189	1.15	U11 52300	2.717	4.094	1.30
0.937	0.956	50	U10 72380	1.890	3.268	1.15	U11 52380	2.835	4.213	1.32
0.968	0.987	50	U10 72460	1.969	3.346	1.19	U11 52460	2.953	4.331	1.32
0.985	1.004	50	U10 72500	1.969	3.346	1.19	U11 52500	2.953	4.331	1.35
1.000	1.019	50	U10 72540	2.047	3.425	1.21	U11 52540	3.071	4.449	1.35
1.031	1.051	50	U10 72620	2.126	3.504	1.23	U11 52620	3.189	4.567	1.39
1.062	1.082	50	U10 72700	2.126	3.504	1.27	U11 52700	3.189	4.567	1.39
1.109	1.129	50	U10 72820	2.283	3.661	1.32	U11 52820	3.425	4.803	1.43
1.125	1.145	50	U10 72860	2.283	3.661	1.34	U11 52860	3.425	4.803	1.47
1.156	1.176	50	U10 72940	2.323	3.740	1.34	U11 52940	3.543	4.921	1.47
1.187	1.207	50	U10 73020	2.441	4.015	1.39	U11 53020	3.661	5.236	1.52
1.218	1.238	50	U10 73090	2.441	4.016	1.46	U11 53090	3.661	5.236	1.74
1.250	1.270	50	U10 73180	2.520	3.094	1.50	U11 53180	3.780	5.354	1.74
1.281	1.301	50	U10 73250	2.598	4.173	1.54	U11 53250	3.898	5.472	1.74

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 2.500" (Ø 14 – 65 mm) are available on request

* see Chapter1 for Micro-adjustable Drill Holders.



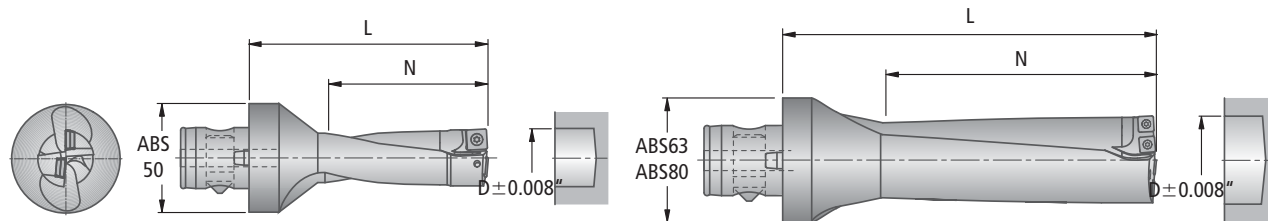
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD											
	●	●	●	●	●	●	●	●	●	●	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts		
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material P M K N S H	Insert clamping screw	Starting clamping torque	TORX PLUS®
				Order No. Description	in-lbs	Order No. Description
W83 13010.048425 W83 13000.0179 W83 13000.0161 W83 13210.047710 W83 13210.042730	SOEX050204-01 BK8425 SOEX050204-01 BK79 SOEX050204-01 BK61 SOEX050204-21 BK7710 SOEX050204-21 BK2730	2		N00 56041 S/M2×4.3-6IP	5.5	L05 00810 6IP
W83 18010.068425 W83 18000.0979 W83 18000.0961 W83 18210.067710 W83 18210.062730	SOEX060306-01 BK8425 SOEX060306-01 BK79 SOEX060306-01 BK61 SOEX060306-21 BK7710 SOEX060306-21 BK2730	2		N00 57553 S/M2.2×5.5-6IP	8.9	L05 00810 6IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730	SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	2		N00 57571 S/M2.5×6.3-8IP	11.0	L05 00830 8IP
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730	SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	2		N00 57261 S3575-15IP	25.0	L05 00860 15IP

KUB Quatron® Ø 1.312" – 2.500"

with ABS® Connection
right hand, Inch



D	*D plus maximum radial offset	ABS d	2×D				3×D			
			Order No.	N	L	lbs	Order No.	N	L	lbs
1.312	1.332	50	U10 73330	2.677	4.251	1.60	U11 53330	4.016	5.591	1.76
1.328	1.348	50	U10 73370	2.677	4.251	1.60	U11 53370	4.016	5.591	1.85
1.375	1.395	50	U10 73490	2.756	4.330	1.65	U11 53490	4.134	5.709	1.87
1.406	1.426	50	U10 73570	2.835	4.409	1.70	U11 53570	4.252	5.827	1.96
1.437	1.457	50	U10 73650	2.913	4.881	1.76	U11 53650	4.370	6.339	2.05
1.469	1.489	50	U10 73730	2.992	4.960	1.94	U11 53730	4.488	6.457	2.29
1.500	1.520	50	U10 73810	3.071	5.039	2.03	U11 53810	4.606	6.575	2.38
1.531	1.551	50	U10 73890	3.071	5.039	2.09	U11 53890	4.606	6.575	2.49
1.562	1.582	50	U10 73970	3.150	5.118	2.16	U11 53970	4.724	6.693	2.58
1.625	1.645	50	U10 74130	3.307	5.275	2.25	U11 54130	4.961	6.929	2.58
1.656	1.676	50	U10 74210	3.386	5.354	2.33	U11 54210	5.079	7.047	2.80
1.687	1.707	50	U10 74290	3.386	5.354	2.43	U11 54290	5.079	7.047	2.93
1.750	1.770	50	U10 74450	3.465	5.433	2.51	U11 54450	5.197	7.165	3.10
1.781	1.801	63	U10 84520	3.622	5.787	3.24	U12 34520	5.433	7.598	3.81
1.812	1.832	63	U10 84600	3.622	5.787	3.33	U12 34600	5.433	7.598	3.97
1.875	1.895	63	U10 84760	3.780	5.945	3.53	U12 34760	5.669	7.835	4.26
1.937	1.957	63	U10 84920	3.937	6.102	3.64	U12 34920	5.906	8.071	4.41
1.975	1.995	63	U10 85020	4.016	6.181	3.75	U12 35020	6.024	8.189	4.59
2.000	2.020	63	U10 85080	4.016	6.181	3.86	U12 35080	6.024	8.189	4.74
2.062	2.082	63	U10 85240	4.173	6.339	3.99	U12 35240	6.260	8.425	4.94
2.125	2.145	63	U10 85400	4.252	6.417	4.15	U12 35400	6.378	8.543	5.18
2.165	2.185	80	U10 95500	4.331	6.496	5.67	U12 45500	6.496	8.661	6.77
2.203	2.223	80	U10 95600	4.409	6.575	5.82	U12 45600	6.614	8.780	6.97
2.250	2.270	80	U10 95720	4.567	6.732	5.95	U12 45720	6.850	9.016	7.19
2.281	2.301	80	U10 95790	4.567	6.732	6.09	U12 45790	6.850	9.016	7.39
2.375	2.395	80	U10 96030	4.803	6.969	6.46	U12 46030	7.205	9.370	7.92
2.437	2.457	80	U10 96190	4.882	7.047	6.79	U12 46190	7.323	9.488	8.40
2.500	2.520	80	U10 96350	5.039	7.205	7.19	U12 46350	7.559	9.724	8.97

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 2.500" (Ø 14 – 65 mm) are available on request

* see Chapter1 for Micro-adjustable Drill Holders.



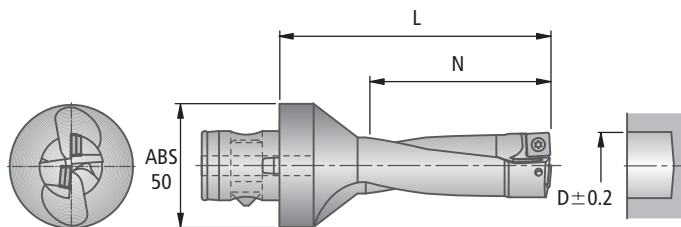
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD											
	●	●	●	●	●	●	●	●	●	●	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts							
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
			P	M	K	N	S	H			
W83 44010.088425 W83 44000.1879 W83 44000.1861 W83 44210.087710 W83 44210.082730	SOEX120508-01 BK8425 SOEX120508-01 BK79 SOEX120508-01 BK61 SOEX120508-21 BK7710 SOEX120508-21 BK2730	2	●	●	●	●	●	●	N00 57301 S45100-20IP	40.0	L05 00870 20IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730	SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	4	●	●	●	●	●	●	N00 57571 S/M2.5×6.3-8IP	11.0	L05 00830 8IP
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730	SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	4	●	●	●	●	●	●	N00 57261 S3575-15IP	25.0	L05 00860 15IP

KUB Quatron® Ø 14 – 33 mm

with ABS® Connection
right hand, Metric



All dimensions are in mm

D mm	D inch	*D plus maximum radial offset	ABS d	2xD				3xD				4xD			
				Order No.	N	L	lbs	Order No.	N	L	lbs	Order No.	N	L	lbs
14.0	0.551	14.5	50	U10 71402	28	63	1.00	U11 51402	42	77	1.04				
15.0	0.591	15.5	50	U10 71502	30	65	1.01	U11 51502	45	80	1.04	U12 51500	60	95	1.10
15.5	0.610	16.0	50	U10 71550	32	67	1.01	U11 51550	48	83	1.04	U12 51550	64	99	1.12
16.0	0.630	16.5	50	U10 71600	32	67	1.01	U11 51600	48	83	1.06	U12 51600	64	99	1.12
17.0	0.669	17.5	50	U10 71700	34	69	1.04	U11 51700	51	86	1.06	U12 51700	68	103	1.15
17.5	0.689	18.0	50	U10 71750	36	71	1.04	U11 51750	54	89	1.08	U12 51750	72	107	1.17
18.0	0.709	18.5	50	U10 71800	36	71	1.04	U11 51800	54	89	1.08	U12 51800	72	107	1.17
18.5	0.728	19.0	50	U10 71850	38	73	1.06	U11 51850	57	92	1.10	U12 51850	76	111	1.20
19.0	0.748	19.5	50	U10 71900	38	73	1.06	U11 51900	57	92	1.06	U12 51900	76	111	1.20
19.5	0.768	20.0	50	U10 71950	40	75	1.08	U11 51950	60	95	1.12	U12 51950	80	115	1.23
20.0	0.787	20.5	50	U10 72000	40	75	1.08	U11 52000	60	95	1.15	U12 52000	80	115	1.23
20.5	0.807	21.0	50	U10 72050	42	77	1.10	U11 52050	63	98	1.15	U12 52050	84	119	1.26
21.0	0.827	21.5	50	U10 72100	42	77	1.10	U11 52100	63	98	1.17	U12 52100	84	119	1.26
22.0	0.866	22.5	50	U10 72200	44	79	1.12	U11 52200	66	101	1.15	U12 52200	88	123	1.30
22.5	0.886	23.0	50	U10 72250	46	81	1.15	U11 52250	69	104	1.23	U12 52250	92	127	1.34
23.0	0.906	23.5	50	U10 72300	46	81	1.15	U11 52300	69	104	1.30	U12 52300	92	127	1.34
24.0	0.945	24.5	50	U10 72400	48	83	1.20	U11 52400	72	107	1.32	U12 52400	96	131	1.37
24.5	0.965	25.0	50	U10 72450	50	85	1.20	U11 52450	75	110	1.32	U12 52450	100	135	1.39
25.0	0.984	25.5	50	U10 72500	50	85	1.21	U11 52500	75	110	1.32	U12 52500	100	135	1.39
26.0	1.024	26.5	50	U10 72600	52	87	1.23	U11 52600	78	113	1.34	U12 52600	104	139	1.41
26.5	1.043	27.0	50	U10 72650	54	89	1.28	U11 52650	81	116	1.39	U12 52650	108	143	1.48
27.0	1.063	27.5	50	U10 72700	54	89	1.28	U11 52700	81	116	1.39	U12 52700	108	143	1.48
28.0	1.102	28.5	50	U10 72800	56	91	1.32	U11 52800	84	119	1.43	U12 52800	112	147	1.54
28.5	1.122	29.0	50	U10 72850	58	93	1.34	U11 52850	87	122	1.48	U12 52850	116	151	1.61
29.0	1.142	29.5	50	U10 72900	58	93	1.34	U11 52900	87	122	1.48	U12 52900	116	151	1.61
29.5	1.161	30.0	50	U10 72950	59	95	1.39	U11 52950	88.5	125	1.52				
30.0	1.181	31.0	50	U10 73000	60	100	1.45	U11 53000	90	130	1.74				
31.0	1.220	32.0	50	U10 73100	60	102	1.50	U11 53100	93	133	1.74				
31.5	1.240	33.0	50	U10 73150	62	104	1.54	U11 53150	96	136	1.72				
32.0	1.260	31.5	50	U10 73200	62	104	1.54	U11 53200	96	136	1.76				
33.0	1.299	34.0	50	U10 73300	64	106	1.61	U11 53300	99	139	1.85				

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 2.500" (Ø 14 – 65 mm) are available on request

* see Chapter1 for Micro-adjustable Drill Holders.



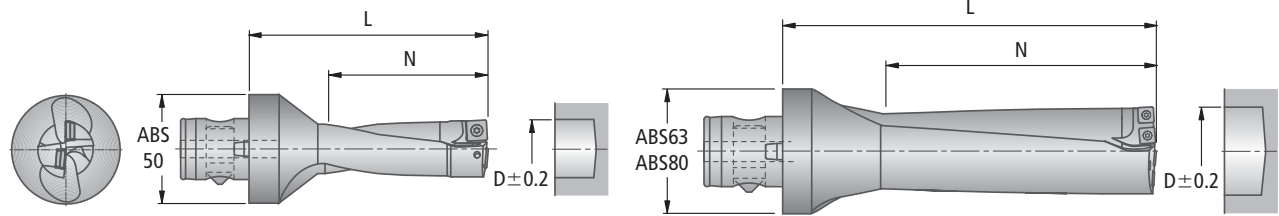
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	●	●	●
3xD	●	●	●	●	●	●	●	●	●	●	●
4xD	●	●	○	○	●	●	●	×	●	●	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation				Replacement Parts							
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
			P	M	K	N	S	H			
W83 13010.048425 W83 13000.0179 W83 13000.0161 W83 13210.047710 W83 13210.042730	SOEX050204-01 BK8425 SOEX050204-01 BK79 SOEX050204-01 BK61 SOEX050204-21 BK7710 SOEX050204-21 BK2730	2	●	●	●	●	●	●	N00 56041 S/M2×4.3-6IP	5.5	L05 00810 6IP
W83 18010.068425 W83 18000.0979 W83 18000.0961 W83 18210.067710 W83 18210.062730	SOEX060306-01 BK8425 SOEX060306-01 BK79 SOEX060306-01 BK61 SOEX060306-21 BK7710 SOEX060306-21 BK2730	2	●	●	●	●	●	●	N00 57553 S/M2.2×5.5-6IP	8.9	L05 00810 6IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730	SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	2	●	●	●	●	●	●	N00 57571 S/M2.5×6.3-8IP	11.0	L05 00830 8IP
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730	SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	2	●	●	●	●	●	●	N00 57261 S3575-15IP	25.0	L05 00860 15IP

KUB Quatron® Ø 34 – 65 mm

with ABS® Connection
right hand, Metric



All dimensions are in mm

D mm	D inch	*D plus maximum radial offset	ABS d	2×D				3×D			
				Order No.	N	L	lbs	Order No.	N	L	lbs
34.0	1.339	35.0	50	U10 73400	66	108	1.65	U11 53400	102	142	1.87
35.0	1.378	36.0	50	U10 73500	68	110	1.70	U11 53500	105	145	1.96
36.0	1.417	37.0	50	U10 73600	70	112	1.76	U11 53600	108	148	2.05
37.0	1.457	37.5	50	U10 73700	72	124	1.94	U11 53700	111	161	2.29
37.5	1.476	38.0	50	U10 73750	74	126	1.98	U11 53750	114	164	2.25
38.0	1.496	39.0	50	U10 73800	74	126	2.03	U11 53800	114	164	2.38
39.0	1.535	39.5	50	U10 73900	76	128	2.09	U11 53900	117	167	2.49
39.5	1.555	40.0	50	U10 73950	78	130	2.14	U11 53950	120	170	2.51
40.0	1.575	41.0	50	U10 74000	78	130	2.16	U11 54000	120	170	2.58
41.0	1.614	42.0	50	U10 74100	80	132	2.25	U11 54100	123	173	2.69
42.0	1.654	43.0	50	U10 74200	82	134	2.34	U11 54200	126	176	2.80
43.0	1.693	44.0	50	U10 74300	84	136	2.42	U11 54300	129	179	2.93
44.0	1.732	44.5	50	U10 74400	88	138	2.51	U11 54400	132	182	3.11
45.0	1.772	45.5	63	U10 84500	90	145	3.24	U12 34500	135	190	3.81
46.0	1.811	46.5	63	U10 84600	92	147	3.33	U12 34600	138	193	3.97
47.0	1.850	47.5	63	U10 84700	94	149	3.42	U12 34700	141	196	4.10
48.0	1.890	48.5	63	U10 84800	96	151	3.53	U12 34800	144	199	4.25
49.0	1.929	49.5	63	U10 84900	98	153	3.64	U12 34900	147	202	4.41
50.0	1.969	50.5	63	U10 85000	100	155	3.75	U12 35000	150	205	4.58
51.0	2.008	51.5	63	U10 85100	102	157	3.86	U12 35100	153	208	4.74
52.0	2.047	52.5	63	U10 85200	104	159	3.99	U12 35200	156	211	4.94
53.0	2.087	53.5	63	U10 85300	106	161	4.01	U12 35300	159	214	5.00
54.0	2.126	54.5	63	U10 85400	108	163	4.14	U12 35400	162	217	5.18
55.0	2.165	55.5	80	U10 95500	110	165	5.66	U12 45500	165	220	6.77
56.0	2.205	56.5	80	U10 95600	112	167	5.82	U12 45600	168	223	6.97
57.0	2.244	57.5	80	U10 95700	114	169	5.95	U12 45700	171	226	7.19
58.0	2.283	58.5	80	U10 95800	116	171	6.08	U12 45800	174	229	7.38
59.0	2.323	59.5	80	U10 95900	118	173	6.24	U12 45900	177	232	7.60
60.0	2.362	60.5	80	U10 96000	120	175	6.46	U12 46000	180	235	7.91
61.0	2.402	61.5	80	U10 96100	122	177	6.63	U12 46100	183	238	7.94
62.0	2.441	62.5	80	U10 96200	124	179	6.79	U12 46200	186	241	8.40
63.0	2.480	63.5	80	U10 96300	126	181	7.01	U12 46300	189	244	8.71
64.0	2.520	64.5	80	U10 96400	128	183	7.19	U12 46400	192	247	8.97
65.0	2.559	65.5	80	U10 96500	130	185	7.38	U12 46500	195	250	9.26

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 2.500" (Ø 14 – 65 mm) are available on request

* see Chapter1 for Micro-adjustable Drill Holders.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD											
	●	●	●	●	●	●	●	●	●	●	●

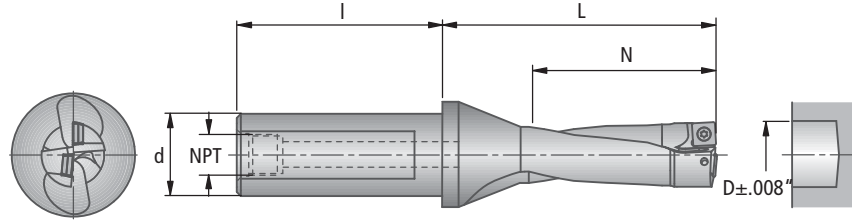
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts								
Order No. Size	Insert 	ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
				P	M	K	N	S	H			
W83 44010.088425 W83 44000.1879 W83 44000.1861 W83 44210.087710 W83 44210.082730		SOEX120508-01 BK8425 SOEX120508-01 BK79 SOEX120508-01 BK61 SOEX120508-21 BK7710 SOEX120508-21 BK2730	2	●	●	●	●	●	●	N00 57301 S45100-20IP	40.0	L05 00870 20IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730		SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	4	●	●	●	●	●	●	N00 57571 S/M2.5x6.3-8IP	11.0	L05 00830 8IP
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730		SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	4	●	●	●	●	●	●	N00 57261 S3575-15IP	25.0	L05 00860 15IP

KUB Quatron® Ø .562" – 1.062"

with Straight Shank
right hand, Inch

Now with Longer Shank!



D	*D plus maximum radial offset	Shank dimension d x l	2xD				3xD			
			Order No.	N	L	NPT	Order No.	N	L	NPT
0.562	0.581	0.750X2.250	U11 21435	1.181	2.126	1/8	U12 01434	1.772	2.717	1/8
0.593	0.612	0.750X2.250	U11 21513	1.260	2.205		U12 01512	1.890	2.835	
0.625	0.644	0.750X2.250	U11 21593	1.260	2.205		U12 01592	1.890	2.835	
0.656	0.675	0.750X2.250	U11 21673	1.339	2.284		U12 01672	2.008	2.953	
0.687	0.706	0.750X2.250	U11 21753	1.417	2.362		U12 01752	2.126	3.071	
0.703	0.722	1.000X3.250	U11 31793	1.417	2.362	1/8	U12 11792	2.126	3.071	1/8
0.718	0.737	1.000X3.250	U11 31823	1.496	2.441		U12 11822	2.244	3.189	
0.750	0.769	1.000X3.250	U11 31913	1.575	2.520		U12 11912	2.362	3.307	
0.765	0.784	1.000X3.250	U11 31943	1.575	2.520		U12 11942	2.362	3.307	
0.781	0.800	1.000X3.250	U11 31983	1.575	2.520		U12 11982	2.362	3.307	
0.812	0.831	1.000X3.250	U11 32063	1.654	2.599		U12 12062	2.480	3.425	
0.828	0.847	1.000X3.250	U11 32103	1.732	2.677		U12 12102	2.598	3.543	
0.843	0.862	1.000X3.250	U11 32143	1.732	2.677		U12 12142	2.598	3.543	
0.875	0.894	1.000X3.250	U11 32223	1.811	2.756	1/8	U12 12222	2.717	3.662	1/8
0.906	0.925	1.000X3.250	U11 32303	1.890	2.835		U12 12302	2.835	3.780	
0.937	0.956	1.000X3.250	U11 32382	1.890	2.835		U12 12382	2.835	3.780	
0.968	0.987	1.000X3.250	U11 32462	1.969	2.914		U12 12462	2.953	3.898	
0.985	1.004	1.000X3.250	U11 32502	1.969	2.914		U12 12502	2.953	3.898	
1.000	1.019	1.000X3.250	U11 32542	2.047	2.992	1/4	U12 12542	3.071	4.016	1/4
0.937	0.956	1.250X3.250	U11 42383	1.890	2.835		U12 22382	2.835	3.780	
0.968	0.987	1.250X3.250	U11 42463	1.969	2.914		U12 22462	2.953	3.898	
0.985	1.004	1.250X3.250	U11 42503	1.969	2.914		U12 22502	3.071	4.016	
1.000	1.019	1.250X3.250	U11 42543	2.047	2.992		U12 22542	3.071	4.016	
1.031	1.050	1.250X3.250	U11 42622	2.126	3.071		U12 22622	3.189	4.134	
1.062	1.081	1.250X3.250	U11 42702	2.126	3.071	U12 22702	3.189	4.134		

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Notes:

Any intermediate dimensions from 0.562" - 2.500" (Ø 14 – 65 mm) are available on request

In some cases, only short shank drills are currently available. New longer shank drills will be available once inventory of short shank drills are depleted. Please contact customer service for availability.

* see Chapter1 for Micro-adjustable Drill Holders.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD											
	●	●	●	●	●	●	●	●	●	●	●

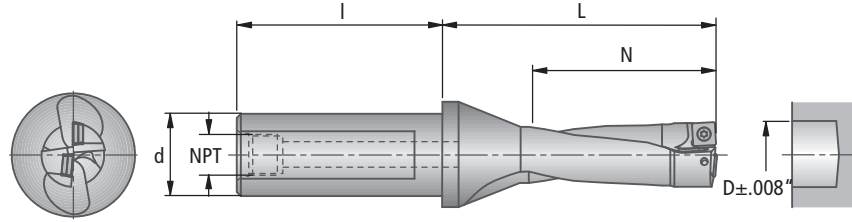
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts								
Order No. Size	Insert 	ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
				P	M	K	N	S	H			
W83 13010.048425 W83 13000.0179 W83 13000.0161 W83 13210.047710 W83 13210.042730		SOEX050204-01 BK8425 SOEX050204-01 BK79 SOEX050204-01 BK61 SOEX050204-21 BK7710 SOEX050204-21 BK2730	2	●	●	●	●	●	●	N00 56041 S/M2×4.3-6IP	5.5	L05 00810 6IP
W83 18010.068425 W83 18000.0979 W83 18000.0961 W83 18210.067710 W83 18210.062730		SOEX060306-01 BK8425 SOEX060306-01 BK79 SOEX060306-01 BK61 SOEX060306-21 BK7710 SOEX060306-21 BK2730	2	●	●	●	●	●	●	N00 57553 S/M2.2×5.5-6IP	8.9	L05 00810 6IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730		SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	2	●	●	●	●	●	●	N00 57571 S/M2.5×6.3-8IP	11.0	L05 00830 8IP

KUB Quatron® Ø 1.109" – 1.750"

with Straight Shank
right hand, Inch

Now with Longer Shank!



D	*D plus maximum radial offset	Shank dimension d x l	2xD				3xD			
			Order No.	N	L	NPT	Order No.	N	L	NPT
1.109	1.129	1.250X3.250	U11 42822	2.283	3.228	1/4	U12 22822	3.425	4.370	1/4
1.125	1.145	1.250X3.250	U11 42862	2.283	3.228		U12 22862	3.425	4.370	
1.156	1.176	1.250X3.250	U11 42942	2.323	3.307		U12 22942	3.543	4.488	
1.187	1.207	1.250X3.250	U11 43022	2.441	3.582		U12 23022	3.661	4.803	
1.218	1.238	1.250X3.250	U11 43092	2.441	3.582		U12 23092	3.661	4.803	
1.250	1.270	1.250X3.250	U11 43182	2.520	3.661		U12 23182	3.780	4.921	
1.281	1.301	1.250X3.250	U11 43252	2.598	3.740		U12 23252	3.898	5.039	
1.312	1.332	1.250X3.250	U11 43332	2.677	3.818	1/4	U12 23332	4.016	5.157	1/4
1.328	1.348	1.250X3.250	U11 43372	2.677	3.818		U12 23372	4.016	5.157	
1.375	1.395	1.250X3.250	U11 43492	2.756	3.897		U12 23492	4.134	5.276	
1.406	1.426	1.250X3.250	U11 43572	2.835	3.976		U12 23572	4.252	5.394	
1.437	1.457	1.250X3.250	U11 43652	2.913	4.448		U12 23652	4.370	5.906	
1.469	1.489	1.250X3.250	U11 43732	2.992	4.527		U12 23732	4.488	6.024	
1.500	1.520	1.250X3.250	U11 43812	3.071	4.606		U12 23812	4.606	6.142	
1.531	1.551	1.250X3.250	U11 43892	3.071	4.606		U12 23892	4.606	6.142	
1.562	1.582	1.250X3.250	U11 43972	3.150	4.685		U12 23972	4.724	6.260	
1.625	1.645	1.250X3.250	U11 44132	3.307	4.842		U12 24132	4.961	6.496	
1.656	1.676	1.250X3.250	U11 44212	3.386	4.921		U12 24212	5.079	6.614	
1.687	1.707	1.250X3.250	U11 44292	3.386	4.921	U12 24292	5.079	6.614		
1.750	1.770	1.250X3.250	U11 44452	3.465	5.000	U12 24452	5.197	6.732		

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 1.750" (Ø 14 – 44 mm) are available on request

In some cases, only short shank drills are currently available. New longer shank drills will be available once inventory of short shank drills are depleted. Please contact customer service for availability.



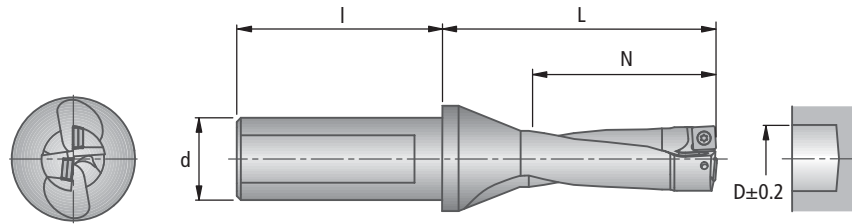
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD	●	●	●	●	●	●	●	●	●	●	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts							
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
			P	M	K	N	S	H			
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730	SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	2	●	●	●	●	●	●	N00 57261 S3575-15IP	25.0	L05 00860 15IP
W83 44010.088425 W83 44000.1879 W83 44000.1861 W83 44210.087710 W83 44210.082730	SOEX120508-01 BK8425 SOEX120508-01 BK79 SOEX120508-01 BK61 SOEX120508-21 BK7710 SOEX120508-21 BK2730	2	●	●	●	●	●	●	N00 57301 S45100-20IP	40.0	L05 00870 20IP

KUB Quatron® Ø 14 – 33 mm

with Straight Shank
right hand, Metric



All dimensions are in mm

D mm	D inch	*D plus maximum radial offset	Shank dimension d x l	2xD				3xD				4xD			
				Order No.	N	L	kg	Order No.	N	L	kg	Order No.	N	L	kg
14.0	0.551	14.5	20 x 50	U10 01402	28	52	0.17	U11 61402	42	66	0.18				
15.0	0.591	15.5	20 x 50	U10 01502	30	54	0.18	U11 61502	45	69	0.19				
15.5	0.610	16.0	20 x 50	U10 01550	32	56	0.18	U11 61550	48	72	0.19				
16.0	0.630	16.5	20 x 50	U10 01600	32	56	0.19	U11 61600	48	72	0.20				
17.0	0.669	17.5	20 x 50	U10 01700	34	58	0.19	U11 61700	51	75	0.20	U12 61700	68	92	0.22
17.5	0.689	18.0	25 x 56	U10 11750	36	60	0.27	U11 71750	54	78	0.28	U12 71750	72	96	0.31
18.0	0.709	18.5	25 x 56	U10 11800	36	60	0.27	U11 71800	54	78	0.28	U12 71800	72	96	0.31
18.5	0.728	19.0	25 x 56	U10 11850	38	62	0.27	U11 71850	57	81	0.29	U12 71850	76	100	0.33
19.0	0.748	19.5	25 x 56	U10 11900	38	62	0.28	U11 71900	57	81	0.29	U12 71900	76	100	0.33
19.5	0.768	20.0	25 x 56	U10 11950	40	64	0.29	U11 71950	60	84	0.30	U12 71950	80	104	0.35
20.0	0.787	20.5	25 x 56	U10 12000	40	64	0.29	U11 72000	60	84	0.31	U12 72000	80	104	0.35
20.5	0.807	21.0	25 x 56	U10 12050	42	66	0.30	U11 72050	63	87	0.31	U12 72050	84	108	0.36
21.0	0.827	21.5	25 x 56	U10 12100	42	66	0.30	U11 72100	63	87	0.32	U12 72100	84	108	0.36
22.0	0.866	22.5	25 x 56	U10 12200	44	68	0.31	U11 72200	66	90	0.33	U12 72200	88	112	0.38
22.5	0.886	23.0	25 x 56	U10 12250	46	70	0.31	U11 72250	69	93	0.34	U12 72250	92	116	0.40
23.0	0.906	23.5	25 x 56	U10 12300	46	70	0.32	U11 72300	69	93	0.35	U12 72300	92	116	0.40
24.0	0.945	24.0	32 x 60	U10 22400	48	72	0.51	U11 82400	72	96	0.55	U12 82400	96	120	0.50
24.5	0.965	24.5	32 x 60	U10 22450	50	74	0.52	U11 82450	75	99	0.56	U12 82450	100	124	0.56
25.0	0.984	25.5	32 x 60	U10 22500	50	74	0.52	U11 82500	75	99	0.56	U12 82500	100	124	0.56
26.0	1.024	26.5	32 x 60	U10 22600	52	76	0.54	U11 82600	78	102	0.58	U12 82600	104	128	0.58
26.5	1.043	27.0	32 x 60	U10 22650	54	78	0.55	U11 82650	81	105	0.60	U12 82650	108	132	0.61
27.0	1.063	27.5	32 x 60	U10 22700	54	78	0.56	U11 82700	81	105	0.61	U12 82700	108	132	0.61
28.0	1.102	28.5	32x60	U10 22800	56	80	0.57	U11 82800	84	108	0.63	U12 82800	112	136	0.64
28.5	1.122	29.0	32x60	U10 22850	58	82	0.58	U11 82850	87	111	0.65	U12 82850	116	140	0.67
29.0	1.142	29.5	32x60	U10 22900	58	82	0.59	U11 82900	87	111	0.66	U12 82900	116	140	0.67
29.5	1.161	30.0	32x60	U10 22950	59	84	0.60	U11 82950	88.5	114	0.67				
30.0	1.181	30.5	32x60	U10 23000	60	89	0.63	U11 83000	90	119	0.70				
31.0	1.220	31.5	32x60	U10 23100	62	91	0.65	U11 83100	93	122	0.73				
31.5	1.240	32.0	32x60	U10 23150	64	93	0.66	U11 83150	96	125	0.75				
32.0	1.260	32.5	32x60	U10 23200	64	93	0.67	U11 83200	96	125	0.76				
33.0	1.299	33.5	32x60	U10 23300	66	95	0.73	U11 83300	99	128	0.83				
			40x68	U10 33300	66	95	1.02	U11 93300	99	128	1.12				

Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

Note:

Any intermediate dimensions from 0.562" - 1.750" (Ø 14 – 44 mm) are available on request

* see Chapter1 for Micro-adjustable Drill Holders.



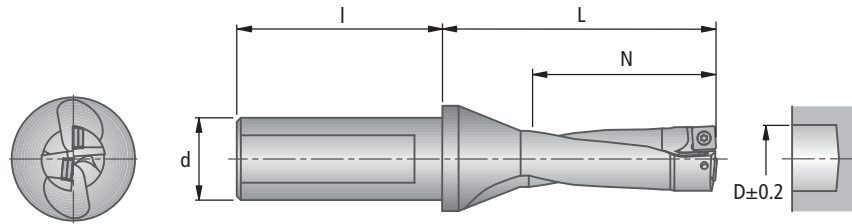
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	●	●	●
3xD	●	●	●	●	●	●	●	●	●	●	●
4xD	●	●	○	○	●	●	●	×	●	●	●

● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation				Replacement Parts							
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
			P	M	K	N	S	H			
W83 13010.048425 W83 13000.0179 W83 13000.0161 W83 13210.047710 W83 13210.042730	SOEX050204-01 BK8425 SOEX050204-01 BK79 SOEX050204-01 BK61 SOEX050204-21 BK7710 SOEX050204-21 BK2730	2	●	●	●	●	●	●	N00 56041 S/M2×4.3-6IP	5.5	L05 00810 6IP
W83 18010.068425 W83 18000.0979 W83 18000.0961 W83 18210.067710 W83 18210.062730	SOEX060306-01 BK8425 SOEX060306-01 BK79 SOEX060306-01 BK61 SOEX060306-21 BK7710 SOEX060306-21 BK2730	2	●	●	●	●	●	●	N00 57553 S/M2.2×5.5-6IP	8.9	L05 00810 6IP
W83 23010.088425 W83 23000.0179 W83 23000.0161 W83 23210.087710 W83 23210.082730	SOEX07T308-01 BK8425 SOEX07T308-01 BK79 SOEX07T308-01 BK61 SOEX07T308-21 BK7710 SOEX07T308-21 BK2730	2	●	●	●	●	●	●	N00 57571 S/M2.5×6.3-8IP	11.0	L05 00830 8IP
W83 32010.088425 W83 32000.1579 W83 32000.1561 W83 32210.087710 W83 32210.082730	SOEX090408-01 BK8425 SOEX090408-01 BK79 SOEX090408-01 BK61 SOEX090408-21 BK7710 SOEX090408-21 BK2730	2	●	●	●	●	●	●	N00 57261 S3575-15IP	25.0	L05 00860 15IP

KUB Quatron® Ø 34 – 44 mm

with Straight Shank
right hand, Metric



Delivery:

KUB Quatron® Drill complete with insert clamping screw and TORX PLUS® screw driver, less inserts.

All dimensions are in mm

D mm	D inch	*D plus maximum radial offset	Shank dimension d × l	2×D				3×D			
				Order No.	N	L	kg	Order No.	N	L	kg
34.0	1.339	34.5	32 × 60	U10 23400	68	97	0.75	U11 83400	102	131	0.86
			40 × 68	U10 33400	68	97	1.04	U11 93400	102	131	1.15
35.0	1.378	35.5	32 × 60	U10 23500	70	99	0.78	U11 83500	105	134	0.89
			40 × 68	U10 33500	70	99	1.07	U11 93500	105	134	1.18
36.0	1.417	36.5	32 × 60	U10 23600	72	101	0.80	U11 83600	108	137	0.93
			40 × 68	U10 33600	72	101	1.09	U11 93600	108	137	1.22
37.0	1.457	37.5	32 × 60	U10 23700	74	113	0.89	U11 83700	111	150	1.03
			40 × 68	U10 33700	74	113	1.18	U11 93700	111	150	1.32
37.5	1.476	38.0	32 × 60	U10 23750	76	115	0.91	U11 83750	114	153	1.06
			40 × 68	U10 33750	76	115	1.20	U11 93750	114	153	1.35
38.0	1.496	38.5	32 × 60	U10 23800	76	115	0.92	U11 83800	114	153	1.07
			40 × 68	U10 33800	76	115	1.21	U11 93800	114	153	1.36
39.0	1.535	39.5	32 × 60	U10 23900	78	117	0.95	U11 83900	117	156	1.12
			40 × 68	U10 33900	78	117	1.24	U11 93900	117	156	1.41
39.5	1.555	40.0	32 × 60	U10 23950	80	119	0.97	U11 83950	120	159	1.15
			40 × 68	U10 33950	80	119	1.26	U11 93950	120	159	1.44
40.0	1.575	40.5	32 × 60	U10 24000	80	119	0.99	U11 84000	120	159	1.17
			40 × 68	U10 34000	80	119	1.28	U11 94000	120	159	1.46
41.0	1.614	41.5	32 × 60	U10 24100	82	121	1.02	U11 84100	123	162	1.22
			40 × 68	U10 34100	82	121	1.31	U11 94100	123	162	1.51
42.0	1.654	42.5	32 × 60	U10 24200	84	123	1.06	U11 84200	126	165	1.27
			40 × 68	U10 34200	84	123	1.35	U11 94200	126	165	1.56
43.0	1.693	43.5	32 × 60	U10 24300	86	125	1.10	U11 84300	129	168	1.33
			40 × 68	U10 34300	86	125	1.39	U11 94300	129	168	1.62
44.0	1.732	44.5	32 × 60	U10 24400	88	127	1.14	U11 84400	132	171	1.34
			40 × 68	U10 34400	88	127	1.43	U11 94400	132	171	1.63

* see Chapter1 for Micro-adjustable Drill Holders.
2.24

Note: Any intermediate dimensions from 0.562" - 1.750"
(Ø 14 – 44 mm) are available on request



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD 3xD	●	●	●	●	●	●	●	●	●	●	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts							
Order No. Size	Insert -01 -21 ISO Insert Description	Qty.	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
			P	M	K	N	S	H			
W83 44010.088425 W83 44000.1879 W83 44000.1861 W83 44210.087710 W83 44210.082730	SOEX120508-01 BK8425 SOEX120508-01 BK79 SOEX120508-01 BK61 SOEX120508-21 BK7710 SOEX120508-21 BK2730	2	●	●	●	●	●	○	N00 57301 S45100-20IP	40.0	L05 00870 20IP

Cutting Recommendations

Data for KUB Quatron® Drills Ø .562" – 2.500" (14 – 65 mm)

(.) = mm

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	2xD					3xD					4xD				
						Maximum Feedrate f, in/rev					Maximum Feedrate. f (in/rev)					Maximum Feedrate. f (in/rev)				
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.004	.004	.005	.005	.006	.004	.004	.005	.005	.006	.004	.004	.005	.005	.006
			Low alloy steel	5120 1055 5115	820	.005	.005	.006	.006	.008	.005	.005	.006	.006	.008	.005	.005	.006	.006	.008
			Lead alloy	12L13	980	.006	.006	.007	.007	.010	.006	.006	.007	.007	.010	.006	.006	.007	.007	.010
			High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	660	.006	.006	.007	.007	.008	.006	.006	.007	.007	.008	.006	.006	.007	.007	.008
			Tool steel	H13 H21	590	.004	.005	.006	.006	.007	.004	.005	.006	.006	.007	.004	.005	.006	.006	.007
S	58000	250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.002	.002	.003	.003	.005	.002	.002	.003	.003	.005	.002	.002	.003	.003	.005
			Titanium, Titanium alloy	AMS R54520	260	.002	.003	.004	.004	.005	.002	.003	.004	.004	.005	.002	.003	.004	.004	.005
M	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.003	.004	.005	.006	.006	.003	.004	.005	.006	.006	.003	.004	.005	.006	.006
			Stainless steel	630	520	.003	.003	.005	.006	.006	.003	.003	.005	.006	.006	.003	.003	.005	.006	.006
K	87000	230	Stainless steel: martensitic/ferritic 400 series	420 403	520	.002	.003	.004	.005	.005	.002	.003	.004	.005	.005	.002	.003	.004	.005	.005
			Grey cast iron	No 35 B No 50 B	660	.006	.006	.007	.007	.010	.006	.006	.007	.007	.010	.006	.006	.007	.007	.010
N		90	Alloy grey cast iron	A436 Type 2	520	.006	.006	.006	.008	.012	.006	.006	.006	.008	.012	.006	.006	.006	.008	.012
			Nodular cast iron ferritic	60-40-18	590	.006	.006	.007	.008	.008	.006	.006	.007	.008	.008	.006	.006	.007	.008	.008
H	261000	203000	Nodular cast iron ferritic / pearlitic	80-55-06	520	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009
			Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	460	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009
H		100	Alloyed nodular cast iron	A43D2	460	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009	.006	.006	.007	.009	.009
			Vermicular cast iron		390	.004	.005	.006	.008	.008	.004	.005	.006	.008	.008	.004	.005	.006	.008	.008
H		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.005	.006	.006	.010	.008	.005	.006	.006	.010	.008	.005	.006	.006	.010	.008
			Copper alloy, Brass, Bronze: average cut		1310	.003	.003	.004	.005	.005	.003	.003	.004	.005	.005	.003	.003	.004	.005	.005
H		60	Wrought aluminum alloy		1970	.003	.003	.004	.005	.005	.003	.003	.004	.005	.005	.003	.003	.004	.005	.005
			Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	980	.004	.005	.006	.006	.008	.004	.005	.006	.006	.008	.004	.005	.006	.006	.008
H		100	Aluminum alloy: Si content >10%	A360.2	820	.004	.005	.006	.008	.012	.004	.005	.006	.008	.012	.004	.005	.006	.008	.012
			Hardened steel < 45 HRC		260	.002	.002	.003	.004	.004	.002	.002	.003	.004	.004	.002	.002	.003	.004	.004
H		130	Hardened steel > 45 HRC		130	.002	.002	.003	.004	.004	.002	.002	.003	.004	.004	.002	.002	.003	.004	.004

Alternative Inserts

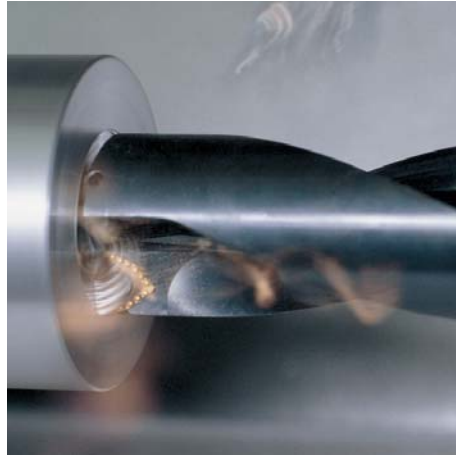
For better chip control								
D	Insert		for Workpiece Material					
	Order No. Size	ISO - Description	P	M	K	N	S	H
.562 - .687	W83 13130.048425	SOEX050204-13 BK8425	●					
	W83 13000.0279	SOEX050204-13 BK79	●	●				
	W83 13210.042730	SOEX050204-21 BK2730	●					
	W83 13210.047710	SOEX050204-21 BK7710	●			●	●	
.703 - .843	W83 18130.068425	SOEX060306-13 BK8425	●					
	W83 18000.1079	SOEX060306-13 BK79	●	●				
	W83 18210.062730	SOEX060306-21 BK2730	●					
	W83 18210.067710	SOEX060306-21 BK7710	●			●	●	
.875 - 1.062	W83 23130.088425	SOEX07T308-13 BK8425	●					
	W83 23000.0279	SOEX07T308-13 BK79	●	●				
	W83 23210.082730	SOEX07T308-21 BK2730	●					
	W83 23210.087710	SOEX07T308-21 BK7710	●			●	●	
1.109 - 1.281	W83 32130.088420	SOEX090408-13 BK8425	●					
	W83 32000.1779	SOEX090408-13 BK79	●	●				
	W83 32210.082730	SOEX090408-21 BK2730	●					
	W83 32210.087710	SOEX090408-21 BK7710	●			●	●	
1.312 - 1.750	W83 44130.088425	SOEX120508-13 BK8425	●					
	W83 44000.1979	SOEX120508-13 BK79	●	●				
	W83 44210.082730	SOEX120508-21 BK2730	●					
	W83 44210.087710	SOEX120508-21 BK7710	●			●	●	
1.781 - 2.000	W83 23130.088425	SOEX07T308-13 BK8425	●					
	W83 23000.0279	SOEX07T308-13 BK79	●	●				
	W83 23210.082730	SOEX07T308-21 BK2730	●					
	W83 23210.087710	SOEX07T308-21 BK7710	●			●	●	
2.062 - 2.500	W83 32130.088420	SOEX090408-13 BK8425	●					
	W83 32000.1779	SOEX090408-13 BK79	●	●				
	W83 32210.082730	SOEX090408-21 BK2730	●					
	W83 32210.087710	SOEX090408-21 BK7710	●			●	●	

For better wear resistance								
D	Insert		for Workpiece Material					
	Order No. Size	ISO - Description	P	M	K	N	S	H
.562 - .687	W83 13010.046420	SOEX050204-01 BK6420	●					
	W83 13000.0174	SOEX050204-01 BK74	●	●				
	W83 13000.016115	SOEX050204-01 BK6115	●			●		
.703 - .843	W83 18010.066420	SOEX060306-01 BK6420	●					
	W83 18000.0974	SOEX060306-01 BK74	●	●				
	W83 18000.096115	SOEX060306-01 BK6115	●			●		
.875 - 1.062	W83 23000.086420	SOEX07T308-01 BK6420	●					
	W83 23000.0174	SOEX07T308-01 BK74	●	●				
	W83 23000.016115	SOEX07T308-01 BK6115	●			●		
1.109 - 1.281	W83 32010.086420	SOEX090408-01 BK6420	●					
	W83 32000.1574	SOEX090408-01 BK74	●	●				
	W83 32000.156115	SOEX090408-01 BK6115	●			●		
1.312 - 1.750	W83 44010.086420	SOEX120508-01 BK6420	●					
	W83 44000.1874	SOEX120508-01 BK74	●	●				
	W83 44000.186115	SOEX120508-01 BK6115	●			●		
1.781 - 2.000	W83 18010.086420	SOEX060306-01 BK6420	●					
	W83 18000.0974	SOEX060306-01 BK74	●	●				
	W83 18000.096115	SOEX060306-01 BK6115	●			●		
2.062 - 2.500	W83 23010.086420	SOEX07T308-01 BK6420	●					
	W83 23000.0174	SOEX07T308-01 BK74	●	●				
	W83 23000.016115	SOEX07T308-01 BK6115	●			●		

For higher toughness								
D	Insert		for Workpiece Material					
	Order No. Size	ISO - Description	P	M	K	N	S	H
.562 - .687	W83 13000.0179	SOEX050204-01 BK79	●					
	W83 13010.046420	SOEX050204-01 BK6420	●					●
.703 - .843	W83 18000.0979	SOEX060306-01 BK79	●					
	W83 18010.066420	SOEX060306-01 BK6420	●					●
.875 - 1.062	W83 23000.0179	SOEX07T308-01 BK79	●					
	W83 23010.086420	SOEX07T308-01 BK6420	●					●
1.109 - 1.281	W83 32000.1579	SOEX090408-01 BK79	●					
	W83 32010.086420	SOEX090408-01 BK6420	●					●
1.312 - 1.750	W83 44000.1879	SOEX120508-01 BK79	●					
	W83 44010.086420	SOEX120508-01 BK6420	●					●
1.781 - 2.000	W83 23000.0179	SOEX07T308-01 BK79	●					
	W83 23010.086420	SOEX07T308-01 BK6420	●					●
2.062 - 2.500	W83 32000.1579	SOEX090408-01 BK79	●					
	W83 32010.086420	SOEX090408-01 BK6420	●					●



KUB Trigon®



Production flexibility
with various insert geometry and
coatings

Tighter drilled hole tolerances

Excellent surface finish

Drill to finish size
without a separate machining
operation

Universal application
for rotating and stationary
applications

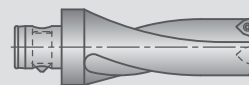


Drilling **2xD, 3xD, 4xD** · Ø .562" - 1.750" (Ø 14 - 44 mm)

2.30 – 2.37

right hand

with ABS® Connection



Cutting Recommendations

2.38

Alternative Inserts

2.39

Drilling **2.5xD, 4xD** · Ø .562" - 1.750" (Ø 14 - 44 mm)

2.40 – 2.45

right hand

with Straight Shank Connection



Cutting Recommendations

2.46

Alternative Inserts

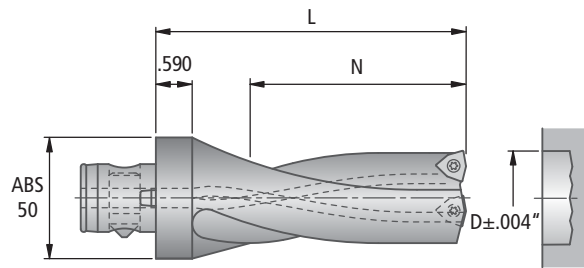
2.47

2



KUB Trigon® Ø .562" – 1.156"

with ABS® Connection
right hand, Inch



D	*D plus maximum radial offset	ABS d	2xD				3xD				4xD			
			Order No.	N	L	lbs	Order No.	N	L	lbs	Order No.	N	L	lbs
0.562	0.602	50	V30 31430	1.124	2.502	0.88	V30 71430	1.686	3.064	1.10	V30 91430	2.248	3.625	1.15
0.593	0.633	50	V30 31510	1.186	2.564	0.88	V30 71510	1.779	3.157	1.10	V30 91510	2.372	3.750	1.15
0.625	0.665	50	V30 31590	1.250	2.628	0.88	V30 71590	1.875	3.253	1.10	V30 91590	2.500	3.878	1.15
0.656	0.696	50					V30 71670	1.969	3.346	1.10	V30 91670	2.624	4.002	1.15
0.687	0.727	50	V30 31750	1.374	2.752	0.88	V30 71750	2.061	3.439	1.10	V30 91750	2.748	4.126	1.15
0.703	0.743	50	V30 31790	1.406	2.784	0.88	V30 71790	2.109	3.487	1.10	V30 91790	2.812	4.189	1.15
0.750	0.790	50	V30 31910	1.500	2.878	1.10	V30 71910	2.250	3.628	1.21	V30 91910	3.000	4.378	1.28
0.765	0.805	50					V30 71940	2.295	3.673	1.21	V30 91940	3.060	4.438	1.28
0.781	0.821	50	V30 31980	1.562	2.940	1.10	V30 71980	2.343	3.721	1.32	V30 91980	3.124	4.502	1.37
0.812	0.852	50	V30 32060	1.624	3.002	1.10	V30 72060	2.436	3.814	1.32	V30 92060	3.248	4.626	1.37
0.828	0.868	50	V30 32100	1.656	3.034	1.21	V30 72100	2.484	3.862	1.32	V30 92100	3.312	4.690	1.37
0.875	0.915	50	V30 32220	1.750	3.128	1.21	V30 72220	2.625	4.003	1.32	V30 92220	3.500	4.878	1.37
0.937	0.977	50	V30 32380	1.874	3.252	1.32	V30 72380	2.811	4.189	1.43	V30 92380	3.748	5.126	1.54
0.985	1.025	50	V30 32500	1.970	3.348	1.32	V30 72500	2.955	4.333	1.43	V30 92500	3.940	5.318	1.54
1.000	1.040	50	V30 32540	2.000	3.378	1.32	V30 72540	3.000	4.378	1.54	V30 92540	4.000	5.378	1.67
1.031	1.111	50	V30 32620	2.062	3.440	1.32	V30 72620	3.093	4.471	1.54	V30 92620	4.124	5.502	1.67
1.062	1.142	50	V30 32700	2.124	3.502	1.32	V30 72700	3.186	4.564	1.54	V30 92700	4.248	5.626	1.67
1.109	1.229	50	V30 32820	2.218	3.596	1.43	V30 72820	3.327	4.705	1.65	V30 92820	4.436	5.814	1.69
1.125	1.245	50	V30 32860	2.250	3.628	1.43	V30 72860	3.375	4.753	1.65	V30 92860	4.500	5.878	1.69
1.156	1.276	50	V30 32940	2.312	3.690	1.54	V30 72940	3.468	4.846	1.65	V30 92940	4.624	6.002	1.69

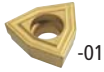
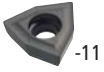





Delivery:

KUB Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.



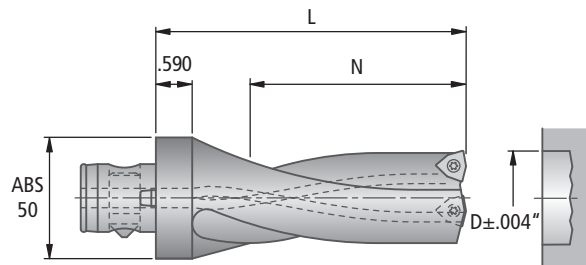
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2×D	●	●	●	●	●	●	●	●	×	●	●
3×D	●	●	●	●	●	●	●	●	×	○	●
4×D	●	●	●	○	○	○	○	○	×	×	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation			Replacement Parts		
Order No. Size	Insert  -01  -11 ISO Insert Description	for Workpiece Material P M K N S H	Insert clamping screw	Starting clamping torque	TORX PLUS®
			 Order No. Description	in-lbs	 Order No. Description
W29 10010.048425 W29 10010.047930 W29 10010.0462 W29 10110.0477	WOEX030204-01 BK8425 WOEX030204-01 BK7930 WOEX030204-01 BK62 WOEX030204-11 BK77		N00 56041 S/M2×4.3-6IP	5.5	L05 00810 6IP
W29 18010.048425 W29 18010.047930 W29 18010.0462 W29 18110.0477	WOEX040304-01 BK8425 WOEX040304-01 BK7930 WOEX040304-01 BK62 WOEX040304-11 BK77		N00 57553 S/M2.2×5.5-6IP	8.9	L05 00810 6IP
W29 24010.048425 W29 24010.047930 W29 24010.0462 W29 24110.0477	WOEX05T304-01 BK8425 WOEX05T304-01 BK7930 WOEX05T304-01 BK62 WOEX05T304-11 BK77		N00 57511 S/M2.5×7.2-8IP	11.0	L05 00830 8IP

KUB Trigon® Ø 1.187" – 1.750"

with ABS® Connection
right hand, Inch



D	*D plus maximum radial offset	ABS d	2xD				3xD				4xD			
			Order No.	N	L	lbs	Order No.	N	L	lbs	Order No.	N	L	lbs
1.187	1.287	50	V30 33020	2.374	3.965	1.65	V30 73020	3.561	5.152	1.76	V30 93020	4.748	6.339	1.81
1.218	1.318	50	V30 33090	2.436	4.013	1.65	V30 73090	3.654	5.224	1.87	V30 93090	4.872	6.463	2.14
1.250	1.331	50	V30 33180	2.500	4.091	1.65	V30 73180	3.750	5.341	1.98	V30 93180	5.000	6.591	2.23
1.281	1.361	50	V30 33250	2.562	4.153	1.76	V30 73250	3.843	5.434	2.09	V30 93250	5.124	6.715	2.34
1.312	1.392	50	V30 33330	2.624	4.215	1.76	V30 73330	3.936	5.527	2.09	V30 93330	5.248	6.839	2.34
1.328	1.408	50	V30 33370	2.656	4.247	1.87	V30 73370	3.984	5.757	2.21	V30 93370	5.312	6.903	2.60
1.375	1.415	50	V30 33490	2.750	4.341	1.98	V30 73490	4.125	5.716	2.21	V30 93490	5.500	7.091	2.60
1.406	1.446	50	V30 33570	2.812	4.403	1.98	V30 73570	4.218	5.809	2.32	V30 93570	5.624	7.215	2.62
1.437	1.477	50	V30 33650	2.874	4.465	2.32	V30 73650	4.311	5.902	2.32	V30 93650	5.748	7.339	2.62
1.469	1.589	50	V30 33730	2.938	4.907	2.32	V30 73730	4.407	6.376	2.65	V30 93730	5.876	7.845	3.09
1.500	1.620	50	V30 33810	3.000	4.969	2.43	V30 73810	4.500	6.469	2.76	V30 93810	6.000	7.969	3.29
1.531	1.651	50	V30 33890	3.062	5.031	2.43	V30 73890	4.593	6.562	2.87	V30 93890	6.124	8.093	3.33
1.562	1.682	50	V30 33970	3.124	5.093	2.54	V30 73970	4.686	6.654	3.09	V30 93970	6.248	8.217	3.66
1.625	1.745	50	V30 34130	3.250	5.219	2.65	V30 74130	4.875	6.844	3.20	V30 94130	6.500	8.469	3.74
1.656	1.772	50	V30 34210	3.312	5.281	2.65	V30 74210	4.968	6.937	3.31	V30 94210	6.624	8.593	3.86
1.687	1.772	50	V30 34290	3.374	5.343	2.76	V30 74290	5.061	7.030	3.42	V30 94290	6.748	8.717	3.17
1.750	1.772	50	V30 34450	3.500	5.469	2.76	V30 74450	5.250	7.219	3.42	V30 94450	7.000	8.969	3.97

Delivery:

KUB Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.



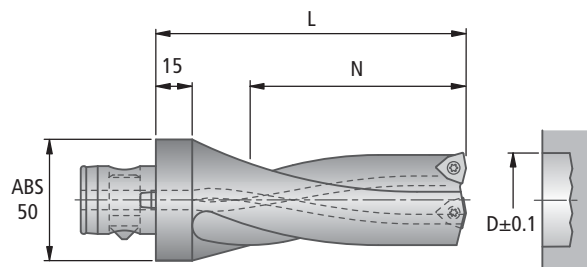
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	×	●	●
3xD	●	●	●	●	●	●	●	●	×	○	●
4xD	●	●	●	○	○	○	○	○	×	×	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation				Replacement Parts						
Order No. Size	Insert -01 -11 ISO Insert Description	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
		P	M	K	N	S	H			
W29 24010.048425 W29 24010.047930 W29 24010.0462 W29 24110.0477	WOEX05T304-01 BK8425 WOEX05T304-01 BK7930 WOEX05T304-01 BK62 WOEX05T304-11 BK77	●	●	●	●	●	●	N00 57511 S/M2.5×7.2-8IP	11.0	L05 00830 8IP
W29 34010.048425 W29 34010.047930 W29 34010.0462 W29 34110.0477	WOEX06T304-01 BK8425 WOEX06T304-01 BK7930 WOEX06T304-01 BK62 WOEX06T304-11 BK77	●	●	●	●	●	●	N00 57521 S/M3.5×7.3-10IP	25.0	L05 00850 10IP

KUB Trigon® Ø 14 – 29.5 mm

with ABS® Connection
right hand, Metric



D	*D plus maximum radial offset	ABS d	2xD				3xD				4xD			
			Order No.	N	L	lbs	Order No.	N	L	lbs	Order No.	N	L	lbs
14	15	50	V30 31403	28	63	1.01	V30 71403	42	77	1.04	V30 91403	56	91	1.04
15	16	50	V30 31503	30	65	1.01	V30 71503	45	80	1.04	V30 91503	60	95	1.06
15.5	16.5	50	V30 31551	32	67	1.01	V30 71551	48	83	1.04	V30 91551	64	99	1.06
16	17	50	V30 31601	32	67	1.04	V30 71601	48	83	1.06	V30 91601	64	99	1.08
17	18	50	V30 31701	34	69	1.04	V30 71701	51	86	1.06	V30 91701	68	103	1.10
17.5	18.5	50	V30 31751	36	71	1.06	V30 71751	54	89	1.08	V30 91751	72	107	1.10
18	19	50	V30 31801	36	71	1.06	V30 71801	54	89	1.08	V30 91801	72	107	1.12
18.5	19	50	V30 31851	38	73	1.06	V30 71851	57	92	1.10	V30 91851	76	111	1.15
19	20	50	V30 31901	38	73	1.06	V30 71901	57	92	1.06	V30 91901	76	111	1.15
19.5	20	50	V30 31951	40	75	1.06	V30 71951	60	95	1.12	V30 91951	80	115	1.15
20	21	50	V30 32001	40	75	1.10	V30 72001	60	95	1.15	V30 92001	80	115	1.19
21	22	50	V30 32101	42	77	1.12	V30 72101	63	98	1.17	V30 92101	84	119	1.23
22	23	50	V30 32201	44	79	1.15	V30 72201	66	101	1.15	V30 92201	88	123	1.28
22.5	23.5	50	V30 32251	46	81	1.17	V30 72251	69	104	1.23	V30 92251	92	127	1.21
23	24	50	V30 32301	46	81	1.17	V30 72301	69	104	1.30	V30 92301	92	127	1.32
24	25	50	V30 32401	48	83	1.21	V30 72401	72	107	1.32	V30 92401	96	131	1.37
24.5	25.5	50	V30 32451	50	85	1.21	V30 72451	75	110	1.32	V30 92451	100	135	1.41
25	26	50	V30 32501	50	85	1.37	V30 72501	75	110	1.32	V30 92501	100	135	1.39
26	28	50	V30 32601	52	87	1.41	V30 72601	78	113	1.35	V30 92601	104	139	1.46
26.5	28.5	50	V30 32651	54	89	1.26	V30 72651	81	116	1.39	V30 92651	108	143	1.48
27	30	50	V30 32701	54	89	1.28	V30 72701	81	116	1.39	V30 92701	108	143	1.59
28	31	50	V30 32801	56	91	1.30	V30 72801	84	119	1.43	V30 92801	112	147	1.54
28.5	31.5	50	V30 32851	58	93	1.32	V30 72851	87	122	1.48	V30 92851	116	151	1.61
29	32	50	V30 32901	58	93	1.35	V30 72901	87	122	1.48	V30 92901	116	151	1.65
29.5	32.5	50	V30 32951	60	95	1.37	V30 72951	90	125	1.52	V30 92951	120	155	1.68

Delivery:

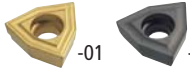





KUB Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.

* see Chapter1 for Micro-adjustable Drill Holders.



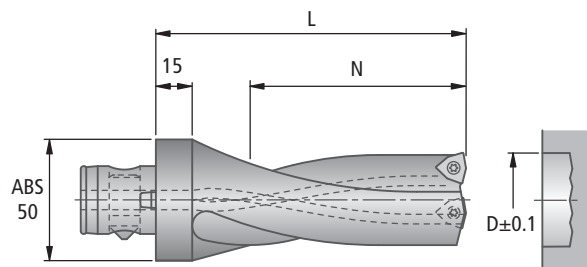
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	×	●	●
3xD	●	●	●	●	●	●	●	●	×	○	●
4xD	●	●	●	○	○	○	○	○	×	×	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation			Replacement Parts		
Order No. Size	Insert  -01 -11 ISO Insert Description	for Workpiece Material P M K N S H	Insert clamping screw	Starting clamping torque	TORX PLUS®
			 Order No. Description	in-lbs	 Order No. Description
W29 10010.048425 W29 10010.047930 W29 10010.0462 W29 10110.0477	WOEX030204-01 BK8425 WOEX030204-01 BK7930 WOEX030204-01 BK62 WOEX030204-11 BK77		N00 56041 S/M2.2x4.3-6IP	5.5	L05 00810 6IP
W29 18010.048425 W29 18010.047930 W29 18010.0462 W29 18110.0477	WOEX040304-01 BK8425 WOEX040304-01 BK7930 WOEX040304-01 BK62 WOEX040304-11 BK77		N00 57553 S/M2.2x5.5-6IP	8.9	L05 00810 6IP
W29 24010.048425 W29 24010.047930 W29 24010.0462 W29 24110.0477	WOEX05T304-01 BK8425 WOEX05T304-01 BK7930 WOEX05T304-01 BK62 WOEX05T304-11 BK77		N00 57511 S/M2.5x7.2-8IP	11.0	L05 00830 8IP

KUB Trigon® Ø 30 – 44 mm

with ABS® Connection
right hand, Metric



D	*D plus maximum radial offset	ABS d	2xD				3xD				4xD			
			Order No.	N	L	lbs	Order No.	N	L	lbs	Order No.	N	L	lbs
30	32.5	50	V30 33001	60	100	1.63	V30 73001	90	130	1.74	V30 93001	120	160	1.81
31	33.5	50	V30 33101	62	102	1.52	V30 73101	93	133	1.74	V30 93101	124	164	1.90
31.5	33.5	50	V30 33151	64	104	1.54	V30 73151	96	136	1.72	V30 93151	128	168	1.94
32	34	50	V30 33201	64	104	1.57	V30 73201	96	136	1.76	V30 93201	128	168	2.01
33	34	50	V30 33301	66	106	1.81	V30 73301	99	139	1.85	V30 93301	132	172	2.07
34	35	50	V30 33401	68	108	1.72	V30 73401	102	142	1.87	V30 93401	136	176	2.14
35	36	50	V30 33501	70	110	1.70	V30 73501	105	145	1.96	V30 93501	140	180	2.23
36	37	50	V30 33601	72	112	1.74	V30 73601	108	148	2.05	V30 93601	144	184	2.34
37	40	50	V30 33701	74	124	1.96	V30 73701	111	161	2.29	V30 93701	148	198	2.60
37.5	40.5	50	V30 33751	76	126	1.98	V30 73751	114	164	2.25	V30 93751	152	202	2.62
38	41	50	V30 33801	76	126	2.03	V30 73801	114	164	2.38	V30 93801	152	202	2.69
39	42	50	V30 33901	78	128	2.09	V30 73901	117	167	2.49	V30 93901	156	206	2.84
39.5	42.5	50	V30 33951	80	130	2.12	V30 73951	120	170	2.51	V30 93951	160	210	2.91
40	43	50	V30 34001	80	130	2.16	V30 74001	120	170	2.58	V30 94001	160	210	3.00
41	44	50	V30 34101	82	132	2.43	V30 74101	123	173	2.69	V30 94101	164	214	3.15
42	45	50	V30 34201	84	134	2.43	V30 74201	126	176	2.80	V30 94201	168	218	3.31
43	45	50	V30 34301	86	136	2.43	V30 74301	129	179	2.93	V30 94301	172	222	3.35
44	45	50	V30 34401	88	138	2.49	V30 74401	132	182	3.11	V30 94401	176	226	3.66

Delivery:







KUB Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.

* see Chapter1 for Micro-adjustable Drill Holders.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	×	●	●
3xD	●	●	●	●	●	●	●	●	×	○	●
4xD	●	●	●	○	○	○	○	○	×	×	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Insert Recommendation			Replacement Parts		
Order No. Size	Insert  -01 -11 ISO Insert Description	for Workpiece Material 	 Insert clamping screw	Starting clamping torque	TORX PLUS® 
			Order No. Description	in-lbs	Order No. Description
W29 24010.048425 W29 24010.047930 W29 24010.0462 W29 24110.0477	WOEX05T304-01 BK8425 WOEX05T304-01 BK7930 WOEX05T304-01 BK62 WOEX05T304-11 BK77		N00 57511 S/M2.5×7.2-8IP	11.0	L05 00830 8IP
W29 34010.048425 W29 34010.047930 W29 34010.0462 W29 34110.0477	WOEX06T304-01 BK8425 WOEX06T304-01 BK7930 WOEX06T304-01 BK62 WOEX06T304-11 BK77		N00 57521 S/M3.5×7.3-10IP	25.0	L05 00850 10IP

Cutting Recommendations



Data for KUB Trigon® Drills Ø .562" – 1.750" (14 – 44 mm)
with ABS® Connection · right hand



Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	2xD								3xD								4xD							
						Maximum Feedrate f, in/rev								Maximum Feedrate f, in/rev								Maximum Feedrate f, in/rev							
1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0					
P	≤72500	Unalloyed steel	A570.36 1213 A573.81	980	.003	.004	.004	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005				
	72500 - 130000																									Low alloy steel	5120 1055 5115	820	.002
S	<72500	Lead alloy	12L13	980	.003	.004	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006				
	>130000																									High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	660	.002
M	>130000	Tool steel	H13 H21	590	.002	.003	.004	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005				
																										HSS		260	.002
K	250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.002	.002	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004				
	58000																									Titanium, Titanium alloy	AMS R54520	260	.002
N	≤87000	Stainless steel: austenitic 300 series	304L 316	590	.002	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006				
	>130000																									Stainless steel	630	520	.002
H	>130000	Stainless steel: martensitic/ferritic 400 series	420 403	520	.002	.002	.003	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005				
																										Grey cast iron	No 35 B No 50 B	660	.004
H	≤87000	Alloy grey cast iron	A436 Type 2	520	.003	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006				
	87000																									Nodular cast iron ferritic	60-40-18	590	.003
H	87000	Nodular cast iron ferritic / pearlitic	80-55-06	520	.003	.004	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008				
																										Nodular cast iron pearlitic	100-70-03	460	.004
H		Malleable cast iron	70003	460	.003	.004	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008				
																										Alloyed nodular cast iron	A43D2	460	.003
H		Vermicular cast iron		390	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006				
																										Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.002
H		Copper alloy, Brass, Bronze: average cut		1310	.002	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004				
																										Wrought aluminum alloy		1970	.002
H		Aluminum alloy: Si content <10%	GD-AISI12	980	.004	.005	.006	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007				
																										Magnesium alloy		820	.004
H	203000	Hardened steel < 45 HRC		260	.002	.002	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004				
	261000																									Hardened steel > 45 HRC		130	.002



Alternative Inserts

2



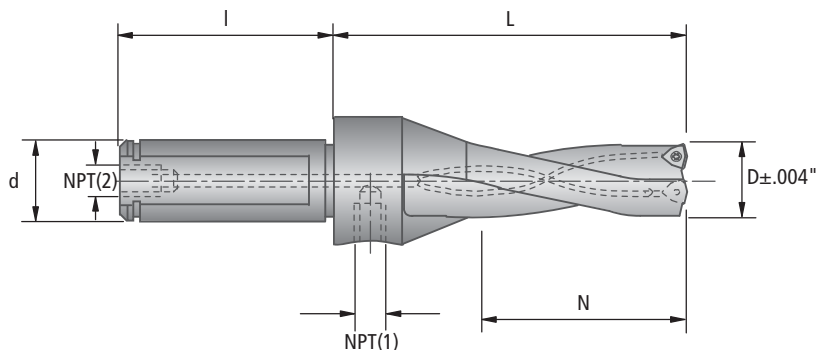
For better chip control			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10130.048425	WOEX030204-13 BK8425	
	W29 10130.0479	WOEX030204-13 BK79	
0.812 - 0.937	W29 18130.048425	WOEX040304-13 BK8425	
	W29 18130.0479	WOEX040304-13 BK79	
0.985 - 1.437	W29 24130.048425	WOEX05T304-13 BK8425	
	W29 24130.0479	WOEX05T304-13 BK79	
	W29 24030.046425	WOEX05T304-03 BK6425	
1.469 - 1.750	W29 34130.048425	WOEX06T304-13 BK8425	
	W29 34130.0479	WOEX06T304-13 BK79	
	W29 34030.046425	WOEX06T304-03 BK6425	

For better wear resistance			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10010.0472	WOEX030204-01 BK72	
	W29 10110.0450	WOEX030204-11 BK50	
0.812 - 0.937	W29 18010.0472	WOEX040304-01 BK72	
	W29 18110.0450	WOEX040304-11 BK50	
0.985 - 1.437	W29 24010.0472	WOEX05T304-01 BK72	
	W29 24110.0450	WOEX05T304-11 BK50	
1.469 - 1.750	W29 34010.0472	WOEX06T304-01 BK72	
	W29 34110.0450	WOEX06T304-11 BK50	

For higher toughness			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10010.047930	WOEX030204-01 BK7930	
	W29 10010.0404	WOEX030204-01 P40	
	W29 10010.0421	WOEX030204-01 K10	
	W29 10110.0421	WOEX030204-11 K10	
0.812 - 0.937	W29 18010.047930	WOEX040304-01 BK7930	
	W29 18010.0404	WOEX040304-01 P40	
	W29 18010.0421	WOEX040304-01 K10	
	W29 18110.0421	WOEX040304-11 K10	
0.985 - 1.437	W29 24010.047930	WOEX05T304-01 BK7930	
	W29 24010.0404	WOEX05T304-01 P40	
	W29 24010.0421	WOEX05T304-01 K10	
	W29 24110.0421	WOEX05T304-11 K10	
1.469 - 1.750	W29 34010.047930	WOEX06T304-01 BK7930	
	W29 34010.0404	WOEX06T304-01 P40	
	W29 34010.0421	WOEX06T304-01 K10	
	W29 34110.0421	WOEX06T304-11 K10	

KUB Trigon® Ø .562" – .750"

with Straight Shank Connection
right hand, Inch



D	D plus maximum radial offset	Shank dimension d x l	2.5xD				4xD			
			Order No.	N	L	NPT (1)&(2)	Order No.	N	L	NPT (1)&(2)
0.562	0.602	.750 X 2.250	V57 41432	1.405	2.875	1/8	V57 61432	2.248	3.625	1/8
0.593	0.633	.750 X 2.250	V57 41510	1.483	2.875		V57 61510	2.372	3.750	
0.625	0.665	.750 X 2.250	V57 41590	1.563	2.875		V57 61590	2.500	3.878	
0.687	0.727	.750 X 2.250	V57 41750	1.718	2.875		V57 61750	2.748	4.126	
0.703	0.743	.750 X 2.250	V57 41790	1.758	2.875		V57 61790	2.812	4.189	
0.750	0.790	.750 X 2.250	V57 41910	1.875	2.875		V57 61910	3.000	4.378	

Delivery:

KUB IT Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.

Note:

KUB IT and KUB IT HD Trigon® drills fit standard machine adapters.
Check shank length "l" to assure proper assembly



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2.5xD 4xD	●	●	●	○	○	○	○	○	✕	✕	●

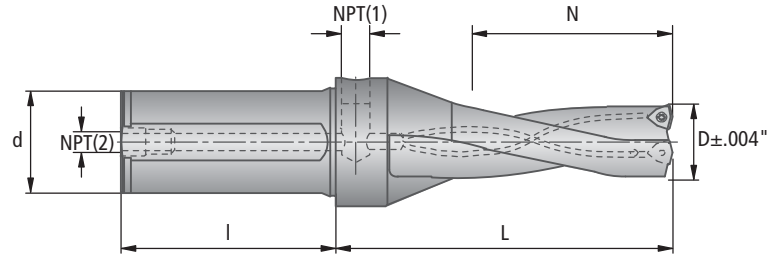
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation			Replacement Parts		
Order No. Size	Insert -01 -11 ISO Insert Description	for Workpiece Material P M K N S H	Insert clamping screw	Starting clamping torque	TORX PLUS®
			Order No. Description	in-lbs	Order No. Description
W29 10010.048425 W29 10010.047930 W29 10010.0462 W29 10110.0477	WOEX030204-01 BK8425 WOEX030204-01 BK7930 WOEX030204-01 BK62 WOEX030204-11 BK77		 N00 56041 S/M2x4.3-6IP	5.5	 L05 00810 6IP

KUB Trigon® Ø .562" – .937"

with Straight Shank Connection
right hand, Inch

Now with Longer Shank!



D	D plus maximum radial offset	Shank dimension d x l	2.5xD				4xD			
			Order No.	N	L	NPT (1)&(2)	Order No.	N	L	NPT (1)&(2)
0.562	0.602	1.250X3.250	V57 51434	1.405	2.875	1/8	V57 71434	2.248	3.625	1/8
0.593	0.633	1.250X3.250	V57 51512	1.483	2.875		V57 71512	2.372	3.750	
0.625	0.665	1.250X3.250	V57 51592	1.563	2.875		V57 71592	2.500	3.878	
0.656	0.696	1.250X3.250	V57 51672	1.718	3.125		V57 71672	2.624	4.002	
0.687	0.727	1.250X3.250	V57 51752	1.718	3.125		V57 71752	2.748	4.126	
0.703	0.743	1.250X3.250	V57 51792	1.758	3.125		V57 71792	2.812	4.189	
0.750	0.790	1.250X3.250	V57 51912	1.625	3.125		V57 71912	3.000	4.378	
0.765	0.805	1.250X3.250	V57 51942	1.625	3.125		V57 71942	3.060	4.438	
0.781	0.821	1.250X3.250	V57 51982	1.625	3.125		V57 71982	3.124	4.502	
0.812	0.852	1.250X3.250	V57 52062	1.625	3.125	1/8	V57 72062	3.248	4.626	1/8
0.828	0.868	1.250X3.250	V57 52102	2.000	3.625		V57 72102	3.312	4.690	
0.843	0.883	1.250X3.250	V57 52142	2.000	3.625		V57 72142	3.372	4.750	
0.875	0.915	1.250X3.250	V57 52222	2.000	3.625		V57 72222	3.500	4.878	
0.906	0.946	1.250X3.250	V57 52302	2.000	3.625		V57 72302	3.624	5.002	
0.937	0.977	1.250X3.250	V57 52382	2.000	3.625		V57 72382	3.748	5.126	

Delivery:

KUB IT Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.

Note:

KUB IT and KUB IT HD Trigon® drills fit standard machine adapters.
Check shank length "l" to assure proper assembly

In some cases, only short shank drills are currently available. New longer shank drills will be available once inventory of short shank drills are depleted. Please contact customer service for availability.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2.5xD 4xD	●	●	●	○	○	○	○	○	✕	✕	●

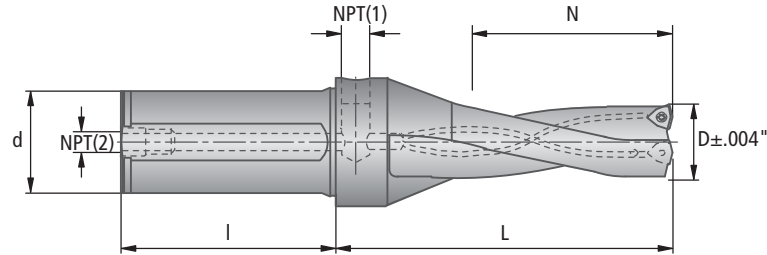
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation			Replacement Parts		
Order No. Size	Insert -01 -11 ISO Insert Description	for Workpiece Material P M K N S H	Insert clamping screw	Starting clamping torque	TORX PLUS®
			Order No. Description	in-lbs	Order No. Description
W29 10010.048425 W29 10010.047930 W29 10010.0462 W29 10110.0477	WOE030204-01 BK8425 WOE030204-01 BK7930 WOE030204-01 BK62 WOE030204-11 BK77		 N00 56041 S/M2×4.3-6IP	5.5	 L05 00810 6IP
W29 18010.048425 W29 18010.047930 W29 18010.0462 W29 18110.0477	WOE040304-01 BK8425 WOE040304-01 BK7930 WOE040304-01 BK62 WOE040304-11 BK77		 N00 57553 S/M2.2×5.5-6IP	8.9	 L05 00810 6IP

KUB Trigon® Ø .985" – 1.750"

with Straight Shank Connection
right hand, Inch

Now with Longer Shank!



D	D plus maximum radial offset	Shank dimension d x l	2.5xD				4xD					
			Order No.	N	L	NPT (1)&(2)	Order No.	N	L	NPT (1)&(2)		
0.985	1.025	1.250X3.250	V57 52502	2.000	3.625	1/8	V57 72502	3.940	5.318	1/8		
1.000	1.040	1.250X3.250	V57 52542	2.000	3.625		V57 72542	4.000	5.378			
1.031	1.111	1.250X3.250	V57 52622	2.750	4.312		V57 72622	4.124	5.502			
1.062	1.142	1.250X3.250	V57 52702	2.750	4.312		V57 72702	4.248	5.626			
1.109	1.229	1.250X3.250	V57 52822	2.750	4.312		V57 72822	4.436	5.814			
1.125	1.245	1.250X3.250	V57 52862	2.750	4.312		V57 72862	4.500	5.878			
1.156	1.276	1.250X3.250	V57 52942	3.250	5.000		V57 72942	4.624	6.002			
1.187	1.287	1.250X3.250	V57 53022	3.250	5.000		V57 73022	4.748	6.339			
1.218	1.318	1.250X3.250	V57 53092	3.250	5.000		V57 73092	4.872	6.463			
1.250	1.331	1.250X3.250	V57 53182	3.250	5.000		V57 73182	5.000	6.591			
1.281	1.361	1.250X3.250	V57 53252	3.250	5.000		V57 73252	5.124	6.715			
1.312	1.392	1.250X3.250	V57 53332	3.250	5.000		V57 73332	5.248	6.839			
1.328	1.408	1.250X3.250	V57 53372	3.250	5.000		V57 73372	5.312	6.887			
1.375	1.415	1.250X3.250	V57 53492	3.250	5.000		V57 73492	5.500	7.091			
1.406	1.446	1.250X3.250	V57 53572	3.250	5.000		V57 73572	5.624	7.199			
1.437	1.477	1.250X3.250	V57 53652	3.250	5.000		V57 73652	5.748	7.339			
1.469	1.589	1.250X3.250	V57 53732	3.500	5.118		1/8	V57 73732	5.876		7.845	1/8
1.500	1.620	1.250X3.250	V57 53812	3.500	5.118			V57 73812	6.000		7.969	
1.531	1.651	1.250X3.250	V57 53892	3.500	5.118	V57 73892		6.124	8.093			
1.562	1.682	1.250X3.250	V57 53972	3.500	5.118	V57 73972		6.248	8.217			
1.625	1.745	1.250X3.250	V57 54132	3.500	5.118	1/4	V57 74132	6.500	8.469	1/4		
1.656	1.772	1.500X5.000	V57 54212	4.000	5.709		V57 74212	6.624	8.593			
1.687	1.772	1.500X5.000	V57 54262	4.000	5.709		V57 74292	6.748	8.717			
1.750	1.772	1.500X5.000	V57 54452	4.000	5.709		V57 74452	7.000	8.969			

Delivery:

KUB IT Trigon® Drill complete with insert clamping screw, less TORX PLUS® screw driver and inserts.

Note:

KUB IT and KUB IT HD Trigon® drills fit standard machine adapters.
Check shank length "l" to assure proper assembly

In some cases, only short shank drills are currently available. New longer shank drills will be available once inventory of short shank drills are depleted. Please contact customer service for availability.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2.5xD 4xD	●	●	●	○	○	○	○	○	✕	✕	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Insert Recommendation				Replacement Parts						
Order No. Size	Insert -01 -11 ISO Insert Description	for Workpiece Material						Insert clamping screw Order No. Description	Starting clamping torque in-lbs	TORX PLUS® Order No. Description
		P	M	K	N	S	H			
W29 24010.048425 W29 24010.047930 W29 24010.0462 W29 24110.0477	WOEX05T304-01 BK8425 WOEX05T304-01 BK7930 WOEX05T304-01 BK62 WOEX05T304-11 BK77	●	●	●	●	●	○	N00 57511 S/M2.5×7.2-8IP	11.0	L05 00830 8IP
W29 34010.048425 W29 34010.047930 W29 34010.0462 W29 34110.0477	WOEX06T304-01 BK8425 WOEX06T304-01 BK7930 WOEX06T304-01 BK62 WOEX06T304-11 BK77	●	●	●	●	●	○	N00 57521 S/M3.5×7.3-10IP	25.0	L05 00850 10IP

Cutting Recommendations

Data for KUB Trigon® Drills Ø .562" – 1.437"















(.) = mm











Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	2.5xD					4xD																
						Maximum Feedrate f, in/rev					Maximum Feedrate. f (in/rev)																
1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0			
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	
	72500 - 130000		Low alloy steel	5120 1055 5115	820	.003	.004	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	<72500		Lead alloy	12L13	980	.003	.004	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	660	.002	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	>130000		Tool steel	H13 H21	590	.002	.003	.004	.004	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
S		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.002	.002	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
	58000		Titanium, Titanium alloy	AMS R54520	260	.002	.003	.004	.004	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
M	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.002	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	<130000		Stainless steel	630	520	.002	.002	.003	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	520	.002	.002	.003	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
K		180	Grey cast iron	No 35 B No 50 B	660	.004	.005	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	
		250	Alloy grey cast iron	A436 Type 2	520	.003	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.003	.004	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	
		230	Nodular cast iron ferritic / pearlitic	80-55-06	520	.003	.004	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008
	87000	250	Nodular cast iron pearlitic	100-70-03	460	.004	.005	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	
		250	Malleable cast iron	70003	460	.004	.005	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	
		200	Alloyed nodular cast iron	A43D2	460	.003	.004	.006	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	
		300	Vermicular cast iron		390	.003	.004	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.002	.003	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	N		100	Copper alloy, Brass, Bronze: average cut		1310	.002	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004
		60	Wrought aluminum alloy		1970	.002	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
		75	Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	980	.004	.005	.006	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	
H	203000		Hardened steel < 45 HRC		260	.002	.002	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
	261000		Hardened steel > 45 HRC	A360.2	130	.002	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	



























Alternative Inserts

2



For better chip control			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10130.048425	WOEX030204-13 BK8425	
	W29 10130.0479	WOEX030204-13 BK79	
0.812 - 0.937	W29 18130.048425	WOEX040304-13 BK8425	
	W29 18130.0479	WOEX040304-13 BK79	
0.985 - 1.437	W29 24130.048425	WOEX05T304-13 BK8425	
	W29 24130.0479	WOEX05T304-13 BK79	
	W29 24030.046425	WOEX05T304-03 BK6425	 
1.469 - 1.750	W29 34130.048425	WOEX06T304-13 BK8425	
	W29 34130.0479	WOEX06T304-13 BK79	
	W29 34030.046425	WOEX06T304-03 BK6425	 

For better wear resistance			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10010.0472	WOEX030204-01 BK72	
	W29 10110.0450	WOEX030204-11 BK50	
0.812 - 0.937	W29 18010.0472	WOEX040304-01 BK72	
	W29 18110.0450	WOEX040304-11 BK50	
0.985 - 1.437	W29 24010.0472	WOEX05T304-01 BK72	
	W29 24110.0450	WOEX05T304-11 BK50	
1.469 - 1.750	W29 34010.0472	WOEX06T304-01 BK72	
	W29 34110.0450	WOEX06T304-11 BK50	

For higher toughness			
D	Insert		for
	Order No. Size	ISO - Description	Workpiece Material
			P M K N S H
0.562 - 0.781	W29 10010.047930	WOEX030204-01 BK7930	
	W29 10010.0404	WOEX030204-01 P40	  
	W29 10010.0421	WOEX030204-01 K10	
	W29 10110.0421	WOEX030204-11 K10	
0.812 - 0.937	W29 18010.047930	WOEX040304-01 BK7930	
	W29 18010.0404	WOEX040304-01 P40	  
	W29 18010.0421	WOEX040304-01 K10	
	W29 18110.0421	WOEX040304-11 K10	
0.985 - 1.437	W29 24010.047930	WOEX05T304-01 BK7930	
	W29 24010.0404	WOEX05T304-01 P40	  
	W29 24010.0421	WOEX05T304-01 K10	
	W29 24110.0421	WOEX05T304-11 K10	
1.469 - 1.750	W29 34010.047930	WOEX06T304-01 BK7930	
	W29 34010.0404	WOEX06T304-01 P40	  
	W29 34010.0421	WOEX06T304-01 K10	
	W29 34110.0421	WOEX06T304-11 K10	

KUB® Drill

KUB® Drill Features

- Standard drilling depth 2 X and 3 X diameter
- Spiral flutes for chip removal from cutting area
- Central coolant supply to cutting edges
- Outside and inside drill pockets for additional drill performance
- Now with TORX PLUS insert clamping screws



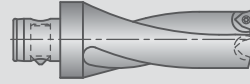


Drilling **2xD, 3xD · Ø 1.781" - 3.250" (Ø 38.5 - 82 mm)**

right hand · with ABS® Connection

Cutting Recommendations

Alternative Inserts



2.50 – 2.53

2.56

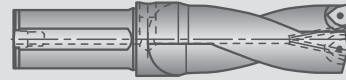
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Drilling **2.5xD · Ø 1.812" - 3.250"**

right hand · with Straight Shank Connection

Cutting Recommendations

Alternative Inserts



2.54 – 2.55

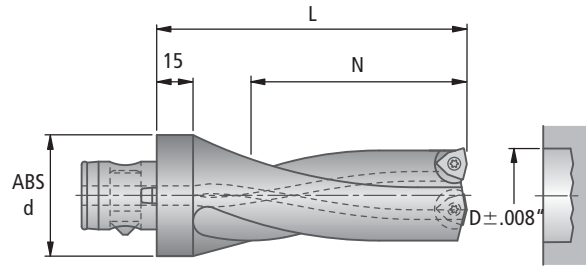
2.56

2.57



KUB® Ø 1.781" – 3.250"

with ABS® Connection
right hand, Inch



D	*D plus maximum radial offset	ABS d	2×D				3×D			
			Order No.	N	L	lbs	Order No.	N	L	lbs
1.781	1.897	63	V13 34520	3.562	5.728	3.86	V13 74520	5.343	7.509	4.63
1.812	1.929	63	V13 34600	3.624	5.790	3.97	V13 74600	5.436	7.602	4.74
1.875	1.992	63	V13 34760	3.750	5.916	4.08	V13 74760	5.625	7.791	4.85
1.937	2.055	63	V13 34920	3.874	6.040	4.30	V13 74920	5.811	7.977	5.18
1.975	2.093	63	V13 35020	3.950	6.116	4.41	V13 75020	5.925	8.091	5.51
2.000	2.118	63	V13 35080	4.000	6.166	4.52	V13 75080	6.000	8.166	5.51
2.062	2.160	63	V13 35240	4.124	6.290	4.74	V13 75240	6.186	8.532	5.73
2.125	2.171	63	V13 35400	4.250	6.416	4.96	V13 75400	6.375	8.541	5.95
2.165	2.283	80	V14 35500	4.330	6.496	6.73	V14 75500	6.495	8.661	7.35
2.203	2.321	80	V14 35600	4.406	6.572	6.84	V14 75600	6.609	8.775	8.16
2.250	2.366	80	V14 35720	4.500	6.666	6.95	V14 75720	6.750	8.916	8.38
2.281	2.397	80	V14 35790	4.562	6.728	7.06	V14 75790	6.843	9.009	8.49
2.375	2.429	80	V14 36030	4.750	6.916	7.39	V14 76030	7.125	9.291	8.85
2.437	2.555	80	V14 36190	4.874	7.040	7.83	V14 76190	7.311	9.477	9.59
2.500	2.630	80	V14 36350	5.000	7.166	8.16	V14 76350	7.500	9.666	9.92
2.593	2.711	80	V14 36590	5.186	7.352	8.71	V14 76590	7.779	9.945	11.03
2.625	2.740	80	V14 36670	5.250	7.416	8.82	V14 76670	7.875	10.041	11.55
2.656	2.774	80	V14 36750	5.312	7.478	8.93	V14 76750	7.968	10.134	11.68
2.750	2.866	80	V14 36990	5.500	8.060	9.92	V14 76990	8.250	10.810	12.90
2.875	2.992	80	V14 37300	5.750	8.310	10.69	V14 77300	8.625	11.185	13.56
3.000	3.118	80	V14 37620	6.000	8.560	11.58	V14 77620	9.000	11.560	15.21
3.250	3.285	80	V14 38260	6.500	9.060	13.34	V14 78260	9.750	12.310	16.75

Delivery:

KUB® drill complete with ABS® hardware, pocket clamping screws, insert clamping screw, dowel pin, WE-KUB pockets; less TORX PLUS® screwdriver and inserts.

* see Chapter1 for Micro-adjustable Drill Holders.
2.50



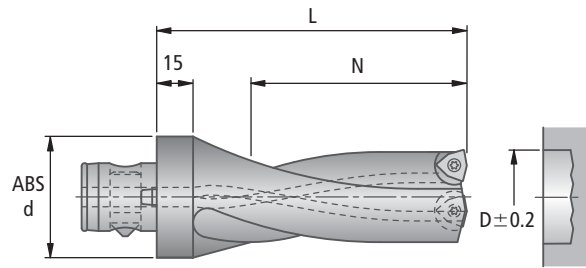
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD											
3xD	●	●	●	●	●	●	●	●	✗	✗	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

Insert Recommendation			Replacement Parts						
Order No. Size	Insert ISO Insert Description	for Workpiece Material P M K N S H	Insert clamping screw	TORX PLUS®	Outer pocket	Inner pocket	Pocket clamping screw	Pin	
			Order No. Description	Order No. Description	Order No.	Order No.	Order No.	Order No. Description	
W29 42010.048425 W29 42010.047930 W29 42010.0462 W29 42110.0477	WOEX080404-01 BK8425 WOEX080404-01 BK7930 WOEX080404-01 BK62 WOEX080404-11 BK77		N00 57531 S/M4.5x9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55310	D50 55110	N00 55821 Tx M4.5x9-10IP 38.1 in-lbs	N00 52010 3/4x5.5	
W29 50010.048425 W29 50010.047930 W29 50010.0462 W29 50110.0477	WOEX100504-01 BK8425 WOEX100504-01 BK7930 WOEX100504-01 BK62 WOEX100504-11 BK77		N00 57531 S/M4.5x9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55320	D50 55120	N00 55821 Tx M4.5x9-10IP 38.1 in-lbs	N00 52010 3/4x5.5	
W29 58010.088425 W29 58010.087930 W29 58010.0862 W29 58000.0884 W29 58000.0821	WOEX120608-01 BK8425 WOEX120608-01 BK7930 WOEX120608-01 BK62 WOEX120608-00 BK84 WOEX120608-00 K10		N00 57541 S/M5.5x11-20IP 55.3 in-lbs	L05 00870 20IP	D50 55330	D50 55130	N00 55901 S/M5.5x13.5-20IP 55.3 in-lbs	N00 52020 4/5x7.0	

KUB® Ø 45 – 82 mm

wint ABS® Connection
right hand, Metric



Delivery:

KUB® drill complete with ABS® hardware, pocket clamping screws, insert clamping screw, dowel pin, WE-KUB pockets; less TORX PLUS® screwdriver and inserts.

D	*D plus maximum radial offset	ABS d	2xD				3xD			
			Order No.	N	L	lbs	Order No.	N	L	lbs
45	48.0	63	V13 34500	90	145	1.61	V13 74500	135	190	1.61
46	49.0	63	V13 34600	92	147	1.66	V13 74600	138	193	1.95
47	50.0	63	V13 34700	94	149	1.70	V13 74700	141	196	2.02
48	51.0	63	V13 34800	96	151	1.75	V13 74800	144	199	2.08
49	52.0	63	V13 34900	98	153	1.80	V13 74900	147	202	2.16
50	53.0	63	V13 35000	100	155	1.85	V13 75000	150	205	2.23
51	54.0	63	V13 35100	102	157	1.89	V13 75100	153	208	2.27
52	55.0	63	V13 35200	104	159	1.94	V13 75200	156	211	2.45
53	55.0	63	V13 35300	106	161	2.00	V13 75300	159	214	2.45
54	55.0	63	V13 35400	108	163	2.07	V13 75400	162	217	2.54
55	58.0	80	V14 35500	110	165	2.91	V14 75500	165	220	3.41
56	59.0	80	V14 35600	112	167	2.96	V14 75600	168	223	3.51
57	60.0	80	V14 35700	114	169	3.06	V14 75700	171	226	3.62
58	61.0	80	V14 35800	116	171	3.13	V14 75800	174	229	3.73
59	62.0	80	V14 35900	118	173	3.21	V14 75900	177	232	3.82
60	63.0	80	V14 36000	120	175	3.32	V14 76000	180	235	3.93
61	64.0	80	V14 36100	122	177	3.32	V14 76100	183	238	4.05
62	65.0	80	V14 36200	124	179	3.44	V14 76200	186	241	4.19
63	66.0	80	V14 36300	126	181	3.54	V14 76300	189	244	4.31
64	67.0	80	V14 36400	128	183	3.59	V14 76400	192	247	4.34
65	68.0	80	V14 36500	130	185	3.65	V14 76500	195	250	4.60
66	69.0	80	V14 36600	132	187	3.73	V14 76600	198	253	4.61
67	69.5	80	V14 36700	134	189	3.82	V14 76700	201	256	4.80
68	70.0	80	V14 36800	136	191	3.99	V14 76800	204	259	4.93
69	72.0	80	V14 36900	138	203	4.30	V14 76900	207	272	5.25
70	73.0	80	V14 37000	140	205	4.38	V14 77000	210	275	5.32
71	74.0	80	V14 37100	142	207	4.57	V14 77100	213	278	5.55
72	75.0	80	V14 37200	144	209	4.53	V14 77200	216	281	5.79
73	76.0	80	V14 37300	146	211	4.65	V14 77300	219	284	5.96
74	77.0	80	V14 37400	148	213	4.76	V14 77400	222	287	6.13
75	78.0	80	V14 37500	150	215	4.90	V14 77500	225	290	6.32
76	79.0	80	V14 37600	152	217	5.10	V14 77600	228	293	6.43
77	80.0	80	V14 37700	154	219	5.18	V14 77700	231	296	6.60
78	81.0	80	V14 37800	156	221	5.39	V14 77800	234	299	6.80
79	82.0	80	V14 37900	158	223	5.42	V14 77900	237	302	7.10
80	82.0	80	V14 38000	160	225	5.66	V14 78000	240	305	7.23
81	82.5	80	V14 38100	162	227	5.75	V14 78100	243	308	7.57
82	83.0	80	V14 38200	164	229	5.97	V14 78200	246	311	7.69

* see Chapter1 for Micro-adjustable Drill Holders.



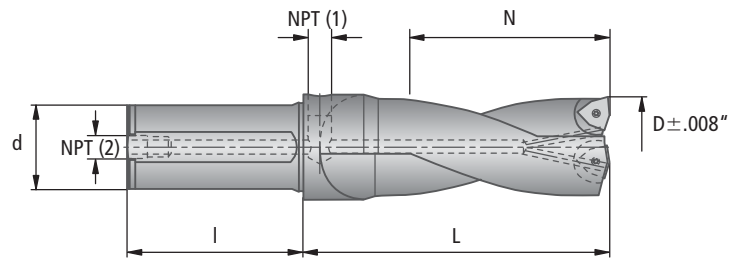
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD											
3xD	●	●	●	●	●	●	●	●	✗	✗	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

Insert Recommendation			Replacement Parts						
 Order No. Size	Insert -00 -01 -11 ISO Insert Description	for Workpiece Material P M K N S H	 Insert clamping screw	 TORX PLUS®	 Outer pocket	 Inner pocket	 Pocket clamping screw	 Pin	
			Order No. Description	Order No. Description	Order No.	Order No.	Order No.	Order No. Description	
W29 42010.048425 W29 42010.047930 W29 42010.0462 W29 42110.0477	WOEX080404-01 BK8425 WOEX080404-01 BK7930 WOEX080404-01 BK62 WOEX080404-11 BK77	● ● ● ● ●	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55310	D50 55110	N00 55821 M4.5×9-10IP 38.1 in-lbs	N00 52010 3/4×5.5	
W29 50010.048425 W29 50010.047930 W29 50010.0462 W29 50110.0477	WOEX100504-01 BK8425 WOEX100504-01 BK7930 WOEX100504-01 BK62 WOEX100504-11 BK77	● ● ● ● ●	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55320	D50 55120	N00 55821 M4.5×9-10IP 38.1 in-lbs	N00 52010 3/4×5.5	
W29 58010.088425 W29 58010.087930 W29 58010.0862 W29 58000.0884 W29 58000.0821	WOEX120608-01 BK8425 WOEX120608-01 BK7930 WOEX120608-01 BK62 WOEX120608-00 BK84 WOEX120608-00 K10	● ● ● ● ●	N00 57541 S/M5.5×11-20IP 55.3 in-lbs	L05 00870 20IP	D50 55330	D50 55130	N00 55901 M5.5×13.5-20IP 55.3 in-lbs	N00 52020 4/5×7.0	

KUB® Ø 1.812" – 3.250"

with Straight Shank Connection
right hand, Inch



D	*D plus maximum radial offset	Shank dimension d x l	2.5xD			
			Order No.	N	L	NPT
1.812	1.929	1.500X2.750	V57 34601	4.000	5.709	1/4
1.875	1.992	1.500X2.750	V57 34761	4.000	5.709	
1.937	2.055	1.500X2.750	V57 34921	5.000	6.890	
2.000	2.118	1.500X2.750	V57 35081	5.000	6.890	
2.125	2.171	1.500X2.750	V57 35401	5.000	6.890	
2.250	2.366	2.000X3.961	V57 35721	5.000	6.890	1/4
2.375	2.492	2.000X3.961	V57 36031	5.000	6.890	
2.500	2.630	2.000X3.961	V57 36351	5.000	6.890	
2.750	2.866	2.000X3.961	V57 36991	6.000	8.267	1/4
3.000	3.118	2.000X3.961	V57 37621	6.000	8.267	
3.250	3.285	2.000X3.961	V57 38261	6.000	8.267	

Delivery:

KUB® drill complete with ABS® hardware, pocket clamping screws, insert clamping screw, dowel pin, WE-KUB pockets; less TORX PLUS® screwdriver and inserts.



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD											
3xD	●	●	●	●	●	●	●	●	✗	✗	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

Insert Recommendation		Replacement Parts											
Order No. Size	Insert -00 -01 ISO Insert Description	for Workpiece Material						Insert clamping screw	TORX PLUS®	Outer pocket	Inner pocket	Pocket clamping screw	Pin
		P	M	K	N	S	H	Order No. Description	Order No. Description	Order No.	Order No.	Order No.	Order No. Description
W29 42010.048425 W29 42010.047930 W29 42010.0462 W29 42110.0477	WOEX080404-01 BK8425 WOEX080404-01 BK7930 WOEX080404-01 BK62 WOEX080404-11 BK77	●	●	●	●	●	○	N00 57531 S/M4.5x9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55310	D50 55110	N00 55821 Tx M4.5x9-10IP 38.1 in-lbs	N00 52010 3/4x5.5
W29 50010.048425 W29 50010.047930 W29 50010.0462 W29 50110.0477	WOEX100504-01 BK8425 WOEX100504-01 BK7930 WOEX100504-01 BK62 WOEX100504-11 BK77	●	●	●	●	●	○	N00 57531 S/M4.5x9-15IP 55.3 in-lbs	L05 00860 15IP	D50 55320	D50 55120	N00 55821 Tx M4.5x9-10IP 38.1 in-lbs	N00 52010 3/4x5.5
W29 58010.088425 W29 58010.087930 W29 58010.0862 W29 58000.0884 W29 58000.0821	WOEX120608-01 BK8425 WOEX120608-01 BK7930 WOEX120608-01 BK62 WOEX120608-00 BK84 WOEX120608-00 K10	●	●	●	●	●	○	N00 57541 S/M5.5x11-20IP 55.3 in-lbs	L05 00870 20IP	D50 55330	D50 55130	N00 55901 S/M5.5x13.5-20IP 55.3 in-lbs	N00 52020 4/5x7.0

Cutting Recommendations

Data for KUB® Drills Ø 1.781" – 3.250"

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	2xD			2.5xD			3xD														
						Maximum Feedrate. f (in/rev)			Maximum Feedrate. f (in/rev)			Maximum Feedrate. f (in/rev)														
1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0		
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
	72500 - 130000		Low alloy steel	5120 1055 5115	820	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
	<72500		Lead alloy	12L13	980	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	660	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
	>130000		Tool steel	H13 H21	590	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
S		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	
	58000		Titanium, Titanium alloy	AMS R54520	260	.003	.003	.004	.004	.003	.003	.003	.003	.003	.003	.004	.004	.003	.003	.003	.003	.003	.003	.004	.004	
M	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.004	.004	.005	.005	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
	<130000		Stainless steel	630	520	.004	.004	.005	.005	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	
	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	520	.003	.003	.004	.004	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	
K		180	Grey cast iron	No 35 B No 50 B	660	.007	.007	.009	.009	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	
		250	Alloy grey cast iron	A436 Type 2	520	.007	.007	.009	.009	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	
	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006	.006	.007	.007	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
		230	Nodular cast iron ferritic / pearlitic	80-55-06	520	.006	.006	.007	.007	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006
	87000	250	Nodular cast iron pearlitic	100-70-03	460	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
		250	Malleable cast iron	70003	460	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
		200	Alloyed nodular cast iron	A43D2	460	.005	.005	.006	.006	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	
		300	Vermicular cast iron		390	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006
		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.006	.006	.007	.007	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006
	N		100	Copper alloy, Brass, Bronze: average cut		1310	.006	.006	.007	.007	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006
		60	Wrought aluminum alloy		1970	.006	.006	.007	.007	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	.006	
		75	Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	980	.007	.007	.009	.009	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	
H	203000		Hardened steel < 45 HRC		260	.003	.003	.004	.004	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	
	261000		Hardened steel > 45 HRC	A360.2	130	.002	.002	.003	.003	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	

Alternative Inserts

2



For better chip control			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. Size	ISO - Description						
1.781-2.125	W29 42130.048425	WOEX080404-13 BK8425	●					
	W29 42130.0479	WOEX080404-13 BK79	●	●				●
	W29 42030.046425	WOEX080404-03 BK6425	●					
2.165-2.656	W29 50130.048425	WOEX100504-13 BK8425	●					
	W29 50130.0479	WOEX100504-13 BK79	●	●				●
	W29 50030.046425	WOEX100504-03 BK6425	●					
2.750-3.250	W29 58130.088425	WOEX120608-13 BK8425	●					
	W29 58130.0879	WOEX120608-13 BK79	●	●				
	W29 58030.086425	WOEX120608-03 BK6425	●					

For better wear resistance			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. Size	ISO - Description						
1.781-2.125	W29 42010.0472	WOEX080404-01 BK72	●					
	W29 42110.0450	WOEX080404-11 BK50					●	
2.165-2.656	W29 50010.0872	WOEX100508-01 BK72	●					
	W29 50110.0450	WOEX100504-11 BK50					●	
2.750-3.250	W29 58010.0872	WOEX120608-01 BK72	●					
	W29 58000.0862	WOEX120608-00 BK62					●	●

For higher toughness			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. Size	ISO - Description						
1.781-2.125	W29 42010.047930	WOEX080404-01 BK7930	●					●
	W29 42010.0404	WOEX080404-01 P40	●	●				●
	W29 42010.0421	WOEX080404-01 K10			●			
	W29 42110.0421	WOEX080404-11 K10					●	
2.165-2.656	W29 50010.047930	WOEX100504-01 BK7930	●					●
	W29 50010.0804	WOEX100508-01 P40	●	●				●
	W29 50010.0821	WOEX100508-01 K10			●			
	W29 50110.0421	WOEX100504-11 K10					●	
2.750-3.250	W29 58010.087930	WOEX120608-01 BK7930	●					
	W29 58010.0804	WOEX120608-01 P40	●	●				●
	W29 58000.0821	WOEX120608-00 K10			●			



Note:

Only use this insert with KUB® drills as an external cutting edge:



WOEX ... -03 (geometry 03)



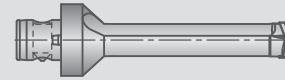
WOEX ... -01 (geometry 01) in BK6115
WOEX ... -01 (geometry 01) in BK6420

KUB Duon®



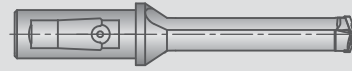
- Double effective for high cutting speeds
- Drill with 2 replaceable screw-on cutting blades; no regrinding is necessary
- Face side, tangential mounting of cutting blades produces greater stability
- Precision ground cutting blades
- Drilling depth up to 5 X Diameter
- Optimum internal coolant supply
- Diameters available in inch and metric 0.697 - 1.413 inch & 17.3 to 36.2 mm
- Torx Plus clamping screw system
- ABS 50 connection and Straight Shank
- Intermediate diameters may be drilled by using smaller or larger cutting blades by 0.004 or 0.008 inch (0.1 or 0.2 mm) than the nominal drill diameter
- High level of productivity in the 5 X D range
- Holes are drilled quickly and accurately without a center drill

Drilling up to **5 × D · 0.697" – 1.413" (Ø 17.3 – 36.2 mm)**
 right hand · with ABS® Connection



2.60 – 2.79

Drilling up to **5 × D · 0.697" – 1.413" (Ø 17.3 – 36.2 mm)**
 right hand · with Straight Shank Connection



2.60 – 2.79

Cutting Recommendations
 Design / Safety Notes

2.80

2.81

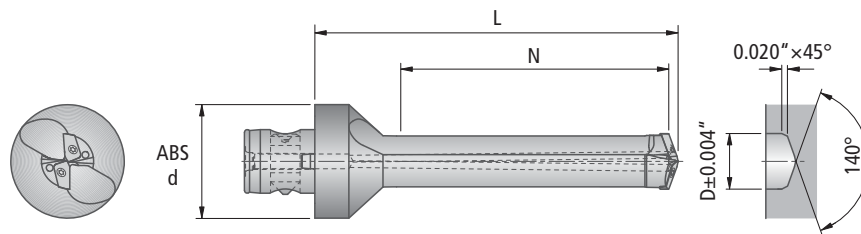
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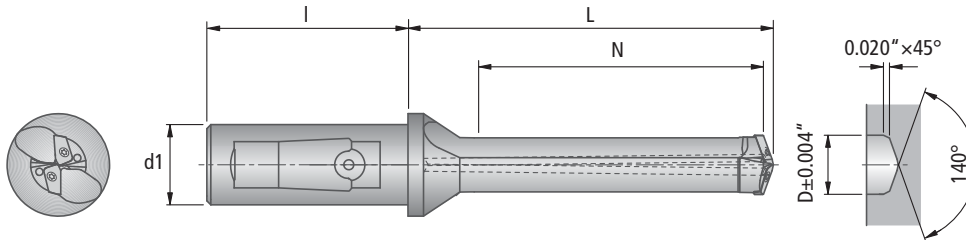
KUB Duon® Ø .697" – .882"

Drilling depth up to 5 × D – right hand
Inch

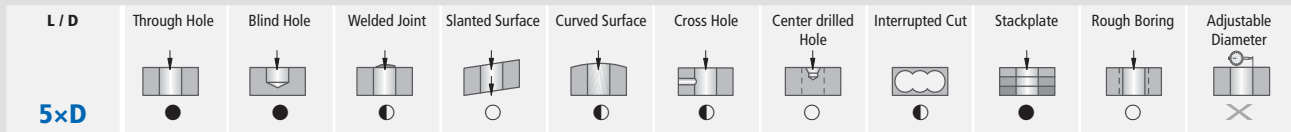
ABS® Connection



Straight Shank Connection



D inch	D mm	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	 lbs approx.	Straight shank d1×l	Order No. Description	N	L	 lbs approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
0.697	17.7	50	U20 01790 ABS 50 KUB Duon 0.703 3.543	3.543	4.921	1.32	1.250 x 2.362	U21 61790 KUB Duon 0.703 3.543	3.543	4.488	0.75	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
0.700	17.8												
0.703	17.9												
0.709	18.0												
0.713	18.1												
0.709	18.0	50	U20 01820 ABS 50 KUB Duon 0.718 3.740	3.740	5.118	1.32	1.250 x 2.362	U21 61820 KUB Duon 0.718 3.740	3.740	4.685	0.75	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
0.713	18.1												
0.718	18.2												
0.720	18.3												
0.724	18.4												
0.744	18.9	50	U20 01910 ABS 50 KUB Duon 0.750 3.937	3.937	5.315	1.32	1.250 x 2.362	U21 61910 KUB Duon 0.750 3.937	3.937	4.882	0.77	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
0.748	19.0												
0.750	19.1												
0.756	19.2												
0.760	19.3												
0.772	19.6	50	U20 01980 ABS 50 KUB Duon 0.781 3.937	3.937	5.315	1.32	1.250 x 2.362	U21 61980 KUB Duon 0.781 3.937	3.937	4.882	1.23	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
0.776	19.7												
0.781	19.8												
0.783	19.9												
0.787	20.0												
0.803	20.4	50	U20 02060 ABS 50 KUB Duon 0.812 4.133	4.133	5.512	1.32	1.250 x 2.362	U21 62060 KUB Duon 0.812 4.133	4.133	5.275	1.23	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
0.807	20.5												
0.812	20.6												
0.815	20.7												
0.819	20.8												
0.819	20.8	50	U20 02100 ABS 50 KUB Duon 0.828 4.133	4.133	5.512	1.32	1.250 x 2.362	U21 62100 KUB Duon 0.828 4.133	4.133	5.275	1.25	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
0.823	20.9												
0.828	21.0												
0.831	21.1												
0.835	21.2												
0.866	22.0	50	U20 02220 ABS 50 KUB Duon 0.875 4.527	4.527	5.709	1.32	1.250 x 2.362	U21 62220 KUB Duon 0.875 4.527	4.527	5.669	1.30	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
0.870	22.1												
0.875	22.2												
0.878	22.3												
0.882	22.4												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø .750", carbide grade BK84,
Order No: H60 19100.84

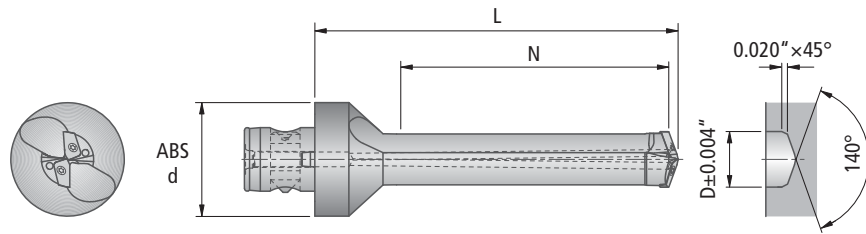


Basic Recommendation				better wear resistance				greater strength				Basic Recommendation			
Cutting blade for Workpiece Material		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		Cutting blade for Workpiece Material		P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.						
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710					
XOHX 0802-17.7	H60 17700 ..							XOHX 0802-17.7-62	H62 17700 ..						
XOHX 0802-17.8	H60 17800 ..							XOHX 0802-17.8-62	H62 17800 ..						
XOHX 0802-17.9	H60 17900 ..	8440	2715	84	8125	2740	8140	XOHX 0802-17.9-62	H62 17900 ..	7710					
XOHX 0802-18.0	H60 18000 ..							XOHX 0802-18.0-62	H62 18000 ..						
XOHX 0802-18.1	H60 18100 ..							XOHX 0802-18.1-62	H62 18100 ..						
XOHX 0802-18.2	H60 18200 ..	8440	2715	84	8125	2740	8140	XOHX 0802-18.2-62	H62 18200 ..	7710					
XOHX 0802-18.3	H60 18300 ..							XOHX 0802-18.3-62	H62 18300 ..						
XOHX 0802-18.4	H60 18400 ..							XOHX 0802-18.4-62	H62 18400 ..						
XOHX 0802-18.9	H60 18900 ..							XOHX 0802-18.9-62	H62 18900 ..						
XOHX 0802-19.0	H60 19000 ..							XOHX 0802-19.0-62	H62 19000 ..						
XOHX 0802-19.1	H60 19100 ..	8440	2715	84	8125	2740	8140	XOHX 0802-19.1-62	H62 19100 ..	7710					
XOHX 0802-19.2	H60 19200 ..							XOHX 0802-19.2-62	H62 19200 ..						
XOHX 0802-19.3	H60 19390 ..							XOHX 0802-19.3-62	H62 19390 ..						
XOHX 0802-19.6	H60 19600 ..							XOHX 0802-19.6-62	H62 19600 ..						
XOHX 0802-19.7	H60 19700 ..							XOHX 0802-19.7-62	H62 19700 ..						
XOHX 0802-19.8	H60 19800 ..	8440	2715	84	8125	2740	8140	XOHX 0802-19.8-62	H62 19800 ..	7710					
XOHX 0802-19.9	H60 19900 ..							XOHX 0802-19.9-62	H62 19900 ..						
XOHX 0802-20.0	H60 20000 ..							XOHX 0802-20.0-62	H62 20000 ..						
XOHX 0802-20.4	H60 20400 ..							XOHX 0802-20.4-62	H62 20400 ..						
XOHX 0802-20.5	H60 20500 ..							XOHX 0802-20.5-62	H62 20500 ..						
XOHX 0802-20.6	H60 20600 ..	8440	2715	84	8125	2740	8140	XOHX 0802-20.6-62	H62 20600 ..	7710					
XOHX 0802-20.7	H60 20700 ..							XOHX 0802-20.7-62	H62 20700 ..						
XOHX 0802-20.8	H60 20890 ..							XOHX 0802-20.8-62	H62 20890 ..						
XOHX 1003-20.8	H60 20800 ..							XOHX 1003-20.8-62	H62 20800 ..						
XOHX 1003-20.9	H60 20900 ..							XOHX 1003-20.9-62	H62 20900 ..						
XOHX 1003-21.0	H60 21000 ..	8440	2715	84	8125	2740	8140	XOHX 1003-21.0-62	H62 21000 ..	7710					
XOHX 1003-21.1	H60 21100 ..							XOHX 1003-21.1-62	H62 21100 ..						
XOHX 1003-21.2	H60 21200 ..							XOHX 1003-21.2-62	H62 21200 ..						
XOHX 1003-22.0	H60 22000 ..							XOHX 1003-22.0-62	H62 22000 ..						
XOHX 1003-22.1	H60 22100 ..							XOHX 1003-22.1-62	H62 22100 ..						
XOHX 1003-22.2	H60 22200 ..	8440	2715	84	8125	2740	8140	XOHX 1003-22.2-62	H62 22200 ..	7710					
XOHX 1003-22.3	H60 22300 ..							XOHX 1003-22.3-62	H62 22300 ..						
XOHX 1003-22.4	H60 22400 ..							XOHX 1003-22.4-62	H62 22400 ..						

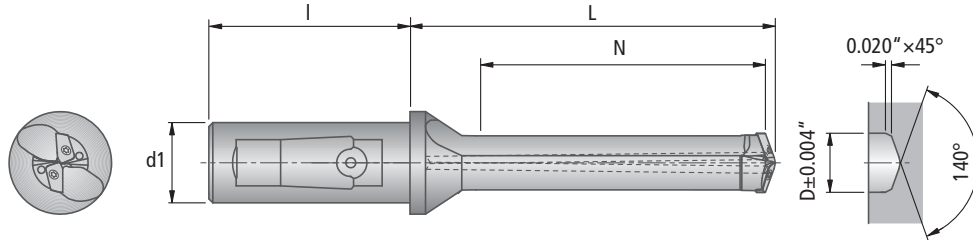
KUB Duon® Ø .929" – 1.134"

Drilling depth up to 5 × D – right hand
Inch

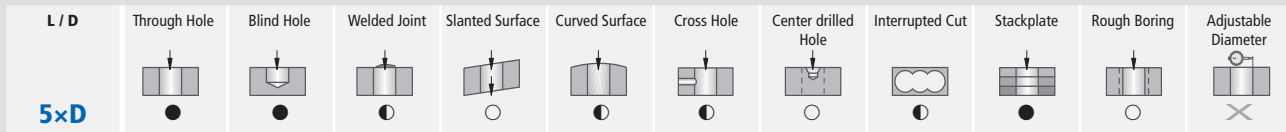
ABS® Connection



Straight Shank Connection



D inch	D mm	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	lbs approx.	Straight shank d1 x l	Order No. Description	N	L	lbs approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
0.929	23.6	50	U20 02380 ABS 50 KUB Duon 0.937 4.724	4.724	6.102	1.54	1.250 x 2.362	U21 62380 KUB Duon 0.937 4.724	4.724	5.866		N00 57630 S/M3×5.8-8IP 20 in-lbs	L05 00830 8IP
0.933	23.7												
0.937	23.8												
0.941	23.9												
0.945	24.0												
0.976	24.8	50	U20 02500 ABS 50 KUB Duon 0.985 4.921	4.921	6.299	1.54	1.500 x 2.677	U21 62500 KUB Duon 0.985 4.921	4.921	6.063		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
0.980	24.9												
0.985	25.0												
0.988	25.1												
0.992	25.2												
0.992	25.2	50	U20 02540 ABS 50 KUB Duon 1.000 5.118	5.118	6.496	1.54	1.500 x 2.677	U21 62540 KUB Duon 1.000 5.118	5.118	6.260		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
0.996	25.3												
1.000	25.4												
1.004	25.5												
1.008	25.6												
1.024	26.0	50	U20 02620 ABS 50 KUB Duon 1.031 5.315	5.315	6.693	1.54	1.500 x 2.677	U21 62620 KUB Duon 1.031 5.315	5.315	6.457		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
1.028	26.1												
1.031	26.2												
1.035	26.3												
1.039	26.4												
1.055	26.8	50	U20 02700 ABS 50 KUB Duon 1.062 5.315	5.315	6.693	1.54	1.500 x 2.677	U21 62700 KUB Duon 1.062 5.315	5.315	6.457		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
1.059	26.9												
1.062	27.0												
1.067	27.1												
1.071	27.2												
1.102	28.0	50	U20 02820 ABS 50 KUB Duon 1.109 5.708	5.708	7.087	1.76	1.500 x 2.677	U21 72820 KUB Duon 1.109 5.708	5.708	6.850		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
1.106	28.1												
1.109	28.2												
1.114	28.3												
1.118	28.4												
1.118	28.4	50	U20 02860 ABS 50 KUB Duon 1.125 5.708	5.708	7.087	1.76	1.500 x 2.677	U21 72860 KUB Duon 1.125 5.708	5.708	6.850		N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
1.122	28.5												
1.125	28.6												
1.130	28.7												
1.134	28.8												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 1.000", carbide grade BK84,
Order No: H60 25400.84

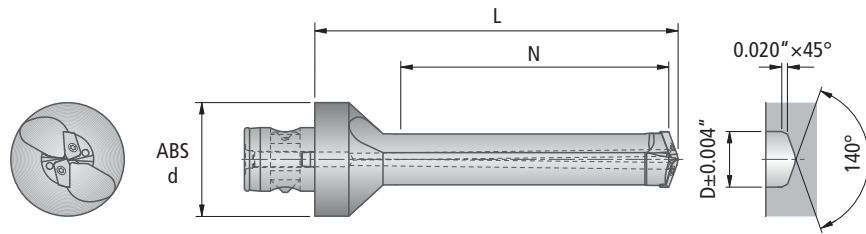


Basic Recommendation		better wear resistance						greater strength			Basic Recommendation	
Cutting blade	for Workpiece Material	P ● K ● N ●		● ● ●		● ● ●			Cutting blade	for Workpiece Material	P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.			
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710		
XOHX 1003-23.6	H60 23600 ..							XOHX 1003-23.6-62	H62 23600 ..			
XOHX 1003-23.7	H60 23700 ..							XOHX 1003-23.7-62	H62 23700 ..			
XOHX 1003-23.8	H60 23800 ..	8440	2715	84	8125	2740	8140	XOHX 1003-23.8-62	H62 23800 ..	7710		
XOHX 1003-23.9	H60 23900 ..							XOHX 1003-23.9-62	H62 23900 ..			
XOHX 1003-24.0	H60 24000 ..							XOHX 1003-24.0-62	H62 24000 ..			
XOHX 12T3-24.8	H60 24800 ..							XOHX 12T3-24.8-62	H62 24800 ..			
XOHX 12T3-24.9	H60 24900 ..							XOHX 12T3-24.9-62	H62 24900 ..			
XOHX 12T3-25.0	H60 25000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-25.0-62	H62 25000 ..	7710		
XOHX 12T3-25.1	H60 25100 ..							XOHX 12T3-25.1-62	H62 25100 ..			
XOHX 12T3-25.2	H60 25200 ..							XOHX 12T3-25.2-62	H62 25200 ..			
XOHX 12T3-25.2	H60 25200 ..							XOHX 12T3-25.2-62	H62 25200 ..			
XOHX 12T3-25.3	H60 25300 ..							XOHX 12T3-25.3-62	H62 25300 ..			
XOHX 12T3-25.4	H60 25400 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-25.4-62	H62 25400 ..	7710		
XOHX 12T3-25.5	H60 25500 ..							XOHX 12T3-25.5-62	H62 25500 ..			
XOHX 12T3-25.6	H60 25600 ..							XOHX 12T3-25.6-62	H62 25600 ..			
XOHX 12T3-26.0	H60 26000 ..							XOHX 12T3-26.0-62	H62 26000 ..			
XOHX 12T3-26.1	H60 26100 ..							XOHX 12T3-26.1-62	H62 26100 ..			
XOHX 12T3-26.2	H60 26200 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-26.2-62	H62 26200 ..	7710		
XOHX 12T3-26.3	H60 26300 ..							XOHX 12T3-26.3-62	H62 26300 ..			
XOHX 12T3-26.4	H60 26400 ..							XOHX 12T3-26.4-62	H62 26400 ..			
XOHX 12T3-26.8	H60 26800 ..							XOHX 12T3-26.8-62	H62 26800 ..			
XOHX 12T3-26.9	H60 26900 ..							XOHX 12T3-26.9-62	H62 26900 ..			
XOHX 12T3-27.0	H60 27000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-27.0-62	H62 27000 ..	7710		
XOHX 12T3-27.1	H60 27100 ..							XOHX 12T3-27.1-62	H62 27100 ..			
XOHX 12T3-27.2	H60 27200 ..							XOHX 12T3-27.2-62	H62 27200 ..			
XOHX 12T3-28.0	H60 28000 ..							XOHX 12T3-28.0-62	H62 28000 ..			
XOHX 12T3-28.1	H60 28100 ..							XOHX 12T3-28.1-62	H62 28100 ..			
XOHX 12T3-28.2	H60 28200 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-28.2-62	H62 28200 ..	7710		
XOHX 12T3-28.3	H60 28300 ..							XOHX 12T3-28.3-62	H62 28300 ..			
XOHX 12T3-28.4	H60 28400 ..							XOHX 12T3-28.4-62	H62 28400 ..			
XOHX 12T3-28.4	H60 28400 ..							XOHX 12T3-28.4-62	H62 28400 ..			
XOHX 12T3-28.5	H60 28500 ..							XOHX 12T3-28.5-62	H62 28500 ..			
XOHX 12T3-28.6	H60 28600 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-28.6-62	H62 28600 ..	7710		
XOHX 12T3-28.7	H60 28700 ..							XOHX 12T3-28.7-62	H62 28700 ..			
XOHX 12T3-28.8	H60 28800 ..							XOHX 12T3-28.8-62	H62 28800 ..			

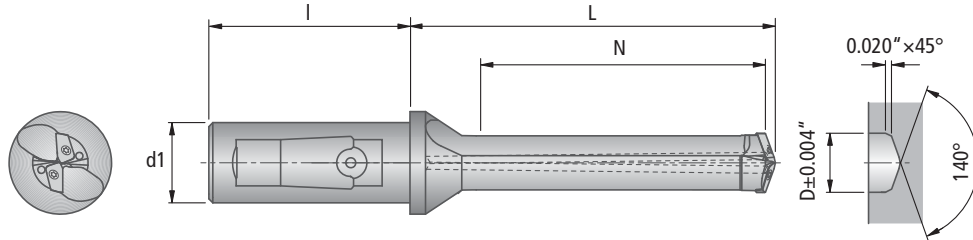
KUB Duon® Ø 1.150" – 1.335"

Drilling depth up to 5 × D – right hand
Inch

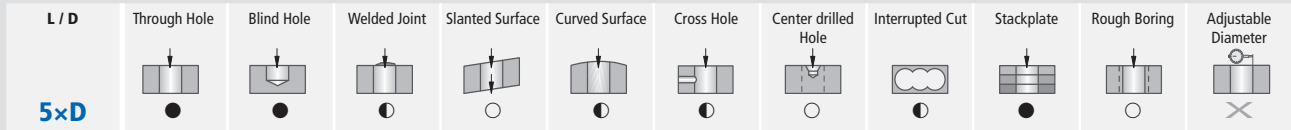
ABS® Connection



Straight Shank Connection



D inch	D mm	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	 lbs approx.	Straight shank d1 x l	Order No. Description	N	L	 lbs approx.	 Clamping screw Order No. Description	 TORX PLUS® Order No. Description
1.150	29.2	50	U20 02940 ABS 50 KUB Duon 1.156 5.905	5.905	7.480	1.76	1.500 x 2.677	U21 72940 KUB Duon 1.156 5.905	5.905	7.047	2.60	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
1.154	29.3												
1.156	29.4												
1.161	29.5												
1.165	29.6												
1.177	29.9	50	U20 03010 ABS 50 KUB Duon 1.187 6.102	6.102	7.480	1.98	1.500 x 2.677	U21 73010 KUB Duon 1.187 6.102	6.102	7.244	2.69	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.181	30.0												
1.187	30.1												
1.189	30.2												
1.193	30.3												
1.209	30.7	50	U20 03090 ABS 50 KUB Duon 1.218 6.102	6.102	7.480	1.98	1.500 x 2.677	U21 73090 KUB Duon 1.218 6.102	6.102	7.244	2.80	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.213	30.8												
1.218	30.9												
1.220	31.0												
1.224	31.1												
1.244	31.6	50	U20 03180 ABS 50 KUB Duon 1.250 6.299	6.299	7.677	1.98	1.500 x 2.677	U21 73180 KUB Duon 1.250 6.299	6.299	7.441	2.82	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.248	31.7												
1.250	31.8												
1.256	31.9												
1.260	32.0												
1.272	32.3	50	U20 03250 ABS 50 KUB Duon 1.281 6.496	6.496	7.874	1.98	1.500 x 2.677	U21 73250 KUB Duon 1.281 6.496	6.496	7.638	2.91	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.276	32.4												
1.281	32.5												
1.283	32.6												
1.287	32.7												
1.303	33.1	50	U20 03330 ABS 50 KUB Duon 1.312 6.693	6.693	8.070	1.98	1.500 x 2.677	U21 73330 KUB Duon 1.312 6.693	6.693	7.835	2.99	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.307	33.2												
1.312	33.3												
1.315	33.4												
1.319	33.5												
1.319	33.5	50	U20 03370 ABS 50 KUB Duon 1.328 6.693	6.693	8.070	2.20	1.500 x 2.677	U21 73370 KUB Duon 1.328 6.693	6.693	7.835	3.02	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.323	33.6												
1.328	33.7												
1.331	33.8												
1.335	33.9												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 1.250", carbide grade BK84,
Order No: H60 31800.84

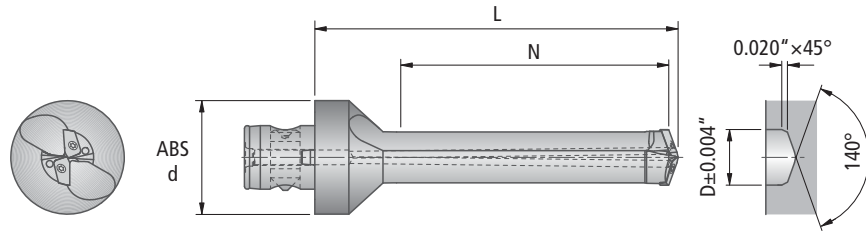


Basic Recommendation				better wear resistance				greater strength				Basic Recommendation			
Cutting blade for Workpiece Material		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		Cutting blade for Workpiece Material		P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.						
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710					
XOHX 12T3-29.2	H60 29200. ...							XOHX 12T3-29.2-62	H62 29200. ...						
XOHX 12T3-29.3	H60 29300. ...							XOHX 12T3-29.3-62	H62 29300. ...						
XOHX 12T3-29.4	H60 29400. ...	8440	2715	84	8125	2740	8140	XOHX 12T3-29.4-62	H62 29400. ...	7710					
XOHX 12T3-29.5	H60 29500. ...							XOHX 12T3-29.5-62	H62 29500. ...						
XOHX 12T3-29.6	H60 29600. ...							XOHX 12T3-29.6-62	H62 29600. ...						
XOHX 1504-29.9	H60 29900. ...							XOHX 1504-29.9-62	H62 29900. ...						
XOHX 1504-30.0	H60 30000. ...							XOHX 1504-30.0-62	H62 30000. ...						
XOHX 1504-30.1	H60 30100. ...	8440	2715	84	8125	2740	8140	XOHX 1504-30.1-62	H62 30100. ...	7710					
XOHX 1504-30.2	H60 30200. ...							XOHX 1504-30.2-62	H62 30200. ...						
XOHX 1504-30.3	H60 30300. ...							XOHX 1504-30.3-62	H62 30300. ...						
XOHX 1504-30.7	H60 30700. ...							XOHX 1504-30.7-62	H62 30700. ...						
XOHX 1504-30.8	H60 30800. ...							XOHX 1504-30.8-62	H62 30800. ...						
XOHX 1504-30.9	H60 30900. ...	8440	2715	84	8125	2740	8140	XOHX 1504-30.9-62	H62 30900. ...	7710					
XOHX 1504-31.0	H60 31000. ...							XOHX 1504-31.0-62	H62 31000. ...						
XOHX 1504-31.1	H60 31100. ...							XOHX 1504-31.1-62	H62 31100. ...						
XOHX 1504-31.6	H60 31600. ...							XOHX 1504-31.6-62	H62 31600. ...						
XOHX 1504-31.7	H60 31700. ...							XOHX 1504-31.7-62	H62 31700. ...						
XOHX 1504-31.8	H60 31800. ...	8440	2715	84	8125	2740	8140	XOHX 1504-31.8-62	H62 31800. ...	7710					
XOHX 1504-31.9	H60 31900. ...							XOHX 1504-31.9-62	H62 31900. ...						
XOHX 1504-32.0	H60 32000. ...							XOHX 1504-32.0-62	H62 32000. ...						
XOHX 1504-32.3	H60 32300. ...							XOHX 1504-32.3-62	H62 32300. ...						
XOHX 1504-32.4	H60 32400. ...							XOHX 1504-32.4-62	H62 32400. ...						
XOHX 1504-32.5	H60 32500. ...	8440	2715	84	8125	2740	8140	XOHX 1504-32.5-62	H62 32500. ...	7710					
XOHX 1504-32.6	H60 32600. ...							XOHX 1504-32.6-62	H62 32600. ...						
XOHX 1504-32.7	H60 32700. ...							XOHX 1504-32.7-62	H62 32700. ...						
XOHX 1504-33.1	H60 33100. ...							XOHX 1504-33.1-62	H62 33100. ...						
XOHX 1504-33.2	H60 33200. ...							XOHX 1504-33.2-62	H62 33200. ...						
XOHX 1504-33.3	H60 33300. ...	8440	2715	84	8125	2740	8140	XOHX 1504-33.3-62	H62 33300. ...	7710					
XOHX 1504-33.4	H60 33400. ...							XOHX 1504-33.4-62	H62 33400. ...						
XOHX 1504-33.5	H60 33500. ...							XOHX 1504-33.5-62	H62 33500. ...						
XOHX 1504-33.5	H60 33500. ...							XOHX 1504-33.5-62	H62 33500. ...						
XOHX 1504-33.6	H60 33600. ...							XOHX 1504-33.6-62	H62 33600. ...						
XOHX 1504-33.7	H60 33700. ...	8440	2715	84	8125	2740	8140	XOHX 1504-33.7-62	H62 33700. ...	7710					
XOHX 1504-33.8	H60 33800. ...							XOHX 1504-33.8-62	H62 33800. ...						
XOHX 1504-33.9	H60 33900. ...							XOHX 1504-33.9-62	H62 33900. ...						

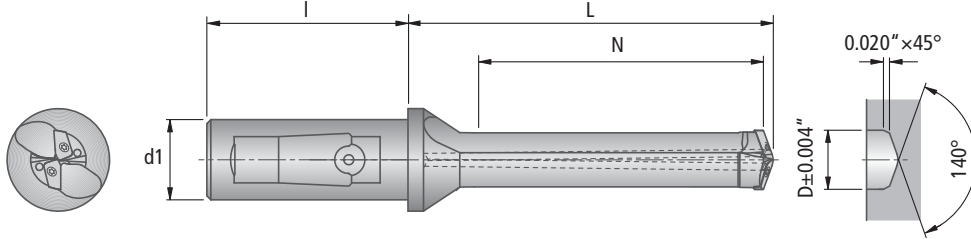
KUB Duon® Ø 1.336" – 1.413"

Drilling depth up to 5 × D – right hand
Inch

ABS® Connection



Straight Shank Connection



D inch	D mm	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	approx.	Straight shank d1 x l	Order No. Description	N	L	approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
1.366	34.7	50	U20 03490 ABS 50 KUB Duon 1.375 6.890	6.890	8.268	2.20	1.500 x 2.677	U21 73490 KUB Duon 1.375 6.890	6.890	8.031	3.15	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.370	34.8												
1.375	34.9												
1.378	35.0												
1.382	35.1												
1.398	35.5	50	U20 03570 ABS 50 KUB Duon 1.406 7.087	7.087	8.465	2.20	1.500 x 2.677	U21 73570 KUB Duon 1.406 7.087	7.087	8.228	3.29	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
1.402	35.6												
1.406	35.7												
1.409	35.8												
1.413	35.9												



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
5xD											
	●	●	●	○	●	●	○	●	●	○	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

Inch diameter drills and blades in **bold face** are in stock.
 Metric drills and blades in **bold face** are available for quick delivery.
 All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
 (Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 1.375", carbide grade BK84,
 Order No: H60 34900.84

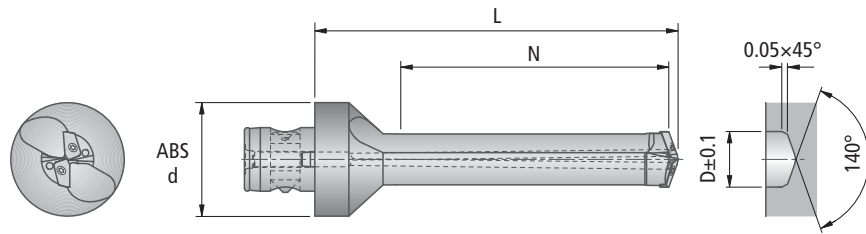
Basic Recommendation				better wear resistance			greater strength			Basic Recommendation			
Cutting blade for Workpiece Material		P ● K ● N ●		● ● ●		● ● ●			Cutting blade for Workpiece Material		P ● K ● N ●		
ISO Insert Description	Order No.							ISO Insert Description	Order No.				
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710			
XOHX 1504-34.7	H60 34700. ..							XOHX 1504-34.7-62	H62 34700. ..				
XOHX 1504-34.8	H60 34800. ..							XOHX 1504-34.8-62	H62 34800. ..				
XOHX 1504-34.9	H60 34900. ..	8440	2715	84	8125	2740	8140	XOHX 1504-34.9-62	H62 34900. ..	7710			
XOHX 1504-35.0	H60 35000. ..							XOHX 1504-35.0-62	H62 35000. ..				
XOHX 1504-35.1	H60 35100. ..							XOHX 1504-35.1-62	H62 35100. ..				
XOHX 1504-35.5	H60 35500. ..							XOHX 1504-35.5-62	H62 35500. ..				
XOHX 1504-35.6	H60 35600. ..							XOHX 1504-35.6-62	H62 35600. ..				
XOHX 1504-35.7	H60 35700. ..	8440	2715	84	8125	2740	8140	XOHX 1504-35.7-62	H62 35700. ..	7710			
XOHX 1504-35.8	H60 35800. ..							XOHX 1504-35.8-62	H62 35800. ..				
XOHX 1504-35.9	H60 35900. ..							XOHX 1504-35.9-62	H62 35900. ..				

KUB Duon® Ø 17.3 – 20.7 mm

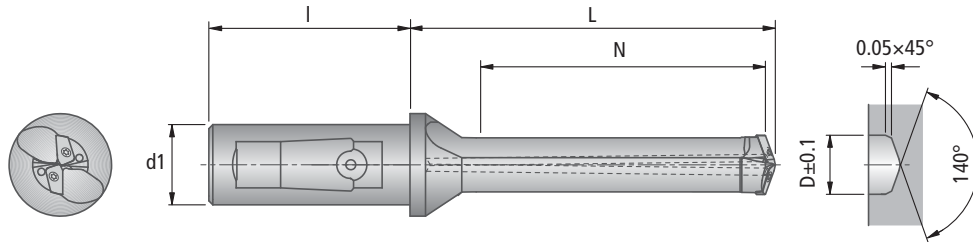
Drilling depth up to 5 × D – right hand

Metric

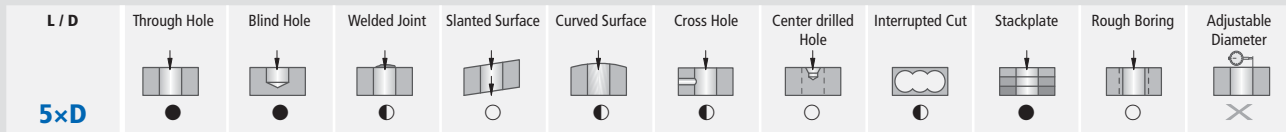
ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	 lbs approx.	Straight shank d1×l	Order No. Description	N	L	 lbs approx.	 Clamping screw Order No. Description	 TORX PLUS® Order No. Description
17.3	0.681	50	U20 01750 ABS 50 KUB Duon 17.5 90	90	125	1.32	25 x 56	U20 71750 KUB Duon 17.5 90	90	114	0.75	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
17.4	0.685												
17.5	0.689												
17.6	0.693												
17.7	0.697												
17.8	0.701	50	U20 01800 ABS 50 KUB Duon 18.0 90	90	125	1.32	25 x 56	U20 71800 KUB Duon 18.0 90	90	114	0.75	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
17.9	0.703												
18.0	0.709												
18.1	0.713												
18.2	0.718												
18.3	0.720	50	U20 01850 ABS 50 KUB Duon 18.5 95	95	130	1.32	25 x 56	U20 71850 KUB Duon 18.5 95	95	119	0.77	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
18.4	0.724												
18.5	0.728												
18.6	0.732												
18.7	0.736												
18.8	0.740	50	U20 01900 ABS 50 KUB Duon 19.0 95	95	130	1.32	25 x 56	U20 71900 KUB Duon 19.0 95	95	119	0.77	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
18.9	0.744												
19.0	0.748												
19.1	0.750												
19.2	0.756												
19.3	0.760	50	U20 01950 ABS 50 KUB Duon 19.5 100	100	135	1.32	32 x 60	U20 81950 KUB Duon 19.5 100	100	124	1.23	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
19.4	0.760												
19.5	0.764												
19.6	0.768												
19.7	0.772												
19.8	0.776	50	U20 02000 ABS 50 KUB Duon 20.0 100	100	135	1.32	32 x 60	U20 82000 KUB Duon 20.0 100	100	124	1.23	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
19.9	0.781												
20.0	0.783												
20.1	0.787												
20.2	0.791												
20.3	0.795	50	U20 02050 ABS 50 KUB Duon 20.5 105	105	140	1.32	32 x 60	U20 82050 KUB Duon 20.5 105	105	134	1.26	N00 57660 S/M2.2×4.8-6IP 8.9 in-lbs	L05 00810 6IP
20.4	0.799												
20.5	0.803												
20.6	0.807												
20.7	0.812												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 18.0 mm, carbide grade BK84,
Order No: H60 18000.84



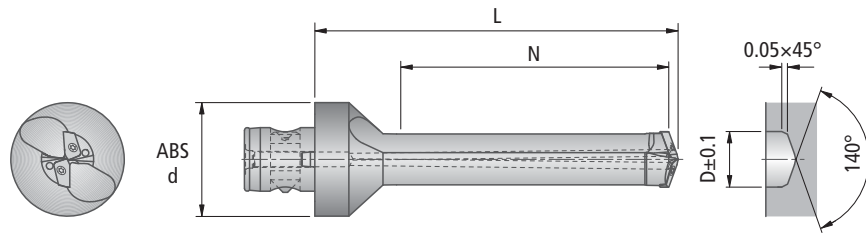
Basic Recommendation		better wear resistance						greater strength			Basic Recommendation	
Cutting blade	for Workpiece Material	P ● K ● N ●		● ● ●		● ● ●			Cutting blade	for Workpiece Material	P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.			
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710		
XOHX 0802-17.3	H60 17300 ..							XOHX 0802-17.3-62	H62 17300 ..			
XOHX 0802-17.4	H60 17400 ..							XOHX 0802-17.4-62	H62 17400 ..			
XOHX 0802-17.5	H60 17500 ..	8440	2715	84	8125	2740	8140	XOHX 0802-17.5-62	H62 17500 ..	7710		
XOHX 0802-17.6	H60 17600 ..							XOHX 0802-17.6-62	H62 17600 ..			
XOHX 0802-17.7	H60 17700 ..							XOHX 0802-17.7-62	H62 17700 ..			
XOHX 0802-17.8	H60 17800 ..							XOHX 0802-17.8-62	H62 17800 ..			
XOHX 0802-17.9	H60 17900 ..							XOHX 0802-17.9-62	H62 17900 ..			
XOHX 0802-18.0	H60 18000 ..	8440	2715	84	8125	2740	8140	XOHX 0802-18.0-62	H62 18000 ..	7710		
XOHX 0802-18.1	H60 18100 ..							XOHX 0802-18.1-62	H62 18100 ..			
XOHX 0802-18.2	H60 18200 ..							XOHX 0802-18.2-62	H62 18200 ..			
XOHX 0802-18.3	H60 18300 ..							XOHX 0802-18.3-62	H62 18300 ..			
XOHX 0802-18.4	H60 18400 ..							XOHX 0802-18.4-62	H62 18400 ..			
XOHX 0802-18.5	H60 18500 ..	8440	2715	84	8125	2740	8140	XOHX 0802-18.5-62	H62 18500 ..	7710		
XOHX 0802-18.6	H60 18600 ..							XOHX 0802-18.6-62	H62 18600 ..			
XOHX 0802-18.7	H60 18700 ..							XOHX 0802-18.7-62	H62 18700 ..			
XOHX 0802-18.8	H60 18800 ..							XOHX 0802-18.8-62	H62 18800 ..			
XOHX 0802-18.9	H60 18900 ..							XOHX 0802-18.9-62	H62 18900 ..			
XOHX 0802-19.0	H60 19000 ..	8440	2715	84	8125	2740	8140	XOHX 0802-19.0-62	H62 19000 ..	7710		
XOHX 0802-19.1	H60 19100 ..							XOHX 0802-19.1-62	H62 19100 ..			
XOHX 0802-19.2	H60 19200 ..							XOHX 0802-19.2-62	H62 19200 ..			
XOHX 0802-19.3	H60 19300 ..							XOHX 0802-19.3-62	H62 19300 ..			
XOHX 0802-19.4	H60 19400 ..							XOHX 0802-19.4-62	H62 19400 ..			
XOHX 0802-19.5	H60 19500 ..	8440	2715	84	8125	2740	8140	XOHX 0802-19.5-62	H62 19500 ..	7710		
XOHX 0802-19.6	H60 19600 ..							XOHX 0802-19.6-62	H62 19600 ..			
XOHX 0802-19.7	H60 19700 ..							XOHX 0802-19.7-62	H62 19700 ..			
XOHX 0802-19.8	H60 19800 ..							XOHX 0802-19.8-62	H62 19800 ..			
XOHX 0802-19.9	H60 19900 ..							XOHX 0802-19.9-62	H62 19900 ..			
XOHX 0802-20.0	H60 20000 ..	8440	2715	84	8125	2740	8140	XOHX 0802-20.0-62	H62 20000 ..	7710		
XOHX 0802-20.1	H60 20100 ..							XOHX 0802-20.1-62	H62 20100 ..			
XOHX 0802-20.2	H60 20200 ..							XOHX 0802-20.2-62	H62 20200 ..			
XOHX 0802-20.3	H60 20300 ..							XOHX 0802-20.3-62	H62 20300 ..			
XOHX 0802-20.4	H60 20400 ..							XOHX 0802-20.4-62	H62 20400 ..			
XOHX 0802-20.5	H60 20500 ..	8440	2715	84	8125	2740	8140	XOHX 0802-20.5-62	H62 20500 ..	7710		
XOHX 0802-20.6	H60 20600 ..							XOHX 0802-20.6-62	H62 20600 ..			
XOHX 0802-20.7	H60 20700 ..							XOHX 0802-20.7-62	H62 20700 ..			

KUB Duon® Ø 20.8 – 24.2 mm

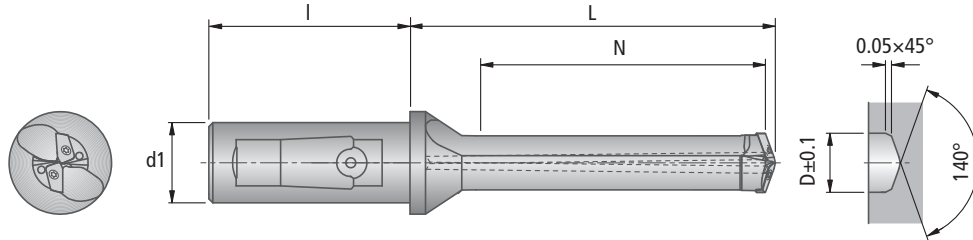
Drilling depth up to 5 × D – right hand

Metric

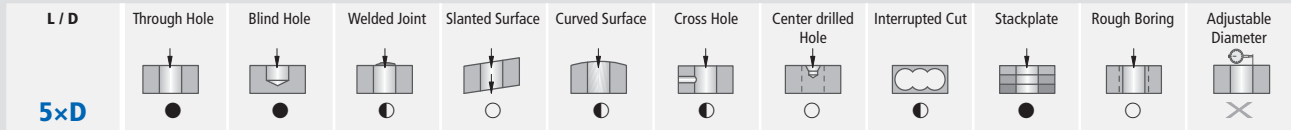
ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	lbs approx.	Straight shank d1×l	Order No. Description	N	L	lbs approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
20.8	0.819	50	U20 02100 ABS 50 KUB Duon 21.0 105	105	140	1.32	32 x 60	U20 82100 KUB Duon 21.0 105	105	134	1.28	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
20.9	0.823												
21.0	0.827												
21.1	0.831												
21.2	0.835												
21.3	0.839	50	U20 02150 ABS 50 KUB Duon 21.5 110	110	145	1.32	32 x 60	U20 82150 KUB Duon 21.5 110	110	139	1.30	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
21.4	0.843												
21.5	0.846												
21.6	0.850												
21.7	0.854												
21.8	0.858	50	U20 02200 ABS 50 KUB Duon 22.0 110	110	145	1.32	32 x 60	U20 82200 KUB Duon 22.0 110	110	139	1.32	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
21.9	0.862												
22.0	0.866												
22.1	0.870												
22.2	0.874												
22.3	0.878	50	U20 02250 ABS 50 KUB Duon 22.5 115	115	150	1.32	32 x 60	U20 82250 KUB Duon 22.5 115	115	144	1.35	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
22.4	0.882												
22.5	0.886												
22.6	0.890												
22.7	0.894												
22.8	0.898	50	U20 02300 ABS 50 KUB Duon 23.0 115	115	150	1.32	32 x 60	U20 82300 KUB Duon 23.0 115	115	144	1.37	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
22.9	0.902												
23.0	0.906												
23.1	0.909												
23.2	0.913												
23.3	0.917	50	U20 02350 ABS 50 KUB Duon 23.5 120	120	155	1.54	32 x 60	U20 82350 KUB Duon 23.5 120	120	149	1.41	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
23.4	0.921												
23.5	0.925												
23.6	0.929												
23.7	0.933												
23.8	0.937	50	U20 02400 ABS 50 KUB Duon 24.0 120	120	155	1.54	32 x 60	U20 82400 KUB Duon 24.0 120	120	149	1.43	N00 57630 S/M3×5.8-8IP 20.0 in-lbs	L05 00830 8IP
23.9	0.941												
24.0	0.945												
24.1	0.949												
24.2	0.953												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 21.0 mm, carbide grade BK84,
Order No: H60 210 00.84



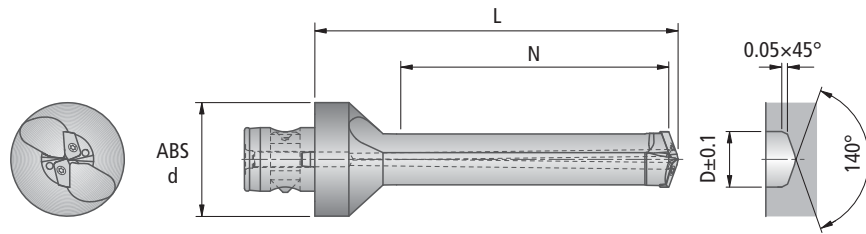
Basic Recommendation		better wear resistance						greater strength			Basic Recommendation	
Cutting blade	for Workpiece Material	P ● K ● N ●		● ● ●		● ● ●			Cutting blade	for Workpiece Material	P ● K ● N ●	
ISO Insert Description	Order No.								ISO Insert Description	Order No.		
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140		enter carbide		BK7710	
XOHX 1003-20.8	H60 20800 ..								XOHX 1003-20.8-62	H62 20800 ..		
XOHX 1003-20.9	H60 20900 ..								XOHX 1003-20.9-62	H62 20900 ..		
XOHX 1003-21.0	H60 21000 ..	8440	2715	84	8125	2740	8140		XOHX 1003-21.0-62	H62 21000 ..	7710	
XOHX 1003-21.1	H60 21100 ..								XOHX 1003-21.1-62	H62 21100 ..		
XOHX 1003-21.2	H60 21200 ..								XOHX 1003-21.2-62	H62 21200 ..		
XOHX 1003-21.3	H60 21300 ..								XOHX 1003-21.3-62	H62 21300 ..		
XOHX 1003-21.4	H60 21400 ..								XOHX 1003-21.4-62	H62 21400 ..		
XOHX 1003-21.5	H60 21500 ..	8440	2715	84	8125	2740	8140		XOHX 1003-21.5-62	H62 21500 ..	7710	
XOHX 1003-21.6	H60 21600 ..								XOHX 1003-21.6-62	H62 21600 ..		
XOHX 1003-21.7	H60 21700 ..								XOHX 1003-21.7-62	H62 21700 ..		
XOHX 1003-21.8	H60 21800 ..								XOHX 1003-21.8-62	H62 21800 ..		
XOHX 1003-21.9	H60 21900 ..								XOHX 1003-21.9-62	H62 21900 ..		
XOHX 1003-22.0	H60 22000 ..	8440	2715	84	8125	2740	8140		XOHX 1003-22.0-62	H62 22000 ..	7710	
XOHX 1003-22.1	H60 22100 ..								XOHX 1003-22.1-62	H62 22100 ..		
XOHX 1003-22.2	H60 22200 ..								XOHX 1003-22.2-62	H62 22200 ..		
XOHX 1003-22.3	H60 22300 ..								XOHX 1003-22.3-62	H62 22300 ..		
XOHX 1003-22.4	H60 22400 ..								XOHX 1003-22.4-62	H62 22400 ..		
XOHX 1003-22.5	H60 22500 ..	8440	2715	84	8125	2740	8140		XOHX 1003-22.5-62	H62 22500 ..	7710	
XOHX 1003-22.6	H60 22600 ..								XOHX 1003-22.6-62	H62 22600 ..		
XOHX 1003-22.7	H60 22700 ..								XOHX 1003-22.7-62	H62 22700 ..		
XOHX 1003-22.8	H60 22800 ..								XOHX 1003-22.8-62	H62 22800 ..		
XOHX 1003-22.9	H60 22900 ..								XOHX 1003-22.9-62	H62 22900 ..		
XOHX 1003-23.0	H60 23000 ..	8440	2715	84	8125	2740	8140		XOHX 1003-23.0-62	H62 23000 ..	7710	
XOHX 1003-23.1	H60 23100 ..								XOHX 1003-23.1-62	H62 23100 ..		
XOHX 1003-23.2	H60 23200 ..								XOHX 1003-23.2-62	H62 23200 ..		
XOHX 1003-23.3	H60 23300 ..								XOHX 1003-23.3-62	H62 23300 ..		
XOHX 1003-23.4	H60 23400 ..								XOHX 1003-23.4-62	H62 23400 ..		
XOHX 1003-23.5	H60 23500 ..	8440	2715	84	8125	2740	8140		XOHX 1003-23.5-62	H62 23500 ..	7710	
XOHX 1003-23.6	H60 23600 ..								XOHX 1003-23.6-62	H62 23600 ..		
XOHX 1003-23.7	H60 23700 ..								XOHX 1003-23.7-62	H62 23700 ..		
XOHX 1003-23.8	H60 23800 ..								XOHX 1003-23.8-62	H62 23800 ..		
XOHX 1003-23.9	H60 23900 ..								XOHX 1003-23.9-62	H62 23900 ..		
XOHX 1003-24.0	H60 24000 ..	8440	2715	84	8125	2740	8140		XOHX 1003-24.0-62	H62 24000 ..	7710	
XOHX 1003-24.1	H60 24100 ..								XOHX 1003-24.1-62	H62 24100 ..		
XOHX 1003-24.2	H60 24200 ..								XOHX 1003-24.2-62	H62 24200 ..		

KUB Duon® Ø 24.3 – 27.7 mm

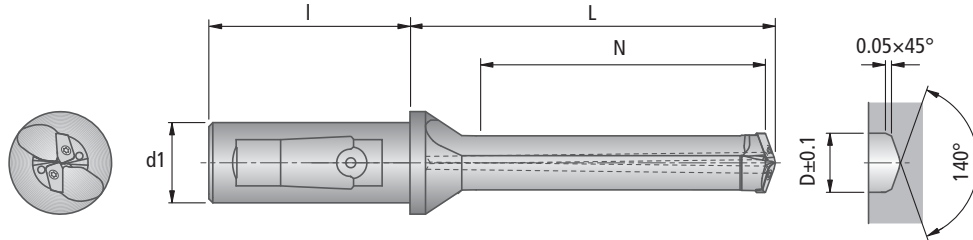
Drilling depth up to 5 × D – right hand

Metric

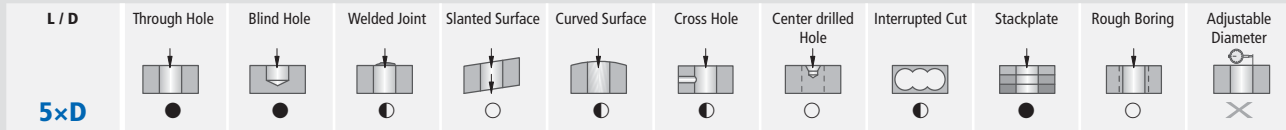
ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	lbs approx.	Straight shank d1×l	Order No. Description	N	L	lbs approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
24.3	0.957	50	U20 02450 ABS 50 KUB Duon 24.5 125	125	160	1.54	32 x 60	U20 82450 KUB Duon 24.5 125	125	154	1.48	N00 57630 S/M3×5.8-8IP 16 in-lbs	L05 00830 8IP
24.4	0.961												
24.5	0.965												
24.6	0.969												
24.7	0.972												
24.8	0.976	50	U20 02500 ABS 50 KUB Duon 25.0 125	125	160	1.54	32 x 60	U20 82500 KUB Duon 25.0 125	125	154	1.50	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
24.9	0.980												
25.0	0.984												
25.1	0.988												
25.2	0.992												
25.3	0.996	50	U20 02550 ABS 50 KUB Duon 25.5 130	130	165	1.54	32 x 60	U20 82550 KUB Duon 25.5 130	130	159	1.52	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
25.4	1.000												
25.5	1.004												
25.6	1.008												
25.7	1.012												
25.8	1.016	50	U20 02600 ABS 50 KUB Duon 26.0 130	130	165	1.54	32 x 60	U20 82600 KUB Duon 26.0 130	130	159	1.57	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
25.9	1.020												
26.0	1.024												
26.1	1.028												
26.2	1.032												
26.3	1.035	50	U20 02650 ABS 50 KUB Duon 26.5 135	135	170	1.54	32 x 60	U20 82650 KUB Duon 26.5 135	135	164	1.61	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
26.4	1.039												
26.5	1.043												
26.6	1.047												
26.7	1.051												
26.8	1.055	50	U20 02700 ABS 50 KUB Duon 27.0 135	135	170	1.54	32 x 60	U20 82700 KUB Duon 27.0 135	135	164	1.63	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
26.9	1.059												
27.0	1.063												
27.1	1.067												
27.2	1.071												
27.3	1.075	50	U20 02750 ABS 50 KUB Duon 27.5 140	140	175	1.76	40 x 68	U20 92750 KUB Duon 27.5 140	140	169	2.45	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
27.4	1.079												
27.5	1.083												
27.6	1.087												
27.7	1.091												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 24.5 mm, carbide grade BK84,
Order No: H60 245 00.84

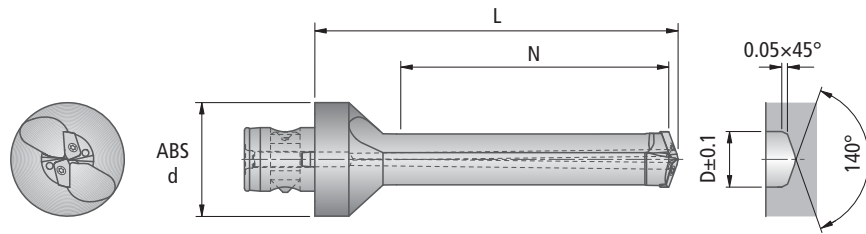


Basic Recommendation		better wear resistance						greater strength			Basic Recommendation	
Cutting blade	for Workpiece Material	P ● K ● N ●		● ● ●		● ● ●			Cutting blade	for Workpiece Material	P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.			
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710		
XOHX 1003-24.3	H60 24300 ..							XOHX 1003-24.3-62	H62 24300 ..			
XOHX 1003-24.4	H60 24400 ..							XOHX 1003-24.4-62	H62 24400 ..			
XOHX 1003-24.5	H60 24500 ..	8440	2715	84	8125	2740	8140	XOHX 1003-24.5-62	H62 24500 ..	7710		
XOHX 1003-24.6	H60 24600 ..							XOHX 1003-24.6-62	H62 24600 ..			
XOHX 1003-24.7	H60 24700 ..							XOHX 1003-24.7-62	H62 24700 ..			
XOHX 12T3-24.8	H60 24800 ..							XOHX 12T3-24.8-62	H62 24800 ..			
XOHX 12T3-24.9	H60 24900 ..							XOHX 12T3-24.9-62	H62 24900 ..			
XOHX 12T3-25.0	H60 25000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-25.0-62	H62 25000 ..	7710		
XOHX 12T3-25.1	H60 25100 ..							XOHX 12T3-25.1-62	H62 25100 ..			
XOHX 12T3-25.2	H60 25200 ..							XOHX 12T3-25.2-62	H62 25200 ..			
XOHX 12T3-25.3	H60 25300 ..							XOHX 12T3-25.3-62	H62 25300 ..			
XOHX 12T3-25.4	H60 25400 ..							XOHX 12T3-25.4-62	H62 25400 ..			
XOHX 12T3-25.5	H60 25500 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-25.5-62	H62 25500 ..	7710		
XOHX 12T3-25.6	H60 25600 ..							XOHX 12T3-25.6-62	H62 25600 ..			
XOHX 12T3-25.7	H60 25700 ..							XOHX 12T3-25.7-62	H62 25700 ..			
XOHX 12T3-25.8	H60 25800 ..							XOHX 12T3-25.8-62	H62 25800 ..			
XOHX 12T3-25.9	H60 25900 ..							XOHX 12T3-25.9-62	H62 25900 ..			
XOHX 12T3-26.0	H60 26000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-26.0-62	H62 26000 ..	7710		
XOHX 12T3-26.1	H60 26100 ..							XOHX 12T3-26.1-62	H62 26100 ..			
XOHX 12T3-26.2	H60 26200 ..							XOHX 12T3-26.2-62	H62 26200 ..			
XOHX 12T3-26.3	H60 26300 ..							XOHX 12T3-26.3-62	H62 26300 ..			
XOHX 12T3-26.4	H60 26400 ..							XOHX 12T3-26.4-62	H62 26400 ..			
XOHX 12T3-26.5	H60 26500 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-26.5-62	H62 26500 ..	7710		
XOHX 12T3-26.6	H60 26600 ..							XOHX 12T3-26.6-62	H62 26600 ..			
XOHX 12T3-26.7	H60 26700 ..							XOHX 12T3-26.7-62	H62 26700 ..			
XOHX 12T3-26.8	H60 26800 ..							XOHX 12T3-26.8-62	H62 26800 ..			
XOHX 12T3-26.9	H60 26900 ..							XOHX 12T3-26.9-62	H62 26900 ..			
XOHX 12T3-27.0	H60 27000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-27.0-62	H62 27000 ..	7710		
XOHX 12T3-27.1	H60 27100 ..							XOHX 12T3-27.1-62	H62 27100 ..			
XOHX 12T3-27.2	H60 27200 ..							XOHX 12T3-27.2-62	H62 27200 ..			
XOHX 12T3-27.3	H60 27300 ..							XOHX 12T3-27.3-62	H62 27300 ..			
XOHX 12T3-27.4	H60 27400 ..							XOHX 12T3-27.4-62	H62 27400 ..			
XOHX 12T3-27.5	H60 27500 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-27.5-62	H62 27500 ..	7710		
XOHX 12T3-27.6	H60 27600 ..							XOHX 12T3-27.6-62	H62 27600 ..			
XOHX 12T3-27.7	H60 27700 ..							XOHX 12T3-27.7-62	H62 27700 ..			

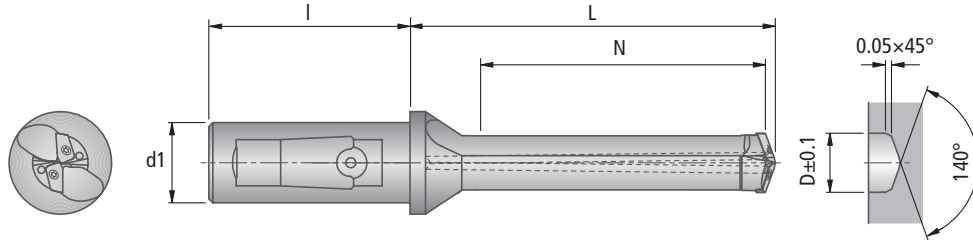
KUB Duon® Ø 27.8 – 31.2 mm

Drilling depth up to 5 × D – right hand
Metric

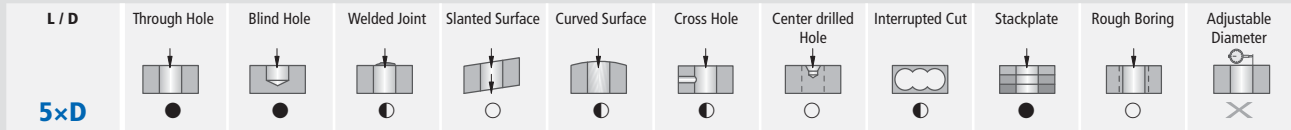
ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	approx.	Straight shank d1×l	Order No. Description	N	L	approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
27.8	1.094	50	U20 02800 ABS 50 KUB Duon 28.0 140	140	175	1.76	40 x 68	U20 92800 KUB Duon 28.0 140	140	169	2.47	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
27.9	1.098												
28.0	1.102												
28.1	1.106												
28.2	1.110	50	U20 02850 ABS 50 KUB Duon 28.5 145	145	180	1.76	40 x 68	U20 92850 KUB Duon 28.5 145	145	174	2.51	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
28.3	1.114												
28.4	1.118												
28.5	1.122												
28.6	1.126	50	U20 02900 ABS 50 KUB Duon 29.0 145	145	180	1.76	40 x 68	U20 92900 KUB Duon 29.0 145	145	174	2.56	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
28.7	1.130												
28.8	1.134												
28.9	1.138												
29.0	1.142	50	U20 02950 ABS 50 KUB Duon 29.5 150	150	190	1.98	40 x 68	U20 92950 KUB Duon 29.5 150	150	179	2.60	N00 57640 S/M3.5×6.9-10IP 25 in-lbs	L05 00850 10IP
29.1	1.146												
29.2	1.150												
29.3	1.154												
29.4	1.157	50	U20 03000 ABS 50 KUB Duon 30.0 150	150	190	1.98	40 x 68	U20 93000 KUB Duon 30.0 150	150	179	2.65	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
29.5	1.161												
29.6	1.165												
29.7	1.169												
29.8	1.173	50	U20 03050 ABS 50 KUB Duon 30.5 155	155	195	1.98	40 x 68	U20 93050 KUB Duon 30.5 155	155	184	2.69	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
29.9	1.177												
30.0	1.181												
30.1	1.187												
30.2	1.189	50	U20 03100 ABS 50 KUB Duon 31.0 155	155	195	1.98	40 x 68	U20 93100 KUB Duon 31.0 155	155	184	2.73	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
30.3	1.193												
30.4	1.197												
30.5	1.201												
30.6	1.205	50	U20 03100 ABS 50 KUB Duon 31.0 155	155	195	1.98	40 x 68	U20 93100 KUB Duon 31.0 155	155	184	2.73	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
30.7	1.209												
30.8	1.213												
30.9	1.218												
31.0	1.220	50	U20 03100 ABS 50 KUB Duon 31.0 155	155	195	1.98	40 x 68	U20 93100 KUB Duon 31.0 155	155	184	2.73	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
31.1	1.224												
31.2	1.228												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 28.0 mm, carbide grade BK84,
Order No: H60 280 00.84



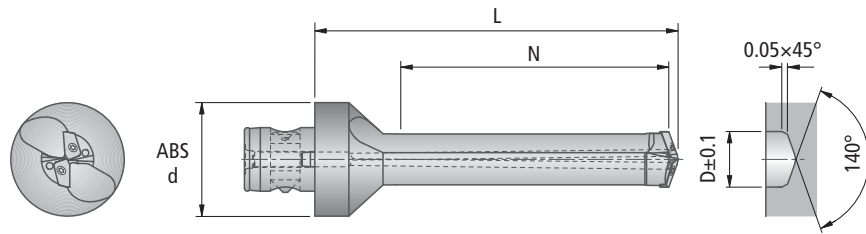
Basic Recommendation				better wear resistance			greater strength			Basic Recommendation			
Cutting blade for Workpiece Material		P ● K ● N ●		● ● ●			● ● ●			Cutting blade for Workpiece Material		P ● K ● N ●	
ISO Insert Description	Order No.							ISO Insert Description	Order No.				
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710			
XOHX 12T3-27.8	H60 27800 ..							XOHX 12T3-27.8-62	H62 27800 ..				
XOHX 12T3-27.9	H60 27900 ..							XOHX 12T3-27.9-62	H62 27900 ..				
XOHX 12T3-28.0	H60 28000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-28.0-62	H62 28000 ..	7710			
XOHX 12T3-28.1	H60 28100 ..							XOHX 12T3-28.1-62	H62 28100 ..				
XOHX 12T3-28.2	H60 28200 ..							XOHX 12T3-28.2-62	H62 28200 ..				
XOHX 12T3-28.3	H60 28300 ..							XOHX 12T3-28.3-62	H62 28300 ..				
XOHX 12T3-28.4	H60 28400 ..							XOHX 12T3-28.4-62	H62 28400 ..				
XOHX 12T3-28.5	H60 28500 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-28.5-62	H62 28500 ..	7710			
XOHX 12T3-28.6	H60 28600 ..							XOHX 12T3-28.6-62	H62 28600 ..				
XOHX 12T3-28.7	H60 28700 ..							XOHX 12T3-28.7-62	H62 28700 ..				
XOHX 12T3-28.8	H60 28800 ..							XOHX 12T3-28.8-62	H62 28800 ..				
XOHX 12T3-28.9	H60 28900 ..							XOHX 12T3-28.9-62	H62 28900 ..				
XOHX 12T3-29.0	H60 29000 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-29.0-62	H62 29000 ..	7710			
XOHX 12T3-29.1	H60 29100 ..							XOHX 12T3-29.1-62	H62 29100 ..				
XOHX 12T3-29.2	H60 29200 ..							XOHX 12T3-29.2-62	H62 29200 ..				
XOHX 12T3-29.3	H60 29300 ..							XOHX 12T3-29.3-62	H62 29300 ..				
XOHX 12T3-29.4	H60 29400 ..							XOHX 12T3-29.4-62	H62 29400 ..				
XOHX 12T3-29.5	H60 29500 ..	8440	2715	84	8125	2740	8140	XOHX 12T3-29.5-62	H62 29500 ..	7710			
XOHX 12T3-29.6	H60 29600 ..							XOHX 12T3-29.6-62	H62 29600 ..				
XOHX 12T3-29.7	H60 29700 ..							XOHX 12T3-29.7-62	H62 29700 ..				
XOHX 1504-29.8	H60 29800 ..							XOHX 1504-29.8-62	H62 29800 ..				
XOHX 1504-29.9	H60 29900 ..							XOHX 1504-29.9-62	H62 29900 ..				
XOHX 1504-30.0	H60 30000 ..	8440	2715	84	8125	2740	8140	XOHX 1504-30.0-62	H62 30000 ..	7710			
XOHX 1504-30.1	H60 30100 ..							XOHX 1504-30.1-62	H62 30100 ..				
XOHX 1504-30.2	H60 30200 ..							XOHX 1504-30.2-62	H62 30200 ..				
XOHX 1504-30.3	H60 30300 ..							XOHX 1504-30.3-62	H62 30300 ..				
XOHX 1504-30.4	H60 30400 ..							XOHX 1504-30.4-62	H62 30400 ..				
XOHX 1504-30.5	H60 30500 ..	8440	2715	84	8125	2740	8140	XOHX 1504-30.5-62	H62 30500 ..	7710			
XOHX 1504-30.6	H60 30600 ..							XOHX 1504-30.6-62	H62 30600 ..				
XOHX 1504-30.7	H60 30700 ..							XOHX 1504-30.7-62	H62 30700 ..				
XOHX 1504-30.8	H60 30800 ..							XOHX 1504-30.8-62	H62 30800 ..				
XOHX 1504-30.9	H60 30900 ..							XOHX 1504-30.9-62	H62 30900 ..				
XOHX 1504-31.0	H60 31000 ..	8440	2715	84	8125	2740	8140	XOHX 1504-31.0-62	H62 31000 ..	7710			
XOHX 1504-31.1	H60 31100 ..							XOHX 1504-31.1-62	H62 31100 ..				
XOHX 1504-31.2	H60 31200 ..							XOHX 1504-31.2-62	H62 31200 ..				

KUB Duon® Ø 31.3 – 34.7 mm

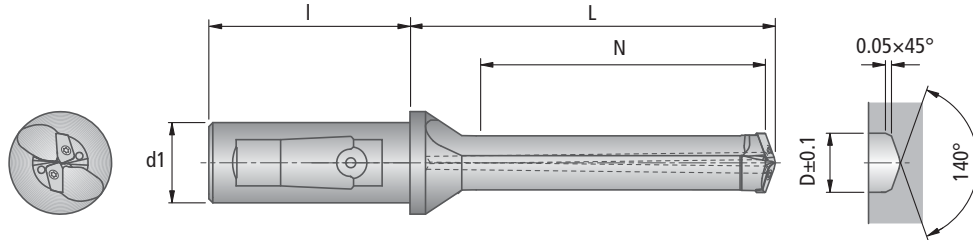
Drilling depth up to 5 × D – right hand

Metric

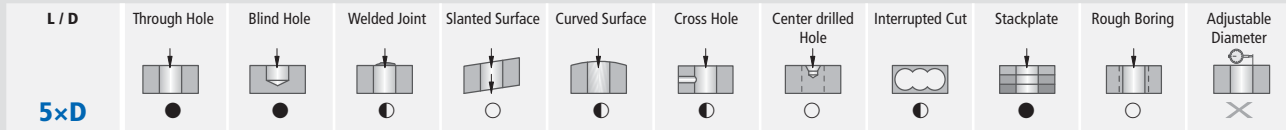
ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	approx.	Straight shank d1×l	Order No. Description	N	L	approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
31.3	1.232	50	U20 03150 ABS 50 KUB Duon 31.5 160	160	200	1.98	40 x 68	U20 93150 KUB Duon 31.5 160	160	189	2.80	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
31.4	1.236												
31.5	1.240												
31.6	1.244												
31.7	1.248												
31.8	1.250	50	U20 03200 ABS 50 KUB Duon 32.0 160	160	200	1.98	40 x 68	U20 93200 KUB Duon 32.0 160	160	189	2.82	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
31.9	1.256												
32.0	1.260												
32.1	1.264												
32.2	1.268												
32.3	1.272	50	U20 03250 ABS 50 KUB Duon 32.5 165	165	205	1.98	40 x 68	U20 93250 KUB Duon 32.5 165	165	194	2.91	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
32.4	1.276												
32.5	1.281												
32.6	1.283												
32.7	1.287												
32.8	1.291	50	U20 03300 ABS 50 KUB Duon 33.0 165	165	205	1.98	40 x 68	U20 93300 KUB Duon 33.0 165	165	194	2.93	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
32.9	1.295												
33.0	1.299												
33.1	1.303												
33.2	1.307												
33.3	1.312	50	U20 03350 ABS 50 KUB Duon 33.5 170	170	210	1.98	40 x 68	U20 93350 KUB Duon 33.5 170	170	199	3.00	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
33.4	1.315												
33.5	1.319												
33.6	1.323												
33.7	1.328												
33.8	1.331	50	U20 03400 ABS 50 KUB Duon 34.0 170	170	210	2.20	40 x 68	U20 93400 KUB Duon 34.0 170	170	199	3.02	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
33.9	1.335												
34.0	1.339												
34.1	1.343												
34.2	1.346												
34.3	1.350	50	U20 03450 ABS 50 KUB Duon 34.5 175	175	215	2.20	40 x 68	U20 93450 KUB Duon 34.5 175	175	204	3.11	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
34.4	1.354												
34.5	1.358												
34.6	1.362												
34.7	1.366												



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 32.0 mm, carbide grade BK84,
Order No: H60 320 00.84

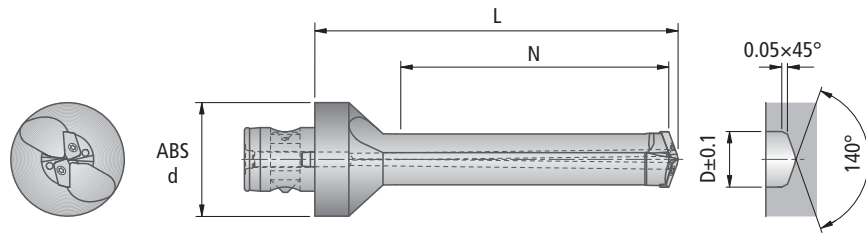


Basic Recommendation		better wear resistance						greater strength			Basic Recommendation	
Cutting blade	for Workpiece Material	P K N		●		●		●			Cutting blade	for Workpiece Material
ISO Insert Description	Order No.										ISO Insert Description	Order No.
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140				enter carbide	BK7710
XOHX1504-31.3	H60 31300 ..										XOHX1504-31.3-62	H62 31300 ..
XOHX1504-31.4	H60 31400 ..										XOHX1504-31.4-62	H62 31400 ..
XOHX 1504-31.5	H60 31500 ..	8440	2715	84	8125	2740	8140				XOHX 1504-31.5-62	H62 31500 ..
XOHX1504-31.6	H60 31600 ..										XOHX1504-31.6-62	H62 31600 ..
XOHX1504-31.7	H60 31700 ..										XOHX1504-31.7-62	H62 31700 ..
XOHX1504-31.8	H60 31800 ..										XOHX1504-31.8-62	H62 31800 ..
XOHX1504-31.9	H60 31900 ..										XOHX1504-31.9-62	H62 31900 ..
XOHX 1504-32.0	H60 32000 ..	8440	2715	84	8125	2740	8140				XOHX 1504-32.0-62	H62 32000 ..
XOHX1504-32.1	H60 32100 ..										XOHX1504-32.1-62	H62 32100 ..
XOHX1504-32.2	H60 32200 ..										XOHX1504-32.2-62	H62 32200 ..
XOHX1504-32.3	H60 32300 ..										XOHX1504-32.3-62	H62 32300 ..
XOHX1504-32.4	H60 32400 ..										XOHX1504-32.4-62	H62 32400 ..
XOHX 1504-32.5	H60 32500 ..	8440	2715	84	8125	2740	8140				XOHX 1504-32.5-62	H62 32500 ..
XOHX1504-32.6	H60 32600 ..										XOHX1504-32.6-62	H62 32600 ..
XOHX1504-32.7	H60 32700 ..										XOHX1504-32.7-62	H62 32700 ..
XOHX1504-32.8	H60 32800 ..										XOHX1504-32.8-62	H62 32800 ..
XOHX1504-32.9	H60 32900 ..										XOHX1504-32.9-62	H62 32900 ..
XOHX 1504-33.0	H60 33000 ..	8440	2715	84	8125	2740	8140				XOHX 1504-33.0-62	H62 33000 ..
XOHX1504-33.1	H60 33100 ..										XOHX1504-33.1-62	H62 33100 ..
XOHX1504-33.2	H60 33200 ..										XOHX1504-33.2-62	H62 33200 ..
XOHX1504-33.3	H60 33300 ..										XOHX1504-33.3-62	H62 33300 ..
XOHX1504-33.4	H60 33400 ..										XOHX1504-33.4-62	H62 33400 ..
XOHX 1504-33.5	H60 33500 ..	8440	2715	84	8125	2740	8140				XOHX 1504-33.5-62	H62 33500 ..
XOHX1504-33.6	H60 33600 ..										XOHX1504-33.6-62	H62 33600 ..
XOHX1504-33.7	H60 33700 ..										XOHX1504-33.7-62	H62 33700 ..
XOHX1504-33.8	H60 33800 ..										XOHX1504-33.8-62	H62 33800 ..
XOHX1504-33.9	H60 33900 ..										XOHX1504-33.9-62	H62 33900 ..
XOHX 1504-34.0	H60 34000 ..	8440	2715	84	8125	2740	8140				XOHX 1504-34.0-62	H62 34000 ..
XOHX1504-34.1	H60 34100 ..										XOHX1504-34.1-62	H62 34100 ..
XOHX1504-34.2	H60 34200 ..										XOHX1504-34.2-62	H62 34200 ..
XOHX1504-34.3	H60 34300 ..										XOHX1504-34.3-62	H62 34300 ..
XOHX1504-34.4	H60 34400 ..										XOHX1504-34.4-62	H62 34400 ..
XOHX 1504-34.5	H60 34500 ..	8440	2715	84	8125	2740	8140				XOHX 1504-34.5-62	H62 34500 ..
XOHX1504-34.6	H60 34600 ..										XOHX1504-34.6-62	H62 34600 ..
XOHX1504-34.7	H60 34700 ..										XOHX1504-34.7-62	H62 34700 ..

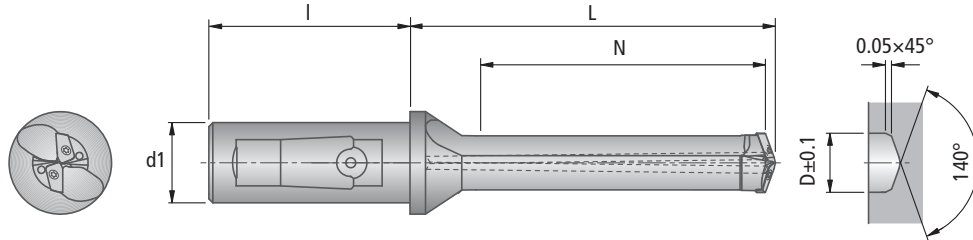
KUB Duon® Ø 34.8 – 36.2 mm

Drilling depth up to 5 × D – right hand
Metric

ABS® Connection



Straight Shank Connection



D mm	D inch	ABS					Straight Shank					Replacement Parts	
		ABS d	Order No. Description	N	L	approx.	Straight shank d1×l	Order No. Description	N	L	approx.	Clamping screw Order No. Description	TORX PLUS® Order No. Description
34.8	1.370	50	U20 03500 ABS 50 KUB Duon 35.0 175	175	215	2.20	40 x 68	U20 93500 KUB Duon 35.0 175	175	204	3.15	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
34.9	1.375												
35.0	1.378												
35.1	1.382												
35.2	1.386												
35.3	1.390	50	U20 03550 ABS 50 KUB Duon 35.5 180	180	220	2.20	40 x 68	U20 93550 KUB Duon 35.5 180	180	209	3.24	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
35.4	1.394												
35.5	1.398												
35.6	1.402												
35.7	1.406												
35.8	1.409	50	U20 03600 ABS 50 KUB Duon 36.0 180	180	220	2.20	40 x 68	U20 93600 KUB Duon 36.0 180	180	209	3.29	N00 57650 S/M4×8.7-15IP 38 in-lbs	L05 00860 15IP
35.9	1.413												
36.0	1.417												
36.1	1.421												
36.2	1.425												



L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
5xD											
	●	●	●	○	●	●	○	●	●	○	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

Inch diameter drills and blades in **bold face** are in stock.
Metric drills and blades in **bold face** are available for quick delivery.
All other diameters available upon request.

Application range:

- = Recommended
- = Alternative

- high tensile strength steels, heat treated steels and tool steels
- grey cast iron, SG cast iron
- cast aluminium alloys, brass and bronze that produce short chips

Delivery:

KUB Duon® drill with cutting blade clamping screws and TORX PLUS® wrench; less cutting blades.
(Cutting blades are delivered in packages of 2 pieces).

Order example:

for Ø 35.0 mm, carbide grade BK84,
Order No: H60 350 00.84

Basic Recommendation		better wear resistance → greater strength						Basic Recommendation		
Cutting blade	for Workpiece Material	P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●		P ● K ● N ●
ISO Insert Description	Order No.							ISO Insert Description	Order No.	
enter carbide		BK8440	BK2715	BK84	BK8125	BK2740	BK8140	enter carbide		BK7710
XOHX1504-34.8	H60 34800. ..							XOHX1504-34.8-62	H62 34800. ..	
XOHX1504-34.9	H60 34900. ..							XOHX1504-34.9-62	H62 34900. ..	
XOHX 1504-35.0	H60 35000. ..	8440	2715	84	8125	2740	8140	XOHX 1504-35.0-62	H62 35000. ..	7710
XOHX1504-35.1	H60 35100. ..							XOHX1504-35.1-62	H62 35100. ..	
XOHX1504-35.2	H60 35200. ..							XOHX1504-35.2-62	H62 35200. ..	
XOHX1504-35.3	H60 35300. ..							XOHX1504-35.3-62	H62 35300. ..	
XOHX1504-35.4	H60 35400. ..							XOHX1504-35.4-62	H62 35400. ..	
XOHX 1504-35.5	H60 35500. ..	8440	2715	84	8125	2740	8140	XOHX 1504-35.5-62	H62 35500. ..	7710
XOHX1504-35.6	H60 35600. ..							XOHX1504-35.6-62	H62 35600. ..	
XOHX1504-35.7	H60 35700. ..							XOHX1504-35.7-62	H62 35700. ..	
XOHX1504-35.8	H60 35800. ..							XOHX1504-35.8-62	H62 35800. ..	
XOHX1504-35.9	H60 35900. ..							XOHX1504-35.9-62	H62 35900. ..	
XOHX 1504-36.0	H60 36000. ..	8440	2715	84	8125	2740	8140	XOHX 1504-36.0-62	H62 36000. ..	7710
XOHX1504-36.1	H60 36100. ..							XOHX1504-36.1-62	H62 36100. ..	
XOHX1504-36.2	H60 36200. ..							XOHX1504-36.2-62	H62 36200. ..	

KUB Duon® Ø 0.697" – 1.413" (Ø 17.3 – 36.2 mm)

Cutting Recommendations

Guideline values for solid drilling with KUB Duon®

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev		
						Ø 0.681-0.803 (Ø 17.3-20.7)	Ø 0.804-1.169 (Ø 20.8-29.7)	Ø 1.170-1.425 (Ø 29.8-36.2)
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0 15.0 16.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	-	-	-	-
			Low alloy steel	5120 1055 5115	460	.012	.016	.018
			Lead alloy	12L13	520	.012	.016	.020
			High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	390	.008	.010	.012
			Tool steel	H13 H21	330	.006	.008	.010
4.1			HSS		-	-	-	-
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	-	-	-	-
5.1	58000		Titanium, Titanium alloy	AMS R54520	-	-	-	-
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	-	-	-	-
6.1	<130000		Stainless steel	630	-	-	-	-
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	-	-	-	-
8.0		180	Grey cast iron	No 35 B No 50 B	460	.012	.016	.020
8.1		250	Alloy grey cast iron	A436 Type 2	330	.008	.012	.018
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	390	.010	.014	.018
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	330	.008	.012	.016
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.008	.012	.016
10.1		200	Malleable cast iron	70003	330	.010	.014	.018
10.2		300	Alloyed nodular cast iron	A43D2	330	.010	.014	.018
10.2		300	Vermicular cast iron		260	.008	.012	.016
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	590	.012	.016	.020
12.1		100	Copper alloy, Brass, Bronze: average cut		-	-	-	-
13.0		60	Wrought aluminum alloy		1310	.008	.008	.008
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.008	.008	.008
14.0		100	Magnesium alloy		-	-	-	-
14.0		100	Aluminum alloy: Si content >10%	A360.2	-	-	-	-
15.0	203000		Hardened steel < 45 HRC		-	-	-	-
16.0	261000		Hardened steel > 45 HRC		-	-	-	-



◀ Designed to customer requirements
e.g. with integral steps or
chamfering insert

Flexibility is the trump card



Safety Notes

- Note! On exit of the drill small chips as shown are ejected. In the case of rotating components there is an obvious risk of accidents. Please arrange suitable guarding for such applications.
- The application details shown depend on the environmental and application conditions (e.g. machine, ambient temperature, use of lubricant/coolant and the machining result required). These are subject to correct operating conditions, correct application and compliance with the spindle speed limits given for the tools.
- To avoid damage on the machine and tool, we recommend the necessary drive power be calculated beforehand. The actual stationary drive performance available can be taken from the machine manufacturer's spindle speed/performance diagram.
- Guarding should be provided to protect personnel from injury by flying chips.
- To ensure optimum tool life, change the inserts promptly.



KUB Centron® · KUB® V464

- Short process times from high performance parameters
- Long tool life means low operating costs
- Modular design gives high flexibility
- High production reliability for drilling depths up to $9 \times D$
- Reliable machining in almost any materials
- Suitable for rotating and stationary and for vertical and horizontal applications
- Combination options reduce tool costs
- Service-friendly



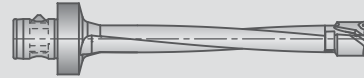


KUB Centron®

Drilling **4 - 9 × D · Ø 0.812" - 2.500" (Ø 20 - 64 mm)**
right hand · with ABS® Connection

2.84 – 2.91

Replacement parts / Accessories
Assembly instructions



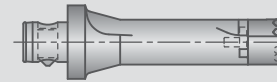
2.94
2.99

KUB Centron®

Drilling **4 - 9 × D · Ø 2.559" - 3.189" (Ø 65 - 81 mm)**
right hand · with ABS® Connection

2.92 – 2.93

Replacement parts / Accessories



2.95

KUB® Drill Head V464

Drilling **6 × D · Ø 3.150" - 6.102" (Ø 80 - 155 mm)**
right hand · with ABS® Connection

2.96 – 2.97

Replacement parts / Accessories



2.98

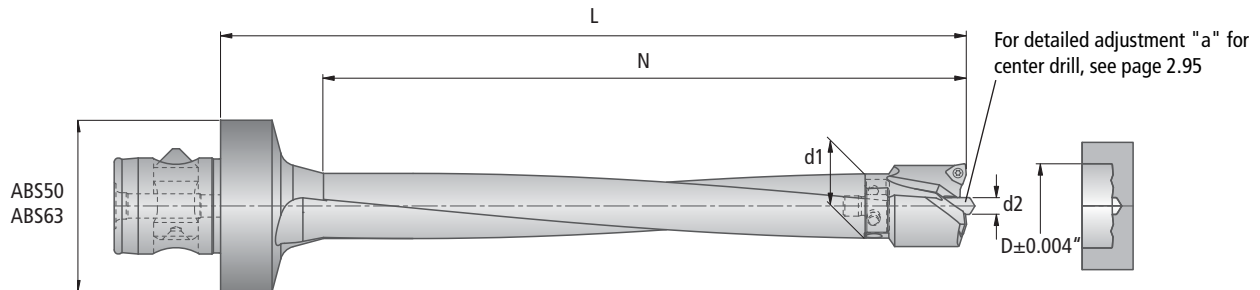


KUB Centron® Ø 0.812" – 1.750"

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
4-9xD	●	●	○	○	○	○	○	○	×	×	×

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Drill head / Base element with ABS® Connection Drilling depth from 4 × D up to 9 × D – right hand, Inch



D	Drill Head Order No.	Insert Recommendation				Center Drill Ø d2 Order No.	Base Element						
		Insert (2 Qty.) Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H					ABS d	L/D app.*	Order No.	d1	N
0.812	V46 52060	W29 10010.048425	WOEX030204-01 BK8425	●		V95 10012.0090 V95 10012.0089 Ø .197	50	4xD	V47 20201	.748	4.449	5.709	1.15
		W29 10010.047930	WOEX030204-01 BK7930	●			50	6xD	V47 40201	.748	5.905	7.283	1.21
		W29 10110.0477	WOEX030204-11 BK77	●			50	8xD	V47 60201	.748	7.874	9.251	1.39
1.125	V46 52860	W29 18010.048425	WOEX040304-01 BK8425	●		V95 10022.0090 V95 10022.0089 Ø .236	50	4xD	V47 20261	.984	5.118	6.299	1.46
		W29 18010.047930	WOEX040304-01 BK7930	●			50	6xD	V47 40261	.984	6.889	8.267	1.70
		W29 18110.0477	WOEX040304-11 BK77	●			50	8xD	V47 60261	.984	9.055	10.24	1.98
1.375	V46 53490	W29 24010.048425	WOEX05T304-01 BK8425	●		V95 10022.0090 V95 10022.0089 Ø .236	50	4xD	V47 20331	1.260	6.299	7.677	2.05
		W29 24010.047930	WOEX05T304-01 BK7930	●			50	6xD	V47 40331	1.260	8.464	10.04	2.49
		W29 24110.0477	WOEX05T304-11 BK77	●			50	8xD	V47 60331	1.260	11.42	12.99	3.09
1.625	V46 54130	W29 24010.048425	WOEX05T304-01 BK8425	●		V95 10032.0090 V95 10032.0089 Ø .315	63	4xD	V47 20401	1.516	7.283	9.252	3.70
		W29 24010.047930	WOEX05T304-01 BK7930	●			63	6xD	V47 40401	1.516	10.24	12.20	4.59
		W29 24110.0477	WOEX05T304-11 BK77	●			63	8xD	V47 60401	1.516	13.39	15.35	5.51

Additional diameters on request.

▲ 90 HSS TiAlN coated
(for grey cast iron and nodular cast iron)
89 HSS TiN coated
(for Steel, Aluminum and non-ferrous metals)

Delivery:

KUB Centron® drill complete with clamping screw, adjusting screw, guide pads, TORX PLUS® screw driver and allen key.

See page 2.94 for replacement parts and accessories.
2.84

* The exact diameter to length ratio (L/D) from the corresponding base element and selected drill head.

Cutting Recommendations

Guideline values for solid drilling with KUB Centron®
4xD - 9xD

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev		
						Ø 0.812-1.000	Ø 1.125-1.250	Ø 1.375-1.750
P	1.0	≤72500	Unalloyed steel	A570.36 1213 A573.81	820	.002	.002	.003
				2.0				
	2.1	<72500	Lead alloy		12L13	820	.004	.005
				3.0	>130000			
	4.0	>130000	Tool steel			H13 H21	530	.002
				4.1		HSS		
	5.0		250				Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A
				5.1	58000	Titanium, Titanium alloy	AMS R54520	I
	6.0	≤87000	Stainless steel: austenitic 300 series				304L 316	
				6.1	<130000	Stainless steel	630	530
7.0	>130000	Stainless steel: martensitic/ferritic 400 series	420 403				390	
			8.0	180	Grey cast iron	No 35 B No 50 B		660
8.1	250	Alloy grey cast iron				A436 Type 2	530	
			9.0	≤87000	130	Nodular cast iron ferritic		60-40-18
9.1		230				Nodular cast iron ferritic / pearlitic	80-55-06	460
			10.0	87000	250	Nodular cast iron pearlitic	100-70-03	
10.1		200				Malleable cast iron	70003	330
			10.2		300	Alloyed nodular cast iron	A43D2	
12.0		90				Vermicular cast iron		660
			12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	
13.0		60				Copper alloy, Brass, Bronze: average cut		1150
			13.1		75	Wrought aluminum alloy		
14.0		100				Aluminum alloy: Si content <10%	GD-AISI12	660
			15.0			Magnesium alloy		
16.0	203000					Aluminum alloy: Si content >10%	A360.2	660
			H	261000		Hardened steel < 45 HRC		
						Hardened steel > 45 HRC		I

Alternative Inserts

For better chip control								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
.812 - 1.000	W29 10030.0484 W29 10030.046425	-03 -13						
1.125 - 1.250	W29 18030.0484 W29 18030.046425	WOEX030204-03 BK84 WOEX030204-03 BK6425						
1.375 - 1.750	W29 24130.048425 W29 24130.0479 W29 24030.046425	WOEX05T304-13 BK8425 WOEX05T304-13 BK79 WOEX05T304-03 BK6425						

For better wear resistance								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
.812 - 1.000	W29 10010.0472 W29 10110.0450 W29 10130.0473	-01 -11 -13						
1.125 - 1.250	W29 18010.0472 W29 18110.0450 W29 18130.0473	WOEX040304-01 BK72 WOEX040304-11 BK50 WOEX040304-13 BK73						
1.375 - 1.750	W29 24010.0472 W29 24110.0450 W29 24130.0473	WOEX05T304-01 BK72 WOEX05T304-11 BK50 WOEX05T304-13 BK73						

For higher toughness								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
.812 - 1.000	W29 10010.047930 W29 10010.0404 W29 10010.0421 W29 10110.0421	-01 -11						
1.125 - 1.250	W29 18010.047930 W29 18010.0404 W29 18010.0421 W29 18110.0421	WOEX040304-01 BK7930 WOEX040304-01 P40 WOEX040304-01 K10 WOEX040304-11 K10						
1.375 - 1.750	W29 24010.047930 W29 24010.0404 W29 24010.0421 W29 24110.0421	WOEX05T304-01 BK7930 WOEX05T304-01 P40 WOEX05T304-01 K10 WOEX05T304-11 K10						

Alternative Center Drill for better wear resistance:

V95008445 (HM TiCN/TiN coated)

- application up to max. 6xD
- smooth starting surface
- robust conditions
- for cast and aluminum

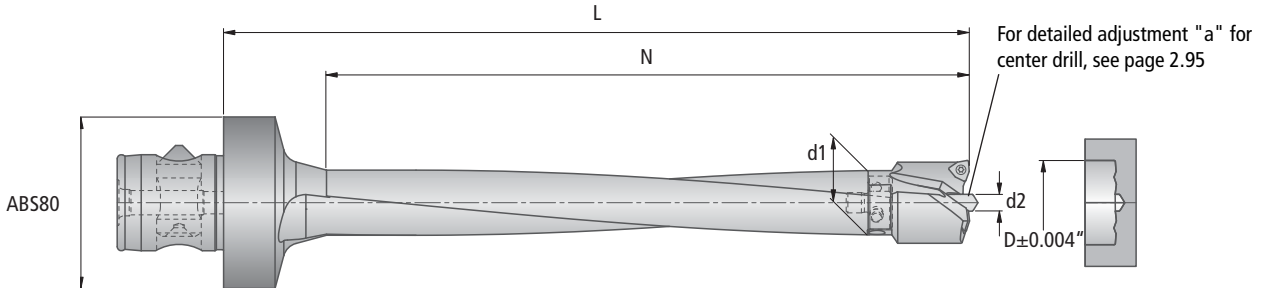


KUB Centron® Ø 1.875" – 2.500"

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
4-9xD											
	●	●	○	○	○	○	○	○	×	×	×

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Drill head / Base element with ABS® Connection Drilling depth from 4 × D up to 9 × D – right hand, Inch



D	Drill Head Order No.	Insert Recommendation				Center Drill Ø d2 Order No.	Base Element						
		Insert (2 Qty.) Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H				ABS d	L/D app.*	Order No.	d1	N	L
1.875	V46 54760	W29 34010.048425	WOEX06T304-01 BK8425	●		V95 10042.0090 V95 10042.0089 Ø .394	80	4xD	V47 20461	1.752	8.464	11.20	7.30
		W29 34010.047930	WOEX06T304-01 BK7930		●		80	6xD	V47 40461	1.752	12.20	14.76	8.75
2.000	V46 55080	W29 34010.0461	WOEX06T304-01 BK61		●	V95 10042.0090 V95 10042.0089 Ø .394	80	8xD	V47 60461	1.752	16.34	18.90	10.63
		W29 34110.0477	WOEX06T304-11 BK77		●								
2.250	V46 55720	W29 42010.048425	WOEX080404-01 BK8425	●		V95 10042.0090 V95 10042.0089 Ø .394	80	4xD	V47 20551	2.106	10.24	12.80	9.48
2.375	V46 56030	W29 42010.047930	WOEX080404-01 BK7930		●		80	6xD	V47 40551	2.106	14.56	17.13	11.95
		W29 42010.0461	WOEX080404-01 BK61		●								
2.500	V46 56350	W29 42110.0477	WOEX080404-11 BK77		●	80	8xD	V47 60551	2.106	19.49	22.05	14.73	

Additional diameters on request.

▲ 90 HSS TiAlN coated
(for grey cast iron and nodular cast iron)
89 HSS TiN coated
(for Steel, Aluminum and non-ferrous metals)

Delivery:

KUB Centron® drill complete with clamping screw, adjusting screw, guide pads, TORX PLUS® screw driver and allen key.

See page 2.94 for replacement parts and accessories.

* The exact diameter to length ratio (L/D) from the corresponding base element and selected drill head.

Cutting Recommendations

Guideline values for solid drilling with KUB Centron®
4xD – 9xD

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev																						
						Ø 1.875-2.000	Ø 2.250-2.500																					
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	820	.004	.005																					
								2.0	72500 - 130000	Low alloy steel	5120 1055 5115	660	.005	.006														
															2.1	<72500	Lead alloy	12L13	820	.005	.006							
																						3.0	>130000	High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	590	.005	.006
4.1			HSS		260	.003	.003																					
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A																								
								5.1	58000	Titanium, Titanium alloy	AMS R54520																	
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.003	.004																					
								6.1	<130000	Stainless steel	630	530	.004	.005														
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.003	.004																					
8.0		180	Grey cast iron	No 35 B No 50 B	660	.007	.010																					
								8.1	250	Alloy grey cast iron	A436 Type 2	530	.006	.008														
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	530	.007	.010																					
								9.1	230	Nodular cast iron ferritic / pearlitic	80-55-06	460	.007	.010														
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.007	.010																					
								10.1	200	Malleable cast iron	70003	330	.006	.008														
10.2		300	Alloyed nodular cast iron	A43D2	260	.006	.008																					
								10.2	300	Vermicular cast iron		260	.006	.008														
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	660	.008	.010																					
								12.1	100	Copper alloy, Brass, Bronze: average cut		820	.004	.006														
13.0		60	Wrought aluminum alloy		1150	.003	.004																					
								13.1	75	Aluminum alloy: Si content <10%	GD-AISI12	820	.007	.010														
13.1			Magnesium alloy		820	.007	.010																					
14.0		100	Aluminum alloy: Si content >10%	A360.2	660	.006	.008																					
15.0	203000		Hardened steel < 45 HRC																									
								16.0	261000		Hardened steel > 45 HRC																	

Please see Chapter 8 for application details and safety notes!

Alternative Inserts

For better chip control				
D	Insert		for Workpiece Material	
	Order No. Size	ISO Insert Description		
1.875 - 2.000	-03	-13	P M K N S H	
			W29 34130.048425	WOEX06T304-13 BK8425
			W29 34130.0479	WOEX06T304-13 BK79
2.250 - 2.500	-03	-13	P M K N S H	
			W29 42130.048425	WOEX080404-13 BK8425
			W29 42130.0479	WOEX080404-13 BK79
2.250 - 2.500	-03	-13	P M K N S H	
			W29 42030.046425	WOEX080404-03 BK6425
			W29 42030.046425	WOEX080404-03 BK6425

For better wear resistance				
D	Insert		for Workpiece Material	
	Order No. Size	ISO Insert Description		
1.875 - 2.000	-01	-11	P M K N S H	
			W29 34010.0472	WOEX06T304-01 BK72
			W29 34110.0450	WOEX06T304-11 BK50
2.250 - 2.500	-01	-11	P M K N S H	
			W29 42010.0472	WOEX080404-01 BK72
			W29 42110.0450	WOEX080404-11 BK50
2.250 - 2.500	-01	-11	P M K N S H	
			W29 42130.0473	WOEX06T304-13 BK73
			W29 42130.0473	WOEX080404-13 BK73

For higher toughness				
D	Insert		for Workpiece Material	
	Order No. Size	ISO Insert Description		
1.875 - 2.000	-01	-11	P M K N S H	
			W29 34010.047930	WOEX06T304-01 BK7930
			W29 34010.0404	WOEX06T304-01 P40
			W29 34010.0421	WOEX06T304-01 K10
2.250 - 2.500	-01	-11	P M K N S H	
			W29 42010.047930	WOEX080404-01 BK7930
			W29 42010.0404	WOEX080404-01 P40
			W29 42010.0421	WOEX080404-01 K10
2.250 - 2.500	-01	-11	P M K N S H	
			W29 42110.0421	WOEX06T304-11 K10
			W29 42110.0421	WOEX080404-11 K10
			W29 42110.0421	WOEX080404-11 K10

Alternative Center Drill for better wear resistance:

V95008445 (HM TiCN/TiN coated)

- application up to max. 6xD
- smooth starting surface
- robust conditions
- for cast and aluminum

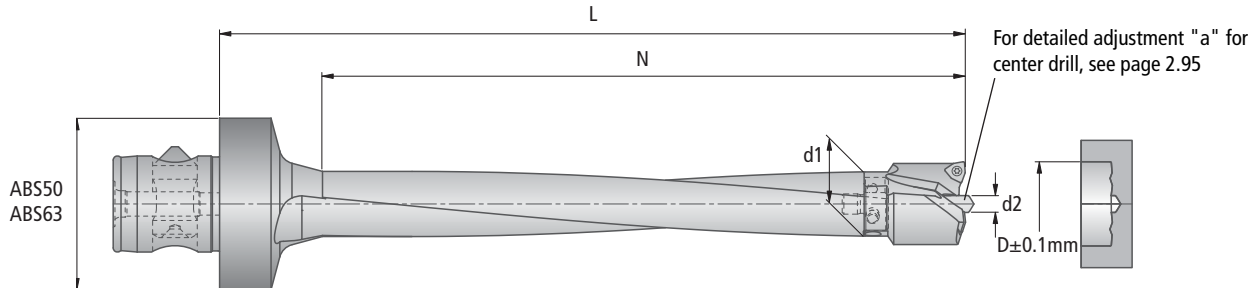


KUB Centron® Ø 20 – 45 mm

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
4-9xD											
	●	●	○	○	○	○	○	○	×	×	×

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Drill head / Base element with ABS® Connection Drilling depth from 4 × D up to 9 × D – right hand, Metric



D mm	D inch	Drill Head Order No.	Insert Recommendation		Center Drill Ø d2 Order No.	Base Element						
			Insert (2 Qty.) Order No. Size	ISO Insert Description		for Workpiece Material P M K N S H	ABS d	L/D app.*	Order No.	d1 (inch)	N (inch)	L (inch)
20	0.787	V46 50200			V95 10012.0090 V95 10012.0089 Ø 5	50	4xD	V47 20201	19 (.75)	113 (4.45)	145 (5.71)	1.15
21	0.827	V46 50210	W29 10010.048425	WOEX030204-01 BK8425		50	6xD	V47 40201	19 (.75)	150 (5.90)	185 (7.28)	1.21
22	0.866	V46 50220	W29 10010.047930	WOEX030204-01 BK7930		50	8xD	V47 60201	19 (.75)	200 (7.87)	235 (9.25)	1.39
23	0.906	V46 50230	W29 10010.0462	WOEX030204-01 BK62								
24	0.945	V46 50240	W29 10110.0477	WOEX030204-11 BK77								
25	0.984	V46 50250										
26	1.024	V46 50260			V95 10022.0090 V95 10022.0089 Ø 6	50	4xD	V47 20261	25 (.98)	130 (5.12)	160 (6.30)	1.46
27	1.063	V46 50270	W29 18010.048425	WOEX040304-01 BK8425		50	6xD	V47 40261	25 (.98)	175 (6.89)	210 (8.27)	1.70
28	1.102	V46 50280	W29 18010.047930	WOEX040304-01 BK7930		50	8xD	V47 60261	25 (.98)	230 (9.05)	260 (10.2)	1.98
29	1.142	V46 50290	W29 18010.0462	WOEX040304-01 BK62								
30	1.181	V46 50300	W29 18110.0477	WOEX040304-11 BK77								
31	1.220	V46 50310										
32	1.260	V46 50320										
33	1.299	V46 50330			V95 10022.0090 V95 10022.0089 Ø 6	50	4xD	V47 20331	32 (1.26)	160 (6.30)	195 (7.68)	2.05
34	1.339	V46 50340	W29 24010.048425	WOEX05T304-01 BK8425		50	6xD	V47 40331	32 (1.26)	215 (8.46)	255 (10.0)	2.49
35	1.378	V46 50350	W29 24010.047930	WOEX05T304-01 BK7930		50	8xD	V47 60331	32 (1.26)	290 (11.4)	330 (13.0)	3.09
36	1.417	V46 50360	W29 24010.0461	WOEX05T304-01 BK61								
37	1.457	V46 50370	W29 24110.0477	WOEX05T304-11 BK77								
38	1.496	V46 50380										
39	1.535	V46 50390										
40	1.575	V46 50400			V95 10032.0090 V95 10032.0089 Ø 8	63	4xD	V47 20401	38.5 (1.51)	185 (7.28)	235 (9.25)	3.70
41	1.614	V46 50410	W29 24010.048425	WOEX05T304-01 BK8425		63	6xD	V47 40401	38.5 (1.51)	260 (10.2)	310 (12.2)	4.59
42	1.654	V46 50420	W29 24010.047930	WOEX05T304-01 BK7930		63	8xD	V47 60401	38.5 (1.51)	340 (13.4)	390 (15.3)	5.51
43	1.693	V46 50430	W29 24010.0461	WOEX05T304-01 BK61								
44	1.732	V46 50440	W29 24110.0477	WOEX05T304-11 BK77								
45	1.772	V46 50450										

Additional diameters on request.

▲ 90 HSS TiAlN coated
(for grey cast iron and nodular cast iron)
89 HSS TiN coated
(for Steel, Aluminum and non-ferrous metals)

Delivery:

KUB Centron® drill complete with clamping screw, adjusting screw, guide pads, TORX PLUS® screw driver and allen key.

See page 2.94 for replacement parts and accessories.
2.88

* The exact diameter to length ratio (L/D) from the corresponding base element and selected drill head.

Cutting Recommendations

Guideline values for solid drilling with KUB Centron®
4xD - 9xD

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev		
						Ø 20 - 25mm	Ø 26 - 32mm	Ø 33 - 45mm
P	1.0	≤72500	Unalloyed steel	A570.36 1213 A573.81	820	.002	.002	.003
			Low alloy steel	5120 1055 5115	660	.003	.004	.004
	2.0	72500 - 130000	Lead alloy	12L13	820	.004	.005	.005
			High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	590	.004	.005	.005
	2.1	<72500			820	.004	.005	.005
	3.0	>130000	Tool steel	H13 H21	530	.002	.003	.003
			HSS		260	.002	.002	.002
	4.0	>130000			530	.002	.003	.003
					530	.002	.003	.003
	4.1				260	.002	.002	.002
				260	.002	.002	.002	
5.0		Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A					
		Titanium, Titanium alloy	AMS R54520					
5.1	58000							
6.0	≤87000	Stainless steel: austenitic 300 series	304L 316	590	.002	.003	.003	
		Stainless steel	630	530	.003	.004	.004	
6.1	<130000			530	.003	.004	.004	
				530	.003	.004	.004	
7.0	>130000	Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.003	.003	
				390	.002	.003	.003	
8.0	180	Grey cast iron	No 35 B No 50 B	660	.005	.006	.006	
		Alloy grey cast iron	A436 Type 2	530	.004	.005	.005	
8.1	250			530	.004	.005	.005	
				530	.004	.005	.005	
9.0	≤87000	Nodular cast iron ferritic	60-40-18	530	.004	.005	.005	
		Nodular cast iron ferritic / pearlitic	80-55-06	460	.004	.005	.005	
9.1	87000			460	.004	.005	.005	
				460	.004	.005	.005	
10.0	250	Nodular cast iron pearlitic	100-70-03	390	.004	.005	.005	
		Malleable cast iron	70003	390	.004	.005	.005	
10.1	200	Alloyed nodular cast iron	A43D2	330	.003	.004	.004	
				330	.003	.004	.004	
10.2	300	Vermicular cast iron		260	.003	.004	.004	
				260	.003	.004	.004	
12.0	90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	660	.005	.006	.006	
				660	.005	.006	.006	
12.1	100	Copper alloy, Brass, Bronze: average cut		820	.002	.002	.002	
				820	.002	.002	.002	
13.0	60	Wrought aluminum alloy		1150	.002	.002	.002	
				1150	.002	.002	.002	
13.1	75	Aluminum alloy: Si content <10%	GD-AISI12	820	.003	.004	.005	
		Magnesium alloy		820	.003	.004	.005	
14.0	100	Aluminum alloy: Si content >10%	A360.2	660	.004	.005	.005	
				660	.004	.005	.005	
15.0	203000	Hardened steel < 45 HRC						
		Hardened steel > 45 HRC						
16.0	261000							

Alternative Inserts

For better chip control								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
20 - 25mm	W29 10030.0484	WOEX030204-03 BK84	●	●				
	W29 10030.046425	WOEX030204-03 BK6425	●	●				
26 - 32mm	W29 18030.0484	WOEX040304-03 BK84	●	●				
	W29 18030.046425	WOEX040304-03 BK6425	●	●				
33 - 45mm	W29 24130.048425	WOEX05T304-13 BK8425	●	●				
	W29 24130.0479	WOEX05T304-13 BK79	●	●				
	W29 24030.046425	WOEX05T304-03 BK6425	●	●				

For better wear resistance								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
20 - 25mm	W29 10010.0472	WOEX030204-01 BK72	●					
	W29 10110.0450	WOEX030204-11 BK50				●		
	W29 10130.0473	WOEX030204-13 BK73				●		
26 - 32mm	W29 18010.0472	WOEX040304-01 BK72	●					
	W29 18110.0450	WOEX040304-11 BK50				●		
	W29 18130.0473	WOEX040304-13 BK73				●		
33 - 45mm	W29 24010.0472	WOEX05T304-01 BK72	●					
	W29 24110.0450	WOEX05T304-11 BK50				●		
	W29 24130.0473	WOEX05T304-13 BK73				●		

For higher toughness								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
20 - 25mm	W29 10010.047930	WOEX030204-01 BK7930	●					
	W29 10010.0404	WOEX030204-01 P40	●	●				
	W29 10010.0421	WOEX030204-01 K10				●		
	W29 10110.0421	WOEX030204-11 K10				●		
26 - 32mm	W29 18010.047930	WOEX040304-01 BK7930	●					
	W29 18010.0404	WOEX040304-01 P40	●	●				
	W29 18010.0421	WOEX040304-01 K10				●		
	W29 18110.0421	WOEX040304-11 K10				●		
33 - 45mm	W29 24010.047930	WOEX05T304-01 BK7930	●					
	W29 24010.0404	WOEX05T304-01 P40	●	●				
	W29 24010.0421	WOEX05T304-01 K10				●		
	W29 24110.0421	WOEX05T304-11 K10				●		

Alternative Center Drill for better wear resistance:

V95008445 (HM TiCN/TiN coated)

- application up to max. 6xD
- smooth starting surface
- robust conditions
- for cast and aluminum

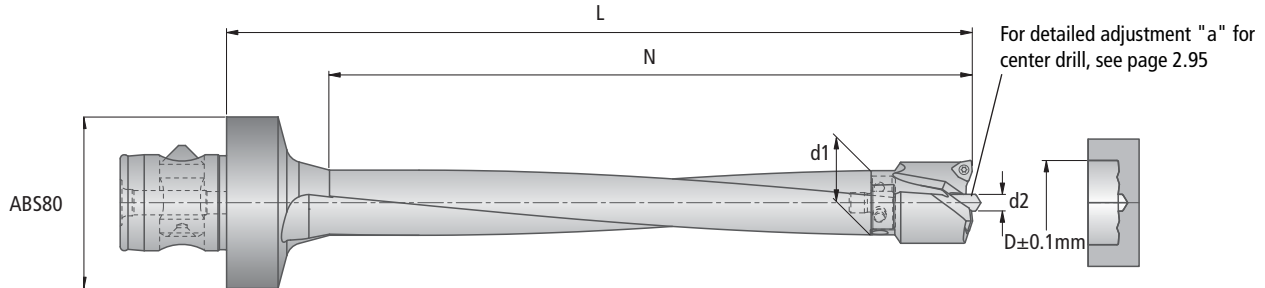


KUB Centron® Ø 46 – 64 mm

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
4-9xD											
	●	●	○	○	○	○	○	○	×	×	×

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

Drill head / Base element with ABS® Connection Drilling depth from 4 × D up to 9 × D – right hand, Metric



D mm	D inch	Drill Head Order No.	Insert Recommendation		Center Drill Ø d2 Order No.	Base Element						
			Insert (2 Qty.) Order No. Size	ISO Insert Description		for Workpiece Material P M K N S H	ABS d	L/D app.*	Order No.	d1 (inch)	N (inch)	L (inch)
46	1.811	V46 50460	W29 34010.048425 W29 34010.047930 W29 34010.0461 W29 34110.0477	WOEX06T304-01 BK8425 WOEX06T304-01 BK7930 WOEX06T304-01 BK61 WOEX06T304-11 BK77	V95 10042.0090 V95 10042.0089 Ø .394 (Ø 10)	80	4xD	V47 20461	44.5 (1.75)	215 (8.46)	280 (11.0)	7.30
47	1.850	V46 50470				80	6xD	V47 40461	44.5 (1.75)	310 (12.2)	375 (14.8)	8.75
48	1.890	V46 50480				80	8xD	V47 60461	44.5 (1.75)	415 (16.3)	480 (18.9)	10.63
49	1.929	V46 50490				80	4xD	V47 20551	53.5 (2.11)	260 (10.2)	325 (12.8)	9.48
50	1.969	V46 50500				80	6xD	V47 40551	53.5 (2.11)	370 (14.6)	435 (17.1)	11.95
51	2.008	V46 50510				80	8xD	V47 60551	53.5 (2.11)	495 (19.5)	560 (22.0)	14.73
52	2.047	V46 50520										
53	2.087	V46 50530										
54	2.126	V46 50540										
55	2.165	V46 50550										
56	2.205	V46 50560										
57	2.244	V46 50570										
58	2.283	V46 50580	W29 42010.048425	WOEX080404-01 BK8425	V95 10042.0090 V95 10042.0089 Ø .394 (Ø 10)	80	4xD	V47 20551	53.5 (2.11)	260 (10.2)	325 (12.8)	9.48
59	2.323	V46 50590	W29 42010.047930	WOEX080404-01 BK7930		80	6xD	V47 40551	53.5 (2.11)	370 (14.6)	435 (17.1)	11.95
60	2.362	V46 50600	W29 42010.0461	WOEX080404-01 BK61		80	8xD	V47 60551	53.5 (2.11)	495 (19.5)	560 (22.0)	14.73
61	2.402	V46 50610	W29 42110.0477	WOEX080404-11 BK77								
62	2.441	V46 50620										
63	2.480	V46 50630										
64	2.520	V46 50640										

Additional diameters on request.

Delivery:

KUB Centron® drill complete with clamping screw, adjusting screw, guide pads, TORX PLUS® screw driver and allen key.

See page 2.94 for replacement parts and accessories.

- ▲ 90 HSS TiAIN coated (for grey cast iron and nodular cast iron)
- 89 HSS TiN coated (for Steel, Aluminum and non-ferrous metals)

* The exact diameter to length ratio (L/D) from the corresponding base element and selected drill head.

Cutting Recommendations

Guideline values for solid drilling with KUB Centron®
4xD - 9xD

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev																						
						Ø 46 - 54mm	Ø55 - 64mm																					
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	820	.004	.005																					
								2.0	72500 - 130000	Low alloy steel	5120 1055 5115	660	.005	.006														
															2.1	<72500	Lead alloy	12L13	820	.005	.006							
																						3.0	>130000	High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	590	.005	.006
4.1			HSS		260	.003	.003																					
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A																								
								5.1	58000	Titanium, Titanium alloy	AMS R54520																	
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.003	.004																					
								6.1	<130000	Stainless steel	630	530	.004	.005														
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.003	.004																					
8.0		180	Grey cast iron	No 35 B No 50 B	660	.007	.010																					
								8.1	250	Alloy grey cast iron	A436 Type 2	530	.006	.008														
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	530	.007	.010																					
								9.1	230	Nodular cast iron ferritic / pearlitic	80-55-06	460	.007	.010														
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.007	.010																					
								10.1	200	Malleable cast iron	70003	330	.006	.008														
10.2		300	Alloyed nodular cast iron	A43D2	260	.006	.008																					
								10.2	300	Vermicular cast iron		260	.006	.008														
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	660	.008	.010																					
								12.1	100	Copper alloy, Brass, Bronze: average cut		820	.004	.006														
13.0		60	Wrought aluminum alloy		1150	.003	.004																					
								13.1	75	Aluminum alloy: Si content <10%	GD-AISI12	820	.007	.010														
13.1			Magnesium alloy		820	.007	.010																					
14.0		100	Aluminum alloy: Si content >10%	A360.2	660	.006	.008																					
15.0	203000		Hardened steel < 45 HRC																									
								16.0	261000		Hardened steel > 45 HRC																	

Please see Chapter 8 for application details and safety notes!

Alternative Inserts

For better chip control								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
46 - 54mm	W29 34130.048425 W29 34130.0479 W29 34030.046425	WOEX06T304-13 BK8425 WOEX06T304-13 BK79 WOEX06T304-03 BK6425	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●
55 - 64mm	W29 42130.0484 W29 42130.0479 W29 42030.046425	WOEX080404-13 BK84 WOEX080404-13 BK79 WOEX080404-03 BK6425	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●

For better wear resistance								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
46 - 54mm	W29 34010.0472 W29 34110.0450 W29 34130.0473	WOEX06T304-01 BK72 WOEX06T304-11 BK50 WOEX06T304-13 BK73	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●
55 - 64mm	W29 42010.0472 W29 42110.0450 W29 42130.0473	WOEX080404-01 BK72 WOEX080404-11 BK50 WOEX080404-13 BK73	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●

For higher toughness								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
46 - 54mm	W29 34010.047930 W29 34010.0404 W29 34010.0421 W29 34110.0421	WOEX06T304-01 BK7930 WOEX06T304-01 P40 WOEX06T304-01 K10 WOEX06T304-11 K10	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●
55 - 64mm	W29 42010.047930 W29 42010.0404 W29 42010.0421 W29 42110.0421	WOEX080404-01 BK7930 WOEX080404-01 P40 WOEX080404-01 K10 WOEX080404-11 K10	●	●	●	●	●	●
			●	●	●	●	●	●
			●	●	●	●	●	●

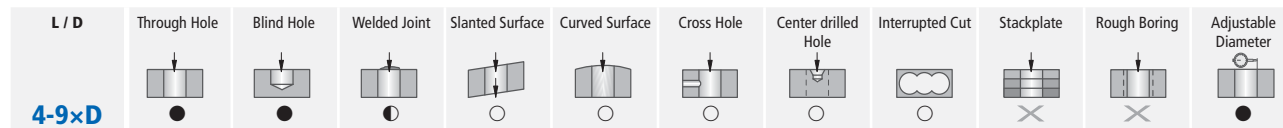
Alternative Center Drill for better wear resistance:

V95008445 (HM TiCN/TiN coated)

- application up to max. 6xD
- smooth starting surface
- robust conditions
- for cast and aluminum

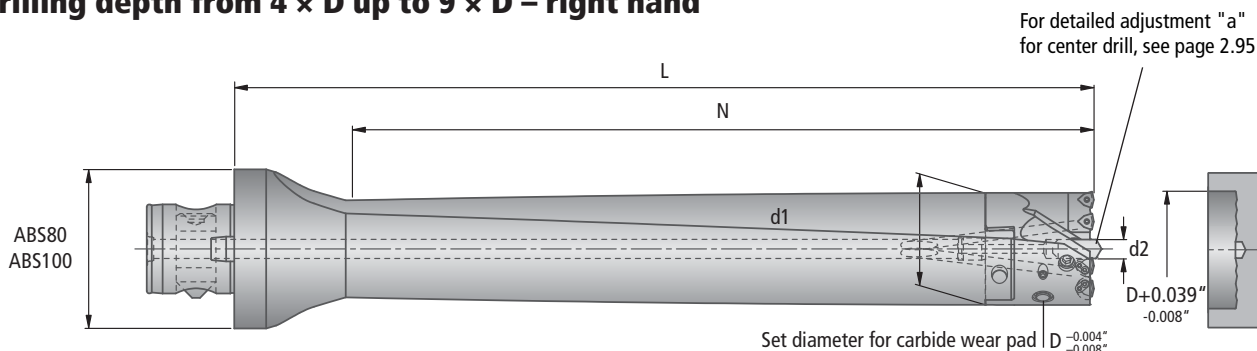


KUB Centron® Ø 2.559" – 3.189" (Ø 65 – 81 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Drill head / Base element with ABS® Connection Drilling depth from 4 × D up to 9 × D – right hand



The outside pocket is adjustable up to + 0.039" (1 mm) on diameter.

D in (mm)	Drill Head Order No.	Insert Recommendation				Center Drill Ø d2 Order No.	Base Element											
		Insert (4 Qty.) Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H					ABS d	L/D app.*	Order No.	d1	N	L	(lbs)			
2.559 (65)	V46 50650					V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	4×D	V47 20651	2.500	11.61	14.76	13.67					
2.598 (66)	V46 50660	W29 24010.048425	WOEX05T304-01 BK8425				V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	6×D	V47 40651	2.500	16.54	19.69	17.97				
2.638 (67)	V46 50670	W29 24010.047930	WOEX05T304-01 BK7930					V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	9×D	V47 60651	2.500	22.05	25.20	22.91			
2.677 (68)	V46 50680	W29 24010.0462	WOEX05T304-01 BK61						V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	4×D	V47 20721	2.775	12.80	15.94	19.25		
2.717 (69)	V46 50690	W29 24110.0477	WOEX05T304-11 BK77							V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	6×D	V47 40721	2.775	18.11	21.26	23.81	
2.756 (70)	V46 50700										V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	9×D	V47 60721	2.775	24.17	27.17	29.55
2.795 (71)	V46 50710																	
2.835 (72)	V46 50720																	
2.874 (73)	V46 50730																	
2.913 (74)	V46 50740																	
2.953 (75)	V46 50750	W29 24010.048425	WOEX05T304-01 BK8425			V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	4×D	V47 20651	2.500	11.61	14.76	13.67					
2.992 (76)	V46 50760	W29 24010.047930	WOEX05T304-01 BK7930				V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	6×D	V47 40651	2.500	16.54	19.69	17.97				
3.031 (77)	V46 50770	W29 24010.0462	WOEX05T304-01 BK62					V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	80	9×D	V47 60651	2.500	22.05	25.20	22.91			
3.071 (78)	V46 50780	W29 24110.0477	WOEX05T304-11 BK77						V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	4×D	V47 20721	2.775	12.80	15.94	19.25		
3.110 (79)	V46 50790									V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	6×D	V47 40721	2.775	18.11	21.26	23.81	
3.150 (80)	V46 50800										V95 10050.0090 V95 10050.0089 Ø .472 (Ø 12)	100	9×D	V47 60721	2.775	24.17	27.17	29.55
3.189 (81)	V46 50810																	

Additional diameters on request.

▲ 90 HSS TiAlN coated
(for grey cast iron and nodular cast iron)
89 HSS TiN coated
(for Steel, Aluminum and non-ferrous metals)

Delivery:

KUB Centron® drill complete with locking screw.

See page 2.96 for replacement parts and accessories.




* The diameter to length ratio (L/D) from the corresponding base element and selected drill head.



Cutting Recommendations



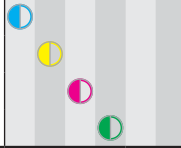
Guideline values for solid drilling with KUB Centron®
4xD – 9xD

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev	
						Ø 2.559-2.495	Ø 2.835-3.189
1.0	≤72500		Unalloyed steel	A570.36	820	.004	.005
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120	660	.005	.006
				1055			
				5115			
2.1	<72500		Lead alloy	12L13	820	.006	.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	590	.006	.006
4.0	>130000		Tool steel	H13 H21	530	.004	.005
4.1			HSS		260	.003	.004
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.004	.005
6.1	<130000		Stainless steel	630	530	.005	.006
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.004	.005
8.0		180	Grey cast iron	No 35 B No 50 B	660	.006	.008
8.1		250	Alloy grey cast iron	A436 Type 2	530	.006	.008
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	530	.006	.008
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	460	.006	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.006	.006
10.1		250	Malleable cast iron	70003	390	.006	.006
10.1		200	Alloyed nodular cast iron	A43D2	330	.005	.006
10.2		300	Vermicular cast iron		260	.005	.006
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	660	.006	.008
12.1		100	Copper alloy, Brass, Bronze: average cut		820	.003	.004
13.0		60	Wrought aluminum alloy		1150	.003	.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	820	.006	.006
			Magnesium alloy				
14.0		100	Aluminum alloy: Si content >10%	A360.2	660	.005	.006
15.0	203000		Hardened steel < 45 HRC				
16.0	261000		Hardened steel > 45 HRC				

Alternative Inserts

For better chip control			for Workpiece Material					
D	Insert	ISO Insert Description	P	M	K	N	S	H
	Order No. Size							
2.559 - 3.189		-03						
		-13						
	W29 24130.048425 W29 24130.0479 W29 24030.046425	WOEX05T304-13 BK8425 WOEX05T304-13 BK79 WOEX05T304-03 BK6425						

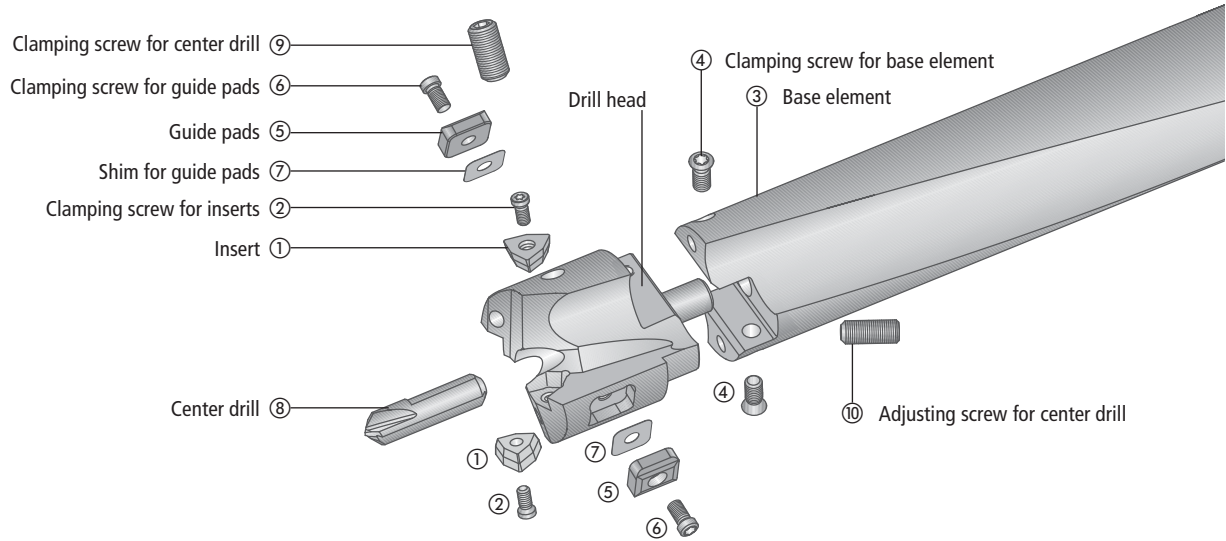
For better wear resistance			for Workpiece Material						
D	Insert	ISO Insert Description	P	M	K	N	S	H	
	Order No. Size								
2.559 - 3.189		-01							
	W29 24010.0472 W29 24010.0450	WOEX05T304-01 BK72 WOEX05T304-01 BK50							

For higher toughness			for Workpiece Material						
D	Insert	ISO Insert Description	P	M	K	N	S	H	
	Order No. Size								
2.559 - 3.189		-01							
		-11							
	W29 24010.047930 W29 24010.0404 W29 24010.0421 W29 24110.0421	WOEX05T304-01 BK7930 WOEX05T304-01 P40 WOEX05T304-01 K10 WOEX05T304-11 K10							



KUB Centron® Ø 0.787" - 2.520" (Ø 20 - 64 mm)

Replacement parts / Accessories



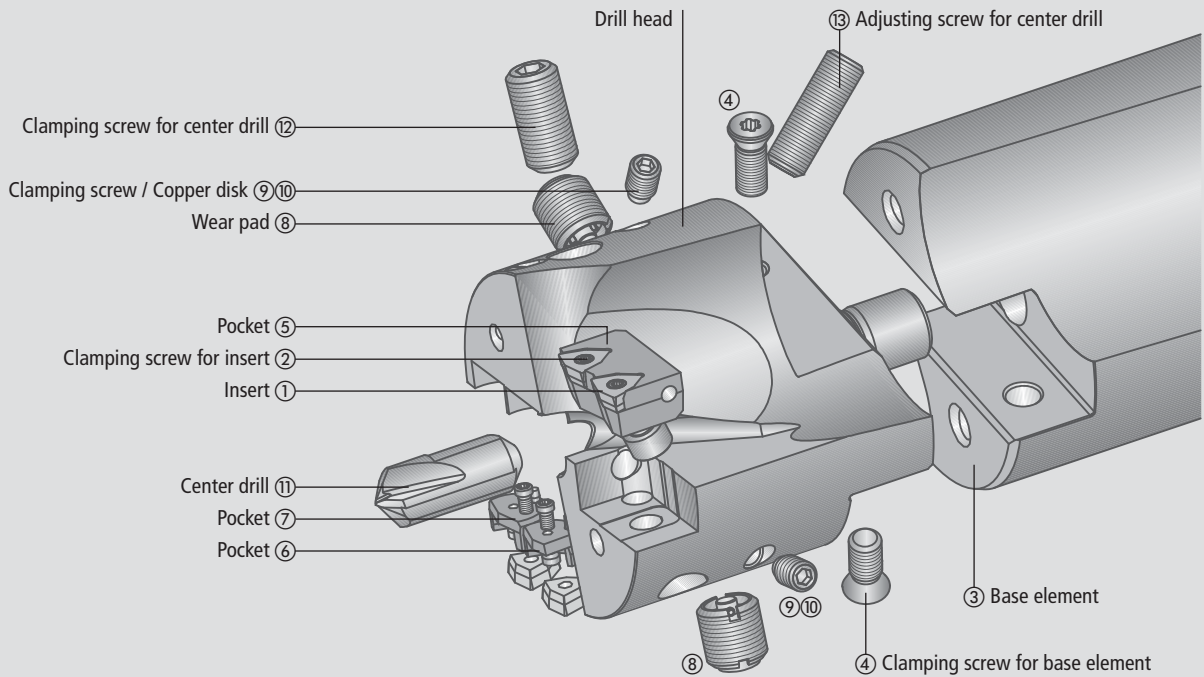
(..) = mm

D	Inserts ①				Base element ③					
	Clamping screw ② for inserts		TORX PLUS®		Clamping screw ④ for basic element			TORX PLUS®		
	Description	Order No.	in-lbs	Description	Order No.	Description	Order No.	in-lbs	Description	Order No.
0.787-0.984 (20-25)	S/M2×4.3-6IP	N00 56041	5.5	6IP	L05 00810	S2560-8IP	N00 57480	11.3	8IP	L05 00830
1.024-1.260 (26-32)	S/M2.2×5.5-6IP	N00 57553	8.9	6IP	L05 00810	S3070-8IP	N00 57490	20	8IP	L05 00830
1.299-1.535 (33-39)	S/M2.5×7.2-8IP	N00 57511	11.3	8IP	L05 00830	S4086-15IP	N00 57440	38	15IP	L05 00860
1.575-1.772 (40-45)	S/M2.5×7.2-8IP	N00 57511	11.3	8IP	L05 00830	S45100-20IP	N00 57500	55.3	20IP	L05 00870
1.811-2.126 (46-54)	S/M3.5×7.3-10IP	N00 57521	25	10IP	L05 00850	S/M5×11.5-20IP	N00 57450	55.3	20IP	L05 00870
2.165-2.520 (55-64)	S/M4.5-9-15IP	N00 57531	55.3	15IP	L05 00860	S/M5.5×14-20IP	N00 57460	55.3	20IP	L05 00870

D	Guide pads ⑤								
	Guide pads ⑤	Clamping screw ⑥ for guide pads			TORX PLUS®		Shim ⑦ for guide pads		
		Order No.	Description	Order No.	in-lbs	Description	Order No.	Order No.	t (mm)
0.787-0.984 (20-25)	L01 03990	S2542-8IP	N00 57211	11.3	8IP	L05 00830	L01 04190	0.025	4
1.024-1.260 (26-32)	L01 04000	M2.5×4.5-8IP	N00 55581	11.3				0.050	2
1.299-1.535 (33-39)	L01 04010	M2.5×4.5-8IP	N00 55581	11.3				0.075	2
1.575-1.772 (40-45)	L01 04020	M2.5×4.5-8IP	N00 55581	11.3				0.100	2
1.811-2.126 (46-54)	L01 04150	M3.5×5-8IP	N00 55701	20	8IP	L05 00830	L01 04240	0.025	4
								0.050	2
								0.075	2
								0.100	2
2.165-2.520 (55-64)	L01 04160	M3.5×5-8IP	N00 55701	20					

D	Center drill ⑧									
	Ø	Center drill ⑧			Clamping screw ⑨ for center drill			Adjusting screw ⑩ for center drill		
		Order No.	Order No.	Order No.	Description	SW	Torque (lbf-ft)	Order No.	Description	Order No.
0.787 (20)	.197	V95 10012.0090	V95 10012.0089	V95 10310.008445	M4×6	2	1.11	N00 70910	M3×8	5505103008
0.827-0.984 (21-25)	.197	V95 10012.0090	V95 10012.0089	V95 10320.008445	M4×8	2	1.11	N00 70920	M3×8	5505103008
1.024-1.260 (26-32)	.236	V95 10022.0090	V95 10022.0089	V95 10320.008445	M5×10	2.5	1.84	N00 70930	M4×10	5505104010
1.299-1.535 (33-39)	.236	V95 10022.0090	V95 10022.0089	V95 10320.008445	M5×12	2.5	1.84	N00 70940	M4×10	5505104010
1.575-1.772 (40-45)	.315	V95 10032.0090	V95 10032.0089	V95 10330.008445	M6×12	3	3.69	N00 70950	M5×10	5505105010
1.811-2.126 (46-54)	.394	V95 10042.0090	V95 10042.0089	V95 10340.008445	M8×16	4	5.90	N00 70960	M5×10	5505105010
2.165-2.520 (55-64)	.394	V95 10042.0090	V95 10042.0089	V95 10340.008445	M8×16	4	5.90	N00 70960	M5×8	5505105008

Replacement parts / Accessories



(..) = mm

D	Inserts ①					Base element ③				
	Clamping screw ② for inserts			TORX PLUS®		Clamping screw ④ for base element			TORX PLUS®	
	Description	Order No.	Torque (in-lbs)	Description	Order No.	Description	Order No.	Torque (in-lbs)	Description	Order No.
2.559-2.795 (65-71)	S/M2.5×7.2-8IP	N00 57511	11.3	8IP	L05 00830	S60160-20IP	N00 57470	55.3	20IP	L05 00870
2.835-3.189 (72-81)	S/M2.5×6.3-8IP	N00 57571	11.3	8IP	L05 00830	S60160-20IP	N00 57470	55.3	20IP	L05 00870

D	WE-KUB Pocket ⑤, ⑥ and ⑦						Wear pad ⑧			
	Pocket ⑤	Pocket clamping screw for ⑤	Pocket ⑥	Pocket ⑦	Locating pin for ⑥+⑦	Pocket clamping screw for ⑥+⑦	Wear pad ⑧	Wrench for ⑧	Clamping screw ⑨	Copper disk ⑩
	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No. Description	Order No.
2.559-2.795 (65-71)	D53 53200	N10 11510	-	-	-	-	L01 04310	L01 04370	5505106008 M6×8	L01 04450 Ø4.5×1.5
2.835-2.953 (72-75)	D53 53220									
2.992-3.071 (76-78)	D53 53230	5501105012	D50 55090	D50 50290	N00 52000	N00 55570				
3.110-3.189 (79-81)	D53 53240									

D	Center drill ⑪						
	Ø	Center drill ⑪		Clamping screw ⑫ for center drill		Adjusting screw ⑬ for center drill	
		Order No. HSS TiAlN coated (for grey cast iron, Nodular cast iron)	Order No. HSS TiN coated (for steel, aluminum and non-ferrous metals)	Description	Order No.	Description	Order No.
2.559-2.795 (65-71)	.472	V95 10050.0090	V95 10050.0089	M10×20	N00 70970	M8×10	5505108010
2.835-3.189 (72-81)	.472	V95 10050.0090	V95 10050.0089	M10×20	N00 70970	M8×25	5505108025

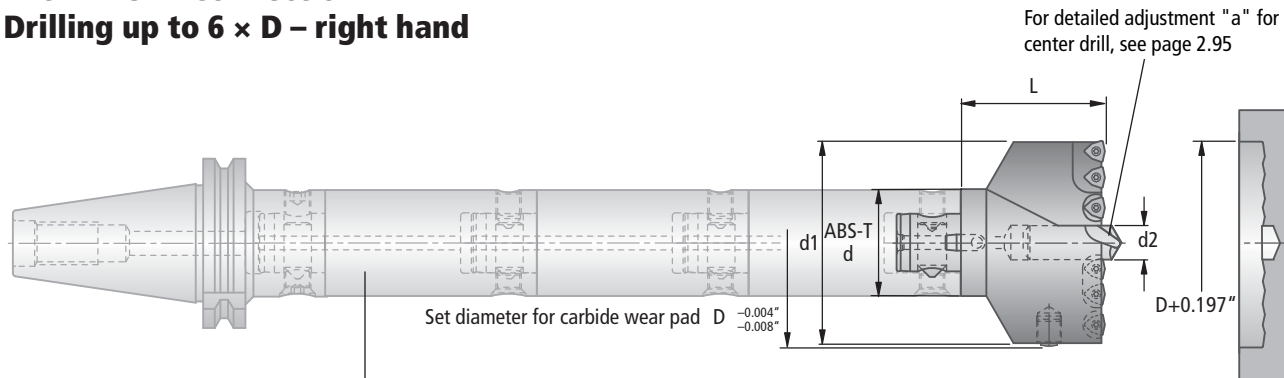


KUB® V464 Ø 3.150" – 6.102" (Ø 80 – 155 mm)

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
4-9xD	●	●	○	○	○	○	○	○	×	×	●

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

with ABS T Connection Drilling up to 6 × D – right hand



Note: Use ABS® -T extensions on Chapter 1, Page 1.58

D	ABS-T d	Order No.	d1	L	lbs	No. of Inserts	Insert Recommendation		for Workpiece Material						Center Drill Ø d2	Order No.
							Order No. Size	ISO Insert Description	P	M	K	N	S	H		
3.150	50	V46 40801	3.091	2.953	3.86	4	W29 34010.048425	WOEX06T304-01 BK8425	●						V95 10063.0090 V95 10063.0089 Ø .630 (Ø 16)	
3.346	50	V46 40851	3.287	2.953	3.97		W29 34010.047930	WOEX06T304-01 BK7930		●						
3.543	50	V46 40901	3.445	2.953	4.54		W29 34010.0462	WOEX06T304-01 BK62			●					
3.740	50	V46 40951	3.642	2.953	4.76		W29 34110.0477	WOEX06T304-11 BK77				●				
3.937	63	V46 41001	3.839	3.346	6.88		W29 42010.048425	WOEX080404-01 BK8425	●							
4.134	63	V46 41051	4.035	3.346	6.44		W29 42010.047930	WOEX080404-01 BK7930		●						
4.331	63	V46 41101	4.232	3.346	7.06		W29 42010.0462	WOEX080404-01 BK62			●					
4.528	63	V46 41151	4.429	3.346	7.39		W29 42110.0477	WOEX080404-11 BK77				●				
4.724	63	V46 41201	4.665	3.346	7.94	6	W29 34010.048425	WOEX06T304-01 BK8425	●					V95 10213.0090 V95 10213.0089 Ø .787 (Ø 20)		
4.921	63	V46 41251	4.862	3.346	8.42		W29 34010.047930	WOEX06T304-01 BK7930		●						
5.118	80	V46 41301	5.020	3.543	12.39		W29 34010.0462	WOEX06T304-01 BK62			●					
5.315	80	V46 41351	5.217	3.543	12.17		W29 34110.0477	WOEX06T304-11 BK77				●				
5.512	80	V46 41401	5.413	3.543	12.77		W29 42010.048425	WOEX080404-01 BK8425	●							
5.709	80	V46 41451	5.610	3.543	13.12		W29 42010.047930	WOEX080404-01 BK7930		●						
5.906	80	V46 41501	5.807	3.543	13.41		W29 42010.0462	WOEX080404-01 BK62			●					
6.102	80	V46 41551	6.004	3.543	14.33		W29 42110.0477	WOEX080404-11 BK77				●				

- The KUB Drills in diameter ranges from Ø 3.150" - 4.528" (80 - 115 mm) have 4 insert pockets and from Ø 4.724" - 6.102" (120 - 155 mm) have 6 insert pockets.
- The outside pocket is adjustable up to + 0.197" (5mm) on diameter.

HSS TiAlN coated **90** ▲
(for grey cast iron and nodular cast iron)
HSS TiN coated **89**
(for Steel, Aluminum and non-ferrous metals)

Delivery:

KUB® V464 drill head comes complete with clamping/adjustment screws, location pin, WE-KUB pockets, copper disks, wear pads and wear pad wrench; less center drill, inserts and torx wrench.

See page 2.98 for replacement parts and accessories.

Cutting Recommendations

Guideline values for solid drilling with KUB® V464 6xD

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev		
						Ø 3.150-3.936	Ø 3.937-4.723	Ø 4.724-6.260
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0 15.0 16.0	≤72500 72500 - 130000 <72500 >130000 >130000 250 58000 ≤87000 <130000 >130000 180 250 130 230 87000 200 300 90 100 60 75 100 203000 261000		Unalloyed steel Low alloy steel Lead alloy High alloy steel heat resistant structural, heat treated, nitride steels Tool steel HSS Special alloy: Inconel, Hastelloy, Nimonic, etc. Titanium, Titanium alloy Stainless steel: austenitic 300 series Stainless steel Stainless steel: martensitic/ferritic 400 series Grey cast iron Alloy grey cast iron Nodular cast iron ferritic Nodular cast iron ferritic / pearlitic Nodular cast iron pearlitic Malleable cast iron Alloyed nodular cast iron Vermicular cast iron Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut Copper alloy, Brass, Bronze: average cut Wrought aluminum alloy Aluminum alloy: Si content <10% Magnesium alloy Aluminum alloy: Si content >10% Hardened steel < 45 HRC Hardened steel > 45 HRC	A570.36 1213 A573.81 5120 1055 5115 12L13 4140 1064 H13 H21 Inconel® 718 Nimonic® 80A AMS R54520 304L 316 630 420 403 No 35 B No 50 B A436 Type 2 60-40-18 80-55-06 100-70-03 70003 A43D2 UNS C36000 GD-AISI12 A360.2 	590 390 590 290 290 200 I I 290 290 290 390 390 290 290 290 290 290 290 590 590 720 720 720 I I	.004 .005 .005 .005 .005 .004 I I .004 .005 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 I I	.005 .006 .006 .006 .006 .005 I I .004 .005 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 .006 I I	.005 .006 .006 .006 .006 .004 I I .006 .008 .008 .008 .007 .006 .006 .010 .005 .004 .004 .005 .006 I I

Alternative Inserts

For better chip control								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
3.150-3.740 / 4.724-5.512	W29 34130.048425	WOEX06T304-13 BK8425	●					
	W29 34130.0479	WOEX06T304-13 BK79		●				
	W29 34030.046425	WOEX06T304-03 BK6425	●	●				
3.397-4.528 / 5.709-6.102	W29 42130.048425	WOEX080404-13 BK8425	●					
	W29 42130.0479	WOEX080404-13 BK79		●				
	W29 42030.046425	WOEX080404-03 BK6425	●	●				

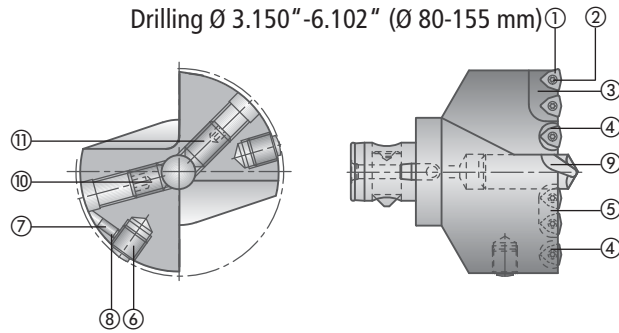
For better wear resistance								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
3.150-3.740 / 4.724-5.512	W29 34010.0472	WOEX06T304-01 BK72	●					
	W29 34110.0450	WOEX06T304-11 BK50				●		
3.397-4.528 / 5.709-6.102	W29 42010.0472	WOEX080404-01 BK72	●					
	W29 42110.0450	WOEX080404-11 BK50				●		

For higher toughness								
D	Order No. Size	Insert ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
3.150-3.740 / 4.724-5.512	W29 34010.047930	WOEX06T304-01 BK7930	●					
	W29 34010.0404	WOEX06T304-01 P40		●				
	W29 34010.0421	WOEX06T304-01 K10			●			
3.397-4.528 / 5.709-6.102	W29 34110.0421	WOEX06T304-11 K10				●		
	W29 42010.047930	WOEX080404-01 BK7930	●					
	W29 42010.0404	WOEX080404-01 P40		●				
	W29 42010.0421	WOEX080404-01 K10			●			
	W29 42110.0421	WOEX080404-11 K10				●		



KUB® Drill Head V464

Replacement parts / Accessories



(..) = mm

D	Inserts ①				Wear pad ⑥				
	Clamping screw ② for inserts		TORX PLUS®		Wear pad ⑥ Order No.	Wrench for ⑥ Order No.	Clamping screw ⑦ Order No. Description	Copper disk ⑧ Order No.	
	Description	Order No.	Torque (in-lbs)	Description					Order No.
3.150-3.740 (80- 95)	S/M3.5×7.3-10IP	N00 57521	25	10IP	L05 00850	L01 04300	L01 04350	5505106008 M6x8	L01 04450
3.937-4.528 (100-115)	S/M4.5×9-15IP	N00 57531	55.3	15IP	L05 00860				
4.724-4.921 (120-125)	S/M3.5×7.3-10IP	N00 57521	25	10IP	L05 00850				
5.118-5.512 (130-140)	S/M3.5×7.3-10IP	N00 57521	25	10IP	L05 00850				
5.709-6.102 (145-155)	S/M4.5×9-15IP	N00 57531	55.3	15IP	L05 00860				

D	WE-KUB Pocket ③, ④ and ⑤											
	Pocket ③		Pocket clamping screw for ③		Pocket ④		Pocket ⑤		Locating pin for ④+⑤ Order No.	Pocket clamping screw for ④+⑤ Order No.		
	Order No.	Qty.	Order No.	Description	Order No.	Qty.	Order No.	Qty.				
3.150 (80)	D53 53360	1	5501105012 M5×12	-	-	D53 53350	1	N00 52000 1.8/2×4.5	N00 55701 M3.5×5-8IP			
3.346 (85)	D53 53370	1		D50 55100	1	D50 50300	1					
3.543 (90)	D53 53380	1		5501105012 M5×12	D50 55110	1	D50 50310			1	N00 52010 3/4×5.5	N00 55821 M4.5×9-10IP
3.740 (95)	D53 53390	1			D50 55100	3	D53 53350 D50 50300			1		
3.937 (100)	D53 53400	1	5501105012 M5×12	D50 55100	3	D50 50300	1	N00 52000 1.8/2×4.5	N00 55701 M3.5×5-8IP			
4.134 (105)	D53 53410	1										
4.331 (110)	D53 53420	1	5501105012 M5×12	D50 55100	3	D50 50300	1	N00 52000 1.8/2×4.5	N00 55701 M3.5×5-8IP			
4.528 (115)	D53 53430	1										
4.724 (120)	D53 53360	1	5501105012 M5×12	D50 55100	3	D50 50300	1	N00 52000 1.8/2×4.5	N00 55701 M3.5×5-8IP			
4.921 (125)	D53 53360	1										
5.118 (130)	D53 53380	1	5501105012 M5×12	D50 55100	3	D50 50300	1	N00 52000 1.8/2×4.5	N00 55701 M3.5×5-8IP			
5.315 (135)	D53 53380	1										
5.512 (140)	D53 53390	1	5501105012 M5×12	D50 55100	3	D50 50310	1	N00 52010 3/4×5.5	N00 55821 M4.5×9-10IP			
5.709 (145)	D53 53400	1										
5.906 (150)	D53 53400	1	5501105012 M5×12	D50 55100	3	D50 50310	1	N00 52010 3/4×5.5	N00 55821 M4.5×9-10IP			
6.102 (155)	D53 53400	1										

D	Center drill ⑨							
	Center drill ⑨				Clamping screw ⑩ for center drill		Adjusting screw ⑪ for center drill	
	Ø	Order No. HSS TiAlN coated (for grey cast iron, Nodular cast iron)	Order No. HSS TiN coated (for steel, aluminum and non-ferrous metals)	Description	Order No.	Description	Order No.	
3.150 (80)	.630	V95 10063.0090	V95 10063.0089	M12×16	N00 70370	M12×16	5505212016	
3.346-4.331 (85-110)	.630	V95 10063.0090	V95 10063.0089	M12×20	N00 70380	M12×20	5505212020	
4.528-6.102 (115-155)	.787	V95 10213.0090	V95 10213.0089	M16×20	N00 70460	M16×22	N00 70800	



Fitting the center drill



When assembling, check the clamping surface is correctly aligned. Insert the center drill into the location hole until there is contact with the length setting screw. This is preset at the factory. Apply the locking screw, using the specified torque.

Assembling the drill head



Insert the drill head with the spigot into the location hole. Ensure the head is rotated against the drive flaps. Then apply the two clamping screws lightly and tighten as required.

Fitting the insert



Check the insert pocket is clean. Place the insert into the pocket and secure with locking screw. Use TORX Plus® screwdriver.

Changing the guide pads



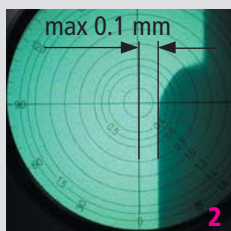
The guide pads can be changed if worn or damaged. When using new guide pads check that these are correctly aligned. See Setting Guide Pads below.

Length adjustment of the center drill



In principle there is no need to adjust the length of the center drill. However, if an alternative length setting is required, this can be achieved by applying the adjusting screw.

Setting the guide pads for through holes 8×D and deeper



The drill diameters for the drill heads are manufactured for an insert corner radius of $R = 0.4 \text{ mm}$ (0.016"). The guide pads are **not** set when delivered and are a minimum of 0.25 mm (0.010") below the drill diameter. For through holes 8×D and deeper, KOMET recommends the use of our shim sets to adjust the guide pads to the correct diameter.

Procedure:

- Loosen the guide pad clamping screw
- Remove guide pad and reset with shims to the correct diameter
- Guide pad setting dimension (D1) is 0.15-0.20 mm (0.006-0.008 inch) below the bore diameter (see Fig 1&2).
- Secure guide pads with clamping screw

Shims:

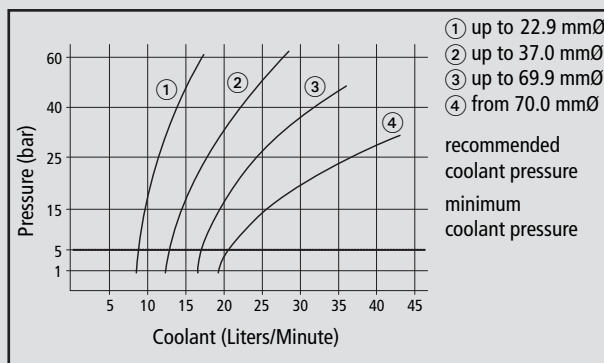
Set 1: for $\varnothing 20-45$ · Order No. L01 04190

- consisting of:
- 4x $t = 0.025 \text{ mm}$ (0.001")
 - 2x $t = 0.050 \text{ mm}$ (0.002")
 - 2x $t = 0.075 \text{ mm}$ (0.003")
 - 2x $t = 0.100 \text{ mm}$ (0.004")

Set 2: for $\varnothing 46-64$ · Order No. L01 04240

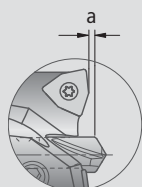
- consisting of:
- 4x $t = 0.025 \text{ mm}$ (0.001")
 - 2x $t = 0.050 \text{ mm}$ (0.002")
 - 2x $t = 0.075 \text{ mm}$ (0.003")
 - 2x $t = 0.100 \text{ mm}$ (0.004")

Coolant flow / Coolant pressure



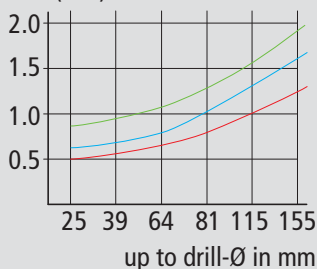
Advance adjustment "a" for center drill

Center drill: Steel < 800 N/mm², 8×D

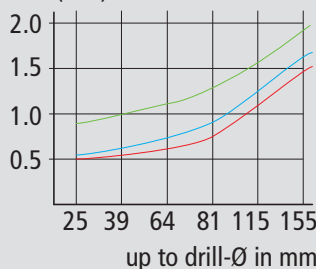


- Steel < 800 N/mm²
— GG25-GG60
- Steel > 800 N/mm²
— GGG40-GGG70
- Non-ferrous metal

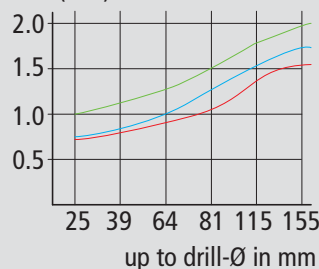
"a" (mm) 4 × D



"a" (mm) 6 × D

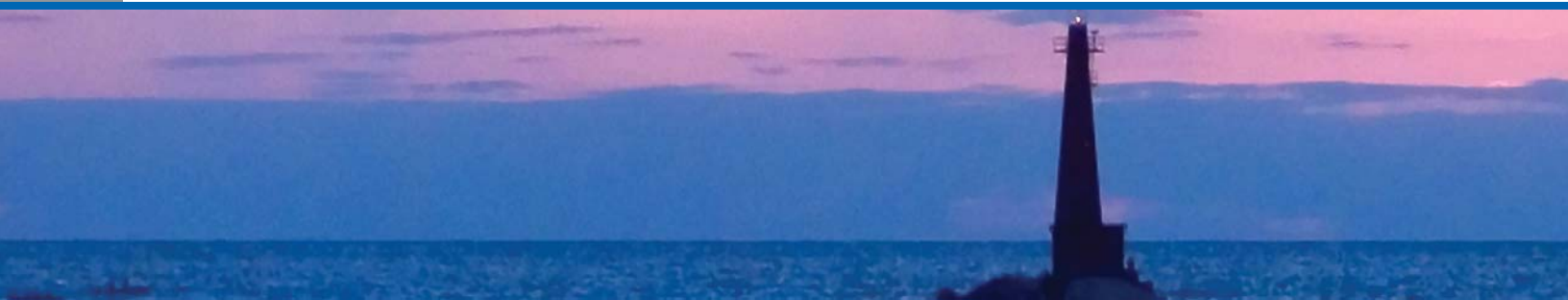


"a" (mm) 8 × D



KC5 / KC7 – Solid Carbide Drill

**Extreme High Performance Drilling
with Extended Tool Life in a Broad Range of Materials**



KC5

Drilling **5×D**

Ø 0.1181" - 0.7874" (Ø 3.00 - 20.00 mm)

with Cylindrical Shank · Coolant Carbide



2.104 – 2.106

KC7

Drilling **7×D**

Ø 0.1181" - 0.5000" (Ø 3.00 - 12.70 mm)

with Cylindrical Shank · Coolant Carbide



2.107 – 2.109

2



KC5 / KC7 – Solid Carbide Drill



Features

- Advanced "Active Cut" Geometric Design
- Refined Critical Cut Zone Characteristics
- High-Efficiency Flute Profile
- "State-of-the-Art" Proprietary Coating
- Stable Low-Thrust Point Form
- Coolant-Fed
- Diameter Range - 3.0 mm to 20.0mm, 1/8" to 3/4"
- Regular (5x), & Long Flute Lengths (7x+)
- Engineered & Produced in the USA

Benefits

- Extended Tool Life
- Elevated Metal Removal Rates (MRR)
- Lower Cost Per Hole
- Improved Hole/Part Quality
- Increased Tool Reliability
- Network of Application & Technical Specialists
- Factory Reconditioning Service
- Ideal Platform for Modification or an Engineered "Special" Tool
- Compatibility to a Wide Range of Standard Toolholder Systems





Cutting Speed

Materials	Description	5 X D (sfm)	7 X D (sfm)	5 X D (meters per min.)	7 X D (meters per min.)
Low Carbon Steel	1018	450 - 500	425 - 475	135 - 150	130 - 145
Alloy Steel (up to 35 Rc)	4140	250 - 350	225 - 300	75 - 105	70 - 90
Alloy Steel (36 - 45 Rc)	4140	150 - 200	135 - 180	45 - 60	40 - 55
Austenetic Stainless Steel	304 / 316	175 - 250	150 - 225	50 - 75	45 - 65
High Temp Alloys	Inconel , Hastelloy, Waspelloy	80 - 120	70 - 110	25 - 35	20 - 30
Precipitation Hardened Stainless	17-4PH	125 - 175	100 - 150	35 - 50	30 - 45
Titanium	6AL-4V	190 - 240	175 - 225	55 - 70	50 - 65
Gray Cast Iron	A48 Class 20/G4000	400 - 500	375 - 475	120 - 150	110 - 140
Ductile Cast Iron	A536/60-40-18	450 - 500	425 - 475	135 - 150	130 - 145

Feed Rate (IPR)

Materials	Description	Drill Diameter (inch)							
		0.0312	0.0625	0.125	0.250	0.375	0.500	0.625	0.750
Low Carbon Steel	1018	.001 - .002	.002 - .003	.003 - .005	.005 - .007	.007 - .009	.008 - .010	.009 - .012	.010 - .014
Alloy Steel (up to 35 Rc)	4140	.001 - .002	.002 - .003	.003 - .005	.005 - .007	.007 - .009	.008 - .010	.009 - .012	.010 - .014
Alloy Steel (36 - 45 Rc)	4140	.0005 - .0010	.001 - .0015	.0015 - .0025	.003 - .005	.004 - .007	.005 - .008	.007 - .010	.008 - .011
Austenetic Stainless Steel	304 / 316	.001 - .002	.002 - .003	.003 - .005	.005 - .007	.007 - .009	.008 - .010	.009 - .012	.010 - .014
High Temp Alloys	Inconel , Hastelloy, Waspelloy	.0005 - .0015	.001 - .002	.0015 - .0035	.0025 - .0045	.004 - .006	.005 - .007	.006 - .008	.009 - .011
Precipitation Hardened Stainless	17-4PH	.0005 - .0015	.001 - .002	.0015 - .0035	.0025 - .0045	.004 - .006	.005 - .007	.006 - .008	.009 - .011
Titanium	6AL-4V	.0005 - .0015	.001 - .002	.0015 - .0035	.0025 - .0045	.004 - .006	.005 - .007	.006 - .008	.009 - .011
Gray Cast Iron	A48 Class 20/G4000	.001 - .002	.002 - .003	.003 - .005	.005 - .007	.007 - .009	.008 - .010	.009 - .012	.010 - .014
Ductile Cast Iron	A536/60-40-18	.001 - .002	.002 - .003	.003 - .005	.005 - .007	.007 - .009	.008 - .010	.009 - .012	.010 - .014

Feed Rate (mm/rev)

Materials	Description	Drill Diameter (mm)							
		0.8	1.5	3.0	6.0	10.0	12.0	16.0	20.0
Low Carbon Steel	1018	.025 - .050	.050 - .075	.075 - .100	.100 - .170	.170 - .225	.200 - .250	.225 - .300	.250 - .350
Alloy Steel (up to 35 Rc)	4140	.025 - .050	.050 - .075	.075 - .100	.100 - .170	.170 - .225	.200 - .250	.225 - .300	.250 - .350
Alloy Steel (36 - 45 Rc)	4140	.010 - .025	.025 - .040	.035 - .050	.075 - .120	.100 - .170	.120 - .200	.170 - .250	.200 - .275
Austenetic Stainless Steel	304 / 316	.025 - .050	.050 - .075	.075 - .100	.100 - .170	.170 - .225	.200 - .250	.225 - .300	.250 - .350
High Temp Alloys	Inconel , Hastelloy, Waspelloy	.010 - .030	.025 - .050	.035 - .085	.060 - .110	.100 - .150	.100 - .170	.150 - .200	.225 - .275
Precipitation Hardened Stainless	17-4PH	.010 - .030	.025 - .050	.035 - .085	.060 - .110	.100 - .150	.100 - .170	.150 - .200	.225 - .275
Titanium	6AL-4V	.010 - .030	.025 - .050	.035 - .085	.060 - .110	.100 - .150	.100 - .170	.150 - .200	.225 - .275
Gray Cast Iron	A48 Class 20/G4000	.025 - .050	.050 - .075	.075 - .100	.100 - .170	.170 - .225	.200 - .250	.225 - .300	.250 - .350
Ductile Cast Iron	A536/60-40-18	.025 - .050	.050 - .075	.075 - .100	.100 - .170	.170 - .225	.200 - .250	.225 - .300	.250 - .350

Tolerances (inch)

Drill Dia. (h7)	Tolerance	Shank Dia. (h6)	Tolerance
.0000 - .1181	+0/-0.00039	.0000 - .1181	+0/-0.00024
.1182 - .2362	+0/-0.00047	.1182 - .2362	+0/-0.00031
.2363 - .3937	+0/-0.00059	.2363 - .3937	+0/-0.00035
.3938 - .7087	+0/-0.00071	.3938 - .7087	+0/-0.00043
.7088 - 1.181	+0/-0.00083	.7088 - 1.181	+0/-0.00051

Tolerances (mm)

Drill Dia. (h7)	Tolerance	Shank Dia. (h6)	Tolerance
0 - 3.0	+0/-0.010	0 - 3.0	+0/-0.006
3.01 - 6.0	+0/-0.012	3.01 - 6.0	+0/-0.008
6.01 - 10.0	+0/-0.015	6.01 - 10.0	+0/-0.009
10.01 - 18.0	+0/-0.018	10.01 - 18.0	+0/-0.011
18.01 - 30.0	+0/-0.021	18.01 - 30.0	+0/-0.013

Formulas (inch)

$$\text{Spindle speed (RPM)} = \frac{\text{SFM X 3.82}}{\text{Drill Diameter}}$$

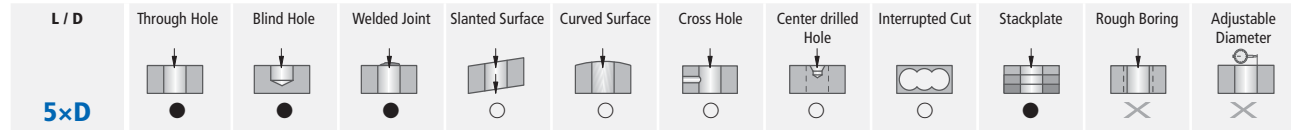
$$\text{Feed rate (IPM)} = \text{RPM X IPR}$$

Formulas (metric)

$$\text{Spindle speed (RPM)} = \frac{\text{meters per min. X 318}}{\text{Drill Diameter}}$$

$$\text{Feed rate (mm/min)} = \text{RPM X mm/rev}$$

KC5 – Coolant Carbide Drill Ø 0.1181" – 0.2570"

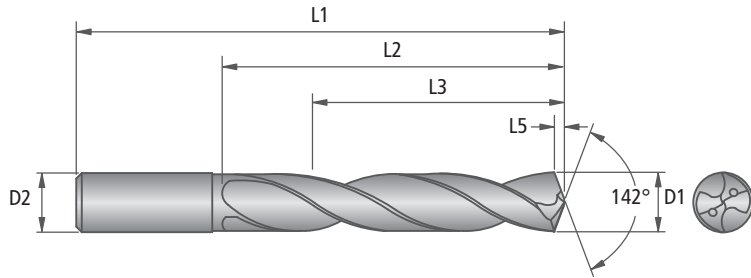


● highly recommended ● recommended ○ may be suitable ✕ not recommended

Drilling 5 × D

Features:

- Coolant fed, regular 5 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated



Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 20010	KC5 1181B 3.0MM			3.0	.1181		3.0		75		24		19		0.46
V90 20020	KC5 1200B #31		#31		.1200	1/8		3		1.125		.90		0.019	
V90 20030	KC5 1250B 1/8	1/8			.1250	1/8		3		1.125		.90		0.019	
V90 20040	KC5 1260B 3.2MM			3.2	.1260		4.0		80		32		26		0.50
V90 20050	KC5 1285B #30		#30		.1285	5/32		3.15		1.26		1.00		0.020	
V90 20060	KC5 1299B 3.3MM			3.3	.1299		4.0		80		32		26		0.51
V90 20070	KC5 1339B 3.4MM			3.4	.1339		4.0		80		32		26		0.53
V90 20080	KC5 1360B #29		#29		.1360	5/32		3.15		1.26		1.00		0.021	
V90 20090	KC5 1378B 3.5MM			3.5	.1378		4.0		80		32		26		0.54
V90 20100	KC5 1406B 9/64	9/64			.1406	5/32		3.15		1.26		1.00		0.022	
V90 20110	KC5 1457B 3.7MM			3.7	.1457		4.0		80		32		26		0.57
V90 20120	KC5 1496B 3.8MM			3.8	.1496		4.0		80		32		26		0.59
V90 20130	KC5 1562B 5/32	5/32			.1562	5/32		3.15		1.26		1.00		0.027	
V90 20140	KC5 1575B 4.0MM			4.0	.1575		4.0		80		32		26		0.62
V90 20150	KC5 1590B #21		#21		.1590	3/16		3.23		1.5		1.20		0.025	
V90 20160	KC5 1654B 4.2MM			4.2	.1654		5.0		82		38		30		0.65
V90 20170	KC5 1719B 11/64	11/64			.1719	3/16		3.23		1.5		1.20		0.027	
V90 20180	KC5 1772B 4.5MM			4.5	.1772		5.0		82		38		30		0.70
V90 20190	KC5 1811B 4.6MM			4.6	.1811		5.0		82		38		30		0.71
V90 20200	KC5 1875B 3/16	3/16			.1875	3/16		3.23		1.5		1.20		0.029	
V90 20210	KC5 1890B 4.8MM			4.8	.1890		5.0		82		38		30		0.74
V90 20220	KC5 1929B 4.9MM			4.9	.1929		5.0		82		38		30		0.76
V90 20230	KC5 1968B 5.0MM			5.0	.1968		5.0		82		38		30		0.77
V90 20240	KC5 2008B 5.1MM			5.1	.2008		6.0		82		40		32		0.79
V90 20250	KC5 2031B 13/64	13/64			.2031	15/64		3.23		1.58		1.26		0.031	
V90 20260	KC5 2047B 5.2MM			5.2	.2047		6.0		82		40		32		0.81
V90 20270	KC5 2087B 5.3MM			5.3	.2087		6.0		82		40		32		0.82
V90 20280	KC5 2126B 5.4MM			5.4	.2126		6.0		82		40		32		0.84
V90 20290	KC5 2165B 5.5MM			5.5	.2165		6.0		82		40		32		0.85
V90 20300	KC5 2187B 7/32	7/32			.2187	15/64		3.23		1.58		1.26		0.034	
V90 20310	KC5 2210B #2		#2		.2210	15/64		3.23		1.58		1.26		0.034	
V90 20320	KC5 2244B 5.7MM			5.7	.2244		6.0		82		40		32		0.88
V90 20330	KC5 2283B 5.8MM			5.8	.2283		6.0		82		40		32		0.90
V90 20340	KC5 2323B 5.9MM			5.9	.2323		6.0		82		40		32		0.91
V90 20350	KC5 2344B 15/64	15/64			.2344	15/64		3.23		1.58		1.26		0.036	
V90 20360	KC5 2362B 6.0MM			6.0	.2362		6.0		82		40		32		0.93
V90 20370	KC5 2402B 6.1MM			6.1	.2402		8.0		91		48		38		0.95
V90 20380	KC5 2420B C		C		.2420	1/4		3.3		1.74		1.39		0.037	
V90 20390	KC5 2441B 6.2MM			6.2	.2441		8.0		91		48		38		0.96
V90 20400	KC5 2460B D		D		.2460	1/4		3.3		1.74		1.39		0.038	
V90 20410	KC5 2480B 6.3MM			6.3	.2480		8.0		91		48		38		0.98
V90 20420	KC5 2500B 1/4	1/4			.2500	1/4		3.3		1.74		1.39		0.039	
V90 20430	KC5 2520B 6.4MM			6.4	.2520		8.0		91		48		38		0.99
V90 20440	KC5 2559B 6.5MM			6.5	.2559		8.0		91		48		38		1.01
V90 20450	KC5 2570B F		F		.2570	5/16		3.58		1.89		1.51		0.040	

KC5 – Coolant Carbide Drill Ø 0.2610” – 0.4409”



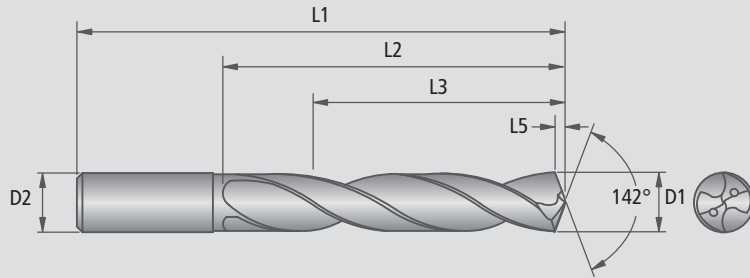
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
5xD											

● highly recommended ● recommended ○ may be suitable ✕ not recommended

Drilling 5 × D

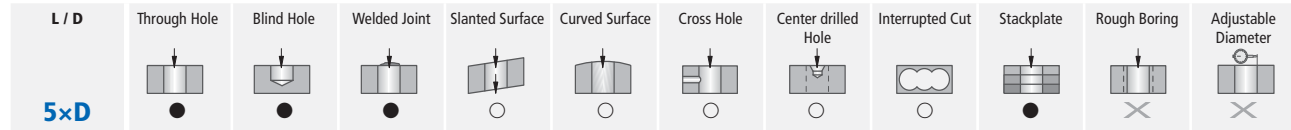
Features:

- Coolant fed, regular 5 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated



Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 20460	KC5 2610B G		G		.2610	5/16		3.58		1.89		1.51		0.040	
V90 20470	KC5 2656B 17/64	17/64			.2656	5/16		3.58		1.89		1.51		0.041	
V90 20480	KC5 2677B 6.8MM			6.8	.2677	8.0		91		48		38		1.05	
V90 20490	KC5 2717B 6.9MM			6.9	.2717	8.0		91		48		38		1.07	
V90 20500	KC5 2756B 7.0MM			7.0	.2756	8.0		91		48		38		1.08	
V90 20510	KC5 2812B 9/32	9/32			.2812	5/16		3.58		1.89		1.51		0.044	
V90 20520	KC5 2835B 7.2MM			7.2	.2835	8.0		91		48		38		1.12	
V90 20530	KC5 2913B 7.4MM			7.4	.2913	8.0		91		48		38		1.15	
V90 20540	KC5 2953B 7.5MM			7.5	.2953	8.0		91		48		38		1.16	
V90 20550	KC5 2969B 19/64	19/64			.2969	5/16		3.58		1.89		1.51		0.046	
V90 20560	KC5 2992B 7.6MM			7.6	.2992	8.0		91		48		38		1.18	
V90 20570	KC5 3031B 7.7MM			7.7	.3031	8.0		91		48		38		1.19	
V90 20580	KC5 3071B 7.8MM			7.8	.3071	8.0		91		48		38		1.21	
V90 20590	KC5 3125B 5/16	5/16			.3125	5/16		3.58		1.89		1.51		0.048	
V90 20600	KC5 3150B 8.0MM			8.0	.3150	8.0		91		48		38		1.24	
V90 20610	KC5 3189B 8.1MM			8.1	.3189	10.0		103		55		44		1.26	
V90 20620	KC5 3228B 8.2MM			8.2	.3228	10.0		103		55		44		1.27	
V90 20630	KC5 3268B 8.3MM			8.3	.3268	10.0		103		55		44		1.29	
V90 20640	KC5 3281B 21/64	21/64			.3281	25/64		4.06		2.17		1.74		0.051	
V90 20650	KC5 3320B Q		Q		.3320	25/64		4.06		2.17		1.74		0.051	
V90 20660	KC5 3346B 8.5MM			8.5	.3346	10.0		103		55		44		1.32	
V90 20670	KC5 3386B 8.6MM			8.6	.3386	10.0		103		55		44		1.33	
V90 20680	KC5 3438B 11/32	11/32			.3438	25/64		4.06		2.17		1.74		0.053	
V90 20690	KC5 3465B 8.8MM			8.8	.3465	10.0		103		55		44		1.36	
V90 20700	KC5 3504B 8.9MM			8.9	.3504	10.0		103		55		44		1.38	
V90 20710	KC5 3543B 9.0MM			9.0	.3543	10.0		103		55		44		1.39	
V90 20720	KC5 3594B 23/64	23/64			.3594	25/64		4.06		2.17		1.74		0.056	
V90 20730	KC5 3622B 9.2MM			9.2	.3622	10.0		103		55		44		1.43	
V90 20740	KC5 3642B 9.25MM			9.25	.3642	10.0		103		55		44		1.43	
V90 20750	KC5 3661B 9.3MM			9.3	.3661	10.0		103		55		44		1.44	
V90 20760	KC5 3701B 9.4MM			9.4	.3701	10.0		103		55		44		1.46	
V90 20770	KC5 3740B 9.5MM			9.5	.3740	10.0		103		55		44		1.47	
V90 20780	KC5 3750B 3/8	3/8			.3750	25/64		4.06		2.17		1.74		0.058	
V90 20790	KC5 3819B 9.7MM			9.7	.3819	10.0		103		55		44		1.50	
V90 20800	KC5 3858B 9.8MM			9.8	.3858	10.0		103		55		44		1.52	
V90 20810	KC5 3906B 25/64	25/64			.3906	25/64		4.06		2.17		1.74		0.061	
V90 20820	KC5 3937B 10.0MM			10.0	.3937	10.0		103		55		44		1.55	
V90 20830	KC5 4016B 10.2MM			10.2	.4016	12.0		120		60		48		1.58	
V90 20840	KC5 4062B 13/32	13/32			.4062	15/32		4.72		2.36		1.89		0.063	
V90 20850	KC5 4134B 10.5MM			10.50	.4134	12.0		120		60		48		1.63	
V90 20860	KC5 4219B 27/64	27/64			.4219	15/32		4.72		2.36		1.89		0.065	
V90 20870	KC5 4252B 10.8MM			10.80	.4252	12.0		120		60		48		1.67	
V90 20880	KC5 4331B 11.0MM			11.0	.4331	12.0		120		60		48		1.70	
V90 20890	KC5 4375B 7/16	7/16			.4375	15/32		4.72		2.6		2.08		0.068	
V90 20900	KC5 4409B 11.2MM			11.2	.4409	12.0		120		66		53		1.74	

KC5 – Coolant Carbide Drill Ø 0.4527" – 0.7874"

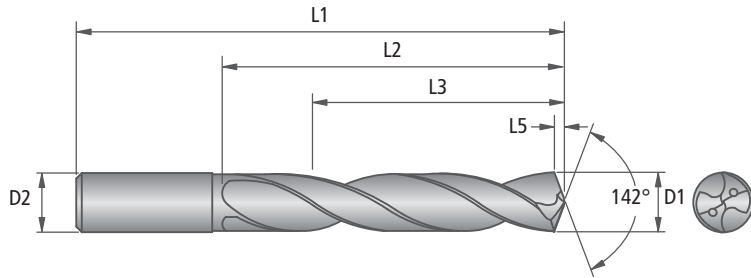


● highly recommended ◐ recommended ○ may be suitable ✕ not recommended

Drilling 5 × D

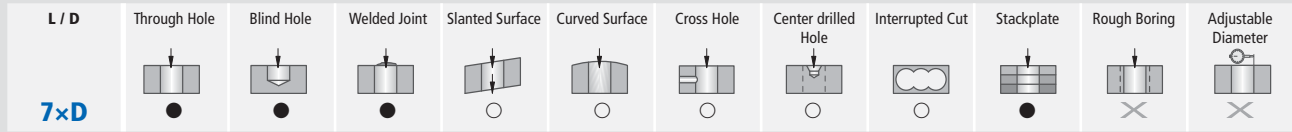
Features:

- Coolant fed, regular 5 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated



Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 20910	KC5 4527B 11.5MM			11.5	.4527		12.0	120		66		53		1.78	
V90 20920	KC5 4606B 11.7MM			11.7	.4606		12.0	120		66		53		1.81	
V90 20930	KC5 4646B 11.8MM			11.8	.4646		12.0	120		66		53		1.83	
V90 20940	KC5 4688B 15/32	15/32			.4688	15/32		4.72		2.6		2.08		0.073	
V90 20950	KC5 4724B 12.0MM			12.0	.4724		12.0	120		66		53		1.86	
V90 20960	KC5 4764B 12.1MM			12.1	.4764		14.0	126		72		58		1.87	
V90 20970	KC5 4844B 31/64	31/64			.4844	1/2		4.75		2.83		2.26		0.075	
V90 20980	KC5 4921B 12.5MM			12.5	.4921		14.0	126		72		58		1.94	
V90 20990	KC5 5000B 1/2	1/2			.5000	1/2		4.75		2.83		2.26		0.077	
V90 21000	KC5 5039B 12.8MM			12.8	.5039		14.0	126		72		58		1.98	
V90 21010	KC5 5079B 12.9MM			12.9	.5079		14.0	126		72		58		2.00	
V90 21020	KC5 5118B 13.0MM			13.0	.5118		14.0	126		72		58		2.01	
V90 21030	KC5 5156B 33/64	33/64			.5156	35/64		5.28		3.03		2.42		0.080	
V90 21040	KC5 5312B 17/32	17/32			.5312	35/64		5.28		3.03		2.42		0.082	
V90 21050	KC5 5315B 13.5MM			13.5	.5315		14.0	134		77		62		2.09	
V90 21060	KC5 5394B 13.7MM			13.7	.5394		14.0	134		77		62		2.12	
V90 21070	KC5 5469B 35/64	35/64			.5469	35/64		5.28		3.03		2.42		0.085	
V90 21080	KC5 5512B 14.0MM			14.0	.5512		14.0	134		77		62		2.17	
V90 21090	KC5 5625B 9/16	9/16			.5625	5/8		5.51		3.15		2.52		0.087	
V90 21100	KC5 5709B 14.5MM			14.5	.5709		16.0	140		80		64		2.25	
V90 21110	KC5 5787B 14.7MM			14.7	.5787		16.0	140		80		64		2.28	
V90 21120	KC5 5905B 15.0MM			15.0	.5905		16.0	140		80		64		2.32	
V90 21130	KC5 5938B 19/32	19/32			.5938	5/8		5.75		3.23		2.58		0.092	
V90 21140	KC5 6024B 15.3MM			15.3	.6024		16.0	146		82		66		2.37	
V90 21150	KC5 6102B 15.5MM			15.5	.6102		16.0	146		82		66		2.40	
V90 21160	KC5 6181B 15.7MM			15.7	.6181		16.0	146		82		66		2.43	
V90 21170	KC5 6250B 5/8	5/8			.6250	5/8		5.75		3.23		2.58		0.097	
V90 21180	KC5 6299B 16.0MM			16.0	.6299		16.0	146		82		66		2.48	
V90 21190	KC5 6331B 16.08MM			16.08	.6331		18.0	158		90		72		2.49	
V90 21200	KC5 6417B 16.3MM			16.3	.6417		18.0	158		90		72		2.53	
V90 21210	KC5 6496B 16.5MM			16.5	.6496		18.0	158		90		72		2.56	
V90 21220	KC5 6562B 21/31	21/32			.6562	45/64		6.22		3.54		2.83		0.102	
V90 21230	KC5 6693B 17.0MM			17.0	.6693		18.0	158		90		72		2.63	
V90 21240	KC5 6875B 11/16	11/16			.6875	45/64		6.22		3.74		3.00		0.107	
V90 21250	KC5 6890B 17.5MM			17.5	.6890		18.0	158		95		76		2.71	
V90 21260	KC5 7087B 18.0MM			18.0	.7087		18.0	158		95		76		2.79	
V90 21270	KC5 7283B 18.5MM			18.5	.7283		20.0	160		100		80		2.87	
V90 21280	KC5 7500B 3/4	3/4			.7500	3/4		6.3		3.94		3.15		0.116	
V90 21290	KC5 7543B 19.16MM			19.16	.7543		20.0	160		100		80		2.97	
V90 21300	KC5 7579B 19.25MM			19.25	.7579		20.0	160		100		80		2.98	
V90 21310	KC5 7598B 19.3MM			19.3	.7598		20.0	160		100		80		2.99	
V90 21320	KC5 7677B 19.5MM			19.5	.7677		20.0	160		100		80		3.02	
V90 21330	KC5 7874B 20.0MM			20.0	.7874		20.0	160		100		80		3.10	

KC7 – Coolant Carbide Drill Ø 0.1181" – 0.2570"

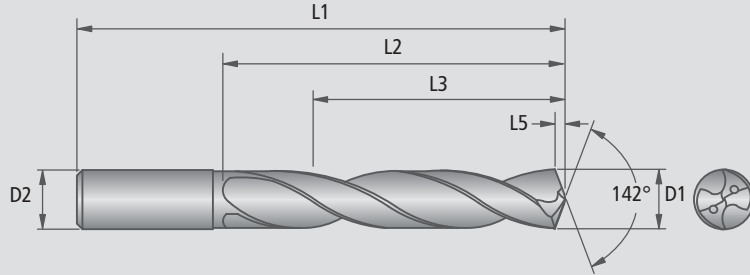


● highly recommended ● recommended ○ may be suitable ✕ not recommended

Drilling 7 × D

Features:

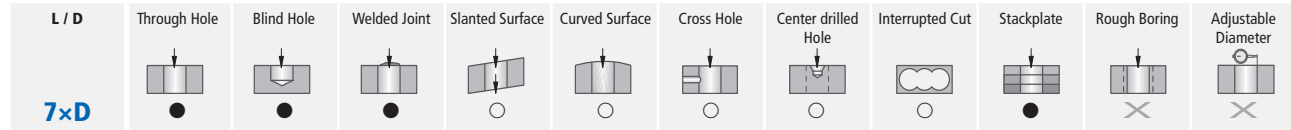
- Coolant fed, long 7 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated



Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 60010	KC7 1181B 3.0MM			3.0	.1181		3.0		81		33		26		0.46
V90 60020	KC7 1200B #31		#31		.1200	1/8		3.5		1.5		1.20		0.019	
V90 60030	KC7 1250B 1/8	1/8			.1250	1/8		3.5		1.5		1.20		0.019	
V90 60040	KC7 1260B 3.2MM			3.2	.1260		4.0		92		44		35		0.50
V90 60050	KC7 1285B #30		#30		.1285	5/32		3.625		1.75		1.40		0.020	
V90 60060	KC7 1299B 3.3MM			3.3	.1299		4.0		92		44		35		0.51
V90 60070	KC7 1339B 3.4MM			3.4	.1339		4.0		92		44		35		0.53
V90 60080	KC7 1360B #29		#29		.1360	5/32		3.625		1.75		1.40		0.021	
V90 60090	KC7 1378B 3.5MM			3.5	.1378		4.0		92		44		35		0.54
V90 60100	KC7 1406B 9/64	9/64			.1406	5/32		3.625		1.75		1.40		0.022	
V90 60110	KC7 1457B 3.7MM			3.7	.1457		4.0		92		44		35		0.57
V90 60120	KC7 1496B 3.8MM			3.8	.1496		4.0		92		44		35		0.59
V90 60130	KC7 1562B 5/32	5/32			.1562	5/32		3.625		1.75		1.40		0.027	
V90 60140	KC7 1575B 4.0MM			4.0	.1575		4.0		92		44		35		0.62
V90 60150	KC7 1590B #21		#21		.1590	3/16		3.94		1.75		1.40		0.025	
V90 60160	KC7 1654B 4.2MM			4.2	.1654		5.0		100		45		36		0.65
V90 60170	KC7 1719B 11/64	11/64			.1719	3/16		3.94		1.75		1.40		0.027	
V90 60180	KC7 1772B 4.5MM			4.5	.1772		5.0		100		45		36		0.70
V90 60190	KC7 1811B 4.6MM			4.6	.1811		5.0		100		45		36		0.71
V90 60200	KC7 1875B 3/16	3/16			.1875	3/16		3.94		1.75		1.40		0.029	
V90 60210	KC7 1890B 4.8MM			4.8	.1890		5.0		100		45		36		0.74
V90 60220	KC7 1929B 4.9MM			4.9	.1929		5.0		100		45		36		0.76
V90 60230	KC7 1968B 5.0MM			5.0	.1968		5.0		100		45		36		0.77
V90 60240	KC7 2008B 5.1MM			5.1	.2008		6.0		100		51		41		0.79
V90 60250	KC7 2031B 13/64	13/64			.2031	15/64		3.94		2		1.60		0.031	
V90 60260	KC7 2047B 5.2MM			5.2	.2047		6.0		100		51		41		0.81
V90 60270	KC7 2087B 5.3MM			5.3	.2087		6.0		100		51		41		0.82
V90 60280	KC7 2126B 5.4MM			5.4	.2126		6.0		100		51		41		0.84
V90 60290	KC7 2165B 5.5MM			5.5	.2165		6.0		100		51		41		0.85
V90 60300	KC7 2187B 7/32	7/32			.2187	15/64		3.94		2		1.60		0.034	
V90 60310	KC7 2210B #2		#2		.2210	15/64		3.94		2		1.60		0.034	
V90 60320	KC7 2244B 5.7MM			5.7	.2244		6.0		100		51		41		0.88
V90 60330	KC7 2283B 5.8MM			5.8	.2283		6.0		100		51		41		0.90
V90 60340	KC7 2323B 5.9MM			5.9	.2323		6.0		100		51		41		0.91
V90 60350	KC7 2344B 15/64	15/64			.2344	15/64		3.94		2		1.60		0.036	
V90 60360	KC7 2362B 6.0MM			6.0	.2362		6.0		100		51		41		0.93
V90 60370	KC7 2402B 6.1MM			6.1	.2402		8.0		109		60		48		0.95
V90 60380	KC7 2420B C		C		.2420	1/4		4.31		2.25		1.80		0.037	
V90 60390	KC7 2441B 6.2MM			6.2	.2441		8.0		109		60		48		0.96
V90 60400	KC7 2460B D		D		.2460	1/4		4.31		2.25		1.80		0.038	
V90 60410	KC7 2480B 6.3MM			6.3	.2480		8.0		109		60		48		0.98
V90 60420	KC7 2500B 1/4	1/4			.2500	1/4		4.31		2.25		1.80		0.039	
V90 60430	KC7 2520B 6.4MM			6.4	.2520		8.0		109		60		48		0.99
V90 60440	KC7 2559B 6.5MM			6.5	.2559		8.0		109		60		48		1.01
V90 60450	KC7 2570B F		F		.2570	5/16		4.31		2.375		1.90		0.040	



KC7 – Coolant Carbide Drill Ø 0.2610" – 0.4409"

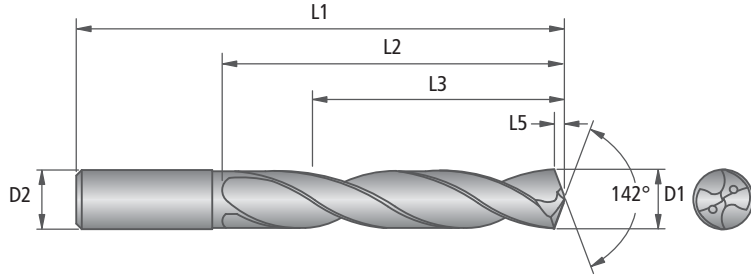


● highly recommended ● recommended ○ may be suitable ✕ not recommended

Drilling 7 × D

Features:

- Coolant fed, long 7 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated



Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 60460	KC7 2610B G		G		.2610	5/16		4.31		2.375		1.90		0.040	
V90 60470	KC7 2656B 17/64	17/64			.2656	5/16		4.31		2.375		1.90		0.041	
V90 60480	KC7 2677B 6.8MM			6.8	.2667		8.0		109		60		48	1.05	
V90 60490	KC7 2717B 6.9MM			6.9	.2717		8.0		109		60		48	1.07	
V90 60500	KC7 2756B 7.0MM			7.0	.2756		8.0		109		60		48	1.08	
V90 60510	KC7 2812B 9/32	9/32			.2812	5/16		4.625		2.75		2.20		0.044	
V90 60520	KC7 2835B 7.2MM			7.2	.2835		8.0		118		70		56	1.12	
V90 60530	KC7 2913B 7.4MM			7.4	.2913		8.0		118		70		56	1.15	
V90 60540	KC7 2953B 7.5MM			7.5	.2953		8.0		118		70		56	1.16	
V90 60550	KC7 2969B 19/64	19/64			.2969	5/16		4.625		2.75		2.20		0.046	
V90 60560	KC7 2992B 7.6MM			7.6	.2992		8.0		118		70		56	1.18	
V90 60570	KC7 3031B 7.7MM			7.7	.3031		8.0		118		70		56	1.19	
V90 60580	KC7 3071B 7.8MM			7.8	.3071		8.0		118		70		56	1.21	
V90 60590	KC7 3125B 5/16	5/16			.3125	5/16		4.625		2.75		2.20		0.048	
V90 60600	KC7 3150B 8.0MM			8.0	.3150		8.0		118		70		56	1.24	
V90 60610	KC7 3189B 8.1MM			8.1	.3189		10.0		127		80		64	1.26	
V90 60620	KC7 3228B 8.2MM			8.2	.3228		10.0		127		80		64	1.27	
V90 60630	KC7 3268B 8.3MM			8.3	.32678		10.0		127		80		64	1.29	
V90 60640	KC7 3281B 21/64	21/64			.3281	25/64		5		3.15		2.52		0.051	
V90 60650	KC7 3320B Q		Q		.3320	25/64		5		3.15		2.52		0.051	
V90 60660	KC7 3346B 8.5MM			8.5	.3346		10.0		127		80		64	1.32	
V90 60670	KC7 3386B 8.6MM			8.6	.3386		10.0		127		80		64	1.33	
V90 60680	KC7 3438B 11/32	11/32			.3438	25/64		5		3.15		2.52		0.053	
V90 60690	KC7 3465B 8.8MM			8.8	.3465		10.0		127		80		64	1.36	
V90 60700	KC7 3504B 8.9MM			8.9	.3504		10.0		127		80		64	1.38	
V90 60710	KC7 3543B 9.0MM			9.0	.3543		10.0		127		80		64	1.39	
V90 60720	KC7 3594B 23/64	23/64			.3594	25/64		5.312		3.34		2.67		0.056	
V90 60730	KC7 3622B 9.2MM			9.2	.3622		10.0		136		85		68	1.43	
V90 60740	KC7 3642B 9.25MM			9.25	.3642		10.0		136		85		68	1.43	
V90 60750	KC7 3661B 9.3MM			9.3	.3661		10.0		136		85		68	1.44	
V90 60760	KC7 3701B 9.4MM			9.4	.3701		10.0		136		85		68	1.46	
V90 60770	KC7 3740B 9.5MM			9.5	.3740		10.0		136		85		68	1.47	
V90 60780	KC7 3750B 3/8	3/8			.3750	25/64		5.312		3.34		2.67		0.058	
V90 60790	KC7 3819B 9.7MM			9.7	.3819		10.0		136		85		68	1.50	
V90 60800	KC7 3858B 9.8MM			9.8	.3858		10.0		136		85		68	1.52	
V90 60810	KC7 3906B 25/64	25/64			.3906	25/64		5.312		3.34		2.67		0.061	
V90 60820	KC7 3937B 10.0MM			10.0	.3937		10.0		136		85		68	1.55	
V90 60830	KC7 4016B 10.2MM			10.2	.4016		12.0		149		93		74	1.58	
V90 60840	KC7 4062B 13/32	13/32			.4062	15/32		5.875		3.625		2.90		0.063	
V90 60850	KC7 4134B 10.50MM			10.50	.4134		12.0		149		93		74	1.63	
V90 60860	KC7 4219B 27/64	27/64			.4219	15/32		5.875		3.625		2.90		0.065	
V90 60870	KC7 4252B 10.8MM			10.8	.4252		12.0		149		93		74	1.67	
V90 60880	KC7 4331B 11.0MM			11.0	.4331		12.0		149		93		74	1.70	
V90 60890	KC7 4375B 7/16	7/16			.4375	15/32		6.1		4		3.20		0.068	
V90 60900	KC7 4409B 11.2MM			11.2	.4409		12.0		155		102		82	1.74	

KC7 – Coolant Carbide Drill Ø 0.4527" – 0.5000"



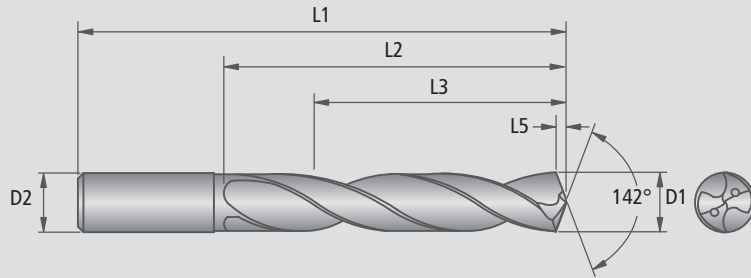
L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
7xD											
	●	●	●	○	○	○	○	○	●	×	×

● highly recommended ● recommended ○ may be suitable × not recommended

Drilling 7 × D

Features:

- Coolant fed, long 7 X D
- Designed for high performance drilling in a broad range of materials
- 30° Helix Angle
- Boutique coated

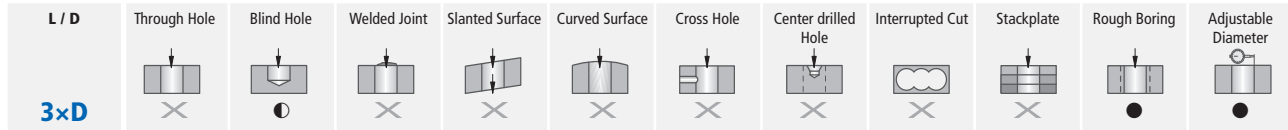


Order No.	Description	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
V90 60910	KC7 4527B 11.5MM			11.5	.4527		12.0		155		102		82		1.78
V90 60920	KC7 4606B 11.7MM			11.7	.4606		12.0		155		102		82		1.81
V90 60930	KC7 4646B 11.8MM			11.8	.4646		12.0		155		102		82		1.83
V90 60940	KC7 4688B 15/32	15/32			.4688	15/32		6.1		4		3.20		0.073	
V90 60950	KC7 4724B 12.0MM			12.0	.4724		12.0		155		102		82		1.86
V90 60960	KC7 4844B 31/64	31/64			.4844	1/2		6.299		4.312		3.45		0.075	
V90 60970	KC7 5000B 1/2	1/2			.5000	1/2		6.299		4.312		3.45		0.077	

2

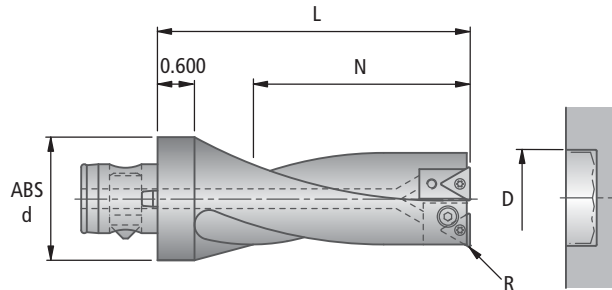


Flat Bottom Boring Tool V71 Ø 1.457" – 2.520" (37 – 64 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection Boring 3 x D – right hand



Please note!

The flat bottom boring tool can not be used with the M01 (ABS-MV) micro-adjustable drill holder, please use other adapters, extensions or reducers.

Adjustment Range D	ABS d	Order No.	R	N	L	lbs	Insert Recommendation		Replacement Parts		
							Order No. Size	ISO Insert Description	Clamping screw	TORX	
1.457 - 1.687	50	V71 00200	.010	4.341	6.340	2.40	W30 26660.0584	TOHX140305EN-G06 BK84	●	N00 56201	L05 00850
1.687 - 1.875	50	V71 00210	.010	5.061	7.030	3.20	W30 26660.0521	TOHX140305EN-G06 K10	●	25 in-lbs	
1.875 - 2.062	63	V71 00250	.016	5.625	7.791	4.85	W30 44660.0803	TOHX22T308EN-G06 P25M	●	N00 56400	L05 00870
2.062 - 2.281	63	V71 00260	.016	6.186	8.352	5.95	W30 44600.0821	TOHX22T308EN-G06 K10	●	S/M5×9.4-20IP	20IP
2.281 - 2.520	80	V71 00330	.016	6.843	9.009	7.90	W30 44720.0821	TOHX22T308FN-G12 K10	●	55.3 in-lbs	

Delivery:

Flat bottom boring tool complete with ABS hardware, pockets and clamping screws, less torx wrench and inserts.

Rigid machine conditions are recommended

D inch	Replacement Parts				
	VPS - Pocket External	VPS - Pocket Internal	Pocket clamping screw DIN 7984	Screw	Adjustment screw DIN 913
1.457 - 1.875	Order No. D53 05310	Order No. D53 05110	Order No. 5501204008 M4×8	Order No. L02 30300 VPS-M.6×6	Order No. 5505103008 M3×8
1.875 - 2.520	Order No. D53 05320	Order No. D53 05120	Order No. 5124706012 M6×12	–	Order No. 5505104008 M4×8

The adjustable flat bottoming tool VPS is specifically used for flat bottoming the bottom face in blind bores. The external cutting edge is radially adjustable and the internal cutting edge is axially adjustable, suitable for facing the bottom of the bore. The flat bottoming tool can also re-machine the bore diameter. Central coolant supply.


Cutting Recommendations


Guideline values for boring with V71 – up to 3xD


Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\emptyset 1.457-1.875	\emptyset 1.875-2.520
1.0	≤72500		Unalloyed steel	A570.36	590	.003	.003
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120	390	.003	.003
				1055			
				5115			
2.1	<72500		Lead alloy	12L13	590	.003	.003
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	290	.002	.003
				1064			
4.0	>130000		Tool steel	H13 H21	290	.002	.003
4.1			HSS		-	-	-
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	-	-	-
5.1	58000		Titanium, Titanium alloy	AMS R54520	-	-	-
6.0	≤87000		Stainless steel: austenitic 300 series	304L	290	.003	.004
				316			
6.1	<130000		Stainless steel	630	290	.003	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420	290	.003	.004
				403			
8.0		180	Grey cast iron	No 35 B	390	.005	.006
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2	390	.005	.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	290	.004	.005
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	290	.004	.005
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	290	.004	.005
10.1		200	Malleable cast iron	70003	290	.004	.005
10.2		300	Alloyed nodular cast iron	A43D2	290	.004	.005
10.2		300	Vermicular cast iron		290	.004	.005
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	590	.005	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		590	.005	.006
13.0		60	Wrought aluminum alloy		720	.003	.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	720	.003	.004
14.0		100	Magnesium alloy		720	.004	.005
15.0	203000		Hardened steel < 45 HRC		-	-	-
16.0	261000		Hardened steel > 45 HRC		-	-	-

Please see Chapter 8 for application details and safety notes!

Alternative Inserts

For better chip control								
D	Order No. Size	Insert  ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
1.457 - 1.875	W30 26720.0503	TOHX140305EN-G12 P25M	●	●				
	W30 26720.0521	TOHX140305FN-G12 K10			●			
1.875 - 2.520	-	-						

For better wear resistance								
D	Order No. Size	Insert  ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
1.457 - 1.875	W30 26660.0572	TOHX140305EN-G06 BK72	●					
	W30 26660.0562	TOHX140305EN-G06 BK62			●			
1.875 - 2.520	W30 44660.0860	TOHX22T308EN-G06 BK60	●					

For higher toughness								
D	Order No. Size	Insert  ISO Insert Description	for Workpiece Material					
			P	M	K	N	S	H
1.457 - 1.875	W30 26660.0503	TOHX140305EN-G06 P25M	●					
1.875 - 2.520	-	-						

2



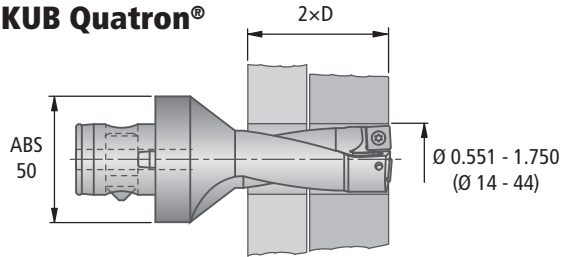
Stackplate Drilling $\text{\O} 0.551'' - 3.228'' (\text{\O} 14 - 82 \text{ mm})$

A drill disk is created as you drill through the stacked material. The drill disk has a tendency to adhere to the subsequent material and the drill. As a result, the carbide inserts and/or drill will be damaged.

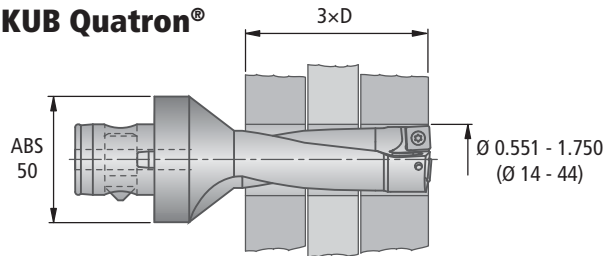
The following KUB drills allow the through cutting insert position to completely drill the stacked material.



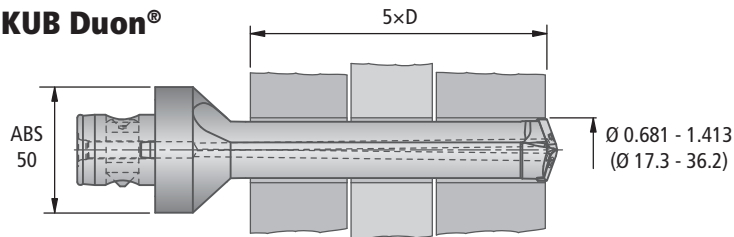
KUB Quatron[®]



KUB Quatron[®]

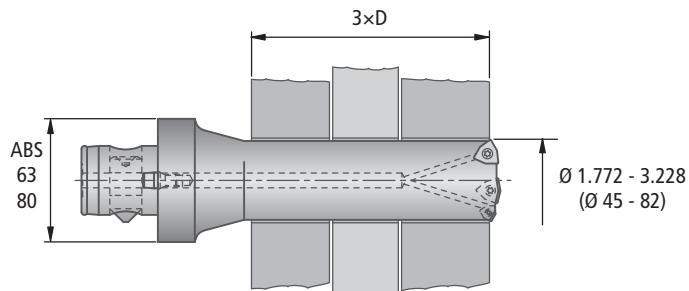
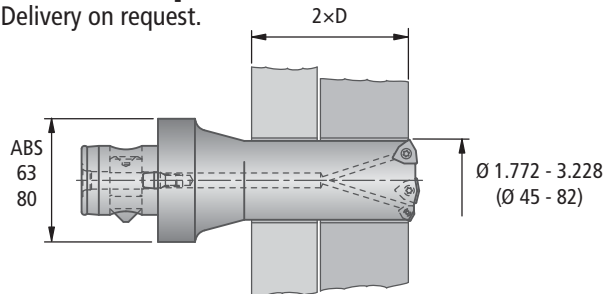


KUB Duon[®]



KUB[®] Stackplate Drill

Delivery on request.





Easy Special™

incorporate KOMET's experience in economical metal cutting methods for drilling and boring operations.

As a leading manufacturer of custom engineered cutting tools, KOMET now supplies parametrically designed cutting tools ready to use in your production within 5 weeks from the order date, at competitive prices.

Our sophisticated 3D-CAD/CAM strategy has allowed a considerable reduction in delivery times for such tools. The key has been the creation of parameters for the various tool models that can be modified within specific limits according to the machining operation and the workpiece dimensions.

The Easy Specials are offered with the proven ABS® connection. Finish boring bars are also available with KFK-UJ shanks. The tool dimensions of Easy Specials are maintained within $\pm 0.004''$ ($\pm 0.1\text{mm}$).

The combination of drilling and/or boring in one cutting tool reduces machining and tooling costs and minimizes the number of tool stations.

Please note that the finish boring tools are offered with regular positive rake inserts for ferrous metals and high shear inserts for non-ferrous metals.

Example:

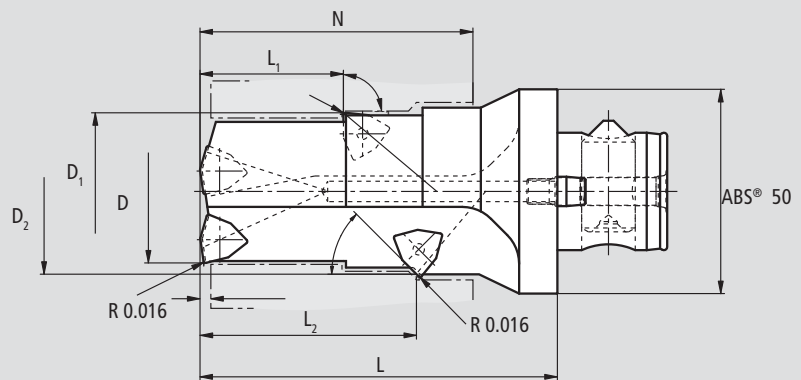
KUB® Drills for through holes
with two stepped cutting edges
and ABS® connection

Model No.: N420012000
Order No.: XV12...
Dia. D : 0.551" – 1.732"
(14mm – 44mm)

D = 1.125" D₁ = 1.250" D₂ = 1.350"

L = 6.075" L₁ = 1.500" L₂ = 3.175"

N = 4.500" a₁ = 90° a₂ = 45°



NOTE:

For delivery status information, see our current Price List.

Please see Chapter 5
for more details



Rough Boring



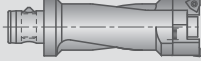
Modularity is the key !

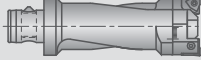
The distinct features of the innovative KOMET twin cutter program bring high levels of efficiency and flexibility. A large selection of different holders and inserts will solve every kind of application with the right insert geometry even in difficult machining tasks.

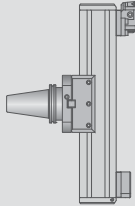



Program Summary 3.4 – 3.5

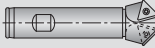
Tool Selection Guide 3.6 – 3.7

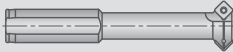
Twin Cutter G04  3.8 – 3.13

Twin Cutter G01  3.14 – 3.41

Twin Cutter $\varnothing < 8.110''$ (206 mm)  3.42 – 3.43

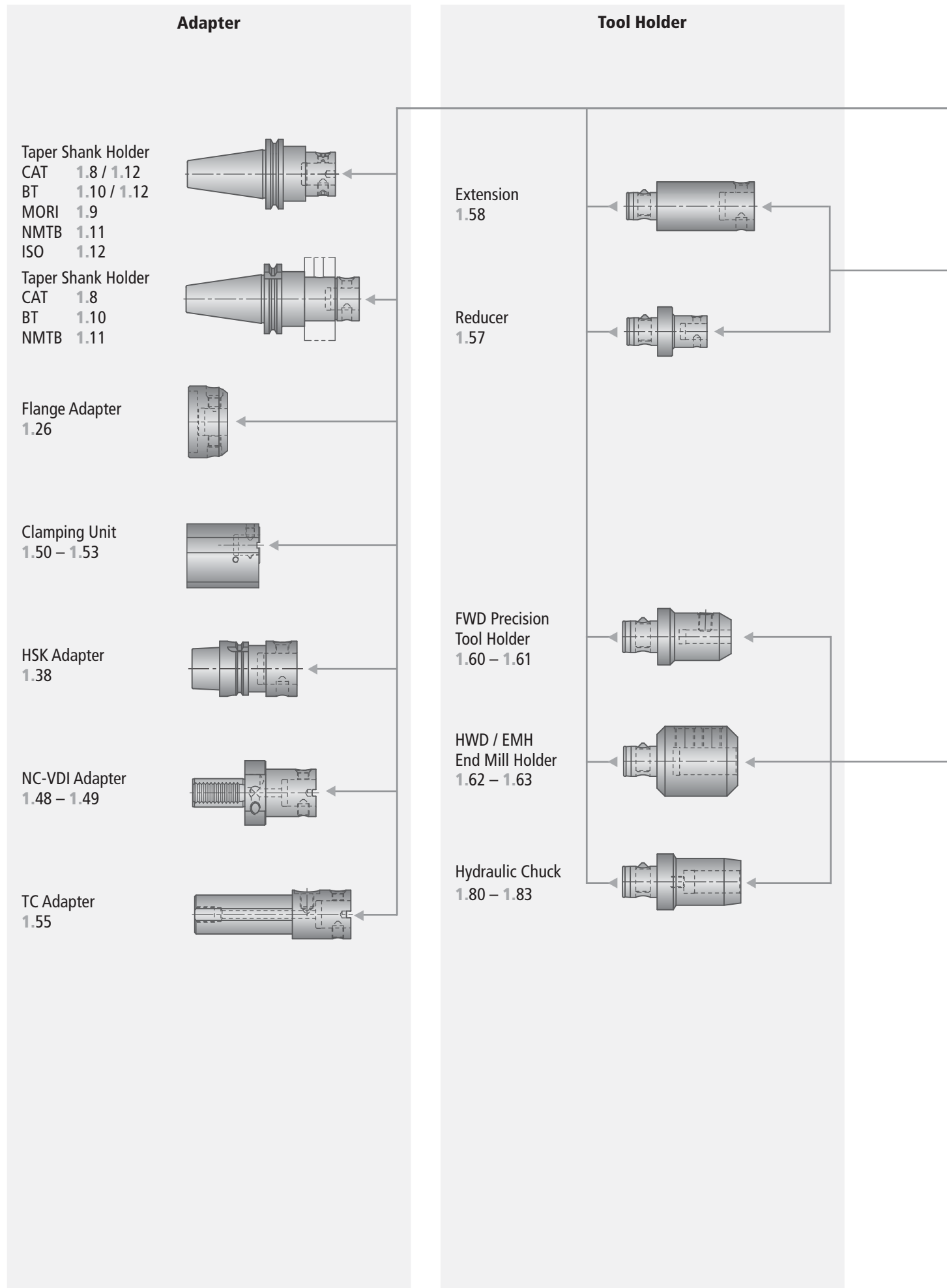
Counterboring Tool KWZ  3.44 – 3.47

Milling and Countersinking Tool KWS  3.48 – 3.49

Forward and Backward Chamfering Tool  3.50 – 3.51

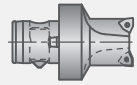


Program Summary



Rough Boring Tool

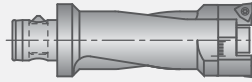
Page



Easy Special™

Ø 0.551"-1.732" (Ø 14-44 mm)

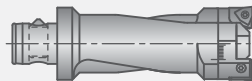
Chapter 5



Twin Cutter G04

Ø 1.181"-8.031" (Ø 30-204 mm)

3.8 – 3.13



Twin Cutter G01

Ø 0.945"-8.465" (Ø 24-215 mm)

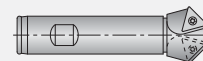
3.14 – 3.41



Counter Boring Tool KWZ

Ø 0.437"-1.375" (Ø 10-48 mm)

3.44 – 3.47



Counter Boring Tool KWS

Ø 0.748"-1.457" (Ø 19-37 mm)

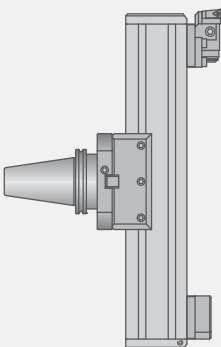
3.48 – 3.49



Foward & Backward
Chamfering tool

Ø 0.625"-1.500"

3.50 – 3.51






Lightweight
Modular Tool

Ø > 8.110" (206 mm)
larger diameters on request

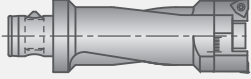
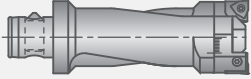
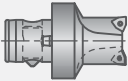
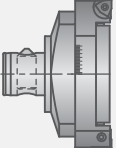
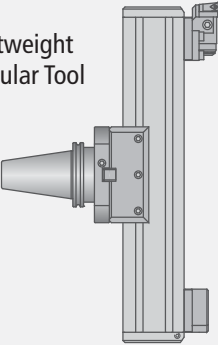

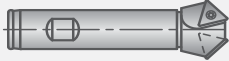
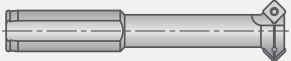
3.42 – 3.43



Tool Selection Guide

Ø inch (mm)	Rough Boring									
	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Step	Large hole offset	Stackplate	Adjustable Diameter
1.181 - 8.465 (30 - 215)	●	●	●	●	●	●		●	80°	●
0.945 - 8.465 (24 - 215)	●	●	●	●	●	●	●	●	80°	●
0.551 - 1.732 (14 - 44)	●	●	●	●	●	●		●	80°	
7.717 - 15.787 (196 - 401)	●	●	●	●	●	●		●	80°	●
8.110 (> 206) larger diameters on request	●	●	●	●	●	●				●
0.437 - 1.375 (10 - 48)	●	●	●	●	●	●		●		
0.748 - 1.457 (19 - 37)	 for producing the 90° and 60° countersinks		 for milling of trapezoidal slots		 for circular milling on machining centres			 for chamfering on machining centres		
0.437 - 1.375 (10 - 48)	Through Hole ●	Blind Hole ●	Slanted Surface ●		Cross Hole ●		Boring Backwards ●			



Coolant		Rough Boring Tool		Workpiece Material						Connection		
Emulsion		MQL										
in	out	in	* for short drilling depth out		Carbon Steel Alloy Steel P	Stainless Steel M	Cast Iron Ductile Iron K	Non-ferrous Metals N	Super Alloy Titanium Alloy S	Hardened Steel H	ABS	Straight Shank
●	●	●	◐*	Twin Cutter G04 	●	●	●	●			3.10 - 3.13	
●	●	●	◐*	Twin Cutter G01 	●	●	●	●			3.20 - 3.41	
●	●	●	◐*	 Easy Special™							Chapter 5	
●	●	●	◐*	 Twin Cutter G016	●	●	●	●			3.22 - 3.41	
●	●	●	◐*	Lightweight Modular Tool 	●	●	●	●	●	○	3.42 - 3.43	
●	●	●	◐*	Counterboring Tool KWZ 	●	●	●	●	●	○	3.44 - 3.47	
				Milling and Countersinking Tool KWS 	●	●	●	●	●	○	3.48 - 3.49	
				Forward and Backward Chamfering Tool 	●	●	●	●	●	○	3.50 - 3.51	

Twin Cutter G04

Sturdy insert holder design

Radial adjustment of insert holder with threaded pin

Basic body can be used with 90° and 80° insert holders

For deep roughing operations, chips are removed by the spiral flutes on the long tool body

Adjustable nozzle for directing coolant onto the cutting edges

With ABS® connection





with WOEX-Insert
 $\alpha = 90^\circ / 80^\circ$

Ø 1.181" - 8.031" (30 - 204 mm)

Cutting recommendation

Alternative insert

3.10

3.11

3.11



with SOEX-Insert
 $\alpha = 80^\circ$

Ø 1.181" - 8.031" (30 - 204 mm)

Cutting recommendation

Alternative insert

3.12

3.13

3.13

3



Cutting Recommendations



Diameter Dmin- Dmax	Replacement Parts		
	Clamping plate Order No.	Clamping screw DIN 912 Order No.	
1.181-1.614	G04 01000.12	M4×20	5501104020
1.535-2.008	G04 01500.12	M5×25	5501105025
1.929-2.795	G04 01510.12	M6×25	5501106025
2.520-3.583	G04 02010.12	M8×30	5501108030
3.268-4.764	G04 02500.12	M10×35	5501110035
4.291-6.181	G04 03000.12	M12×45	5501112045
5.472-8.031	G04 03500.12	M16×55	5501116055

Replacement Parts		
Clamping screw Order No. Description	TORX PLUS Order No. Description	Adjusting screw DIN 912 Order No. Description
N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	5505103010 M3×10
N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505104010 M4×10
		5505104016 M4×16
N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505105025 M5×25
N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505108035 M8×35
		5505108055 M8×55
N00 57541 S/M5.5×11-20IP 55.3 in-lbs	L05 00870 20IP	5505110080 M10×80

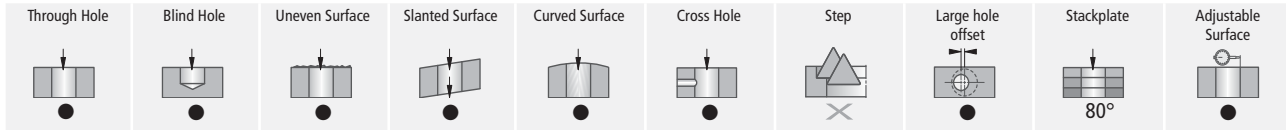
Order example:

Basic body short G04 00500
 Cross slide assembly G03 60410
 Inserts 2x W29 24010.0484

Please see Chapter 8 for application details and safety notes!

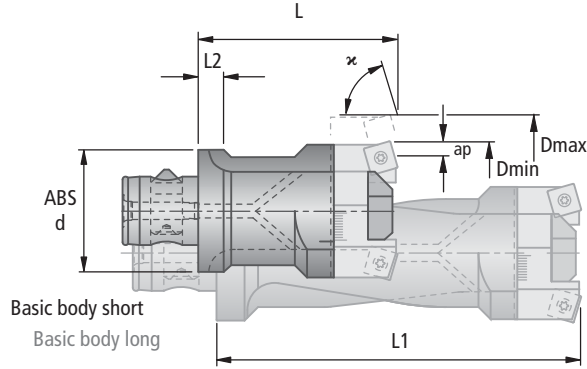
Material group	Tensile Strength (lb/ft ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev								
						Ø 1.181 - 1.614	Ø 1.535 - 2.008	Ø 1.929 - 2.795	Ø 2.520 - 3.583	Ø 3.268 - 4.764	Ø 4.291 - 6.181	Ø 5.472 - 8.031		
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0 15.0 16.0	≤72500 72500 - 130000 <72500 >130000 >130000 >130000 58000 ≤87000 <130000 >130000 180 250 ≤87000 87000 200 300 90 100 60 75 100		Unalloyed steel	A570.36 1213 A573.81	660	.005	.006	.008	.010	.012	.012	.012		
				Low alloy steel	5120 1055 5115	660	.005	.006	.008	.010	.012	.012	.012	.012
				Lead alloy	12L13	590	.005	.006	.008	.010	.012	.012	.012	.012
				High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	.005	.006	.008	.010	.012	.012	.012	.012
				Tool steel	H13 H21	390	.004	.005	.006	.008	.008	.010	.010	.010
				HSS										
				Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	250	.003	.004	.005	.005	.006	.006	.006	.008
				Titanium, Titanium alloy	AMS R54520	160	.003	.004	.005	.005	.006	.006	.006	.008
				Stainless steel: austenitic 300 series	304L 316	390	.004	.005	.005	.006	.008	.008	.008	.008
				Stainless steel	630	390	.004	.005	.005	.006	.008	.008	.008	.008
Stainless steel: martensitic/ferritic 400 series	420 403	300	.003	.004	.004	.005	.006	.006	.006	.006				
Grey cast iron	No 35 B No 50 B	590	.006	.010	.010	.012	.014	.014	.014	.014				
Alloy grey cast iron	A436 Type 2	460	.006	.010	.010	.012	.014	.014	.014	.014				
Nodular cast iron ferritic	60-40-18	460	.006	.010	.010	.012	.014	.014	.014	.014				
Nodular cast iron ferritic / pearlitic	80-55-06	390	.005	.006	.008	.010	.012	.012	.014	.014				
Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	330	.005	.006	.008	.010	.012	.012	.014	.014				
Alloyed nodular cast iron	A43D2	330	.005	.006	.008	.010	.012	.012	.014	.014				
Vermicular cast iron		300	.006	.010	.012	.012	.014	.014	.014	.014				
Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	.006	.010	.010	.012	.014	.014	.014	.014				
Copper alloy, Brass, Bronze: average cut		820	.006	.010	.010	.012	.014	.014	.014	.014				
Wrought aluminum alloy		820	.006	.010	.010	.012	.014	.014	.014	.014				
Aluminum alloy: Si content <10%	GD-AISI12	820	.006	.010	.010	.012	.014	.014	.014	.014				
Magnesium alloy		820	.006	.010	.010	.012	.014	.014	.014	.014				
Aluminum alloy: Si content >10%	A360.2	660	.006	.010	.010	.012	.014	.014	.014	.014				
Hardened steel < 45 HRC														
Hardened steel > 45 HRC														

Twin Cutter G04 Ø 1.181" – 8.031" (Ø 30 – 204 mm)

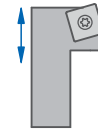


● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

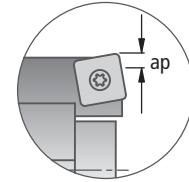
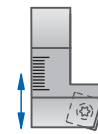
with **ABS® Connection**
 $\alpha = 80^\circ$, radial adjustment



Cross slide assembly ①



$\alpha = 80^\circ$



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.


Dmin-Dmax inch (mm)	Basic body Order No.	ABS d	L	L1	L2	Cross slide assembly ② $\alpha=80^\circ$ Order No.	Basic Recommendation							max. cutting depth ap						
							Order No. Size	Insert ISO Insert Description	for Workpiece Material											
									P	M	K	N	S		H					
1.181 – 1.614 (30 – 41)	G04 00500 0.29	25	1.969 (50)	–	–	G03 80200	W83 23010.018425	SOEX07T308-01 BK8425	●						0.177					
							W83 23000.0179	SOEX07T308-01 BK79		●					0.138					
							W83 23000.0161	SOEX07T308-01 BK61			●				0.197					
							W83 23000.0184	SOEX07T308-01 BK84					●		0.197					
1.535 – 2.008 (39 – 51)	G04 01010 0.63	32	2.362 (60)	–	–	G03 80211	W83 32010.158425	SOEX090408-01 BK8425	●						0.236					
							W83 32000.1579	SOEX090408-01 BK79		●					0.157					
1.929 – 2.795 (49 – 71)	G04 01500 1.46	40	–	4.724 (120)	0.335 (8.5)	G03 80220	W83 32010.1561	SOEX090408-01 BK61							0.236					
							W83 32000.1584	SOEX090408-01 BK84					●		0.236					
							G04 01510 0.94	2.362 (60)	–	–	G03 80220	G04 02000 2.70	50	–	5.315 (135)	0.413 (10.5)				
							G04 02010 1.79					50	2.756 (70)	–	–	G03 80230				
2.520 – 3.583 (64 – 91)	G04 02020 4.91	50	–	5.315 (135)	–	G03 80230														
							G04 02500 2.95	63	2.756 (70)	–	–	G03 80240								
3.268 – 4.764 (83 – 121)	G04 02510 8.37	63	–	6.102 (155)	–	G03 80240	W83 44010.188425	SOEX120508-01 BK8425	●						0.354					
							W83 44000.1879	SOEX120508-01 BK79		●					0.354					
4.291 – 6.181 (109 – 157)	G04 03000 6.69	80	3.543 (90)	–	–	G03 80250	W83 44000.1861	SOEX120508-01 BK61							0.354					
							W83 44000.1884	SOEX120508-01 BK84					●		0.354					
							G04 03010 13.34	80	–	6.890 (175)	–	G03 80250								
							G04 03500 13.72						100	4.921 (125)	–	–	G03 80260			




Delivery: ABS® Adapter Body comes complete with ABS® hardware, clamping plate, adjusting screws, clamping screws and coolant nozzle, less coolant nozzle wrench. Cross Slide Assembly comes complete with insert screws, less inserts and TORX PLUS wrench.

Cutting Recommendations

3



Diameter Dmin- Dmax	Replacement Parts	
	Clamping plate Order No.	Clamping screw DIN 912  Order No.
1.181-1.614	G04 01000.12	M4x20 5501104020
1.535-2.008	G04 01500.12	M5x25 5501105025
1.929-2.795	G04 01510.12	M6x25 5501106025
2.520-3.583	G04 02010.12	M8x30 5501108030
3.268-4.764	G04 02500.12	M10x35 5501110035
4.291-6.181	G04 03000.12	M12x45 5501112045
5.472-8.031	G04 03500.12	M16x55 5501116055

Replacement Parts		
Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Adjusting screw DIN 912  Order No. Description
N00 57571 S/M2.5x6.3-8IP 11.3 in-lbs	L05 00830 8IP	5505103010 M3x10
N00 57261 S3575-15IP 25 in-lbs	L05 00860 15IP	5505104010 M4x10
		5505104016 M4x16
N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP	5505105025 M5x25
		5505108035 M8x35
		5505108055 M8x55
		5505110080 M10x80

Order example:

Basic body short G04 00500
 Cross slide assembly G03 80200
 Inserts 2x W83 23000.0184

Please see Chapter 8 for application details and safety notes!

Material group	Tensile Strength (lb/In ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev						
						Ø 1.181 - 1.614	Ø 1.535 - 2.008	Ø 1.929 - 2.795	Ø 2.520 - 3.583	Ø 3.268 - 4.764	Ø 4.291 - 6.181	Ø 5.472 - 8.031
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0 15.0 16.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	660	.005	.006	.008	.010	.012	.012	.012
	72500 - 130000		Low alloy steel	5120 1055 5115	660	.005	.006	.008	.010	.012	.012	.012
	<72500		Lead alloy	12L13	590	.005	.006	.008	.010	.012	.012	.012
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	.005	.006	.008	.010	.012	.012	.012
	>130000		Tool steel	H13 H21	390	.004	.005	.006	.008	.008	.010	.010
			HSS									
	58000	250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	160	.003	.004	.005	.005	.006	.006	.008
			Titanium, Titanium alloy	AMS R54520	160	.003	.004	.005	.005	.006	.006	.008
	≤87000		Stainless steel: austenitic 300 series	304L 316	390	.004	.005	.005	.006	.008	.008	.008
	<130000		Stainless steel	630	390	.004	.005	.005	.006	.008	.008	.008
>130000		Stainless steel: martensitic/ferritic 400 series	420 403	300	.003	.004	.004	.005	.006	.006	.006	
180		Grey cast iron	No 35 B No 50 B	590	.006	.010	.010	.012	.014	.014	.014	
250		Alloy grey cast iron	A436 Type 2	460	.006	.010	.010	.012	.014	.014	.014	
≤87000		Nodular cast iron ferritic	60-40-18	460	.006	.010	.010	.012	.014	.014	.014	
		Nodular cast iron ferritic / pearlitic	80-55-06	390	.005	.006	.008	.010	.012	.012	.014	
87000		Nodular cast iron pearlitic	100-70-03	330	.005	.006	.008	.010	.012	.012	.014	
		Malleable cast iron	70003	330	.005	.006	.008	.010	.012	.012	.014	
		Alloyed nodular cast iron	A43D2	330	.005	.006	.008	.010	.012	.012	.014	
300		Vermicular cast iron		300	.006	.010	.012	.012	.014	.014	.014	
90		Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	.006	.010	.010	.012	.014	.014	.014	
100		Copper alloy, Brass, Bronze: average cut		820	.006	.010	.010	.012	.014	.014	.014	
60		Wrought aluminum alloy		820	.006	.010	.010	.012	.014	.014	.014	
75		Aluminum alloy: Si content <10%	GD-ALS12	820	.006	.010	.010	.012	.014	.014	.014	
		Magnesium alloy										
100		Aluminum alloy: Si content >10%	A360.2	660	.006	.010	.010	.012	.014	.014	.014	
		Hardened steel < 45 HRC										
261000 203000		Hardened steel > 45 HRC										

Twin Cutter G01

Axially adjustable insert holder for constant division of cut between the two cutting edges.

Radially adjustable insert holder for full twin cutter effect.

Radially adjustable insert holders allow conversion to stepped tool for larger depth.

Compact tool design.

For deep roughing operations chip removal is aided by the spiral flutes.

With ABS® connection.

Application range from 0.945" to 8.465" (24 to 215 mm) diameter.



Application Range	3.16 – 3.17
Assembly	3.18
Technical Information	3.19



with WOEX-Insert
 $\kappa = 90^\circ / 80^\circ$ · with / without axial adjustment

Ø 0.945" - 8.465" (24 - 215 mm)	3.20 – 3.21
Ø 7.717" - 15.787" (196 - 401 mm)	3.22 – 3.23
Cutting recommendation	3.24
Alternative insert	3.25 – 3.27



with SOEX-Insert
 $\kappa = 80^\circ$ · without axial adjustment

Ø 0.945" - 4.882" (24 - 124 mm)	3.28 – 3.29
Cutting recommendation	3.30
Alternative insert	3.31



with CCMT-Insert
 $\kappa = 90^\circ$ · with / without axial adjustment

Ø 0.945" - 8.465" (24 - 215 mm)	3.32 – 3.33
Ø 7.717" - 15.787" (196 - 401 mm)	3.34
Cutting recommendation	3.35



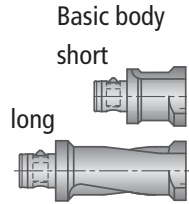
with TOHX/TOGX-Insert
 $\kappa = 90^\circ$ · with / without axial adjustment

Ø 0.945" - 8.465" (24 - 215 mm)	3.36 – 3.37
Ø 7.717" - 15.787" (196 - 401 mm)	3.38 – 3.39
Cutting recommendation	3.40
Alternative insert	3.41



Twin Cutter G01 – Higher performance and flexible

Application range

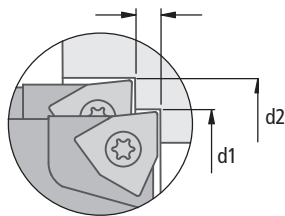


- 1st choice
- ◐ may be possible

	Rough Boring					Stepped Rough Boring
	$\kappa = 90^\circ$ WOEX ... axial + radial	$\kappa = 90^\circ$ WOEX ... radial	$\kappa = 80^\circ$ WOEX ... axial + radial	$\kappa = 80^\circ$ WOEX ... radial	$\kappa = 90^\circ$ SOEX ... radial	$\kappa = 90^\circ$ WOEX ... axial + radial
	Page 3.20	Page 3.20	Page 3.20	Page 3.20	Page 3.28	Page 3.20
Rough boring with large machining allowance and large axial offset	●	●	●	●	●	●
Rough boring with extremely large allowance and large axial offset	◐	◐	●	●	●	●
Rough boring with large allowance and long tool overhang	●	●	◐	◐	◐	●
Light rough boring Semi-finish boring with large axial offset						
Light rough boring Semi-finish boring with slight axial offset						
Finish boring with small to medium offset and slight axial offset						
Finish boring with small allowance and no axial offset						

Division of cut by axial and radial offset of cutting edge

Stepped Rough Boring / Stepped Finish Boring



With combination rough boring and combination finish boring, division of the whole cutting width is produced by offsetting the cutting edge axially and radially. This should allow the ensuing cutting forces to be better distributed and produce an even cutting result. With the rough boring operation, this allows double the cutting width (using only a single feed rate $f = fz$).

With the finish boring operation, the cutting width is divided so that some of the intermediate machining can be omitted.

Adapters with the same approach angle may be used with each other

Semi-finish Boring / Finish Boring				Stepped Semi-finish Boring	Stepped Finish Boring	
for machining allowance $a_p = 0.028'' - 0.118''$ (0.7-3 mm) two cutting edges ($f = 2 \times fz$)		for machining allowance $a_p = 0.004'' - 0.080''$ (0.1-2 mm) two cutting edges ($f = 2 \times fz$)		for machining allowance $a_p = 0.055'' - 0.236''$ (1.4-6 mm) 1+1 cutting edges ($f = fz$)	for machining allowance $a_p = 0.059'' - 0.197''$ (1.5-5 mm) 1+1 cutting edges ($f = fz$)	
$\kappa = 90^\circ$ CCMT ... axial + radial	$\kappa = 90^\circ$ CCMT ... radial	$\kappa = 90^\circ$ TOHX ... axial + radial	$\kappa = 90^\circ$ TOHX ... radial	$\kappa = 90^\circ$ CCMT ... axial + radial	$\kappa = 90^\circ$ WOEX ... axial + radial	$\kappa = 90^\circ$ TOHX ... axial + radial
Page 3.32	Page 3.32	Page 3.36	Page 3.36	Page 3.32	Page 3.20	Page 3.36
				Division of cut by axial and radial offset of cutting edge	Division of cut by axial and radial offset of cutting edge	
●	●			●		
●	●			●	●	
●	●	●	●		●	
		●	●		●	

3

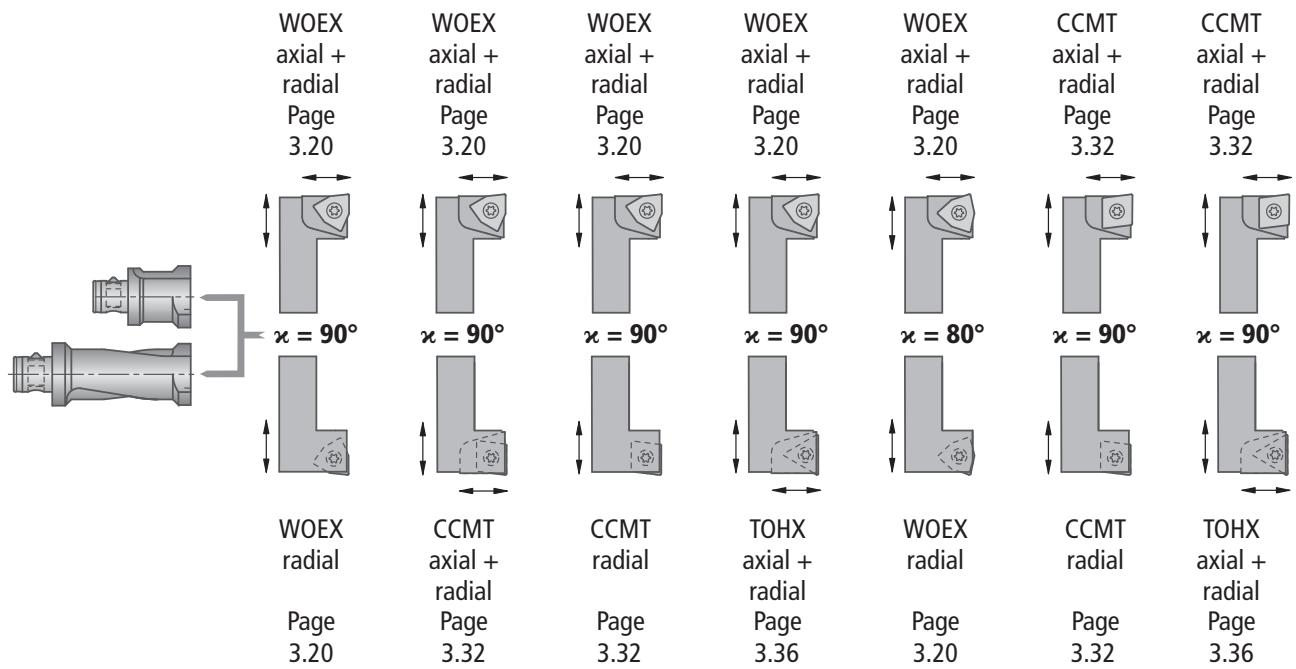


- Axially adjustable insert holder for constant division of cut between the two cutting edges.
- Radially adjustable insert holder for full twin cutter effect.
- Radially adjustable insert holders allow conversion to stepped tool for larger depth.
- Compact tool design.
- Adjustable nozzle for directing coolant onto the cutting edges.
- For deep rough boring operations chip removal is by means of the spiral flutes.
- With ABS connection.
- Application range from 0.945" to 8.465" (24 to 215 mm diameter).

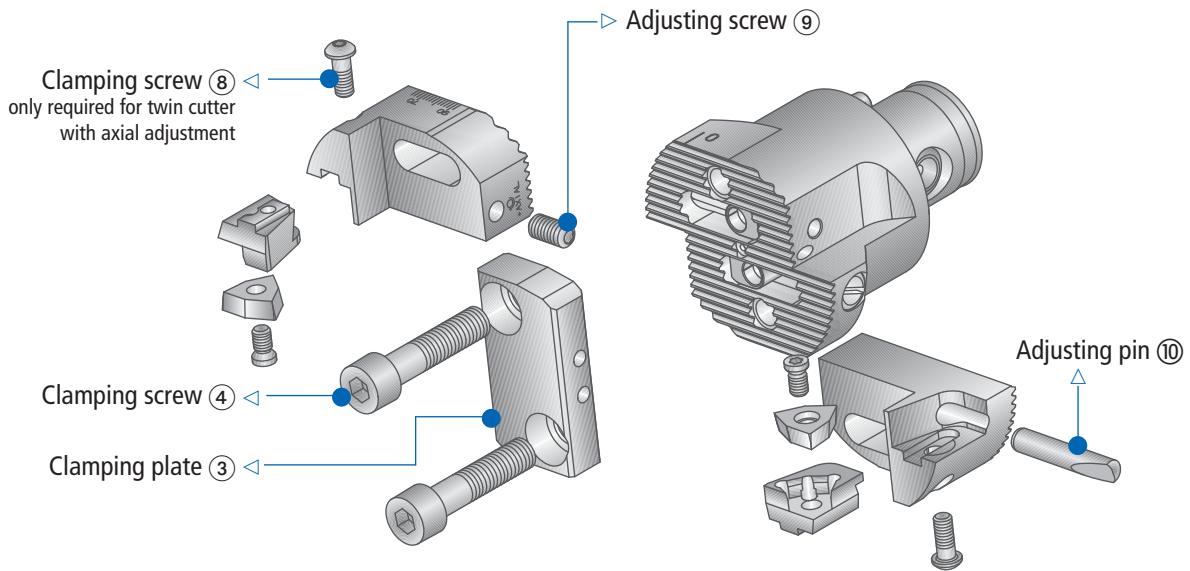


Twin Cutter G01

Other Possible Combinations



Replacement Parts and Detail

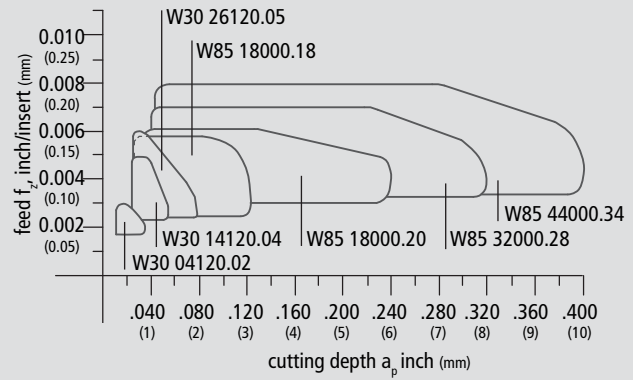
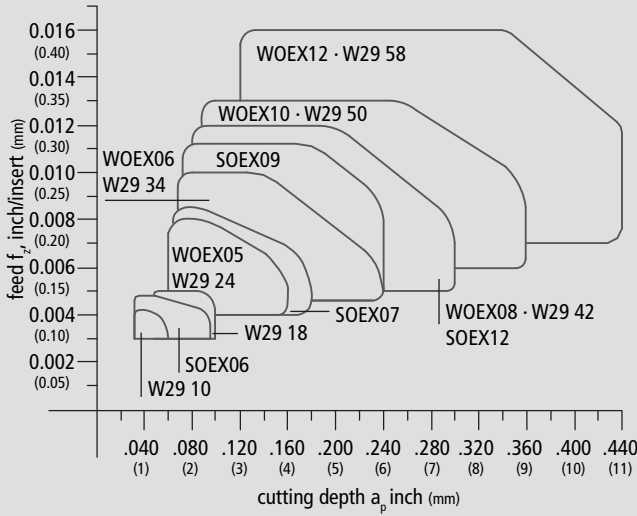


For additional replacement parts see page 3.20-3.41

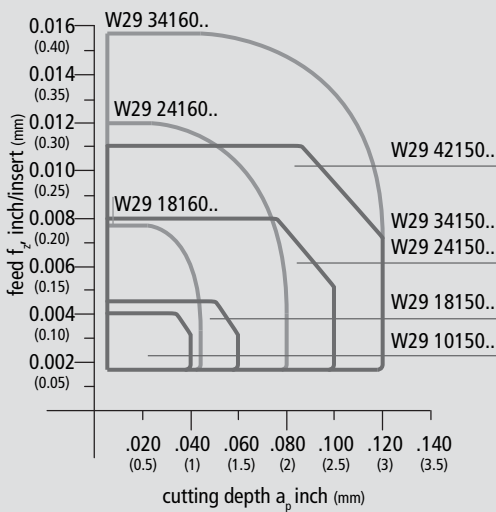
Dmin- Dmax	Clamping plate (3) Order No.	Clamping screw (4) DIN 912		Clamping screw (8) Order No.	Adjusting screw (9)		Adjusting pin (10) Order No.
		Description	Order No.		Description	Order No.	
24 - 32	G01 70510.12	M3×16	5501103016	N10 11200	DIN 913 / SW 1.3	5505102505	G03 70010.11
30 - 41	G01 70521.12	M4×20	5501104020	N10 11300	DIN 913 / SW 1.3	5505102505	G03 70020.11
39 - 53	G01 71011.12	M5×25	5501105025	N10 11310	SW 2	5505104008	G03 70030.11
51 - 71	G01 71511.12	M6×30	5501106030	N10 11400	SW 2	5505104010	G03 70040.11
64 - 91	G01 72011.12	M8×35	5501108035	N10 11510	SW 3	5505106012	G03 70060.11
83 - 124	G01 72511.12	M8×45	5501108045	5501105012	SW 3	5505106020	G03 70070.11
109 - 167	G01 73011.12	M10×50	5501110050	5501105016	SW 4	5505108020	G03 70080.11
139 - 215	G01 73511.12	M12×60	5501112060	5501106020	SW 5	5505110020	G03 70090.11

Technical Information

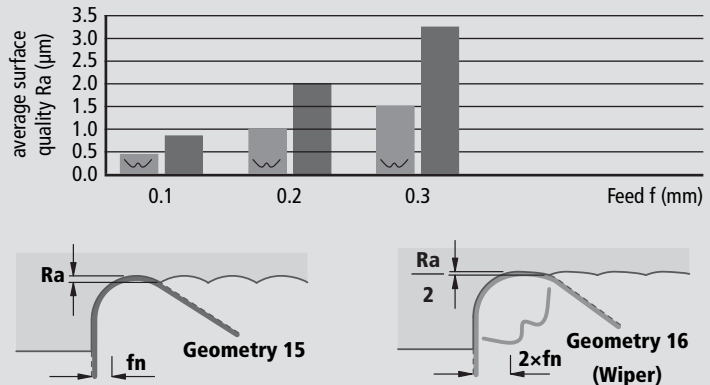
Guideline for medium strength steels



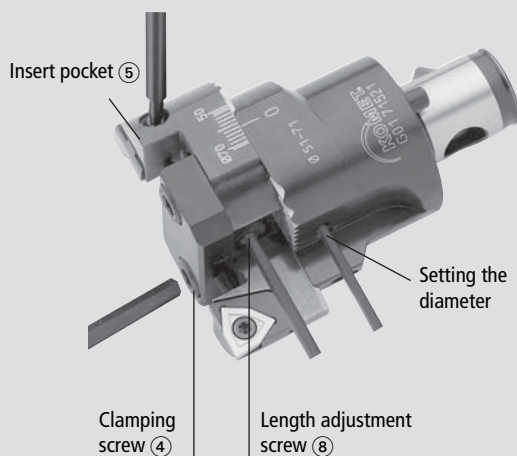
Guideline for geometry 15 and 16 for medium strength steels



Comparison of surface quality results for "Wiper" - R04 for $\alpha = 90^\circ$ (in X40Cr13 / 1.4034)



Assembly



Setting the diameter

Loosen the clamping screw (4) on one side only. Set the diameter and tighten clamping screw (4) again. Repeat the same procedure on the second side.

Length adjustment

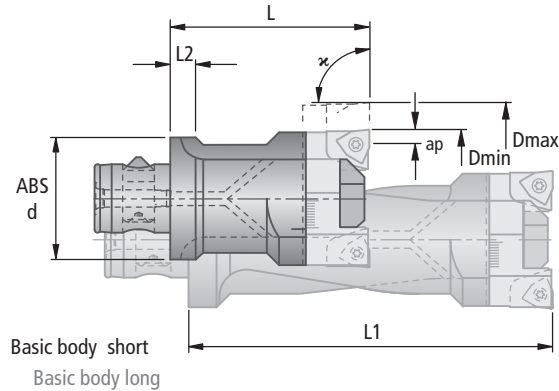
Loosen insert pocket (5) and then tighten again slightly. Set length to 0.02 mm in front of required dimension using length adjustment screw (8), tighten insert pocket (5) and set to required height with length adjustment screw (8). Repeat the same procedure on the second side.



Twin Cutter G01 Ø 0.945" – 8.465" (24 – 215 mm)

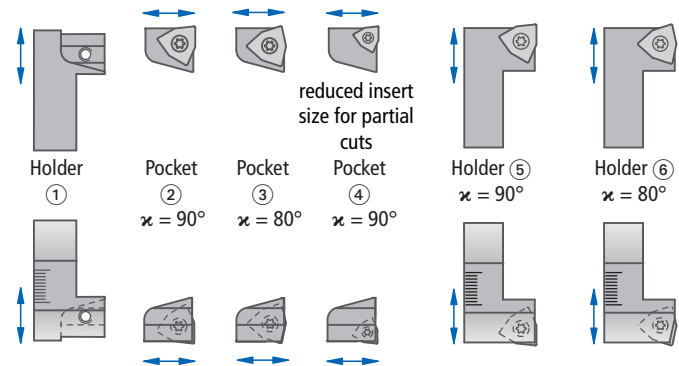
with ABS® Connection

$\kappa = 90^\circ / 80^\circ$



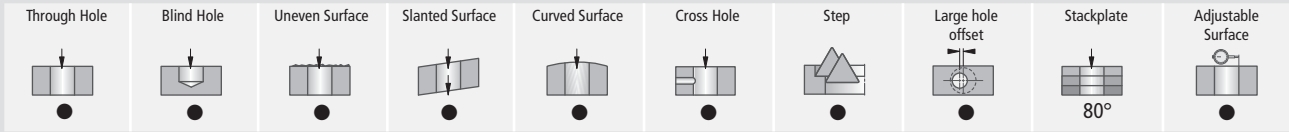
with axial adjustment

without Axial adjustment

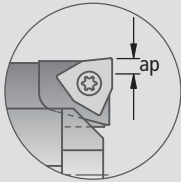


inch (mm)

Dmin-Dmax	Basic body	d	L	L1	L2	Holder ①	Insert pocket ②	Insert pocket ③	Insert pocket ④	Holder ⑤	Holder ⑥
	Order No.					Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
0.945 – 1.260 (24 – 32)	G01 70551 0.24	25	1.772 (45)	–	0.236 (6.0)	G03 70011 0.02	D54 60510 0.004 W29 10...	D54 60610 0.004 W29 10...		G03 70330 0.026 W29 18...	G03 80310 0.012 W29 18...
	G01 71071 0.46	32	–	2.756 (70)	0.276 (7.0)						
1.181 – 1.614 (30 – 41)	G01 70561 0.25	25	1.969 (50)	–	–	G03 70021 0.04	D54 60520 0.004 W29 18...	D54 60620 0.004 W29 18...		G03 70141 0.037 W29 24...	G03 80021 0.040 W29 24...
	G01 71131 0.65	32	–	3.346 (85)	0.295 (7.5)						
1.535 – 2.087 (39 – 53)	G01 71021 0.63	32	2.362 (60)	–	–	G03 70031 0.08	D54 60030 0.009 W29 24...	D54 60130 0.009 W29 24...		G03 70230 0.086 W29 24...	G03 80090 0.084 W29 24...
	G01 71621 1.49	40	–	4.724 (120)	0.315 (8.0)						
2.008 – 2.795 (51 – 71)	G01 71521 0.97	40	2.362 (60)	–	–	G03 70041 0.15	D54 60040 0.018 W29 34...	D54 60140 0.018 W29 34...	D54 60540 0.018 W29 24...	G03 70240 0.170 W29 34...	G03 80100 0.168 W29 34...
	G01 72121 2.73	50	–	5.315 (135)	0.394 (10.0)						
2.520 – 3.583 (64 – 91)	G01 72021 1.82	50	2.756 (70)	–	–	G03 70061 0.28	D54 60050 0.031 W29 42...	D54 60150 0.031 W29 42...	D54 60550 0.037 W29 24...	G03 70250 0.320 W29 42...	G03 80110 0.315 W29 42...
	G01 72621 4.96	63	–	6.102 (155)	0.512 (13.0)						
3.268 – 4.882 (83 – 124)	G01 72521 2.98	63	2.756 (70)	–	–	G03 70071 0.54	D54 60060 0.057 W29 50...	D54 60160 0.057 W29 50...	D54 60560 0.073 W29 24...	G03 70260 0.611 W29 50...	G03 80120 0.600 W29 50...
	G01 73121 8.39	80	–	6.102 (155)	0.650 (16.5)						
4.291 – 6.575 (109 – 167)	G01 73031 6.74	80	3.543 (90)	–	–	G03 70081 1.07	D54 60060 0.057 W29 50...	D54 60160 0.057 W29 50...	D54 60560 0.073 W29 24...		
	G01 73041 13.69	80	–	6.890 (175)	–						
5.472 – 8.465 (139 – 215)	G01 73561 14.27	100	4.921 (125)	–	–	G03 70091 2.39	D54 60070 0.108 W29 58...	D54 60170 0.108 W29 58...	D54 60570 0.137 W29 24...		
	G01 73571 29.22	100	–	9.449 (240)	–						



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Delivery Basic Body:

Clamping plate with adjusting screw and clamping screw.

Delivery Insert Pocket: with insert clamping screw and torx wrench.

Order example:

Basic body short	G01 70551
Holder 2x	G03 70011
Insert cart. 90° 2x	D54 60510
Insert 2x	W29 10010.0484

3



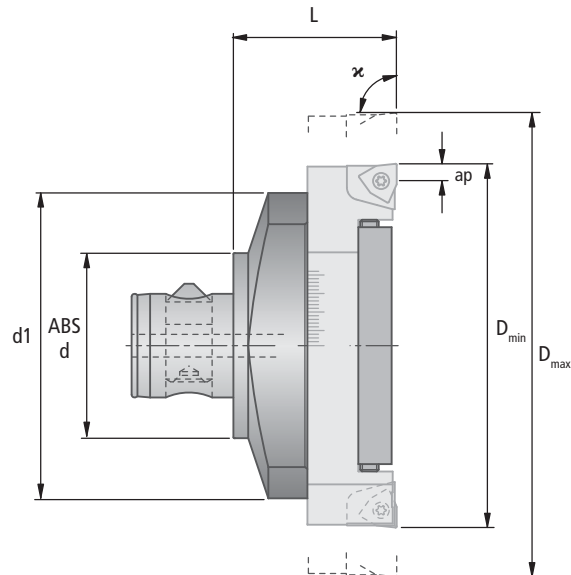
Basic Recommendation			for Workpiece Material	max. cutting depth ap	Replacement Parts	
Insert	Order No. Size	ISO Insert Description			Clamping screw	TORX PLUS®
			P M K N S H	Order No. Description	Order No. Description	
W29 10...	W29 10010.048425	WOEX030204-01 BK8425	●	0.059	N00 56041 S/M2×4.3-6IP 5.5 in-lbs	L05 00810 6IP
	W29 10010.047930	WOEX030204-01 BK7930	●	0.039		
	W29 10010.0461	WOEX030204-01 BK61	●	0.059		
	W29 10110.0477	WOEX030204-11 BK77	●	0.079		
W29 18...	W29 18010.048425	WOEX040304-01 BK8425	●	0.098	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
	W29 18010.047930	WOEX040304-01 BK7930	●	0.059		
	W29 18010.0461	WOEX040304-01 BK61	●	0.118		
	W29 18110.0477	WOEX040304-11 BK77	●	0.118		
W29 24...	W29 24010.048425	WOEX05T304-01 BK8425	●	0.177	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
	W29 24010.047930	WOEX05T304-01 BK7930	●	0.138		
	W29 24010.0461	WOEX05T304-01 BK61	●	0.197		
	W29 24110.0477	WOEX05T304-11 BK77	●	0.197		
W29 34...	W29 34010.048425	WOEX06T304-01 BK8425	●	0.236	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
	W29 34010.047930	WOEX06T304-01 BK7930	●	0.157		
	W29 34010.0461	WOEX06T304-01 BK61	●	0.236		
	W29 34110.0477	WOEX06T304-11 BK77	●	0.236		
W29 42...	W29 42010.048425	WOEX080404-01 BK8425	●	0.295	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP
	W29 42010.047930	WOEX080404-01 BK7930	●	0.236		
	W29 42010.0461	WOEX080404-01 BK61	●	0.295		
	W29 42110.0477	WOEX080404-11 BK77	●	0.295		
W29 50...	W29 50010.088425	WOEX100508-01 BK8425	●	0.354	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP
	W29 50010.047930	WOEX100504-01 BK7930	●	0.354		
	W29 50010.0861	WOEX100508-01 BK61	●	0.354		
	W29 50110.0477	WOEX100504-11 BK77	●	0.354		
W29 58...	W29 58010.088425	WOEX120608-01 BK8425	●	0.354	N00 57541 S/M5.5×11-20IP 55.3 in-lbs	L05 00870 20IP
	W29 58010.087930	WOEX120608-01 BK7930	●	0.354		
	W29 58010.0861	WOEX120608-01 BK61	●	0.354		
	W29 58000.0821	WOEX120608-00 K10	●	0.354		

Twin Cutter GD Ø 7.717" – 15.787" (Ø 196 – 401 mm)

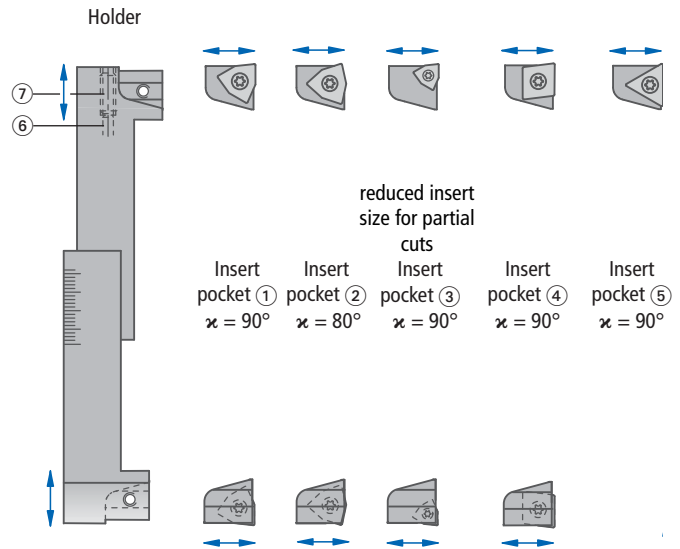
with ABS® Connection

$\alpha = 90^\circ / 80^\circ$

(ABS-GD)



with axial adjustment

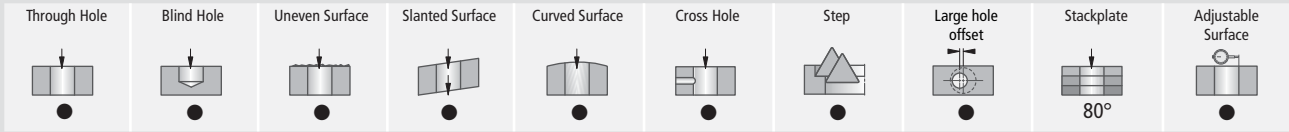


inch (mm)

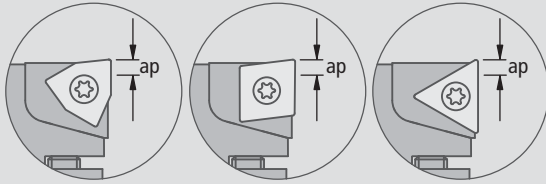
D min-max	Twin Cutter Tool (basic body + pair of holders) Order No.	ABS d	d1	L	Accessories					Assembly parts		
					Holder Order No.	Insert seating ① $\alpha=90^\circ$ Order No. <small>Recommended insert</small>	Insert seating ② $\alpha=80^\circ$ Order No. <small>Recommended insert</small>	Insert seating ③ $\alpha=90^\circ$ Order No. <small>Recommended insert</small>	Insert seating ④ $\alpha=90^\circ$ Order No. <small>Recommended insert</small>	Insert seating ⑤ $\alpha=90^\circ$ Order No. <small>Recommended insert</small>	Axial adjustment pin ⑥ Order No.	Threaded pin ⑦ Order No. Article
7.717 – 10.669 (196 – 271)	G01 63531 20.17	100	6.496 (165)	88	G03 10281 2.943							
10.276 - 13.189 (261–335)	G01 63541 24.25	100	9.055 (230)	88	G03 10291 3.821	D54 60070 0.108 W29 58...	D54 60170 0.108 W29 58...	D54 60570 0.137 W29 24...	D54 60470 0.121 C85 44...	D54 60370 0.123 W30 44...	G03 10281.13	55051 05020 M5x20
12.835 - 15.787 (326–401)	G01 63551 30.73	100	11.614 (295)	88	G03 10301 4.373							

Design Characteristics:

- The GD 90 has radially arranged cutters and can operate at the same cutting diameter with double feed rate or at different cutter diameters with double cutting depth. The tool has internal coolant supply to each cutter.
- The GD 80 offers greater cutting widths "a" (see table) through arrow-shaped cutter arrangement that allows excellent tool guidance.
- The tool has internal coolant supply to each cutting insert.



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Delivery Twin Cutter:

Basic body with axial-adjustment pin and adjustment screw.
Clamping plate with adjusting screw and clamping screw.

Delivery Insert Pocket: with insert clamping screw, less torx wrench.

Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Order example:

Twin cutter	G01 63531
Insert pockets 90° 2x	D54 60070
Inserts 2x	W29 58010.0884

3



Basic recommendation			for workpiece material	max. cutting depth ap	Assembly parts	Accessories
recommended insert	Insert Order No. size	ISO Insert Description			Clamping screw Order No. Description	Screwdriver Order No. Description
W29 24...	W29 24010.048425	WOEX05T304-01 BK8425		0.177	N00 57511 S/M2.5x7.2-8IP 11.3 in-lbs	L05 00830 8IP
	W29 24010.047930	WOEX05T304-01 BK7930		0.138		
	W29 24010.0461	WOEX05T304-01 BK61		0.197		
	W29 24110.0477	WOEX05T304-11 BK77		0.197		
W29 58...	W29 58010.088425	WOEX120608-01 BK8425		0.354	N00 57541 S/M5.5x11-20IP 55.3 in-lbs	L05 00870 20IP
	W29 58010.087930	WOEX120608-01 BK7930		0.354		
	W29 58010.0861	WOEX120608-01 BK61		0.354		
	W29 58000.0821	WOEX120608-00 K10		0.354		

Basic recommendation			for workpiece material	max. cutting depth ap	Assembly parts	Accessories
recommended insert	Insert Order No. size	ISO Insert Description			Clamping screw Order No. Description	Screwdriver Order No. Description
C85 44...	C85 44010.047525	CCMT120404-01 BK7520		0.098	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP
	C85 44010.047525	CCMT120404-01 BK7520		0.079		
	C85 44050.047610	CCMT120404-05 BK7610		0.118		
	C85 44120.0423	CCGT120404-12 K10		0.118		

Basic recommendation			for workpiece material	max. cutting depth ap	Assembly parts	Accessories
recommended insert	Insert Order No. size	ISO Insert Description			Clamping screw Order No. Description	Screwdriver Order No. Description
W30 44...	W30 44060.0884	TOHX22T308EL-G06 BK84		0.039	N00 56401 S/M5x9.4-20IP 55.3 in-lbs	L05 00870 20IP
	W30 44600.0861	TOHX22T308EN BK61		0.031		

Cutting Recommendations



Guideline for rough boring with G01 / WOEX Insert (W29)

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev																										
						1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0		
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	660	0.004	0.005	0.006	0.008	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012		
			Low alloy steel	5120 1055 5115	660	0.004	0.005	0.006	0.008	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	
			Lead alloy	12L13	590	0.004	0.005	0.006	0.008	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
			High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.004	0.005	0.006	0.008	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
S		250	Tool steel	H13 H21	390	0.002	0.004	0.005	0.006	0.008	0.008	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
			HSS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	≤87000		Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	120	0.002	0.003	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
			Titanium, Titanium alloy	AMS R54520	160	0.002	0.003	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
K	≤87000		Stainless steel: austenitic 300 series	304L 316	390	0.003	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
			Stainless steel	630	390	0.003	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
N	≤87000		Stainless steel: martensitic/ferritic 400 series	420 403	300	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
			Grey cast iron	No 35 B No 50 B	590	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	203000		Alloy grey cast iron	A436 Type 2	460	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
			Nodular cast iron ferritic	60-40-18	460	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	261000		Nodular cast iron ferritic / pearlitic	80-55-06	390	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
			Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	330	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
H	261000		Alloyed nodular cast iron	A43D2	330	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
			Vermicular cast iron		300	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	261000		Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Copper alloy, Brass, Bronze: average cut		100	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
H	261000		Wrought aluminum alloy		820	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	820	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
H	261000		Aluminum alloy: Si content >10%	A360.2	660	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Hardened steel < 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	261000		Hardened steel > 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

for better chip control			
appropriate insert	Insert		for workpiece material
	a_p	Order No. size	
			P M K N S H
▽ W29 10...		-03 -13 -15 W01 W29 10150.0484 WOGX030204-15 BK84 W29 10030.0484 WOEX030204-03 BK84 W29 10130.048425 WOEX030204-13 BK8425 W29 10130.0479 WOEX030204-13 BK79 W01 10120.0421 WOHX030204FL-G12 K10	
▽ W29 18...		W29 18150.0484 WOGX040304-15 BK84 W29 18030.0484 WOEX040304-03 BK84 W29 18130.048425 WOEX040304-13 BK8425 W29 18130.0479 WOEX040304-13 BK79 W01 18120.0421 WOHX040304FL-G12 K10	
▽ W29 24...		W29 24150.0484 WOGX05T304-15 BK84 W29 24030.0484 WOEX05T304-03 BK84 W29 24020.0464 WOEX05T304-02 BK64 W29 24130.048425 WOEX05T304-13 BK8425 W29 24130.0479 WOEX05T304-13 BK79 W01 24120.0421 WOHX05T304FL-G12 K10	
▽ W29 34...		W29 34150.0484 WOGX06T304-15 BK84 W29 34030.0484 WOEX06T304-03 BK84 W29 34020.0464 WOEX06T304-02 BK64 W29 34130.048425 WOEX06T304-13 BK8425 W29 34130.0479 WOEX06T304-13 BK79 W01 34120.0421 WOHX06T304FL-G12 K10	
▽ W29 42...		W29 42150.0484 WOGX080404-15 BK84 W29 42030.0484 WOEX080404-03 BK84 W29 42020.0464 WOEX080404-02 BK64 W29 42130.048425 WOEX080404-13 BK8425 W29 42130.0479 WOEX080404-13 BK79 W01 42120.0421 WOHX080404FL-G12 K10	
▽ W29 50...		W29 50030.0484 WOEX100504-03 BK84 W29 50020.0464 WOEX100504-02 BK64 W29 50130.048425 WOEX100504-13 BK8425 W29 50130.0479 WOEX100504-13 BK79 W01 50120.0421 WOHX100504FL-G12 K10	
▽ W29 58...		W29 58030.0884 WOEX120608-03 BK84 W29 58020.0864 WOEX120608-02 BK64 W29 58130.0879 WOEX120608-13 BK79	
		For cutting depths $a_p < 0.118$ in use smaller cartridge D54 60170	



Alternative Insert for G01

For better wear resistance			
 Insert Order No. size ISO Insert Description			for Workpiece Material
			 P M K N S H
W29 10..	W29 10130.0473	WOEX030204-13 BK73	
	W29 10150.0473	WOGX030204-15 BK73	
	W29 10010.0472	WOEX030204-01 BK72	
	W29 10110.0450	WOEX030204-11 BK50	
	W29 10020.0460	WOEX030204-02 BK60	
	W01 10060.0461	WOHX030204EL-G06 BK61	
W29 18..	W29 18130.0473	WOEX040304-13 BK73	
	W29 18150.0473	WOGX040304-15 BK73	
	W29 18010.0472	WOEX040304-01 BK72	
	W29 18110.0450	WOEX040304-11 BK50	
	W29 18020.0460	WOEX040304-02 BK60	
	W01 18060.0461	WOHX040304EL-G06 BK61	
W29 24..	W29 24130.0479	WOEX05T304-13 BK73	
	W29 24150.0473	WOGX05T304-15 BK73	
	W29 24010.0472	WOEX05T304-01 BK72	
	W29 24110.0450	WOEX05T304-11 BK50	
	W29 24020.0460	WOEX05T304-02 BK60	
	W01 24940.0455	WOGX05T304F PKD55	
	W01 24940.0457	WOGX05T304F CBN57	
W01 24600.0845	WOHX05T308TN SK45		
W29 34..	W29 34130.0479	WOEX06T304-13 BK73	
	W29 34150.0473	WOGX06T304-15 BK73	
	W29 34010.0472	WOEX06T304-01 BK72	
	W29 34110.0450	WOEX06T304-11 BK50	
	W29 34020.0460	WOEX06T304-02 BK60	
	W01 34940.0455	WOGX06T304F PKD55	
	W01 34940.0457	WOGX06T304F CBN57	
W29 42..	W29 42130.0479	WOEX080404-13 BK73	
	W29 42150.0473	WOGX080404-15 BK73	
	W29 42010.0472	WOEX080404-01 BK72	
	W29 42110.0450	WOEX080404-11 BK50	
	W29 42020.0460	WOEX080404-02 BK60	
	W01 42940.0455	WOGX080404F PKD55	
	W01 42940.0457	WOGX080404F CBN57	
W29 50..	W29 50130.0473	WOEX100504-13 BK73	
	W29 50010.0472	WOEX100504-01 BK72	
	W29 50020.0460	WOEX100504-02 BK60	
W29 58..	W29 58130.0873	WOEX120608-13 BK73	
	W29 58010.0872	WOEX120608-01 BK72	
	W29 58020.0860	WOEX120608-02 BK60	

Alternative Insert for G01

For higher toughness			for Workpiece Material					
Order No. size	Insert ISO Insert Description		P	M	K	N	S	H
W29 10..	W29 10010.047930	WOEX030204-01 BK7930	●	●				
	W29 10010.0404	WOEX030204-01 P40	●	●				
	W29 10010.0421	WOEX030204-01 K10			●			
	W29 10110.0421	WOEX030204-11 K10				●	●	
	W01 10120.0421	WOHX030204FL-G12 K21				●	●	
W29 18..	W29 18010.047930	WOEX040304-01 BK7930	●	●				
	W29 18010.0404	WOEX040304-01 P40	●	●				
	W29 18010.0421	WOEX040304-01 K10			●			
	W29 18110.0421	WOEX040304-11 K10				●	●	
	W01 18120.0421	WOHX040304FL-G12 K21				●	●	
W29 24..	W29 24010.047930	WOEX05T304-01 BK7930	●	●				
	W29 24010.0404	WOEX05T304-01 P40	●	●				
	W29 24010.0421	WOEX05T304-01 K10			●			
	W29 24110.0421	WOEX05T304-11 K10				●	●	
	W01 24120.0421	WOHX05T304FL-G12 K21				●	●	
W29 34..	W29 34010.047930	WOEX06T304-01 BK7930	●	●				
	W29 34010.0404	WOEX06T304-01 P40	●	●				
	W29 34010.0421	WOEX06T304-01 K10			●			
	W29 34110.0421	WOEX06T304-11 K10				●	●	
	W01 34120.0421	WOHX06T304FL-G12 K21				●	●	
W29 42..	W29 42010.047930	WOEX080404-01 BK7930	●	●				
	W29 42010.0404	WOEX080404-01 P40	●	●				
	W29 42010.0421	WOEX080404-01 K10			●			
	W29 42110.0421	WOEX080404-11 K10				●	●	
	W01 42120.0421	WOHX080404FL-G12 K21				●	●	
W29 50..	W29 50010.047930	WOEX100504-01 BK7930	●	●				
	W29 50010.0404	WOEX100504-01 P40	●	●				
	W29 50010.0421	WOEX100504-01 K10			●			
	W29 50110.0421	WOEX100504-11 K10				●	●	
	W01 50120.0421	WOHX100504FL-G12 K21				●	●	
W29 58..	W29 58010.087930	WOEX120608-01 BK7930	●	●				
	W29 58010.0804	WOEX120608-01 P40	●	●				
	W29 58010.0821	WOEX120608-01 K10			●			

For better surface finish			for Workpiece Material					
Order No. size	Insert ISO Insert Description		P	M	K	N	S	H
W29 18..	W29 18160.0484	WOGX040304-16 BK84	●					
	W29 18160.0460	WOGX040304-16 BK60			●			
	W29 18160.0473	WOGX040304-16 BK73				●		
W29 24..	W29 24160.0484	WOGX05T304-16 BK84	●					
	W29 24160.0460	WOGX05T304-16 BK60			●			
	W29 24160.0473	WOGX05T304-16 BK73				●		
W29 34..	W29 34160.0484	WOGX06T304-16 BK84	●					
	W29 34160.0460	WOGX06T304-16 BK60			●			
	W29 34160.0473	WOGX06T304-16 BK73				●		

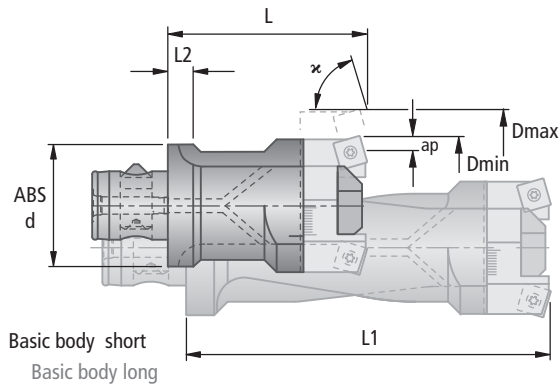
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Twin Cutter G01 Ø 0.945" – 8.464" (24 – 215 mm)

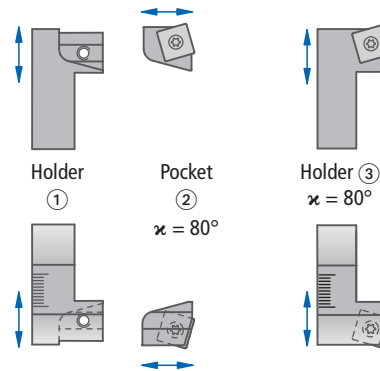
with ABS® Connection

$\alpha = 80^\circ$



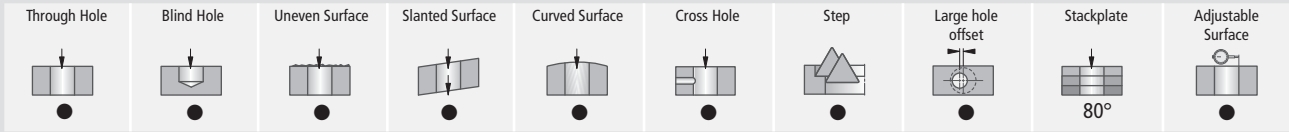
with Axial adjustment

without Axial adjustment

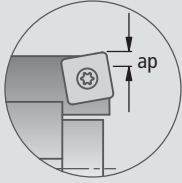


inch (mm)

Dmin-Dmax	Basic body	ABS d	L	L1	L2	Holder ①	Holder ②	Holder ③
	Order No.					Order No. Insert	Order No. Insert	Order No. Insert
0.945 – 1.260 (24 – 32)	G01 70551 ⌀ 0.24	25	1.772 (45)	–	0.236 (6.0)	G03 70011 ⌀ 0.022	D54 60710 ⌀ 0.004 ⊗ W83 13...	G03 80030 ⌀ 0.022 ⊗ W83 18...
	G01 71071 ⌀ 0.46	32	–	2.756 (70)	0.276 (7.0)			
1.181 – 1.614 (30 – 41)	G01 70561 ⌀ 0.25	25	1.969 (50)	–	–	G03 70021 ⌀ 0.035	D54 60720 ⌀ 0.004 ⊗ W83 13...	G03 80040 ⌀ 0.037 ⊗ W83 23...
	G01 71131 ⌀ 0.65	32	–	3.346 (85)	0.295 (7.5)			
1.535 – 2.087 (39 – 53)	G01 71021 ⌀ 0.63	32	2.362 (60)	–	–	G03 70031 ⌀ 0.077	D54 60730 ⌀ 0.009 ⊗ W83 18...	G03 80050 ⌀ 0.079 ⊗ W83 32...
	G01 71621 ⌀ 1.49	40	–	4.724 (120)	0.315 (8.0)			
2.008 – 2.795 (51 – 71)	G01 71521 ⌀ 0.97	40	2.362 (60)	–	–	G03 70041 ⌀ 0.158	D54 60740 ⌀ 0.018 ⊗ W83 23...	G03 80060 ⌀ 0.159 ⊗ W83 32...
	G01 72121 ⌀ 2.73	50	–	5.315 (135)	0.394 (10.0)			
2.520 – 3.583 (64 – 91)	G01 72021 ⌀ 1.82	50	2.756 (70)	–	–	G03 70061 ⌀ 0.282	D54 60750 ⌀ 0.035 ⊗ W83 32...	G03 80070 ⌀ 0.300 ⊗ W83 44...
	G01 72621 ⌀ 4.96	63	–	6.102 (155)	0.512 (13.0)			
3.268 – 4.882 (83 – 124)	G01 72521 ⌀ 2.98	63	2.756 (70)	–	–	G03 70071 ⌀ 0.544	D54 60760 ⌀ 0.053 ⊗ W83 44...	G03 80080 ⌀ 0.591 ⊗ W83 44...
	G01 73121 ⌀ 8.39	80	–	6.102 (155)	0.650 (16.5)			
4.291 – 6.575 (109 – 167)	G01 73031 ⌀ 6.73	80	3.543 (90)	–	–	G03 70081 ⌀ 1.071	D54 60760 ⌀ 0.053 ⊗ W83 44...	
	G01 73041 ⌀ 13.69	80	–	6.890 (175)	–			
5.472 – 8.464 (139 – 215)	G01 73561 ⌀ 14.26	100	4.921 (125)	–	–	G03 70091 ⌀ 2.385	D54 60770 ⌀ 0.121 ⊗ W83 44...	
	G01 73571 ⌀ 29.21	100	–	9.449 (240)	–			



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Delivery Basic Body:

Clamping plate with adjusting screw and clamping screw.

Delivery Holder: with insert clamping screw and TORX PLUS wrench.

Order example:

Basic body short G01 70551
 Holder 80° 2x G03 70011
 Insert cart. 80° 2x D54 60710
 Insert 2x W29 13010.048425

3



Basic Recommendation				max. cutting depth ap	Replacement Parts	
Insert 	Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H		Clamping screw	TORX PLUS PLUS®
					 Order No. Description	 Order No. Description
W83 13...	W83 13010.048425	SOEX050204-01 BK8425		0.098	N00 56041 S/M2x4.3-6IP 5.5 in-lbs	L05 00810 6IP
	W83 13000.0179	SOEX050204-01 BK79		0.059		
	W83 13000.0161	SOEX050204-01 BK61		0.118		
	W83 13010.048425	SOEX050204-01 BK8425		0.118		
W83 18...	W83 18010.068425	SOEX060306-01 BK8425		0.098	N00 57553 S/M2.2x5.5-6IP 8.9 in-lbs	L05 00810 6IP
	W83 18000.0979	SOEX060306-01 BK79		0.059		
	W83 18000.0961	SOEX060306-01 BK61		0.118		
	W83 18000.068425	SOEX060306-01 BK8425		0.118		
W83 23...	W83 23000.088425	SOEX07T308-01 BK8425		0.177	N00 57571 S/M2.5x6.3-8IP 11.3 in-lbs	L05 00830 8IP
	W83 23000.0179	SOEX07T308-01 BK79		0.138		
	W83 23000.0161	SOEX07T308-01 BK61		0.197		
	W83 23000.088425	SOEX07T308-01 BK8425		0.197		
W83 32...	W83 32000.088425	SOEX090408-01 BK8425		Ø 1.535-2.087 Ø 2.008-2.795 0.177 0.236	N00 57261 S3575-15IP 25 in-lbs	L05 00860 15IP
	W83 32000.1579	SOEX090408-01 BK79		0.138 0.157		
	W83 32000.1561	SOEX090408-01 BK61		0.197 0.236		
	W83 32000.088425	SOEX090408-01 BK8425		0.197 0.236		
W83 44...	W83 44000.088425	SOEX120508-01 BK8425		Ø 2.520-3.583 Ø 3.268-4.882 0.295 0.354	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP
	W83 44000.1879	SOEX120508-01 BK79		0.236 0.354		
	W83 44000.1861	SOEX120508-01 BK61		0.295 0.354		
	W83 44000.088425	SOEX120508-01 BK8425		0.295 0.354		

Cutting Recommendations

Guideline for rough boring with G01 / SOEX Insert (W83)

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev					
						1.0	2.0	2.1	3.0	4.0	4.1
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	660	0.005	0.006	0.008	0.010	0.012	0.014
			Low alloy steel	5120 1055 5115	660	0.005	0.006	0.008	0.010	0.012	0.014
	<72500	Lead alloy	12L13	590	0.005	0.006	0.008	0.010	0.012	0.014	
		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.005	0.006	0.008	0.010	0.012	0.014	
S	72500 - 130000		Tool steel	H13 H21	390	0.004	0.005	0.006	0.008	0.010	0.010
			HSS		-	-	-	-	-	-	-
M	>130000		Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	120	-	-	-	-	-	-
			Titanium, Titanium alloy	AMS R54520	160	-	-	-	-	-	-
K	≤87000	250	Stainless steel: austenitic 300 series	304L 316	390	0.004	0.005	0.006	0.008	0.010	0.010
			Stainless steel	630	390	0.004	0.005	0.006	0.008	0.010	0.010
N	<130000		Stainless steel: martensitic/ferritic 400 series	420 403	300	0.004	0.005	0.006	0.008	0.010	0.010
			Grey cast iron	No 35 B No 50 B	590	0.006	0.008	0.010	0.012	0.014	0.016
H	87000	180	Alloy grey cast iron	A436 Type 2	460	0.006	0.008	0.010	0.012	0.014	0.016
			Nodular cast iron ferritic	60-40-18	460	0.006	0.008	0.010	0.012	0.014	0.016
H	≤87000	130	Nodular cast iron ferritic / pearlitic	80-55-06	390	0.006	0.008	0.010	0.012	0.014	0.016
			Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	330	0.005	0.006	0.008	0.010	0.012	0.016
H	87000	230	Alloyed nodular cast iron	A43D2	330	0.005	0.006	0.008	0.010	0.012	0.016
			Vermicular cast iron		300	0.006	0.008	0.010	0.012	0.014	0.016
H	203000	90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.006	0.008	0.010	0.012	0.014	0.016
			Copper alloy, Brass, Bronze: average cut		820	0.006	0.008	0.010	0.012	0.014	0.016
H	261000	100	Wrought aluminum alloy		820	0.006	0.008	0.010	0.012	0.014	0.016
			Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	820	0.006	0.008	0.010	0.012	0.014	0.016
H	261000	75	Aluminum alloy: Si content >10%	A360.2	660	0.006	0.008	0.010	0.012	0.014	0.016
			Hardened steel < 45 HRC		-	-	-	-	-	-	-
H	261000	100	Hardened steel > 45 HRC		-	-	-	-	-	-	-

Alternative Insert for G01

For better chip control			
Insert		for Workpiece Material	
Order No. size	ISO Insert Description	P	M K N S H
W83 18...	W83 18130.068425	SOEX060306-13 BK8425	●
	W83 18000.1079	SOEX060306-13 BK79	●
	W83 18210.062730	SOEX060306-21 BK2730	●
	W83 18210.067710	SOEX060306-21 BK7710	●
W83 23...	W83 23130.088425	SOEX07T308-13 BK8425	●
	W83 23000.0279	SOEX07T308-13 BK79	●
	W83 23210.082730	SOEX07T308-21 BK2730	●
	W83 23210.087710	SOEX07T308-21 BK7710	●
W83 32...	W83 32130.088425	SOEX090408-13 BK8425	●
	W83 32000.1779	SOEX090408-13 BK79	●
	W83 32210.082730	SOEX090408-21 BK2730	●
	W83 32210.087710	SOEX090408-21 BK7710	●
W83 44...	W83 44130.088425	SOEX120508-13 BK8425	●
	W83 44000.1979	SOEX120508-13 BK79	●
	W83 44210.082730	SOEX120508-21 BK2730	●
	W83 44210.087710	SOEX120508-21 BK7710	●

For better wear resistance			
Insert		for Workpiece Material	
Order No. size	ISO Insert Description	P	M K N S H
W83 18...	W83 18010.066420	SOEX060306-01 BK6420	●
	W83 18000.0974	SOEX060306-01 BK74	●
	W83 18000.096115	SOEX060306-01 BK6115	●
W83 23...	W83 23010.086420	SOEX07T308-01 BK6420	●
	W83 23000.0174	SOEX07T308-01 BK74	●
	W83 23000.016115	SOEX07T308-01 BK6115	●
W83 32...	W83 32010.086420	SOEX090408-01 BK6420	●
	W83 32000.1574	SOEX090408-01 BK74	●
	W83 32000.156115	SOEX090408-01 BK6115	●
W83 44...	W83 44010.086420	SOEX120508-01 BK6420	●
	W83 44000.1874	SOEX120508-01 BK74	●
	W83 44000.186115	SOEX120508-01 BK6115	●

For higher toughness			
Insert		for Workpiece Material	
Order No. size	ISO Insert Description	P	M K N S H
W83 18...	W83 18000.0979	SOEX060306-01 BK79	●
	W83 18010.066420	SOEX060306-01 BK6420	●
W83 23...	W83 23000.0179	SOEX07T308-01 BK79	●
	W83 23010.016420	SOEX07T308-01 BK6420	●
W83 32...	W83 32000.1579	SOEX090408-01 BK79	●
	W83 32010.086420	SOEX090408-01 BK6420	●
W83 44...	W83 44000.1879	SOEX120508-01 BK79	●
	W83 44010.086420	SOEX120508-01 BK6420	●

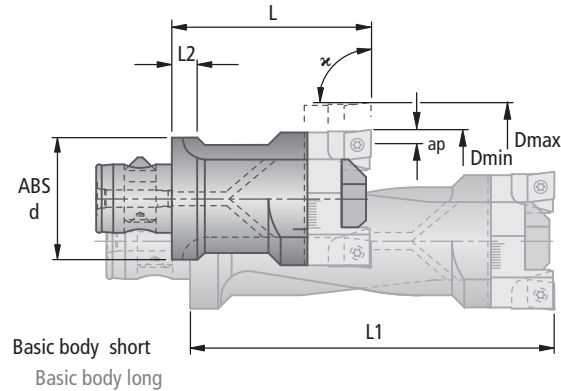
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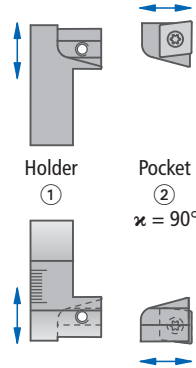
Twin Cutter G01 Ø 0.945" – 8.465" (24 – 215 mm)

with ABS® Connection

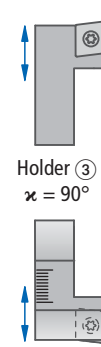
$\kappa = 90^\circ$



with axial adjustment

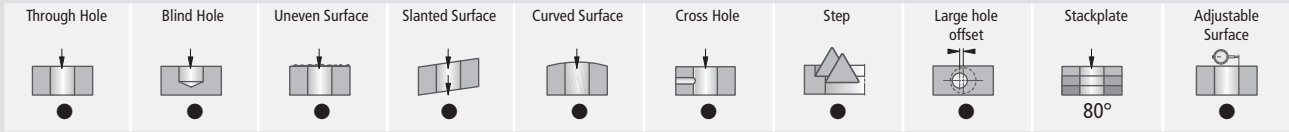


without Axial adjustment

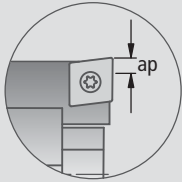


inch (mm)

Dmin-Dmax	Basic body	ABS d	L	L1	L2	Holder ①	Insert pocket ②	Holder ③ $\kappa=90^\circ$
	Order No.					Order No.	Order No. Insert	
0.945 – 1.260 (24 – 32)	G01 70551 ♂ 0.24	25	1.772 (45)	–	0.236 (6.0)			G03 70150 ♂ 0.024
	G01 71071 ♂ 0.46	32	–	2.756 (70)	0.276 (7.0)			⊗ W85 18...
1.181 – 1.614 (30 – 41)	G01 70561 ♂ 0.25	25	1.969 (50)	–	–			G03 70160 ♂ 0.040
	G01 71131 ♂ 0.65	32	–	3.346 (85)	0.295 (7.5)			⊗ W85 18...
1.535 – 2.087 (39 – 53)	G01 71021 ♂ 0.63	32	2.362 (60)	–	–	G03 70031 ♂ 0.077	D54 60430 ♂ 0.011	G03 70170 ♂ 0.079
	G01 71621 ♂ 1.49	40	–	4.724 (120)	0.315 (8.0)		⊗ W85 18...	⊗ W85 32...
2.008 – 2.795 (51 – 71)	G01 71521 ♂ 0.97	40	2.362 (60)	–	–	G03 70041 ♂ 0.148	D54 60440 ♂ 0.018	G03 70180 ♂ 0.161
	G01 72121 ♂ 2.73	50	–	5.315 (135)	0.394 (10.0)		⊗ W85 32...	⊗ W85 32...
2.520 – 3.583 (64 – 91)	G01 72021 ♂ 1.82	50	2.756 (70)	–	–	G03 70061 ♂ 0.282	D54 60450 ♂ 0.035	G03 70190 ♂ 0.304
	G01 72621 ♂ 4.96	63	–	6.102 (155)	0.512 (13.0)		⊗ W85 32...	⊗ W85 44...
3.268 – 4.882 (83 – 124)	G01 72521 ♂ 2.98	63	2.756 (70)	–	–	G03 70071 ♂ 0.545	D54 60460 ♂ 0.053	G03 70200 ♂ 0.591
	G01 73121 ♂ 8.39	80	–	6.102 (155)	0.650 (16.5)		⊗ W85 44...	⊗ W85 44...
4.291 – 6.575 (109 – 167)	G01 73031 ♂ 6.74	80	3.543 (90)	–	–	G03 70081 ♂ 1.072	D54 60460 ♂ 0.053	
	G01 73041 ♂ 13.69	80	–	6.890 (175)	–		⊗ W85 44...	
5.472 – 8.465 (139 – 215)	G01 73561 ♂ 14.27	100	4.921 (125)	–	–	G03 70091 ♂ 2.386	D54 60470 ♂ 0.121	
	G01 73571 ♂ 29.22	100	–	9.449 (240)	–		⊗ W85 44...	



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Delivery Basic Body:

Clamping plate with adjusting screw and clamping screw.




Delivery Insert Pocket: with insert clamping screw and TORX PLUS wrench.

Order example:

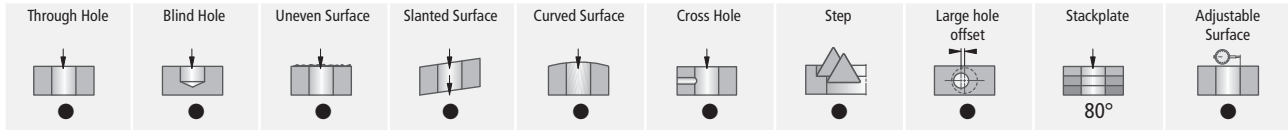
Basic body short G01 71021
 Holder 90° 2x G03 70031
 Insert cart. 90° 2x D54 60430
 Insert 2x C85 18010.047525

3



Basic Recommendation				max. cutting depth ap	Replacement Parts	
Insert 	Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H		Clamping screw  Order No. Description	TORX PLUS  Order No. Description
C85 18...	C85 18010.047525	CCMT060204-01 BK7520	●	0.039	N00 57221 S2553-7IP 11.3 in-lbs	L05 00820 7IP
	C85 18010.047525	CCMT060204-01 BK7520	●	0.028		
	C85 18050.047610	CCMT060204-05 BK7610	●	0.059		
	C85 18120.0423	CCMT060204-12 K10	●	0.059		
C85 32...	C85 32010.047525	CCMT09T304-01 BK7520	●	0.059	N00 57261 S3575-15IP 25 in-lbs	L05 00860 15IP
	C85 32010.047525	CCMT09T304-01 BK7520	●	0.039		
	C85 32050.047610	CCMT09T304-05 BK7610	●	0.079		
	C85 32120.0423	CCMT09T304-12 K10	●	0.079		
C85 44...	C85 44010.047525	CCMT120404-01 BK7520	●	0.098	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP
	C85 44010.047525	CCMT120404-01 BK7520	●	0.079		
	C85 44050.047610	CCMT120404-01 BK7610	●	0.118		
	C85 44120.0423	CCMT120404-12 K10	●	0.118		

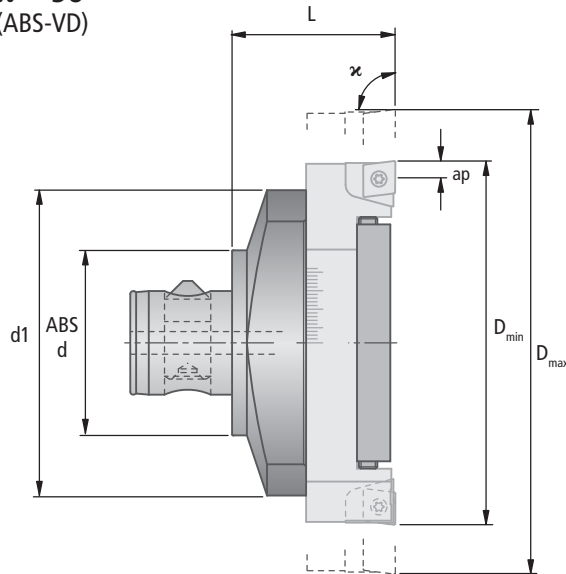
Twin Cutter G016 Ø 7.717" – 15.787" (Ø 196 – 401 mm) / CCMT



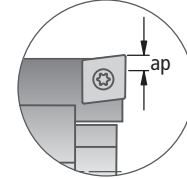
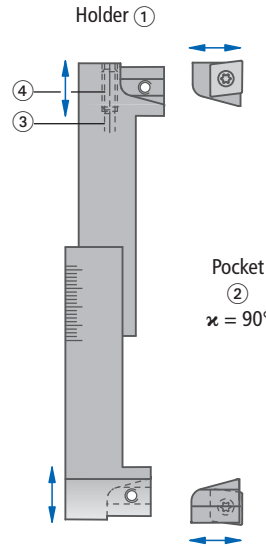
● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection

$\alpha = 90^\circ$
(ABS-VD)



with Axial adjustment



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Design Characteristics:

- The GD 90 has radially arranged cutters and can operate at the same cutting diameter with double feed rate or at different cutter diameters with double cutting depth. The tool has internal coolant supply to each cutter.
- The tool has internal coolant supply to each cutting insert.

$D_{min} - D_{max}$	Order No.	ABS d	d1	L	Holder ①	Insert pocket ①
7.717 – 10.669 (196 – 271)	G01 63531 Ⓜ 20.18	100	6.496 (165)	3.464 (88)	G03 10281 Ⓜ 2.944	D54 60470 Ⓜ 0.121 Ⓜ W85 44...
10.276 – 13.189 (261 – 335)	G01 63541 Ⓜ 24.26	100	9.055 (230)	3.464 (88)	G03 10291 Ⓜ 3.821	
12.835 – 15.787 (326 – 401)	G01 63551 Ⓜ 30.74	100	11.614 (295)	3.464 (88)	G03 10301 Ⓜ 4.373	

Basic Recommendation			Replacement Parts				
Order No. Size	Insert ISO Insert Description	for Workpiece Material P M K N S H	max. cutting depth ap	Insert clamping screw	TORX PLUS	Axial-adjustment pin ③	Adjustment screw DIN913 ④
				Order No. Description	Order No. Description	Order No. Description	Order No. Description
Ⓜ W85 44...	W85 44000.3475	CCMT120404EN-F9 BK75	0.098	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP	G03 10281.13	5505105020 M5×20
	W85 44000.3475	CCMT120404EN-F9 BK75	0.079				
	W85 44000.3476	CCMT120404EN-F9 BK76	0.118				
	W85 44000.3475	CCMT120404EN-F9 BK75	0.118				

Delivery Twin Cutter:

Basic body with axial-adjustment pin and adjustment screw.
Clamping plate with adjusting screw and clamping screw.

Delivery Insert Pocket: with insert clamping screw, less TORX PLUS wrench.

Order example:

Twin cutter
Insert cart. 90° 2×
Insert 2×

G01 63531
D54 60470
W85 44000.3475

Cutting Recommendations

Guideline for rough boring with G01 / CCMT Insert (W85)

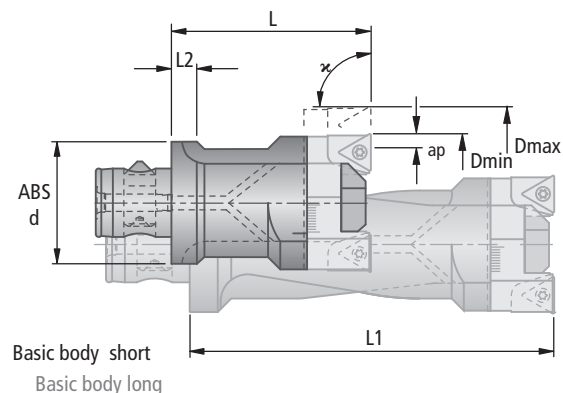
Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev																											
						1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0			
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	660	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003		
			Low alloy steel	5120 1055 5115	660	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
			Lead alloy	12L13	590	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
			High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
S	≤72500		Tool steel	H13 H21	390	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
			HSS		300	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
M	72500 - 130000		Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Titanium, Titanium alloy	AMS R54520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	≤87000	250	Stainless steel: austenitic 300 series	304L 316	390	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
			Stainless steel	630	390	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
N	>130000	180	Stainless steel: martensitic/ferritic 400 series	420 403	300	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
			Grey cast iron	No 35 B No 50 B	590	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
H	261000	250	Alloy grey cast iron	A436 Type 2	460	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
			Nodular cast iron ferritic	60-40-18	460	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
H	261000	250	Nodular cast iron ferritic / pearlitic	80-55-06	390	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
			Nodular cast iron pearlitic	100-70-03	330	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
H	261000	250	Malleable cast iron	70003	330	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
			Alloyed nodular cast iron	A43D2	330	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
H	261000	250	Alloyed nodular cast iron	A43D2	330	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
			Vermicular cast iron		300	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
H	261000	250	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	
			Copper alloy, Brass, Bronze: average cut		100	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	261000	250	Wrought aluminum alloy		820	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	
			Aluminum alloy: Si content <10%	GD-AISI12	820	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	261000	250	Magnesium alloy		820	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	
			Aluminum alloy: Si content >10%	A360.2	660	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
H	261000	250	Hardened steel < 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			Hardened steel > 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Twin Cutter G01 Ø 0.945" – 8.465" (24 – 215 mm)

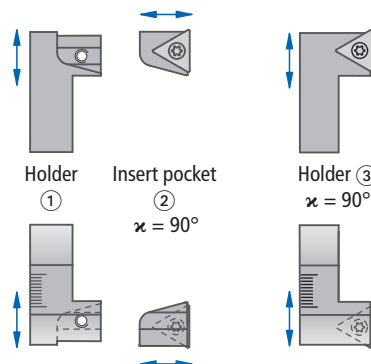
with ABS® Connection

$\alpha = 90^\circ$



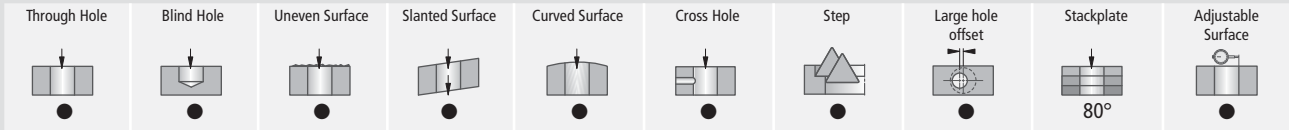
with axial adjustment

without Axial adjustment

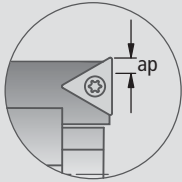


inch (mm)

Dmin-Dmax	Basic body	ABS d	L	L1	L2	Holder ①	Insert pocket ②		Holder ③
	Order No.					Order No.	Order No.	Order No.	
0.945 – 1.260 (24 – 32)	G01 70551 0.24	25	1.772 (45)	–	0.236 (6.0)				G03 70210 0.026
	G01 71071 0.46	32	–	2.756 (70)	0.276 (7.0)				▽ W30 04...
1.181 – 1.614 (30 – 41)	G01 70561 0.25	25	1.969 (50)	–	–				G03 70220 0.040
	G01 71131 0.65	32	–	3.346 (85)	0.295 (7.5)				▽ W30 14...
1.535 – 2.087 (39 – 53)	G01 71021 0.63	32	2.362 (60)	–	–	G03 70031 0.077	D54 60330 0.011		
	G01 71621 1.49	40	–	4.724 (120)	0.315 (8.0)		▽ W30 14...		
2.008 – 2.795 (51 – 71)	G01 71521 0.97	40	2.362 (60)	–	–	G03 70041 0.148	D54 60340 0.018		
	G01 72121 2.73	50	–	5.315 (135)	0.394 (10.0)		▽ W30 26...		
2.520 – 3.583 (64 – 91)	G01 72021 1.82	50	2.756 (70)	–	–	G03 70061 0.282	D54 60350 0.035		
	G01 72621 4.96	63	–	6.102 (155)	0.512 (13.0)		▽ W30 26...		
3.268 – 4.882 (83 – 124)	G01 72521 2.98	63	2.756 (70)	–	–	G03 70071 0.545	D54 60360 0.071		
	G01 73121 8.39	80	–	6.102 (155)	0.650 (16.5)		▽ W30 26...		
4.291 – 6.575 (109 – 167)	G01 73031 6.74	80	3.543 (90)	–	–	G03 70081 1.072	D54 60360 0.071		
	G01 73041 13.69	80	–	6.890 (175)	–		▽ W30 26...		
5.472 – 8.465 (139 – 215)	G01 73561 14.27	100	4.921 (125)	–	–	G03 70091 2.386	D54 60380 0.132	D54 60370 0.123	
	G01 73571 29.22	100	–	9.449 (240)	–		▽ W30 26...	▽ W30 44...	



● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Delivery Basic Body:








Clamping plate with adjusting screw and clamping screw.

Delivery Insert Pocket: with insert clamping screw and TORX PLUS wrench.

Order example:

Basic body short G01 71021
 Holder 90° 2x G03 70031
 Insert cart. 90° 2x D54 60330
 Insert 2x W57 14150.0284



Basic Recommendation				max. cutting depth ap	Replacement Parts	
Insert 	Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H		Clamping screw 	TORX PLUS 
				Order No. Description	Order No. Description	
▼ W57 04... ▼ W30 04...	W57 04140.0284 W57 04120.0223 W30 04060.0361	TOGX06T102EN-14 BK84 TOGX06T102FN-12 K10 TOHX06T103EL-G06 BK61		N00 56031 S/M2x4.9-6IP 5.5 in-lbs	L05 00810 6IP	
▼ W57 14... ▼ W30 14...	W57 14140.0284 W57 14120.0423 W30 14060.0461	TOGX090202EN-14 BK84 TOGX090202FN-12 K10 TOHX090204EL-G06 BK61		N00 57221 S2553-7IP 11.3 in-lbs	L05 00820 8IP	
▼ W57 26... ▼ W30 26...	W57 26140.0284 W57 26120.0423 W30 26060.0461	TOGX140302EN-14 BK84 TOGX140304FN-12 K10 TOHX140304EL-G06 BK61		N00 56201 S/M3.5x6.2-10IP 25 in-lbs	L05 00850 10IP	
▼ W30 44...	W30 44660.0860 W30 44600.0861	TOHX22T308EN-G06 BK TOHX22T308EN BK61		N00 56401 S/M5x9.4-20IP 55.3 in-lbs	L05 00870 20IP	

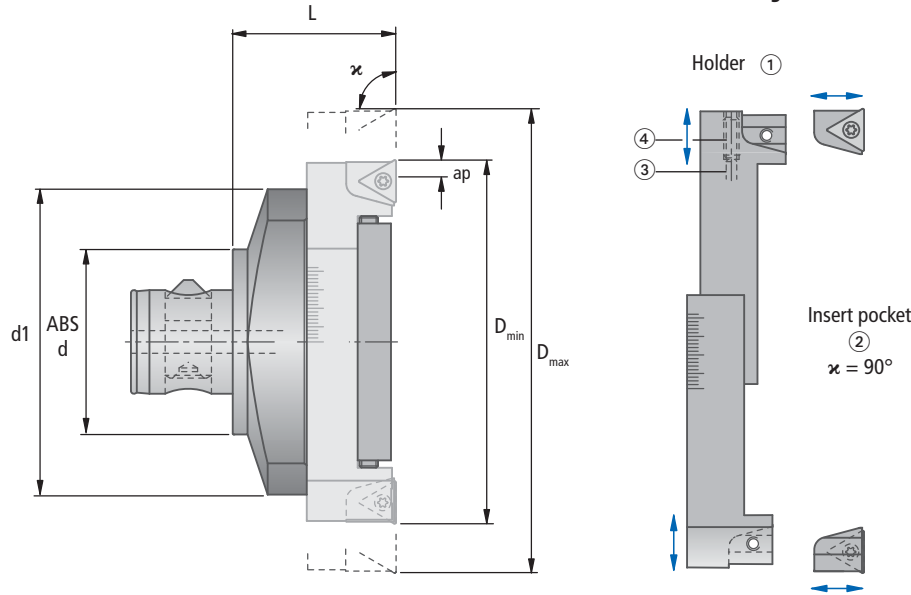
Twin Cutter G01 Ø 7.717" – 15.787" (Ø 196 – 401 mm)

with ABS® Connection

$\alpha = 90^\circ$

(ABS-VD)

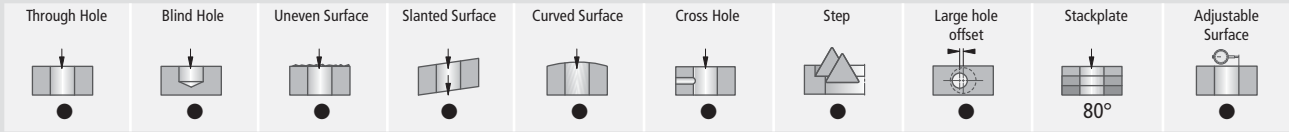
with axial adjustment



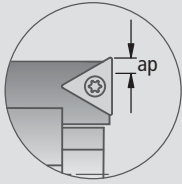
					inch (mm)	
Dmin-Dmax inch (mm)	Twin cutter with basic body and holders Order No. Description	ABS d	d1	L	Holder ①	Insert pocket ②
					Order No.	Order No. Recommended insert
10.669 (271)	G01 63531 20.17	100	6.496 (165)	3.465 (88)	G03 10281 2.943	D54 60370 0.123 W30 44...
13.189 (335)	G01 63541 24.25	100	9.055 (230)	3.465 (88)	G03 10291 3.821	
15.787 (401)	G01 63551 30.73	100	11.614 (295)	3.465 (88)	G03 10301 4.373	

Design Characteristics:

- The GD 90 has radially arranged cutters and can operate at the same cutting diameter with double feed rate or at different cutter diameters with double cutting depth. The tool has internal coolant supply to each cutter.
- The tool has internal coolant supply to each cutting insert.



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended



Note!

For optimum cutting in the Dmin area the cutting depth "ap" should be reduced.

Delivery Twin Cutter:

Basic body with axial-adjustment pin and adjustment screw. Clamping plate with adjusting screw and clamping screw.

Delivery Insert Pocket: with insert clamping screw, less TORX PLUS wrench.

Order example:

Twin cutter	G01 63531
Insert cart. 90° 2x	D54 60370
Insert 2x	W30 44120.0884

3



Basic Recommendation			Replacement Parts				
Order No. Size	Insert ISO Insert Description	for Workpiece Material P M K N S H	max. cutting depth ap	Insert clamping screw	TORX PLUS	Axial-adjustment pin ⑤	Adjustment screw DIN913 ⑥
				Order No. Description	Order No. Description	Order No. Description	Order No. Description
W30 44...	W30 44660.0860	TOHX22T308EN-G06 BK	0.039 0.031	N00 56401 S/M5×9.4-20IP 55.3 in-lbs	L05 00870 20IP	G03 10281.13	5505105020 M5×20
	W30 44600.0861	TOHX22T308EN BK61					

Cutting Recommendations

Guideline for rough boring

with G01 / TOHX / TOGX Insert (W30 / W57)

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev																								
						1.0	2.0	2.1	3.0	4.0	4.1	5.0	5.1	6.0	6.1	7.0	8.0	8.1	9.0	9.1	10.0	10.1	10.2	12.0	12.1	13.0	13.1	14.0	15.0	16.0
P	≤72500		Unalloyed steel	A570.36 1213 A573.81	660	0.002	0.002	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
			Low alloy steel	5120 1055 5115	660	0.002	0.002	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
	<72500		Lead alloy	12L13	590	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	>130000		Tool steel	H13 H21	390	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
S	58000	250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Titanium, Titanium alloy	AMS R54520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	≤87000	<130000	Stainless steel: austenitic 300 series	304L 316	390	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
			Stainless steel	630	390	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
K	>130000	180	Stainless steel: martensitic/ferritic 400 series	420 403	300	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
			Grey cast iron	No 35 B No 50 B	590	0.004	0.004	0.006	0.006	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
K	≤87000	250	Alloy grey cast iron	A436 Type 2	460	0.004	0.004	0.006	0.006	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
			Nodular cast iron ferritic	60-40-18	460	0.003	0.003	0.006	0.006	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
K	87000	230	Nodular cast iron ferritic / pearlitic	80-55-06	390	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
			Nodular cast iron pearlitic	100-70-03	330	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
K	87000	250	Malleable cast iron	70003	330	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
			Alloyed nodular cast iron	A43D2	330	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N	87000	300	Vermicular cast iron		300	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
			Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.005	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
N	87000	100	Copper alloy, Brass, Bronze: average cut		820	0.005	0.005	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Wrought aluminum alloy		820	0.004	0.004	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
N	87000	60	Aluminum alloy: Si content <10%	GD-AISI12	820	0.004	0.004	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Magnesium alloy		820	0.004	0.004	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
H	261000	100	Aluminum alloy: Si content >10%	A360.2	660	0.004	0.004	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
			Hardened steel < 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	261000	100	Hardened steel > 45 HRC		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Alternative Insert for G01

For better chip control			for Workpiece Material							
Insert W30 Order No. size	W57 ISO Insert Description	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
▽ W30 04...	W30 04120.3232	TOHX06T102EL-US12 CK32	●	●						
	W30 04120.3060	TOHX06T100EL-G12 BK60	●	●						
	W30 04120.0223	TOGX06T102FN-12 K10				●	●			
▽ W30 14...	W30 14120.3232	TOHX090202EL-US12 CK32	●	●						
	W30 14120.3060	TOHX090200EL-G12 BK60	●	●						
	W57 14120.0423	TOGX090204FN-12 K10				●	●			
▽ W30 26...	W30 26120.3232	TOHX140302EL-US12 CK32	●	●						
	W30 26120.3060	TOHX140300EL-G12 BK60	●	●						
	W57 26120.0423	TOGX140304FN-12 K10				●	●			
▽ W30 44...	-									

For better wear resistance			for Workpiece Material							
Insert W57 Order No. size	W30 ISO Insert Description	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
▽ W30 04...	W57 04140.0232	TOGX06T102EN-14 CK32	●	●						
	W57 04140.0260	TOGX06T102EN-14 BK60	●	●						
	W30 04990.0355	TOGX06T103FN PCD55						●		
	W30 04990.0357	TOGX06T103TN CBN57						●		
▽ W30 14...	W30 14120.3232	TOHX090202EL-US12 CK32	●	●						
	W30 14120.3060	TOHX090200EL-G12 BK60	●	●						
	W57 14120.0423	TOGX090204FN-12 K10				●	●			
▽ W30 26...	W30 26120.3232	TOHX140302EL-US12 CK32	●	●						
	W30 26120.3060	TOHX140300EL-G12 BK60	●	●						
	W57 26120.0423	TOGX140304FN-12 K10				●	●			
▽ W30 44...	-									

For better surface finish			for Workpiece Material							
Insert W57 Order No. size	W30 ISO Insert Description	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
▽ W30 04...	W30 04120.3160	TOHX06T102EL-UF12 BK60	●	●						
	W30 04990.0355	TOGX06T103FN PCD55						●		
	W30 04990.0357	TOGX06T103TN CBN57						●		
	W30 04990.0240	TOGX06T103TN CBN40						●		●
▽ W30 14...	W30 14120.3160	TOHX090202EL-UF12 BK60	●	●						
	W30 14120.3060	TOHX090200EL-G12 BK60	●	●						
	W57 14120.0423	TOGX090204FN-12 K10				●	●			
	W30 14990.0440	TOGX090204TN CBN40				●	●			●
▽ W30 26...	W30 26120.3160	TOHX140302EL-UF12 BK60	●	●						
	W30 26120.3060	TOHX140300EL-G12 BK60	●	●						
	W57 26120.0423	TOGX140304FN-12 K10				●	●			
	W30 26990.0440	TOGX140304TN CBN40				●	●			●
▽ W30 44...	-									

3



Lightweight Modular Tool for $\varnothing > 8.110''$ (206 mm)

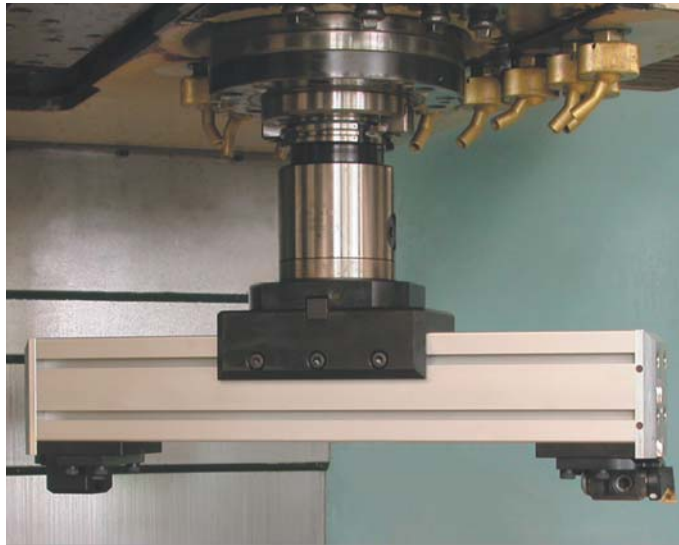
Machining Example

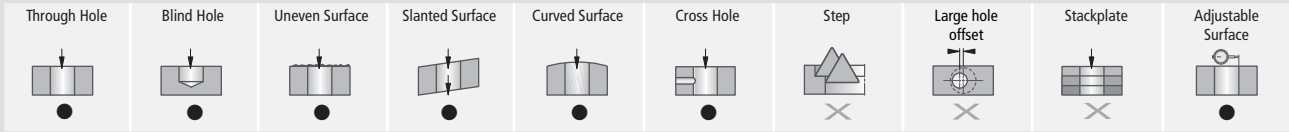
Material: Grey cast iron
Boring \varnothing : $\varnothing 575 \text{ mm} + 0.02$
Speed, $v_c =$ 395 sfm
Feed, $f =$ 0.007 ipr

Exmple of a complete tool

for fine boring with single insert $\varnothing 575 \text{ mm}$:

Description	Order No.
1× Adapter ISO50	A05 25300
1× Replaceable bridge $\varnothing 575$ Special tool	XA
2× Cover plate - internal coolant	G05 00010
1× Holding plate micro-adjustable cartridge	G05 10010
1× Micro-adjustable cartridge	M30 20051
1× Balancing weight	G05 10040

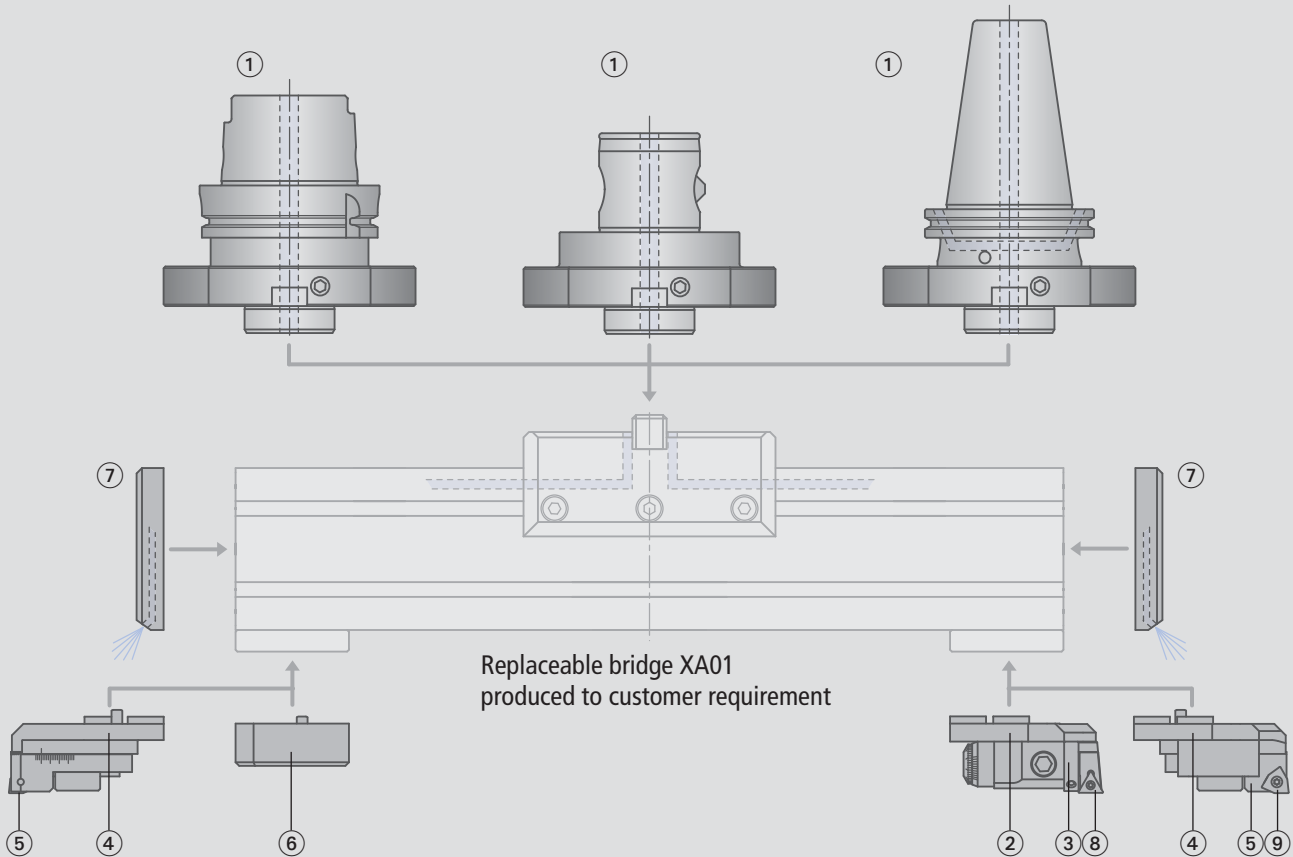




● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Modular design

- The tool consists of lightweight replaceable bridge to specific length and elements for fine boring or roughing (see accessories).
- Adjustment range relates to 70 mm diameter!



Replaceable bridge	
Ø-Range inch (mm)	Order No.
10.236 – 12.992 (260 – 330)	XA01 17410
13.386 – 16.142 (340 – 410)	XA01 17620
15.512 – 18.268 (394 – 464)	XA01 17100
15.945 – 18.701 (405 – 475)	XA01 17110
17.323 – 20.079 (440 – 510)	XA01 17050
19.291 – 22.047 (490 – 560)	XA01 17190
25.591 – 28.346 (650 – 720)	XA01 17610
27.756 – 30.512 (705 – 775)	XA01 17420

Adapter ①	
Description	Order No.
HSK-A100	A06 53880
ABS100	A20 50080
ABS100 (ABS rotated 90°)	A20 50180
ISO50 DIN69871 AD/B	A05 25300

Fine boring assembly ②+③+⑥+⑧	
Description	Order No.
② Holding plate	G05 10010
③ Micro-adj. cartridge	M30 20051
⑥ Balancing weight	G05 10040
⑦ Insert	W57 26.. / W30 26..

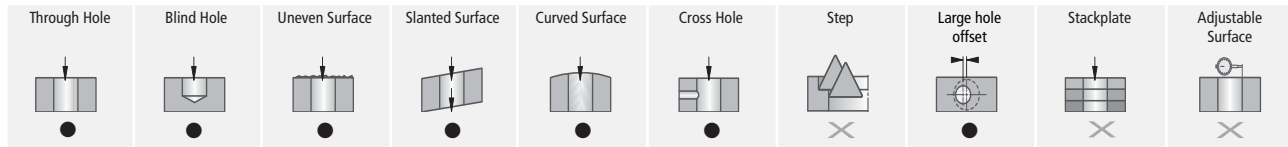
Cover Plate ⑦	
Description	Order No.
Cover plate w/ int. coolant	G05 00010

Rough boring assembly ④+⑤+⑨	
Description	Order No.
④ Holding plate	G05 20010
⑤ Roughing cartridge	G05 20020
⑧ Insert	W29 42..

Replaceable bridge XA01 produced to customer requirement



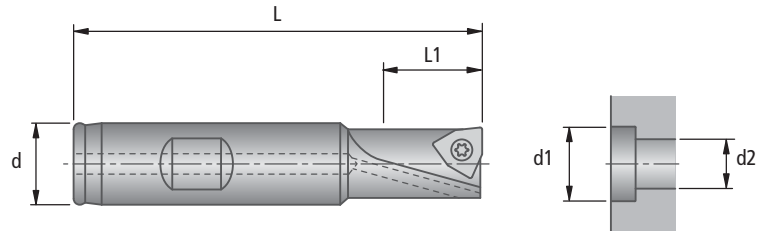
Counterboring Tool Ø 0.437" – 1.375"



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

KWZ - Counterboring tool Ø 0.437" - 0.718", Inch

- Central coolant supply from counterbore size F10 10040
- Shank design to DIN 1835/B T1 A and B
- For producing 90° counterbores to DIN 974, Part 1, for cap head screws



y = Number of inserts = 1

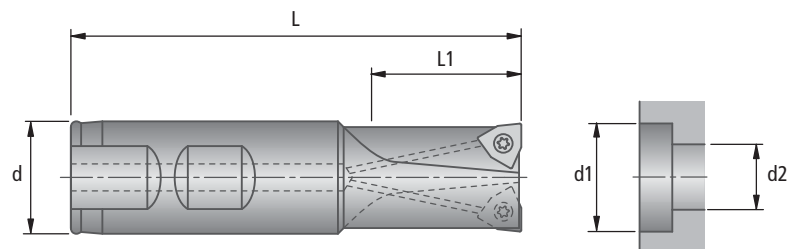
z = effective number of teeth for determining $V_f = 1$

d1	Description	Order No.	Rough bore-Ø d2 min	d	L	max. countersinking depth L1 lbs	Basic Recommendation					Replacement Part					
							Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	TORX PLUS Order No. Description		
.437	KWZ 1/4"-K1	F10 30020	.281	.625	3.150	.750	0.33	W28 17010.0464	WOEX040204-01 BK64	P	M	K	N	S	H	N00 55551 M2.5×2.8-8IP 11.3 in-lbs	L05 00830 8IP
.531	KWZ 5/16"-K1	F10 30030	.344	.625	3.150	.750	0.33	W28 17010.0421	WOEX040204-01 K10							N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
.625	KWZ 3/8"-K1	F10 30040	.406	.625	3.150	.750	0.33	W29 24010.048425 W29 24010.0421	WOEX05T304-01 BK8425 WOEX05T304-01 K10							N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
.781	KWZ 7/16"-K1	F10 30050	.469	.625	3.150	1.000	0.33	W29 24010.048425	WOEX05T304-01 BK8425							N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
.812	KWZ 1/2"-K1	F10 30060	.531	1.000	3.940	1.250	0.77	W29 24010.0421	WOEX05T304-01 K10							N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP

Delivery: Counterboring tool with clamping screw, less inserts and torx screwdriver.

KWZ - Counterboring tool Ø 0.812" - 1.375", Inch

- Central coolant supply from counterbore size F10 10040
- Shank design to DIN 1835/B T1 A and B
- For producing 90° counterbores to DIN 974, Part 1, for cap head screws



y = Number of inserts = 2

z = effective number of teeth for determining $V_f = 2$

d1	Description	Order No.	Rough bore-Ø d2 min	d	L	max. countersinking depth L1 lbs	Basic Recommendation					Replacement Part					
							Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	Screw driver Order No. Description		
1.000	KWZ 5/8"-K2	F10 30070	.656	1.000	3.940	1.250	0.77	W29 24010.048425 W29 24010.0421	WOEX05T304-01 BK8425 WOEX05T304-01 K10							N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
1.187	KWZ 3/4"-K2	F10 30080	.781	1.000	3.940	1.250	0.77	W29 34010.048425 W29 34010.0421	WOEX06T304-01 BK8425 WOEX06T304-01 K10							N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
1.375	KWZ 7/8"-K2	F10 30090	.906	1.000	3.940	1.250	0.88	W29 42010.048425 W29 42010.0421	WOEX080404-01 BK8425 WOEX080404-01 K10							N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP

Delivery: Counterboring tool with clamping screw, less inserts and torx screwdriver.

Cutting Recommendations

Guideline for counterboring with F10

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.437 - 0.531	\emptyset 0.625 - 0.781	\emptyset 0.812 - 1.375
1.0	≤ 72500		Unalloyed steel	A570.36	590-790	.002 - .004	.004 - .008	.006 - .010
				1213				
				A573.81				
				5120				
				1055				
2.0	72500 - 130000		Low alloy steel	5120	590-790	.002 - .004	.004 - .008	.010 - .016
				1055				
2.1	<72500		Lead alloy	12L13	530	.002 - .004	.008	.008 - .012
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	460	.002 - .004	.007	.008 - .014
				1064				
4.0	>130000		Tool steel	H13	390	.002 - .003	.006	.008 - .012
				H21				
4.1			HSS					
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.004	.005
				Nimonic® 80A				
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.004	.005
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L	390	.003	.006	.006
				316				
6.1	<130000		Stainless steel	630	390	.003	.006	.006
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420	330	.002	.004	.004
				403				
8.0		180	Grey cast iron	No 35 B	530	.006	.012	.016
				No 50 B				
8.1		250	Alloy grey cast iron	A436 Type 2	460	.006	.010	.012
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	460	.006	.010	.012
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	390	.005	.008	.010
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.004	.007	.010
10.1		200	Malleable cast iron	70003	390	.004	.007	.008
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.006	.008
12.0		90	Vermicular cast iron		330	.004	.006	.008
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.002	.004	.005
12.2		100	Copper alloy, Brass, Bronze: average cut		980	.002	.004	.005
13.0		60	Wrought aluminum alloy		980	.002	.005	.006
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	820	.002	.006	.008
13.2		100	Magnesium alloy		660	.004	.008	.010
14.0		100	Aluminum alloy: Si content >10%	A360.2	660	.004	.008	.010
15.0	203000		Hardened steel < 45 HRC		160	.002	.004	.006
16.0	261000		Hardened steel > 45 HRC		160	.002	.004	.006

Alternative Insert

For better chip control			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO Insert Description						
.437-.531	W28 17030.046425	WOEX040204-03 BK6425	●	●	●	●	●	○
	W28 17000.0421	WOEX040204-00 K10	●	●	●	●	●	○
.625-.781	W29 24030.046425	WOEX050304-03 BK6425	●	●	●	●	●	○
	W29 24110.0477	WOEX05T304-11 BK77	●	●	●	●	●	○
.812-1.000	W29 24030.046425	WOEX050304-03 BK6425	●	●	●	●	●	○
	W29 24110.0477	WOEX05T304-11 BK77	●	●	●	●	●	○
1.187-1.375	W29 34030.046425	WOEX060304-03 BK6425	●	●	●	●	●	○
	W29 34110.0477	WOEX06T304-11 BK77	●	●	●	●	●	○

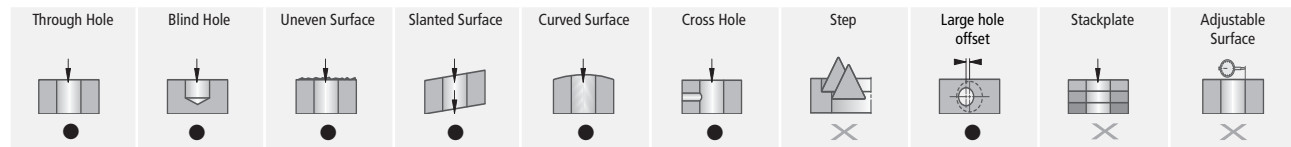
For better wear resistance			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO Insert Description						
.437-.531	W28 17010.0461	WOEX040204-01 BK61	●	●	●	●	●	○
.625-.781	W29 24010.0460	WOEX05T304-01 BK60	●	●	●	●	●	○
	W29 24010.0461	WOEX05T304-01 BK61	●	●	●	●	●	○
.812-1.000	W29 24010.0460	WOEX05T304-01 BK60	●	●	●	●	●	○
	W29 24010.0461	WOEX05T304-01 BK61	●	●	●	●	●	○
1.187-1.375	W29 34010.0460	WOEX06T304-01 BK60	●	●	●	●	●	○
	W29 34010.0461	WOEX06T304-01 BK61	●	●	●	●	●	○

For higher toughness			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO Insert Description						
.437-.531	W28 17010.0403	WOEX040204-01 P25M	●	●	●	●	●	○
	W28 17010.0404	WOEX040204-01 P40	●	●	●	●	●	○
.625-.781	W29 24010.047930	WOEX05T304-01 BK7930	●	●	●	●	●	○
.812-1.000	W29 24010.047930	WOEX05T304-01 BK7930	●	●	●	●	●	○
1.187-1.375	W29 34010.047930	WOEX06T304-01 BK7930	●	●	●	●	●	○

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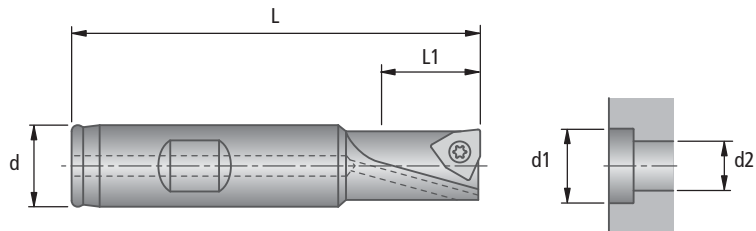
Counterboring Tool Ø 10 – 48 mm



● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

KWZ - Counterboring tool Ø 10 - 20 mm, Metric

- Central coolant supply from counterbore size F10 10040
- Shank design to DIN 1835/B T1 A and B
- For producing 90° counterbores to DIN 974, Part 1 for cap head screws



y = Number of inserts = 1

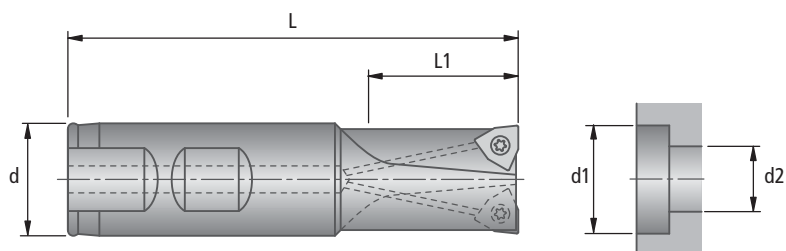
z = effective number of teeth for determining $V_f = 1$

d1	Description	Order No.	Rough bore-Ø d2 min	d	L	L1	max. countersinking depth lbs	Basic Recommendation					Replacement Part				
								Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	TORX PLUS Order No. Description	
10	KWZ-M5K1	F10 10020	5.3	16	80	10	0.20	W28 17010.0464	WOEX040204-01 BK64	P	M	K	N	S	H	N00 55551 M2.5×2.8-8IP 11.3 in-lbs	L05 00830 8IP
11	KWZ-M6K1	F10 10030	6.4	16	80	11	0.22	W28 17010.0421	WOEX040204-01 K10								
15	KWZ-M8K1	F10 10040	8.4	16	80	15	0.22	W29 24010.048425	WOEX05T304-01 BK8425							N00 5558 1 M2.5×4. 5-8IP 11.3 in-lbs	L05 00830 8IP
								W29 24010.0421	WOEX05T304-01 K10								
18	KWZ-M10K1	F10 10050	10.4	16	80	18	0.24	W29 24010.048425	WOEX05T304-01 BK8425							N00 57511 M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
20	KWZ-M12K1	F10 10060	13.0	25	100	20	0.62	W29 24010.0421	WOEX05T304-01 K10								

Delivery: Counterboring tool with clamping screw, less inserts and torx screwdriver.

KWZ - Counterboring tool Ø 24 - 48 mm, Metric

- Central coolant supply from counterbore size F10 10040
- Shank design to DIN 1835/B T1 A and B
- For producing 90° counterbores to DIN 974, Part 1 for cap head screws



y = Number of inserts = 2

z = effective number of teeth for determining $V_f = 2$

d1	Description	Order No.	Rough bore-Ø d2 min	d	L	L1	max. countersinking depth lbs	Basic Recommendation					Replacement Part					
								Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	TORX PLUS Order No. Description		
24	KWZ-M14K2	F10 11070	15	25	100	24	0.64	W29 24010.048425	WOEX05T304-01 BK8425	P	M	K	N	S	H	N00 57511 M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	
26	KWZ-M16K2	F10 11080	17	25	100	26	0.68	W29 24010.0421	WOEX05T304-01 K10									
30	KWZ-M18K2	F10 11090	19	25	100	30	0.75	W29 34010.048425	WOEX06T304-01 BK8425							N00 57521 M3.5×7.3-10IP 24.78 in-lbs	L05 00850 10IP	
								W29 34010.0421	WOEX06T304-01 K10									
33	KWZ-M20K2	F10 11100	21	25	100	33	0.79	W29 42010.048425	WOEX080404-01 BK8425							N00 57531 M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	
36	KWZ-M22K2	F10 11110	21	25	100	36	0.86	W29 42010.0421	WOEX080404-01 K10									
40	KWZ-M24K2	F10 11120	25	25	100	40	0.99											
48	KWZ-M30K2	F10 11130	28	32	120	48	1.87	W29 50010.048425	WOEX100504-01 BK8425									
								W29 50010.0421	WOEX100504-01 K10									

Delivery: Counterboring tool with clamping screw, less inserts and torx screwdriver.

Cutting Recommendations

Guideline for counterboring with F10

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev				
						Ø 10 - 15	Ø 18 - 24	Ø 24 - 30	Ø 33 - 48	
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	590-790	.002 - .004	.002 - .004	.004 - .008	.006 - .010	.008 - .012
				5120 1055 5115						
2.0	72500 - 130000		Low alloy steel		590-790	.002 - .004	.004 - .008	.010 - .016	.010 - .016	
2.1	<72500		Lead alloy	12L13	530	.002 - .004	.008	.008 - .012	.008 - .016	
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	.002 - .004	.007	.008 - .014	.010 - .016	
4.0	>130000		Tool steel	H13 H21	390	.002 - .003	.006	.008 - .012	.008 - .014	
4.1			HSS		-	-	-	-	-	
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.002	.002	.004	.005	.006
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.004	.005	.006	
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	390	.003	.006	.006	.007	
6.1	<130000		Stainless steel	630	390	.003	.006	.006	.007	
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	330	.002	.004	.004	.005	
8.0		180	Grey cast iron	No 35 B No 50 B	530	.006	.012	.016	.024	
8.1		250	Alloy grey cast iron	A436 Type 2	460	.006	.010	.012	.016	
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	460	.006	.010	.012	.014	
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	390	.005	.008	.010	.014	
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	.004	.007	.010	.012	
10.1		200	Malleable cast iron	70003	390	.004	.007	.008	.012	
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.007	.008	.012	
10.2		300	Vermicular cast iron		330	.004	.006	.008	.010	
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.002	.004	.005	.006	
12.1		100	Copper alloy, Brass, Bronze: average cut		980	.002	.004	.005	.006	
13.0		60	Wrought aluminum alloy		980	.002	.005	.006	.008	
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	820	.002	.006	.008	.010	
13.1			Magnesium alloy		820	.002	.006	.008	.010	
14.0		100	Aluminum alloy: Si content >10%	A360.2	660	.004	.008	.010	.012	
15.0	203000		Hardened steel < 45 HRC		160	.002	.004	.006	.008	
16.0	261000		Hardened steel > 45 HRC		160	.002	.004	.006	.008	

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	Insert					
			P	M	K	N	S	H
10 - 11	W28 17030.046425	WOEX040204-03 BK6425	●	●	●	●	●	○
	W28 17000.0421	WOEX040204-00 K10	●	●	●	●	●	○
15 - 20	W29 24030.046425	WOEX050304-03 BK6425	●	●	●	●	●	○
	W29 24110.0477	WOEX05T304-11 BK77	●	●	●	●	●	○
24 - 26	W29 24030.046425	WOEX050304-03 BK6425	●	●	●	●	●	○
	W29 24110.0477	WOEX05T304-11 BK77	●	●	●	●	●	○
30	W29 34030.046425	WOEX060304-03 BK6425	●	●	●	●	●	○
	W29 34110.0421	WOEX06T304-11 BK77	●	●	●	●	●	○
33 - 40	W29 42030.046425	WOEX08T304-03 BK6425	●	●	●	●	●	○
	W29 42110.0477	WOEX08T304-11 BK77	●	●	●	●	●	○
48	W29 50030.046425	WOEX100504-03 BK6425	●	●	●	●	●	○
	W29 50110.0477	WOEX100504-11 BK77	●	●	●	●	●	○

For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	Insert					
			P	M	K	N	S	H
10 - 11	W28 17010.0461	WOEX040204-01 BK61	●	●	●	●	●	○
15 - 20	W29 24010.0460	WOEX05T304-01 BK60	●	●	●	●	●	○
	W29 24010.0461	WOEX05T304-01 BK61	●	●	●	●	●	○
24 - 26	W29 24010.0460	WOEX05T304-01 BK60	●	●	●	●	●	○
	W29 24010.0461	WOEX05T304-01 BK61	●	●	●	●	●	○
30	W29 34010.0460	WOEX06T304-01 BK60	●	●	●	●	●	○
	W29 34010.0461	WOEX06T304-01 BK61	●	●	●	●	●	○
33 - 40	W29 42010.0460	WOEX080404-01 BK60	●	●	●	●	●	○
	W29 42010.0461	WOEX080404-01 BK61	●	●	●	●	●	○
48	W29 50010.0460	WOEX100504-01 BK60	●	●	●	●	●	○
	W29 50010.0461	WOEX100504-01 BK61	●	●	●	●	●	○

For higher toughness			for Workpiece Material					
D	Order No. size	ISO Insert Description	Insert					
			P	M	K	N	S	H
10 - 11	W28 17010.0403	WOEX040204-01 P25M	●	●	●	●	●	○
	W28 17010.0404	WOEX040204-01 P40	●	●	●	●	●	○
15 - 20	W29 24010.047930	WOEX05T304-01 BK7930	●	●	●	●	●	○
24 - 26	W29 24010.047930	WOEX05T304-01 BK7930	●	●	●	●	●	○
30	W29 34010.047930	WOEX06T304-01 BK7930	●	●	●	●	●	○
33 - 40	W29 42010.047930	WOEX080404-01 BK7930	●	●	●	●	●	○
48	W29 50010.047930	WOEX100504-01 BK7930	●	●	●	●	●	○

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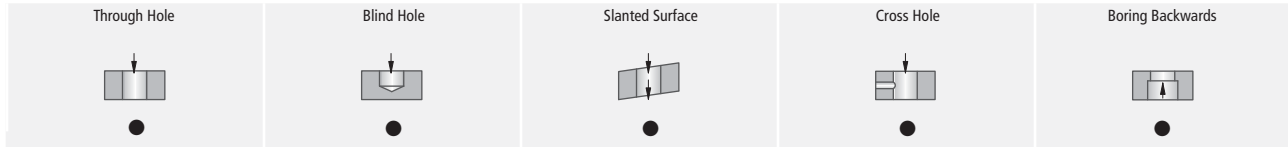
Cutting Recommendations

Guideline for milling and countersinking with F10

	Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c , ft/min	Maximum Feedrate f , in/rev
P	1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	820	0.006
	2.0	72500 - 130000		Low alloy steel	5120 1055 5115	660	0.008
	2.1	<72500		Lead alloy	12L13	820	0.012
	3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	490	0.008
	4.0	>130000		Tool steel	H13 H21	390	0.006
4.1				HSS		330	0.007
S	5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	160	0.005
	5.1	58000		Titanium, Titanium alloy	AMS R54520	330	0.008
	6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	520	0.006
M	6.1	<130000		Stainless steel	630	390	0.006
	7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	330	0.006
K	8.0		180	Grey cast iron	No 35 B No 50 B	490	0.016
	8.1		250	Alloy grey cast iron	A436 Type 2	390	0.012
	9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	390	0.012
	9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	330	0.012
	10.0	87000	250	Nodular cast iron pearlitic	100-70-03	330	0.008
	10.1		200	Malleable cast iron	70003	260	0.008
	10.2		300	Alloyed nodular cast iron	A43D2	160	0.008
	12.0		90	Vermicular cast iron		160	0.008
	12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.012
	13.0		60	Copper alloy, Brass, Bronze: average cut		820	0.008
N	13.1		75	Wrought aluminum alloy		820	0.008
	14.0		100	Aluminum alloy: Si content <10%	GD-AISI12	490	0.012
	15.0		100	Magnesium alloy		390	0.010
H	15.0	203000		Aluminum alloy: Si content >10%	A360.2	160	0.006
	16.0	261000		Hardened steel < 45 HRC		80	0.004
				Hardened steel > 45 HRC			0.004

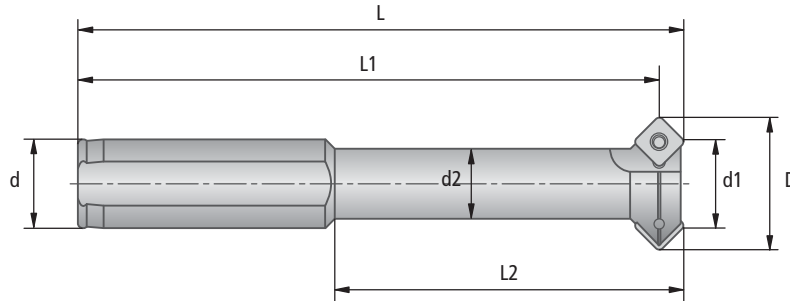


Forward and Backward Chamfering Tool



with Cylindrical Shank

$\alpha = 45^\circ$



D	Order No. Description	d	d1	d2	L	L1	L2	Basic Recommendation		Replacement Part								
								Order No. Size	ISO Insert Description	for Workpiece Material						Clamping screw Order No. Description	TORX Order No. Description	
0.625	F53 30010 0.625-45 F&B Tool	0.500	0.350	0.354	2.950	2.800	1.418	W83 13010.048425	SOEX 050204-01 BK8425	●								
								W83 13000.0179	SOEX 050204-01 BK79									
								W83 13000.0161	SOEX 050204-01 BK61									
0.687	F53 30060 0.687-45 F&B Tool	0.500	0.413	0.354	2.950	2.800	1.418	W83 13210.047710	SOEX 050204-21 BK7710									
								W83 13210.042730	SOEX 050204-21 BK2730									
0.750	F53 30020 0.750-45 F&B Tool	0.625	0.450	0.354	3.600	3.430	1.650	W83 18000.068425	SOEX 060306-01 BK8425	●								
0.812	F53 30070 0.812-45 F&B Tool	0.625	0.511	0.354	3.600	3.430	1.650	W83 18000.0979	SOEX 060306-01 BK79									
								W83 18000.0961	SOEX 060306-01 BK61									
								W83 18210.067710	SOEX 060306-21 BK7710									
	W83 18210.062730	SOEX 060306-21 BK2730																
0.875	F53 30080 0.875-45 F&B Tool	0.750	0.574	0.472	5.100	4.933	2.851	W83 23020.088425	SOEX 07T308-01 BK8425	●								
1.000	F53 30090 1.000-45 F&B Tool	0.750	0.629	0.591	5.100	4.892	2.910	W83 23000.0179	SOEX 07T308-01 BK79									
								W83 23000.0161	SOEX 07T308-01 BK61									
								W83 23210.087710	SOEX 07T308-21 BK7710									
	W83 23210.082730	SOEX 07T308-21 BK2730																
1.250	F53 30040 1.250-45 F&B Tool	0.750	0.791	0.709	5.450	5.120	3.150	W83 32010.088425	SOEX 090408-01 BK8425	●								
								W83 32000.1579	SOEX 090408-01 BK79									
								W83 32000.1561	SOEX 090408-01 BK61									
								W83 32210.087710	SOEX 090408-21 BK7710									
	W83 32210.082730	SOEX 090408-21 BK2730																
1.500	F53 30050 1.500-45 F&B Tool	1.000	0.863	0.787	5.600	5.260	3.240	W83 44010.088425	SOEX 120508-01 BK8425	●								
								W83 44000.1879	SOEX 120508-01 BK79									
								W83 44000.1861	SOEX 120508-01 BK61									
								W83 44210.087710	SOEX 120508-21 BK7710									
								W83 44210.082730	SOEX 120508-21 BK2730									

Delivery: Chamfering tool complete with clamping screw, please order insert and torx wrench separately.

Cutting Recommendations

Guideline for forward and backward chamfering with F53

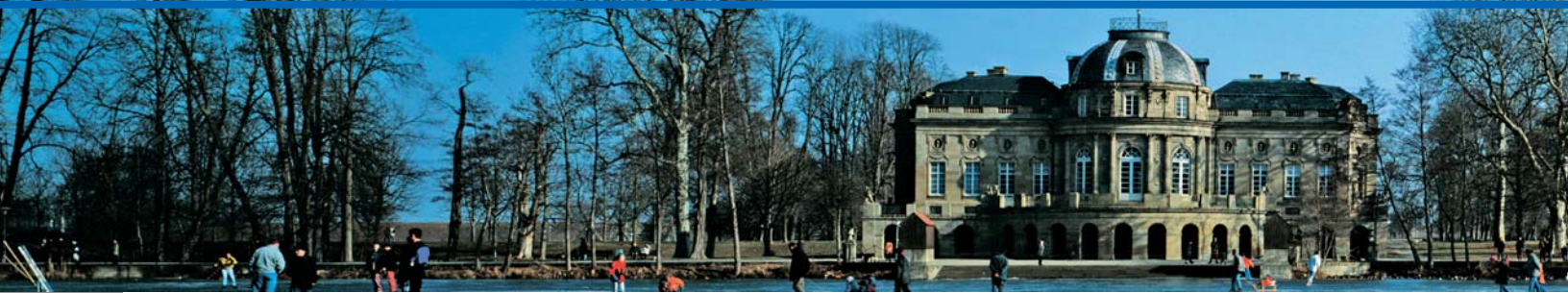
Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c , ft/min	Maximum Feedrate f , in/rev				
						\emptyset 0.625	\emptyset 0.750	\emptyset 1.125	\emptyset 1.250	\emptyset 1.500
1.0 2.0 2.1 3.0 4.0 4.1	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.005	.005	.006	.006	.006
			Low alloy steel	5120 1055 5115	820	.006	.006	.008	.008	.010
	<72500		Lead alloy	12L13	980	.006	.007	.010	.010	.012
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	660	.006	.007	.008	.008	.010
	>130000		Tool steel	H13 H21	590	.005	.006	.007	.007	.008
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.003	.004	.005	.005	.005
5.1	58000		Titanium, Titanium alloy	AMS R54520	260	.003	.004	.005	.005	.005
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	590	.004	.005	.006	.006	.006
6.1	<130000		Stainless steel	630	520	.003	.005	.006	.006	.008
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	520	.003	.004	.005	.005	.006
8.0		180	Grey cast iron	No 35 B No 50 B	660	.006	.010	.012	.012	.012
8.1		250	Alloy grey cast iron	A436 Type 2	520	.006	.007	.008	.008	.010
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006	.007	.008	.008	.010
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	520	.006	.007	.009	.009	.010
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	460	.006	.007	.009	.009	.010
10.1		200	Malleable cast iron	70003	460	.006	.007	.010	.010	.010
10.2		300	Alloyed nodular cast iron	A43D2	460	.006	.007	.010	.010	.010
12.0		90	Vermicular cast iron		390	.005	.006	.008	.008	.010
12.0 12.1 13.0 13.1 14.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.006	.006	.008	.008	.010
		100	Copper alloy, Brass, Bronze: average cut		1310	.003	.004	.005	.005	.006
		60	Wrought aluminum alloy		1970	.003	.004	.005	.005	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	980	.005	.006	.006	.006	.008
14.0		100	Magnesium alloy							
15.0		100	Aluminum alloy: Si content >10%	A360.2	820	.005	.006	.008	.008	.012
16.0	203000		Hardened steel < 45 HRC		260	.002	.003	.004	.004	.004
	261000		Hardened steel > 45 HRC		130	.002	.003	.004	.004	.004



Finish Boring



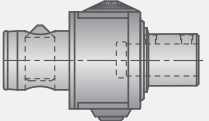
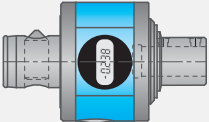
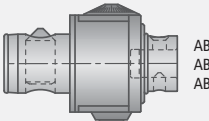
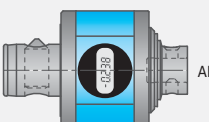
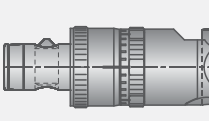

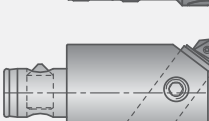
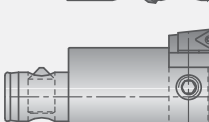
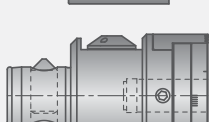

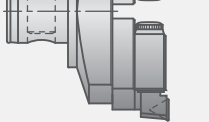

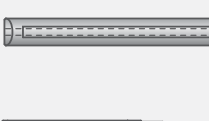
Modern batch production is defined by the shortest machining intervals and the highest quality requirements. To meet these demands, highly developed tools are needed with the latest cutting materials and efficient coatings. The KOMET GROUP offer excellent tooling solutions for the finish boring application.



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Program Summary	4.4 – 4.5
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Micro-Adjustable Boring Head M040 Replaceable Bridge for M040	4.24 – 4.33
Micro-Adjustable Boring Head <i>M03Speed</i> and Replaceable Bridge	4.34 – 4.53
Micro-Adjustable Boring Head M020	4.54 – 4.56
Balancing Ring	4.58 – 4.59
Boring / Profiling Bars	4.61 – 4.87
Boring Bar M105	4.88 – 4.89
Micro-Adjustable Boring Head B30	4.90 – 4.101
Twin Cutter GDF	4.102 – 4.103
Twin Cutter $\varnothing < 8.110''$ (206 mm)	4.104 – 4.105
KomTronic® – Original Mechatronic Tooling System	4.106 – 4.107



Program Summary

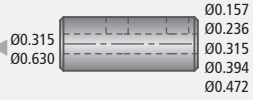
Adapter		Finish Boring Tool		Page
		 <p>ABS40 ABS50</p> <p>Ø 0.315 Ø 0.630</p>	Micro-Adjustable Boring head M020	4.54
		 <p>ABS50</p> <p>Ø 0.630</p>	Micro-Adjustable Boring head M040	4.24
		 <p>ABS50 ABS63</p> <p>ABS25 ABS32 ABS40</p>	Micro-Adjustable Boring head M020	4.55
Taper shank holder	Chapter 1	 <p>ABS50</p> <p>ABS32</p>	Micro-Adjustable Boring head M040	4.25
		 <p>ABS25 ABS32 ABS40 ABS50 ABS63</p>	Micro-Adjustable Boring head M03Speed Ø 0.976"-4.055"	4.36
HSK Adapter	Chapter 1	 <p>ABS32 ABS50 ABS63</p>	Micro-Adjustable Boring head M03Speed Ø 1.496"-8.110"	4.40
Integral Micro-Adjustable Boring Head M020	4.56	 <p>ABS25 ABS32 ABS40 ABS50 ABS63 ABS80 ABS100</p>	Micro-Adjustable Boring head Ø 0.787"-6.890"	4.90
		 <p>ABS25 ABS32 ABS40 ABS50 ABS63 ABS80 ABS100</p>	Micro-Adjustable Boring head Ø 1.161"-7.835"	4.97
		 <p>ABS50</p> <p>Ø 0.315 ABS32</p>	MicroKom ^{hi.flex}	4.12
		 <p>ABS100</p>	Twin Cutter Ø 7.717"-15.787"	4.102
		 <p>Ø 0.250 Ø 0.312 Ø 0.375 Ø 0.500 Ø 0.625 Ø 0.750 Ø 1.000</p>	Boring Bar Ø 0.220"-1.250"	4.72 – 4.81
		 <p>Ø 0.375 Ø 0.500 Ø 0.625 Ø 0.750 Ø 1.000 Ø 1.250</p>	Profiling Bar Ø 0.500"-1.625"	4.82 – 4.87
		 <p>Ø 0.630 Ø 0.787</p>	Boring Bar Ø 0.626"-1.024"	4.88

Adapter / Replaceable Bridge

Boring Bar

Page

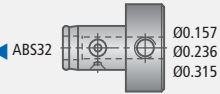
Page



4.60



Ø 0.020" - 0.079" 4.61



4.60



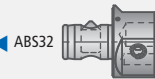
Ø 0.118" - 0.354" 4.61

Adapter
4.26

Replaceable Bridge
Ø 1.496" - 2.480"



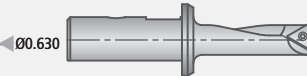
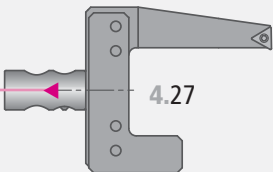
Ø 0.220" - 0.272" 4.70



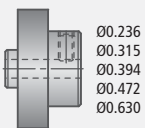
Ø 0.220" - 0.472" 4.62

Mounting Bridge
Ø 0.197" - 2.756"

Ø 2.441" - 4.055"

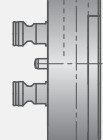


Ø 0.315" - 0.945" 4.62



Adapter 4.23

Ø 3.937" - 8.110"



Ø 0.354" - 0.433" 4.70

Basic Tool Body / Insert Holder

Ø 0.984" - 2.480" 4.18



Ø 0.512" - 0.669" 4.70



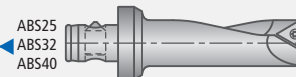
Ø 0.669" - 1.024" 4.70



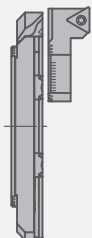
Ø 0.236" - 0.709" 4.16



Insert Holder Ø 2.480" - 3.661" 4.18



Ø 0.315" - 1.102" 4.64



Bridge / Insert Holder Ø 3.543" - 4.921" 4.20




Ø 0.469" - 1.181" 4.68



Ø 1.102" - 1.732" 4.96



Tool Selection Guide

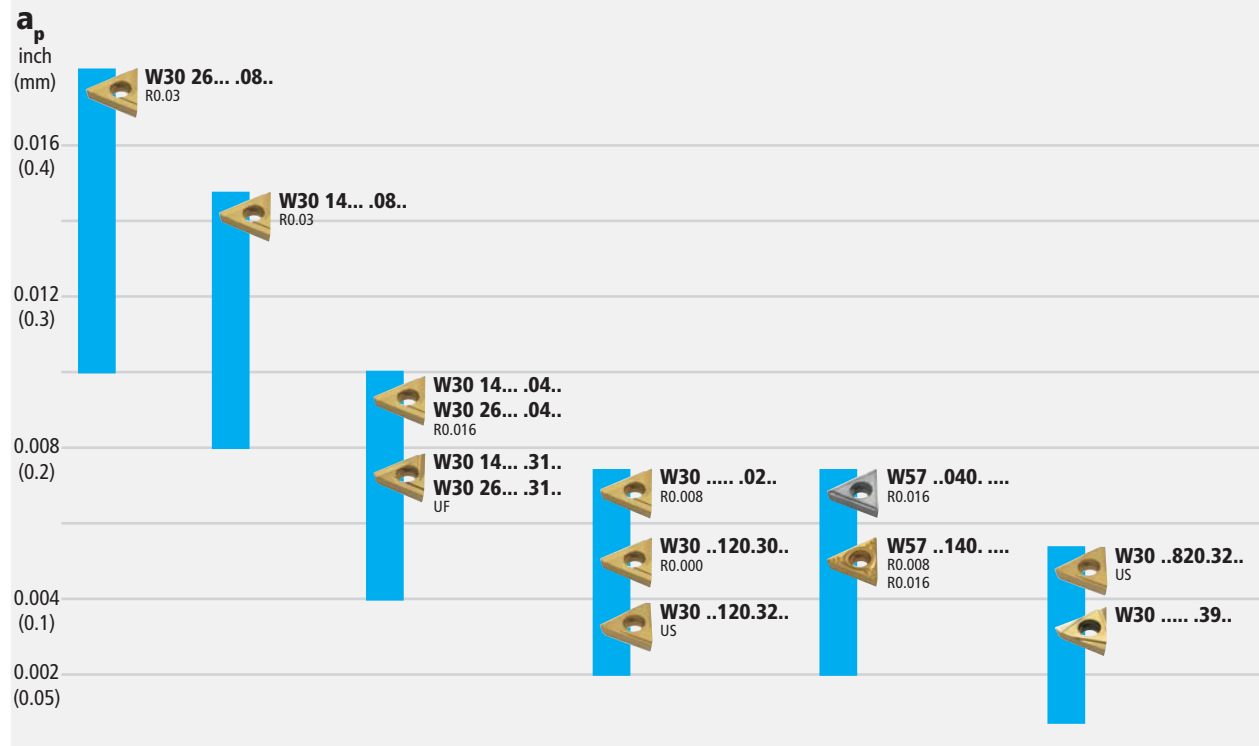
Ø inch (mm)	L / D	Finish Boring							
		Through Hole 	Blind Hole 	Slanted Surface 	Cross Hole 	Boring Backwards 	HRC > 54 Through Hole 	HRC > 54 Blind Hole 	Optimized Oscillation 
0.020 - 0.354 (0.5 - 9)	> 3.5 × D	●	●	○	○				●
0.220 - 0.945 (5.6 - 24)	3.5 × D	●	●	○	○		●	●	
0.311 - 1.732 (7.9 - 44)	3.5 × D	●	●	○	○		●	●	
0.469 - 1.181 (11.9 - 30)	3.5 × D	●	●	○	○		●	●	
0.626 - 1.024 (15.9 - 26)	3 × D	●	●	○	○		●	●	
0.220 - 1.024 (5.6 - 26)	3 × D	●	●	○	○		○	○	○
0.220 - 1.250 (5.6 - 31.75)	3.5 × D	●	●	○	○	●	○	○	○
0.500 - 1.625 (12.7 - 41.28)	3.5 × D	●	●	○	○		○	○	○
0.019 - 4.055 (0.5 - 103)	3-6 × D	●	●	○	○		●	●	
0.019 - 4.055 (0.5 - 103)	3-6 × D	●	●	○	○	●	○	○	
0.236 - 4.921 (6 - 125)	3.5 × D	●	●	○	○		○	○	
0.976 - 8.110 (24.8 - 206)	> 3.5 × D	●	●	○	○	●	●	●	●
1.102 - 1.732 (28 - 44)	3.5 × D	●	●	○	○		●	●	●
0.787 - 6.890 (20 - 175)	> 3.5 × D	●	●	○	○		●	●	●
1.161 - 7.835 (29.5 - 199)	> 3.5 × D	●	●	○	○		●	●	●
7.717 - 15.787 (196 - 401)	3.5 × D	●	●	○	○		●	●	
> 8.110 (> 206)	> 3.5 × D	●	●	○	○				



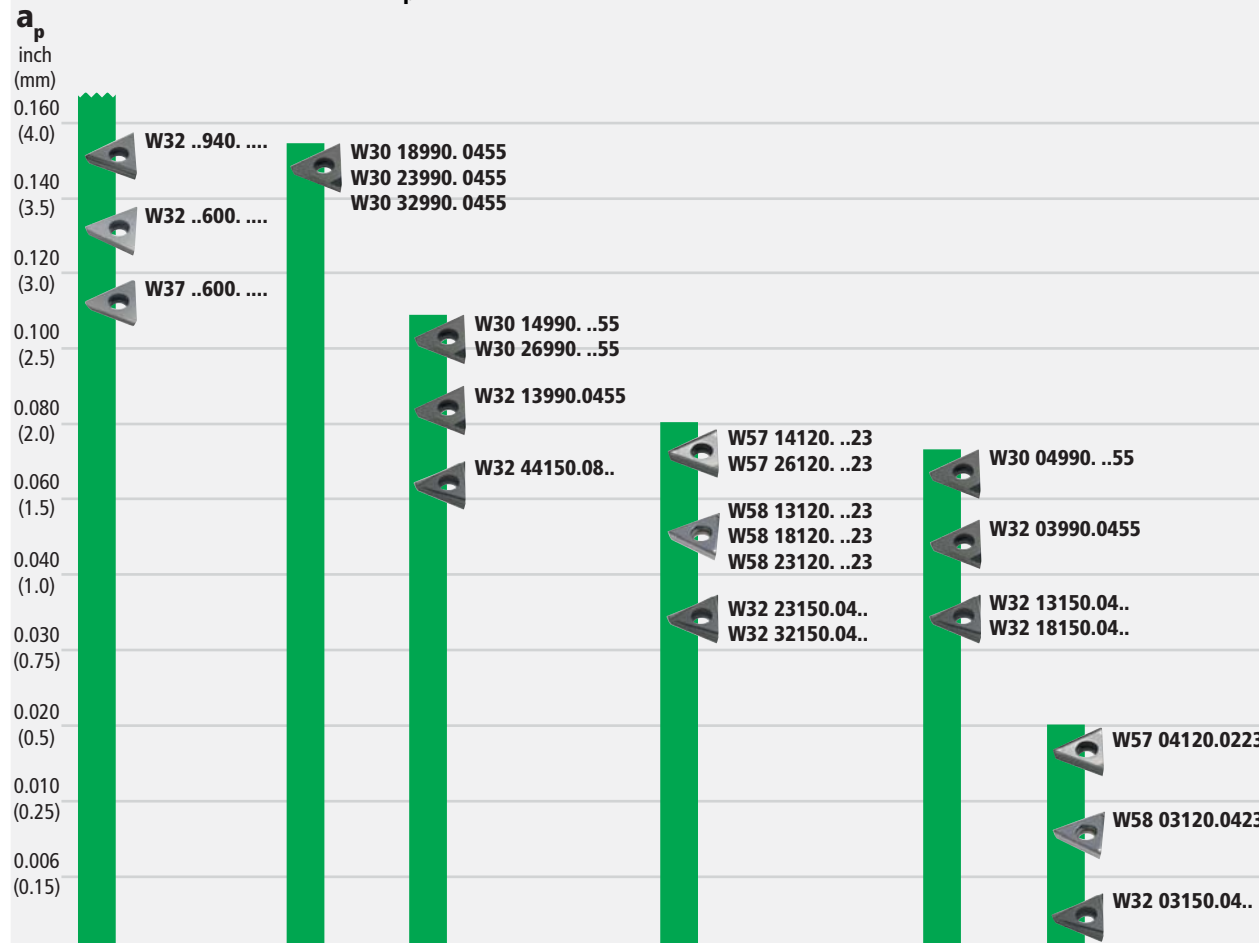
Coolant		IT-Area		Finish Boring Tool		Connection	
Emulsion		MQL				ABS	Straight Shank
in	out	in	out				
	●			to be used with micro-adjustable boring head		Boring bar	4.61
●	●	●	●	to be used with micro-adjustable boring head		Boring bar	4.62
●	●	●	●	to be used with micro-adjustable boring head		Boring bar	4.64
●	●	●	●	to be used with micro-adjustable boring head		Boring bar	4.68
●	●	●	●	IT7		Boring bar	4.88
●	●	●	●	to be used with micro-adjustable boring head		Boring bar	4.70
●	●	●	●	< IT7		Boring bar	4.72
●	●	●	●	< IT7		Profiling bar	4.82
●	●	●	●	< IT7		Micro-adjustable boring head M020	4.54
●	●	●	●	< IT7		Micro-adjustable boring head M040	4.24
●	●	●	●			Replaceable bridge	4.27
●	●	●	●			MicroKom ^{hi.flex}	4.12
●	●	●	●	< IT7		Micro-adjustable boring head M03Speed	4.36
●	●	●	●			Replaceable bridge	4.46
●	●	●	●	> IT7		Micro-adjustable boring head	4.96
●	●	●	●	> IT7		Micro-adjustable boring head (FZ)	4.90
●	●	●	●	> IT7		Micro-adjustable boring head (FF)	4.97
●	●	●	●	< IT7		Twin cutter G01	4.102
●	●	●	●	< IT7		Lightweight modular tool	4.104

Indexable Insert Geometry Selection

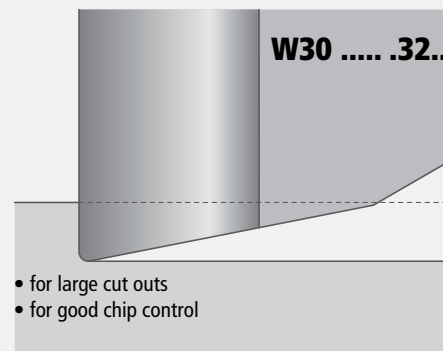
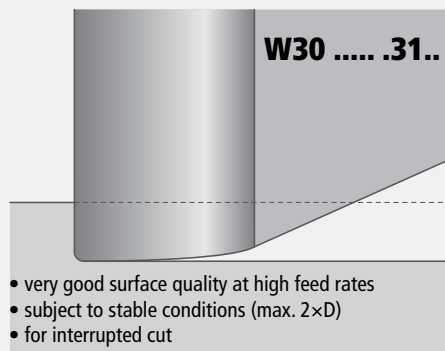
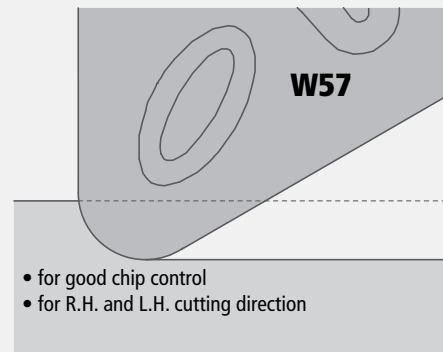
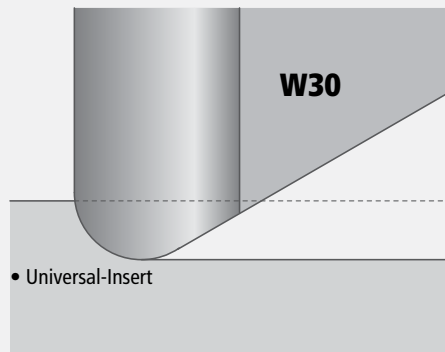
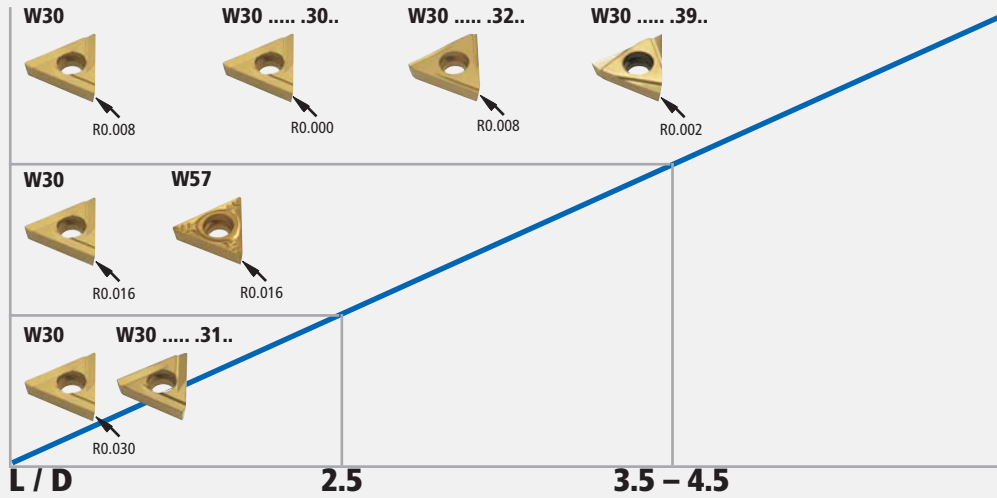
Function of Depth of Cut a_p on the Radius - Machining Steel



Function of Depth of Cut a_p on the Radius - Machining Aluminum



Function of Length to Diameter ratio L/D



MicroKom[®] hi.flex

Finish Boring Kit

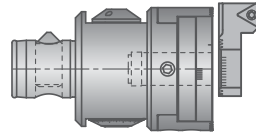
Micro-adjustable Head

Boring Bar

Basic Body / Insert Holder

Bridge / Insert Holder

Mounting Bridge



Ø 0.236" - 0.709" 4.13

Ø 0.984" - 2.480" 4.15

Ø 2.480" - 3.661" 4.16

Ø 3.543" - 4.921" 4.18

Ø 0.197" - 2.756" 4.20

Ø 0.197" - 2.756" 4.23

Micro-adjustable Boring Head M040

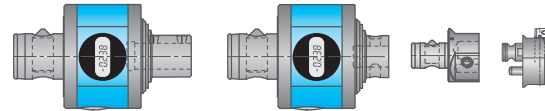
Intermediate Adapter

Replaceable Bridge

Boring Cartridge

Boring Cartridge for Non-ferrous Metals

Boring Set



4.24 – 4.25

4.26

4.27

Ø 1.496" - 4.055" 4.28 – 4.29

Ø 1.496" - 4.055" 4.30 – 4.31

4.32 – 4.33

Micro-adjustable Boring Head MO3Speed

with Replaceable Bridge

Insert Holder

Insert Holder for Non-ferrous Metals

Insert Holder

Insert Holder for Non-ferrous Metals

Insert Holder

Insert Holder for Non-ferrous Metals

Boring System



4.36

4.46 – 4.47

4.38 – 4.39

Ø 0.976" - 1.535" 4.48 – 4.49

Ø 0.976" - 1.535" 4.40 – 4.41

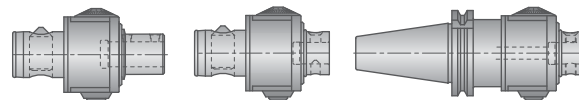
Ø 1.496" - 4.055" 4.50 – 4.51

Ø 1.496" - 4.055" 4.44 – 4.45

Ø 3.937" - 8.110" 4.50 – 4.51

Ø 3.937" - 8.110" 4.52 – 4.53

Micro-adjustable Boring Head M020



4.54 – 4.56

Micro-adjustable Boring Head B300



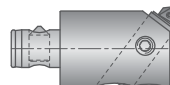
Ø 1.102" - 1.732" 4.96

Micro-adjustable Boring Head B300

Boring Head

Boring Cartridge

Boring Cartridge for Non-ferrous Metals



4.90 – 4.91

Ø 0.787" - 6.890" 4.92 – 4.93

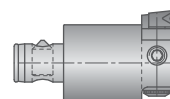
Ø 1.102" - 2.677" 4.94 – 4.95

Micro-adjustable Boring Head B301

Boring Bar

Boring Cartridge

Boring Cartridge for Non-ferrous Metals

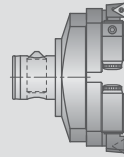


4.97

Ø 1.161" - 7.835" 4.98 – 4.99

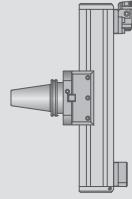
Ø 1.161" - 2.598" 4.100 – 4.101

Twin cutter



Ø 7.717" - 15.787" 4.102 – 4.103

Twin Cutter Lightweight Modular Tool



Ø > 8.110" 4.104 – 4.105

Boring Bars

Reducer Bushing



4.60

Boring Bar



Ø 0.019" - 0.079" 4.61

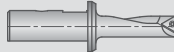
Boring Bar



Ø 0.118" - 0.354" 4.61

Boring Bars

Boring Bar



Ø 0.220" - 0.945" 4.62 – 4.63

Boring Bar



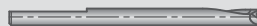
Ø 0.315" - 1.102" 4.64 – 4.67

Boring Bar



Ø 0.469" - 1.181" 4.68 – 4.69

Boring Bar - Low Vibration



Ø 0.220" - 1.024" 4.70 – 4.71

Boring Bar



Ø 0.220" - 1.250" 4.72 – 4.81

MicroKom Boring Bar



Ø 0.626" - 1.024" 4.88 – 4.89

Profiling Bars

Profiling Bar



Ø 0.500" - 1.625" 4.82 – 4.87



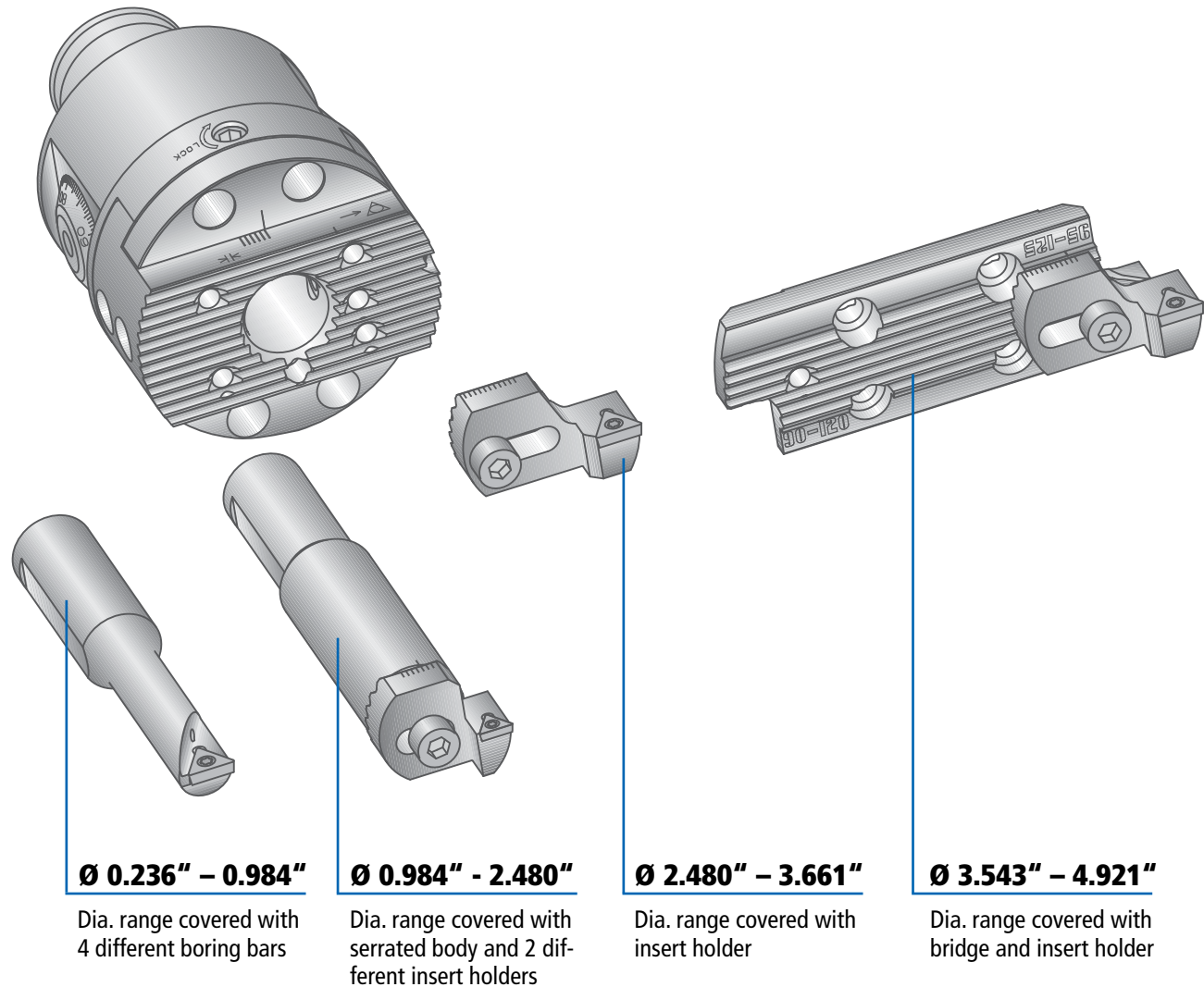
Fine adjustment system for diameters 0.236" to 4.921"

KOMET Group extended its MicroKom® micro adjustable boring product line with the new M05 hi.flex system. The unique finish boring system is specially designed for high flexibility and covers the diameter ranges from 0.236" to 4.921" with just one adjustable boring head. The availability of various boring bars and the new intelligent adapter design contribute to this wide diameter range.

The adjustable head offers an adjustment accuracy of 0.0004" per graduation on an easy-to-read scale and 0.00008" from a vernier with a total adjustment path of up to 0.197". The system is balanced in zero position and provides an internal coolant supply directly on to the cutting edge throughout the entire cutting diameter range. The standard set includes four boring bars for diameters

0.236" to 0.984". According to the individual combination, a serrated body, a bridge and two different holders for inserts provide for cutting diameters up to 4.921".

The MicroKom® hi.flex is compatible with existing ABS® and cylindrical shank fine boring components. The set can be extended with standard boring tools and UniTurn® products, for which the turning range starts at 0.020". Variable overhang lengths and a single key for clamping, adjusting and mounting bridges and insert holders illustrate how easy the new system is to operate.



Finish boring kit with inch adjustment



4



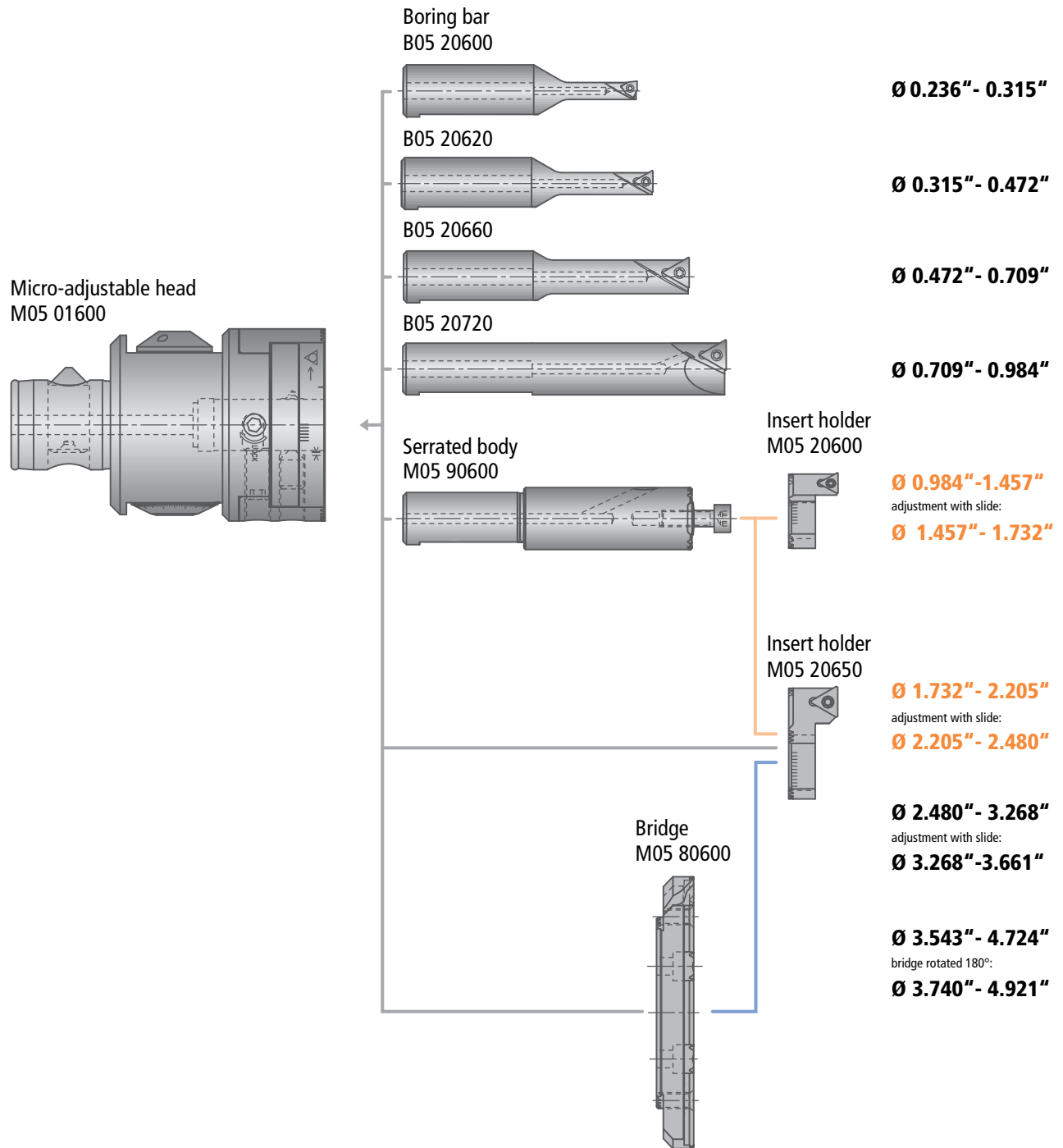
**Finish boring kit Ø 0.236" - 4.921"
Order No. M05 00610**

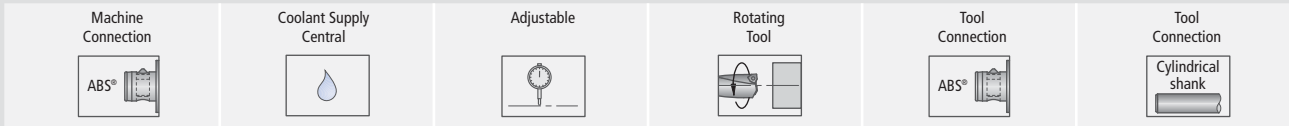
Contents of case			
	Order No.	Qty.	Description
①	M05 01600	1	Micro-adjustable head
②	M05 20600	1	Insert holder Ø 0.984" - 1.732"
③	M05 20650	1	Insert holder Ø 1.732" - 4.921"
④	M05 80600	1	Bridge
⑤	M05 90600	1	Serrated body
⑥	M05 90500.11	1	Packing piece
⑦	B05 20600	1	Boring bar Ø 0.236" - 0.315"
⑧	B05 20620	1	Boring bar Ø 0.315" - 0.472"
⑨	B05 20660	1	Boring bar Ø 0.472" - 0.709"
⑩	B05 20720	1	Boring bar Ø 0.709" - 0.984"
⑪	A5210150 or A5210350	1	ABS 50 CAT 50 or ABS50 CAT 40 Adapter
⑫	1805010040	1	Allen key SW4
⑬	L05 01110	1	Flag key 5IP
	L05 01120	1	Flag key 6IP
	L05 01240	1	Flag key 8IP
	5501105016	5	Cylindrical screw M5×16
⑭	W57 04140.0260	4	Insert BK60
	W57 14140.0460	4	Insert BK60
	W00 04120.0164	2	Insert BK64

Variable Options

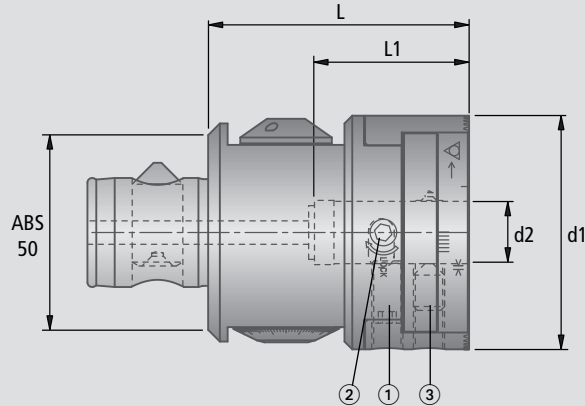
Only **9** tool components

covering diameters **0.236" – 4.921"**





Micro-adjustable boring head with ABS® connection
with ABS® and cylindrical tool adapter



4



	Order No.	ABS d	d1	d2	Adjustment S	L	L1	lbs	Replacement Part		
									Clamping screw ① DIN913 Order No. Description	Clamping screw ② DIN913 Order No. Description	Gripper screw ③ Order No. Description
ABS50/16	M05 01600	50	2.362	ABS32	0.197	2.638	1.575	2.70	5505108116 M8×1×16	5505108008 M8×8	N00 02061 ABS32-F1

The micro-adjustable boring head is balanced in the zero position.
Adjustment must be in line with cutting parameters and spindle speed.

Features :

- Diameter range 0.020" - 4.921" with existing KOMET standard tools
- Large adjustment range from -0.020 to + 0.394" on dia.
- Easy to use
- Adjustment per graduation = Ø 0.0004"
- Adjustment accuracy Ø 0.00008" with vernier
- Easy-to-read scale
- Existing ABS32 tools can be used
- Internal coolant supply over entire range
- ABS32 spindle connection and 0.630" cylindrical shank
- Can be adapted for any machine tool with standard tool adapters
- Head diameter: 2.362"

Cutting Recommendations

Guideline for finish boring with MicroKom® hi.flex Fine boring system

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.236 - 0.311	\emptyset 0.315 - 0.469	\emptyset 0.472 - 0.984
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81	980	.002	.003	.004
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.002	.002	.005
2.1	< 72500		Lead alloy	12L13	980	.002	.003	.005
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.001	.002	.004
4.0	> 130000		Tool steel	H13 H21	660	.001	.002	.004
4.1			HSS		390	.001	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.000	.002	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.000	.002	.003
6.0	≤ 87000		Stainless steel: austenitic 300 series	304L 316	660	.000	.002	.004
6.1	< 130000		Stainless steel	630	590	.000	.002	.004
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.000	.002	.003
8.0		180	Grey cast iron	No 35 B No 50 B	790	.002	.004	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.002	.004	.006
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	590	.002	.003	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.002	.003	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.002	.003	.006
10.1		200	Malleable cast iron	70003	460	.001	.003	.005
10.2		300	Alloyed nodular cast iron	A43D2	460	.001	.003	.005
12.0		90	Vermicular cast iron		390	.001	.004	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	1310	.001	.002	.003
12.2		100	Copper alloy, Brass, Bronze: average cut		980	.002	.003	.006
13.0		60	Wrought aluminum alloy		1640	.001	.002	.004
13.1		75	Aluminum alloy: Si content $< 10\%$	GD-AISI12	1150	.002	.003	.005
13.2		100	Magnesium alloy		980	.002	.003	.005
14.0		100	Aluminum alloy: Si content $> 10\%$	A360.2	980	.002	.003	.005
15.0	203000		Hardened steel < 45 HRC		390	.001	.002	.003
16.0	261000		Hardened steel > 45 HRC		300	.001	.002	.003

Alternative Insert

For better chip control			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.236-0.311	-		
0.315-0.469	W30 04120.3232 W30 04120.3977	TOHX06T102EL-US12 CK32 TOHX06T1ZZEL-39G12 BK77	
0.472-0.984	W30 14120.3232 W30 14120.3977	TOHX090202EL-US12 CK32 TOHX0902ZZEL-39G12 BK77	

For better wear resistance			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.236-0.311	-		
0.315-0.469	W57 04140.0232 W30 04120.0238 W30 04990.0255 W30 04990.0257	TOGX06T102EN-14 CK32 TOGX06T102EL-G12 CK38 TOGX06T102FN PCD55 TOGX06T102FN CBN57	
0.472-0.984	W57 14140.0432 W30 14120.0238 W30 14990.0455 W30 14990.0457	TOGX090204EN-14 CK32 TOGX090202EL-G12 CK38 TOGX090204FN PCD55 TOGX090204FN CBN57	

For better surface finish			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.236-0.311	-		
0.315-0.469	W57 04140.0232 W30 04060.036110 W30 04200.0321 W30 04990.0255	TOGX06T102EN-14 CK32 TOGX06T103EL-G06 BK6110 TOGX06T103FL-G20 K10 TOGX06T102FN PCD55	
0.472-0.984	W57 14140.0432 W30 14060.046110 W30 14200.0421 W30 14990.0455	TOGX090204EN-14 CK32 TOGX090204EL-G06 BK6110 TOGX090204FL-G20 K10 TOGX090204FN PCD55	

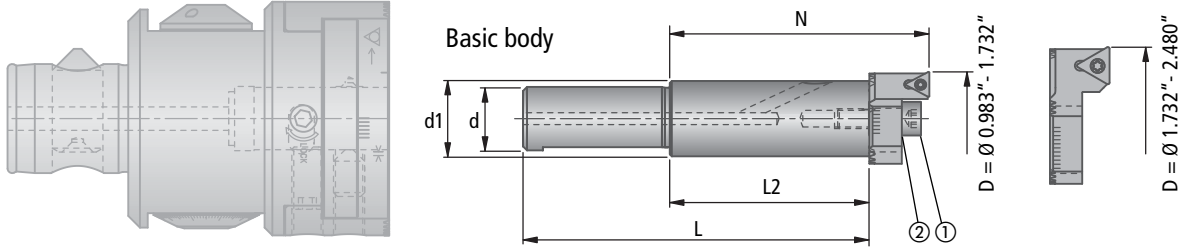


MicroKom® *hi.flex* Basic body / Insert holder Ø 0.984" – 3.661"

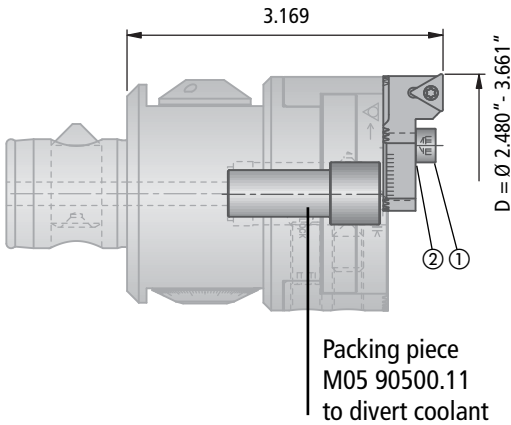
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
< 2.5xD								
	●	●	○	○	✗	●	●	✗

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

Ø 0.984" – 2.480"



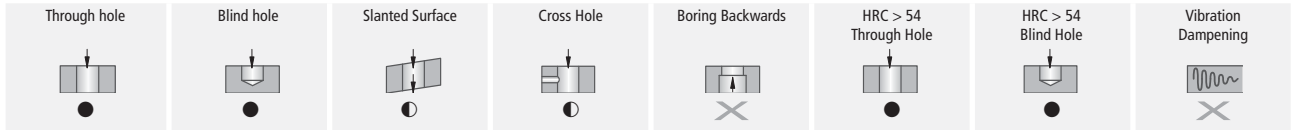
Ø 2.480" – 3.661"



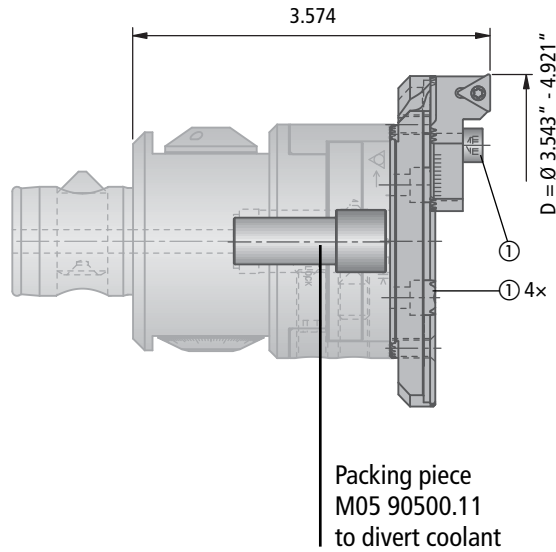
Basic body							Replacement parts	
							Location screw ①	Cup spring ②
Order No.	d	d1	N	L	L1		 Order No. Description	 Order No. Description
M05 90600	0.630	0.748	2.559	3.484	2.028	0.36	5501105016 M5×16 ISO4762	5677110053 A12.5Ø6.2×0.35

Insert Holder			Basic Recommendation				Replacement Part						
D	 Order No.		Insert			for Workpiece Material		Clamping screw	TORX PLUS				
			 Order No. Size	 ISO Insert Description		P	M	K	N	S	H	 Order No. Description	 Order No. Description
0.983 - 1.732	M05 20600	0.042	W57 04140.0260 W30 04060.0361 W57 04120.0223	TOGX06T102EN-14 BK60 TOHX06T103EL-G06 BK61 TOGX06T102FN-12 K10		●	●	●	●	●	●	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
1.732 - 3.661	M05 20650	0.057	W57 14140.0460 W30 14060.0461 W57 14120.0423	TOGX090204EN-14 BK60 TOHX090204EL-G06 BK61 TOGX090204FN-12 K10		●	●	●	●	●	●	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP

MicroKom® *hi.flex* Bridge / Insert holder Ø 3.543" – 4.921"



● highly recommended ● recommended ○ may be suitable ✗ not recommended



D	Bridge Order No.	Location screw Order No. Description	Insert holder Order No.	Basic Recommendation		Replacement Part		
				Insert Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H	Clamping screw Order No. Description	TORX PLUS Order No. Description
3.543 - 4.921	M05 80600 0.32	5501105016 M5×16 ISO4762	M05 20150 0.06	W57 14140.0460 W30 14060.0461 W57 14120.0423	TOGX090204EN-14 BK60 TOHX090204EL-G06 BK61 TOGX090204FN-12 K10	P M K N S H ● ● ● ● ● ●	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP

Delivery: Bridge with location screw.
Insert holder with clamping screw.
Please order inserts and Torx Plus screw driver separately.

Cutting Recommendations

Guideline for finish boring with MicroKom® *hi.flex* Fine boring system

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.004
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.005
2.1	<72500		Lead alloy	12L13	980	.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.004
4.0	>130000		Tool steel	H13 H21	660	.004
4.1			HSS		390	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	160	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.004
6.1	<130000		Stainless steel	630	590	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.004
8.0		180	Grey cast iron	No 35 B No 50 B	790	.008
8.1		250	Alloy grey cast iron	A436 Type 2	660	.008
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.006
10.1		200	Malleable cast iron	70003	460	.006
10.2		300	Alloyed nodular cast iron	A43D2	460	.006
10.2		300	Vermicular cast iron		390	.006
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		890	.006
13.0		60	Wrought aluminum alloy		1640	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	980	.006
13.1		100	Magnesium alloy		820	.006
14.0		100	Aluminum alloy: Si content >10%	A360.2	820	.006
15.0	203000		Hardened steel < 45 HRC		390	.003
16.0	261000		Hardened steel > 45 HRC		300	.003

Alternative Insert

For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
3.543 - 4.921			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	

For better wear resistance			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
3.543 - 4.921			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	

For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
3.543 - 4.921			W30 14120.3160	TOHX090202EL-UF12 BK60	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	
			W30 14990.0440	TOGX090204TN CBN40						●

4



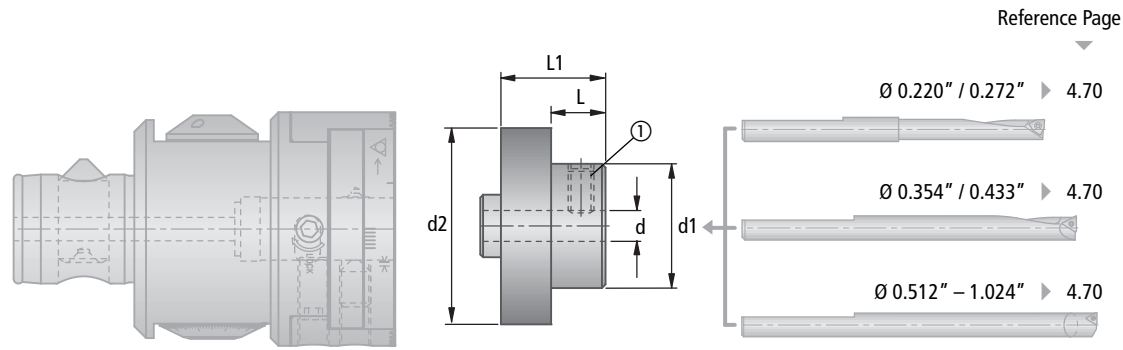
MicroKom® hi.flex Optional Equipment

Boring Bar Adapter

Adapter

with cylindrical tool location

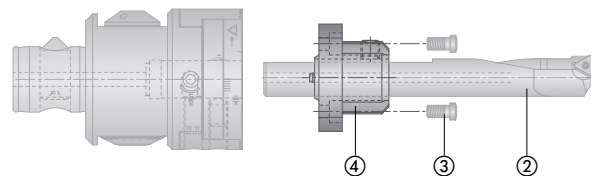
for clamping vibration dampened fine boring bars



Order No.	d	d1	d2	L	L1	lbs	Assembly parts	
							Description	Order No.
M05 90200	0.236	1.220	–	0.630	–	0.25	M8×10	55051 08010
M05 90210	0.315	1.220	–	0.630	–	0.26	M8×10	55051 08010
M05 90220	0.394	1.220	1.811	0.590	0.984	0.34	M8×10	55051 08010
M05 90230	0.472	1.220	1.811	0.590	0.984	0.32	M8×10	55051 08010
M05 90240	0.630	1.220	1.811	0.787	1.181	0.32	M8×8	55051 08008

Supplies include: Adapter complete.

Instruction for adapter M05 90240



Please note:

Before tightening the holding screw (3), center the adapter (4) with shank \varnothing for the boring bar (2) on the micro-adjustable head.



Mounting bridge

for O.D. machining \varnothing 0.197" – 2.756"



Setting the diameter

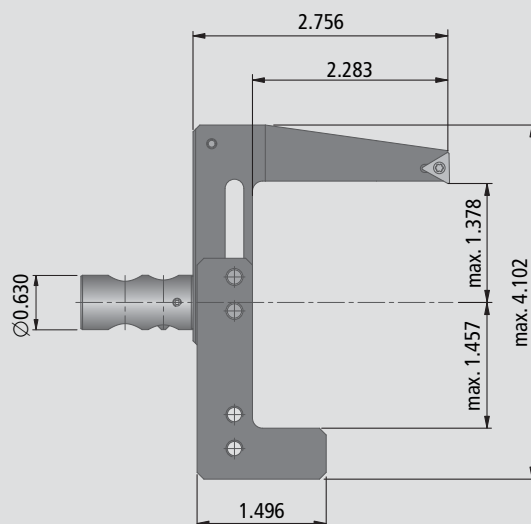
- Position the mounting bridge on the micro-adjustable head.
- Set the coarse position on the upper scale, tighten screw ①.

Important note: check position of screw ① for required \varnothing range!

\varnothing 0.197" – 1.338" \varnothing 1.299" – 1.732" \varnothing 1.693" – 2.756"



- Align the front scale for the mounting bridge with the positioning mark on the adjustable head, tighten the pull stud ②.
- Carry out fine adjustment on the setting device using the scale on the micro-adjustable head.








4



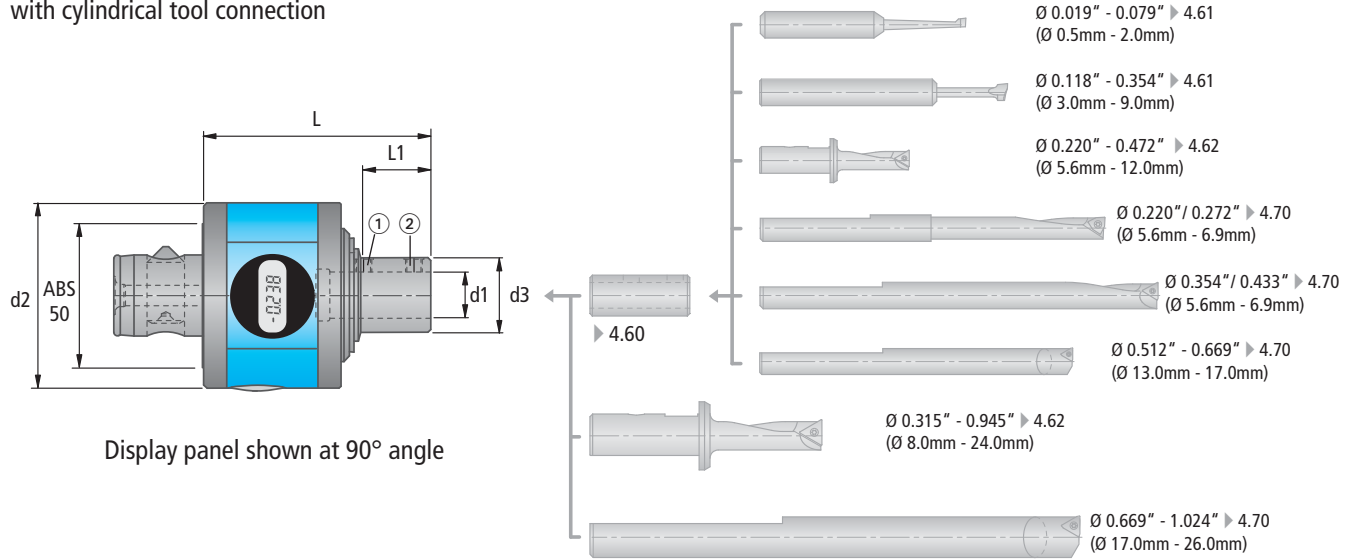
D	Order No.	ISO	Basic Recommendation		Replacement Parts			
			Insert	for Workpiece Material	Clamping screw	TORX PLUS	Cylindrical screw ①	
			Order No. size	ISO Insert Description	P M K N S H	Order No. Description	Order No. Description	Order No. Description
0.197" – 2.756"	M05 90300	0.014	W30	TOGX090204EN-14 BK60 TOHX090204EL-G06 BK61 TOGX090204FN-12 K10	● ● ● ● ● ●	N00 56111 S/M2.6x6.2-8IP 11.3 in-lbs	L05 00830 8IP	55011 05030 M5x30


Supplies include: Mounting bridge with assembly parts.
Please order inserts and accessories separately.

KomTronic® Micro-adjustable Boring Head M040

Machine Connection 	Balancing Note (Chapter 8) Pre-balanced Q6.3 12,500 RPM	Coolant Supply Central up to 725 PSI 	Adjustment 	Rotating Tool 	Tool Connection Cylindrical Shank 
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with ABS® Connection
with cylindrical tool connection



Order No.	ABS d	d1	d2	d3	Adjustment S	L	L1	
M04 00201	50	.630	2.756	1.024	0.098	3.228	0.984	2.42

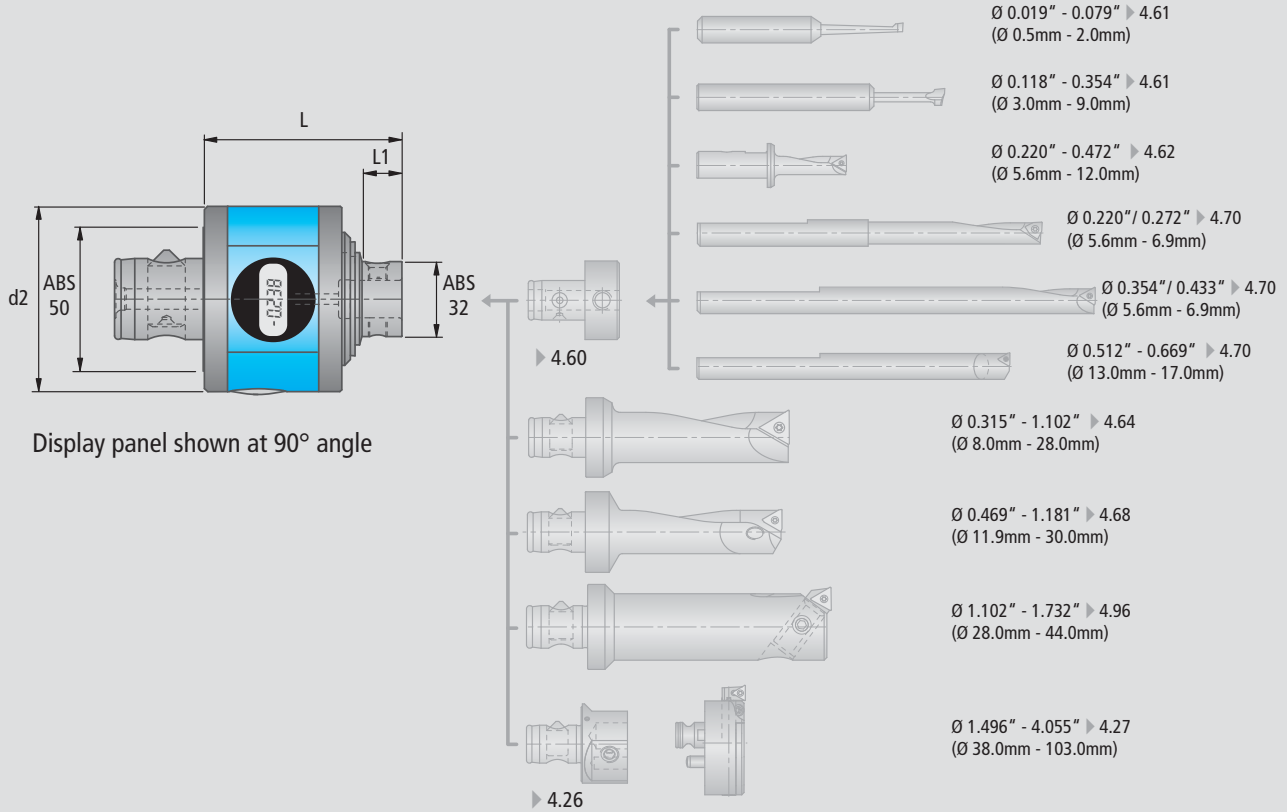
Replacement Parts						
Battery	Battery spring	O-Ring	Positioning pin	Battery cover	Clamping screw ①	Clamping screw ②
Order No.	Order No.	Order No.	Order No.	Order No.	Order No. Description	Order No. Description
7500012150	5271000053	5291401615	N00 05480	M04 00150.11	N00 70900 M6×8	N00 70190 M6×6

Note: The micro-adjustable head is balanced without offset.

Note: When setting the M04 00201, the balancing ring (page 4.58) may be used for higher spindle speeds or surface requirements.

Machine Connection 	Balancing Note (Chapter 8) Pre-balanced Q6.3 12,500 RPM	Coolant Supply Central up to 725 PSI 	Adjustable 	Rotating Tool 	Tool Connection
-------------------------------	--	--	-----------------------	--------------------------	----------------------------

with ABS® Connection



Order No.	ABS d	ABS d1	d2	L	L1		Replacement Parts				
							Battery	Battery spring	O-Ring	Positioning pin	Battery cover
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	
M04 00151	50	32	2.756	2.717	0.531	2.62	7500012150	5271000053	5291401615	N00 05480	M04 00150.11

Note: The micro-adjustable head is balanced without offset.

Assembly

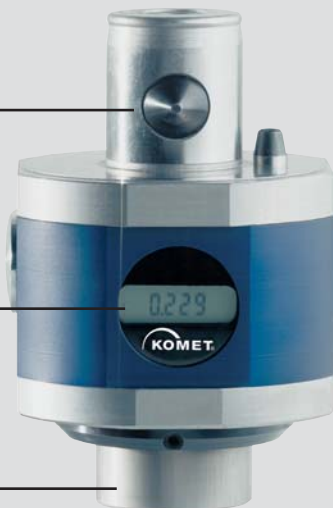
Can be adapted for any machine tool with ABS standard tool adapters

Operating buttons

Battery compartment

Digital display with position display energy saving function: Display automatically switches off after 30 seconds

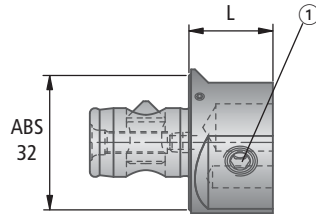
ABS 32 on tool side or 0.630" (16 mm) cylindrical shank connection




The adjustment mechanism is activated manually by the use of hex socket type key. Adjustment in increments of 0.00005" (0.001mm) are possible. A full turn equals an adjustment of 0.0028" (0.70mm) on diameter.

Intermediate Adapter for M040 with ABS® Connection

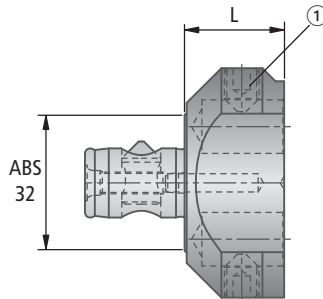
for Ø 1.496" – 2.480" (38 – 63 mm)




(..) = mm

Order No.	ABS d1	L		Replacement Part
				Clamping screw ①
Order No.				Order No.
M04 01310	32	0.767 (19.5)	0.30	M03 20090.15

for Ø 2.441" – 4.055" (62 – 103 mm)



(..) = mm

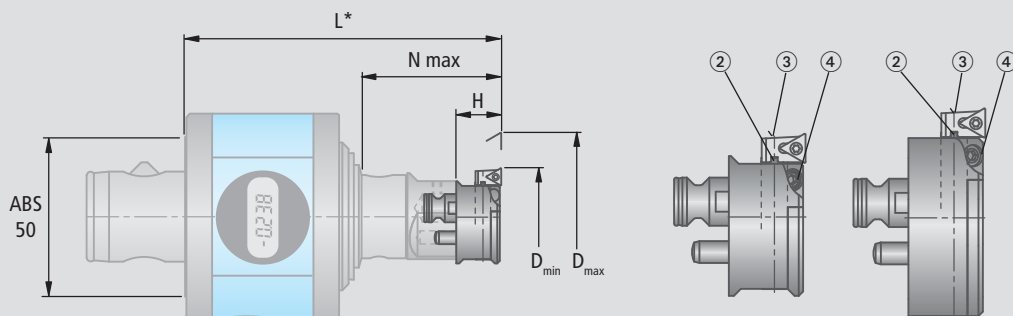
Order No.	ABS d1	L		Replacement Part
				Clamping screw ①
Order No.				Order No.
M04 01320	32	0.906 (23)	0.63	M03 20090.15

Delivery:

Intermediate adapter complete with clamping screw ①.

Replaceable Bridge for M040

for Ø 1.496" - 2.480" (38 - 63 mm)

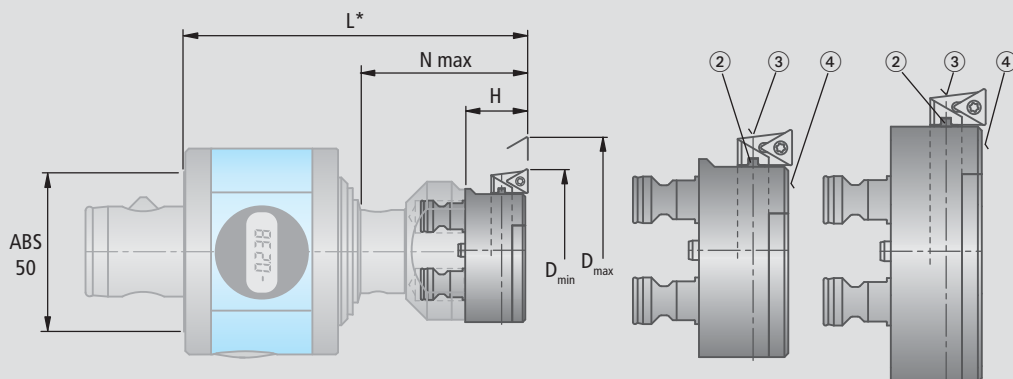


* for L-length, see table on opposite page

(..) = mm

D _{min} - D _{max}	Order No.	H	N max	lbs	Replacement Part		
					② Holder Order No.	③ Location screw for insert holder Order No. Description	④ Clamping screw for holder Order No.
1.496-2.008 (38-51)	M03 20180	0.689 (17.5)	1.968 (50)	0.13	M03 20180.16	N00 56211 S/M3.5×7.3-10IP	5505104008
1.969-2.480 (50-63)	M03 20190	0.689 (17.5)	1.968 (50)	0.18			

for Ø 2.441" - 4.055" (62 - 103 mm)



* for L-length, see table on opposite page

(..) = mm

D _{min} - D _{max}	Order No.	H	N max	lbs	Replacement Part		
					② Holder Order No.	③ Location screw for insert holder Order No. Description	④ Clamping screw for holder Order No.
2.441-3.268 (62-83)	M03 20150	0.945 (24)	2.362 (60)	0.20	M03 20150.16	N00 56211 S/M3.5×7.3-10IP	5505104008
3.228-4.055 (82-103)	M03 20160	0.945 (24)	2.362 (60)	0.24			

Delivery:

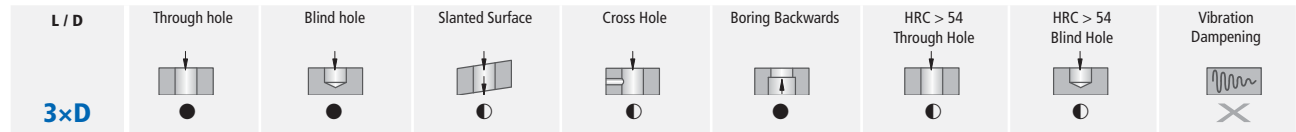
Replaceable bridge with location screw ③, holder ② and calmping screw ④.
Please order boring cartridge separately.

Note:

Use replaceable bridges with intermediate adapter (see page 4.26)
These replaceable bridges can also be used on the **M03Speed** micro-adjustable head (see page 4.46)

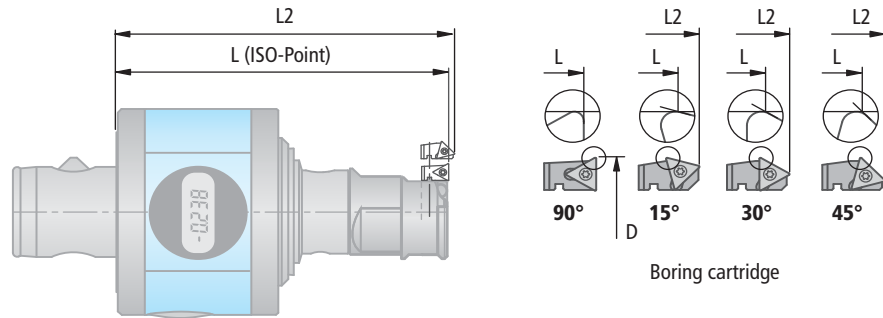


Boring Cartridge for M040



● highly recommended ◐ recommended ○ may be suitable ✗ not recommended

1.496" – 4.055" (Ø 38.0 – 103.0 mm)



(.) = mm

Boring Head	Boring cartridge forward						Basic Recommendation						Replacement Part				
	D	Order No.	α	L	L2	lbs	Insert			for Workpiece Material						Clamping screw Order No. Description	TORX PLUS Order No. Description
							Order No. Size	ISO Insert Description		P	M	K	N	S	H		
M04.00151 ABS50	1.496 - 2.480 (38 - 63)	M03 10033	90°	4.173 (106.0)	4.173 (106.0)	0.004										N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
		M03 11120	15°	3.996 (101.5)	4.240 (107.7)	0.004	W57 04120.0223	TOGX06T102FN-12 K10									
		M03 11220	30°	4.035 (102.5)	4.252 (108.0)	0.004	W57 04140.0284	TOGX06T102EN-14 BK84									
		M03 11320	45°	4.075 (103.5)	4.252 (108.0)	0.004	W30 04060.0361	TOGX06T103EL-G06 BK61									
	2.441 - 4.055 (62 - 103)	M03 10043	90°	4.567 (116.0)	4.576 (116.0)	0.011										N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
		M03 11130	15°	4.311 (109.5)	4.642 (117.9)	0.011	W57 14120.0423	TOGX090204FN-12 K10									
		M03 11230	30°	4.350 (110.5)	4.646 (118.0)	0.011	W57 14140.0484	TOGX090204EN-14 BK84									
		M03 11330	45°	4.409 (112.0)	4.650 (118.1)	0.011	W30 14060.0461	TOGX090204EL-G06 BK61									

Delivery: Boring cartridge with clamping screw and screwdriver.
Insert not included.

Additional inserts and approach angles available on request.





Cutting Recommendations





Guideline for finish boring with Boring Head M040





Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\varnothing 1.496 - 2.480	\varnothing 2.441 - 4.055
1.0	≤72500		Unalloyed steel	A570.36	980	.003	.004
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120	820	.003	.005
				1055			
				5115			
2.1	<72500		Lead alloy	12L13	980	.004	.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	790	.003	.004
				1064			
4.0	>130000		Tool steel	H13	660	.002	.004
				H21			
4.1			HSS		390	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.003
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L	660	.003	.004
				316			
6.1	<130000		Stainless steel	630	590	.002	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420	390	.002	.004
				403			
8.0		180	Grey cast iron	No 35 B	790	.006	.008
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004	.006
10.1		200	Malleable cast iron	70003	460	.004	.006
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.006
12.0		90	Vermicular cast iron		980	.004	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
13.0		60	Copper alloy, Brass, Bronze: average cut		1640	.003	.005
13.1		75	Wrought aluminum alloy	GD-AISI12	1150	.004	.006
14.0		100	Aluminum alloy: Si content <10%		820	.004	.006
15.0	203000		Aluminum alloy: Si content >10%	A360.2	390	.003	.003
16.0	261000		Hardened steel < 45 HRC		300	.002	.003
			Hardened steel > 45 HRC		300	.002	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

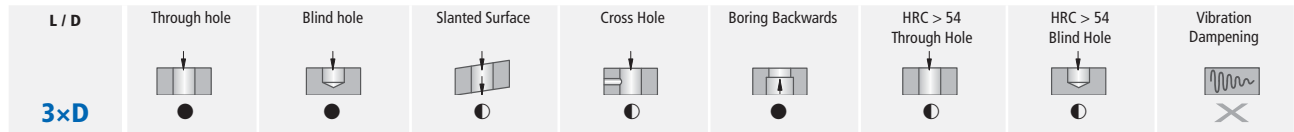
For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
1.496 - 2.480			W30 04120.3232	TOHX06T102EL-US12 CK32	●	●				
			W30 04120.0360	TOHX06T100EL-G12 BK60	●	●				
			W57 04120.0223	TOHX06T102FN-12 K10			●	●		
2.441 - 4.055			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.0360	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0223	TOHX090204FN-12 K10			●	●		

For better wear resistance			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
1.496 - 2.480			W57 04140.0232	TOGX06T102EN-14 CK32	●	●				
			W57 04140.0260	TOGX06T102EN-14 BK60	●	●				
			W30 04990.0355	TOGX06T103FN PCD55			●	●		
			W30 04990.0357	TOGX06T103TN CBN57					●	●
2.441 - 4.055			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10			●	●		

For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
1.496 - 2.480			W30 04120.3160	TOGX06T102EL-UF12 BK60	●	●				
			W30 04990.0355	TOGX06T103FN PCD55			●	●		
			W30 04990.0357	TOGX06T103TN CBN57					●	●
			W30 04990.0240	TOGX06T103TN CBN40						●
2.441 - 4.055			W30 14120.3160	TOGX090202EL-UF12 BK60	●	●				
			W30 14120.3060	TOGX090200EL-G12 BK60	●	●				
			W30 14120.0423	TOGX090204FN-12 K10			●	●		
			W30 14990.0440	TOGX090204TN CBN40					●	●

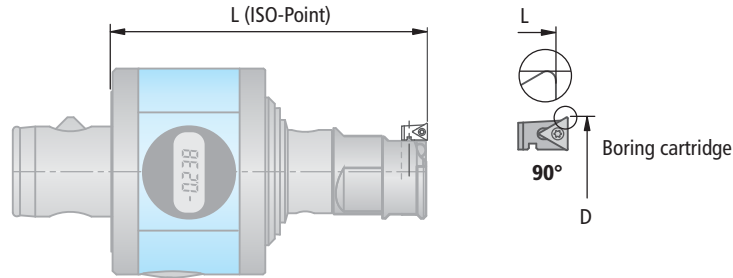


Boring Cartridge for M040



● highly recommended ◐ recommended ○ may be suitable ✗ not recommended

for High Shear Non-ferrous Metal Boring
Ø 1.496" – 4.055" (38.0 – 103.0 mm)
Angle of inclination to main cutting edge: + 5°



(.) = mm

Boring Head	Boring cartridge forward					Basic Recommendation					Replacement Part				
	D	Order No.	α	L		Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw	TORX PLUS	
								P	M	K	N	S	H	Order No. Description	Order No. Description
M04.00151 AB550	1.496-2.480 (38-63)	M03 10133	90°	4.173 (106.0)	0.004	W58 03120.0423	TPGX060104FN-12 K10							N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
M04.00151	2.441-4.055 (62-103)	M03 10143	90°	4.567 (116.0)	0.011	W58 13120.0423	TPGX090204FN-12 K10							N00 56101 TxS/M2.6×5.1 11.3 in-lbs	L05 00830 8IP

Delivery: Boring cartridge with clamping screw and screwdriver.
 Insert not included.

Additional inserts and approach angles available on request.


Cutting Recommendations



Guideline for finish boring with Boring Head M040 - High Shear



Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\varnothing 1.496 - 2.480	\varnothing 2.441 - 4.055
1.0	≤72500		Unalloyed steel	A570.36			
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120			
				1055			
				5115			
2.1	<72500		Lead alloy	12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140			
				1064			
4.0	>130000		Tool steel	H13 H21			
4.1			HSS				
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718			
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L			
				316			
6.1	<130000		Stainless steel	630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420			
				403			
8.0		180	Grey cast iron	No 35 B			
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03			
10.1		200	Malleable cast iron	70003			
10.2		300	Alloyed nodular cast iron	A43D2			
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		820	.004	.006
13.0		60	Wrought aluminum alloy		1310	.003	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	980	.004	.006
14.0		100	Magnesium alloy		820	.004	.006
15.0	203000		Hardened steel < 45 HRC				
16.0	261000		Hardened steel > 45 HRC				

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03150.0421	TPHX060104FL-P15 K10				●				
2.441 - 4.055	W32 13150.0421	TPHX090204FL-P15 K10				●				

For better wear resistance										
D	Order No. size	Insert  PCD  -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHB060104FL-P15 BK50				●	●			
2.441 - 4.055	W32 13990.0455	TPHB090204FN PCD55				●				

For better surface finish										
D	Order No. size	Insert  PCD  -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHX060104FL-P15 BK50				●	●			
2.441 - 4.055	W32 13990.0455	TPHB090204FN PCD55				●				

4



Micro-adjustable Boring Head M040

Boring Set

A

Ø 0.315" - 1.732" (Ø 8 - 44 mm)



Complete Boring Set Case Order No. M04 01230

	Qty.	Description	Order No.
①	1	Micro-adjustable boring head M040	M04 00151
②	1	Boring bar ABS32 Ø 0.311 - 0.508	B00 25610
	1	Boring bar ABS32 Ø 0.469 - 0.665	B00 25630
	1	Boring bar ABS32 Ø 0.626 - 0.823	B00 25650
	1	Boring bar ABS32 Ø 0.783 - 0.981	B00 25671
	1	Boring bar ABS32 Ø 0.941 - 1.138	B00 25691
	1	Boring bar ABS32 Ø 1.098 - 1.732	B30 02020
③	5	Inserts	W57 04140.0284
	5	Inserts	W57 14140.0284
④	optional	Adapter DIN69871 ISO40AD/B-ABS50	A50 55150
		Adapter DIN69871 ISO50AD/B-ABS50	A50 55350
		Adapter HSK-A63 ABS50	A06 30150
⑤	1	Control key SW4	1859110040

B

Ø 1.496" - 4.055" (Ø 38 - 103 mm)



Complete Boring Set Case Order No. M04 01240

	Qty.	Description	Order No.
①	1	Micro-adjustable boring head M040	M04 00151
②	1	Adapter ABS32 Ø 1.496 - 2.480	M04 01310
	1	Adapter ABS32 Ø 2.441 - 4.055	M04 01320
	1	Replaceable bridge Ø 1.496 - 2.008	M03 20180
	1	Replaceable bridge Ø 1.969 - 2.480	M03 20190
	1	Replaceable bridge Ø 2.441 - 3.268	M03 20150
	1	Replaceable bridge Ø 3.228 - 4.055	M03 20160
⑤	2	Insert holder 90° forwards	M03 10033
	2	Insert holder 90° forwards	M03 10043
⑥	5	Insert	W57 04140.0284
	5	Insert	W57 14140.0284
⑦	optional	Adapter DIN69871 ISO40AD/B-ABS50	A50 55150
		Adapter DIN69871 ISO50AD/B-ABS50	A50 55350
		Adapter HSK-A63 ABS50	A06 30150
⑧	1	Control key SW4	1859110040

Possible combinations may be supplied in various options

Supply includes the case with foam lining and 5 inserts for each size

Please ask our sales representative.

**B1 Basic-Set
for boring**
Ø 1.496" - 2.480"
(38 - 63 mm)
Boring set case
Order No. M04 01241



Qty.	Description	Order No.
1	Micro-adjustable boring head M040	M04 00151
1	Adapter ABS32 Ø 1.496 - 2.480	M04 01310
1	Replaceable bridge Ø 1.496 - 2.008	M03 20180
1	Replaceable bridge Ø 1.969 - 2.480	M03 20190
2	Insert holder 90° forwards	M03 10033
1 optional	Adapter DIN69871 ISO40AD/B-ABS50	A50 55150
	Adapter DIN69871 ISO50AD/B-ABS50	A50 55350
	Adapter HSK-A63 ABS50	A06 30150

**B2 Basic-Set
for boring**
Ø 2.441" - 4.055"
(62 - 103 mm)
Boring set case
Order No. M04 01242



Qty.	Description	Order No.
1	Micro-adjustable boring head M040	M04 00151
1	Adapter ABS32 Ø 2.441 - 4.055	M04 01320
1	Replaceable bridge Ø 2.441 - 3.268	M03 20150
1	Replaceable bridge Ø 3.228 - 4.055	M03 20160
2	Insert holder 90° forwards	M03 10043
1 optional	Adapter DIN69871 ISO40AD/B-ABS50	A50 55150
	Adapter DIN69871 ISO50AD/B-ABS50	A50 55350
	Adapter HSK-A63 ABS50	A06 30150

**B3 Extension-Set
for boring**
Ø 1.496" - 2.480"
(38 - 63 mm)
Boring set case
Order No. M04 01243



Qty.	Description	Order No.
1	Adapter ABS32 Ø 1.496 - 2.480	M04 01310
1	Replaceable bridge Ø 1.496 - 2.008	M03 20180
1	Replaceable bridge Ø 1.969 - 2.480	M03 20190
2	Insert holder 90° forwards	M03 10033

**B4 Extension-Set
for boring**
Ø 2.441" - 4.055"
(62 - 103 mm)
Boring set case
Order No. M04 01244



Qty.	Description	Order No.
1	Adapter ABS32 Ø 2.441 - 4.055	M04 01320
1	Replaceable bridge Ø 2.441 - 3.268	M03 20150
1	Replaceable bridge Ø 3.228 - 4.055	M03 20160
2	Insert holder 90° forwards	M03 10043

**B5 Extension-Set
for boring**
Ø 1.496" - 4.055"
(38 - 103 mm)
Boring set case
Order No. M04 01245



Qty.	Description	Order No.
1	Adapter ABS32 Ø 1.496 - 2.480	M04 01310
1	Adapter ABS32 Ø 2.441 - 4.055	M04 01320
1	Replaceable bridge Ø 1.496 - 2.008	M03 20180
1	Replaceable bridge Ø 1.969 - 2.480	M03 20190
1	Replaceable bridge Ø 2.441 - 3.268	M03 20150
1	Replaceable bridge Ø 3.228 - 4.055	M03 20160
2	Insert holder 90° forwards	M03 10033
2	Insert holder 90° forwards	M03 10043



Micro-Adjustable Boring Head **M03Speed**

High-precision fine adjustment with balancing

- The demands on finish boring tools are primarily the increasing improvements on the surface finish and at the same time the higher cutting speeds to achieve shorter machining times.
- The finish boring is a demanding machining operation. The M03 micro-adjustable boring system has provided a tried and tested performance with its high precision adjustment mechanism. From the rough adjustment for the rotating clamping holder to the graduation collar on the external diameter allows fine adjustment of up to 0.00008" (0.002 mm) on the diameter.
- The fine adjustments to compensate the insert wear or after measurement are performed rather effortlessly and with extreme accuracy while the tools are still mounted on the machine spindle. The tooling dimensions are perfectly maintained without the clamping requirements during and after the fine adjustments.
- Balancing: when the insert position is changed, an automatic balancing adjustment is made via the convenient balancing weight that lies diametrically opposite side. This is a balancing operation on the adjustment plane for the insert.
- This is done with seven M03 tool bodies to cover a diameter range from 24.8 to 206 mm. Maximum changeover accuracy is guaranteed with the ABS connection (25, 32, 40, 50 and 63).
- For finish boring of larger diameters from 100mm to 206mm, the three adaptable and replaceable bridges are used along with a basic ABS 63 body unit.
- Like the whole M03 product range, the bridges are constructed with lightweight material and a hard surface coating that allows high machining speed and durability.
- The NEW and IMPROVED M03 Speed Micro-adjustable Finish Boring Head also offers flexibility with its replaceable insert holders. This is the unique and new feature of the improved M03 product line.
- The user has the option of performing forward and reverse machining with one tool that utilizes the insert holders with different approach angles. Using a specially designed connection, the changeover is fast, uncomplicated and safe.

The modular tool range

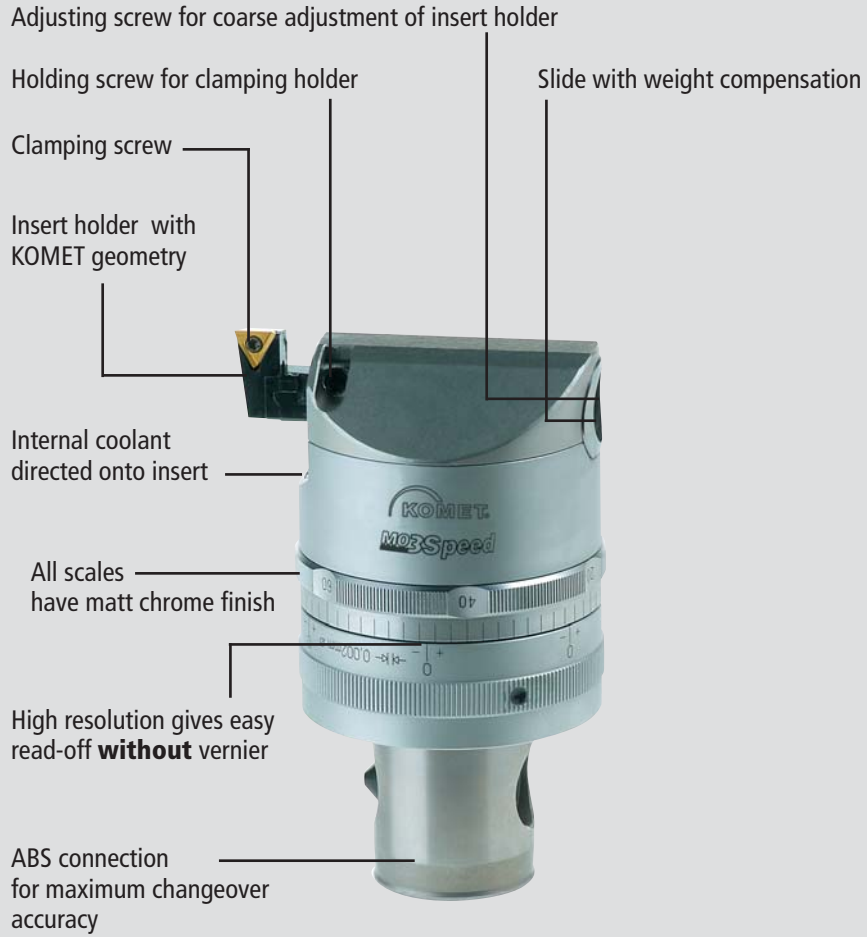
- For diameters over 206 millimeters KOMET offers bridging tools.
- In a modular design, these consist of standard elements and elements adjusted to length to customer specification.

The advantages

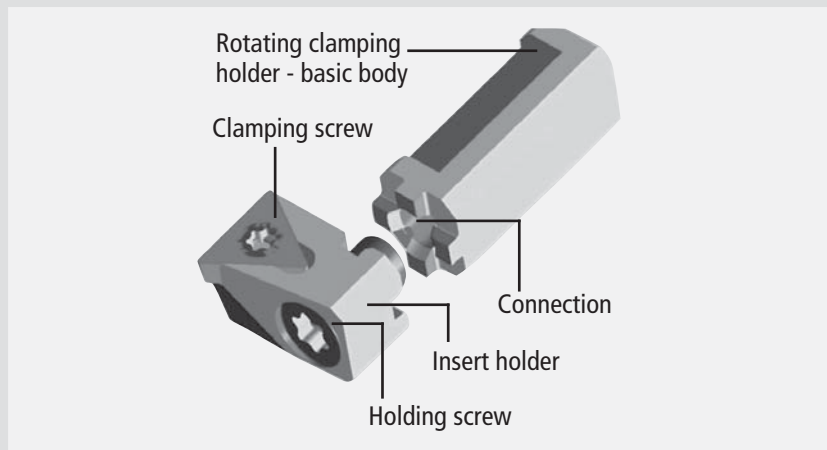
- Unique: our micro-adjustable head with automatic balancing in the slide.
- Micro-adjustment steps per graduation of 0.002 mm in the diameter.
- Geometrically the same as previous M03 design – and therefore compatible.
- Micro-adjustment without the need for clamping.



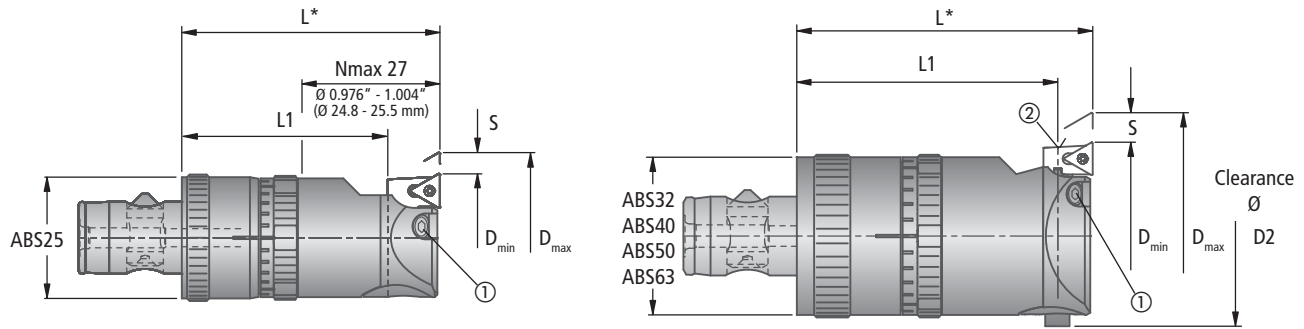
Design



4



Micro-Adjustable Boring Head **MO3Speed** with ABS® Connection Ø 0.976" – 4.055" (24.8 – 103.0 mm)



1)Note:

Up to 1.004" (25.5 mm) diameters, the effective length corresponds to tool length L.

*L-length, see insert holder table on opposite page

(..) = mm

Order No.	ABS d	D _{min}	D _{max}	Clearance diameter D2	L1	Coarse adjustment path S	Fine adjustment in diameter	Tolerances	Tolerances	Replacement Parts	
										Clamping screw ① for holder Order No. Description	Holding screw for insert holder ② Order No. Description
M03 00115	25	.976 ¹⁾ (24.8)	1.299 (33.0)	.965 (24.5)	1.571 (39.9)	0.177 (4.5)	0.01 (0.25)	40 000	0.55	55051 04504 M4x0.5x4	-
M03 00515	25	1.142 (29.0)	1.535 (39.0)	1.024 (26.0)	1.571 (39.9)	0.197 (5.0)	0.016 (0.4)	40 000	0.88		
M03 01025	32	1.496 (38.0)	1.654 (42.0)	1.299 (33.0)	2.083 (52.9)	0.236 (6.0)	0.016 (0.4)	31 000	0.88	55051 04504 M4x0.5x4	N00 56211
		1.654 (42.0)	1.969 (50.0)	D - .314 (8)							S/M3.5x7.3-10IP
M03 01535	40	1.929 (49.0)	2.480 (63.0)	1.614 (41.0)	2.362 (60.0)	0.276 (7.0)	0.016 (0.4)	24 000	0.88	55051 05506 M5x0.5x6	N00 56211 S/M3.5x7.3-10IP
M03 02045	50	2.441 (62.0)	3.150 (80.0)	2.008 (51.0)	2.559 (65.0)	0.354 (9.0)	0.024 (0.6)	18 000	1.32		
M03 02555	63	3.110 (79.0)	3.740 (95.0)	2.559 (65.0)	2.598 (66.0)	0.472 (12.0)	0.024 (0.6)	15 000	1.32	55051 06008 M6x8	N00 56401
		3.740 (95.0)	4.055 (103.0)	D-1.181 (30.0)							S/M5x9.4-20IP

Delivery: Micro-adjustable boring head ABS25

Micro-adjustable boring head with clamping screw ①.
Please order insert holder and insert separately.

Delivery: Micro-adjustable boring head ABS32–ABS63

Micro-adjustable boring head with clamping screw ① and holder with holding screw ②.
Please order insert holder and insert separately.

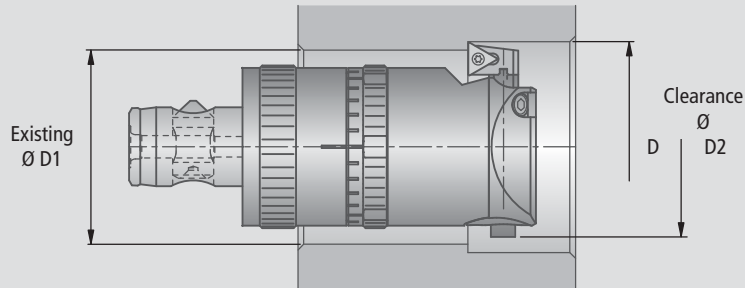
Calculation for backward machining

$$D1 = \frac{D2 + D}{2} + 0.020''$$

D1 = Existing boring-Ø

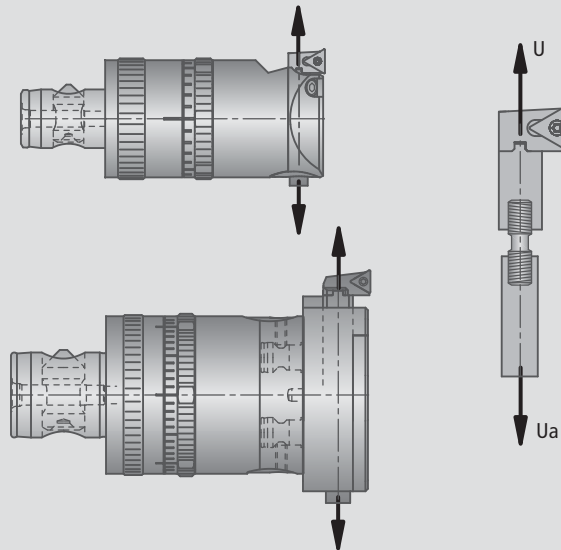
D2 = Clearance-Ø

D = Boring-Ø



Dynamic weight balance

on the slide guarantees optimum balance in any position

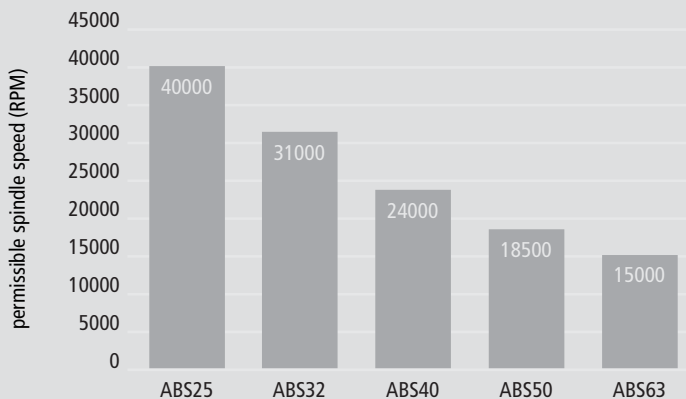


Maximum Spindle Speed

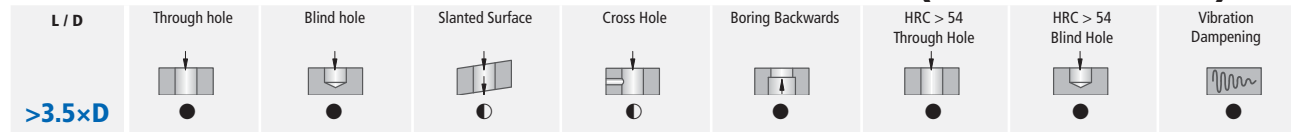
when using different ABS® sizes

Ø 0.976" - 4.055" (24.8 - 103.0 mm)

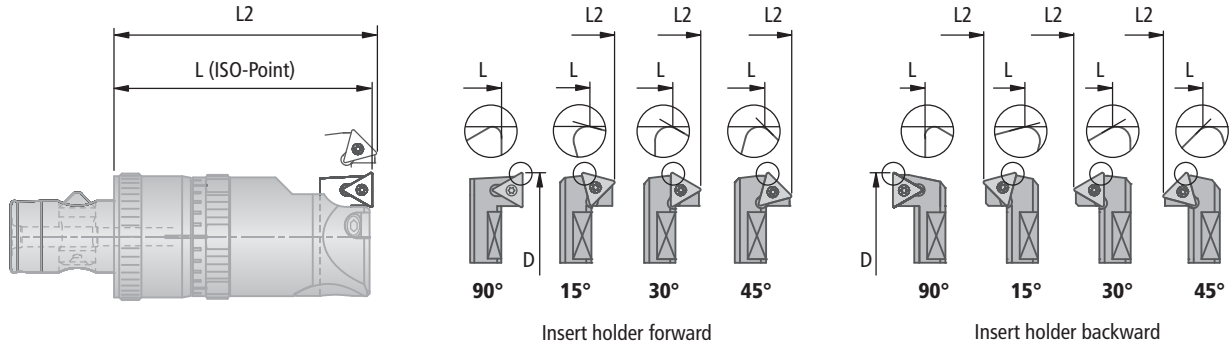
(Page 4.36 **MO3Speed** without replaceable bridges)



Insert Holder for **M03Speed** $\varnothing 0.976'' - 1.535''$ (24.8 – 39.0 mm)



● highly recommended ● recommended ○ may be suitable ✕ not recommended



(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation					Replacement Part			
	D	Order No.	α	L	L2	Insert Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	TORX PLUS Order No. Description
								P	M	K	N	S		
M03 00115 _{ABS25} 0.976 - 1.299 (24.8 - 33.0)	M03 10011	90°	1.969 (50.0)	-	W57 04140.0260 W57 04120.0223	TOGX06T102EN-14 BK60 TOGX06T102FN-12 K10	●	●					N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
	M03 11110	15°	1.748 (44.4)	1.980 (50.3)										
	M03 11210	30°	1.787 (45.4)	1.996 (50.7)										
	M03 11310	45°	1.827 (46.4)	1.996 (50.7)										
M03 00515 _{ABS25} 1.142 - 1.535 (29.0 - 39.0)	M03 10021	90°	1.969 (50.0)	-	W30 04990.0240 W30 04060.036110	TOGX06T102TN CBN40 TOHX06T103EL-G06 BK6110							N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
	M03 11100	15°	1.748 (44.4)	1.980 (50.3)										
	M03 11200	30°	2.142 (54.4)	1.996 (50.7)										
	M03 11300	45°	1.827 (46.4)	1.996 (50.7)										

(..) = mm

Micro-adj. boring head	Insert holder backward					Basic Recommendation					Replacement Part			
	D	Order No.	α	L	L2	Insert Order No. Size	ISO Insert Description	for Workpiece Material					Clamping screw Order No. Description	TORX PLUS Order No. Description
								P	M	K	N	S		
M03 00115 _{ABS25} 1.181 - 1.299 (30.0 - 33.0)	M03 12010	90°	1.409 (35.8)	-	W57 04140.0260 W57 04120.0223	TOGX06T102EN-14 BK60 TOGX06T102FN-12 K10	●	●					N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
	M03 12110	15°	1.630 (41.4)	1.396 (35.4)										
	M03 12210	30°	1.591 (40.4)	1.382 (35.1)										
	M03 12310	45°	1.551 (39.4)	1.382 (35.1)										
M03 00515 _{ABS25} 1.339 - 1.535 (34.0 - 39.0)	M03 12000	90°	1.409 (35.8)	-	W30 04990.0240 W30 04420.0362	TOGX06T102TN CBN40 TOHX06T103ER-G12 BK62							N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
	M03 12100	15°	1.630 (41.4)	1.396 (35.4)										
	M03 12200	30°	1.591 (40.4)	1.382 (35.1)										
	M03 12300	45°	1.551 (39.4)	1.382 (35.1)										

Delivery:

Insert holder with clamping screw and screwdriver. Insert not included.

Cutting Recommendations

Guideline for finish boring with Boring Head **MO3Speed**

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.003
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.003
2.1	<72500		Lead alloy	12L13	980	.004
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.003
4.0	>130000		Tool steel	H13 H21	660	.002
4.1			HSS		390	.002
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.002
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.003
6.1	<130000		Stainless steel	630	590	.002
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.004
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004
10.1		200	Malleable cast iron	70003	460	.004
10.2		300	Alloyed nodular cast iron	A43D2	460	.004
10.2		300	Vermicular cast iron		390	.004
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.004
12.1		100	Copper alloy, Brass, Bronze: average cut		890	.004
13.0		60	Wrought aluminum alloy		1640	.003
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.004
13.1			Magnesium alloy		820	.004
14.0		100	Aluminum alloy: Si content >10%	A360.2	820	.004
15.0	203000		Hardened steel < 45 HRC		390	.003
16.0	261000		Hardened steel > 45 HRC		300	.002

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
1.181 - 1.535	W57 04140.0232	TOGX06T102EN-14 CK32	●	●				
	only for insert holder forward W30 04120.3232	TOHX06T102EN-US12 CK32	●	●				

only for insert holder forwards

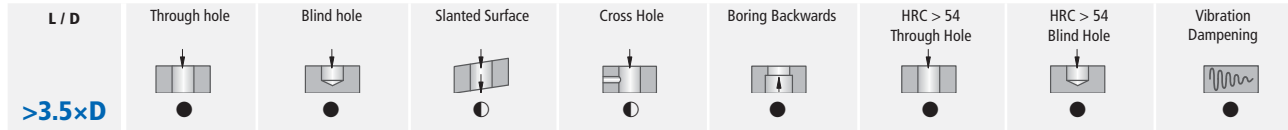
For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
1.181 - 1.535	W57 04140.0232	TOGX06T102EN-14 CK32	●					
	W30 04990.0257	TOGX06T102TN CBN57				●		
	only for insert holder forward W30 04120.0238	TOHX06T102EL-G12 CK38	●	●				

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
1.181 - 1.535	W30 04990.0355	TOGX06T103FN PCD55					●	
	only for insert holder forward W30 04120.3130	TOHX06T102EL-UF12 CK30	●	●				

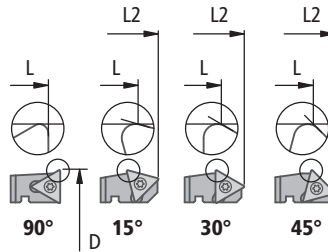
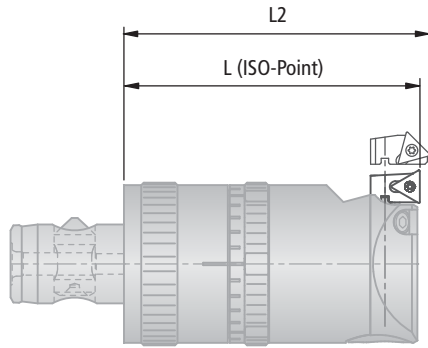
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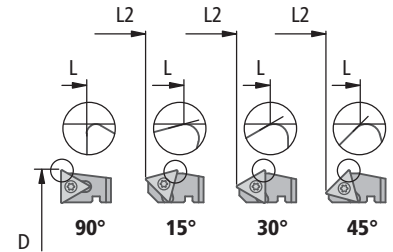
Insert Holder for **Mo3Speed** Ø 1.496" – 4.055" (38.0 – 103.0 mm)



● highly recommended ● recommended ○ may be suitable ✗ not recommended



Insert holder **forward**



Insert holder **backward**

(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation					Replacement Part										
	D	Order No.	α	L	L2	Insert Order No. Size	Insert ISO Insert Description	for Workpiece Material						Clamping screw Order No. Description	TORX PLUS Order No. Description						
								P	M	K	N	S	H								
M03 01025 ABS32 1.496 - 1.969 (38.0 - 50.0)	M03 10033	90°	2.362 (60.0)	-	W57 04140.0260	TOGX06T102EN-14 BK60	●	●					N00 56031 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP							
	M03 11120	15°	2.185 (55.5)	2.429 (61.7)	W57 04120.0223	TOGX06T102FN-12 K10			●	●											
	M03 11220	30°	2.224 (56.5)	2.441 (62.0)	W30 04990.0240	TOGX06T102TN CBN40					●										
	M03 11320	45°	2.264 (57.5)	2.441 (62.0)	W30 04060.036110	TOHX06T103EL-G06 BK6110						●									
M03 01535 ABS40 1.929 - 2.480 (49.0 - 63.0)	M03 10043	90°	2.756 (70.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●					N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP							
	M03 11130	15°	2.500 (63.5)	2.831 (71.9)											W57 14120.0423	TOGX090204FN-12 K10			●	●	
	M03 11230	30°	2.539 (64.5)	2.835 (72.0)											W30 14990.0440	TOGX090204TN CBN40					●
	M03 11330	45°	2.630 (66.8)	2.870 (72.9)											W30 14060.046110	TOHX090204EL-G06 BK6110					
M03 02045 ABS50 2.441 - 3.150 (62.0 - 80.0)	M03 10043	90°	2.953 (75.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP								
	M03 11130	15°	2.697 (68.5)	3.028 (76.9)										W57 14120.0423	TOGX090204FN-12 K10			●	●		
	M03 11230	30°	2.736 (69.5)	3.031 (77.0)										W30 14990.0440	TOGX090204TN CBN40					●	
	M03 11330	45°	2.827 (71.8)	3.067 (77.9)										W30 14060.046110	TOHX090204EL-G06 BK6110						●
M03 02555 ABS63 3.110 - 4.055 (79.0 - 103.0)	M03 10063	90°	3.150 (80.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP								
	M03 11150	15°	2.795 (71.0)	3.138 (79.7)										W57 14120.0423	TOGX090204FN-12 K10			●	●		
	M03 11250	30°	2.874 (73.0)	3.177 (80.7)										W30 14990.0440	TOGX090204TN CBN40					●	
	M03 11350	45°	2.953 (75.0)	3.201 (81.3)										W30 14060.046110	TOHX090204EL-G06 BK6110						●

Insert holder backward					Basic Recommendation					Replacement Part										
Micro-adj. boring head	D	Order No.	α	L	L2	Insert Order No. Size	Insert ISO Insert Description	for Workpiece Material						Clamping screw Order No. Description	TORX PLUS Order No. Description					
								P	M	K	N	S	H							
M03 01025 ABS32 1.654 - 1.969 (42.0 - 50.0)	M03 12020	90°	1.803 (45.8)	-	W57 04140.0260	TOGX06T102EN-14 BK60	●	●					N00 56031 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP						
	M03 12120	15°	1.984 (50.4)	1.740 (44.2)	W57 04120.0223	TOGX06T102FN-12 K10			●	●										
	M03 12220	30°	1.945 (49.4)	1.728 (43.9)	W30 04990.0240	TOGX06T102TN CBN40					●									
	M03 12320	45°	1.906 (48.4)	1.728 (43.9)	W30 04420.0362	TOHX06T103ER-G12 BK62						●								
M03 01535 ABS40 1.929 - 2.480 (49.0 - 63.0)	M03 12030	90°	1.969 (50.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP							
	M03 12130	15°	2.224 (56.5)	1.894 (48.1)										W57 14120.0423	TOGX090204FN-12 K10			●	●	
	M03 12230	30°	2.185 (55.5)	1.89 (48.0)										W30 14990.0440	TOGX090204TN CBN40					●
	M03 12330	45°	2.087 (53.0)	1.846 (46.9)										W30 14420.0462	TOHX090204ER-G12 BK62					
M03 02045 ABS50 2.441 - 3.150 (62.0 - 80.0)	M03 12030	90°	2.165 (55.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP							
	M03 12130	15°	2.421 (61.5)	2.091 (53.1)										W57 14120.0423	TOGX090204FN-12 K10			●	●	
	M03 12230	30°	2.382 (60.5)	2.087 (53.0)										W30 14990.0440	TOGX090204TN CBN40					●
	M03 12330	45°	2.283 (58.0)	2.043 (51.9)										W30 14420.0462	TOHX090204ER-G12 BK62					
M03 02555 ABS63 3.110 - 4.055 (79.0 - 103.0)	M03 12050	90°	2.047 (52.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP							
	M03 12150	15°	2.402 (61.0)	2.071 (52.6)										W57 14120.0423	TOGX090204FN-12 K10			●	●	
	M03 12250	30°	2.323 (59.0)	2.028 (51.5)										W30 14990.0440	TOGX090204TN CBN40					●
	M03 12350	45°	2.244 (57.0)	2.004 (50.9)										W30 14420.0462	TOHX090204ER-G12 BK62					

Delivery: Insert holder with clamping screw and screwdriver. Insert not included.

Additional inserts and approach angles available on request.

Cutting Recommendations

Guideline for finish boring with Boring Head **MO3Speed**

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\emptyset 1.496 - 1.969	\emptyset 1.929 - 4.055
1.0	≤72500		Unalloyed steel	A570.36	980	.003	.004
				1213			
				A573.81			
				5120			
				1055			
2.0	72500 - 130000		Low alloy steel	5115	820	.003	.005
				5115			
2.1	<72500		Lead alloy	12L13	980	.004	.006
				12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	790	.003	.004
				1064			
4.0	>130000		Tool steel	H13	660	.002	.004
				H21			
4.1			HSS		390	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.003
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003
				AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L	660	.003	.004
				316			
6.1	<130000		Stainless steel	630	590	.002	.004
				630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420	390	.002	.004
				403			
8.0		180	Grey cast iron	No 35 B	790	.006	.008
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008
				A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006
				60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006
				80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004	.006
				100-70-03			
10.1		200	Malleable cast iron	70003	460	.004	.006
				70003			
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.006
				A43D2			
12.0		90	Vermicular cast iron		980	.004	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
				UNS C36000			
13.0		60	Copper alloy, Brass, Bronze: average cut		1640	.003	.005
13.1		75	Wrought aluminum alloy	GD-AISI12	1150	.004	.006
				GD-AISI12			
14.0		100	Aluminum alloy: Si content <10%	A360.2	820	.004	.006
				A360.2			
15.0	203000		Hardened steel < 45 HRC		390	.003	.003
16.0	261000		Hardened steel > 45 HRC		300	.002	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

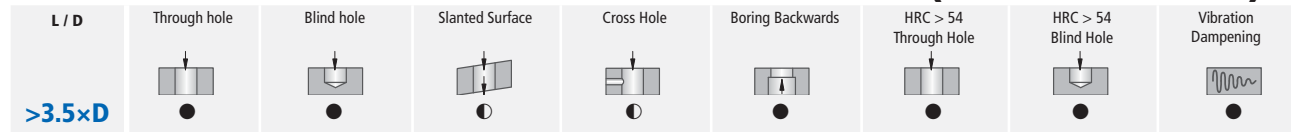
For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
1.496 - 1.969			W57 04140.0232	TOGX06T102EN-14 CK32	●	●				
1.929 - 4.055			W30 04120.3232	TOHX06T102EL-US12 CK32	●	●				

For better wear resistance			for Workpiece Material												
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H					
	W57	W30													
1.496 - 1.969			W57 04140.0232	TOGX06T102EN-14 CK32	●										
											W30 04990.0257	TOGX06T102TN CBN57	●	●	only GG25
1.929 - 4.055			W57 14140.0432	TOGX090204EN-14 CK32	●										
											W30 14990.0457	TOGX090204TN CBN57	●	●	only GG25

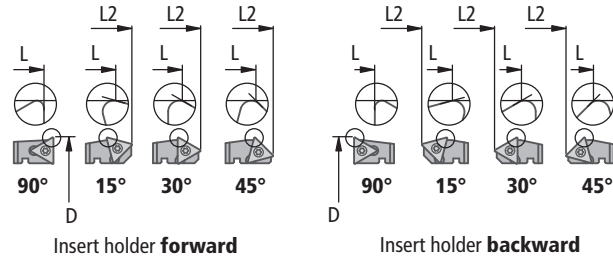
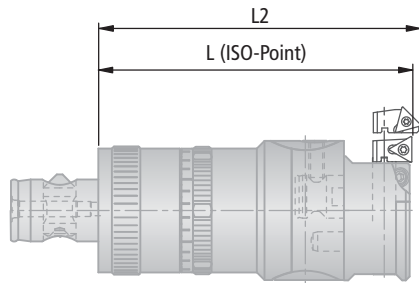
For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W30								
1.496 - 1.969			W30 04990.0355	TOGX06T103FN PCD55	●					
1.929 - 4.055			W30 04120.3130	TOHX06T102EL-UF12 CK30	●	●				



Insert Holder for **Mo3Speed** $\varnothing 1.496'' - 4.055''$ (38.0 – 103.0 mm)



● highly recommended ● recommended ○ may be suitable ✗ not recommended



(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation		Replacement Part			
	D	Order No.	α	L	L2	Insert Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H	Clamping screw Order No. Description	TORX PLUS Order No. Description	
M03 20170 ABS32 1.496 - 2.480 (38.0 - 63.0)		M03 10033	90°	3.189 (81.0)	-	W57 04140.0260	TOGX06T102EN-14 BK60	●		 N00 56031 S/M2×3.8-6IP 5.5 in-lbs	 L05 00810 6IP
		M03 11120	15°	3.012 (76.5)	3.256 (82.7)	W57 04120.0223	TOGX06T102FN-12 K10	●			
		M03 11220	30°	3.051 (77.5)	3.268 (83.0)	W30 04990.0240	TOGX06T102TN CBN40	●			
		M03 11320	45°	3.091 (78.5)	3.268 (83.0)	W30 04060.036110	TOHX06T103EL-G06 BK6110	●			
M03 20140 ABS50 2.441 - 4.055 (62.0 - 103.0)		M03 10043	90°	4.055 (103.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●		 N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	 L05 00830 8IP
		M03 11130	15°	3.799 (96.5)	4.130(104.9)	W57 14120.0423	TOGX090204FN-12 K10	●			
		M03 11230	30°	3.839 (97.5)	4.134 (105.0)	W30 14990.0440	TOGX090204TN CBN40	●			
		M03 11330	45°	3.929 (99.8)	4.169 (105.9)	W30 14060.046110	TOHX090204EL-G06 BK6110	●			

(..) = mm

Micro-adj. boring head	Insert holder backward					Basic Recommendation		Replacement Part			
	D	Order No.	α	L	L2	Insert Order No. Size	ISO Insert Description	for Workpiece Material P M K N S H	Clamping screw Order No. Description	TORX PLUS Order No. Description	
M03 20170 ABS32 1.654 - 2.480 (42.0 - 63.0)		M03 12020	90°	2.630 (66.8)	-	W57 04140.0260	TOGX06T102EN-14 BK60	●		 N00 56031 S/M2×3.8-6IP 5.5 in-lbs	 L05 00810 6IP
		M03 12120	15°	2.811 (71.4)	2.567 (65.2)	W57 04120.0223	TOGX06T102FN-12 K10	●			
		M03 12220	30°	2.772 (70.4)	2.555 (64.9)	W30 04990.0240	TOGX06T102TN CBN40	●			
		M03 12320	45°	2.732 (69.4)	2.555 (64.9)	W30 04420.0362	TOHX06T103ER-G12 BK62	●			
M03 20140 ABS50 2.441 - 4.055 (62.0 - 103.0)		M03 12030	90°	3.268 (83.0)	-	W57 14140.0460	TOGX090204EN-14 BK60	●		 N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	 L05 00830 8IP
		M03 12130	15°	3.524 (89.5)	3.193 (81.1)	W57 14120.0423	TOGX090204FN-12 K10	●			
		M03 12230	30°	3.484 (88.5)	3.189 (81.0)	W30 14990.0440	TOGX090204TN CBN40	●			
		M03 12330	45°	3.386 (86.0)	3.146 (79.9)	W30 14420.0462	TOHX090204ER-G12 BK62	●			

Delivery: Insert holder with clamping screw and screwdriver. Insert not included. Additional inserts and approach angles available on request.

Cutting Recommendations

Guideline for finish boring with Boring Head *MO3*Speed

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\varnothing 1.496 - 2.480	\varnothing 2.441 - 4.055
1.0	≤72500		Unalloyed steel	A570.36	980	.003	.004
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120	820	.003	.005
				1055			
				5115			
2.1	<72500		Lead alloy	12L13	980	.004	.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.003	.004
4.0	>130000		Tool steel	H13 H21	660	.002	.004
4.1			HSS		390	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.002	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.003	.004
6.1	<130000		Stainless steel	630	590	.002	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.004
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006	.008
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004	.006
10.1		200	Malleable cast iron	70003	460	.004	.006
10.2		300	Alloyed nodular cast iron	A43D2	460	.004	.006
10.2		300	Vermicular cast iron		390	.004	.006
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.004	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		890	.004	.006
13.0		60	Wrought aluminum alloy		1640	.003	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.004	.006
14.0		100	Aluminum alloy: Si content >10%	A360.2	820	.004	.006
15.0	203000		Hardened steel < 45 HRC		390	.003	.003
16.0	261000		Hardened steel > 45 HRC		300	.002	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
1.496 - 2.480	W57	04140.0232	TOGX06T102EN-14 CK32	●	●					
	only for insert holder forward									
2.441 - 4.055	W30	04120.3232	TOHX06T102EL-US12 CK32	●	●					
	only for insert holder forward									

For better wear resistance			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
1.496 - 2.480	W57	04140.0232	TOGX06T102EN-14 CK32	●						
	W30	04990.0257	TOGX06T102TN CBN57						● only GG25	
	only for insert holder forward									
2.441 - 4.055	W30	04120.0238	TOHX06T102EL-G12 CK38	●	●					
	W57	14140.0432	TOGX090204EN-14 CK32	●						
	W30	14990.0457	TOGX090204TN CBN57						● only GG25	
only for insert holder forward										
2.441 - 4.055	W30	14120.0238	TOHX090202EL-G12 CK32	●	●					
	only for insert holder forward									

For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30 UF	W30 PCD								
1.496 - 2.480	W30	04990.0355	TOGX06T103FN PCD55							●
	only for insert holder forward									
2.441 - 4.055	W30	04120.3130	TOHX06T102EL-UF12 CK30	●	●					
	only for insert holder forward									
2.441 - 4.055	W30	14990.0455	TOGX090204FN PCD55							●
	only for insert holder forward									
2.441 - 4.055	W30	14120.3130	TOHX020202EL-UF12 CK30	●	●					
	only for insert holder forward									

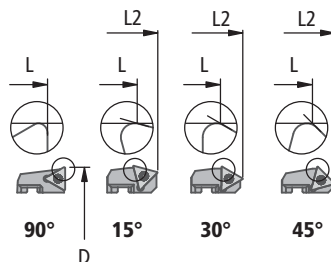
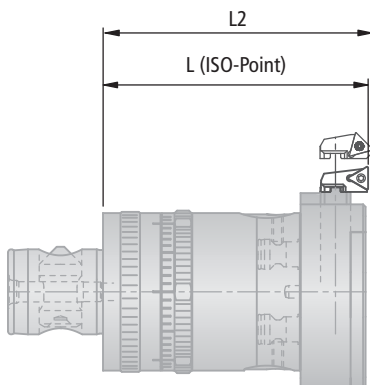
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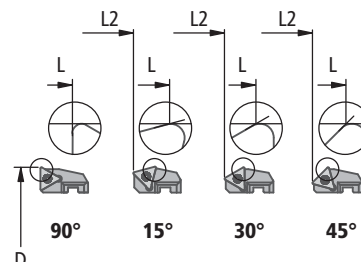
Insert Holder for **Mo3Speed** \varnothing 3.937" – 8.110" (100.0 – 206.0 mm)

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								
	●	●	○	○	●	●	●	●

● highly recommended ○ recommended ○ may be suitable ✕ not recommended



Insert holder **forward**



Insert holder **backward**

(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation			Replacement Part	
	D	Order No.	α	L	L2	Insert		for Workpiece Material	Clamping screw	TORX PLUS
						Order No. Size	ISO Insert Description			
M03 20090 ABS63 3.937 - 8.110 (100.0 - 206.0)		M03 10070	90°	4.173 (106.0)	–	W57 14140.0460	TOGX090204EN-14 BK60		 N00 56101 S/M2.6x5.2-8IP 11.3 in-lbs	 L05 00830 8IP
		M03 11160	15°	3.819 (97.0)	4.169 (105.9)	W57 14120.0423	TOGX090204FN-12 K10			
		M03 11260	30°	3.898 (99.0)	4.213 (107.0)	W30 14990.0440	TOGX090204TN CBN40			
		M03 11360	45°	3.976 (101.0)	4.232 (107.5)	W30 14060.046110	TOHX090204EL-G06 BK6110			

(..) = mm

Micro-adj. boring head	Insert holder backward					Basic Recommendation			Replacement Part	
	D	Order No.	α	L	L2	Insert		for Workpiece Material	Clamping screw	TORX PLUS
						Order No. Size	ISO Insert Description			
M03 20090 ABS63 3.937 - 8.110 (100.0 - 206.0)		M03 12060	90°	3.150 (80.0)	–	W57 14140.0460	TOGX090204EN-14 BK60		 N00 56101 S/M2.6x5.2-8IP 11.3 in-lbs	 L05 00830 8IP
		M03 12160	15°	3.504 (89.0)	3.173 (80.6)	W57 14120.0423	TOGX090204FN-12 K10			
		M03 12260	30°	3.425 (87.0)	3.130 (79.5)	W30 14990.0440	TOGX090204TN CBN40			
		M03 12360	45°	3.346 (85.0)	3.106 (78.9)	W30 14420.0462	TOHX090204ER-G12 BK62			

Delivery: Insert holder with clamping screw and screwdriver. Insert not included. Additional inserts and approach angles available on request.

Cutting Recommendations

Guideline for finish boring with Boring Head **MO3**Speed

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.004
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.005
2.1	<72500		Lead alloy	12L13	980	.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.004
4.0	>130000		Tool steel	H13 H21	660	.004
4.1			HSS		390	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.004
6.1	<130000		Stainless steel	630	590	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.004
8.0		180	Grey cast iron	No 35 B No 50 B	790	.008
8.1		250	Alloy grey cast iron	A436 Type 2	660	.008
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.006
10.1		200	Malleable cast iron	70003	460	.006
10.2		300	Alloyed nodular cast iron	A43D2	460	.006
12.0		90	Vermicular cast iron		390	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.006
12.2		100	Copper alloy, Brass, Bronze: average cut		890	.006
13.0		60	Wrought aluminum alloy		1640	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.006
14.0		100	Magnesium alloy		820	.006
15.0	203000		Hardened steel < 45 HRC	A360.2	390	.003
16.0	261000		Hardened steel > 45 HRC		300	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
3.937 - 8.110	W30 14140.0232	TOGX090202EN-14 CK32	●	●				
	only for insert holder forward							
	W30 14120.3232	TOHX090202EL-US12 CK32	●	●				

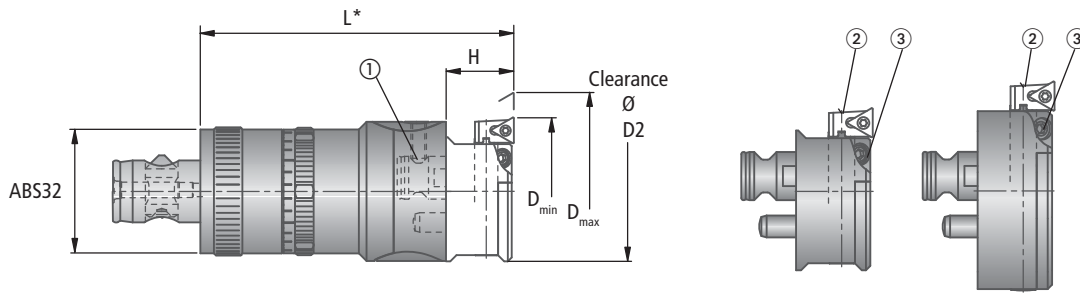
For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
3.937 - 8.110	W57 14140.0432	TOGX090204EN-14 CK32	●					
	W30 14990.0457	TOGX090204TN CBN57				●		
	only for insert holder forward							
	W30 14120.0238	TOHX090202EL-G12 CK32	●	●				

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
3.937 - 8.110	W30 14990.0455	TOGX090204FN PCD55					●	
	only for insert holder forward							
	W30 14120.3130	TOHX020202EL-UF12 CK30	●	●				

4



Micro-Adjustable Boring Head and Replaceable Bridge **M03Speed** Ø 1.496" – 2.480" (38.0 – 63.0 mm)



D = Boring-Ø

*L-length, see insert holder table on opposite page

(..) = mm

Boring Head			Replacement Parts	Replaceable Bridge					Replacement Parts		
Order No.	ABS d	lbs	① Clamping screw for replaceable bridge Order No. Description	D _{min} - D _{max}	Order No.	Clearance Ø D2	H	Max. permissible spindle speed RPM	lbs	② Holding screw for insert holder Order No.	③ Clamping screw for holder Order No. Description
M03 20170	32	0.77	M03 20090.15 M8x10	1.496-2.008 (38-51)	M03 20180	D - .126 (3.2)	.689 (17.5)	31 000	0.13	N00 56211 S/M3.5x7.3-10IP	5505104008 M4x8
				1.968-2.480 (50-63)	M03 20190	D - .137 (3.5)	.689 (17.5)	24 000	0.18		

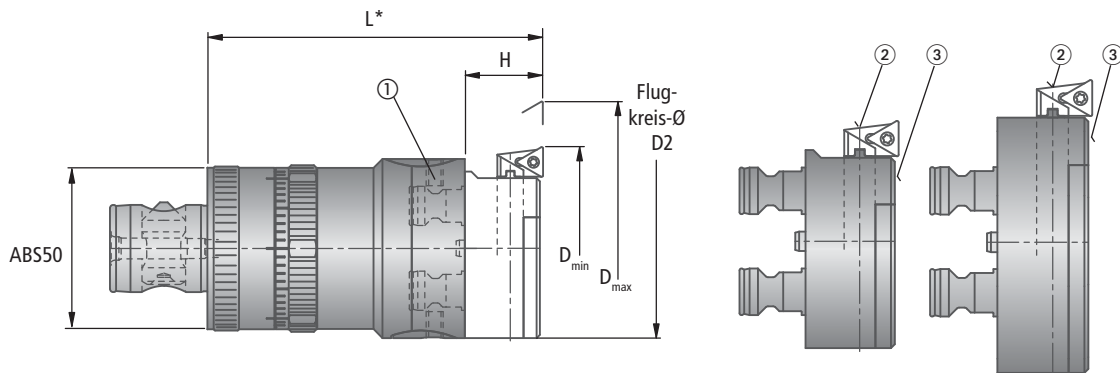
Delivery: Micro-adjustable boring head

Micro-adjustable boring head with clamping screw ①. Please order replaceable bridge separately.

Delivery: Replaceable bridge

Replaceable bridge with holding screw ② and clamping screw ③. Please order insert holder separately.

Ø 2.441" – 4.055" (62.0 – 103.0 mm)



*L-length, see insert holder table on opposite page

(..) = mm

Boring Head			Replacement Parts	Replaceable Bridge					Replacement Parts		
Order No.	ABS d	lbs	① Clamping screw for replaceable bridge Order No. Description	D _{min} - D _{max}	Order No.	Clearance Ø D2	H	Max. permissible spindle speed RPM	lbs	② Holding screw for insert holder Order No.	③ Clamping screw for holder Order No. Description
M03 20140	50	2.87	M03 20090.15 M8x10	2.480-3.268 (63-83)	M03 20150	2.165 (55)	.945 (24)	18 500	0.20	N00 56211 S/M3.5x7.3-10IP	5505104008 M4x8
				3.228-4.055 (82-103)	M03 20160	2.795 (71)	.945 (24)	15 000	0.24		

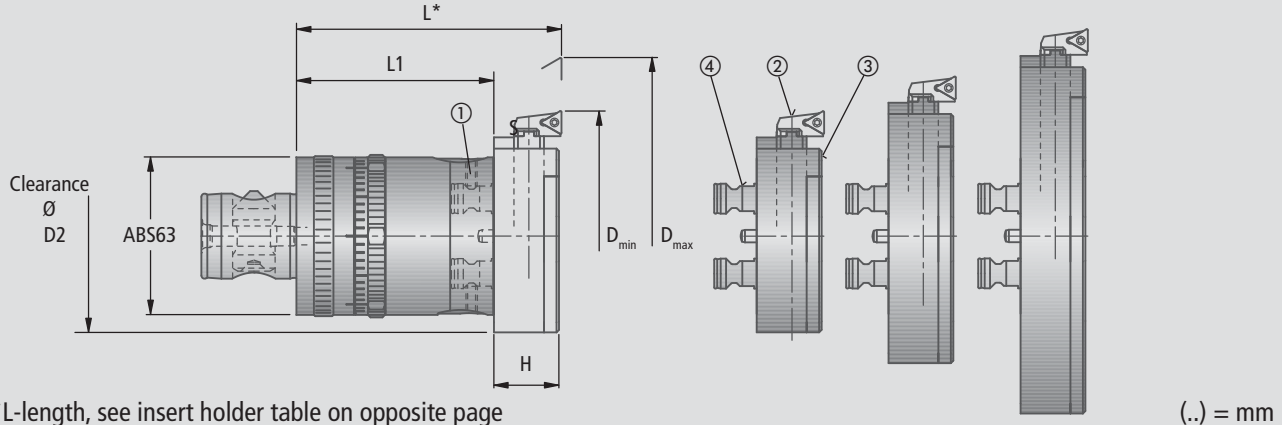
Delivery: Micro-adjustable boring head

Micro-adjustable boring head with clamping screw ①. Please order replaceable bridge separately.

Delivery: Replaceable bridge

Replaceable bridge with holding screw ② and clamping screw ③. Please order insert holder separately.

Micro-Adjustable Boring Head and Replaceable Bridge **M03Speed** Ø 3.937" – 8.110" (100.0 – 206.0 mm)



*L-length, see insert holder table on opposite page

(..) = mm

Boring Head				Replacement Parts	Replaceable Bridge						Replacement Parts		
Order No.	ABS d		lbs	① Clamping screw for replaceable bridge Order No. Description	D _{min} - D _{max}	Order No.	Clearance Ø D2	H	Max. permissible spindle speed RPM	lbs	② Holding screw for insert holder Order No.	③ Clamping screw for holder Order No. Description	④ Pin Order No.
M03 20090	63	79 (3.110)	4.01	M03 20090.15 M8x10	3.937-5.118 (100-130)	M03 20100	3.346 (85)	1.024 (26)	11 500	0.86	N00 56401 S/M5x9.4-20IP	5505104008 M4x8	M0320100.14
					5.040-6.614 (128-168)	M03 20110	4.291 (109)	1.024 (26)	10 000	1.08			
					6.535-8.110 (166-206)	M03 20120	5.748 (146)	1.024 (26)	8 000	1.30			

Delivery: Micro-adjustable boring head

Micro-adjustable boring head with clamping screw ①. Please order replaceable bridge separately.

Delivery: Replaceable bridge

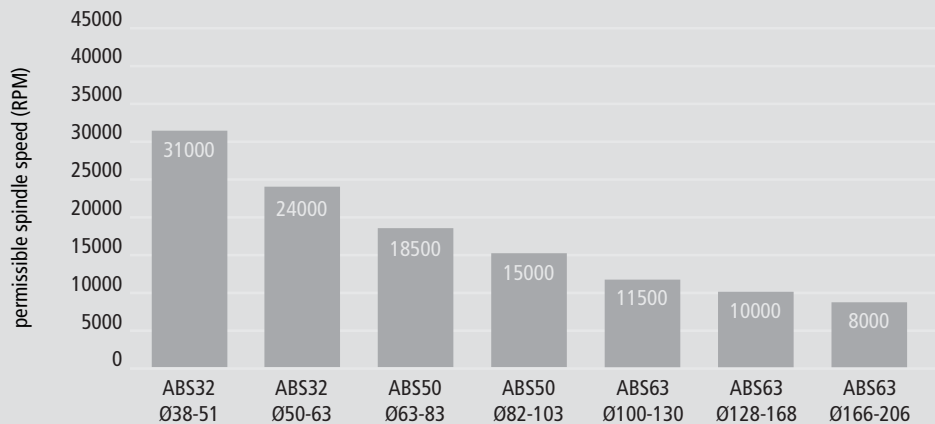
Replaceable bridge with holding screw ②, clamping screw ③ and pin ④.
Please order insert holder separately.

Maximum Spindle Speed

when using different ABS® sizes

Ø 1.496" - 8.110" (38 - 206 mm)

(Page 4.46 - 4.47 **M03Speed** with replaceable bridges)





Insert Holder for **M03Speed** Ø 0.976" – 4.055" (24.8 – 103.0 mm)

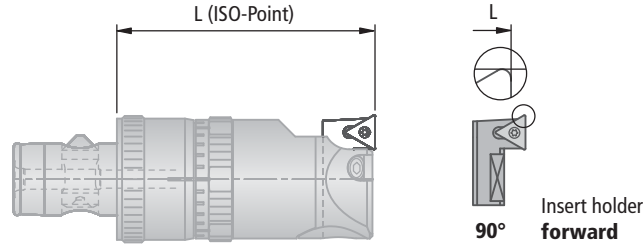
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

for High Shear Non-ferrous Metal Boring

Ø 0.976" – 1.535 (24.8 – 39.0 mm)

Angle of inclination to main cutting edge: +5°



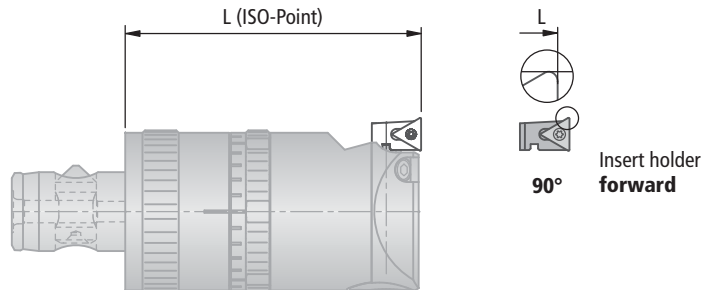
(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation						Replacement Part			
	D	Order No.	α	L				for Workpiece Material							TORX PLUS
						Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description
M03 00115 ABS25	0.976 - 1.299 (24.8 - 33.0)	M03 10111	90°	1.969 (50.0)	0.009	W58 03120.0423	TPGX060104FN-12 K10							N00 56031 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
M03 00515 ABS25	1.142 - 1.535 (29.0 - 39.0)	M03 10121	90°	1.969 (50.0)	0.011										

for High Shear Non-ferrous Metal Boring

Ø 1.496" – 4.055" (38.0 – 103.0 mm)

Angle of inclination to main cutting edge: +5°



(..) = mm

Micro-adj. boring head	Insert holder forward					Basic Recommendation						Replacement Part			
	D	Order No.	α	L				for Workpiece Material							TORX PLUS
						Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description
M03 01025 ABS32	1.496 - 1.969 (38.0 - 50.0)	M03 10133	90°	2.362 (60.0)	0.004	W58 03120.0423	TPGX060104FN-12 K10							N00 56031 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
M03 01535 ABS40	1.929 - 2.480 (49.0 - 63.0)	M03 10143	90°	2.756 (70.0)	0.011										
M03 02045 ABS50	2.441 - 3.150 (62.0 - 80.0)	M03 10143	90°	2.953 (75.0)	0.011	W58 13120.0423	TPGX090204FN-12 K10							N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
M03 02555 ABS63	3.110 - 4.055 (79.0 - 103.0)	M03 10163	90°	3.150 (80.0)	0.020										

Delivery:

Insert holder with clamping screw and screwdriver. Insert not included.

4.48


Cutting Recommendations


Guideline for finish boring with Boring Head M03Speed


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						Ø 0.976 - 1.969	Ø 1.929 - 4.055
1.0	≤72500		Unalloyed steel	A570.36			
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120			
				1055			
				5115			
2.1	<72500		Lead alloy	12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140			
				1064			
4.0	>130000		Tool steel	H13 H21			
4.1			HSS				
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718			
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L			
				316			
6.1	<130000		Stainless steel	630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420			
				403			
8.0		180	Grey cast iron	No 35 B			
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03			
10.1		200	Malleable cast iron	70003			
10.2		300	Alloyed nodular cast iron	A43D2			
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		820	.004	.006
13.0		60	Wrought aluminum alloy		1310	.003	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	980	.004	.006
14.0		100	Magnesium alloy		820	.004	.006
15.0	203000		Hardened steel < 45 HRC				
16.0	261000		Hardened steel > 45 HRC				

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.976 - 1.969	W32 03150.0421	TPHX060104FL-P15 K10				●				
1.929 - 4.055	W32 13150.0421	TPHX090204FL-P15 K10				●				

For better wear resistance										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.976 - 1.969	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHB060104FL-P15 BK50				●	●			
1.929 - 4.055	W32 13990.0455	TPHB090204FN PCD55				●				

For better surface finish										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.976 - 1.969	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHX060104FL-P15 BK50				●	●			
1.929 - 4.055	W32 13990.0455	TPHB090204FN PCD55				●				

4





Insert Holder for **Mo3Speed** Ø 1.496" – 8.110" (38.0 – 206.0 mm)

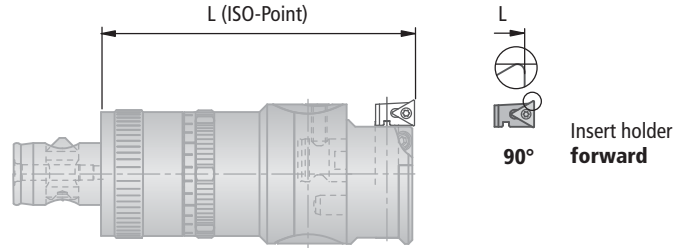
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

for High Shear Non-ferrous Metal Boring

Ø 1.496" – 4.055" (38.0 – 103.0 mm)

Angle of inclination to main cutting edge: + 5°



Micro-adj. boring head	Insert holder forward					Basic Recommendation						Replacement Part			
	D	Order No.	α	L	lbs	W32 Order No. Size	W58 ISO Insert Description	for Workpiece Material						Clamping screw Order No. Description	TORX PLUS TORX PLUS Order No. Description
M03 20170 ABS32	1.496 - 2.480 (38.0 - 63.0)	M03 10133	90°	3.189 (81.0)	0.004	W58 03120.0423	TPGX060104FN-12 K10	P	M	K	N	S	H	N00 56031 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
M03 20140 ABS50	2.441 - 4.055 (62.0 - 103.0)	M03 10143	90°	4.055 (103.0)	0.011	W58 13120.0423	TPGX090204FN-12 K10							N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP

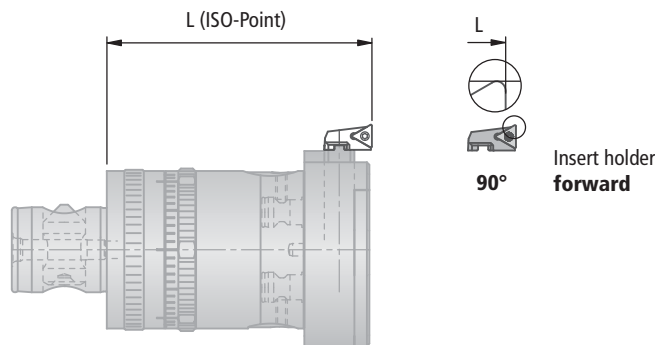
Delivery:

Insert holder with clamping screw and screwdriver. Insert not included.

for High Shear Non-ferrous Metal Boring

Ø 3.937" – 8.110" (100.0 – 206.0 mm)

Angle of inclination to main cutting edge: + 5°



Micro-adj. boring head	Insert holder forward					Basic Recommendation						Replacement Part			
	D	Order No.	α	L	lbs	W32 Order No. Size	W58 ISO Insert Description	for Workpiece Material						Clamping screw Order No. Description	TORX PLUS TORX PLUS Order No. Description
M03 20090 ABS63	3.937 - 8.110 (100.0-206.0)	M03 10170	90°	4.173 (106.0)	0.020	W58 13120.0423	TPGX090204FN-12 K10							N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP

Delivery:

Insert holder with clamping screw and screwdriver. Insert not included.


Cutting Recommendations


Guideline for finish boring with Boring Head **MO3Speed**


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						Ø 1.496 - 2.480	Ø 2.441 - 8.110
1.0	≤72500		Unalloyed steel	A570.36			
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120			
				1055			
2.1	<72500		Lead alloy	12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140			
				1064			
4.0	>130000		Tool steel	H13			
				H21			
4.1			HSS				
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718			
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L			
				316			
6.1	<130000		Stainless steel	630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420			
				403			
8.0		180	Grey cast iron	No 35 B			
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03			
10.1		200	Malleable cast iron	70003			
10.2		300	Alloyed nodular cast iron	A43D2			
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
12.1		100	Copper alloy, Brass, Bronze: average cut		820	.004	.006
13.0		60	Wrought aluminum alloy		1310	.003	.005
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	980	.004	.006
14.0		100	Magnesium alloy		820	.004	.006
15.0	203000		Hardened steel < 45 HRC				
16.0	261000		Hardened steel > 45 HRC				

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03150.0421	TPHX060104FL-P15 K10				●				
2.441 - 8.110	W32 13150.0421	TPHX090204FL-P15 K10				●				

For better wear resistance										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHB060104FL-P15 BK50				●	●			
2.441 - 8.110	W32 13990.0455	TPHB090204FN PCD55				●				

For better surface finish										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.496 - 2.480	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHX060104FL-P15 BK50				●	●			
2.441 - 8.110	W32 13990.0455	TPHB090204FN PCD55				●				

4



Micro-Adjustable Boring Head **M03Speed** Boring System Kit

A



Boring System Kit Ø 1.496'' – 2.480'' ABS 32 / Order No. M03 20230

Boring system case, content			
	Order No.	Qty.	Description
①	M03 20180	1	Replaceable bridge Ø 1.496 - 2.008
②	M03 20190	1	Replaceable bridge Ø 1.969 - 2.480
③	M03 20170	1	Micro-adjustable head ABS32
④	M03 10033	2	Insert holder 90° forwards
⑤	1859110040	1	Allen key SW 4

B



Boring System Kit Ø 2.441'' – 4.055'' ABS 50 / Order No. M03 20240

Boring system case, content			
	Order No.	Qty.	Description
①	M03 20150	1	Replaceable bridge Ø 2.441 - 3.268
②	M03 20160	1	Replaceable bridge Ø 3.228 - 4.055
③	M03 20140	1	Micro-adjustable head ABS50
④	M03 10043	2	Insert holder 90° forwards
⑤	1859110040	1	Allen key SW 4

C

Boring System Kit Ø 3.937" – 8.110" ABS 63 / Order No. M03 20130

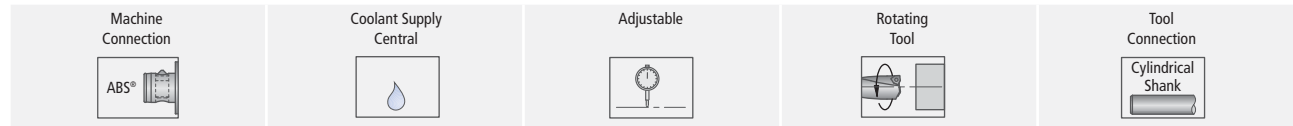


Boring system case, content			
	Order No.	Qty.	Description
①	M03 20100	1	Replaceable bridge Ø 3.937 - 5.118
②	M03 20110	1	Replaceable bridge Ø 5.039 - 6.614
③	M03 20120	1	Replaceable bridge Ø 6.535 - 8.110
④	M03 20090	1	Micro-adjustable head ABS63
⑤	M03 10070	3	Insert holder 90° forwards
⑥	L05 00830	1	Torx wrench 8IP
	1859110020	1	Allen key SW 2
	1859110030	1	Allen key SW 3
	1859110040	1	Allen key SW 4

4



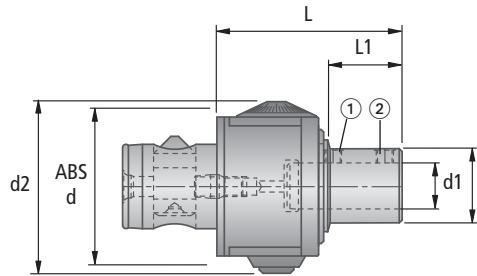
Micro-adjustable Finish Boring Head M020



with ABS® Connection

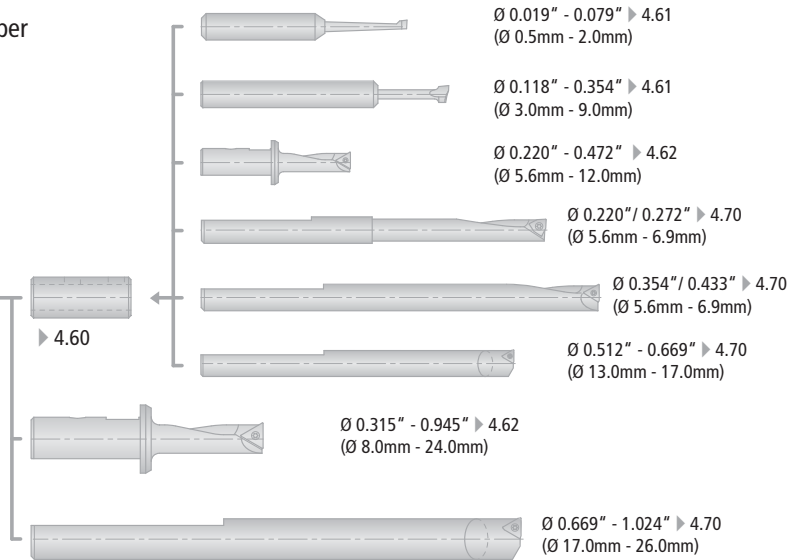
for Straight Shank Boring Bars
(ABS-KFK)

the smallest adjustment step is 0.0001" (0.002mm) per graduation on diameter, using the vernier scale



Note:

Maximum coolant pressure: 280PSI



Inch Adjustment

dimensions below are in inch

Description	Order No.	ABS d	d1	d2	d3	Adjustment	L	L1	lbs	Replacement Parts			
										Clamping screw ①		Clamping screw ②	
										Description	Order No. DIN914	Description	Order No. DIN913 DIN916
ABS40KFK8-Z	M02 05100	40	0.315	1.575	0.622	0.039	2.047	0.591	0.76	M5×6	5505205006	M5×5	5505105005
ABS50KFK1-16-Z	M02 06201	50	0.630	2.756	1.024	0.157	2.953	1.063	3.95	M6×8	N00 70900	M6×6	N00 70190
ABS63KFK1-16-Z	M02 06211	63	0.630	2.756	1.024	0.157	2.953	1.181	5.50	M6×8	N00 70900	M6×6	N00 70190

Metric Adjustment

dimensions below are in mm

Description	Order No.	ABS d	d1	d2	d3	Adjustment	L	L1	lbs	Replacement Parts			
										Clamping screw ①		Clamping screw ②	
										Description	Order No. DIN914	Description	Order No. DIN913 DIN916
ABS40KFK1-16	M02 01100	40	8	40	16	1	52	15	2.20	M5×6	55052 05006	M5×5	55051 05005
ABS50KFK1-16	M02 01201	50	16	70	26	4	75	27	2.77	M6×8	N00 70900	M6×6	N00 70190
ABS63KFK1-16	M02 01211	63	16	70	26	4	75	27		M6×8	N00 70900	M6×6	N00 70190

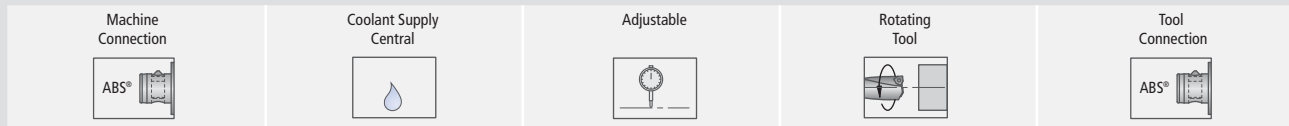
The micro-adjustable head balanced in zero-position

Boring range: $D_{min} = D$
 $D_{max} = D1(2 \times S)$

Note:

When setting the M02 06201, the balancing ring (page 4.58) may be used for higher spindle speeds or surface requirements.

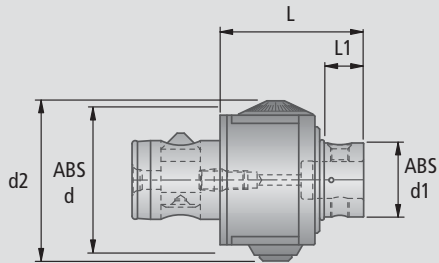
Micro-adjustable Finish Boring Head M020



with ABS® Connection

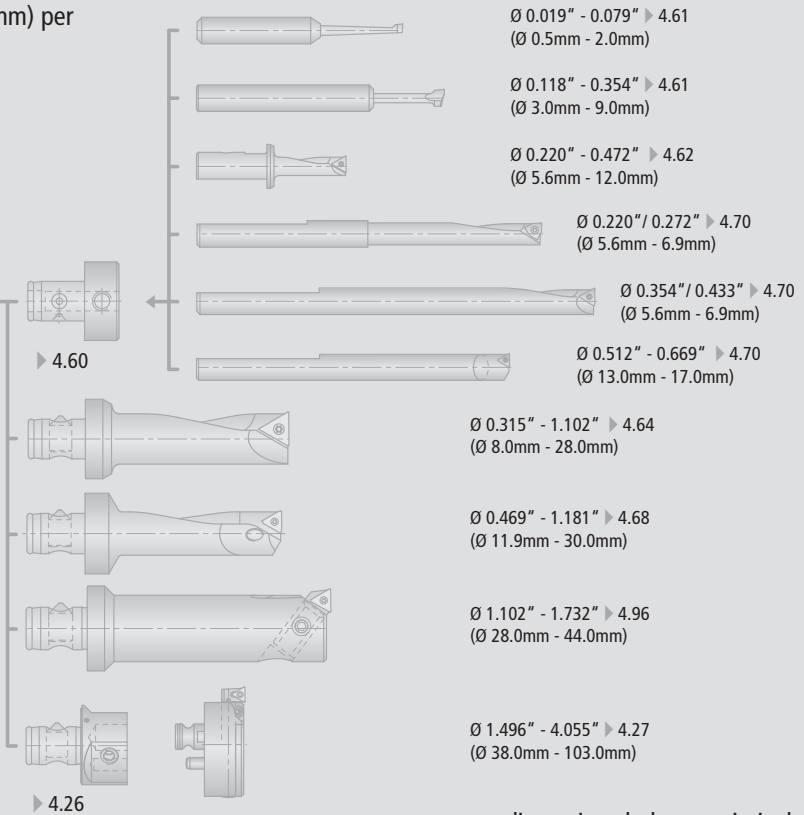
for ABS® Boring Bars
(ABS-KFK)

the smallest adjustment step is 0.0001" (0.002mm) per graduation on diameter, using the vernier scale



Note:

Maximum coolant pressure: 280PSI



Inch Adjustment

dimensions below are in inch

Description	Order No.	ABS d	ABS d1	d2	Adjustment	L	L1	lbs
ABS50/25KFK0-Z	M02 05000	50	25	2.205	0.118	2.165	0.512	1.85
ABS50/32KFK1-Z	M02 05201	50	32	2.756	0.157	2.441	0.748	2.77
ABS63/32KFK1-Z	M02 05211	63	32	2.756	0.157	2.441	0.748	3.01
ABS63/40KFK2-Z	M02 05401	63	40	3.858	0.236	2.638	0.748	5.74

Metric Adjustment

dimensions below are in mm

Description	Order No.	ABS d	ABS d1	d2	Adjustment	L	L1	lbs
ABS 50/25 KFK0-F	M02 00000 ¹⁾²⁾	50	25	56	3	55	11.5	1.85
ABS 50/32 KFK1-F	M02 00201 ²⁾	50	32	70	4	62	17.0	2.78
ABS 63/32 KFK1-F	M02 00211	63	32	70	4	62	17.0	3.02
ABS 63/40 KFK2-F	M02 00401	63	40	98	6	67	17.5	5.75

The micro-adjustable head balanced in zero-position

Boring range: $D_{min} = D$
 $D_{max} = D1(2 \times S)$

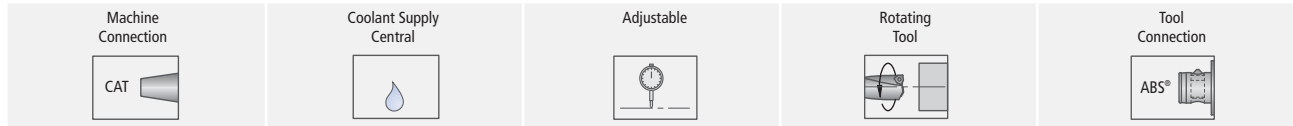
Note:

¹⁾ A sealing disc cannot be used in the ABS for micro-adjustable head M02 05000

²⁾ When adjusting the M02 05000 / M02 05201, the balancing ring (page 4.58) can be used for higher spindle speeds or surface.



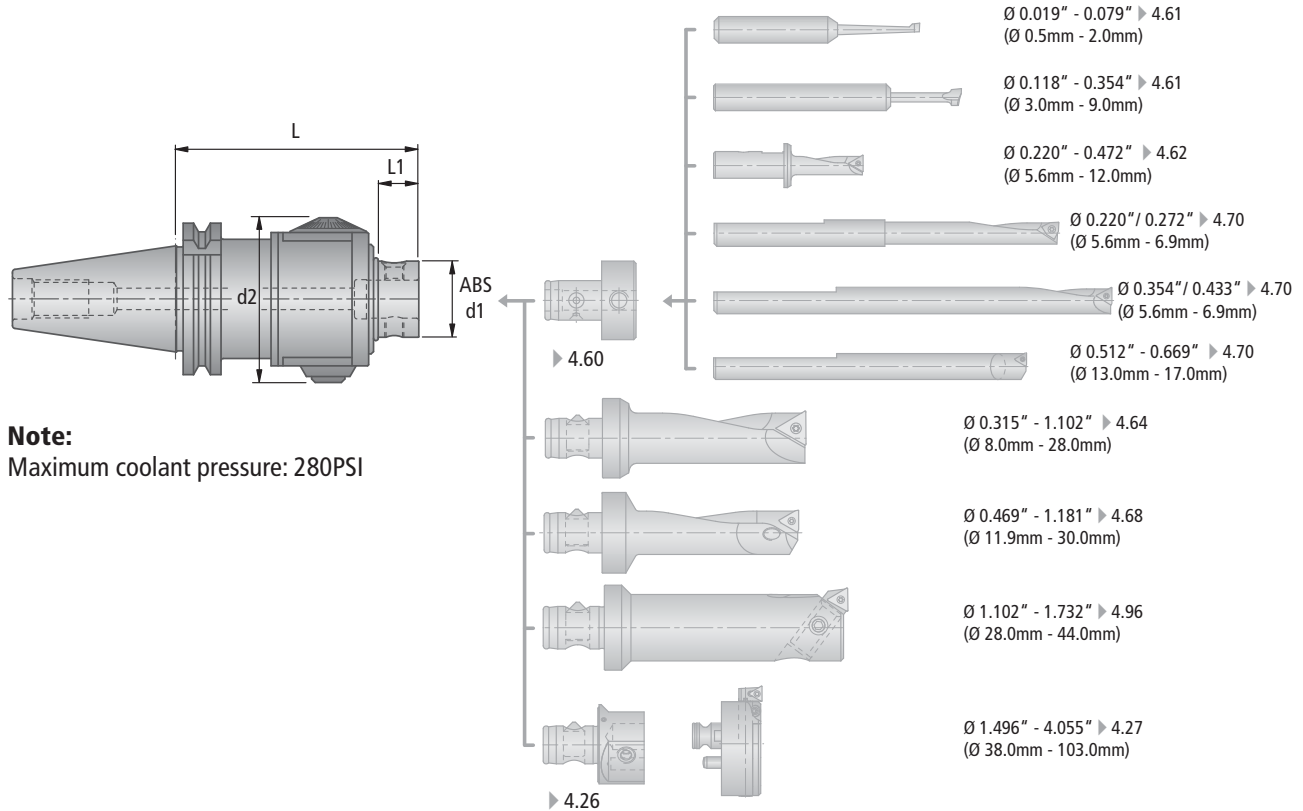
Micro-adjustable Finish Boring Head M020



Integral Micro-adjustable Boring Head M020

(KFK)

radial adjustment of 0.0001" (0.002mm) per graduation on diameter, using vernier scale



Note:

Maximum coolant pressure: 280PSI

CAT	Description	Order No.	ABS d1	d2	Adjustment	L	L1	
40	CAT 40 KFK1-Z-ABS 32	M02 07200	32	2.692	0.157	3.740	0.635	
50	CAT 50 KFK1-Z-ABS 32	M02 07210	32	2.756	0.157	3.740	0.635	

Delivery:

Integral micro-adjustable boring head complete without retention knob.

ABS® Replacement parts see Chapter 8.

The micro-adjustable head balanced in zero position

Boring Range: $D_{min} = D$
 $D_{max} = D1(2 \times S)$

Sturdy – Accurate – Easy to use

The new advanced design for our M040 micro-adjustable boring head still records slide adjustment directly by means of an electronic measurement system. The measurement result is evaluated by a microprocessor and displayed on an LCD display with a resolution of 1 μm . This reduces errors in adjustment and read-off to a minimum.

• Sturdy design

By using new technology we have been able to make the new M040 even sturdier. With its water and dustproof design (IP67), it is not affected by either chips or coolant.

• Direct measurement = accurate measurement

Even with the most highly accurate translation of adjustment sequences, other micro-adjustable boring heads only show the adjustment value indirectly. Our M040 micro-adjustable head works directly in conjunction with the actual measurement process, making the operation considerably easier for the operator.

• Easy to use

The head has been made even easier to use, switching from absolute to differential dimensions with only two keys and also allowing the differential to be set to zero. Concentricity or balanced position can be easily located again in the Absolute mode without need for a setting device.

• Extended setting range

The adjustment value has been increased to 0.197" (5 mm) on the diameter.

• Replaceable bridges

In combination with the new replaceable bridges, boring of up to 4.055" (103mm) diameter is now possible. The replaceable bridges are constructed from lightweight material with a surface coating and integrated balancing compensation capability.

Features

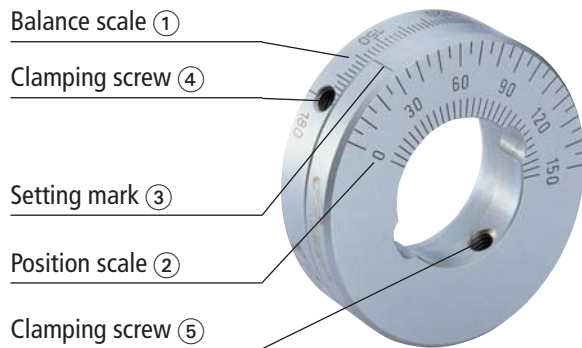
- large adjustment range from 0.016" to 0.181" (-0.4 to +4.6 mm) on dia.
- easy to use with only 2 keys
- waterproof and dustproof (IP67 standard)
- direct measuring system on slide
- display resolution 0.001 mm in the diameter
- display in mm or inches
- can be switched between differential and absolute mode
- easy to read LCD display
- energy saving function, i.e. M040 automatically switches off after 30 seconds
- central coolant supply up to 725 psi
- ABS 32 spindle connection – 0.630" (16 mm) cylindrical shank
- can be adapted for any machine tool with standard tool adapters
- maximum spindle speed: 12,500 rpm
- head diameter: 2.756" (70 mm)
- weight: 2.42 lbs (1.1 kg)



Balancing Ring

Precision balancing on standard tools

At high speeds a loss of balance or imbalance produces a negative effect on machining results, particularly on tools for finish machining. Standard precision balancing is particularly difficult to carry out on tools with adjustment in the diameter as the balance ratios shift with the change of machining diameter.



What is imbalance?

By imbalance we mean an uneven distribution of weight with reference to the axis of rotation. The larger the weight, the greater the imbalance and the further this occurs beyond the radius of the tool.

The formula for this is as follows:

$$\text{Imbalance} = \text{imbalanced weight (lb/g)} \times \text{Radius (inch/mm)}$$

Normally lb/g \times inch/mm is used as a unit of measurement

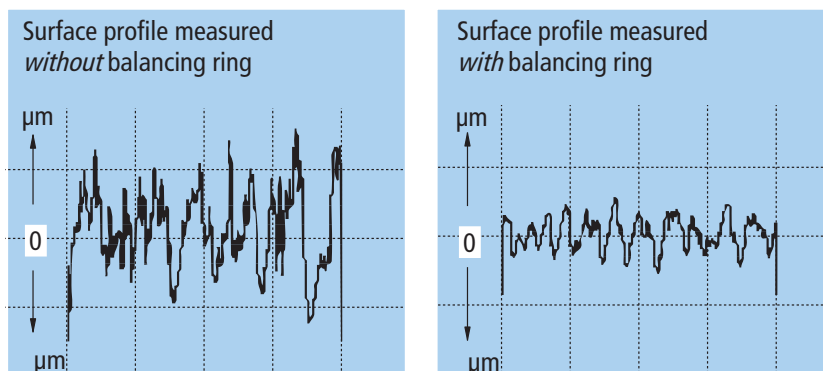
During rotation the imbalance has an extremely negative effect as a result of the imbalance (centrifugal force). This force is calculated as follows:

$$\text{Centrifugal force} = \text{Weight (lb/kg)} \times \text{Radius (inch/m)} \times \text{Angular velocity}^2 \text{ (1/sec)}^2$$

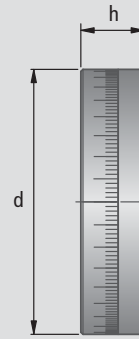
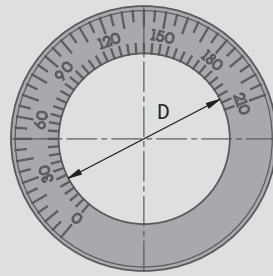
The balancing ring which can be fitted to all KOMET M02 and M040 micro-adjustable heads provides an extremely simple "Do It Yourself" method of balancing tools over their full adjustment range.

The values given in the table are only recommendations which will produce an improvement in any imbalance which occurs. Where there are particular requirements with regards to balance, adjustments should be carried out on a balancing machine.

For exact adjustment value, Please see Operating Instruction for Balancing Ring.



Balancing Ring



Order No.	d	D	h	lbs	suitable for micro-adjustable boring head		in conjunction with boring bars
					Order No.	Order No.	Order No.
L01 15010	1.969	1.260	0.472	0.20	M02 00201	M04 00201	G10 1...
L01 15030	1.732	1.024	0.669	0.20	M02 00000	–	B00 255...
L01 15050	2.047	1.260	0.984	0.37	M02 00201	M04 00151	B00 256... / B00 257...
L01 15060	2.165	1.024	0.630	0.35	M02 01201	M04 00201	B00 156... / B00 157...

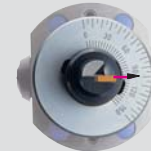
Setting example for Ø 18.2 mm

Micro-adjustable head M02 01201 · Boring bar B00 15660 Ø 18 mm

First setting operation:

Angle of torsion between rings

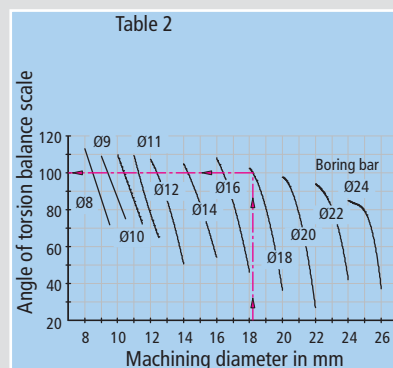
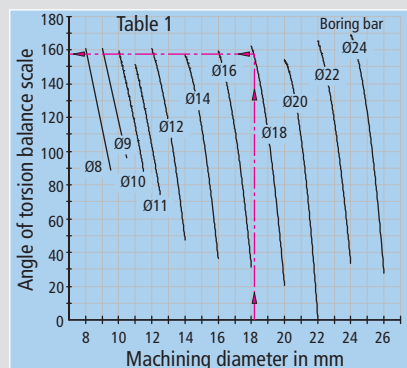
- Determine the machining diameter from table 1 (in this case 18.2 mm diameter).
- Trace a vertical line upwards until this crosses the contour line for the boring bar to be used.
- At the intersect point trace a horizontal line and read off the torsion angle required (in this case 158°).
- Set the value determined to the setting mark ③ on the balancing scale ①.
- Clamp the two rings together with the clamping screw ④.



Second setting operation:

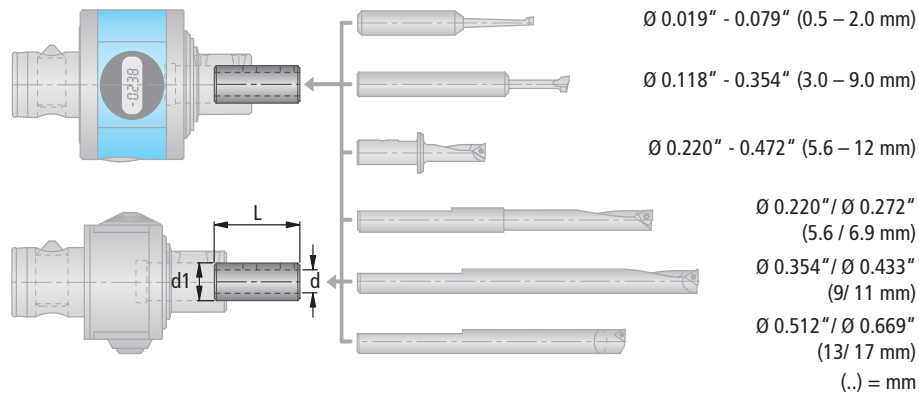
Position of balancing ring in relation to the cutting edge

- Locate machining diameter 18.2 mm in table 2.
- Trace a vertical line to the contour line for the 18 mm diameter boring bar.
- At the intersect point, trace a horizontal line and read off the torsion angle (in this case 100°).
- Fit the ring on the micro-adjustable head.
- Position the ring according to the torsion angle which has been determined. For this the cutting edge or center of the tool should be aligned with the appropriate graduation for 100°.
- Using the clamping screw ⑤, clamp the balancing ring to the tool. The setting values given will only produce optimum adjustment of any imbalance using inserts W30.....32.



Reducer Bushing

Reducer Bushing with cylindrical tool connection

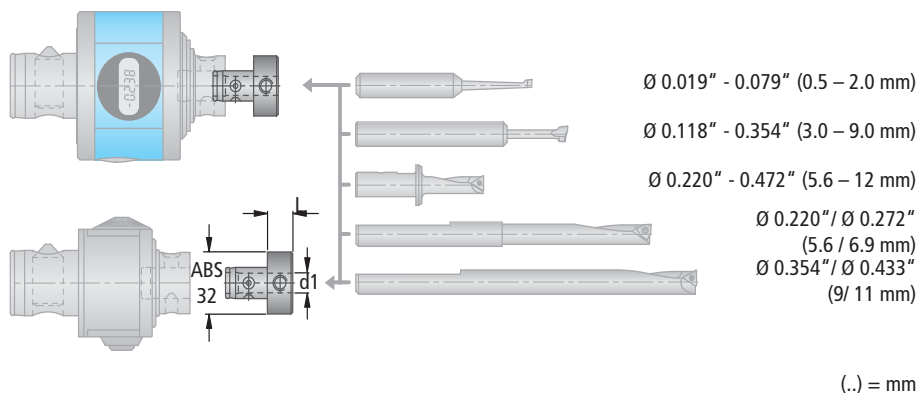


Order No.	d	d1	L	lbs	Replacement Parts			
					Clamping screw ①		Clamping screw ②	
					Description	Order No.	Description	Order No.
L01 10300	0.157(4)	0.315(8)	0.787(20)	0.01	–	–	–	–
L01 10100	0.157(4)	0.630(16)	1.614(41)	0.13	M6×12	5505206012	M6×10	5505106010
L01 10110	0.236(6)	0.630(16)	1.614(41)	0.12	M6×12	5505206012	M6×10	5505106010
L01 10120	0.315(8)	0.630(16)	1.614(41)	0.10	M6×12	5505206012	M6×10	5505106010
L01 10130	0.394(10)	0.630(16)	1.614(41)	0.08	M6×10	5505206010	M6×8	5505106008
L01 10140	0.472(12)	0.630(16)	1.614(41)	0.06	M6×10	5505206010	M6×8	5505106008

Note: To use reducer bushing L01 10100 to L01 10140 in micro-adjustable head M020 / M040, use the clamping screws ① and ②. Please order the clamping screws separately.

Delivery: Reducer bushing supplied without screws

Reducer Bushing with cylindrical tool connection



Order No.	ABS d	d1	d2	lbs
L01 10421	32	0.157 (4)	0.551 (14)	0.26
L01 10431	32	0.236 (6)	0.551 (14)	0.26
L01 10441	32	0.315 (8)	0.551 (14)	0.26

Delivery: Reducer bushing complete.

Carbide Miniture Boring Tool Ø 0.020" – 0.354"

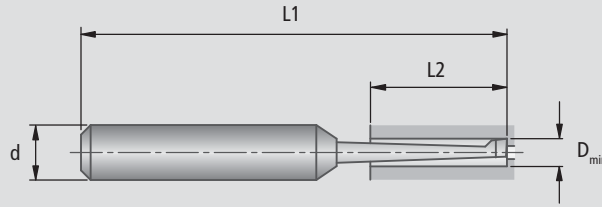


L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Optimized Oscillation
> 3.5xD								
	●	●	○	○	✗	✗	✗	●

● highly recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

with Cylindrical Shank

Form K-f



(..) = mm

D _{min}	Description	Order No.	d	L1	L2		Basic Recommendation						
							Grade	for Workpiece Material					
							P	M	K	N	S	H	
0.020	5K-f-K10	H15 11100.21	0.157 (4)	0.984	0.118	0.01	K10	●					
0.031	8K-f-K10	H15 11110.21	0.157 (4)	0.984	0.157	0.01							
0.039	10K-f-K10	H15 11120.21	0.157 (4)	0.984	0.157	0.01							
0.047	12K-f-K10	H15 11130.21	0.157 (4)	0.984	0.236	0.01							
0.059	15K-f-K10	H15 11140.21	0.157 (4)	1.102	0.276	0.01							
0.067	17K-f-K10	H15 11150.21	0.157 (4)	1.102	0.276	0.01							
0.079	20K-f-K10	H15 11160.21	0.157 (4)	1.181	0.354	0.01							

4



with Cylindrical Shank

Form f



(..) = mm

D _{min}	Description	Order No.	d	L1	L2		Basic Recommendation						
							Grade	for Workpiece Material					
							P	M	K	N	S	H	
0.118	B01f-P20	H15 21110.02	0.315 (8)	2.362	0.630	0.04	P20	●	●				
	B01f-K10	H15 21110.21					K10	●					
0.197	B02f-P20	H15 21120.02	0.315 (8)	2.362	0.748	0.04	P20	●	●				
	B02f-K10	H15 21120.21					K10	●					
0.276	B03f-P20	H15 21130.02	0.315 (8)	2.559	1.024	0.04	P20	●	●				
	B03f-K10	H15 21130.21					K10	●					
0.354	B04f-P20	H15 21140.02	0.315 (8)	2.953	1.772	0.06	P20	●	●				
	B04f-K10	H15 21140.21					K10	●					

Boring Bar Ø 0.220" – 0.945"

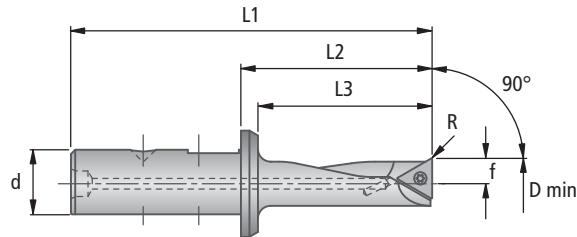
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5×D								

● highly recommended ● recommended ○ may be suitable ✕ not recommended

with Cylindrical Shank

$\alpha = 90^\circ$ right hand

(FK-UJ)



D min	Order No.	d	L1	L2	L3	f	R	lbs	Basic Recommendation		Replacement Part			
									Insert Order No. Size	Insert ISO Description	for Workpiece Material	Clamping screw	TORX PLUS	
									W00 W03 W57		P M K N S H	Order No. Description	Order No. Description	
0.220	B00 37010	0.315	1.890	1.024	0.866	0.108	0.004	0.09	W00 04120.0464	WOHX02T001EL-G12 BK64	●	●	N00 56011 S/M1.8×2.9-5IP 4.4 in-lbs	L05 00800 5IP
0.256	B00 37020	0.315	2.047	1.181	1.024	0.126	0.004	0.07	W00 04120.0121	WOHX02T001FL-G12 K1	●	●		
0.315	B00 15510	0.315	2.244	1.378	1.102	0.156	0.008	0.04	W57 04140.0284	TOGX06T102EN-14 BK84	●	●	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
	B00 15610	0.630	2.953	1.378	1.181	0.156	0.008	0.18		TOGX06T102FN-12 K10	●	●		
0.354	B00 15700	0.630	3.150	1.575	1.378	0.175	0.008	0.18	W57 04120.0223	TOGX06T102TN CBN40	●	●		
0.394	B00 15520	0.315	2.441	1.575	1.299	0.195	0.008	0.09	W30 04990.0240	TOHX06T103EL-G06 BK6110	●	●		
	B00 15620	0.630	3.150	1.575	1.378	0.195	0.008	0.18				○	○	
0.433	B00 15710	0.630	3.346	1.772	1.575	0.215	0.008	0.20			○	○		
0.472	B00 15530	0.315	2.638	1.772	1.496	0.234	0.008	0.09	W57 14140.0484	TOGX090204EN-14 BK84	●	●	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
	B00 15630	0.630	3.346	1.772	1.575	0.234	0.008	0.20		TOGX090204FN-12 K10	●	●		
0.512	B00 15720	0.630	3.543	1.969	1.772	0.254	0.008	0.22	W30 14990.0440	TOGX090204TN CBN40	●	●		
0.551	B00 15640	0.630	3.543	1.969	1.772	0.274	0.008	0.24	W30 14060.046110	TOHX090204EL-G06 BK6110	●	●		
0.591	B00 15730	0.630	3.740	2.165	1.969	0.293	0.008	0.26			○	○		
0.630	B00 15650	0.630	3.740	2.165	1.969	0.313	0.008	0.37			○	○		
0.669	B00 15741	0.630	3.937	2.362	2.165	0.333	0.008	0.29	W57 14120.0423	TOGX090204FN-12 K10	●	●		
0.709	B00 15661	0.630	3.937	2.362	2.165	0.352	0.008	0.31	W30 14990.0440	TOGX090204TN CBN40	●	●		
0.748	B00 15751	0.630	4.134	2.559	2.362	0.372	0.008	0.35	W30 14060.046110	TOHX090204EL-G06 BK6110	●	●		
0.787	B00 15671	0.630	4.134	2.559	2.362	0.390	0.008	0.48			○	○		
0.827	B00 15761	0.630	4.134	2.559	2.362	0.411	0.008	0.40			○	○		
0.866	B00 15681	0.630	4.134	2.559	2.362	0.429	0.008	0.42			○	○		
0.906	B00 15771	0.630	4.134	2.559	2.362	0.451	0.008	0.22			○	○		
0.945	B00 15691	0.630	4.134	2.559	2.362	0.469	0.008	0.46			○	○		

Delivery:

Boring bars complete with clamping screw, less torx screwdriver and inserts.

Cutting Recommendations

Guideline for finish boring with Boring Bar B001 / B003

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.220 - 0.256	\emptyset 0.315 - 0.394	\emptyset 0.433 - 0.945
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81	980	.002	.003	.005
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.002	.002	.005
2.1	< 72500		Lead alloy	12L13	980	.002	.003	.004
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.001	.002	.004
4.0	> 130000		Tool steel	H13 H21	660	.001	.002	.004
4.1			HSS		390	.001	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110		.002	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100		.002	.003
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L 316	660		.002	.004
6.1	< 130000		Stainless steel	630	590		.002	.004
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420 403	390		.002	.003
8.0		180	Grey cast iron	No 35 B No 50 B	790	.002	.004	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.002	.004	.006
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	590	.002	.003	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.002	.003	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.002	.003	.006
10.1		200	Malleable cast iron	70003	460	.001	.003	.005
10.2		300	Alloyed nodular cast iron	A43D2	460	.001	.003	.005
12.0		90	Vermicular cast iron		390	.001	.004	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	1310	.001	.002	.003
12.2		100	Copper alloy, Brass, Bronze: average cut		980	.002	.003	.006
13.0		60	Wrought aluminum alloy		1640	.001	.002	.004
13.1		75	Aluminum alloy: Si content $< 10\%$	GD-AISI12	1150	.002	.003	.005
13.2		100	Magnesium alloy		980	.002	.003	.005
14.0		100	Aluminum alloy: Si content $> 10\%$	A360.2	980	.002	.003	.005
15.0	203000		Hardened steel < 45 HRC		390		.002	.003
16.0	261000		Hardened steel > 45 HRC		300		.002	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Insert	ISO Insert Description	P	M	K	N	S	H
	Order No. size							
0.220-0.256		.32..						
0.315-0.394		.39..						
0.433-0.945								

For better wear resistance			for Workpiece Material					
D	Insert	ISO Insert Description	P	M	K	N	S	H
	Order No. size							
0.220-0.256		W57						
0.315-0.394		W30 PCD						
0.433-0.945		W30 CBN						

For better surface finish			for Workpiece Material					
D	Insert	ISO Insert Description	P	M	K	N	S	H
	Order No. size							
0.220-0.256		W57						
0.315-0.394		W30 PCD						
0.433-0.945		W30 CBN						

4



Boring Bar Ø 0.315" – 1.102"

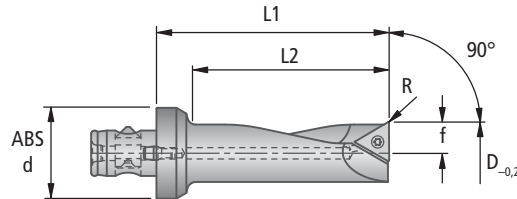
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	✗	●	●	✗

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

with ABS® Connection

$\alpha = 90^\circ$ right hand

(ABS-KFK-UJ)



D min	Order No.	d	L1	L2	f	R	lbs	Basic Recommendation		Replacement Part				
								Order No. Size	ISO Insert Description	Workpiece Material	Order No. Description	Order No. Description		
0.315	B00 25510	25	1.496	1.102	0.156	0.008	0.11	W57 04140.0284	TOGX06T102EN-14 BK84	P M K N S H	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP		
	B00 25610	32	1.654	1.102	0.156	0.008	0.22							
	B00 25810	40	1.772	1.102	0.156	0.008	0.40							
0.354	B00 25700	32	1.890	1.339	0.175	0.008	0.22	W30 04990.0240	TOGX06T102FN-12 K10	P M K N S H	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP		
0.394	B00 25520	25	1.732	1.339	0.195	0.008	0.13						W30 04060.036110	TOGX06T102TN CBN40
	B00 25620	32	1.890	1.339	0.195	0.008	0.24							
	B00 25820	40	2.008	1.339	0.195	0.008	0.42							
0.433	B00 25710	32	2.244	1.693	0.215	0.008	0.24	W57 14140.0484	TOGX090204EN-14 BK84	P M K N S H	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP		
0.472	B00 25530	25	2.087	1.693	0.234	0.008	0.15						W57 14120.0423	TOGX090204FN-12 K10
	B00 25630	32	2.244	1.693	0.220	0.008	0.26							
	B00 25830	40	2.362	1.693	0.234	0.008	0.44							
0.551	B00 25540	25	2.362	1.969	0.274	0.008	0.18	W30 14990.0440	TOGX090204EL-G06 BK6110	P M K N S H	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP		
	B00 25640	32	2.520	1.969	0.274	0.008	0.31							
	B00 25840	40	2.638	1.969	0.274	0.008	0.48							
0.630	B00 25650	32	2.835	2.283	0.313	0.008	0.33	W30 14060.046110	TOGX090204EL-G06 BK6110	P M K N S H	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP		
	B00 25850	40	2.953	2.283	0.313	0.008	0.53							
0.709	B00 25661	32	2.835	2.323	0.352	0.008	0.79							
0.787	B00 25861	40	2.953	2.323	0.352	0.008	0.33							
	B00 25671	32	3.228	2.756	0.390	0.008	0.46							
	B00 25871	40	3.346	2.756	0.390	0.008	0.66							
0.866	B00 25681	32	3.228	2.756	0.429	0.008	0.51							
	B00 25881	40	3.346	2.756	0.429	0.008	0.73							
0.945	B00 25691	32	3.228	2.756	0.469	0.008	0.57							
	B00 25891	40	3.346	2.756	0.469	0.008	0.77							
1.024	B00 25901	40	3.346	2.756	0.508	0.008	0.84							
	B00 25911	40	3.346	2.756	0.547	0.008	0.92							

Delivery:

Boring bars complete with clamping screw, less torx screwdriver and inserts.

Cutting Recommendations

Guideline for finish boring with Boring Bar B002

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\emptyset 0.315 - 0.394	\emptyset 0.433 - 1.024
1.0	≤72500		Unalloyed steel	A570.36	980	.003	.005
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120	820	.002	.005
				1055			
				5115			
2.1	<72500		Lead alloy	12L13	980	.003	.004
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.002	.004
4.0	>130000		Tool steel	H13 H21	660	.002	.004
4.1			HSS		390	.002	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.002	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.002	.004
6.1	<130000		Stainless steel	630	590	.002	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.003
8.0		180	Grey cast iron	No 35 B No 50 B	790	.004	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.004	.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.003	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.003	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.003	.006
10.1		200	Malleable cast iron	70003	460	.003	.005
10.2		300	Alloyed nodular cast iron	A43D2	460	.003	.005
10.2		300	Vermicular cast iron		390	.004	.006
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	1310	.002	.003
12.1		100	Copper alloy, Brass, Bronze: average cut		980	.003	.006
13.0		60	Wrought aluminum alloy		1640	.002	.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.003	.005
			Magnesium alloy				
14.0		100	Aluminum alloy: Si content >10%	A360.2	980	.003	.005
15.0	203000		Hardened steel < 45 HRC		390	.002	.003
16.0	261000		Hardened steel > 45 HRC		300	.002	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO Insert Description						
0.315 - 0.394	W30 04120.3232 W30 04120.3977	TOHX06T102EL-US12 CK32 TOHX06T1ZZEL-39G12 BK77	●	●				●
0.433 - 1.024	W30 14120.3232 W30 14120.3977	TOHX090202EL-US12 CK32 TOHX0902ZZEL-39G12 BK77	●	●				●

For better wear resistance			for Workpiece Material						
D	Insert		P	M	K	N	S	H	
	Order No. size	ISO Insert Description							
0.315 - 0.394	W57 04140.0232 W30 04120.0238 W30 04990.0255 W30 04990.0257	TOGX06T102EN-14 CK32 TOGX06T102EL-G12 CK38 TOGX06T102FN PCD55 TOGX06T102TN CBN57	●	●					
			●	●					
								●	
									● only GG25
0.433 - 1.024	W57 14140.0432 W30 14120.0238 W30 14990.0455 W30 14990.0457	TOGX090204EN-14 CK32 TOGX090202EL-G12 CK38 TOGX090204FN PCD55 TOGX090204TN CBN57	●	●					
			●	●					
								●	
									● only GG25

For better surface finish			for Workpiece Material						
D	Insert		P	M	K	N	S	H	
	Order No. size	ISO Insert Description							
0.315 - 0.394	W57 04140.0232 W30 04060.036110 W30 04200.0321 W30 04990.0255	TOGX06T102EN-14 CK32 TOGX06T103EL-G06 BK6110 TOGX06T103FL-G20 K10 TOGX06T102FN PCD55	●	●					
			●	●					
								●	
									●
0.433 - 1.024	W57 14140.0432 W30 14060.046110 W30 14200.0421 W30 14990.0455	TOGX090204EN-14 CK32 TOGX090204EL-G06 BK6110 TOGX090204FL-G20 K10 TOGX090204FN PCD55	●	●					
			●	●					
								●	
									●




Cutting Recommendations


Guideline for finish boring with Boring Bar B002

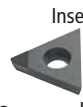
Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev			
						\emptyset 0.315 - 0.390	\emptyset 0.429 - 0.469	\emptyset 0.547 - 0.705	\emptyset 0.779 - 0.937
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81					
2.0	72500 - 130000		Low alloy steel	5120 1055 5115					
2.1	< 72500		Lead alloy	12L13					
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064					
4.0	> 130000		Tool steel	H13 H21					
4.1			HSS						
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A					
5.1	58000		Titanium, Titanium alloy	AMS R54520					
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L 316					
6.1	< 130000		Stainless steel	630					
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420 403					
8.0		180	Grey cast iron	No 35 B No 50 B					
8.1		250	Alloy grey cast iron	A436 Type 2					
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18					
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06					
10.0	87000	250	Nodular cast iron pearlitic	100-70-03					
10.1		200	Malleable cast iron Alloyed nodular cast iron	70003 A43D2					
10.2		300	Vermicular cast iron						
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	880	0.001	0.001	0.002	0.003
12.1		100	Copper alloy, Brass, Bronze: average cut		820	0.003	0.003	0.003	0.004
13.0		60	Wrought aluminum alloy		1300	0.002	0.002	0.002	0.003
13.1		75	Aluminum alloy: Si content $< 10\%$ Magnesium alloy	GD-AISI12	980	0.003	0.003	0.003	0.004
14.0		100	Aluminum alloy: Si content $> 10\%$	A360.2	820	0.003	0.003	0.003	0.004
15.0	203000		Hardened steel < 45 HRC						
16.0	261000		Hardened steel > 45 HRC						

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control									
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material						
			P	M	K	N	S	H	
0.315 - 0.390	W32 03150.0421	TPHX060104FL-P15 K10				●			
0.429 - 0.469	W32 13150.0421	TPHX090204FL-P15 K10				●			
0.547 - 0.705	W32 18150.0421	TPHX110204FL-P15 K10				●			
0.779 - 0.937	W32 32150.0421	TPHX160304FL-P15 K10				●			

For better wear resistance									
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material						
			P	M	K	N	S	H	
0.315 - 0.390	W32 03150.0450 W32 03150.047710	TPHX060104FL-P15 BK50 TPHX060104FL-P15 BK7710				●			
0.429 - 0.469	W32 13150.0450 W32 13150.047710	TPHX090204FL-P15 BK50 TPHX090204FL-P15 BK7710				●			
0.547 - 0.705	W32 18150.0450 W32 18150.047710	TPHX110204FL-P15 BK50 TPHX110204FL-P15 BK7710				●			
0.779 - 0.937	W32 32150.0450 W32 32150.047710	TPHX160304FL-P15 BK50 TPHX160304FL-P15 BK7710				●			

For better surface finish									
D	Order No. size	Insert  PCD ISO Insert Description	for Workpiece Material						
			P	M	K	N	S	H	
0.315 - 0.390	W32 03990.0455	TPHB060104FN PCD55				●			
0.429 - 0.469	W32 13990.0455	TPHB090204FN PCD55				●			
0.547 - 0.705	W32 18990.0455	TPHB110204FN PCD55				●			
0.779 - 0.937	W32 32990.0455	TPHB160304FN PCD55				●			

4

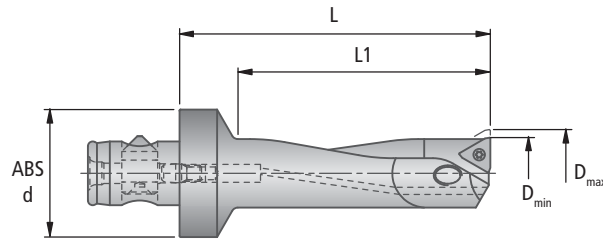


Boring Bar Ø 0.469" – 1.181"

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	✗	●	●	✗

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

with ABS® Connection (ABS-VE-U)

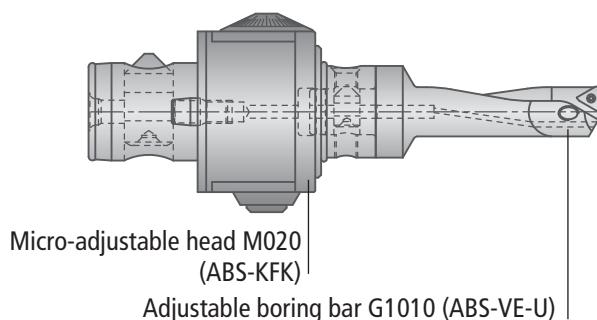


Dmin-Dmax	Order No. Description	ABS d	L1	L2	lbs	Basic Recommendation		for Workpiece Material						Replacement Part		
						Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description	
0.469 - 0.551	G10 10111 ABS32VE12U	32	2.244	1.654	0.29											
0.547 - 0.630	G10 10121 ABS32VE14U	32	2.520	1.929	0.31											
0.626 - 0.709	G10 10131 ABS32VE16U	32	2.795	2.205	0.35	W57 14140.0484	TOGX090204EN-14 BK84	●	●					N00 56101 S/M2.6x5.2-8IP 11.3 in-lbs	L05 00830 8IP	
0.705 - 0.787	G10 10141 ABS32VE18U	32	3.071	2.480	0.42	W57 14120.0423	TOGX090204FN-12 K10			●	●					
0.780 - 0.945	G10 10151 ABS32VE20U	32	3.346	2.756	0.51	W30 14990.0440	TOGX090204TN CBN40					●				
0.937 - 1.181	G10 10161 ABS32VE24U	32	3.898	3.307	0.70	W30 14060.046110	TOGX090204EL-G06 BK6110			●		○				
												○	52 HRC			

Note: The adjustment range Dmin/Dmax is based on the use of the W30 14 .. 0.32 (US4 2502L) insert. If you use inserts with other radii the adjustment range Dmin/Dmax are different.

Delivery: Boring bars complete with boring head, and clamping screw, less insert and torx screwdriver.

When using Micro-adjustable Boring Heads (ABS®-KFK) with high RPM, a central balanced tool is necessary. The adjustable Boring Bar (ABS®-VE-U) allows a rough adjustment with minimal weight imbalance. The fine adjustment (adjustable in 0.001" increments on diameter) is accomplished with the Micro-adjustable Boring Head. For finishing with the Boring Bar G 1010 (ABS®-VE-U) use the KOMET® Triangle Insert.



Boring bar	Replacement Part			
	Order No.	Order No.	Order No.	Order No. Description
..VE12	G10 10611	N00 70080	G10 10111.15	L05 00060 Tx 10
..VE14	G10 10621	N00 70080	G10 10121.15	L05 00080 Tx 20
..VE16	G10 10631	N00 70090	G10 10131.15	1805000025 Tx 25
..VE18	G10 10641	N00 70140	G10 10141.15	1805000025 Tx 25
..VE20	G10 10651	N00 70140	G10 10151.15	1805000025 Tx 25
..VE24	G10 10661	N00 70190	G10 10161.15	1805000030 Tx 30

Cutting Recommendations

Guideline for finish boring with Boring Bar G1011

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.005
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.005
2.1	<72500		Lead alloy	12L13	980	.004
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.004
4.0	>130000		Tool steel	H13 H21	660	.004
4.1			HSS		390	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	110	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.004
6.1	<130000		Stainless steel	630	590	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.003
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.006
10.1		200	Malleable cast iron	70003	460	.005
10.2		300	Alloyed nodular cast iron	A43D2	460	.005
10.2		300	Vermicular cast iron		390	.006
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	1310	.003
12.1		100	Copper alloy, Brass, Bronze: average cut		980	.006
13.0		60	Wrought aluminum alloy		1640	.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.005
13.1			Magnesium alloy		980	.005
14.0		100	Aluminum alloy: Si content >10%	A360.2	980	.005
15.0	203000		Hardened steel < 45 HRC		390	.003
16.0	261000		Hardened steel > 45 HRC		300	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.433 - 1.024	W30 14120.3232 W30 14120.3977	TOHX090202EL-US12 CK32 TOHX0902ZZEL-39G12 BK77	●	●				●

For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.433 - 1.024	W57 14140.0432 W30 14120.0238 W30 14990.0455 W30 14990.0457	TOGX090204EN-14 CK32 TOGX090202EL-G12 CK38 TOGX090204FN PCD55 TOGX090204TN CBN57	●	●				●

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.433 - 1.024	W57 14140.0432 W30 14060.046110 W30 14200.0421 W30 14990.0455	TOGX090204EN-14 CK32 TOGX090204EL-G06 BK6110 TOGX090204FL-G20 K10 TOGX090204FN PCD55	●	●				●

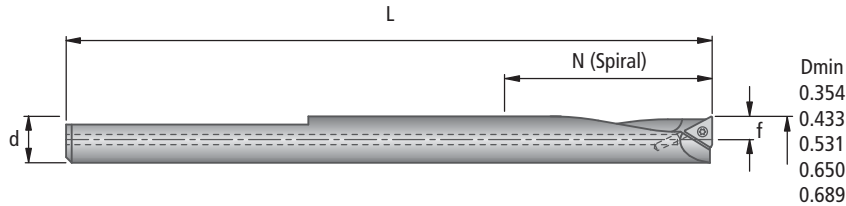
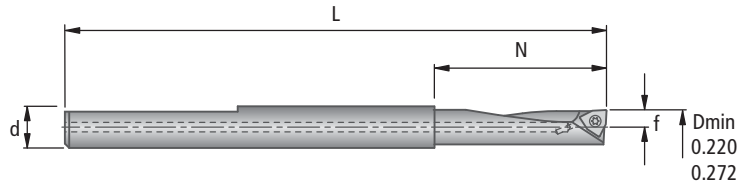
4



Low Vibration Boring Bar Ø 0.220" – 1.024"

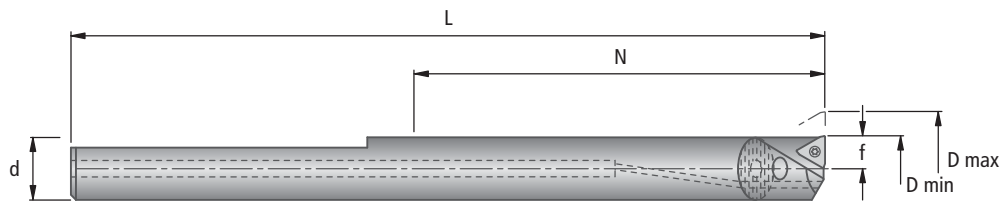
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	×	○	○	●

● highly recommended ○ recommended ○ may be suitable × not recommended



D min	Order No. <small>*carbide version ^ round shank</small>	d	L	N max	f	lbs	Basic Recommendation		for Workpiece Material		Replacement Part						
							Insert Order No. Size	ISO Insert Description	P	M	K	N	S	H	Clamping screw Order No. Description	TORX PLUS Order No. Description	
0.220	B00 30280	0.236	2.559	0.866	0.110		W00 04120.0164	WOHX02T001EL-G12 BK64	●	●							
0.272	B00 30290*	0.236	3.150	1.417	0.136		W00 04120.0121	WOHX02T001FL-G12 K10			●	●					
0.354	B00 00680*	0.315	3.543	0.945	0.175		W57 04140.0284	TOGX06T102EN-14 BK84	●	●							
0.433	B00 00690*	0.394	3.740	1.181	0.214		W57 04120.0223	TOGX06T102FN-12 K10			●	●					
							W30 04990.0240	TOGX06T102TN CBN40									
							W30 04060.036110	TOHX06T103EL-G06									
0.531	B00 05630*^	0.472	7.087	-	0.266	0.66	W57 14140.0484	TOGX090204EN-14 BK84	●	●							
0.650	B00 05640*^	0.591	7.087	-	0.325	0.95	W57 14120.0423	TOGX090204FN-12 K10			●	●					
							W30 14990.0240	TOGX090202TN CBN40									
0.689	B00 05650*^	0.630	7.087	-	0.344	1.06	W30 14060.046110	TOHX090204EL-G06									

Delivery: Boring bar complete with clamping screw and torx wrench, please order insert separately.



for adapter	Replacement Part Boring head clamping screw Order No.
G10 12060	G10 10111.15
G10 12070	G10 10131.15
G10 12080	G10 10131.15

D	Boring head Order No.	d	f	L	N	Adapter Order No.	Basic Recommendation		for Workpiece Material		Replacement Part				
							Insert Order No. Size	ISO Insert Description	P	M	K	N	S	H	Clamping screw Order No. Description
0.512 - 0.591	G10 12621 <small>0.04</small>	.472	.254			G10 12060 <small>0.30</small>									
0.591 - 0.669	G10 12841 <small>0.04</small>	.472	.333			G10 12070 <small>0.66</small>	W57 14140.0484	TOGX090204EN-14 BK84	●	●					
							W57 14120.0423	TOGX090204FN-12 K10							
0.669 - 0.748	G10 12711 <small>0.04</small>	.630	.333			G10 12070 <small>0.66</small>	W30 14990.0440	TOGX090204TN CBN40							
0.748 - 0.866	G10 12861 <small>0.04</small>	.630	.510			G10 12080 <small>0.66</small>	W30 14060.046110	TOHX090204EL-G06 BK6110							
0.866 - 1.024	G10 12731 <small>0.04</small>	.630	.589			G10 12080 <small>0.66</small>									

Delivery Boring Head: complete with clamping screw and torx wrench, please order insert separately.

Delivery Adapter: complete with boring head clamping screw.

Cutting Recommendations

Guideline for finish boring with Boring Bar G1011

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.220 - 0.272	\emptyset 0.354 - 0.433	\emptyset 0.512 - 1.024
1.0	≤72500		Unalloyed steel	A570.36	390	0.002	0.003	0.004
				1213				
				A573.81				
2.0	72500 - 130000		Low alloy steel	5120	490	0.002	0.002	0.005
				1055				
				5115				
2.1	<72500		Lead alloy	12L13	490	0.002	0.003	0.005
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	300	0.001	0.002	0.004
				1064				
4.0	>130000		Tool steel	H13	300	0.001	0.002	0.004
				H21				
4.1			HSS		230	0.001	0.002	0.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	0.000	0.002	0.003
				Nimonic® 80A				
5.1	58000		Titanium, Titanium alloy	AMS R54520	70	0.000	0.002	0.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L	230	0.000	0.002	0.004
				316				
6.1	<130000		Stainless steel	630	230	0.000	0.002	0.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420	230	0.000	0.002	0.003
				403				
8.0		180	Grey cast iron	No 35 B	590	0.002	0.004	0.006
				No 50 B				
8.1		250	Alloy grey cast iron	A436 Type 2	520	0.002	0.004	0.001
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	520	0.002	0.003	0.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	460	0.002	0.003	0.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	390	0.002	0.003	0.006
10.1		200	Malleable cast iron	70003	390	0.001	0.003	0.005
10.2		300	Alloyed nodular cast iron	A43D2	390	0.001	0.004	0.006
12.0		90	Vermicular cast iron		820	0.001	0.002	0.003
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.001	0.002	0.003
13.0		60	Copper alloy, Brass, Bronze: average cut		820	0.002	0.003	0.006
13.1		75	Wrought aluminum alloy	GD-AISI12	1310	0.001	0.002	0.004
13.2			Aluminum alloy: Si content <10%		890	0.002	0.003	0.005
14.0		100	Magnesium alloy		660	0.002	0.003	0.005
15.0	203000		Aluminum alloy: Si content >10%	A360.2	660	0.002	0.003	0.005
16.0	261000		Hardened steel < 45 HRC		-	-	-	-
			Hardened steel > 45 HRC		-	-	-	-

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			Insert		for Workpiece Material	
D	Order No. size	ISO Insert Description			P	M K N S H
0.220 - 0.272	-					
0.354 - 0.433	W30 04120.3232 W30 04120.3977	TOHX06T102EL-US12 CK32 TOHX06T1ZZEL-39G12 BK77				
0.512 - 1.024	W30 14120.3232 W30 14120.3977	TOHX090202EL-US12 CK32 TOHX0902ZZEL-39G12 BK77				

For better wear resistance			Insert		for Workpiece Material	
D	Order No. size	ISO Insert Description			P	M K N S H
0.220 - 0.272	-					
0.354 - 0.433	W57 04140.0232 W30 04120.0238 W30 04990.0255 W30 04990.0257	TOGX06T102EN-14 CK32 TOHX06T102EL-G12 CK38 TOGX06T102FN PCD55 TOGX06T102TN CBN57				
0.512 - 1.024	W57 14140.0432 W30 14120.0238 W30 14990.0455 W30 14990.0457	TOGX090204EN-14 CK32 TOHX090202EL-G12 CK32 TOGX090204FN PCD55 TOGX090204TN CBN57				

For better surface finish			Insert		for Workpiece Material	
D	Order No. size	ISO Insert Description			P	M K N S H
0.220 - 0.272	-					
0.354 - 0.433	W57 04140.0232 W30 04060.036110 W30 04200.0321 W30 04990.0255	TOGX06T102EN-14 CK32 TOHX06T103EL-G06 BK6110 TOHX06T103FL-G20 K10 TOGX06T102FN PCD55				
0.512 - 1.024	W57 14140.0432 W30 14060.046110 W30 14200.0421 W30 14990.0455	TOGX090204EN-14 CK32 TOHX090204EL-G06 BK6110 TOHX090204FL-G20 K10 TOGX090204FN PCD55				

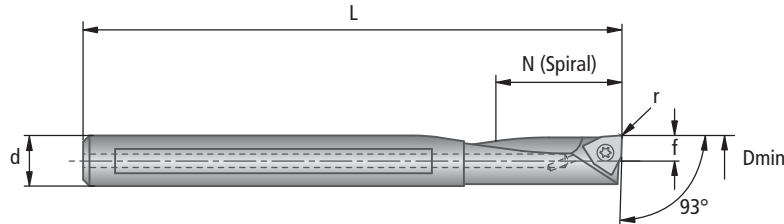


Boring Bar Ø 0.220" – 0.496"

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	✗	○	○	●

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

(SWUCR)

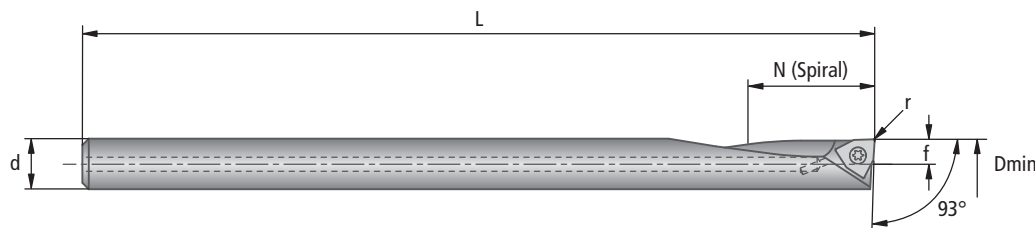


D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		Replacement Part		
							Insert	for Workpiece Material	Clamping screw	TORX	
							W00 Order No. Size	W28 ISO Insert Description	P M K N S H	Order No. Description	Order No. Description
0.220	B00 36100 S4A-SWUCR040W	0.250	2.362	0.394	0.110	0.004	W00 04120.0164 W00 04120.0121	WOHX02T001EL-G12 BK64 WOHX02T001EL-G12 K10	● ● ● ● ● ●	N00 56011 S/M1.8×2.9-5IP	L05 00800 5IP
0.281	B00 36111 S5A-SWUCR050W	0.312	2.750	0.750	0.141	0.008	W00 10120.0260 W00 10120.0221 W28 10000.0264 W28 10000.0221	WOHX03T102EL-G12 BK WOHX03T102EL-G12 K10 WOEX03T102-00 BK64 WOEX03T102-00 K10	● ● ● ● ● ●	N00 56021 S/M2×3.8-6IP	L05 00810 6IP
0.308	B00 36121 S5A-SWUCR050W	0.312	3.250	0.875	0.154	0.008					
0.371	B00 36131 S6A-SWUCR050W	0.375	3.750	1.187	0.185	0.008					
0.496	B00 36140 S8A-SWUCR060W	0.500	4.500	1.625	0.248	0.016	W00 17120.0260 W00 17120.0221 W28 17000.0464 W28 17000.0421	WOHX040202EL-G12 BK WOHX040202EL-G12 K10 WOEX040204-00 BK64 WOEX040204-00 K10	● ● ● ● ● ●	N00 55561 M2.5×4-8IP	L05 00830 8IP

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

with carbide shank

(SWUCR)



D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		Replacement Part		
							Insert	for Workpiece Material	Clamping screw	TORX	
							W00 Order No. Size	W28 ISO Insert Description	P M K N S H	Order No. Description	Order No. Description
0.335	B00 36320 C5C-SWUCR050W	0.312	5.000	0.787	0.141	0.008	W00 10120.0260 W00 10120.0221 W28 10000.0264 W28 10000.0221	WOHX03T102EL-G12 BK WOHX03T102EL-G12 K10 WOEX03T102-00 BK64 WOEX03T102-00 K10	● ● ● ● ● ●	N00 56021 S/M2×3.8-6IP	L05 00810 6IP
0.398	B00 36330 C6D-SWUCR050W	0.375	6.000	0.866	0.185	0.008					

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.


Cutting Recommendations


Guideline for finish boring with Boring Bar B003


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.220	\emptyset 0.281 - 0.398	\emptyset 0.496
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81	850	0.002	0.003	0.006
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	850	0.002	0.003	0.006
2.1	< 72500		Lead alloy	12L13	850	0.002	0.003	0.006
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	800	0.002	0.003	0.006
4.0	> 130000		Tool steel	H13 H21	450	0.002	0.003	0.006
4.1			HSS		390	0.002	0.003	0.006
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	0.002	0.002	0.004
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	0.002	0.004	0.004
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L 316	450	0.002	0.003	0.006
6.1	< 130000		Stainless steel	630	500	0.002	0.003	0.006
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420 403	300	0.002	0.003	0.004
8.0		180	Grey cast iron	No 35 B No 50 B	700	0.003	0.003	0.006
8.1		250	Alloy grey cast iron	A436 Type 2	650	0.003	0.003	0.006
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	550	0.003	0.004	0.005
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	550	0.003	0.004	0.005
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	500	0.002	0.003	0.004
10.1		200	Malleable cast iron	70003	450	0.002	0.003	0.004
10.2		300	Alloyed nodular cast iron	A43D2	450	0.002	0.003	0.004
12.0		90	Vermicular cast iron		390	0.002	0.003	0.004
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	0.004	0.005	0.006
13.0		60	Copper alloy, Brass, Bronze: average cut		1600	0.004	0.005	0.006
13.1		75	Wrought aluminum alloy	GD-AISI12	950	0.004	0.005	0.006
13.2		100	Aluminum alloy: Si content $< 10\%$ Magnesium alloy		950	0.004	0.005	0.006
14.0		100	Aluminum alloy: Si content $> 10\%$	A360.2	820	0.004	0.005	0.006
15.0	203000		Hardened steel < 45 HRC		390	0.002	0.002	0.004
16.0	261000		Hardened steel > 45 HRC		390	0.002	0.004	0.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Insert  Order No. size	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.220	-									
0.281 - 0.398	W28 10030.0263	WOEX03T102-03 BK63								
0.496	W28 17030.0463	WOEX040204-03 BK63								

For better wear resistance										
D	Insert  Order No. size	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.220	-									
0.281 - 0.398	-									
0.496	W28 17010.0461	WOEX040204-01 BK61								

For higher toughness										
D	Insert  Order No. size	ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
0.220	-									
0.281 - 0.398	-									
0.496	-									



Cutting Recommendations

Guideline for finish boring with Boring Bar D03

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	850	0.006
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	850	0.006
2.1	<72500		Lead alloy	12L13	850	0.006
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	800	0.006
4.0	>130000		Tool steel	H13 H21	450	0.006
4.1			HSS		390	0.006
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	0.004
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	0.004
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	450	0.006
6.1	<130000		Stainless steel	630	500	0.006
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	300	0.004
8.0		180	Grey cast iron	No 35 B No 50 B	700	0.006
8.1		250	Alloy grey cast iron	A436 Type 2	650	0.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	550	0.005
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	550	0.005
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	500	0.004
10.1		200	Malleable cast iron	70003	450	0.004
10.2		300	Alloyed nodular cast iron	A43D2	450	0.004
12.0		90	Vermicular cast iron		390	0.004
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	0.006
13.0		60	Copper alloy, Brass, Bronze: average cut		1600	0.006
13.1		75	Wrought aluminum alloy	GD-AISI12	950	0.006
14.0		100	Aluminum alloy: Si content <10% Magnesium alloy		950	0.006
15.0	203000		Aluminum alloy: Si content >10%	A360.2	820	0.006
16.0	261000		Hardened steel < 45 HRC		390	0.004
			Hardened steel > 45 HRC		390	0.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.812 - 1.250	W00 W28	WOHX060302EL-G12 BK60 WOEX060304-03 BK63	P M K N S H

For better wear resistance			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.812 - 1.250	W28	WOEX060304-00 BK61	P M K N S H

For higher toughness			
D	Insert		for Workpiece Material
	Order No. size	ISO Insert Description	P M K N S H
0.812 - 1.250	I		P M K N S H

4

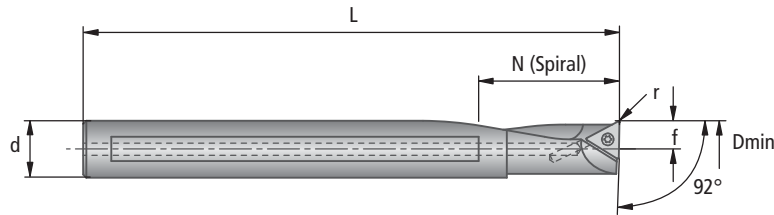


Boring Bar Ø 0.308" – 0.746"

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	×	○	○	○

● highly recommended ○ recommended ○ may be suitable × not recommended

(S-STUCR)

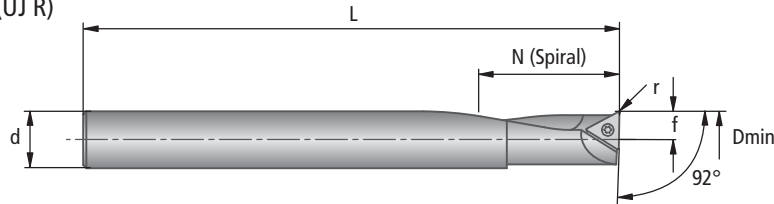


D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		for Workpiece Material						Replacement Part			
							Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description		
0.308	B00 06011 SSA STUCR040W	0.312	3.250	0.625	0.152	0.008	W57 04140.0284 W57 04120.0223	TOGX06T102EN-14 BK84 TOGX06T102FN-12 K10	●	●		●	●				N00 56021 S/M2×3.8-6IP	L05 00810 6IP
0.371	B00 06021 S6A STUCR040W	0.375	3.750	0.750	0.183	0.008	W30 04990.0240 W30 04060.036110	TOGX06T102TN CBN40 TOHX06T103EL-G06 BK6110										
0.496	B00 06031 S8A STUCR060W	0.500	4.500	1.000	0.246	0.008	W57 14140.0484 W57 14120.0423	TOGX090204EN-14 BK84 TOGX090204FN-12 K10	●	●		●	●				N00 56101 S/M2.6×5.2-8IP	L05 00830 8IP
0.621	B00 06041 S10C STUCR060W	0.625	5.000	1.250	0.307	0.008	W30 14990.0440 W30 14060.046110	TOGX090204TN CBN40 TOHX090204EL-G06 BK6110										
0.746	B00 06051 S12D STUCR082W	0.750	6.000	1.500	0.370	0.008	W57 26140.0484 W57 26120.0423 W30 26990.0440 W30 26060.046110	TOGX140304EN-14 BK84 TOGX140304FN-12 K10 TOGX140304TN CBN40 TOHX140304EL-G06 BK6110	●	●		●	●				N00 56211 S/M3.5×7.3-10IP	L05 00850 10IP

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

without central coolant supply

(UJ R)



D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		for Workpiece Material						Replacement Part			
							Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description		
0.308	B00 06110 UJ .312 FR	0.312	3.250	0.625	0.152	0.008	W57 04140.0284 W57 04120.0223	TOGX06T102EN-14 BK84 TOGX06T102FN-12 K10	●	●		●	●				N00 56021 S/M2×3.8-6IP	L05 00810 6IP
0.371	B00 06120 UJ .375 FR	0.375	3.750	0.750	0.183	0.008	W30 04990.0240 W30 04060.036110	TOGX06T102TN CBN40 TOHX06T103EL-G06 BK6110										
0.496	B00 06130 UJ .500 FR	0.500	4.500	1.000	0.246	0.008	W57 14140.0484 W57 14120.0423	TOGX090204EN-14 BK84 TOGX090204FN-12 K10	●	●		●	●				N00 56101 S/M2.6×5.2-8IP	L05 00830 8IP
0.621	B00 06140 UJ .625FR	0.625	5.000	1.250	0.307	0.008	W30 14990.0440 W30 14060.046110	TOGX090204TN CBN40 TOHX090204EL-G06 BK6110										
0.746	B00 06150 UJ .750FR	0.750	6.000	1.500	0.370	0.008	W57 26140.0484 W57 26120.0423 W30 26990.0440 W30 26060.046110	TOGX140304EN-14 BK84 TOGX140304FN-12 K10 TOGX140304TN CBN40 TOHX140304EL-G06 BK6110	●	●		●	●				N00 56211 S/M3.5×7.3-10IP	L05 00850 10IP

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

Cutting Recommendations

Guideline for finish boring with Boring Bar B000

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.308 - 0.371	\emptyset 0.496 - 0.621	\emptyset 0.746
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81	980	.003	.004	.006
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.003	.005	.008
2.1	< 72500		Lead alloy	12L13	980	.004	.006	.010
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.003	.004	.008
4.0	> 130000		Tool steel	H13 H21	660	.002	.004	.006
4.1			HSS		390	.002	.003	.005
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.002	.003	.004
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003	.004
6.0	≤ 87000		Stainless steel: austenitic 300 series	304L 316	660	.003	.004	.006
6.1	< 130000		Stainless steel	630	590	.002	.004	.006
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.004	.006
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006	.008	.012
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008	.012
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006	.010
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006	.010
10.0	87000	250	Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	520	.004	.006	.010
10.1		200	Alloyed nodular cast iron	A43D2	460	.004	.006	.010
10.2		300	Vermicular cast iron		390	.004	.006	.010
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.004	.006	.008
12.1		100	Copper alloy, Brass, Bronze: average cut		980	.004	.006	.008
13.0		60	Wrought aluminum alloy		1640	.003	.005	.006
13.1		75	Aluminum alloy: Si content $< 10\%$ Magnesium alloy	GD-AISI12	1150	.004	.006	.008
14.0		100	Aluminum alloy: Si content $> 10\%$	A360.2	980	.004	.006	.001
15.0	203000		Hardened steel < 45 HRC		390	.003	.003	.004
16.0	261000		Hardened steel > 45 HRC		300	.002	.003	.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
0.308 - 0.371	W30	W57	04120.3232	TOHX06T102EL-US12 CK32	●	●				
	W57		04140.0232	TOGX06T102EN-14 CK32	●	●				
0.496 - 0.621	W30	W57	14120.3232	TOHX090202EL-US12 CK32	●	●				
	W57		14140.0232	TOGX090202EN-14 CK32	●	●				
0.746	W30	W57	26120.3232	TOHX140302EL-US12 CK32	●	●				
	W57		26140.0232	TOGX140302EN-14 CK32	●	●				

For better wear resistance			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
0.308 - 0.371	W57	W30	04140.0232	TOGX06T102EN-14 CK32	●	●				
	W30		04120.0238	TOHX06T102EL-G12 CK38	●	●				
	W30		04990.0257	TOGX06T102TN CBN57						● only GG25
0.496 - 0.621	W57	W30	14140.0432	TOGX090204EN-14 CK32	●	●				
	W30		14120.0238	TOHX090202EL-G12 CK32	●	●				
	W30		14990.0457	TOGX090204TN CBN57						● only GG25
0.746	W57	W30	26140.0432	TOGX140304EN-14 CK32	●	●				
	W30		26120.0238	TOHX140302EL-G12 CK32	●	●				
	W30		26990.0457	TOGX140304TN CBN57						● only GG25

For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30 UF	W30 PCD								
0.308 - 0.371	W30	W30	04120.3130	TOHX06T102EL-UF12 CK30	●	●				
	W30		04990.0355	TOGX06T103FN PCD55					●	
0.496 - 0.621	W30	W30	14120.3130	TOHX090202EL-UF12 CK30	●	●				
	W30		14990.0455	TOGX090204FN PCD55					●	
0.746	W30	W30	26120.3130	TOHX140302EL-UF12 CK30	●	●				
	W30		26990.0455	TOGX140304FN PCD5					●	

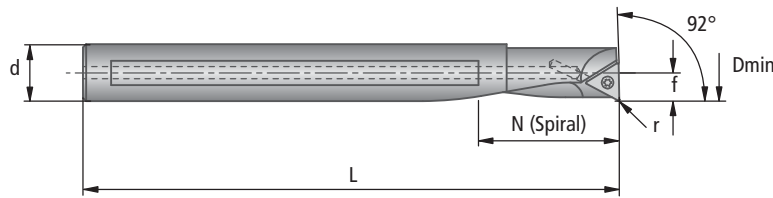


Boring Bar Ø 0.308" – 0.746"

L / D 3.5xD	Through hole 	Blind hole 	Slanted Surface 	Cross Hole 	Boring Backwards 	HRC > 54 Through Hole 	HRC > 54 Blind Hole 	Vibration Dampening
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● highly recommended ○ recommended ○ may be suitable ✕ not recommended

(S-STUCL)

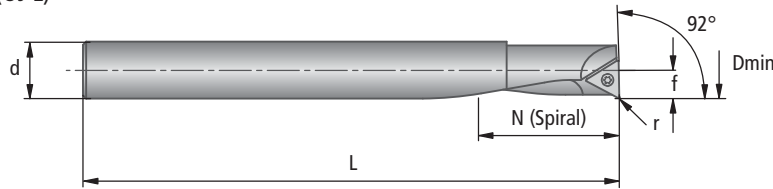


D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		Replacement Part							
							Order No. Size	ISO Insert Description	for Workpiece Material						Clamping screw	TORX
0.308	B00 01011 S5A STUCL040W	0.312	3.250	0.625	0.152	0.008	W57 04140.0284	TOGX06T102EN-14 BK84							 N00 56021 S/M2×3.8-6IP	 L05 00810 6IP
0.371	B00 01021 S6A STUCL040W	0.375	3.750	0.750	0.183	0.008	W30 04990.0240	TOGX06T102FN-12 K10 TOGX06T102TN CBN40								
0.496	B00 01031 S8A STUCL060W	0.500	4.500	1.000	0.246	0.008	W57 14140.0484	TOGX090204EN-14 BK84							 N00 56101 S/M2.6×5.2-8IP	 L05 00830 8IP
0.621	B00 01041 S10C STUCL060W	0.625	5.000	1.250	0.307	0.008	W30 14990.0440	TOGX090204FN-12 K10 TOGX090204TN CBN40								
0.746	B00 01051 S12D STUCL082W	0.750	6.000	1.500	0.370	0.008	W57 26140.0484	TOGX140304EN-14 BK84							 N00 56211 S/M3.5×7.3-10IP	 L05 00850 10IP
							W57 26120.0423	TOGX140304FN-12 K10								
							W30 26990.0440	TOGX140304TN CBN40								

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

without central coolant supply

(UJ L)



D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		Replacement Part							
							Order No. Size	ISO Insert Description	for Workpiece Material						Clamping screw	TORX
0.308	B00 01110 UJ .312 FL	0.312	3.250	0.625	0.152	0.008	W57 04140.0284	TOGX06T102EN-14 BK84							 N00 56021 S/M2×3.8-6IP	 L05 00810 6IP
0.371	B00 01120 UJ .375 FL	0.375	3.750	0.750	0.183	0.008	W30 04990.0240	TOGX06T102FN-12 K10 TOGX06T102TN CBN40								
0.496	B00 01130 UJ .500 FL	0.500	4.500	1.000	0.246	0.008	W57 14140.0484	TOGX090204EN-14 BK84							 N00 56101 S/M2.6×5.2-8IP	 L05 00830 8IP
0.621	B00 01140 UJ .625FL	0.625	5.000	1.250	0.307	0.008	W30 14990.0440	TOGX090204FN-12 K10 TOGX090204TN CBN40								
0.746	B00 01150 UJ .750FL	0.750	6.000	1.500	0.370	0.008	W57 26140.0484	TOGX140304EN-14 BK84							 N00 56211 S/M3.5×7.3-10IP	 L05 00850 10IP
							W57 26120.0423	TOGX140304FN-12 K10								
							W30 26990.0440	TOGX140304TN CBN40								

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

Cutting Recommendations

Guideline for finish boring with Boring Bar B000

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.308 - 0.371	\emptyset 0.496 - 0.621	\emptyset 0.746
1.0	≤72500		Unalloyed steel	A570.36	980	.003	.004	.005
				1213				
				A573.81				
2.0	72500 - 130000		Low alloy steel	5120	820	.003	.004	.004
				1055				
				5115				
2.1	<72500	P	Lead alloy	12L13	980	.004	.005	.008
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	790	.003	.004	.007
				1064				
4.0	>130000		Tool steel	H13 H21	660	.002	.004	.005
4.1			HSS		390	.002	.003	.004
5.0			Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.003	.004
				Nimonic® 80A				
5.1	58000	S	Titanium, Titanium alloy	Inconel® 718	100	.002	.003	.004
				Nimonic® 80A				
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.003	.004	.005
6.1	<130000	M	Stainless steel	630	590	.002	.003	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.003	.004
8.0			Grey cast iron	No 35 B No 50 B	790	.005	.007	.010
8.1			Alloy grey cast iron	A436 Type 2	660	.005	.007	.010
9.0	≤87000		Nodular cast iron ferritic	60-40-18	590	.004	.005	.009
9.1			Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.005	.009
10.0	87000		Nodular cast iron pearlitic	100-70-03	520	.004	.005	.009
10.1			Malleable cast iron	70003	460	.004	.005	.009
10.2			Alloyed nodular cast iron	A43D2	390	.004	.005	.009
12.0			Vermicular cast iron		980	.004	.005	.008
12.1			Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.004	.005	.008
13.0			Copper alloy, Brass, Bronze: average cut		980	.004	.005	.008
13.1			Wrought aluminum alloy		1640	.003	.004	.005
13.2			Aluminum alloy: Si content <10%	GD-AISI12	980	.004	.005	.007
14.0			Magnesium alloy		820	.004	.005	.006
15.0	203000		Hardened steel < 45 HRC	A360.2	390	.003	.003	.004
16.0	261000	H	Hardened steel > 45 HRC		300	.002	.003	.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	Insert W30 W57 ISO Insert Description	P	M	K	N	S	H
			0.308 - 0.371	W30 04420.0332 W57 04140.0232	TOHX06T103ER-G12 CK32 TOGX06T102EN-14 CK32	●	●	
0.496 - 0.621	W30 14420.0232 W57 14140.0232	TOHX090202ER-G12 CK32 TOGX090202EN-14 CK32	●	●				
0.746	W30 26420.0232 W57 26140.0232	TOHX140302ER-G12 CK32 TOGX140302EN-14 CK32	●	●				

For better wear resistance			for Workpiece Material					
D	Order No. size	Insert W57 W30 ISO Insert Description	P	M	K	N	S	H
			0.308 - 0.371	W57 04140.0232 W30 04420.0238 W30 04990.0257	TOGX06T102EN-14 CK32 TOHX06T102ER-G12 CK38 TOGX06T102TN CBN57	●	●	
0.496 - 0.621	W57 14140.0432 W30 14420.0238 W30 14990.0457	TOGX090204EN-14 CK32 TOHX090202ER-G12 CK38 TOGX090204TN CBN57	●	●				● only GG25
0.746	W57 26140.0432 W30 26420.0438 W30 26990.0457	TOGX140304EN-14 CK32 TOHX140304ER-G12 CK38 TOGX140304TN CBN57	●	●				● only GG25

For better surface finish			for Workpiece Material					
D	Order No. size	Insert W30 PCD ISO Insert Description	P	M	K	N	S	H
			0.308 - 0.371	W30 04990.0355	TOGX065103 FN PCD55			
0.496 - 0.621	W30 14990.0455	TOGX090204 FN PCD55						●
0.746	W30 26990.0455	TOGX140304 FN PCD55						●



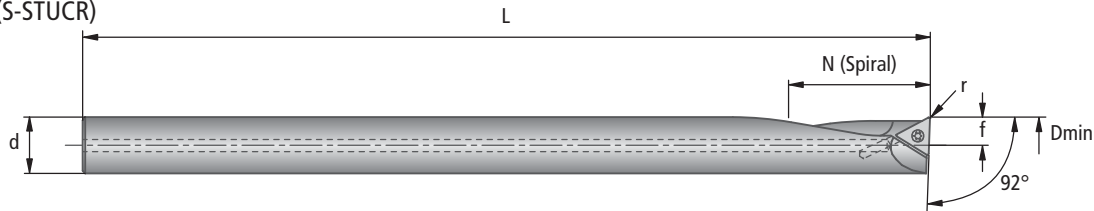
Boring Bar Ø 0.362" – 0.854"

L / D 3.5xD	Through hole 	Blind hole 	Slanted Surface 	Cross Hole 	Boring Backwards 	HRC > 54 Through Hole 	HRC > 54 Blind Hole 	Vibration Dampening
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● highly recommended ○ recommended ○ may be suitable ✗ not recommended

with carbide shank

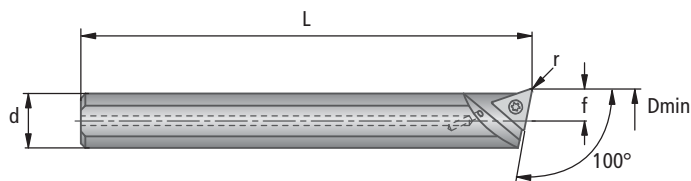
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D min	Order No. Description	d	L	N max	f	r	Basic Recommendation		for Workpiece Material						Replacement Part			
							Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description		
0.362	B00 05910 C5C STUCR040W	0.312	5.000	0.787	0.181	0.008	W57 04140.0284	TOGX06T102EN-14 BK84	●	●		●	●				N00 56021 S/M2×3.8-6IP	L05 00810 6IP
							W57 04120.0223	TOGX06T102FN-12 K10										
							W30 04990.0240	TOGX06T102TN CBN40										
							W30 04060.036110	TOHX06T103EL-G06 BK6110										
0.441	B00 05920 C6D STUCR040W	0.375	6.000	0.866	0.221	0.008	W30 04990.0240	TOGX06T102TN CBN40										
							W30 04060.036110	TOHX06T103EL-G06 BK6110										
0.531	B00 05930 C8E STUCR060W	0.500	7.000	0.945	0.267	0.008	W57 14140.0484	TOGX090204EN-14 BK84	●	●		●	●				N00 56101 S/M2.6×5.2-8IP	L05 00830 8IP
							W57 14120.0423	TOGX090204FN-12 K10										
							W30 14990.0440	TOGX090204TN CBN40										
							W30 14060.046110	TOHX090204EL-G06 BK6110										
0.689	B00 05940 C10F STUCR060W	0.625	8.000	1.220	0.345	0.008	W30 14060.046110	TOHX090204EL-G06 BK6110										
							W57 26140.0484	TOGX140304EN-14 BK84	●	●		●	●					
							W57 26120.0423	TOGX140304FN-12 K10										
							W30 26990.0440	TOGX140304TN CBN40										
							W30 26060.046110	TOHX140304EL-G06 BK6110										
0.854	B00 05950 C12S STUCR082W	0.750	10.000	1.457	0.427	0.008	W57 26140.0484	TOGX140304EN-14 BK84	●	●		●	●				N00 56211 S/M3.5×7.3-10IP	L05 00850 10IP
							W57 26120.0423	TOGX140304FN-12 K10										
							W30 26990.0440	TOGX140304TN CBN40										
							W30 26060.046110	TOHX140304EL-G06 BK6110										

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

(Z-IC R/L)



D min	Order No. Description	d	L	f	r	Basic Recommendation		for Workpiece Material						Replacement Part				
						Order No. Size	ISO Insert Description	P	M	K	N	S	H	Order No. Description	Order No. Description			
0.370	D02 26111 Z-.312-ICR	0.312	4.000	0.187	0.012	W57 04140.0284	TOGX06T102EN-14 BK84	●	●		●	●				N00 56021 S/M2×3.8-6IP	L05 00810 6IP	
						W57 04120.0223	TOGX06T102FN-12 K10											
						W30 04990.0240	TOGX06T102TN CBN40											
						W30 04060.036110	TOHX06T103EL-G06 BK6110											
0.453	D02 26121 Z-.375-ICR	0.375	5.000	0.218	0.016	W57 14140.0484	TOGX090204EN-14 BK84	●	●		●	●					N00 56101 S/M2.6×5.2-8IP	L05 00830 8IP
						W57 14120.0423	TOGX090204FN-12 K10											
						W30 14990.0440	TOGX090204TN CBN40											
						W30 14060.046110	TOHX090204EL-G06 BK6110											
0.546	D02 26131 Z-.500-ICR	0.500	5.000	0.281	0.016	W30 14060.046110	TOHX090204EL-G06 BK6110											
						W57 26140.0484	TOGX140304EN-14 BK84	●	●		●	●						
						W57 26120.0423	TOGX140304FN-12 K10											
						W30 26990.0440	TOGX140304TN CBN40											
						W30 26060.046110	TOHX140304EL-G06 BK6110											
0.750	D02 26141 Z-.625-ICR	0.625	6.000	0.375	0.020	W57 26140.0484	TOGX140304EN-14 BK84	●	●		●	●					N00 56211 S/M3.5×7.3-10IP	L05 00850 10IP
						W57 26120.0423	TOGX140304FN-12 K10											
						W30 26990.0440	TOGX140304TN CBN40											
						W30 26060.046110	TOHX140304EL-G06 BK6110											

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

Cutting Recommendations

Guideline for profiling with Boring Bar B000 / D022

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev		
						Ø 0.362 - 0.441	Ø 0.531 - 0.689	Ø 0.854
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.003	.004	.006
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.003	.005	.008
2.1	<72500		Lead alloy	12L13	980	.004	.006	.010
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.003	.004	.008
4.0	>130000		Tool steel	H13 H21	660	.002	.004	.006
4.1			HSS		390	.002	.003	.005
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.002	.003	.004
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003	.004
6.0	≤87000		Stainless steel: austenitic 300 series	304L 316	660	.003	.004	.006
6.1	<130000		Stainless steel	630	590	.002	.004	.006
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.002	.004	.006
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006	.008	.012
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008	.012
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006	.010
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006	.010
10.0	87000	250	Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	520	.004	.006	.010
10.1		200	Alloyed nodular cast iron	A43D2	460	.004	.006	.010
10.2		300	Vermicular cast iron		390	.004	.006	.010
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.004	.006	.008
12.1		100	Copper alloy, Brass, Bronze: average cut		980	.004	.006	.008
13.0		60	Wrought aluminum alloy		1640	.003	.005	.006
13.1		75	Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	1150	.004	.006	.008
14.0		100	Aluminum alloy: Si content >10%	A360.2	980	.004	.006	.001
15.0	203000		Hardened steel < 45 HRC		390	.003	.003	.004
16.0	261000		Hardened steel > 45 HRC		300	.002	.003	.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30	W57								
0.362 - 0.441			W30 04120.3232 W57 04140.0232	TOHX06T102EL-US12 CK32 TOGX06T102EN-14 CK32	●	●				
0.531 - 0.689			W30 14120.3232 W57 14140.0232	TOHX090202EL-US12 CK32 TOGX090202EN-14 CK32	●	●				
0.854			W30 26120.3232 W57 26140.0232	TOHX140302EL-US12 CK32 TOGX140302EN-14 CK32	●	●				

For better wear resistance			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W57	W30								
0.362 - 0.441			W57 04140.0232 W30 04120.0238 W30 04990.0257	TOGX06T102EN-14 CK32 TOHX06T102EL-G12 CK38 TOGX06T102TN CBN57	●	●				● only GG25
0.531 - 0.689			W57 14140.0432 W30 14120.0238 W30 14990.0457	TOGX090204EN-14 CK32 TOHX090202EL-G12 CK32 TOGX090204TN CBN57	●	●				● only GG25
0.854			W57 26140.0432 W30 26120.0238 W30 26990.0457	TOGX140304EN-14 CK32 TOHX140302EL-G12 CK32 TOGX140304TN CBN57	●	●				● only GG25

For better surface finish			for Workpiece Material							
D	Insert		Order No. size	ISO Insert Description	P	M	K	N	S	H
	W30 UF	W30 PCD								
0.362 - 0.441			W30 04120.3130 W30 04990.0355	TOHX06T102EL-UF12 CK30 TOGX06T103FN PCD55	●	●				●
0.531 - 0.689			W30 14120.3130 W30 14990.0455	TOHX090202EL-UF12 CK30 TOGX090204FN PCD55	●	●				●
0.854			W30 26120.3130 W30 26990.0455	TOHX140302EL-UF12 CK30 TOGX140304FN PCD5	●	●				●

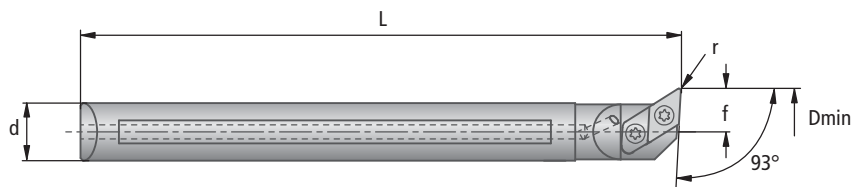


Profiling Bar Ø 0.500" – 1.625" R.H.

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	✗	○	○	●

● highly recommended ○ recommended ✗ not recommended

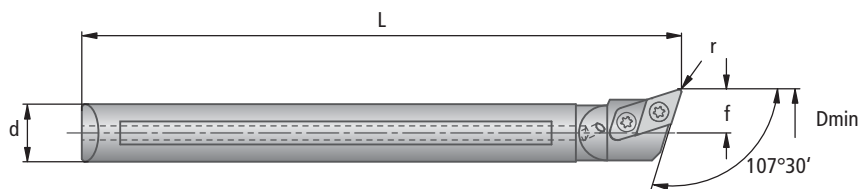
(IK-UR)



D min	Order No. Description	d	L	f	r	Basic Recommendation						Replacement Part						
						Insert Order No. Size	Insert ISO Description	for Workpiece Material						Shim Order No.	Clamping screw Order No. Description	TORX Order No. Description		
0.500	D02 16121 IK55-0.375-IC-UR	0.375	4.000	0.250	0.016													
0.687	D02 16131 IK55-0.500IC-UR	0.500	5.000	0.375	0.016	W60 18120.0460	DOHT070204EL-G12 BK60	●	●					L01 11420	N00 56651 S2560-8IP	L05 00830 8IP		
						W60 18120.0421	DOHT070204EL-G12 K10		●	●				L01 12100				
						W60 18990.0440	DOGW070204TN CBN40							L01 12100				
0.750	D02 16141 IK55-0.625IC-UR	0.625	6.000	0.406	0.016													
1.000	D02 16151 IK55-0.750IC-UR	0.750	7.000	0.516	0.031									L01 12110	N00 56751 S3574-10IP	L05 00850 10IP		
1.250	D02 16161 IK55-1.000IC-UR	1.000	8.000	0.625	0.031	W60 32120.0460	DOHT11T304EL-G12 BK60	●	●					L01 12110				
						W60 32120.0421	DOHT11T304EL-G12 K10		●	●				L01 12110				
1.625	D02 16171 IK55-1.250IC-UR	1.250	10.000	0.875	0.031	W60 32990.0440	DOGW11T304TN CBN40							L01 12110				

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

(IK-ZR)



D min	Order No. Description	d	L	f	r	Basic Recommendation						Replacement Part						
						Insert Order No. Size	Insert ISO Description	for Workpiece Material						Shim Order No.	Clamping screw Order No. Description	TORX Order No. Description		
0.500	D02 16021 IK55-0.375-IC-ZR	0.375	4.000	0.250	0.016													
0.687	D02 16031 IK55-0.500IC-ZR	0.500	5.000	0.375	0.016	W60 18120.0460	DOHT070204EL-G12 BK60	●	●					L01 12100	N00 56651 S2560-8IP	L05 00830 8IP		
						W60 18120.0421	DOHT070204EL-G12 K10		●	●				L01 12100				
						W60 18990.0440	DOGW070204TN CBN40							L01 12100				
0.750	D02 16041 IK55-0.625IC-ZR	0.625	6.000	0.406	0.016													
1.000	D02 16051 IK55-0.750IC-ZR	0.750	7.000	0.516	0.031									L01 12110	N00 56751 S3574-10IP	L05 00850 10IP		
1.250	D02 16061 IK55-1.000IC-ZR	1.000	8.000	0.625	0.031	W60 32120.0460	DOHT11T304EL-G12 BK60	●	●					L01 12110				
						W60 32120.0421	DOHT11T304EL-G12 K10		●	●				L01 12110				
1.625	D02 16071 IK55-1.250IC-ZR	1.250	10.000	0.875	0.031	W60 32990.0440	DOGW11T304TN CBN40							L01 12110				

Delivery: Boring bar complete with clamping screw, please order insert and torx wrench separately.

Cutting Recommendations

Guideline for finish boring with Boring Bar D021

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	650	0.004 0.005
	72500 - 130000		Low alloy steel	5120 1055 5115	650	0.004 0.005
	<72500		Lead alloy	12L13	590	0.004 0.005
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.004 0.005
	>130000		Tool steel	H13 H21	390	0.002 0.003
			HSS		-	-
		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	0.002 0.003
		58000	Titanium, Titanium alloy	AMS R54520	160	0.002 0.003
		≈87000	Stainless steel: austenitic 300 series	304L 316	390	0.002 0.003
		<130000	Stainless steel	630	390	0.002 0.003
	>130000	Stainless steel: martensitic/ferritic 400 series	420 403	290	0.002 0.003	
	180	Grey cast iron	No 35 B No 50 B	590	0.004 0.005	
	250	Alloy grey cast iron	A436 Type 2	460	0.004 0.005	
	130	Nodular cast iron ferritic	60-40-18	460	0.004 0.005	
	230	Nodular cast iron ferritic / pearlitic	80-55-06	390	0.003 0.004	
	250	Nodular cast iron pearlitic	100-70-03	320	0.003 0.004	
	70003	Malleable cast iron	70003	320	0.003 0.004	
	200	Alloyed nodular cast iron	A43D2	320	0.003 0.004	
	300	Vermicular cast iron		290	0.003 0.004	
	90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.003 0.004	
	100	Copper alloy, Brass, Bronze: average cut		820	0.003 0.004	
	60	Wrought aluminum alloy		820	0.003 0.004	
	75	Aluminum alloy: Si content <10%	GD-AISI12	820	0.003 0.004	
	100	Magnesium alloy		820	0.003 0.004	
	100	Aluminum alloy: Si content >10%	A360.2	650	0.003 0.004	
16.0 15.0 16.0	203000		Hardened steel < 45 HRC		-	-
	261000		Hardened steel > 45 HRC		-	-

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			
D	Order No. size	ISO Insert Description	for Workpiece Material P M K N S H
0.500 - 0.750	W79 18060.0260	DOHT070202-06 BK60	
	W79 18060.0221	DOHT070202-06 K10	
1.000 - 1.625	W79 32060.0460	DOHT11T304-06 BK60	
	W79 32060.0421	DOHT11T304-06 K10	

For better wear resistance			
D	Order No. size	ISO Insert Description	for Workpiece Material P M K N S H
0.500 - 0.750	W79 18060.0461	DOHT070204-06 BK61	
1.000 - 1.625	W79 32060.0461	DOHT11T304-06 BK61	

For better surface finish			
D	Order No. size	ISO Insert Description	for Workpiece Material P M K N S H
0.500 - 0.750	-		
1.000 - 1.625	-		

4




Cutting Recommendations


Guideline for finish boring with Boring Bar D021


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
1.0 2.0 2.1 3.0 4.0 4.1 5.0 5.1 6.0 6.1 7.0 8.0 8.1 9.0 9.1 10.0 10.1 10.2 12.0 12.1 13.0 13.1 14.0 15.0 16.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	650	0.004	0.005
	72500 - 130000		Low alloy steel	5120 1055 5115	650	0.004	0.005
	<72500		Lead alloy	12L13	590	0.004	0.005
	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.004	0.005
	>130000		Tool steel	H13 H21	390	0.002	0.003
			HSS		-	-	-
	250		Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	0.002	0.003
	58000		Titanium, Titanium alloy	AMS R54520	160	0.002	0.003
	≈87000		Stainless steel: austenitic 300 series	304L 316	390	0.002	0.003
	<130000		Stainless steel	630	390	0.002	0.003
>130000		Stainless steel: martensitic/ferritic 400 series	420 403	290	0.002	0.003	
180		Grey cast iron	No 35 B No 50 B	590	0.004	0.005	
250		Alloy grey cast iron	A436 Type 2	460	0.004	0.005	
≤87000		Nodular cast iron ferritic	60-40-18	460	0.004	0.005	
		Nodular cast iron ferritic / pearlitic	80-55-06	390	0.003	0.004	
87000		Nodular cast iron pearlitic	100-70-03	320	0.003	0.004	
		Malleable cast iron	70003	320	0.003	0.004	
		Alloyed nodular cast iron	A43D2	320	0.003	0.004	
300		Vermicular cast iron		290	0.003	0.004	
90		Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.003	0.004	
100		Copper alloy, Brass, Bronze: average cut		820	0.003	0.004	
60		Wrought aluminum alloy		820	0.003	0.004	
75		Aluminum alloy: Si content <10%	GD-AISI12	820	0.003	0.004	
100		Magnesium alloy		820	0.003	0.004	
		Aluminum alloy: Si content >10%	A360.2	650	0.003	0.004	
		Hardened steel < 45 HRC		-	-	-	
		Hardened steel > 45 HRC		-	-	-	

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Insert  W79	Order No. size	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.500 - 0.750		W79 18060.0260	DOHT070202-06 BK60	●	●					
		W79 18060.0221	DOHT070202-06 K10			●	●	●		
1.000 - 1.250		W79 32060.0460	DOHT11T304-06 BK60	●	●					
		W79 32060.0421	DOHT11T304-06 K10			●	●	●		

For better wear resistance										
D	Insert  W79	Order No. size	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.500 - 0.750		W79 18060.0461	DOHT070204-06 BK61				●			
		W79 32060.0461	DOHT11T304-06 BK61				●			

For better surface finish										
D	Insert  W60 PCD	Order No. size	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.500 - 0.750		W60 18990.0255	DOGW070202FN PCD55							●
		W60 32990.0455	DOGW011T304FN PCD55							●

4

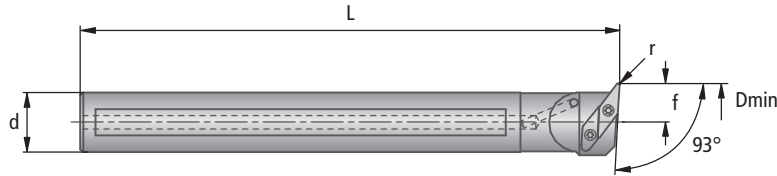


Profiling Bar Ø 0.670" – 1.260"

L / D 3.5xD	Through hole 	Blind hole 	Slanted Surface 	Cross Hole 	Boring Backwards D02 1593(I) D02 1596(I)	HRC > 54 Through Hole 	HRC > 54 Blind Hole 	Vibration Dampening
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● highly recommended ● recommended ○ may be suitable ✕ not recommended

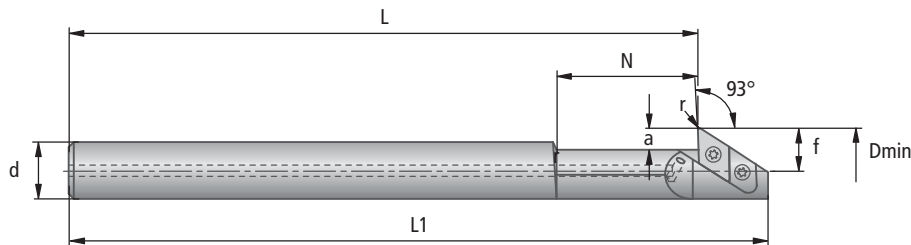
(S-SVUCR)



D min	Order No. Description	d	L	f	r	Basic Recommendation		Replacement Part		
						Order No. Size	ISO Insert Description	Shim	Clamping screw	TORX
0.830	D02 15740 S10 SVUCR-4W	0.625	6.000	0.433	0.016	W78 18070.0466 W78 18070.0414 W78 18990.0457	VOHT110304-07 BK66 VOHT110304-07 P35 VOGW110304TN CBN57			
								D02 15240.12	N00 56651 S2560-8IP	L05 00830 8IP

Delivery: Boring bar complete with clamping screw and torx wrench, please order insert separately.

(S-SDXC R)



D min	Order No. Description	d	L	L1	N	a	f	r	Basic Recommendation		for Workpiece Material
									Order No. Size	ISO Insert Description	
0.670	D02 15930 S8 SDXC R 4W	0.500	6.000	6.625	1.181	0.177	0.354	0.016	W60 18120.0460 W60 18120.0421 W60 18990.0440	DOHT070204EL-G12 BK60 DOHT070204FL-G12 K10 DOGW070204TN CBN40	
1.260	D02 15960 S16 SDXC R 4W	1.260	10.000	10.787	1.969	0.413	0.669	0.031	W60 32120.0460 W60 32120.0421 W60 32990.0440	DOHT11T304EL-G12 BK60 DOHT11T304FL-G12 K10 DOGW11T304TN CBN40	

for Profiling Bar	Replacement Part		
	Shim Order No.	Clamping screw Order No. Description	TORX Order No. Description
D02 15930	L01 12150	N00 56651 S2560-8IP	L05 00830 8IP
D02 15960	L01 12160	N00 56751 S3574-10IP	L05 00850 10IP

Delivery: Boring bar complete with clamping screw and torx wrench, please order insert separately.


Cutting Recommendations



Guideline for profiling with Boring Bar D021



Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.830	\emptyset 0.670	\emptyset 1.250
1.0	≤ 72500		Unalloyed steel	A570.36 1213 A573.81	650	0.004	0.004	0.005
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	650	0.004	0.004	0.005
2.1	<72500		Lead alloy	12L13	590	0.004	0.004	0.005
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	460	0.004	0.004	0.005
4.0	>130000		Tool steel	H13 H21	390	0.002	0.002	0.003
4.1			HSS		-	-	-	-
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	0.002	0.002	0.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	160	0.002	0.002	0.003
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L 316	390	0.002	0.002	0.003
6.1	<130000		Stainless steel	630	390	0.002	0.002	0.003
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	290	0.002	0.002	0.003
8.0		180	Grey cast iron	No 35 B No 50 B	590	0.004	0.004	0.005
8.1		250	Alloy grey cast iron	A436 Type 2	460	0.004	0.004	0.005
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	460	0.004	0.004	0.005
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	390	0.003	0.003	0.004
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	320	0.003	0.003	0.004
10.1		200	Malleable cast iron	70003	320	0.003	0.003	0.004
10.2		300	Alloyed nodular cast iron	A43D2	320	0.003	0.003	0.004
10.2		300	Vermicular cast iron		290	0.003	0.003	0.004
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	820	0.003	0.003	0.004
12.1		100	Copper alloy, Brass, Bronze: average cut		820	0.003	0.003	0.004
13.0		60	Wrought aluminum alloy		820	0.003	0.003	0.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	820	0.003	0.003	0.004
13.1		75	Magnesium alloy		820	0.003	0.003	0.004
14.0		100	Aluminum alloy: Si content >10%	A360.2	650	0.003	0.003	0.004
15.0	203000		Hardened steel < 45 HRC		-	-	-	-
16.0	261000		Hardened steel > 45 HRC		-	-	-	-

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Insert  W79	Order No.	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.830	-									
0.670	W79 18060.0260	DOHT070202-06 BK60								
0.670	W79 18060.0221	DOHT070202-06 K10								
1.250	W79 32060.0460	DOHT11T304-06 BK60								
1.250	W79 32060.0421	DOHT11T304-06 K10								

For better wear resistance										
D	Insert  W78 CBN  W79	Order No.	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.830	W78 18990.0457	VOGW110304TN CBN57								
0.670	W79 18060.0461	DOHT070204-06 BK61								
1.250	W79 32060.0461	DOHT11T304-06 BK61								

For better surface finish										
D	Insert  W78 PCD  W60 PCD	Order No.	ISO Insert Description	for Workpiece Material						
				P	M	K	N	S	H	
0.830	W78 18990.0455	VOGW110304FN PCD55								
0.670	W60 18990.0255	DOGW070202FN PCD55								
1.250	W60 32990.0455	DOGW11T304FN PCD55								



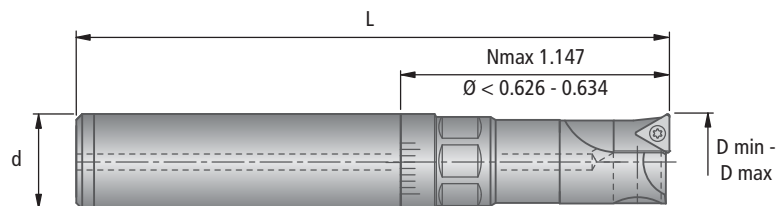
MicroKom® Boring Bar Ø 0.626" – 1.024" (15.9 – 26 mm)

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3xD								
	●	●	○	○	×	●	●	×

● highly recommended ○ recommended ○ may be suitable × not recommended

with Cylindrical Tool Connection

- The micro-adjusting scale is adjustable in 0.00078" (0.02 mm) increments
- The boring bar from 0.626" to 0.634" diameter has a maximum boring depth of 1.147"



Dmin-Dmax	Order No. Description	d	L	Wrench Size SW	lbs	Basic Recommendation		Replacement Part		
						Insert	for Workpiece Material	Clamping screw	TORX PLUS	
						Order No. Size	ISO Insert Description	Order No. Description	Order No. Description	
0.626 - 0.787	M10 50011	0.630	3.937	14	0.29	W57 04140.0284	TOGX06T102EN-14 BK84		 N00 56021 S/M2×3.8-6IP 5.5 in-lbs	 L05 00810 6IP
0.748 - 0.906	M10 50021	0.630	4.134	14	0.44	W57 04120.0223 W30 04990.0240	TOGX06T102FN-12 K10 TOGX06T102TN CBN40			
0.866 - 1.024	M10 50031	0.787	4.331	18	0.51	W30 04060.036110	TOHX06T103EL-G06 BK6110			

Delivery:

Boring bar complete with boring cartridge, adjusting and clamping screw and open end wrench, less torx screwdriver and insert.

for Boring bar	Replacement Parts			
	Boring cartridge	Boring cartridge clamping screw	Boring cartridge adjusting screw	Open end wrench
	Order No.	Order No.	Order No.	Order No. Description
M10 50011	M10 50010.15	M10 50010.16	M10 50010.18	1858900014
M10 50021	M10 50020.15	M10 50020.16	M10 50020.18	1858900014
M10 50031	M10 50030.15	M10 50030.16	M10 50030.18	1858900018



Features

- Three boring bars for boring diameters from 0.626" to 1.023"
- Central coolant supply through the boring bar
- Boring bar can be used for high R.P.M. applications
- Straight shank with 0.630" (16 mm) and 0.787" (18 mm)
- Finish adjustment range 0.0118" (0.3 mm) on diameter
- Extensive range of inserts with positive insert geometry and wear-resistant coatings
- Cylindrical shank



Cutting Recommendations

Guideline for finish boring with Boring Bar M105

Material group	Tensile Strength (lb/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v _c ft/min	Maximum Feedrate f, in/rev
1.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.004
2.0	72500 - 130000		Low alloy steel	5120 1055 5115	820	.005
2.1	<72500		Lead alloy	12L13	980	.005
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.004
4.0	>130000		Tool steel	H13 H21	660	.004
4.1			HSS		390	.003
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.003
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.003
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316	660	.004
6.1	<130000		Stainless steel	630	590	.004
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403	390	.003
8.0		180	Grey cast iron	No 35 B No 50 B	790	.006
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18	590	.006
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.006
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.006
10.1		200	Malleable cast iron	70003	460	.005
10.2		300	Alloyed nodular cast iron	A43D2	460	.005
12.0		90	Vermicular cast iron		390	.006
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	1310	.003
12.2		100	Copper alloy, Brass, Bronze: average cut		980	.006
13.0		60	Wrought aluminum alloy		1640	.004
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	1150	.005
13.2		100	Magnesium alloy		980	.005
14.0		100	Aluminum alloy: Si content >10%	A360.2	980	.005
15.0	203000		Hardened steel < 45 HRC		390	.003
16.0	261000		Hardened steel > 45 HRC		300	.003

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.626 - 1.024	W30 04120.3232 W30 04120.3977	TOHX06T102EL-US12 CK32 TOHX06T1ZZEL-39G12 BK77	●	●				

For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.626 - 1.024	W57 04140.0232 W30 04120.0238 W30 04990.0255 W30 04990.0257	TOGX06T102EN-14 CK32 TOGX06T102EL-G12 CK38 TOGX06T102FN PCD55 TOGX06T102TN CBN57	●	●				● only GG25

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.626 - 1.024	W57 04140.0232 W30 04060.036110 W30 04200.0321 W30 04990.0255	TOGX06T102EN-14 CK32 TOGX06T103EL-G06 BK6110 TOGX06T103FL-G20 K10 TOGX06T102FN PCD55	●	●		●	●	●

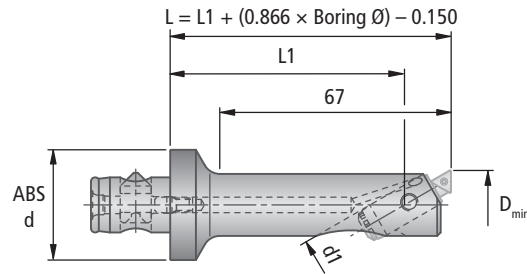
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Micro-Adjustable Boring Head Ø 0.787" – 1.024"

Boring Head with ABS® Connection

(ABS-FZ)



Description Mounting angle ▼	Order No.	ABS d	d1	D _{min}	L1	lbs	Replacement Part			
							Cartridge clamping screw DIN913		Hex socket wrench	
							Description	Order No.	Description	Order No.
ABS 25/23-FZ 10-5	B30 01210	25	0.394	0.937	1.516	0.40	M5×6	5505105006	SW 3	1859110030
ABS 25-FZ 10-5	B30 01220	25	0.394	1.024	1.563	0.29	M5×5	5505105005	SW 2.5	1859110025
ABS32/20-FZ 10-5	B30 02200	32	0.394	0.787	2.677	0.42	M5×5	5505105005	SW 2.5	1859110025

Delivery:

Micro-adjustable Boring Head complete with ABS hardware, cartridge clamping screw and hex socket type wrench, less FZ cartridge.

- Fast, accurate setting of tool using adjusting spindle
- Central coolant supply
- Maximum setting accuracy by adjusting tool while clamped.

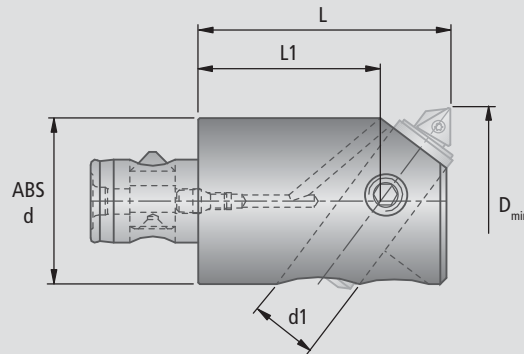
Micro-Adjustable Boring Head Ø 1.024" – 4.331"

Boring Head with ABS® Connection (ABS-FZ)

$$L = L1 + (0.375 \times \text{Boring } \varnothing)$$

B30 01220:

$$L = L1 + (0.866 \times \text{Boring } \varnothing) - 0.154$$



4



Description Mounting angle ▼	Order No.	ABS d	d1	D _{min}	L1		Replacement Part			
							Cartridge clamping screw DIN913		Hex socket wrench	
							Description	Order No.	Description	Order No.
ABS 25-FZ 10-3	B30 01010	25	0.394	1.102	1.575	0.44	M6X8	5505106008	SW 3	1859110030
ABS 32-FZ 12-3	B30 02010	32	0.472	1.417	1.850	0.79	M8X10	5505108010	SW 4	1859110040
ABS 40-FZ 16-3	B30 03010	40	0.630	1.772	1.732	1.21	M10X12	5505110012	SW 5	1859110050
ABS 50-FZ 20-3	B30 04010	50	0.787	2.205	1.949	2.24	M12X16	5505112016	SW 6	1859110060
ABS 63-FZ 25-3	B30 05010	63	0.984	2.835	2.500	4.53	M16X20	5505116020	SW 8	1859110080
ABS 80-FZ 32-3	B30 06010	80	1.260	3.543	3.031	8.93	M20X20	5505120020	SW 10	1859110100
ABS 100-FZ32-3	B30 07010	100	1.260	4.331	3.327	16.83	M20X25	5505120025	SW 10	1859110100

Delivery:

Micro-adjustable Boring Head complete with ABS hardware, cartridge clamping screw and hex socket type wrench, less FZ cartridge.

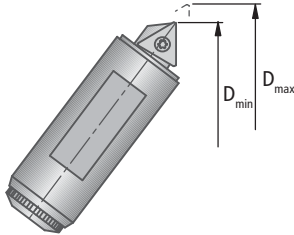
- Fast, accurate setting of tool using adjusting spindle
- Central coolant supply
- Maximum setting accuracy by adjusting tool while clamped.

Boring Cartridge

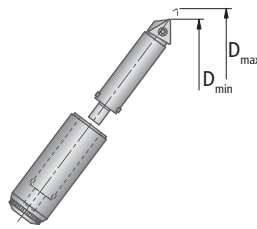
L / D >3.5xD	Through hole 	Blind hole 	Slanted Surface 	Cross Hole 	Boring Backwards 	HRC > 54 Through Hole 	HRC > 54 Blind Hole 	Vibration Dampening
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● highly recommended ● recommended ○ may be suitable ✕ not recommended

Boring cartridge assembly (FZ)



Cartridge / Tool (FZ)



- The smallest adjustment step is .00008" per graduation on diameter using vernier scale on side of cartridge
- Sizes FZ 10 and FZ 12 are .00016" using vernier scale
- Boring range shown in brackets is achieved by coarse adjustment of the cartridge

(..) = mm

for Boring head	Boring cartridge assembly Order No.	Cartridge Order No. Description Insert seat angle ▼	Tool Order No. Description	D _{min}	D _{max}	Basic Recommendation						Replacement Part					
						Insert W30 W57 Order No. Size	for Workpiece Material						Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking Key Order No. Description		
							P	M	K	N	S	H					
B30 01210	M30 04111	M30 04011 FZ10-20-5	M30 54011 U10-Z5-803K	0.787	0.866 (1.024)												
B30 01220	M30 04121	M30 00031 FZ10-31-1	M30 54021 U10-Z5-803	1.024	1.181 (1.299)	W57 04140.0260 TOGX06T102EN-14 BK60	●	●									L05 01020 R2/N1
B30 01010	M30 02231	M30 02031 FZ10-28-3	M30 52021 U10-Z3-803	1.102	1.354 (1.496)	W30 04990.0240 TOGX06T102TN CBN40							N00 56031 S/M2x4.9-6IP 5.5 in-lbs	L05 00810 6IP			
	M30 02241	M30 02041 FZ10-32-3		1.260	1.512 (1.732)	W30 04060.036110 TOHX06T103EL-G06 BK6110											
B30 02010	M30 02251	M30 02051 FZ12-36-3	M30 52031 U12-Z3-803	1.417	1.732 (1.890)												L05 01030 R2a/N1
	M30 02261	M30 02061 FZ12-40-3		1.575	1.890 (2.165)												
B30 03010	M30 02271	M30 02071 FZ16-45-3	M30 52041 U16-Z3-804	1.772	2.150 (2.362)	W57 14140.0460 TOGX090204EN-14 BK60	●	●						N00 56111 S/M2.6x6.2-8IP 11.3 in-lbs	L05 00830 8IP		L05 01040 N3
	M30 02281	M30 02081 FZ16-50-3		1.969	2.346 (2.677)	W57 14120.0423 TOGX090204FN-12 K10											
B30 04010	M30 02291	M30 02091 FZ20-56-3	M30 52051 U20-Z3-804	2.205	2.677 (3.071)	W30 14990.0440 TOGX090204TN CBN40											L05 01050 R4/N4
	M30 02301	M30 02101 FZ20-64-3		2.520	2.992 (3.543)	W30 14060.046110 TOHX090204EL-G06 BK6110											
B30 05010	M30 02311	M30 02111 FZ25-72-3	M30 52061 U25-Z3-805	2.835	3.465 (3.937)												L05 01060 ZV25
	M30 02321	M30 02121 FZ25-80-3		3.150	3.78 (4.488)	W57 26140.0460 TOGX140304EN-14 BK60	●	●									
B30 06010	M30 02331	M30 02131 FZ32-90-3	M30 52071 U32-Z3-805	3.543	4.488 (4.961)	W57 26120.0423 TOGX140304FN-12 K10							N00 56211 S/M3.5x7.3-10IP 25 in-lbs	L05 00850 10IP			
	M30 02341	M30 02141 FZ32-100-3		3.937	4.882 (5.512)	W30 26990.0440 TOGX140304TN CBN40											
B30 07010	M30 02351	M30 02151 FZ32-110-3	M30 52071 U32-Z3-805	4.331	5.276 (5.906)	W30 26060.046110 TOHX140304EL-G06 BK6110											L05 01070 R5/N5
	M30 02361	M30 02161 FZ32-125-3		4.921	5.866 (6.890)												

Cutting Recommendations

Guideline for finish boring with Boring Bar B001 / B003

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 0.787 - 1.890	\emptyset 1.772 - 2.992	\emptyset 2.835 - 5.866
1.0	≤ 72500		Unalloyed steel	A570.36	980	.003	.004	.006
				1213				
				A573.81				
				5120				
				1055				
5115								
2.0	72500 - 130000		Low alloy steel	5120	820	.003	.005	.008
				1055				
5115								
2.1	< 72500		Lead alloy	12L13	980	.004	.006	.010
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	790	.003	.004	.008
				1064				
4.0	> 130000		Tool steel	H13	660	.002	.004	.006
				H21				
4.1			HSS		390	.002	.003	.005
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.003	.004
				Nimonic® 80A				
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003	.004
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L	660	.003	.004	.006
				316				
6.1	< 130000		Stainless steel	630	590	.002	.004	.006
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420	390	.002	.004	.006
				403				
8.0		180	Grey cast iron	No 35 B	790	.006	.008	.012
				No 50 B				
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008	.012
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006	.010
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006	.010
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004	.006	.010
10.1		200	Malleable cast iron	70003	460	.004	.006	.010
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.006	.010
12.0		90	Vermicular cast iron		980	.004	.006	.008
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006	.008
13.0		60	Copper alloy, Brass, Bronze: average cut		890	.004	.006	.008
13.1		75	Wrought aluminum alloy	GD-AISI12	1150	.004	.006	.008
14.0		100	Aluminum alloy: Si content $< 10\%$	A360.2	820	.004	.006	.001
15.0	203000		Aluminum alloy: Si content $> 10\%$		390	.003	.003	.004
16.0	261000		Hardened steel < 45 HRC		300	.002	.003	.004
			Hardened steel > 45 HRC		300	.002	.003	.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.787-1.890	W30 04120.3232	TOHX06T102EL-US12 CK32	●	●				
	W57 04140.0232	TOGX06T102EN-14 CK32	●	●				
1.772-2.992	W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
	W57 14140.0232	TOGX090202EN-14 CK32	●	●				
2.835-5.866	W30 26120.3232	TOHX140302EL-US12 CK32	●	●				
	W57 26140.0232	TOGX140302EN-14 CK32	●	●				

For better wear resistance			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.787-1.890	W57 04140.0232	TOGX06T102EN-14 CK32	●	●				
	W30 04120.0238	TOHX06T102EL-G12 CK38	●	●				
	W30 04990.0257	TOGX06T102TN CBN57				●		
1.772-2.992	W57 14140.0432	TOGX090204EN-14 CK32	●	●				
	W30 14120.0238	TOHX090202EL-G12 CK32	●	●				
	W30 14990.0457	TOGX090204TN CBN57				●		
2.835-5.866	W57 26140.0432	TOGX140304EN-14 CK32	●	●				
	W30 26120.0238	TOHX140302EL-G12 CK32	●	●				
	W30 26990.0457	TOGX140304TN CBN57				●		

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
0.787-1.890	W30 04120.3130	TOHX06T102EL-UF12 CK30	●	●				
	W30 04990.0355	TOGX06T103FN PCD55					●	
1.772-2.992	W30 14120.3130	TOHX090202EL-UF12 CK30	●	●				
	W30 14990.0455	TOGX090204FN PCD55					●	
2.835-5.866	W30 26120.3130	TOHX140302EL-UF12 CK30	●	●				
	W30 26990.0455	TOGX140304FN PCD55					●	

Delivery Boring Cartridge:

Fine boring cartridge with clamping screw.

Delivery Cartridge: Cartridge without boring tool.

Delivery Boring Tool: with clamping screw.

Please order inserts and screwdriver separately.

4



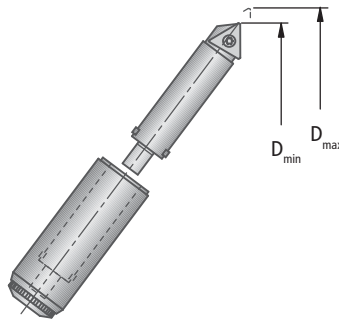


Boring Cartridge

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								
	●	●	○	○	✗	●	●	●

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

for High Shear Non-ferrous Metal Boring
Angle of inclination to main cutting edge: + 5°
 (FZ)



(..) = mm

for Boring head	Cartridge	Tool			Basic Recommendation		Replacement Part		
			D _{min}	D _{max}	Insert	for Workpiece Material	Clamping screw	TORX PLUS	Locking Key
	Order No. Description Insert seat angle ▼	Order No. Description			W32 W58 Order No. Size	P M K N S H			
B30 01010	M30 02031 FZ10-28-3	M30 52421 U10-Z3-T06	1.102	1.354 (1.496)	W58 03120.0423 TPGX060104FN-12 K10	●	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1
	M30 02041 FZ10-32-3		1.260	1.512 (1.732)					
B30 02010	M30 02051 FZ12-36-3	M30 52431 U12-Z3-T06	1.417	1.732 (1.890)	W58 03120.0423 TPGX060104FN-12 K10	●	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01030 R2a/N1
	M30 02061 FZ12-40-3		1.575	1.890 (2.165)					
B30 03010	M30 02071 FZ16-45-3	M30 52441 U16-Z3-T06	1.772	2.150 (2.362)	W58 13120.0423 TPGX090204FN-12 K10	●	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01040 N3
	M30 02081 FZ16-50-3		1.969	2.346 (2.677)					

- The smallest adjustment step is .00008" per graduation on diameter using vernier scale on side of cartridge
- Boring range shown in brackets is achieved by coarse adjustment of the cartridge

Delivery of Micro-adjustable Cartridge:

Complete with hex socket type wrench, less Boring Tool.

Delivery of Boring Tool:

Complete with insert clamping screw, less torx screwdriver and insert.


Cutting Recommendations


Guideline for finish boring with Boring Head M040 - High Shear


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						\emptyset 1.102 - 1.890	\emptyset 1.772 - 2.346
1.0	≤72500		Unalloyed steel	A570.36			
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120			
				1055			
				5115			
2.1	<72500		Lead alloy	12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064			
4.0	>130000		Tool steel	H13 H21			
4.1			HSS				
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L 316			
6.1	<130000		Stainless steel	630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420 403			
8.0		180	Grey cast iron	No 35 B No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03			
10.1		200	Malleable cast iron	70003			
10.2		300	Alloyed nodular cast iron	A43D2			
12.0		90	Vermicular cast iron				
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
13.0		60	Copper alloy, Brass, Bronze: average cut		820	.004	.006
13.1		75	Wrought aluminum alloy	GD-AISI12	1310	.003	.005
13.1		75	Aluminum alloy: Si content <10%		980	.004	.006
14.0		100	Magnesium alloy		820	.004	.006
15.0	203000		Aluminum alloy: Si content >10%	A360.2			
16.0	261000		Hardened steel < 45 HRC				
			Hardened steel > 45 HRC				

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.102 - 1.890	W32 03150.0421	TPHX060104FL-P15 K10				●				
1.772 - 2.346	W32 13150.0421	TPHX090204FL-P15 K10				●				

For better wear resistance										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.102 - 1.890	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHB060104FL-P15 BK50				●	●			
1.772 - 2.346	W32 13990.0455	TPHB090204FN PCD55				●				

For better surface finish										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.102 - 1.890	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHX060104FL-P15 BK50				●	●			
1.772 - 2.346	W32 13990.0455	TPHB090204FN PCD55				●				

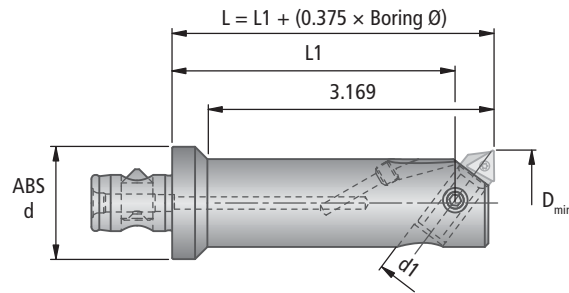
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Micro-Adjustable Boring Head Ø 1.102" – 1.732"

Boring Head with ABS® Connection

κ = 90° righ hand



Order No.	ABS d	d1	D _{min}	L1		Replacement Part	
						Cartridge clamping screw DIN913 Order No. Description	Hex socket wrench Order No. Description
B30 02020	32	0.394	1.102	3.173	0.81	5505106008 M6x8	1859110030 SW3

Delivery:

Boring Head complete with ABS® hardware, cartridge clamping screw and hex socket type wrench, less cartridge.

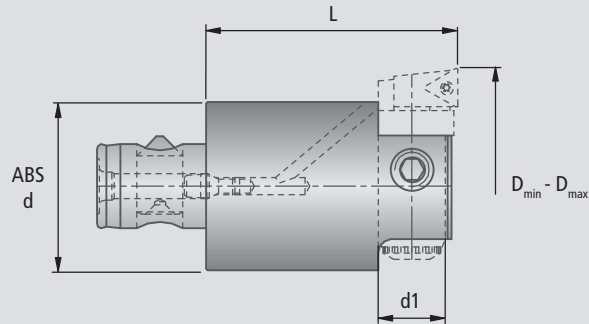
for Boring head	Order No. Description	D _{min}	D _{max}	d1		Basic Recommendation		Replacement Part		
						Insert Order No. Size	ISO Insert Description	for Workpiece Material 	Clamping screw Order No. Description	TORX PLUS Order No. Description
B30 02020	D20 10620 UZ10/804-30-53-L-30	1.102	1.732	0.394	0.13	W57 14140.0460 W57 14120.0423 W30 14990.0440 W30 14060.046110	TOGX090204EN-14 BK60 TOGX090204FN-12 K10 TOGX090204TN CBN40 TOHX06T103EL-G06 BK6110		N00 56111 S/M2.6x6.2-8IP 11.3 in-lbs	L05 00830 8IP

Delivery:

Boring Head complete with ABS® hardware, cartridge clamping screw and hex socket type wrench, less cartridge.

Micro-Adjustable Boring Head Ø 1.161" – 7.835"

Boring Head with ABS® Connection (ABS-FF)



4



Description	Order No.	ABS d	D _{min}	D _{max}	L	d1	lbs	Replacement Part			
								Cartridge clamping screw DIN913		Hex socket wrench	
								Description	Order No.	Description	Order No.
ABS 25-FF- 29.5	B30 11010	25	1.161	1.417	1.969	0.394	0.37	M6×6	5505106006	SW 3	1859110030
ABS 25-FF- 35.5	B30 11020	25	1.398	1.654	1.969	0.394	0.40				
ABS 32-FF- 39	B30 12010	32	1.535	1.772	2.362	0.472	0.77	M8×8	5505108008	SW 4	1859110040
ABS 32-FF- 44	B30 12020	32	1.732	1.969	2.362	0.472	0.77				
ABS 40-FF- 47	B30 13010	40	1.850	2.244	2.362	0.630	1.14	M10×10	5505110010	SW 5	1859110050
ABS 40-FF- 56	B30 13020	40	2.205	2.598	2.362	0.630	1.17				
ABS 50-FF- 58	B30 14010	50	2.283	2.795	2.756	0.787	2.13	M12×12	5505112012	SW 6	1859110060
ABS 50-FF- 70	B30 14020	50	2.756	3.268	2.756	0.787	2.20				
ABS 63-FF- 79	B30 15010	63	3.110	3.701	2.756	0.984	3.48	M16×16	5505116016	SW 8	1859110080
ABS 63-FF- 93	B30 15020	63	3.661	4.252	2.756	0.984	3.54				
ABS 80-FF-100	B30 16010	80	3.937	4.764	3.543	1.260	7.33	M20×20	5505120020	SW 10	1859110100
ABS 80-FF-120	B30 16020	80	4.724	5.551	3.543	1.260	7.41				
ABS100-FF-138	B30 17010	100	5.433	6.260	3.543	1.260	14.43	M20×30	5505120030	SW 10	1859110100
ABS100-FF-158	B30 17020	100	6.220	7.047	3.543	1.260	14.96	M20×20	5505120020		
ABS100-FF-178	B30 17030	100	7.008	7.835	3.543	1.260	14.54	M20×30	5505120030		

Delivery:

Boring Head complete with ABS® hardware, cartridge clamping screw and hex socket type wrench, less cartridge.

- Radial mounting of micro-adjustable cartridge.
- Adjustment of cartridge while clamped, providing optimum setting accuracy.
- Central coolant supply onto cutting edge thru coolant nozzle.

Boring Cartridge

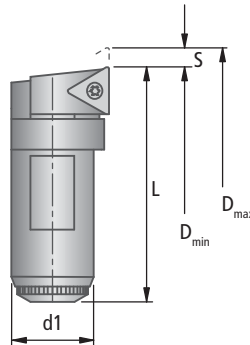
L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								

● highly recommended ○ recommended ○ may be suitable ✕ not recommended

Boring Cartridge

(FF)

- The smallest adjustment step is 0.00078" (0.02 mm) per graduation on diameter. Smaller adjustments are also possible using the vernier.



for Boring head	Order No. Description	D _{min}	D _{max}	d1	L	S	lbs	Basic Recommendation		for Workpiece Material						Replacement Part				
								Order No. Size	ISO Insert Description	P	M	K	N	S	H	Clamping screw	TORX PLUS			
B30 11010	M30 20011 FF 10-30	1.161	1.654	0.394	1.122	0.138	0.13	W57 04140.0260	TOGX06T102EN-14 BK60	●	●	●	●	●	●	HRC >52	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP		
B30 11020																			W57 04120.0223	TOGX06T102FN-12 K10
B30 12010	M30 20021 FF 12-39	1.535	1.969	0.472	1.476	0.138	0.07	W30 04990.0240	TOGX06T102TN CBN40	●	●	●	●	●	●	HRC >52				
B30 12020																			W30 04060.036110	TOHX06T103EL-G06 BK6110
B30 13010	M30 20031 FF 16-47	1.850	2.598	0.630	1.772	0.197	0.13	W57 14140.0460	TOGX090204EN-14 BK60	●	●	●	●	●	●	HRC >52	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP		
B30 13020																			W57 14120.0423	TOGX090204FN-12 K10
B30 14010	M30 20041 FF 20-58	2.283	3.268	0.787	2.205	0.276	0.26	W30 14990.0440	TOGX090204TN CBN40	●	●	●	●	●	●	HRC >52	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP		
B30 14020																			W30 14060.046110	TOHX090204EL-G06 BK6110
B30 15010	M30 20051 FF 25-79	3.110	4.252	0.984	3.051	0.315	0.59			●	●	●	●	●	●	HRC >52				
B30 15020																				
B30 16010	M30 20061 FF 32-100	3.937	5.551	1.260	3.819	0.433	1.21	W57 26140.0460	TOGX140304EN-14 BK60	●	●	●	●	●	●	HRC >52	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP		
B30 16020																			W57 26120.0423	TOGX140304FN-12 K10
B30 17010	M30 20071 FF 32-138	5.433	7.835	1.260	5.157	0.433	1.67	W30 26990.0440	TOGX140304TN CBN40	●	●	●	●	●	●	HRC >52				
B30 17020																			W30 26060.046110	TOHX140304EL-G06 BK6110
B30 17030																				

Delivery:

Cartridge complete with hardware and hex socket type wrench, less torx screwdriver and insert.

Cutting Recommendations

Guideline for finish boring with Boring Head B301 / M302

Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev		
						\emptyset 1.161 - 1.969	\emptyset 1.850 - 3.268	\emptyset 3.110 - 7.835
1.0	≤ 72500		Unalloyed steel	A570.36	980	.003	.004	.006
				1213				
				A573.81				
2.0	72500 - 130000		Low alloy steel	5120	820	.003	.005	.008
				1055				
				5115				
2.1	< 72500		Lead alloy	12L13	980	.004	.006	.010
3.0	> 130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140	790	.003	.004	.008
				1064				
4.0	> 130000		Tool steel	H13	660	.002	.004	.006
				H21				
4.1			HSS		390	.002	.003	.005
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718	100	.002	.003	.004
				Nimonic® 80A				
5.1	58000		Titanium, Titanium alloy	AMS R54520	100	.002	.003	.004
6.0	≈ 87000		Stainless steel: austenitic 300 series	304L	660	.003	.004	.006
				316				
6.1	< 130000		Stainless steel	630	590	.002	.004	.006
7.0	> 130000		Stainless steel: martensitic/ferritic 400 series	420	390	.002	.004	.006
				403				
8.0		180	Grey cast iron	No 35 B	790	.006	.008	.012
				No 50 B				
8.1		250	Alloy grey cast iron	A436 Type 2	660	.006	.008	.012
9.0	≤ 87000	130	Nodular cast iron ferritic	60-40-18	590	.004	.006	.010
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.004	.006	.010
10.0	87000	250	Nodular cast iron pearlitic	100-70-03	520	.004	.006	.010
10.1		200	Malleable cast iron	70003	460	.004	.006	.010
10.2		300	Alloyed nodular cast iron	A43D2	390	.004	.006	.010
12.0		90	Vermicular cast iron		980	.004	.006	.008
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006	.008
13.0		60	Copper alloy, Brass, Bronze: average cut		890	.004	.006	.008
13.1		75	Wrought aluminum alloy	GD-AISI12	1640	.003	.005	.006
13.2			Aluminum alloy: Si content $< 10\%$		1150	.004	.006	.008
14.0		100	Magnesium alloy		820	.004	.006	.001
15.0	203000		Aluminum alloy: Si content $> 10\%$	A360.2	390	.003	.003	.004
16.0	261000		Hardened steel < 45 HRC		300	.002	.003	.004
			Hardened steel > 45 HRC		300	.002	.003	.004

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
			1.161-1.969	W30 04120.3232	TOHX06T102EL-US12 CK32	●	●	
W57 04140.0232	TOGX06T102EN-14 CK32	●		●				
1.850-3.268	W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
	W57 14140.0232	TOGX090202EN-14 CK32	●	●				
3.110-7.835	W30 26120.3232	TOHX140302EL-US12 CK32	●	●				
	W57 26140.0232	TOGX140302EN-14 CK32	●	●				

For better wear resistance			for Workpiece Material						
D	Order No. size	ISO Insert Description	P	M	K	N	S	H	
			W57 04140.0232	TOGX06T102EN-14 CK32	●				
W30 04120.0238	TOHX06T102EL-G12 CK38	●				●			
							W30 04990.0257	TOGX06T102TN CBN57	●
W57 14140.0432	TOGX090204EN-14 CK32	●	●	●	●	● only GG25			
							W30 14120.0238	TOHX090202EL-G12 CK32	●
W57 26140.0432	TOGX140304EN-14 CK32	●	●	●	●	● only GG25			
							W30 26120.0238	TOHX140302EL-G12 CK32	●
W30 26990.0457	TOGX140304TN CBN57	●	●	●	●	● only GG25			

For better surface finish			for Workpiece Material					
D	Order No. size	ISO Insert Description	P	M	K	N	S	H
			0.787-1.890	W30 04120.3130	TOHX06T102EL-UF12 CK30	●	●	
W30 04990.0355	TOGX06T103FN PCD55	●		●				
1.772-2.992	W30 14120.3130	TOHX090202EL-UF12 CK30	●	●				
	W30 14990.0455	TOGX090204FN PCD55	●	●				
2.835-5.866	W30 26120.3130	TOHX140302EL-UF12 CK30	●	●				
	W30 26990.0455	TOGX140304FN PCD55	●	●				





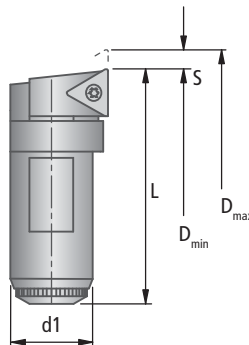
Boring Cartridge

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
>3.5xD								

● highly recommended ○ recommended ○ may be suitable ✕ not recommended

for High Shear Non-ferrous Metal Boring Angle of inclination to main cutting edge: + 5° (FF)

- The smallest adjustment step is 0.00078" (0.02 mm) per graduation on diameter. Smaller adjustments are also possible using the vernier



for Boring head	Cartridge							Basic Recommendation		Replacement Part	
	 Order No. Description	D _{min}	D _{max}	d1	L	S	 lbs	Insert W32 W58 Order No. Size	for Workpiece Material P M K N S H	Clamping screw Order No. Description	TORX PLUS Order No. Description
B30 11010	M30 20200	1.161	1.654	0.394	1.122	0.138	0.13	W58 03120.0423		N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
B30 11020	FF 10 T06 30						TPGX060104FN-12 K10				
B30 12010	M30 20210	1.535	1.969	0.472	1.476	0.138	0.07	W58 03120.0423		N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
B30 12020	FF 12 T06 39						TPGX060104FN-12 K10				
B30 13010	M30 20220	1.850	2.598	0.630	1.772	0.197	0.13	W58 13120.0423		N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
B30 13020	FF 16 T09 47						TPGX090204FN-12 K10				

Delivery:

Boring cartridge complete with hardware and hex socket type wrench, less torx screwdriver and insert.


Cutting Recommendations


Guideline for finish boring with Boring Head M0302 - High Shear


Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c ft/min	Maximum Feedrate f , in/rev	
						Ø 1.161 - 1.969	Ø 1.850 - 2.598
1.0	≤72500		Unalloyed steel	A570.36			
				1213			
				A573.81			
2.0	72500 - 130000		Low alloy steel	5120			
				1055			
				5115			
2.1	<72500		Lead alloy	12L13			
3.0	>130000		High alloy steel heat resistant structural, heat treated, nitride steels	4140			
				1064			
4.0	>130000		Tool steel	H13 H21			
4.1			HSS				
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718			
				Nimonic® 80A			
5.1	58000		Titanium, Titanium alloy	AMS R54520			
6.0	≈87000		Stainless steel: austenitic 300 series	304L			
				316			
6.1	<130000		Stainless steel	630			
7.0	>130000		Stainless steel: martensitic/ferritic 400 series	420			
				403			
8.0		180	Grey cast iron	No 35 B			
				No 50 B			
8.1		250	Alloy grey cast iron	A436 Type 2			
9.0	≤87000	130	Nodular cast iron ferritic	60-40-18			
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06			
10.0	87000	250	Nodular cast iron pearlitic	100-70-03			
10.1		200	Malleable cast iron	70003			
10.2		300	Alloyed nodular cast iron	A43D2			
12.0		90	Vermicular cast iron				
12.1		100	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	890	.004	.006
13.0		60	Copper alloy, Brass, Bronze: average cut		820	.004	.006
13.1		75	Wrought aluminum alloy	GD-AISI12	1310	.003	.005
13.1		75	Aluminum alloy: Si content <10%		980	.004	.006
14.0		100	Magnesium alloy		820	.004	.006
15.0	203000		Aluminum alloy: Si content >10%	A360.2			
16.0	261000		Hardened steel < 45 HRC				
16.0			Hardened steel > 45 HRC				

Please see Chapter 8 for application details and safety notes!

Alternative Insert

For better chip control										
D	Order No. size	Insert  ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.161 - 1.969	W32 03150.0421	TPHX060104FL-P15 K10								
1.850 - 2.598	W32 13150.0421	TPHX090204FL-P15 K10								

For better wear resistance										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.161 - 1.969	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHB060104FL-P15 BK50								
1.850 - 2.598	W32 13990.0455	TPHB090204FN PCD55								

For better surface finish										
D	Order No. size	Insert  PCD -P15 ISO Insert Description	for Workpiece Material							
			P	M	K	N	S	H		
1.161 - 1.969	W32 03990.0455 W32 03150.0450	TPHB060104FN PCD55 TPHX060104FL-P15 BK50								
1.850 - 2.598	W32 13990.0455	TPHB090204FN PCD55								

4

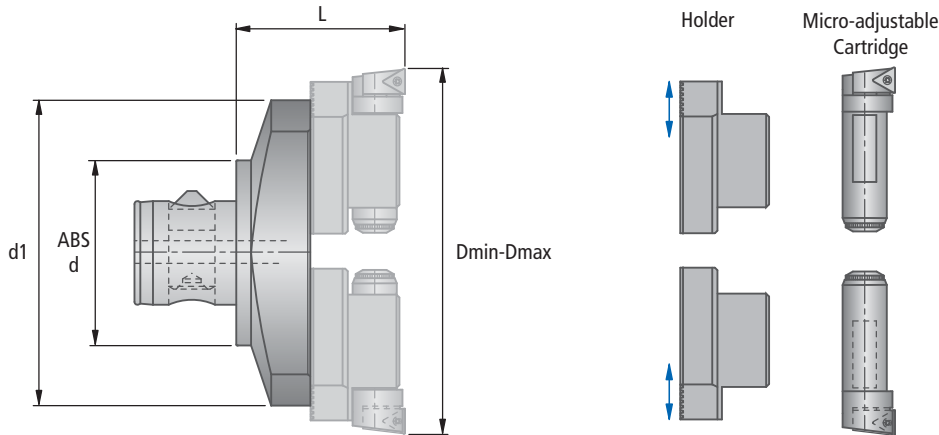


Twin Cutter GDF $\kappa = 90^\circ$ $\varnothing 7.717'' - 15.787''$ (196 - 401 mm)

L / D	Through hole	Blind hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Vibration Dampening
3.5xD								
	●	●	○	○	✗	●	●	✗

● highly recommended ○ recommended ○ may be suitable ✗ not recommended

with ABS® Connection
right hand
 (ABS-GDF)



$D_{min} - D_{max}$	Twin cutter with micro-adjustable holders and cartridges	ABS d	d1	L		Holder with cartridges	Cartridge	Basic Recommendation		for Workpiece Material																							
								Order No. Description	Order No.	Insert	ISO Insert Description	P	M	K	N	S	H																
7.717 - 10.669 (196 - 271)	G01 23510 ABS100GDF165	100	6.496 (165)	3.465 (88)	16.94			W57	W30	TOGX140304EN-14 BK60	TOGX140304FN-12 K10	TOGX140304TN CBN40	TOHX140304EL-G06 BK6110	●	●	●	●	●	●														
10.276 - 13.189 (261 - 335)	G01 23520 ABS100GDF230	100	9.055 (230)	3.465 (88)	19.36															G01 23600 GDF165-295	M30 20051	W57 26140.0460	W57 26120.0423	W30 26990.0440	W30 26060.046110	●	●	●	●	●	●	●	●
12.835 - 15.787 (326 - 401)	G01 23530 ABS100GDF295	100	11.614 (295)	3.465 (88)	22.88																												

Delivery Twin Cutter:

Twin cutters complete with ABS® assembly parts, clamping screws, pair of holders with micro-adjustable cartridge, less torx screwdriver and inserts.

Delivery Holder:

Holder complete with clamping screw and micro-adjustable cartridge, less torx screwdriver and inserts.

Design Characteristics:

- This tool not only reduces the fine boring time and the costs by half, but also guarantees good cylindrical shape even for long and large diameter bores. By dividing the feed the contact time between cutter and workpiece in half, the dimensional stability is guaranteed compared to the single effective tools.

Cutting Recommendations

Guideline for finish boring with GDF

	Material group	Tensile Strength (lbf/in ²)	Hardness HB	Material	Material example AISI / SAE	Cutting speed v_c , ft/min	Maximum Feedrate f , in/rev																																								
1.0	2.0	≤72500		Unalloyed steel	A570.36 1213 A573.81	980	.006																																								
								72500 - 130000	Low alloy steel	5120 1055 5115	820	.008																																			
													<72500	Lead alloy	12L13	980	.010																														
																		>130000	High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	790	.008																									
																							>130000	Tool steel	H13 H21	660	.006																				
																													HSS		390	.005															
																																	250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	100	.004										
																																						58000	Titanium, Titanium alloy	AMS R54520	100	.004					
																																											≤87000	Stainless steel: austenitic 300 series	304L 316	660	.006
>130000	Stainless steel: martensitic/ferritic 400 series	420 403	390	.006																																											
					180	Grey cast iron	No 35 B No 50 B	790	.012																																						
										250	Alloy grey cast iron	A436 Type 2	660	.012																																	
															≤87000	Nodular cast iron ferritic	60-40-18	590	.010																												
																				230	Nodular cast iron ferritic / pearlitic	80-55-06	590	.010																							
																									87000	Nodular cast iron pearlitic Malleable cast iron	100-70-03 70003	520	.010																		
																														200	Alloyed nodular cast iron	A43D2	460	.010													
																																			300	Vermicular cast iron		390	.010								
																																								90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	980	.008			
																																													100	Copper alloy, Brass, Bronze: average cut	
60	Wrought aluminum alloy		1640	.006																																											
					75	Aluminum alloy: Si content <10% Magnesium alloy	GD-AISI12	1150	.008																																						
										100	Aluminum alloy: Si content >10%	A360.2	820	.001																																	
															203000	Hardened steel < 45 HRC		390	.004																												
																				261000	Hardened steel > 45 HRC		300	.004																							

4



Replacement Parts	
Order No. Description	Order No. Description
Clamping screw 	TORX PLUS
N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP

Lightweight Modular Tool for $\varnothing > 8.110''$ (206 mm)

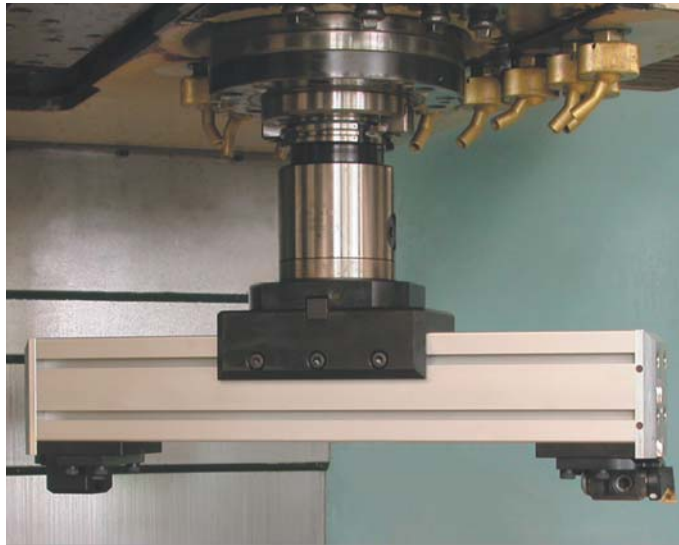
Machining Example

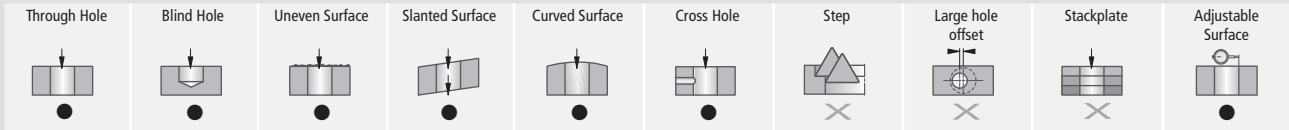
Material: Grey cast iron
Boring \varnothing : $\varnothing 575 \text{ mm} + 0.02$
Speed, $v_c =$ 395 sfm
Feed, $f =$ 0.007 ipr

Exmple of a complete tool

for fine boring with single insert $\varnothing 575 \text{ mm}$:

Description	Order No.
1× Adapter ISO50	A05 25300
1× Replaceable bridge $\varnothing 575$ Special tool	XA
2× Cover plate - internal coolant	G05 00010
1× Holding plate micro-adjustable cartridge	G05 10010
1× Micro-adjustable cartridge	M30 20051
1× Balancing weight	G05 10040

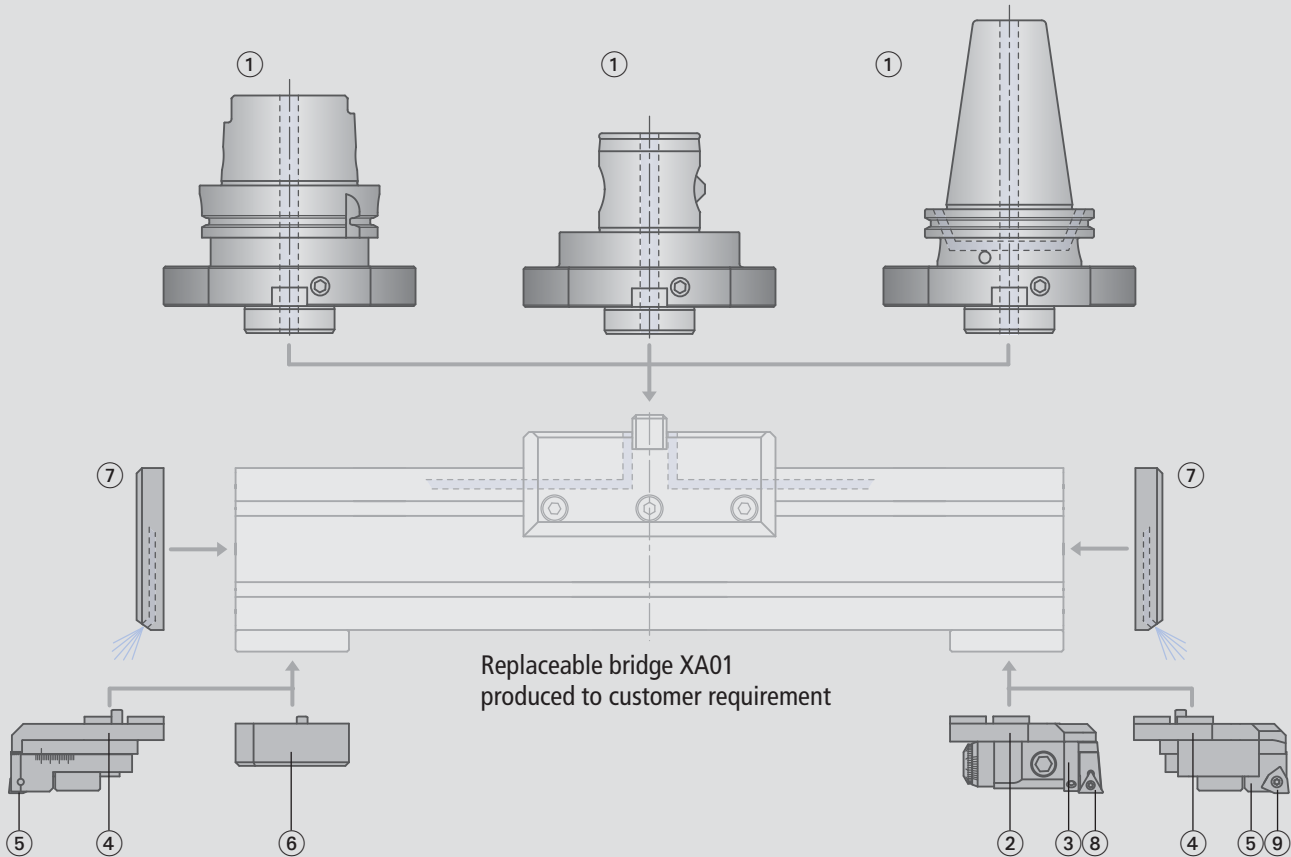




● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

Modular design

- The tool consists of lightweight replaceable bridge to specific length and elements for fine boring or roughing (see accessories).
- Adjustment range relates to 70 mm diameter!



Replaceable bridge	
Ø-Range inch (mm)	Description
10.236 – 12.992 (260 – 330)	XA01 17410
13.386 – 16.142 (340 – 410)	XA01 17620
15.512 – 18.268 (394 – 464)	XA01 17100
15.945 – 18.701 (405 – 475)	XA01 17110
17.323 – 20.079 (440 – 510)	XA01 17050
19.291 – 22.047 (490 – 560)	XA01 17190
25.591 – 28.346 (650 – 720)	XA01 17610
27.756 – 30.512 (705 – 775)	XA01 17420

Replaceable bridge XA01 produced to customer requirement

Adapter ①	
Description	Order No.
HSK-A100	A06 53880
ABS100	A20 50080
ABS100 (ABS rotated 90°)	A20 50180
ISO50 DIN69871 AD/B	A05 25300

Cover Plate ⑦	
Description	Order No.
Cover plate w/ int. coolant	G05 00010

Fine boring assembly ②+③+⑥+⑧	
Description	Order No.
② Holding plate	G05 10010
③ Micro-adj. cartridge	M30 20051
⑥ Balancing weight	G05 10040
⑧ Insert	W57 26.. / W30 26..

Rough boring assembly ④+⑤+⑨	
Description	Order No.
④ Holding plate	G05 20010
⑤ Roughing cartridge	G05 20020
⑨ Insert	W29 42..



KomTronic® – The U-Axis tools

increases the flexibility and productivity of your machining center

inch (mm)

UAS-125-Z-12



UAS-125-Z-12			
Order No.	Description/type	d	L
E11 10050	UAS-125-HSK63-E-Z-12-1a	HSK 63	6.535 (166)
E16 10080	UAS-125-SK40-E-Z-12-1a	SK 40	6.260 (159)
E16 10090	UAS-125-CAT40-E-Z-12-1a	CAT 40	6.260 (159)
E16 10100	UAS-125-BT40-E-Z-12-1a	BT 40	6.535 (166)

UAS-160-Z-22



UAS-160-Z-22			
Order No.	Description/type	d	L
E21 31010	UAS-160-HSK100-E-Z-22-1	HSK 100	8.012 (203.5)
E21 33010	UAS-160-SK50-E-Z-22-1	SK 50	7.618 (193.5)
E21 35010	UAS-160-CAT50-E-Z-22-1	CAT 50	7.618 (193.5)
E21 37010	UAS-160-BT50-E-Z-22-1	BT 50	8.327 (211.5)

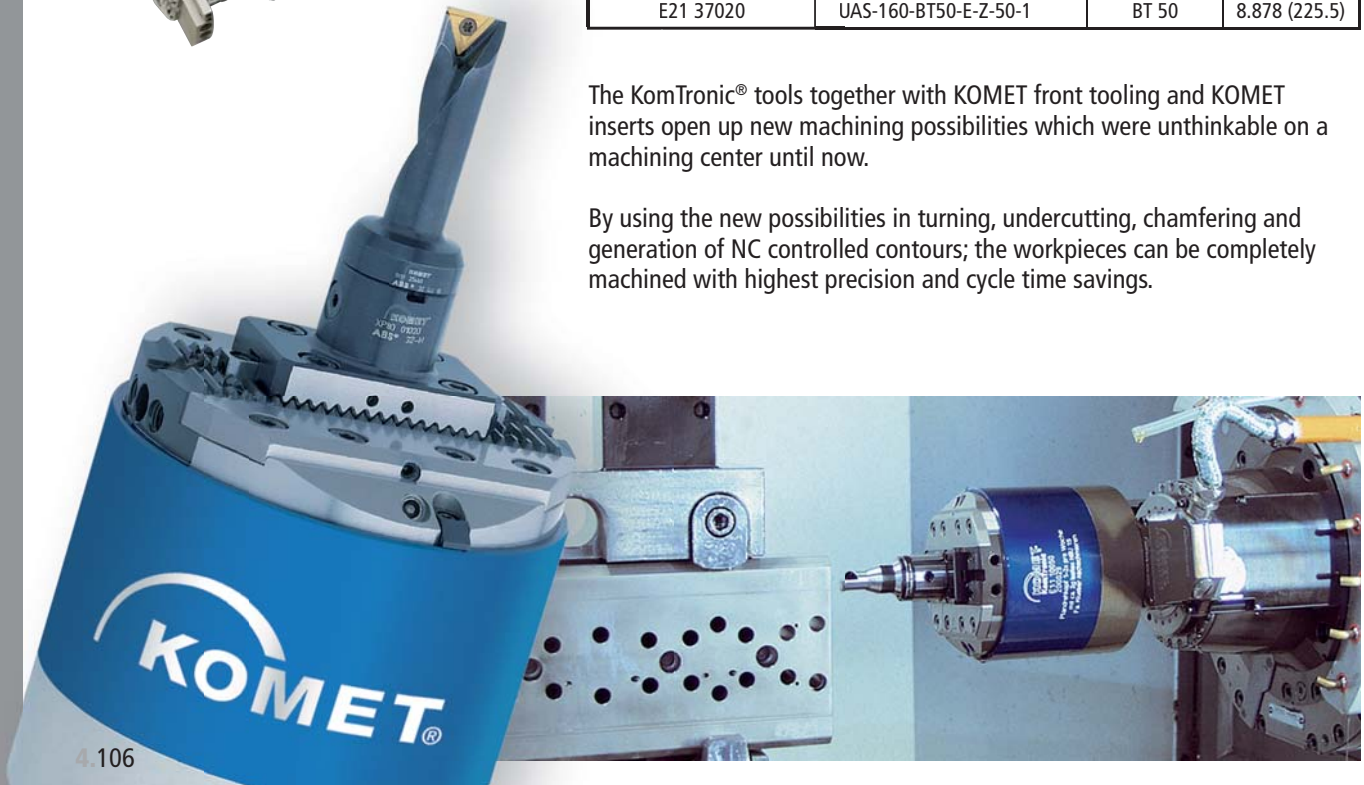
UAS-160-Z-50



UAS-160-Z-50			
Order No.	Description/type	d	L
E21 31020	UAS-160-HSK100-E-Z-50-1	HSK 100	8.563 (217.5)
E21 33020	UAS-160-SK50-E-Z-50-1	SK 50	8.169 (207.5)
E21 35020	UAS-160-CAT50-E-Z-50-1	CAT 50	8.169 (207.5)
E21 37020	UAS-160-BT50-E-Z-50-1	BT 50	8.878 (225.5)

The KomTronic® tools together with KOMET front tooling and KOMET inserts open up new machining possibilities which were unthinkable on a machining center until now.

By using the new possibilities in turning, undercutting, chamfering and generation of NC controlled contours; the workpieces can be completely machined with highest precision and cycle time savings.



Fully automatic control of cutting edge with the M042 Electronic Compensating System

Protecting the future - means to be ready today for problems of tomorrow. With this in mind the KOMET M042 Electronic Compensating System offers a maximum precision and efficiency. The M042 is equipped with an absolute measuring system mounted directly on the slide, a servo motor and an infrared transceiver module. This enables the system to perform fully automatic micron adjustments on the diameter without manual intervention. The M042 Electronic Boring System guarantees a maximum of quality, repeatability and reliability on machining centers, flex lines, special and transfer machines.

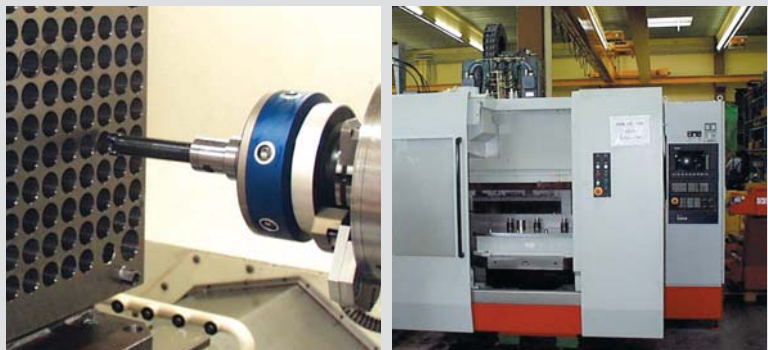
Aerospace



Automotive



Machine Tool and Die/Mold



Technical Specification

- Infrared data transmission
- Inductive power supply
- Direct absolute measuring system on the slide
- Resolution 1µm on diameter
- Positioning accuracy: standard deviation $\sigma < 1\mu\text{m}$
deviation $\Delta x + 1\mu\text{m}$
- Several heads possible on one machine
(four digit tool address)
- Electronic control of adjusting range
- Maintenance free for up to 2 million adjusting cycles



Easy Special™

Custom engineered tools are setting the standard

Custom engineered tools with KOMET's comprehensive knowledge and experience for economic cutting

The advantages of our Easy Special™ custom engineered tools are obvious:

- High tech tools from planning to productive use
- Shortest delivery times - available within 5 weeks
- Parameters set for different tool models
- Optimum manufacturing tolerances
- Standard list prices are available

In short: time costs money



Program Summary	5.4 – 5.5
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

Tool Selection Guide	5.6 – 5.7
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Maximum Depth of Cut and Chamfer Widths · Example Fax-Request	5.8 – 5.9
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Drilling Applications

KUB Quatron®		5.10 – 5.12
KUB Trigon®		5.22 – 5.24
KUB® Drill		5.30 – 5.32
KUB Trigon® with a chamfer		5.26 – 5.28
KUB Quatron® with a stepped cutting edge		5.14 – 5.16
KUB® Drill with a stepped cutting edge		5.34 – 5.38
KUB Quatron® with two stepped cutting edges		5.18 – 5.20
KUB® Drill with two stepped cutting edges		5.40 – 5.44
KUB® Drill with three stepped cutting edges		5.46 – 5.48

Boring Applications

Core drill		5.50 – 5.52
Core drill		5.54 – 5.56
Core drill with a chamfer		5.58 – 5.60
Core drill with a stepped cutting edge		5.62 – 5.64
Core drill with two stepped cutting edge		5.66 – 5.72

Finish Boring Applications	5.74 – 5.88
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HSK Adapter	5.90 – 5.91
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Taper Shank Adapter	5.92 – 5.93
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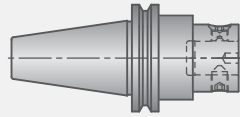
ABS® Extension/Reducer	5.94 – 5.95
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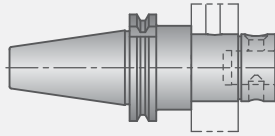
Program Summary

Adapter

Taper Shank Holder
 CAT 1.8 / 1.12
 BT 1.10 / 1.12
 MORI 1.9
 NMTB 1.11



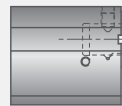
Taper Shank Holder
 CAT 1.8
 BT 1.10
 NMTB 1.11



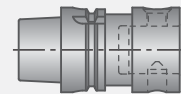
Flange Adapter
 1.26



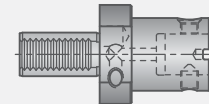
Clamping Unit
 1.50 – 1.53



HSK Adapter
 1.38



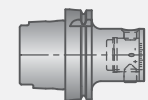
NC-VDI Adapter
 1.48 – 1.49



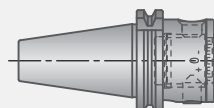
TC Adapter
 1.55



HSK Eccentric
 Adjusting Holder
 1.38

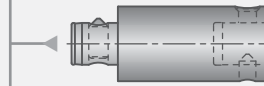


Eccentric Adjusting
 Holder
 1.12



Tool Holder

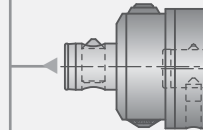
Extension
 1.58



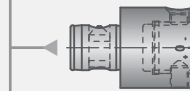
Reducer
 1.57



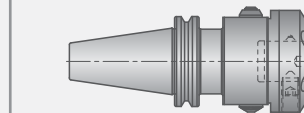
Micro -Adjustable
 Drill Holder ABS-MV
 1.56



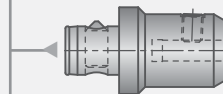
ABS Eccentric
 Adjusting Holder
 1.54



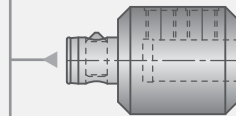
Integral MV
 Drill Holder
 1.14



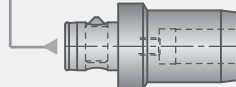
FWD Precision
 Tool Holder
 1.60 – 1.61



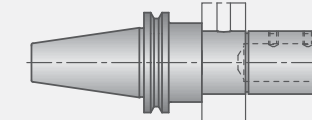
HWD / EMH
 End Mill Holder
 1.62 – 1.63



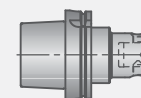
Hydraulic Chuck
 1.80 – 1.83



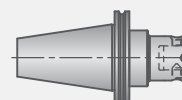
Integral
 Drill Holder
 1.14



Easy Special™ Adapter



5.90



5.92



5.94

Drilling Ø 0.472" - 1.732" (12 - 44 mm)

	KUB Trigon®	5.22
	1 Chamfer	5.26
	KUB® Quatron	5.10
	1 Step	5.14
	2 Steps	5.18
	KUB® Drill	5.30
	1 Step	5.34
	2 Steps	5.40
	3 Steps	5.46

Rough Boring Ø 0.551" - 1.969" (14 - 50 mm)

	Twin Cutter	5.50
		5.54
	1 Chamfer	5.58
	1 Step	5.62
	2 Steps	5.66
	2 Steps	5.70

Finish Boring Ø 0.315" - 1.102" (8 - 28 mm)

	Boring Bar	5.74
		5.78
	1 Chamfer	5.82
		5.86






























	KUB Trigon®	5.24
	1 Chamfer	5.28
	KUB® Quatron	5.12
	1 Step	5.16
	2 Steps	5.20
	KUB® Drill	5.32
	1 Step	5.38
	2 Steps	5.44
	3 Steps	5.48
	1 Step	5.36
	2 Steps	5.42









	Core Drill	5.52
		5.56
	1 Chamfer	5.60
	1 Step	5.64
	2 Steps	5.68
	2 Steps	5.72
	Twin Cutter	5.54

	Boring Bar	5.76
		5.80
	1 Chamfer	5.84
		5.88

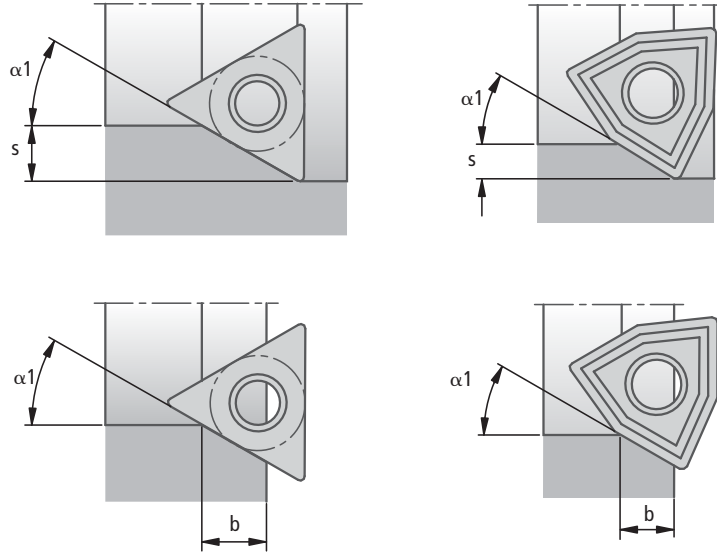


Tool Selection Guide

Drilling		Application										
Ø inch (mm)	L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
												
0.551 - 1.732 (14.0 - 44.0)	2 × D	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
0.472 - 1.732 (12.0 - 44.0)	2 × D	●	●	●	●	●	●	●	●	●	●	●
	3 × D	●	●	●	●	○	○	○	○	○	○	●
	4 × D	●	●	○	○	○	○	○	○	○	○	○
0.551 - 1.732 (14.0 - 44.0)	2 × D	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
Rough Boring		Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Step	Large hole offset	Stackplate	Adjustable Diameter	
Ø inch (mm)	L / D											
0.551 - 1.969 (14.0 - 50.0)	2 - 4 × D	●	●	●	●	●	●	●	●	80°		
0.551 - 1.969 (14.0 - 50.0)	2 × D	●	●	●	●	●	●	●	●	80°		
0.551 - 1.969 (14.0 - 50.0)	2 × D	●	●	●	●	●	●	●	●	80°		
0.551 - 1.969 (14.0 - 50.0)	2 × D	●	●	●	●	●	●	●	●	80°		
0.551 - 1.969 (14.0 - 50.0)	2 × D	●	●	●	●	●	●	●	●	80°		
Finish Boring		Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind Hole	Optimized Oscillation			
Ø inch (mm)	L / D											
0.315 - 1.102 (8.0 - 28.0)	4 × D	●	●	●	●		●	●				
0.315 - 1.102 (8.0 - 28.0)	4 × D	●	●	●	●		●	●				

Coolant				Tool	Workpiece Material						Connection							
Emulsion		MQL			Carbon Steel	Alloy Steel	Stainless Steel	Cast Iron	Ductile Iron	Non-ferrous Metals	Super Alloy	Titanium Alloy	Hardened Steel	ABS	Straight Shank	HSK		
in	out	in	out		P	M	K	N	S	H								
●	◐	●	◐	 KUB Quatron®	●	●	●	●	●	○	○		5.10	5.12				
●	◐	●	◐	 KUB Quatron® Drill with a stepped cutting edge	●	●	●	●	●	○	○		5.14	5.16				
●	◐	●	◐	 KUB Quatron® Drill with two stepped cutting edges	●	●	●	●	●	○	○		5.18	5.20				
●	◐	●	◐	 KUB Trigon®	●	●	●	●	●	○	○		5.20	5.24				
●	◐	●	○	 KUB Trigon® with a chamfer	●	●	●	●	●	○	○		5.26	5.28				
●	◐	○	◐	 KUB® Drill	●	●	●	●	●	○	○		5.30	5.32				
●	◐	○	○	 KUB® Drill with a stepped cutting edge	●	●	●	●	●	○	○		5.34	5.38	5.36			
●	◐	○	○	 KUB® Drill with two stepped cutting edges	●	●	●	●	●	○	○		5.40	5.44	5.42			
●	◐	○	○	 KUB® Drill with three stepped cutting edges	●	●	●	●	●	○	○		5.46	5.48				
Emulsion				MQL								ABS	Straight Shank	HSK				
in	out	in	out							P	M	K	N	S	H			
●	◐	●	◐	 Core drill	●	●	●	●	●	○	○		5.50	5.52				
●	◐	◐	◐	 Core drill	●	●	●	●	●	○	○		5.54	5.56	5.54			
●	◐	◐	◐	 Core drill with a chamfer	●	●	●	●	●	○	○		5.58	5.60				
●	◐	◐	◐	 Core drill with a stepped cutting edge	●	●	●	●	●	○	○		5.62	5.64				
●	◐	◐	◐	 Core drill with two stepped cutting edges	●	●	●	●	●	○	○		5.66 5.70	5.68 5.72				
Emulsion				MQL								ABS	Straight Shank	HSK				
in	out	in	out							P	M	K	N	S	H			
●	◐	●	◐	 Boring bar	●	●	●	●	●	○	○		5.74 5.78	5.76 5.80				
●	◐	●	◐	 Boring bar with a chamfer	●	●	●	●	●	○	○		5.82 5.86	5.84 5.88				

Maximum Depth of Cut and Chamfer Widths



Drilling and Rough Boring

inch (mm)

Insert	α_1 90°	α_1 75°		α_1 60°		α_1 45°		α_1 30°		α_1 15°	
		s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}
W29 10...	0.118 (3.0)	0.110 (2.8)	0.024 (0.6)	0.098 (2.5)	0.047 (1.2)	0.083 (2.1)	0.063 (1.6)	0.059 (1.5)	0.079 (2.0)	0.028 (0.7)	0.091 (2.3)
W29 18...	0.157 (4.0)	0.150 (3.8)	0.031 (0.8)	0.134 (3.4)	0.063 (1.6)	0.110 (2.8)	0.091 (2.3)	0.079 (2.0)	0.110 (2.8)	0.039 (1.0)	0.122 (3.1)
W29 24...	0.197 (5.0)	0.189 (4.8)	0.043 (1.1)	0.169 (4.3)	0.083 (2.1)	0.138 (3.5)	0.118 (3.0)	0.098 (2.5)	0.146 (3.7)	0.047 (1.2)	0.161 (4.1)
W29 34...	0.244 (6.2)	0.232 (5.9)	0.059 (1.5)	0.209 (5.3)	0.110 (2.8)	0.169 (4.3)	0.157 (4.0)	0.122 (3.1)	0.193 (4.9)	0.063 (1.6)	0.217 (5.5)
W59 18...	0.394 (10.0)	0.378 (9.6)	0.091 (2.3)	0.339 (8.6)	0.177 (4.5)	0.276 (7.0)	0.248 (6.3)	0.197 (5.0)	0.303 (7.7)	0.098 (2.5)	0.339 (8.6)

s_{max} = Max. depth of cut

b_{max} = Max. chamfering width

Finish Boring

inch (mm)

Boring Range	α_1 75°		α_1 60°		α_1 45°		α_1 30°		α_1 15°	
	s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}	s_{max}	b_{max}
0.315 - 0.550 (8 - 13.9)	0.051 (1.3)	0.012 (0.3)	0.047 (1.2)	0.024 (0.6)	0.039 (1.0)	0.039 (1.0)	0.024 (0.6)	0.047 (1.2)	0.012 (0.3)	0.051 (1.3)
0.551 - 1.102 (14 - 28.0)	0.106 (2.7)	0.028 (0.7)	0.094 (2.4)	0.055 (1.4)	0.079 (2.0)	0.079 (2.0)	0.055 (1.4)	0.094 (2.4)	0.028 (0.7)	0.106 (2.7)

s_{max} = Max. depth of cut

b_{max} = Max. chamfering width

Example of a completed fax request

- Step ①: Address / Contact information
- Step ②: Enter required dimensions
- Step ③: Provide workpiece sketch with marked up dimensions

KUB® Ø 0.551" – 1.732" (14 – 44 mm)

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and two stepped cutting edges right hand

The table shown below gives the minimum and maximum dimensions.

N420018000

N420019000

Drilling range D _{min} -D _{max}	Drilling depth N _{min} -N _{max}	Insert	Cylindrical shank d = 1/2 inch (12.7 mm)
0.551 - 0.786 (14 - 19.9)	0.591 (1.5)	L2+(1.5+D2)	W29 10
0.787 - 0.983 (20 - 24.9)	0.591 (1.5)	L2+(1.5+D2)	W29 18
0.984 - 1.180 (25 - 29.9)	0.787 (2.0)	L2+(1.5+D2)	W29 24
1.181 - 1.456 (30 - 36.9)	0.787 (2.0)	L2+(1.5+D2)	W29 24
1.457 - 1.732 (37 - 44.0)	0.787 (2.0)	L2+(1.5+D2)	W29 34

Boring range D1 _{min} -D1 _{max}	α1	L1 _{min}	L1 _{max}	Insert
0.689 - 0.983 (17.5 - 24.9)	90° - 15°	0.394 (1.0)	1.5+D	W29 10
0.984 - 1.180 (25.0 - 29.9)	90° - 15°	0.394 (1.0)	1.5+D	W29 18
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	0.591 (1.5)	1.5+D	W29 24
1.377 - 1.609 (35.0 - 41.0)	90° - 15°	0.591 (1.5)	1.5+D	W29 34

Boring range D2 _{min} -D2 _{max}	α2	L2 _{min}	L2 _{max}	L	Insert
0.689 - 0.983 (17.5 - 24.9)	90° - 15°	L1+(0.5-D1)N + 0.945 (N - 24)			W29 -
0.984 - 1.180 (25.0 - 29.9)	90° - 15°	L1+(0.5-D1)N + 0.945 (N - 24)			W29 -
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	L1+(0.5-D1)N + 1.142 (N - 24)			W29 -
1.377 - 1.732 (35.0 - 44.0)	90° - 15°	L1+(0.5-D1)N + 1.142 (N - 24)			W29 -
1.181 - 1.732 (30.0 - 44.0)	90° - 15°	L1+(0.5-D1)N + 1.142 (N - 24)			W29 18

Fax to 1-800-865-6638

KOMET OF AMERICA, Inc. 2050 Mitchell Blvd. Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Quotations Department Date: 10/12/05

Inquiry Purchase Order

Company Name: Wipac Tools, Inc. Purchase Order No.: A2483098

Address: 1000 Industrial Ave.

Contact - Name: John Smith Signature: [Signature]

Telephone No.: (888) 888-8888 FAX No.: (888) 888-8889

Purchase Quantity: 2

Material to be machined:

D = 1.000"
 N = 2.000"
 D1 = 1.063"
 L1 = 1.812"
 α1 = 45°
 D2 = 1.575"
 L2 = 1.825"
 α2 = 30°
 d = 1.250"

UV8S...

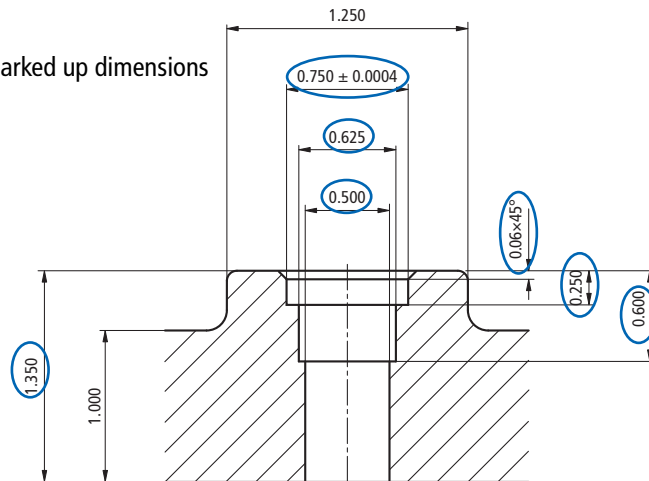
Please provide workpiece sketch!

Caution! When drilling rotating parts, a slug as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

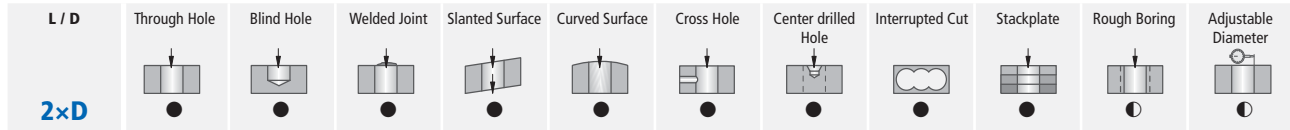
Delivery: Basic tool body. Insert(s) not included.

③

Workpiece example with marked up dimensions

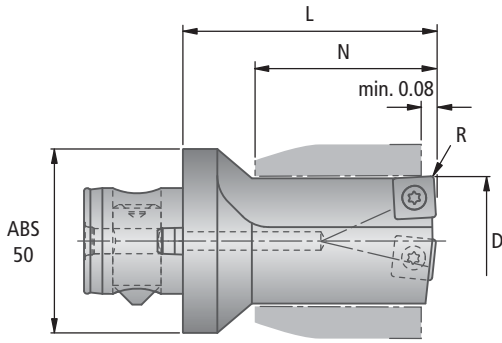


KUB Quatron® Ø 0.551" – 1.752" (14 – 44.5 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection
Drilling depth 2×D
right hand



N420270000

The table shown below gives the minimum and maximum dimensions.

Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth N_{max}	L	Insert	R
0.551 - 0.690 (14.0 - 17.5)	2×D	N + 1.378 (N + 35)	W83 13...	0.016
0.691 - 0.848 (17.6 - 21.5)	2×D	N + 1.378 (N + 35)	W83 18...	0.024
0.849 - 1.064 (21.6 - 27.0)	2×D	N + 1.378 (N + 35)	W83 23...	0.031
1.065 - 1.301 (27.1 - 33.0)	2×D	N + 1.575 (N + 40)	W83 32...	0.031
1.302 - 1.752 (33.1 - 44.5)	2×D	N + 1.575 (N + 40)	W83 44...	0.031

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

KOMET of AMERICA, Inc.
Easy Specials
Quotations Department

2050 Mitchell Blvd.
 Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Date: ____/____/____

Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

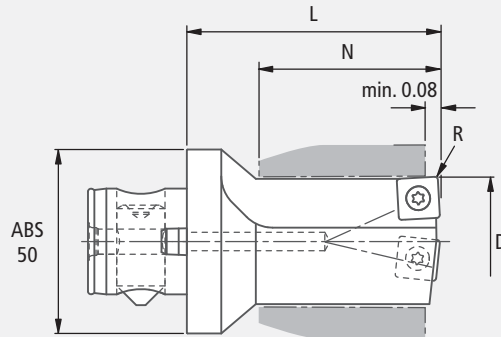
FAX No. _____

Purchase Quantity _____

Material to be machined: _____

D = _____

N = _____



N420270000

XV02...

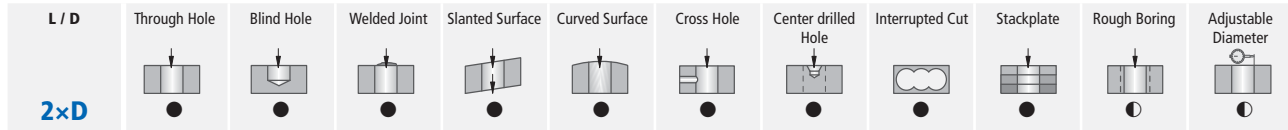
Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



KUB Quatron® Ø 0.551" – 1.752" (14 – 44.5 mm)



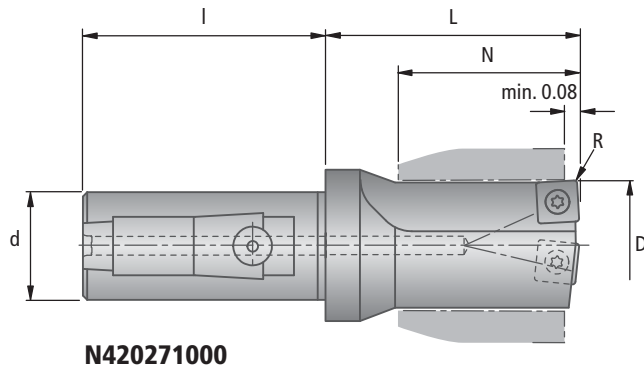
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595

Drilling depth 2×D

right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth N_{max}	L	Insert	R	inch (mm)	
					Cylindrical shank $d \times l$	
0.551 - 0.690 (14.0 - 17.5)	2×D	$N + 0.945 (N + 24)$	W83 13...	0.016	1.000×2.205 (25×56)	● ●
0.691 - 0.848 (17.6 - 21.5)	2×D	$N + 0.945 (N + 24)$	W83 18...	0.024	1.250×2.362 (32×60)	● ●
0.849 - 1.064 (21.6 - 27.0)	2×D	$N + 1.142 (N + 29)$	W83 23...	0.031		● ●
1.065 - 1.301 (27.1 - 33.0)	2×D	$N + 1.142 (N + 29)$	W83 32...	0.031		● ●
1.302 - 1.752 (33.1 - 44.5)	2×D	$N + 1.142 (N + 29)$	W83 44...	0.031		● ●

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

KOMET of AMERICA, Inc.
Easy Specials
Quotations Department

2050 Mitchell Blvd.
 Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Date: ____/____/____

Inquiry

Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

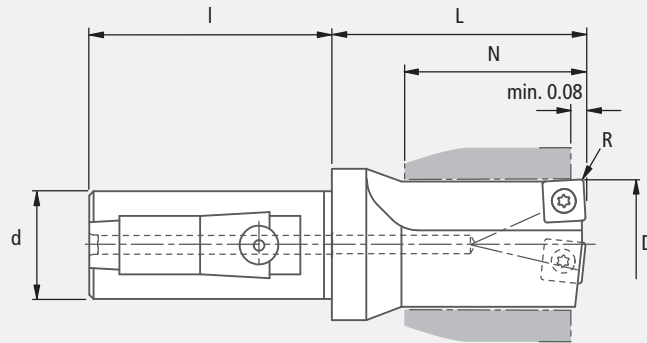
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____

N = _____

d = _____



N420271000

XV85...

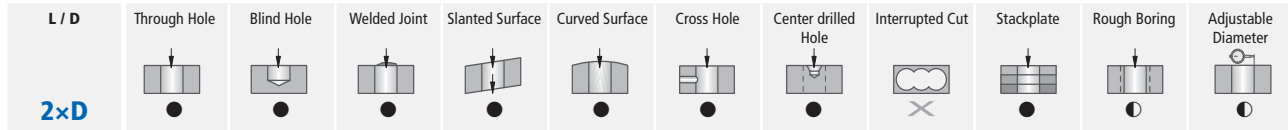
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



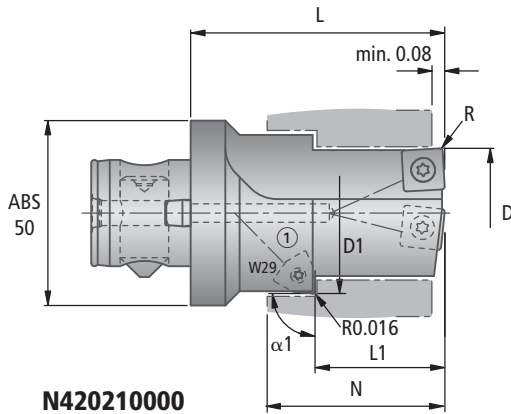
KUB Quatron® Ø 0.551" – 1.752" (14 – 44.5 mm)



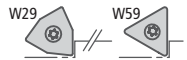
● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

**with ABS® Connection
and a stepped cutting edge
right hand**

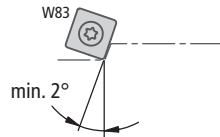
The table shown below gives the minimum and maximum dimensions.



Version 1:



Version 2:



Solid drilling step

inch (mm)

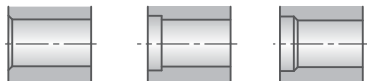
Drilling range $D_{min} - D_{max}$	Drilling depth N_{max}	L	Insert	R
0.551 - 0.690 (14.0 - 17.5)	2×D	N + 1.378 (N + 35)	W83 13...	0.016
0.691 - 0.848 (17.6 - 21.5)	2×D	N + 1.378 (N + 35)	W83 18...	0.024
0.849 - 1.064 (21.6 - 27.0)	2×D	N + 1.378 (N + 35)	W83 23...	0.031
1.065 - 1.301 (27.1 - 33.0)	2×D	N + 1.575 (N + 40)	W83 32...	0.031
1.302 - 1.752 (33.1 - 44.5)	2×D	N + 1.575 (N + 40)	W83 44...	0.031

Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert	
					Version 1	Version 2
0.689 - 0.983 (17.5 - 24.9)	Version 1	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	Version 2	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	W83	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	88° - 15°	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W59 18...	W83 44...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

KOMET of AMERICA, Inc.
Easy Specials
Quotations Department

2050 Mitchell Blvd.
 Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Date: ____/____/____

Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

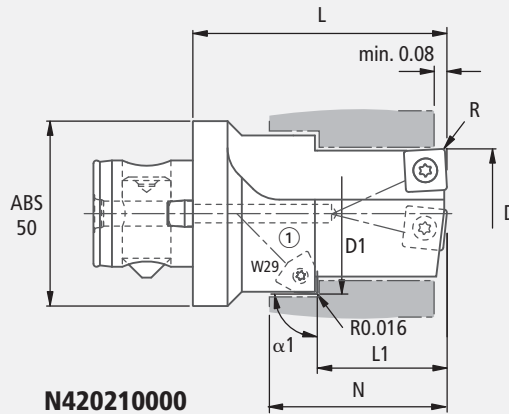
D = _____

N = _____

D1 = _____

L1 = _____

$\alpha 1 =$ _____



XV12...

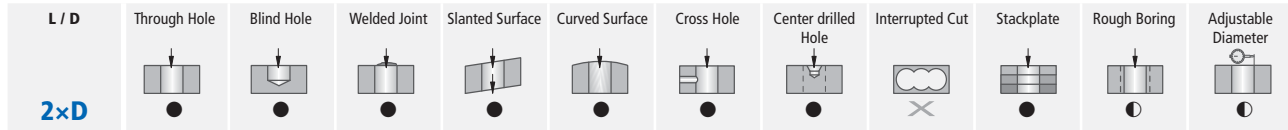
Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



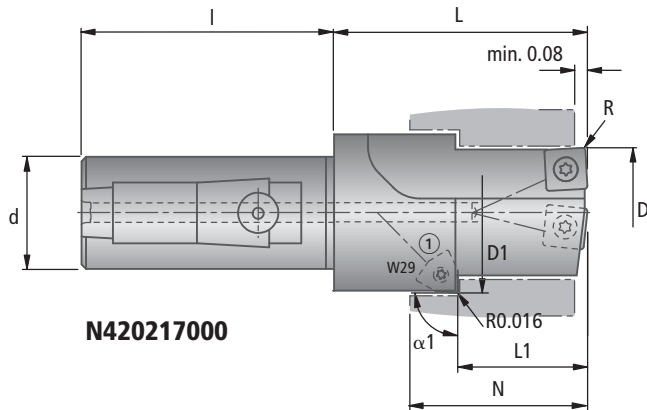
KUB Quatron® Ø 0.551" – 1.752" (14 – 44.5 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and a stepped cutting edge right hand

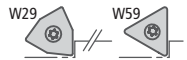
The table shown below gives the minimum and maximum dimensions.



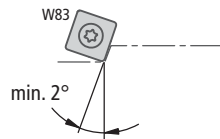
Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth N_{max}	L	Insert	R	Cylindrical shank $d \times l$	
					1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 - 0.690 (14.0 - 17.5)	2×D	N + 0.945 (N + 24)	W83 13...	0.016	●	●
0.691 - 0.848 (17.6 - 21.5)	2×D	N + 0.945 (N + 24)	W83 18...	0.024	●	●
0.849 - 1.064 (21.6 - 27.0)	2×D	N + 1.142 (N + 29)	W83 23...	0.031	●	●
1.065 - 1.301 (27.1 - 33.0)	2×D	N + 1.142 (N + 29)	W83 32...	0.031	●	●
1.302 - 1.752 (33.1 - 44.5)	2×D	N + 1.142 (N + 29)	W83 44...	0.031	●	●

Version 1:



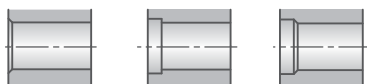
Version 2:



Step ①

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert	
					Version 1	Version 2
0.689 - 0.983 (17.5 - 24.9)	Version 1	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	Version 2	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	W83	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	88° - 15°	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W59 18...	W83 44...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

KOMET of AMERICA, Inc.
Easy Specials
Quotations Department

2050 Mitchell Blvd.
 Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Date: ____/____/____

Inquiry

Purchase Order

Company Name _____

Address _____

Contact - Name _____

Telephone No. _____

Purchase Quantity _____

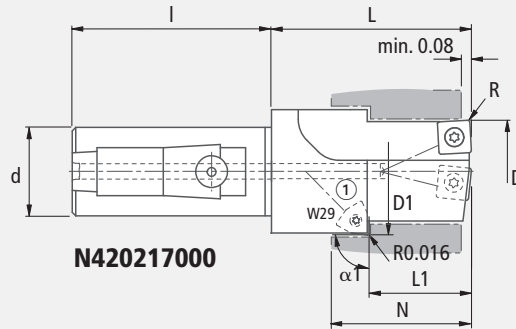
Purchase Order No. _____

Signature _____

FAX No. _____

Material to be machined: _____

- D = _____
- N = _____
- D1 = _____
- L1 = _____
- $\alpha 1$ = _____
- d = _____



XV85...

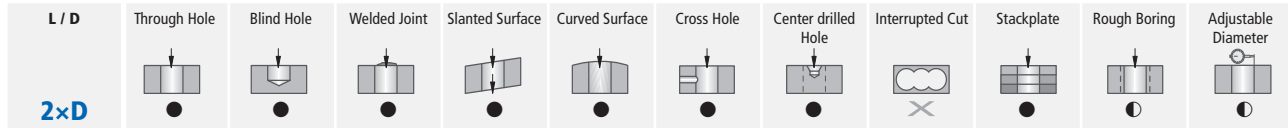
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.

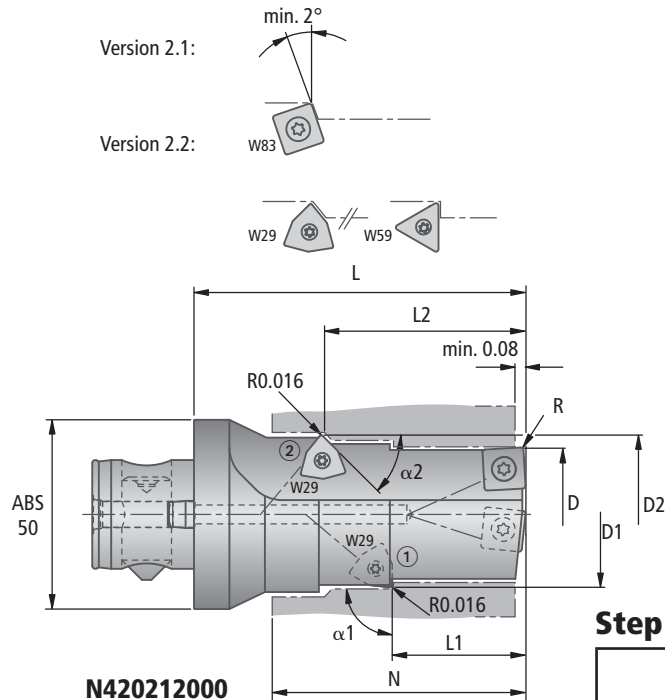


KUB Quatron® Ø 0.551" – 1.752" (14 – 44.5 mm)



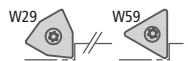
● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

**with ABS® Connection
and two stepped cutting edges
right hand**

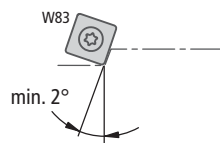


N420212000

Version 1.1:



Version 2.1:



The table shown below gives the minimum and maximum dimensions.

Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth N_{max}	L	Insert	R
0.551 - 0.690 (14.0 - 17.5)	2xD	N + 1.378 (N + 35)	W83 13...	0.016
0.691 - 0.848 (17.6 - 21.5)	2xD	N + 1.378 (N + 35)	W83 18...	0.024
0.849 - 1.064 (21.6 - 27.0)	2xD	N + 1.378 (N + 35)	W83 23...	0.031
1.065 - 1.301 (27.1 - 33.0)	2xD	N + 1.575 (N + 40)	W83 32...	0.031
1.302 - 1.752 (33.1 - 44.5)	2xD	N + 1.575 (N + 40)	W83 44...	0.031

Step ①

inch (mm)

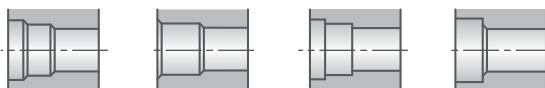
Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert	
					Version 1.1	Version 1.2
0.689 - 0.983 (17.5 - 24.9)	Version 1.1	0.394 (10)	1.5xD	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	0.394 (10)	1.5xD	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	0.591 (15)	1.5xD	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	Version 1.2	0.591 (15)	1.5xD	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	W83	0.591 (15)	1.5xD	N + 1.575 (N + 40)	W59 18...	W83 44...
	88° - 15°	0.591 (15)	1.5xD	N + 1.575 (N + 40)		

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert	
					Version 2.1	Version 2.2
0.689 - 0.983 (17.5 - 24.9)	Version 2.1	L1	L1+(1.5xD1)	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	L1	L1+(1.5xD1)	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	L1	L1+(1.5xD1)	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	Version 2.2	L1	L1+(1.5xD1)	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	W83	L1	L1+(1.5xD1)	N + 1.575 (N + 40)	W59 18...	W83 44...
	88° - 15°	L1	L1+(1.5xD1)	N + 1.575 (N + 40)		

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

KOMET of AMERICA, Inc.
Easy Specials
Quotations Department

2050 Mitchell Blvd.
 Schaumburg, IL 60193-4544
 TEL: 847/923-8400 www.komet.com

Date: ____/____/____

Inquiry

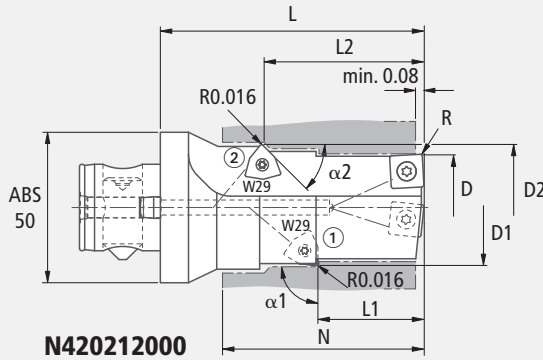
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 D2 = _____
 L2 = _____
 $\alpha 2$ = _____



XV12...

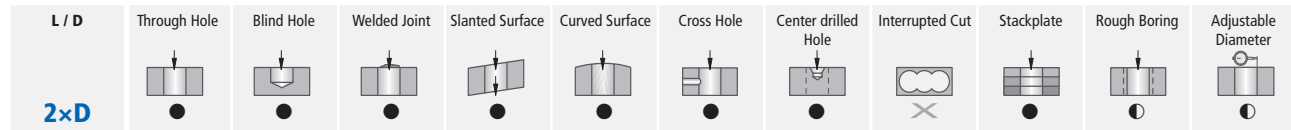
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



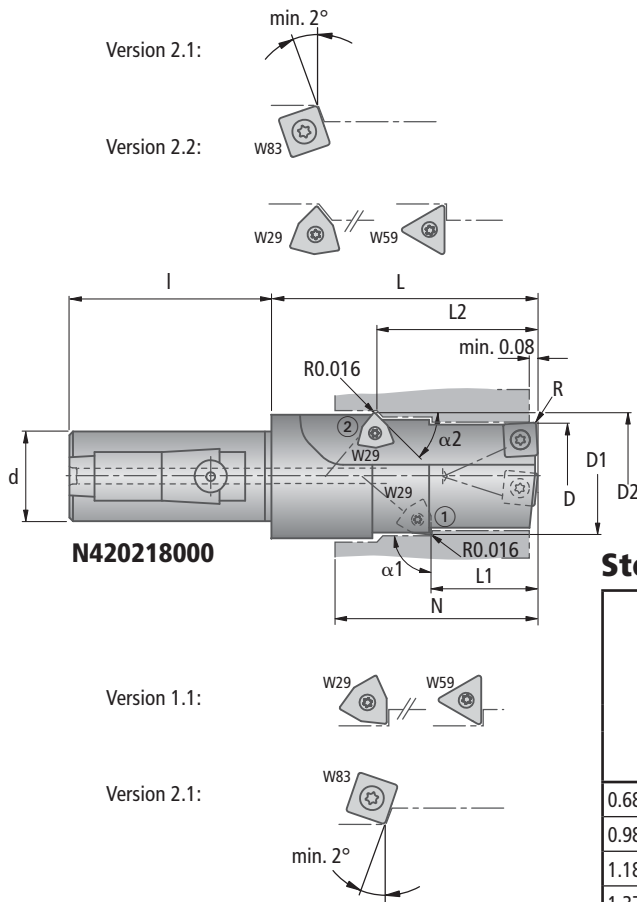
KUB Quatron® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and two stepped cutting edges right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth N_{min}	L	Insert	R	Cylindrical shank $d \times l$	
					1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 - 0.690 (14.0 - 17.5)	2×D	N + 0.945 (N + 24)	W83 13...	0.016	●	●
0.691 - 0.848 (17.6 - 21.5)	2×D	N + 0.945 (N + 24)	W83 18...	0.024	●	●
0.849 - 1.064 (21.6 - 27.0)	2×D	N + 1.142 (N + 29)	W83 23...	0.031	●	●
1.065 - 1.301 (27.1 - 33.0)	2×D	N + 1.142 (N + 29)	W83 32...	0.031	●	●
1.302 - 1.752 (33.1 - 44.5)	2×D	N + 1.142 (N + 29)	W83 44...	0.031	●	●

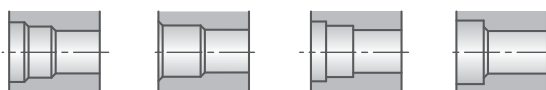
Step ①

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert	
					Version 1.1	Version 1.2
0.689 - 0.983 (17.5 - 24.9)	Version 1.1	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	0.394 (10)	1.5×D	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	Version 1.2	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	W83	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	88° - 15°	0.591 (15)	1.5×D	N + 1.575 (N + 40)	W59 18...	W83 44...

Step ②

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert	
					Version 2.1	Version 2.2
0.689 - 0.983 (17.5 - 24.9)	Version 2.1	L1	L1+(1.5×D1)	N + 1.378 (N + 35)	W29 10...	W83 13...
0.984 - 1.180 (25.0 - 29.9)	W29/W59	L1	L1+(1.5×D1)	N + 1.378 (N + 35)	W29 18...	W83 18...
1.181 - 1.376 (30.0 - 34.9)	90° - 15°	L1	L1+(1.5×D1)	N + 1.575 (N + 40)	W29 24...	W83 23...
1.377 - 1.969 (35.0 - 50.0)	Version 2.2	L1	L1+(1.5×D1)	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	W83	L1	L1+(1.5×D1)	N + 1.575 (N + 40)	W29 34...	W83 32...
1.181 - 1.969 (30.0 - 50.0)	88° - 15°	L1	L1+(1.5×D1)	N + 1.575 (N + 40)	W59 18...	W83 44...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

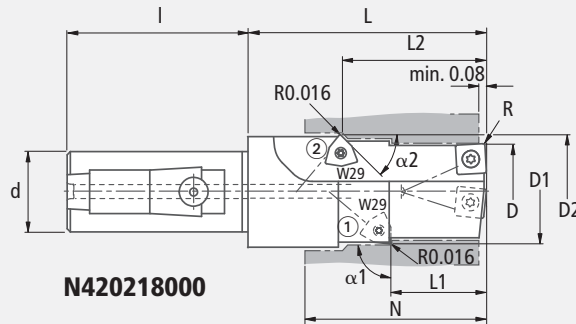
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 D2 = _____
 L2 = _____
 $\alpha 2$ = _____
 d = _____



XV85...

Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



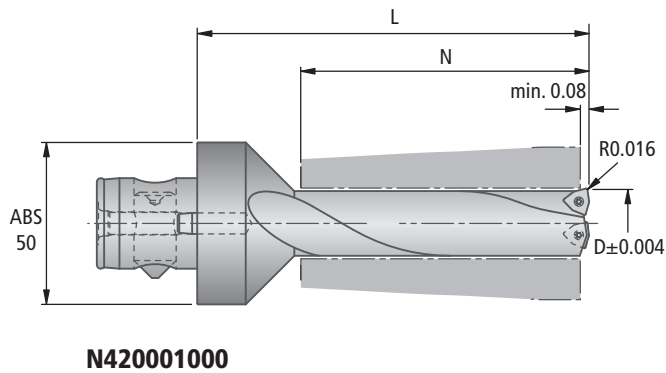
KUB Trigon® Ø 0.551" – 1.732" (14 – 44 mm)

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	×	●	●
3xD	●	●	●	●	●	●	●	●	×	○	●
4xD	●	●	○	○	○	○	○	○	×	×	○

● highly recommended ○ recommended ○ may be suitable; refer to Application Recommendations (Chapter 8) × not recommended

with ABS® Connection Drilling depth 2xD, 3xD and 4xD right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth N			L	Insert
	2xD	3xD	4xD		
0.551 – 0.786 (14 – 19.9)	●	●	●	N + 1.378 (N + 35)	W29 10...
0.787 – 0.983 (20 – 24.9)	●	●	●	N + 1.378 (N + 35)	W29 18...
0.984 – 1.180 (25 – 29.9)	●	●	●	N + 1.378 (N + 35)	W29 24...
1.181 – 1.456 (30 – 36.9)	●	●	●	N + 1.575 (N + 40)	W29 24...
1.457 – 1.732 (37 – 44.0)	●	●	●	N + 1.969 (N + 50)	W29 34...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Easy Specials
Quotations Department

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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

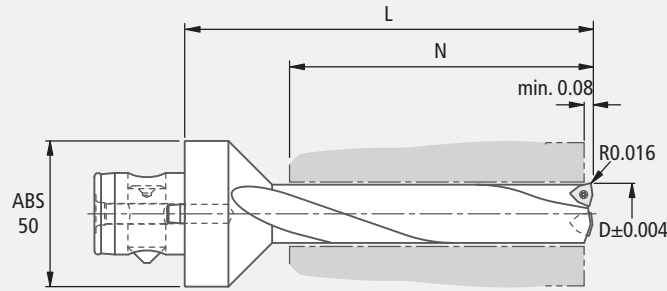
Material to be machined: _____

D = _____

N = 2×D

3×D

4×D



N420001000

UV02...

Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



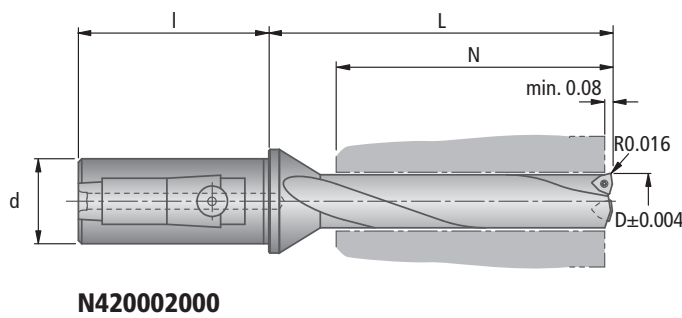
KUB Trigon® Ø 0.472" – 1.732" (12 – 44 mm)

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	○	○	○	×	○	●
3xD	●	●	●	●	○	○	○	○	×	○	●
4xD	●	●	○	○	○	○	○	○	×	×	○

● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595
Drilling depth 2xD, 3xD and 4xD
right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth N			L	Insert	Cylindrical shank d × L				
	2xD	3xD	4xD			0.750 × 1.969 (20 × 50)	1.000 × 2.205 (25 × 56)	1.250 × 2.562 (32 × 60)		
0.472 – 0.550 (12 – 13.9)	●	●		N + 0.945 (N + 24)	W29 04...	●				
0.551 – 0.786 (14 – 19.9)	●	●	●	N + 0.945 (N + 24)	W29 10...	●	●	●		
0.787 – 0.983 (20 – 24.9)	●	●	●	N + 0.945 (N + 24)	W29 18...	●	●	●		
0.984 – 1.180 (25 – 29.9)	●	●	●	N + 0.945 (N + 24)	W29 24...		●	●		
1.181 – 1.456 (30 – 36.9)	●	●	●	N + 1.142 (N + 29)	W29 24...			●		
1.457 – 1.732 (37 – 44.0)	●	●	●	N + 1.535 (N + 39)	W29 34...				●	

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

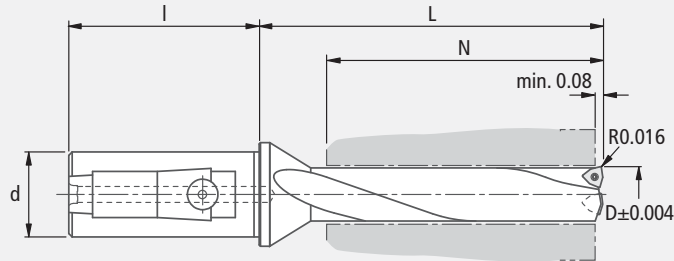
D = _____

N = 2×D

3×D

4×D

d = _____



N420002000

UV85...

Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



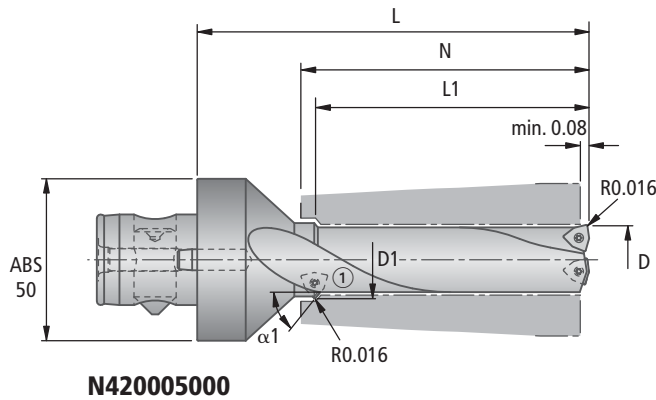
KUB Trigon® Ø 0.551" – 1.732" (14 – 44 mm)

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	○	○	○	×	○	○
3xD	●	●	●	●	●	○	○	○	×	○	○
4xD	●	●	○	○	○	○	○	○	×	×	○

● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

with ABS® Connection and chamfering insert Drilling depth 2xD, 3xD and 4xD right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	L	Insert
0.551 – 0.786 (14 – 19.9)	$N + 1.575 (N + 40)$	W29 10...
0.787 – 0.983 (20 – 24.9)	$N + 1.575 (N + 40)$	W29 18...
0.984 – 1.180 (25 – 29.9)	$N + 1.575 (N + 40)$	W29 24...
1.181 – 1.456 (30 – 36.9)	$N + 1.772 (N + 45)$	W29 24...
1.457 – 1.732 (37 – 44.0)	$N + 2.165 (N + 55)$	W29 34...

Drilling example



Chamfering step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha 1_{max-min}$	L1			Boring Depth		Insert
		2xD	3xD	4xD	N_{min}	N_{max}	
0.787 – 0.983 (20 – 24.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 10...
0.984 – 1.180 (25 – 29.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 18...
1.181 – 1.456 (30 – 36.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 24...
1.457 – 1.732 (37 – 44.0)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 34...

Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

D = _____

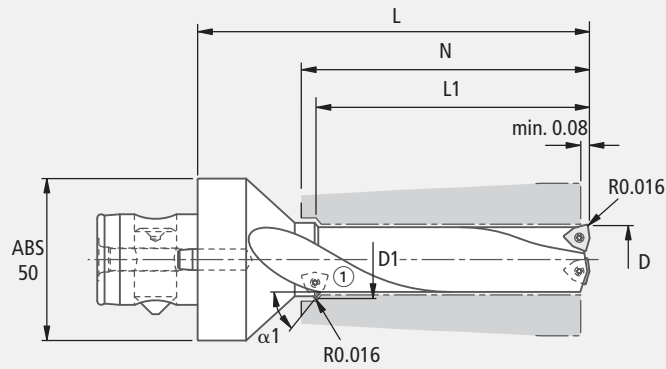
D1 = _____

L1 = 2×D

3×D

4×D

$\alpha 1 =$ _____



N420005000

UV12...

Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



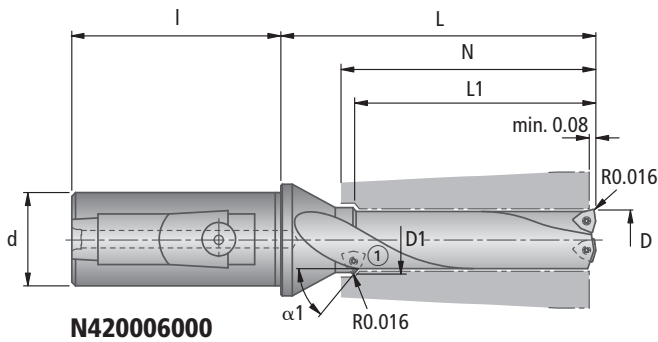
KUB Trigon® Ø 0.551" – 1.732" (14 – 44 mm)

L / D	Through Hole	Blind Hole	Welded Joint	Slanted Surface	Curved Surface	Cross Hole	Center drilled Hole	Interrupted Cut	Stackplate	Rough Boring	Adjustable Diameter
2xD	●	●	●	●	●	●	●	●	×	●	●
3xD	●	●	●	●	●	●	●	●	×	○	●
4xD	●	●	○	○	○	○	○	○	×	×	○

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and chamfering insert
Drilling depth 2xD, 3xD and 4xD
right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	L	Insert	Cylindrical shank $d \times l$		
			0.750×1.969 (20×50)	1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	$N + 1.142 (N + 29)$	W29 10...	●	●	●
0.787 – 0.983 (20 – 24.9)	$N + 1.142 (N + 29)$	W29 18...	●	●	●
0.984 – 1.180 (25 – 29.9)	$N + 1.142 (N + 29)$	W29 24...		●	●
1.181 – 1.456 (30 – 36.9)	$N + 1.339 (N + 34)$	W29 24...			●
1.457 – 1.732 (37 – 44.0)	$N + 1.732 (N + 44)$	W29 34...			●

Drilling example



Chamfering step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha 1_{max-min}$	L1			Boring Depth		Insert
		2xD	3xD	4xD	N_{min}	N_{max}	
0.787 – 0.983 (20 – 24.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 10...
0.984 – 1.180 (25 – 29.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 18...
1.181 – 1.456 (30 – 36.9)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 24...
1.457 – 1.732 (37 – 44.0)	90° - 15°	●	●	●	L1	$L1 + 0.197 (L1 + 5)$	W29 34...

Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

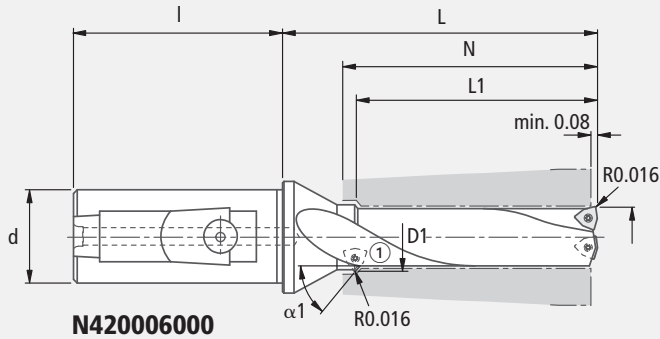
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 D1 = _____
 L1 = 2×D
 3×D
 4×D
 $\alpha 1 =$ _____
 d = _____



UV85...

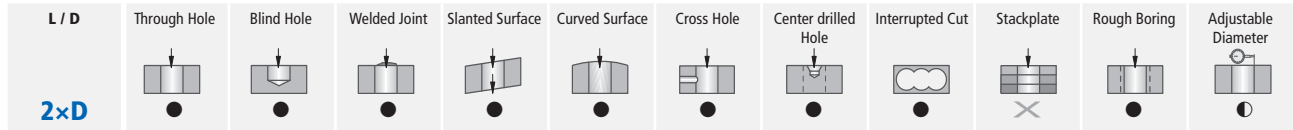
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



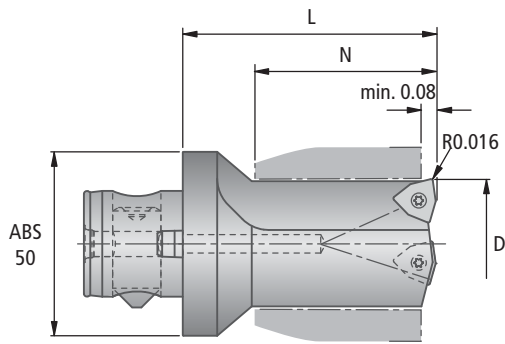
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection
Drilling depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.



N420070000

Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		L	Insert
	N_{min}	N_{max}		
0.551 – 0.786 (14 – 19.9)	0.591 (15)	2×D	N + 1.378 (N + 35)	W29 10...
0.787 – 0.983 (20 – 24.9)	0.591 (15)	2×D	N + 1.378 (N + 35)	W29 18...
0.984 – 1.180 (25 – 29.9)	0.591 (15)	2×D	N + 1.378 (N + 35)	W29 24...
1.181 – 1.456 (30 – 36.9)	0.787 (20)	2×D	N + 1.575 (N + 40)	W29 24...
1.457 – 1.732 (37 – 44.0)	0.787 (20)	2×D	N + 1.575 (N + 40)	W29 34...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

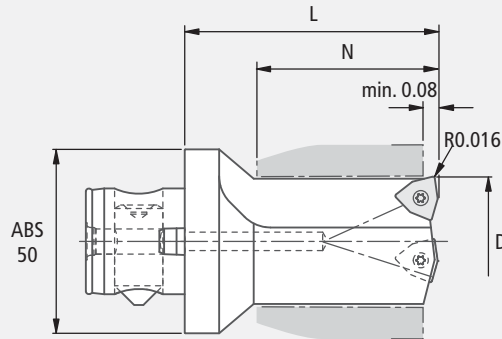
FAX No. _____

Purchase Quantity _____

Material to be machined: _____

D = _____

N = _____



N420070000

UV12...

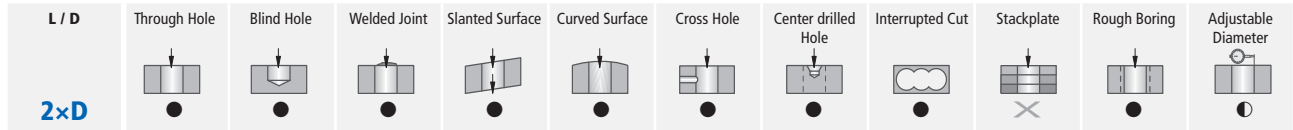
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



KUB® Ø 0.551" – 1.732" (14 – 44 mm)



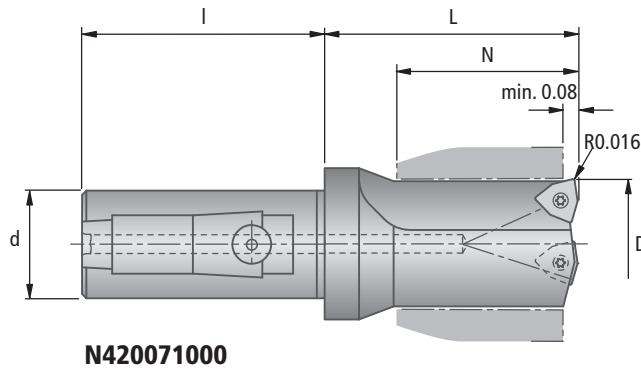
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595

Drilling depth 2×D

right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth		L	Insert	Cylindrical shank d × l	
	N_{min}	N_{max}			1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	0.394 (10)	2×D	N + 0.945 (N + 24)	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	0.394 (10)	2×D	N + 0.945 (N + 24)	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	0.394 (10)	2×D	N + 1.142 (N + 29)	W29 24...	●	●
1.181 – 1.456 (30 – 36.9)	0.591 (15)	2×D	N + 1.142 (N + 29)	W29 24...		●
1.457 – 1.732 (37 – 44.0)	0.591 (15)	2×D	N + 1.142 (N + 29)	W29 34...		●

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

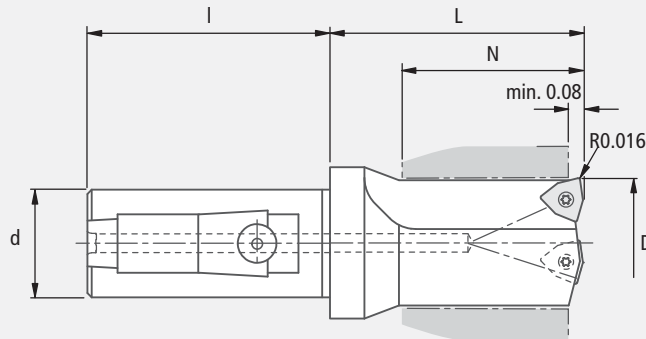
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 d = _____



N420071000

UV85...

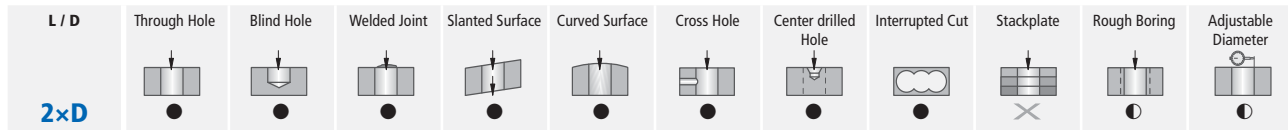
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.

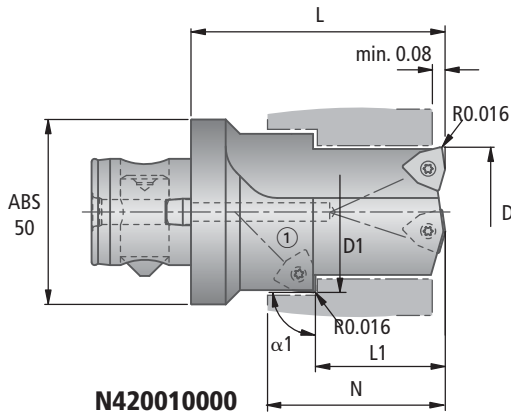


KUB® Ø 0.551" – 1.732" (14 – 44 mm)



**with ABS® Connection
and a stepped cutting edge
right hand**

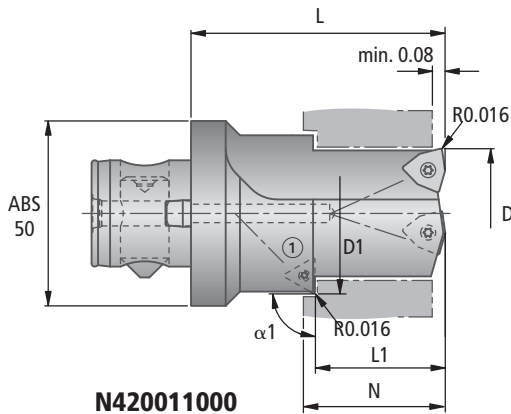
The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert
	N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 10...
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 18...
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 34...

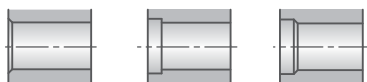


Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5xD	$N + 1.378 (N + 35)$	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5xD	$N + 1.378 (N + 35)$	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5xD	$N + 1.575 (N + 40)$	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5xD	$N + 1.575 (N + 40)$	W29 34...
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	0.591 (15)	1.5xD	$N + 1.575 (N + 40)$	W59 18...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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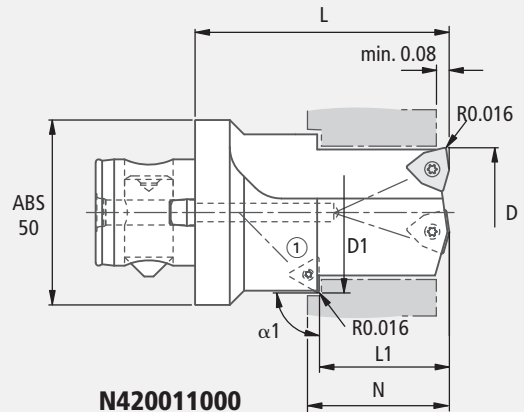
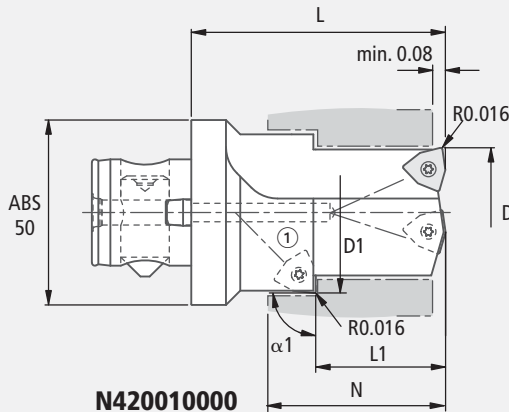
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1 =$ _____



UV12...

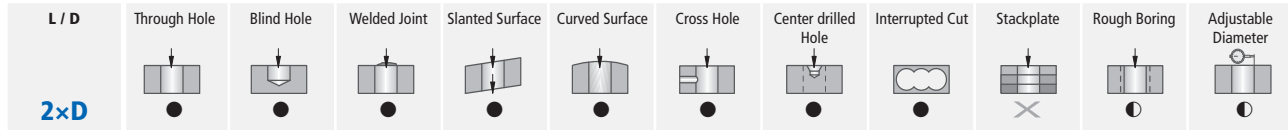
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



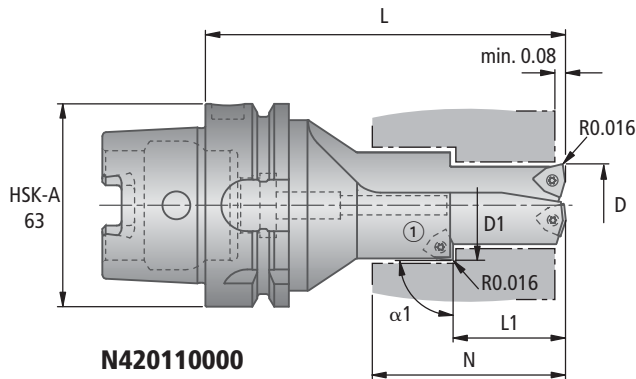
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

**with HSK-A63 Connection
and a stepped cutting edge
right hand**

The table shown below gives the minimum and maximum dimensions.

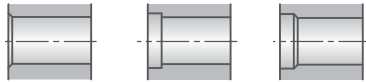


Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert
	N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 10...
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 18...
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 34...

Drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha 1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5xD	$N + 2.216 (N + 54)$	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5xD	$N + 2.216 (N + 54)$	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5xD	$N + 2.323 (N + 59)$	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5xD	$N + 2.323 (N + 59)$	W29 34...
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	0.591 (15)	1.5xD	$N + 2.323 (N + 59)$	W59 18...

Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

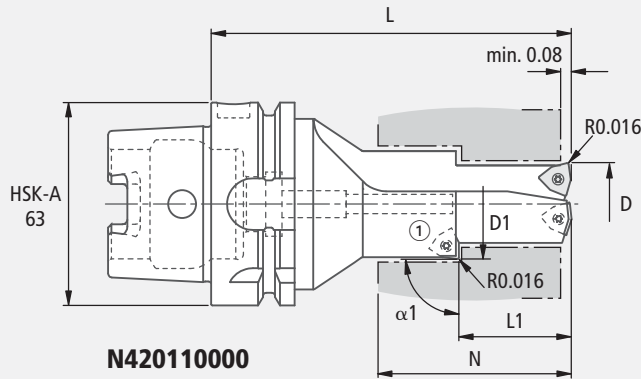
Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1 =$ _____



UV77...

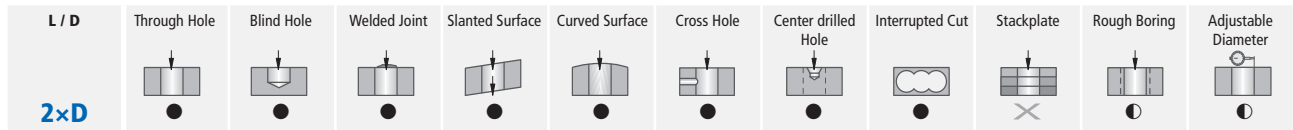
Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



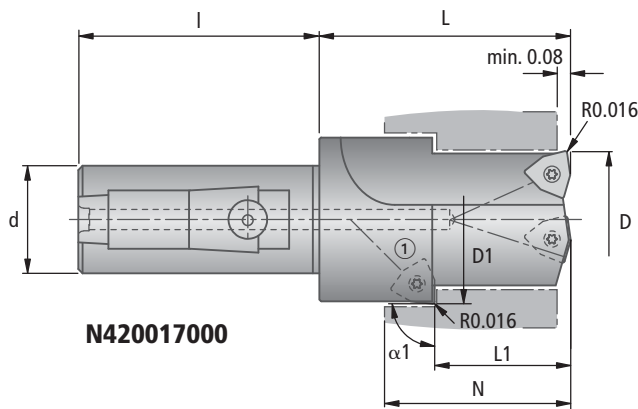
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and a stepped cutting edge right hand

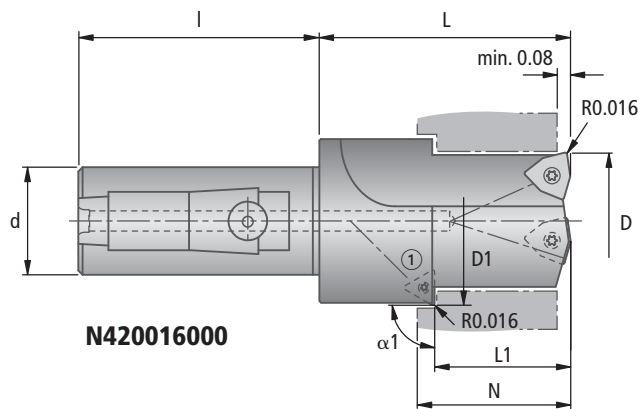
The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert	Cylindrical shank $d \times l$	
	N_{min}	N_{max}		1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L1 + (1.5 \times D1)$	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...	●	●
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 24...		●
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L1 + (1.5 \times D1)$	W29 34...		●

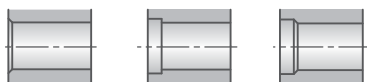


Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha 1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5×D	$N + 0.945 (N + 24)$	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5×D	$N + 0.945 (N + 24)$	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5×D	$N + 1.142 (N + 29)$	W29 24...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	0.591 (15)	1.5×D	$N + 1.142 (N + 29)$	W29 34...
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	0.591 (15)	1.5×D	$N + 1.142 (N + 29)$	W59 18...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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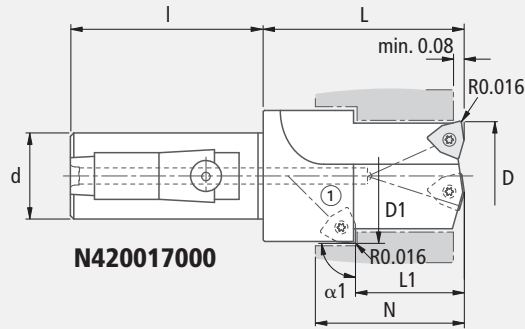
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

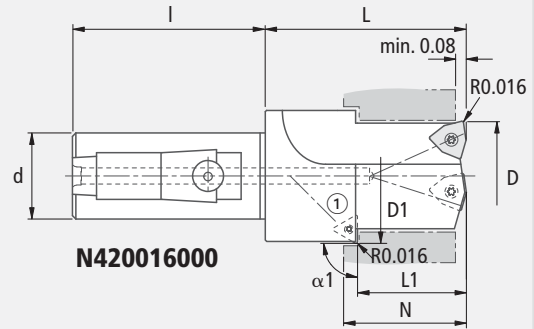
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1 =$ _____
 d = _____



N420017000



N420016000

UV85...

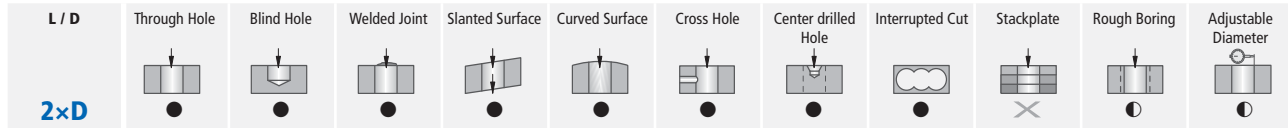
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



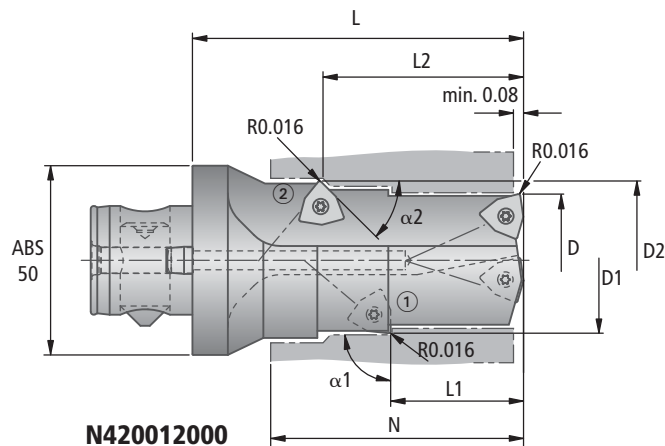
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

**with ABS® Connection
and two stepped cutting edges
right hand**

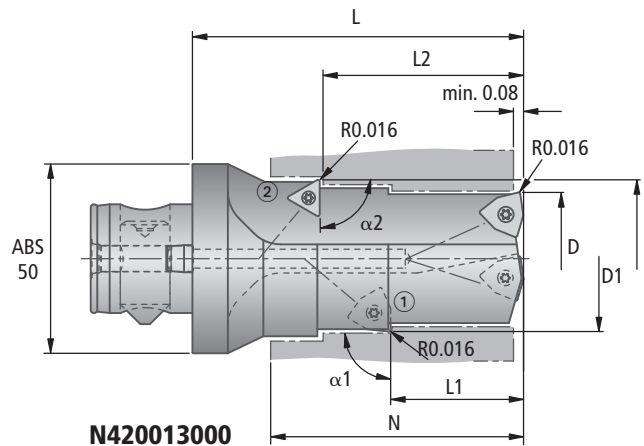
The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert
	N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 10...
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 18...
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 34...



Step ①

inch (mm)

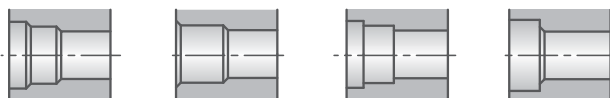
Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5 × D	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5 × D	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5 × D	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5 × D	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.378 (N + 35)$	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.378 (N + 35)$	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.575 (N + 40)$	W29 ...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.575 (N + 40)$	W29 ...
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.575 (N + 40)$	W59 18...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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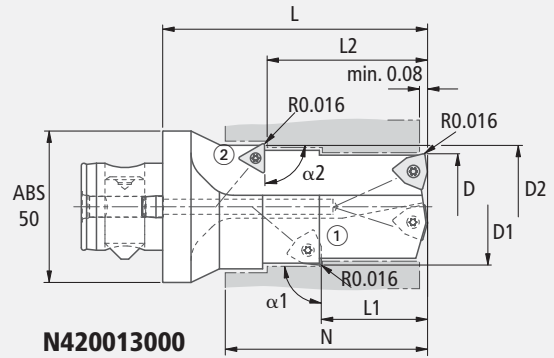
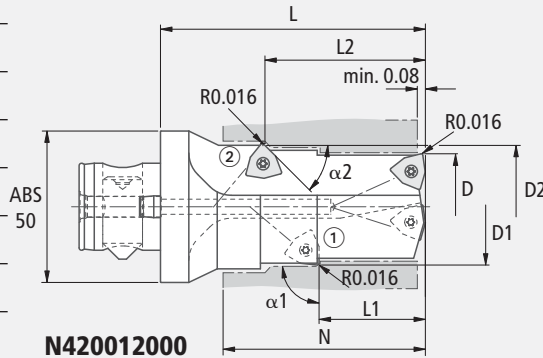
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 D2 = _____
 L2 = _____
 $\alpha 2$ = _____



UV12...

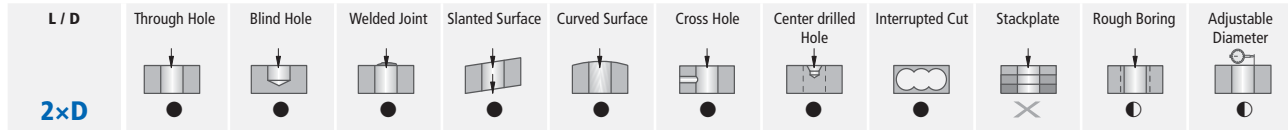
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.

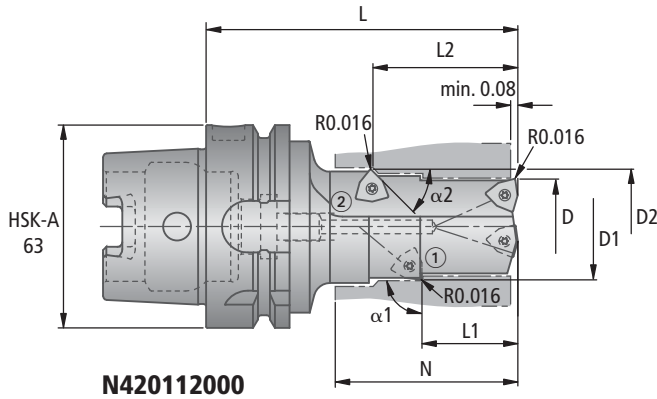


KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

**with HSK-A63 Connection
and two stepped cutting edges
right hand**



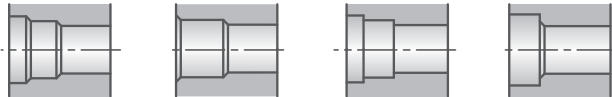
The table shown below gives the minimum and maximum dimensions.

Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert
	N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 10...
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 18...
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 34...

Drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5xD	$N + 2.216 (N + 54)$	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5xD	$N + 2.216 (N + 54)$	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5xD	$N + 2.323 (N + 59)$	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5xD	$N + 2.323 (N + 59)$	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 2.216 (N + 54)$	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 2.216 (N + 54)$	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 2.323 (N + 59)$	W29 ...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 2.323 (N + 59)$	W29 ...

Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

D = _____

N = _____

D1 = _____

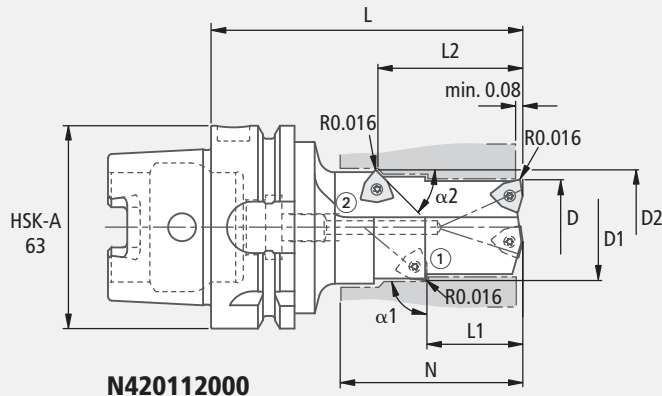
L1 = _____

$\alpha 1$ = _____

D2 = _____

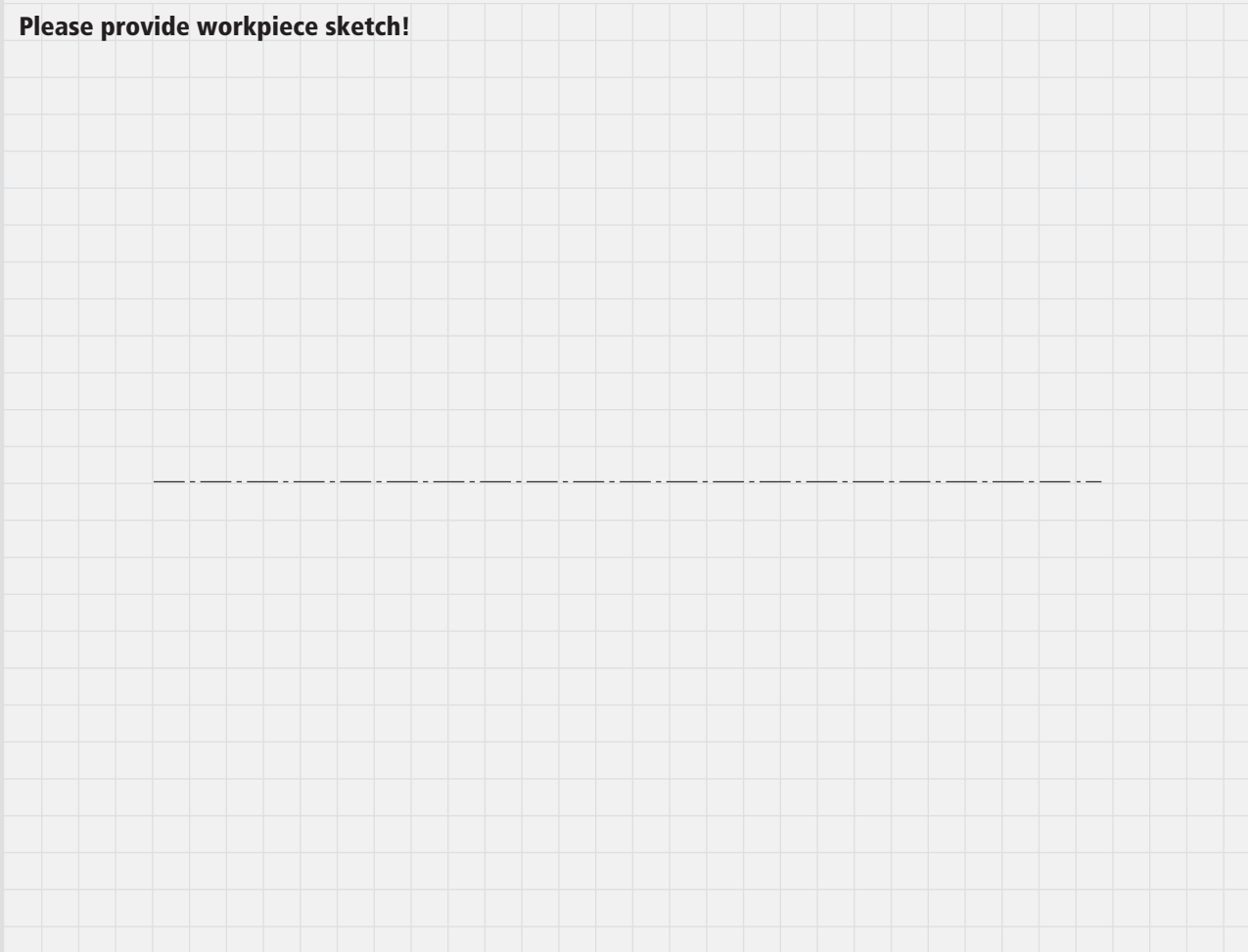
L2 = _____

$\alpha 2$ = _____



UV77...

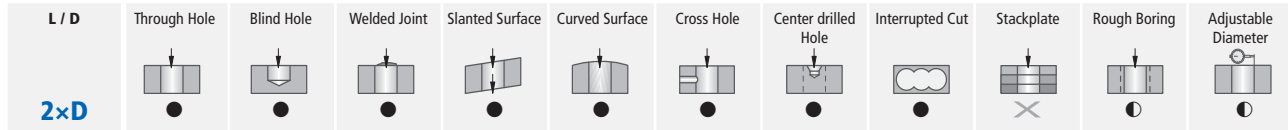
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



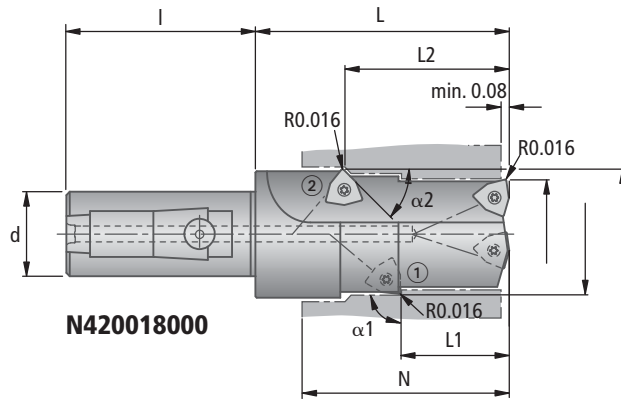
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and two stepped cutting edges right hand

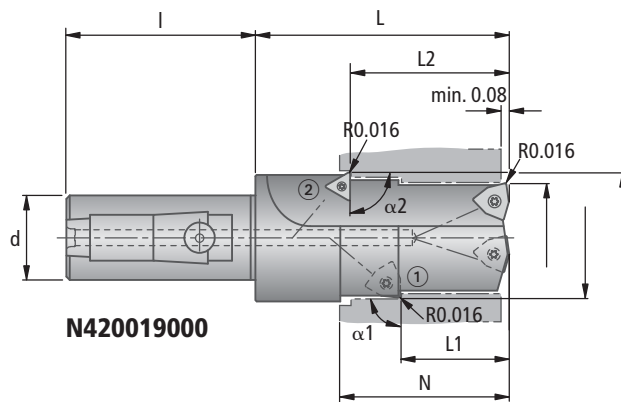
The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert	Cylindrical shank $d \times l$	
	N_{min}	N_{max}		1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L2 + (1.5 \times D2)$	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...	●	●
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 24...		●
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L2 + (1.5 \times D2)$	W29 34...		●



Step ①

inch (mm)

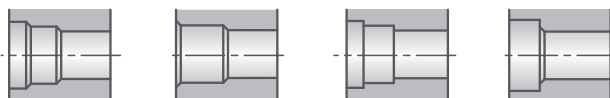
Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5×D	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5×D	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5×D	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5×D	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 0.945 (N + 24)$	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 0.945 (N + 24)$	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.142 (N + 29)$	W29 ...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.142 (N + 29)$	W29 ...
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	$N + 1.142 (N + 29)$	W59 18...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

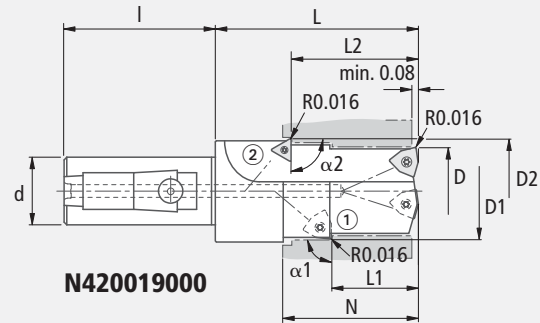
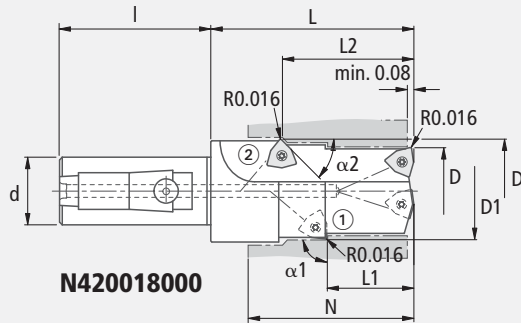
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 D2 = _____
 L2 = _____
 $\alpha 2$ = _____
 d = _____



UV85...

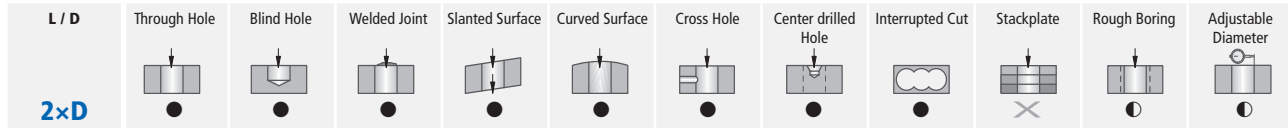
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



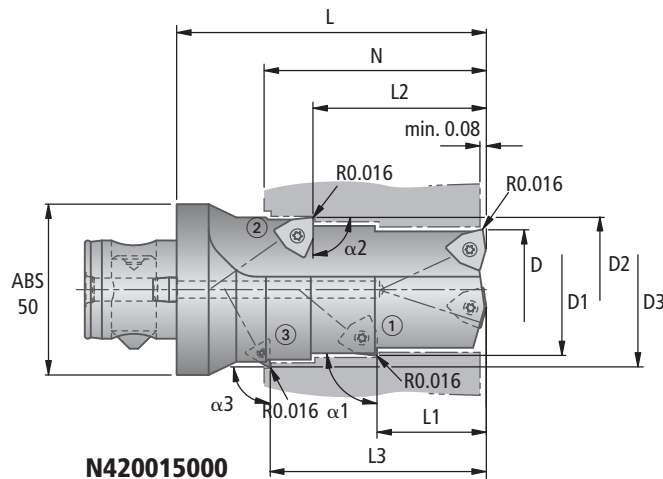
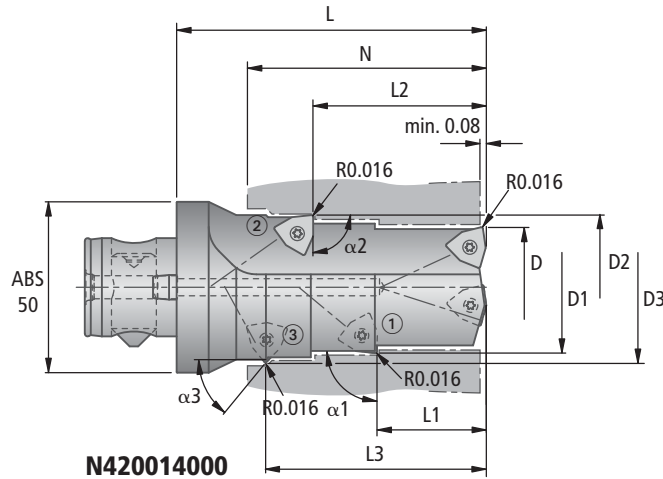
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and three stepped cutting edges right hand

The table shown below gives the minimum and maximum dimensions.



Solid drilling step

inch (mm)

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert
	N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	1.181 (30)	L3+(1.5×D3)	W29 10...
0.787 – 0.983 (20 – 24.9)	1.181 (30)	L3+(1.5×D3)	W29 18...
0.984 – 1.180 (25 – 29.9)	1.575 (40)	L3+(1.5×D3)	W29 24...
1.181 – 1.456 (30 – 36.9)	1.575 (40)	L3+(1.5×D3)	W29 24...
1.457 – 1.732 (37 – 44.0)	1.575 (40)	L3+(1.5×D3)	W29 34...

Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5×D	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5×D	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5×D	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	1.5×D	W29 34...

Step ②

inch (mm)

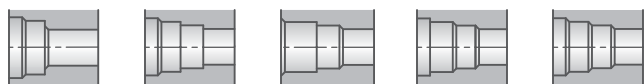
Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	L1+(1.5×D1)	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	L1+(1.5×D1)	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	L1+(1.5×D1)	W29 ...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	L1+(1.5×D1)	W29 ...

Step ③

inch (mm)

Boring range $D3_{min} - D3_{max}$	$\alpha3_{max-min}$	$L3_{min}$	$L3_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L2	L2+(1.5×D2)	N + 1.378 (N + 35)	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L2	L2+(1.5×D2)	N + 1.378 (N + 35)	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L2	L2+(1.5×D2)	N + 1.575 (N + 40)	W29 ...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	L2	L2+(1.5×D2)	N + 1.575 (N + 40)	W29 ...
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	L2	L2+(1.5×D2)	N + 1.575 (N + 40)	W59 18...

Drilling example



Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____

N = _____

D1 = _____

L1 = _____

$\alpha 1 =$ _____

D2 = _____

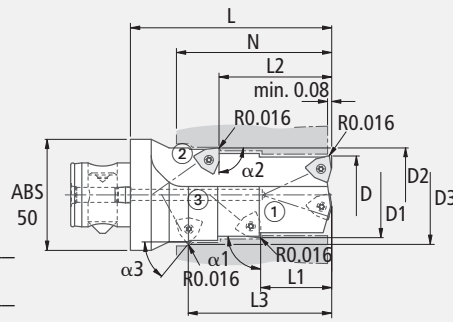
D3 = _____

L2 = _____

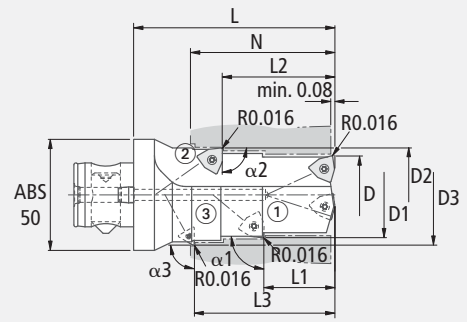
L3 = _____

$\alpha 2 =$ _____

$\alpha 3 =$ _____



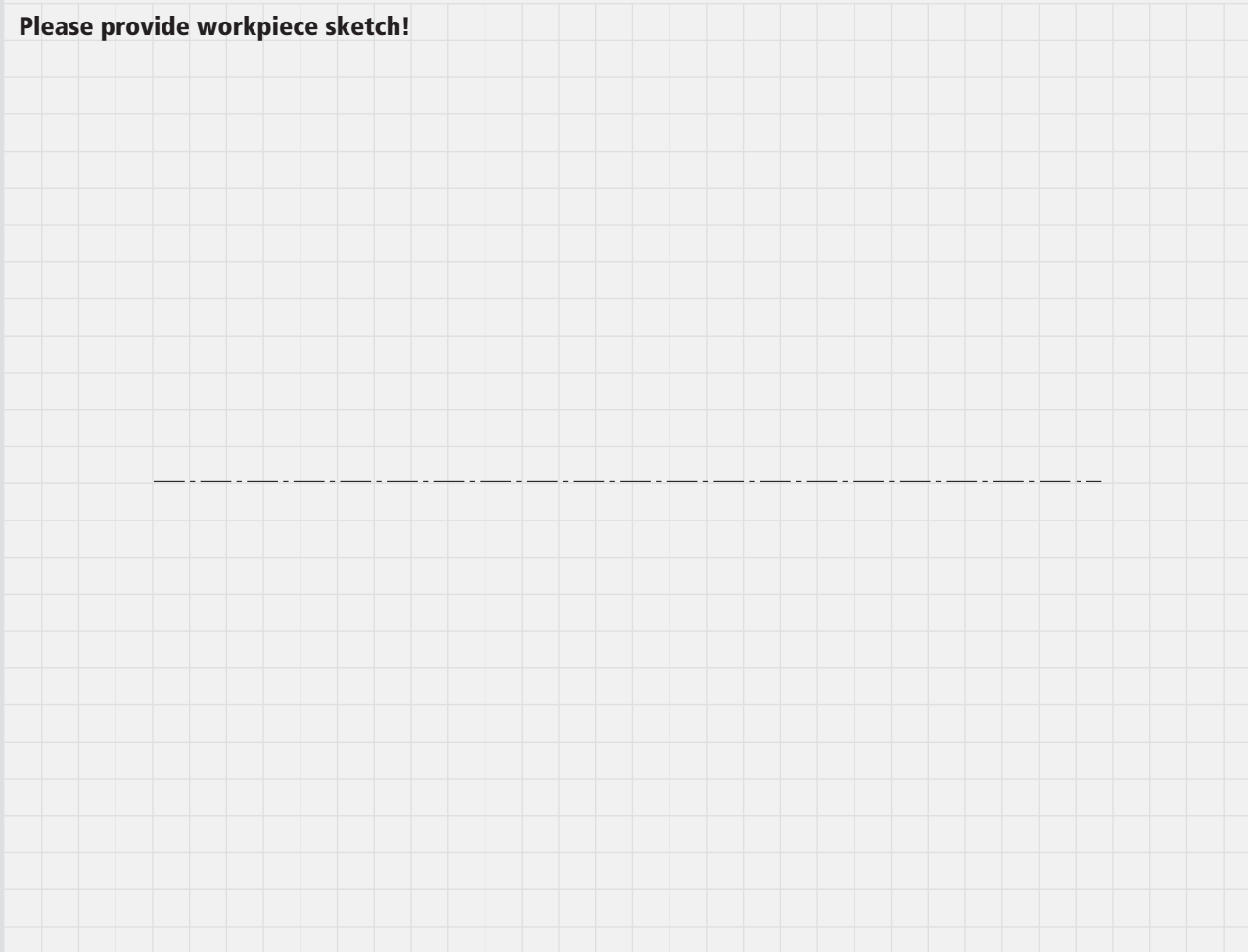
N420014000



N420015000

UV12...

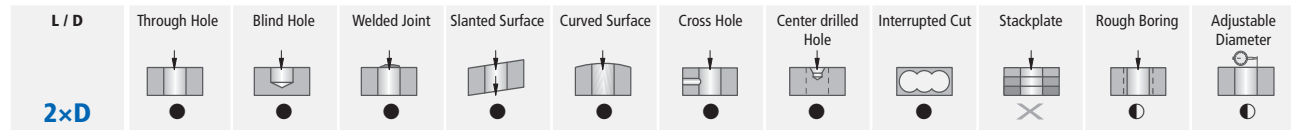
Please provide workpiece sketch!



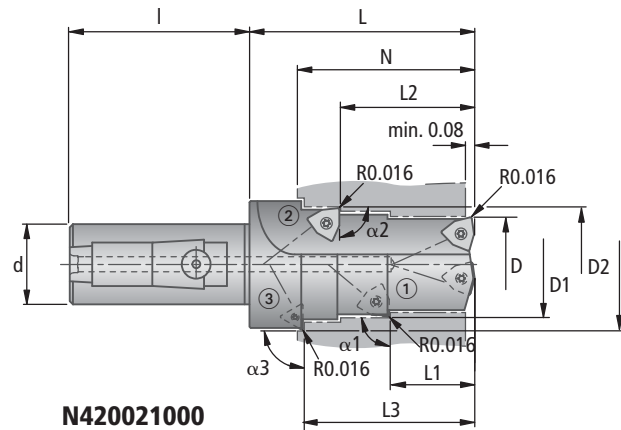
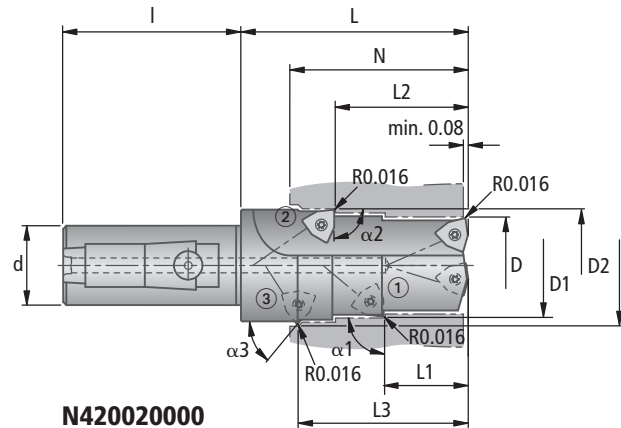
Delivery: Basic tool body. Insert(s) not included.



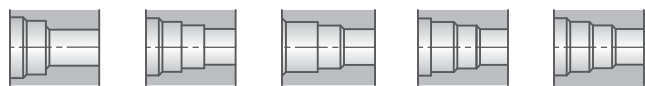
KUB® Ø 0.551" – 1.732" (14 – 44 mm)



with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and three stepped cutting edges right hand



Bohrungsbeispiele



The table shown below gives the minimum and maximum dimensions.

Solid drilling step

Drilling range $D_{min} - D_{max}$	Drilling depth		Insert	Cylindrical shank $d \times l$	
	N_{min}	N_{max}		1.000x2.205 (25x56)	1.250x2.362 (32x60)
0.551 – 0.786 (14 – 19.9)	0.591 (15)	$L3 + (1.5 \times D3)$	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	0.591 (15)	$L3 + (1.5 \times D3)$	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	0.787 (20)	$L3 + (1.5 \times D3)$	W29 24...	●	●
1.181 – 1.456 (30 – 36.9)	0.787 (20)	$L3 + (1.5 \times D3)$	W29 24...		●
1.457 – 1.732 (37 – 44.0)	0.787 (20)	$L3 + (1.5 \times D3)$	W29 34...		●

Step ①

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	0.394 (10)	1.5xD	W29 10...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	0.394 (10)	1.5xD	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	1.5xD	W29 24...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	0.591 (15)	1.5xD	W29 34...

Step ②

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L1	$L1 + (1.5 \times D1)$	W29 ...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	L1	$L1 + (1.5 \times D1)$	W29 ...

Step ③

Boring range $D3_{min} - D3_{max}$	$\alpha3_{max-min}$	$L3_{min}$	$L3_{max}$	L	Insert
0.689 – 0.983 (17.5 – 24.9)	90° - 15°	L2	$L2 + (1.5 \times D2)$	$N + 0.945 (N + 24)$	W29 ...
0.984 – 1.180 (25.0 – 29.9)	90° - 15°	L2	$L2 + (1.5 \times D2)$	$N + 0.945 (N + 24)$	W29 ...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	L2	$L2 + (1.5 \times D2)$	$N + 1.142 (N + 29)$	W29 ...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	L2	$L2 + (1.5 \times D2)$	$N + 1.142 (N + 29)$	W29 ...
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	L2	$L2 + (1.5 \times D2)$	$N + 1.142 (N + 29)$	W59 18...

Caution! When drilling rotating parts, a slug ● as shown pops out when drill breaks through and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity.

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Inquiry

Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____

N = _____

D1 = _____

L1 = _____

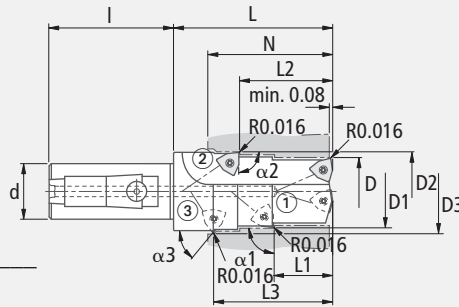
$\alpha 1 =$ _____

D2 = _____ D3 = _____

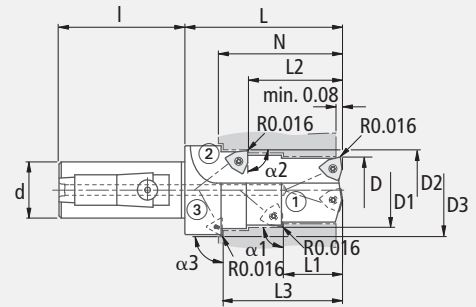
L2 = _____ L3 = _____

$\alpha 2 =$ _____ $\alpha 3 =$ _____

UV85... d = _____



N420020000



N420021000

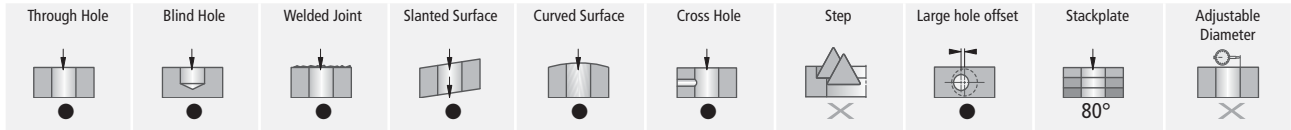
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



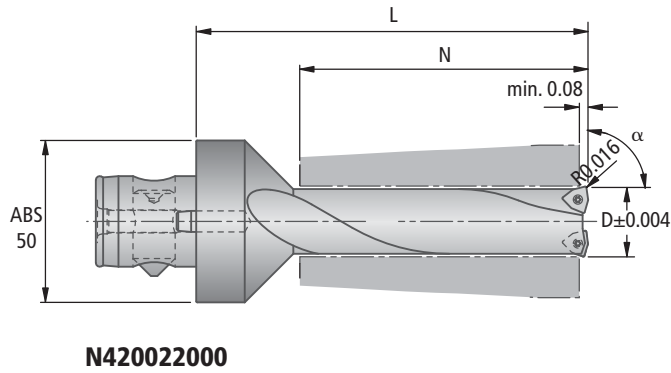
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection
Boring depth 2×D, 3×D and 4×D
right hand

The table shown below gives the minimum and maximum dimensions.



Core drilling example



Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring depth N			L	$\alpha_{max-min}$	Insert
	2×D	3×D	4×D			
0.551 – 0.786 (14 – 19.9)	●	●	●	N + 1.378 (N + 35)	90° - 15°	W29 10...
0.787 – 0.983 (20 – 24.9)	●	●	●	N + 1.378 (N + 35)	90° - 15°	W29 18...
0.984 – 1.180 (25 – 29.9)	●	●	●	N + 1.378 (N + 35)	90° - 15°	W29 24...
1.181 – 1.456 (30 – 36.9)	●	●	●	N + 1.575 (N + 40)	90° - 15°	W29 24...
1.457 – 1.732 (37 – 44.0)	●	●	●	N + 1.969 (N + 50)	90° - 15°	W29 34...

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Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

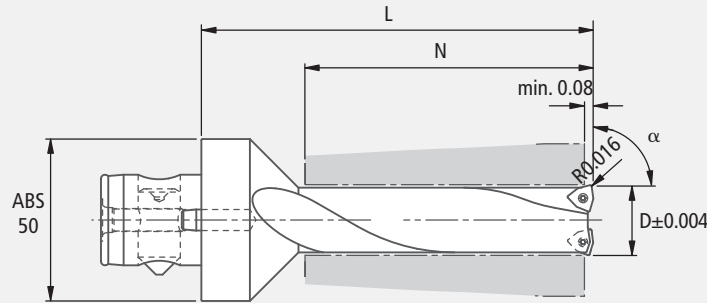
D = _____

α = _____

N = 2xD

3xD

4xD



N420022000

UB86...

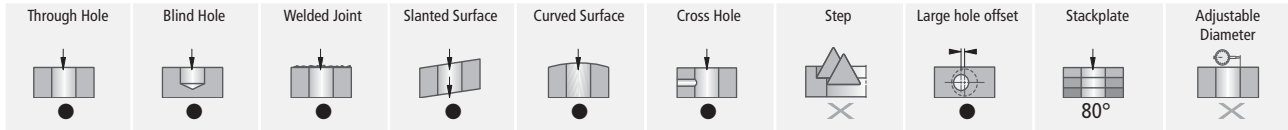
Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



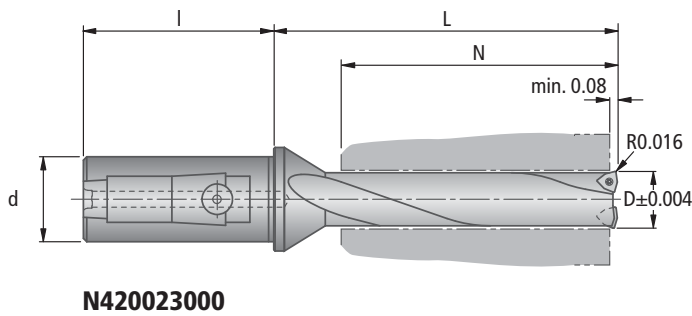
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595
Boring depth 2×D, 3×D and 4×D
right hand

The table shown below gives the minimum and maximum dimensions.



Core drilling example



Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring depth N			L	Insert	Cylindrical shank d × l		
	2×D	3×D	4×D			0.750×1.969 (20×50)	1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	●	●	●	N + 0.945 (N + 24)	W29 10...	●	●	●
0.787 – 0.983 (20 – 24.9)	●	●	●	N + 0.945 (N + 24)	W29 18...	●	●	●
0.984 – 1.180 (25 – 29.9)	●	●	●	N + 0.945 (N + 24)	W29 24...	●	●	●
1.181 – 1.456 (30 – 36.9)	●	●	●	N + 1.142 (N + 29)	W29 24...			●
1.457 – 1.732 (37 – 44.0)	●	●	●	N + 1.535 (N + 39)	W29 34...			●

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Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

Material to be machined: _____

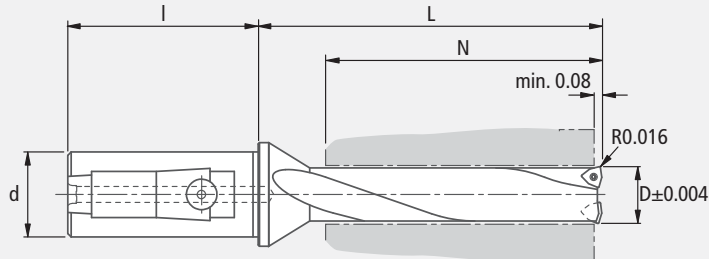
D = _____

N = 2×D

3×D

4×D

d = _____



N420023000

UB97...

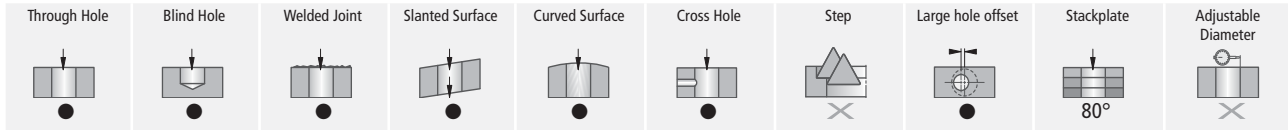
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



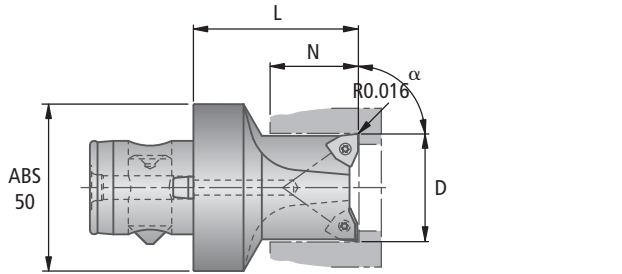
Core Drill Ø 0.551" – 1.969" (14 – 50 mm)



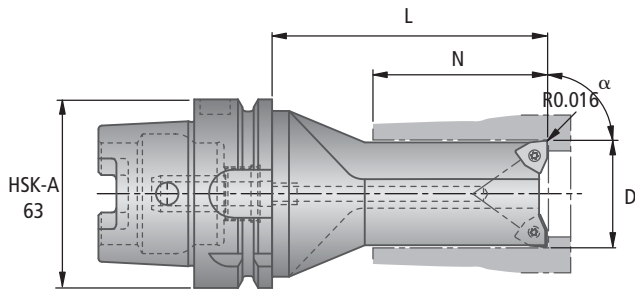
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

with ABS® or HSK-A63 Connection
Boring depth 2xD
right hand

The table shown below gives the minimum and maximum dimensions.



N420022000



N420122000

Rough boring step

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	ABS L	HSK L	Boring Depth		Insert
				N_{min}	N_{max}	
0.551 – 0.786 (14 – 19.9)	90° - 15°	N + 1.378 (N + 35)	N + 2.216 (N + 54)	0.197 (5)	2xD	W29 10...
0.787 – 0.983 (20 – 24.9)	90° - 15°	N + 1.378 (N + 35)	N + 2.216 (N + 54)	0.197 (5)	2xD	W29 18...
0.984 – 1.180 (25 – 29.9)	90° - 15°	N + 1.378 (N + 35)	N + 2.216 (N + 54)	0.197 (5)	2xD	W29 24...
1.181 – 1.969 (30 – 50.0)	90° - 15°	N + 1.575 (N + 40)	N + 2.323 (N + 59)	0.197 (5)	2xD	W29 34...

Core drilling example



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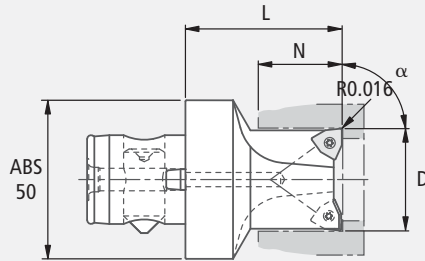
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

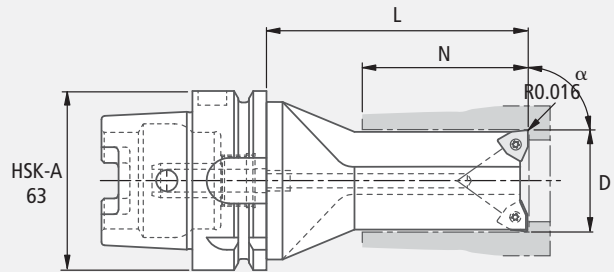
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 α = _____
 ABS50
 HSK-A63



N420022000



N420122000

UB86.../UB83...

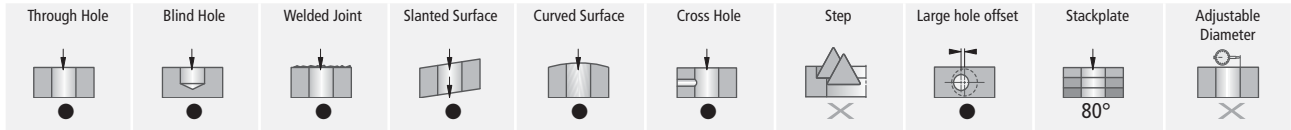
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



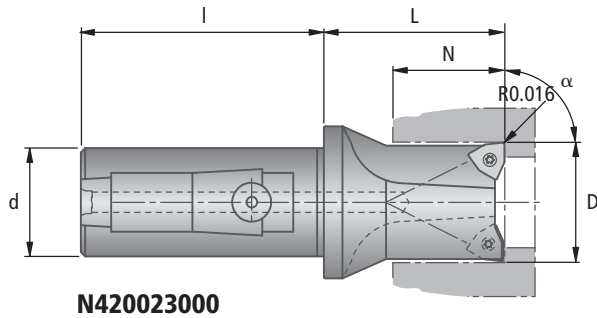
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.

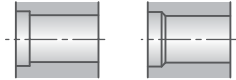


Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	$\alpha_{max-min}$	L	Boring Depth		Insert	Cylindrical shank d × l	
			N_{min}	N_{max}		1.000×2.205 (25×56)	1.250×2.362 (32×60)
0.551 – 0.786 (14 – 19.9)	90° - 15°	$N + 0.945$ (N + 24)	0.197 (5)	2×D	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	90° - 15°	$N + 0.945$ (N + 24)	0.197 (5)	2×D	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	90° - 15°	$N + 0.945$ (N + 24)	0.197 (5)	2×D	W29 24...	●	●
1.181 – 1.732 (30 – 44.0)	90° - 15°	$N + 1.142$ (N + 29)	0.197 (5)	2×D	W29 34...		●

Core drilling example



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Inquiry

Purchase Order

Company Name _____

Purchase Order No. _____

Address _____

Contact - Name _____

Signature _____

Telephone No. _____

FAX No. _____

Purchase Quantity _____

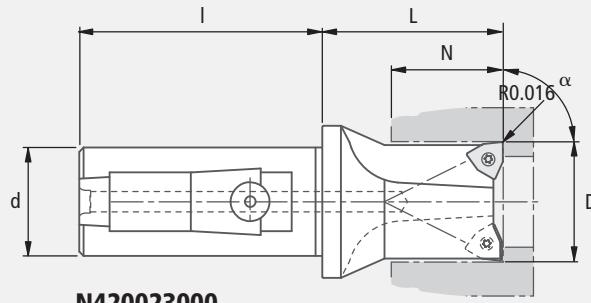
Material to be machined: _____

D = _____

N = _____

α = _____

d = _____



N420023000

UV97...

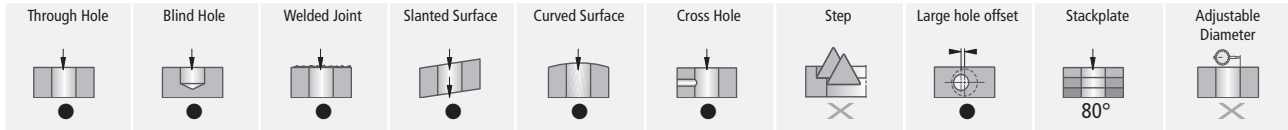
Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



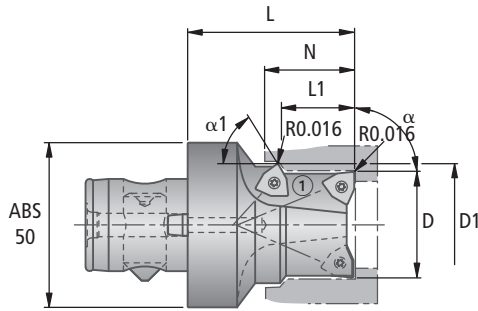
Core Drill Ø 0.551" – 1.969" (14 – 50 mm)



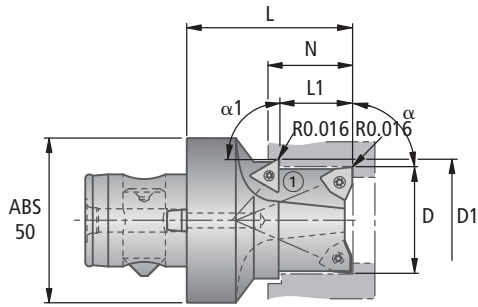
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and chamfering insert
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.



N420025000



N420027000

Rough boring step

inch (mm)

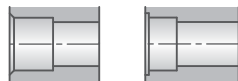
Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert	
	N_{min} with N420025000	N_{max} with N420027000			
0.551 – 0.786 (14 – 19.9)	0.394 (10)	L1	2×D	90° - 15°	W29 10...
0.787 – 0.983 (20 – 24.9)	0.394 (10)	L1	2×D	90° - 15°	W29 18...
0.984 – 1.180 (25 – 29.9)	0.591 (15)	L1	2×D	90° - 15°	W29 24...
1.181 – 1.969 (30 – 50.0)	0.591 (15)	L1	2×D	90° - 15°	W29 34...

Chamfering step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	L1	L	Insert
0.689 – 0.903 (17.5 – 22.9)	75° - 15°	0.394 (10)	$\cong N$	$N + 1.378$ (N + 35)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	75° - 15°	0.394 (10)	$\cong N$	$N + 1.378$ (N + 35)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	75° - 15°	0.591 (15)	$\cong N$	$N + 1.575$ (N + 40)	W29 24...
1.377 – 1.969 (35.0 – 50.0)	75° - 15°	0.591 (15)	$\cong N$	$N + 1.575$ (N + 40)	W29 34...
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	0.591 (15)	2×D	$N + 1.575$ (N + 40)	W59 18...

Core drilling example



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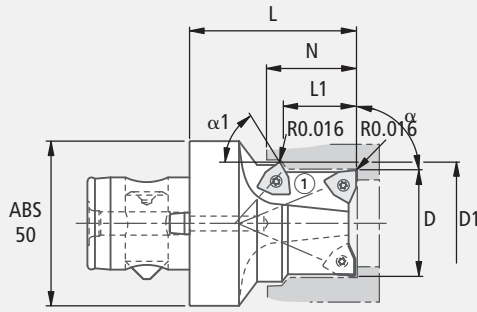
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

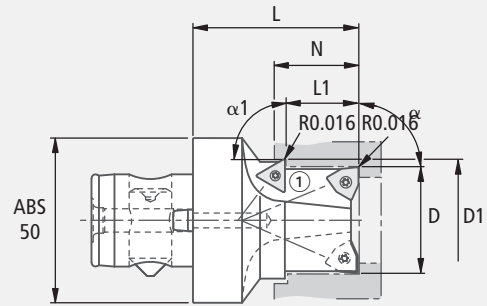
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 α = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____



N420025000



N420027000

UB86...

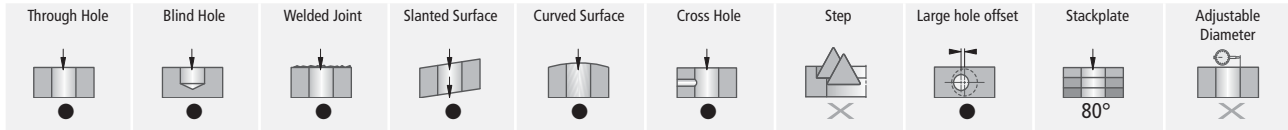
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



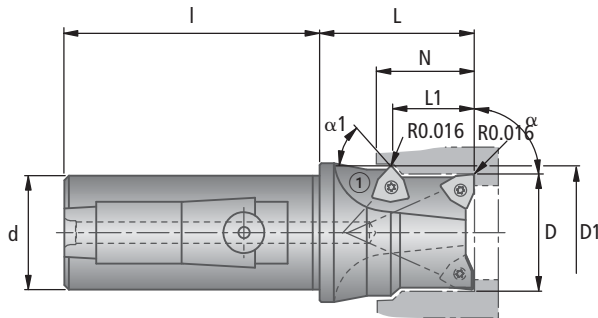
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



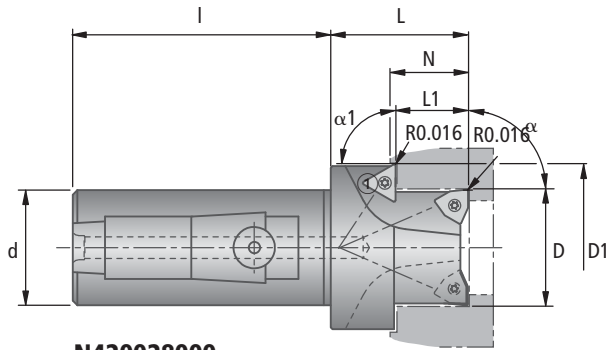
● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and chamfering insert
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.



N420026000



N420028000

Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert	Cylindrical shank $d \times l$	
	N_{min}	N_{max}			1,000×2,205 (25×56)	1,250×2,362 (32×60)
0.551 – 0.786 (14 – 19.9)	0.394 (10)	2×D	90° - 15°	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	0.394 (10)	2×D	90° - 15°	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	0.591 (15)	2×D	90° - 15°	W29 24...	●	●
1.181 – 1.732 (30 – 44.0)	0.591 (15)	2×D	90° - 15°	W29 34...		●

Chamfering step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	L1	L	Insert
0.669 – 0.903 (17.0 – 22.9)	75° - 15°	0.394 (10)	$\cong N$	$N + 0.945$ (N + 24)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	75° - 15°	0.394 (10)	$\cong N$	$N + 0.945$ (N + 24)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	75° - 15°	0.591 (15)	$\cong N$	$N + 1.142$ (N + 29)	W29 24...
1.377 – 1.732 (35.0 – 44.0)	75° - 15°	0.591 (15)	$\cong N$	$N + 1.142$ (N + 29)	W29 34...
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	0.591 (15)	$\cong N$	$N + 1.142$ (N + 29)	W59 18...

Core drilling example



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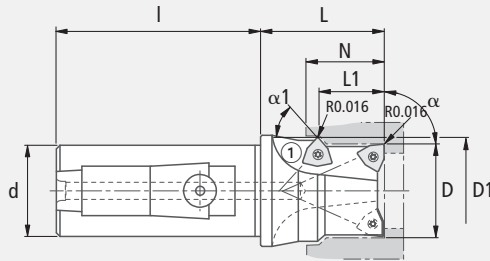
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

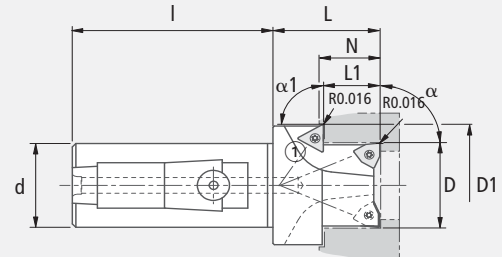
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 α = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 d = _____



N420026000



N420028000

UB97...

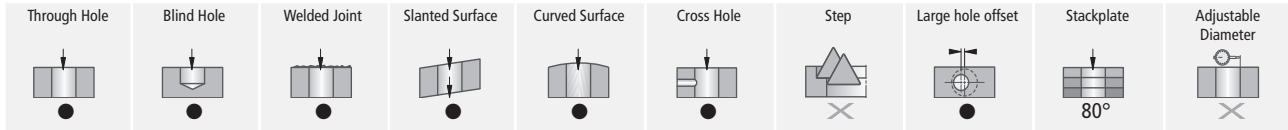
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



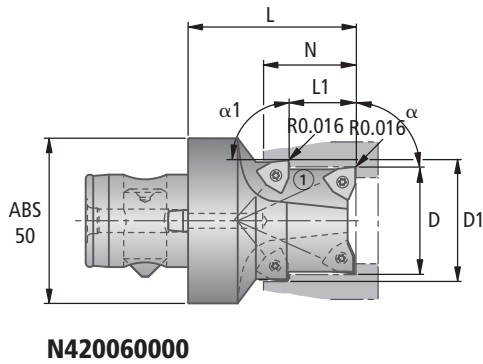
Core Drill Ø 0.551" – 1.969" (14 – 50 mm)



● highly recommended ◐ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and a stepped cutting edge
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.

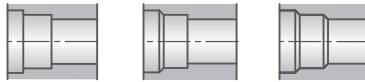


Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert
	N_{min}	N_{max}		
0.551 – 0.786 (14 – 19.9)	> L1	2×D	90° - 15°	W29 10...
0.787 – 0.983 (20 – 24.9)	> L1	2×D	90° - 15°	W29 18...
0.984 – 1.180 (25 – 29.9)	> L1	2×D	90° - 15°	W29 24...
1.181 – 1.969 (30 – 50.0)	> L1	2×D	90° - 15°	W29 34...

Core drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	L1	L	Insert
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	$\cong N$	$N + 1.378$ (N + 35)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	$\cong N$	$N + 1.378$ (N + 35)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	$\cong N$	$N + 1.575$ (N + 40)	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	$\cong N$	$N + 1.575$ (N + 40)	W29 34...

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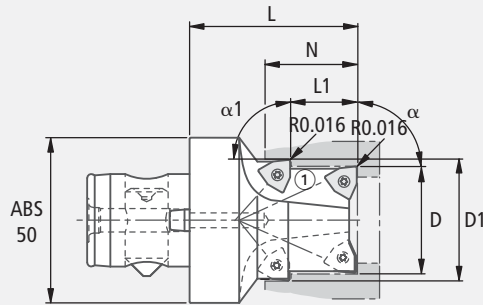
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

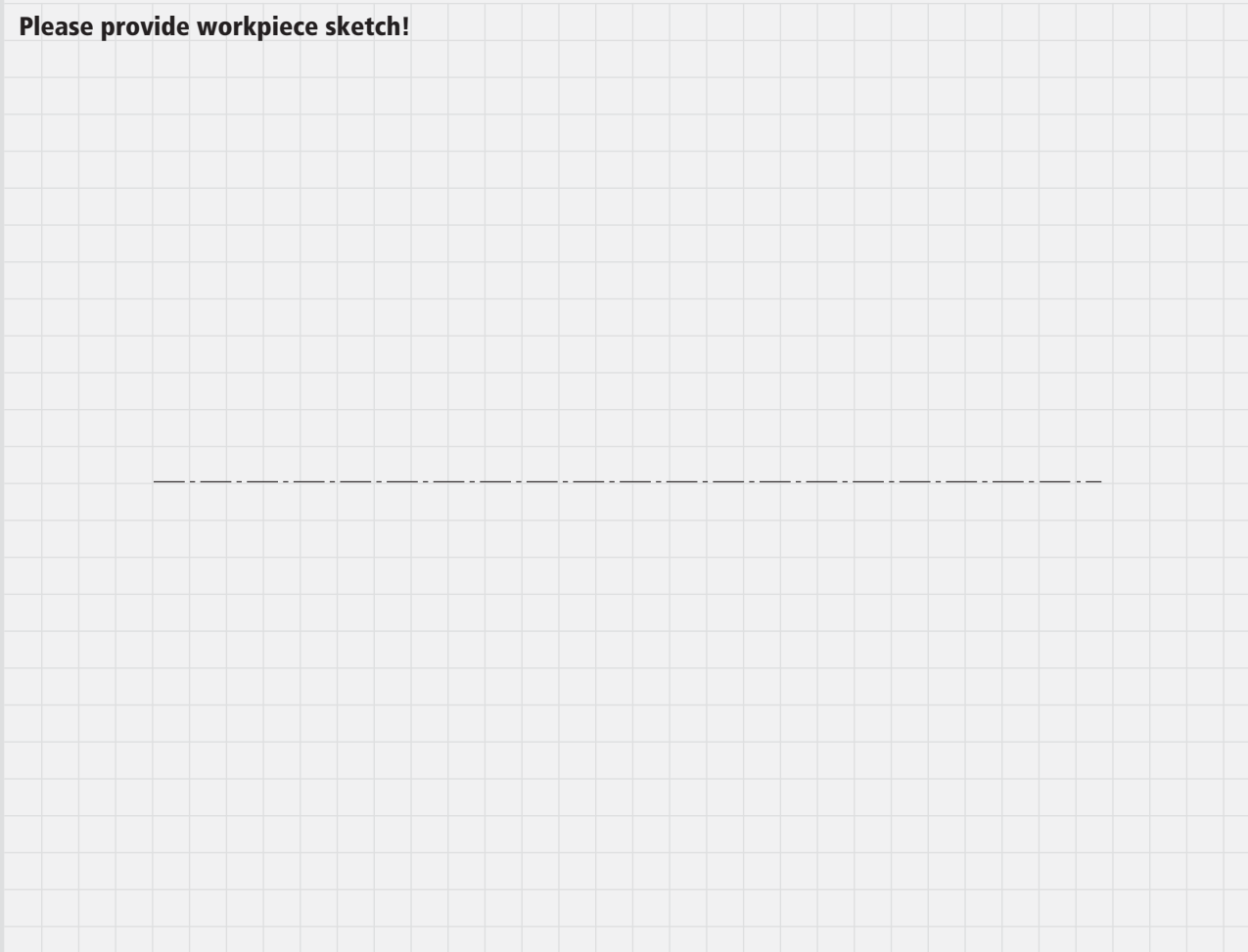
D = _____
 α = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____



N42006000

UB86...

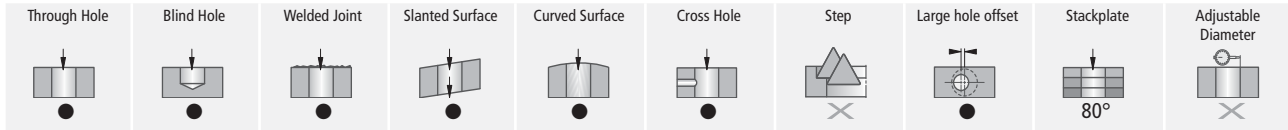
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



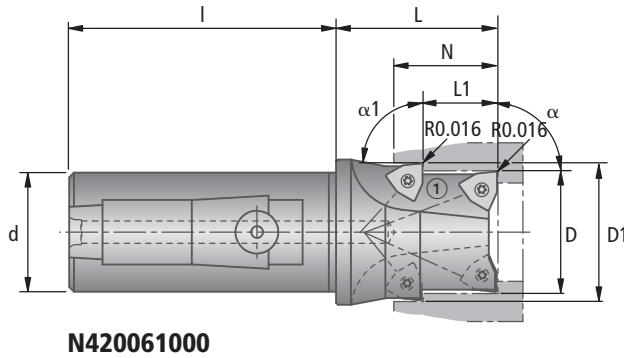
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595 and a stepped cutting edge
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.

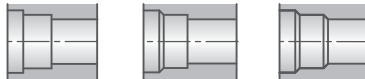


Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert	Cylindrical shank $d \times l$	
	N_{min}	N_{max}			1,000×2,205 (25×56)	1,250×2,362 (32×60)
0.551 – 0.786 (14 – 19.9)	> L1	2×D	90° - 15°	W29 10...	●	●
0.787 – 0.983 (20 – 24.9)	> L1	2×D	90° - 15°	W29 18...	●	●
0.984 – 1.180 (25 – 29.9)	> L1	2×D	90° - 15°	W29 24...	●	●
1.181 – 1.732 (30 – 44.0)	> L1	2×D	90° - 15°	W29 34...		●

Core drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	L1	L	Insert
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	< N	N + 0.945 (N + 24)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	< N	N + 0.945 (N + 24)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	< N	N + 1.142 (N + 29)	W29 24...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	0.591 (15)	< N	N + 1.142 (N + 29)	W29 34...

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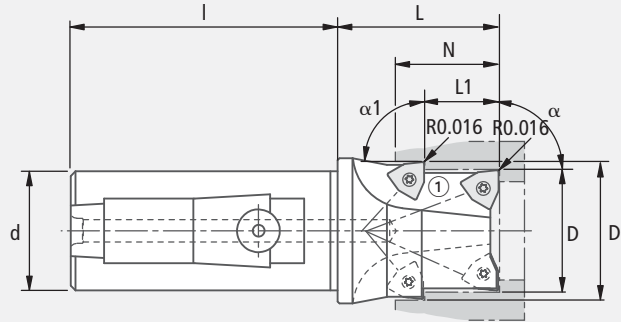
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 α = _____
 N = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 d = _____



N420061000

UB97...

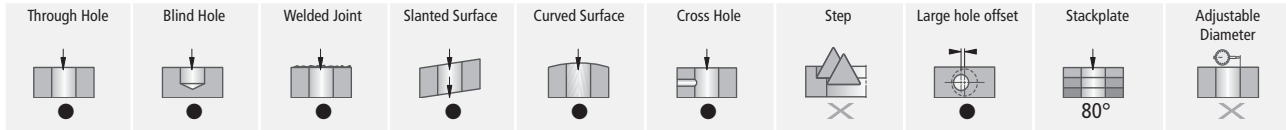
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.

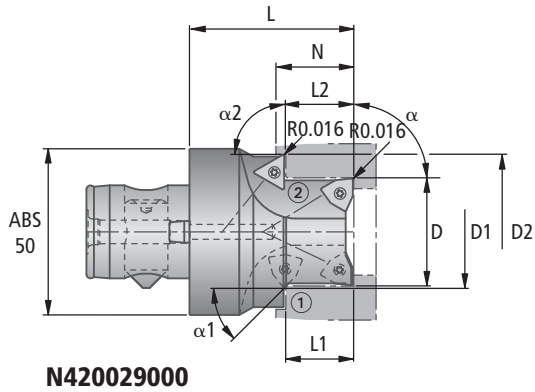


Core Drill Ø 0.551" – 1.969" (14 – 50 mm)



● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and two stepped cutting edges
Boring depth 2×D
right hand



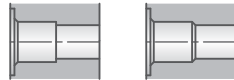
The table shown below gives the minimum and maximum dimensions.

Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert
	N_{min}	N_{max}		
0.551 – 0.786 (14 – 19.9)	L2	L2 + 2	90° - 15°	W29 10...
0.787 – 0.983 (20 – 24.9)	L2	L2 + 2	90° - 15°	W29 18...
0.984 – 1.180 (25 – 29.9)	L2	L2 + 2	90° - 15°	W29 24...
1.181 – 1.969 (30 – 50.0)	L2	L2 + 2	90° - 15°	W29 34...

Core drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	L1		Insert
		$L1_{min}$	$L1_{max}$	
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	≦ L2	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	≦ L2	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	≦ L2	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	≦ L2	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	L2		L	Insert
		$L2_{min}$	$L2_{max}$		
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	L1	2×D	$N + 1.575$ (N + 40)	W59 18...

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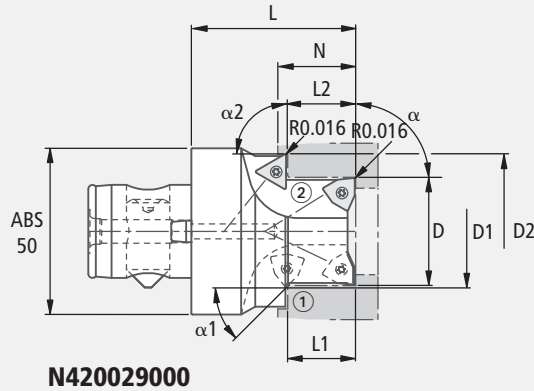
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 N = _____
 α = _____
 D1 = _____
 L1 = _____
 $\alpha 1$ = _____
 D2 = _____
 L2 = _____
 $\alpha 2$ = _____



UB86...

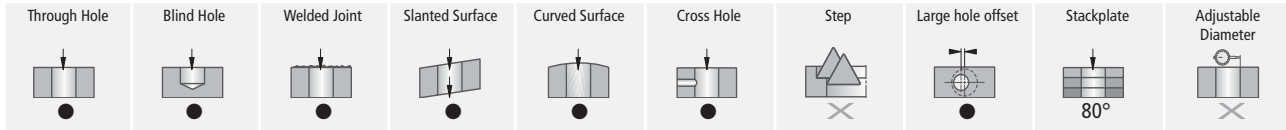
Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



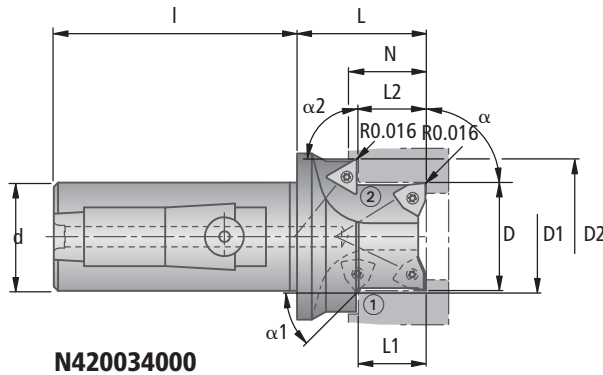
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595
and two stepped cutting edges
Boring depth 2×D
right hand

The table shown below gives the minimum and maximum dimensions.

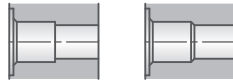


Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert	Cylindrical shank $d \times l$
	N_{min}	N_{max}			
0.551 – 0.786 (14 – 19.9)	L2	L2 + 2	90° - 15°	W29 10...	32×60
0.787 – 0.983 (20 – 24.9)	L2	L2 + 2	90° - 15°	W29 18...	32×60
0.984 – 1.180 (25 – 29.9)	L2	L2 + 2	90° - 15°	W29 24...	32×60
1.181 – 1.732 (30 – 44.0)	L2	L2 + 2	90° - 15°	W29 34...	32×60

Core drilling example



Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	L1		Insert
		$L1_{min}$	$L1_{max}$	
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	≦ L2	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	≦ L2	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	≦ L2	W29 24...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	0.591 (15)	≦ L2	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	L2		L	Insert
		$L2_{min}$	$L2_{max}$		
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	L1	2×D	$N + 1.142$ (N + 29)	W59 18...

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Inquiry

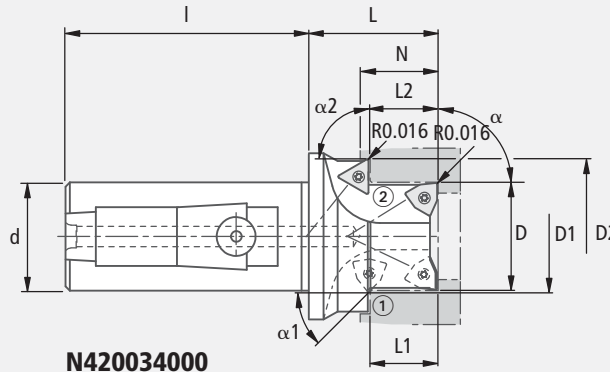
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 α = _____
 N = _____
 D1 = _____ D2 = _____
 L1 = _____ L2 = _____
 $\alpha 1$ = _____ $\alpha 2$ = _____



UB97...

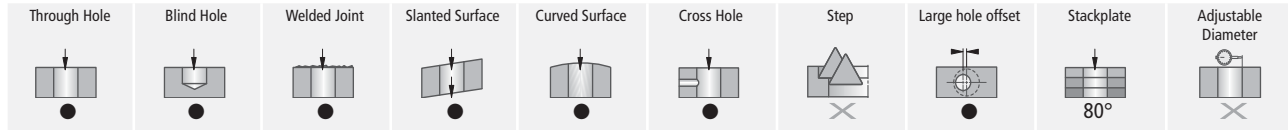
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.

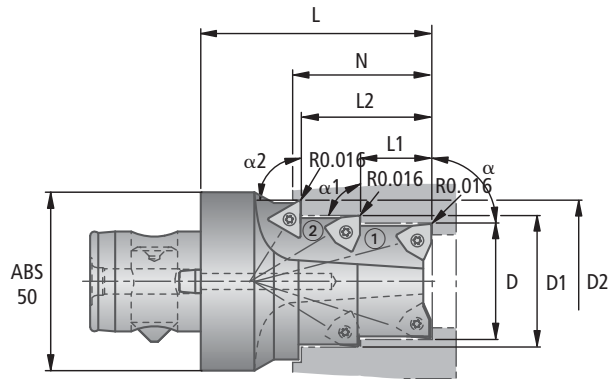


Core Drill Ø 0.551" – 1.969" (14 – 50 mm)



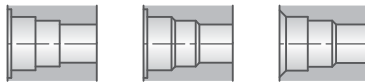
● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and two stepped cutting edges
Boring depth 2×D
right hand



N420062000

Core drilling example



The table shown below gives the minimum and maximum dimensions.

Rough boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert
	N_{min}	N_{max}		
0.551 – 0.786 (14 – 19.9)	> L2	L2 + 2	90° - 15°	W29 10...
0.787 – 0.983 (20 – 24.9)	> L2	L2 + 2	90° - 15°	W29 18...
0.984 – 1.180 (25 – 29.9)	> L2	L2 + 2	90° - 15°	W29 24...
1.181 – 1.969 (30 – 50.0)	> L2	L2 + 2	90° - 15°	W29 34...

Step ①

inch (mm)

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	$L1_{min}$	$L1_{max}$	Insert
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	L2 - 0.394 (L2 - 10)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	L2 - 0.394 (L2 - 10)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	L2 - 0.591 (L2 - 15)	W29 24...
1.377 – 1.969 (35.0 – 50.0)	90° - 15°	0.591 (15)	L2 - 0.591 (L2 - 15)	W29 34...

Step ②

inch (mm)

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	$L2_{min}$	$L2_{max}$	L	Insert
1.181 – 1.969 (30.0 – 50.0)	90° - 15°	L1 + 0.591 (L1 + 15)	2×D	N + 1.575 (N + 40)	W59 18...

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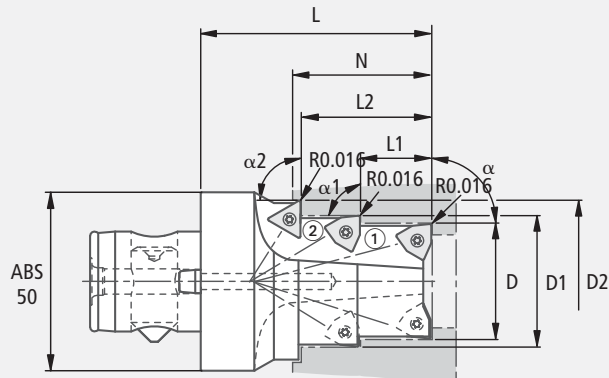
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 L = _____
 α = _____
 N = _____
 D1 = _____ D2 = _____
 L1 = _____ L2 = _____
 $\alpha 1$ = _____ $\alpha 2$ = _____



N420062000

UB86...

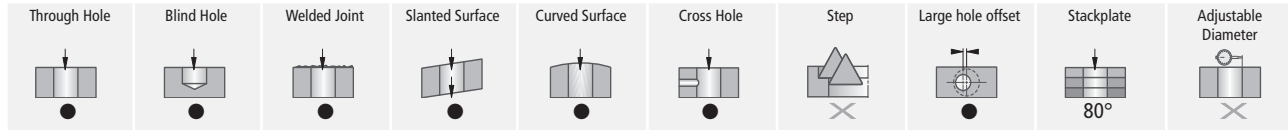
Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



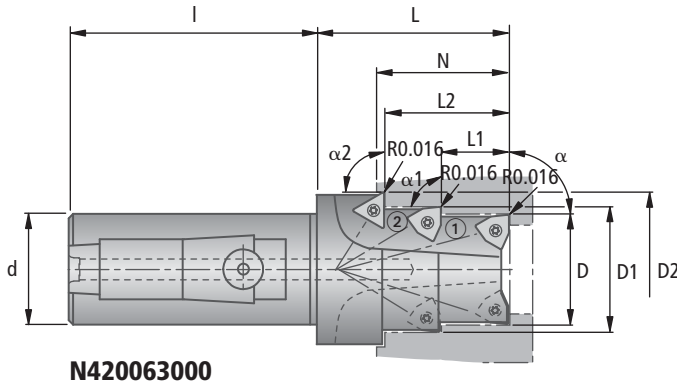
Core Drill Ø 0.551" – 1.732" (14 – 44 mm)



● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with Cylindrical shank similar to DIN 6535 HE, 1835 E and 6595
and two stepped cutting edges
Boring depth 2×D
right hand

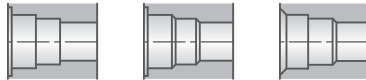
The table shown below gives the minimum and maximum dimensions.



Rough boring step

Boring range $D_{min} - D_{max}$	Boring Depth		$\alpha_{max-min}$	Insert	Cylindrical shank $d \times l$
	N_{min}	N_{max}			
0.551 – 0.786 (14 – 19.9)	> L2	L2 + 2	90° - 15°	W29 10...	32×60
0.787 – 0.983 (20 – 24.9)	> L2	L2 + 2	90° - 15°	W29 18...	32×60
0.984 – 1.180 (25 – 29.9)	> L2	L2 + 2	90° - 15°	W29 24...	32×60
1.181 – 1.732 (30 – 44.0)	> L2	L2 + 2	90° - 15°	W29 34...	32×60

Core drilling example



Step ①

Boring range $D1_{min} - D1_{max}$	$\alpha1_{max-min}$	L1		Insert
		$L1_{min}$	$L1_{max}$	
0.669 – 0.903 (17.0 – 22.9)	90° - 15°	0.394 (10)	L2 - 0.394 (L2 - 10)	W29 10...
0.904 – 1.180 (23.0 – 29.9)	90° - 15°	0.394 (10)	L2 - 0.394 (L2 - 10)	W29 18...
1.181 – 1.376 (30.0 – 34.9)	90° - 15°	0.591 (15)	L2 - 0.591 (L2 - 15)	W29 24...
1.377 – 1.732 (35.0 – 44.0)	90° - 15°	0.591 (15)	L2 - 0.591 (L2 - 15)	W29 34...

Step ②

Boring range $D2_{min} - D2_{max}$	$\alpha2_{max-min}$	L2		L	Insert
		$L2_{min}$	$L2_{max}$		
1.181 – 1.732 (30.0 – 44.0)	90° - 15°	L1 + 0.591 (L1 + 15)	2×D	N + 1.142 (N + 29)	W59 18...

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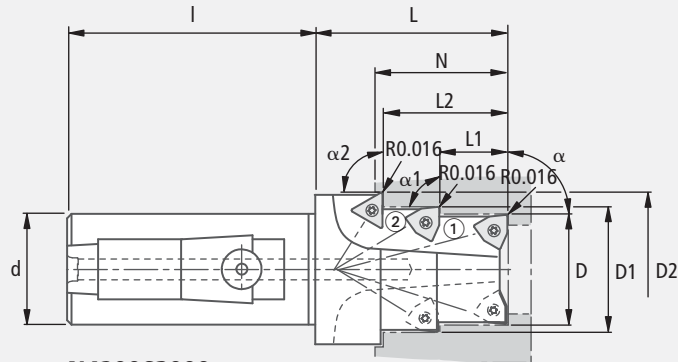
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

D = _____
 L = _____
 α = _____
 N = _____
 D1 = _____ D2 = _____
 L1 = _____ L2 = _____
 $\alpha 1$ = _____ $\alpha 2$ = _____



UB97...

Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



Boring Bar \varnothing 0.315" – 1.102" (8 – 28 mm)

L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
	●	●	○	○	✗	● up to 2xD	● up to 2xD	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

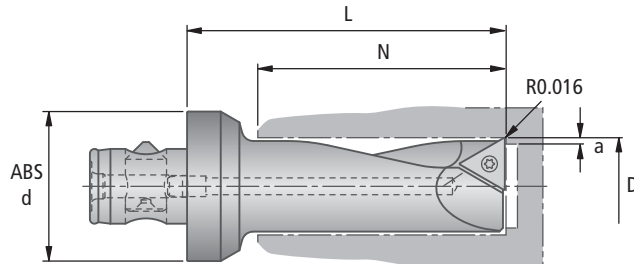
with **ABS® Connection for machining steel**

Boring depth 4xD, right hand,

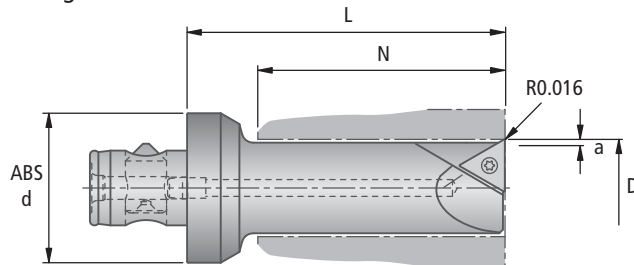
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.

Blind bore



Through bore



Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		L	a_{max}	Insert	ABS d
	N_{min}	N_{max}				
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W30 04...	25
0.472 – 0.551 (12 – 14.0)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W30 14...	25
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W30 04...	32
0.472 – 0.945 (12 – 24.0)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W30 14...	32
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.787$ (N + 20)	0.012 (0.3)	W30 04...	40
0.472 – 1.102 (12 – 28.0)	0.591 (15)	4xD	$N + 0.787$ (N + 20)	0.012 (0.3)	W30 14...	40

N420030000

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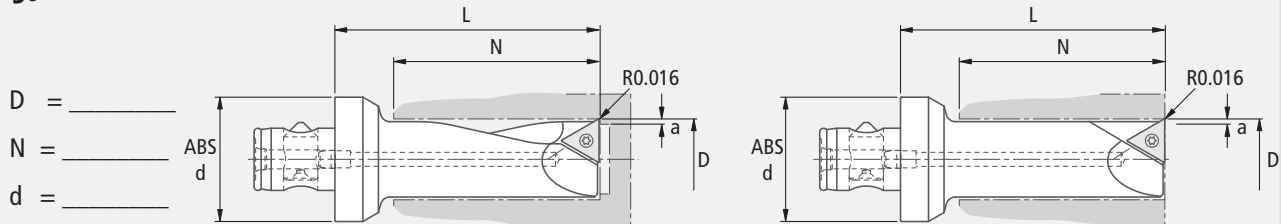
Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Steel Machining



N420030000

UB00...

Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



Boring Bar \varnothing 0.315" – 0.945" (8 – 24 mm)

L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
	●	●	○	○	×	● up to 2xD	● up to 2xD	×

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) × not recommended

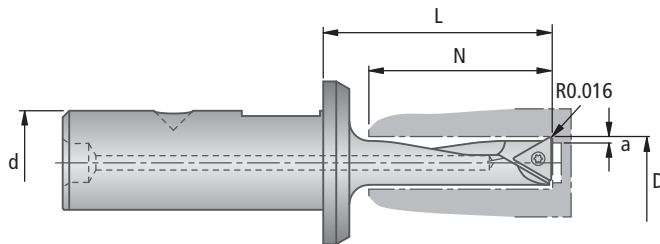
with KFK-UJ Shank for machining steel

Boring depth 4xD, right hand,

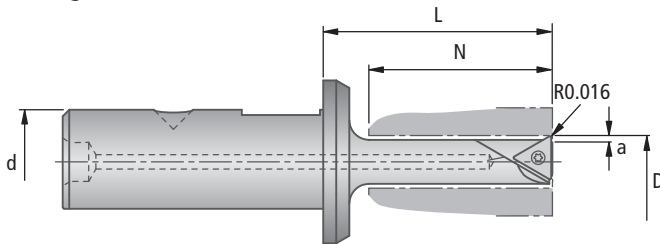
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.

Blind bore



Through bore



Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		L	a_{max}	Insert	KFK-UJ Size d
	N_{min}	N_{max}				
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.354$ (N + 9)	0.012 (0.3)	W30 04...	0.630 (16)
0.472 – 0.945 (12 – 24.0)	0.591 (15)	4xD	$N + 0.354$ (N + 9)	0.012 (0.3)	W30 14...	0.630 (16)

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Inquiry

Purchase Order

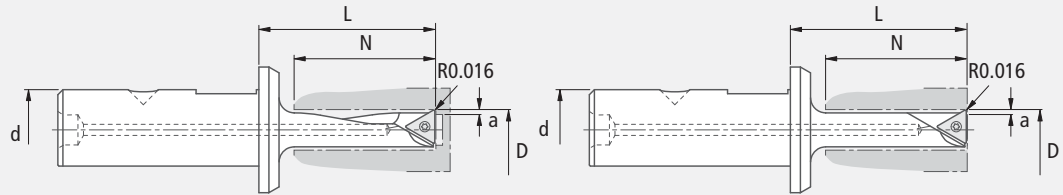
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Steel Machining

D = _____
 N = _____



N420031000

UB00...

Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.





Boring Bar \varnothing 0.315" – 1.102" (8 – 28 mm)

L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
	●	●	○	○	✗	● up to 2xD	● up to 2xD	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

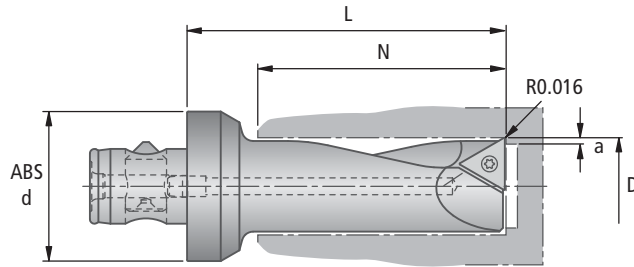
with **ABS® Connection for machining aluminum**

Boring depth 4xD, right hand,

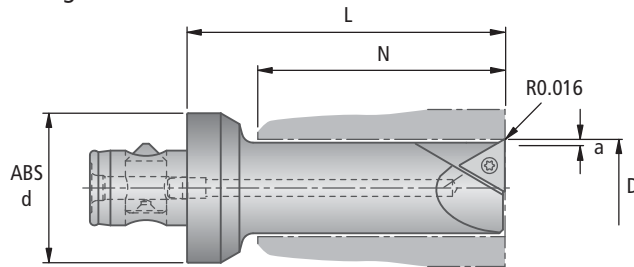
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.

Blind bore



Through bore



Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		L	a_{max}	Insert	ABS d
	N_{min}	N_{max}				
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W32 03... TPHB/TPHX 06	25
0.472 – 0.551 (12 – 14.0)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W32 13... TPHB/TPHX 09	25
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W32 03... TPHB/TPHX 06	32
0.472 – 0.945 (12 – 24.0)	0.591 (15)	4xD	$N + 0.669$ (N + 17)	0.012 (0.3)	W32 13... TPHB/TPHX 09	32
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.787$ (N + 20)	0.012 (0.3)	W32 03... TPHB/TPHX 06	40
0.472 – 1.102 (12 – 28.0)	0.591 (15)	4xD	$N + 0.787$ (N + 20)	0.012 (0.3)	W32 13... TPHB/TPHX 09	40

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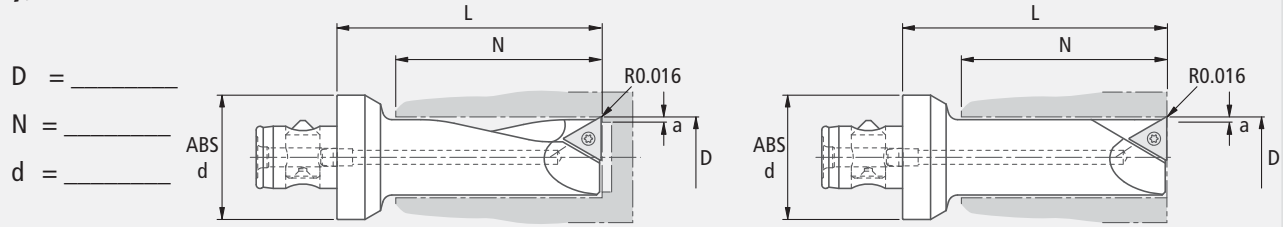
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Aluminum Machining



N420030000

UB00...

Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.





Boring Bar \varnothing 0.315" – 0.945" (8 – 24 mm)

L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
	●	●	○	○	✗	● up to 2xD	● up to 2xD	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

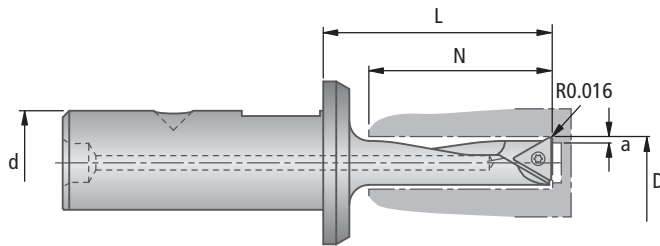
with KFK-UJ Shank for machining aluminum

Boring depth 4xD, right hand,

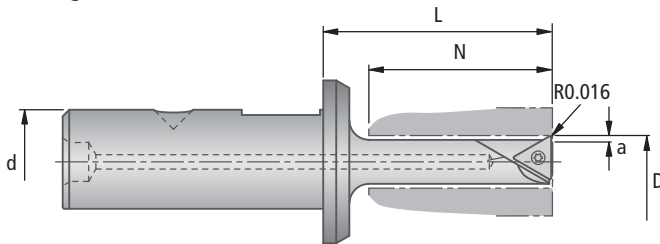
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.

Blind bore



Through bore



Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	Boring Depth		L	a_{max}	Insert	KFK-UJ Size d
	N_{min}	N_{max}				
0.315 – 0.471 (8 – 11.9)	0.591 (15)	4xD	$N + 0.354$ (N + 9)	0.012 (0.3)	W32 03... TPHB/TPHX 06	0.630 (16)
0.472 – 0.945 (12 – 24.0)	0.591 (15)	4xD	$N + 0.354$ (N + 9)	0.012 (0.3)	W32 13... TPHB/TPHX 09	0.630 (16)

N420031000

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Inquiry

Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

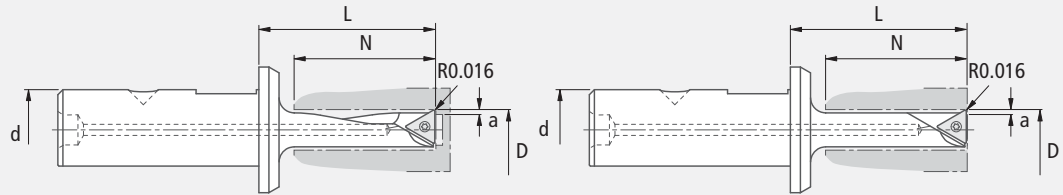
Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Aluminum Machining

D = _____

N = _____



N420031000

UB00...

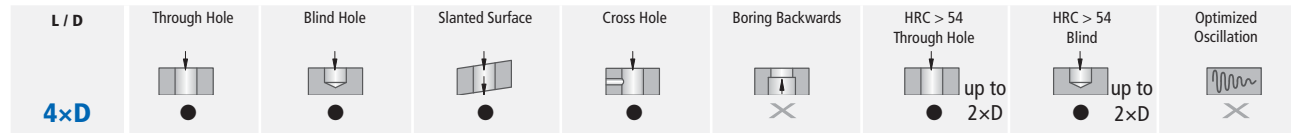
Please provide workpiece sketch!

Grid area for workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



Boring Bar \varnothing 0.315" – 1.102" (8 – 28 mm)

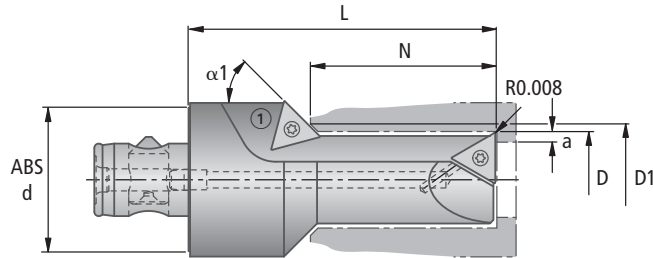


● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and chamfering insert for machining steel

Boring depth 4xD, right hand,
for use with KOMET M020 (KFK) and M040
micro adjustable heads

The table shown below gives the minimum and maximum dimensions.



N420032000

Step ① can only be used for chamfering the rough boring step.

Finish boring step

inch (mm)			
Boring range $D_{min} - D_{max}$	a_{max}	Insert	ABS d
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W30 04...	25
0.472 – 0.551 (12 – 14.0)	0.012 (0.3)	W30 14...	25
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W30 04...	32
0.472 – 0.945 (12 – 24.0)	0.012 (0.3)	W30 14...	32
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W30 04...	40
0.472 – 1.102 (12 – 28.0)	0.012 (0.3)	W30 14...	40

Boring range \varnothing 0.315" – 1.102" (8 – 28 mm)

	$\alpha 1$	Max. cutting width s_{max} Inch (mm)	Max. chamfering width b_{max} Inch (mm)
	75°	0.051 (1.3)	0.012 (0.3)
	60°	0.047 (1.2)	0.024 (0.6)
	45°	0.039 (1.0)	0.039 (1.0)
	30°	0.024 (0.6)	0.047 (1.2)
	15°	0.012 (0.3)	0.051 (1.3)

Chamfering step ①

inch (mm)					
Boring range $D_{min} - D_{max}$	$\alpha 1_{max-min}$	Boring Depth		L	Insert
		N_{min}	N_{max}		
0.315 – 0.393 (8 – 9.9)	75° - 50°	0.591 (15)	4xD	$N + 1.063$ (N + 27)	W30 04...
0.394 – 0.590 (10 – 14.9)	75° - 45°	0.591 (15)	4xD	$N + 1.063$ (N + 27)	W30 04...
0.591 – 0.747 (15 – 18.9)	75° - 30°	0.591 (15)	4xD	$N + 1.063$ (N + 27)	W30 04...
0.748 – 1.102 (19 – 28.0)	75° - 15°	0.591 (15)	4xD	$N + 1.063$ (N + 27)	W30 04...

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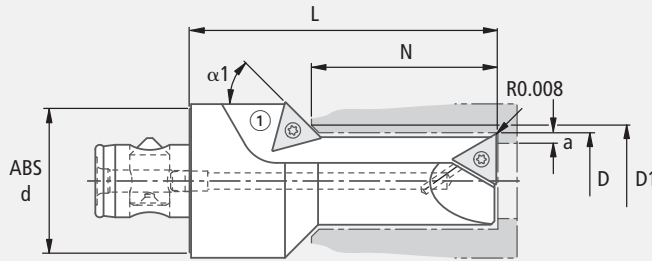
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Steel Machining

D = _____
 N = _____
 D1 = _____
 $\alpha 1$ = _____
 d = _____



N420032000

UB85...

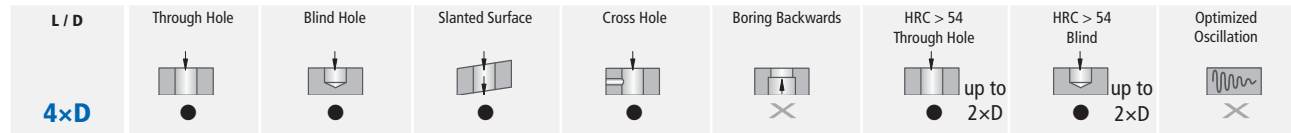
Please provide workpiece sketch!

A large grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.



Boring Bar Ø 0.315" – 1.102" (8 – 28 mm)

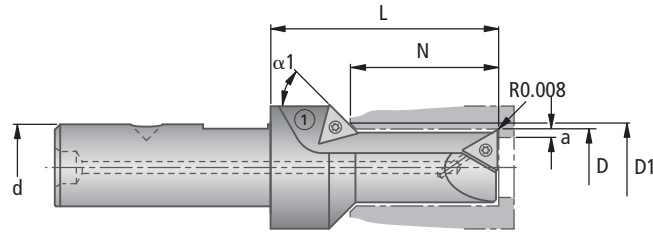


● highly recommended ○ recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with KFK-UJ Shank and chamfering insert for machining steel

Boring depth 4×D, right hand,
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.



N420033000

Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	a_{max}	Insert	KFK-UJ Size d
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W30 04...	0.630 (16)
0.472 – 1.102 (12 – 28.0)	0.012 (0.3)	W30 14...	0.630 (16)

Step ① can only be used for chamfering the rough boring step.

Chamfering step ①

inch (mm)

Boring range $D_{min} - D_{max}$	$\alpha 1_{max-min}$	Boring Depth		L	Insert
		N_{min}	N_{max}		
0.315 – 0.393 (8 – 9.9)	75° - 50°	0.591 (15)	4×D	$N + 1.063$ (N + 27)	W30 04...
0.394 – 0.590 (10 – 14.9)	75° - 45°	0.591 (15)	4×D	$N + 1.063$ (N + 27)	W30 04...
0.591 – 0.747 (15 – 18.9)	75° - 30°	0.591 (15)	4×D	$N + 1.063$ (N + 27)	W30 04...
0.748 – 1.102 (19 – 28.0)	75° - 15°	0.591 (15)	4×D	$N + 1.063$ (N + 27)	W30 04...

Boring range Ø 0.315" – 1.102" (8 – 28 mm)

	$\alpha 1$	Max. cutting width s_{max} Inch (mm)	Max. chamfering width b_{max} Inch (mm)
	75°	0.051 (1.3)	0.012 (0.3)
	60°	0.047 (1.2)	0.024 (0.6)
	45°	0.039 (1.0)	0.039 (1.0)
	30°	0.024 (0.6)	0.047 (1.2)
	15°	0.012 (0.3)	0.051 (1.3)

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Inquiry

Purchase Order

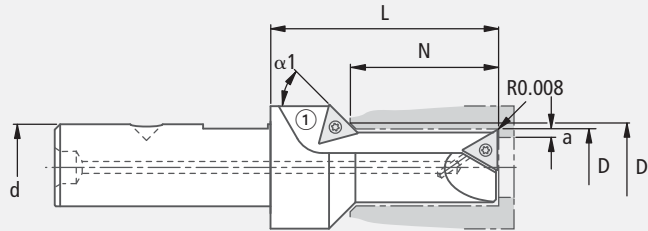
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Steel Machining

D = _____
 N = _____
 D1 = _____
 $\alpha 1$ = _____



N420033000

UB98...

Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.





Boring Bar Ø 0.315" – 1.102" (8 – 28 mm)

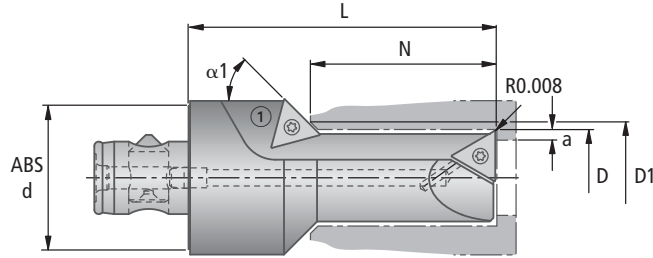
L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
						up to 2xD	up to 2xD	

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✕ not recommended

with ABS® Connection and chamfering insert for machining aluminum

Boring depth 4xD, right hand,
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.



N420032000

Step ① can only be used for chamfering the rough boring step.

Finish boring step

Boring range $D_{min} - D_{max}$	a_{max}	Insert	ABS d
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W32 03... TPHB/TPHX 06	25
0.472 – 0.551 (12 – 14.0)	0.012 (0.3)	W32 13... TPHB/TPHX 09	25
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W32 03... TPHB/TPHX 06	32
0.472 – 0.945 (12 – 24.0)	0.012 (0.3)	W32 13... TPHB/TPHX 09	32
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W32 03... TPHB/TPHX 06	40
0.472 – 1.102 (12 – 28.0)	0.012 (0.3)	W32 13... TPHB/TPHX 09	40

Boring range Ø 0.315" – 1.102" (8 – 28 mm)

	$\alpha 1$	Max. cutting width s_{max} Inch (mm)	Max. chamfering width b_{max} Inch (mm)
	75°	0.051 (1.3)	0.012 (0.3)
	60°	0.047 (1.2)	0.024 (0.6)
	45°	0.039 (1.0)	0.039 (1.0)
	30°	0.024 (0.6)	0.047 (1.2)
	15°	0.012 (0.3)	0.051 (1.3)

Chamfering step ①

Boring range $D_{min} - D_{max}$	$\alpha 1_{max-min}$	Boring Depth N_{min} N_{max}		L	Insert
0.315 – 0.393 (8 – 9.9)	75° - 50°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.394 – 0.590 (10 – 14.9)	75° - 45°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.591 – 0.747 (15 – 18.9)	75° - 30°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.748 – 1.102 (19 – 28.0)	75° - 15°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...

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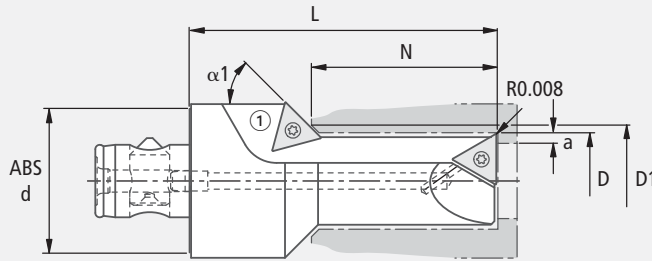
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Aluminum Machining

D = _____
 N = _____
 D1 = _____
 $\alpha 1$ = _____
 d = _____



N420032000

UB85...

Please provide workpiece sketch!

Grid area for providing a workpiece sketch.

Delivery: Basic tool body. Insert(s) not included.





Boring Bar Ø 0.315" – 1.102" (8 – 28 mm)

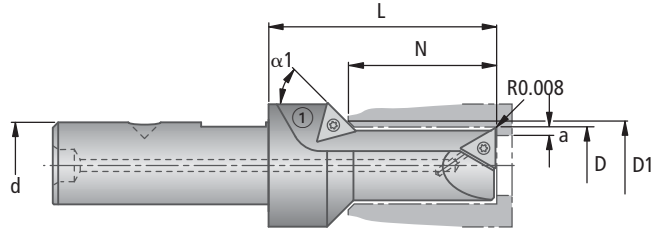
L / D	Through Hole	Blind Hole	Slanted Surface	Cross Hole	Boring Backwards	HRC > 54 Through Hole	HRC > 54 Blind	Optimized Oscillation
4xD								
	●	●	○	○	✗	● up to 2xD	● up to 2xD	✗

● highly recommended ● recommended ○ may be suitable: refer to Application Recommendations (Chapter 8) ✗ not recommended

with KFK-UJ Shank and chamfering insert for machining aluminum

Boring depth 4xD, right hand,
for use with KOMET M020 (KFK) and M040 micro adjustable heads

The table shown below gives the minimum and maximum dimensions.



N420033000

Finish boring step

inch (mm)

Boring range $D_{min} - D_{max}$	a_{max}	Insert	KFK-UJ Size d
0.315 – 0.471 (8 – 11.9)	0.012 (0.3)	W32 03... TPHB/TPHX 06	0.630 (16)
0.472 – 1.102 (12 – 28.0)	0.012 (0.3)	W32 13... TPHB/TPHX 09	0.630 (16)

Step ① can only be used for chamfering the rough boring step.

Chamfering step ①

inch (mm)

Boring range $D_{min} - D_{max}$	$\alpha 1_{max-min}$	Boring Depth		L	Insert
		N_{min}	N_{max}		
0.315 – 0.393 (8 – 9.9)	75° - 50°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.394 – 0.590 (10 – 14.9)	75° - 45°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.591 – 0.747 (15 – 18.9)	75° - 30°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...
0.748 – 1.102 (19 – 28.0)	75° - 15°	0.591 (15)	4xD	N + 1.063 (N + 27)	W30 04...

Boring range Ø 0.315" – 1.102" (8 – 28 mm)

	$\alpha 1$	Max. cutting width s_{max} Inch (mm)	Max. chamfering width b_{max} Inch (mm)
	75°	0.051 (1.3)	0.012 (0.3)
	60°	0.047 (1.2)	0.024 (0.6)
	45°	0.039 (1.0)	0.039 (1.0)
	30°	0.024 (0.6)	0.047 (1.2)
	15°	0.012 (0.3)	0.051 (1.3)

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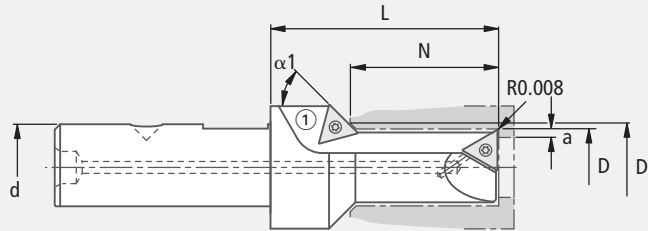
Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order No. _____
 Signature _____
 FAX No. _____

Material to be machined: _____

Aluminum Machining

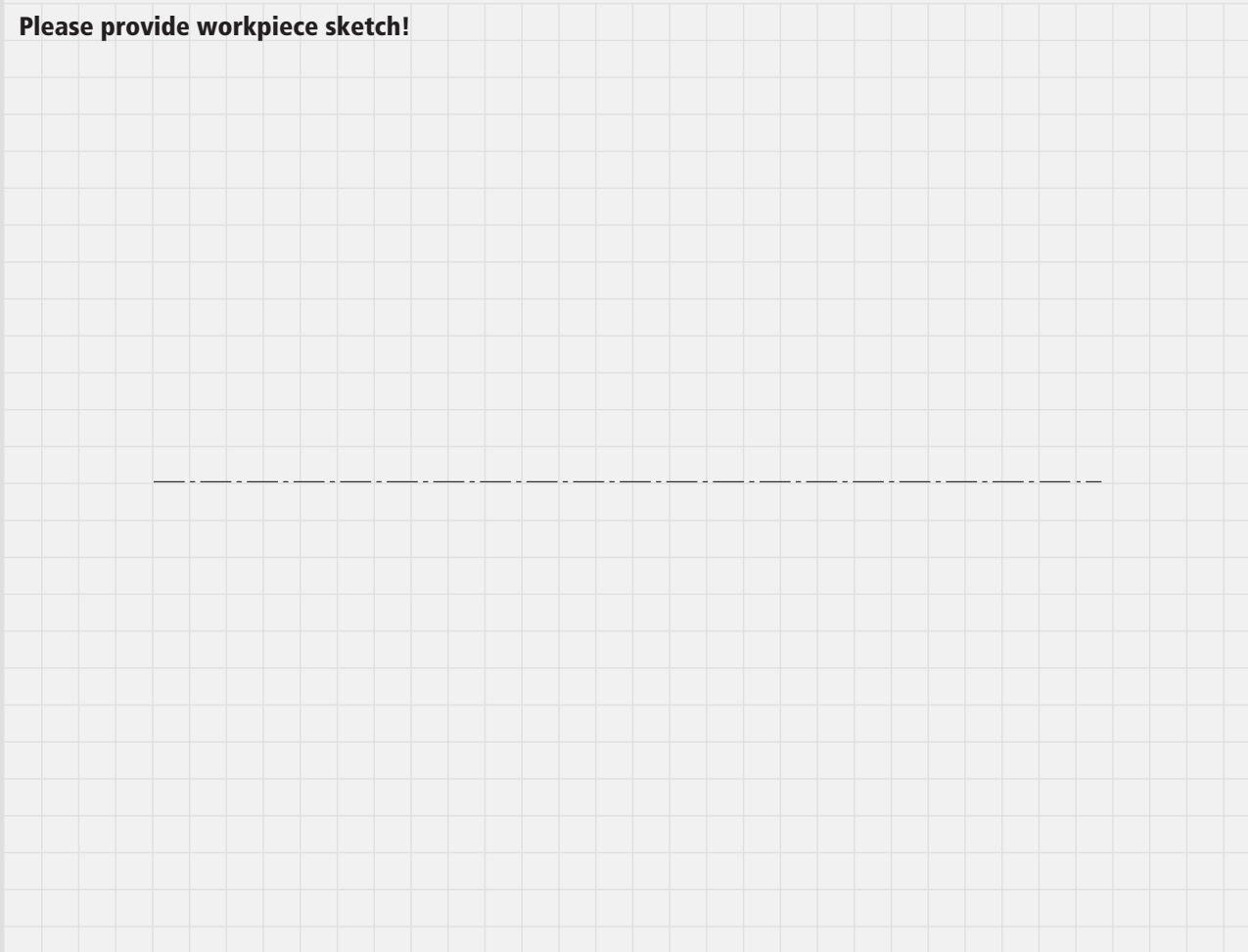
D = _____
 N = _____
 D1 = _____
 $\alpha 1$ = _____



N420033000

UB98...

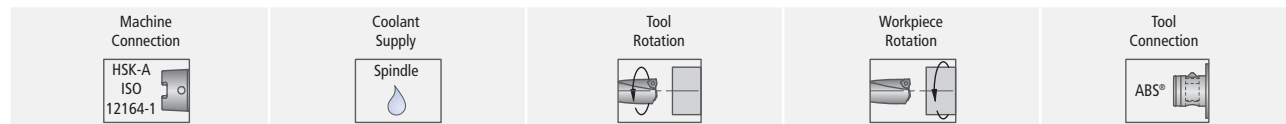
Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.

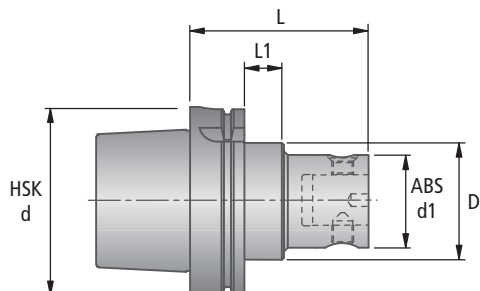


HSK-A



Adapter with ABS® Connection

The table shown below gives the minimum and maximum dimensions.



N410004...

inch (mm)

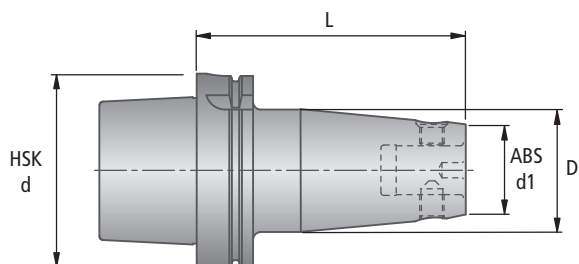
Number	HSK d	ABS d1	D max	L min	L max
N41 0004000	63	25-32-40-50-63	3.307 (84)	1×D	7.283 (185)
N41 0004100	100	25-32-40-50-63-80	3.937 (100)	1×D	7.874 (200)

Note: The clearance for the HSK tool changer is per HSK DIN 69893 A.

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

Also possible: $L1_{max} = L$ and $d = D$

Adapter with ABS® Connection conical version



N410004...

inch (mm)

Number	HSK d	ABS d1	D max	L min	L max
N41 0001000	63	25-32-40-50-63	3.307 (84)	1×D	7.480 (190)
N41 0001100	100	25-32-40-50-63-80	3.937 (100)	1×D	7.874 (200)

Note: The clearance for the HSK tool changer is per HSK DIN 69893 A.

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

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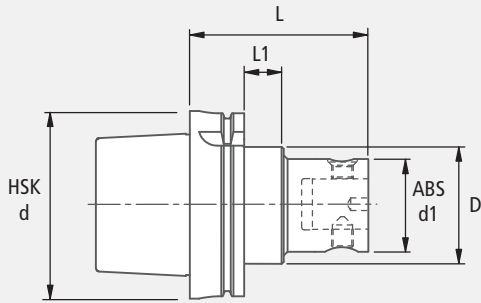
Inquiry

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

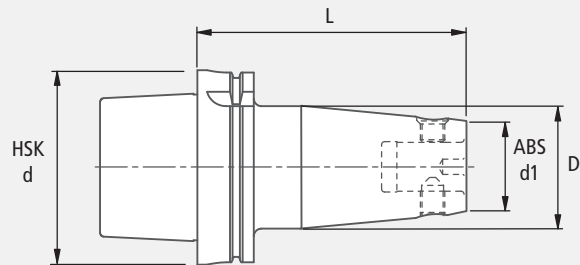
Purchase Order No. _____
 Signature _____
 FAX No. _____

- HSK63 (N410004000) ABS d1 = ____ L = ____
 HSK100 (N410004100) D = ____ L1 = ____



UA... N410004...

- HSK63 (N410001000) ABS d1 = ____
 HSK100 (N410001100) D = ____ L = ____



UA... N410001...

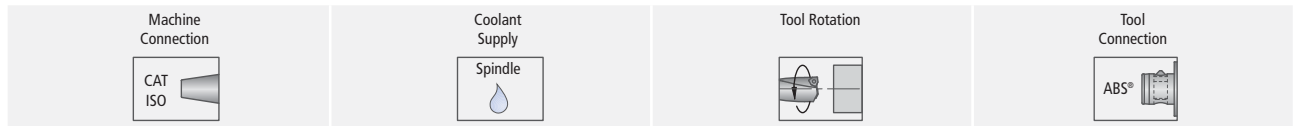
Please provide workpiece sketch!



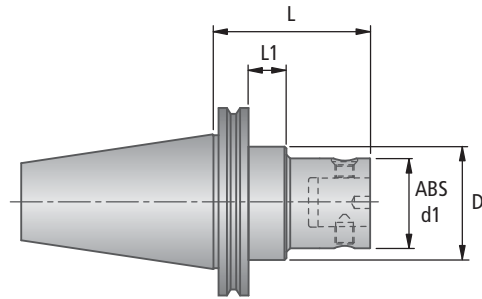
Delivery: Basic tool body. Insert(s) not included.



DIN 69871-AD/B & CAT



Taper shank adapter with ABS® Connection



N410005...

The table shown below gives the minimum and maximum dimensions.

inch (mm)

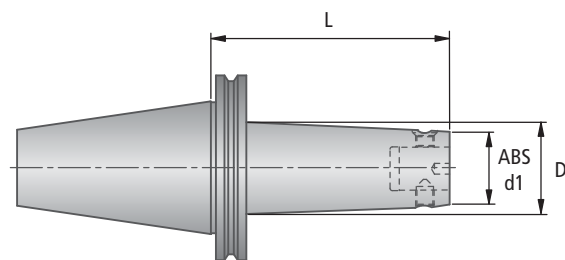
Number	Taper	ABS d1	D max	L min	L max
N41 0005000	ISO40	25-32-40-50-63	2.480 (63)	1×D	7.087 (180)
N41 0005100	ISO50	25-32-40-50-63-80	3.150 (80)	1×D	7.874 (200)
N41 0005000	CAT40	25-32-40-50-63	2.480 (63)	1×D	7.087 (180)
N41 0005100	CAT50	25-32-40-50-63-80	3.150 (80)	1×D	7.874 (200)

Note: The clearance for the HSK tool changer is per HSK DIN 69893 AD/B.

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

Also possible: $L1_{max} = L$ and $d = D$

Taper shank adapter with ABS® Connection conical version



N410002...

inch (mm)

Number	Taper	ABS d1	D max	L min	L max
N41 0002000	ISO40	25-32-40-50-63	2.480 (63)	1×D	7.087 (180)
N41 0002100	ISO50	25-32-40-50-63-80	3.150 (80)	1×D	7.874 (200)
N41 0002000	CAT40	25-32-40-50-63	2.480 (63)	1×D	7.087 (180)
N41 0002100	CAT50	25-32-40-50-63-80	3.150 (80)	1×D	7.874 (200)

Note: The clearance for the HSK tool changer is per HSK DIN 69893 AD/B.

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

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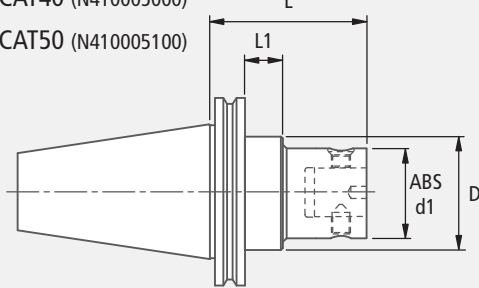
Inquiry

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

Purchase Order

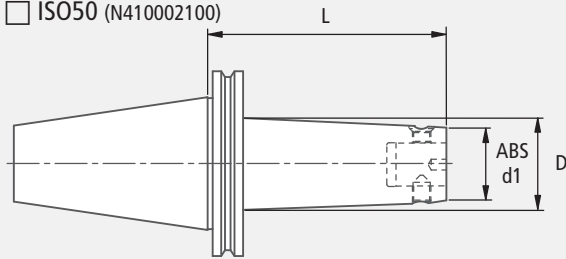
Purchase Order No. _____
 Signature _____
 FAX No. _____

- ISO40 (N410005000) ABS d1 = ____ L = ____
- ISO50 (N410005100) D = ____ L1 = ____
- CAT40 (N410005000)
- CAT50 (N410005100)



UA... N410005...

- ISO40 (N410002000) ABS d1 = ____
- ISO50 (N410002100) D = ____ L = ____
- ISO40 (N410002000)
- ISO50 (N410002100)



UA... N410002...

Please provide workpiece sketch!

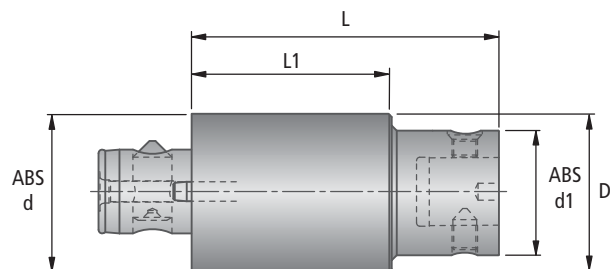


Delivery: Basic tool body. Insert(s) not included.





Extension / Reducer with ABS® Connection



N410006...

The table shown below gives the minimum and maximum dimensions.

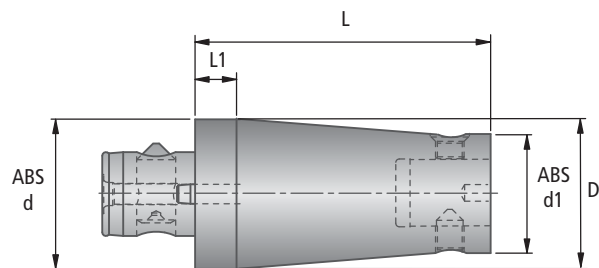
Number	ABS d	ABS d1	D max	L min	inch (mm)
					L max
N41 006000	25	25	1.339 (34)	0.394 (10)	4.134 (105)
N41 006100	32	25-32	1.929 (49)	0.472 (12)	4.528 (115)
N41 006200	40	25-32-40	2.323 (59)	0.472 (12)	4.724 (120)
N41 006300	50	25-32-40-50	2.913 (74)	0.591 (15)	6.890 (175)
N41 006400	63	25-32-40-50-63	3.307 (84)	0.787 (20)	7.087 (180)
N41 006500	80	25-32-40-50-63-80	3.307 (84)	0.984 (25)	7.874 (200)

Note:

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

Also possible: $L1_{max} = L$ and $d = D$

Extension / Reducer with ABS® Connection
conical version



N410003...

Number	ABS d	ABS d1	D max	L min	inch (mm)
					L max
N41 003000	25	25	1.339 (34)	0.394 (10)	4.134 (105)
N41 003100	32	25-32	1.929 (49)	0.472 (12)	4.528 (115)
N41 003200	40	25-32-40	2.362 (60)	0.472 (12)	4.724 (120)
N41 003300	50	25-32-40-50	2.913 (74)	0.591 (15)	6.890 (175)
N41 003400	63	25-32-40-50-63	3.307 (84)	0.787 (20)	7.087 (180)
N41 003500	80	25-32-40-50-63-80	3.307 (84)	0.984 (25)	7.874 (200)

Note:

Intermediate sizes for ABS tool adapters and ABS extension can be supplied with a larger O. D. than the ABS O. D. dimensions.

Also possible: $L1_{max} = L$

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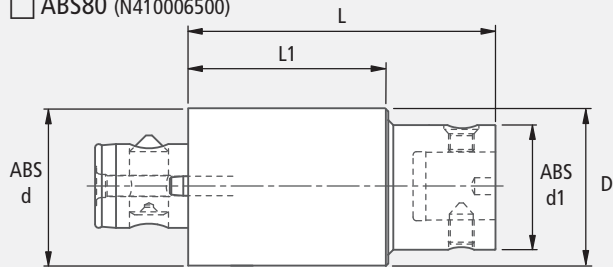
Inquiry

Purchase Order

Company Name _____
 Address _____
 Contact - Name _____
 Telephone No. _____
 Purchase Quantity _____

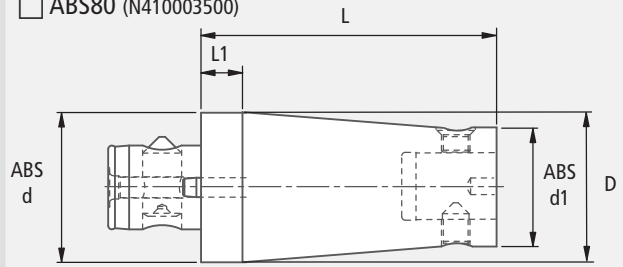
Purchase Order No. _____
 Signature _____
 FAX No. _____

- ABS25 (N410006000) ABS d1 = ____ L = ____
- ABS32 (N410006100) D = ____ L1 = ____
- ABS40 (N410006200)
- ABS50 (N410006300)
- ABS63 (N410006400)
- ABS80 (N410006500)



UA... **N410006...**

- ABS25 (N410003000) ABS d1 = ____ L = ____
- ABS32 (N410003100) D = ____ L1 = ____
- ABS40 (N410003200)
- ABS50 (N410003300)
- ABS63 (N410003400)
- ABS80 (N410003500)



UA... **N410003...**

Please provide workpiece sketch!



Delivery: Basic tool body. Insert(s) not included.



Kometric® Cartridges and Pockets

With the Kometric® components, KOMET has placed great value on uncomplicated and versatile use, even in the smallest space. The use of special tools allows several machining tasks to be combined in one operating step, providing consistent quality at reduced production costs.

You can obtain Kometric® cartridges and pockets from us for mounting into tools. The Kometric® system offers a tried and tested range of efficient and economic insert pockets and finish boring cartridges.

This chapter contains the necessary information for mounting these components. They have been designed so that they are easy to fit, versatile to use and require minimum space.

Boring bars with adjustable Kometric® insert pockets.



Semi-Finished Heads

ABS® · HSK-A

6.6 – 6.7



Cartridge

UKS · ISO Standard

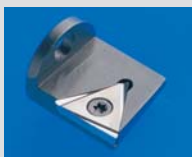
6.8 – 6.37

UKS with axial and radial wedge adjustment

6.38 – 6.41

UKS for non-ferrous metal machining

6.92 – 6.99



Adjustable Insert Pocket

WVU · WVP

6.44 – 6.59

WVU for non-ferrous metal machining

6.100 – 6.104



Flat Bed Insert Pocket

FLWE

6.42 – 6.43

FLWE for non-ferrous metal machining

6.105



Adjustable Boring Cartridge

UZV

6.66 – 6.73

UZ

6.74 – 6.79

UZV for non-ferrous metal machining

6.106 – 6.111



Micro-Adjustable Cartridge

FZ

6.80 – 6.86

FZ for non-ferrous metal machining

6.112



Micro-Adjustable Cartridge

FF

6.87

FF for non-ferrous metal machining

6.113



Fine Boring Cartridge

M31

6.88 – 6.89

M31 for non-ferrous metal machining

6.114 – 6.115


Adjustable Pocket UWU · UWE

6.56 – 6.61

Fine Adjustment Inserts

6.90

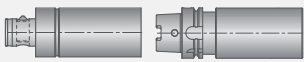
Chamfering Cartridge

6.91



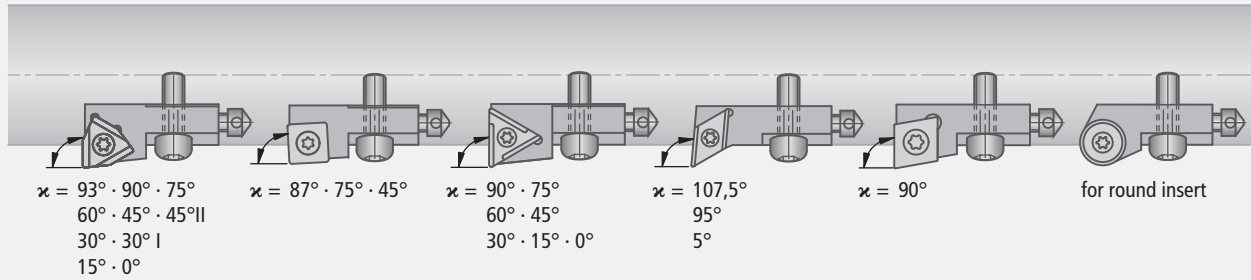
Program Summary Kometric® Cartridges

for machining steel

Semi-finished Heads
6.6 – 6.7 

UKS Cartridge

Page 6.10 – 6.19 6.20 6.21 – 6.27 6.28 – 6.30 6.32 6.31

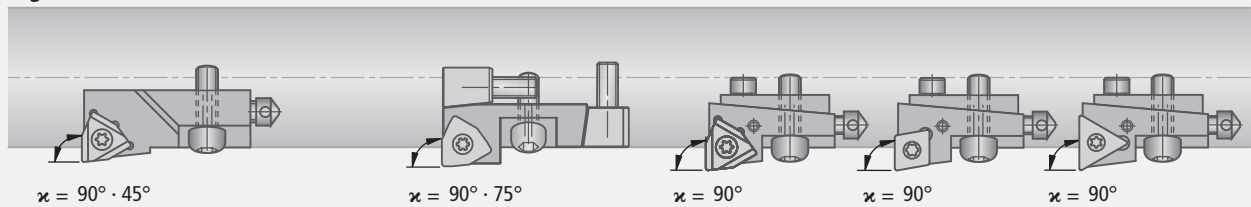


Cartridge – ISO Standard

Page 6.33 – 6.35

UKS Short Cartridge with axial and radial adjustment

6.36 – 6.41



Adjustable Insert Pocket

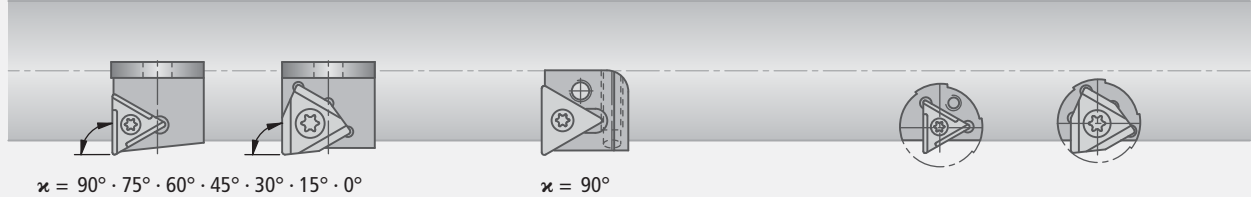
WVU WVP
Page 6.53 – 6.59 6.46 – 6.52

Flat Bed Insert Pocket

FLWE
6.42 – 6.43

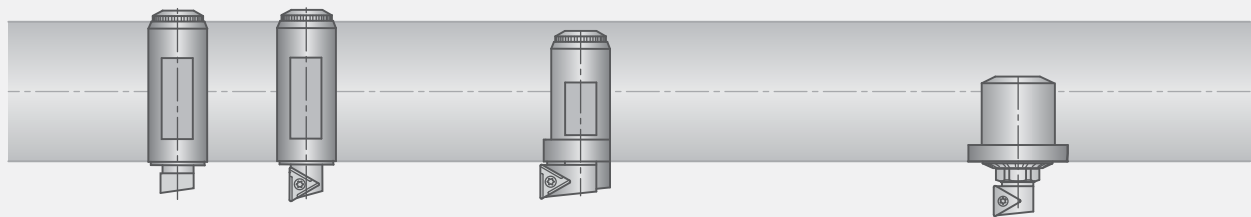
Adjustable Pocket

UWU · UWE
6.60 – 6.65



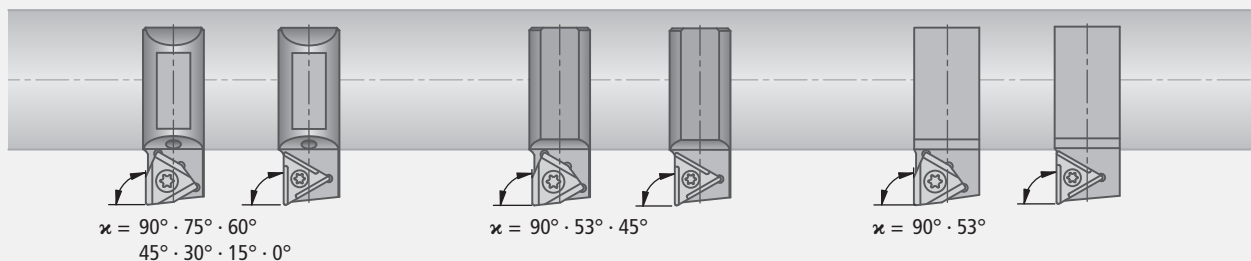
Micro-Adjustable Cartridge – Radial and Angular Mounting

FZ FF M31
Page 6.82 – 6.86 6.87 6.88 – 6.89

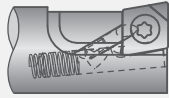


Adjustable Boring Cartridge

UZV UZ UV
Page 6.67 – 6.73 6.74 – 6.77 6.78 – 6.79

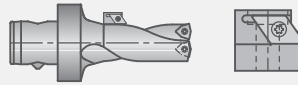


Fine Adjustment Inserts



6.90

Chamfering Cartridge

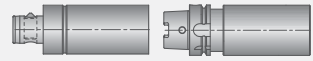


6.91



for non-ferrous metal machining

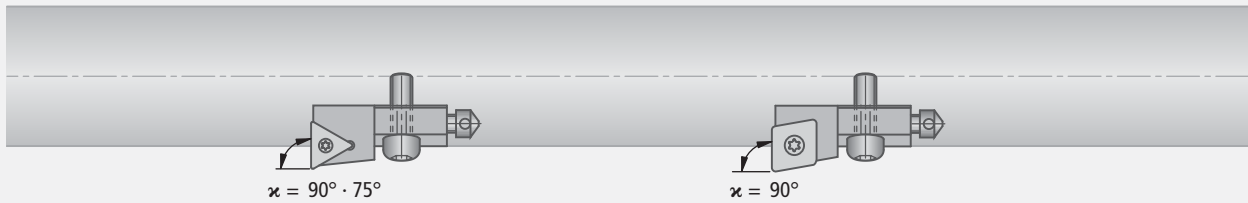
Semi-finished Heads
6.6 – 6.7



UKS Short Cartridge

Page 6.93 – 6.94

6.92



$\alpha = 90^\circ \cdot 75^\circ$

$\alpha = 90^\circ$

Adjustable Insert Pocket

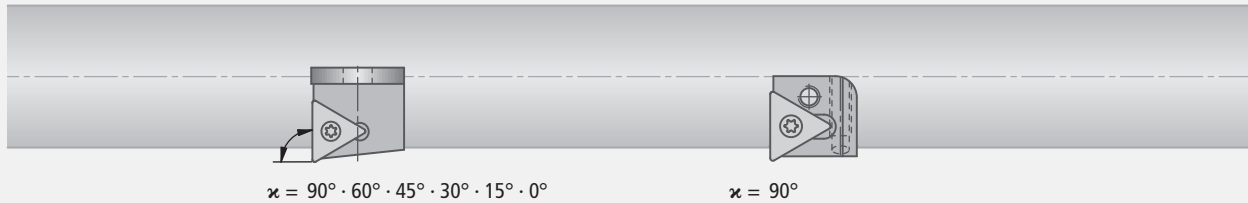
WVU

Page 6.100 – 6.104

Flat Bed Insert Pocket

FLWE

6.105



$\alpha = 90^\circ \cdot 60^\circ \cdot 45^\circ \cdot 30^\circ \cdot 15^\circ \cdot 0^\circ$

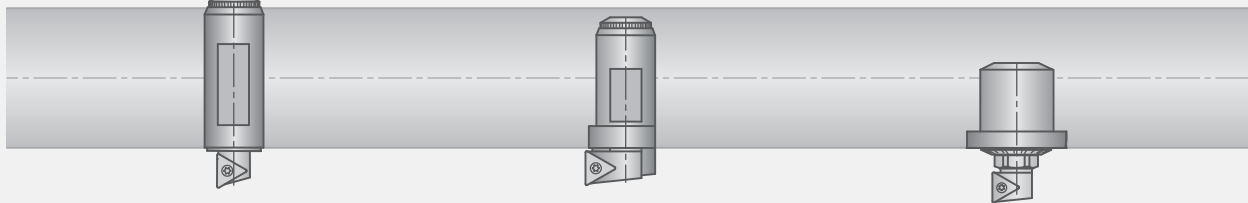
$\alpha = 90^\circ$

Micro-adjustable Cartridges radial and angled mounting

Page FZ
6.112

FF
6.113

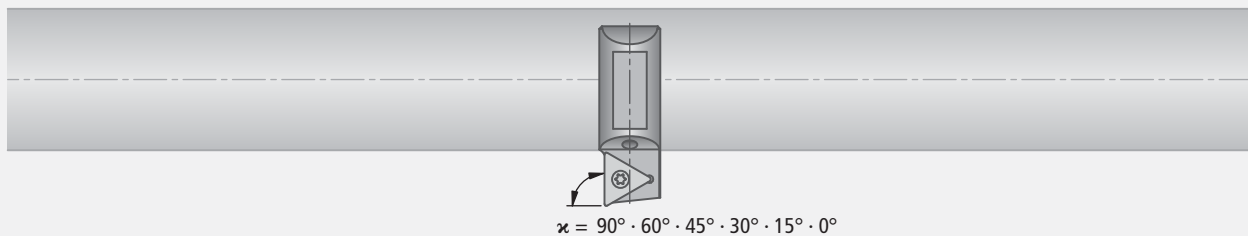
M31
6.114 – 6.115



Adjustable Boring Cartridge

Page

UZV
6.106 – 6.111



$\alpha = 90^\circ \cdot 60^\circ \cdot 45^\circ \cdot 30^\circ \cdot 15^\circ \cdot 0^\circ$

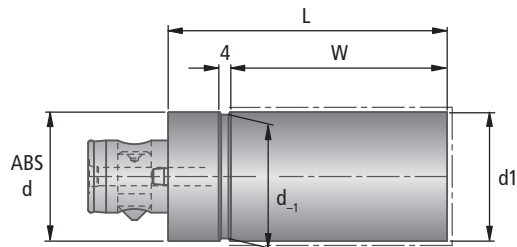


ABS®

Semi-finished heads

ABS-HK

for further machining with Kometric® cartridges



— · — · — Soft zone

inch (mm)

Description	Order No.	ABS d	d1	L	W	lbs
ABS 25-HK	B10 01011	25	1.024 (26)	2.756 (70)	2.008 (51)	0.7
ABS 32-HK	B10 02011	32	1.299 (33)	3.150 (80)	2.402 (61)	1.3
ABS 40-HK	B10 03011	40	1.614 (41)	3.937 (100)	3.071 (78)	2.4
ABS 50-HK	B10 04011	50	2.008 (51)	4.724 (120)	3.740 (95)	4.5
ABS 63-HK	B10 05011	63	2.520 (64)	5.906 (150)	4.724 (120)	9.0
ABS 80-HK	B10 06011	80	3.189 (81)	7.087 (180)	5.551 (141)	17.1
ABS100-HK	B10 07011	100	3.976 (101)	7.874 (200)	6.063 (154)	29.7

As all heavy duty tools are completely hardened, ABS® semi-finished heads should only be used where there is no alternative. These semi-finished heads are hardened and ground on the ABS® connecting faces only and are soft at the front. i. e. not heat-treated. Further machining of ABS® semi-finished heads can only be carried out in the area marked W.

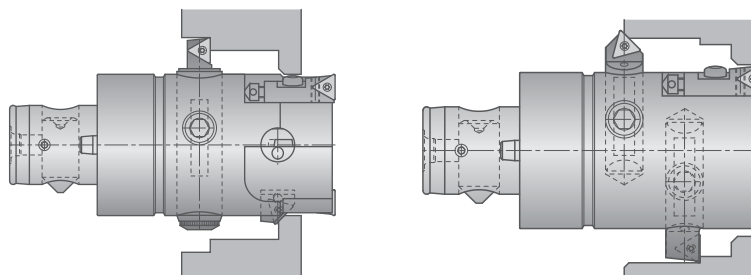
Note:

Semi-finished heads should not be further hardened!

Should additional hardening be carried out, we cannot accept responsibility for function or quality.

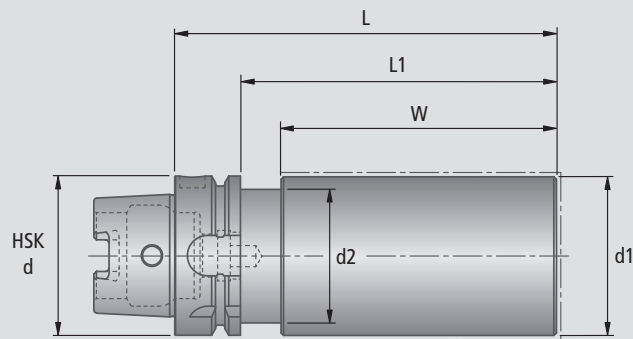
Do-it-yourself mounting Kometric® insert pockets

Examples of semi-finished heads from the ABS® HK range used with Kometric® cartridges



Semi-finished heads

for further machining with Kometric® cartridges



— · — · — Soft zone

inch (mm)

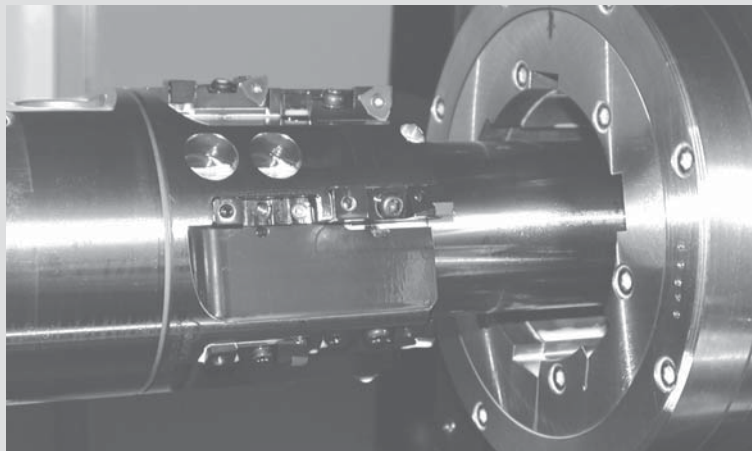
Description	Order No.	HSK d	d1	d2	L	L1	W	
HSK-A63-63x200	A06 33650	63	2.480 (63)	2.087 (53)	7.874(200)	6.850(174)	6.220(158)	10.71
HSK-A100-100x250	A06 53650	100	3.937(100)	3.346 (85)	9.843(250)	8.701(221)	8.071(205)	31.64

Delivery: HSK blank complete. Please order coolant supply connection and key separately (Chapter 8).

As all heavy duty tools are completely hardened, ABS® semi-finished heads should only be used where there is no alternative. These semi-finished heads are hardened and ground on the ABS® connecting faces only and are soft at the front. i. e. not heat-treated. Further machining of ABS® semi-finished heads can only be carried out in the area marked W.

Note:

Semi-finished heads should not be further hardened!
Should additional hardening be carried out, we cannot accept responsibility for function or quality.

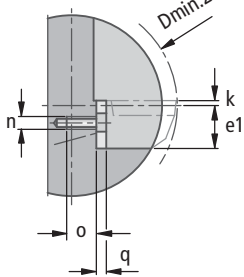


Kometric® UKS Cartridge

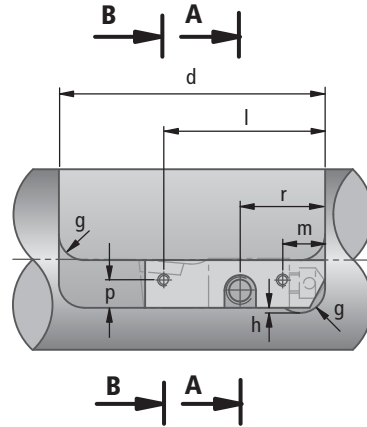
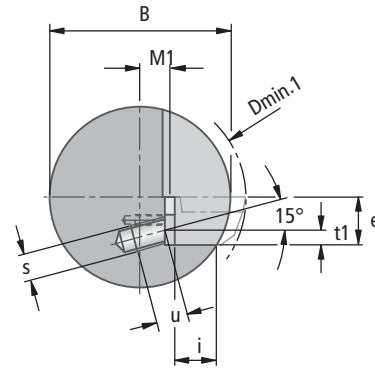
Mounting Dimensions

Axial mounting *with* fitting spacer / shim

Part section B-B,
insert over center line



View A-A



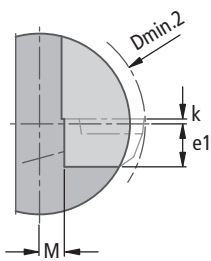
$$B = 2 \sqrt{e^2 + (M1 + q + i)^2}$$

$$M1 = \frac{D}{2} - f - q$$

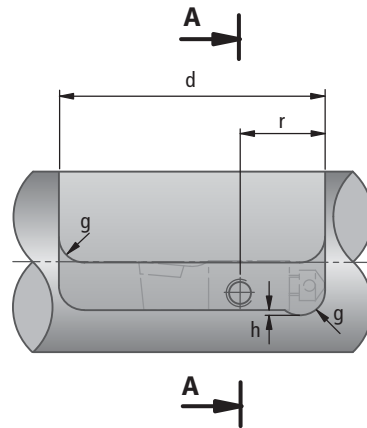
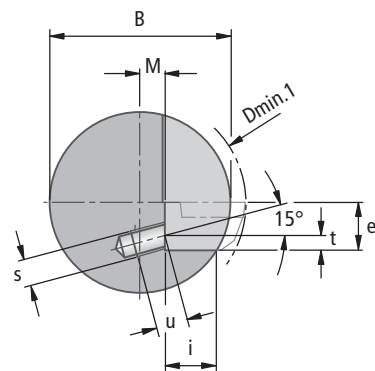
Dimension f:
see page 6.10 - 6.31

Axial mounting *without* fitting spacer / shim

Part section A-A,
insert over center line



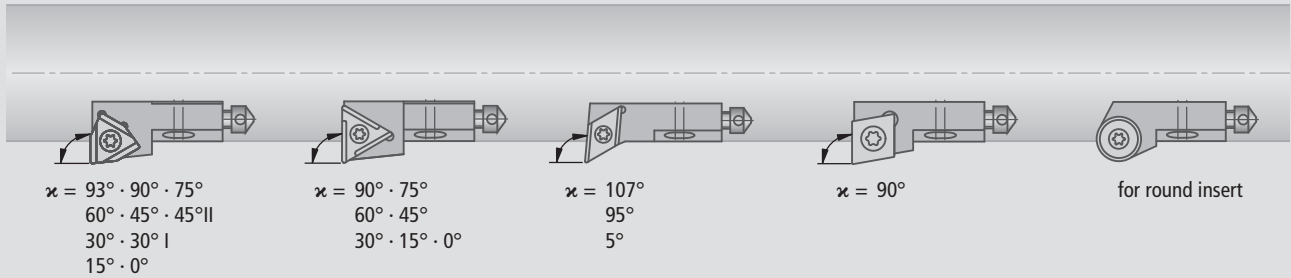
View A-A



$$B = 2 \sqrt{e^2 + (M + i)^2}$$

$$M = \frac{D}{2} - f$$

Dimension f:
see page 6.10 - 6.31



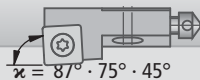
inch (mm)

Short clamp holder size	Boring bar																													
	D1 min. for $\kappa = \dots^\circ$										D2 min. for $\kappa = \dots^\circ$																			
	107°	95°	93°	90°	75°	60°	45°	45°∥	30°	30°∥	15°	5°	0°	round insert	107°	95°	93°	90°	75°	60°	45°	45°∥	30°	30°∥	15°	5°	0°	round insert		
UKS6	0.945 (24)							.787 (20)	.787 (20)	.945 (24)	.787 (20)	0.945 (24)			.630 (16)							.630 (16)	.630 (16)	.630 (16)	.630 (16)	.630 (16)	.630 (16)	.630 (16)		
UKS8	1.299 (33)							.866 (22)	.945 (24)	1.299 (33)	1.024 (26)	1.299 (33)			.984 (25)							.709 (18)	.787 (20)	.984 (25)	.866 (22)	.984 (25)				
UKS10	1.417 (36)							1.024 (26)	1.024 (26)	1.417 (36)	1.417 (36)	1.417 (36)			1.102 (28)							.866 (22)	.866 (22)	1.102 (28)	1.260 (32)	1.102 (28)				
UKS16	2.205 (56)							2.205 (56)	2.520 (64)	2.205 (56)	2.362 (60)	2.205 (56)			1.575 (40)							1.811 (46)	2.047 (52)	1.575 (40)	1.575 (40)	1.575 (40)				
UKS20	2.677 (68)							2.913 (74)	3.071 (78)	2.677 (68)	3.150 (80)	2.677 (68)			2.047 (52)							2.047 (52)	2.283 (58)	2.047 (52)	2.047 (52)	2.047 (52)				

inch (mm)

Short clamp holder size	Cartridge mounting							Location thread																								
								without shim plate					with shim plate																			
	d	e	e1	g	h	i	k	r	s	t	t1	u	Dimension l for $\kappa = \dots^\circ$								round insert	m	n	o	p	q						
													93°	45°∥	30°	0°	90°	75°	60°	45°	30°∥	15°	5°	107°	95°	0°						
UKS6	1.299 (33)	0.228 (5.8)	0.188 (4.8)	0.118 (3)	0.019 (0.5)	0.157 (4)	0.039 (1)	0.472 (12)	M3	0.098 (2.5)	0.077 (2.0)	0.276 (7)	-	-	0.944 (24)	0.925 (23.5)	-	-	-	-	-	-	-	-	0.275 (7)	M2	0.236 (6)	0.118 (3)	0.078 (2)			
UKS8-804/706																																
UKS8-802/708																																
UKS8-818	1.692 (43)	0.299 (7.6)	0.259 (6.6)	0.157 (4)	0.039 (1)	0.275 (7)	0.039 (1)	0.669 (17)	M4	0.125 (3.2)	0.104 (2.7)	0.255 (6.5)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	-	-	0.275 (7)	M2	0.236 (6)	0.157 (4)	0.078 (2)					
UKS8-8C1																																
UKS8-CC06																																
UKS10	2.086 (53)	0.377 (9.6)	0.338 (8.6)	0.196 (5)	0.039 (1)	0.330 (8.4)	0.039 (1)	0.669 (17)	M5	0.137 (3.5)	0.116 (3.0)	0.116 (3.0)	1.240 (31.5)	1.259 (32)	1.318 (33.5)	1.496 (38)	1.476 (37.5)	1.318 (33.5)	-	-	1.279 (32.5)	0.334 (8.5)	M2	0.236 (6)	0.196 (5)	0.078 (2)						
UKS16	2.756 (70)	0.614 (15.6)	0.535 (13.6)	0.314 (8)	0.039 (1)	0.413 (10.5)	0.079 (2)	0.984 (25)	M6	0.255 (6.5)	0.234 (6.0)	0.234 (6.0)	1.751 (44.5)	1.771 (45)	1.811 (46)	1.968 (50)	1.929 (49)	1.811 (46)	-	-	1.712 (43.5)	0.551 (14.0)	M3	0.314 (8)	0.314 (8)	0.078 (2)						
UKS20	3.228 (82)	0.771 (19.6)	0.673 (17.1)	0.393 (10)	0.039 (1)	0.511 (13)	0.098 (2.5)	1.062 (27)	M8	0.334 (8.5)	0.313 (8.0)	0.313 (8.0)	1.929 (49)	2.027 (51.5)	2.165 (55)	2.165 (55)	2.244 (57)	1.968 (50)	-	-	1.929 (49.0)	0.629 (16.0)	M3	0.314 (8)	0.393 (10)	0.078 (2)						

6



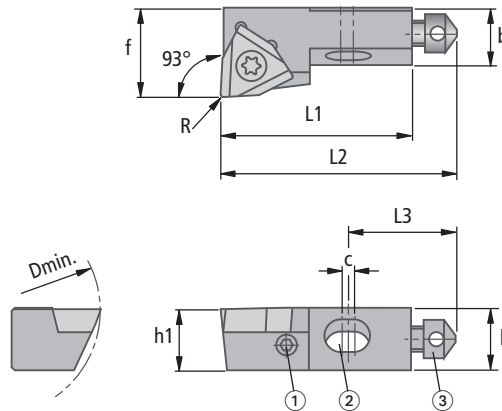
inch (mm)

Short clamp holder size	Boring Tools		Cartridge mounting							Location thread															
	D1 min.	D2 min.	d	e	e1	g	h	i	k	without shim plate					with shim plate										
										r	s	t	t1	u	Dimension l for κ										
														87°	75°	45°									
UKS8	1.299 (33)	0.984 (25)	1.692 (43)	0.299 (7.6)	0.259 (6.6)	0.157 (4)	0.039 (1)	0.275 (7)	0.039 (1)	0.669 (17)	M4	0.125 (3.2)	0.104 (2.7)	0.255 (6.5)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	1.102 (28)	0.275 (7)	M2	0.236 (6)	0.157 (4)	0.078 (2)
UKS10	1.417 (36)	1.102 (28)	2.086 (53)	0.377 (9.6)	0.338 (8.6)	0.196 (5)	0.039 (1)	0.330 (8.4)	0.039 (1)	0.669 (17)	M5	0.137 (3.5)	0.116 (3.0)	0.116 (3.0)	1.259 (32)	1.319 (33.5)	1.476 (37.5)	0.334 (8.5)	M2	0.236 (6)	0.196 (5)	0.078 (2)			
UKS16	2.205 (56)	1.575 (40)	2.756 (70)	0.614 (15.6)	0.535 (13.6)	0.315 (8)	0.039 (1)	0.413 (10.5)	0.078 (2)	0.984 (25)	M6	0.256 (6.5)	0.236 (6)	0.394 (10)	1.772 (45)	1.811 (46)	1.929 (49)	0.551 (14)	M3	0.315 (8)	0.315 (8)	0.078 (2)			

Kometric® UKS Cartridge $\kappa = 93^\circ$



for Insert W01 / W29



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.
Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 8-802-93R38	D40 55011	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.433 (11)	0.433 (10.99)	0.432 (10.97)	0.02	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS 8-802-93L38	D40 50011												UKS 8-5-75L	L02 21310	
UKS10-801-93R38	D40 55020	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.551 (13.99)	0.550 (13.97)	0.04	UKS10-5- 0R	L02 20920	5502103008 M3×8 DIN7991
UKS10-801-93L38	D40 50020												UKS10-5- 0L	L02 21920	
UKS16-810-93R48	D40 55040	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.709 (18)	0.708 (17.99)	0.707 (17.97)	0.11	UKS16-5- 0R	L02 20940	5502103008 M3×8 DIN7991
UKS16-810-93L48	D40 50040												UKS16-5- 0L	L02 21940	

for Cartridge	Insert				Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-...R	W01 24...0.02..				N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	-	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS8-...L		W01 24...0.02..							
UKS10-...R	W01 34...0.02..				N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-...L		W01 34...0.02..							
UKS16-...R	W01 42...0.02..				N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-...L		W01 42...0.02..							

For further details on inserts, please see Chapter 7

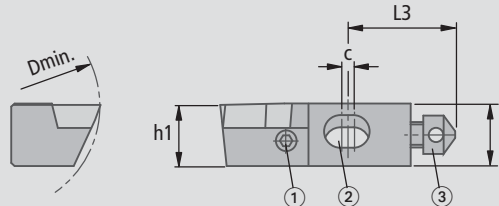
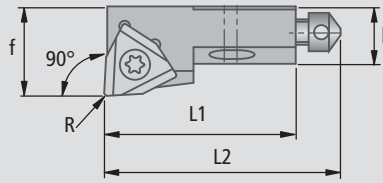
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W01 / W29**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS6-810-90R23	D40 55160	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	-	0.275 (6.98)	-	0.007	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS8-818-90R32	D40 55170	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	-	0.432 (10.98)	-	0.007	UKS 8-5-75R	L02 20310	
UKS8-802-90R38	D40 55111	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.433 (11)	0.432 (10.98)	0.430 (10.93)	0.022	UKS 8-5-75R	L02 20310	
UKS10-801-90R38	D40 55120	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.550 (13.98)	0.548 (13.93)	0.037	UKS10-5-90R	L02 20220	
UKS10-801-90L38	D40 50120												UKS10-5-90L	L02 21220	
UKS16-810-90R48	D40 55140	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.669 (17)	0.708 (17.98)	0.706 (17.93)	0.110	UKS16-5-90R	L02 20240	5502103008 M3×8 DIN7991
UKS16-810-90L48	D40 50140												UKS16-5-90L	L02 21240	
UKS20-820-90R53	D40 55150	0.772 (19.6)	0.787 (20)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15)	0.079 (2)	-	0.866 (22)	0.864 (21.95)	0.200	UKS20-5-90R	L02 20250	

for Cartridge	Insert				Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6-...R	-	-	-	W29 10000.04..	N00 56041 S/M2×4.3-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8-818-...R	-	-	-	W29 18000.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS8-802-...R	W01 24..0.02..		W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	-	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..		W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-...L		W01 34..0.02..							
UKS16-...R	W01 42..0.02..		W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-...L		W01 42..0.02..							
UKS20-...R	W01 50..0.04..		W01 50600...	W29 50000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405014 M5×14	L02 30160 UKS12-3	L02 30030 UKS12-4

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



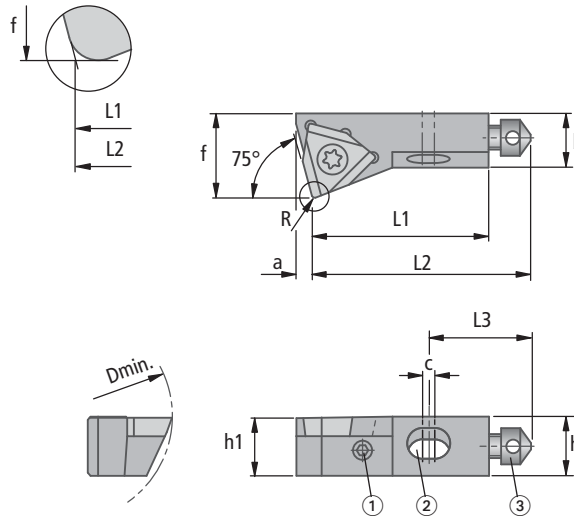
Kometric® UKS Cartridge $\kappa = 75^\circ$



for Insert W01 / W29

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.



For Dmin see page 6.8

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R			lbs	Replacement Parts		
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Shim shim stock 0.019(0.5) - 0.098 (2.5)	Shim clamping screw	
UKS 8-818-75R32	D40 55270	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.039 (1)	-	0.431 (10.94)	-	0.007	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS 8-802-75R38	D40 55211	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.039 (1)	0.433 (11)	0.431 (10.94)	0.425 (10.8)	0.022	UKS 8-5-75R	L02 20310	
UKS10-801-75R38	D40 55220	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.118 (3)	0.551 (14)	0.549 (13.94)	0.543 (13.8)	0.037	UKS10-5-75R	L02 20320	
UKS16-810-75R48	D40 55240	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.138 (3.5)	0.709 (18)	0.706 (17.94)	0.701 (17.8)	0.110	UKS16-5-75R	L02 20340	

for Cartridge	Insert			Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-818-...R	-	-	W29 18000.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS8-802-...R	W01 24..0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	-	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-...R	W01 42..0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

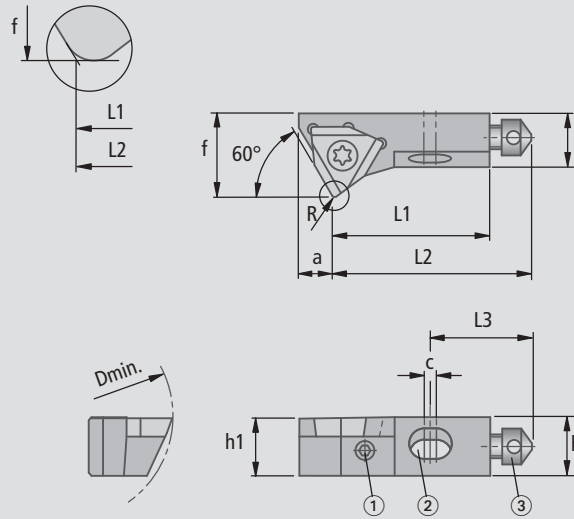


for Insert W01 / W29

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

For Dmin see page 6.8



inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R			lbs	Replacement Parts		
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 6-810-60R23	D40 55360	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.118 (3)	—	0.272 (6.9)	—	0.007	UKS 6-5-60R	L02 20400	5502300206 M2×6 DIN965
UKS 8-802-60R38	D40 55311	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.177 (4.5)	0.433 (11)	0.429 (10.9)	0.422 (10.72)	0.024	UKS 8-5-60R	L02 20410	
UKS10-801-60R38	D40 55320	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.236 (6)	0.551 (14)	0.547 (13.9)	0.540 (13.72)	0.040	UKS10-5-60R	L02 20420	
UKS16-810-60R48	D40 55340	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.276 (7)	0.709 (18)	0.705 (17.9)	0.698 (17.72)	0.125	UKS16-5-60R	L02 20440	5502103008 M3×8 DIN7991

for Cartridge	Insert			Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6-...R	—	—	W29 10000.04..	N00 56041 S/M2×4.3-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8-802-...R	W01 24..0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-...R	W01 42..0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



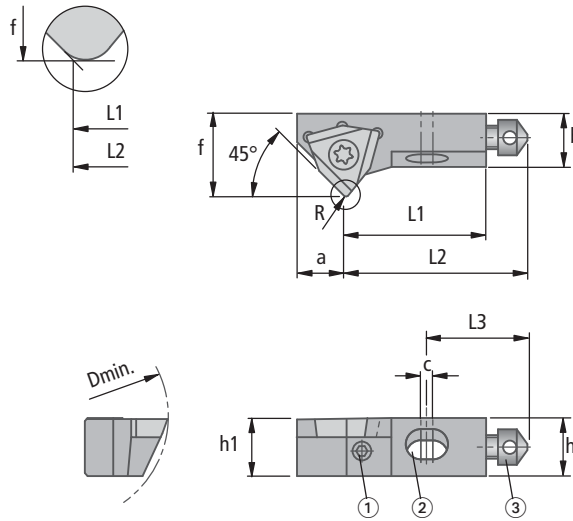
Kometric® UKS Cartridge $\kappa = 45^\circ$



for Insert W01 / W29

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.



For Dmin see page 6.8

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R			lbs	Replacement Parts		
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Shim Description	Shim clamping screw Order No. Description	
UKS 6-810-45R23	D40 55460	0.228 (5.8)	0.236 (6)	0.591 (15)	0.768 (19.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.157 (4)	—	0.272 (6.9)	—	0.007	UKS 6-5-90R	L02 20200	5502300206 M2x6 DIN965
UKS 8-802-45R38	D40 55411	0.299 (7.6)	0.315 (8)	0.768 (19.5)	1.043 (26.5)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.256 (6.5)	0.433 (11)	0.429 (10.9)	0.422 (10.71)	0.018	UKS 8-5-75R	L02 20310	
UKS10-801-45R38	D40 55420	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.354 (9)	0.551 (14)	0.547 (13.9)	0.540 (13.71)	0.057	UKS10-5-45R	L02 20520	
UKS10-801-45L38	D40 50420													UKS10-5-45L	L02 21520	
UKS16-810-45R48	D40 55440	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.394 (10)	0.709 (18)	0.705 (17.9)	0.697 (17.71)	0.141	UKS16-5-45R	L02 20540	5502103008 M3x8 DIN7991

for Cartridge	Insert				Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6-...R	—	—	—	W29 10000.04..	N00 56041 S/M2x4.3-6IP 5.5 in-lbs	L05 00810 6IP	—	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8-802-...R	W01 24..0.02..	—	W01 24600...	W29 24000.04..	N00 57511 S/M2.5x7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..	—	W01 34600...	W29 34000.04..	N00 57521 S/M3.5x7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4x8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-...L	—	W01 34..0.02..	—	—	—	—	—	—	—
UKS16-...R	W01 42..0.02..	—	W01 42600...	W29 42000.04..	N00 57531 S/M4.5x9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5x12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

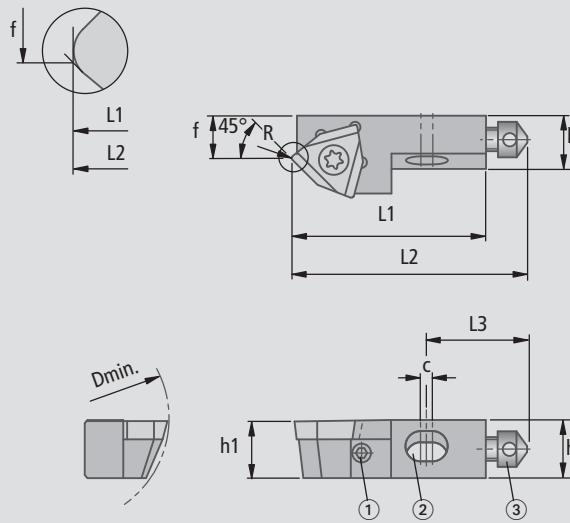
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W01 / W29**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Shim Description	Shim Order No.	Shim clamping screw Order No. Description
UKS 8-802-II-45R38	D40 55511	0.299 (7.6)	0.315 (8)	1.024 (26)	1.299 (33)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.220 (5.6)	0.224 (5.7)	0.232 (5.89)	0.020	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS10-801-II-45R38	D40 55520	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.280 (7.1)	0.283 (7.2)	0.291 (7.39)	0.042	UKS10-5- 0R	L02 20920	
UKS16-810-II-45R48	D40 55540	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.378 (9.6)	0.382 (9.7)	0.389 (9.89)	0.110	UKS16-5- 0R	L02 20940	5502103008 M3×8 DIN7991

for Cartridge	Insert			Replacement Parts				
	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-...R	W01 24...0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34...0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-...R	W01 42...0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

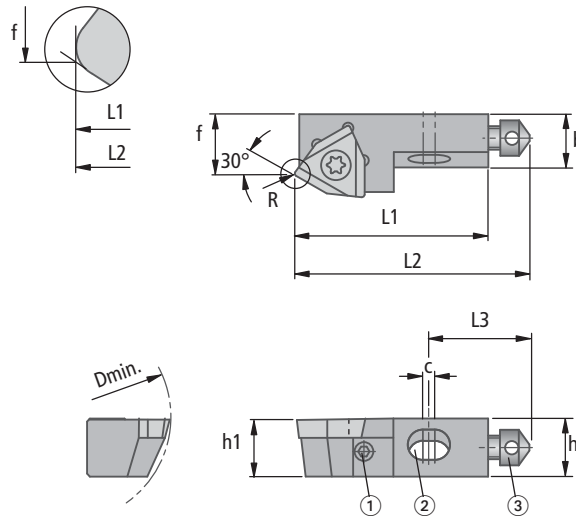
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 30^\circ$



for Insert W01 / W29



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 8-802-30R38	D40 55611	0.299 (7.6)	0.315 (8)	0.630 (16)	1.299 (33)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.317 (8.05)	0.319 (8.11)	0.323 (8.21)	0.020	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS10-801-30R38	D40 55620	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.396 (10.05)	0.398 (10.11)	0.402 (10.21)	0.040	UKS10-5-0R	L02 20920	
UKS16-810-30R48	D40 55640	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.514 (13.05)	0.516 (13.11)	0.520 (13.21)	0.115	UKS16-5-0R	L02 20940	5502103008 M3×8 DIN7991

for Cartridge	Insert			Replacement Parts				
	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-...R	W01 24..0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-...R	W01 42..0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

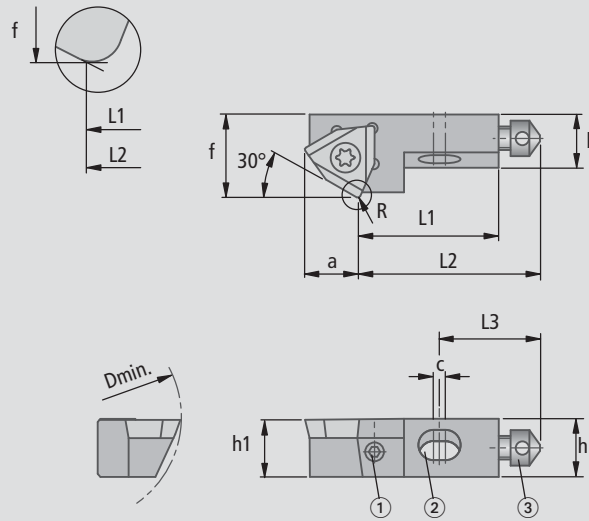
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert W01 / W29



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R			lbs	Replacement Parts		
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Description
UKS 8-802-I-30R38	D40 55711	0.299 (7.6)	0.315 (8)	0.768 (19.5)	1.043 (26.5)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.315 (8)	0.433 (11)	0.430 (10.92)	0.423 (10.75)	0.022	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS10-801-I-30R38	D40 55720	0.378 (9.6)	0.394 (10)	0.945 (24)	1.220 (31)	0.669 (17)	0.354 (9)	0.079 (2)	0.369 (9.38)	0.551 (14)	0.548 (13.92)	0.541 (13.75)	0.037	UKS10-5-75R	L02 20320	
UKS16-810-I-30R48	D40 55740	0.614 (15.6)	0.630 (16)	1.339 (34)	1.654 (42)	0.984 (25)	0.472 (12)	0.079 (2)	0.433 (11)	0.709 (18)	0.706 (17.92)	0.699 (17.75)	0.099	UKS16-5-75R	L02 20340	5502103008 M3×8 DIN7991

for Cartridge	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	Insert		Replacement Parts				
		W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Radial adj. screw ①	Holding screw ② DIN916	Axial adj. screw ③
				Order No. Description	Order No. Description	Order No. Description	Order No. Description	Order No. Description
UKS6-...R	—	—	W29 10000.04..	N00 56041 S/M2×4.3-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8-802-...R	W01 24..0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R	W01 34..0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-...R	W01 42..0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

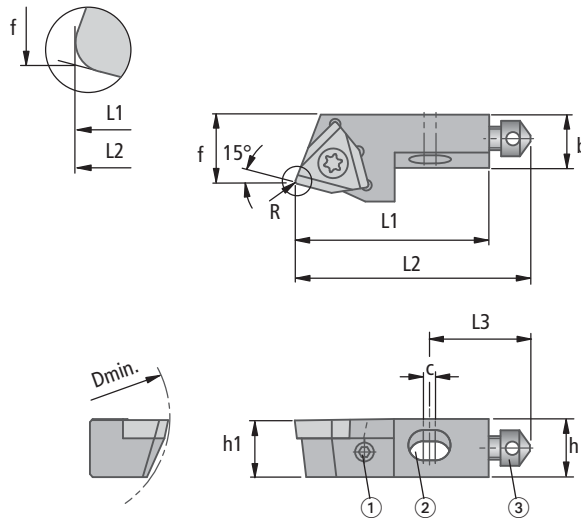
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 15^\circ$



for Insert W01 / W29



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 8-802-15R38	D40 50811	0.299 (7.6)	0.315 (8)	1.024 (26)	1.299 (33)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.375 (9.52)	0.376 (9.54)	0.377 (9.57)	0.022	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS10-801-15R38	D40 55820	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.473 (12.02)	0.474 (12.04)	0.475 (12.07)	0.037	UKS10-5-15R	L02 20720	
UKS10-801-15L38	D40 50820												UKS10-5-15L	L02 21720	
UKS16-810-15R48	D40 55840	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.611 (15.52)	0.612 (15.54)	0.613 (15.57)	0.106	UKS16-5-15R	L02 20740	5502103008 M3×8 DIN7991
UKS16-810-15L48	D40 50840												UKS16-5-15L	L02 21740	

for Cartridge	Insert				Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-...R		W01 24...0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	-	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R		W01 34...0.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-...L	W01 34...0.02..								
UKS16-...R		W01 42...0.02..	W01 42600...	W29 42000.04..	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-...L	W01 42...0.02..								

For further details on inserts, please see Chapter 7

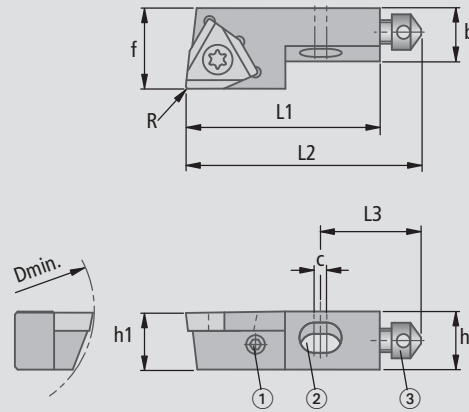
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W01 / W29**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R 0.008 (0.2) 0.016 (0.4) 0.031 (0.8)		Replacement Parts		
											Shim shim stock 0.019(0.5) ± 0.098 (2.5)		Shim clamping screw
											Description	Order No.	Description
UKS 8-802-0R38	D40 55911	0.299 (7.6)	0.315 (8)	1.024 (26)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.433 (11)	0.018	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS10-801-0R38	D40 55920	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.035	UKS10-5- 0R	L02 20920	
UKS10-801-0L38	D40 50920										UKS10-5- 0L	L02 21920	
UKS16-810-0R48	D40 55940	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.709 (18)	0.106	UKS16-5- 0R	L02 20940	5502103008 M3×8 DIN7991
UKS16-810-0L48	D40 50940										UKS16-5- 0L	L02 21940	

for Cartridge	Insert				Replacement Parts				
	W01 L.H. radial rake 06 = 6° 12 = 12° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° ▼▼	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8-802-...R		W01 24..0.02..	W01 24600...	W29 24000.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	—	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-...R		W01 34..0.02..			N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-...L	W01 34..0.02..		W01 34600...	W29 34000.04..					
UKS16-...R		W01 42..0.02..			N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-...L	W01 42..0.02..		W01 42600...	W29 42000.04..					

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

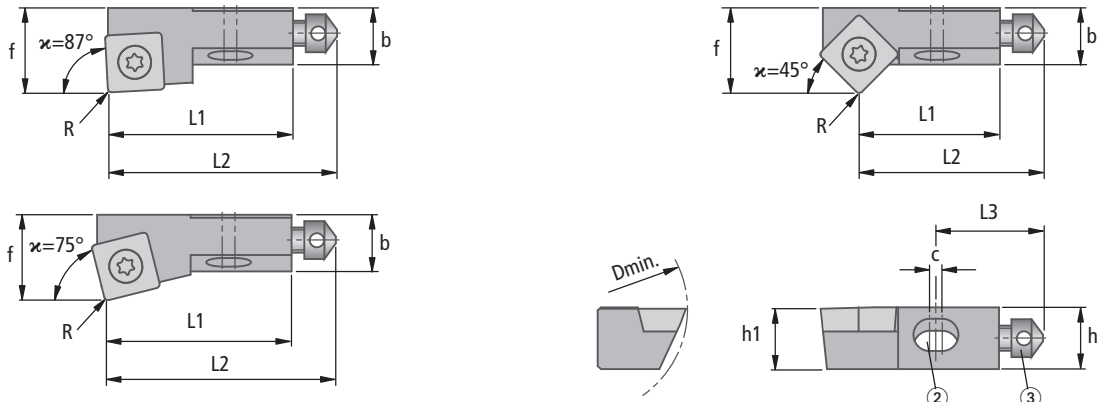
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 87^\circ / 75^\circ / 45^\circ$








for insert **W83**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Description cutting form ▼	Order No.	κ	h1	h	L1	L2	L3	b	c	R	ISO Dimension f	Replacement Parts			
												Shim Description	Shim stock Order No.	Shim clamping screw Order No. Description	
UKS8 SOEX060306 87R	D40 06700	87°	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.024 (0.6)	0.433 (11)	0.031	UKS-8-5-75R	L02 20810	5502300206 M2×6 DIN965
UKS8 SOEX060306 75R	D40 06710	75°			0.984 (25)	1.260 (32)					0.431 (10.94)	0.029	UKS-8-5-75R	L02 20810	
UKS8 SOEX060306 45R	D40 06720	45°			0.768 (19.5)	1.043 (26.5)					0.547 (13.9)	0.026	UKS-8-5-75R	L02 20810	
UKS8 SOEX090408 87R	D40 06800	87°	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.032 (0.8)	0.551 (14)	0.055	UKS-10-5-90R	L02 20220	5502300206 M2×6 DIN965
UKS8 SOEX090408 75R	D40 06810	75°			1.181 (30)	1.457 (37)					0.549 (13.94)	0.053	UKS-10-5-75R	L02 20320	
UKS8 SOEX090408 45R	D40 06820	45°			0.984 (25)	1.260 (32)					0.547 (13.9)	0.051	UKS-10-5-75R	L02 20320	
UKS8 SOEX120508 87R	D40 06900	87°	0.614 (15.6)	0.618 (15.7)	1.653 (42)	1.968 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.032 (0.8)	0.709 (18)	0.145	UKS-16-5-90R	L02 20240	5502103008 M3×8 DIN7991
UKS8 SOEX120508 75R	D40 06910	75°									0.706 (17.94)	0.145	UKS-16-5-75R	L02 20340	
UKS8 SOEX120508 45R	D40 06920	45°									0.705 (17.9)	0.168	UKS-16-5-45R	L02 20540	

for Cartridge	Insert 	Replacement Parts			
		Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS8 SOEX060306 ... R	W83 18...	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 SOEX090408 87R	W83 32...	N00 57261 S3575-15IP 25 in-lbs	L05 00860 15IP	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 SOEX090408 75R	W83 23...	N00 57571 S/M2.5×6.3-8IP 11.3 in-lbs	L05 00830 8IP	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 SOEX090408 45R					
UKS16 SOEX120508 ... R	W83 44...	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

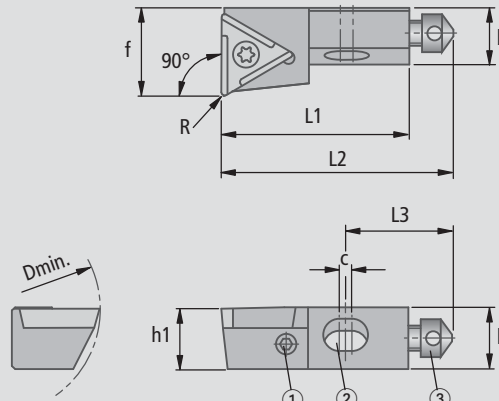
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W30 / W57**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R					lbs	Replacement Parts		
									0.008	0.012	0.016	0.020	0.031		Shim		Shim clamping screw
									(0.2)	(0.3)	(0.4)	(0.5)	(0.8)		Description	Order No.	
UKS 6-803-90R	D40 05160	0.228	0.236	0.787	0.965	0.472	0.177	0.039	0.279	0.276	0.273	-	-	0.007	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS 6-803-90L	D40 00160	(5.8)	(6)	(20)	(24.5)	(12)	(4.5)	(1)	(7.08)	(7)	(6.93)	-	-	0.007	UKS 6-5-90L	L02 21200	
UKS 8-804-90R	D40 05170	0.299	0.315	0.984	1.260	0.669	0.256	0.079	0.399	-	0.394	-	0.382	0.018	UKS 8-5-75R	L02 20310	
UKS 8-804-90L	D40 00170	(7.6)	(8)	(25)	(32)	(17)	(6.5)	(2)	(10.14)	-	(10)	-	(9.7)	0.018	UKS 8-5-75L	L02 21310	
UKS10-805-90R	D40 05180	0.378	0.394	1.181	1.457	0.669	0.354	0.079	0.560	-	0.554	0.551	0.543	0.037	UKS10-5-90R	L02 20220	5502103008 M3×8 DIN7991
UKS10-805-90L	D40 00180	(9.6)	(10)	(30)	(37)	(17)	(9)	(2)	(14.23)	-	(14.08)	(14)	(13.78)	0.037	UKS10-5-90L	L02 21220	
UKS20-806-90R	D40 05190	0.772	0.787	1.850	2.244	1.063	0.591	0.079	-	-	0.878	-	0.866	0.203	UKS20-5-90R	L02 20250	5502103008 M3×8 DIN7991
UKS20-806-90L	D40 00190	(19.6)	(20)	(47)	(57)	(27)	(15)	(2)	-	-	(22.3)	-	(22)	0.203	UKS20-5-90L	L02 21250	
UKS10-T4-90R	D40 07130	0.378	0.394	1.181	1.457	0.669	0.354	0.079	-	-	0.554	-	0.543	0.110	UKS10-5-90R	L02 20220	5502300206 M2×6 DIN965
UKS16-T5-90R	D40 07140	0.614	0.630	1.654	1.969	0.984	0.472	0.079	-	-	-	0.717	0.709	0.132	UKS16-5-90R	L02 20240	5502103008 M3×8 DIN7991

for Cartridge	Insert			Replacement Parts				
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 / W59 Neutral 	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS 6-803-90R	W30 04...0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-90L		W30 04...0.03..		N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-90R	W30 14...0.04..		W57 14040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS 8-804-90L		W30 14...0.04..		N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405014 M5×14	L02 30160 UKS20-3	L02 30030 UKS12-4
UKS10-805-90R	W30 26...0.05..		W57 26040.04..	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-805-90L		W30 26...0.05..		N00 56771 S3510-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20-806-90R	W30 44...0.08..		-					
UKS20-806-90L		W30 44...0.08..						
UKS10-T4-90R	-	-	W59 18050.04..					
UKS16-T5-90R	-	-	W59 32050.08..					

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

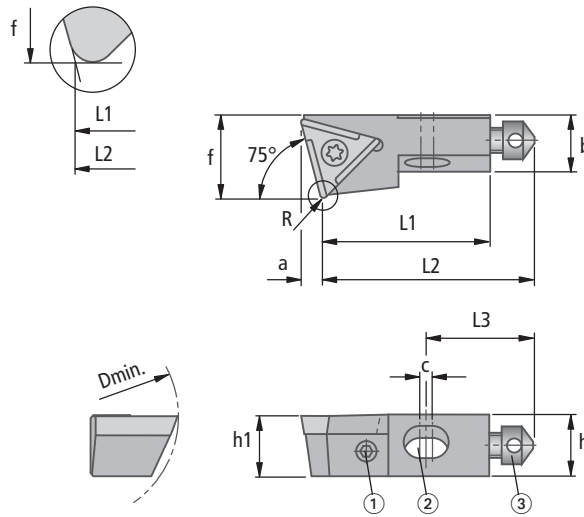
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 75^\circ$



for Insert **W30 / W57**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R					lbs	Replacement Parts		
										0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	0.031 (0.8)		Shim shim stock 0.019(0.5) L (2.5)	Shim clamping screw	Order No. Description
UKS 6-803-75R	D40 05260	0.228	0.236	0.787	0.965	0.472	0.177	0.039	0.039	0.280	0.276	0.272	-	-	0.007	UKS 6-5-75R	L02 20300	5502300206 M2×6 DIN965
UKS 6-803-75L	D40 00260	(5.8)	(6)	(20)	(24.5)	(12)	(4.5)	(1)	(1)	(7.1)	(7)	(6.91)	-	-	0.007	UKS 6-5-75L	L02 21300	
UKS 8-804-75R	D40 05270	0.299	0.315	0.984	1.260	0.669	0.256	0.079	0.059	0.401	-	0.394	-	-	0.020	UKS 8-5-75R	L02 20310	
UKS 8-804-75L	D40 00270	(7.6)	(8)	(25)	(32)	(17)	(6.5)	(2)	(1.5)	(10.18)	-	(10)	-	-	0.020	UKS 8-5-75L	L02 21310	

for Cartridge	Insert			Replacement Parts				
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 / W59 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS 6-803-75R	W30 04..0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-75L		W30 04..0.03..		N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-75R	W30 14..0.04..		W57 14040.04..					
UKS 8-804-75L		W30 14..0.04..						

For further details on inserts, please see Chapter 7

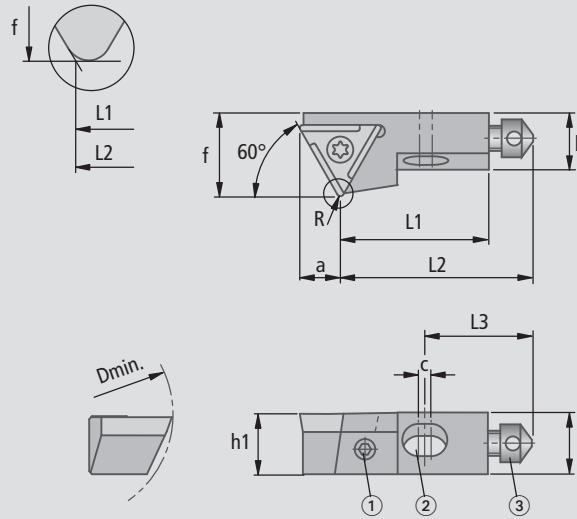
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W30 / W57**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R					lbs	Replacement Parts		
										0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	0.031 (0.8)		Shim shim stock 0.019(0.5)	Shim clamping screw	Shim 0.098 (2.5)
UKS 6-803-60R	D40 05360	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.142 (3.6)	0.280 (7.1)	0.276 (7)	0.272 (6.9)	–	–	0.007	UKS 6-5-60R	L02 20400	5502300206 M2×6 DIN965
UKS 8-804-60R	D40 05370	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.189 (4.8)	0.402 (10.2)	–	0.394 (10)	–	0.378 (9.6)	0.022	UKS 8-5-60R	L02 20410	

for Cartridge	Insert		Replacement Parts				
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 / W59 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS 6-803-60R	W30 04..0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 8-804-60R	W30 14..0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

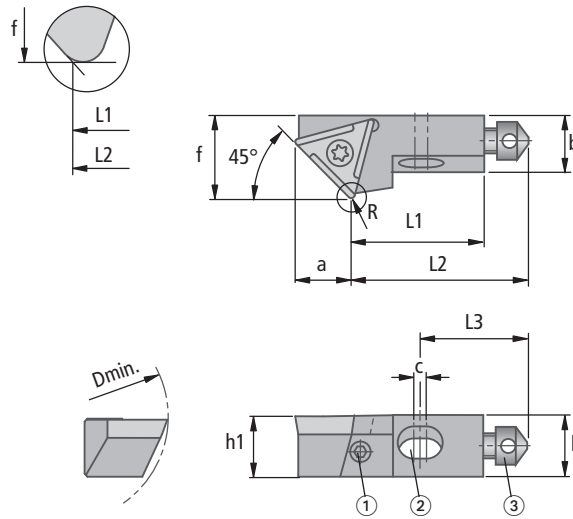
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 45^\circ$



for Insert **W30 / W57**



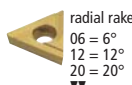
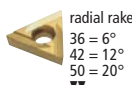
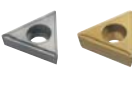





For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R					lbs	Replacement Parts		
										0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	0.031 (0.8)		Shim shim stock 0.019(0.5) L (2.5) 0.098	Shim clamping screw	Order No. Description
UKS 6-803-45R	D40 05460	0.228 (5.8)	0.236 (6)	0.591 (15)	0.768 (19.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.197 (5)	0.280 (7.1)	0.276 (7)	0.272 (6.91)	-	-	0.007	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS 6-803-45L	D40 00460															UKS 6-5-90L	L02 21200	
UKS 8-804-45R	D40 05470	0.299 (7.6)	0.315 (8)	0.768 (19.5)	1.043 (26.5)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.256 (6.5)	0.401 (10.18)	-	0.394 (10)	-	0.379 (9.62)	0.015	UKS 8-5-75R	L02 20310	
UKS 8-804-45L	D40 00470															UKS 8-5-75L	L02 21310	

for Cartridge	Insert			Replacement Parts				
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 / W59 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 6-803-45R	W30 04..0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403004 M3×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-45L		W30 04..0.03..						
UKS 8-804-45R	W30 14..0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-45L		W30 14..0.04..						

For further details on inserts, please see Chapter 7

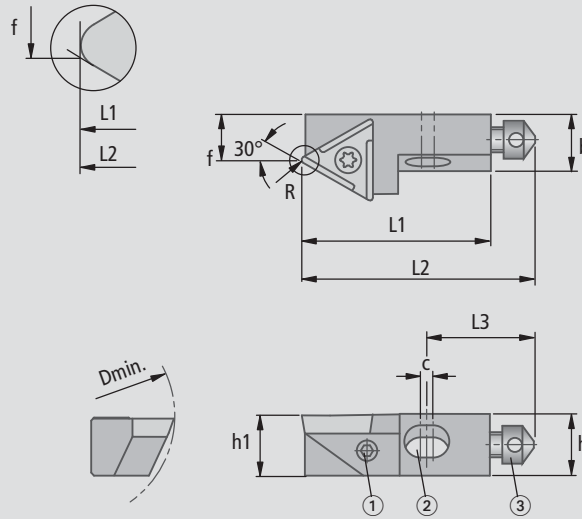
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W30 / W57**





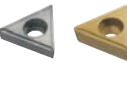





For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R					lbs	Replacement Parts		
									0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	0.031 (0.8)		Shim shim stock 0.019(0.5)	Shim clamping screw	
UKS 6-803-30R	D40 05660	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.143 (3.62)	0.144 (3.67)	0.147 (3.73)	-	-	0.007	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS 6-803-30L	D40 00660														UKS 6-5-90L	L02 21200	
UKS 8-804-30R	D40 05670	0.299 (7.6)	0.315 (8)	1.024 (26)	1.299 (33)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.202 (5.12)	-	0.206 (5.23)	-	0.215 (5.46)	0.018	UKS 8-5-75R	L02 20310	
UKS 8-804-30L	D40 00670														UKS 8-5-75L	L02 21310	

for Cartridge	Insert			Replacement Parts				
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 / W59 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 6-803-30R		W30 04..0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-30L	W30 04..0.03..			N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-30R		W30 14..0.04..	W57 14040.04..					
UKS 8-804-30L	W30 14..0.04..							

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

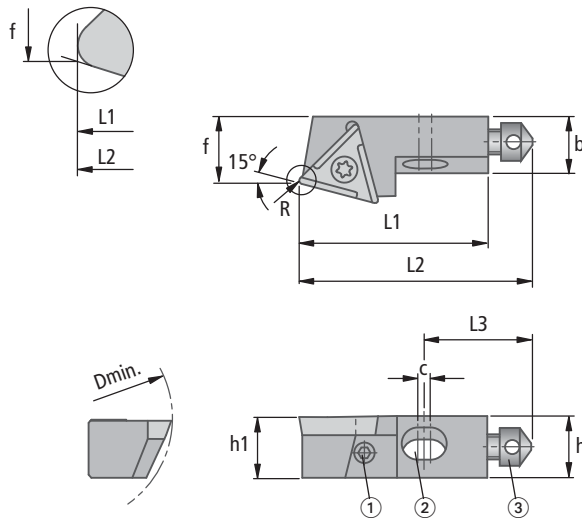
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 15^\circ$



for Insert **W30 / W57**



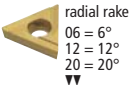
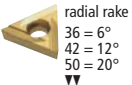
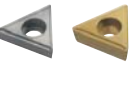





For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R					lbs	Replacement Parts		
									0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	0.031 (0.8)		Shim shim stock 0.019(0.5) L (2.5)	Description	Order No.
UKS 6-803-15R	D40 05860	0.228	0.236	0.787	0.965	0.472	0.177	0.039	0.199	0.200	0.201	-	-	0.007	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS 6-803-15L	D40 00860	(5.8)	(6)	(20)	(24.5)	(12)	(4.5)	(1)	(5.05)	(5.07)	(5.1)	-	-	0.007	UKS 6-5-90L	L02 21200	
UKS 8-804-15R	D40 05870	0.299	0.315	1.024	1.299	0.669	0.256	0.079	0.297	-	0.299	-	0.303	0.018	UKS 8-5-75R	L02 20310	
UKS 8-804-15L	D40 00870	(7.6)	(8)	(26)	(33)	(17)	(6.5)	(2)	(7.55)	-	(7.6)	-	(7.7)	0.018	UKS 8-5-75L	L02 21310	

for Cartridge	Insert			Replacement Parts				
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 / W59 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 6-803-15R		W30 04..0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-15L	W30 04..0.03..			N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-15R		W30 14..0.04..	W57 14040.04..					
UKS 8-804-15L	W30 14..0.04..							

For further details on inserts, please see Chapter 7

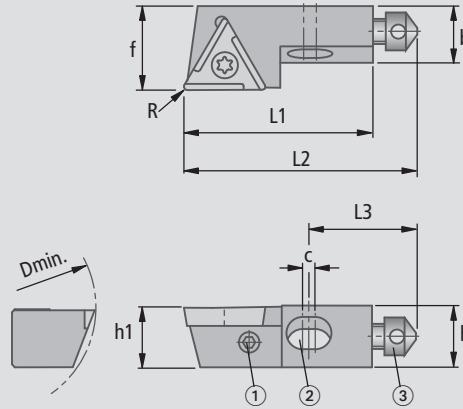
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W30 / W57**



For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R 0.008 (0.2) · 0.012 (0.3) 0.016 (0.4) · 0.020 (0.5) 0.031 (0.8)	lbs	Replacement Parts		
											Shim shim stock 0.019(0.5) ± 0.098 (2.5)		Shim clamping screw
											Description	Order No.	Order No. Description
UKS 6-803-OR	D40 05960	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.276 (7)	0.009	UKS 6-5-90R	L02 20200	5502300206 M2×6 DIN965
UKS 6-803-OL	D40 00960												
UKS 8-804-OR	D40 05970	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.394 (10)	0.018	UKS 8-5-75R	L02 20310	5502300206 M2×6 DIN965
UKS 8-804-OL	D40 00970												
UKS10-805-OR	D40 05980	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.033	UKS10-5- 0R	L02 20920	

for Cartridge	Insert			Replacement Parts				
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W57 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② Order No. Description	Axial adj. screw ③ Order No. Description
UKS 6-803-OR		W30 04..0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 6-803-OL	W30 04..0.03..			N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-804-OR		W30 14..0.04..	W57 14040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS 8-804-OL	W30 14..0.04..							
UKS10-805-OR		W30 26..0.05..	W57 26040.04..					

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

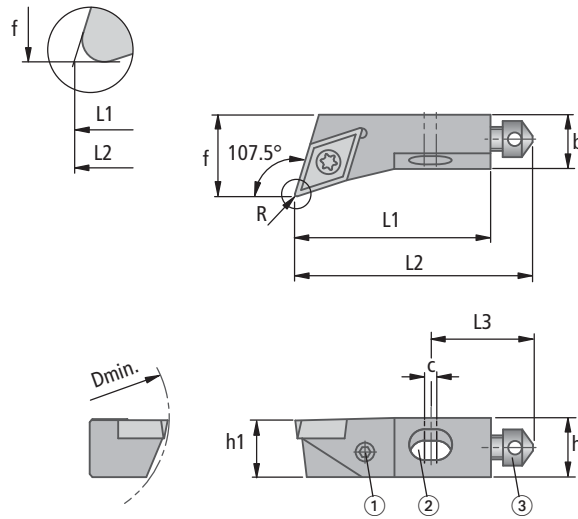
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 107.5^\circ$



for Insert **W79**









For Dmin see page 6.8

Right hand cartridge as shown.

Left hand cartridge is mirror image of above.

inch (mm)

Description cutting form ∇	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Shim		Shim clamping screw
									shim stock 0.019(0.5) \pm 0.098 (2.5)		Description		Order No.	Order No. Description	
UKS 8-8C1-107R	D40 06010	0.299	0.315	0.984	1.260	0.669	0.295	0.079	0.437	0.433	–	0.018	UKS 8-5-107R	L02 20010	5502300206 M2×6 DIN965
UKS 8-8C1-107L	D40 01010	(7.6)	(8)	(25)	(32)	(17)	(7.5)	(2)	(11.11)	(11)	–	0.018	UKS 8-5-107L	L02 21010	
UKS10-8C1-107R	D40 06020	0.378	0.394	1.181	1.457	0.669	0.354	0.079	0.556	0.551	–	0.033	UKS10-5-107R	L02 20720	
UKS10-8C1-107L	D40 01020	(9.6)	(10)	(30)	(37)	(17)	(9)	(2)	(14.11)	(14)	–	0.033	UKS10-5-107L	L02 21720	
UKS16-8C2-107R	D40 06040	0.614	0.630	1.654	1.969	0.984	0.472	0.079	–	0.717	0.709	0.097	UKS16-5-107R	L02 20040	5502103008 M3×8 DIN7991
UKS16-8C2-107L	D40 01040	(15.6)	(16)	(42)	(50)	(25)	(12)	(2)	–	(18.21)	(18)	0.097	UKS16-5-107L	L02 21040	

for Cartridge	Insert W79 Neutral 	Replacement Parts				
		Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adjustment screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 8-8C1-107R	W79 18060.04..	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-8C1-107L		N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-8C1-107R	W79 18060.04..	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-8C1-107L		N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-8C2-107R	W79 32060.08..	N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-8C2-107L		N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

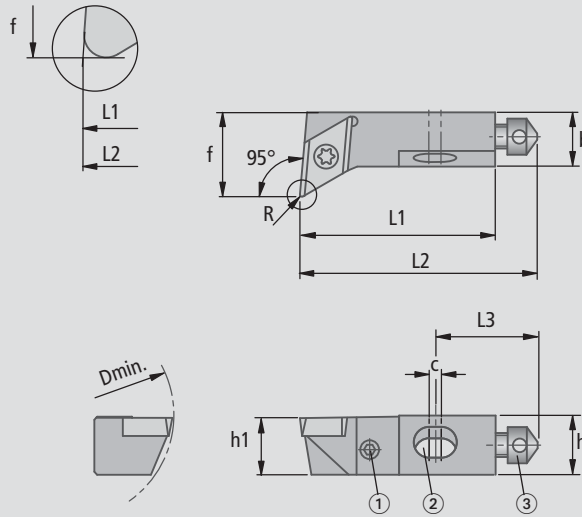
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



for Insert **W60 / W79**











For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 8-8C1-95R	D40 06110	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.479 (12.17)	0.472 (12)	–	0.020	UKS 8-5-95R	L02 20110	5502300206 M2×6 DIN965
UKS 8-8C1-95L	D40 01110												UKS 8-5-95L	L02 21110	
UKS10-8C1-95R	D40 06120	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.558 (14.17)	0.551 (14)	–	0.035	UKS10-5-95R	L02 20120	5502103008 M3×8 DIN7991
UKS10-8C1-95L	D40 01120												UKS10-5-95L	L02 21120	
UKS16-8C2-95R	D40 06140	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	–	0.722 (18.33)	0.709 (18)	0.090	UKS16-5-95R	L02 20140	5502103008 M3×8 DIN7991
UKS16-8C2-95L	D40 01140												UKS16-5-95L	L02 21140	

for Cartridge	Insert			Replacement Parts				
	W60 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W60 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W79 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 8-8C1-95R	W60 18..0.04..		W79 18060.02..	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-8C1-95L		W60 18..0.04..		N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-8C1-95R	W60 18..0.04..		W79 18060.02..	N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS10-8C1-95L		W60 18..0.04..		N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-8C2-95R	W60 32..0.08..		W79 32060.02..					
UKS16-8C2-95L		W60 32..0.08..						

For further details on inserts, please see Chapter 7

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

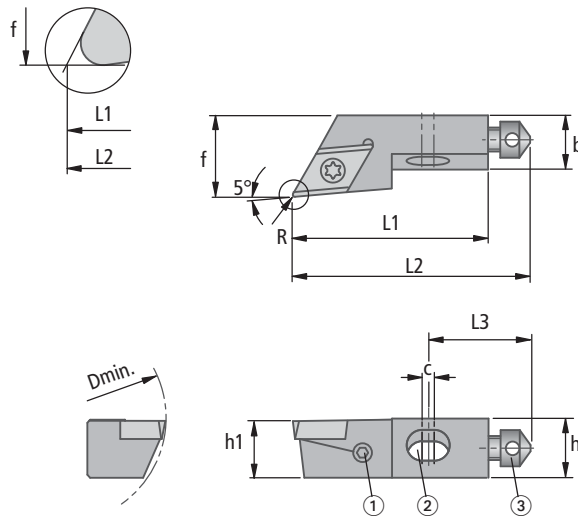
* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 5^\circ$



for Insert **W60 / W79**



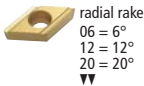
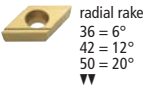






For Dmin see page 6.8

Right hand cartridge as shown, uses neutral and right hand insert.

Left hand cartridge is mirror image of above, uses neutral and left hand insert.

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
									0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS 8-8C1-5R	D40 06210	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.434 (11.03)	0.433 (11)	–	0.015	UKS 8-5-5R	L02 20810	5502300206 M2×6 DIN965
UKS 8-8C1-5L	D40 01210												UKS 8-5-5L	L02 21810	
UKS10-8C1-5R	D40 06220	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.552 (14.03)	0.551 (14)	–	0.031	UKS10-5-5R	L02 20820	5502103008 M3×8 DIN7991
UKS10-8C1-5L	D40 01220												UKS10-5-5L	L02 21820	
UKS16-8C2-5R	D40 06240	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	–	0.711 (18.06)	0.709 (18)	0.090	UKS16-5-5R	L02 20840	5502103008 M3×8 DIN7991
UKS16-8C2-5L	D40 01240												UKS16-5-5L	L02 21840	

for Cartridge	Insert			Replacement Parts				
	W60 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W60 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W79 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 8-8C1-5R		W60 18..0.04..	W79 18060.02..	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-8C1-5L	W60 18..0.04..			N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10-8C1-5R		W60 18..0.04..	W79 18060.02..	N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS10-8C1-5L	W60 18..0.04..			N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16-8C2-5R		W60 32..0.08..	W79 32060.02..					
UKS16-8C2-5L	W60 32..0.08..							

For further details on inserts, please see Chapter 7

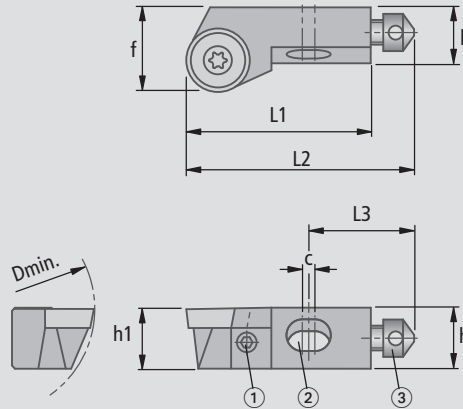
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.









for Round Insert



For Dmin see page 6.8

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	f	lbs	Replacement Parts		
											Description	Order No.	Order No. Description
UKS 6-705-Rd-R	D40 06500	0.228 (5.8)	0.236 (6)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.276 (7)	0.007	UKS6-5- 90R	L02 20200	5502300206 M2×6 DIN965
UKS 8-706-Rd-R	D40 06510	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.394 (10)	0.018	UKS8-5-107R	L02 20010	
UKS 8-708-Rd-R	D40 06520	0.299 (7.6)	0.315 (8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.433 (11)	0.020	UKS8-5-107R	L02 20010	
UKS10-710-Rd-R	D40 06530	0.378 (9.6)	0.394 (10)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.033	UKS10-5- 0R	L02 20920	
UKS16-712-Rd-R	D40 06550	0.614 (15.6)	0.630 (16)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.709 (18)	0.101	UKS16-5- 0R	L02 20940	5502103008 M3×8 DIN7991

for Cartridge	Insert 	Replacement Parts				
		Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adjustment screw ①  Order No. Description	Holding screw ②  DIN916 Order No. Description	Axial adj. screw ③  Order No. Description
UKS 6-705-Rd-R	RCMT 05 02 M0	N00 56591 S2245-6IP 8.9 in-lbs	L05 00810 6IP	5505403005 M3×5	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS 8-706-Rd-R	RCMT 06 02 M0	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS 8-708-Rd-R	RCMT 08 03 M0	N00 57341 S3066-9IP 22 in-lbs	L05 00840 9IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-710-Rd-R	RCMT 10 T3 M0	N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-712-Rd-R	RCMT 12 04 M0	N00 56851 S4511-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

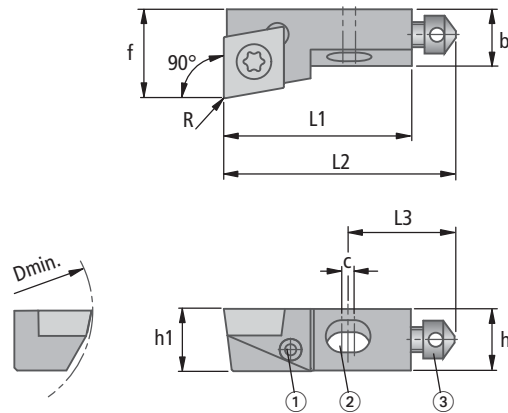
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



Kometric® UKS Cartridge $\kappa = 90^\circ$



For Dmin see page 6.8

inch (mm)

Description cutting form ▼	Order No.	h1	h	L1	L2	L3	b	c	ISO Dimension f		Replacement Parts		
											Shim Description	Shim stock Order No.	Shim clamping screw Order No. Description
UKS 8-CC06-90R	D40 06600	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.669 (17)	0.295 (7.5)	0.079 (2)	0.433 (11)	0.029	UKS8-5-90R	L02 20310	5502300206 M2×6 DIN965
UKS10-CC09-90R	D40 06610	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9)	0.079 (2)	0.551 (14)	0.049	UKS10-5-90R	L02 20220	
UKS16-CC09-90R	D40 06630	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12)	0.079 (2)	0.709 (18)	0.139	UKS16-5-90R	L02 20240	5502103008 M3×8 DIN7991
UKS20-CC12-90R	D40 06640	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15)	0.079 (2)	0.866 (22)	0.245	UKS20-5-90R	L02 20250	

for Cartridge	Insert 	Replacement Parts				
		Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adjustment screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS 8-CC06-90R	CCMT 06 02 04	N00 56651 S2560-8IP 11.3 in-lbs	L05 00830 8IP	5505403005 M3×5	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10-CC09-90R	CCMT 09 T3 04	N00 56751 S3570-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16-CC09-90R	CCMT 09 T3 04	N00 56751 S3570-10IP 25 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20-CC12-90R	CCMT 12 04 04	N00 56851 S4511-20IP 55.3 in-lbs	L05 00870 20IP	5505405014 M5×14	L02 30160 UKS20-3	L02 30030 UKS12-4

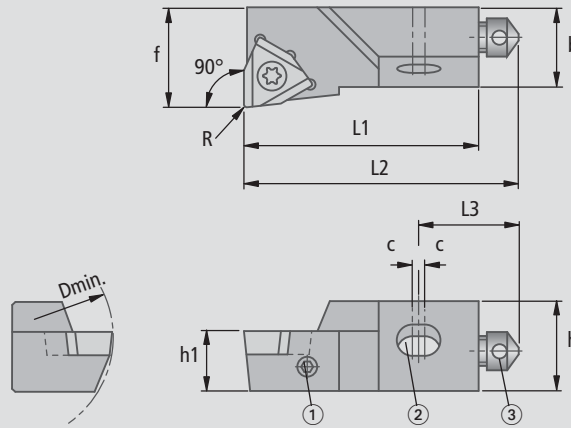
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.



ISO Standard
for Insert **W01 / W29**



For Dmin see page 6.35

Right hand cartridge as shown, uses neutral and left hand insert.

inch (mm)

Description	Order No.	D _{min}	h ₁	h	L ₁	L ₂	L ₃	b	c	ISO Dimension, f for radius, R			lbs
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
SWFOR10CA-06-38	D40 58000	1.575 (40)	0.394 (10)	0.551 (14)	1.654 (42)	1.969 (50)	0.787 (20)	0.354 (9)	0.079 (2)	0.551 (14)	0.551 (13.99)	0.548 (13.93)	0.061
SWFOR12CA-07-48	D40 58010	1.969 (50)	0.472 (12)	0.709 (18)	1.850 (47)	2.165 (55)	0.787 (20)	0.630 (16)	0.079 (2)	0.787 (20)	0.787 (19.98)	0.785 (19.93)	0.157

for Cartridge	Insert			Replacement Parts				
	W01 L.H.	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
SWFOR10CA-06-38				N00 57521 S/M3,5×7,3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30140 UKS12-3	L02 30020 UKS8-4
SWFOR12CA-07-48				N00 57531 S/M4,5×9-15IP 55.3 in-lbs	L05 00860 15IP	5505405012 M5×12	5501106020	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

Delivery:

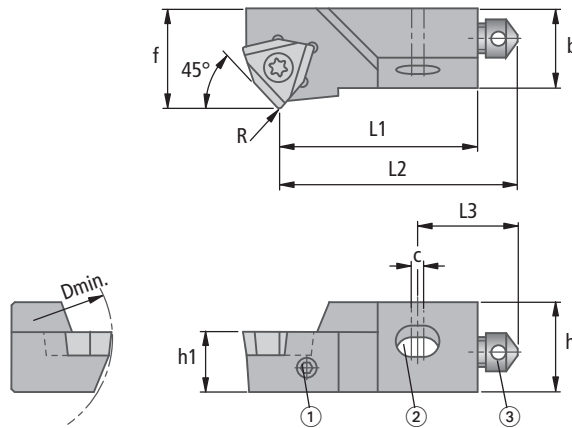
Cartridges complete with all replacement parts, less shim, wrenches and insert.



Kometric® Cartridge $\kappa = 45^\circ$



ISO Standard
for Insert **W01 / W29**



For Dmin see page 6.35

Right hand cartridge as shown, uses neutral and left hand insert.

inch (mm)

Description	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
SWSOR10CA-06-38	D40 58400	1.575 (40)	0.394 (10)	0.551 (14)	1.417 (36)	1.732 (44)	0.787 (20)	0.354 (9)	0.079 (2)	0.551 (14)	0.547 (13.9)	0.540 (13.71)	0.062

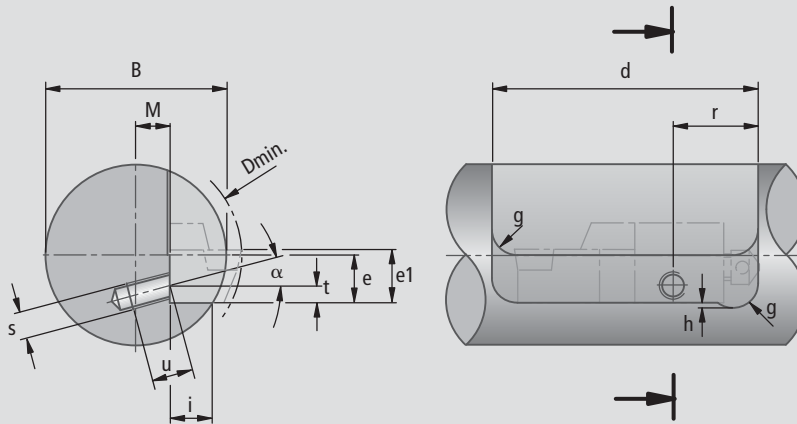
for Cartridge	Insert			Replacement Parts				
	W01 L.H.	W01 Neutral	W29 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
SWSOR10CA-06-38	W01 34060.02..	W01 34600...	W29 34000.04..	N00 57521 S/M3,5x7,3-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4x8	L02 30140 UKS12-3	L02 30020 UKS8-4

For further details on inserts, please see Chapter 7

Delivery:

Cartridges complete with all replacement parts, less shim, wrenches and insert.

Mounting Dimensions



$$B = 2 \sqrt{e^2 + (M + i)^2}$$

$$M = \frac{D}{2} - f$$

Dimension f:
see page 6.34-6.35

inch (mm)

Cartridge Size	Cartridge mounting Dimensions							Holding screw Dimensions				
	D _{min}	d	e	e1	g	h	i	r	s	t	α	u
10CA	1.575 (40)	2.362 (60)	0.354 (9)	0.394 (10)	0.157 (4)	0.039 (1)	0.354 (9)	0.787 (20)	M 6	0.197 (5)	20°	0.472 (12)
12CA	1.969 (50)	2.559 (65)	0.433 (11)	0.472 (12)	0.197 (5)	0.039 (1)	0.512 (13)	0.787 (20)	M 6	0.236 (6)	20°	0.472 (12)
16CA	2.165 (55)	2.953 (75)	0.591 (15)	0.630 (16)	0.236 (6)	0.039 (1)	0.650 (16.5)	0.984 (25)	M 8	—	45°	0.512 (13)

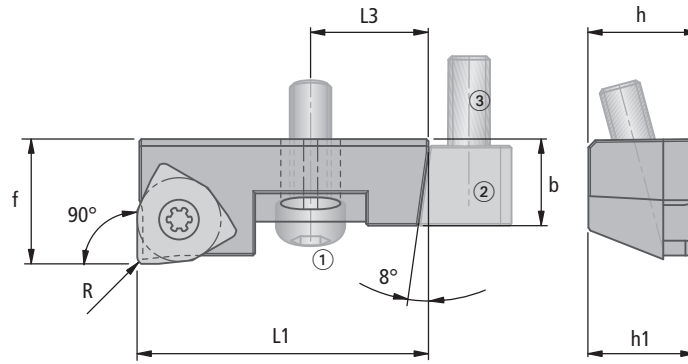


Kometric® UKS Short Cartridge $\kappa = 90^\circ$

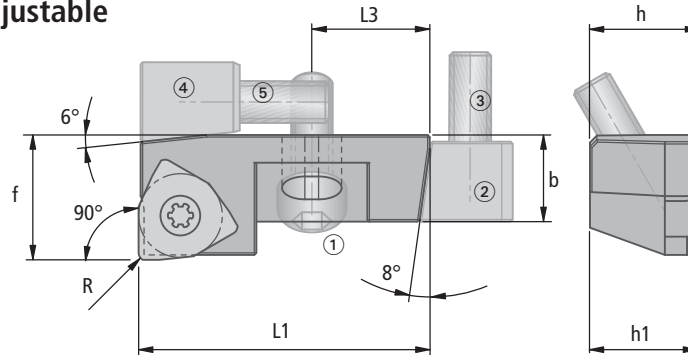


for power insert **W01**

axially adjustable



axially + radially adjustable



inch (mm)

Description cutting form ∇	Order No.	adjustable	h1	h	L1	L3	b	ISO dimension f for radius R0.031 (R0.8)	
UKS 8 WOHX 05T3 PN EL 90°	D40 55180	axially	0.299 (7.6)	0.307 (7.8)	0.974 (24.75)	0.384 (9.75)	0.295 (7.5)	0.425 (10.81)	0.022
UKS10 WOHX 05T3 PN EL 90°	D40 55190	axially + radially	0.299 (7.6)	0.386 (9.8)	1.161 (29.5)	0.413 (10.5)	0.394 (10)	0.571 (14.5)	0.046
UKS16 WOHX 0804 PN EL 90°	D40 65180	axially	0.629 (15.6)	0.622 (15.8)	1.653 (42)	0.669 (17)	0.492 (12.5)	0.709 (18)	0.130
UKS16 WOHX 0804 PN EL 90°	D40 65190	axially + radially	0.629 (15.6)	0.622 (15.8)	1.653 (42)	0.669 (17)	0.492 (12.5)	0.709 (18)	0.126

for short clamp holder	Insert W01 neutral 	Assembly parts	Accessories	Assembly parts				
		Clamping screw Order No. Description	Screwdriver Order No. Description	Location screw ① DIN 916 Order No. Description	Axial wedge ② Order No.	Differential screw ③ Order No. Description	Radial wedge ④ Order No.	Differential screw ⑤ Order No. Description
UKS 8 WOHX 05T3 PN EL 90°	W01 24600.906115	N00 57511 S/M2.5×7.2-8IP 1.28	L05 00830 8IP	L02 30170 UKS8-3	L02 30870	L02 30850 M5×0.5	-	-
UKS10 WOHX 05T3 PN EL 90°				L02 30130 UKS10-3	L02 30880	L02 30850 M5×0.5	L02 30860	L02 30850 M5×0.5
UKS16 WOHX 0804 PN EL 90°	W01 42600.906115	N00 57531 S/M4.5×9-15IP 6.25	L05 00860 15IP	L02 30140 UKS12-3	L02 30890	N10 20200 M6×0.75	-	-
UKS16 WOHX 0804 PN EL 90°				L02 30140 UKS12-3	L02 30890	N10 20200 M6×0.75	L02 30860	L02 30850 M5×0.5

For further details on inserts see chapter 7

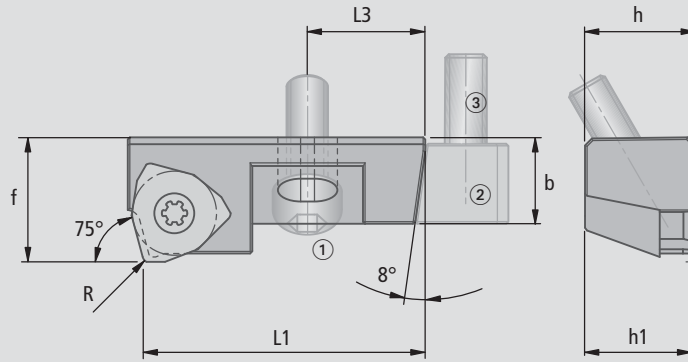
Supply includes:

Short clamp holder with assembly parts. Please order insert and accessories separately.

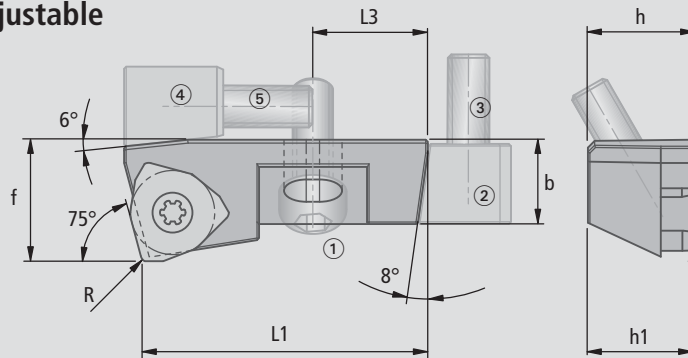


for power insert **W01**

axially adjustable



axially + radially adjustable



inch (mm)

Description cutting form ∇	Order No.	adjustable	h1	h	L1	L3	b	ISO dimension f for radius R0.031 (R0.8)	
UKS10 WOHX 05T3 EN EL 75°	D40 55280	axially	0.299 (7.6)	0.386 (9.8)	1.059 (26.9)	0.403 (10.25)	0.305 (7.75)	0.571 (14.5)	0.040
UKS10 WOHX 05T3 EN EL 75°	D40 55290	axially + radially	0.299 (7.6)	0.386 (9.8)	1.069 (27.15)	0.413 (10.5)	0.394 (10)	0.571 (14.5)	0.042
UKS16 WOHX 0804 EN EL 75°	D40 65280	axially	0.629 (15.6)	0.622 (15.8)	1.594 (40.5)	0.669 (17)	0.492 (12.5)	0.709 (18)	0.132
UKS16 WOHX 0804 EN EL 75°	D40 65290	axially + radially	0.629 (15.6)	0.622 (15.8)	1.653 (42)	0.669 (17)	0.492 (12.5)	0.709 (18)	0.132

6



for short clamp holder	Insert W01 neutral 	Assembly parts	Accessories	Assembly parts				
		Clamping screw Order No. Description	Screwdriver Order No. Description	Location screw ① DIN 916 Order No. Description	Axial wedge ② Order No.	Differential screw ③ Order No. Description	Radial wedge ④ Order No.	Differential screw ⑤ Order No. Description
UKS10 WOHX 05T3 EN EL 75°	W01 24600.756115	N00 57511 S/M2.5×7.2-8IP 1.28	L05 00830 8IP	L02 30130 UKS10-3	L02 30880	L02 30850 M5×0.5	-	-
UKS10 WOHX 05T3 EN EL 75°							L02 30860	L02 30850 M5×0.5
UKS16 WOHX 0804 EN EL 75°	W01 42600.756115	N00 57531 S/M4.5×9-15IP 6.25	L05 00860 15IP	L02 30140 UKS12-3	L02 30890	N10 20200 M6×0.75	-	-
UKS16 WOHX 0804 EN EL 75°							L02 30860	L02 30850 M5×0.5

For further details on inserts see chapter 7

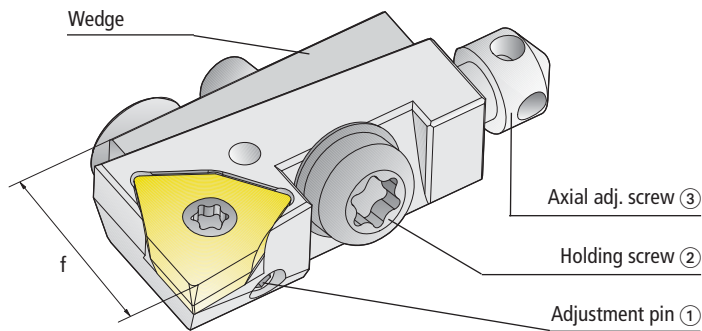
Supply includes:

Short clamp holder with assembly parts. Please order insert and accessories separately.

Kometric® UKS Cartridge

with axial and radial wedge adjustment

Adjusting the Kometric® short clamp holder with wedge adjustment



1. Set the cartridge to the smallest possible diameter (turn adjustment pin ① clockwise until it stops and place the holding screw ② lightly in position)
2. Set the axial dimension (length) with the axial adj. screw ③
3. Set the cartridge to the required diameter by turning the adjustment pin ① counter-clockwise. (If necessary, loosen the holding screw ② slightly)
4. Tighten the holding screw ②

Important note:

The cartridge must always be set from minus(-) to plus(+)!

The following cartridge adjustments apply:

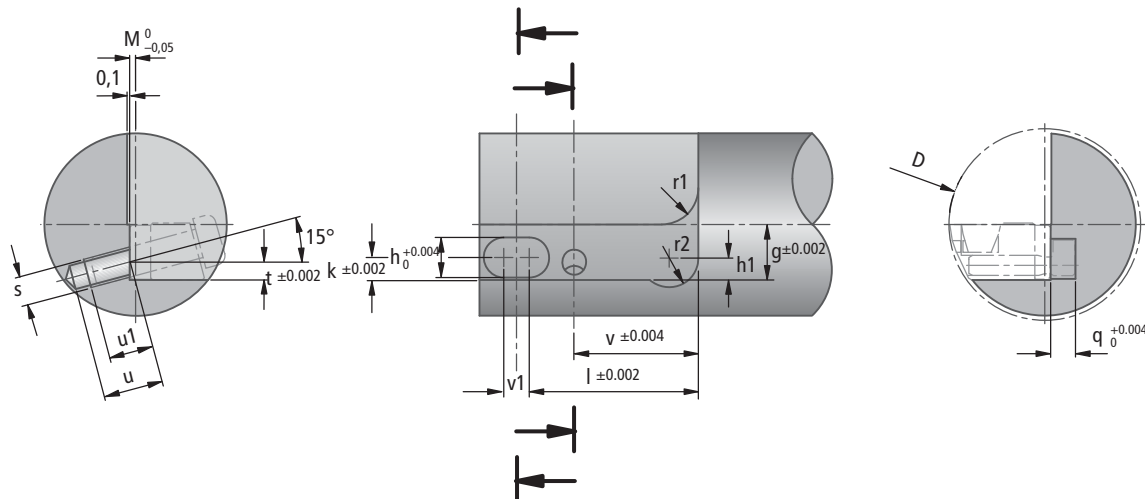
Cartridge size	axial	radial	f for R0.016(R0.4)
UKS 08	-0.039" to +0.039" (-1.0 to +1.0 mm)	-0.003" to +0.006" (-0.07 to +0.16 mm)	0.543" (13.80mm)
USK 10	-0.039" to +0.039" (-1.0 to +1.0 mm)	-0.003" to +0.008" (-0.07 to +0.20 mm)	0.692" (17.58mm)

Features

- Precise radial and axial adjustment
- Maximum support surface for cartridge on basic body provides maximum stability
- Parallel radial adjustment without changing the approach angle

Unlike the previous cartridge solutions, the user may set the radial adjustment with more accuracy and confidence as no movement occurs when the cartridge is locked with the central clamping screw.

Mounting Details

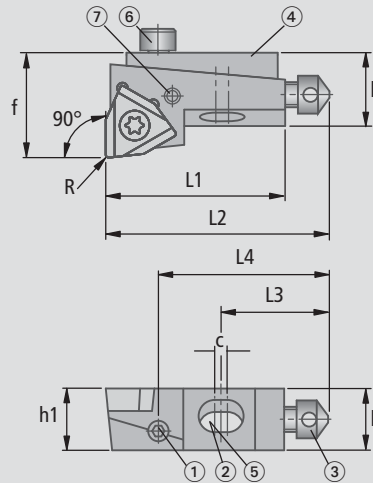


Cartridge Size	D _{min}	for R0.016 (R0.4) f	g	h	h1	k	l	M	q	r1	r2	s	t	u	u1	v	v1
UKS 08	1.024 (26)	0.543 (13.8)	0.299 (7.6)	0.217 (5.5)	0.118 (3)	0.114 (2.9)	0.911 (23.15)	D/2 - f	0.134 (3.4)	R5	R4	M4	0.096 (2.45)	0.315 (8)	0.256 (6.5)	0.669 (17)	0.138 (3.5)
UKS10	1.339 (34)	0.692 (17.58)	0.378 (9.6)	0.256 (6.5)	0.157 (4)	0.157 (4)	0.969 (24.60)	D/2 - f	0.157 (4)	R5	R5	M5	0.100 (2.55)	0.433 (11)	0.354 (9)	0.669 (17)	0.150 (3.8)

Kometric® UKS Cartridge $\kappa = 90^\circ$



for Insert **W01 / W29**
with axial and radial wedge adjustment



Right hand cartridge as shown, uses neutral and left hand insert.

inch (mm)

Description	Order No.	h1	h	L1	L2	L3	L4	b	c	Radial adj. range		ISO Dimension, f in zero position for radius R0.016 (R0.4)	lbs	Insert	
										from	to			W01 L.H. Radial rake 06 = 6° 12 = 12°	W01 W29 Neutral
UKS08-W2924-90R	D40 65011	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.394 (10)	0.705 (17.9)	0.406 (10.3)	0.079 (2)	-0.003 (-0.07)	+0.006 (+0.16)	0.543 (13.8)	0.026	W01 24..0.04..	W01 24600... W29 24000.04..
UKS10-W2934-90R	D40 65021	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.394 (10)	0.768 (19.5)	0.492 (12.5)	0.079 (2)	-0.004 (-0.10)	+0.008 (+0.20)	0.692 (17.58)	0.053	W01 34..0.04..	W01 34600... W29 34000.04..

For further details on inserts, please see Chapter 7

for Cartridge	Replacement Parts									
	Clamping screw	TORX PLUS	Adjustment pin ①	TORX	Holding screw ②	Axial adj. screw ③	Adjustment wedge ④	Spring ⑤	Cylindrical pin ⑥	Cylindrical pin ⑦
	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description
UKS 08	N00 57511 S/M2.5x7.2-8IP 11.3 in-lbs	L05 00830 8IP	L02 30771	L05 00020 Tx 6	L02 31010 UKS8-3	L02 30020 UKS8-4	L02 22510	56771108043 8x4.2x0.3	5531102006 2m6x6	5531101504 1.5m6x4
UKS 10	N00 57521 S/M3.5x7.3-10IP 25 in-lbs	L05 00850 10IP	L02 30781	L05 00020 Tx 6	L02 31020 UKS10-3	L02 30020 UKS8-4	L02 22520	5677110054 10x5.2x0.4	5531102008 2m6x8	5531101505 1.5m6x5

Delivery:

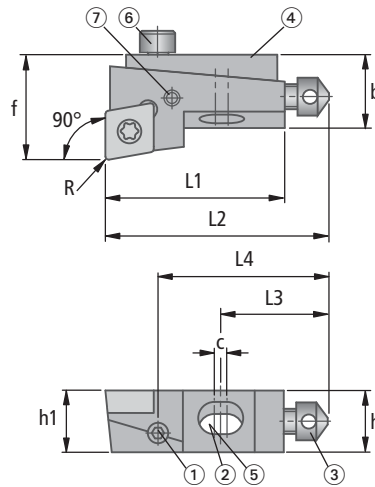
UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.



Kometric® UKS Cartridge $\kappa = 90^\circ$



for Insert **W85**
with axial and radial wedge adjustment



For Dmin see page 6.38

Right hand cartridge as shown, uses neutral insert.

inch (mm)

Description	Order No.	h1	h	L1	L2	L3	L4	b	c	Radial adj. range from to	ISO Dimension, f in zero position for radius R0.016 (R0.4)	lbs	Insert W85 Neutral
UKS10-CC09T3-90R	D40 65081	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.394 (10)	0.768 (19.5)	0.492 (12.5)	0.079 (2)	-0.004 (-0.10) to +0.008 (+0.20)	0.692 (17.58)	0.053	W85 32000.

For further details on inserts, please see Chapter 7

for Cartridge	Replacement Parts									
	Clamping screw	TORX PLUS	Adjustment pin ①	TORX	Holding screw ②	Axial adj. screw ③	Adjustment wedge ④	Spring ⑤	Cylindrical pin ⑥	Cylindrical pin ⑦
	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description
UKS 10	N00 56751 S3574-10IP 25 in-lbs	L05 00850 10IP	L02 30781	L05 00020 Tx 6	L02 31020 UKS10-3	L02 30020 UKS8-4	L02 22520	5677110054 10x5.2x0.4	5531102008 2m6x8	5531101505 1.5m6x5

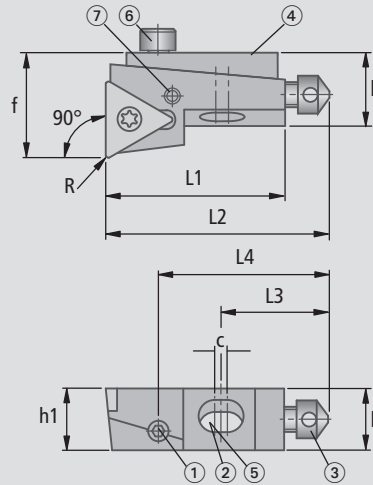
Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

Kometric® UKS Cartridge $\kappa = 90^\circ$



for Insert **W30 / W57**
with axial and radial wedge adjustment



For Dmin see page 6.38

Right hand cartridge as shown, uses neutral and left hand insert.

inch (mm)

Description	Order No.	h1	h	L1	L2	L3	L4	b	c	Radial adj. range		ISO Dimension, f in zero position for radius R0.016 (R0.4)	lbs	Insert	
										from	to			W30 L.H. Radial rake 06 = 6° 12 = 12° 20 = 20°	W57 Neutral
UKS08-W3014-90R	D40 65131	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.394 (10)	0.705 (17.9)	0.406 (10.3)	0.079 (2)	-0.003 (-0.07)	+0.006 (+0.16)	0.543 (13.8)	0.029	W30 14..0.04..	W57 14040.04..

For further details on inserts, please see Chapter 7

for Cartridge	Replacement Parts									
	Clamping screw	TORX PLUS	Adjustment pin ①	TORX	Holding screw ②	Axial adj. screw ③	Adjustment wedge ④	Spring ⑤	Cylindrical pin ⑥	Cylindrical pin ⑦
	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description	Order No.	Order No. Description	Order No. Description	Order No. Description
UKS 08	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	L02 30771	L05 00020 Tx 6	L02 31010 UKS8-3	L02 30020 UKS8-4	L02 22510	5677108043 8×4.2×0.3	5531102006 2m6×6	5531101504 1.5m6×4

Delivery:

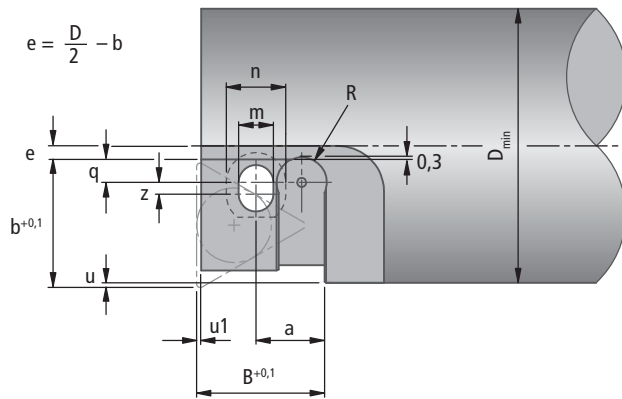
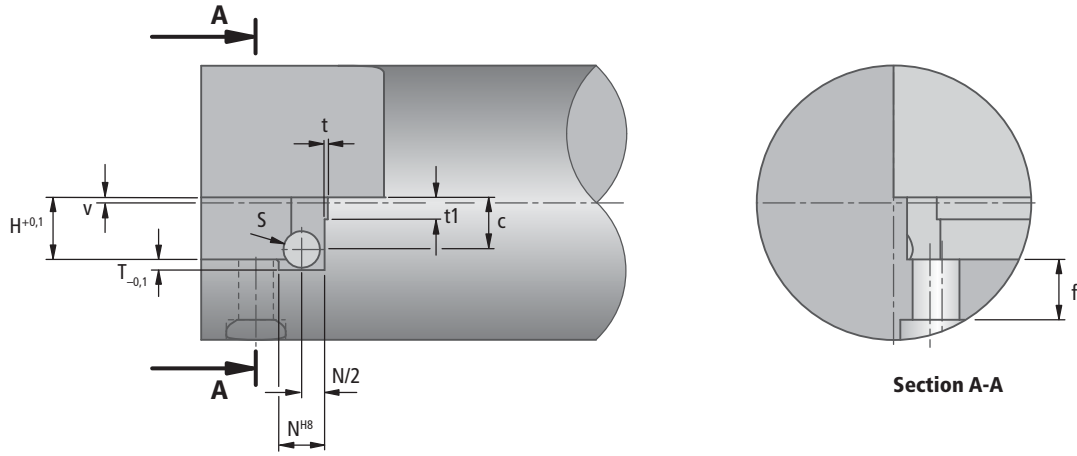
UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.



Kometric® FLWE Flat Bed Insert Pocket

Adjustable Insert flat bed seatings

Mounting
for cutting form 1 as shown
for cutting form 2 in mirror image



D = required turning diameter

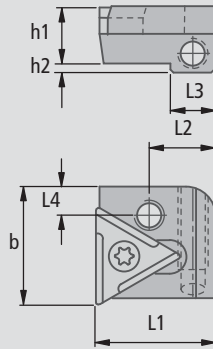
Mounting dimensions

inch (mm)

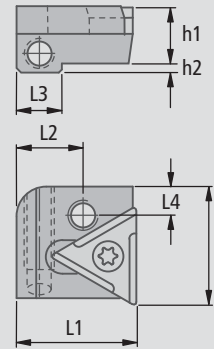
Insert flat bed seating size	a	B	c	D min.	f	b	H	m	N	n	q	R	S	T	t	t1	u	u1	v	z
FLWE-U3..	0.173	0.315	0.114	0.630	0.051	0.307	0.142	0.087	0.118	0.157	0.063	0.069	0.098	0.033	0.004	0.071	0.020	0.012	0.020	0.031
FLWE-TPHB 06..	(4.4)	(8)	(2.9)	(16)	(1.3)	(7.8)	(3.6)	(2.2)	(3)	(4)	(1.6)	(1.75)	(2.5)	(0.85)	(0.1)	(1.8)	(0.5)	(0.3)	(0.5)	(0.8)
FLWE-U4..	0.275	0.472	0.161	0.866	0.142	0.433	0.224	0.110	0.197	0.177	0.079	0.108	0.157	0.045	0.006	0.094	0.020	0.020	0.024	0.051
FLWE-TPHB 09..	(7)	(12)	(4.1)	(22)	(3.6)	(11)	(5.7)	(2.8)	(5)	(4.5)	(2)	(2.75)	(4)	(1.15)	(0.15)	(2.4)	(0.5)	(0.5)	(0.6)	(1.3)
FLWE-U5..	0.275	0.551	0.224	1.181	0.260	0.551	0.268	0.150	0.197	0.256	0.098	0.108	0.157	0.045	0.006	0.094	0.020	0.020	0.024	0.051
	(7.5)	(14)	(5.7)	(30)	(6.6)	(14)	(6.8)	(3.8)	(5)	(6.5)	(2.5)	(2.75)	(4)	(1.15)	(0.15)	(2.4)	(0.5)	(0.5)	(0.6)	(1.3)



Adjustable Insert flat bed seatings for Insert W30 / W57



Insert seating cutting form 1
as shown with left or neutral
insert.



Insert seating cutting form 2
in mirror image with right or
neutral insert.

Dimension 'b' relates to the appropriate insert radius

Article cutting form ▼	Order No.	for radius b	L1	L2	L3	L4	h1	h2	
FLWE-U3-90°-1	D53 56410	0.307 (7.8)	0.315 (8)	0.173 (4.4)	0.118 (3)	0.075 (1.9)	0.142 (3.6)	0.024 (0.6)	0.009
FLWE-U4-90°-1	D53 56430	0.433 (11)	0.442 (12)	0.275 (7)	0.197 (5)	0.098 (2.5)	0.224 (5.7)	0.037 (0.95)	0.013
FLWE-U4-90°-2	D53 51430								
FLWE-U5-90°-1	D53 56440	0.551 (14)	0.551 (14)	0.295 (7.5)	0.197 (5)	0.118 (3)	0.268 (6.8)	0.037 (0.95)	0.018
FLWE-U5-90°-2	D53 51440								

for insert seating	Insert			Assembly parts	Accessories	Assembly parts	
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral 	Clamping screw Order No. Article	Screwdriver Order No. Article	Location screw Order No.	Threaded pin Order No. Article
FLWE-U3-90°-1	W30 04..0.03..		W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N10 11200	55051 02005 M2×5
FLWE-U4-90°-1	W30 14..0.04..		W57 14040.04..	N00 56031 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N10 11310	55051 03006 M3×6
FLWE-U4-90°-2		W30 14..0.04..					
FLWE-U5-90°-1	W30 26..0.05..		W57 26040.05..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	N10 11400	55051 03006 M3×6
FLWE-U5-90°-2		W30 26..0.05..					

For further details on inserts see chapter 7

Note:

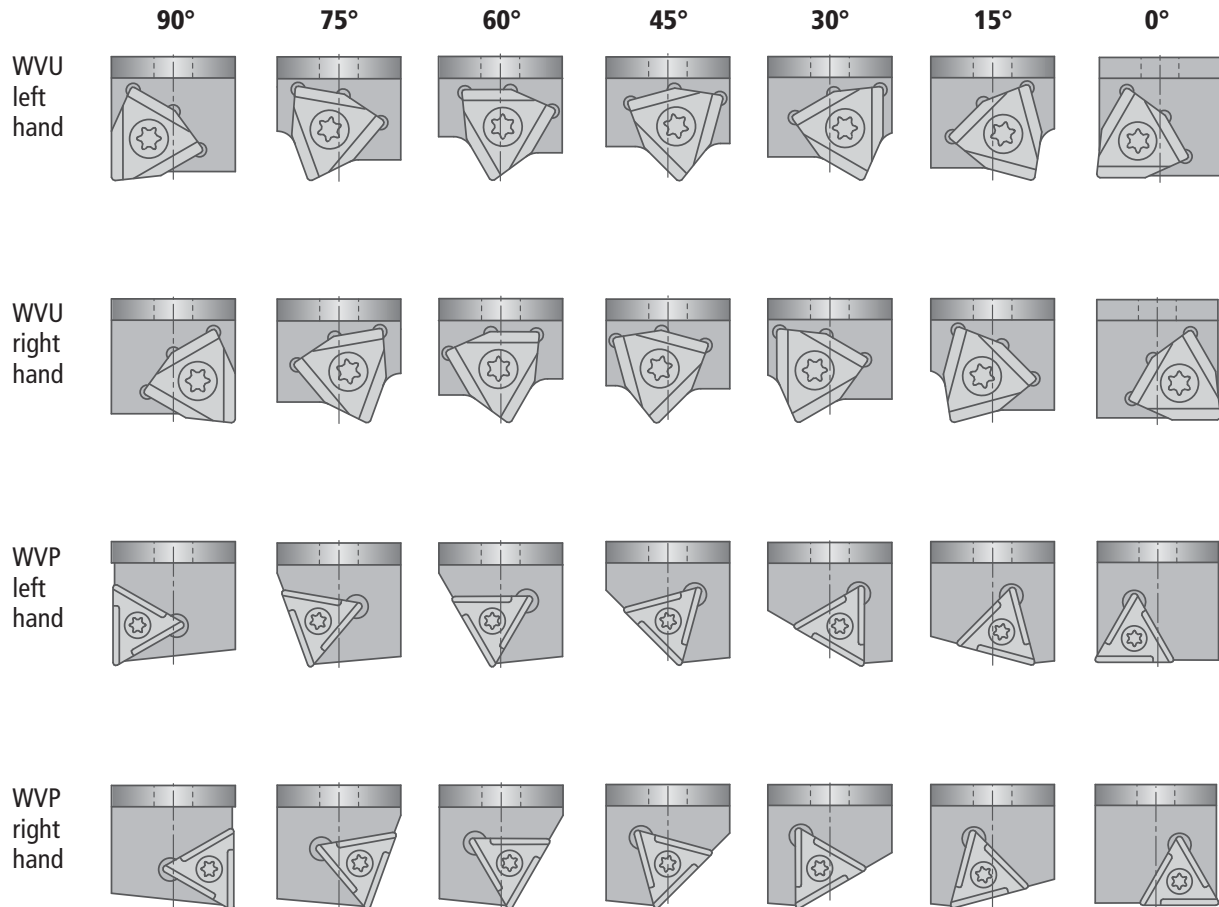
If using insert W3031.. (UF) the external contour have to be reworked.

Supply includes:

Insert seating with assembly parts. Please order insert and accessories separately.



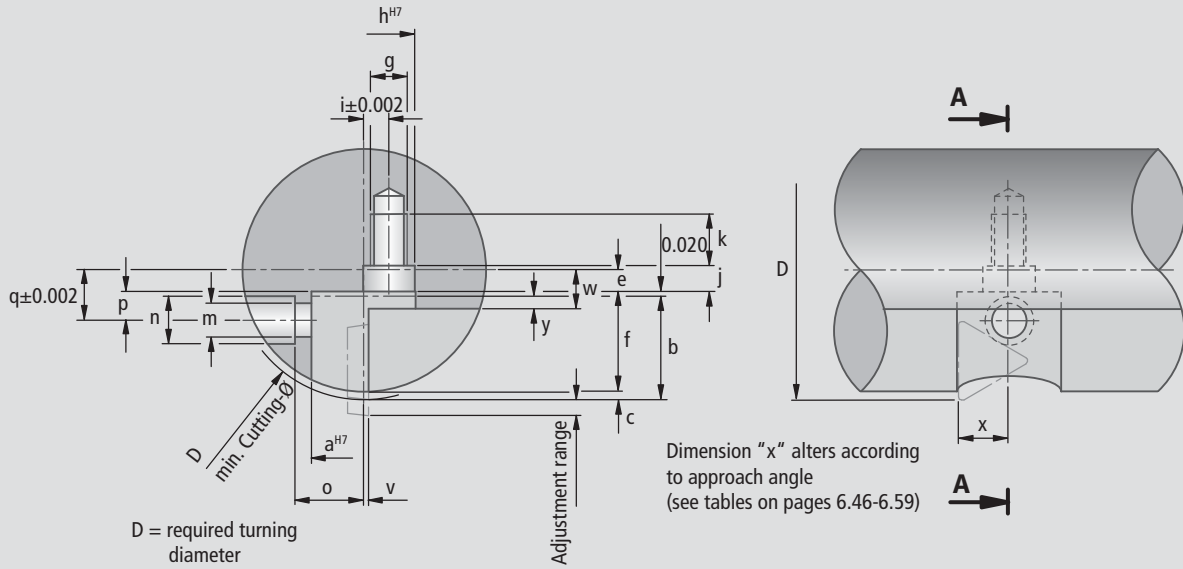
KOMETRIC® WVU / WVP Adjustable Insert Pocket



Features

- KOMETRIC® type WVU for use with the triangular insert
- KOMETRIC® type WVP for use with the Unisix® insert
- KOMETRIC® types WVU4 and WVU5 are interchangeable with WVP02, WVP12, WVP01 and WVP16
- can be used from dia. 0.630 in (16 mm)
- optimum adjustment with easily accessible adjusting screw
- precision finishing tools can be further machined using the ABS® or HSK semi-finished heads

Mounting Details



$$e = \frac{D}{2} - b - 0.020$$

$$f = b + 0.020 - c$$

$$q = p + \frac{D}{2} - b - 0.020$$

$$w = e + y + 0.020$$

inch (mm)

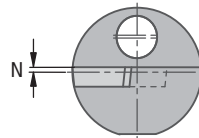
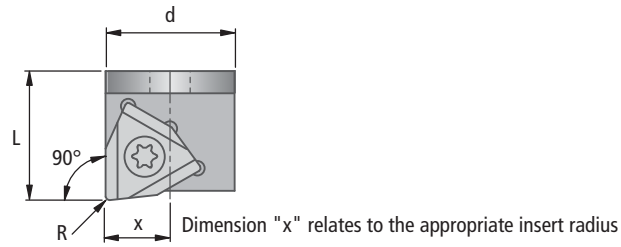
Cartridge Size	Pocket			Adjusting screw					Clamping screw				Chip channel	
	a	b	c	g	h	i	j	k	m	n	o	p	v	y
WVU 3-..L/R	0.315 (8)	0.335 (8.5)	0.030 (0.75)	M3	0.157 (4)	0.083 (2.1)	0.098 (2.5)	0.157 (4)	0.110 (2.8)	0.157 (4)	0.217 (5.5)	0.106 (2.7)	0.020 (0.5)	0.059 (1.5)
WVU T06..L/R														
WVU 4-..L/R	0.472 (12)	0.472 (12)	0.039 (1)	M4	0.236 (6)	0.114 (2.9)	0.118 (3)	0.236 (6)	0.154 (3.9)	0.217 (5.5)	0.311 (7.9)	0.130 (3.3)	0.024 (0.6)	0.059 (1.5)
WVU T09..L/R														
WVP 02-..L/R														
WVU 5-..L/R	0.630 (16)	0.630 (16)	0.039 (1)	M5	0.276 (7)	0.173 (4.4)	0.138 (3.5)	0.315 (8)	0.177 (4.5)	0.295 (7.5)	0.374 (9.5)	0.165 (4.2)	0.024 (0.6)	0.079 (2)
WVU T11..L/R														
WVU T13..L/R														
WVP 01-..L/R														
WVP 1-..L/R	0.709 (18)	0.728 (18.5)	0.079 (2)	M6	0.354 (9)	0.173 (4.4)	0.197 (5)	0.394 (10)	0.177 (4.5)	0.295 (7.5)	0.433 (11)	0.197 (5)	0.020 (0.5)	0.098 (2.5)
WVU T16..L/R	0.787 (20)	0.945 (24)	0.079 (2)	M6	0.354 (9)	0.228 (5.8)	0.197 (5)	0.394 (10)	0.217 (5.5)	0.354 (9)	0.551 (14)	0.236 (6)	0.024 (0.6)	0.118 (3)



Kometric® WVP Adjustable Insert Pocket $\kappa = 90^\circ$



for Insert **W01 / W29**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			lbs
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-90L31	D20 80050	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.228 (5.8)	0.228 (5.8)	0.228 (5.8)	0.044
WVP12-818-90R31	D20 85050									
WVP16-824-90L38	D20 80060	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.307 (7.8)	0.307 (7.8)	0.307 (7.8)	0.044
WVP16-824-90R38	D20 85060									
WVP18-834-90L38	D20 80070	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.346 (8.8)	0.346 (8.8)	0.346 (8.8)	0.044
WVP18-834-90R38	D20 85070									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
WVP12-818-90L31	—	—	—	W29 18010.04..	N00 57553	L05 00810	N00 55701	N00 52510
WVP12-818-90R31		—			S/M2.2×5.5-6IP 8.9 in-lbs	6IP	M3.5×5-8IP 20 in-lbs	E46
WVP16-824-90L38	W01 24060.02..				N00 57511	L05 00830	5501204006	N00 52520
WVP16-824-90R38		W01 24360.02..	W01 24600...	W29 24010.04..	S/M2.5×7.2-8IP 11.3 in-lbs	8IP	M4×6 DIN7984	E58
WVP18-834-90L38	W01 34060.04..				N00 57521	L05 00850	5501104006	N00 52530
WVP18-834-90R38		W01 34360.04..	W01 34600...	W29 34010.04..	S/M3.5×7.3-10IP 25 in-lbs	10IP	M4×6 DIN912	E610

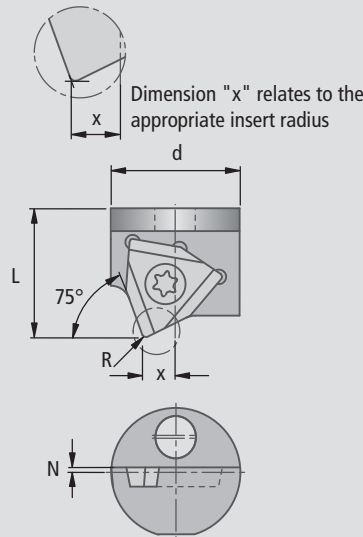
For further details on inserts, please see Chapter 7

Delivery

WVP pocket complete with all replacement parts, less wrenches and insert.



for Insert **W01 / W29**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-75L31	D20 80150	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.142 (3.6)	0.143 (3.62)	0.144 (3.66)	0.044
WVP12-818-75R31	D20 85150									
WVP16-824-75L38	D20 80160	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.157 (4)	0.158 (4.02)	0.159 (4.05)	0.044
WVP16-824-75R38	D20 85160									
WVP18-834-75L38	D20 80170	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.197 (5)	0.198 (5.02)	0.199 (5.05)	0.044
WVP18-834-75R38	D20 85170									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H. 	W01 R.H. 	W01 Neutral 	W29 Neutral 	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVP12-818-75L31	—	—	—	W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVP12-818-75R31	—	—	—					
WVP16-824-75L38	W01 24060.02..	—	W01 24600...	W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVP16-824-75R38	—	W01 24360.02..						
WVP18-834-75L38	W01 34060.04..	—	W01 34600...	W29 34010.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5501104006 M4×6 DIN912	N00 52530 E610
WVP18-834-75R38	—	W01 34360.04..						

For further details on inserts, please see Chapter 7

Delivery

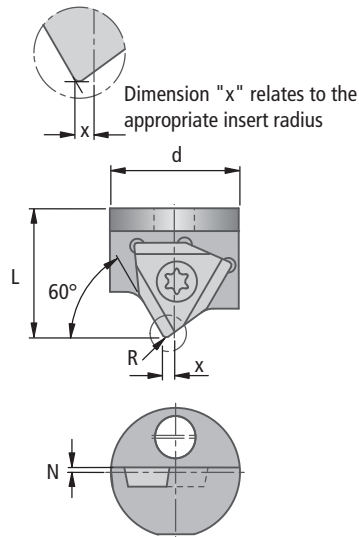
WVP pocket complete with all replacement parts, less wrenches and insert.



Kometric® WVP Adjustable Insert Pocket $\alpha = 60^\circ$



for Insert W01 / W29



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-60L31	D20 80250	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.059 (1.5)	0.061 (1.55)	0.065 (1.66)	0.044
WVP12-818-60R31	D20 85250									
WVP16-824-60L38	D20 80260	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.051 (1.3)	0.054 (1.36)	0.057 (1.46)	0.044
WVP16-824-60R38	D20 85260									
WVP18-834-60L38	D20 80270	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.091 (2.3)	0.093 (2.36)	0.097 (2.46)	0.044
WVP18-834-60R38	D20 85270									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
WVP12-818-60L31	—	—	—	W29 18010.04..	N00 57553	L05 00810	N00 55701	N00 52510
WVP12-818-60R31		—			S/M2.2×5.5-6IP 8.9 in-lbs	6IP	M3.5×5-8IP 20 in-lbs	E46
WVP16-824-60L38	W01 24060.02..				N00 57511	L05 00830	5501204006	N00 52520
WVP16-824-60R38		W01 24360.02..	W01 24600...	W29 24010.04..	S/M2.5×7.2-8IP 11.3 in-lbs	8IP	M4×6 DIN7984	E58
WVP18-834-60L38	W01 34060.04..				N00 57521	L05 00850	5501104006	N00 52530
WVP18-834-60R38		W01 34360.04..	W01 34600...	W29 34010.04..	S/M3.5×7.3-10IP 25 in-lbs	10IP	M4×6 DIN912	E610

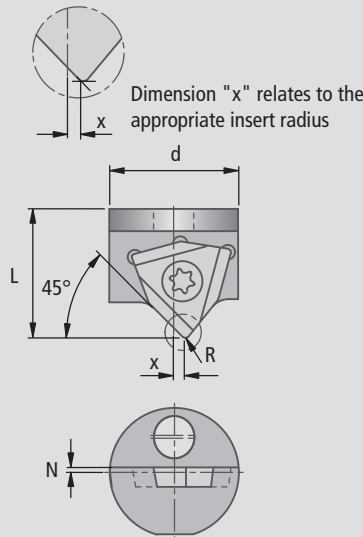
For further details on inserts, please see Chapter 7

Delivery

WVP pocket complete with all replacement parts, less wrenches and insert.



for Insert **W01 / W29**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			lbs
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-45L31	D20 80350	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.028 (0.7)	0.024 (0.61)	0.016 (0.41)	0.044
WVP12-818-45R31	D20 85350									
WVP16-824-45L38	D20 80360	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.051 (1.3)	0.047 (1.2)	0.040 (1.01)	0.044
WVP16-824-45R38	D20 85360									
WVP18-834-45L38	D20 80370	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.020 (0.5)	0.016 (0.4)	0.008 (0.21)	0.044
WVP18-834-45R38	D20 85370									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
WVP12-818-45L31	—	—	—	W29 18010.04..	 N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	 L05 00810 6IP	 N00 55701 M3.5×5-8IP 20 in-lbs	 N00 52510 E46
WVP12-818-45R31	—	—	—					
WVP16-824-45L38	W01 24060.02..	—	W01 24600...	W29 24010.04..	 N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	 L05 00830 8IP	 5501204006 M4×6 DIN7984	 N00 52520 E58
WVP16-824-45R38	—	W01 24360.02..						
WVP18-834-45L38	W01 34060.04..	—	W01 34600...	W29 34010.04..	 N00 57521 S/M3.5×7.3-10IP 25 in-lbs	 L05 00850 10IP	 5501104006 M4×6 DIN912	 N00 52530 E610
WVP18-834-45R38	—	W01 34360.04..						

For further details on inserts, please see Chapter 7

Delivery

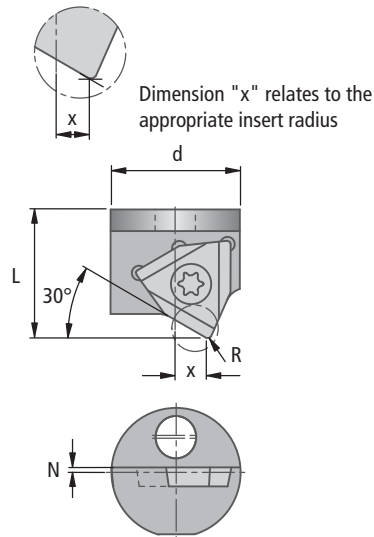
WVP pocket complete with all replacement parts, less wrenches and insert.



Kometric® WVP Adjustable Insert Pocket $\kappa = 30^\circ$



for Insert **W01 / W29**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			lbs
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-30L31	D20 80450	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.098 (2.5)	0.093 (2.35)	0.081 (2.06)	0.044
WVP12-818-30R31	D20 85450									
WVP16-824-30L38	D20 80460	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.157 (4)	0.152 (3.86)	0.141 (3.57)	0.044
WVP16-824-30R38	D20 85460									
WVP18-834-30L38	D20 80470	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.138 (3.5)	0.132 (3.36)	0.121 (3.07)	0.044
WVP18-834-30R38	D20 85470									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
WVP12-818-30L31	—		—	W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVP12-818-30R31		—						
WVP16-824-30L38	W01 24060.02..				N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN984	N00 52520 E58
WVP16-824-30R38		W01 24360.02..	W01 24600...	W29 24010.04..				
WVP18-834-30L38	W01 34060.04..				N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5501104006 M4×6 DIN912	N00 52530 E610
WVP18-834-30R38		W01 34360.04..	W01 34600...	W29 34010.04..				

For further details on inserts, please see Chapter 7

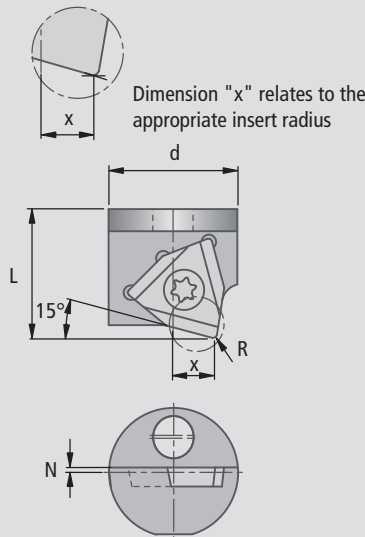
Delivery

WVP pocket complete with all replacement parts, less wrenches and insert.

6.50



for Insert **W01 / W29**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			lbs
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-15L31	D20 80550	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.118 (3)	0.111 (2.81)	0.096 (2.43)	0.044
WVP12-818-15R31	D20 85550									
WVP16-824-15L38	D20 80560	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.197 (5)	0.189 (4.81)	0.174 (4.43)	0.044
WVP16-824-15R38	D20 85560									
WVP18-834-15L38	D20 80570	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.236 (6)	0.229 (5.81)	0.214 (5.43)	0.044
WVP18-834-15R38	D20 85570									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
WVP12-818-15L31	—	—	—	W29 18010.04..	 N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	 L05 00810 6IP	 N00 55701 M3.5×5-8IP 20 in-lbs	 N00 52510 E46
WVP12-818-15R31	—	—	—					
WVP16-824-15L38	W01 24060.02..	—	W01 24600...	W29 24010.04..	 N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	 L05 00830 8IP	 5501204006 M4×6 DIN7984	 N00 52520 E58
WVP16-824-15R38	—	W01 24360.02..						
WVP18-834-15L38	W01 34060.04..	—	W01 34600...	W29 34010.04..	 N00 57521 S/M3.5×7.3-10IP 25 in-lbs	 L05 00850 10IP	 5501104006 M4×6 DIN912	 N00 52530 E610
WVP18-834-15R38	—	W01 34360.04..						

For further details on inserts, please see Chapter 7

Delivery

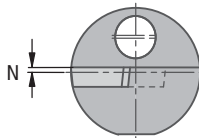
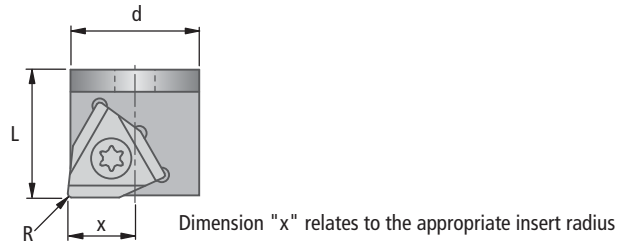
WVP pocket complete with all replacement parts, less wrenches and insert.



Kometric® WVP Adjustable Insert Pocket $\kappa = 0^\circ$



for Insert **W01 / W29**












For mounting dimensions see page 6.45

L.H. pocket as shown with right or neutral insert.

R.H. pocket in mirror image with left or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R			
							0.008 (0.2)	0.016 (0.4)	0.031 (0.8)	
WVP12-818-0L31	D20 80650	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.248 (6.3)	0.247 (6.28)	0.245 (6.23)	0.044
WVP12-818-0R31	D20 85650									
WVP16-824-0L38	D20 80660	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.327 (8.3)	0.326 (8.28)	0.324 (8.23)	0.044
WVP16-824-0R38	D20 85660									
WVP18-834-0L38	D20 80670	1.1417 (36)	0.020 (0.5)	0.709 (18)	0.728 (18.5)	0.020 (0.5)	0.366 (9.3)	0.365 (9.28)	0.363 (9.23)	0.044
WVP18-834-0R38	D20 85670									

for Insert pocket	Insert				Replacement Parts			
	W01 L.H.	W01 R.H.	W01 Neutral	W29 Neutral	Clamping screw	TORX PLUS	Locking screw	Adjusting screw
								
				Order No. Description	Order No. Description	Order No. Description	Order No. Description	
WVP12-818-0L31		–	–	W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVP12-818-0R31	–							
WVP16-824-0L38		W01 24060.02..	W01 24600...	W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN984	N00 52520 E58
WVP16-824-0R38	W01 24360.02..							
WVP18-834-0L38		W01 34060.04..	W01 34600...	W29 34010.04..	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	5501104006 M4×6 DIN912	N00 52530 E610
WVP18-834-0R38	W01 34360.04..							

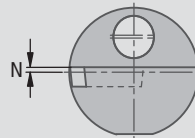
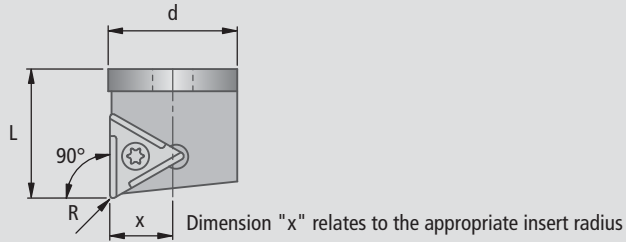
For further details on inserts, please see Chapter 7

Delivery

WVP pocket complete with all replacement parts, less wrenches and insert.



for Insert **W30 / W57**







For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-90L	D20 40000	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.154 (3.9)	0.154 (3.9)	0.154 (3.9)	0.154 (3.9)	0.009
WVU4-800-90L	D20 40010	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.228 (5.8)	0.228 (5.8)	0.228 (5.8)	0.228 (5.8)	0.009
WVU5-800-90L	D20 40020	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.307 (7.8)	0.307 (7.8)	0.307 (7.8)	0.307 (7.8)	0.022

for Insert pocket	Insert		Replacement Parts			
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU3-800-90L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-90L	W30 14..0.04..	W57 14040.04..	N00 56121 S/M2.6×4.7-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-90L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

For further details on inserts, please see Chapter 7

Delivery

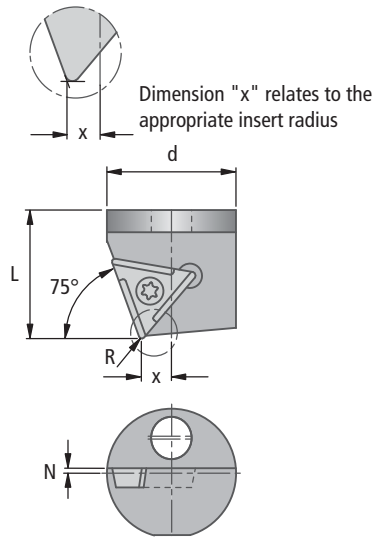
WVU pocket complete with all replacement parts, less wrenches and insert.



Kometric® WVU Adjustable Insert Pocket $\alpha = 75^\circ$



for Insert **W30 / W57**




For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-75L	D20 40100	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.090 (2.28)	0.091 (2.3)	0.092 (2.33)	—	0.007
WVU4-800-75L	D20 40110	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.140 (3.55)	—	0.142 (3.6)	—	0.013
WVU5-800-75L	D20 40120	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.154 (3.92)	—	0.156 (3.97)	0.157 (4)	0.026

for Insert pocket	Insert		Replacement Parts			
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU3-800-75L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-75L	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-75L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

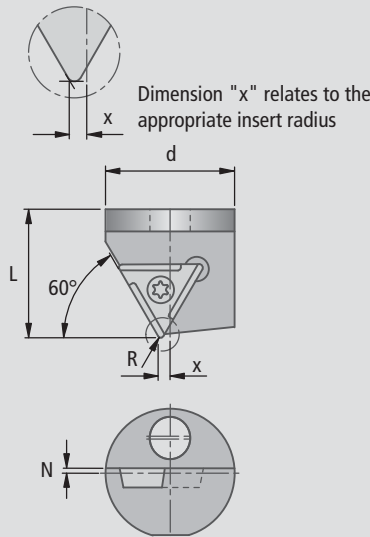
For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.



for Insert **W30 / W57**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-60L	D20 40200	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.030 (0.75)	0.031 (0.8)	0.034 (0.86)	—	0.004
WVU4-800-60L	D20 40210	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.055 (1.39)	—	0.059 (1.5)	—	0.013
WVU5-800-60L	D20 40220	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.044 (1.13)	—	0.049 (1.24)	0.051 (1.3)	0.029

for Insert pocket	Insert		Replacement Parts			
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 Neutral	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVU3-800-60L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-60L	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-60L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

For further details on inserts, please see Chapter 7

Delivery

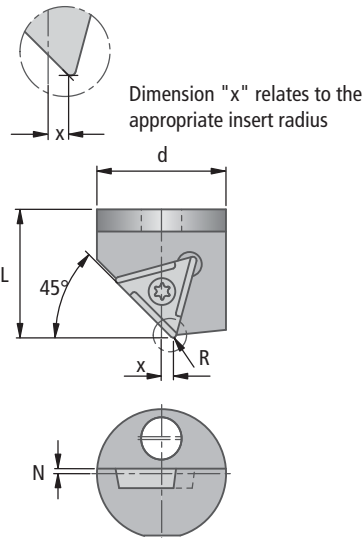
WVU pocket complete with all replacement parts, less wrenches and insert.



Kometric® WVU Adjustable Insert Pocket $\alpha = 45^\circ$



for Insert **W30 / W57**










For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-45L	D20 40300	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.019 (0.49)	0.016 (0.4)	0.012 (0.3)	—	0.004
WVU4-800-45L	D20 40310	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.035 (0.88)	—	0.028 (0.7)	—	0.011
WVU4-800-45R	D20 45310										
WVU5-800-45L	D20 40320	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.063 (1.59)	—	0.055 (1.4)	0.051 (1.3)	0.026
WVU5-800-45L	D20 45320										

for Insert pocket	Insert			Replacement Parts			
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20°	W57 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU3-800-45L	W30 04..0.03..		W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-45L	W30 14..0.04..		W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU4-800-45R		W30 14..0.04..					
WVU5-800-45L	W30 26..0.05..		W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU5-800-45R		W30 26..0.05..					

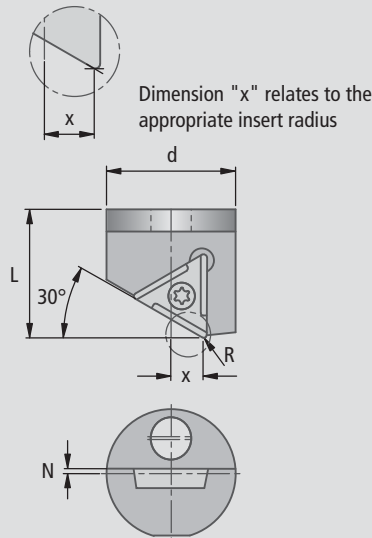
For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.



for Insert **W30 / W57**



For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

Description cutting form ▼	Order No.	Min. cutting Ø	Adjustment range	d	L	N	ISO Dimension x for Radius, R				inch (mm)
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-30L	D20 40400	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.064 (1.63)	0.059 (1.5)	0.054 (1.37)	–	0.004
WVU4-800-30L	D20 40410	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.109 (2.76)	–	0.098 (2.5)	–	0.013
WVU5-800-30L	D20 40420	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.172 (4.38)	–	0.162 (4.12)	0.157 (4)	0.026

6



for Insert pocket	Insert		Replacement Parts			
	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W57 Neutral 	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVU3-800-30L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-30L	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-30L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

For further details on inserts, please see Chapter 7

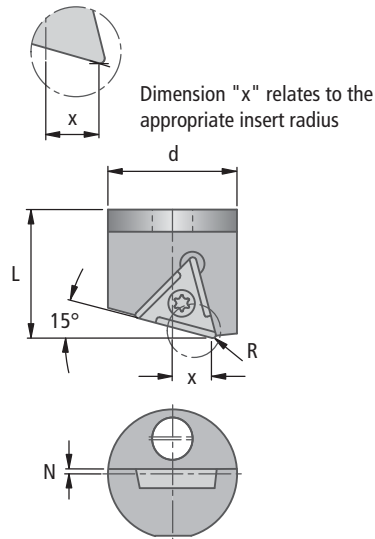
Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.

Kometric® WVU Adjustable Insert Pocket $\kappa = 15^\circ$



for Insert **W30 / W57**









For mounting dimensions see page 6.45

L.H. pocket as shown with left or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-15L	D20 40500	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.089 (2.25)	0.083 (2.1)	0.076 (1.94)	—	0.007
WVU4-800-15L	D20 40510	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.130 (3.31)	—	0.118 (3)	—	0.013
WVU5-800-15L	D20 40520	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.215 (5.46)	—	0.203 (5.15)	0.197 (5)	0.029

for Insert pocket	Insert		Replacement Parts			
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU3-800-15L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-15L	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-15L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

For further details on inserts, please see Chapter 7

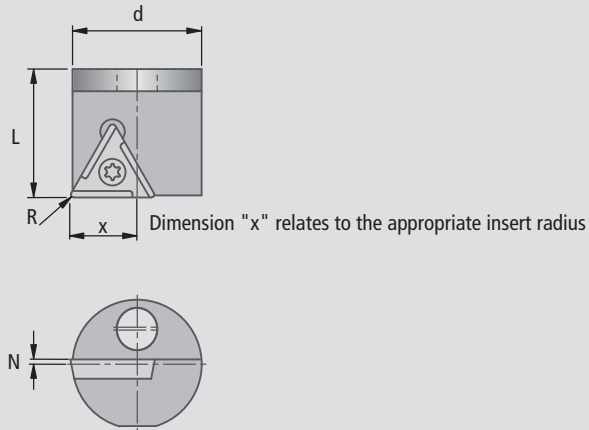
Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.

6.58



for Insert **W30 / W57**



For mounting dimensions see page 6.45


L.H. pocket as shown with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R				lbs
							0.008 (0.2)	0.012 (0.3)	0.016 (0.4)	0.020 (0.5)	
WVU3-800-0L	D20 40600	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.172 (4.38)	0.169 (4.3)	0.167 (4.23)	–	0.007
WVU4-800-0L	D20 40610	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.254 (6.45)	–	0.248 (6.3)	–	0.013
WVU5-800-0L	D20 40620	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.336 (8.53)	–	0.330 (8.38)	0.327 (8.3)	0.033

6



for Insert pocket	Insert		Replacement Parts			
	W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20° ▼	W57 Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU3-800-0L	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2.6×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU4-800-0L	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU5-800-0L	W30 26..0.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.

Kometric® UWU Adjustable Pocket



for Insert **W30 / W57**

90°

75°

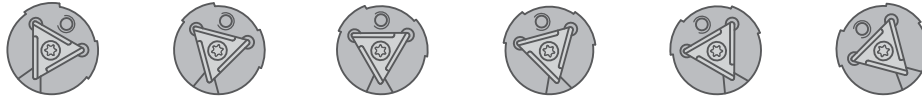
60°

45°

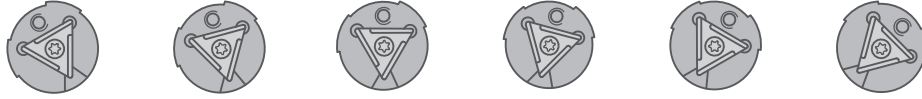
30°

15°

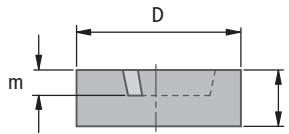
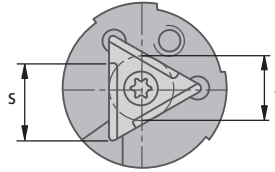
UWU
L.H.



UWU
R.H.







For mounting dimensions see page 6.62








L.H. pocket as shown with left or neutral insert.

R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	J	D	h	at Standard radius s	Insert thickness m	 lbs	Insert		
								W30 L.H.  radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H.  radial rake 36 = 6° 42 = 12° 50 = 20°	W57 Neutral 
UWU4L	D52 01100	0.220 (5.6)	0.630 (16)	0.217 (5.5)	0.177 (4.5)	0.098 (2.5)	0.015	W30 14..0.04..		W57 14040.04..
UWU4R	D52 06100								W30 14..0.04..	
UWU5L	D52 01110	0.323 (8.2)	0.787 (20)	0.256 (6.5)	0.264 (6.7)	0.118 (3)	0.026	W30 26..0.04..		W57 26040.04..
UWU5R	D52 06110								W30 26..0.04..	
UWU6L	D52 01120	0.500 (12.7)	1.181 (30)	0.346 (8.8)	0.409 (10.4)	0.169 (4.3)	0.084	W30 44..0.05..		-
UWU6R	D52 06120								W30 44..0.05..	

For further details on inserts, please see Chapter 7

for Insert pocket	Replacement Parts				
	Insert clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking & clamping screw  Order No. Description	Cylindrical pin for External machining  Order No. Description	Cylindrical pin for Internal machining  Order No. Description
UWU4..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	N00 55600 Tx M2.6×6	N00 52000 1.8/2×4.5	N00 52000 1.8/2×4.5
UWU5..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	N00 55701 M3.5×5-8IP 20 in-lbs	5531103010 Ø3×10 DIN6325	N00 52030 1.8/×5.5
UWU6..	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	N00 55851 M5×13.5-15IP 55.3 in-lbs	5531104010 Ø4×10 DIN6325	N00 52010 3/4×5.5

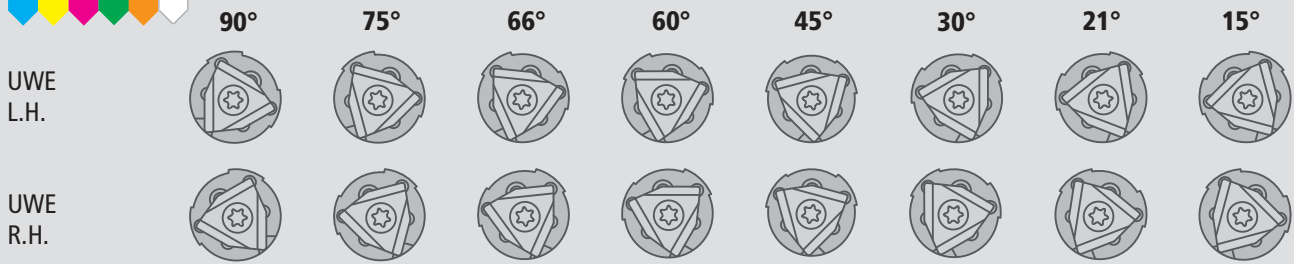
Delivery

UWU pocket complete with all replacement parts, less wrenches and insert.

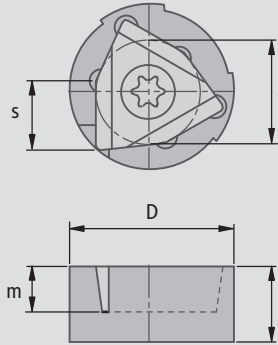
Kometric® UWE Adjustable Pocket



for Insert **W01 / W29**



For mounting dimensions see page 6.64



L.H. pocket as shown with left or neutral insert.
R.H. pocket in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	J	D	h	s	Insert thickness m	lbs	Insert			
								W01 L.H. radial rake 06 = 6° 12 = 12° 20 = 20° ▼▼	W01 R.H. radial rake 36 = 6° 42 = 12° 50 = 20° ▼▼	W01 Neutral	W29 Neutral 00 = PD 01 = K ▼▼
UWE02-38L	D52 50090	0.315 (8)	0.551 (14)	0.236 (6)	0.197 (5)	0.15 (3.8)	0.011	W01 24..0.04..		W01 24600...	W29 24..0.04..
UWE02-38R	D52 55090								W01 24..0.04..		
UWE01-38L	D52 50100	0.394 (10)	0.63 (16)	0.256 (6.5)	0.256 (6.5)	0.15 (3.8)	0.015	W01 34..0.04..		W01 34600...	W29 34..0.04..
UWE01-38R	D52 55100								W01 34..0.04..		
UWE 1-48L	D52 50110	0.472 (12)	0.787 (20)	0.327 (8.3)	0.295 (7.5)	0.189 (4.8)	0.029	W01 42..0.04..		W01 42600...	W29 42..0.04..
UWE 1-48R	D52 55110								W01 42..0.04..		
UWE 2-53L	D52 50120	0.591 (15)	0.984 (25)	0.346 (8.8)	0.374 (9.5)	0.209 (5.3)	0.051	W01 50..0.04..		W01 50600...	W29 50..0.04..
UWE 2-53R	D52 55120								W01 50..0.04..		
UWE 3-60L	D52 50130	0.693 (17.6)	1.181 (30)	0.413 (10.5)	0.453 (11.5)	0.236 (6)	0.09	W01 58..0.04..		W01 58600...	W29 58..0.04..
UWE 3-60R	D52 55130								W01 58..0.04..		

For further details on inserts, please see Chapter 7

for Insert pocket	Replacement Parts				
	Insert clamping screw Order No. Description	TORX PLUS Order No. Description	Locking & clamping screw Order No. Description	Cylindrical pin for External machining Order No. Description	Cylindrical pin for Internal machining Order No. Description
UWE 02..L/R	N00 57571 S/M2.5×6.3-8IP 11.3 in-lbs	L05 00830 8IP	N00 55571 M2.5×6-8IP 11.3 in-lbs	N00 52000 1.8/2×4.5	N00 52000 1.8/2×4.5
UWE 01..L/R	N00 57521 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52000 1.8/2×4.5	N00 52000 1.8/2×4.5
UWE 1..L/R	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	N00 55821 M4.5×9-10IP 55.3 in-lbs	5531104010 Ø4×10 DIN6325	N00 52010 3/4×5.5
UWE 2..L/R	N00 57531 S/M4.5×9-15IP 55.3 in-lbs	L05 00860 15IP	N00 55821 M4.5×9-10IP 55.3 in-lbs	5531104010 Ø4×10 DIN6325	N00 52010 3/4×5.5
UWE 3..L/R	N00 57541 S/M5.5×11-20IP 55.3 in-lbs	L05 00870 20IP	N00 55901 M5.5×13.5-20IP 55.3 in-lbs	5531105012 Ø5×12 DIN6325	N00 52020 4/5×7

Delivery

UWE pocket complete with all replacement parts, less wrenches and insert.



Kometric® UWU Adjustable Pocket

Mounting dimensions

Left hand cutting (right hand cutting mirror inverted)

Approach angle	Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 5	Fig. 5a	Fig. 6
$\alpha = 90^\circ$							
$\alpha = 75^\circ$							
$\alpha = 60^\circ$							
$\alpha = 45^\circ$							
$\alpha = 30^\circ$							
$\alpha = 15^\circ$							

Ø D = desired turning diameter

1. Mill cutting height "Z" to minimum width "b", so that UWU pocket lies with diameter "f" as far as possible in the flute (Fig. 1)
2. Align machine spindle with central axis "M-M", read off dimensions "d" and "e" from the table, based on insert radius "R", and calculate the distance "g" for center point "M₁" ($g = \frac{D}{2} - d$).
Move spindle by distance "g" and take "e" into account. The spindle is now at the center point "M₁" (Fig. 2).
3. Center centerpoint "M₁" and drill center hole "n" to depth "m" (Fig. 1). Position machine spindle over "n".
4. Move to cutting height "Z" and countersink with Ø "f" to depth "h" (Fig. 1).
5. Move with machine spindle (to coordinates "p" and "q") to clamping hole "o", center and drill with Ø "o" (Fig. 4).
6. Rotate workpiece 180°, locate bore "o" and counterbore Ø "r" to dimension "t" (Fig. 3).
7. Move workpiece back 180°. Position UWU pocket, secure lightly, Δ -insert and check setting dimensions. Secure UWU pocket with clamping screw (Fig. 5).
8. UWU pocket is now firmly mounted, remove Δ -insert and drill out both pin holes "u" to corner holes "v" and ream with Ø "w" to depth "y" (Fig. 5 + 5a). Remove UWU pocket.
Note: Attention should be paid with pin hole "u" and "w" as to whether the UWU pocket is used for internal or external machining (see Table).
9. Press in the pins provided to a distance of "x" (Fig. 5a).
10. Turn, mill or grind off the excessive UWU pocket (Fig. 6). Deburr the tool an if necessary harden or temper.

Note: The UWU seating is hardened to approx. 52 HRC and has a tensile strength of approx. 260,000 in/lbs². It is therefore highly suitable for machining with turning tool holders D007 and Δ -inserts. Carbide grade P25M at cutting speed of 150 SFM and feed $s \approx .003$ IPR.

Kometric® UWU Adjustable Pocket

Mounting dimensions

All dimensions are in mm

Pocket size Approach angle		UWU 4 L/R		UWU 5 L/R			UWU 6 L/R		
		R0.4	R0.8	R0.4	R0.5	R0.8	R0.4	R0.8	R1.2
$\alpha = 90^\circ$ 	d	4.56	4.26	6.81	6.73	6.51	10.71	10.41	10.12
	e	2.8	2.8	4.1	4.1	4.1	6.35	6.35	6.35
	P	3.9	3.9	5.5	5.5	5.5	8.23	8.23	8.23
	q	2.25	2.25	3.18	3.18	3.18	4.75	4.75	4.75
$\alpha = 75^\circ$ 	d	5.04	4.66	7.55	7.45	7.17	11.94	11.56	11.19
	e	1.55	1.65	2.22	2.25	2.32	3.39	3.49	3.59
	P	4.35	4.35	6.13	6.13	6.13	9.18	9.18	9.18
	q	1.16	1.16	1.64	1.64	1.64	2.46	2.46	2.46
$\alpha = 60^\circ$ 	d	5.2	4.8	7.8	7.7	7.4	12.3	11.9	11.5
	e	0.23	0.46	0.23	0.29	0.46	0.23	0.46	0.69
	P	4.5	4.5	6.35	6.35	6.35	9.5	9.5	9.5
	q	–	–	–	–	–	–	–	–
$\alpha = 45^\circ$ 	d	5.04	4.66	7.55	7.45	7.17	11.89	11.52	11.15
	e	1.08	0.7	1.75	1.65	1.37	2.92	2.54	2.17
	P	4.35	4.35	6.13	6.13	6.13	9.18	9.18	9.18
	q	1.16	1.16	1.64	1.64	1.64	2.46	2.46	2.46
$\alpha = 30^\circ$ 	d	4.56	4.26	6.81	6.73	6.51	10.71	10.41	10.12
	e	2.29	1.79	3.59	3.47	3.09	5.84	5.34	4.83
	P	3.9	3.9	5.5	5.5	5.5	8.23	8.23	8.23
	q	2.25	2.25	3.18	3.18	3.18	4.75	4.75	4.75
$\alpha = 15^\circ$ 	d	3.79	3.63	5.63	5.59	5.47	8.81	8.65	8.48
	e	3.34	3.72	5.18	5.03	4.56	8.36	7.74	7.13
	P	3.18	3.18	4.49	4.49	4.49	6.72	6.72	6.72
	q	3.18	3.18	4.49	4.49	4.49	6.72	6.72	6.72

All dimensions are in mm

Mounting dimension		UWU 4 L/R	UWU 5 L/R		UWU 6 L/R	
		R0.4	R0.4		R0.4	
Pocket	min. Cutting-Ø	24.0	40.0		50.0	
	b	14.0	19.0		28.0	
	c	0.5	0.5		0.7	
	f ^{H7}	16.0	20.0		30.0	
	h	5.5	6.5		8.8	
	n	3.0	3.8		5.5	
	m	7.0	11.3		14.2	
Clamping screw	o	2.8	3.8		5.3	
	r	4.5	5.5		7.5	
	s	4.5	6.35		9.5	
	t ^{+0.1}	2.5	3.9		8.5	
Pin			Internal machining	External machining	Internal machining	External machining
	u	1.6	1.6	2.8	2.8	3.8
	v ^{H7}	2.0	3.0	3.0	4.0	4.0
	w ^{H7}	1.8	1.8	3.0	3.0	4.0
	x	2.0	2.5	2.5	2.5	2.5
	y	3.0	6.0	7.5	6.0	7.5



Kometric® UWE Adjustable Pocket

Mounting dimensions

Left hand cutting (right hand cutting mirror inverted)

Approach angle	Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 5	Fig. 5a	Fig. 6
$\alpha = 90^\circ$							
$\alpha = 75^\circ$							
$\alpha = 66^\circ$							
$\alpha = 60^\circ$							
$\alpha = 45^\circ$							
$\alpha = 30^\circ$							
$\alpha = 21^\circ$							
$\alpha = 15^\circ$							

Ø D = desired turning diameter

1. Mill cutting height "Z" to minimum width "b", so that UWE pocket lies with diameter "f" as far as possible in the flute (Fig. 1).
2. Align machine spindle with center axis "M-M", read off dimensions "d" and "e" from the table, based on insert radius "R", and calculate the distance "g" for center point "M₁" ($g = \frac{D}{2} - d$). Move spindle by distance "g" and take "e" into account. The spindle is now at the center point "M₁" (Fig. 2).
3. Center centerpoint "M₁" and drill center hole "n" to depth "m" (Fig. 1). Position machine spindle over "n".
4. Move to cutting height "Z" and countersink with Ø "f" to depth "h" (Fig. 1).
5. Move with machine spindle (to coordinates "p" and "q") to clamping hole "o", center and drill with Ø "o" (Fig. 4).
6. Rotate workpiece 180°, locate bore "o" and counterbore Ø "r" to dimension "t" (Fig. 3).
7. Move workpiece back 180°. Position UWE pocket, secure lightly, position Unisix® insert and check setting dimensions. Secure UWE pocket with clamping screw (Fig. 5).
8. UWE pocket is now firmly mounted, remove Unisix® insert and drill out both pin holes "u" to corner holes "v" and ream with Ø "w" to depth "y" (Fig. 5 + 5a). Remove UWE pocket.
Note: Attention should be paid with pin hole "u" and "w" as to whether the UWE pocket is used for internal or external machining (see Table).
9. Press in the pins provided to a distance of "x" (Fig. 5a).
10. Turn, mill or grind off the excessive UWE pocket (Fig. 6). Deburr the tool and if necessary harden or temper.

Note: The UWE pocket is hardened to approx. 52 HRC and has a tensile strength of approx. 260,000 in/lbs². It is therefore highly suitable for machining with Unisix® turning tool holders D007 and Unisix® inserts. Carbide grade P25M at cutting speed of 150 SFM and feed $s \approx .003$ IPR.

Mounting dimensions

All dimensions are in mm

Pocket size Approach angle		UWE 02..L/R				UWE 01..L/R			UWE 1..L/R				UWE 2..L/R				UWE 3..L/R			
		R0.2	R0.4	R0.8	R1.2	R0.2	R0.4	R0.8	R0.2	R0.4	R0.8	R1.2	R0.4	R0.8	R1.2	R1.6	R0.6	R0.8	R1.2	R1.6
$\alpha = 90^\circ$ 	d	4.42	4.34	4.35	4.31	5.53	5.51	5.47	6.64	6.62	6.58		8.29	8.25	8.2		9.71	9.69	9.65	9.61
	e	4.0	4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.0		7.5	7.5	7.5		8.8	8.8	8.8	8.8
	P	2.39	2.39	2.39	2.39	2.97	2.97	2.97	3.72	3.72	3.72		4.09	4.09	4.09		5.05	5.05	5.05	5.05
	q	2.14	2.14	2.14	2.14	2.68	2.68	2.68	3.35	3.35	3.35		3.68	3.68	3.68		4.55	4.55	4.55	4.55
$\alpha = 75^\circ$ 	d	5.26	5.19	5.06	4.93	6.59	6.53	6.39	7.92	7.87	7.72	7.59	9.86	9.72	9.59	9.46	11.52	11.46	11.33	11.2
	e	2.73	2.75	2.79	2.82	3.41	3.43	3.46	4.09	4.11	4.14	4.18	5.13	5.16	5.2	5.23	6.02	6.04	6.08	6.11
	P	2.85	2.85	2.85	2.85	3.56	3.56	3.56	4.46	4.46	4.46	4.46	4.90	4.90	4.90	4.90	6.06	6.06	6.06	6.06
	q	1.45	1.45	1.45	1.45	1.82	1.82	1.82	2.27	2.27	2.27	2.27	2.49	2.49	2.49	2.49	3.09	3.09	3.09	3.09
$\alpha = 66^\circ$ 	d	4.42	4.4	4.35	4.31	5.53	5.51	5.46	6.64	6.62	6.58		8.29	8.24	8.2		9.71	9.68	9.64	9.6
	e	4.0	4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.0		7.5	7.5	7.5		8.8	8.8	8.8	8.8
	P	3.04	3.04	3.04	3.04	3.8	3.8	3.8	4.76	4.76	4.76		5.23	5.23	5.23		6.47	6.47	6.47	6.47
	q	0.99	0.99	0.99	0.99	1.24	1.24	1.24	1.55	1.55	1.55		1.7	1.7	1.7		2.1	2.1	2.1	2.1
$\alpha = 60^\circ$ 	d	5.76	5.66	5.48	5.29	7.22	7.12	6.94	8.68	8.58	8.4	8.22	10.78	10.60	10.42	10.33	12.59	12.49	12.31	12.12
	e	1.3	1.35	1.46	1.56	1.60	1.66	1.76	1.92	1.98	2.08	2.19	2.44	2.55	2.65	2.77	2.89	2.95	3.05	3.17
	P	3.13	3.13	3.13	3.13	3.91	3.91	3.91	4.89	4.89	4.89	4.89	5.38	5.38	5.38	5.38	6.65	6.65	6.65	6.65
	q	0.66	0.66	0.66	0.66	0.83	0.83	0.83	1.04	1.04	1.04	1.04	1.14	1.14	1.14	1.14	1.41	1.41	1.41	1.41
$\alpha = 45^\circ$ 	d	5.87	5.77	5.58	5.38	7.36	7.26	7.07	8.86	8.76	8.57	8.37	10.99	10.8	10.6	10.41	12.84	12.74	12.54	12.35
	e	0.21	0.12	0.08	-0.28	0.29	0.19	0.0	0.37	0.27	0.08	-0.12	0.39	0.20	0.0	-0.19	0.40	0.30	0.10	-0.09
	P	3.20	3.20	3.20	3.20	3.99	3.99	3.99	4.99	4.99	4.99	4.99	5.49	5.49	5.49	5.49	6.79	6.79	6.79	6.79
	q	0.17	0.17	0.17	0.17	0.21	0.21	0.21	0.26	0.26	0.26	0.26	0.29	0.29	0.29	0.29	0.36	0.36	0.36	0.36
$\alpha = 30^\circ$ 	d	5.6	5.52	5.35	5.18	7.02	6.93	6.76	8.45	8.36	8.19	8.03	10.49	10.32	10.15	9.99	12.25	12.16	12.0	11.82
	e	1.70	1.56	1.26	0.97	2.16	2.02	1.73	2.62	2.48	2.19	1.90	3.17	2.88	2.59	2.30	3.63	3.48	3.19	2.90
	P	3.04	3.04	3.04	3.04	3.80	3.80	3.80	4.76	4.76	4.76	4.76	5.23	5.23	5.23	5.23	6.47	6.47	6.47	6.47
	q	0.99	0.99	0.99	0.99	1.24	1.24	1.24	1.55	1.55	1.55	1.55	1.70	1.70	1.70	1.70	2.10	2.10	2.10	2.10
$\alpha = 21^\circ$ 	d	0.21	0.12	-0.08	-0.28	0.29	0.19	0.0	0.37	0.27	0.08		11	10.8	10.6		12.84	12.74	12.54	12.35
	e	5.87	5.77	5.58	5.38	7.36	7.27	7.07	8.86	8.76	8.56		0.39	0.19	0		0.39	0.29	0.1	-0.1
	P	2.85	2.85	2.85	2.85	3.56	3.56	3.56	4.46	4.46	4.46		4.9	4.9	4.9		6.06	6.06	6.06	6.06
	q	1.45	1.45	1.45	1.45	1.82	1.82	1.82	2.27	2.27	2.27		2.5	2.5	2.5		3.09	3.09	3.09	3.09
$\alpha = 15^\circ$ 	d	4.96	4.91	4.81	4.71	6.22	6.17	6.06	7.47	7.42	7.32		9.3	9.2	9.1		10.88	10.83	10.73	10.62
	e	3.07	2.88	2.50	2.12	3.88	3.69	3.31	4.69	4.51	4.13		5.73	5.35	4.97		6.6	6.41	6.03	5.65
	P	2.68	2.68	2.68	2.68	3.35	3.35	3.35	4.19	4.19	4.19		4.61	4.61	4.61		5.7	5.7	5.7	5.7
	q	1.74	1.74	1.74	1.74	2.18	2.18	2.18	2.72	2.72	2.72		3.0	3.0	3.0		3.7	3.7	3.7	3.7

Mounting dimension		UWE 02..L/R	UWE 01..L/R	UWE 1..L/R	UWE 2..L/R	UWE 3..L/R			
Pocket for $\alpha =$ 90°, 75°, 60°, 45°, 30°, 15° $g = D/2 - d$ for $\alpha =$ 66°, 21° $g = D/2 + d$	min. Cut-Ø	32.0	34.0	40.0	50.0	54.0			
	b	13.0	16.0	19.0	24.0	28.0			
	c	0.5	0.5	0.6	0.7	0.8			
	f ^{H7}	14.0	16.0	20.0	25.0	30.0			
	h	6.0	6.5	8.3	8.8	10.5			
	n	2.7	3.8	4.8	4.8	5.8			
	m	8.5	7.0	11.3	11.3	16.0			
Clamping screw	o	2.7	3.8	4.8	4.8	5.8			
	r	4.0	5.5	6.5	6.5	7.5			
	s	3.2	4.0	5.0	5.5	6.8			
	t ^{+0.1}	3.9	2.5	5.7	5.7	9.2			
Pin	u	1.6	1.6	Internal machining	External machining	Internal machining	External machining	Internal machining	External machining
	v ^{H7}	2.0	2.0	2.8	3.8	2.8	3.8	3.8	4.8
	w ^{H7}	1.8	1.8	4.0	4.0	4.0	4.0	5.0	5.0
	x	2.0	2.0	3.0	4.0	3.0	4.0	4.0	5.0
	y	3.0	3.0	2.5	2.5	2.5	2.5	5.0	5.0
				6.0	7.5	6.0	7.5	8.0	8.0



Kometric® UZV Adjustable Boring Cartridge

Mounting Dimensions

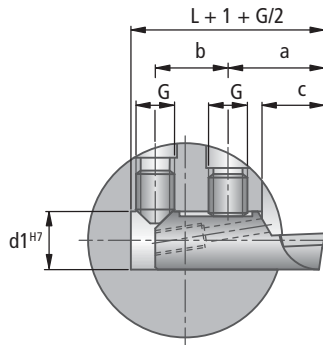
Mounting depends on the insert position required. The right dimensions for the mounting bore and holding thread for each boring bar \varnothing can be taken from the details on the drawings and tables.

inch (mm)

Boring cartridge size	Dimension				
	d1	a	b	G	c
UZV 8..	0.315 (8)	0.591 (15)	0.394 (10)	M6	0.354 (9)
UZV10..	0.394 (10)	0.709 (18)	0.472 (12)	M6	0.472 (12)
UZV12..	0.472 (12)	0.787 (20)	0.591 (15)	M8	0.512 (13)
UZV16..	0.630 (16)	1.063 (27)	0.709 (18)	M10	0.709 (18)
UZV20..	0.787 (20)	1.181 (30)	0.787 (20)	M12	0.787 (20)

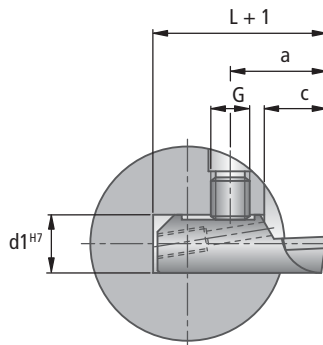
Type A

Adjustment via adjusting screw DIN 914 on back chamfer



Type B

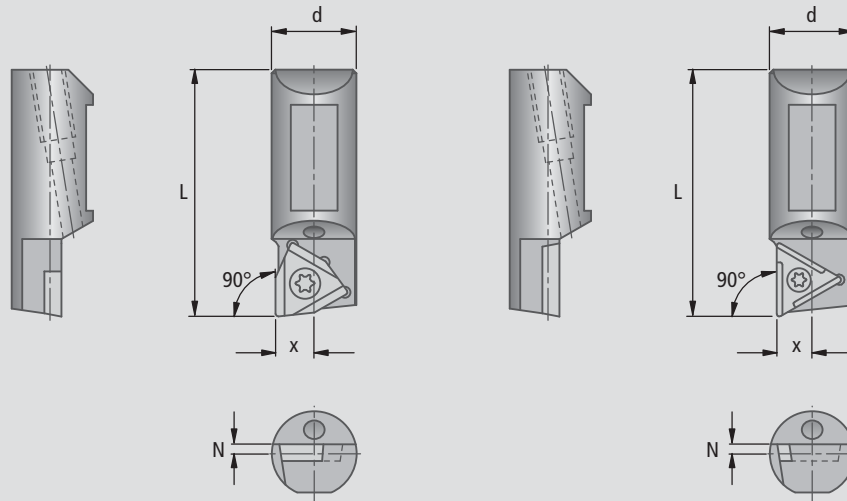
Adjustment via internal adjustment screw



Kometric® UZV Adjustable Boring Cartridge $\kappa = 90^\circ$



for Insert W01 / W29 and W30 / W57



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H. 	W30 R.H. 	W57 neutral 		
UZV8-803-25-90°-L	D20 00000	0.315 (8)	0.984 (25)	0.039 (1.0)	0.118 (3)	0.015	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw Order No. Description	Screwdriver Order No. Description
UZV8-803-25-90°-R	D20 05000								W30 04 .. 0.03..	W57 04040.04.. S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZV10-804-30-90°-L	D20 00020	0.394 (10)	1.181 (30)	0.059 (1.5)	0.157 (4)	0.029			W30 14 .. 0.04..	W57 14040.04.. S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10-804-30-90°-R	D20 05020								W30 14 .. 0.04..		
UZV12-804-35-90°-L	D20 00040	0.472 (12)	1.378 (35)	0.059 (1.5)	0.197 (5)	0.049			W30 14 .. 0.04..	W57 14040.04.. S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-90°-R	D20 05040								W30 14 .. 0.04..		
UZV16-805-45-90°-L	D20 00060	0.630 (16)	1.772 (45)	0.118 (3.0)	0.236 (6)	0.115			W30 26 .. 0.05..	W57 26040.04.. S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
UZV16-805-45-90°-R	D20 05060								W30 26 .. 0.05..		

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 / W01 L.H. 	W00 / W01 R.H. 	W28 / W29 neutral 		
UZV10-818-30-90°-L31	D20 50020	0.394 (10)	1.181 (30)	0.059 (1.5)	0.157 (4)	0.029	radial rake 06 = 6° 12 = 12°	radial rake 36 = 6° 42 = 12°		Clamping screw Order No. Description	Screwdriver Order No. Description
UZV10-818-30-90°-R31	D20 55020								W00 24 .. 0.02..	W29 18010.04.. S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
UZV12-802-35-90°-L	D20 00070	0.472 (12)	1.378 (35)	0.059 (1.5)	0.197 (5)	0.049			W00 24 .. 0.02..	W28 24 .. 0.04.. M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-802-35-90°-R	D20 05070								W00 24 .. 0.02..		
UVZ16-802-45-90°-L38	D20 50090	0.630 (16)	1.772 (45)	0.118 (3.0)	0.236 (6)	0.115			W01 24060.02..	W29 24010.04.. S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-90°-R38	D20 55090								W01 24360.02..		
UZV16-801-45-90°-L	D20 00090	0.630 (16)	1.772 (45)	0.118 (3.0)	0.236 (6)	0.115			W00 34 .. 0.02..	W28 34 .. 0.04.. M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UZV16-801-45-90°-R	D20 05090								W00 34 .. 0.02..		

For further details on inserts, please see Chapter 7

Delivery:

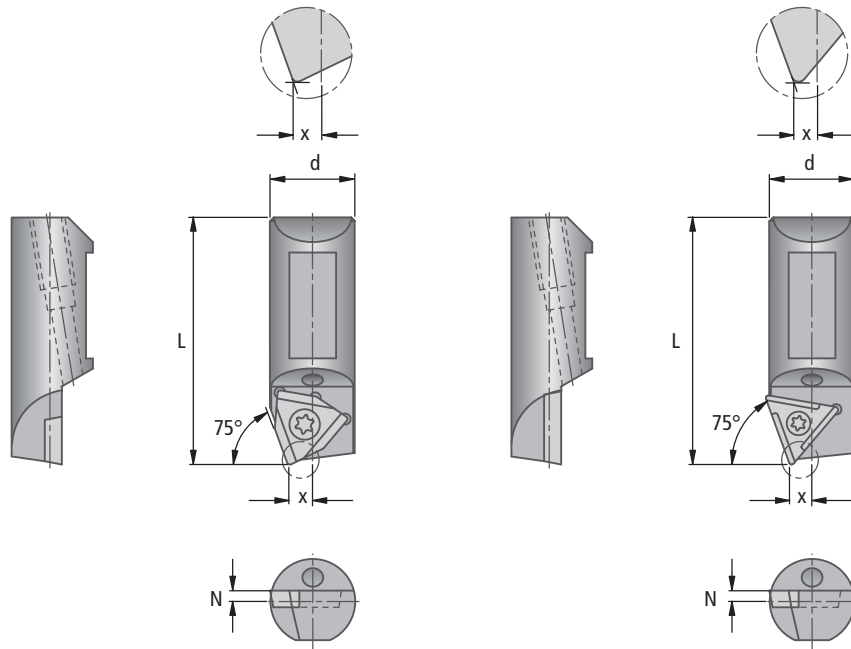
UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZV Adjustable Boring Cartridge $\kappa = 75^\circ$



for Insert **W01 / W29** and **W30 / W57**



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form #	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral		
UZV8-803-25-75°-L	D20 00100	0.315 (8)	0.984 (25)	0.039 (1.0)	0.079 (2)	0.015	W30 04 .. 0.03..		W57 04040.04..	N00 56031 S/M2.4×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZV8-803-25-75°-R	D20 05100							W30 04 .. 0.03..			
UZV10-804-30-75°-L	D20 00120	0.394 (10)	1.181 (30)	0.059 (1.5)	0.098 (2.5)	0.029	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10-804-30-75°-R	D20 05120							W30 14 .. 0.04..			
UZV12-804-35-75°-L	D20 00140	0.472 (12)	1.378 (35)	0.059 (1.5)	0.157 (4)	0.049	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-75°-R	D20 05140							W30 14 .. 0.04..			
UZV16-805-45-75°-L	D20 00160	0.630 (16)	1.772 (45)	0.118 (3.0)	0.157 (4)	0.049	W30 26 .. 0.05..		W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
UZV16-805-45-75°-R	D20 05160							W30 26 .. 0.05..			

Description cutting form #	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 / W01 L.H. radial rake 06 = 6° 12 = 12°	W00 / W01 R.H. radial rake 36 = 6° 42 = 12°	W28 / W29 neutral 00 = PD 01 = K		
UZV10-818-30-75°-L31	D20 50120	0.394 (10)	1.181 (30)	0.059 (1.5)	0.098 (2.5)	0.029			W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
UZV10-818-30-75°-R31	D20 55120										
UZV12-802-35-75°-L	D20 00170	0.472 (12)	1.378 (35)	0.059 (1.5)	0.157 (4)	0.049	W00 24 .. 0.02..		W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-802-35-75°-R	D20 05170							W00 24 .. 0.02..			
UVZ16-802-45-75°-L38	D20 50190	0.630 (16)	1.772 (45)	0.118 (3.0)	0.157 (4)	0.115	W01 24060.02..		W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-75°-R38	D20 55190							W01 24360.02..			
UZV16-801-45-75°-L	D20 00190	0.630 (16)	1.772 (45)	0.118 (3.0)	0.157 (4)	0.115	W00 34 .. 0.02..		W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UZV16-801-45-75°-R	D20 05190							W00 34 .. 0.02..			

For further details on inserts, please see Chapter 7

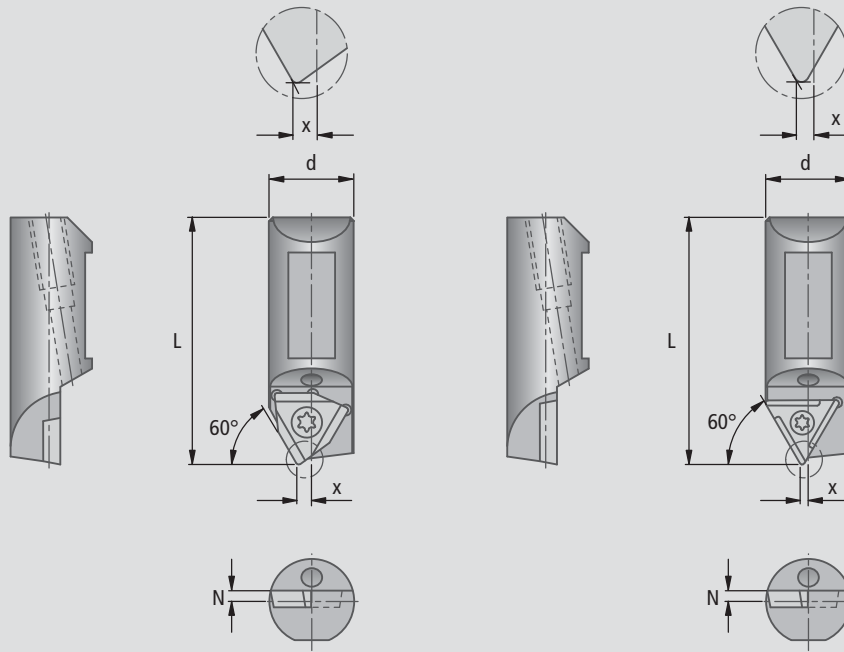
Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.

Kometric® UZV Adjustable Boring Cartridge $\kappa = 60^\circ$



for Insert W01 / W29 and W30 / W57



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H. 	W30 R.H. 	W57 neutral 		
UZV8-803-25-60°-L	D20 00200	0.315 (8)	0.984 (25)	0.039 (1.0)	0.024 (0.6)	0.015	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw 	Screwdriver
UZV8-803-25-60°-R	D20 05200									Order No. Description	Order No. Description
UZV10-804-30-60°-L	D20 00220	0.394 (10)	1.181 (30)	0.059 (1.5)	0.024 (0.6)	0.029				N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZV10-804-30-60°-R	D20 05220									N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-60°-L	D20 00240	0.315 (8)	0.984 (25)	0.039 (1.0)	0.024 (0.6)	0.015				N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-60°-R	D20 05240									N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
UZV16-805-45-60°-L	D20 00260	0.630 (16)	1.772 (45)	0.118 (3.0)	0.039 (1)	0.115					
UZV16-805-45-60°-R	D20 05260										

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 / W01 L.H. 	W00 / W01 R.H. 	W28 / W29 neutral 		
UZV10-818-30-60°-L31	D20 50220	0.394 (10)	1.181 (30)	0.059 (1.5)	0.020 (0.5)	0.029	radial rake 06 = 6° 12 = 12°	radial rake 36 = 6° 42 = 12°		Clamping screw 	Screwdriver
UZV10-818-30-60°-R31	D20 55220									Order No. Description	Order No. Description
UZV12-802-35-60°-L	D20 00270	0.472 (12)	1.378 (35)	0.059 (1.5)	0.039 (1)	0.049				N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
UZV12-802-35-60°-R	D20 05270									N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-60°-L38	D20 50290	0.630 (16)	1.772 (45)	0.118 (3.0)	0.039 (1)	0.115				N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-60°-R38	D20 55290									N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UZV16-801-45-60°-L	D20 00290	0.630 (16)	1.772 (45)	0.118 (3.0)	0.039 (1)	0.115					
UZV16-801-45-60°-R	D20 05290										

For further details on inserts, please see Chapter 7

Delivery:

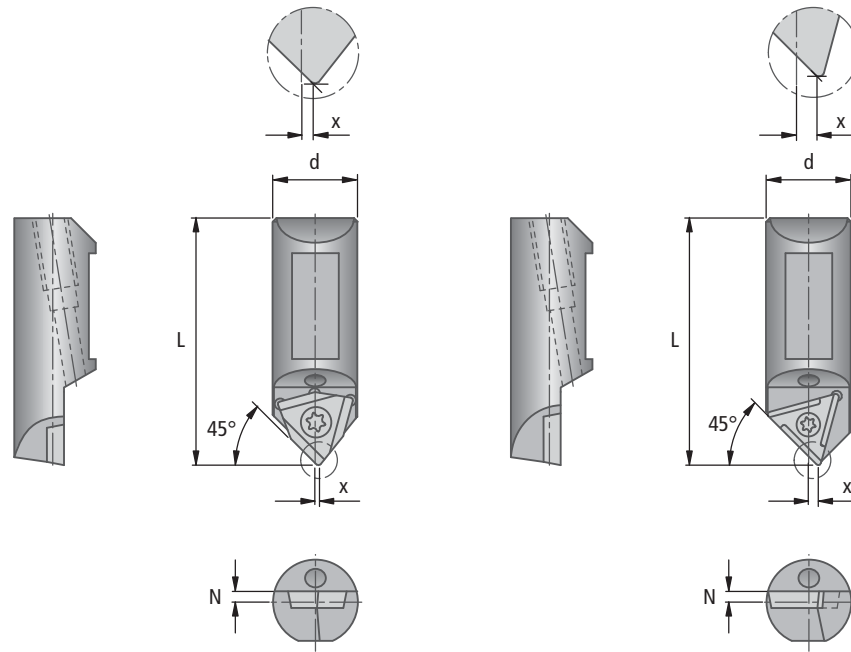
UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZV Adjustable Boring Cartridge $\kappa = 45^\circ$



for Insert **W01 / W29** and **W30 / W57**



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts		Accessories
							W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral	Clamping screw	Screwdriver	
									Order No. Description	Order No. Description		
UZV8-803-25-45°-L	D20 00400	0.315 (8)	0.984 (25)	0.039 (1.0)	0.039 (1)	0.015	W30 04 .. 0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP	
UZV8-803-25-45°-R	D20 05400							W30 04 .. 0.03..				
UZV10-804-30-45°-L	D20 00420	0.394 (10)	1.181 (30)	0.059 (1.5)	0.051 (1.3)	0.029	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	
UZV10-804-30-45°-R	D20 05420							W30 14 .. 0.04..				
UZV12-804-35-45°-L	D20 00440	0.472 (12)	1.378 (35)	0.059 (1.5)	0.039 (1)	0.049	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	
UZV12-804-35-45°-R	D20 05440							W30 14 .. 0.04..				
UZV16-805-45-45°-L	D20 00460	0.630 (16)	1.772 (45)	0.118 (3.0)	0.059 (1.5)	0.115	W30 26 .. 0.05..		W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP	
UZV16-805-45-45°-R	D20 05460							W30 26 .. 0.05..				

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts		Accessories
							W00 / W01 L.H. radial rake 06 = 6° 12 = 12°	W00 / W01 R.H. radial rake 36 = 6° 42 = 12°	W28 / W29 neutral 00 = PD 01 = K	Clamping screw	Screwdriver	
									Order No. Description	Order No. Description		
UZV10-818-30-45°-L31	D20 50420	0.394 (10)	1.181 (30)	0.059 (1.5)	0.051 (1.3)	0.029			W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP	
UZV10-818-30-45°-R31	D20 55420											
UZV12-802-35-45°-L	D20 00470	0.472 (12)	1.378 (35)	0.059 (1.5)	0.039 (1)	0.049	W00 24 .. 0.02..		W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP	
UZV12-802-35-45°-R	D20 05470							W00 24 .. 0.02..				
UVZ16-802-45-45°-L38	D20 50490	0.630 (16)	1.772 (45)	0.118 (3.0)	0.059 (1.5)	0.115	W01 24060.02..		W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP	
UVZ16-802-45-45°-R38	D20 55490							W01 24360.02..				
UZV16-801-45-45°-L	D20 00490	0.630 (16)	1.772 (45)	0.118 (3.0)	0.059 (1.5)	0.115	W00 34 .. 0.02..		W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP	
UZV16-801-45-45°-R	D20 05490							W00 34 .. 0.02..				

For further details on inserts, please see Chapter 7

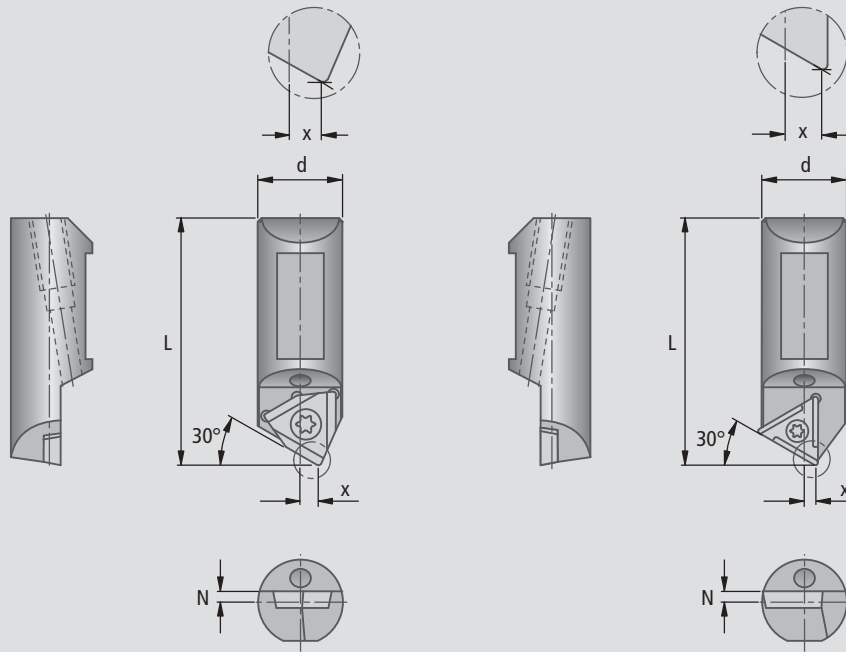
Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.

Kometric® UZV Adjustable Boring Cartridge $\kappa = 30^\circ$



for Insert W01 / W29 and W30 / W57



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral		
									Order No. Description	Order No. Description	
UZV8-803-25-30°-L	D20 00500	0.315 (8)	0.984 (25)	0.039 (1.0)	0.098 (2.5)	0.015	W30 04 .. 0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZV8-803-25-30°-R	D20 05500							W30 04 .. 0.03..			
UZV10-804-30-30°-L	D20 00520	0.394 (10)	1.181 (30)	0.059 (1.5)	0.118 (3)	0.029	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10-804-30-30°-R	D20 05520							W30 14 .. 0.04..			
UZV12-804-35-30°-L	D20 00540	0.472 (12)	1.378 (35)	0.059 (1.5)	0.118 (3)	0.049	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-30°-R	D20 05540							W30 14 .. 0.04..			
UZV16-805-45-30°-L	D20 00560	0.630 (16)	1.772 (45)	0.118 (3.0)	0.138 (3.5)	0.115	W30 26 .. 0.05..		W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
UZV16-805-45-30°-R	D20 05560							W30 26 .. 0.05..			

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 / W01 L.H. radial rake 06 = 6° 12 = 12°	W00 / W01 R.H. radial rake 36 = 6° 42 = 12°	W28 / W29 neutral 00 = PD 01 = K		
									Order No. Description	Order No. Description	
UZV10-818-30-30°-L31	D20 50520	0.394 (10)	1.181 (30)	0.059 (1.5)	0.118 (3)	0.029			W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
UZV10-818-30-30°-R31	D20 55520										
UZV12-802-35-30°-L	D20 00570	0.472 (12)	1.378 (35)	0.059 (1.5)	0.118 (3)	0.049	W00 24 .. 0.02..		W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-802-35-30°-R	D20 05570							W00 24 .. 0.02..			
UVZ16-802-45-30°-L38	D20 50590	0.630 (16)	1.772 (45)	0.118 (3.0)	0.138 (3.5)	0.115	W01 24060.02..		W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-30°-R38	D20 55590							W01 24360.02..			
UZV16-801-45-30°-L	D20 00590	0.630 (16)	1.772 (45)	0.118 (3.0)	0.138 (3.5)	0.115	W00 34 .. 0.02..		W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UZV16-801-45-30°-R	D20 05590							W00 34 .. 0.02..			

For further details on inserts, please see Chapter 7

Delivery:

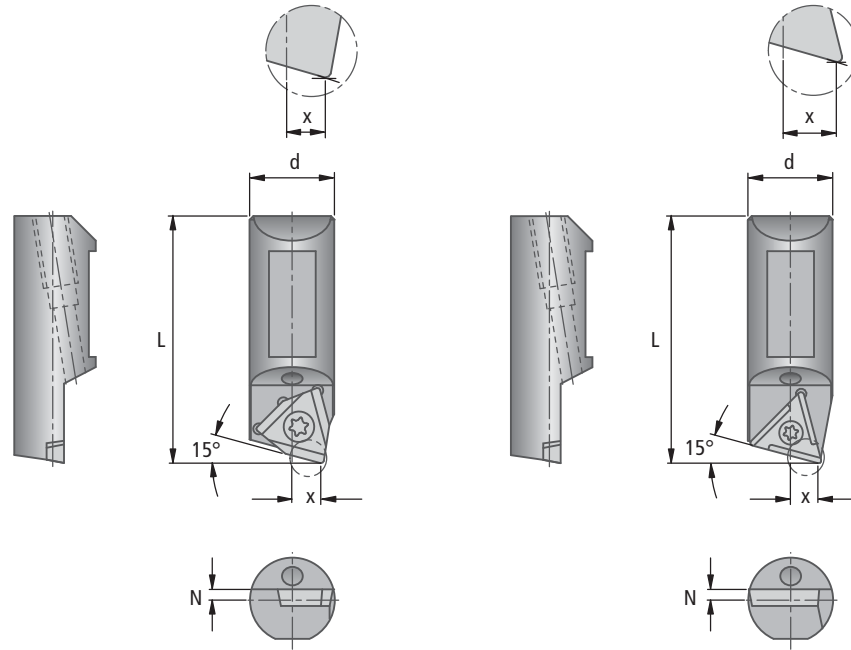
UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZV Adjustable Boring Cartridge $\kappa = 15^\circ$



for Insert **W01 / W29** and **W30 / W57**



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts		Accessories	
							W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral	Clamping screw	Order No. Description	Screwdriver	Order No. Description
UZV8-803-25-15°-L	D20 00600	0.315 (8)	0.984 (25)	0.039 (1.0)	0.118 (3)	0.015	W30 04 .. 0.03..		W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP		
UZV8-803-25-15°-R	D20 05600							W30 04 .. 0.03..					
UZV10-804-30-15°-L	D20 00620	0.394 (10)	1.181 (30)	0.059 (1.5)	0.157 (4)	0.029	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP		
UZV10-804-30-15°-R	D20 05620							W30 14 .. 0.04..					
UZV12-804-35-15°-L	D20 00640	0.472 (12)	1.378 (35)	0.059 (1.5)	0.138 (3.5)	0.049	W30 14 .. 0.04..		W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP		
UZV12-804-35-15°-R	D20 05640							W30 14 .. 0.04..					
UZV16-805-45-15°-L	D20 00660	0.630 (16)	1.772 (45)	0.118 (3.0)	0.197 (5)	0.115	W30 26 .. 0.05..		W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP		
UZV16-805-45-15°-R	D20 05660							W30 26 .. 0.05..					

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts		Accessories	
							W00 / W01 L.H. radial rake 06 = 6° 12 = 12°	W00 / W01 R.H. radial rake 36 = 6° 42 = 12°	W28 / W29 neutral 00 = PD 01 = K	Clamping screw	Order No. Description	Screwdriver	Order No. Description
UZV10-818-30-15°-L31	D20 50620	0.394 (10)	1.181 (30)	0.059 (1.5)	.157 (4)	0.029			W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP		
UZV10-818-30-15°-R31	D20 55620												
UZV12-802-35-15°-L	D20 00670	0.472 (12)	1.378 (35)	0.059 (1.5)	0.138 (3.5)	0.049	W00 24 .. 0.02..		W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP		
UZV12-802-35-15°-R	D20 05670							W00 24 .. 0.02..					
UVZ16-802-45-15°-L38	D20 50690	0.630 (16)	1.772 (45)	0.118 (3.0)	0.197 (5)	0.115	W01 24060.02..		W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP		
UVZ16-802-45-15°-R38	D20 55690							W01 24360.02..					
UZV16-801-45-15°-L	D20 00690	0.630 (16)	1.772 (45)	0.118 (3.0)	0.197 (5)	0.115	W00 34 .. 0.02..		W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP		
UZV16-801-45-15°-R	D20 05690							W00 34 .. 0.02..					

For further details on inserts, please see Chapter 7

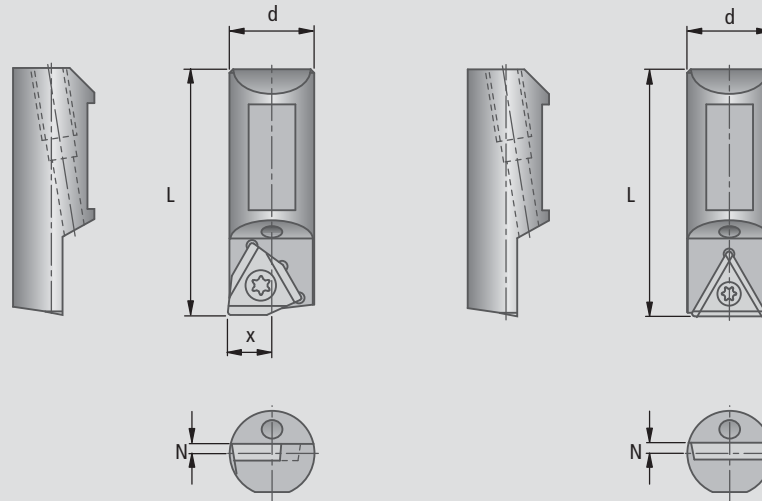
Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.

Kometric® UZV Adjustable Boring Cartridge $\kappa = 0^\circ$



for Insert **W01 / W29** and **W30 / W57**



For mounting dimensions see page 6.66

L.H. boring cartridge as shown with right or neutral insert.

R.H. boring cartridge in mirror image with left or neutral insert.

inch (mm)

Description	Order No.	d	L	N	lbs	Insert			Assembly parts	Accessories
						W30 L.H.	W30 R.H.	W57 neutral		
						radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw 	Screwdriver
									Order No. Description	Order No. Description
UZV8-803-25-0°	D20 05700	0.315 (8)	0.984 (25)	0.039 (1.0)	0.015	W30 04 .. 0.03..	W30 04 .. 0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZV10-804-30-0°	D20 05720	0.394 (10)	1.181 (30)	0.059 (1.5)	0.029	W30 14 .. 0.04..	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-804-35-0°	D20 05740	0.472 (12)	1.378 (35)	0.059 (1.5)	0.049	W30 14 .. 0.04..	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV16-805-45-0°	D20 05760	0.630 (16)	1.772 (45)	0.118 (3.0)	0.115	W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
UZV20-806-50-0°	D20 05800	0.787 (20)	1.969 (50)	0.157 (4.0)	0.216	W30 44 .. 0.08..	W30 44 .. 0.08..		N00 56411 S/M5×13.4-20IP 25 in-lbs	L05 00870 20IP

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 / W01 L.H.	W00 / W01 R.H.	W28 / W29 neutral		
							radial rake 06 = 6° 12 = 12°	radial rake 36 = 6° 42 = 12°	00 = PD 01 = K	Clamping screw 	Screwdriver
										Order No. Description	Order No. Description
UZV10-818-30-0°-L31	D20 50720	0.394 (10)	1.181 (30)	0.059 (1.5)	0.209 (5.3)	0.029			W29 18010.04..	N00 57553 S/M2.2×5.5-6IP 8.9 in-lbs	L05 00810 6IP
UZV10-818-30-0°-R31	D20 55720										
UZV12-802-35-0°-L	D20 00770	0.472 (12)	1.378 (35)	0.059 (1.5)	0.248 (6.3)	0.049		W00 24 .. 0.02..	W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UZV12-802-35-0°-R	D20 05770							W00 24 .. 0.02..			
UVZ16-802-45-0°-L38	D20 50790	0.630 (16)	1.772 (45)	0.118 (3.0)	0.327 (8.3)	0.115		W01 24360.02..	W29 24010.04..	N00 57511 S/M2.5×7.2-8IP 11.3 in-lbs	L05 00830 8IP
UVZ16-802-45-0°-R38	D20 55790							W01 24060.02..			
UZV16-801-45-0°-L	D20 00790	0.630 (16)	1.772 (45)	0.118 (3.0)	0.327 (8.3)	0.115		W00 34 .. 0.02..	W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UZV16-801-45-0°-R	D20 05790							W00 34 .. 0.02..			

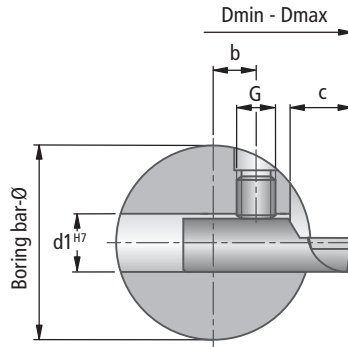
For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZ Adjustable Boring Cartridge Mounting Dimensions



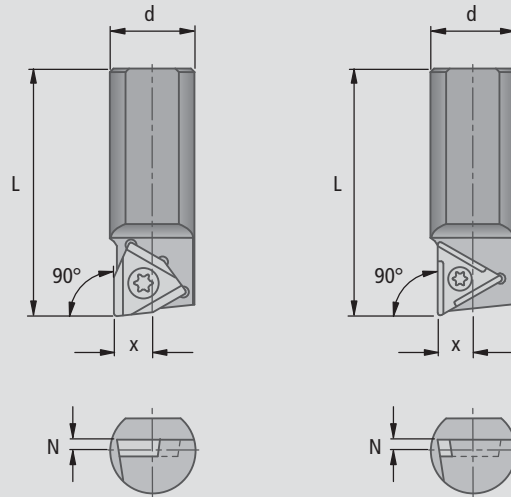
inch (mm)

Boring cartridge size	Boring range radial mounting Dmin - Dmax	For boring bar diameter	d1	b	G	c
UZ 8..	1.063 - 1.575 (27 - 40)	0.787 (20)	0.315 (8)	0.059 (1.5)	M6	0.354 (9)
UZ 10..	1.378 - 2.047 (35 - 52)	0.984 (25)	0.394 (10)	0.079 (2.0)	M6	0.472 (12)
UZ 12-804..	1.575 - 2.480 (40 - 63)	1.260 (32)	0.472 (12)	0.098 (2.5)	M8	0.512 (13)
UZ 12-802..	1.575 - 2.480 (40 - 63)	1.260 (32)	0.472 (12)	0.098 (2.5)	M8	0.512 (13)
UZ 16..	2.047 - 3.150 (52 - 80)	1.575 (40)	0.630 (16)	0.118 (3.0)	M10	0.709 (18)
UZ 20..	2.520 - 3.937 (64 - 100)	1.969 (50)	0.787 (20)	0.197 (5.0)	M12	0.787 (20)
UZ 25..	3.110 - 4.961 (79 - 126)	2.480 (63)	0.984 (25)	0.157 (4.0)	M16	0.906 (23)

Kometric® UZ Adjustable Boring Cartridge $\kappa = 90^\circ$



for Insert **W00 / W28** and **W30 / W57**



For mounting dimensions see page 6.74

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H.	W30 R.H.	W57 neutral		
UZ8-803-45-90°-L	D20 10010	0.315	1.772	0.039	0.118	0.033	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw 	Screwdriver
UZ8-803-45-90°-R	D20 15010	(8)	(45)	(1.0)	(3.0)				W57 04040.04..	N00 56031 S/M2.6×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZ10-804-50-90°-L	D20 10030	0.394	1.969	0.059	0.157	0.057				N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZ10-804-50-90°-R	D20 15030	(10)	(50)	(1.5)	(4.0)				W57 14040.04..		
UZ12-804-60-90°-L	D20 10050	0.472	2.362	0.059	0.197	0.099				N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZ12-804-60-90°-R	D20 15050	(12)	(60)	(1.5)	(5.0)				W57 14040.04..		

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 L.H.	W00 R.H.	W28 neutral		
UZ12-802-60-90°-L	D20 10070	0.472	2.362	0.059	0.197	0.097	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°	00 = PD 01 = K	Clamping screw 	Screwdriver
UZ12-802-60-90°-R	D20 15070	(12)	(60)	(1.5)	(5.0)				W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UV16-801-80-90°-L	D20 10090	0.63	3.15	0.118	0.236	0.243				N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UV16-801-80-90°-R	D20 15090	(16)	(80)	(3.0)	(6.0)				W28 34 .. 0.04..		
UZ20-810-100-90°-L	D20 10110	0.787	3.937	0.157	0.315	0.478				N00 55821 M4.5×9-10IP 38 in-lbs	L05 00850 10IP
UZ20-810-100-90°-R	D20 15110	(20)	(100)	(4.0)	(8.0)				W28 42 .. 0.04..		
UZ25-820-120-90°-L	D20 10130	0.984	4.724	0.157	0.394	0.891				N00 55821 M4.5×9-10IP 38 in-lbs	L05 00850 10IP
UZ25-820-120-90°-R	D20 15130	(25)	(120)	(4.0)	(10.0)				W28 50 .. 0.04..		

For further details on inserts, please see Chapter 7

Delivery:

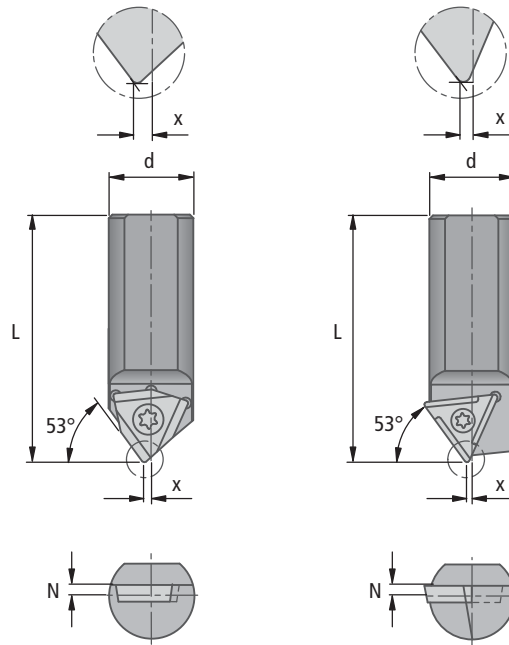
UZ boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZ Adjustable Boring Cartridge $\kappa = 53^\circ$



for Insert **W00 / W28** and **W30 / W57**



For mounting dimensions see page 6.74

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H.	W30 R.H.	W57 neutral		
UZ8-803-45-53°-L	D20 10610	0.315 (8)	1.772 (45)	0.039 (1.0)	0.016 (0.4)	0.033	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw 	Screwdriver
UZ8-803-45-53°-R	D20 15610								W57 04040.04..	N00 56031 S/M2×4.9-6IP 0,62 Nm	L05 00810 6IP
UZ10-804-50-53°-L	D20 10630	0.394 (10)	1.969 (50)	0.059 (1.5)	0.02 (0.5)	0.057				N00 56111 S/M2,6×6.2-8IP 1,28 Nm	L05 00830 8IP
UZ10-804-50-53°-R	D20 15630								W57 14040.04..		
UZ12-804-60-53°-L	D20 10650	0.472 (12)	2.362 (60)	0.059 (1.5)	0.02 (0.5)	0.099				N00 56111 S/M2,6×6.2-8IP 1,28 Nm	L05 00830 8IP
UZ12-804-60-53°-R	D20 15650								W57 14040.04..		

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 L.H.	W00 R.H.	W28 neutral		
UZ12-802-60-53°-L	D20 10670	0.472 (12)	2.362 (60)	0.059 (1.5)	0.02 (0.5)	0.097	radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw 	Screwdriver
UZ12-802-60-53°-R	D20 15670								W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UV16-801-80-53°-L	D20 10690	0.63 (16)	3.15 (80)	0.118 (3.0)	0.024 (0.6)	0.243				N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UV16-801-80-53°-R	D20 15690								W28 34 .. 0.04..		
UZ20-810-100-53°-L	D20 10710	0.787 (20)	3.937 (100)	0.157 (4.0)	0.024 (0.6)	0.478				N00 55821 M4.5×9-10IP 38 in-lbs	L05 00850 10IP
UZ20-810-100-53°-R	D20 15710								W28 42 .. 0.04..		
UZ25-820-120-53°-L	D20 10730	0.984 (25)	4.724 (120)	0.157 (4.0)	0.024 (0.6)	0.891				N00 55821 M4.5×9-10IP 38 in-lbs	L05 00850 10IP
UZ25-820-120-53°-R	D20 15730								W28 50 .. 0.04..		

For further details on inserts, please see Chapter 7

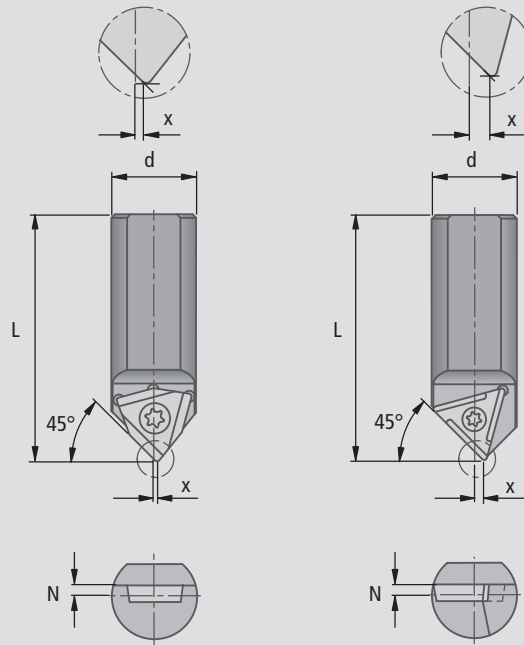
Delivery:

UZ boring cartridge complete with all replacement parts, less wrenches and insert.

Kometric® UZ Adjustable Boring Cartridge $\kappa = 45^\circ$



for Insert **W00 / W28** and **W30 / W57**



For mounting dimensions see page 6.74

L.H. boring cartridge as shown with left or neutral insert.

R.H. boring cartridge in mirror image with right or neutral insert.

inch (mm)

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W30 L.H.	W30 R.H.	W57 neutral		
							radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°		Clamping screw Order No. Description	Screwdriver Order No. Description
UZ8-803-45-45°-L	D20 10810	0.315 (8)	1.772 (45)	0.039 (1.0)	0.039 (1.0)	0.033	W30 04 .. 0.03..		W57 0404.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UZ8-803-45-45°-R	D20 15810							W30 04 .. 0.03..			
UZ10-804-50-45°-L	D20 10830	0.394 (10)	1.969 (50)	0.059 (1.5)	0.051 (1.3)	0.057	W30 14 .. 0.04..		W57 1404.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZ10-804-50-45°-R	D20 15830							W30 14 .. 0.04..			
UZ12-804-60-45°-L	D20 10850	0.472 (12)	2.362 (60)	0.059 (1.5)	0.039 (1.0)	0.099	W30 14 .. 0.04..		W57 1404.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UZ12-804-60-45°-R	D20 15850							W30 14 .. 0.04..			

Description cutting form ▼	Order No.	d	L	N	x	lbs	Insert			Assembly parts	Accessories
							W00 L.H.	W00 R.H.	W28 neutral		
							radial rake 06 = 6° 12 = 12° 20 = 20°	radial rake 36 = 6° 42 = 12° 50 = 20°	00 = PD 01 = K	Clamping screw Order No. Description	Screwdriver Order No. Description
UZ12-802-60-45°-L	D20 10870	0.472 (12)	2.362 (60)	0.059 (1.5)	0.039 (1.0)	0.097	W00 24 .. 0.02..		W28 24 .. 0.04..	N00 55581 M2.5×4.5-8IP 11.3 in-lbs	L05 00830 8IP
UZ12-802-60-45°-R	D20 15870							W00 24 .. 0.02..			
UV16-801-80-45°-L	D20 10890	0.472 (12)	2.362 (60)	0.059 (1.5)	0.039 (1.0)	0.097	W00 34 .. 0.02..		W28 34 .. 0.04..	N00 55711 M3.5×7.4-8IP 20 in-lbs	L05 00830 8IP
UV16-801-80-45°-R	D20 15890							W00 34 .. 0.02..			

For further details on inserts, please see Chapter 7

Delivery:

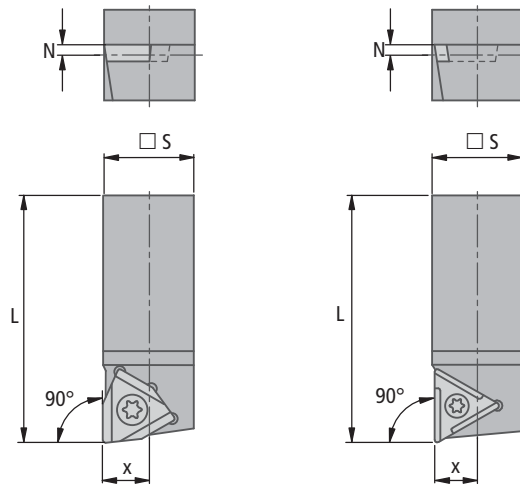
UZ boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UV Boring Tools $\kappa = 90^\circ$



for insert **W00 / W28** and **W30 / W57**



L.H. boring tool as shown with left or neutral insert.

inch (mm)

Description cutting form ▾	Order No.	for boring bar dia.	□ S	L	N	x	lbs	Insert		Assembly parts	Accessories
								W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W57 neutral		
UV8-803-40-90°-L	D20 20020	0.984 (25)	0.315 (8)	1.575 (40)	0.059 (1.5)	0.150 (3.8)	0.044	W30 04 .. 0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UV10-804-50-90°-L	D20 20040	1.260 (32)	0.394 (10)	1.968 (50)	0.059 (1.5)	0.189 (4.8)	0.066	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UV12-804-60-90°-L	D20 20060	1.575 (40)	0.472 (12)	2.362 (60)	0.059 (1.5)	0.228 (5.8)	0.132	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP

Description cutting form ▾	Order No.	for boring bar dia.	□ S	L	N	x	lbs	Insert		Assembly parts	Accessories
								W00 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W28 neutral 00 = PD 01 = K		
UV16-801-80-90°-L	D20 20080	1.968 (50)	0.630 (16)	3.150 (80)	0.118 (3)	0.307 (7.8)	0.022	W00 34 .. 0.02..	W28 34 .. 0.04..	N00 55701 M3.5×5-8IP 20 in-lbs	L05 00830 8IP
UV20-810-100-90°-L	D20 20100	2.480 (63)	0.787 (20)	3.937 (100)	0.157 (4)	0.386 (9.8)	0.066	W00 42 .. 0.02..	W28 42 .. 0.04..	N00 55811 M4.5×7-10IP 38 in-lbs	L05 00850 10IP
UV25-820-120-90°-L	D20 20120	3.150 (80)	0.984 (25)	4.724 (120)	0.157 (4)	0.484 (12.3)	0.110	W00 50 .. 0.04..	W28 50 .. 0.04..	N00 55811 M4.5×7-10IP 38 in-lbs	L05 00850 10IP

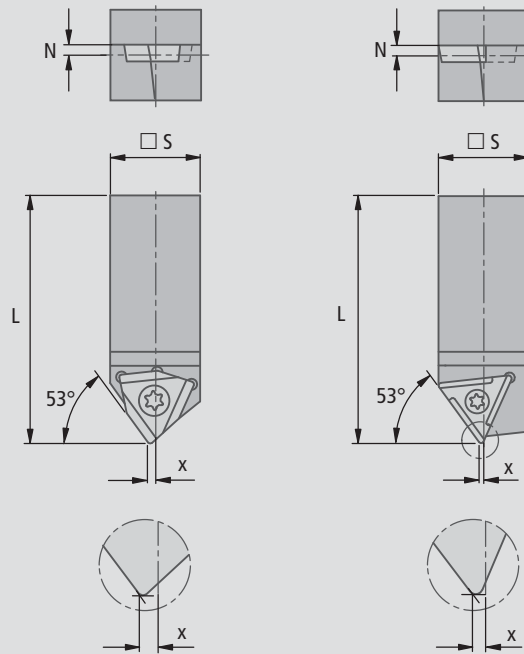
For further details on inserts see chapter 7

Delivery:

Boring tool with assembly parts. Please order insert and accessories separately.



for insert **W00 / W28** and **W30 / W57**



L.H. boring tool as shown with left or neutral insert.

Description cutting form ▼	Order No.	for boring bar dia.	□ S	L	N	x	lbs	Insert		Assembly parts	Accessories
								W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W57 neutral		
UV8-803-40-53°-L	D20 20220	0.984 (25)	0.315 (8)	1.575 (40)	0.059 (1.5)	0.016 (0.4)	0.044	W30 04 .. 0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 5.5 in-lbs	L05 00810 6IP
UV10-804-50-53°-L	D20 20240	1.260 (32)	0.394 (10)	1.968 (50)	0.059 (1.5)	0.020 (0.5)	0.066	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
UV12-804-60-53°-L	D20 20260	1.575 (40)	0.472 (12)	2.362 (60)	0.059 (1.5)	0.020 (0.5)	0.132	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP

Description cutting form ▼	Order No.	for boring bar dia.	□ S	L	N	x	lbs	Insert		Assembly parts	Accessories
								W00 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W28 neutral 00 = PD 01 = K		
UV16-801-80-53°-L	D20 20280	1.968 (50)	0.630 (16)	3.150 (80)	0.118 (3)	0.024 (0.6)	0.022	W00 34 .. 0.02..	W28 34 .. 0.04..	N00 55701 M3.5×5-8IP 20 in-lbs	L05 00830 8IP
UV20-810-100-53°-L	D20 20300	2.480 (63)	0.787 (20)	3.937 (100)	0.157 (4)	0.024 (0.6)	0.066	W00 42 .. 0.02..	W28 42 .. 0.04..	N00 55811 M4.5×7-10IP 38 in-lbs	L05 00850 10IP
UV25-820-120-53°-L	D20 20320	3.150 (80)	0.984 (25)	4.724 (120)	0.157 (4)	0.024 (0.6)	0.110	W00 50 .. 0.04..	W28 50 .. 0.04..	N00 55811 M4.5×7-10IP 38 in-lbs	L05 00850 10IP

For further details on inserts see chapter 7

Delivery:

Boring tool with assembly parts. Please order insert and accessories separately.



Kometric® FZ Micro-Adjustable Cartridge

Design

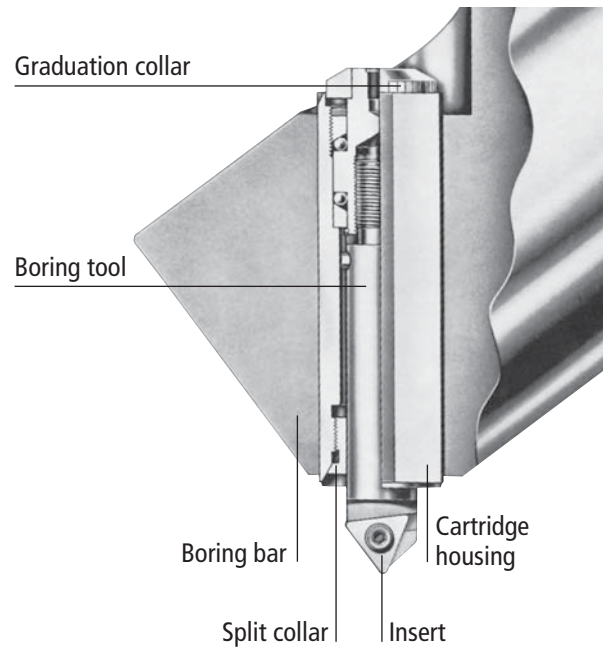
The adjustment spindle is rigidly secured at the rear of the cartridge housing between two **thrust bearings**, eliminating all axial and radial play, and is provided with fine micrometer threads into which the threaded shoulder of the tool is screwed.

The **boring tool** is supported on adjustable bearings in the front part of the housing with two keys on its shaft which slide in guide slots and prevent the tool from twisting. It is tightly clamped as closely as possible to the **cutting edge** with a **split collar** accessible from the front of the housing. Adjustment is made in the clamped position by rotating the setting spindle with a key.

Forward and backward adjustment of the tool is controlled by turning the setting spindle. When the tool is rigidly clamped, this also reduces the force required for this, as the two ball bearings reduce the frictional resistance, making adjustment sensitive and accurate.

Play is eliminated on the tool for forward and backward adjustment by elastic prestressing of a section of the threads of the setting spindle.

The amount of adjustment can be read off against marking on the **cartridge housing** on the **graduation collar** connected to the setting spindle.



Advantages:

- **Fast, accurate tool setting:** simply using setting spindle.
- **Maximum accuracy:** Tool is adjusted when clamped. Anti-backlash design.
- **Large turning range:** In addition to micro-adjustment, the whole cartridge can be moved.
- **Easy mounting:**
Only requirements: close tolerance bore tapped hole for clamping.
- **Minimum weakening of boring bar:** due to small dimensions of cartridges.
- **Suitable for standard boring bars**
- **Excellent for external turning:** on automatics, turret lathes and special machines.

Type FZ

Round shank micro-adjustable cartridge, particularly suitable for fitting by operator. Requires only a close tolerance bore and tapped hole for clamping.



1

Material: Cast iron
 Cutting tool: **M30 52060** (U25Z3-805)
 with Δ -Insert: **W30 26600.052110** (U5-8005-N-K10)
 Cutting speed: 260 sfm (80 m/min)
 Feed: 0.003 ipr (0.08 mm/rev)
 Cutting depth: 0.008" or 0.0160" (0.2 mm or 0.4mm) on \emptyset

Boring bar: BZ 40x63x160 mm
 Micro-adj. tool: Cartridge FZ25-80-3
 (for boring tool used, see test results)
 Measuring tool: TESA-internal precision measuring system

Bore- \emptyset start:	91.210	91.608	92.008	92.409	92.809	93.210	93.609	94.012	94.409	94.810	95.210	95.611	96.009	96.410	96.808
Stock removed:	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
Sum Total- \emptyset :	91.610	92.008	92.408	92.809	93.209	93.610	94.009	94.412	94.809	95.210	95.610	96.011	96.409	96.810	97.208
Measured- \emptyset :	91.608	92.008	92.409	92.809	93.210	93.609	94.012	94.409	94.810	95.210	95.611	96.009	96.410	96.808	97.208
Difference in 1/1000 mm			+1		+1		+3		+1		+1		+1		
		-2	0	0		-1		-3		0		-2		-2	0

Result: Average diviation per pass = .00005 inch (0.0012 mm)

2

Material: Steel 16MnCr5
 Cutting tool: **M30 52060** (U25Z3-805)
 with Δ -Insert: **W30 26600.052110** (U5-8005-N-K10)
 Cutting speed: 820 sfm (250 m/min)
 Feed: 0.004 ipr (0.1 mm/rev)
 Cutting depth: 0.008" or 0.0160" (0.2 mm or 0.4mm) on \emptyset

Boring bar: BZ 40x63x160 mm
 Micro-adj. tool: Cartridge FZ25-80-3
 (for boring tool used, see test results)
 Measuring tool: TESA-internal precision measuring system

Bore- \emptyset start:	82.883	83.282	83.680	84.076	84.474	84.874	85.272	85.671	86.069	86.470	86.865	87.872	88.871	89.868	90.868	
Stock removed:	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	1.000	1.000	1.000	1.000	1.000	
Sum Total- \emptyset :	83.283	83.682	84.080	84.476	84.874	85.274	85.672	86.071	86.469	86.870	87.865	88.872	89.871	90.868	91.868	
Measured- \emptyset :	83.282	83.680	84.076	84.474	84.874	85.272	85.671	86.069	86.470	86.865	87.872	88.871	89.868	90.868	91.866	
Difference in 1/1000 mm									+1		+7					
		-1	-2	-4	-2	0	-2	-1	-2		-5		-1	-3	0	-2

0.016 inch (0.400 mm) adjustment in \emptyset 0.016 inch (1.000 mm) adjustment in \emptyset

Result: Average diviation per pass = .00009 inch (0.0022 mm)

3

Material: Steel 16MnCr5
 Cutting tool: **M30 52060** (U25Z3-805)
 with Δ -Insert: **W30 26600.052110** (U5-8005-N-K10)
 Cutting speed: 620 sfm (190 m/min)
 Feed: 0.004 ipr (0.1 mm/rev)
 Cutting depth: 0.008" or 0.0160" (0.2 mm or 0.4mm) on \emptyset

Boring bar: BZ 40x63x160 mm
 Micro-adj. tool: Cartridge FZ25-80-3
 (for boring tool used, see test results)
 Measuring tool: TESA-internal precision measuring system

Bore- \emptyset start:	94.730	95.131	95.530	95.930	96.326	96.726	97.126	97.530	97.924	98.324	98.724	99.124	99.523	99.920	100.320	
Stock removed:	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	
Sum Total- \emptyset :	95.130	95.531	95.930	96.330	96.726	97.126	97.526	97.930	98.324	98.724	99.124	99.524	99.923	100.320	100.720	
Measured- \emptyset :	95.131	95.530	95.930	96.326	96.726	97.126	97.530	97.924	98.324	98.724	99.124	99.523	99.920	100.320	100.715	
Difference in 1/1000 mm		+1					+4									
			-1	0	-4	0	0		-6	0	0	0	-1	-3	0	-5

Result: Average diviation per pass = .00007 inch (0.0017 mm)

6



Note: The application details shown depend on the environmental and application conditions (e.g. machine, ambient temperature, use of lubricant/coolant and the machining result required). These are subject to correct operating conditions, correct application and compliance with the spindle speed limits given for the tools.

Kometric® FZ Micro-Adjustable Cartridge



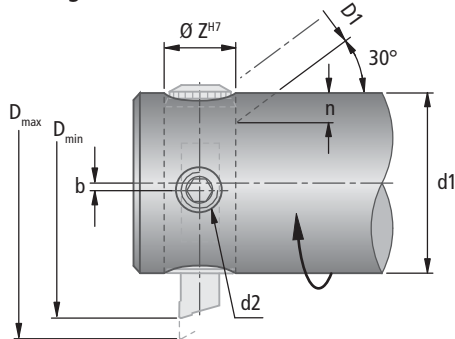
for Insert W30 / W57

Radial Mounting 90° (Cutting form 1 and/or 2)

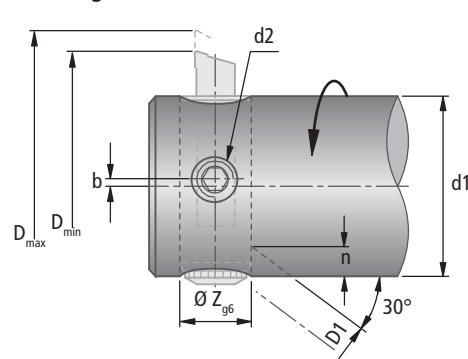
Adjustment per graduation = .0008 inch dia.

(0.02 mm Ø)

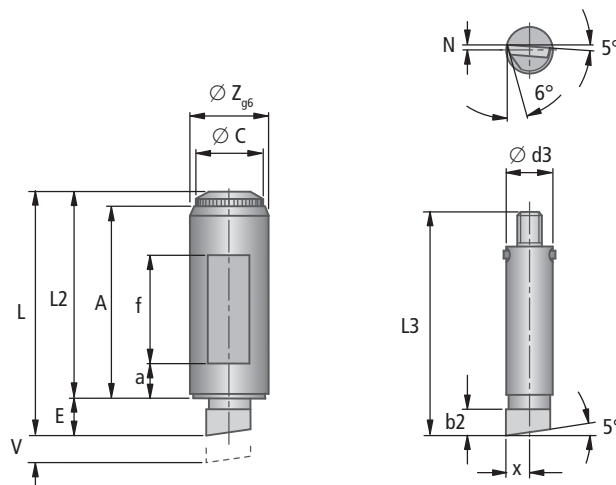
Cutting form 1 (L.H.)



Cutting form 2 (R.H.)



Kometric® FZ Micro-Adjustable Cartridges up to Ø 0.984"



inch (mm)

Boring range ¹⁾			Cartridge		Soldering		lbs	Accessories	
D _{min} ①	D _{max} ②	D _{max} ③	Description	Order No.	cutting form 1 Order No. Description	cutting form 2 Order No. Description		Wrench Order No. Description	
0.984 (25)	1.299 (33)	1.417 (36)	FZ8-25-1	M30 00011	M30 50111.21	M30 51111.21	0.015	L05 01010	
1.102 (28)	1.417 (36)	1.535 (39)	FZ8-28-1	M30 00021	8Z1-K10	8Z2-K10	0.018	R0/N0	

Drilling range ¹⁾			Cutter																		
D _{min} ①	D _{max} ②	D _{max} ③	d1	n ²⁾	Ø D1 ²⁾	b	d2	Ø Z _{H7} g ₆	L1	L2	E1	V	A	Ø C	a	f	Ø d3	L4	x	N	b2
0.984 (25)	1.299 (33)	1.417 (36)	0.787	0.138	0.315	0.059	M6	0.315	0.933 (23.7)	0.827 (21)	0.106	0.157 (4)	0.756 (19.2)	0.272 (6.9)	0.197 (5)	0.394 (10)	0.185 (4.7)	0.756 (19.2)	0.075 (1.9)	0.035 (0.9)	0.098 (2.5)
1.102 (28)	1.417 (36)	1.535 (39)	(20)	(3.5)	(8)	(1.5)		(8)	1.051 (26.7)	0.945 (24)	(2.7)	(4)	0.874 (22.2)	(6.9)	(5)	0.512 (13)	(4.7)	(19.2)	(1.9)	(0.9)	(2.5)

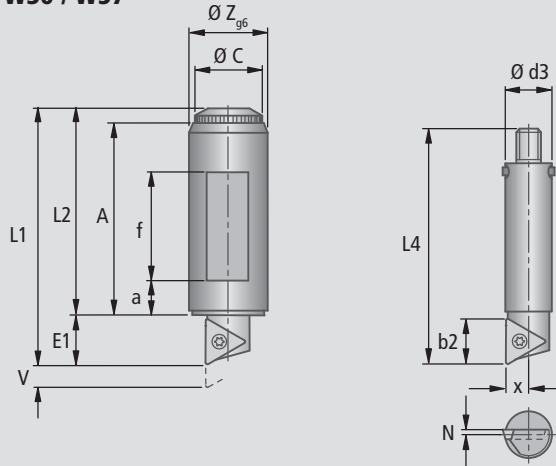
¹⁾ Value 1 to 2 = micro adjustment range of cartridge

Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar




for Insert **W30 / W57**



inch (mm)

Boring range ¹⁾			Cartridge		Turning tool		Insert			Assembly parts		Accessories	
D _{min} ①	D _{max} ②	D _{max} ③	Description	Order No.	Order No.	Order No.	W30 L.H.	W30 R.H.	W57 neutral	Clamping screw	Screwdriver	Wrench	
					Description	Description	radial rake	radial rake		Order No. Description	Order No. Description	Order No. Description	
1.299 (33)	1.614 (41)	1.889 (48)	FZ10-31-1	M30 00031	M30 50021	M30 51021				N00 56021 S/M2×3,8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1	
1.456 (37)	1.771 (45)	2.047 (52)	FZ10-35-1	M30 00041	U10Z1-803	U10Z2-803	W30 04 .. 0.03..	W30 04 .. 0.03..	W57 04040.04..	N00 56031 S/M2×4,9-6IP 5.5 in-lbs	L05 00810 6IP	L05 01030 R2a/N2	
1.614 (41)	2.007 (51)	2.362 (58)	FZ12-40-1	M30 00051	M30 50031	M30 51031						L05 01040 R2/N2	
1.811 (46)	2.204 (56)	2.480 (63)	FZ12-45-1	M30 00061	U12Z1-803	U12Z2-803	W30 14 .. 0.04..	W30 14 .. 0.04..	W57 14040.04..	N00 56101 S/M2,6×5,2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01050 N3	
2.086 (53)	2.559 (65)	2.874 (73)	FZ16-50-1	M30 00071	M30 50041	M30 51041						L05 01060 ZV25	
2.322 (59)	2.795 (71)	3.110 (79)	FZ16-56-1	M30 00081	U16Z1-804	U16Z2-804	W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..	N00 56111 S/M2,6×6,2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01070 R5/N5	
2.480 (63)	3.070 (78)	3.464 (88)	FZ20-64-1	M30 00091	M30 50051	M30 51051							
2.834 (72)	3.425 (87)	3.937 (100)	FZ20-72-1	M30 00101	U20Z1-804	U20Z2-804	W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..	N00 56211 S/M3,5×7,3-10IP 25 in-lbs	L05 00850 10IP	L05 01060 ZV25	
3.149 (80)	3.937 (100)	4.527 (115)	FZ25-80-1	M30 00111	M30 50061	M30 51061							
3.543 (90)	4.330 (110)	4.960 (126)	FZ25-90-1	M30 00121	U25Z1-805	U25Z2-805	W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..	N00 56211 S/M3,5×7,3-10IP 25 in-lbs	L05 00850 10IP	L05 01070 R5/N5	
4.094 (104)	5.275 (134)	6.062 (154)	FZ32-100-1	M30 00131									
4.488 (114)	5.669 (144)	6.496 (165)	FZ32-110-1	M30 00141	M30 50071	M30 51071							
5.078 (129)	6.259 (159)	7.283 (185)	FZ32-125-1	M30 00151	U32Z1-805	U32Z2-805							
5.708 (145)	6.889 (175)	8.070 (205)	FZ32-140-1	M30 00161									

For further details on inserts see chapter 7

Boring range ¹⁾			Cutter	Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter	
D _{min} ①	D _{max} ②	D _{max} ③	d1	n ²⁾	D1 ²⁾	b	d2	Z ^{H7/96}	L1	L2	E1	V	A	Ø	a	f	Ø	L4	x	N	b2		
1.299 (33)	1.614 (41)	1.889 (48)	0.984	0.177	0.315	0.079	M6	0.393	1.240 (31.5)	1.004 (25.5)	0.236	0.157	0.917 (23.3)	0.350	0.236	0.472 (12)	0.224	0.976	0.091	0.047	0.256	0.031	
1.456 (37)	1.771 (45)	2.047 (52)	(25)	(4.5)	(8)	(2)		(10)	1.398 (35.5)	1.161 (29.5)	(6)	(4)	1.075 (27.3)	(8.9)	(6)	0.630 (16)	(5.7)	(24.8)	(2.3)	(1.2)	(6.5)	0.035	
1.614 (41)	2.007 (51)	2.362 (58)	1.260	0.197	0.394	0.098	M8	0.472	1.555 (39.5)	1.319 (33.5)	0.236	0.197	1.220 (31)	0.429	0.315	0.630 (16)	0.264	1.201	0.114	0.047	0.256	0.055	
1.811 (46)	2.204 (56)	2.480 (63)	(32)	(5)	(10)	(2.5)		(12)	1.752 (44.5)	1.516 (38.5)	(6)	(5)	1.417 (36)	(10.9)	(8)	0.827 (21)	(6.7)	(30.5)	(2.9)	(1.2)	(6.5)	0.066	
2.086 (53)	2.559 (65)	2.874 (73)	1.575	0.315	0.472	0.118	M10	0.629	2.008 (51)	1.654 (42)	0.354	0.236	1.535 (39)	0.547	0.394	0.787 (20)	0.339	1.563	0.15	0.047	0.354	0.128	
2.322 (59)	2.795 (71)	3.110 (79)	(40)	(8)	(12)	(3)		(16)	2.244 (57)	1.890 (48)	(9)	(6)	1.772 (45)	(13.9)	(10)	1.024 (26)	(8.6)	(39.7)	(3.8)	(1.2)	(9)	0.148	
2.480 (63)	3.070 (78)	3.464 (88)	1.969	0.354	0.630	0.197	M12	0.787	2.362 (60)	2.008 (51)	0.354	0.295	1.850 (47)	0.705	0.472	0.945 (24)	0.453	1.898	0.185	0.067	0.354	0.247	
2.834 (72)	3.425 (87)	3.937 (100)	(50)	(9)	(16)	(5)		(20)	2.677 (68)	2.323 (59)	(9)	(7.5)	2.165 (55)	(17.9)	(12)	1.260 (32)	(11.5)	(48.2)	(4.7)	(1.7)	(9)	0.287	
3.149 (80)	3.937 (100)	4.527 (115)	2.480	0.394	0.787	0.157	M16	0.984	3.051 (77.5)	2.539 (64.5)	0.512	0.394	2.343 (59.5)	0.862	0.591	1.181 (30)	0.551	2.374	0.236	0.079	0.531	0.487	
3.543 (90)	4.330 (110)	4.960 (126)	(63)	(10)	(20)	(4)		(25)	3.445 (87.5)	2.933 (74.5)	(13)	(10)	2.736 (69.5)	(21.9)	(15)	1.575 (40)	(14)	(60.3)	(6)	(2)	(13.5)	0.571	
4.094 (104)	5.275 (134)	6.062 (154)	3.150	0.512	0.984	0.236	M20	1.259	3.819 (97)	3.307 (84)	0.512	0.591	3.071 (78)	1.138	0.787	1.575 (40)	0.709	3.091	0.299	0.106	0.531	1.063	
4.488 (114)	5.669 (144)	6.496 (165)	(80)	(13)	(25)	(6)		(32)	4.213 (107)	3.701 (94)	(13)	(15)	3.465 (88)	(28.9)	(20)	1.969 (50)	(18)	(78.5)	(7.6)	(2.7)	(13.5)	1.200	
5.078 (129)	6.259 (159)	7.283 (185)	3.937	0.512	0.984	0.472	M20	1.259	4.803 (122)	4.291 (109)	0.512	0.591	4.055 (103)	1.138	0.984	1.969 (50)	0.709	3.091	0.299	0.106	0.531	1.400	
5.708 (145)	6.889 (175)	8.070 (205)	(100)	(13)	(25)	(12)		(32)	5.394 (137)	4.882 (124)	(13)	(15)	4.646 (118)	(28.9)	(25)	2.559 (65)	(18)	(78.5)	(7.6)	(2.7)	(13.5)	1.605	

¹⁾ Value 1 to 2 = micro adjustment range of cartridge

Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar



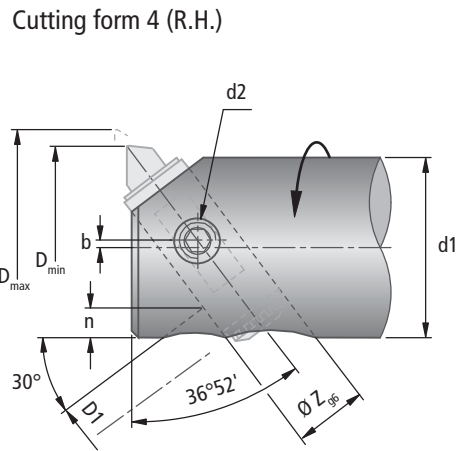
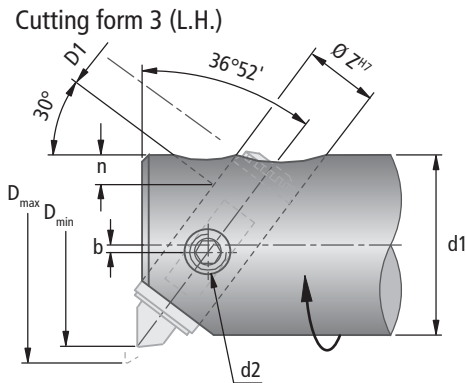
Kometric® FZ Micro-Adjustable Cartridge



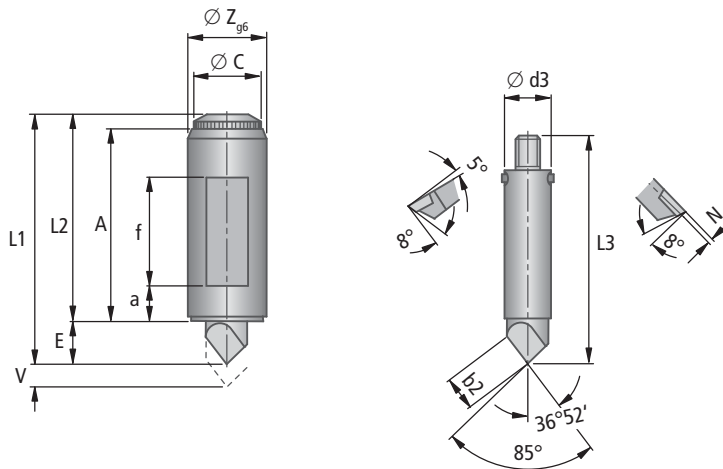
for Insert W30 / W57

Angular Mounting 36°52' (Cutting form 3 and/or 4)



Adjustment per graduation = .0006 inch dia.
(0.016 mm Ø)



Kometric® FZ Micro-Adjustable Cartridges up to Ø 0.905"



inch (mm)

Boring range ¹⁾			Cartridge		Soldering cutting form 3	Accessories
D_{min} ①	D_{max} ②	D_{max} ③	Description	Order No.	Order No. Description	
0.905 (23)	1.157 (29.4)	1.260 (32)	FZ8-23-3	M30 02011	 Order No. Description M30 52111.21 8Z3-K10	 Order No. Description L05 01010 R0/N0
1.024 (26)	1.275 (32.4)	1.929 (49)	FZ8-26-3	M30 02021		

Drilling range ¹⁾			Cutter																	
D_{min} ①	D_{max} ②	D_{max} ③	d1	n ²⁾	Ø D1 ²⁾	b	d2	Ø Z _{g6}	L1	L2	E1	V	A	Ø C	a	f	Ø d3	L4	N	b2
23	1.157 (29.4)	1.260 (32)	0.787	0.118	0.315	0.059	M6	0.315	1.024 (26)	0.827 (21)	0.197	0.157	0.756 (19.2)	0.272	0.197	0.394 (10)	0.185	0.846	0.035	0.098
26	1.275 (32.4)	1.929 (49)	(20)	(3)	(8)	(1.5)		(8)	1.142 (29)	0.945 (24)	(5)	(4)	0.874 (22.2)	(6.9)	(5)	0.512 (13)	(4.7)	(21.5)	(0.9)	(2.5)

¹⁾ Value 1 to 2 = micro adjustment range of cartridge

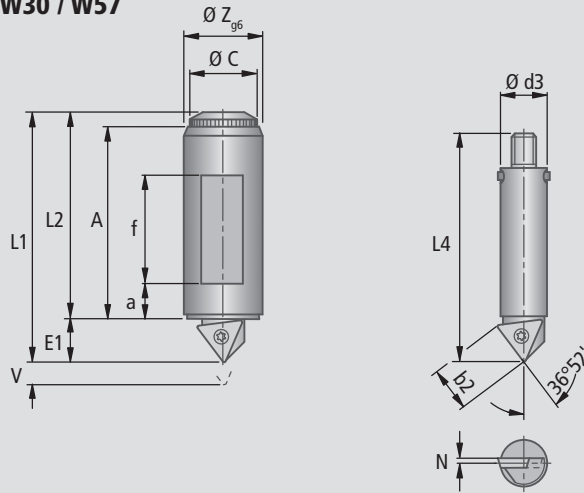
Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar

Kometric® FZ Micro-Adjustable Cartridge up to Ø1.102"



for Insert **W30 / W57**



inch (mm)

Boring range ¹⁾			Cartridge		Turning tool		Insert			Assembly parts		Accessories	
D _{min} ①	D _{max} ②	D _{max} ③	Description	Order No.	cutting form 1 Order No.	cutting form 2 Order No.	W30 L.H. radial rake 06 = 6° 12 = 12° 20 = 20°	W30 R.H. radial rake 36 = 6° 42 = 12° 50 = 20°	W57 neutral	Clamping screw	Screwdriver	Wrench	
										Order No.	Order No.	Order No.	
1.102 (28)	1.354 (34.4)	1.496 (38)	FZ10-28-3	M30 02031	M30 52021	M30 53021				N00 56021 S/M2×3,8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1	
1.259 (32)	1.551 (38.4)	1.732 (44)	FZ10-32-3	M30 02041	U10Z3-803	U10Z4-803	W30 04 .. 0.03..	W30 04 .. 0.03..	W57 04040.04..	N00 56031 S/M2×4,9-6IP 5.5 in-lbs	L05 00810 6IP	L05 01030 R2a/N2	
1.417 (36)	1.732 (44)	1.889 (48)	FZ12-36-3	M30 02051	M30 52031	M30 53031				N00 56101 S/M2,6×5,2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01040 N3	
1.574 (40)	1.889 (48)	2.165 (55)	FZ12-40-3	M30 02061	U12Z3-803	U12Z4-803	W30 14 .. 0.04..	W30 14 .. 0.04..	W57 14040.04..	N00 56111 S/M2,6×6,2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01050 R4/N4	
1.771 (45)	2.149 (54.6)	2.362 (60)	FZ16-45-3	M30 02071	M30 52041	M30 53041				N00 56211 S/M3,5×7,3-10IP 25 in-lbs	L05 00850 10IP	L05 01060 ZV25	
1.968 (50)	2.346 (59.6)	2.362 (68)	FZ16-50-3	M30 02081	U16Z3-804	U16Z4-804	W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..			L05 01070 R5/N5	
2.204 (56)	2.677 (68)	3.070 (78)	FZ20-56-3	M30 02091	M30 52051	M30 53051							
2.519 (64)	2.992 (76)	3.543 (90)	FZ20-64-3	M30 02101	U20Z3-804	U20Z4-804							
2.834 (72)	3.464 (88)	3.937 (100)	FZ25-72-3	M30 02111	M30 52061	M30 53061							
3.149 (80)	3.779 (96)	4.488 (114)	FZ25-80-3	M30 02121	U25Z3-805	U25Z4-805							
3.543 (90)	4.488 (114)	4.960 (126)	FZ32-90-3	M30 02131			W30 26 .. 0.05..	W30 26 .. 0.05..	W57 26040.04..				
3.937 (100)	4.881 (124)	5.511 (140)	FZ32-100-3	M30 02141	M30 52071	-							
4.330 (110)	5.275 (134)	5.905 (150)	FZ32-110-3	M30 02151	U32Z3-805								
4.921 (125)	5.866 (149)	6.889 (175)	FZ32-125-3	M30 02161									

For further details on inserts see chapter 7

Boring range ¹⁾			Cutter																			
D _{min} ①	D _{max} ②	D _{max} ③	d1	n ²⁾	D1 ²⁾	b	d2	Ø Z _{H6}	L1	L2	E1	V	A	Ø C	a	f	Ø d3	L4	N	b2	lbs	
1.102 (28)	1.354 (34.4)	1.496 (38)	0.984 (25)	0.138 (3.5)	0.315 (8)	0.079 (2)	M6	0.393 (10)	1.24 (31.5)	1.004 (25.5)	0.236 (6)	0.157 (4)	0.917 (23.3)	0.350 (8.9)	0.236 (6)	0.472 (12)	0.224 (5.7)	0.976 (24.8)	0.047 (1.2)	0.256 (6.5)	0.029	
1.259 (32)	1.551 (38.4)	1.732 (44)							1.398 (35.5)	1.161 (29.5)			1.075 (27.3)			0.630 (16)					0.033	
1.417 (36)	1.732 (44)	1.889 (48)	1.260 (32)	0.157 (4)	0.394 (10)	0.098 (2.5)	M8	0.472 (12)	1.587 (40.3)	1.319 (33.5)	0.268 (6.8)	0.197 (5)	1.220 (31)	0.429 (10.9)	0.315 (8)	0.630 (16)	0.264 (6.7)	1.232 (31.3)	0.047 (1.2)	0.256 (6.5)	0.057	
1.574 (40)	1.889 (48)	2.165 (55)							1.783 (45.3)	1.516 (38.5)			1.417 (36)			0.827 (21)					0.064	
1.771 (45)	2.149 (54.6)	2.362 (60)	1.575 (40)	0.256 (6.5)	0.472 (12)	0.118 (3)	M10	0.629 (16)	2.008 (51)	1.654 (42)	0.354 (9)	0.236 (6)	1.535 (39)	0.547 (13.9)	0.394 (10)	0.787 (20)	0.339 (8.6)	1.563 (39.7)	0.047 (1.2)	0.354 (9)	0.128	
1.968 (50)	2.346 (59.6)	2.362 (68)							2.244 (57)	1.890 (48)			1.772 (45)			1.024 (26)					0.148	
2.204 (56)	2.677 (68)	3.070 (78)	1.969 (50)	0.276 (7)	0.630 (16)	0.197 (5)	M12	0.787 (20)	2.48 (63)	2.008 (51)	0.472 (12)	0.295 (7.5)	1.850 (47)	0.705 (17.9)	0.472 (12)	0.945 (24)	0.453 (11.5)	2.016 (51.2)	0.067 (1.7)	0.354 (9)	0.247	
2.519 (64)	2.992 (76)	3.543 (90)							2.795 (71)	2.323 (59)			2.165 (55)			1.260 (32)					0.291	
2.834 (72)	3.464 (88)	3.937 (100)	2.480 (63)	0.315 (8)	0.787 (20)	0.157 (4)	M16	0.984 (25)	3.189 (81)	2.539 (64.5)	0.65 (16.5)	0.394 (10)	2.343 (59.5)	0.862 (21.9)	0.591 (15)	1.181 (30)	0.551 (14)	2.512 (63.8)	0.079 (2)	0.531 (13.5)	0.494	
3.149 (80)	3.779 (96)	4.488 (114)							3.583 (91)	2.933 (74.5)			2.736 (69.5)			1.575 (40)					0.58	
3.543 (90)	4.488 (114)	4.960 (126)	3.150 (80)	0.394 (10)	0.984 (25)	0.236 (6)	M20	1.259 (32)	4.016 (102)	3.307 (84)	0.709 (18)	0.591 (15)	3.071 (78)	1.138 (28.9)	0.787 (20)	1.575 (40)	0.709 (18)	3.287 (83.5)	0.106 (2.7)	0.531 (13.5)	1.074	
3.937 (100)	4.881 (124)	5.511 (140)							4.409 (112)	3.701 (94)			3.465 (88)			1.969 (50)					1.208	
4.330 (110)	5.275 (134)	5.905 (150)	3.937 (100)	0.394 (10)	0.984 (25)	0.472 (12)	M20	1.259 (32)	5.000 (127)	4.291 (109)	0.709 (18)	0.591 (15)	4.055 (103)	1.138 (28.9)	0.984 (25)	1.969 (50)	0.709 (18)	3.287 (83.5)	0.106 (2.7)	0.531 (13.5)	1.409	
4.921 (125)	5.866 (149)	6.889 (175)							5.591 (142)	4.882 (124)			4.646 (118)			2.559 (65)					1.614	

¹⁾ Value 1 to 2 = micro adjustment range of cartridge

Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar



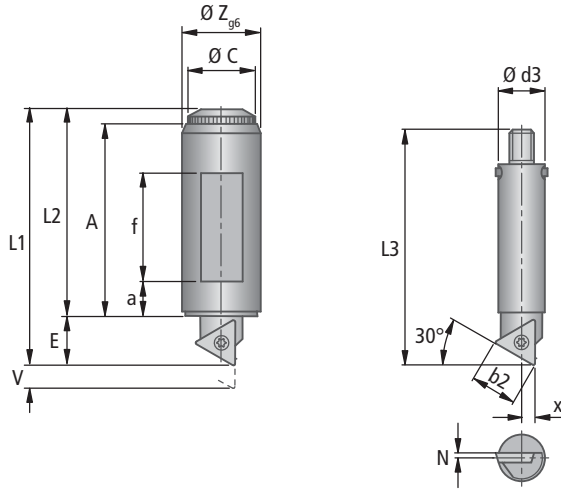
Kometric® FZ Micro-Adjustable Cartridge Ø 0.787" - 1.732"



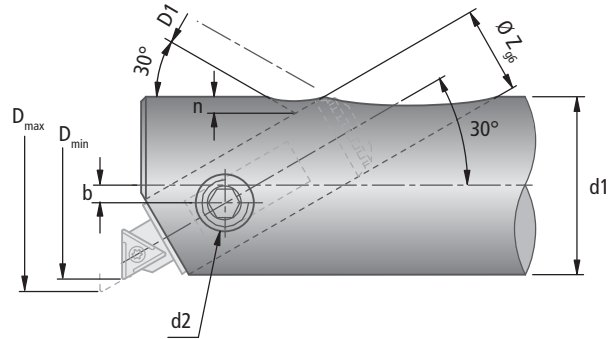
Angular Mounting 30° (Cutting form 5)
for Insert W30 / W57

Adjustment per graduation = .0004 inch dia. (0.01 mm Ø)

For machining particularly small bores, the FZ fine boring cartridges can also be used for radial mounting on the boring bar at a 30° angle. Adjustment is then →||← .0002 inch (0.005 mm) per graduation in the radial direction.



Cutting form 5 (L.H.)



inch (mm)

Boring Range ¹⁾			Cartridge	Boring tool Cutting form 5	Insert		Replacement Parts		
D _{min} ①	D _{max} ②	D _{max} ③	Order No. Description	Order No. Description	L.H.	Neutral	Clamping screw	TORX PLUS	Wrench for split bushing
					radial rake		Order No. Description	Order No. Description	Order No. Description
0.787 (20)	0.866 (22)	1.024 (26)	M30 04011 FZ10-20-5	M30 54011 U10Z5-803K	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1
1.024 (26)	1.181 (30)	1.299 (33)	M30 00031 FZ10-31-1	M30 54021 U10Z5-803	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1
1.181 (30)	1.378 (35)	1.575 (40)	M30 00051 FZ12-40-1	M30 54030 U12Z5-804	W30 04..0.03..	W57 04040.04..	N00 56031 S/M2×4.9-6IP 11.3 in-lbs	L05 00810 6IP	L05 01030 R2a/N2
1.496 (38)	1.732 (44)	1.929 (50)	M30 00071 FZ16-50-1	M30 54040 U16Z5-804	W30 14..0.04..	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01040 N3

For further details on inserts, please see Chapter 7

inch (mm)

Boring Range ¹⁾			d1	n ²⁾	Cutter Ø D1 ²⁾	b	d2	ØZ ^{H7}	L1	L2	E	Rough adj. V	A	ØC	a	f	Ød3	L3	x	N	b2	lbs
D _{min} ①	D _{max} ②	D _{max} ③																				
0.787 (20)	0.866 (22)	1.024 (26)	0.709 (18)	-	-	0.031 (0.8)	M5	0.394 (10)	1.122 (28.5)	0.933 (23.7)	0.189 (4.8)	0.079 (2)	0.846 (21.5)	0.350 (8.9)	0.197 (5)	0.394 (10)	0.224 (5.7)	0.866 (22.0)	0.083 (2.1)	0.047 (1.2)	0.256 (6.5)	0.026
1.024 (26)	1.181 (30)	1.299 (33)	0.787 (20)	0.177 (4.5)	0.315 (8)	0.047 (1.2)	M6	0.394 (10)	1.335 (33.9)	1.004 (25.5)	0.331 (8.4)	0.157 (4)	0.917 (23.3)	0.350 (8.9)	0.236 (6)	0.472 (12)	0.224 (5.7)	1.075 (27.3)	0.083 (2.1)	0.047 (1.2)	0.256 (6.5)	0.031
1.181 (30)	1.378 (35)	1.575 (40)	0.984 (25)	0.197 (5)	0.394 (10)	0.059 (1.5)	M8	0.472 (12)	1.693 (43.0)	1.319 (33.5)	0.374 (9.5)	0.197 (5)	1.220 (31.0)	0.429 (10.9)	0.315 (8)	0.630 (16)	0.264 (6.7)	1.339 (34)	0.110 (2.8)	0.047 (1.2)	0.256 (6.5)	0.057
1.496 (38)	1.732 (44)	1.929 (50)	1.260 (32)	0.315 (8)	0.472 (12)	0.079 (2.0)	M10	0.630 (16)	2.146 (54.5)	1.654 (42.0)	0.492 (12.5)	0.236 (6)	1.535 (39.0)	0.547 (13.9)	0.394 (10)	0.787 (20)	0.339 (8.6)	1.701 (43.2)	0.130 (3.3)	0.047 (1.2)	0.354 (9)	0.130

¹⁾ Value 1 to 2 = micro adjustment range of cartridge

Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar

Kometric® FF Micro-Adjustable Cartridge Ø 1.161" - 7.047"



for Insert **W30 / W57**

Adjustment per graduation = .0008 inch dia. (0.02 mm Ø)

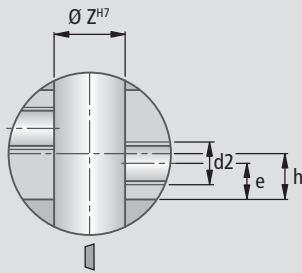
The FF micro adjustable cartridge is mounted radially and ideally suitable for NC tools, because the axial cutting dimensions are constant. The design and features of the cartridge are the same as type FZ (see sectional drawing), and are therefore also highly accurate. The protruding cutting edge is supported in its seating and mounting, and is therefore exceptionally rigid.

The adjustment is only carried out in a clamped state.

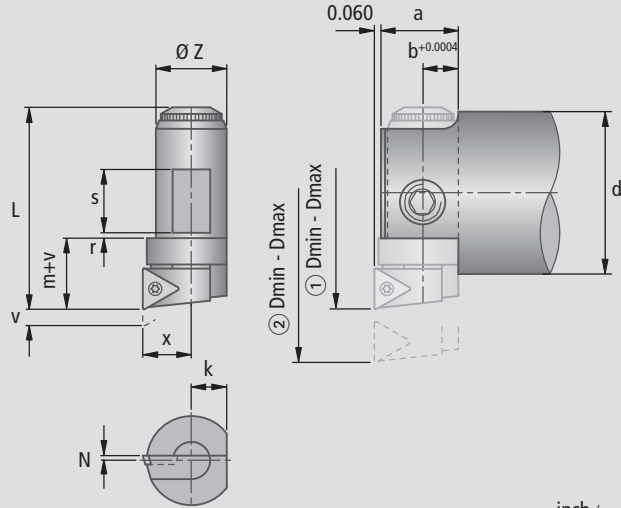
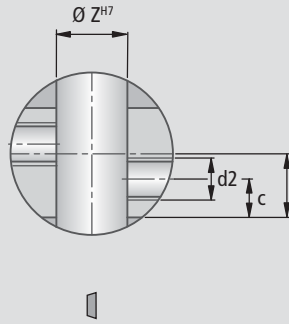
Setting: 1. Basic setting to be taken from boring range ① and ②.

2. Machining diameter set by fine adjustment device.





Boring range ①



Boring range ②




inch (mm)

Boring Range ① D _{min} - D _{max}	Boring Range ② D _{min} - D _{max}	Cartridge Order No. Description	Insert		Replacement Parts	
			L.H.  radial rake 06 = 6° 12 = 12° 20 = 20°	Neutral 	Clamping screw  Order No. Description	TORX PLUS  Order No. Description
1.161 - 1.417 (29.5 - 36)	1.397 - 1.653 (35.5 - 42)	M30 20011 FF10-30	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
1.535 - 1.771 (39 - 45)	1.732 - 1.968 (44 - 50)	M30 20021 FF12-39	W30 04..0.03..	W57 04040.04..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
1.850 - 2.244 (47 - 57)	2.204 - 2.598 (56 - 66)	M30 20031 FF16-47	W30 14..0.04.	W57 14040.04..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
2.283 - 2.795 (58 - 71)	2.755 - 3.267 (70 - 83)	M30 20041 FF20-58	W30 14..0.04.	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP
3.110 - 3.700 (79 - 94)	3.661 - 4.251 (93 - 108)	M30 20051 FF25-79	W30 26..0.05..	W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
3.937 - 4.763 (100 - 121)	4.724 - 5.551 (120 - 141)	M30 20061 FF32-100	W30 26..0.05..	W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP
5.433 - 6.259 (138 - 159)	6.220 - 7.047 (158 - 179)	M30 20071 FF32-138	W30 26..0.05..	W57 26040.04..	N00 56211 S/M3.5×7.3-10IP 25 in-lbs	L05 00850 10IP

For further details on inserts, please see Chapter 7

inch (mm)

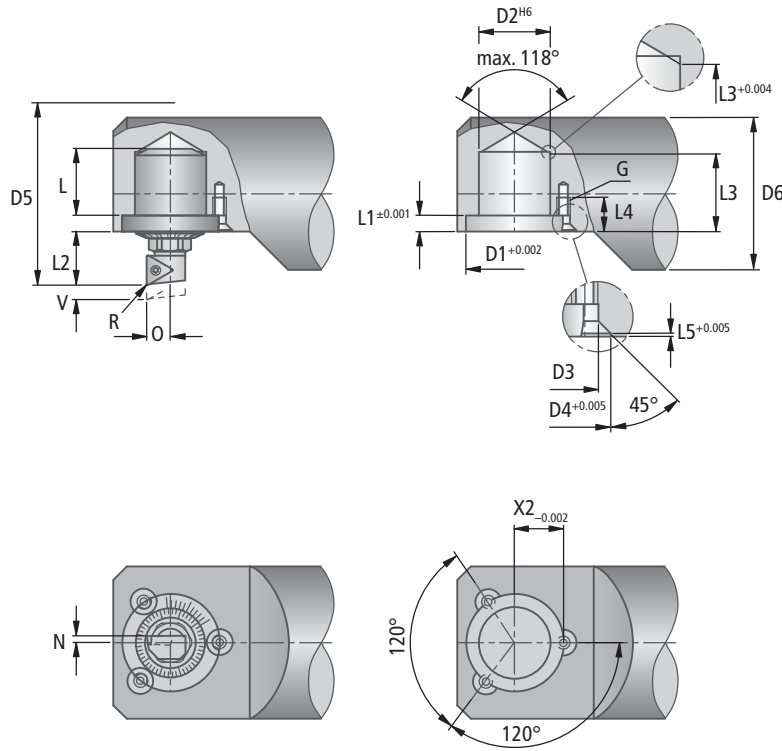
for Cartridge	Ø d	Ø Z	a	b	h	e	f	c	d2	L	x	N	k	v	m	r	s	
M30 20011	0.984 (25)	0.394 (10)	0.433 (11)	0.197 (5)	0.146 (3.7)	0.154 (3.9)	0.264 (6.7)	0.154 (3.9)	M6	1.122 (28.5)	0.295 (7.5)	0.079 (2)	0.197 (5)	0.138 (3.5)	0.433 (11)	0.020 (0.5)	0.315 (8)	0.124
M30 20021	1.260 (32)	0.472 (12)	0.531 (13.5)	0.236 (6)	0.276 (7)	0.236 (6)	0.374 (9.5)	0.236 (6)	M8	1.476 (37.5)	0.354 (9)	0.047 (1.2)	0.236 (6)	0.138 (3.5)	0.492 (12.5)	0.039 (1)	0.433 (11)	0.070
M30 20031	1.575 (40)	0.630 (16)	0.689 (17.5)	0.315 (8)	0.295 (7.5)	0.295 (7.5)	0.472 (12)	0.315 (8)	M10	1.772 (45)	0.433 (11)	0.047 (1.2)	0.315 (8)	0.197 (5)	0.630 (16)	0.079 (2)	0.512 (13)	0.140
M30 20041	1.969 (50)	0.787 (20)	0.906 (23)	0.394 (10)	0.433 (11)	0.354 (9)	0.669 (17)	0.354 (9)	M12	2.205 (56)	0.571 (14.5)	0.067 (1.7)	0.394 (10)	0.276 (7)	0.709 (18)	0.079 (2)	0.571 (14.5)	0.277
M30 20051	2.480 (63)	0.984 (25)	1.063 (27)	0.492 (12.5)	0.705 (17.9)	0.488 (12.4)	0.980 (24.9)	0.606 (15.4)	M16	3.051 (77.5)	0.630 (16)	0.079 (2)	0.492 (12.5)	0.315 (8)	0.85 (21.6)	0.079 (2)	1.102 (28)	0.603
M30 20061	3.150 (80)	1.260 (32)	1.319 (33.5)	0.630 (16)	0.965 (24.5)	0.591 (15)	1.358 (34.5)	0.866 (22)	M20	3.819 (97)	0.748 (19)	0.106 (2.7)	0.630 (16)	0.433 (11)	1.004 (25.5)	0.079 (2)	1.378 (35)	1.233
M30 20071	4.528 (115)	1.260 (32)	1.319 (33.5)	0.630 (16)	1.713 (43.5)	0.787 (20)	2.106 (53.5)	0.787 (20)	M20	5.157 (131)	0.748 (19)	0.106 (2.7)	0.630 (16)	0.433 (11)	1.004 (25.5)	0.079 (2)	1.378 (35)	1.710



Kometric® Fine Boring Cartridge Ø 1.087" with Front Adjustment



Radial Mounting for Insert W30 / W57



Technical advantages of fine boring cartridges in cutting operations

- easy adjustment from the front
- precision micro-adjustment to size
- no clamping required
- compact, rigid design
- two methods for mounting
- considerably shorter setting time
- extensive range of inserts with positive chip geometry provides the right type of cutting for the material.
- the smallest adjustment step is .0008 inch (0.02 mm) per graduation on diameter

inch (mm)

min. Cutting Ø D5	Order No.	lbs	Insert			Replacement Parts			
			L.H.	Neutral	Neutral	Clamping screw	TORX PLUS	Monting screw 3x	Adjustment wrench
						Order No. Description	Order No. Description	Order No. Description	Order No. Description
1.087 (27.6)	M31 00021	0.046	W30 04060.04..	W30 04060.03..	W57 04040.04..	N00 56040 S/M2×4.3 5.5 in-lbs	L05 00810 6IP	M31 00020.18 M3×6 similar DIN7991	1858910008 SW8
1.949 (49.5)	M31 00031	0.179	W30 14060.04..	W30 14660.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5502104010 M4×10	1858900012 SW12
2.756 (70)	M31 00041	0.550	W30 26060.05..	W30 26660.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5502105012 M5×12	1858900017 SW17

Delivery:

Front adjustable cartridge complete with mounting replacement parts and wrenches less torx wrench and insert.

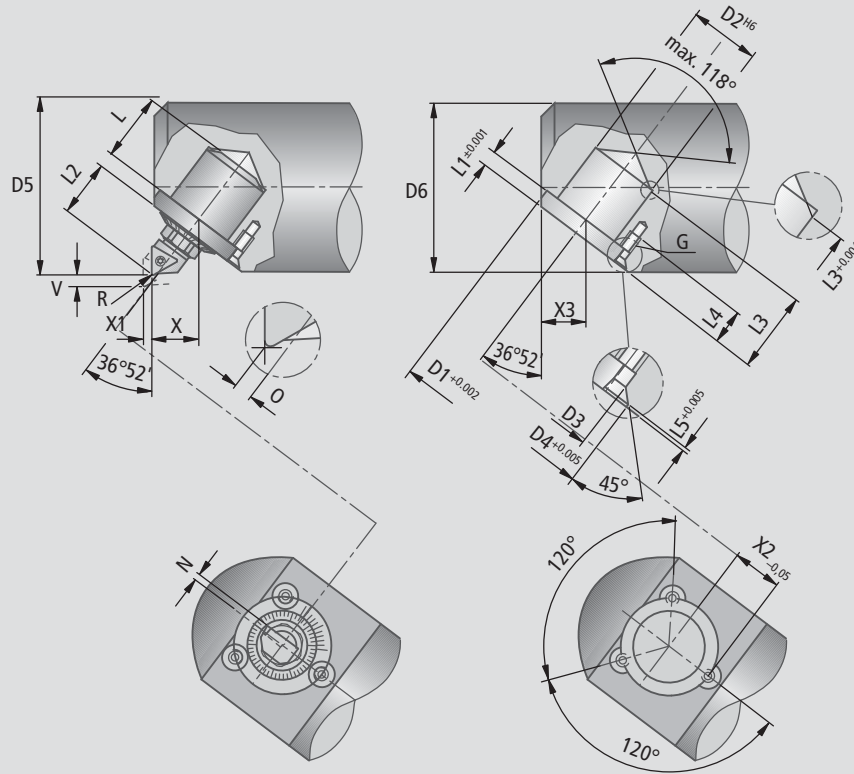
Mounting dimensions

inch (mm)

for Cartridge	D1	D2	D3	D4	D6 min	L	L1	L2	L3 min	L4	L5	G	N	R	V	O	X2
M31 00021	0.748 (19)	0.630 (16)	0.126 (3.2)	0.181 (4.6)	1.024 (26)	0.429 (10.9)	0.110 (2.8)	0.394 (10)	0.453 (11.5)	0.354 (9)	0.063 (1.6)	M3	0.059 (1.5)	0.016 (0.4)	0.039 (1.0)	0.201 (5.1)	0.380 (9.65)
M31 00031	1.181 (30)	0.866 (22)	0.169 (4.3)	0.315 (8)	1.811 (46)	0.807 (20.5)	0.197 (5)	0.665 (16.9)	0.945 (24)	0.394 (10)	0.035 (0.9)	M4	0.079 (2)	0.016 (0.4)	0.138 (3.5)	0.283 (7.2)	0.606 (15.4)
M31 00041	1.811 (46)	1.260 (32)	0.217 (5.5)	0.394 (10)	2.638 (67)	1.142 (29)	0.248 (6.3)	1.004 (25.5)	1.299 (33)	0.472 (12)	0.031 (0.8)	M5	0.079 (2)	0.020 (0.5)	0.217 (5.5)	0.406 (10.3)	0.906 (23)



Angular Mounting
for Insert W30 / W57



Technical advantages of fine boring cartridges in cutting operations

- easy adjustment from the front
- precision micro-adjustment to size
- no clamping required
- compact, rigid design
- two methods for mounting
- considerably shorter setting time
- extensive range of inserts with positive chip geometry provides the right type of cutting for the material.
- the smallest adjustment step is .0008 inch (0.02 mm) per graduation on diameter

inch (mm)

min. Cutting Ø D5	Order No.	lbs	Insert			Replacement Parts			
			L.H.	Neutral	Neutral	Clamping screw	TORX PLUS	Monting screw 3x	Adjustment wrench
									
						Order No. Description	Order No. Description	Order No. Description	Order No. Description
1.000 (25.4)	M31 01021	0.046	W30 04060.04..	W30 04060.03..	W57 04040.04..	N00 56040 S/M2×4.3 5.5 in-lbs	L05 00810 6IP	M31 00020.18	1858910008 SW8
1.693 (43)	M31 01031	0.180	W30 14060.04..	W30 14660.04..	W57 14040.04..	N00 56111 S/M2.6×6.2-8IP 11.3 in-lbs	L05 00830 8IP	5502104010 M4×10	1858900012 SW12
2.402 (61)	M31 01041	0.551	W30 26060.05..	W30 26660.05..	W57 26040.04..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5502105012 M5×12	1858900017 SW17

Delivery:

Front adjustable cartridge complete with mounting replacement parts and wrenches less torx wrench and insert.

Mounting dimensions

inch (mm)

for Cartridge	D1	D2	D3	D4	D6 min	L	L1	L2	L3 min	L4	L5	G	N	ISO – Dimension						
														for R	V	O	X	X1	X2	X3
M31 01021	0.748 (19)	0.630 (16)	0.126 (3.2)	0.181 (4.6)	0.965 (24.5)	0.429 (10.9)	0.110 (2.8)	0.433 (11)	0.453 (11.5)	0.354 (9)	0.063 (1.6)	M3	0.059 (1.5)	0.016 (0.4)	0.043 (1.1)	0.013 (0.33)	0.340 (8.64)	0.032 (0.81)	0.380 (9.65)	0.322 (8.18)
M31 01031	1.181 (30)	0.866 (22)	0.169 (4.3)	0.315 (8)	1.575 (40)	0.807 (20.5)	0.197 (5)	0.724 (18.4)	0.945 (24)	0.394 (10)	0.035 (0.9)	M4	0.079 (2)	0.016 (0.4)	0.122 (3.1)	0.051 (1.3)	0.594 (15.1)	0.079 (2.0)	0.606 (15.4)	0.551 (14.0)
M31 01041	1.811 (46)	1.260 (32)	0.217 (5.5)	0.394 (10)	2.165 (55)	1.142 (29)	0.248 (6.3)	1.071 (27.2)	1.299 (33)	0.472 (12)	0.031 (0.8)	M5	0.079 (2)	0.020 (0.5)	0.181 (4.6)	0.055 (1.4)	0.840 (21.34)	0.126 (3.2)	0.906 (23)	0.78 (19.8)



Kometric® Inserts Fine Adjustment



Inserts with fine adjustment by adjusting pin for special tools for precision machining

With the new adjustment facility for inserts, KOMET offers another solution in the precision machining area.

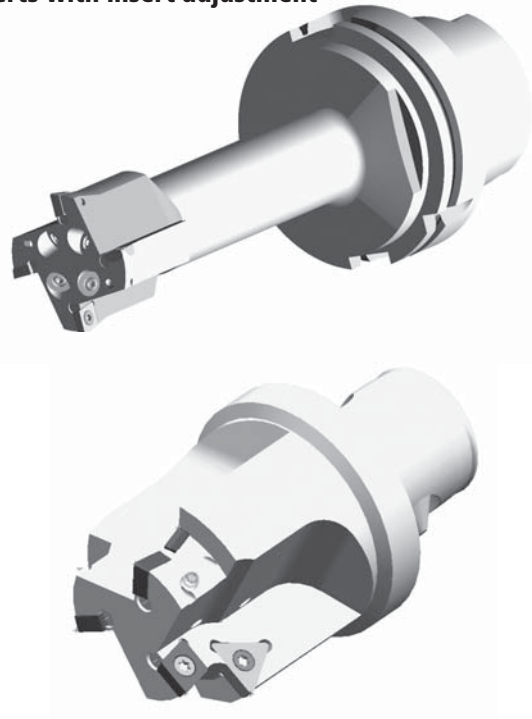
Function:

Using an adjusting pin on the tool, the insert can be easily set for the individual application.

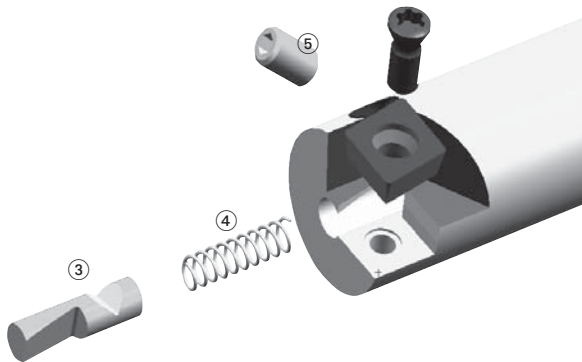
Features:

- **Maximum adjustment:**
0.2 mm for C inserts with reference to the diameter.
- **Adjustment accuracy:**
4 to 10 μm with reference to the diameter
- Bores can be produced in **IT7 quality**
- Suitable for **stepped tools**

Special tools with multiple inserts with insert adjustment



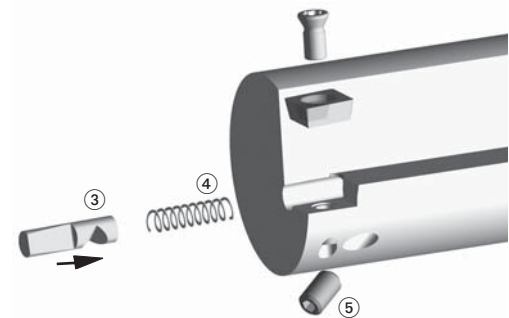
Insert adjustment for use in front of the blade



inch (mm)

Adjustment version	Insert	D min.	Assembly parts		
			Adjusting pin ③	Spring ④	Threaded pin ⑤
			Order No. Description	Order No. Description	Order No. Description
C1	C04	0.472 (12)	L02 31102 $\varnothing 0.118$ ($\varnothing 3$)	52710 01042 0.32x2.32x10	55051 03005 M3x5
C2	C06	0.551 (14)	L02 31102 $\varnothing 0.118$ ($\varnothing 3$)	52710 01042 0.32x2.32x10	55051 03005 M3x5
C3	C09	0.709 (18)	L02 31302 $\varnothing 0.197$ ($\varnothing 5$)	52710 01112 0.5x4.5x10	55051 04008 M4x8

Insert adjustment for use behind the blade

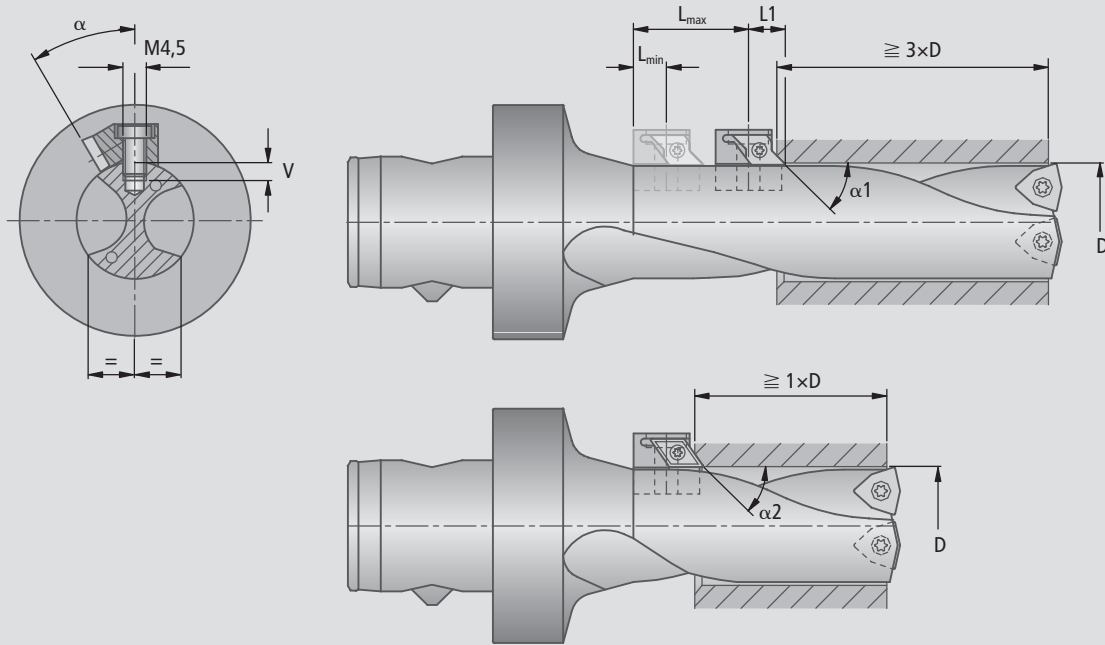


inch (mm)

Adjustment version	Insert	D min.	Assembly parts		
			Adjusting pin ③	Spring ④	Threaded pin ⑤
			Order No. Description	Order No. Description	Order No. Description
C1	C04	0.630 (16)	L02 31110 $\varnothing 0.118 \times 0.433$ ($\varnothing 3 \times 11$)	52710 01042 0.32x2.32x10	55051 03004 M3x4
C2	C06	0.551 (14)	L02 31110 $\varnothing 0.118 \times 0.433$ ($\varnothing 3 \times 11$)	52710 01042 0.32x2.32x10	55051 03005 M3x5
C3	C09	0.709 (18)	L02 31310 $\varnothing 0.197 \times 0.709$ ($\varnothing 3 \times 11$)	52710 01112 0.5x4.5x10	55051 04006 M4x6



for insert W60 / W79



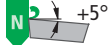
Order No.	for Ø range D	max. chamfer diameter	L min	L max	L1	α	Insert W60 / W79 	Assembly parts	Accessories	Assembly parts
								Clamping screw Order No. Description	Screwdriver Order No. Description	Location screw Order No. Description
D50 00800	0.787 – 0.945 (20 – 24)	D+5	0.275 (7)	1.181 (30)	0.394 (10)	26°	W60 18600.4003 α1=45° W60 18420.0403 α2=55°	N00 57221 S2553-7IP 11.3 in-lbs	L05 00820 7IP	N10 11500 Tx M4.5×10.5
D50 00810	0.984 – 1.142 (25 – 29)		0.197 (5)	1.378 (35)	0.315 (8)	30°	W79 18060.0403 α2=55°			

Supply includes:

Chamfering cartridge with assembly parts. Please order accessories and inserts separately.

Stepped tools are an important element for minimizing production costs. The new D5000 chamfering cartridge now offers an economical solution to frequent solid drilling applications where chamfer machining is required. The D5000 chamfering cartridge can be fitted to any KUB® insert drills, KUB Trigon® and KUB Duon®.



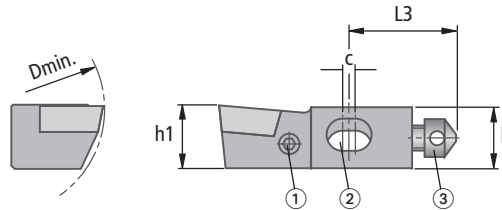
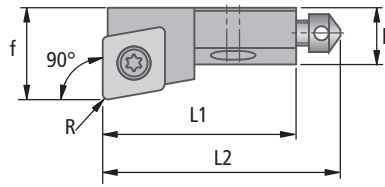


Kometric® UKS Cartridge $\kappa = 90^\circ$

Angle of inclination to main cutting edge: +5°

for Insert W85 (CPGW / CPTG)

Right hand cartridge as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.8

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R			lbs	Replacement Parts		
										0.008 (0.2)	0.016 (0.4)	0.031 (0.8)		Description	Order No.	Order No. Description
UKS8CP0602 90R	D40 06410	0.984 (25)	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.395 (10.03)	0.394 (10)	–	0.020	UKS8 5 75R	L02 20310	5502300206 M2×6 DIN965
UKS10CP09T3 90R	D40 06430	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	–	0.551 (14)	0.548 (13.92)	0.040	UKS10 5 90 R	L02 20220	
UKS16CP1204 90R	D40 06440	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	–	0.709 (18)	0.706 (17.92)	0.112	UKS16 5 90R	L02 20240	5502103008 M3×8 DIN7991

for Cartridge	Insert		Replacement Parts				
	W85.. L.H. Size	W85.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS8CP0602 90R	W85 18000.. CPG..0602..L	W85 18000.. CPGW 0602..N	N00 57221 S2553-7IP 11.3 in-lbs	L05 00820 7IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10CP09T3 90R	W85 32000.. CPG..09T3..L	W85 32000.. CPGW 09T3..N	N00 57261 S3575-15IP 25 in-lbs	L05 00860 15IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16CP1204 90R	W85 44000.. CPG..1204..L	W85 44000.. CPGW 1204..N	N00 57301 S45100-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



Kometic® UKS Cartridge $\alpha = 90^\circ$

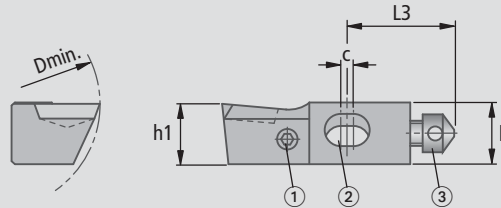
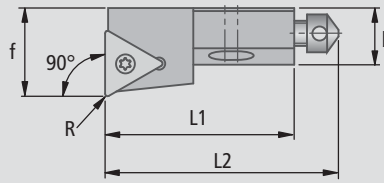


Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and left hand insert.

Left hand cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.8

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

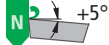
inch (mm)

Description cutting form ▼	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R		lbs	Replacement Parts		
										0.016 (0.4)	0.031 (0.8)		Shim shim stock 0.019(0.5) 0.098 (2.5)		Shim clamping screw
													Description	Order No.	Order No. Description
UKS6 T06 90R	D40 07000	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.276 (7)	0.264 (6.7)	0.09	UKS 6 5 90 R	L02 20200	5502300206 M2×6 DIN965
UKS8 T09 90R	D40 07010	0.984 (25)	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.394 (10)	0.382 (9.7)	0.07	UKS 8 5 75 R	L02 20310	
UKS8 T09 90L	D40 02010												UKS 8 5 75 L	L02 21310	
UKS10 T11 90R	D40 07020	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.551 (14)	0.539 (13.7)	0.09	UKS10 5 90 R	L02 20220	
UKS10 T11 90L	D40 02020												UKS10 5 90 L	L02 21220	
UKS10 T13 90R	D40 07030	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.551 (14)	0.539 (13.7)	0.04	UKS10 5 90 R	L02 20220	
UKS10 T13 90L	D40 02030												UKS10 5 90 L	L02 21220	
UKS16 T16 90R	D40 07040	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.709 (18)	0.697 (17.7)	0.22	UKS16 5 90 R	L02 20240	5502103008 M3×8 DIN7991
UKS16 T16 90L	D40 02040												UKS16 5 90 L	L02 21240	
UKS20 T22 90R	D40 07050	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.866 (22)	0.854 (21.7)	0.22	UKS20 5 90 R	L02 20250	

for Cartridge	Insert				Replacement Parts				
	W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6 T06 90R	W32 03150..		W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 90R	W32 13150..		W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS8 T09 90L	W32 13450..								
UKS10 T11 90R	W32 18150..		W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T11 90L	W32 18450..								
UKS10 T13 90R	W32 23150..		W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 90L	W32 23450..								
UKS16 T16 90R	W32 32150..		W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS16 T16 90L	W32 32450..								
UKS20 T22 90R	W32 44150..		W32 44... TPHB 2204..	-	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



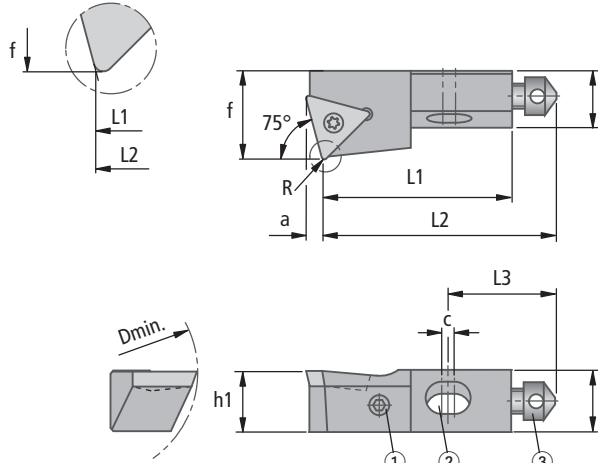


Kometric® UKS Cartridge $\alpha = 75^\circ$

Angle of inclination to main cutting edge: $+5^\circ$

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.8









Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h ₁	h	L ₁	L ₂	L ₃	b	c	a	ISO Dimension, f for radius, R		Replacement Parts			
											0.016 (0.4)	0.031 (0.8)	Description	Order No.	Order No. Description	
UKS6 T06 75R	D40 07200	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.059 (1.51)	0.276 (7)	0.264 (6.7)	0.011	UKS 6 5 75 R	L02 20300	5502300206 M2×6 DIN965
UKS8 T09 75R	D40 07210	0.984 (25)	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.088 (2.23)	0.394 (10)	0.382 (9.7)	0.033	UKS 8 5 75 R	L02 20310	
UKS10 T11 75R	D40 07220	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.102 (2.58)	0.551 (14)	0.539 (13.7)	0.053	UKS10 5 75 R	L02 20320	
UKS10 T13 75R	D40 07230	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.130 (3.29)	0.551 (14)	0.539 (13.7)	0.099	UKS10 5 75 R	L02 20320	
UKS16 T16 75R	D40 07240	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.157 (4.00)	0.709 (18)	0.697 (17.7)	0.137	UKS16 5 75 R	L02 20340	5502103008 M3×8 DIN7991
UKS20 T22 75R	D40 07250	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.214 (5.43)	0.866 (22)	0.854 (21.7)	0.249	UKS20 5 75 R	L02 20350	

for Cartridge	Insert			Replacement Parts				
	W32..15 L.H. TPHX  Size	W32.. Neutral  Size	W58.. Neutral  Size	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw  ① Order No. Description	Holding screw  DIN916 Order No. Description	Axial adj. screw  Order No. Description
UKS6 T06 75R	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 75R	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 75R	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 75R	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 75R	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 75R	W32 44150..	W32 44... TPHB 2204..	—	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



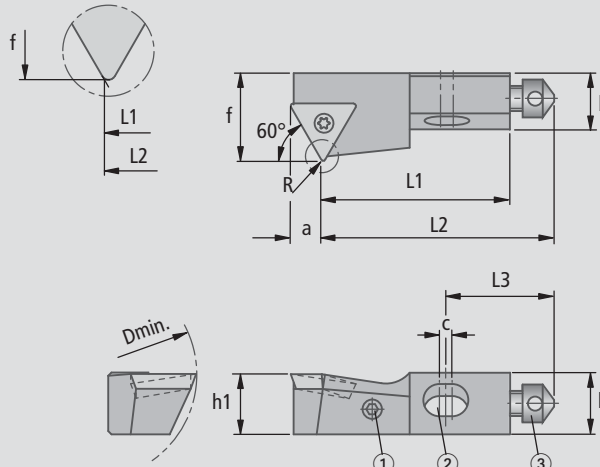
Kometic® UKS Cartridge $\kappa = 60^\circ$



Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.8

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R		lbs	Replacement Parts		
											0.016 (0.4)	0.031 (0.8)		Description	Order No.	Order No. Description
UKS6 T06 60R	D40 07300	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.115 (2.91)	0.276 (7)	0.260 (6.6)	0.011	UKS 6 5 60 R	L02 20400	5502300206 M2×6 DIN965
UKS8 T09 60R	D40 07310	0.984 (25)	0.299 (7.6)	0.307 (7.8)	0.984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.169 (4.29)	0.394 (10)	0.378 (9.6)	0.033	UKS 8 5 60 R	L02 20410	
UKS10 T11 60R	D40 07320	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.196 (4.97)	0.551 (14)	0.535 (13.6)	0.053	UKS10 5 60 R	L02 20420	
UKS10 T13 60R	D40 07330	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.250 (6.35)	0.551 (14)	0.535 (13.6)	0.099	UKS10 5 60 R	L02 20420	
UKS16 T16 60R	D40 07340	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.304 (7.72)	0.709 (18)	0.693 (17.6)	0.137	UKS16 5 60 R	L02 20440	5502103008 M3×8 DIN7991
UKS20 T22 60R	D40 07350	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.412 (10.47)	0.866 (22)	0.850 (21.6)	0.249	UKS20 5 60 R	L02 20450	

for Cartridge	Insert			Replacement Parts				
	W32..15 L.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6 T06 60R	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 60R	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 60R	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 60R	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 60R	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 60R	W32 44150..	W32 44... TPHB 2204..	-	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



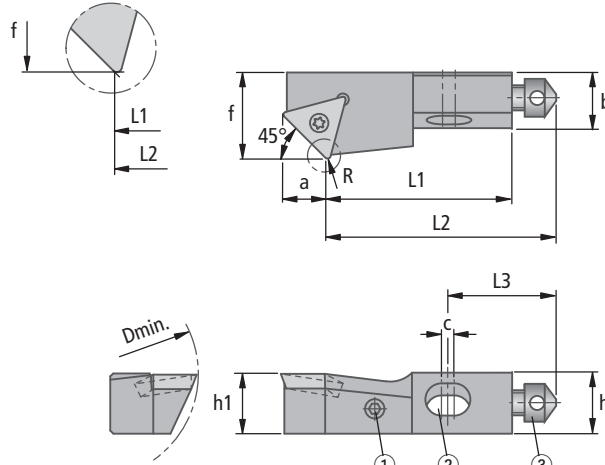


Kometric® UKS Cartridge $\alpha = 45^\circ$

Angle of inclination to main cutting edge: $+5^\circ$

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.8









Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h ₁	h	L ₁	L ₂	L ₃	b	c	a	ISO Dimension, f for radius, R	lbs	Replacement Parts			
													Description	Order No.	Order No. Description	
UKS6 T06 45R	D40 07400	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.591 (15)	0.768 (19.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.162 (4.12)	0.276 (7)	0.261 (6.63)	0.015	UKS 6 5 90 R	L02 20200	5502300206 M2×6 DIN965
UKS8 T09 45R	D40 07410	0.984 (25)	0.299 (7.6)	0.307 (7.8)	0.768 (19.5)	1.043 (26.5)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.239 (6.06)	0.394 (10)	0.379 (9.63)	0.066	UKS 8 5 75 R	L02 20310	
UKS10 T11 45R	D40 07420	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.277 (7.03)	0.551 (14)	0.537 (13.63)	0.064	UKS10 5 45 R	L02 20520	
UKS10 T13 45R	D40 07430	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.353 (8.97)	0.551 (14)	0.537 (13.63)	0.057	UKS10 5 45 R	L02 20520	
UKS16 T16 45R	D40 07440	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.430 (10.92)	0.709 (18)	0.694 (17.63)	0.163	UKS16 5 45 R	L02 20540	5502103008 M3×8 DIN7991
UKS20 T22 45R	D40 07450	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.583 (14.81)	0.866 (22)	0.852 (21.63)	0.293	UKS20 5 45 R	L02 20550	

for Cartridge	Insert			Replacement Parts				
	W32..15 L.H. TPHX  Size	W32.. Neutral  Size	W58.. Neutral  Size	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ② DIN916  Order No. Description	Axial adj. screw ③  Order No. Description
UKS6 T06 45R	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 45R	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 45R	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 45R	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 45R	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 45R	W32 44150..	W32 44... TPHB 2204..	—	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

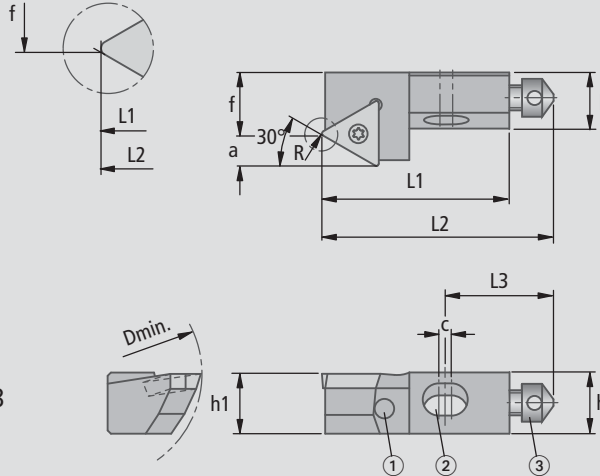


Kometic® UKS Cartridge $\alpha = 30^\circ$

Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.8

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	a	ISO Dimension, f for radius, R		lbs	Replacement Parts		
											0.016 (0.4)	0.031 (0.8)		Description	Order No.	Order No. Description
UKS6 T06 30R	D40 07600	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.115 (2.91)	0.138 (3.5)	0.147 (3.73)	0.018	UKS 6 5 90 R	L02 20200	5502300206 M2×6 DIN965
UKS8 T09 30R	D40 07610	0.984 (25)	0.299 (7.6)	0.307 (7.8)	1.024 (26)	1.299 (33)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.169 (4.29)	0.197 (5.0)	0.206 (5.23)	0.029	UKS 8 5 75 R	L02 20310	
UKS10 T11 30R	D40 07620	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.196 (4.97)	0.394 (10.0)	0.403 (10.23)	0.055	UKS10 5 0 R	L02 20920	
UKS10 T13 30R	D40 07630	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.250 (6.35)	0.394 (10.0)	0.403 (10.23)	0.040	UKS10 5 0 R	L02 20920	
UKS16 T16 30R	D40 07640	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.304 (7.72)	0.512 (13.0)	0.521 (13.23)	0.135	UKS16 5 0 R	L02 20940	5502103008 M3×8 DIN991
UKS20 T22 30R	D40 07650	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.412 (10.47)	0.630 (16.0)	0.639 (16.23)	0.234	UKS20 5 0 R	L02 20950	

for Cartridge	Insert			Replacement Parts				
	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6 T06 30R	W32 03450..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 30R	W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 30R	W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 30R	W32 23450..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 30R	W32 32450..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 30R	W32 44450..	W32 44... TPHB 2204..	-	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



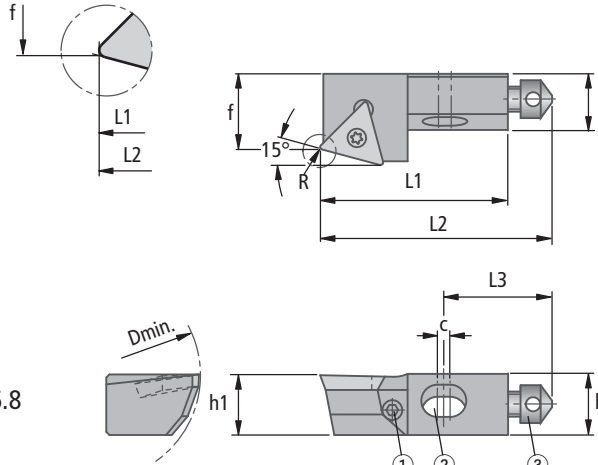


Kometric® UKS Cartridge $\alpha = 15^\circ$

Angle of inclination to main cutting edge: $+5^\circ$

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown, uses neutral and right hand insert.



For mounting dimensions see page 6.8




Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h ₁	h	L ₁	L ₂	L ₃	b	c	ISO Dimension, f for radius, R		lbs	Replacement Parts		
										0.016 (0.4)	0.031 (0.8)		Description	Order No.	Order No. Description
UKS6 T06 15R	D40 07700	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.197 (5)	0.201 (5.1)	0.009	UKS 6 5 90 R	L02 20200	5502300206 M2×6 DIN965
UKS8 T09 15R	D40 07710	0.984 (25)	0.299 (7.6)	0.307 (7.8)	1.024 (26)	1.299 (33)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.295 (7.5)	0.299 (7.6)	0.029	UKS 8 5 75 R	L02 20310	
UKS10 T11 15R	D40 07720	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.472 (12.0)	0.476 (12.1)	0.051	UKS10 5 15 R	L02 20720	
UKS10 T13 15R	D40 07730	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.472 (12.0)	0.476 (12.1)	0.053	UKS10 5 15 R	L02 20720	
UKS16 T16 15R	D40 07740	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.610 (15.5)	0.614 (15.6)	0.119	UKS16 5 15 R	L02 20740	5502103008 M3×8 DIN7991
UKS20 T22 15R	D40 07750	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.748 (19.0)	0.752 (19.1)	0.232	UKS20 5 15 R	L02 20750	

for Cartridge	W32..15 R.H. TPHX  Size	W32.. Neutral  Size	W58.. Neutral  Size	Replacement Parts				
				Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Radial adj. screw ①  Order No. Description	Holding screw ②  Order No. Description	Axial adj. screw ③  Order No. Description
UKS6 T06 15R	W32 03450..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 15R	W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 15R	W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 15R	W32 23450..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 15R	W32 32450..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 15R	W32 44450..	W32 44... TPHB 2204..	—	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7

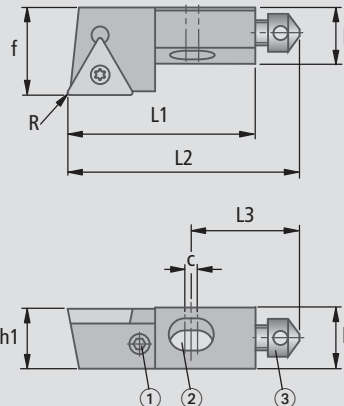


Kometic® UKS Cartridge $\alpha = 0^\circ$

Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Right hand cartridge as shown,
uses neutral and left hand insert.



For mounting dimensions see page 6.8

Delivery:

UKS Cartridges complete with all replacement parts, less shim, wrenches and insert.

* The shim plate for UKS8... is supplied with longer holding screw L02 30170.

inch (mm)

Description cutting form ▼	Order No.	D _{min}	h1	h	L1	L2	L3	b	c	ISO Dimension, f for radius, R		lbs	Replacement Parts		
										0.016 (0.4)	0.031 (0.8)		Description	Order No.	Shim clamping screw Order No. Description
UKS6 T06 OR	D40 07900	0.787 (20)	0.228 (5.8)	0.232 (5.9)	0.787 (20)	0.965 (24.5)	0.472 (12)	0.177 (4.5)	0.039 (1)	0.276 (7)	0.276 (7)	0.011	UKS 6 5 90 R	L02 20200	5502300206 M2×6 DIN965
UKS8 T09 OR	D40 07910	0.984 (25)	0.299 (7.6)	0.307 (7.8)	984 (25)	1.260 (32)	0.669 (17)	0.256 (6.5)	0.079 (2)	0.394 (10)	0.394 (10)	0.029	UKS 8 5 75 R	L02 20310	
UKS10 T11 OR	D40 07920	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.551 (14)	0.551 (14)	0.046	UKS10 5 0 R	L02 20920	
UKS10 T13 OR	D40 07930	1.299 (33)	0.378 (9.6)	0.386 (9.8)	1.181 (30)	1.457 (37)	0.669 (17)	0.354 (9.0)	0.079 (2)	0.551 (14)	0.551 (14)	0.046	UKS10 5 0 R	L02 20920	
UKS16 T16 OR	D40 07940	2.205 (56)	0.614 (15.6)	0.622 (15.8)	1.654 (42)	1.969 (50)	0.984 (25)	0.472 (12.0)	0.079 (2)	0.709 (18)	0.709 (18)	0.121	UKS16 5 0 R	L02 20940	5502103008 M3×8 DIN7991
UKS20 T22 OR	D40 07950	2.362 (60)	0.772 (19.6)	0.780 (19.8)	1.850 (47)	2.244 (57)	1.063 (27)	0.591 (15.0)	0.079 (2)	0.866 (22)	0.866 (22)	0.234	UKS20 5 0 R	L02 20950	

for Cartridge	Insert			Replacement Parts				
	W32..15 L.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Radial adj. screw ① Order No. Description	Holding screw ② DIN916 Order No. Description	Axial adj. screw ③ Order No. Description
UKS6 T06 OR	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	5505402504 M2.5×4	L02 30111 UKS6-3	L02 30010 UKS6-4
UKS8 T09 OR	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505403006 M3×6	L02 30121* UKS8-3	L02 30020 UKS8-4
UKS10 T11 OR	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS10 T13 OR	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5505404008 M4×8	L02 30130 UKS10-3	L02 30020 UKS8-4
UKS16 T16 OR	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5505405012 M5×12	L02 30140 UKS12-3	L02 30030 UKS12-4
UKS20 T22 OR	W32 44150..	W32 44... TPHB 2204..	-	N00 56411 S/M5×13.4-20IP 55.3 in-lbs	L05 00870 20IP	5505405012 M5×12	L02 30160 UKS20-3	L02 30030 UKS12-4

For further details on inserts, please see Chapter 7



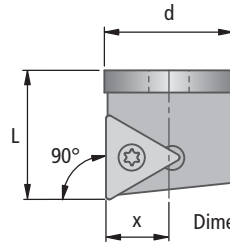


Kometric® WVU Adjustable Insert Pocket $\alpha = 90^\circ$

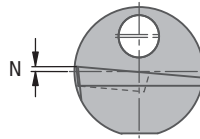
Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Left hand pocket as shown, uses neutral and left hand insert.










Dimension "x" relates to the appropriate insert radius.



For mounting dimensions see page 6.45

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R		lbs
							0.016 (0.4)	0.031 (0.8)	
WVU T06 90L	D20 41000	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.154 (3.9)	0.154 (3.9)	0.013
WVU T09 90L	D20 41010	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.228 (5.8)	0.228 (5.8)	0.020
WVU T11 90L	D20 41020	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.307 (7.8)	0.307 (7.8)	0.026
WVU T13 90L	D20 41040	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.307 (7.8)	0.307 (7.8)	0.029
WVU T16 90L	D20 41030	1.772 (45)	0.020 (0.5)	0.787 (20)	0.945 (24)	0.024 (0.6)	0.386 (9.8)	0.386 (9.8)	0.062

for Cartridge	Insert			Replacement Parts			
	W32..15 L.H. TPHX  Size	W32.. Neutral  Size	W58.. Neutral  Size	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU T06 90L	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU T09 90L	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56121 S/M2.6×4.6 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU T11 90L	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T13 90L	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T16 90L	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5501105010 M5×10 DIN912	N00 52530 E610

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.



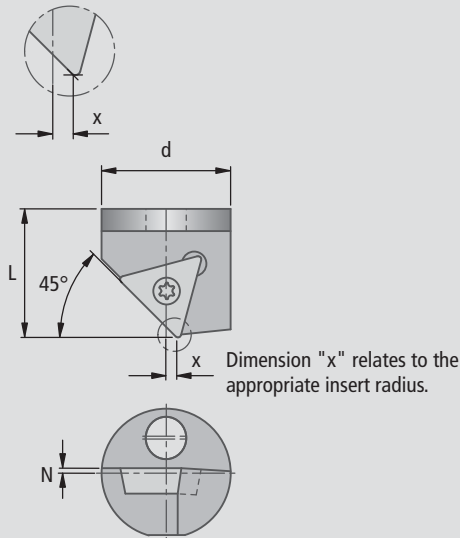
Kometic® WVU Adjustable Insert Pocket $\alpha = 45^\circ$



Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Left hand pocket as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.45

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R		lbs
							0.016 (0.4)	0.031 (0.8)	
WVU T06 45L	D20 41300	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.016 (0.4)	0.001 (0.03)	0.004
WVU T09 45L	D20 41310	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.028 (0.7)	0.013 (0.33)	0.020
WVU T11 45L	D20 41320	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.051 (1.3)	0.037 (0.93)	0.020
WVU T13 45L	D20 41340	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.051 (1.3)	0.037 (0.93)	0.022
WVU T16 45L	D20 41330	1.772 (45)	0.020 (0.5)	0.787 (20)	0.945 (24)	0.024 (0.6)	0.059 (1.5)	0.044 (1.13)	0.060

6

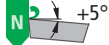


for Cartridge	Insert			Replacement Parts			
	W32..15 L.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVU T06 45L	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2.6×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU T09 45L	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56121 S/M2.6×4.6 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU T11 45L	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T13 45L	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T16 45L	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5501105010 M5×10 DIN912	N00 52530 E610

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.

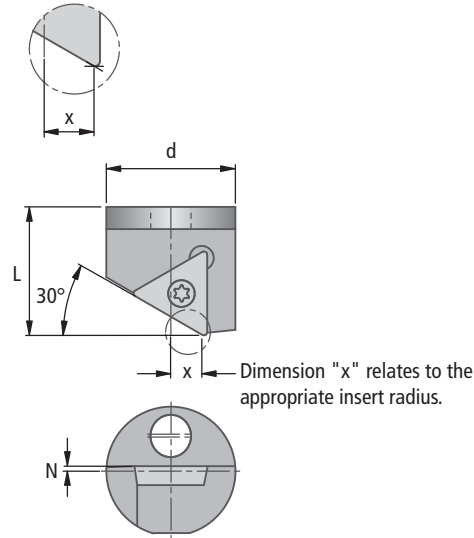


Kometric® WVU Adjustable Insert Pocket $\alpha = 30^\circ$

Angle of inclination to main cutting edge: $+5^\circ$

for Insert W32 (TPH..) / W58 (TPGX..)

Left hand pocket as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.45

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R		
							0.016 (0.4)	0.031 (0.8)	
WVU T06 30L	D20 41400	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.059 (1.5)	0.039 (1.0)	0.007
WVU T09 30L	D20 41410	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.098 (2.5)	0.079 (2.0)	0.020
WVU T11 30L	D20 41420	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.157 (4.0)	0.138 (3.5)	0.024
WVU T13 30L	D20 41440	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.157 (4.0)	0.138 (3.5)	0.022
WVU T16 30L	D20 41430	1.772 (45)	0.020 (0.5)	0.787 (20)	0.945 (24)	0.024 (0.6)	0.138 (3.5)	0.118 (3.0)	0.062

for Cartridge	Insert			Replacement Parts			
	W32..15 L.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVU T06 30L	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2.6x3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5x4-8IP 11.3 in-lbs	N00 52500 E34
WVU T09 30L	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56121 S/M2.6x4.6 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5x5-8IP 20 in-lbs	N00 52510 E46
WVU T11 30L	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6x5.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4x6 DIN7984	N00 52520 E58
WVU T13 30L	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5x6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4x6 DIN7984	N00 52520 E58
WVU T16 30L	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4x8-10IP 38 in-lbs	L05 00850 10IP	5501105010 M5x10 DIN912	N00 52530 E610

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.



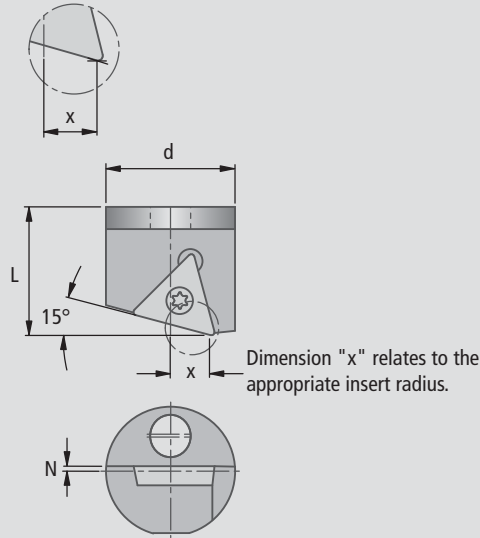
Kometic® WVU Adjustable Insert Pocket $\kappa = 15^\circ$



Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Left hand pocket as shown, uses neutral and left hand insert.



For mounting dimensions see page 6.45

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R		lbs
							0.016 (0.4)	0.031 (0.8)	
WVU T06 15L	D20 41500	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.083 (2.1)	0.058 (1.48)	0.004
WVU T09 15L	D20 41510	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.118 (3.0)	0.094 (2.38)	0.011
WVU T11 15L	D20 41520	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.197 (5.0)	0.172 (4.38)	0.029
WVU T13 15L	D20 41540	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.197 (5.0)	0.172 (4.38)	0.024
WVU T16 15L	D20 41530	1.772 (45)	0.020 (0.5)	0.787 (20)	0.945 (24)	0.024 (0.6)	0.197 (5.0)	0.172 (4.38)	0.064

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for Cartridge	Insert			Replacement Parts			
	W32..15 L.H. TPHX Size	W32.. Neutral Size	W58.. Neutral Size	Clamping screw Order No. Description	TORX PLUS Order No. Description	Locking screw Order No. Description	Adjusting screw Order No. Description
WVU T06 15L	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5×4-8IP 11.3 in-lbs	N00 52500 E34
WVU T09 15L	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56121 S/M2.6×4.6 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5×5-8IP 20 in-lbs	N00 52510 E46
WVU T11 15L	W32 18150..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T13 15L	W32 23150..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4×6 DIN7984	N00 52520 E58
WVU T16 15L	W32 32150..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4×8-10IP 38 in-lbs	L05 00850 10IP	5501105010 M5×10 DIN912	N00 52530 E610

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.

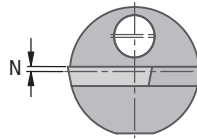
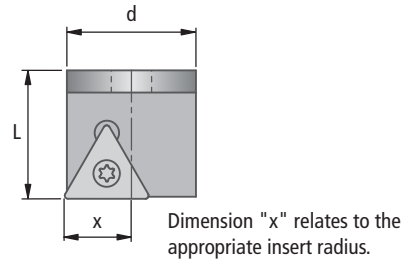


Kometric® WVU Adjustable Insert Pocket $\alpha = 0^\circ$

Angle of inclination to main cutting edge: $+5^\circ$


for Insert W32 (TPH..) / W58 (TPGX..)








Left hand pocket as shown, uses neutral and right hand insert.



For mounting dimensions see page 6.45

inch (mm)

Description cutting form ▼	Order No.	Min. cutting \varnothing	Adjustment range	d	L	N	ISO Dimension x for Radius, R		 lbs
							0.016 (0.4)	0.031 (0.8)	
WVU T06 0L	D20 41600	0.630 (16)	0.012 (0.3)	0.315 (8)	0.335 (8.5)	0.020 (0.5)	0.169 (4.3)	0.157 (4.0)	0.004
WVU T09 0L	D20 41610	0.866 (22)	0.016 (0.4)	0.472 (12)	0.472 (12)	0.024 (0.6)	0.248 (6.3)	0.236 (6.0)	0.013
WVU T11 0L	D20 41620	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.327 (8.3)	0.315 (8.0)	0.029
WVU T13 0L	D20 41640	1.181 (30)	0.020 (0.5)	0.630 (16)	0.630 (16)	0.024 (0.6)	0.327 (8.3)	0.315 (8.0)	0.029
WVU T16 0L	D20 41630	1.772 (45)	0.020 (0.5)	0.787 (20)	0.945 (24)	0.024 (0.6)	0.406 (10.3)	0.394 (10.0)	0.068

for Cartridge	Insert			Replacement Parts			
	W32..15 R.H. TPHX  Size	W32.. Neutral  Size	W58.. Neutral  Size	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Locking screw  Order No. Description	Adjusting screw  Order No. Description
WVU T06 0L	W32 03450..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2.6x3.8-6IP 5.5 in-lbs	L05 00810 6IP	N00 55561 M2.5x4-8IP 11.3 in-lbs	N00 52500 E34
WVU T09 0L	W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56121 S/M2.6x4.6 11.3 in-lbs	L05 00830 8IP	N00 55701 M3.5x5-8IP 20 in-lbs	N00 52510 E46
WVU T11 0L	W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6x5.2-8IP 11.3 in-lbs	L05 00830 8IP	5501204006 M4x6 DIN7984	N00 52520 E58
WVU T13 0L	W32 23450..	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5x6.2-10IP 25 in-lbs	L05 00850 10IP	5501204006 M4x6 DIN7984	N00 52520 E58
WVU T16 0L	W32 32450..	W32 32... TPHB 1603..	W58 32... TPGX 1603..	N00 56301 S/M4x8-10IP 38 in-lbs	L05 00850 10IP	5501105010 M5x10 DIN912	N00 52530 E610

For further details on inserts, please see Chapter 7

Delivery

WVU pocket complete with all replacement parts, less wrenches and insert.



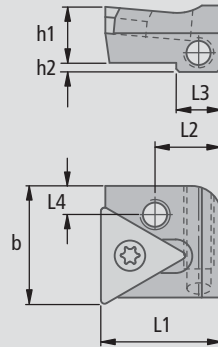
Kometic® FLWE Flat Bed Insert Pocket $\kappa = 90^\circ$



Adjustable flat bed insert pocket

Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)



Insert seating cutting form 1 as shown with left or neutral insert.

Mounting instruction see page 6.42

Dimension 'b' relates to the appropriate insert radius

inch (mm)

Description cutting form ▾	Order No.	for radius R0.016 (R0.4) b	L1	L2	L3	L4	h1	h2	
FLWE-TPHB06-90°-1	D53 56400	0.307 (7.8)	0.315 (8)	0.173 (4.4)	0.118 (3)	0.075 (1.9)	0.142 (3.6)	0.024 (0.6)	0.009
FLWE-TPHB09-90°-1	D53 56420	0.433 (11)	0.472 (12)	0.275 (7)	0.197 (5)	0.098 (2.5)	0.224 (5.7)	0.037 (0.95)	0.013

6



for Cartridge	W32 L.H. size	Insert		Assembly parts	Accessories	Assembly parts	
		W32 neutral size	W58 neutral size			Clamping screw Order No. Article	Screwdriver Order No. Article
FLWE-TPHB06..	W32 03150.. TPHX 0601..	W32 03..... TPHB 0601..	W58 03..... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	N10 11200	55051 02005 M2×5
FLWE-TPHB09..	W32 13150.. TPHX 0902..	W32 13..... TPHB 0902..	W58 13..... TPGX 0902..	N00 56101 S/M2,6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	N10 11310	55051 03006 M3×6

For further details on inserts see chapter 7

Supply includes:

Insert seating with assembly parts. Please order insert and accessories separately.



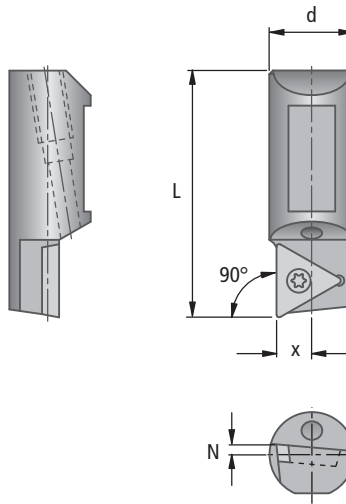
Kometric® UZV Adjustable Boring Cartridge $\kappa = 90^\circ$

Angle of inclination to main cutting edge: + 5°

for Insert **W32 (TPH..) / W58 (TPGX..)**

Left hand boring cartridge as shown, uses neutral and left hand insert.

Right hand boring cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.68

inch (mm)

Description cutting form ▼	Order No.	d	L	N	ISO Dim. x for radius 0.016 (R0.4)	lbs	Insert				Replacement Parts	
							W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58 Size	Clamping screw Order No. Description	TORX PLUS Order No. Description
UZV10 T09 30 90R	D20 06020	0.394 (10)	1.181 (30)	0.059 (1.5)	0.157 (4)	0.029		W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10 T09 30 90L	D20 01020						W32 13150..					
UZV12 T11 35 90R	D20 06040	0.472 (12)	1.377 (35)	0.059 (1.5)	0.197 (5)	0.051		W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 90L	D20 01040						W32 18150..					

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometric® UZV Adjustable Boring Cartridge $\kappa = 60^\circ$

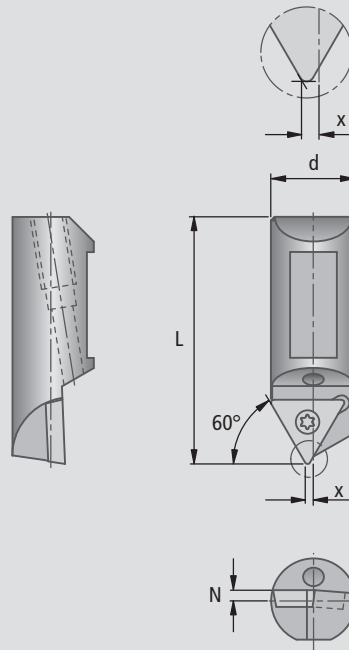


Angle of inclination to main cutting edge: + 5°

for Insert **W32 (TPH..)** / **W58 (TPGX..)**

Left hand boring cartridge as shown, uses neutral and left hand insert.

Right hand boring cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.68

inch (mm)

Description cutting form ▼	Order No.	d	L	N	ISO Dim. x for radius 0.016 (R0.4)	lbs	Insert				Replacement Parts	
							W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58 Size	Clamping screw Order No. Description	TORX PLUS Order No. Description
UZV10 T09 30 60R	D20 06220	0.394 (10)	1.181 (30)	0.059 (1.5)	0.020 (0.5)	0.035		W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10 T09 30 60L	D20 01220						W32 13150..					
UZV12 T11 35 60R	D20 06240	0.472 (12)	1.377 (35)	0.059 (1.5)	0.039 (1.0)	0.053		W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 60L	D20 01240						W32 18150..					

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.





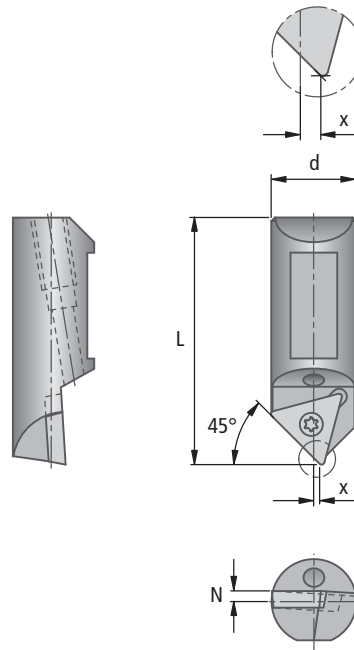
Kometric® UZV Adjustable Boring Cartridge $\kappa = 45^\circ$

Angle of inclination to main cutting edge: + 5°

for Insert **W32 (TPH..)** / **W58 (TPGX..)**

Left hand boring cartridge as shown, uses neutral and left hand insert.

Right hand boring cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.68

inch (mm)

Description cutting form ▼	Order No.	d	L	N	ISO Dim. x for radius 0.016 (R0.4)	lbs	Insert				Replacement Parts	
							W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58 Size	Clamping screw Order No. Description	TORX PLUS Order No. Description
UZV10 T09 30 45R	D20 06420	0.394	1.181	0.059	0.051	0.044		W32 13450..	W32 13...	W58 13...	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10 T09 30 45L	D20 01420	(10)	(30)	(1.5)	(1.3)		W32 13150..		TPHB 0902..	TPGX 0902..		
UZV12 T11 35 45R	D20 06440	0.472	1.377	0.059	0.039	0.049		W32 18450..	W32 18...	W58 18...	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 45L	D20 01440	(12)	(35)	(1.5)	(1.0)		W32 18150..		TPHB 1102..	TPGX 1102..		

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.



Kometic® UZV Adjustable Boring Cartridge $\kappa = 30^\circ$

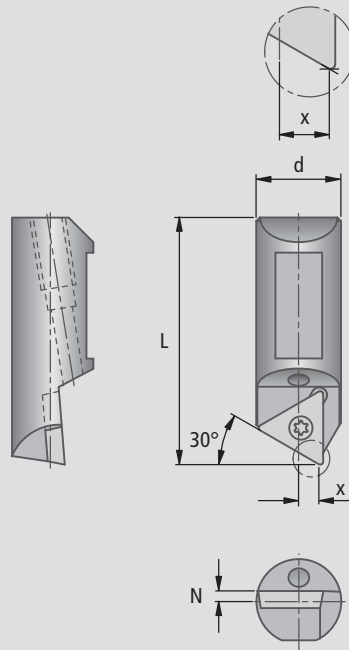


Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)

Left hand boring cartridge as shown, uses neutral and left hand insert.

Right hand boring cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.68

inch (mm)

Description cutting form ▼	Order No.	d	L	N	ISO Dim. x for radius 0.016 (R0.4)	lbs	Insert				Replacement Parts	
							W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58 Size	Clamping screw Order No. Description	TORX PLUS Order No. Description
UZV10 T09 30 30R	D20 06520	0.394 (10)	1.181 (30)	0.059 (1.5)	0.118 (3)	0.031		W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10 T09 30 30L	D20 01520						W32 13150..					
UZV12 T11 35 30R	D20 06540	0.472 (12)	1.377 (35)	0.059 (1.5)	0.118 (3)	0.049		W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 30L	D20 01540						W32 18150..					

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.





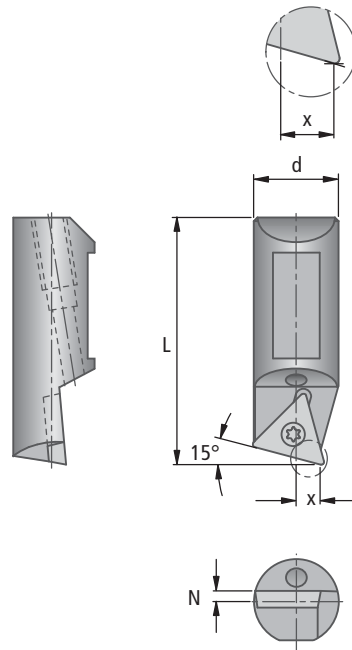
Kometric® UZV Adjustable Boring Cartridge $\kappa = 15^\circ$

Angle of inclination to main cutting edge: + 5°

for Insert **W32 (TPH..)** / **W58 (TPGX..)**

Left hand boring cartridge as shown, uses neutral and left hand insert.

Right hand boring cartridge is mirror image of above, uses neutral and right hand insert.



For mounting dimensions see page 6.68

inch (mm)

Description cutting form ▼	Order No.	d	L	N	ISO Dim. x for radius 0.016 (R0.4)	lbs	Insert				Replacement Parts	
							W32..15 L.H. TPHX Size	W32..15 R.H. TPHX Size	W32.. Neutral Size	W58 Size	Clamping screw Order No. Description	TORX PLUS Order No. Description
UZV10 T09 30 15R	D20 06620	0.394 (10)	1.181 (30)	0.059 (1.5)	0.157 (4.0)	0.031		W32 13450..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV10 T09 30 15L	D20 01620						W32 13150..					
UZV12 T11 35 15R	D20 06640	0.472 (12)	1.377 (35)	0.059 (1.5)	0.138 (3.5)	0.053		W32 18450..	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 15L	D20 01640						W32 18150..					

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.

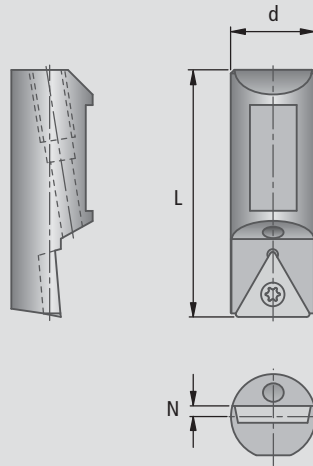


Kometic® UZV Adjustable Boring Cartridge $\kappa = 0^\circ$



Angle of inclination to main cutting edge: + 5°

for Insert **W32 (TPH..)** / **W58 (TPGX..)**



For mounting dimensions see page 6.68

inch (mm)

Description	Order No.	d	L	N	lbs	Insert		Replacement Parts	
						W32.. Neutral	W58	Clamping screw	TORX PLUS
						Size	Size	Order No. Description	Order No. Description
UZV10 T09 30 0	D20 01720	0.394 (10)	1.181 (30)	0.059 (1.5)	0.031	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP
UZV12 T11 35 0	D20 01740	0.472 (12)	1.377 (35)	0.059 (1.5)	0.053	W32 18... TPHB 1102..	W58 18... TPGX 1102..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP

For further details on inserts, please see Chapter 7

Delivery:

UZV boring cartridge complete with all replacement parts, less wrenches and insert.





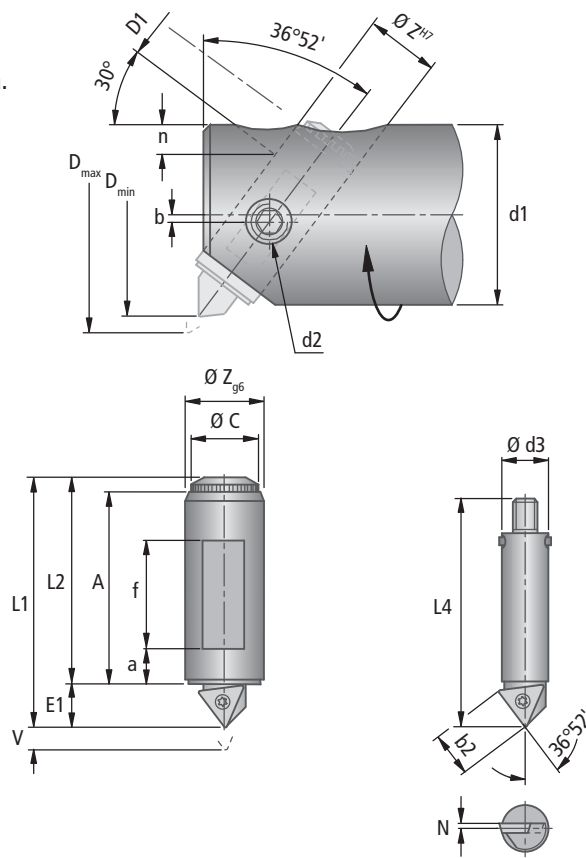
Kometric® FZ Micro-Adjustable Cartridge

Angle of inclination to main cutting edge: +5°








for Insert W32 (TPH..) / W58 (TPGX..)

Angular Mounting 36°52'

Adjustment per graduation = 0.0006 inch dia.
(0.016 mm Ø)




inch (mm)

Boring Range ¹⁾ D _{min} - D _{max}	Cartridge		Boring tool  Order No. Description	Insert			Replacement Parts		
	Description	Order No.		W32..15 L.H. TPHX  Size	Insert W32.. Neutral  Size	W58..  Size	Clamping screw  Order No. Description	TORX PLUS  Order No. Description	Wrench for split bushing  Order No. Description
1.102-1.354 [1.496] (28- 34.4 [38])	FZ10- 28-3	M30 02031	M30 52421 U10Z3-T06	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01020 R2/N1
1.259-1.511 [1.732] (32- 38.4 [44])	FZ10- 32-3	M30 02041							
1.417-1.732 [1.889] (36- 44 [48])	FZ12- 36-3	M30 02051	M30 52431 U12Z3-T06	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	L05 01030 R2a/N2
1.574-1.889 [2.165] (40- 48 [55])	FZ12- 40-3	M30 02061							
1.771-2.149 [2.362] (45- 54.6 [60])	FZ16- 45-3	M30 02071	M30 52441 U16Z3-T06	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	L05 01040 N3
1.968-2.346 [2.362] (50- 59.6 [68])	FZ16- 50-3	M30 02081							

For further details on inserts, please see Chapter 7

inch (mm)

Boring Range ¹⁾ D _{min} - D _{max}	d1	n ²⁾	Cutter Ø D1 ²⁾	b	d2	Ø Z ^{H7}	L1	L2	E1	Rough adj. V	A	Ø C	a	f	Ø d3	L4	N	b2	
1.102-1.354 [1.496] (28- 34.4 [38])	0.984 (25)	0.138 (3.5)	0.315 (8)	0.079 (2)	M6	0.393 (10)	1.24 (31.5)	1.004 (25.5)	0.236 (6)	0.157 (4)	0.917 (23.3)	0.350 (8.9)	0.236 (6)	0.472 (12)	0.224 (5.7)	0.976 (24.8)	0.047 (1.2)	0.256 (6.5)	0.029
1.259-1.511 [1.732] (32- 38.4 [44])							1.398 (35.5)	1.161 (29.5)			1.075 (27.3)			0.630 (16)					0.033
1.417-1.732 [1.889] (36- 44 [48])	1.260 (32)	0.157 (4)	0.394 (10)	0.098 (2.5)	M8	0.472 (12)	1.587 (40.3)	1.319 (33.5)	0.268 (6.8)	0.197 (5)	1.220 (31)	0.429 (10.9)	0.315 (8)	0.630 (16)	0.264 (6.7)	1.232 (31.3)	0.047 (1.2)	0.256 (6.5)	0.057
1.574-1.889 [2.165] (40- 48 [55])							1.783 (45.3)	1.516 (38.5)			1.417 (36)			0.827 (21)					0.064
1.771-2.149 [2.362] (45- 54.6 [60])	1.575 (40)	0.256 (6.5)	0.472 (12)	0.118 (3)	M10	0.629 (16)	2.008 (51)	1.654 (42)	0.354 (9)	0.236 (6)	1.535 (39)	0.547 (13.9)	0.394 (10)	0.787 (20)	0.339 (8.6)	1.563 (39.7)	0.047 (1.2)	0.354 (9)	0.128
1.968-2.346 [2.362] (50- 59.6 [68])							2.244 (57)	1.890 (48)			1.772 (45)			1.024 (26)					0.148

¹⁾ Value 1 to 2 = micro adjustment range of cartridge

Value 1 to [3] = total adjustment range, consisting of micro and rough adjustment of cartridge in holder

²⁾ when using rough adjustment, the distance "n" must be used on the boring bar



Kometic® FF Micro-Adjustable Cartridge



Angle of inclination to main cutting edge: + 5°

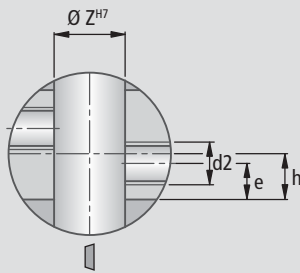
for Insert **W32 (TPH..) / W58 (TPGX..)**

Adjustment per graduation = .0008 inch dia. (0.02 mm \varnothing)

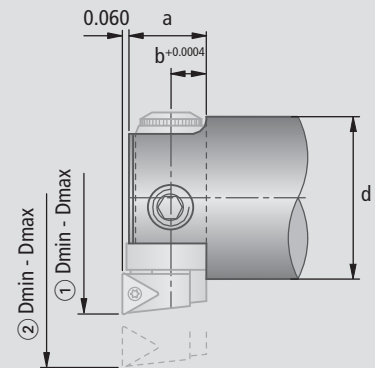
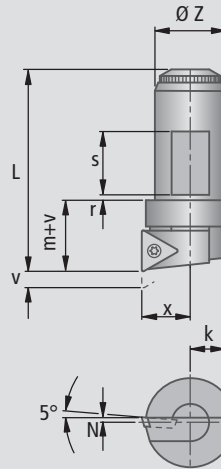
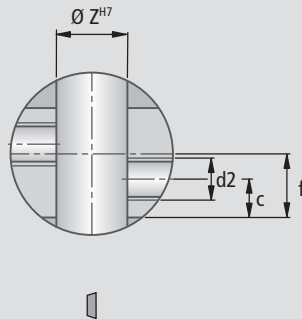
The FF micro adjustable cartridge is mounted radially and ideally suitable for NC tools, because the axial cutting dimensions are constant. The design and features of the cartridge are the same as type FZ (see sectional drawing), and are therefore also highly accurate. The protruding cutting edge is supported in its seating and mounting, and is therefore exceptionally rigid. The adjustment is only carried out in a clamped state.

- Setting:**
1. Basic setting to be taken from boring range ① and ②.
 2. Machining diameter set by fine adjustment device.

Boring range ①



Boring range ②



inch (mm)

Boring Range ① $D_{min} - D_{max}$	Boring Range ② $D_{min} - D_{max}$	Cartridge Order No. Description	W32..15 L.H. TPHX Size	Insert W32.. Neutral Size	W58.. Size	Replacement Parts	
						Clamping screw Order No. Description	TORX PLUS Order No. Description
1.161 - 1.417 (29.5 - 36)	1.397 - 1.653 (35.5 - 42)	M30 20201 FF10 T06 30	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
1.535 - 1.771 (39 - 45)	1.732 - 1.968 (44 - 50)	M30 20211 FF12 T06 39	W32 03150..	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP
1.850 - 2.244 (47 - 57)	2.204 - 2.598 (56 - 66)	M30 20221 FF16 T09 47	W32 13150..	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP

For further details on inserts, please see Chapter 7

inch (mm)

for Cartridge	$\varnothing d$	$\varnothing Z$	a	b	h	e	f	c	d2	L	x	N	k	v	m	r	s	lbs
M30 20201	0.984 (25)	0.394 (10)	0.433 (11)	0.197 (5)	0.146 (3.7)	0.154 (3.9)	0.264 (6.7)	0.154 (3.9)	M6	1.122 (28.5)	0.295 (7.5)	0.079 (2.0)	0.197 (5)	0.138 (3.5)	0.433 (11)	0.020 (0.5)	0.315 (8)	0.121
M30 20211	1.260 (32)	0.472 (12)	0.531 (13.5)	0.236 (6)	0.276 (7)	0.236 (6)	0.374 (9.5)	0.236 (6)	M8	1.476 (37.5)	0.354 (9)	0.047 (1.2)	0.236 (6)	0.138 (3.5)	0.492 (12.5)	0.039 (1)	0.433 (11)	0.068
M30 20221	1.575 (40)	0.630 (16)	0.689 (17.5)	0.315 (8)	0.295 (7.5)	0.295 (7.5)	0.472 (12)	0.315 (8)	M10	1.772 (45)	0.433 (11)	0.047 (1.2)	0.315 (8)	0.197 (5)	0.630 (16)	0.079 (2)	0.512 (13)	0.137



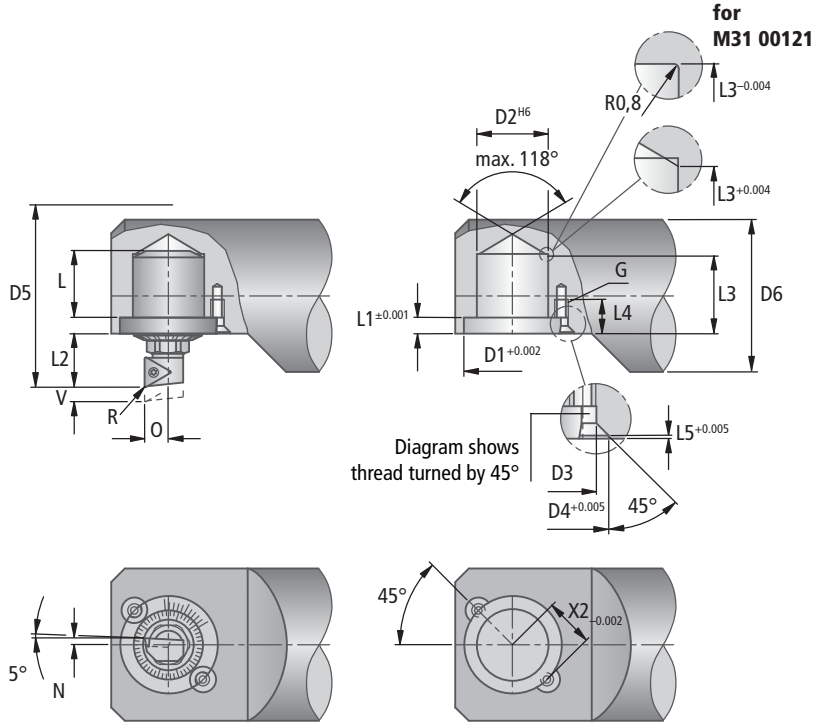


Kometric® Fine Boring Cartridge with Front Adjustment

Radial Mounting

Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)



Technical advantages of fine boring cartridges in cutting operations

- easy adjustment from the front
- precision micro-adjustment to size
- no clamping required
- compact, rigid design
- two methods for mounting
- considerably shorter setting time
- extensive range of inserts with positive chip geometry provides the right type of cutting for the material.
- the smallest adjustment step is .0008 inch (0.02 mm) per graduation on diameter

inch (mm)

min. Cutting Ø D5	Order No.	lbs	W32.. L.H. TPHX	Insert W32.. Neutral	W58.. Neutral	Replacement Parts			
						Clamping screw	TORX PLUS	Monting screw 2x DIN7991	Adjustment wrench
			Size	Size	Size	Order No. Description	Order No. Description	Order No. Description	Order No. Description
1.000 (25.4)	M31 00121	0.044	W32 03150.. TPHX 0601..FL	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	M31 00020.18 M3×6 similar DIN7991	1858910008 SW8
1.437 (36.5)	M31 00152	0.088	W32 13150.. TPHX 0902..FL	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5502103008 M3×8	1858910010 SW10
2.874 (73)	M31 00161	0.551	W32 23150.. TPHX 1303..FL	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5502105012 M5×12	1858900017 SW17

Delivery:

Front adjustable cartridge complete with mounting replacement parts and wrenches less torx wrench and insert.

Mounting dimensions

inch (mm)

for Cartridge	D1	D2	D3	D4	D6 min	L	L1	L2	L3 min	L4	L5	G	N	R	V	O	X2
M31 00021	0.748 (19)	0.630 (16)	0.126 (3.2)	0.181 (4.6)	1.024 (26)	0.429 (10.9)	0.110 (2.8)	0.394 (10)	0.453 (11.5)	0.354 (9)	0.063 (1.6)	M3	0.059 (1.5)	0.016 (0.4)	0.039 (1.0)	0.201 (5.1)	0.380 (9.65)
M31 00152	1.181 (30)	0.866 (22)	0.169 (4.3)	0.315 (8)	1.811 (46)	0.807 (20.5)	0.197 (5)	0.665 (16.9)	0.945 (24)	0.394 (10)	0.035 (0.9)	M4	0.079 (2)	0.016 (0.4)	0.138 (3.5)	0.283 (7.2)	0.606 (15.4)
M31 00161	1.811 (46)	1.260 (32)	0.217 (5.5)	0.394 (10)	2.638 (67)	1.142 (29)	0.248 (6.3)	1.004 (25.5)	1.299 (33)	0.472 (12)	0.031 (0.8)	M5	0.079 (2)	0.020 (0.5)	0.217 (5.5)	0.406 (10.3)	0.906 (23)



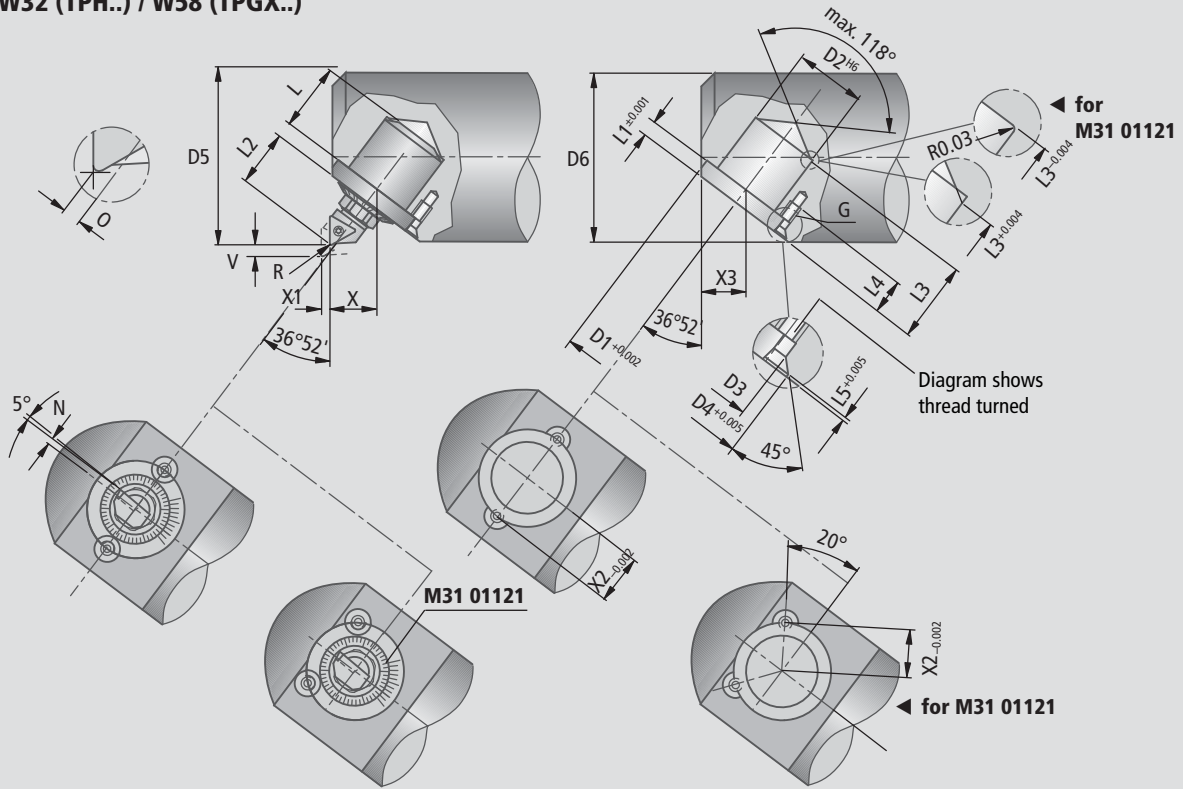
Kometic® Fine Boring Cartridge with Front Adjustment



Angular Mounting

Angle of inclination to main cutting edge: + 5°

for Insert W32 (TPH..) / W58 (TPGX..)



Technical advantages of fine boring cartridges in cutting operations

- easy adjustment from the front
- precision micro-adjustment to size
- no clamping required
- compact, rigid design
- two methods for mounting
- considerably shorter setting time
- extensive range of inserts with positive chip geometry provides the right type of cutting for the material.
- the smallest adjustment step is .0008 inch (0.02 mm) per graduation on diameter

inch (mm)

min. Cutting Ø D5	Order No.	lbs	W32.. L.H. TPHX	Insert W32.. Neutral	W58.. Neutral	Replacement Parts			
						Clamping screw	TORX PLUS	Monting screw 2x DIN7991	Adjustment wrench
			Size	Size	Size	Order No. Description	Order No. Description	Order No. Description	Order No. Description
1.000 (25.4)	M31 01121	0.044	W32 03150.. TPHX 0601..FL	W32 03... TPHB 0601..	W58 03... TPGX 0601..	N00 56021 S/M2×3.8-6IP 5.5 in-lbs	L05 00810 6IP	M31 00020.18 M3×6 similar DIN7991	1858910008 SW8
1.437 (36.5)	M31 01152	0.088	W32 13150.. TPHX 0902..FL	W32 13... TPHB 0902..	W58 13... TPGX 0902..	N00 56101 S/M2.6×5.2-8IP 11.3 in-lbs	L05 00830 8IP	5502103008 M3×8	1858910010 SW10
2.874 (73)	M31 01161	0.551	W32 23150.. TPHX 1303..FL	W32 23... TPHB 1303..	W58 23... TPGX 1303..	N00 56201 S/M3.5×6.2-10IP 25 in-lbs	L05 00850 10IP	5502105012 M5×12	1858900017 SW17

Delivery:

Front adjustable cartridge complete with mounting replacement parts and wrenches less torx wrench and insert.

Mounting dimensions

inch (mm)

for Cartridge	D1	D2	D3	D4	D6 min	L	L1	for R0.016 L2	L3 min	L4	L5	G	N	ISO – Dimension						
														for R	V	O	X	X1	X2	X3
M31 01121	0.748 (19)	0.591 (15)	0.126 (3.2)	0.177 (4.5)	0.906 (23)	0.358 (9.1)	0.126 (3.2)	0.437 (11.1)	0.500 (12.7)	0.512 (13)	0.063 (1.6)	M3	0.059 (1.5)	0.016 (0.4)	0.031 (0.8)	0.027 (0.68)	0.362 (9.2)	0.024 (0.6)	0.374 (9.5)	0.346 (8.8)
M31 01152	0.969 (24.6)	0.750 (19.05)	0.138 (3.5)	0.236 (6)	1.299 (33)	0.572 (14.54)	0.156 (3.96)	0.588 (14.94)	0.748 (19)	0.394 (10)	0.059 (1.5)	M3	0.079 (2)	0.016 (0.4)	0.051 (1.3)	0.035 (0.9)	0.478 (12.15)	0.037 (0.95)	0.484 (12.3)	0.445 (11.3)
M31 01161	1.811 (46)	1.250 (31.75)	0.217 (5.5)	0.394 (10)	2.559 (65)	1.167 (29.65)	0.250 (6.35)	1.063 (27)	1.457 (37)	0.472 (12)	0.059 (1.5)	M5	0.079 (2)	0.016 (0.4)	0.185 (4.7)	0.035 (0.9)	0.819 (20.8)	0.148 (3.75)	0.906 (23)	0.780 (19.8)



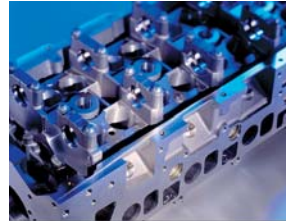
Machining Aluminum with Dihart Tooling

Application example: Cylinder head

The challenge

Cam shaft bores

- Machining aluminium
- Maximum tolerance requirements
- Allowance up to 0.059" (1.5 mm)
- Large scale production
- Solutions for machining centers and transfer lines



Our solution

Ready-to-use solution from tool design to putting into operation

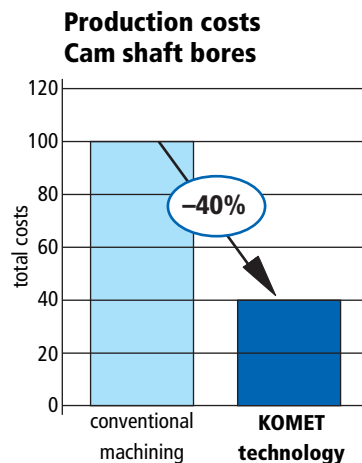
- Development of multiple insert PCD tools with up to eight cutting edges
- Pre-machining with multiple insert pilot PCD tool
- Finish machining with multiple insert PCD tool with carbide guide pad and internal coolant supply



Customer benefit

Complete result in just a few weeks

- 50% reduction of main time
- Increase in tool life to up to 80,000 parts per tool
- No setting
- Easy handling
- Approx. 40% reduction in production costs



Machining Aluminum with JEL Tooling

The future

The conventional filter will be replaced by a new generation of oil filters; these are already in use on new car models. This consists mainly of an aluminum housing fitted with the appropriate filter elements.

Cast aluminum filter:

Material: Aluminum alloy

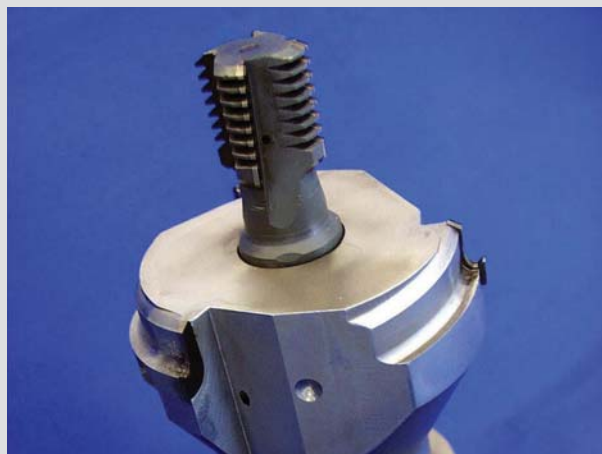
Machined mit:

"TOMILL" thread milling tool GWF S80x3
with PCD inserts

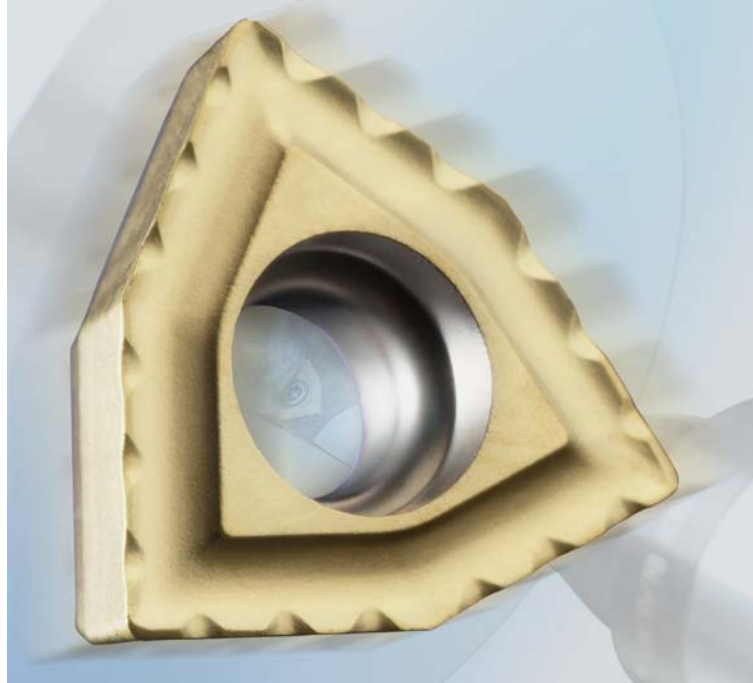


Special solution:

Special VABOS (variable boring and counterboring system) with PCD inserts for complete face machining on filter housing.



Insert



KOMET inserts and the appropriate tools provide the user with an efficient system for machining any materials.



Unisix® Inserts W00 - W29	7.15 – 7.39
Numerical Coding	7.114

Inserts W30 - W79	7.40 – 7.73
Numerical Coding	7.114

Inserts W83 - W89	7.74 – 7.89
Numerical Coding	7.115

ISO Inserts C83 - C86	7.90 – 7.93
Numerical Coding	7.114

Inserts H60 - H62 for KUB Duon®	7.94 – 7.101
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Inserts Q..	7.103 – 7.112
Numerical Coding	7.115

Cutting Materials	7.6 – 7.14
Summary and List of Codes	

Clamping screws	Chapter 8
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Program Summary

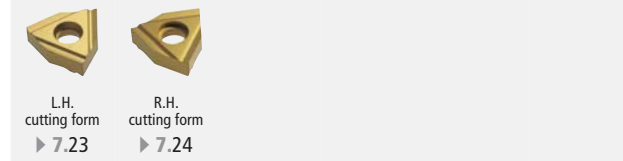
Unisix® W00 – WOHX standard



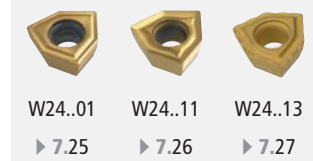
Unisix® W01 – WOHX heavy duty



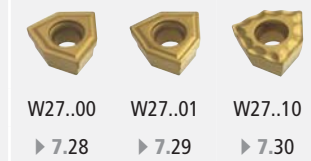
Unisix® W04 – WNHX P6 cutting edges



Unisix® W24



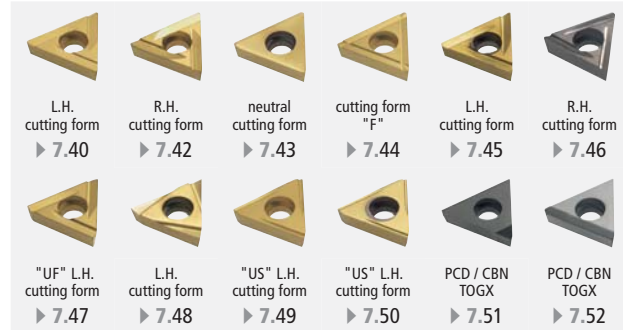
Unisix® W27



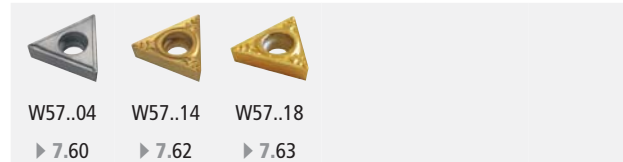
Unisix® W29 – WOEX



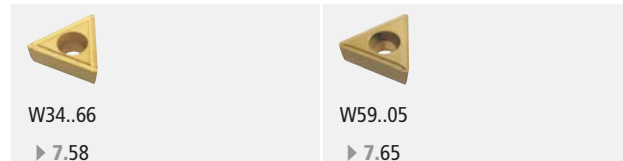
W30 – TOHX / TOGX



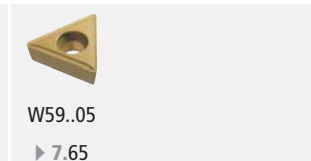
W57 – TOHX / TOGX



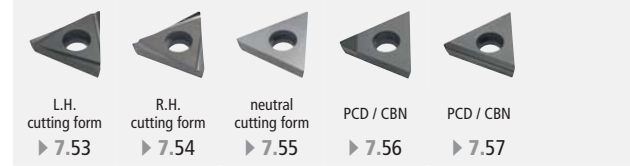
W34 – TOHT



W59 – TOHT



W32 – TPHX machining aluminum



W37 – TPHB



W57 – TOGX



W58 – TPGX



W83 – SPGT / SPGW machining aluminum



W85 – CPGT / CPGW machining aluminum



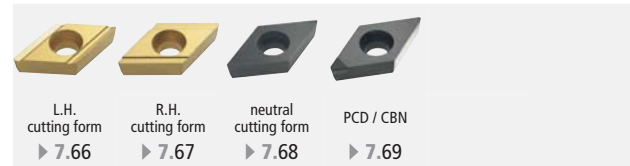
W83 – SCGW



W85 - CCGW



W60 – DOHT / DOHW / DOWG



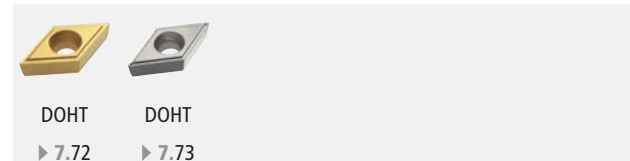
W78 – VOHT / VOGW



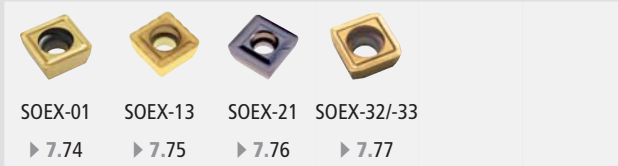
W89 – VCMT / VBMT



W79 – DOHT



KUB Quatron® W83 – SOEX



Q09 – SPGW / SPMT / SEHW / SEHT



ISO Inserts

C83 – SCMT / SCGT



C84 – TCMT / TCGT



C85 – CCMT / CCGT



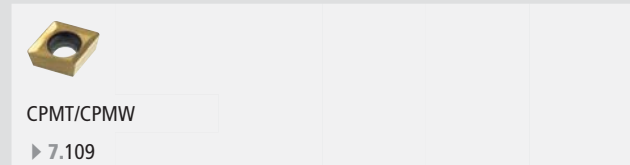
C86 – DCMT / DCGT



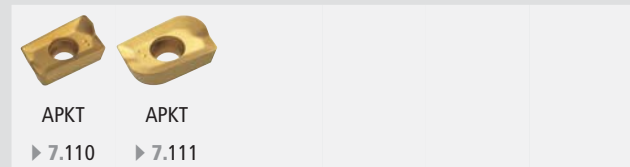
Q12 – TCAA / TCAX / TNAA / TNAX / TPAX



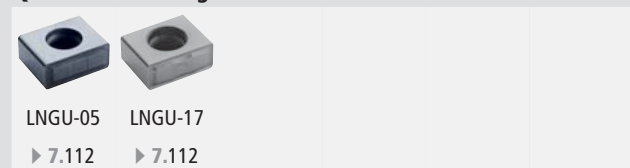
Q15 – CPMT / CPMW



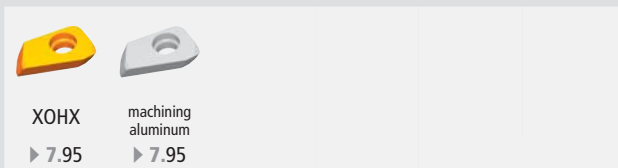
Q36 – APKT



Q80 – LNGU Tangential Inserts



KUB Duon® H60 / H62 – XOHX



Guidelines for Selecting Inserts





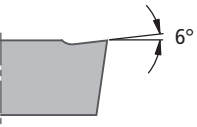
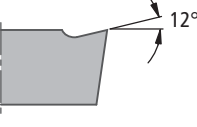
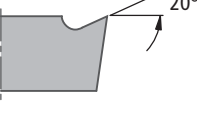
All dimensions shown are subject to tolerance in accordance with the relevant requirement.

Workpiece material	
Carbon steel / Alloy steel	P
Stainless steel	M
Cast iron / Ductile iron	K
Non-ferrous metals	N
Super-alloy / Titanium alloy	S
Hardened steel	H

Selecting the top rake

Recommendations for using inserts with ground chip grooves

(W00, W01, W04, W30, W32, W34, W37, W60)

	honed 	sharp 	land 
	P M K N S H	P M K N ^{PCD55 PCD520} S H	P M K N S H
	P M K N S H	P M K N S H	P M K N S H
	P M K N S H	P M K N S H	P M K N S H
	P M K N S H	P M K N S H	P M K N S H

Summary and Description

uncoated																									
Cutting material code	Order No.	Application					Properties	Norm code	Application range																
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor											
									01	05	10	15	20	25	30	35	40	45	50						
P10	01				T	uncoated: • turning operations with medium to low cutting depths without interrupted cut	HW-P10	P	05-15		10-15														
								M																	
								K																	
								N																	
								S																	
P25	12				T	uncoated: • with excellent wear resistance and good toughness factor • suitable for medium to high cutting speeds for roughing and finishing • for non-alloy steel, malleable cast iron, stainless steel and cast iron	HW-P25	P			15-25		20-30												
								M																	
								K																	
								N																	
								S																	
P25M	03	D	R	F	T	M	uncoated: • with excellent wear resistance and good toughness factor • suitable for medium to high cutting speeds for roughing and finishing, also for interrupted cut • for non-alloy steel, malleable cast iron, stainless steel and cast steel	HW-P25	P			15-25		20-30											
									M																
									K																
									N																
									S																
P30	13				T	uncoated: • good toughness factor with reasonable wear resistance • for universal use	HW-P30	P			20-25		25-30												
								M																	
								K																	
								N																	
								S																	
P35	14				T	uncoated: • for turning operations with suitable toughness factor and good resistance to wear	HW-P35	P			25-30		30-35												
								M																	
								K																	
								N																	
								S																	
P40	04	D	R		T	M	uncoated: • with medium wear resistance at optimum toughness factor • low to medium cutting speeds for roughing and with heavily interrupted cut • also for unstable working conditions • for non-alloy steel, die steel and stainless steels	HW-P40	P			25-30		30-35											
									M																
									K																
									N																
									S																
K10	21	D	R	F	T	M	uncoated: • chamfered and neutral cutter geometry suitable for all grades of cast iron • positively sintered (PD) and ground geometry is used for aluminum. e.g.: 12° and 20° top rake, ground sharply and not rounded	HW-K10	P	05-10		10-15													
									M																
									K	05-10		10-15													
									N	05-10		10-15													
									S	05-10		10-15													
K10 / fine grain	23			F			uncoated: • fine grain carbide with high wear and thermal resistance • mainly for machining aluminum; PVD coated, also suitable for machining general steels and rust-resistant materials	HW-M10 HW-K15	P	05-10		10-15													
									M	05-10		10-15													
									K	05-10		10-15													
									N	05-10		10-15													
									S	05-10		10-15													
K20	22				M	uncoated: • with large application range for cast iron materials • medium to high cutting speeds for roughing and finishing • wet and dry machining also possible • for cast iron, malleable cast iron, aluminum/ copper/brass and bronze alloys; main application area in milling	HW-K20	P			15-20		20-25												
								M																	
								K																	
								N																	
								S																	

main area of application
 suitable in some cases



Summary and Description

CVD coated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor							
									01	05	10	15	20	25	30	35	40	45	50		
BK50	50	D	R	F			diamond coating: <ul style="list-style-type: none"> • crystalline diamond coating • for cutting aluminum alloys, abrasive materials, graphite, plastics and bonded materials at high cutting speeds 	HC-K10	P	M	K	N	S	H							
BK60	60	D	R	F	T		CVD-TiC-TiCN-TiN: <ul style="list-style-type: none"> • multiple coating on P25M carbide base • high tool life, even in the higher cutting speed range 	HC-M10	P	M	K	N	S	H							
BK61	61	D	R	F			CVD-TiC-Al2O3: <ul style="list-style-type: none"> • aluminum oxide coating (ceramic) for higher cutting speeds in all cast iron materials • only suitable for interrupted cut to limited extent • not for use with aluminum materials ! 	HC-K15	P	M	K	N	S	H							
BK6110	6110			F			CVD-TiCN-TiN-Al2O3: <ul style="list-style-type: none"> • for final machining bores in cast iron and steel materials • excellent dimensional stability due to combination of wear resistant substrate and ceramic, surface treated coating 	HC-P10 HC-K10	P	M	K	N	S	H							
BK6115	6115	D	R				CVD-TiCN-TiN-Al2O3: <ul style="list-style-type: none"> • high quality, surface treated coating • mainly for machining cast iron materials under standard to stable conditions, also at high cutting speeds 	HC-P20 HC-K20	P	M	K	N	S	H							
BK62	62	D	R	F			CVD-TiN-TiCN-Al2O3: <ul style="list-style-type: none"> • for higher cutting speeds in all types of cast iron materials • only limited suitability for extreme interrupted cut • not suitable for aluminum materials 	HC-K15	P	M	K	N	S	H							
BK63	63	D	R				CVD-TiCN-TiN: <ul style="list-style-type: none"> • multiple coating on P 25 base • only available as dimple inserts 	HC-P25	P	M	K	N	S	H							
BK64	64	D	R	F	M		CVD-TiC-TiN: <ul style="list-style-type: none"> • multiple coating on P 40 carbide base • suitable for interrupted cut 	HC-P35 HC-M15	P	M	K	N	S	H							
BK6420	6420	D	R		T		CVD-TiCN-Al2O3-TiN: <ul style="list-style-type: none"> • good toughness factor with maximum wear resistance • for full cut at high cutting speeds in steel, cast steel and stainless steels 	HC-P20	P	M	K	N	S	H							

main area of application
 suitable in some cases

CVD coated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor							
									01	05	10	15	20	25	30	35	40	45	50		
BK6425	6425	D	R				MT-CVD-TiCN-Al2O3-TiN: <ul style="list-style-type: none"> • standard grades (grain) • maximum wear resistance in all steel and stainless steel materials 	HC-P25 HC-M15	P M K N S H												
BK66	66					T	CVD-TiC-TiCN-TiN: <ul style="list-style-type: none"> • for turning 	HC-P35	P M K N S H												
BK72	72	D	R				CVD-TiCN-TiC-Al2O3-TiN: <ul style="list-style-type: none"> • cutting material with tough substrate • for machining non-alloy and alloy steels, die steels and cast steel • ensures long tool life even at high cutting speeds 	HC-P30	P M K N S H												
BK73	73	D	R				CVD-TiCN/TiC/TiN-Al2O3-TiN: <ul style="list-style-type: none"> • tough carbide substrate • for machining rust-resistant and stainless steel materials, plus alloyed steels, even at higher cutting speeds 	HC-M20	P M K N S H												
BK74	74	D	R				CVD-TiCN-TiC-Al2O3: <ul style="list-style-type: none"> • extremely tough carbide substrate • for machining rust-resistant and stainless steels 	HC-M25	P M K N S H												
BK75	75					T	CVD-TiCN-TiC-Al2O3-TiN: <ul style="list-style-type: none"> • tough carbide substrate • for turning non-alloy and alloy steels, die steels and cast steel 	HC-P25	P M K N S H												
BK7525	7525					T	CVD-TiCN-Al2O3-TiN: <ul style="list-style-type: none"> • Grade for universal use with balanced wear and toughness properties 	HC-P30	P M K N S H												
BK76	76					T	CVD-TiCN-TiC-Al2O3: <ul style="list-style-type: none"> • for turning stainless steels, carbide steels with low tensile strength and cast materials 	HC-P20	P M K N S H												
BK7610	7610					T	CVD-TiCN-Al2O3: <ul style="list-style-type: none"> • high wear-resistant grade for machining grey cast iron, S.G. cast iron and cast iron material 	HC-K10	P M K N S H												

main area of application
 suitable in some cases

01 05 10 15 20 25 30 35 40 45 50



Summary and Description

PVD coated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor							
									01	05	10	15	20	25	30	35	40	45	50		
BK2710	2710			F			PVD-TiAlN: • extremely wear resistant carbide • for bore end machining stainless steels, structural and tool steels and cast materials • excellent dimensional stability due to combination of hard substrate and TiAlN coating with high aluminum content	HC-K10	P	M	K	N	S	H							
BK2715	2715		D				PVD-TiAlN: for KUB Duon® only • extremely fine grade carbide with nano-structured coating • for maximum resistance against thermal and mechanical wear • maximum performance with double insert solid drilling in grey cast iron and SG cast iron grades and can also be used for high tensile strength steels and non ferrous metals	HC-K20	P	M	K	N	S	H							
BK2730	2730		D	R			PVD-TiAlN: • extremely fine grades • extremely good edge stability and maximum wear resistance at medium and high speed ranges	HC-M25	P	M	K	N	S	H							
BK2740	2740		D				PVD-TiAlN: • coating with high aluminum content on extremely tough substrate • completes the grades for solid drilling steel materials in the medium cutting speed ranges	HC-P35	P	M	K	N	S	H							
BK68	68					M	PVD-TiCN: • multiple coating on carbide • medium to high cutting speeds for roughing and finishing and with interrupted cut • for non-alloy steel, cast steel, die steel and cast iron	HC-P20	P	M	K	N	S	H							
BK77	77		D	R	F		PVD-TiN: • tough PVD coated grade • for cutting aluminum alloys and plastics at medium cutting speeds • tough characteristics and a high resistance to build-up of cutting edges	HC-K10	P	M	K	N	S	H							
BK7710	7710		D	R	F		PVD-TiB2: • coating on extremely high wear resistance K10 carbide • for finish and rough machining aluminum up to approx. 10% Si content and titanium alloys • optimum coating properties to prevent build-up on cutting edges	HC-K10	P	M	K	N	S	H							
BK78	78					M	PVD-TiAlN: • coated carbide on P25M base with extremely high wear resistance • medium to high cutting speed for roughing and finishing and with interrupted cut • for non alloy steel, cast steel and die steels	HC-P25	P	M	K	N	S	H							
BK79	79		D	R			PVD-TiAlN: • coated carbide on P40 base with extremely high wear resistance • low to medium cutting speed for roughing and finishing and with interrupted cut • for non-alloy steel, cast steel, die steels and rust-proof and stainless steels	HC-M35	P	M	K	N	S	H							

main area of application
 suitable in some cases

PVD coated																				
Cutting material code	Order No.	Application					Properties	Norm code	Application range											
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor						
									01	05	10	15	20	25	30	35	40	45	50	
BK7930	7930	D	R				PVD-TiAlN: <ul style="list-style-type: none"> extremely efficient combination of extremely fine grade carbide for use on solid drills for stainless and acid resistant steels 	HC-M25	P											
BK80	80					M	PVD-TiCN: <ul style="list-style-type: none"> for milling with a wide range of applications in steel and cast iron materials excellent balance between wear resistance and strength makes this suitable for universal use 	HC-P35	P											
BK8125	8125	D					PVD-TiCN: <i>for KUB Duon® only</i> <ul style="list-style-type: none"> coated K20/30 extremely fine grade carbide with good hardness level for extremely high resistance to fracturing for double insert solid drilling in steel materials, particularly at low and medium cutting speeds with high requirements for cutting edge stability 	HC-P25	P											
BK8140	8140	D					PVD-TiCN: <ul style="list-style-type: none"> coating on extremely tough substrate for optimum cutting edge stability particularly suitable for low and medium cutting speeds and also with interrupted cut and under difficult conditions 	HC-P40 HC-M15	P											
BK82	82					T	PVD-TiN: <i>for UniTurn® only</i> <ul style="list-style-type: none"> coated extremely fine grade carbide with extremely good wear resistance and good toughness factor for machining cast iron and steel 	HC-K15	P											
BK84	84	D	R	F		M	PVD-TiCN/TiN: <ul style="list-style-type: none"> grade which combines toughness with good wear resistance for machining steel, cast steel and stainless steel 	HC-P25	P											
BK8425	8425	D	R	F		M	PVD-TiAlN/TiN: <ul style="list-style-type: none"> grade for universal application with increased wear resistance due to innovative PVD coating 	HC-P25	P											
BK8430	8430		R	F			PVD-TiAlN/TiN: <ul style="list-style-type: none"> extremely fine grades extremely good edge stability and maximum wear resistance at medium and high speed ranges 	HC-P30	P											
BK8440	8440	D					PVD-TiCN/TiN: <ul style="list-style-type: none"> coating on extremely tough substrate for medium cutting speeds and also suitable for interrupted cut 	HC-P35	P											

main area of application
 suitable in some cases

01 05 10 15 20 25 30 35 40 45 50



Summary and Description

PVD coated																				
Cutting material code	Order No.	Application					Properties	Norm code	Application range											
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor						
									01	05	10	15	20	25	30	35	40	45	50	
BK8445	8445	D					PVD-TiCN/TiN: <i>for pilot V95 only</i> • extremely tough carbide with very fine grain • extremely good wear due to coating • for use on non-alloy and alloy steels and on stainless materials	HC-P35	P											
									M											
									K											
									N											
									S											
									H											
BK85	85					T	M	PVD-TiCN/TiN: • coated carbide with optimum wear resistance and high toughness factor • medium and high cutting speeds for roughing and finishing • for non-alloy and alloy steels and cast steel	HC-P20	P										
									M											
									K											
									N											
									S											
									H											
BK87	87						M	PVD-TiN: • coated carbide on P40 base • medium to high cutting speeds for roughing and finishing and with interrupted cut • for non alloy steel, cast steel and die steels	HC-P35	P										
									M											
									K											
									N											
									S											
									H											
BK89	89	D						PVD-TiN: <i>only for pilot V95</i> • coated HSS-E high quality, high speed steel • first choice for steel and aluminum • used for low cutting speeds with medium to high feed rates • coolant essential !	HSS-Co. coated	P										
									M											
									K											
									N											
									S											
									H											
BK90	90	D						PVD-TiAlN: <i>only for pilot V95</i> • coated HSS-E high quality, high speed steel • first choice for stainless steel and iron cast • good suited for unusual materials, Ti alloys, Ni and Co alloys • coolant essential !	HSS-Co. coated	P										
									M											
									K											
									N											
									S											
									H											

main area of application

suitable in some cases

New 4-digit cutting material code e.g.

BK6115 toughness grade (05...50)
 coating type (e.g. CVD Al₂O₃)
 cutting material type: carbide + coating

Super-Hard CBN																				
CBN40	40		F	T	uncoated: • cubic boron nitride material • for turning hardened steels with an HRC of over 45, high heat resistant alloys on nickel or cobalt base	BN-H05	P													
							M													
CBN57	57	R	F	T	uncoated: • cubic boron nitride • for machining cast materials, powder metallurgical materials and high temperature alloys	BN-K05	P													
							M													
							K													
							N													
							S													
							H													
main area of application suitable in some cases																				
									01	05	10	15	20	25	30	35	40	45	50	

Super-Hard PCD																					
PKD55	55	D	R	F	T	M	uncoated: • polycrystalline diamond cutting material • for turning aluminum, ceramics and plastics	DP-K05	P												
									M												
PKD520	520	R		T			uncoated: • polycrystalline diamond cutting material with extremely high edge stability • for machining aluminum materials also at extremely high cutting values and with interrupted cut and for other non ferrous metals	DP-K10	P												
									M												
									K												
									N												
									S												
									H												
main area of application suitable in some cases																					
											01	05	10	15	20	25	30	35	40	45	50

Ceramic uncoated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance						Toughness factor						
										01	05	10	15	20	25	30	35	40	45	50	
SK44	44	R			M	uncoated: • silicon nitride • ceramic material with extremely high wear resistance and high toughness factor • for roughing and finishing cast iron • high to very high cutting speeds	CN-K30	P													
								M													
								K													
								N													
								S													
								H													
main area of application suitable in some cases																					
										01	05	10	15	20	25	30	35	40	45	50	

Ceramic coated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance						Toughness factor						
										01	05	10	15	20	25	30	35	40	45	50	
SK45	45	R				CVD-Al2O3-multilayer: • coated silicon nitride cutting material • for high performance cutting of grey cast iron and SG cast iron materials • for high cutting speeds in conjunction with high feed rates; also for interrupted cut	CC-K20	P													
								M													
								K													
								N													
								S													
								H													
main area of application suitable in some cases																					
										01	05	10	15	20	25	30	35	40	45	50	



Summary and Description

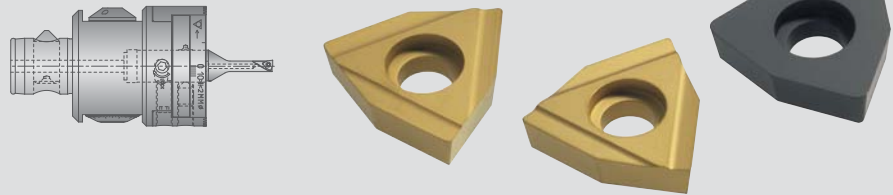
Cermets uncoated																				
Cutting material code	Order No.	Application					Properties	Norm code	Application range											
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor						
									01	05	10	15	20	25	30	35	40	45	50	
CK30	30			F			uncoated: <ul style="list-style-type: none"> for fine and finish turning high toughness factor, low wear and comparatively high cutting speeds produce longer tool life and high surface quality 	HT-P15	P	M	K	N	S	H						
CK32	32			F	T		uncoated: <ul style="list-style-type: none"> for fine and finish turning low wear and higher cutting speed producing longer tool life and good surface finish cutting material for high productivity in the upper cutting speed range 	HT-P15	P	M	K	N	S	H						
CK3215	3215			F	T		uncoated: <ul style="list-style-type: none"> wear-resistant grade with the necessary strength for machining steel and stainless steel and for cast iron materials 	HT-P10	P	M	K	N	S	H						
CK37	37		R	F	T	M	uncoated: <ul style="list-style-type: none"> good balance of wear resistance and toughness allows interrupted cuts and light roughing operations 	HT-P20	P	M	K	N	S	H						
									01	05	10	15	20	25	30	35	40	45	50	

Cermets coated																					
Cutting material code	Order No.	Application					Properties	Norm code	Application range												
		Drilling	Roughing	Fine Boring	Turning	Milling			Wear resistance					Toughness factor							
									01	05	10	15	20	25	30	35	40	45	50		
CK38	38			F			PVD-TiCN/TiN: <ul style="list-style-type: none"> high toughness factor and extremely good wear resistance this cutting material has a wide range of applications in non-alloy and alloy steel, die steel, rust-resistant and stainless steels and cast irons 	HC-P10	P	M	K	N	S	H							
CK39	39				T		PVD-TiCN/TiN: <ul style="list-style-type: none"> for fine and finish turning high toughness factor, low wear and comparatively high cutting speeds produce longer tool life and high surface quality 	HC-P15	P	M	K	N	S	H							
									01	05	10	15	20	25	30	35	40	45	50		

WOHX – standard

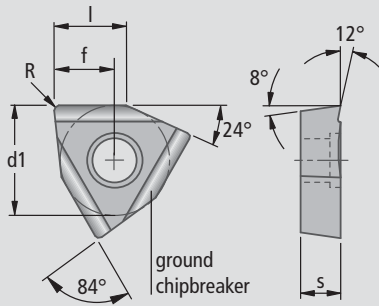
Application range:

- MicroKom® hi-flex Ø 6-8 mm
- External and internal turning
- Special tools
- Kometric® mounted seatings
- positive cutter geometry produces efficient cutting results
- particularly suitable for low output machines and unstable workpieces
- good, controllable chip formation in materials with low tensile strength



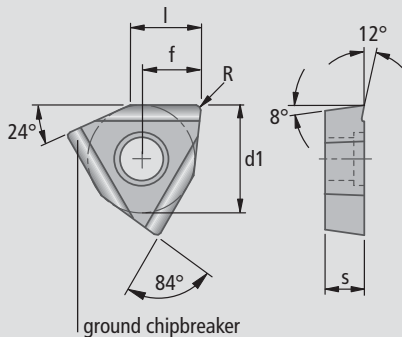
Insert geometry:

L.H. cutting form "L"



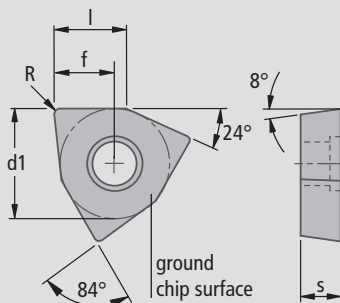
Article ISO Description	Order No.	Carbide grades				d1	s	l	γ	f	R
		uncoated		PVD coated							
Cutting edge design E = rounded F = sharp	enter carbide code										
		P40 E	K10 F	BK2710 E	BK8440 E						
		04	21	2710	8440						
WOHX 02T001..L-G12	W00 04120.01..	▲	▲	▲	▲	.157	.047	.102	12°	.087	.004
WOHX 02T002..L-G12	W00 04120.02..			▲	▲					.087	.009
Carbon steel / Alloy steel	P	●	●	●	●	Order example:					
Stainless steel	M	●		●	●	Article					
Cast iron / Ductile iron	K		●	●		WOHX 02T001 FL-G12					
Non-ferrous metals	N		●			Carbide grade					
Super-alloy / Titanium alloy	S		●			K10					
Hardened steel	H			○		Order No.					
						W00 04120.0121					

R.H. cutting form "R"



Article ISO Description	Order No.	Carbide grades			d1	s	l	γ	f	R
		uncoated	PVD coated							
Cutting edge design E = rounded	enter carbide code									
		P40 E	BK2710 E	BK8440 E						
		04	2710	8440						
WOHX 02T001..R-G12	W00 04420.01..	▲	▲	▲	.157	.047	.102	12°	.087	.004
WOHX 02T002..R-G12	W00 04420.02..		▲	▲					.087	.009
Carbon steel / Alloy steel	P	●	●	●	Order example:					
Stainless steel	M	●	●	●	Article					
Cast iron / Ductile iron	K		●		WOHX 02T001 ER-G12					
Non-ferrous metals	N				Carbide grade					
Super-alloy / Titanium alloy	S				BK2710					
Hardened steel	H			○	Order No.					
					W00 04420.012710					

Neutral cutting form "N"

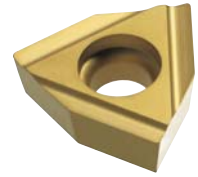


Article ISO Description	Order No.	Carbide grades	d1	s	l	f	R
		uncoated					
Cutting edge design E = rounded	enter carbide code						
		K10 E					
		21					
WOHX 02T001 EN	W00 04600.01..	▲	.157	.047	.102	.087	.004
Carbon steel / Alloy steel	P	●	Order example:				
Stainless steel	M		Article				
Cast iron / Ductile iron	K	●	WOHX 02T001 EN				
Non-ferrous metals	N	●	Carbide grade				
Super-alloy / Titanium alloy	S	●	K10				
Hardened steel	H	○	Order No.				
			W00 04600.0121				



Unisix® Insert W01

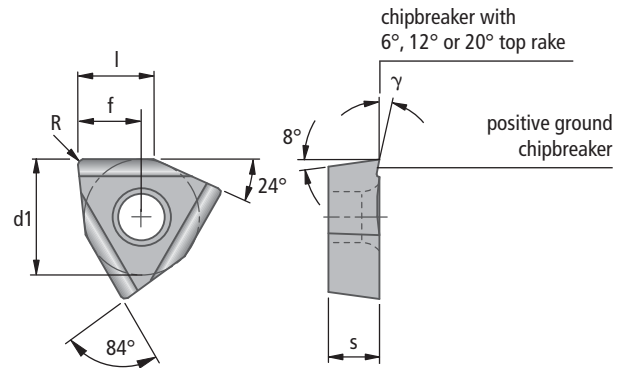
**WOHX – heavy duty
L.H. cutting form “L”**



Application range:

- External and internal turning
- TwinKom® Double Insert Tools
- Special tools
- Kometric® mounted seatings
- positive cutter geometry produces efficient cutting results
- particularly suitable for low output machines and unstable workpieces
- good, controllable chip formation in materials with low tensile strength

Insert geometry:

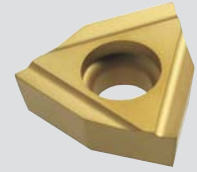


Article ISO Description	Order No.	Carbide grades								d1	s	l	γ	f	R
		uncoated				CVD coated			PVD						
		P25M E	K10 E	K10 F	BK60 E	BK61 E	BK6115 E	BK64 E	BK8425* E						
	enter carbide code ▼	03	21	21	60	61	6115	64	8425						
WOHX 030204..L-G06	W01 10060.04..	▲			▲	▲			▲	.197	.090	.126	6°	.107	.016
WOHX 030204..L-G12	W01 10120.04..	▲		▲	▲				▲				12°	.107	.016
WOHX 040304..L-G06	W01 18060.04..	▲			▲	▲			▲	.250	.125	.161	6°	.137	.016
WOHX 040304..L-G12	W01 18120.04..	▲		▲	▲				▲				12°	.137	.016
WOHX 05T302..L-G06	W01 24060.02..	▲	▲		▲				▲	.315	.150	.209	6°	.174	.008
WOHX 05T304..L-G06	W01 24060.04..						▲							.173	.016
WOHX 05T302..L-G12	W01 24120.02..	▲			▲				▲	.315	.150	.209	12°	.174	.008
WOHX 05T304..L-G12	W01 24120.04..	▲		▲	▲			▲	▲					.173	.016
WOHX 06T302..L-G06	W01 34060.02..	▲	▲		▲				▲	.394	.150	.260	6°	.218	.008
WOHX 06T304..L-G06	W01 34060.04..						▲		▲					.217	.016
WOHX 06T302..L-G12	W01 34120.02..	▲							▲	.394	.150	.260	12°	.218	.008
WOHX 06T304..L-G12	W01 34120.04..	▲		▲	▲				▲					.217	.016
WOHX 080402..L-G06	W01 42060.02..	▲			▲				▲	.472	.189	.311	6°	.261	.008
WOHX 080404..L-G06	W01 42060.04..		▲				▲		▲					.261	.016
WOHX 080402..L-G12	W01 42120.02..				▲				▲	.472	.189	.311	12°	.261	.008
WOHX 080404..L-G12	W01 42120.04..	▲		▲	▲				▲					.261	.016
WOHX 100504..L-G06	W01 50060.04..	▲	▲		▲				▲	.590	.209	.390	6°	.326	.016
WOHX 100504..L-G12	W01 50120.04..			▲					▲					.326	.016
WOHX 120606..L-G06	W01 58060.06..								▲	.693	.236	.457	6°	.382	.024
WOHX 120606..L-G12	W01 58120.06..								▲					.382	.024
Carbon steel / Alloy steel	P	●	●	●	●		●	●	●	Order example: Article WOHX 030204 EL-G06 Carbide grade P25M Order No. W01 10060.0403					
Stainless steel	M	●			●			●	●						
Cast iron / Ductile iron	K		●	●		●	●								
Non-ferrous metals	N		●	●											
Super-alloy / Titanium alloy	S		●	●											
Hardened steel	H					●	●								

* Coating BK8425 replaces BK84

Unisix® Insert W01

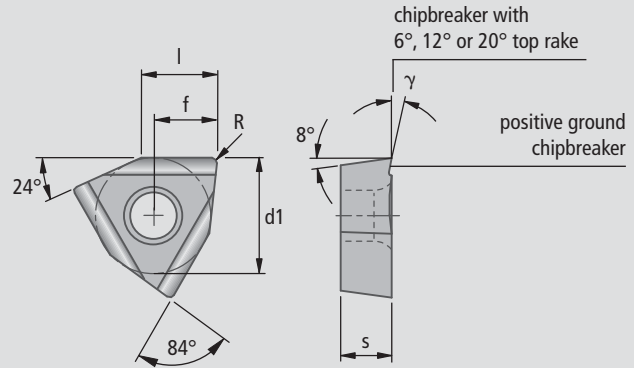
**WOHX – heavy duty
R.H. cutting form "R"**



Application range:

- External and internal turning
- TwinKom® Double Insert Tools
- Special tools
- Kometric® mounted seatings
- positive cutter geometry produces efficient cutting results
- particularly suitable for low output machines and unstable workpieces
- good, controllable chip formation in materials with low tensile strength

Insert geometry:



Article ISO Description	Order No.	Carbide grades						d1	s	l	γ	f	R
		uncoated		CVD coated			PVD coated						
		P25M E	K10 F	BK60 E	BK61 E	BK6115 E	BK8425* E						
WOHX 030204..R-G06	W01 10360.04..	▲		▲	▲		▲	.197	.090	.126	6°	.107	.016
WOHX 030204..R-G12	W01 10420.04..	▲	▲	▲			▲				12°	.107	.016
WOHX 040304..R-G06	W01 18360.04..			▲	▲		▲	.250	.125	.161	6°	.137	.016
WOHX 040304..R-G12	W01 18420.04..		▲				▲				12°	.137	.016
WOHX 05T304..R-G06	W01 24360.04..					▲		.315	.150	.209	6°	.173	.016
WOHX 05T302..R-G12	W01 24420.02..	▲	▲	▲			▲				12°	.174	.008
WOHX 06T302..R-G06	W01 34360.02..	▲						.394	.150	.260	6°	.218	.008
WOHX 06T304..R-G06	W01 34360.04..					▲						.217	.016
WOHX 06T302..R-G12	W01 34420.02..	▲		▲			▲	.394	.150	.260	12°	.218	.008
WOHX 080402..R-G06	W01 42360.02..	▲						.472	.189	.311	6°	.261	.008
WOHX 080404..R-G06	W01 42360.04..					▲						.261	.016
WOHX 080402..R-G12	W01 42420.02..	▲	▲	▲			▲	.472	.189	.311	12°	.261	.008
WOHX 080404..R-G12	W01 42420.04..						▲					.261	.016
WOHX 100504..R-G06	W01 50360.04..	▲						.590	.209	.390	6°	.326	.016
WOHX 100504..R-G12	W01 50420.04..	▲					▲				12°	.326	.016
Carbon steel / Alloy steel	P	●	●	●		●	●	Order example: Article WOHX 030204 ER-G06 Carbide grade P25M Order No. W01 10360.0403					
Stainless steel	M	●		●			●						
Cast iron / Ductile iron	K		●		●								
Non-ferrous metals	N		●										
Super-alloy / Titanium alloy	S		●										
Hardened steel	H				●	●	●						

* Coating BK8425 replaces BK84



Unisix® Insert W01

WOHX – heavy duty
Neutral cutting form "N"

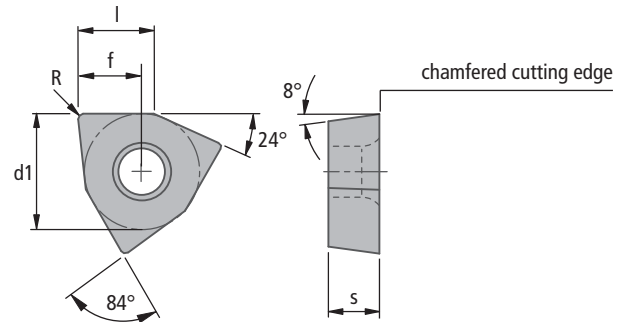


Application range:

Rough boring and turning operations on grey cast iron and SG cast iron materials

- roughing and standard machining under difficult operating conditions (interrupted cut or variations in machining allowances)
- grey cast iron and SG cast iron materials
- can be used on G01 twin cutting tools and on special tools
- extremely efficient because of high cutting speeds

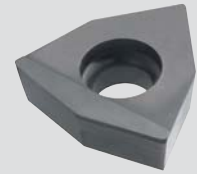
Insert geometry:



Article ISO Description	Order No.	Carbide grades		Silicon nitride		d1	s	l	f	R
		uncoated	CVD coated	uncoated	CVD coated					
Cutting edge design E = honed T = land	enter carbide code ▼									
		K10 E 21	BK61 E 61	SK44 T 44	SK45 T 45					
WOHX 030204 EN	W01 10600.04..	▲	▲			.197	.090	.126	.107	.016
WOHX 040304 EN	W01 18600.04..	▲	▲			.250	.125	.161	.137	.016
WOHX 05T304 ..N	W01 24600.04..	▲	▲	▲	▲	.315	.150	.209	.173	.016
WOHX 05T308 ..N	W01 24600.08..		▲	▲	▲				.171	.031
WOHX 06T304 EN	W01 34600.04..	▲	▲			.394	.150	.260	.217	.016
WOHX 06T308 EN	W01 34600.08..		▲						.215	.031
WOHX 080404 EN	W01 42600.04..		▲			.472	.189	.311	.261	.016
WOHX 080408 EN	W01 42600.08..		▲						.259	.031
Carbon steel / Alloy steel						Order example: Article WOHX 030204 EN Carbide grade K10 Order No. W01 10600.0421				
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel				<52HRC						

Unisix® Insert W01

WOGX – heavy duty
Neutral cutting form “N”



Application range:

PCD application range

Machining non-ferrous metals, plastics, composites, rubber, graphite, etc.

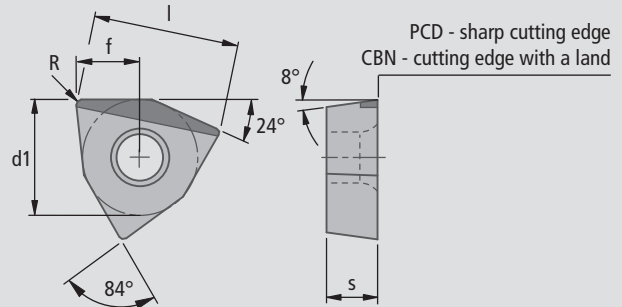
CBN application range (CBN57)

Machining cast iron materials etc.

Inserts with PCD and CBN cutting edges have the following advantages:

- high cutting speeds
- high dimensional consistency
- extremely long tool life
- high quality surface finish

Insert geometry:



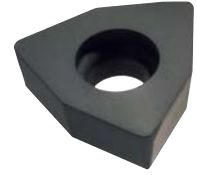
Article ISO Description	Order No.	Cutting material		d1	s	l	f	R
		PCD tipped PKD55 F 55	CBN tipped CBN57 S 57					
WOGX 05T304 ..	W01 24940.04..	▲	▲	.315	.150	.398	.173	.016
WOGX 06T304 ..	W01 34940.04..	▲	▲	.394	.150	.500	.217	.016
WOGX 080404 ..	W01 42940.04..	▲	▲	.472	.189	.602	.261	.016
Carbon steel / Alloy steel				Order example: Article WOGX 05T304 S Cutting material CBN57 Order No. W01 24940.0457				
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals		●	●					
Super-alloy / Titanium alloy			●					
Hardened steel								



Unisix® Insert W01

WOHX heavy duty L.H. cutting form "L"

for clockwise-rotating tools
Approach angle $\kappa = 90^\circ$

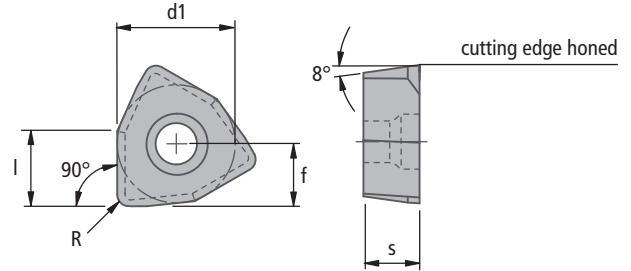



Application range:

Roughing and semi finish machining tools with multiple inserts

- roughing and semi finishing
- grey cast iron and graphite cast iron materials
- higher feed rates
- high quality surface finish

Insert geometry:

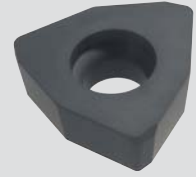


Article ISO Description	Order No.	Carbide grades					d1	s	l	f	R
		CVD coated									
Cutting edge design E = honed	enter carbide code	 BK6115 E 6115									
WOHX 05T3PN EL	W01 24600.90..	▲					0.315	0.150	0.201	0.166	0.031
WOHX 06T3PN EL	W01 34600.90..	▲					0.394	0.150	0.252	0.210	0.031
WOHX 0804PN EL	W01 42600.90..	▲					0.472	0.189	0.303	0.254	0.031
WOHX 1005PN EL	W01 50600.90..	▲					0.590	0.209	0.382	0.320	0.031
Carbon steel / Alloy steel	P	●					Order example: Article WOHX 05T3PN EL Carbide grade BK61 Order No. W01 24600.906115				
Stainless steel	M										
Cast iron / Ductile iron	K										
Non-ferrous metals	N										
Super-alloy / Titanium alloy	S										
Hardened steel	H	◐ <52HRC									

Unisix® Insert W01

WOHX heavy duty L.H. cutting form "L"

for clockwise-rotating tools
Approach angle $\alpha = 75^\circ$

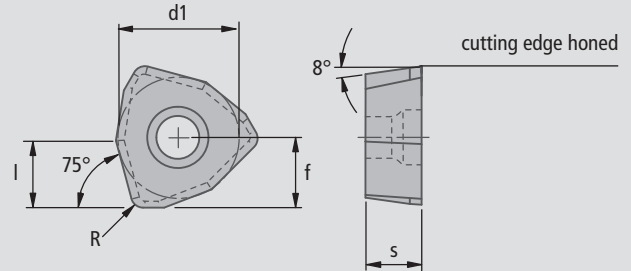










Application range:

Roughing and semi finish machining tools with multiple inserts

- roughing and semi finishing
- grey cast iron and graphite cast iron materials
- higher feed rates
- high quality surface finish

Insert geometry:

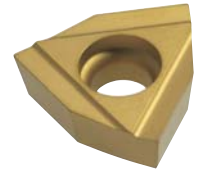


Article ISO Description	Order No.	Carbide grades								
		CVD coated								
Cutting edge design E = honed	enter carbide code		BK6115	E	6115	d1	s	l	f	R
WOHX 05T3EN EL	W01 24600.75..	▲				0.315	0.150	0.173	0.182	0.031
WOHX 06T3EN EL	W01 34600.75..	▲				0.394	0.150	0.224	0.235	0.031
WOHX 0804EN EL	W01 42600.75..	▲				0.472	0.189	0.272	0.287	0.031
WOHX 1005EN EL	W01 50600.75..	▲				0.590	0.209	0.350	0.366	0.031
Carbon steel / Alloy steel						Order example: Article WOHX 05T3EN EL Carbide grade BK61 Order No. W01 24600.756115				
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										
					 <52HRC					

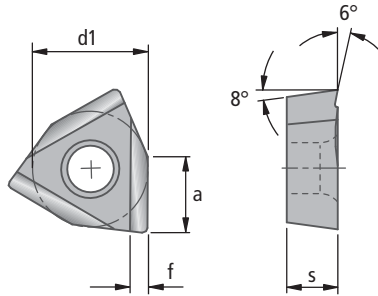


Unisix® Insert W01

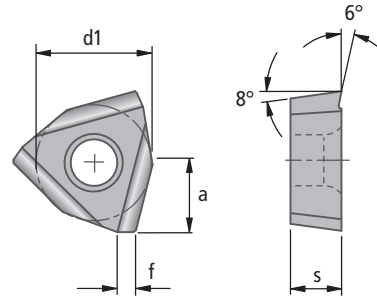
**WOHX heavy duty
for milling cutters**




















Insert geometry:



Approach angle 90°
for corner milling cutter F020



Approach angle 75°
for face milling cutter F020

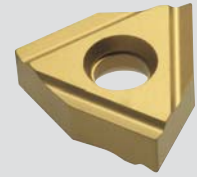
Article ISO Description	Order No.	Carbide grades			d1	s	γ	f	R
		uncoated		CVD coated					
		 P25M E 03	 K10 E 21	 BK64 E 64					
WOHX 06T3PA ER-G06	W01 34360.34..	▲	▲	▲	0.394	0.150	6°	0.055	0.236
WOHX 06T3EA ER-G06	W01 34360.35..		▲						0.232
WOHX 0804PA ER-G06	W01 42360.34..	▲	▲		0.472	0.189	6°	0.055	0.275
Carbon steel / Alloy steel					Order example: Article WOHX 06T3PA ER-G06 Carbide grade P25M Order No. W01 34360.3403				
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									

Unisix® Insert W04

WNHX P6-Cutting edges

L.H. cutting form "L"

with positive ground chipbreaker



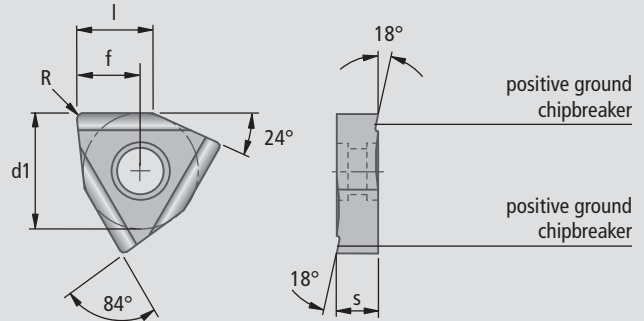
Application range:

Internal and external turning

The Unisix insert with 6 cutting edges is an efficient and economic insert. The six cutting edges can be used because of the negative insert seating.

The positively ground chipbreakers guarantee a good chip form and a soft cut.

Insert geometry:



Article ISO Description	Order No.	Carbide grades				d1	s	l	f	R
		P25	P40	K10	BK60					
Cutting edge design E = honed F = sharp	enter carbide code	E	E	F	E					
		12	04	21	60					
WNHX 060302..L-G18	W04 34180.02..	▲				0.394	0.138	0.256	0.218	0.008
WNHX 08T302..L-G18	W04 42180.02..	▲	▲	▲	▲	0.472	0.177	0.295	0.261	0.008
WNHX 100404..L-G18	W04 50180.04..	▲	▲		▲	0.591	0.197	0.374	0.326	0.016
Carbon steel / Alloy steel						Order example: Article WNHX 060302 EL-G18 Carbide grade P25 Order No. W04 34180.0212				
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										

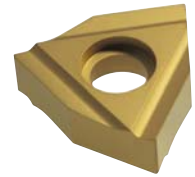


Unisix® Insert W04

WNHX P6-Cutting edges

R.H. cutting form "R"

with positive ground chipbreaker



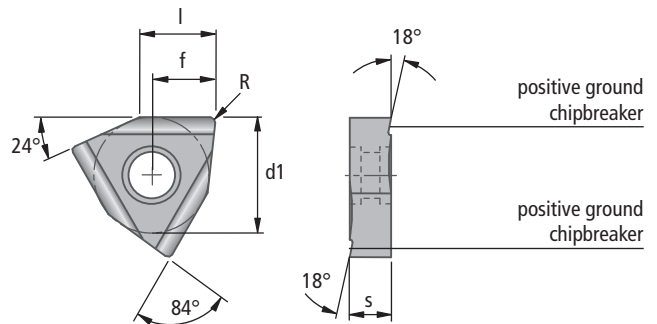
Application range:

Internal and external turning

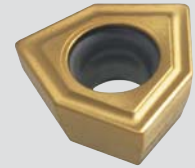
The Unisix insert with 6 cutting edges is an efficient and economic insert. The six cutting edges can be used because of the negative insert seating.

The positively ground chipbreakers guarantee a good chip form and a soft cut.

Insert geometry:



Article ISO Description	Order No.	Carbide grades					d1	s	l	f	R
		uncoated				CVD coated					
Cutting edge design E = honed F = sharp	enter carbide code	P10 E 01	P25 E 12	P40 E 04	K10 F 21	BK60 E 60					
WNHX 060302..R-G18	W04 34480.02..		▲				0.394	0.138	0.256	0.218	0.008
WNHX 08T302..R-G18	W04 42480.02..	▲	▲	▲	▲	▲	0.472	0.177	0.295	0.261	0.008
WNHX 08T304..R-G18	W04 42480.04..		▲							0.261	0.016
WNHX 100404..R-G18	W04 50480.04..	▲	▲	▲	▲	▲	0.590	0.197	0.374	0.326	0.016
WNHX 120606..R-G18	W04 58480.06..		▲				0.693	0.236	0.453	0.382	0.024
Carbon steel / Alloy steel		●	●	●	●	●	Order example: Article WNHX 060302ER-G18 Carbide grade P25 Order No. W04 34480.0212				
Stainless steel		●	●	●		●					
Cast iron / Ductile iron						●					
Non-ferrous metals						●					
Super-alloy / Titanium alloy						●					
Hardened steel											

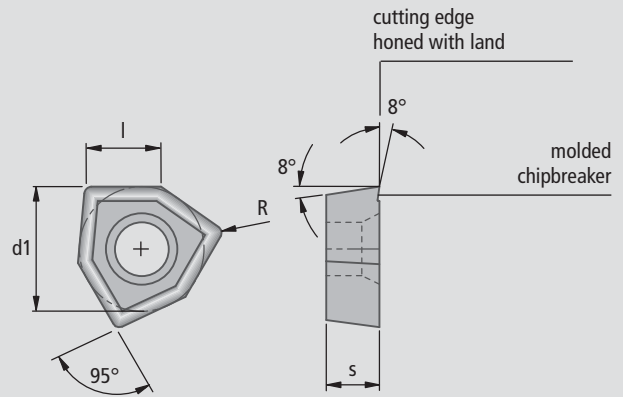


Application range:

- **Drilling into the solid**
- **Special tools**

Excellent for all roughing operations for which turning accuracy of peripheral ground inserts is not essential. Suitable for medium and high tensile strength steels and cast irons, subject to grade.

Insert geometry:



Please note:

These inserts are being replaced by W27 ..01...

Order No.	Carbide grades			d1	s	l	R
	CVD coated	PVD coated					
	BK64 64	BK79 79	BK84 84				
W24 12010.04..		▲		0.216	0.090	0.134	0.016
W24 20010.04..	▲	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel				Order example: Carbide grade BK79 Order No. W24 12010.0464			
Stainless steel							
Cast iron / Ductile iron							
Non-ferrous metals							
Super-alloy / Titanium alloy							
Hardened steel							



Unisix® Insert W24

W24..11



Application range:

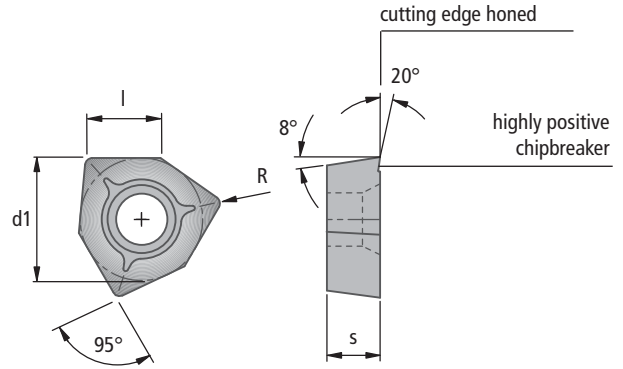
with BK77 coating

For cutting aluminium alloys and plastics at medium cutting speeds. Tough characteristics with a high resistance to build-up on cutting edges.

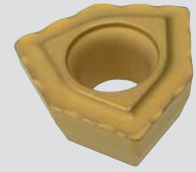
with BK50 coating

For cutting aluminium alloys, abrasive materials, graphite, plastics and bonded materials at high cutting speeds.

Insert geometry:



Order No.	Carbide grades			d1	s	l	R
	uncoated	diamond coated	PVD coated				
 K10 21	 BK50 50	 BK77 77					
enter carbide code ▼							
W24 12110.04..		▲	▲	0.216	0.090	0.134	0.016
W24 20110.04..	▲	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel P	●			Order example: Carbide grade BK77 Order No. W24 12110.0477			
Stainless steel M							
Cast iron / Ductile iron K	●						
Non-ferrous metals N	●	●	●				
Super-alloy / Titanium alloy S	●		●				
Hardened steel H							



Application range:

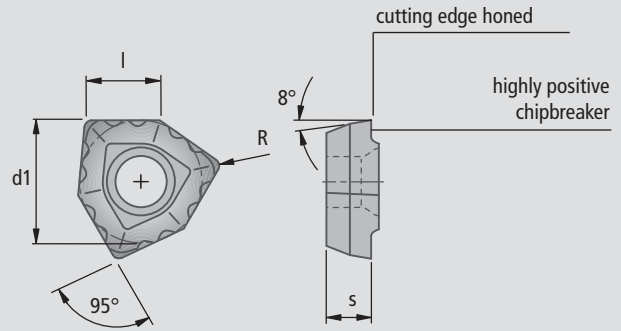
with BK71 coating

Multiple layer CVD coating with maximum wear resistance on a tough substrate. Drilling into the solid in the medium to high cutting speed range in structural and carbon steels and in stainless and acid-resistant steels.

with BK79 coating

A wear-resistant PVD coating on a tough P40 substrate. Drilling into the solid in the low to medium cutting speed range. Particularly suitable as internal inserts and with interrupted cut.

Insert geometry:



Note: Because of the special cutting edge geometry, the inserts W24..13 can only be used for R.H. cutting KUB® drills.

Order No.	Carbide grades		d1	s	l	R
	CVD coated BK71 71	PVD coated BK79 79				
W24 12130.04..	▲	▲	0.216	0.090	0.134	0.016
W24 20130.04..	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel			Order example: Carbide grade BK71 Order No. W24 12130.0471			
Stainless steel						
Cast iron / Ductile iron						
Non-ferrous metals						
Super-alloy / Titanium alloy						
Hardened steel						



Unisix® Insert W27

W27..00



Application range:

Drilling into the solid <math>< \varnothing 0.945 \text{ inch (24 mm)}</math>

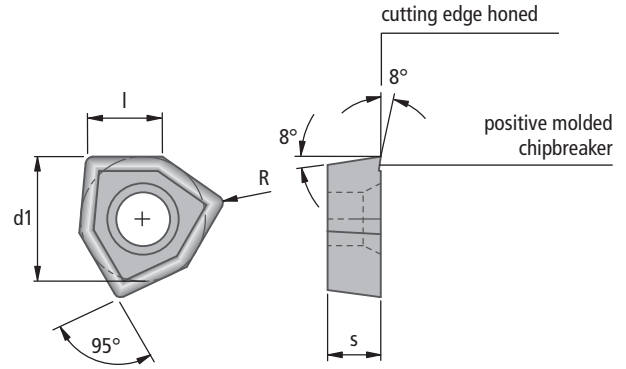
A mixture of parts are normally used on solid boring tools. Here a coated insert is used as the external cutting edge and an uncoated insert for the internal cutting edge.

The 95° cutting angle increases the stability of the insert and produces a clear improvement in machining safety.

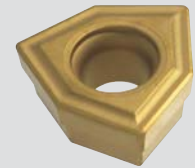
Optimum chip form at a feed of $f \leq .0023 \text{ in.}$

Used as a central insert only.

Insert geometry:



Order No.	Carbide grades		d1	s	l	R
	uncoated	CVD coated				
enter carbide code ▼	 K10 21	 BK64 64				
W27 12000.04..		▲	0.216	0.090	0.134	0.016
W27 20000.04..	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel P			Order example: Carbide grade BK64 Order No. W27 12000.0464			
Stainless steel M						
Cast iron / Ductile iron K						
Non-ferrous metals N						
Super-alloy / Titanium alloy S						
Hardened steel H						



Application range:

Drilling into the solid <math>< \text{Ø } 0.945 \text{ inch (24 mm)}</math>

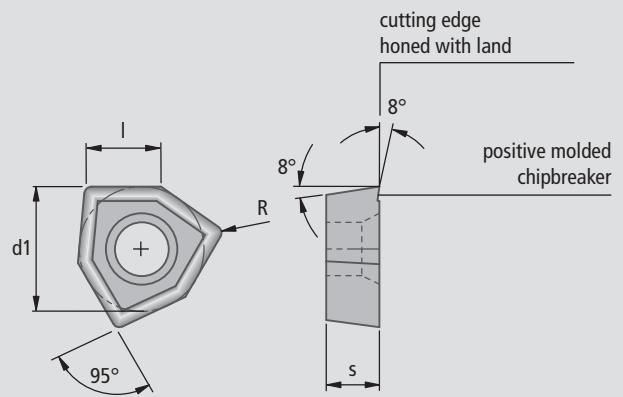
A mixture of parts are normally used on solid boring tools. Here a coated insert is used as the external cutting edge and an uncoated insert for the internal cutting edge.

The 95° cutting angle increases the stability of the insert and produces a clear improvement in machining safety.

Optimum chip form at a feed of $f \leq .0023 \text{ in.}$

Used as a central insert only.

Insert geometry:

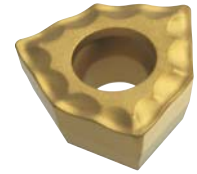


Order No.	Carbide grades									d1	s	l	R
	uncoated			CVD coated				PVD coated					
enter carbide code ▼	03	04	21	60	61	64	69	79	84				
W27 12010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲	0.216	0.090	0.134	0.016
W27 20010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel										Order example: Carbide grade P25M Order No. W27 12010.0403			
Stainless steel													
Cast iron / Ductile iron													
Non-ferrous metals													
Super-alloy / Titanium alloy													
Hardened steel													



Unisix® Insert W27

W27..10



Application range:

Drilling into the solid <math>< \varnothing 0.945 \text{ inch (24 mm)}</math>

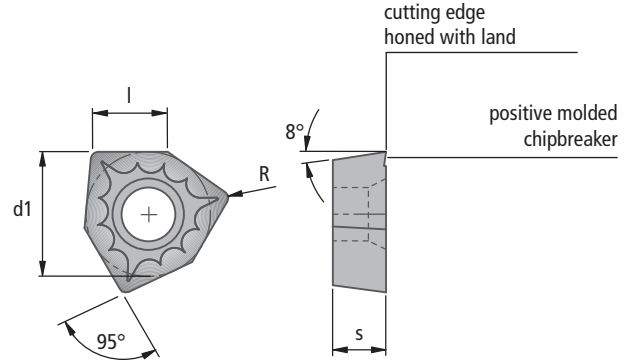
A mixture of parts are normally used on solid boring tools. Here a coated insert is used as the external cutting edge and an uncoated insert for the internal cutting edge.














The 95° cutting angle increases the stability of the insert and produces a clear improvement in machining safety.

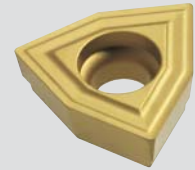
Optimum chip form at a feed of $f \leq .0023 \text{ in.}$

Used as a central insert only.

Insert geometry:



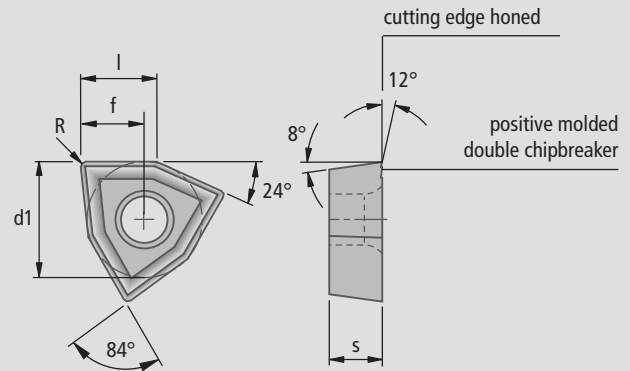
Order No.	Carbide grades		d1	s	l	R
	CVD coated  BK64 64	PVD coated  BK79 79				
W27 12100.04..	▲	▲	0.216	0.090	0.134	0.016
W27 20100.04..	▲	▲	0.275	0.118	0.170	0.016
Carbon steel / Alloy steel 			Order example: Carbide grade BK64 Order No. W27 12100.0464			
Stainless steel 						
Cast iron / Ductile iron 						
Non-ferrous metals 						
Super-alloy / Titanium alloy 						
Hardened steel 						



Application range:

- External and internal turning
- KUB® solid drill
- TwinKom® Double Insert Tools
- Special tools
- Kometric® mounted seatings
- positive cutter geometry produces efficient cutting results
- particularly suitable for low output machines and unstable workpieces
- good, controllable chip formation in materials with low tensile strength

Insert geometry:



Article ISO Description	Order No.	Carbide grades								Cermet	d1	s	l	f	R
		uncoated		CVD coated				PVD coated	uncoated						
	enter carbide code	03	21	60	61	6115	62	64	8425	37					
WOEX 05T304-00	W29 24000.04..	▲	▲	▲	▲	▲		▲	▲	▲	0.315	0.150	0.209	0.173	0.016
WOEX 06T304-00	W29 34000.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲	0.394	0.150	0.260	0.217	0.016
WOEX 080404-00	W29 42000.04..	▲	▲	▲	▲	▲		▲	▲		0.472	0.189	0.311	0.261	0.016
WOEX 100504-00	W29 50000.04..	▲	▲	▲	▲	▲		▲	▲		0.590	0.209	0.390	0.326	0.016
WOEX 100508-00	W29 50000.08..					▲		▲							
WOEX 120608-00	W29 58000.08..	▲	▲	▲	▲	▲		▲	▲		0.693	0.236	0.457	0.381	0.031
Carbon steel / Alloy steel	P	●	●	●	●	●		●	●	●	Order example: Article WOEX 05T304-00 Carbide grade P25M Order No. W29 24000.0403				
Stainless steel	M	●		●		●		●	●	●					
Cast iron / Ductile iron	K		●		●	●	●		●	●					
Non-ferrous metals	N		●							●					
Super-alloy / Titanium alloy	S		●												
Hardened steel	H					◐				◐ ≤52 HRC					



Unisix® Insert W29

W29..01

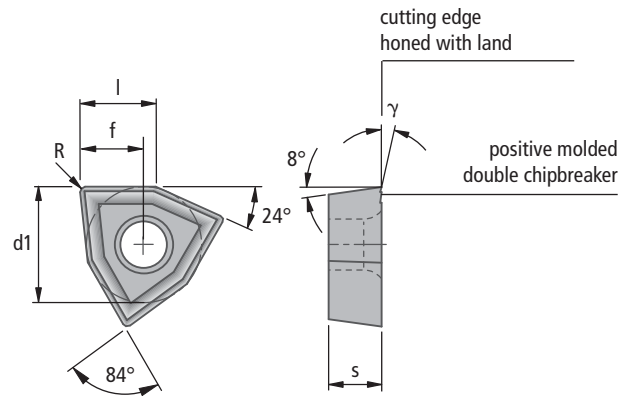
WOEX heavy duty



Application range:

- External and internal turning
- KUB® solid drill
- TwinKom® Double Insert Tools
- Special tools
- Kometric® mounted seatings
- positive cutter geometry produces efficient cutting results
- particularly suitable for low output machines and unstable workpieces
- good, controllable chip formation in materials with low tensile strength

Insert geometry:



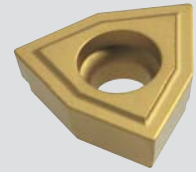
Article ISO Description	Order No.	Carbide grades												d1	s	l	γ	f	R
		uncoated			CVD coated						PVD coated								
		P25M 03	P40 04	K10 21	BK 60	BK 61	BK 6115	BK 62	BK 64	BK* 6420	BK 72	BK 79	BK 7930						
WOEX 020102-01	W29 04010.02..										▲	▲	0.157	0.063	0.102	12°	0.086	0.008	
WOEX 030204-01	W29 10010.04..		▲	▲				▲			▲	▲	0.197	0.090	0.126	8°	0.107	0.016	
WOEX 040304-01	W29 18010.04..		▲	▲				▲			▲	▲	0.250	0.125	0.161	8°	0.137	0.016	
WOEX 05T304-01	W29 24010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	0.315	0.150	0.209	12°	0.173	0.016
WOEX 05T308-01	W29 24010.08..	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲					0.171	0.031
WOEX 06T304-01	W29 34010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	0.394	0.150	0.260	12°	0.217	0.016
WOEX 06T308-01	W29 34010.08..	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲					0.215	0.031
WOEX 080404-01	W29 42010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	0.472	0.189	0.311	12°	0.261	0.016
WOEX 080408-01	W29 42010.08..	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲					0.259	0.031
WOEX 100504-01	W29 50010.04..	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	0.590	0.209	0.390	12°	0.326	0.016
WOEX 100508-01	W29 50010.08..	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲					0.324	0.031
WOEX 120608-01	W29 58010.08..	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	0.693	0.236	0.457	12°	0.381	0.031
Carbon steel / Alloy steel	P	●	●	●	●		●		●	●	●	●	●	Order example: Article WOEX 05T304-01 Carbide grade P25M Order No. W29 24010.0403					
Stainless steel	M	●	●		●		●		●	●	●	●	●						
Cast iron / Ductile iron	K			●		●	●		●		●	●	●						
Non-ferrous metals	N			●															
Super-alloy / Titanium alloy	S			●															
Hardened steel	H					●	●	●	●	●	●	●	●						

* Coating BK6420 replaces BK69; coating BK8425 replaces BK84



Note:

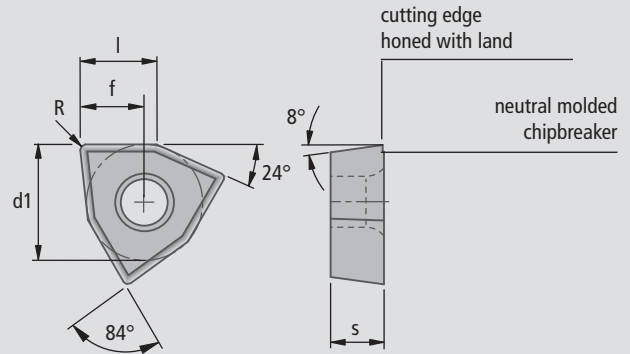
Insert W29..01 in BK6115 and BK6420 is **NOT** suitable for use as an internal cutting edge for solid drilling.


















Application range:

- **KUB® solid drill**
- **TwinKom® Double Insert Tools**
- **Special tools**
- Excellent for interrupted cut because of stable cutting angle (82°) (top rake 0°) and chamfered cutting edge. A first class chipbreaker also produces good chip formation even from difficult materials.
- Cutting edge chamfered and rounded.
- For cutting depths of < 1.5 mm

Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	f	R
		uncoated	CVD coated						
	enter carbide code ▼	 P25M 03	 BK60 60	 BK64 64					
WOEX 05T304-02	W29 24020.04..		▲	▲	0.315	0.150	0.209	0.173	0.016
WOEX 05T308-02	W29 24020.08..			▲				0.171	0.031
WOEX 06T304-02	W29 34020.04..	▲	▲	▲	0.394	0.150	0.260	0.217	0.016
WOEX 06T308-02	W29 34020.08..			▲				0.215	0.031
WOEX 080404-02	W29 42020.04..	▲		▲	0.472	0.189	0.311	0.261	0.016
WOEX 080408-02	W29 42020.08..			▲				0.259	0.031
WOEX 100504-02	W29 50020.04..	▲		▲	0.590	0.209	0.390	0.326	0.016
WOEX 100508-02	W29 50020.08..			▲				0.324	0.031
WOEX 120608-02	W29 58020.08..			▲	0.693	0.236	0.457	0.381	0.031
Carbon steel / Alloy steel					Order example: Article WOEX 05T304-02 Carbide grade BK64 Order No. W29 24020.0464				
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									



Note:

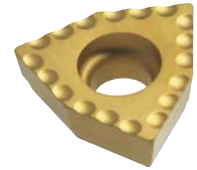
Insert W29..02 is **NOT** suitable for use as an internal cutting edge for solid drilling.



Unisix® Insert W29

W29..03

WOEX heavy duty



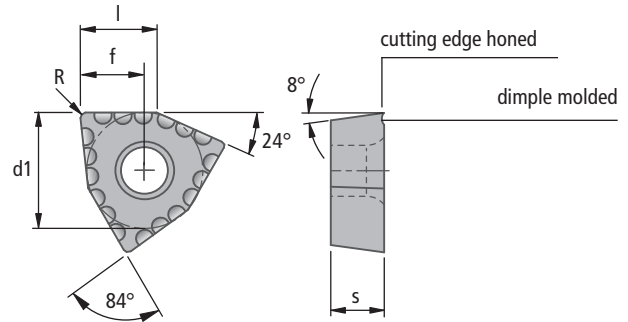
Application range:

- KUB® solid drill
- TwinKom® Double Insert Tools
- Special tools
- Internal and external machining

The dimple shaped chipbreaker causes a different chip flow action.

The chip is compressed in cross section and tends to break more rapidly.

Insert geometry:



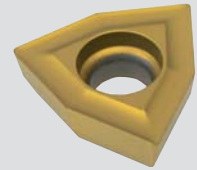
Article ISO Description	Order No.	Carbide grades			d1	s	l	f	R
		uncoated	CVD coated	PVD coated					
	enter carbide code ▼	 P25M 03	 BK6425 6425	 BK8425* 8425					
WOEX 030201-03	W29 10030.04..		▲	▲	0.197	0.090	0.126	0.107	0.016
WOEX 040304-03	W29 18030.04..		▲	▲	0.236	0.125	0.161	0.137	0.016
WOEX 05T304-03	W29 24030.04..	▲	▲	▲	0.315	0.150	0.209	0.173	0.016
WOEX 05T308-03	W29 24030.08..		▲					0.171	0.031
WOEX 06T304-03	W29 34030.04..	▲	▲	▲	0.394	0.150	0.260	0.217	0.016
WOEX 06T308-03	W29 34030.08..		▲	▲				0.215	0.031
WOEX 080404-03	W29 42030.04..	▲	▲	▲	0.472	0.189	0.311	0.261	0.016
WOEX 080408-03	W29 42030.08..		▲	▲				0.259	0.031
WOEX 100504-03	W29 50030.04..	▲	▲	▲	0.590	0.209	0.390	0.326	0.016
WOEX 100508-03	W29 50030.08..		▲	▲				0.324	0.031
WOEX 120608-03	W29 58030.08..	▲	▲	▲	0.693	0.236	0.457	0.381	0.031
Carbon steel / Alloy steel P		●	●	●	Order example: Article WOEX 030201-03 Carbide grade BK6420 Order No. W29 10030.046420				
Stainless steel M		●	●	●					
Cast iron / Ductile iron K				●					
Non-ferrous metals N									
Super-alloy / Titanium alloy S									
Hardened steel H									

* Coating BK8425 replaces BK84



Note:

Insert W29..03 is **NOT** suitable for use as an internal cutting edge for solid drilling.

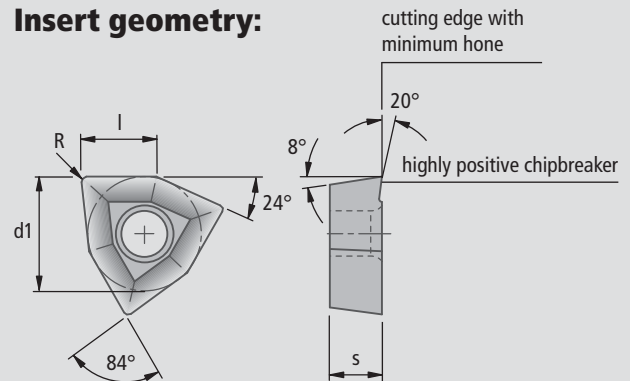


Application range:

- KUB® solid drill
- TwinKom® Double Insert Tools
- Special tools
- Internal and external machining

The highly positive chip groove with minimal chamfer for soft cutting operations, mainly on aluminium

Insert geometry:



Article ISO Description	Order No. <small>enter carbide code</small>	Carbide grades				d1	s	l	R
		uncoated K10 21	diamond coated BK50 50	PVD coated BK77 77 BK7710 7710					
WOEX 030204-11	W29 10110.04..	▲	▲	▲	▲	0.197	0.090	0.126	0.016
WOEX 040304-11	W29 18110.04..	▲	▲	▲	▲	0.250	0.125	0.161	0.016
WOEX 05T304-11	W29 24110.04..	▲	▲	▲	▲	0.315	0.150	0.209	0.016
WOEX 06T304-11	W29 34110.04..	▲	▲	▲	▲	0.394	0.150	0.260	0.016
WOEX 080404-11	W29 42110.04..	▲	▲	▲	▲	0.472	0.189	0.311	0.016
WOEX 100504-11	W29 50110.04..	▲	▲	▲	▲	0.590	0.209	0.390	0.016
Carbon steel / Alloy steel						Order example: Article WOEX 030204-11 Carbide grade K10 Order No. W29 10110.0421			
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									



Unisix® Insert W29

W29..13

WOEX heavy duty



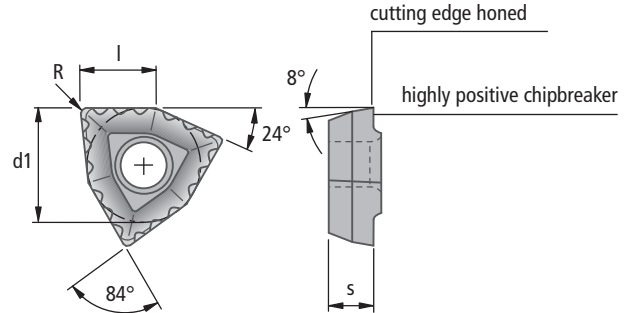
Application range:





- KUB® solid drill
- TwinKom® Double Insert Tools
- Special tools
- Internal and external machining

The dimple shaped chipbreaker causes a different chip flow action.

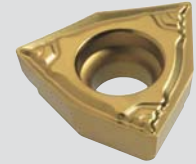
The chip is compressed in cross section and tends to break more rapidly.

Insert geometry:



Article ISO Description	Order No.	Carbide grades				d1	s	I	R
		uncoated	CVD coated	PVD coated					
	enter carbide code ▼	 P40 04	 BK73 73	 BK79 79	 BK8425* 8425				
WOEX 030204-13	W29 10130.04..	▲	▲	▲	▲	0.197	0.090	0.126	0.016
WOEX 040304-13	W29 18130.04..	▲	▲	▲	▲	0.250	0.125	0.161	0.016
WOEX 05T304-13	W29 24130.04..	▲	▲	▲	▲	0.315	0.150	0.209	0.016
WOEX 06T304-13	W29 34130.04..	▲	▲	▲	▲	0.394	0.150	0.260	0.016
WOEX 080404-13	W29 42130.04..	▲	▲	▲	▲	0.472	0.189	0.311	0.016
WOEX 100504-13	W29 50130.04..		▲	▲	▲	0.590	0.209	0.390	0.016
WOEX 120608-13	W29 58130.08..	▲		▲	▲	0.693	0.236	0.457	0.031
Carbon steel / Alloy steel	P	●	●	●	●	Order example: Article WOEX 030204-13 Carbide grade P40 Order No. W29 10130.0404			
Stainless steel	M	●	●	●	●				
Cast iron / Ductile iron	K				●				
Non-ferrous metals	N								
Super-alloy / Titanium alloy	S			●					
Hardened steel	H								

* Coating BK8425 replaces BK84

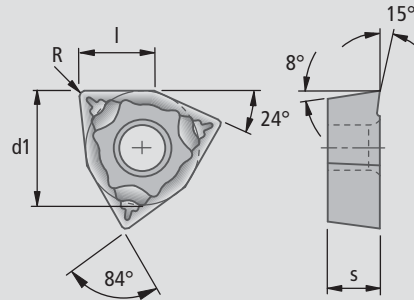


















Application range:

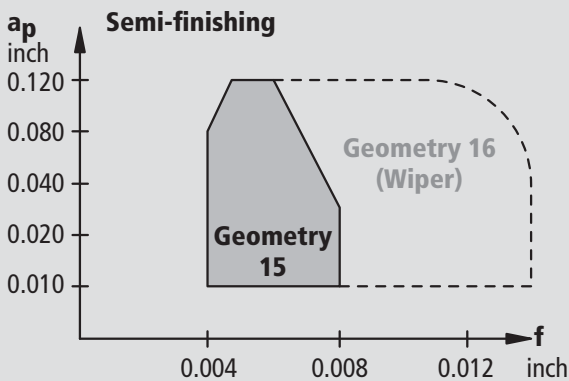
- TwinKom® Double Insert Tools
- Special tools
- Internal and external machining

Optimum chip formation for cutting depths from 0.010 inch (0.25 mm)

Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	R
		CVD coated	PVD coated					
	enter carbide code ▼	 BK60 60	 BK73 73	 BK84 84				
WOGX 030204-15	W29 10150.04..	▲	▲	▲	0.197	0.090	0.126	0.016
WOGX 040304-15	W29 18150.04..	▲	▲	▲	0.250	0.125	0.161	0.016
WOGX 05T304-15	W29 24150.04..	▲	▲	▲	0.315	0.150	0.209	0.016
WOGX 06T304-15	W29 34150.04..	▲	▲	▲	0.394	0.150	0.260	0.016
WOGX 080404-15	W29 42150.04..	▲	▲	▲	0.472	0.189	0.311	0.016
Carbon steel / Alloy steel 					Order example: Article WOGX 030204-15 Carbide grade BK60 Order No. W29 10150.0460			
Stainless steel 								
Cast iron / Ductile iron 								
Non-ferrous metals 								
Super-alloy / Titanium alloy 								
Hardened steel 								



Unisix® Insert W29

W29..16

WOGX heavy duty

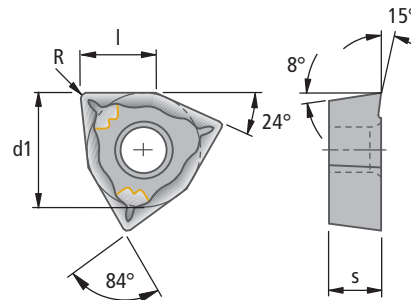


















Application range:

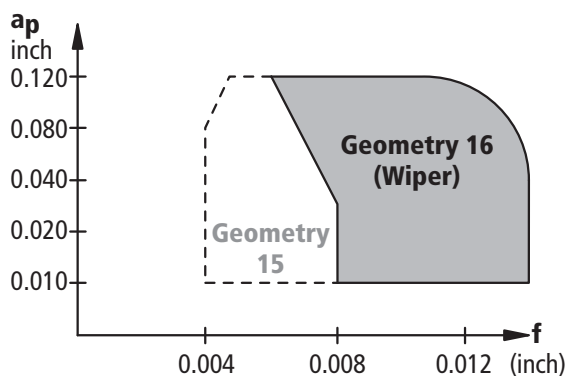
- TwinKom® Double Insert Tools
- Special tools
- Internal and external machining

Optimum chip formation for cutting depths from 0.010 inch (0.25 mm)

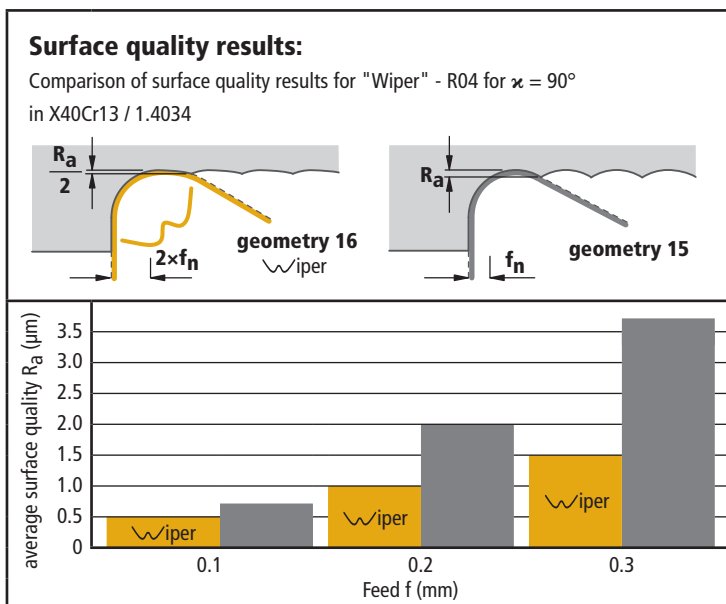
Insert geometry:



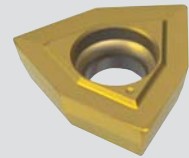
Article ISO Description	Order No.	Carbide grades			d1	s	l	R
		 CVD coated BK60 60	 CVD coated BK73 73	 PVD coated BK84 84				
WOGX 030204-16	W29 10160.04..	▲	▲	▲	0.197	0.090	0.126	0.016
WOGX 040304-16	W29 18160.04..	▲	▲	▲	0.250	0.125	0.161	0.016
WOGX 05T304-16	W29 24160.04..	▲	▲	▲	0.315	0.150	0.209	0.016
WOGX 06T304-16	W29 34160.04..	▲	▲	▲	0.394	0.150	0.260	0.016
WOGX 080404-16	W29 42160.04..	▲	▲	▲	0.472	0.189	0.311	0.016
Carbon steel / Alloy steel					Order example: Article WOGX 030204-16 Carbide grade BK60 Order No. W29 10160.0460			
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								



7.38



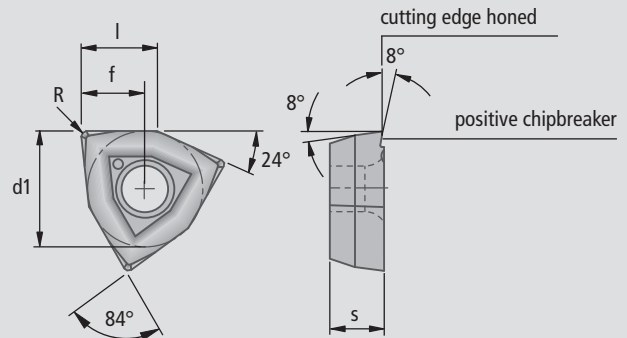
▲ Availability: for delivery see current price and stock list



Application range:

- External and internal turning
- KUB® solid drill
- TwinKom® Double Insert Tools
- Kometric® mounted seatings

Insert geometry:



Article ISO Description	Order No. enter carbide code ▼	Carbide grades		d1	s	l	R
		 BK2730 2730	 BK8430 8430				
WOEX 030204-20	W29 10200.04..	▲	▲	0.197	0.090	0.126	0.016
WOEX 040304-20	W29 18200.04..	▲	▲	0.250	0.125	0.161	0.016
WOEX 05T304-20	W29 24200.04..	▲	▲	0.315	0.150	0.209	0.016
WOEX 06T304-20	W29 34200.04..	▲	▲	0.394	0.150	0.260	0.016
WOEX 080404-20	W29 42200.04..	▲	▲	0.472	0.189	0.311	0.016
WOEX 100504-20	W29 50200.04..	▲	▲	0.590	0.209	0.390	0.016
Carbon steel / Alloy steel				Order example: Article WOEX 030204-20 Carbide grade BK2730 Order No. W29 10200.042730			
Stainless steel							
Cast iron / Ductile iron							
Non-ferrous metals							
Super-alloy / Titanium alloy							
Hardened steel							



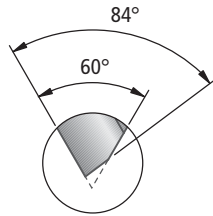
Insert W30

TOHX

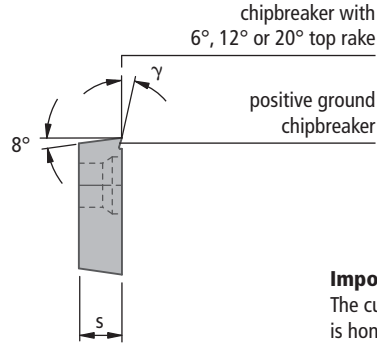
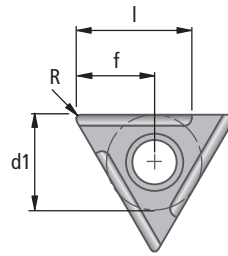
L.H. cutting form "L"



Insert geometry:



without tip radius R = 0.0 inch



Important note!

The cutting edge on Cermet inserts is honed.

Article ISO Description	Order No.	Carbide grades									
		uncoated					CVD coated				
TOHX 06T100..L-G06	W30 04060.30..				▲		▲				
TOHX 06T102..L-G06	W30 04060.02..		▲			▲	▲	▲	▲	▲	
TOHX 06T103..L-G06	W30 04060.03..		▲	▲		▲	▲	▲	▲	▲	
TOHX 06T104..L-G06	W30 04060.04..		▲			▲	▲			▲	
TOHX 06T100..L-G12	W30 04120.30..						▲				
TOHX 06T102..L-G12	W30 04120.02..		▲			▲	▲			▲	
TOHX 06T103..L-G12	W30 04120.03..		▲			▲	▲			▲	
TOHX 06T104..L-G12	W30 04120.04..		▲			▲	▲			▲	
TOHX 06T102..L-G20	W30 04200.02..	▲					▲				
TOHX 06T103..L-G20	W30 04200.03..					▲	▲				
TOHX 090200..L-G06	W30 14060.30..				▲		▲				
TOHX 090202..L-G06	W30 14060.02..		▲		▲		▲	▲	▲	▲	
TOHX 090204..L-G06	W30 14060.04..		▲		▲		▲	▲	▲	▲	
TOHX 090208..L-G06	W30 14060.08..				▲		▲	▲			
TOHX 090200..L-G12	W30 14120.30..				▲		▲				
TOHX 090202..L-G12	W30 14120.02..		▲			▲	▲			▲	
TOHX 090204..L-G12	W30 14120.04..	▲	▲		▲		▲			▲	
TOHX 090208..L-G12	W30 14120.08..					▲	▲				
TOHX 090202..L-G20	W30 14200.02..		▲			▲	▲				
TOHX 090204..L-G20	W30 14200.04..					▲	▲				
TOHX 140302..L-G06	W30 26060.02..		▲		▲		▲	▲	▲		
TOHX 140304..L-G06	W30 26060.04..		▲		▲		▲	▲	▲	▲	
TOHX 140305..L-G06	W30 26060.05..		▲		▲		▲	▲	▲	▲	
TOHX 140308..L-G06	W30 26060.08..						▲	▲			
TOHX 140302..L-G12	W30 26120.02..		▲			▲	▲			▲	
TOHX 140304..L-G12	W30 26120.04..		▲			▲	▲				
TOHX 140305..L-G12	W30 26120.05..		▲			▲	▲			▲	
TOHX 140308..L-G12	W30 26120.08..						▲				
TOHX 140302..L-G20	W30 26200.02..					▲					
TOHX 140305..L-G20	W30 26200.05..					▲					
TOHX 22T308..L-G06	W30 44060.08..		▲								
TOHX 22T308..L-G12	W30 44120.08..										
Carbon steel / Alloy steel	P	●	●	●	●	●	●	●	●	●	
Stainless steel	M	●	●	●	●	●	●	●	●	●	
Cast iron / Ductile iron	K				●	●	●	●	●	●	
Non-ferrous metals	N				●	●					
Super-alloy / Titanium alloy	S				●	●					
Hardened steel	H						●	●			

Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact. Large selection of ground chipbreakers and carbides suitable for almost any materials.

* Coating BK8425 replaces BK84

Carbide grades		Cermet				d1	s	l	γ	f	R
PVD coated		uncoated		PVD coated							
	▲					0.157	0.071	0.138	6°	0.128	0.000
▲	▲				0.131					0.008	
▲	▲				0.128					0.012	
					0.125					0.016	
	▲					0.157	0.071	0.138	12°	0.128	0.000
	▲	▲	▲	▲	0.131					0.008	
	▲	▲	▲	▲	0.128					0.012	
	▲	▲		▲	0.125					0.016	
	▲					0.157	0.071	0.138	20°	0.131	0.008
					0.128					0.012	
	▲					0.220	0.098	0.177	6°	0.179	0.000
▲	▲				0.185					0.008	
▲	▲				0.179					0.016	
▲	▲				0.168					0.031	
	▲					0.220	0.098	0.177	12°	0.179	0.000
	▲	▲	▲	▲	0.185					0.008	
	▲	▲	▲	▲	0.179					0.016	
	▲				0.168					0.031	
	▲					0.220	0.098	0.177	20°	0.185	0.008
					0.179					0.016	
	▲					0.323	0.118	0.236	6°	0.274	0.008
▲	▲				0.268					0.016	
▲	▲				0.265					0.020	
▲	▲				0.257					0.031	
	▲	▲	▲	▲		0.323	0.118	0.236	12°	0.274	0.008
	▲	▲		▲	0.268					0.016	
	▲		▲	▲	0.265					0.020	
	▲				0.257					0.031	
						0.323	0.118	0.236	20°	0.274	0.008
					0.265					0.020	
	▲					0.500	0.169	0.472	6°	0.410	0.031
	▲				0.410					0.031	
●	●	●	●	●	●	Order example: Article TOHX 06T100 EL-G06 Carbide grade BK60 Order No. W30 04060.3060					
●	●	●	●	●	●						
●	●	●	●	●	●						
●	●	●	●	●	●						

▲ Availability: for delivery see current price and stock list



Insert W30

TOHX

R.H. cutting form "R"

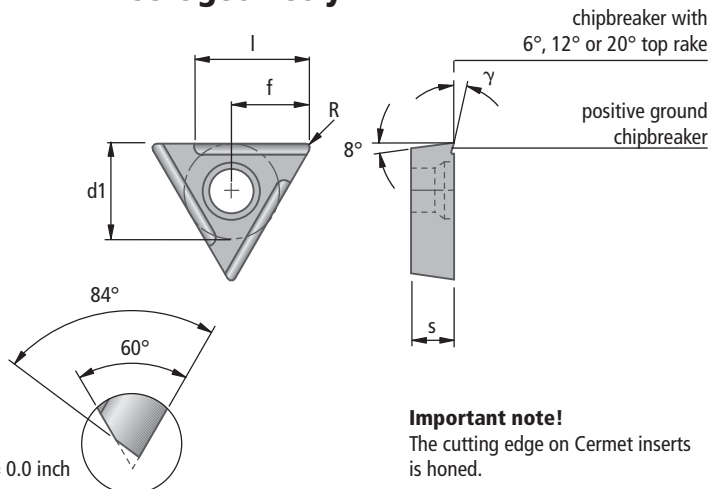


Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact. Large selection of ground chipbreakers and carbides suitable for almost any materials.

Insert geometry:



Important note!

The cutting edge on Cermet inserts is honed.

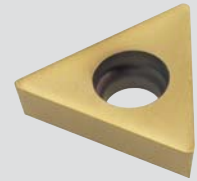
Article ISO Description	Order No.	Carbide grades						Cermet				d1	s	l	γ	f	R
		uncoated		CVD coated				uncoated			PVD coated						
		P25M E	K10 E F	BK60 E F	BK61 E	BK64 E	BK8425* E	CK30 E	CK32 E	CK37 E	CK38 E						
		03	21	60	61	64	8425	30	32	37	38						
TOHX 06T102 ..R-G06	W30 04360.02..	▲	▲	▲			▲								.131	.008	
TOHX 06T103 ..R-G06	W30 04360.03..	▲	▲	▲			▲	▲				.157	.071	.138	6°	.128	.012
TOHX 06T104 ..R-G06	W30 04360.04..			▲			▲									.125	.016
TOHX 06T102 ..R-G12	W30 04420.02..	▲		▲	▲		▲	▲	▲	▲	▲					.131	.008
TOHX 06T103 ..R-G12	W30 04420.03..	▲		▲	▲		▲	▲		▲	▲	.157	.071	.138	12°	.128	.012
TOHX 06T104 ..R-G12	W30 04420.04..			▲			▲	▲			▲					.125	.016
TOHX 06T102 ..R-G20	W30 04500.02..			▲			▲					.157	.071	.138	20°	.131	.008
TOHX 06T103 ..R-G20	W30 04500.03..			▲			▲									.128	.012
TOHX 090200 ..R-G06	W30 14360.30..	▲					▲									.179	.000
TOHX 090202 ..R-G06	W30 14360.02..	▲	▲	▲			▲					.220	.098	.177	6°	.185	.008
TOHX 090204 ..R-G06	W30 14360.04..	▲	▲	▲		▲	▲	▲								.179	.016
TOHX 090202 ..R-G12	W30 14420.02..	▲		▲	▲		▲	▲	▲	▲	▲	.220	.098	.177	12°	.185	.008
TOHX 090204 ..R-G12	W30 14420.04..	▲		▲	▲		▲	▲	▲	▲	▲					.179	.016
TOHX 090202 ..R-G20	W30 14500.02..			▲								.220	.098	.177	20°	.185	.008
TOHX 090204 ..R-G20	W30 14500.04..			▲	▲											.179	.016
TOHX 140302 ..R-G06	W30 26360.02..		▲				▲									.274	.008
TOHX 140304 ..R-G06	W30 26360.04..			▲								.323	.118	.236	6°	.268	.016
TOHX 140305 ..R-G06	W30 26360.05..	▲	▲	▲			▲	▲								.265	.020
TOHX 140302 ..R-G12	W30 26420.02..			▲	▲		▲	▲	▲	▲	▲					.274	.008
TOHX 140304 ..R-G12	W30 26420.04..							▲			▲	.323	.118	.236	12°	.268	.016
TOHX 140305 ..R-G12	W30 26420.05..	▲		▲	▲		▲		▲	▲						.265	.020
TOHX 140305 ..R-G20	W30 26500.05..						▲					.323	.118	.236	20°	.265	.020
TOHX 22T308 ..R-G06	W30 44360.08..	▲					▲					.500	.169	.472	6°	.410	.031
TOHX 22T308 ..R-G12	W30 44420.08..						▲					.500	.169	.472	12°	.410	.031
Carbon steel / Alloy steel	P	●	●	●			●	●	●	●	●					Order example:	
Stainless steel	M	●	●	●			●	●	●	●	●					Article	
Cast iron / Ductile iron	K		●	●	●		●	●	●	●	●					TOHX 06T102 ER-G06	
Non-ferrous metals	N		●	●					●	●						Carbide grade	
Super-alloy / Titanium alloy	S		●													P25M	
Hardened steel	H															Order No.	
																W30 04360.0203	

* Coating BK8425 replaces BK84

Insert W30

TOHX

Neutral cutting form "N"

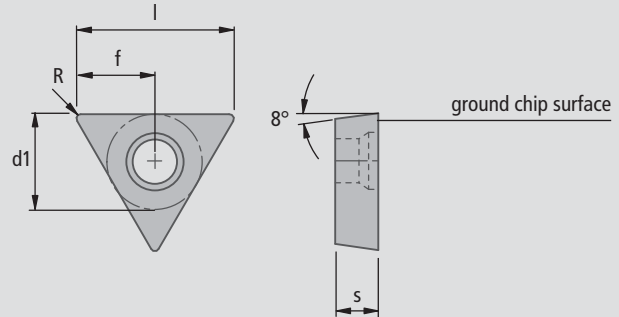


Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact.

Insert geometry:



Article ISO Description	Order No.	Carbide grades						d1	s	l	f	R
		uncoated		CVD coated			PVD coated					
	enter carbide code ▼	P25M E 03	K10 E 21	BK60 E 60	BK61 E 61	BK62 E 62	BK8425* E 8425					
TOHX 06T103 EN	W30 04600.03..	▲	▲	▲	▲		▲	0.157	0.071	0.256	0.128	0.012
TOHX 090202 EN	W30 14600.02..		▲					0.220	0.098	0.370	0.185	0.008
TOHX 090204 EN	W30 14600.04..	▲	▲	▲	▲	▲	▲			0.358	0.180	0.016
TOHX 140305 EN	W30 26600.05..	▲	▲		▲		▲	0.323	0.118	0.531	0.265	0.020
TOHX 140308 EN	W30 26600.08..		▲	▲	▲					0.512	0.257	0.031
TOHX 22T308 EN	W30 44600.08..		▲		▲			0.500	0.169	0.819	0.410	0.031
Carbon steel / Alloy steel								Order example: Article TOHX 06T103 EN Carbide grade K10 Order No. W30 04600.0321				
Stainless steel												
Cast iron / Ductile iron												
Non-ferrous metals												
Super-alloy / Titanium alloy												
Hardened steel												

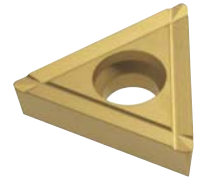
* Coating BK8425 replaces BK84



Insert W30

TOHX

Cutting form "F"

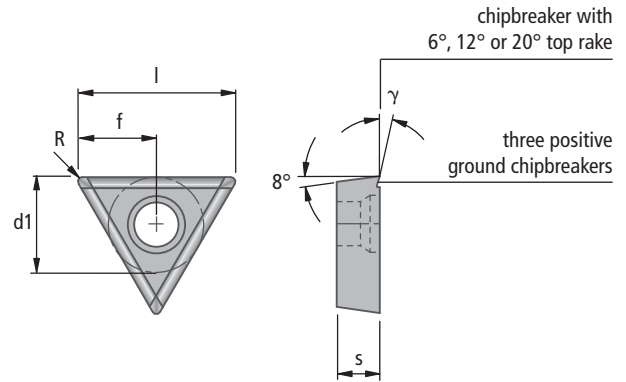


Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact. Large selection of ground chipbreakers and carbides suitable for almost any materials

Insert geometry:



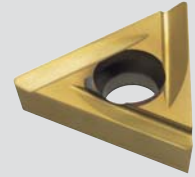
Article ISO Description	Order No.	Carbide grades								d1	s	l	γ	f	R
		uncoated				CVD coated			PVD coated						
		P25M E	P40 E	K10 E	K10 F	BK60 E	BK61 E	BK64 E	BK8425* E						
TOHX 06T103 ..N-G06	W30 04660.03..	▲		▲		▲		▲	▲	.157	.071	.256	6°	.128	.012
TOHX 06T103 ..N-G12	W30 04720.03..	▲			▲	▲				.157	.071	.256	12°	.128	.012
TOHX 090202 ..N-G06	W30 14660.02..								▲					.185	.008
TOHX 090204 ..N-G06	W30 14660.04..	▲	▲	▲		▲	▲	▲	▲	.220	.098	.358	6°	.179	.016
TOHX 090204 ..N-U8.77	W30 14660.33..	▲		▲		▲		▲	▲					.179	.016
TOHX 090202 ..N-G12	W30 14720.02..					▲				.220	.098	.370	12°	.185	.008
TOHX 090204 ..N-G12	W30 14720.04..	▲			▲	▲		▲	▲	.220	.098	.358	12°	.179	.016
TOHX 090204 ..N-G20	W30 14800.04..				▲								20°	.179	.016
TOHX 140305 ..N-G06	W30 26660.05..	▲		▲		▲	▲	▲	▲	.323	.118	.531	6°	.265	.020
TOHX 140305 ..N-G12	W30 26720.05..	▲			▲	▲							12°	.265	.020
TOHX 22T308 ..N-G06	W30 44660.08..	▲		▲		▲	▲	▲		.500	.169	.819	6°	.410	.031
TOHX 22T308 ..N-G12	W30 44720.08..				▲								12°	.410	.031
Carbon steel / Alloy steel	P	●	●	●	●	●		●	●	Order example: Article TOHX 06T103 EN-G06 Carbide grade P25M Order No. W30 04660.0303					
Stainless steel	M	●	●			●		●	●						
Cast iron / Ductile iron	K			●	●		●		●						
Non-ferrous metals	N			●	●										
Super-alloy / Titanium alloy	S			●	●										
Hardened steel	H						●								

* Coating BK8425 replaces BK84

Insert W30

TOHX

L.H. cutting form "L"

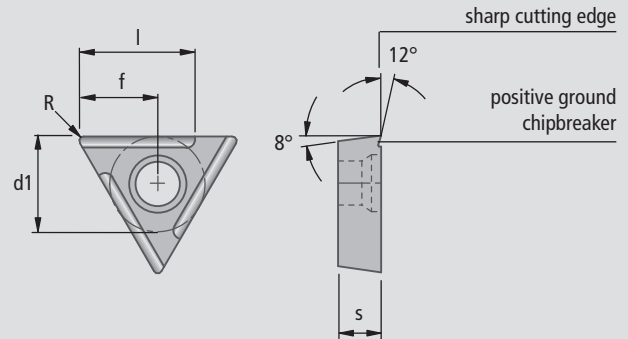




















Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact. Large selection of ground chipbreakers and carbides suitable for almost any materials

Insert geometry:



Article ISO Description	Order No.	Cermet			d1	s	l	f	R
		uncoated	uncoated	PVD coated					
Cutting edge design F = sharp ▼	enter carbide code ▼	 CK30 F 30	 CK32 F 32	 CK38 F 38					
TOHX 06T102 FL-G12	W30 04820.02..	▲	▲	▲	0.157	0.071	0.138	0.131	0.008
TOHX 06T103 FL-G12	W30 04820.03..		▲					0.128	0.012
TOHX 06T104 FL-G12	W30 04820.04..	▲		▲				0.125	0.016
TOHX 090202 FL-G12	W30 14820.02..	▲	▲	▲	0.220	0.098	0.177	0.185	0.008
TOHX 090204 FL-G12	W30 14820.04..	▲	▲	▲				0.179	0.016
TOHX 140302 FL-G12	W30 26820.02..	▲	▲	▲	0.323	0.118	0.236	0.274	0.008
TOHX 140304 FL-G12	W30 26820.04..	▲		▲				0.268	0.016
TOHX 140305 FL-G12	W30 26820.05..		▲					0.265	0.020
Carbon steel / Alloy steel 					Order example: Article TOHX 06T102 FL-G12 Carbide grade CK30 Order No. W30 04820.0230				
Stainless steel 									
Cast iron / Ductile iron 									
Non-ferrous metals 									
Super-alloy / Titanium alloy 									
Hardened steel 									



Insert W30

TOHX

R.H. cutting form "R"

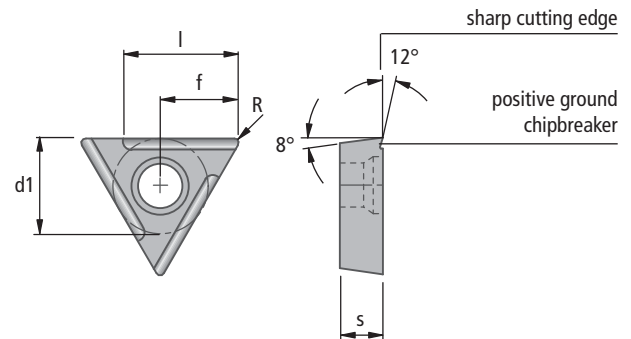




Application range:

- Internal and external turning
- Small boring bars
- Fine machining, internal and external
- Countersink tools, end mill cutters

Peripheral ground triangular insert. Can be turned over with high changeover accuracy because of precision 2-sided contact. Large selection of ground chipbreakers and carbides suitable for almost any materials

Insert geometry:

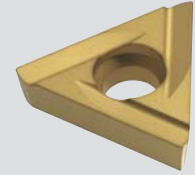


Article ISO Description	Order No.	Cermet uncoated		d1	s	l	f	R
		 CK30 F 30	 CK32 F 32					
TOHX 06T102 FR-G12	W30 04830.02..		▲	0.157	0.071	0.138	0.131	0.008
TOHX 090202 FR-G12	W30 14830.02..		▲	0.220	0.098	0.177	0.185	0.008
TOHX 090204 FR-G12	W30 14830.04..	▲					0.179	0.016
Carbon steel / Alloy steel	P	●	●	Order example: Article TOHX 06T102 FR-G12 Carbide grade CK30 Order No. W30 04830.0230				
Stainless steel	M	●	●					
Cast iron / Ductile iron	K	●	●					
Non-ferrous metals	N							
Super-alloy / Titanium alloy	S							
Hardened steel	H							

Insert W30

TOHX

L.H. cutting form "L"

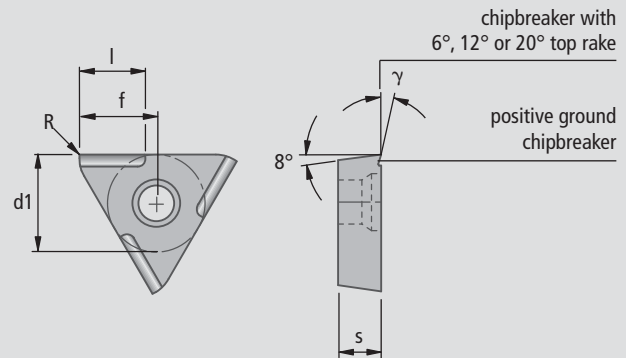


Application range:

- **Internal turning**
with high feed rates for stable conditions for tools up to a max. of 2.5 x D

Ideal cutting depths:
Steel $a_p = .004 - .010$ in (0.1 - 0.25 mm)
Cast iron $a_p = .006 - .012$ in (0.15 - 0.3 mm)

Insert geometry:



Important note!
The cutting edge on Cermet inserts is honed

Article ISO Description	Order No.	Carbide grades						Cermet		d1	s	l	γ	f	R
		uncoated		CVD coated		PVD coated	uncoated	PVD coated							
		K10 E	K10 F	BK60 E	BK61 E	BK64 E	BK8425* E	CK30 E	CK38 E						
TOHX 06T102..L-UF06	W30 04060.31..	▲		▲	▲	▲				.157	.071	.110	6°	.127	.079
TOHX 06T102..L-UF12	W30 04120.31..		▲	▲			▲	▲	▲				12°	.127	.079
TOHX 090200..L-UF06	W30 14060.31..	▲		▲	▲	▲				.220	.098	.157	6°	.170	.118
TOHX 090202..L-UF12	W30 14120.31..			▲	▲	▲	▲	▲	▲				12°	.169	.118
TOHX 140302..L-UF06	W30 26060.31..	▲		▲	▲	▲	▲		▲	.323	.118	.216	6°	.254	.118
TOHX 140302..L-UF12	W30 26120.31..			▲		▲	▲	▲					12°	.254	.118
Carbon steel / Alloy steel	P	●	●	●		●	●	●	●	Order example: Article TOHX06T102 EL-UF06 Carbide grade BK60 Order No. W30 04060.3160					
Stainless steel	M			●		●	●	●	●						
Cast iron / Ductile iron	K	●	●		●		●	●	●						
Non-ferrous metals	N	●	●												
Super-alloy / Titanium alloy	S	●	●												
Hardened steel	H														

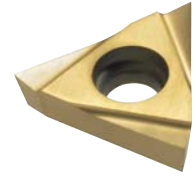
* Coating BK8425 replaces BK84



Insert W30

TOHX

L.H. cutting form "L"



Application range:

- Sharp cutting edge

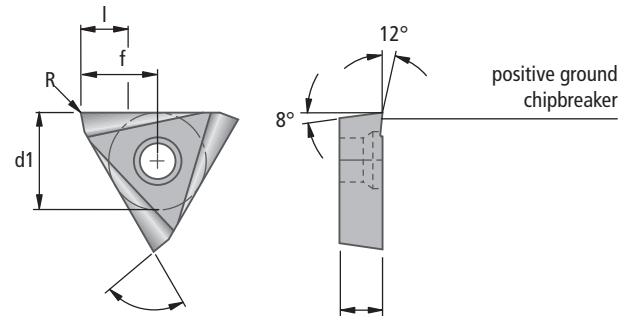
Insert with .002 in nose radius for internal machining for tools with long overhang.


Ideal cutting depths:

Steel $a_p = .001 - .004$ in. (0.02 – 0.1 mm)

Non-ferrous metal $a_p = .002 - .010$ in. (0.05 – 0.25 mm)

Insert geometry:

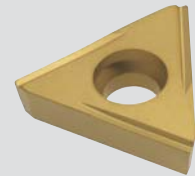


Article ISO Description	Order No.	Carbide grades					d1	s	l	f	R
		PVD coated									
Cutting edge design E = honed ▼	enter carbide code ▼	 BK77 E 77									
TOHX 06T1ZZ EL-39G12	W30 04120.39..	▲					0.157	0.071	0.079	0.125	0.002
TOHX 0902ZZ EL-39G12	W30 14120.39..	▲					0.220	0.098	0.118	0.175	0.002
TOHX 1403ZZ EL-39G12	W30 26120.39..	▲					0.323	0.118	0.157	0.260	0.002
Carbon steel / Alloy steel	P						Order example: Article TOHX 06T1ZZ EL-39G12 Carbide grade BK77 Order No. W30 04120.3977				
Stainless steel	M										
Cast iron / Ductile iron	K										
Non-ferrous metals	N	●									
Super-alloy / Titanium alloy	S	●									
Hardened steel	H										

Insert W30

TOHX

L.H. cutting form "L"



Application range:

- Small boring bars
- Internal fine machining

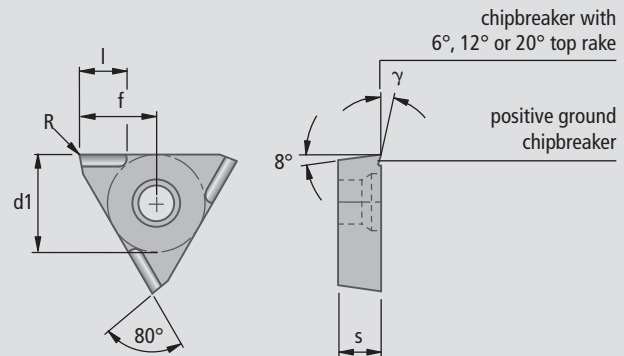
Because of the positive cutting edge geometry, cutting is very efficient. A deeper, narrow chipbreaker produces a controlled chip even from materials that produce long chips and at narrow cutting depths. A flat ground secondary cutting edge provides increased corner stability. Can be supplied in Cermet for sharp-edged version.

Ideal Cutting depths:

Steel $a_p = .0004 - .006$ in (0.01 – 0.15 mm)

Only suitable for non-ferrous metals in certain circumstances.

Insert geometry:



Important note!

The cutting edge on Cermet inserts is honed

Article ISO Description	Order No.	Carbide grades			Cermet				d1	s	l	γ	f	R
		CVD coated	PVD coated		uncoated		PVD coated							
Cutting edge design E = honed ▼ enter carbide code ▼														
		BK60 E 60	BK64 E 64	BK8425* E 8425	CK30 E 30	CK32 E 32	CK37 E 37	CK38 E 38						
TOHX 06T102EL-US12	W30 04120.32..	▲	▲	▲	▲	▲	▲	▲	0.157	0.071	0.110	12°	0.116	0.008
TOHX 090202EL-US12	W30 14120.32..	▲	▲	▲	▲	▲	▲	▲	0.220	0.098	0.157	12°	0.168	0.008
TOHX 140302EL-US12	W30 26120.32..	▲	▲	▲	▲	▲	▲	▲	0.323	0.118	0.216	12°	0.253	0.008
Carbon steel / Alloy steel		●	●	●	●	●	●	●	Order example: Article TOHX 06T102 EL-US12 Carbide grade BK60 Order No. W30 04120.3260					
Stainless steel		●	●	●	●	●	●	●						
Cast iron / Ductile iron				●	●	●	●	●						
Non-ferrous metals					●	●								
Super-alloy / Titanium alloy														
Hardened steel														

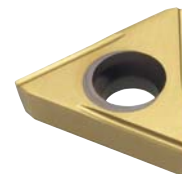
* Coating BK8425 replaces BK84



Insert W30

TOHX

L.H. cutting form "L"



Application range:

- Small boring bars
- Internal fine machining

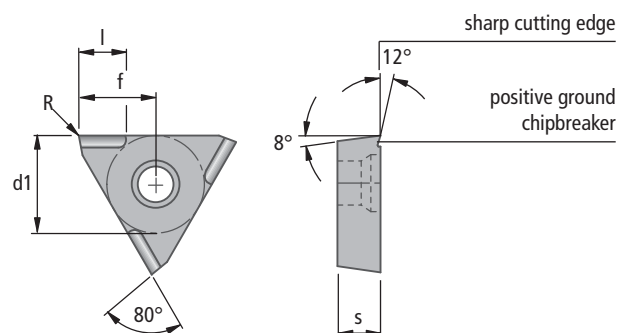
Because of the positive cutting edge geometry, cutting is very efficient. A deeper, narrow chipbreaker produces a controlled chip even from materials that produce long chips and at narrow cutting depths. A flat ground secondary cutting edge provides increased corner stability. Can be supplied in Cermet for sharp-edged version.




Ideal Cutting depth:

Steel $a_p = .0004 - .006$ in (0.01 – 0.15 mm)

Only suitable for non-ferrous metals in certain circumstances.

Insert geometry:

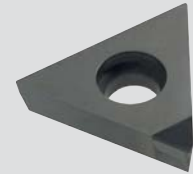


Article ISO Description	Order No.	Cermet			d1	s	l	f	R
		uncoated		PVD coated					
Cutting edge design F = sharp ▼	enter carbide code ▼	 CK30 F 30	 CK32 F 32	 CK38 F 38					
TOHX 06T102 FL-US12	W30 04820.32..	▲		▲	0.157	0.071	0.059	0.116	0.008
TOHX 090202 FL-US12	W30 14820.32..	▲	▲	▲	0.220	0.098	0.079	0.168	0.008
TOHX 140302 FL-US12	W30 26820.32..	▲		▲	0.323	0.118	0.079	0.253	0.008
Carbon steel / Alloy steel P		●	●	●	Order example: Article TOHX 06T102 FL-US12 Carbide grade CK30 Order No. W30 04820.3230				
Stainless steel M		●	●	●					
Cast iron / Ductile iron K		●	●	●					
Non-ferrous metals N			●						
Super-alloy / Titanium alloy S									
Hardened steel H									

Insert W30

TOGX

with PCD or CBN cutting edges



Application range:

PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.

High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.

CBN: Internal and external machining, fine turning.

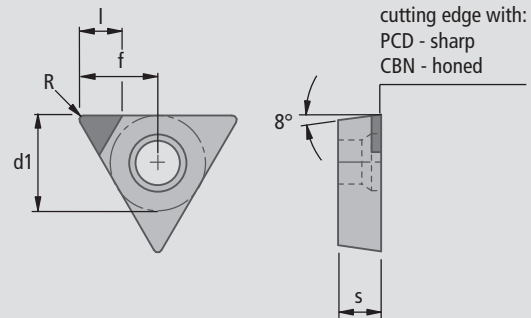
Inserts with cutting edges have the following advantages:

- high cutting speeds
- high dimensional consistency
- extremely long tool life
- high quality surface finish

CBN 57: Preferably for cast materials and alloys on a nickel cobalt base.

CBN 40: For machining hardened steels (harder than 45 HRC)

Insert geometry:



Article ISO Description	Order No.	Cutting material			d1	s	l max.	f	R
		PCD tipped PKD55 F 55	CBN tipped CBN57 T 57	CBN tipped CBN40 T 40					
TOGX 06T102 ..N	W30 04990.02..	▲	▲	▲	0.157	0.071	0.071	0.131	0.008
TOGX 06T103 ..N	W30 04990.03..	▲	▲					0.128	0.012
TOGX 06T104 ..N	W30 04990.04..	▲						0.125	0.016
TOGX 090202 ..N	W30 14990.02..	▲	▲	▲	0.220	0.098	0.106	0.185	0.008
TOGX 090204 ..N	W30 14990.04..	▲	▲	▲				0.179	0.016
TOGX 090208 ..N	W30 14990.08..	▲	▲					0.168	0.031
TOGX 140302 ..N	W30 26990.02..	▲	▲		0.323	0.118	0.106	0.274	0.008
TOGX 140304 ..N	W30 26990.04..	▲	▲	▲				0.268	0.016
TOGX 140305 ..N	W30 26990.05..	▲	▲					0.265	0.020
Carbon steel / Alloy steel	Stainless steel			> 45 HRC	Order example: Article TOGX 06T102 TN Cutting material CBN57 Order No. W30 04990.0257				
Cast iron / Ductile iron	Non-ferrous metals								
Super-alloy / Titanium alloy	Hardened steel								
				< 52 HRC					



Insert W30

TOGX

with PCD or CBN cutting edges



Application range:

PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.

High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.

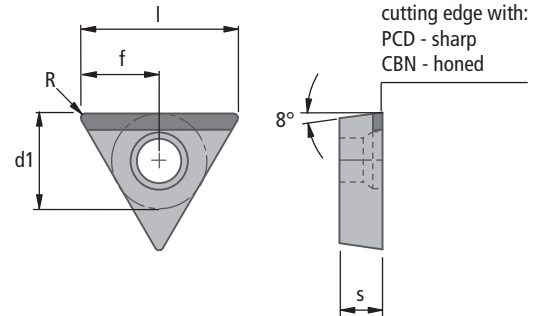
CBN: Internal and external machining, fine turning.



Inserts with cutting edges have the following advantages:

- high cutting speeds
- high dimensional consistency
- extremely long tool life
- high quality surface finish

CBN 57: Preferably for cast materials and alloys on a nickel cobalt base.

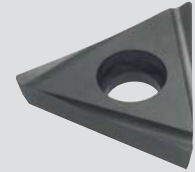
Insert geometry:



Article ISO Description	Order No.	Cutting material		d1	s	l	f	R
		PCD tipped  PKD55 F 55	CBN tipped  CBN57 T 57					
TOGX 090204 ..	W30 14940.04..	▲	▲	0.220	0.098	0.359	0.179	0.016
TOGX 140305 ..	W30 26940.05..	▲	▲	0.323	0.118	0.531	0.265	0.020
Carbon steel / Alloy steel P				Order example: Article TOGX 090204 T Cutting material CBN57 Order No. W30 14940.0457				
Stainless steel M								
Cast iron / Ductile iron K			●					
Non-ferrous metals N		●						
Super-alloy / Titanium alloy S			●					
Hardened steel H			○ < 52 HRC					

Insert W32

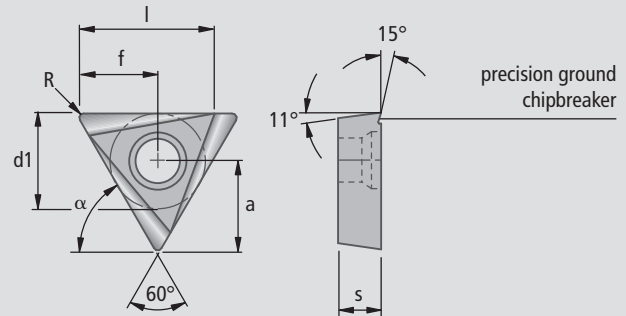
TPHX – for high shear non-ferrous metal boring L.H. cutting form "L"



Application range:

11° TPHX insert with polished chip surface for softer aluminum materials and other non-ferrous metals.
10 - 15° top rake with axial and radial tilt.

Insert geometry:



Please note:

Should a TPHB be used instead of this insert, dimension "a" changes according to angle "α" .

$$a = \cos(\alpha - 60^\circ) \times (d1 - 2R) + R - \left(\frac{\alpha}{90^\circ} \times \Delta\right)$$

Δ 0.0012 for R = 0.016"

Δ 0.0024 for R = 0.031"

Article ISO Description	Order No.	Carbide grades			d1	s	l	f	R
		uncoated K10 F 21	diamond coated BK50 F 50	PVD coated BK7710 F 7710					
TPHX 060104 FL-P15	W32 03150.04..	▲	▲	▲	0.156	0.063	0.130	0.123	0.016
TPHX 090204 FL-P15	W32 13150.04..	▲	▲	▲	0.219	0.094	0.177	0.177	0.016
TPHX 090208 FL-P15	W32 13150.08..	▲	▲	▲			0.165	0.164	0.031
TPHX 110204 FL-P15	W32 18150.04..	▲	▲	▲	0.250	0.094	0.181	0.203	0.016
TPHX 110208 FL-P15	W32 18150.08..	▲	▲	▲			0.169	0.192	0.031
TPHX 130304 FL-P15	W32 23150.04..	▲	▲	▲	0.313	0.125	0.197	0.258	0.016
TPHX 130308 FL-P15	W32 23150.08..	▲	▲	▲			0.185	0.246	0.031
TPHX 160304 FL-P15	W32 32150.04..	▲	▲	▲	0.375	0.125	0.315	0.312	0.016
TPHX 160308 FL-P15	W32 32150.08..	▲	▲	▲			0.303	0.299	0.031
TPHX 220408 FL-P15	W32 44150.08..			▲	0.500	0.169	0.409	0.407	0.031
Carbon steel / Alloy steel					Order example: Article TPHX 060104 FL-P15 Carbide grade K10 Order No. W32 03150.0421				
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									



Insert W32

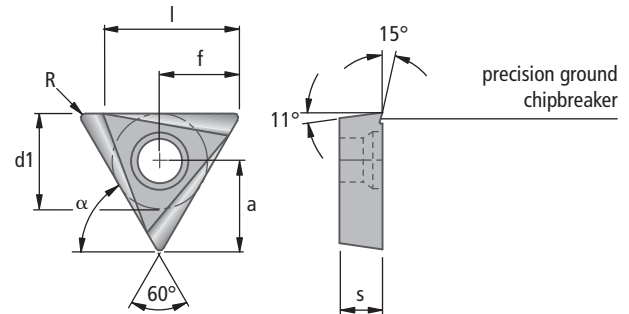
TPHX – for high shear non-ferrous metal boring
R.H. cutting form "R"



Application range:

11° TPHX insert with polished chip surface for softer aluminum materials and other non-ferrous metals.
 10 - 15° top rake with axial and radial tilt.

Insert geometry:
















Please note:

Should a TPHB be used instead of this insert, dimension "a" changes according to angle "α" .

$$a = \cos(\alpha - 60^\circ) \times (d1 - 2R) + R - \left(\frac{\alpha}{90^\circ} \times \Delta\right)$$

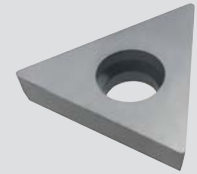
Δ 0.0012 for R = 0.016"

Δ 0.0024 for R = 0.031"

Article ISO Description	Order No.	Carbide grades					d1	s	l	f	R
		uncoated									
Cutting edge design F = sharp ▼	enter carbide code ▼	 K10 F 21									
TPHX 060104 FR-P15	W32 03450.04..	▲					0.156	0.063	0.130	0.123	0.016
TPHX 090204 FR-P15	W32 13450.04..	▲					0.219	0.094	0.177	0.177	0.016
TPHX 110204 FR-P15	W32 18450.04..	▲					0.250	0.094	0.181	0.203	0.016
TPHX 130304 FR-P15	W32 23450.04..	▲					0.313	0.125	0.197	0.258	0.016
TPHX 160304 FR-P15	W32 32450.04..	▲					0.375	0.125	0.315	0.312	0.016
TPHX 220408 FR-P15	W32 44450.08..	▲					0.500	0.169	0.409	0.407	0.031
Carbon steel / Alloy steel							Order example: Article TPHX 060104 FL-P15 Carbide grade K10 Order No. W32 03150.0421				
Stainless steel											
Cast iron / Ductile iron											
Non-ferrous metals											
Super-alloy / Titanium alloy											
Hardened steel											

Insert W32

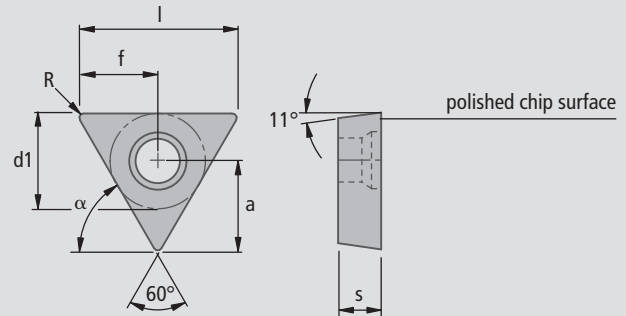
TPHB – for high shear non-ferrous metal boring Neutral cutting form "N"



Application range:

11° TPHB insert with polished chip surface
for high tensile strength cast aluminum alloys.
5° top rake due to axial tilt for cutting speed range of
≤ 950 sfm.

Insert geometry:



$$a = \cos(\alpha - 60^\circ) \times (d1 - 2R) + R$$

Article ISO Description	Order No.	Carbide grades		d1	s	l	f	R
		uncoated K10 F 21	diamond coated BK50 F 50					
TPHB 060104 FN-P	W32 03600.04..	▲	▲	0.156	0.063	0.248	0.124	0.016
TPHB 090204 FN-P	W32 13600.04..	▲	▲	0.219	0.094	0.356	0.178	0.016
TPHB 090208 FN-P	W32 13600.08..	▲	▲			0.333	0.166	0.031
TPHB 110204 FN-P	W32 18600.04..	▲	▲	0.250	0.094	0.410	0.205	0.016
TPHB 110208 FN-P	W32 18600.08..	▲	▲			0.387	0.193	0.031
TPHB 130304 FN-P	W32 23600.04..	▲	▲	0.313	0.125	0.518	0.259	0.016
TPHB 130308 FN-P	W32 23600.08..	▲	▲			0.495	0.248	0.031
TPHB 160304 FN-P	W32 32600.04..	▲	▲	0.375	0.125	0.626	0.313	0.016
TPHB 160308 FN-P	W32 32600.08..	▲	▲			0.603	0.301	0.031
TPHB 220404 FN-P	W32 44600.04..	▲	▲	0.500	0.169	0.843	0.422	0.016
TPHB 220408 FN-P	W32 44600.08..	▲	▲			0.820	0.410	0.031
Carbon steel / Alloy steel				Order example: Article TPHB 060104 FN-P Carbide grade K10 Order No. W32 03600.0421				
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								



Insert W32

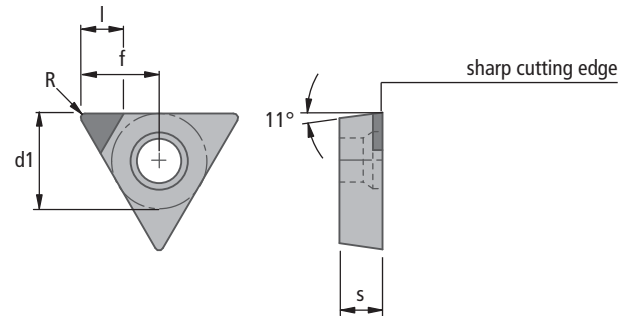
TPHB – for high shear non-ferrous metal boring with PCD cutting edges




Application range:

PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.
High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.

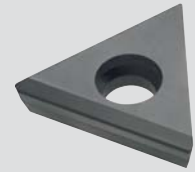
Insert geometry:



Article ISO Description	Order No.	Cutting material					d1	s	l	f	R
		PCD tipped									
Cutting edge design F = sharp ▼ enter carbide code ▼		 PKD55 F 55									
TPHB 060104 FN	W32 03990.04..	▲					0.156	0.063	0.071	0.124	0.016
TPHB 090204 FN	W32 13990.04..	▲					0.219	0.094	0.106	0.178	0.016
TPHB 110204 FN	W32 18990.04..	▲					0.250	0.094	0.150	0.205	0.016
TPHB 130304 FN	W32 23990.04..	▲					0.313	0.125	0.150	0.259	0.016
TPHB 160304 FN	W32 32990.04..	▲					0.375	0.125	0.150	0.313	0.016
Carbon steel / Alloy steel P Stainless steel M Cast iron / Ductile iron K Non-ferrous metals N Super-alloy / Titanium alloy S Hardened steel H		●					Order example: Article TPHB 060104 FN Cutting material PKD55 Order No. W32 03990.0455				

Insert W32

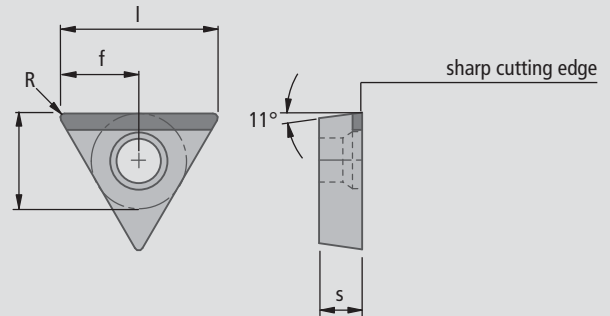
TPHB – for high shear non-ferrous metal boring with PCD cutting edges



Application range:

PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.
 High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.

Insert geometry:



Article ISO Description	Order No.	Cutting material					
		PCD tipped	d1	s	l	f	R
Cutting edge design F = sharp	enter carbide code	 PKD55 F 55					
TPHB 090204 F	W32 13940.04..	▲	0.219	0.094	0.356	0.178	0.016
TPHB 110204 F	W32 18940.04..	▲	0.250	0.094	0.410	0.205	0.016
TPHB 130304 F	W32 23940.04..	▲	0.313	0.125	0.518	0.259	0.016
TPHB 160304 F	W32 32940.04..	▲	0.375	0.125	0.626	0.313	0.016
Carbon steel / Alloy steel Stainless steel Cast iron / Ductile iron Non-ferrous metals Super-alloy / Titanium alloy Hardened steel		●	Order example: Article TPHB 090204 F Cutting material PKD55 Order No. W32 13940.0455				



Insert W34

TOHT



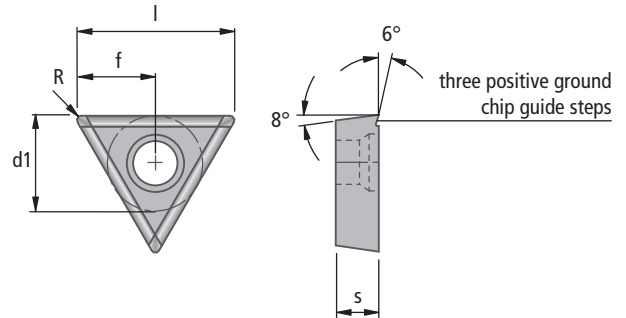
Application range:

- **Multi-tooth milling cutter**

Peripheral and surface ground triangular insert for roughing and facing operations:

2-sided contact produces a very high indexing accuracy when changing the insert.

Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	f	R
		uncoated		CVD coated					
Cutting edge design E = honed ▼	enter carbide code ▼	 P25M E 03	 K10 E 21	 BK60 E 60					
TOHT 110304 EN-G06	W34 18660.04..	▲	▲	▲	0.250	0.125	0.409	0.205	0.016
Carbon steel / Alloy steel	P	●	●	●	Order example: Article TOHT 110304 EN-G06 Carbide grade P25M Order No. W34 18660.0403				
Stainless steel	M	●	●	●					
Cast iron / Ductile iron	K		●						
Non-ferrous metals	N		●						
Super-alloy / Titanium alloy	S		●						
Hardened steel	H		●						

Insert W37

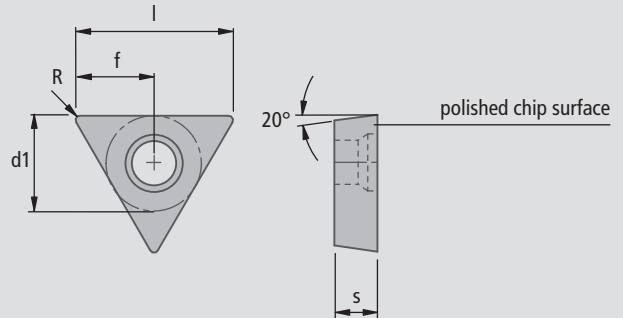
TEHB – for high shear non-ferrous metal boring
Neutral cutting form "N"














Application range:

20° TEHB insert with polished chip surface
 for softer aluminum materials and other non-ferrous metals.
 10 – 12° top rake with axial and radial tilt.

Insert geometry:



Article ISO Description	Order No.	Carbide grades					
		uncoated	d1	s	l	f	R
Cutting edge design F = sharp ▼	enter carbide code ▼	 K10 F 21					
TEHB 110204 FN-P	W37 18600.04..	▲	0.250	0.094	0.409	0.205	0.016
TEHB 110208 FN-P	W37 18600.08..	▲			0.386	0.193	0.031
TEHB 130308 FN-P	W37 23600.08..	▲	0.313	0.125	0.496	0.248	0.031
Carbon steel / Alloy steel 			Order example: Article TEHB 110204 FN-P Carbide grade K10 Order No. W37 18600.0421				
Stainless steel 							
Cast iron / Ductile iron 							
Non-ferrous metals 							
Super-alloy / Titanium alloy 							
Hardened steel 							



Insert W57

W57..04

TOHX



Application range:

- Internal and external turning
- Fine finish turning

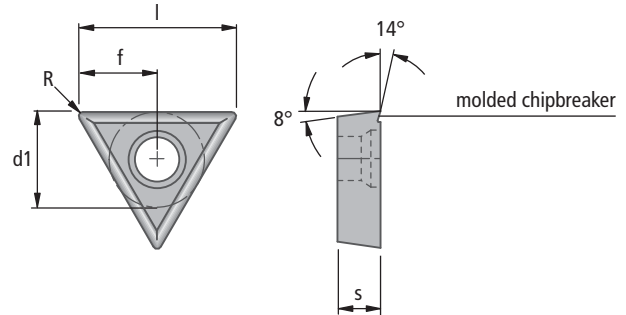
The positive cutter geometry and the peripheral ground clearance faces ensure low cutting forces with high changeover accuracy. Particularly suitable for steel materials of all grades. Application range up to 3.5×D



Ideal cutting depths:

Steel $a_p = 0.002 - 0.008$ in (0.05 – 0.2 mm)

Only suitable for some aluminium and non-ferrous materials in certain circumstances.

Insert geometry:



Article ISO Description	Order No.	Cermet uncoated		d1	s	l	f	R
		 CK32 E 32	 CK37 E 37					
TOHX 06T104 EN-04	W57 04040.04..	▲	▲	0.157	0.071	0.248	0.125	0.016
TOHX 090204 EN-04	W57 14040.04..	▲	▲	0.220	0.098	0.358	0.179	0.016
TOHX 140304 EN-04	W57 26040.04..	▲	▲	0.323	0.118	0.535	0.268	0.016
Carbon steel / Alloy steel P		●	●	Order example: Article TOHX 06T104 EN-04 Quality CK32 Order No. W57 04040.0432				
Stainless steel M		●	●					
Cast iron / Ductile iron K		●	●					
Non-ferrous metals N		●	●					
Super-alloy / Titanium alloy S		●	●					
Hardened steel H		●	●					

Insert W57

W57..12

TOHX – for high shear non-ferrous metal boring

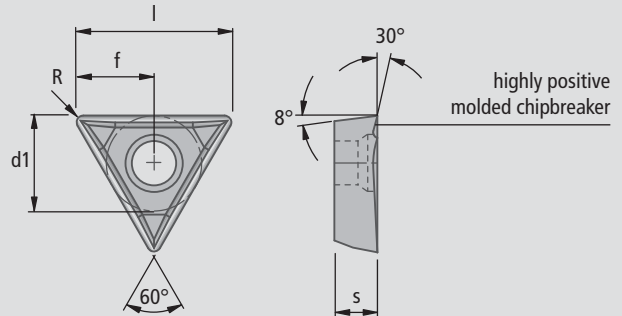


Application range:

- Internal and external turning
- Fine finish turning for aluminum materials for softer aluminum materials and other non-ferrous metals.

The high positive cutting geometry and the ground clearance surface guarantee a controlled chip formation and high quality surface finish with low cutting force.

Insert geometry:



Article ISO Description	Order No.	Carbide grades		d1	s	l	f	R
		uncoated K10 F 23	PVD coated BK7710 F 7710					
TOGX 06T102 FN-12	W57 04120.02..	▲	▲	0.157	0.071	0.261	0.131	0.008
TOGX 090204 FN-12	W57 14120.04..	▲	▲	0.220	0.098	0.359	0.179	0.016
TOGX 140304 FN-12	W57 26120.04..	▲	▲	0.323	0.118	0.536	0.268	0.016
Carbon steel / Alloy steel				Order example: Article TOGX 06T102 FN-12 Carbide grade K10 Order No. W57 04120.0223				
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								



Insert W57

W57..14

TOGX

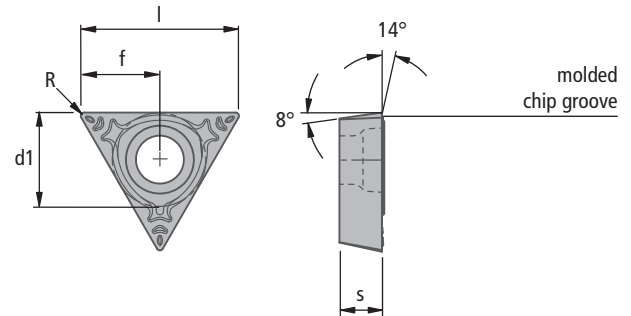





Application range:

- Internal and external machining
- Special tools
- Fine boring

Controlled chip formation for fine and high precision machining.
Wear resistant grades: CVD and PVD coated and uncoated Cermet.

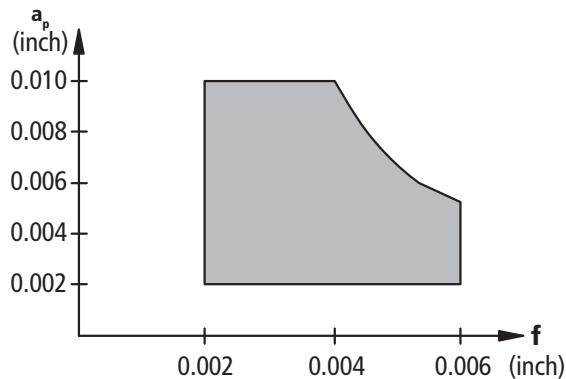
Insert geometry:



Article ISO Description	Order No.	Carbide grades			Cermet uncoated	d1	s	l	f	R
		CVD coated  BK60 E	PVD coated  BK84 E	uncoated  CK32 E						
Cutting edge design E = honed ▼										
enter carbide code ▼		60	84	32						
TOGX 06T102 EN-14	W57 04140.02..	▲	▲	▲	0.157	0.071	0.261	0.131	0.008	
TOGX 06T104 EN-14	W57 04140.04..	▲	▲	▲			0.250	0.125	0.016	
TOGX 090202 EN-14	W57 14140.02..	▲	▲	▲	0.220	0.098	0.370	0.185	0.008	
TOGX 090204 EN-14	W57 14140.04..	▲	▲	▲			0.359	0.179	0.016	
TOGX 140302 EN-14	W57 26140.02..	▲	▲	▲	0.323	0.118	0.548	0.274	0.008	
TOGX 140304 EN-14	W57 26140.04..	▲	▲	▲			0.536	0.268	0.016	
Carbon steel / Alloy steel P		●	●	●	Order example: Article TOGX 06T102 EN-14 Carbide grade BK60 Order No. W57 04140.0260					
Stainless steel M			●	●						
Cast iron / Ductile iron K		●	●	●						
Non-ferrous metals N				●						
Super-alloy / Titanium alloy S										
Hardened steel H										

Application range:

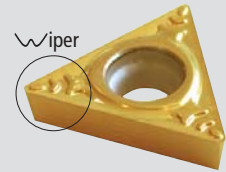
wear-resistant grades: CVD and PVD coated and Cermet uncoated



Insert W57

W57..18

TOGX



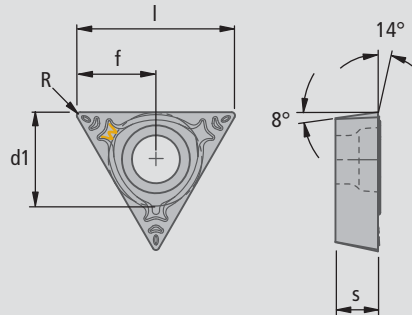
Application range:













- Internal and external machining
- Special tools
- Fine boring

Controlled chip formation for fine and high precision machining with optimized feed:surface ratio for best surface finish.

Wear resistant grades: Finest grade carbide + PVD coating and uncoated Cermet.

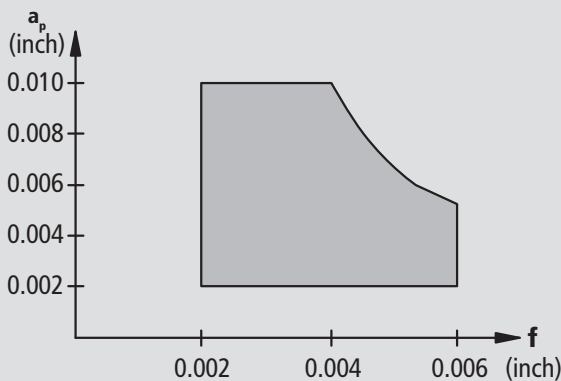
Insert geometry:



Article ISO Description	Order No.	Carbide grades	Cermet	d1	s	l	f	R
		PVD coated	uncoated					
Cutting edge design E = honed ▼	enter carbide code ▼	 BK8430 E 8430	 CK32 E 32					
TOGX 060104 EN-18	W57 04180.04..	▲	▲	0.157	0.071	0.248	0.125	0.016
TOGX 090204 EN-18	W57 14180.04..	▲	▲	0.220	0.098	0.358	0.179	0.016
TOGX 140304 EN-18	W57 26180.04..	▲	▲	0.323	0.118	0.535	0.268	0.016
Carbon steel / Alloy steel P				Order example: Article TOGX 060104 EN-18 Carbide grade BK8430 Order No. W57 04180.048430				
Stainless steel M								
Cast iron / Ductile iron K								
Non-ferrous metals N								
Super-alloy / Titanium alloy S								
Hardened steel H								

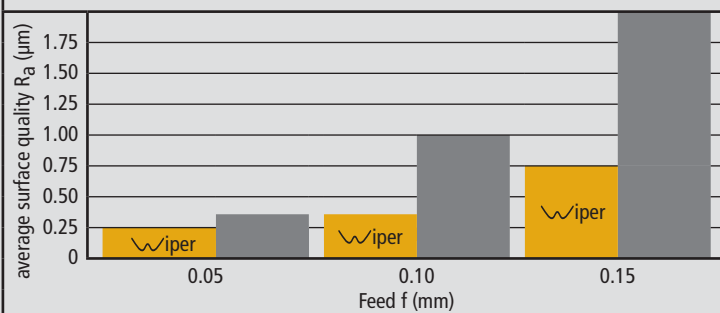
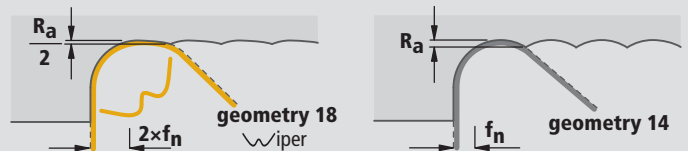
Application range:

wear-resistant grades: PVD coated and Cermet uncoated



Surface quality results:

Comparison of surface quality results for "Wiper" - R04 for $\alpha = 90^\circ$ in X40Cr13 / 1.4034



Insert W58

TPGX – for high shear non-ferrous metal boring

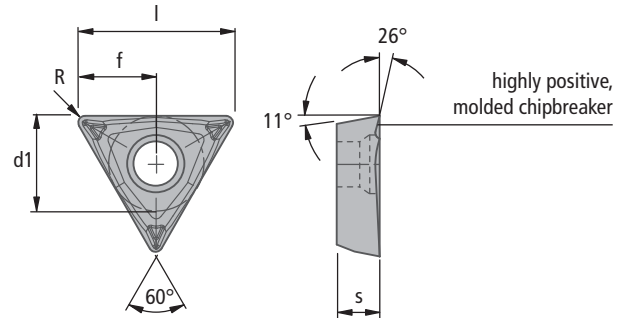










Application range:

- Internal and external turning
- Fine finish turning for aluminum materials, softer aluminum materials and other non-ferrous metals.

The high positive cutting geometry and the ground clearance surface guarantee a controlled chip formation and high quality surface finish with low cutting force.

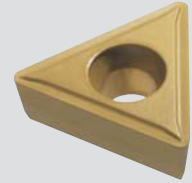
Insert geometry:



Article ISO Description	Order No.	Carbide grades		d1	s	l	f	R
		uncoated  K10 F 23	PVD coated  BK7710 F 7710					
TPGX 060104 FN-12	W58 03120.04..	▲	▲	0.156	0.063	0.248	0.124	0.016
TPGX 090204 FN-12	W58 13120.04..	▲	▲	0.219	0.094	0.356	0.178	0.016
TPGX 110204 FN-12	W58 18120.04..	▲	▲	0.250	0.094	0.410	0.205	0.016
TPGX 130304 FN-12	W58 23120.04..	▲	▲	0.313	0.125	0.519	0.259	0.016
TPGX 160304 FN-12	W58 32120.04..	▲	▲	0.375	0.125	0.626	0.313	0.016
Carbon steel / Alloy steel 				Order example: Article TPGX 060104 FN-12 Carbide grade K10 Order No. W58 03120.0423				
Stainless steel 		Ⓧ						
Cast iron / Ductile iron 								
Non-ferrous metals 		●	●					
Super-alloy / Titanium alloy 		●						
Hardened steel 								

Insert W59

TOHT



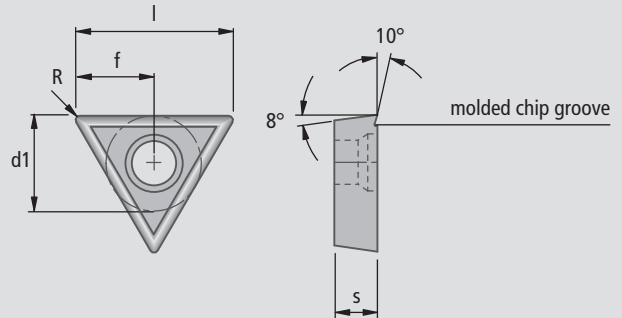
Application range:

- Multi-tooth milling cutter

Peripheral and surface ground triangular insert for roughing and facing operations:

2-sided contact produces a very high changeover accuracy when changing the insert.

Insert geometry:



Article ISO Description	Order No.	Carbide grades							d1	s	l	f	R
		uncoated		CVD coated			PVD coated						
Cutting edge design E = honed ▼	enter carbide code ▼	P25M E 03	K10 E 21	BK60 E 60	BK61 E 61	BK64 E 64	BK79 E 79	BK84 E 84					
TOHT 110304 EN-05	W59 18050.04..	▲	▲	▲	▲	▲	▲	▲	0.250	0.125	0.409	0.205	0.016
TOHT 160405 EN-05	W59 32050.05..	▲							0.375	0.187	0.622	0.310	0.020
TOHT 160408 EN-05	W59 32050.08..	▲	▲	▲	▲	▲	▲	▲			0.602	0.301	0.031
Carbon steel / Alloy steel									Order example: Article TOHT 110304 EN-05 Carbide grade P25M Order No. W59 18050.0403				
Stainless steel													
Cast iron / Ductile iron													
Non-ferrous metals													
Super-alloy / Titanium alloy													
Hardened steel													



Insert W60

DOHT

L.H. cutting form "L"

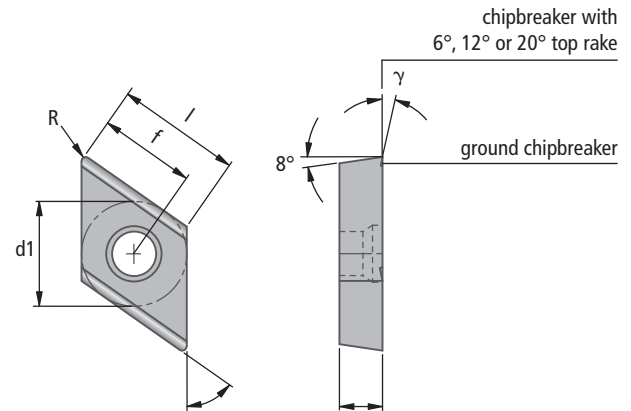


Application range:

- External and internal copy turning

Because of the positive cutting edge geometry, cutting is very efficient. Particularly suitable for long overhang and for thin-walled materials. The large selection of ground chipbreakers and carbides will suit almost any materials.

Insert geometry:

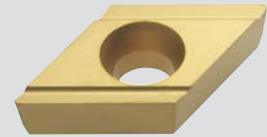


Article ISO Description	Order No.	Carbide grades			d1	s	l	γ	f	R
		uncoated		CVD coated						
Cutting edge design E = honed F = sharp	enter carbide code ▼	 P25M E 03	 K10 F 21	 BK60 E 60						
DOHT 070202..L-G06	W60 18060.02..	▲			0.250	0.094	0.291	6°	0.233	0.008
DOHT 070204..L-G06	W60 18060.04..			▲					0.225	0.016
DOHT 070202..L-G12	W60 18120.02..	▲	▲	▲	0.250	0.094	0.291	12°	0.233	0.008
DOHT 070204..L-G12	W60 18120.04..	▲	▲	▲					0.225	0.016
DOHT 070202..L-G20	W60 18200.02..		▲		0.250	0.094	0.291	20°	0.233	0.008
DOHT 11T302..L-G12	W60 32120.02..	▲	▲	▲	0.375	0.157	0.441	12°	0.353	0.008
DOHT 11T304..L-G12	W60 32120.04..	▲	▲	▲					0.346	0.016
DOHT 11T308..L-G12	W60 32120.08..			▲					0.331	0.031
Carbon steel / Alloy steel	P	●	●	●	Order example: Article DOHT 070202 EL-G06 Carbide grade P25M Order No. W60 18060.0203					
Stainless steel	M	●	●	●						
Cast iron / Ductile iron	K		●	●						
Non-ferrous metals	N		●							
Super-alloy / Titanium alloy	S		●							
Hardened steel	H									

Insert W60

DOHT

R.H. cutting form "R"

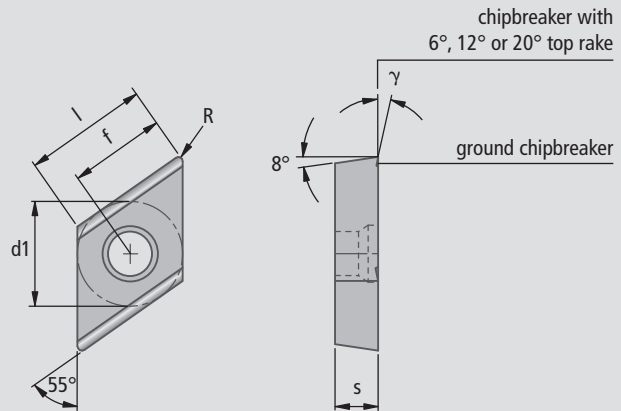


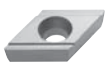
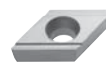
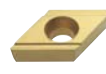














Application range:

- External and internal copy turning

Because of the positive cutting edge geometry, cutting is very efficient. Particularly suitable for long overhang and for thin-walled materials. The large selection of ground chipbreakers and carbides will suit almost any materials.

Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	γ	f	R
		uncoated		CVD coated						
Cutting edge design E = honed F = sharp	enter carbide code ▼	 P25M E 03	 K10 F 21	 BK60 E 60						
DOHT 070202..R-G06	W60 18360.02..	▲		▲	0.250	0.094	0.291	6°	0.233	0.008
DOHT 070204..R-G06	W60 18360.04..			▲					0.225	0.016
DOHT 070202..R-G12	W60 18420.02..	▲	▲	▲	0.250	0.094	0.291	12°	0.233	0.008
DOHT 070204..R-G12	W60 18420.04..	▲	▲	▲					0.225	0.016
DOHT 070202..R-G20	W60 18500.02..		▲		0.250	0.094	0.291	20°	0.233	0.008
DOHT 070204..R-G20	W60 18500.04..		▲						0.225	0.016
DOHT 11T308..R-G06	W60 32360.08..			▲	0.375	0.157	0.441	6°	0.331	0.031
DOHT 11T302..R-G12	W60 32420.02..	▲	▲	▲					0.353	0.008
DOHT 11T304..R-G12	W60 32420.04..	▲	▲	▲	0.375	0.157	0.441	12°	0.346	0.016
DOHT 11T308..R-G12	W60 32420.08..			▲					0.331	0.031
Carbon steel / Alloy steel					Order example: Article DOHT 070202 ER-G06 Carbide grade P25M Order No. W60 18360.0203					
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										



Insert W60

DOHW

Neutral cutting form "N"

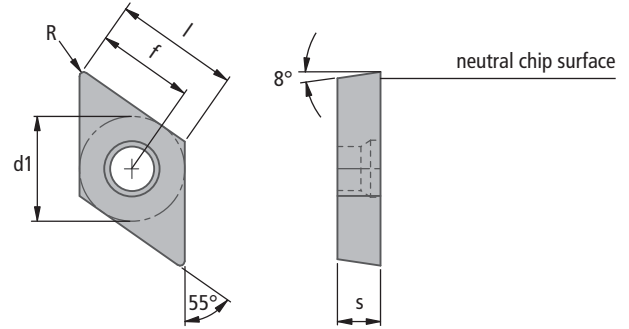



Application range:

- External and internal copy turning

Because of the positive cutting edge geometry, cutting is very efficient. Particularly suitable for long overhang and for thin-walled materials. The large selection of ground chipbreakers and carbides will suit almost any materials.

Insert geometry:

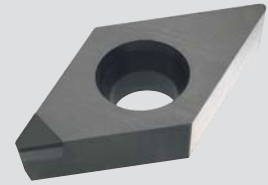


Article ISO Description	Order No.	Carbide grades					d1	s	l	f	R
		uncoated									
Cutting edge design E = honed		 K10 E 21									
	enter carbide code										
DOHW 070202 EN	W60 18600.02..	▲					0.250	0.094	0.291	0.205	0.008
DOHW 070204 EN	W60 18600.04..	▲								0.226	0.016
DOHW 11T302 EN	W60 32600.02..	▲					0.375	0.157	0.441	0.353	0.008
DOHW 11T304 EN	W60 32600.04..	▲								0.345	0.016
Carbon steel / Alloy steel	P	●					Order example: Article DOHW 070202 EN Carbide grade K10 Order No. W60 18600.0221				
Stainless steel	M	●									
Cast iron / Ductile iron	K	●									
Non-ferrous metals	N	●									
Super-alloy / Titanium alloy	S	●									
Hardened steel	H	●									

Insert W60

DOGW

with PCD or CBN cutting edges



Application range:

PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.

High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.

CBN: Internal and external machining, fine turning.

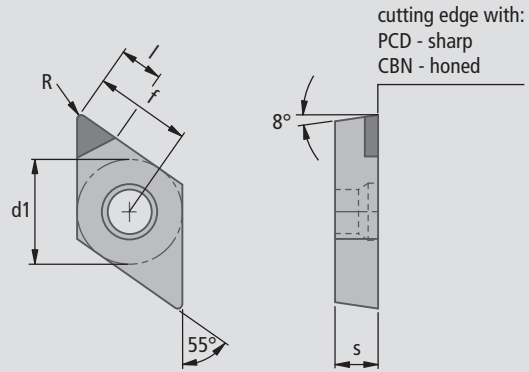
Inserts with cutting edges have the following advantages:

- high cutting speeds
- high dimensional consistency
- extremely long tool life
- high quality surface finish

CBN 57: Preferably for cast materials and alloys on a nickel cobalt base.

CBN 40: For machining hardened steels (harder than 52 HRC)

Insert geometry:



Article ISO Description	Order No.	Cutting material			d1	s	l min.	f	R
		PCD tipped PKD55 F 55	CBN tipped CBN57 T 57						
DOGW 070202 ..N	W60 18990.02..	▲	▲	▲	0.250	0.094	0.118	0.233	0.008
DOGW 070204 ..N	W60 18990.04..	▲	▲	▲				0.226	0.016
DOGW 11T302 ..N	W60 32990.02..	▲	▲	▲	0.375	0.157	0.118	0.353	0.008
DOGW 11T304 ..N	W60 32990.04..	▲	▲	▲				0.345	0.016
Carbon steel / Alloy steel					Order example: Article DOGW 070202 FN Cutting material PKD55 Order No. W60 18990.0255				
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals		●							
Super-alloy / Titanium alloy			●						
Hardened steel				≥ 52 HRC					



Insert W78

VOHT

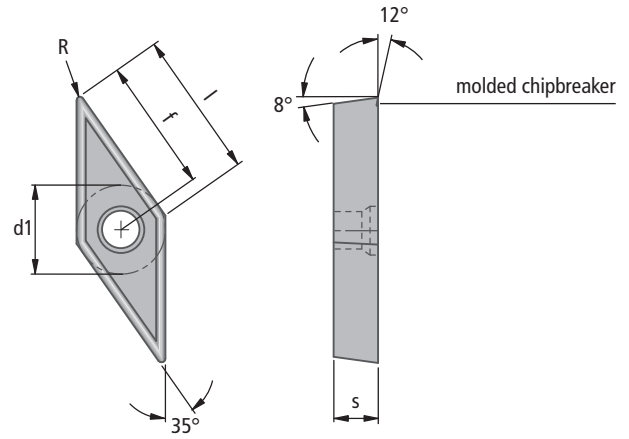




Application range:

- External and internal profile turning

The molded chipbreaker allows universal application. The positive Insert geometry and peripheral ground clearance faces produce low cutting forces with high changeover indexability.

Insert geometry:



Article ISO Description	Order No.	Carbide grades		d1	s	l	f	R
		uncoated	CVD coated					
	enter carbide code ▼	 P35 14	 BK66 66					
VOHT 110302-07	W78 18070.02..	▲	▲	0.250	0.125	0.433	0.379	0.008
VOHT 110304-07	W78 18070.04..	▲	▲				0.362	0.016
VOHT 160404-07	W78 32070.04..	▲	▲	0.375	0.187	0.630	0.560	0.016
VOHT 160408-07	W78 32070.08..	▲	▲				0.526	0.031
Carbon steel / Alloy steel P		●	●	Order example: Article VOHT 110302-07 Carbide grade P35 Order No. W78 18070.0214				
Stainless steel M		●	●					
Cast iron / Ductile iron K								
Non-ferrous metals N								
Super-alloy / Titanium alloy S								
Hardened steel H								

Insert W78

VOGW

with PCD or CBN cutting edges



Application range:

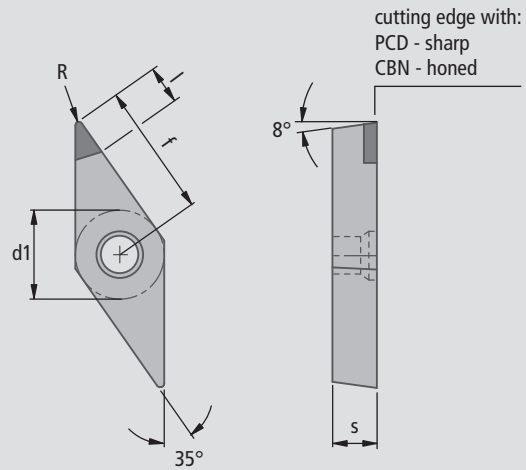
PCD: Internal and external machining, fine turning of non-ferrous metals, plastics, composites, rubber, graphites, etc.
High cutting speeds, good dimensional accuracy, above-average surface finish and extremely good tool life are all features of these PCD tipped inserts.









CBN: Internal and external machining, fine turning. Inserts with cutting edges have the following advantages:

- high cutting speeds
- high dimensional consistency
- extremely long tool life
- high quality surface finish

CBN 57: Preferably for cast materials and alloys on a nickel cobalt base.

Insert geometry:

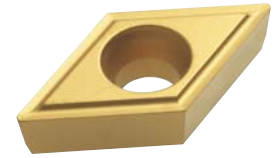


Article ISO Description	Order No.	Cutting material		d1	s	l	f	R
		PCD tipped  PKD55 F 55	CBN tipped  CBN57 T 57					
VOGW 110304 ..N	W78 18990.04..	▲	▲	0.250	0.094	0.098	0.362	0.016
VOGW 160408 ..N	W78 32990.08..	▲	▲	0.375	0.157	0.138	0.526	0.031
Carbon steel / Alloy steel 	Stainless steel 			Order example: Article VOGW 110304 FN Cutting material PKD55 Order No. W78 18990.0455				
Cast iron / Ductile iron 	Non-ferrous metals 	●	●					
Super-alloy / Titanium alloy 	Hardened steel 		●					



Insert W79

DOHT

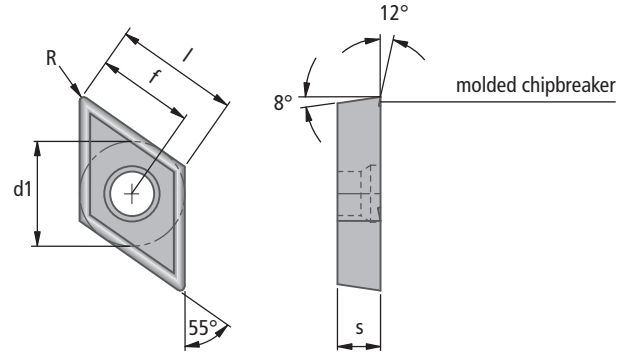


Application range:

- External and internal profile turning

The molded chipbreaker allows universal application. The positive Insert geometry and peripheral ground clearance faces produce low cutting forces with high indexability.

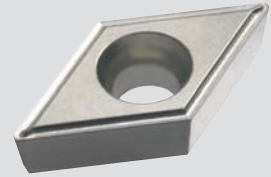
Insert geometry:



Article ISO Description	Order No. enter carbide code ▼	Carbide grades					d1	s	l	f	R
		uncoated		CVD coated							
		P25M 03	K10 21	BK60 60	BK61 61	BK64 64					
DOHT 070202-06	W79 18060.02..	▲	▲	▲		▲	0.250	0.094	0.291	0.233	0.008
DOHT 070204-06	W79 18060.04..	▲	▲	▲	▲	▲				0.226	0.016
DOHT 070208-06	W79 18060.08..			▲		▲				0.211	0.031
DOHT 11T302-06	W79 32060.02..	▲	▲	▲			0.375	0.157	0.441	0.353	0.008
DOHT 11T304-06	W79 32060.04..	▲	▲	▲	▲	▲				0.345	0.016
DOHT 11T308-06	W79 32060.08..	▲	▲	▲		▲				0.331	0.031
Carbon steel / Alloy steel	P	●	●	●		●	Order example: Article DOHT 070202-06 Carbide grade P25M Order No. W79 18060.0203				
Stainless steel	M	●		●		●					
Cast iron / Ductile iron	K		●		●						
Non-ferrous metals	N		●								
Super-alloy / Titanium alloy	S		●								
Hardened steel	H					● < 52 HRC					

Insert W79

DOHT

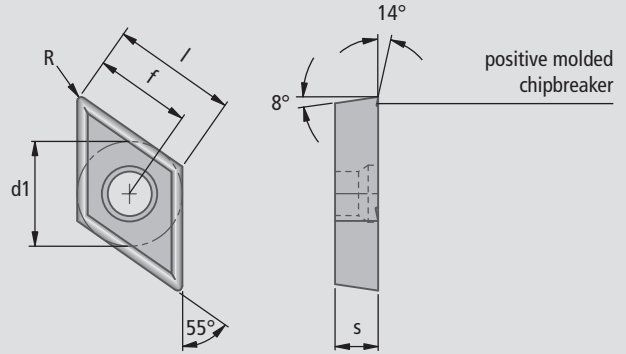


Application range:

- External and internal profile turning

The molded chipbreaker allows universal application. The positive Insert geometry and peripheral ground clearance faces produce low cutting forces with high indexability.

Insert geometry:



Important note!
The cutting edge on Cermet inserts is honed.

Article ISO Description	Order No. <small>enter carbide code ▼</small>	Cermet uncoated						
		 CK32 32	 CK37 37	d1	s	l	f	R
DOHT 070204-04	W79 18040.04..	▲	▲	0.250	0.094	0.291	0.226	0.016
DOHT 11T307-04	W79 32040.04..	▲	▲	0.375	0.157	0.441	0.345	0.016
Carbon steel / Alloy steel				Order example: Article DOHT 070204-04 Quality CK32 Order No. W79 18040.0432				
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								



Insert W83

W83..01

SOEX



Application range:

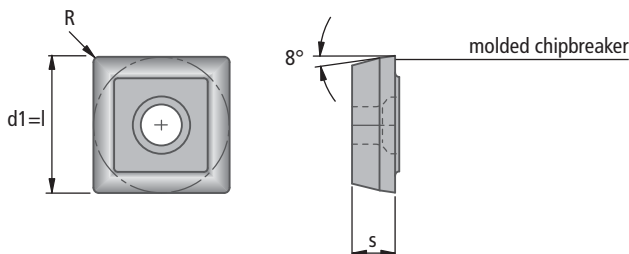
- Solid drilling
- Special tools
- TwinKom® Double Insert Tools
- Kometric® mounted seatings

Insert geometry:

Optimum solution for all roughing operations in which changeover accuracy of peripheral ground insert is not essential. Suitable for medium and strong steels and cast iron according to quality.

All-round geometry:

Wear-resistant insert for universal use for internal and external cutting.



Article ISO Description	Order No.	Carbide grades						d1	s	l	R
		CVD coated			PVD coated						
	enter carbide code ▼	BK61 61	BK6115 6115	BK6420* 6420	BK74 74	BK79 79	BK8425* 8425				
SOEX 050204-01	W83 13000.01..	▲	▲		▲	▲		0.219	0.094	0.219	0.016
	W83 13010.04..			▲			▲				
SOEX 060306-01	W83 18000.09..	▲	▲		▲	▲		0.250	0.125	0.250	0.024
	W83 18010.06..			▲			▲				
SOEX 07T308-01	W83 23000.01..	▲	▲		▲	▲		0.313	0.141	0.313	0.031
	W83 23010.08..			▲			▲				
SOEX 090408-01	W83 32000.15..	▲	▲		▲	▲		0.375	0.172	0.375	0.031
	W83 32010.08..			▲			▲				
SOEX 120508-01	W83 44000.18..	▲	▲		▲	▲		0.500	0.203	0.500	0.031
	W83 44010.08..			▲			▲				
Carbon steel / Alloy steel	P		●	●	●	●	●	Order example: Article SOEX 050204-01 Carbide grade BK6420 Order No. W83 13010.046420			
Stainless steel	M		●	●	●	●	●				
Cast iron / Ductile iron	K	●	●	●			●				
Non-ferrous metals	N										
Super-alloy / Titanium alloy	S				●	●					
Hardened steel	H	●	●								

* Coating BK6420 replaces BK69; coating BK8425 replaces BK84



Note:

Insert W83..01 in BK6115 and BK6420 is **NOT** suitable for use as an internal cutting edge for solid drilling.

Insert W83

W83..13

SOEX

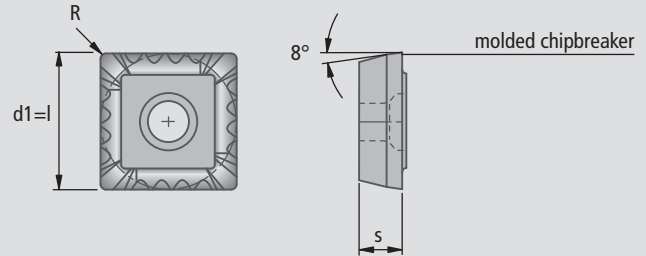


Application range:

- Solid drilling
- Special tools
- TwinKom® Double Insert Tools
- Kometric® mounted seatings

Optimum solution for steel with low carbon content and for stainless steels. Suitable for medium to high cutting speeds for internal and external cutting edge.

Insert geometry:



Article ISO Description	Order No. enter carbide code ▼	Carbide grades				d1	s	l	R
		CVD coated		PVD coated					
		 BK6420* 6420	 BK74 74	 BK79 79	 BK8425* 8425				
SOEX 050204-13	W83 13000.02..		▲	▲		0.219	0.094	0.219	0.016
	W83 13130.04..	▲			▲				
SOEX 060306-13	W83 18000.10..		▲	▲		0.250	0.125	0.250	0.024
	W83 18130.06..	▲			▲				
SOEX 07T308-13	W83 23000.02..		▲	▲		0.313	0.141	0.313	0.031
	W83 23130.08..	▲			▲				
SOEX 090408-13	W83 32000.17..		▲	▲		0.375	0.172	0.375	0.031
	W83 32130.08..	▲			▲				
SOEX 120508-13	W83 44000.19..		▲	▲		0.500	0.203	0.500	0.031
	W83 44130.08..	▲			▲				
Carbon steel / Alloy steel						Order example: Article SOEX 050204-13 Carbide grade BK6420 Order No. W83 13130.046420			
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									

* Coating BK6420 replaces BK69; coating BK8425 replaces BK84



Note:

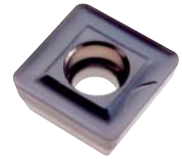
Insert W83..13 in BK6420 is **NOT** suitable for use as an internal cutting edge for solid drilling.



Insert W83

W83..21

SOEX

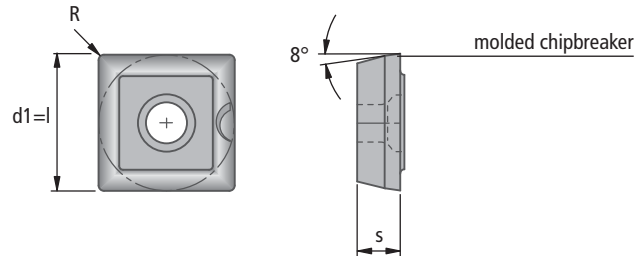














Application range:

- Solid drilling
- Special tools
- TwinKom® Double Insert Tools
- Kometric® mounted seatings

For cutting stainless and general steels and aluminium materials. As center cutting insert in BK2730 only conditionally applicable for drilling.

Insert geometry:



Article ISO Description	Order No.	Carbide grades		d1	s	l	R
		 BK2730 2730	 BK7710 7710				
SOEX 050204-21	W83 13210.04..	▲	▲	0.219	0.094	0.219	0.016
SOEX 060306-21	W83 18210.06..	▲	▲	0.250	0.125	0.250	0.024
SOEX 07T308-21	W83 23210.08..	▲	▲	0.313	0.141	0.313	0.031
SOEX 090408-21	W83 32210.08..	▲	▲	0.375	0.172	0.375	0.031
SOEX 120508-21	W83 44210.08..	▲	▲	0.500	0.203	0.500	0.031
Carbon steel / Alloy steel 				Order example: Article SOEX 050204-21 Carbide grade BK2730 Order No. W83 13210.042730			
Stainless steel 							
Cast iron / Ductile iron 							
Non-ferrous metals 							
Super-alloy / Titanium alloy 							
Hardened steel 							

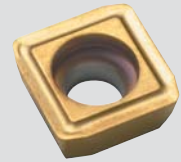


Note:

Insert W83..21 is **NOT** suitable for use as an internal cutting edge for solid drilling.

Insert W83

W83..21 / W83..33 – for drilling with minimum burring
SOEX

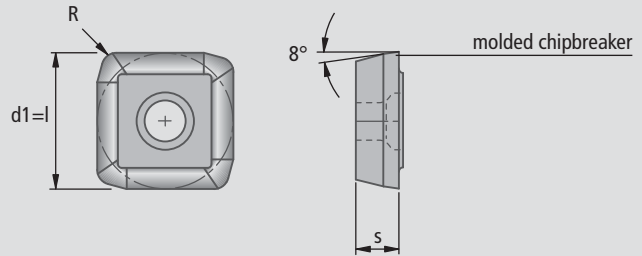


Application range:

- Solid drilling
- Special tools

For cutting steel and cast iron materials. Minimum burring at bore entrance and exit.

Insert geometry:



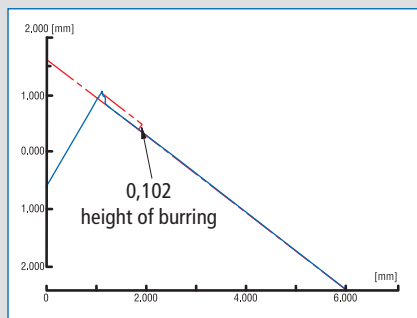
- Drive shaft machining
- Safe removal of disc produced during operation when drill is withdrawn
- Connecting rod machining C70 with minimized burring



Article ISO Description	Order No.	Carbide grades		d1	s	l	R	Important Note			
		BK79 79	BK8425* 8425					Tool-∅	Reduction		
SOEX 050204-BM2	W83 13000.04..	▲		0.219	0.094	0.219	0.016	0.551 - 0.632	0.002		
SOEX 050204-32	W83 13320.04..		▲					0.633 - 0.691	0.003		
SOEX 060306-BM2	W83 18000.18..	▲		0.250	0.125	0.250	0.024	0.692 - 0.847	0.004		
SOEX 060306-32	W83 18320.06..		▲					0.848 - 1.064	0.004		
SOEX 07T308-33	W83 23330.08..	▲	▲	0.313	0.141	0.313	0.031	1.735 - 2.048	0.004		
SOEX 090408-BM2	W83 32000.21..	▲		0.375	0.172	0.375	0.031	1.065 - 1.301	0.004		
SOEX 090408-32	W83 32320.08..		▲					2.049 - 2.559	0.004		
SOEX 120508-BM2	W83 44000.23..	▲		0.500	0.203	0.500	0.031	1.302 - 1.734	0.005		
SOEX 120508-32	W83 44320.08..		▲								
Carbon steel / Alloy steel P		●	●	Order example: Article SOEX 050204-32 Carbide grade BK6420 Order No. W83 13320.046420						* Coating BK8425 replaces BK84	
Stainless steel M		●	●								
Cast iron / Ductile iron K		●	●								
Non-ferrous metals N		●	●								
Super-alloy / Titanium alloy S		●	●								
Hardened steel H		●	●								

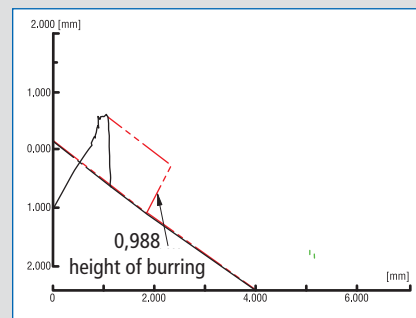
Burring example 1

Material: Unalloyed steel
Tool: KUB Quatron®
with burr minimizing insert



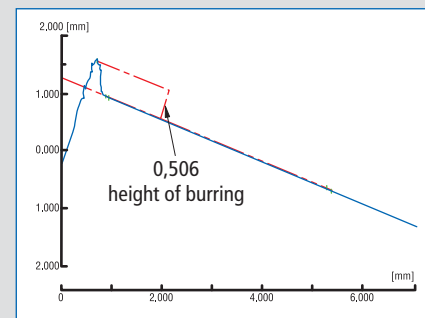
Burring example 2

Material: Unalloyed steel
Tool:
Insert drill: Competitor 1



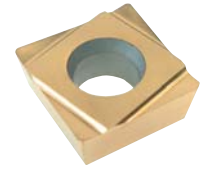
Burring example 3

Material: Unalloyed steel
Tool:
Insert drill: Competitor 2



Insert W83

SPGT – for high shear non-ferrous metal boring

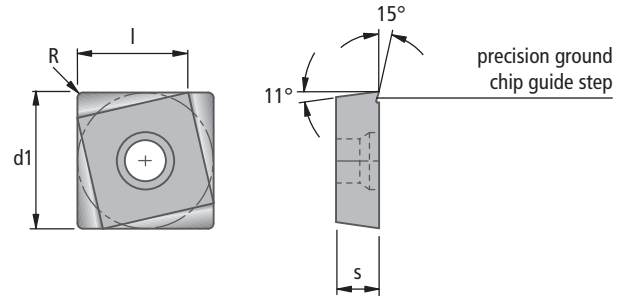











Application range:

BK77-coating

For cutting aluminium materials and plastics at medium cutting speeds. Tough grades and high resistance to build-up on cutting edges.

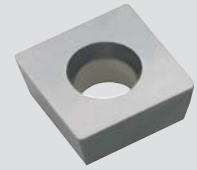
Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	R
		uncoated  K10 F 21	diamond coated  BK50 F 50	PVD coated  BK77 F 77				
SPGT 060202 FL-P15	W83 18000.01..		▲		0.250	0.094	0.178	0.008
SPGT 09T304 FL-P15	W83 32000.03..	▲	▲	▲	0.375	0.156	0.261	0.016
SPGT 09T308 FL-P15	W83 32000.05..		▲				0.247	0.031
SPGT 120404 FL-P15	W83 44000.14..		▲	▲	0.500	0.187	0.330	0.016
SPGT 120408 FL-P15	W83 44000.15..		▲	▲			0.316	0.031
Carbon steel / Alloy steel 					Order example: Article SPGT 060202 FL-P15 Carbide grade BK50 Order No. W83 18000.0150			
Stainless steel 								
Cast iron / Ductile iron 								
Non-ferrous metals 		●	●	●				
Super-alloy / Titanium alloy 				●				
Hardened steel 				●				

Insert W83

SPGW – for high shear non-ferrous metal boring

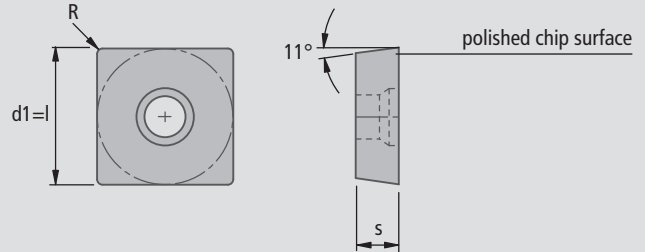














Application range:

with K10 coating

For cutting aluminum materials and plastics at medium cutting speeds. Tough grades and high resistance to build-up on cutting edges.

Insert geometry:



Article ISO Description	Order No.	Carbide grades				d1	s	l	R
		uncoated							
Cutting edge design F = sharp ▼	enter carbide code ▼		K10	F	21				
SPGW 060202 FN	W83 18000.15..	▲				0.250	0.094	0.250	0.008
SPGW 060204 FN	W83 18000.16..	▲							0.016
SPGW 09T304 FN	W83 32000.18..	▲				0.375	0.156	0.375	0.016
SPGW 09T308 FN	W83 32000.19..	▲							0.031
SPGW 120408 FN	W83 44000.21..	▲				0.500	0.187	0.500	0.031
Carbon steel / Alloy steel 						Order example: Article SPGW 060202 FN Carbide grade K10 Order No. W83 18000.1521			
Stainless steel 									
Cast iron / Ductile iron 									
Non-ferrous metals 									
Super-alloy / Titanium alloy 									
Hardened steel 									



Insert W83

SPGW – for high shear non-ferrous metal boring with PCD cutting edges



Application range:

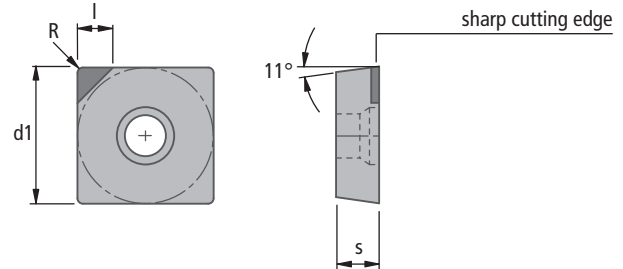
Insert geometry:

PCD55

Polycrystalline diamond cutting material for cutting aluminum materials, abrasive materials, plastics and compound materials at high cutting speeds.

PCD5520

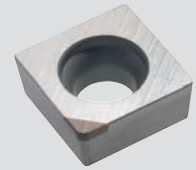
Increased edge stability so can also be used, for example, in aluminium with 12% Si content and with interrupted cut



Article ISO Description	Order No.	Cutting material		d1	s	l	R
		PCD tipped	PCD tipped				
Cutting edge design F = sharp ▼ enter carbide code ▼		 PKD55 F 55	 PKD5520 F 5520				
SPGW 060204 FN	W83 18000.13..		▲	0.250	0.094	0.118	0.016
SPGW 09T304 FN	W83 32000.13..	▲		0.375	0.156	0.118	0.016
SPGW 09T308 FN	W83 32000.14..		▲				0.031
SPGW 120404 FN	W83 44000.16..	▲		0.500	0.187	0.118	0.016
SPGW 120408 FN	W83 44000.17..		▲				0.031
Carbon steel / Alloy steel P Stainless steel M Cast iron / Ductile iron K Non-ferrous metals N Super-alloy / Titanium alloy S Hardened steel H		●	●	Order example: Article SPGW 09T304 FN Cutting material PKD55 Order No. W83 32000.1355			

Insert W83

SCGW – for hard machining and cast iron machining with CBN cutting edges



Application range:

Insert geometry:

CBN57

for cutting cast iron (GJL) and alloyed cast iron (ferrite content <10%) and chilled cast iron and some heat resistant alloys

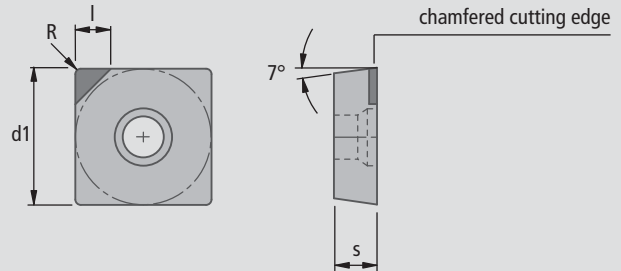
$v_c = 1640 \dots 2620$ (4920) sfm









$f = 0.004 \dots 0.020$ ipr

$a_p = 0.004 \dots 0.040$ inch

CBN40

for cutting hardened steels ≥ 52 HRC



Article ISO Description	Order No.	Cutting material				d1	s	l	R
		CBN tipped							
Cutting edge design T = land	enter carbide code	 CBN40 T 40	 CBN57 T 57						
SCGW 060204 TN	W83 18000.20..	▲	▲		0.250	0.094	0.118	0.016	
SCGW 09T308 TN	W83 32000.25..	▲	▲		0.375	0.156	0.118	0.031	
SCGW 120408 TN	W83 44000.26..	▲	▲		0.500	0.187	0.118	0.031	
Carbon steel / Alloy steel 					Order example: Article SCGW 060204 TN Cutting material CBN40 Order No. W83 18000.2040				
Stainless steel 									
Cast iron / Ductile iron 			●						
Non-ferrous metals 									
Super-alloy / Titanium alloy 		●	●						
Hardened steel 		○ ≥ 52 HRC							



Insert W85

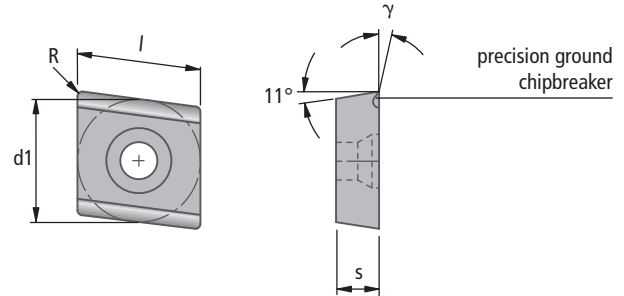
CPGT – for high shear non-ferrous metal boring
L.H. cutting form "L"



















Application range:

For cutting aluminum materials and plastics at medium cutting speeds. Tough grades and high resistance to build-up on cutting edges.

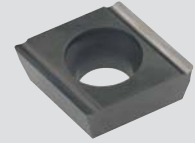
Insert geometry:



Article ISO Description	Order No.	Carbide grades			d1	s	l	γ	R
		uncoated  K10 F 21	diamond coated  BK50 F 50	PVD coated  BK77 F 77					
CPGT 040102 FL-P18	W85 09000.01..	▲	▲	▲	0.187	0.063	0.189	18°	0.009
CPGT 040104 FL-P18	W85 09000.03..	▲	▲	▲					0.016
CPGT 04T102 FL-P18	W85 09000.11..	▲			0.187	0.078	0.189	18°	0.009
CPGT 04T104 FL-P18	W85 09000.12..	▲							0.016
CPGT 060202 FL-P18	W85 18000.06..	▲	▲	▲	0.250	0.094	0.254	18°	0.009
CPGT 060204 FL-P18	W85 18000.08..	▲	▲	▲					0.016
CPGT 080302 FL-P18	W85 23000.01..	▲			0.313	0.125	0.317	18°	0.009
CPGT 080304 FL-P18	W85 23000.02..	▲							0.016
CPGT 09T304 FL-P18	W85 32000.23..	▲	▲	▲	0.375	0.156	0.380	18°	0.016
CPGT 09T308 FL-P18	W85 32000.24..	▲	▲	▲					0.031
CPGT 120404 FL-P18	W85 44000.29..	▲	▲	▲	0.500	0.187	0.508	18°	0.016
CPGT 120408 FL-P18	W85 44000.30..	▲	▲	▲					0.031
Carbon steel / Alloy steel					Order example: Article CPGT 040102 FL-P18 Carbide grade BK50 Order No. W85 09000.0150				
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									

Insert W85

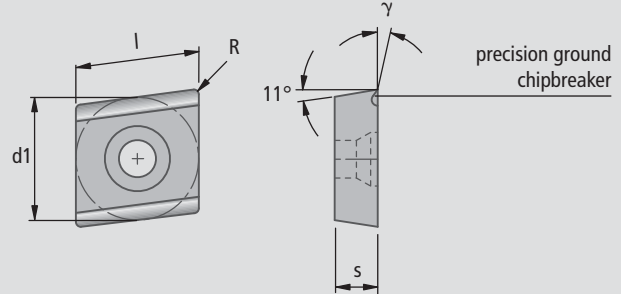
CPGT – for high shear non-ferrous metal boring
R.H. cutting form “R”














Application range:

For cutting aluminum materials and plastics at medium cutting speeds. Tough grades and high resistance to build-up on cutting edges.

Insert geometry:

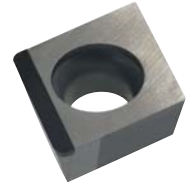


Article ISO Description	Order No.	Carbide grades					d1	s	l	γ	R
		uncoated									
Cutting edge design F = sharp ▼	enter carbide code ▼	 K10 F 21									
CPGT 040102 FR-P18	W85 09000.09..	▲					0.187	0.063	0.189	18°	0.009
CPGT 040104 FR-P18	W85 09000.10..	▲									0.016
CPGT 04T102 FR-P18	W85 09000.13..	▲					0.187	0.078	0.189	18°	0.009
CPGT 04T104 FR-P18	W85 09000.14..	▲									0.016
CPGT 060202 FR-P18	W85 18000.27..	▲					0.250	0.094	0.254	18°	0.009
CPGT 060204 FR-P18	W85 18000.28..	▲									0.016
CPGT 080302 FR-P18	W85 23000.03..	▲					0.313	0.125	0.317	18°	0.009
CPGT 080304 FR-P18	W85 23000.04..	▲									0.016
CPGT 09T304 FR-P18	W85 32000.34..	▲					0.375	0.156	0.380	18°	0.016
CPGT 09T308 FR-P18	W85 32000.35..	▲									0.031
CPGT 120404 FR-P18	W85 44000.38..	▲					0.500	0.187	0.508	18°	0.016
CPGT 120408 FR-P18	W85 44000.39..	▲									0.031
Carbon steel / Alloy steel							Order example: Article CPGT 040102 FR-P18 Carbide grade K10 Order No. W85 09000.0921				
Stainless steel											
Cast iron / Ductile iron											
Non-ferrous metals											
Super-alloy / Titanium alloy											
Hardened steel											



Insert W85

CPGW– for high shear non-ferrous metal boring
L.H. cutting form "L"

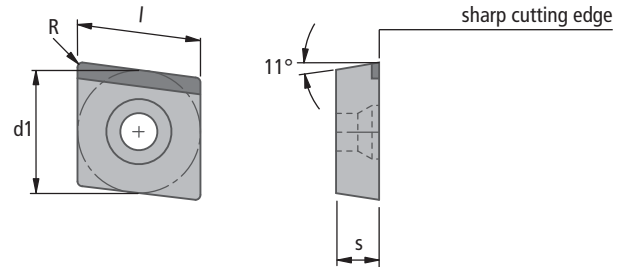



Application range:

PCD55

Polycrystalline diamond cutting material for cutting aluminum materials, abrasive materials, plastics and compound materials at high cutting speeds.

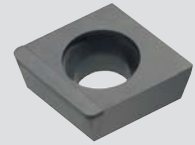
Insert geometry:



Article ISO Description	Order No.	Cutting material				d1	s	l	R
		PCD tipped							
Cutting edge design F = sharp	enter carbide code	 PKD55 F 55							
CPGW 04T102 FL	W85 09000.15..	▲				0.187	0.078	0.189	0.009
CPGW 060202 FL	W85 18000.30..	▲				0.250	0.094	0.254	0.009
CPGW 060204 FL	W85 18000.21..	▲							0.016
CPGW 080302 FL	W85 23000.05..	▲				0.313	0.125	0.317	0.009
CPGW 080304 FL	W85 23000.06..	▲							0.016
CPGW 09T304 FL	W85 32000.19..	▲				0.375	0.156	0.380	0.016
CPGW 09T308 FL	W85 32000.20..	▲							0.031
CPGW 120404 FL	W85 44000.25..	▲				0.500	0.187	0.508	0.016
CPGW 120408 FL	W85 44000.26..	▲							0.031
Carbon steel / Alloy steel		P				Order example: Article CPGW 04T102 FL Cutting material PKD55 Order No. W85 09000.1555			
Stainless steel		M							
Cast iron / Ductile iron		K							
Non-ferrous metals		N							
Super-alloy / Titanium alloy		S							
Hardened steel		H							

Insert W85

**CPGW– for high shear non-ferrous metal boring
R.H. cutting form "R"**

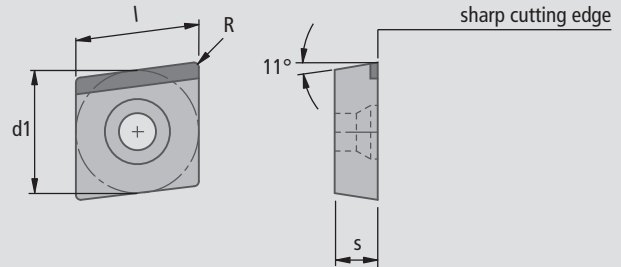


Application range:

PCD55

Polycrystalline diamond cutting material for cutting aluminum materials, abrasive materials, plastics and compound materials at high cutting speeds.

Insert geometry:



Article ISO Description	Order No.	Cutting material				
		PCD tipped PKD55 F 55	d1	s	l	R
CPGW 04T102 FR	W85 09000.16..	▲	0.187	0.078	0.189	0.009
CPGW 060202 FR	W85 18000.31..	▲	0.250	0.094	0.254	0.009
CPGW 060204 FR	W85 18000.29..	▲				0.016
CPGW 080302 FR	W85 23000.07..	▲	0.313	0.125	0.317	0.009
CPGW 080304 FR	W85 23000.08..	▲				0.016
CPGW 09T304 FR	W85 32000.36..	▲	0.375	0.156	0.380	0.016
CPGW 09T308 FR	W85 32000.37..	▲				0.031
CPGW 120404 FR	W85 44000.40..	▲	0.500	0.187	0.508	0.016
CPGW 120408 FR	W85 44000.41..	▲				0.031
Carbon steel / Alloy steel Stainless steel Cast iron / Ductile iron Non-ferrous metals Super-alloy / Titanium alloy Hardened steel		Order example: Article CPGW 04T102 FL Cutting material PKD55 Order No. W85 09000.1555				



Insert W85

CPGW – for high shear non-ferrous metal boring



Application range:

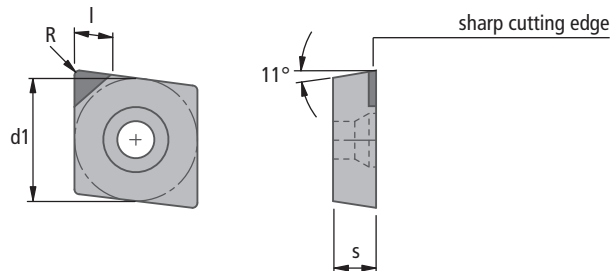
Insert geometry:

PCD55

Polycrystalline diamond cutting material for cutting aluminum materials, abrasive materials, plastics and compound materials at high cutting speeds.

PCD5520

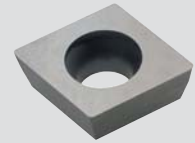
Increased edge stability so can also be used, for example, in aluminium with 12% Si content and with interrupted cut



Article ISO Description	Order No.	Cutting material		d1	s	l	R
		PKD55 F 55	PKD5520 F 5520				
CPGW 04T102 FN	W85 09000.07..		▲	0.187	0.078	0.079	0.009
CPGW 060201 FN	W85 18000.23..		▲	0.250	0.094	0.118	0.004
CPGW 060202 FN	W85 18000.24..		▲				0.009
CPGW 060204 FN	W85 18000.16..		▲				0.016
CPGW 09T302 FN	W85 32000.30..		▲	0.375	0.156	0.118	0.009
CPGW 09T304 FN	W85 32000.21..	▲	▲				0.016
CPGW 09T308 FN	W85 32000.22..	▲	▲				0.031
CPGW 120404 FN	W85 44000.27..	▲	▲	0.500	0.187	0.118	0.016
CPGW 120408 FN	W85 44000.28..	▲	▲				0.031
Carbon steel / Alloy steel	P			Order example: Article CPGW 04T102 FN Cutting material PKD5520 Order No. W85 09000.075520			
Stainless steel	M						
Cast iron / Ductile iron	K						
Non-ferrous metals	N	●	●				
Super-alloy / Titanium alloy	S						
Hardened steel	H						

Insert W85

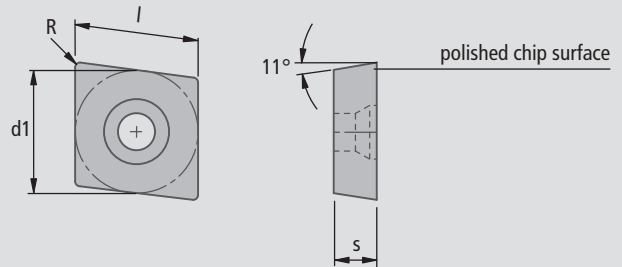
CPGW – for high shear non-ferrous metal boring










Application range:

For cutting aluminium materials and plastics at up to medium cutting speeds. Tough grades and high resistance to build-up on cutting edges.

Insert geometry:



Article ISO Description	Order No.	Carbide grades				d1	s	l	R
		uncoated							
Cutting edge design F = sharp ▼	enter carbide code ▼		K10	F	21				
CPGW 060202 FN	W85 18000.17..	▲				0.250	0.094	0.254	0.009
CPGW 060204 FN	W85 18000.18..	▲							0.016
CPGW 09T304 FN	W85 32000.26..	▲				0.375	0.156	0.380	0.016
CPGW 09T308 FN	W85 32000.27..	▲							0.031
CPGW 120404 FN	W85 44000.32..	▲				0.500	0.187	0.508	0.016
CPGW 120408 FN	W85 44000.33..	▲							0.031
Carbon steel / Alloy steel						Order example: Article CPGW 060202 FN Carbide grade K10 Order No. W85 18000.1721			
Stainless steel									
Cast iron / Ductile iron									
Non-ferrous metals									
Super-alloy / Titanium alloy									
Hardened steel									



Insert W85

CCGW – for hard machining and cast iron machining



Application range:

Insert geometry:

CBN57

for cutting cast iron (GJL) and alloyed cast iron (ferrite content <10%) and chilled cast iron and some heat resistant alloys

$vc = 1640 \dots 2620$ (4920) sfm

$f = 0.004 \dots 0.020$ ipr

$a_p = 0.004 \dots 0.040$ inch

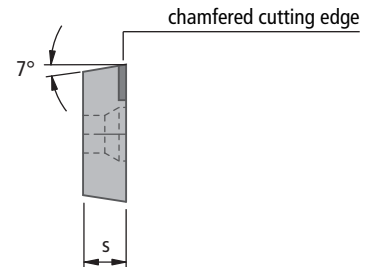
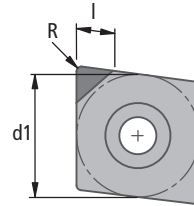
CBN40











for cutting hardened steels >48 HRC

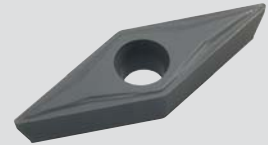
$vc = 330 \dots 520$ ft/min

$f = 0.004 \dots 0.012$ ipr

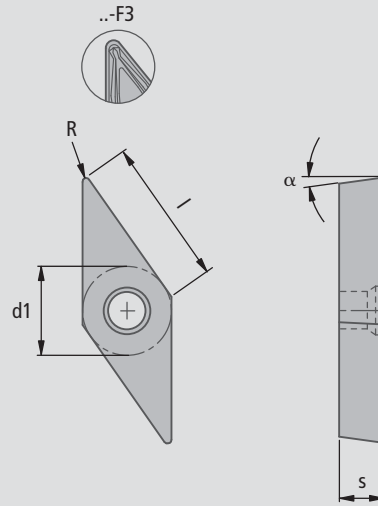
$a_p = 0.004 \dots 0.020$ inch















Article ISO Description	Order No.	Cutting material				d1	s	l	R
		CBN tipped							
Cutting edge design T = land	enter carbide code	 CBN40 T 40	 CBN57 T 57						
CCGW 04T102 TN	W85 09000.08..	▲	▲		0.187	0.078	0.079	0.009	
CCGW 060204 TN	W85 18000.26..	▲	▲		0.250	0.094	0.118	0.016	
CCGW 09T304 TN	W85 32000.31..	▲	▲		0.375	0.156	0.118	0.016	
CCGW 09T308 TN	W85 32000.32..	▲	▲	0.031					
CCGW 09T312 TN	W85 32000.33..		▲	0.047					
CCGW 120404 TN	W85 44000.35..		▲		0.500	0.187	0.118	0.016	
CCGW 120408 TN	W85 44000.36..	▲	▲	0.031					
Carbon steel / Alloy steel					Order example: Article CCGW 04T102 TN Cutting material CBN40 Order No. W85 09000.0840				
Stainless steel									
Cast iron / Ductile iron			●						
Non-ferrous metals									
Super-alloy / Titanium alloy			●						
Hardened steel				● ≥ 52 HRC					



Insert geometry:


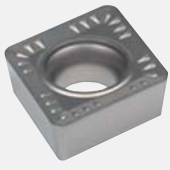
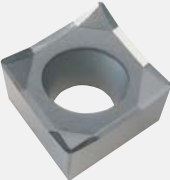

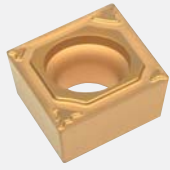
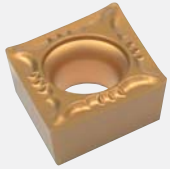


Article ISO Description	Order No. enter carbide code	Carbide grades				Cermet		f mm	a _p mm	d1	s	l	α	R
		CVD coated												
		BK75 75 v _c ft/min	BK76 76 v _c ft/min	CK39 39 v _c ft/min										
VCMT 160404-F3	W89 32000.05..	590-920	430-720	820-1080	390-590	660-980	490-920	0.005-0.010	0.039-0.197	0.375	0.187	0.650	7°	0.016
VCMT 160408-F3	W89 32000.06..							0.005-0.012	0.039-0.197					0.031
VBMT 160404	W89 32000.07..	260-620	260-590	390-890	200-490			0.005-0.014	0.039-0.197	0.375	0.187	0.654	5°	0.016
VBMT 160408	W89 32000.08..							0.006-0.016	0.039-0.197					0.031
Carbon steel / Alloy steel  Stainless steel  Cast iron / Ductile iron  Non-ferrous metals  Super-alloy / Titanium alloy  Hardened steel 								Order example: Article VCMT 160404-F3 Carbide grade BK75 Order No. W89 32000.0575						

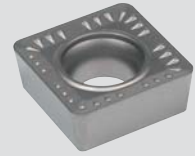


ISO Inserts

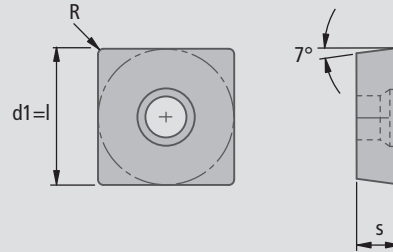
Examples of C85 ISO inserts

Geometry -01	
	Rough machining $a_p = 0.020 - 0.168$ inch $f = 0.004 - 0.014$ inch
Geometry -05	
	Roughing/ semi-finishing for machining cast iron $a_p = 0.020 - 0.168$ inch $f = 0.004 - 0.010$ inch
Geometry -12	
	Semi-finishing $a_p = 0.015 - 0.279$ inch $f = 0.002 - 0.020$ inch
Geometry -14	
	Finish machining for Cermet $a_p = 0.002 - 0.098$ inch $f = 0.002 - 0.010$ inch
Geometry -14	
	Finish machining for coated carbide $a_p = 0.006 - 0.046$ inch $f = 0.001 - 0.004$ inch
Geometry -15	
	Semi-finishing $a_p = 0.010 - 0.127$ inch $f = 0.001 - 0.011$ inch

Figures given depend on insert size and corner radius
(see pages 9.91 - 9.94)



Insert geometry:

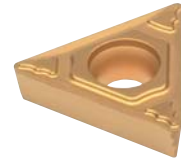


Article ISO Description	Order No. enter carbide code	Carbide grades						Cermet			f	ap	d1	s	l	R	
		uncoated		CVD coated													
		K10 23 vc ft/min		BK7525 7525 vc ft/min		BK7610 7610 vc ft/min		CK3215 3215 vc ft/min									
R SCMT 09T304-01	C83 32010.04..			260-790	330-590	195-590					.004-.007	.020-.118	0.375	0.156	0.375	0.016	
R SCMT 09T308-01	C83 32010.08..			260-790	330-590	195-590				.009-.014	.039-.118	0.031					
R/S SCMT 09T304-05	C83 32050.04..						390-890	195-890			P .004-.009 K .020-.118	P .006-.010 K .020-.118	0.375	0.156	0.375	0.016	
R/S SCMT 09T308-05	C83 32050.08..						390-890	195-890			.009-.016	.039-.118				0.031	
F SCMT 09T304-14	C83 32140.04..			260-790	330-590	195-590			390-890	330-720	175-985	BK7525: .004-.009 CK3215: .002-.010	BK7525: .002-.059 CK3215: .002-.098	0.375	0.156	0.375	0.016
F SCMT 09T308-14	C83 32140.08..			260-790	330-590	195-590			390-890	330-720	175-985	BK7525: .004-.009 CK3215: .002-.010	BK7525: .002-.059 CK3215: .002-.098				0.031
R SCMT 120404-01	C83 44010.04..			260-790	330-590	195-590						.004-.007	.020-.163	0.500	0.187	0.500	0.016
R SCMT 120408-01	C83 44010.08..			260-790	330-590	195-590						.009-.014	.039-.163				0.031
R SCMT 120412-01	C83 44010.12..			260-790	330-590	195-590						.012-.018	.059-.197				0.047
R/S SCMT 120404-05	C83 44050.04..						390-890	195-890				.004-.008	.020-.165	0.500	0.187	0.500	0.016
R/S SCMT 120408-05	C83 44050.08..						390-890	195-890				.009-.016	.039-.165				0.031
R/S SCMT 120412-05	C83 44050.12..						390-890	195-890				.013-.025	.059-.165				0.047
S SCGT 120408FN-12	C83 44120.08..	295-655	655-1970									.009-.022	.059-.295	0.500	0.187	0.500	0.031
F SCMT 120408-14	C83 44140.08..			260-790	330-590	195-590						.006-.018	.059-.197	0.500	0.187	0.500	0.031
Carbon steel / Alloy steel		P												Order example: Article SCMT 09T304-01 Carbide grade BK7525 Order No. C83 32010.047525			
Stainless steel		M															
Cast iron / Ductile iron		K															
Non-ferrous metals		N															
Super-alloy / Titanium alloy		S															
Hardened steel		H															

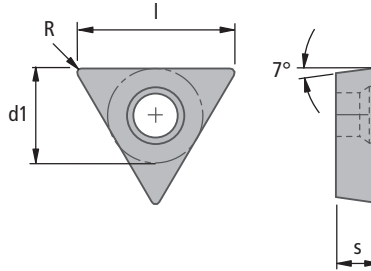


ISO Inserts C84

TCMT / TCGT



Insert geometry:



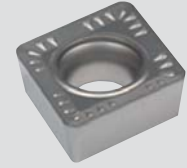
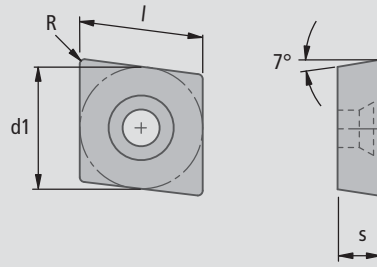
Article ISO Description	Order No. enter carbide code	Carbide grades					Cermet			f	ap	d1	s	l	R	
		CVD coated														
		BK7525 7525 vc ft/min			BK7610 7610 vc ft/min		CK3215 3215 vc ft/min									
R/S TCMT 090204-05	C84 13050.04..	260-790	330-590	195-590						.004-.009	.020-.118	0.219	0.094	0.378	0.016	
R TCMT 110208-01	C84 18010.08..	260-790	330-590	195-590						.009-.014	.039-.143	0.250	0.094	0.433	0.031	
R/S TCMT 110204-05	C84 18050.04..					390-890	195-890			.004-.009	.020-.143	0.250	0.094	0.433	0.016	
R/S TCMT 110208-05	C84 18050.08..								.009-.016	.039-.143	0.031					
F TCGT 110202-14	C84 18140.02..							390-890	330-720	175-985	.002-.010	.002-.098	0.250	0.094	0.433	0.009
F TCMT 110202-14	C84 18140.02..	260-790	330-590	195-590						.006-.022	.006-.052	0.250	0.094	0.433	0.009	
F TCMT 110204-14	C84 18140.04..	260-790	330-590	195-590				390-890	330-720	175-985	BK7525: .001-.004 CK3215: .002-.010	BK7525: .011-.052 CK3215: .002-.098	0.250	0.094	0.433	0.016
F TCMT 110208-14	C84 18140.08..	260-790	330-590	195-590						.002-.009	.022-.052	0.250	0.094	0.433	0.031	
S TCMT 110202-15	C84 18150.02..	260-790	330-590	195-590						.001-.003	.010-.108	0.250	0.094		0.009	
S TCMT 110204-15	C84 18150.04..									.002-.006	.020-.108				0.016	
R TCMT 16T304-01	C84 32010.04..	260-790	330-590	195-590						.004-.007	.020-.214	0.375	0.156	0.650	0.016	
R TCMT 16T308-01	C84 32010.08..									.009-.014	.039-.214				0.031	
R/S TCMT 16T304-05	C84 32050.04..				390-890	195-890				.004-.008	.020-.214	0.375	0.156	0.650	0.016	
R/S TCMT 16T308-05	C84 32050.08..									.009-.016	.039-.214				0.031	
F TCMT 16T304-14	C84 32140.04..	260-790	330-590	195-590						.001-.004	.035-.078	0.375	0.156	0.650	0.016	
F TCMT 16T308-14	C84 32140.08..									.002-.009	.022-.078				0.031	
Carbon steel / Alloy steel P Stainless steel M Cast iron / Ductile iron K Non-ferrous metals N Super-alloy / Titanium alloy S Hardened steel H											Order example: Article TCMT 090204-05 Carbide grade BK7525 Order No. C84 13050.047525					

ISO Inserts C85

CCMT / CCGT



Insert geometry:



Article ISO Description	Order No. <small>enter carbide code</small>	Carbide grades						Cermet		f	ap	d1	s	l	R
		uncoated		CVD coated				CK3215							
		K10 23 vc ft/min	BK7525 7525 vc ft/min	BK73 73 vc ft/min	BK7610 7610 vc ft/min	CK3215 3215 vc ft/min									
R CCMT 060204-01	C85 18010.04..		260-790 330-590 195-590						.004-.007	.020-.084	0.250	0.094	0.254	0.016	
R/S CCMT 060204-05	C85 18050.04..					390-890 195-890			.004-.008	.020-.084	0.250	0.094	0.254	0.016	
S CCGT 060202-12	C85 18120.02..	295-655 655-1970							.002-.005	.015-.140	0.250	0.094	0.254	0.009	
S CCGT 060204-12	C85 18120.04..							.004-.007	.020-.125	0.016					
F CCGT 060202-14	C85 18140.02..						390-890 330-720 175-985		.002-.010	.002-.098	0.250	0.094	0.254	0.009	
F CCMT 060202-14	C85 18140.02..		260-790 330-590 195-590						.001-.002	.006-.030	0.250	0.094	0.254	0.009	
F CCMT 060204-14	C85 18140.04..		260-790 330-590 195-590				390-890 330-720 175-985	BK7525: .001-.004 CK3215: .002-.010	BK7525: .011-.030 CK3215: .002-.098	0.250	0.094	0.254	0.016		
S CCMT 060202-15	C85 18150.02..				165-755 180-655				.001-.003	.010-.063	0.250	0.094	0.254	0.009	
S CCMT 060204-15	C85 18150.04..							.002-.006	.020-.063	0.016					
R CCMT 09T304-01	C85 32010.04..		260-790 330-590 195-590						.004-.007	.020-.125	0.375	0.156	0.381	0.016	
R CCMT 09T308-01	C85 32010.08..							.008-.014	.039-.125	0.031					
R/S CCMT 09T304-05	C85 32050.04..					390-890 195-890			.004-.008	.020-.125	0.375	0.156	0.381	0.016	
R/S CCMT 09T308-05	C85 32050.08..							.009-.016	.039-.125	0.031					
S CCGT 09T304-12	C85 32120.04..	295-655 655-1970							.004-.010	.030-.140	0.375	0.156	0.381	0.016	
S CCGT 09T308-12	C85 32120.08..							.009-.020	.060-.209	0.031					
F CCMT 09T304-14	C85 32140.04..		260-790 330-590 195-590				390-890 330-720 175-985	BK7525: .001-.004 CK3215: .002-.010	BK7525: .011-.046 CK3215: .002-.098	0.375	0.156	0.381	0.016		
F CCMT 09T308-14	C85 32140.08..								.002-.010	.002-.098	0.375	0.156	0.381	0.031	
S CCMT 09T304-15	C85 32150.04..				165-755 180-655				.002-.006	.020-.095	0.375	0.156	0.381	0.016	
S CCMT 09T308-15	C85 32150.08..		260-790 330-590 195-590		165-755 180-655				.005-.011	.039-.095	0.375	0.156	0.381	0.031	
R CCMT 120404-01	C85 44010.04..		260-790 330-590 195-590						.004-.007	.020-.168	0.500	0.187	0.508	0.016	
R CCMT 120408-01	C85 44010.08..							.009-.014	.039-.168	0.031					
R/S CCMT 120404-05	C85 44050.04..								.004-.008	.020-.168	0.500	0.187	0.508	0.016	
R/S CCMT 120408-05	C85 44050.08..					390-890 195-890			.009-.016	.039-.143				0.031	
R/S CCMT 120412-05	C85 44050.12..								.013-.024	.059-.168				0.047	
S CCGT 120404-12	C85 44120.04..	295-655 655-1970							.004-.010	.030-.279	0.500	0.187	0.508	0.016	
S CCGT 120408-12	C85 44120.08..							.009-.020	.060-.279	0.031					
S CCMT 120404-15	C85 44150.04..		260-790 330-590 195-590						.002-.006	.020-.127	0.500	0.187	0.508	0.016	
S CCMT 120408-15	C85 44150.08..							.005-.011	.039-.127	0.031					
Carbon steel / Alloy steel P Stainless steel M Cast iron / Ductile iron K Non-ferrous metals N Super-alloy / Titanium alloy S Hardened steel H										Order example: Article CCMT 060204-01 Carbide grade BK7525 Order No. C85 18010.047525					

▲ Availability: for delivery see current price and stock list

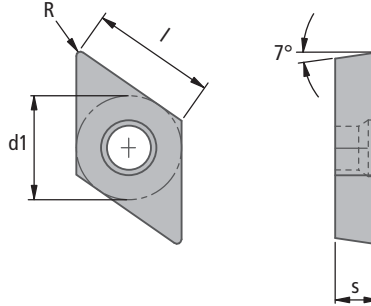


ISO Inserts C86

DCMT / DCGT



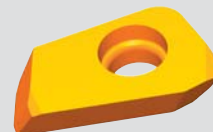
Insert geometry:




























Article ISO Description	Order No. enter carbide code	Carbide grades						Cermets			f	ap	d1	s	l	R	
		uncoated		CVD coated													
		K10 23 vc ft/min		BK7525 7525 vc ft/min	BK7610 7610 vc ft/min		CK3215 3215 vc ft/min										
R/S DCMT 070204-05	C86 18050.04..						390-890	195-890				.001-.004	.011-.101	0.250	0.094	0.305	0.016
F DCGT 070202-14	C86 18140.02..								390-890	330-720	175-985	.002-.010	.002-.098	0.250	0.094	0.305	0.009
F DCMT 070202-14	C86 18140.02..			260-790	330-590	195-590						.001-.002	.006-.037	0.250	0.094	0.305	0.009
F DCMT 070204-14	C86 18140.04..			260-790	330-590	195-590			390-890	330-720	175-985	BK7525: .001-.004 CK3215: .002-.010	BK7525: .011-.037 CK3215: .002-.098	0.250	0.094	0.305	0.016
S DCMT 070202-15	C86 18150.02..			260-790	330-590	195-590						.001-.003	.010-.076	0.250	0.094	0.305	0.009
S DCMT 070204-15	C86 18150.04..			260-790	330-590	195-590						.002-.006	.020-.077				0.016
R/S DCMT 11T304-05	C86 32050.04..						390-890	195-890				.004-.008	.020-.151	0.375	0.156	0.458	0.016
R/S DCMT 11T308-05	C86 32050.08..											.009-.016	.039-.151				0.031
S DCGT 11T304-12	C86 32120.04..	295-655	655-1970									.004-.010	.030-.252	0.375	0.156	0.458	0.016
S DCGT 11T308-12	C86 32120.08..											.009-.020	.060-.252				0.031
F DCMT 11T304-14	C86 32140.04..			260-790	330-590	195-590			390-890	330-720	175-985	BK7525: .001-.004 CK3215: .002-.010	BK7525: .011-.055 CK3215: .002-.098	0.375	0.156	0.458	0.016
F DCMT 11T308-14	C86 32140.08..			260-790	330-590	195-590						BK7525: .002-.009 CK3215: .002-.010	BK7525: .022-.055 CK3215: .002-.098				0.031
S DCMT 11T304-15	C86 32150.04..			260-790	330-590	195-590						.002-.006	.020-.114	0.375	0.156	0.458	0.016
S DCMT 11T308-15	C86 32150.08..			260-790	330-590	195-590						.005-.011	.039-.114				0.031
Carbon steel / Alloy steel		P		●			●		●								
Stainless steel		M			●					●							
Cast iron / Ductile iron		K	●				●		●		●						
Non-ferrous metals		N	●														
Super-alloy / Titanium alloy		S															
Hardened steel		H															
Order example: Article DCMT 070204-05 Carbide grade BK7610 Order No. C86 18050.047610																	

Insert H60 / H62

XOHX - Ø 0.681" - 0.835"



Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.

Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX0802-17.3....	H60 17300 ..							XOHX0802-17.3-62...	H62 17300 ..	
XOHX0802-17.4....	H60 17400 ..							XOHX0802-17.4-62...	H62 17400 ..	
XOHX0802-17.5....	H60 17500 ..	8440	2715	84	8125	2740	8140	XOHX0802-17.5-62...	H62 17500 ..	7710
XOHX0802-17.6....	H60 17600 ..							XOHX0802-17.6-62...	H62 17600 ..	
XOHX0802-17.7....	H60 17700 ..							XOHX0802-17.7-62...	H62 17700 ..	
XOHX0802-17.8....	H60 17800 ..							XOHX0802-17.8-62...	H62 17800 ..	
XOHX0802-17.9....	H60 17900 ..							XOHX0802-17.9-62...	H62 17900 ..	
XOHX0802-18.0....	H60 18000 ..	8440	2715	84	8125	2740	8140	XOHX0802-18.0-62...	H62 18000 ..	7710
XOHX0802-18.1....	H60 18100 ..							XOHX0802-18.1-62...	H62 18100 ..	
XOHX0802-18.2....	H60 18200 ..							XOHX0802-18.2-62...	H62 18200 ..	
XOHX0802-18.3....	H60 18300 ..							XOHX0802-18.3-62...	H62 18300 ..	
XOHX0802-18.4....	H60 18400 ..							XOHX0802-18.4-62...	H62 18400 ..	
XOHX0802-18.5....	H60 18500 ..	8440	2715	84	8125	2740	8140	XOHX0802-18.5-62...	H62 18500 ..	7710
XOHX0802-18.6....	H60 18600 ..							XOHX0802-18.6-62...	H62 18600 ..	
XOHX0802-18.7....	H60 18700 ..							XOHX0802-18.7-62...	H62 18700 ..	
XOHX0802-18.8....	H60 18800 ..							XOHX0802-18.8-62...	H62 18800 ..	
XOHX0802-18.9....	H60 18900 ..							XOHX0802-18.9-62...	H62 18900 ..	
XOHX0802-19.0....	H60 19000 ..	8440	2715	84	8125	2740	8140	XOHX0802-19.0-62...	H62 19000 ..	7710
XOHX0802-19.1....	H60 19100 ..							XOHX0802-19.1-62...	H62 19100 ..	
XOHX0802-19.2....	H60 19200 ..							XOHX0802-19.2-62...	H62 19200 ..	
XOHX0802-19.3....	H60 19300 ..							XOHX0802-19.3-62...	H62 19300 ..	
XOHX0802-19.4....	H60 19400 ..							XOHX0802-19.4-62...	H62 19400 ..	
XOHX0802-19.5....	H60 19500 ..	8440	2715	84	8125	2740	8140	XOHX0802-19.5-62...	H62 19500 ..	7710
XOHX0802-19.6....	H60 19600 ..							XOHX0802-19.6-62...	H62 19600 ..	
XOHX0802-19.7....	H60 19700 ..							XOHX0802-19.7-62...	H62 19700 ..	
XOHX0802-19.8....	H60 19800 ..							XOHX0802-19.8-62...	H62 19800 ..	
XOHX0802-19.9....	H60 19900 ..							XOHX0802-19.9-62...	H62 19900 ..	
XOHX0802-20.0....	H60 20000 ..	8440	2715	84	8125	2740	8140	XOHX0802-20.0-62...	H62 20000 ..	7710
XOHX0802-20.1....	H60 20100 ..							XOHX0802-20.1-62...	H62 20100 ..	
XOHX0802-20.2....	H60 20200 ..							XOHX0802-20.2-62...	H62 20200 ..	
XOHX0802-20.3....	H60 20300 ..							XOHX0802-20.3-62...	H62 20300 ..	
XOHX0802-20.4....	H60 20400 ..							XOHX0802-20.4-62...	H62 20400 ..	
XOHX0802-20.5....	H60 20500 ..	8440	2715	84	8125	2740	8140	XOHX0802-20.5-62...	H62 20500 ..	7710
XOHX0802-20.6....	H60 20600 ..							XOHX0802-20.6-62...	H62 20600 ..	
XOHX0802-20.7....	H60 20700 ..							XOHX0802-20.7-62...	H62 20700 ..	
XOHX1003-20.8....	H60 20800 ..							XOHX1003-20.8-62...	H62 20800 ..	
XOHX1003-20.9....	H60 20900 ..							XOHX1003-20.9-62...	H62 20900 ..	
XOHX1003-21.0....	H60 21000 ..	8440	2715	84	8125	2740	8140	XOHX1003-21.0-62...	H62 21000 ..	7710
XOHX1003-21.1....	H60 21100 ..							XOHX1003-21.1-62...	H62 21100 ..	
XOHX1003-21.2....	H60 21200 ..							XOHX1003-21.2-62...	H62 21200 ..	
Carbon steel / Alloy steel								Order example:		
Stainless steel								Article		
Cast iron / Ductile iron								XOHX0802-17.5		
Non-ferrous metals								Carbide grade		
Super-alloy / Titanium alloy								BK8440		
Hardened steel								Order No.		
								H60 17500.8440		









Insert H60 / H62

XOHX – Ø 0.838" - 0.992"

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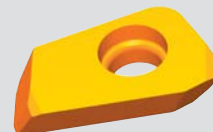


Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.



























		Carbide grades								
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX1003-21.3...	H60 21300 ..							XOHX1003-21.3-62...	H62 21300 ..	
XOHX1003-21.4...	H60 21400 ..							XOHX1003-21.4-62...	H62 21400 ..	
XOHX1003-21.5...	H60 21500 ..	8440	2715	84	8125	2740	8140	XOHX1003-21.5-62...	H62 21500 ..	7710
XOHX1003-21.6...	H60 21600 ..							XOHX1003-21.6-62...	H62 21600 ..	
XOHX1003-21.7...	H60 21700 ..							XOHX1003-21.7-62...	H62 21700 ..	
XOHX1003-21.8...	H60 21800 ..							XOHX1003-21.8-62...	H62 21800 ..	
XOHX1003-21.9...	H60 21900 ..							XOHX1003-21.9-62...	H62 21900 ..	
XOHX1003-22.0...	H60 22000 ..	8440	2715	84	8125	2740	8140	XOHX1003-22.0-62...	H62 22000 ..	7710
XOHX1003-22.1...	H60 22100 ..							XOHX1003-22.1-62...	H62 22100 ..	
XOHX1003-22.2...	H60 22200 ..							XOHX1003-22.2-62...	H62 22200 ..	
XOHX1003-22.3...	H60 22300 ..							XOHX1003-22.3-62...	H62 22300 ..	
XOHX1003-22.4...	H60 22400 ..							XOHX1003-22.4-62...	H62 22400 ..	
XOHX1003-22.5...	H60 22500 ..	8440	2715	84	8125	2740	8140	XOHX1003-22.5-62...	H62 22500 ..	7710
XOHX1003-22.6...	H60 22600 ..							XOHX1003-22.6-62...	H62 22600 ..	
XOHX1003-22.7...	H60 22700 ..							XOHX1003-22.7-62...	H62 22700 ..	
XOHX1003-22.8...	H60 22800 ..							XOHX1003-22.8-62...	H62 22800 ..	
XOHX1003-22.9...	H60 22900 ..							XOHX1003-22.9-62...	H62 22900 ..	
XOHX1003-23.0...	H60 23000 ..	8440	2715	84	8125	2740	8140	XOHX1003-23.0-62...	H62 23000 ..	7710
XOHX1003-23.1...	H60 23100 ..							XOHX1003-23.1-62...	H62 23100 ..	
XOHX1003-23.2...	H60 23200 ..							XOHX1003-23.2-62...	H62 23200 ..	
XOHX1003-23.3...	H60 23300 ..							XOHX1003-23.3-62...	H62 23300 ..	
XOHX1003-23.4...	H60 23400 ..							XOHX1003-23.4-62...	H62 23400 ..	
XOHX1003-23.5...	H60 23500 ..	8440	2715	84	8125	2740	8140	XOHX1003-23.5-62...	H62 23500 ..	7710
XOHX1003-23.6...	H60 23600 ..							XOHX1003-23.6-62...	H62 23600 ..	
XOHX1003-23.7...	H60 23700 ..							XOHX1003-23.7-62...	H62 23700 ..	
XOHX1003-23.8...	H60 23800 ..							XOHX1003-23.8-62...	H62 23800 ..	
XOHX1003-23.9...	H60 23900 ..							XOHX1003-23.9-62...	H62 23900 ..	
XOHX1003-24.0...	H60 24000 ..	8440	2715	84	8125	2740	8140	XOHX1003-24.0-62...	H62 24000 ..	7710
XOHX1003-24.1...	H60 24100 ..							XOHX1003-24.1-62...	H62 24100 ..	
XOHX1003-24.2...	H60 24200 ..							XOHX1003-24.2-62...	H62 24200 ..	
XOHX1003-24.3...	H60 24300 ..							XOHX1003-24.3-62...	H62 24300 ..	
XOHX1003-24.4...	H60 24400 ..							XOHX1003-24.4-62...	H62 24400 ..	
XOHX1003-24.5...	H60 24500 ..	8440	2715	84	8125	2740	8140	XOHX1003-24.5-62...	H62 24500 ..	7710
XOHX1003-24.6...	H60 24600 ..							XOHX1003-24.6-62...	H62 24600 ..	
XOHX1003-24.7...	H60 24700 ..							XOHX1003-24.7-62...	H62 24700 ..	
XOHX12T3-24.8...	H60 24800 ..							XOHX12T3-24.8-62...	H62 24800 ..	
XOHX12T3-24.9...	H60 24900 ..							XOHX12T3-24.9-62...	H62 24900 ..	
XOHX12T3-25.0...	H60 25000 ..	8440	2715	84	8125	2740	8140	XOHX12T3-25.0-62...	H62 25000 ..	7710
XOHX12T3-25.1...	H60 25100 ..							XOHX12T3-25.1-62...	H62 25100 ..	
XOHX12T3-25.2...	H60 25200 ..							XOHX12T3-25.2-62...	H62 25200 ..	
Carbon steel / Alloy steel	P	●	●	●	●	●	●	Order example: Article XOHX1003-21.5 Carbide grade BK8440 Order No. H60 21500.8440	P	●
Stainless steel	M								M	
Cast iron / Ductile iron	K		●	●	●				K	
Non-ferrous metals	N		●	●	●				N	●
Super-alloy / Titanium alloy	S								S	
Hardened steel	H								H	

Insert H60 / H62

XOHX – Ø 0.996" - 1.150"



Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.

Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX12T3-25.3....	H60 25300 ..							XOHX12T3-25.3-62...	H62 25300 ..	
XOHX12T3-25.4....	H60 25400 ..							XOHX12T3-25.4-62...	H62 25400 ..	
XOHX12T3-25.5....	H60 25500 ..	8440	2715	84	8125	2740	8140	XOHX12T3-25.5-62...	H62 25500 ..	7710
XOHX12T3-25.6....	H60 25600 ..							XOHX12T3-25.6-62...	H62 25600 ..	
XOHX12T3-25.7....	H60 25700 ..							XOHX12T3-25.7-62...	H62 25700 ..	
XOHX12T3-25.8....	H60 25800 ..							XOHX12T3-25.8-62...	H62 25800 ..	
XOHX12T3-25.9....	H60 25900 ..							XOHX12T3-25.9-62...	H62 25900 ..	
XOHX12T3-26.0....	H60 26000 ..	8440	2715	84	8125	2740	8140	XOHX12T3-26.0-62...	H62 26000 ..	7710
XOHX12T3-26.1....	H60 26100 ..							XOHX12T3-26.1-62...	H62 26100 ..	
XOHX12T3-26.2....	H60 26200 ..							XOHX12T3-26.2-62...	H62 26200 ..	
XOHX12T3-26.3....	H60 26300 ..							XOHX12T3-26.3-62...	H62 26300 ..	
XOHX12T3-26.4....	H60 26400 ..							XOHX12T3-26.4-62...	H62 26400 ..	
XOHX12T3-26.5....	H60 26500 ..	8440	2715	84	8125	2740	8140	XOHX12T3-26.5-62...	H62 26500 ..	7710
XOHX12T3-26.6....	H60 26600 ..							XOHX12T3-26.6-62...	H62 26600 ..	
XOHX12T3-26.7....	H60 26700 ..							XOHX12T3-26.7-62...	H62 26700 ..	
XOHX12T3-26.8....	H60 26800 ..							XOHX12T3-26.8-62...	H62 26800 ..	
XOHX12T3-26.9....	H60 26900 ..							XOHX12T3-26.9-62...	H62 26900 ..	
XOHX12T3-27.0....	H60 27000 ..	8440	2715	84	8125	2740	8140	XOHX12T3-27.0-62...	H62 27000 ..	7710
XOHX12T3-27.1....	H60 27100 ..							XOHX12T3-27.1-62...	H62 27100 ..	
XOHX12T3-27.2....	H60 27200 ..							XOHX12T3-27.2-62...	H62 27200 ..	
XOHX12T3-27.3....	H60 27300 ..							XOHX12T3-27.3-62...	H62 27300 ..	
XOHX12T3-27.4....	H60 27400 ..							XOHX12T3-27.4-62...	H62 27400 ..	
XOHX12T3-27.5....	H60 27500 ..	8440	2715	84	8125	2740	8140	XOHX12T3-27.5-62...	H62 27500 ..	7710
XOHX12T3-27.6....	H60 27600 ..							XOHX12T3-27.6-62...	H62 27600 ..	
XOHX12T3-27.7....	H60 27700 ..							XOHX12T3-27.7-62...	H62 27700 ..	
XOHX12T3-27.8....	H62 27800 ..							XOHX12T3-27.8-62...	H62 27800 ..	
XOHX12T3-27.9....	H60 27900 ..							XOHX12T3-27.9-62...	H62 27900 ..	
XOHX12T3-28.0....	H60 28000 ..	8440	2715	84	8125	2740	8140	XOHX12T3-28.0-62...	H62 28000 ..	7710
XOHX12T3-28.1....	H60 28100 ..							XOHX12T3-28.1-62...	H62 28100 ..	
XOHX12T3-28.2....	H60 28200 ..							XOHX12T3-28.2-62...	H62 28200 ..	
XOHX12T3-28.3....	H60 28300 ..							XOHX12T3-28.3-62...	H62 28300 ..	
XOHX12T3-28.4....	H60 28400 ..							XOHX12T3-28.4-62...	H62 28400 ..	
XOHX12T3-28.5....	H60 28500 ..	8440	2715	84	8125	2740	8140	XOHX12T3-28.5-62...	H62 28500 ..	7710
XOHX12T3-28.6....	H60 28600 ..							XOHX12T3-28.6-62...	H62 28600 ..	
XOHX12T3-28.7....	H60 28700 ..							XOHX12T3-28.7-62...	H62 28700 ..	
XOHX12T3-28.8....	H60 28800 ..							XOHX12T3-28.8-62...	H62 28800 ..	
XOHX12T3-28.9....	H60 28900 ..							XOHX12T3-28.9-62...	H62 28900 ..	
XOHX12T3-29.0....	H60 29000 ..	8440	2715	84	8125	2740	8140	XOHX12T3-29.0-62...	H62 29000 ..	7710
XOHX12T3-29.1....	H60 29100 ..							XOHX12T3-29.1-62...	H62 29100 ..	
XOHX12T3-29.2....	H60 29200 ..							XOHX12T3-29.2-62...	H62 29200 ..	
Carbon steel / Alloy steel								Order example:		
Stainless steel								Article		
Cast iron / Ductile iron								XOHX12T3-25.5		
Non-ferrous metals								Carbide grade		
Super-alloy / Titanium alloy								BK8440		
Hardened steel								Order No.		
								H60 25500.8440		









Insert H60 / H62

XOHX – Ø 1.153" - 1.307"

KUB Duon®

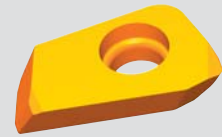


Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.


























Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ▼Ø		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ▼Ø		BK7710 7710
XOHX12T3-29.3...	H60 29300 ..							XOHX12T3-29.3-62...	H62 29300 ..	
XOHX12T3-29.4...	H60 29400 ..							XOHX12T3-29.4-62...	H62 29400 ..	
XOHX12T3-29.5...	H60 29500 ..	8440	2715	84	8125	2740	8140	XOHX12T3-29.5-62...	H62 29500 ..	7710
XOHX12T3-29.6...	H60 29600 ..							XOHX12T3-29.6-62...	H62 29600 ..	
XOHX12T3-29.7...	H60 29700 ..							XOHX12T3-29.7-62...	H62 29700 ..	
XOHX1504-29.8...	H60 29800 ..							XOHX1504-29.8-62...	H62 29800 ..	
XOHX1504-29.9...	H60 29900 ..							XOHX1504-29.9-62...	H62 29900 ..	
XOHX1504-30.0...	H60 30000 ..	8440	2715	84	8125	2740	8140	XOHX1504-30.0-62...	H62 30000 ..	7710
XOHX1504-30.1...	H60 30100 ..							XOHX1504-30.1-62...	H62 30100 ..	
XOHX1504-30.2...	H60 30200 ..							XOHX1504-30.2-62...	H62 30200 ..	
XOHX1504-30.3...	H60 30300 ..							XOHX1504-30.3-62...	H62 30300 ..	
XOHX1504-30.4...	H60 30400 ..							XOHX1504-30.4-62...	H62 30400 ..	
XOHX1504-30.5...	H60 30500 ..	8440	2715	84	8125	2740	8140	XOHX1504-30.5-62...	H62 30500 ..	7710
XOHX1504-30.6...	H60 30600 ..							XOHX1504-30.6-62...	H62 30600 ..	
XOHX1504-30.7...	H60 30700 ..							XOHX1504-30.7-62...	H62 30700 ..	
XOHX1504-30.8...	H60 30800 ..							XOHX1504-30.8-62...	H62 30800 ..	
XOHX1504-30.9...	H60 30900 ..							XOHX1504-30.9-62...	H62 30900 ..	
XOHX1504-31.0...	H60 31000 ..	8440	2715	84	8125	2740	8140	XOHX1504-31.0-62...	H62 31000 ..	7710
XOHX1504-31.1...	H60 31100 ..							XOHX1504-31.1-62...	H62 31100 ..	
XOHX1504-31.2...	H60 31200 ..							XOHX1504-31.2-62...	H62 31200 ..	
XOHX1504-31.3...	H62 31300 ..							XOHX1504-31.3-62...	H62 31300 ..	
XOHX1504-31.4...	H60 31400 ..							XOHX1504-31.4-62...	H62 31400 ..	
XOHX1504-31.5...	H60 31500 ..	8440	2715	84	8125	2740	8140	XOHX1504-31.5-62...	H62 31500 ..	7710
XOHX1504-31.6...	H60 31600 ..							XOHX1504-31.6-62...	H62 31600 ..	
XOHX1504-31.7...	H60 31700 ..							XOHX1504-31.7-62...	H62 31700 ..	
XOHX1504-31.8...	H60 31800 ..							XOHX1504-31.8-62...	H62 31800 ..	
XOHX1504-31.9...	H60 31900 ..							XOHX1504-31.9-62...	H62 31900 ..	
XOHX1504-32.0...	H60 32000 ..	8440	2715	84	8125	2740	8140	XOHX1504-32.0-62...	H62 32000 ..	7710
XOHX1504-32.1...	H60 32100 ..							XOHX1504-32.1-62...	H62 32100 ..	
XOHX1504-32.2...	H60 32200 ..							XOHX1504-32.2-62...	H62 32200 ..	
XOHX1504-32.3...	H60 32300 ..							XOHX1504-32.3-62...	H62 32300 ..	
XOHX1504-32.4...	H60 32400 ..							XOHX1504-32.4-62...	H62 32400 ..	
XOHX1504-32.5...	H60 32500 ..	8440	2715	84	8125	2740	8140	XOHX1504-32.5-62...	H62 32500 ..	7710
XOHX1504-32.6...	H60 32600 ..							XOHX1504-32.6-62...	H62 32600 ..	
XOHX1504-32.7...	H60 32700 ..							XOHX1504-32.7-62...	H62 32700 ..	
XOHX1504-32.8...	H60 32800 ..							XOHX1504-32.8-62...	H62 32800 ..	
XOHX1504-32.9...	H60 32900 ..							XOHX1504-32.9-62...	H62 32900 ..	
XOHX1504-33.0...	H60 33000 ..	8440	2715	84	8125	2740	8140	XOHX1504-33.0-62...	H62 33000 ..	7710
XOHX1504-33.1...	H60 33100 ..							XOHX1504-33.1-62...	H62 33100 ..	
XOHX1504-33.2...	H60 33200 ..							XOHX1504-33.2-62...	H62 33200 ..	
Carbon steel / Alloy steel	P	●	●	●	●	●	●	Order example: Article XOHX12T3-29.5 Carbide grade BK8440 Order No. H60 29500.8440	P	●
Stainless steel	M								M	
Cast iron / Ductile iron	K		●	●	●				K	
Non-ferrous metals	N		●	●	●				N	●
Super-alloy / Titanium alloy	S								S	
Hardened steel	H								H	

Insert H60 / H62

XOHX - Ø 1.311" - 1.464"



Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.

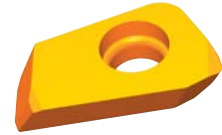
Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX1504-33.3....	H60 33300. ...							XOHX1504-33.3-62...	H62 33300. ...	
XOHX1504-33.4....	H60 33400. ...							XOHX1504-33.4-62...	H62 33400. ...	
XOHX1504-33.5....	H60 33500. ...	8440	2715	84	8125	2740	8140	XOHX1504-33.5-62...	H62 33500. ...	7710
XOHX1504-33.6....	H60 33600. ...							XOHX1504-33.6-62...	H62 33600. ...	
XOHX1504-33.7....	H60 33700. ...							XOHX1504-33.7-62...	H62 33700. ...	
XOHX1504-33.8....	H60 33800. ...							XOHX1504-33.8-62...	H62 33800. ...	
XOHX1504-33.9....	H60 33900. ...							XOHX1504-33.9-62...	H62 33900. ...	
XOHX1504-34.0....	H60 34000. ...	8440	2715	84	8125	2740	8140	XOHX1504-34.0-62...	H62 34000. ...	7710
XOHX1504-34.1....	H60 34100. ...							XOHX1504-34.1-62...	H62 34100. ...	
XOHX1504-34.2....	H60 34200. ...							XOHX1504-34.2-62...	H62 34200. ...	
XOHX1504-34.3....	H60 34300. ...							XOHX1504-34.3-62...	H62 34300. ...	
XOHX1504-34.4....	H60 34400. ...							XOHX1504-34.4-62...	H62 34400. ...	
XOHX1504-34.5....	H60 34500. ...	8440	2715	84	8125	2740	8140	XOHX1504-34.5-62...	H62 34500. ...	7710
XOHX1504-34.6....	H60 34600. ...							XOHX1504-34.6-62...	H62 34600. ...	
XOHX1504-34.7....	H60 34700. ...							XOHX1504-34.7-62...	H62 34700. ...	
XOHX1504-34.8....	H62 34800. ...							XOHX1504-34.8-62...	H62 34800. ...	
XOHX1504-34.9....	H60 34900. ...							XOHX1504-34.9-62...	H62 34900. ...	
XOHX1504-35.0....	H60 35000. ...	8440	2715	84	8125	2740	8140	XOHX1504-35.0-62...	H62 35000. ...	7710
XOHX1504-35.1....	H60 35100. ...							XOHX1504-35.1-62...	H62 35100. ...	
XOHX1504-35.2....	H60 35200. ...							XOHX1504-35.2-62...	H62 35200. ...	
XOHX1504-35.3....	H60 35300. ...							XOHX1504-35.3-62...	H62 35300. ...	
XOHX1504-35.4....	H60 35400. ...							XOHX1504-35.4-62...	H62 35400. ...	
XOHX1504-35.5....	H60 35500. ...	8440	2715	84	8125	2740	8140	XOHX1504-35.5-62...	H62 35500. ...	7710
XOHX1504-35.6....	H60 35600. ...							XOHX1504-35.6-62...	H62 35600. ...	
XOHX1504-35.7....	H60 35700. ...							XOHX1504-35.7-62...	H62 35700. ...	
XOHX1504-35.8....	H60 35800. ...							XOHX1504-35.8-62...	H62 35800. ...	
XOHX1504-35.9....	H60 35900. ...							XOHX1504-35.9-62...	H62 35900. ...	
XOHX1504-36.0....	H60 36000. ...	8440	2715	84	8125	2740	8140	XOHX1504-36.0-62...	H62 36000. ...	7710
XOHX1504-36.1....	H60 36100. ...							XOHX1504-36.1-62...	H62 36100. ...	
XOHX1504-36.2....	H60 36200. ...							XOHX1504-36.2-62...	H62 36200. ...	
XOHX2205-36.3....	H60 36300. ...							XOHX2205-36.3-62...	H62 36300. ...	
XOHX2205-36.4....	H60 36400. ...							XOHX2205-36.4-62...	H62 36400. ...	
XOHX2205-36.5....	H60 36500. ...	8440	2715	84	8125	2740	8140	XOHX2205-36.5-62...	H62 36500. ...	7710
XOHX2205-36.6....	H60 36600. ...							XOHX2205-36.6-62...	H62 36600. ...	
XOHX2205-36.7....	H60 36700. ...							XOHX2205-36.7-62...	H62 36700. ...	
XOHX2205-36.8....	H60 36800. ...							XOHX2205-36.8-62...	H62 36800. ...	
XOHX2205-36.9....	H60 36900. ...							XOHX2205-36.9-62...	H62 36900. ...	
XOHX2205-37.0....	H60 37000. ...	8440	2715	84	8125	2740	8140	XOHX2205-37.0-62...	H62 37000. ...	7710
XOHX2205-37.1....	H60 37100. ...							XOHX2205-37.1-62...	H62 37100. ...	
XOHX2205-37.2....	H60 37200. ...							XOHX2205-37.2-62...	H62 37200. ...	
Carbon steel / Alloy steel								Order example:		
Stainless steel								Article		
Cast iron / Ductile iron								XOHX1504-33.5		
Non-ferrous metals								Carbide grade		
Super-alloy / Titanium alloy								BK8440		
Hardened steel								Order No.		
								H60 33500.8440		









Insert H60 / H62

XOHX – Ø 1.468" - 1.622"

KUB Duon®

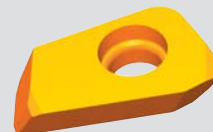


Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.

































Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX2205-37.3...	H60 37300 ..							XOHX2205-37.3-62...	H62 37300 ..	
XOHX2205-37.4...	H60 37400 ..							XOHX2205-37.4-62...	H62 37400 ..	
XOHX2205-37.5...	H60 37500 ..	8440	2715	84	8125	2740	8140	XOHX2205-37.5-62...	H62 37500 ..	7710
XOHX2205-37.6...	H60 37600 ..							XOHX2205-37.6-62...	H62 37600 ..	
XOHX2205-37.7...	H60 37700 ..							XOHX2205-37.7-62...	H62 37700 ..	
XOHX2205-37.8...	H60 37800 ..							XOHX2205-37.8-62...	H62 37800 ..	
XOHX2205-37.9...	H60 37900 ..							XOHX2205-37.9-62...	H62 37900 ..	
XOHX2205-38.0...	H60 38000 ..	8440	2715	84	8125	2740	8140	XOHX2205-38.0-62...	H62 38000 ..	7710
XOHX2205-38.1...	H60 38100 ..							XOHX2205-38.1-62...	H62 38100 ..	
XOHX2205-38.2...	H60 38200 ..							XOHX2205-38.2-62...	H62 38200 ..	
XOHX2205-38.3...	H62 38300 ..							XOHX2205-38.3-62...	H62 38300 ..	
XOHX2205-38.4...	H60 38400 ..							XOHX2205-38.4-62...	H62 38400 ..	
XOHX2205-38.5...	H60 38500 ..	8440	2715	84	8125	2740	8140	XOHX2205-38.5-62...	H62 38500 ..	7710
XOHX2205-38.6...	H60 38600 ..							XOHX2205-38.6-62...	H62 38600 ..	
XOHX2205-38.7...	H60 38700 ..							XOHX2205-38.7-62...	H62 38700 ..	
XOHX2205-38.8...	H60 38800 ..							XOHX2205-38.8-62...	H62 38800 ..	
XOHX2205-38.9...	H60 38900 ..							XOHX2205-38.9-62...	H62 38900 ..	
XOHX2205-39.0...	H60 39000 ..	8440	2715	84	8125	2740	8140	XOHX2205-39.0-62...	H62 39000 ..	7710
XOHX2205-39.1...	H60 39100 ..							XOHX2205-39.1-62...	H62 39100 ..	
XOHX2205-39.2...	H60 39200 ..							XOHX2205-39.2-62...	H62 39200 ..	
XOHX2205-39.3...	H60 39300 ..							XOHX2205-39.3-62...	H62 39300 ..	
XOHX2205-39.4...	H60 39400 ..							XOHX2205-39.4-62...	H62 39400 ..	
XOHX2205-39.5...	H60 39500 ..	8440	2715	84	8125	2740	8140	XOHX2205-39.5-62...	H62 39500 ..	7710
XOHX2205-39.6...	H60 39600 ..							XOHX2205-39.6-62...	H62 39600 ..	
XOHX2205-39.7...	H60 39700 ..							XOHX2205-39.7-62...	H62 39700 ..	
XOHX2205-39.8...	H60 39800 ..							XOHX2205-39.8-62...	H62 39800 ..	
XOHX2205-39.9...	H60 39900 ..							XOHX2205-39.9-62...	H62 39900 ..	
XOHX2205-40.0...	H60 40000 ..	8440	2715	84	8125	2740	8140	XOHX2205-40.0-62...	H62 40000 ..	7710
XOHX2205-40.1...	H60 40100 ..							XOHX2205-40.1-62...	H62 40100 ..	
XOHX2205-40.2...	H60 40200 ..							XOHX2205-40.2-62...	H62 40200 ..	
XOHX2205-40.3...	H60 40300 ..							XOHX2205-40.3-62...	H62 40300 ..	
XOHX2205-40.4...	H60 40400 ..							XOHX2205-40.4-62...	H62 40400 ..	
XOHX2205-40.5...	H60 40500 ..	8440	2715	84	8125	2740	8140	XOHX2205-40.5-62...	H62 40500 ..	7710
XOHX2205-40.6...	H60 40600 ..							XOHX2205-40.6-62...	H62 40600 ..	
XOHX2205-40.7...	H60 40700 ..							XOHX2205-40.7-62...	H62 40700 ..	
XOHX2205-40.8...	H60 40800 ..							XOHX2205-40.8-62...	H62 40800 ..	
XOHX2205-40.9...	H60 40900 ..							XOHX2205-40.9-62...	H62 40900 ..	
XOHX2205-41.0...	H60 41000 ..	8440	2715	84	8125	2740	8140	XOHX2205-41.0-62...	H62 41000 ..	7710
XOHX2205-41.1...	H60 41100 ..							XOHX2205-41.1-62...	H62 41100 ..	
XOHX2205-41.2...	H60 41200 ..							XOHX2205-41.2-62...	H62 41200 ..	
Carbon steel / Alloy steel	P	●	●	●	●	●	●	Order example: Article XOHX2205-37.5 Carbide grade BK8440 Order No. H60 37500.8440	P	●
Stainless steel	M								M	
Cast iron / Ductile iron	K		●	●	●				K	
Non-ferrous metals	N		●	●	●				N	●
Super-alloy / Titanium alloy	S								S	
Hardened steel	H								H	

Insert H60 / H62

XOHX – Ø 1.626" - 1.740"



Inserts shown in bold print are kept in stock.
Intermediate dimensions can be supplied on request.

Carbide grades										
Article ISO Description	Order No.	PVD coated						Article ISO Description	Order No.	PVD coated
										
enter carbide ▼ ∅		BK8440 8440	BK2715 2715	BK84 84	BK8125 8125	BK2740 2740	BK8140 8140	enter carbide ▼ ∅		BK7710 7710
XOHX2205-41.3....	H60 41300 ..							XOHX2205-41.3-62...	H62 41300 ..	
XOHX2205-41.4....	H60 41400 ..							XOHX2205-41.4-62...	H62 41400 ..	
XOHX2205-41.5....	H60 41500 ..	8440	2715	84	8125	2740	8140	XOHX2205-41.5-62...	H62 41500 ..	7710
XOHX2205-41.6....	H60 41600 ..							XOHX2205-41.6-62...	H62 41600 ..	
XOHX2205-41.7....	H60 41700 ..							XOHX2205-41.7-62...	H62 41700 ..	
XOHX2205-41.8....	H62 41800 ..							XOHX2205-41.8-62...	H62 41800 ..	
XOHX2205-41.9....	H60 41900 ..							XOHX2205-41.9-62...	H62 41900 ..	
XOHX2205-42.0....	H60 42000 ..	8440	2715	84	8125	2740	8140	XOHX2205-42.0-62...	H62 42000 ..	7710
XOHX2205-42.1....	H60 42100 ..							XOHX2205-42.1-62...	H62 42100 ..	
XOHX2205-42.2....	H60 42200 ..							XOHX2205-42.2-62...	H62 42200 ..	
XOHX2205-42.3....	H60 42300 ..							XOHX2205-42.3-62...	H62 42300 ..	
XOHX2205-42.4....	H60 42400 ..							XOHX2205-42.4-62...	H62 42400 ..	
XOHX2205-42.5....	H60 42500 ..	8440	2715	84	8125	2740	8140	XOHX2205-42.5-62...	H62 42500 ..	7710
XOHX2205-42.6....	H60 42600 ..							XOHX2205-42.6-62...	H62 42600 ..	
XOHX2205-42.7....	H60 42700 ..							XOHX2205-42.7-62...	H62 42700 ..	
XOHX2205-42.8....	H60 42800 ..							XOHX2205-42.8-62...	H62 42800 ..	
XOHX2205-42.9....	H60 42900 ..							XOHX2205-42.9-62...	H62 42900 ..	
XOHX2205-43.0....	H60 43000 ..	8440	2715	84	8125	2740	8140	XOHX2205-43.0-62...	H62 43000 ..	7710
XOHX2205-43.1....	H60 43100 ..							XOHX2205-43.1-62...	H62 43100 ..	
XOHX2205-43.2....	H60 43200 ..							XOHX2205-43.2-62...	H62 43200 ..	
XOHX2205-43.3....	H60 43300 ..							XOHX2205-43.3-62...	H62 43300 ..	
XOHX2205-43.4....	H60 43400 ..							XOHX2205-43.4-62...	H62 43400 ..	
XOHX2205-43.5....	H60 43500 ..	8440	2715	84	8125	2740	8140	XOHX2205-43.5-62...	H62 43500 ..	7710
XOHX2205-43.6....	H60 43600 ..							XOHX2205-43.6-62...	H62 43600 ..	
XOHX2205-43.7....	H60 43700 ..							XOHX2205-43.7-62...	H62 43700 ..	
XOHX2205-43.8....	H60 43800 ..							XOHX2205-43.8-62...	H62 43800 ..	
XOHX2205-43.9....	H60 43900 ..							XOHX2205-43.9-62...	H62 43900 ..	
XOHX2205-44.0....	H60 44000 ..	8440	2715	84	8125	2740	8140	XOHX2205-44.0-62...	H62 44000 ..	7710
XOHX2205-44.1....	H60 44100 ..							XOHX2205-44.1-62...	H62 44100 ..	
XOHX2205-44.2....	H60 44200 ..							XOHX2205-44.2-62...	H62 44200 ..	
Carbon steel / Alloy steel								Order example:		
Stainless steel								Article		
Cast iron / Ductile iron								XOHX2205-41.5		
Non-ferrous metals								Carbide grade		
Super-alloy / Titanium alloy								BK8440		
Hardened steel								Order No.		
								H60 41500.8440		



Insert Q09

SPGW

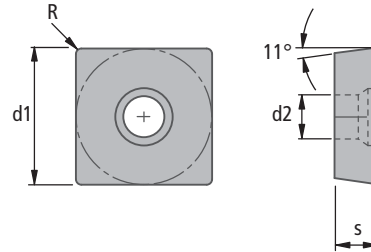




Application range:

Insert geometry:

T slot cutter

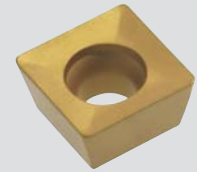
Precision inserts ground on all sides with honed cutting edges. Suitable for machining steel and cast iron materials in conjunction with positive axial position.



Article ISO Description	Order No.	Carbide grades		d1	d2	s	R
		uncoated	uncoated				
		 P25M 03	 K20 22				
SPGW 050204	Q09 13000.01..	▲	▲	0.219	0.110	0.094	0.016
Carbon steel / Alloy steel	P	●		Order example: Article SPGW 050204 Carbide grade P25M Order No. Q09 13000.0103			
Stainless steel	M	●					
Cast iron / Ductile iron	K		●				
Non-ferrous metals	N		●				
Super-alloy / Titanium alloy	S						
Hardened steel	H						

Insert Q09

SPMT

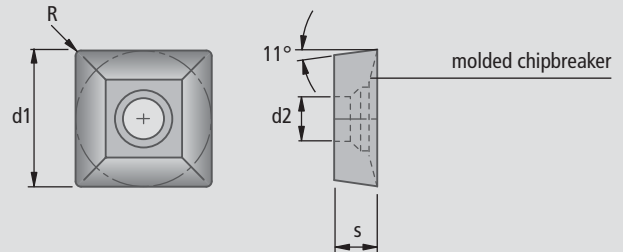


Application range:

Insert geometry:

Chamfering

Inserts with molded positive chip breaker and honed cutting edge. Because of its positive chip geometry, this insert produces a good cutting result even under difficult and critical cutting conditions.



Article ISO Description	Order No. <small>enter carbide code</small>	Carbide grades			d1	d2	s	R
		uncoated		PVD coated				
		 P25M 03	 K20 22	 BK87 87				
SPMT 060304	Q09 18000.17..	▲	▲	▲	0.250	0.110	0.125	0.016
Carbon steel / Alloy steel					Order example: Article SPMT 060304 Carbide grade P25M Order No. Q09 18000.1703			
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								



Insert Q09

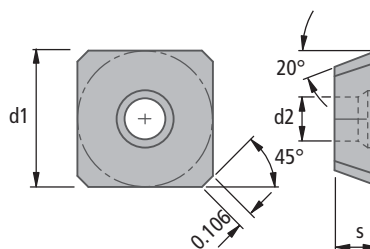
SEHW /SEHT

Application range:

Face milling cutter

Insert precision ground on all sides.

Insert geometry:



Important note!

The cutting edge on Cermet inserts is rounded.

Article ISO Description	Order No.	Carbide grades						HSS	SiN	Cermet	d1	d2	s	R
		uncoated			coated			coated	Silicon nitride	uncoated				
		P25M	P40	K20	CVD	PVD	PVD	BK89	SK44	CK37				
	enter carbide code ▼	03	04	22	64	85	87	89	44	37				
SEHW 1204 AFTN	Q09 44000.13..	▲		▲		▲	▲				0.500	0.216	0.187	–
SEHW 1204 AFFN-V	Q09 44000.02..			▲						▲				0.039
SEHW 1204 AFFN-V	Q09 44000.14..							▲						0.039
SEHW 1204 AFTN-V	Q09 44000.15..	▲				▲				▲				0.039
SEHW 1204 AFTN-20V	Q09 44000.03..								▲					0.039
SEHT 1204 AFEN	Q09 44000.23..				▲									0.039
Carbon steel / Alloy steel	P	●	●		●	●	●			●	Order example:			
Stainless steel	M	●	●		●	●	●	●		●	Article			
Cast iron / Ductile iron	K			●		●			●	●	SEHW 1204 AFTN			
Non-ferrous metals	N			●				●			Carbide grade			
Super-alloy / Titanium alloy	S										P25M			
Hardened steel	H										Order No.			
											Q09 44000.1303			



Q09 44000.13.. : Without blending radius between main and secondary edge, land on main edge.

Main cutting edge stabilised by chamfering. Particularly suitable for heavy duty cutting through rolling mill or forge skin, at medium cutting speeds. Used particularly for steel and cast iron materials with medium to high tensile strength.



Q09 44000.02.. : Blending radius between main and secondary edge, sharp edged.

The insert provides a specially shaped, positive cutter geometry for machining CrNi and unusual materials. Materials which tend to produce a build-up on the cutting edge can also be successfully machined with this geometry. Used in the lower cutting speed ranges with medium chip cross sections.



Q09 44000.14.. : Blending radius between main and secondary edge, sharp edged.

The cutting edge geometry is designed for medium to high cutting speeds with medium to small chip cross section. Because of the blending radius, a finished surface is produced in conjunction with the facing chamfer.

Not suitable for heavily interrupted cut.



Q09 44000.15.. : Blending radius between main and secondary edge, land on main edge.

For roughing and finishing at medium to high cutting speeds and feed rates. Main cutting edge stabilised by chamfer. The rounded transition to the sharp secondary cutting edge produces a high quality surface finish. The wide application range is particularly suitable for steel and cast iron materials.



Q09 44000.03.. : Blending radius between main and secondary edge, both with land.

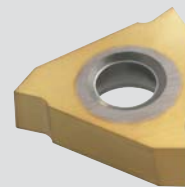
A chamfer around the cutting edge prevents fracturing and produces good tool life, even for heavily interrupted cutting. When machining cast material with silicon nitride at high cutting speed, this chamfer produces a high degree of stability on the cutting edge.



Q09 44000.23..

Insert Q12

TCAA / TNAA

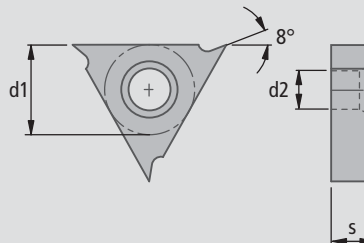


















Application range:

Slot milling cutter
Slot milling cutter adapter

Positive chip angle produces soft cut.
The cutting edge is designed for machining steel or cast iron/aluminum.

Insert geometry:



Article ISO Description	Order No. <small>enter carbide code ▼</small>	Carbide grades			d1	d2	s	for milling width
		uncoated		PVD coated				
		 P25M 03	 K20 22	 BK8425* 8425				
TCAA 1102ZZ R	Q12 18000.01..	▲	▲	▲	0.250	0.110	0.102	0.157 - 0.197
TCAA 1102ZZ L	Q12 18000.02..	▲	▲	▲				
TCAA 1103ZZ R	Q12 18000.03..	▲	▲	▲	0.250	0.110	0.126	0.236
TCAA 1103ZZ L	Q12 18000.04..	▲	▲	▲				
TNAA 16T3ZZ R	Q12 32000.05..	▲	▲	▲	0.375	0.173	0.156	0.276
TNAA 16T3ZZ L	Q12 32000.06..	▲	▲	▲				
TNAA 1604ZZ N	Q12 32000.07..	▲	▲	▲	0.375	0.134	0.187	0.315 - 0.354
TNAA 1604ZZ R	Q12 32000.52..		▲	▲				
TNAA 1604ZZ L	Q12 32000.53..		▲	▲	0.375	0.173	0.187	0.315 - 0.354
TNAA 1606ZZ R	Q12 32000.08..	▲	▲	▲				
TNAA 1606ZZ L	Q12 32000.09..	▲	▲	▲	0.375	0.173	0.252	0.394 - 0.472
Carbon steel / Alloy steel					Order example: Article TCAA 1102ZZ R Carbide grade P25M Order No. Q12 18000.0103			
Stainless steel								
Cast iron / Ductile iron								
Non-ferrous metals								
Super-alloy / Titanium alloy								
Hardened steel								

* Coating BK8425 replaces BK85



Insert Q12

TCAX / TNAX



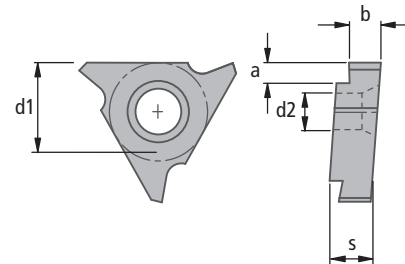
Application range:

Circular milling



Internal and external circular milling of longitudinal or annular slots for snap rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminum when used with the appropriate carbide grades.

Design:

Dimension "b" is aligned with the slot width to H13 tolerance for snap rings to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

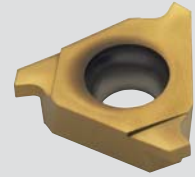


Insert geometry:

Article ISO Description	Order No.	Carbide grades		d1	d2	s	b ^{H13}	a max
		uncoated	uncoated					
	enter carbide code ▼	 P25M 03	 K20 22					
TCAX 1103ZZ R-160	Q12 18000.11..	▲	▲	0.250	0.110	0.126	0.063	0.055
TCAX 1103ZZ R-185	Q12 18000.12..	▲	▲				0.073	0.067
TCAX 1103ZZ R-215	Q12 18000.13..	▲	▲				0.085	0.079
TCAX 1103ZZ R-265	Q12 18000.14..	▲					0.104	0.087
TNAX 1604ZZ R-265	Q12 32000.18..	▲		0.375	0.134	0.187	0.104	0.087
TNAX 1604ZZ R-315	Q12 32000.19..	▲					0.124	0.087
TNAX 1604ZZ R-415	Q12 32000.20..	▲					0.163	0.126
TNAX 2206ZZ R-415	Q12 44000.21..	▲	▲	0.500	0.216	0.252	0.163	0.157
TNAX 2206ZZ R-465	Q12 44000.22..	▲					0.183	0.177
TNAX 2206ZZ R-515	Q12 44000.23..	▲	▲				0.203	0.177
TNAX 2206ZZ R-620	Q12 44000.25..	▲					0.244	0.236
Carbon steel / Alloy steel	P	●		Order example: Article TCAX 1103ZZ R-160 Carbide grade P25M Order No. Q12 18000.1103				
Stainless steel	M	●						
Cast iron / Ductile iron	K		●					
Non-ferrous metals	N		●					
Super-alloy / Titanium alloy	S							
Hardened steel	H							

Insert Q12

TPAX / TCAX / TNAX



Application range:

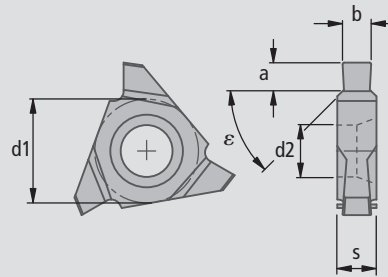
Circular milling

Internal and external circular milling of longitudinal or annular slots for snap rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminum when used with the appropriate carbide grades.

Design:

Dimension "b" is aligned with the slot width to H13 tolerance for snap rings to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

Insert geometry:



Dimensions "a" and "b" apply for the resulting workpiece profile.

Article ISO Description	Order No. <small>enter carbide code</small>	Carbide grades			d1	d2	s	b ^{H13}	a	land ε
		uncoated		coated						
		P25M 03	K20 22	BK8425* 8425						
TPAX 1103ZZ R-110F	Q12 18000.10..	▲	▲	▲	0.250	0.114	0.126	0.043	0.035	–
TNAX 1103ZZ R-160F	Q12 18000.31..	▲	▲	▲	0.250	0.114	0.126	0.063	0.039	45°
TNAX 1103ZZ R-185F	Q12 18000.32..	▲	▲	▲				0.073	0.049	
TNAX 1103ZZ R-215F	Q12 18000.33..	▲	▲	▲				0.085	0.059	
TNAX 1103ZZ R-265F	Q12 18000.34..	▲	▲	▲				0.104	0.069	
TCAX 16T3ZZ R-110F	Q12 32000.15..	▲	▲	▲	0.375	0.173	0.156	0.043	0.035	–
TCAX 16T3ZZ R-130F	Q12 32000.16..	▲	▲	▲				0.051	0.051	
TCAX 16T3ZZ R-160F	Q12 32000.17..	▲	▲	▲				0.063	0.055	
TNAX 1604ZZ R-265F	Q12 32000.41..		▲	▲	0.375	0.173	0.187	0.104	0.069	45°
TNAX 1604ZZ R-315F	Q12 32000.42..	▲	▲	▲				0.124	0.069	
TNAX 1604ZZ R-415F	Q12 32000.43..	▲	▲	▲				0.163	0.098	
TNAX 2206ZZ R-415F	Q12 44000.84..		▲	▲	0.500	0.216	0.252	0.163	0.098	45°
TNAX 2206ZZ R-465F	Q12 44000.85..			▲				0.183	0.134	
TNAX 2206ZZ R-515F	Q12 44000.86..			▲				0.203	0.157	
TNAX 2206ZZ R-515F	Q12 44000.87..			▲				0.203	0.157	
Carbon steel / Alloy steel					Order example:					
Stainless steel					Article					
Cast iron / Ductile iron					TPAX 1103ZZ R-110F					
Non-ferrous metals					Carbide grade					
Super-alloy / Titanium alloy					P25M					
Hardened steel					Order No.					
					Q12 18000.1003					

* Coating BK8425 replaces BK85



Insert Q12

TNAX



Application range:

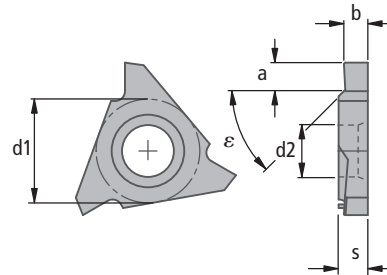
Circular milling

Internal and external circular milling of longitudinal or annular slots for snap rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminum when used with the appropriate carbide grades.

Design:

Dimension "b" is aligned with the slot width to H13 tolerance for snap rings to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

Insert geometry:



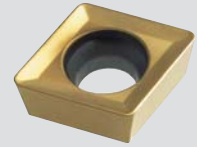
Dimensions "a" and "b" apply for the resulting workpiece profile.

Article ISO Description	Order No.	Carbide grades			d1	d2	s	b ^{H13}	a	chamfer ε
		uncoated		coated						
	enter carbide code ▼	 P25M 03	 K20 22	 BK8425* 8425						
TNAX 1103ZZ R-265F	Q12 18000.36..	▲	▲	▲	0.250	0.114	0.126	0.104	0.069	45°
TNAX 1604ZZ R-415F	Q12 32000.38..		▲	▲	0.375	0.173	0.187	0.163	0.098	45°
Carbon steel / Alloy steel					Order example: Article TNAX 1103ZZ R-265F Carbide grade P25M Order No. Q12 18000.3603					
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										

* Coating BK8425 replaces BK85

Insert Q15

CPMT / CPMW



Application range:

T slot cutter

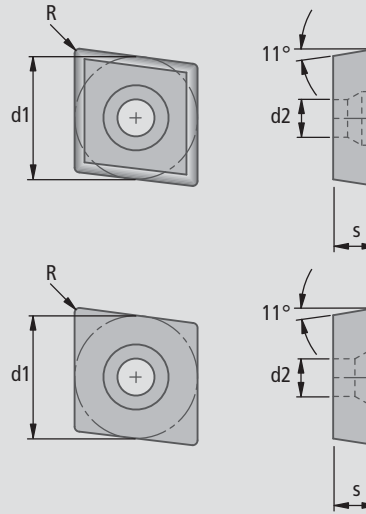
CPMT:

Inserts with molded peripheral positive chip guide and cutting edge with a land. Particularly suitable for T slot cutting for steel materials.

CPMW:

Insert with a land on cutting edge. Because of its cutting geometry, particularly suitable for machining cast iron materials.

Insert geometry:



Article ISO Description	Order No. <small>enter carbide code ▼</small>	Carbide grades						d1	d2	s	R
		uncoated			coated						
		P25M 03	P40 04	K20 22	BK61 61	BK85 85	BK87 87				
CPMT 060304	Q15 18000.01..		▲			▲	▲	0.250	0.110	0.125	0.016
CPMW 060304	Q15 18000.02..				▲						
CPMW 09T308	Q15 32000.03..			▲				0.375	0.169	0.156	0.031
CPMT 09T308	Q15 32000.04..	▲					▲				
Carbon steel / Alloy steel											
Stainless steel											
Cast iron / Ductile iron											
Non-ferrous metals											
Super-alloy / Titanium alloy											
Hardened steel											

< 52 HRC

Order example:
Article
CPMT 060304
Carbide grade
P40
Order No.
Q15 18000.0104



Insert Q36

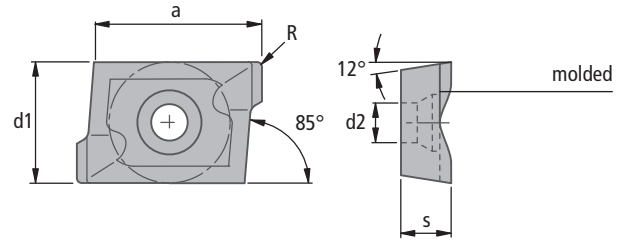
APKT

Application range:

- Corner milling cutter
- Shell end face milling cutter
- End milling cutter
- Face milling cutter 75°

Highly positive cutter geometry with specially designed face cutter allows high feed rates and a good surface quality. Soft cutting also possible even with unstable machining conditions. The special cutter geometry allows the insert to be used universally in the appropriate grades both for machining steel, cast iron and aluminum.

Insert geometry:



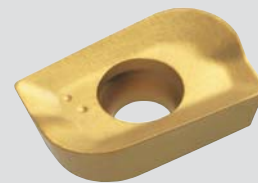
Important note!

The cutting edge on Cermet inserts is honed.

Article ISO Description	Order No.	Carbide grades							d1	d2	s	a	R
		uncoated		coated									
	enter carbide code ▼												
		P25M 03	K10 21	BK64 64	BK74 74	BK78 78	BK80 80	BK84 84					
APKT 1003PD-R	Q36 18000.01..	▲	▲	▲	▲	▲	▲	▲	0.264	0.110	0.138	0.354	0.014
APKT 1203PD-R	Q36 24000.02..	▲	▲	▲	▲	▲	▲	▲	0.315	0.138	0.150	0.433	0.024
APKT 1605PD-RM	Q36 38000.07..	▲	▲	▲	▲	▲	▲	▲	0.437	0.177	0.207	0.591	0.031
Carbon steel / Alloy steel		●	●	●	●	●	●	●	Order example: Article APKT 1003PD-R Carbide grade P25M Order No. Q36 18000.0103				
Stainless steel		●	●	●	●	●	●	●					
Cast iron / Ductile iron		●	●	●	●	●	●	●					
Non-ferrous metals		●	●	●	●	●	●	●					
Super-alloy / Titanium alloy		●	●	●	●	●	●	●					
Hardened steel		●	●	●	●	●	●	●					

Insert Q36

APKT

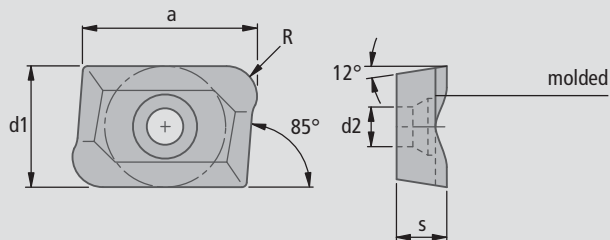





















Application range:

Copy end milling cutter

A special cutter geometry whose main feature is a positive peripheral top rake, produces a soft cut particularly in the radius range of the insert; this requires low cutting forces and produces good chip formation. The insert can be used universally in various carbide grades both for steel and cast iron.

Insert geometry:



Article ISO Description	Order No.	Carbide grades				d1	d2	s	a	R
		uncoated		PVD coated						
	enter carbide code ▼	 P25M 03	 K10 21	 BK64 64	 BK68 68					
APKT 120316PD-R	Q36 24000.04..	▲	▲	▲	▲	0.315	0.138	0.150	0.433	0.063
APKT 120324PD-R	Q36 24000.05..	▲	▲	▲	▲					0.094
APKT 120332PD-R	Q36 24000.06..	▲	▲	▲	▲					0.126
Carbon steel / Alloy steel 	Stainless steel 					Order example: Article APKT 120316PD-R Carbide grade P25M Order No. Q36 24000.0403				
Cast iron / Ductile iron 	Non-ferrous metals 		 							
Super-alloy / Titanium alloy 	Hardened steel 									



Tangential Insert Q80

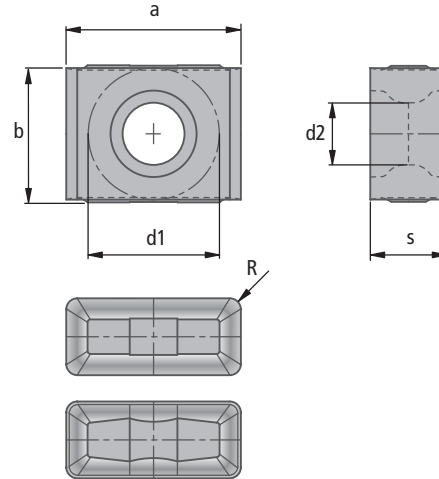
LNGU



Application range:

















- Roughing
- Milling














Insert geometry:



Geometry 05: Cast materials, some steel materials

Geometry 17: Steel materials, also stainless

Article ISO Description	Order No. <small>enter carbide code ▼</small>	Carbide grades			d1	d2	a	b	s	R
		PVD coated		CVD coated						
		 BK2715 2715	 BK2730 2730	 BK6115 6115						
LNGU 120508 EN-05	Q80 32000.01..	▲	▲	▲	0.375	0.177	0.500	0.318	0.219	0.031
Carbon steel / Alloy steel					Order example: Article LNGU 120508 EN-05 Carbide grade BK2715 Order No. Q80 32000.012715					
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										

Article ISO Description	Order No. <small>enter carbide code ▼</small>	Carbide grades			d1	d2	a	b	s	R
		PVD coated								
		 BK2730 2730								
LNGU 120508 EN-17	Q80 32000.02..	▲			0.375	0.177	0.500	0.318	0.219	0.031
Carbon steel / Alloy steel					Order example: Article LNGU 120508 EN-17 Carbide grade BK2730 Order No. Q80 32000.022730					
Stainless steel										
Cast iron / Ductile iron										
Non-ferrous metals										
Super-alloy / Titanium alloy										
Hardened steel										



① Identification Letter: Shape

- R**
- S**
- T**
- C** = 80° / 100°
- E** = 75°
- D** = 55°
- V** = 35°
- W** = 80°

② Identification Letter: Relief Angle

- N** = 0°
- B** = 5°
- C** = 7°
- O** = 8°
- P** = 11°
- E** = 20°

⑥ Index Number: Thickness inch (mm)

-
- 1 (01)** = 1/16(1.59) **3 (04)** = 3/16(4.76)
 - 1.5(02)** = 3/32(2.38) **4 (06)** = 1/4 (6.35)
 - 2 (03)** = 1/8 (3.18) **5 (07)** = 5/16(7.94)
 - 2.5(T3)** = 5/32(3.97)

③ Identification Letter: Tolerance inch (mm)

- | | | |
|---|------------------|---|
| E = m ±0.001 (0.025) | s ±0.001 (0.025) | d ±0.001 (0.025) |
| G = m ±0.001 (0.025) | s ±0.005 (0.13) | d ±0.001 (0.025) |
| M = $m \pm 0.003 \dots \pm 0.007^{(1)}$
(m ±0.08...±0.18 ⁽¹⁾) | s ±0.005 (0.13) | d ±0.002...±0.005 ⁽¹⁾
(d ±0.05...±0.13 ⁽¹⁾) |
| U = $m \pm 0.005 \dots \pm 0.015^{(1)}$
(m ±0.13...±0.38 ⁽¹⁾) | s ±0.005 (0.13) | d ±0.003...±0.010 ⁽¹⁾
(d ±0.08...±0.25 ⁽¹⁾) |

Ø Incribed circle	at m	at m	at d1	at d1
d1	Class M	Class U	Class M	Class U
0.250 (6.35)	±0.003(0.08)	±0.005(0.13)	d±0.002(0.05)	±0.003(0.08)
0.375 (9.52)	±0.003(0.08)	±0.005(0.13)	d±0.002(0.05)	±0.003(0.08)
0.500 (12.70)	±0.005(0.13)	±0.008(0.20)	±0.003(0.08)	±0.005(0.13)
0.625 (15.87)	±0.006(0.15)	±0.010(0.27)	±0.004(0.10)	±0.007(0.18)
0.750 (19.05)	±0.006(0.15)	±0.010(0.27)	±0.004(0.10)	±0.007(0.18)
1.000 (25.40)	±0.007(0.18)	±0.015(0.38)	±0.005(0.13)	±0.25

⑦ Index Number: Corner Radius inch (mm)

-
- 0.5(02)** = 0.008(0.2) **4 (16)** = 1/16 (1.6)
 - 1 (04)** = 1/64 (0.4) **5 (20)** = 5/64 (2.0)
 - 2 (08)** = 1/32 (0.8) **6 (24)** = 3/32 (2.4)
 - 3 (12)** = 3/64 (1.2)

④ Identification Letter: Type

- A** = no chipbreaker, with hole
- G** = chipbreaker both sides, with hole
- M** = chipbreaker on one side, with hole
- R** = chipbreaker on one side, no hole
- B** = no chipbreaker, countersunk hole on one side
- T, H** = chipbreaker on one side, with countersunk hole
- P** = neg./pos. one or two sides, with hole
- Z, X** = special design

⑤ Index Number: Insert Size I

Inch (I)	d1 inch (mm)	Metric cutting edge length						
		C	D	R	S	T	V	W
1.2	5/32 (3.97)	-	-	-	-	-	-	02
1.8	7/32 (5.56)	05	-	-	-	09	-	-
2	1/4 (6.35)	06	07	-	-	11	11	13
2.5	5/16 (7.94)	-	-	-	-	-	-	13
-	0.315 (8.00)	-	-	08	-	-	-	-
3	3/8 (9.52)	09	11	-	09	16	16	06
-	0.394 (10.00)	-	-	10	-	-	-	-
-	0.472 (12.00)	-	-	12	-	-	-	-
4	1/2 (12.70)	12	15	-	12	22	22	08
5	5/8 (15.88)	16	-	-	15	27	-	-
-	0.630 (16.00)	-	-	16	-	-	-	-
6	3/4 (19.05)	19	-	-	19	33	-	13
-	0.787 (20.00)	-	-	20	-	-	-	-
-	0.984 (25.00)	-	-	25	-	-	-	-
8	1.000 (25.40)	-	-	-	25	-	-	-

⑧ Identification Letter: Insert Edge

- F** = sharp
- E** = honed
- T** = chamfered, negative
- S** = chamfered and honed

⑨ Identification Letter: Insert Cutting Direction

- R** = right hand
- L** = left hand
- N** = right hand and left hand

⑩ Identification Letter: Chipformer

- Roughing
-R1, -R2, -R4
- Medium
-M1, -M2, -M3
- Finishing
-F1, -F2, -F3, -F4, -F5, -F6, -F8
- KUB Quatron®
-13, -01



Numerical Coding for Inserts W00 – 79

W	6 0	3 2	0 6	0	.	0 8	6 0
W	2 9	2 4	0 1	0	.	0 4	0 3
①	②	③	④	⑤		⑥	⑦

① Identification Letter: Prime Category Letter for Standard Inserts

② Index Number: Secondary Group Number Insert Geometry

- ▽ 00 = Unisix 00 regular, ground top rake and periphery
- ▽ 01 = Unisix 01 heavy duty, ground top rake and periphery
- ▽ 04 = Unisix 04, 6-edged, ground top rake and periphery
- ▽ 05 = Unisix 05, 6-edged, ground top rake and periphery
- ▽ 24 = Unisix 24 heavy duty, molded top rake and periphery
- ▽ 25 = Unisix 25 regular, molded top rake and periphery
- ▽ 27 = Unisix 27 heavy duty, molded top rake and periphery
- ▽ 28 = Unisix 28 regular, molded top rake and periphery
- ▽ 29 = Unisix 29 heavy duty, molded top rake and periphery
- ▽ 30 = U.., ground top rake and periphery
- ▽ 32 = TPH.., ground top rake and periphery
- ▽ 34 = T.., ground top rake and periphery
- ▽ 36 = U.., 6-edged, ground top rake and periphery
- ▽ 37 = TEH.., ground top rake and periphery
- ▽ 57 = U.., molded top rake and periphery
- ▽ 58 = TP.., molded top rake and periphery
- ▽ 59 = T.., molded top rake and periphery
- ◇ 60 = C.., ground top rake and periphery
- ◇ 78 = Copying insert 35°, molded top rake and periphery
- ◇ 79 = C.., molded top rake and periphery

③ Index Number: Inscribed Circle d1 inch (mm)



03 = 0.156 (3.97)	18 = 0.250 (6.35)	34 = 0.394 (10.00)
04 = 0.157 (4.00)	20 = 0.276 (7.00)	42 = 0.472 (12.00)
10 = 0.197 (5.00)	22 = 0.303 (7.70)	44 = 0.500 (12.70)
12 = 0.217 (5.50)	23 = 0.313 (7.94)	50 = 0.591 (15.00)
13 = 0.219 (5.56)	24 = 0.315 (8.00)	58 = 0.693 (17.60)
14 = 0.220 (5.60)	26 = 0.323 (8.20)	
17 = 0.236 (6.00)	32 = 0.375 (9.52)	

⑤ Index Number: Modification Number 1 ... 9

⑥ Index Number: Insert Nose Geometry inch (mm)

- ⊙ 01 = R 0.004 (0.1)
- ⊙ 02 = R 0.008 (0.2)
- ⊙ 03 = R 0.012 (0.3)
- ⊙ 04 = R 0.016 (0.4)
- ⊙ 05 = R 0.020 (0.5)
- ⊙ 06 = R 0.024 (0.6)
- ⊙ 08 = R 0.031 (0.8)
- ⊙ 12 = R 0.047 (1.2)
- ⊙ 30 = U8.00 R 0
- ⊙ 31 = UF
- ⊙ 32 = US
- 33 = U8.77 15° clearance angle
- Cutting edge form for Unisix milling cutter inserts
- 34 = F and KUF 90°
- 35 = F and KUF 75°
- 36 = F and KUF 60°
- 39 = R 0.002 (0.05)
- 40 = 45° corner for chamfer cartridge
- 75 = Support chamfer 75° L.H.
- 90 = Support chamfer 90° L.H.

④ Index Number: Type of Chip Control / Rake precision ground

- ⊙ 00 = left hand, neutral
- ⊙ 06 = left hand, 6°
- ⊙ 12 = left hand, 12°
- ⊙ 15 = left hand, 15°
- ⊙ 18 = left hand, 18°
- ⊙ 20 = left hand, 20°
- ⊙ 30 = right hand, neutral
- ⊙ 36 = right hand, 6°
- ⊙ 42 = right hand, 12°
- ⊙ 45 = right hand, 15°
- ⊙ 48 = right hand, 18°
- ⊙ 50 = right hand, 20°
- ⊙ 60 = neutral
- ⊙ 66 = 3x ground, 6°
- ⊙ 70 = 3x ground, 10°
- ⊙ 72 = 3x ground, 12°
- ⊙ 80 = 3x ground, 20°
- ⊙ 82 = left hand, 12° sharp edged
- ⊙ 83 = right hand, 12° sharp edged
- ⊙ 94 = neutral, tipped, complete, NL/NR
- ⊙ 98 = neutral, tipped on corner
- ⊙ 99 = neutral, tipped on corner, NL/NR

molded

- ⊙ 00 = Double chip rake (PD) honed cutting edge
- ⊙ 01 = Double chip rake (K) honed cutting edge+land
- ⊙ 02 = Step geometry (KS) honed cutting edge+land
- ⊙ 03 = Dimple geometry (KX) honed cutting edge
- ⊙ 04 = Continuous rake
- ⊙ 05 = 10° Continuous rake (T) honed cutting edge
- ⊙ 06 = 12° Continuous rake (C) honed cutting edge
- ⊙ 07 = Finished geometry
- ⊙ 10 = Wave geometry, honed cutting edge+land
- ⊙ 11 = 20° Continuous rake, honed cutting edge
- ⊙ 12 = Alu-/Finished geometry
- ⊙ 13 = Wave geometry, honed cutting edge

⑦ Index Number: Carbide Grade

- Example
- 01 = P10
- 03 = P25M
- ...



① **Identification Letter: Prime Category Letter for Standard Inserts**

② **Index Number: Secondary Group Number for Insert Geometry ISO Basic Forms**

- 83 = S... square
- 84 = T... triangular
- 85 = C... rhomboid 80°
- 86 = D... rhomboid 55°
- 89 = V... rhomboid 35°
- 90 = W... hexagonal 80°
- 95 = R... round
- 97 = Threaded

③ **Index Number: Inscribed circle d1**



- 13 = 7/32 (5.56)
- 18 = 1/4 (6.35)
- 24 = 0.315 (8.00)
- 32 = 3/8 (9.52)
- 38 = 7/16 (11.10)
- 44 = 1/2 (12.7)
- 53 = 5/8 (15.88)
- 62 = 3/4 (19.05)

④ **Index Number: Serial Number**
01 ... 99

⑤ **Index Number: Modification Number**
1 ... 9

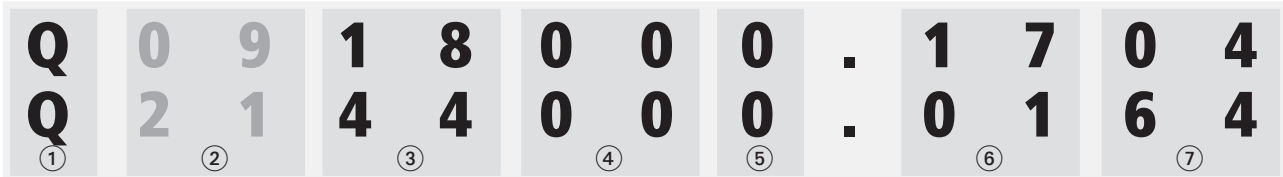
⑥ **Index Number: Serial Number**
01 ... 99

⑦ **Index Number: Carbide Grade**

- Example
- 01 = P10
- 03 = P25M
- ...



Numerical Coding for Inserts Q..



① **Identification Letter: Prime Category Letter for Standard Inserts**

② **Index Number: Secondary Group Number for Insert Geometry ISO Basic Forms**

09 = S... square

12 = T... triangular

15 = C... rhomboid 80°

21 = E... rhomboid 75°

36 = A... rhomboid form

③ **Index Number: Inscribed Circle d1 inch (mm)**



13 = 0.219 (5.56)

18 = 0.250 (6.35)

24 = 0.315 (8.00)

32 = 0.375 (9.52)

38 = 0.437 (11.10)

44 = 0.500 (12.70)

53 = 0.625 (15.88)

④ **Index Number: Serial Number**

01 ... 99

⑤ **Index Number: Modification Number**

1 ... 9

⑥ **Index Number: Serial Number**

01 ... 99

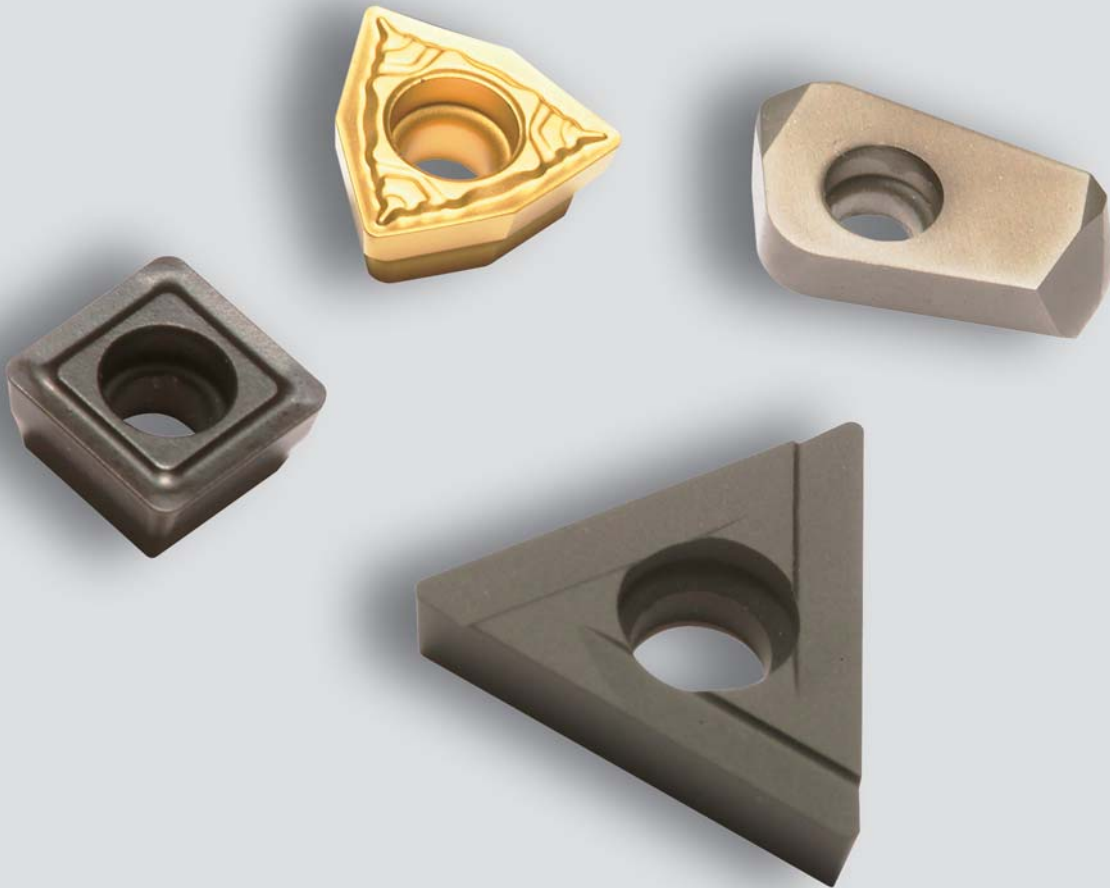
⑦ **Index Number: Carbide Grade**

Example

01 = P10

03 = P25M

...



Application Recommendation - Drilling

2 × D – KUB® / KUB Trigon® and KUB Quatron®	8.4
3 × D – KUB® / KUB Trigon® and KUB Quatron®	8.5
4 × D – KUB® / KUB Trigon®	8.6
5 × D – KUB Duon®	8.7
9 × D – KUB Centron®	8.8
9 × D – KUB Centron®	8.9
Twin Cutter	8.24

KC5 / KC7 Solid Carbide Drills

Set-up	8.10
Coolant Set-up	8.11

Performance Calculation

8.12 – 8.13

Drilling
Rough Boring
Finish Boring

Troubleshooting Guide

for KUB® / KUB Trigon®	8.14 – 8.15
for KUB Centron®	8.16 – 8.17
for KUB Quatron®	8.18 – 8.19
for KUB Duon®	8.20
for Twin Cutter	8.25

Coolant Flow / Coolant Pressure

8.21

Safety Notes

8.21

Balancing Notes

8.21

Application Examples

8.22

Types of Wear on Inserts

8.23



ABS® / ABS® N / ABS® T / ABS® H

Operation and Characteristics	8.26
Nominal Dimensions	8.27
Replacement Parts	8.28 – 8.29

HSK

Technical Information	8.30
Replacement Parts	8.31 – 8.32
Features and Advantages	8.33
HSK Versions	8.34 – 8.35

KomLoc®

KomLoc® HSK-Adapter System K	8.36
KomLoc® HSK-Adapter System K for MQL	8.37 – 8.38
KomLoc® HSK-Adapter System M	8.39
KomLoc® HSK-Adapter System M for MQL	8.40
	8.41

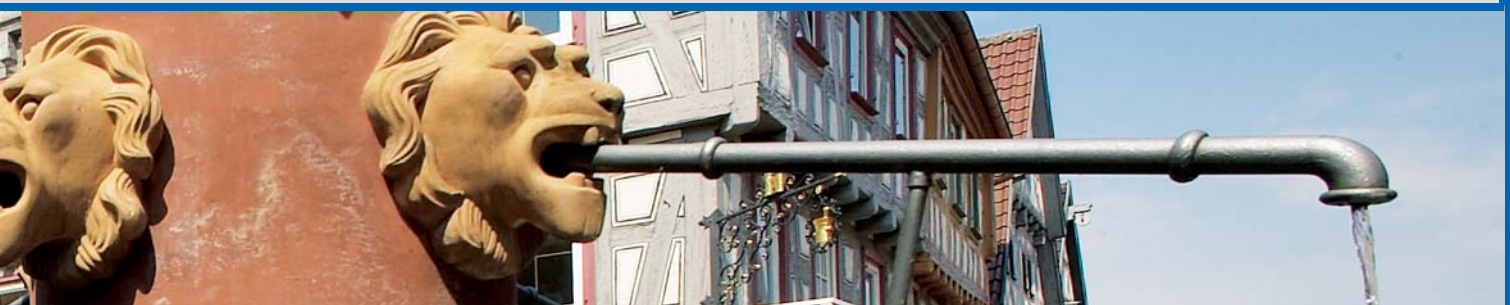
Machining with minimal lubrication (MQL)

8.42 – 8.43

Coolant Ring	8.44
Coolant Supply Ring with NC Adapter	8.45
Coolant Supply System	8.46
Coolant Inducer	8.47
TORX PLUS® Clamping Screw	8.48 – 8.52
TORX PLUS® Screwdriver	8.53

International Material Cross Reference List

8.54 – 8.55

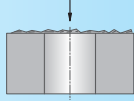


Application Recommendation for KUB® / KUB Trigon® and KUB Quatron®

up to **2 × D**

1 Drilling uneven surface (Castings)

- reduce feed rate depending upon the quality of surface finish if necessary

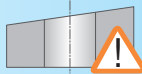


2 Drilling on slanted surface

- reduce feed rate according to the angle of slanted surface

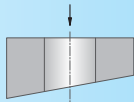
General rule: $3^\circ \triangleq 30\%$
 $10^\circ \triangleq 40\%$
 $25^\circ \triangleq 60\%$ } use tools max. $2 \times D$

- use tougher indexable insert grade
- use stable corner radius



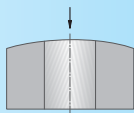
3 Drilling through interruption

- reduce feed rate up to 50% on entry to interruption
- use tougher indexable insert grade
- use stable corner radius



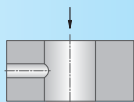
4 Drilling on curved surface

- possible without difficulties
- reduce feed rate if necessary



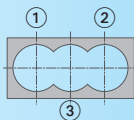
5 Drilling with a cross hole

- reduce feed rate up to 50% if necessary
- watch for chips wrapping around the cutting tool
- use tougher indexable insert grade
- use stable corner radius



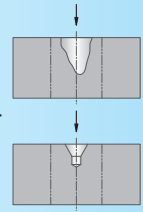
6 Drilling into interrupted cut

- first drill ① + ②, then drill ③
- check distribution is symmetrical
- avoid chip jams
- if necessary reduce to approx. 0.04" - 0.06" (1-1.5 mm) on the \varnothing on circumference
- reduce feed rate 50% for interrupted cut
- use tougher indexable insert grade
- use stable corner radius



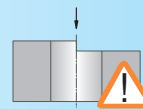
7 Starting on a groove or large center drilled hole

- use short tools, max. $3 \times D$
- perform spot facing if necessary
- reduce feed rate
- use tougher indexable insert grade for the inside carbide inserts



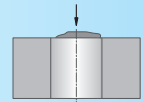
8 Drilling on an edge

- reduce feed rate up to 50%
- use tougher indexable insert grade
- use stable corner radius



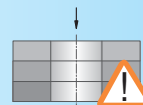
9 Drilling into welded joint

- reduce feed rate
- use max. $3 \times D$ tools



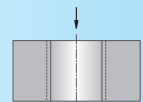
10 Drilling through stackplate

- recommended with KUB Quatron
- **not recommended** with KUB / KUB Trigon
- sturdy workpiece clamping required



11 Rough boring

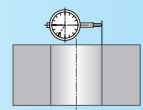
- recommended with KUB Quatron
- recommended with KUB Trigon up to $3 \times D$



12 Adjustable

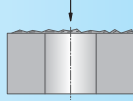
- using adjusting holder (ABS-MV) and eccentric adjusting holder
- for turning machines over axis

Note: please note max. offset \varnothing in tables



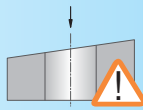
1 Drilling uneven surface (Castings)

- reduce feed rate depending upon the quality of surface finish if necessary



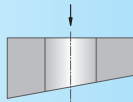
2 Drilling on slanted surface

- max. 3° angled position possible (cast angles)
- reduce feed rate when starting bore
- use stable corner radius



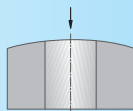
3 Drilling through interruption

- reduce feed rate up to 50% on entry to interruption
- use tougher indexable insert grade
- use stable corner radius



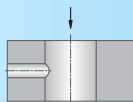
4 Drilling on curved surface

- possible without difficulties
- reduce feed rate if necessary



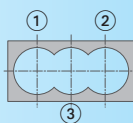
5 Drilling with a cross hole

- reduce feed rate up to 50% if necessary
- watch for chips wrapping around the cutting tool
- use tougher indexable insert grade
- use stable corner radius



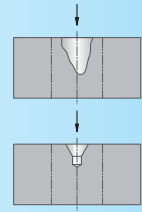
6 Drilling into interrupted cut

- first drill ① + ②, then drill ③
- check distribution is symmetrical
- avoid chip jams
- if necessary reduce to approx. 0.04" - 0.06" (1-1.5 mm) on the Ø on circumference
- reduce feed rate 50% for interrupted cut
- use tougher indexable insert grade
- use stable corner radius



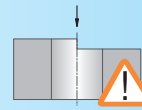
7 Starting on a groove or large center drilled hole

- use short tools, max. 3×D
- perform spot facing if necessary
- reduce feed rate
- use tougher indexable insert grade for the inside carbide inserts



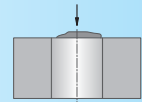
8 Drilling on an edge

- **not recommended** for 3×D tools
- because of the undefined surface for starting the bore, pre-machining is required (spot facing, face milling)
- then continue as described in Point 1



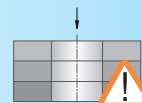
9 Drilling into welded joint

- reduce feed rate
- use max. 3×D tools



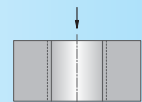
10 Drilling through stackplate

- recommended with KUB Quatron
- **not recommended** with KUB / KUB Trigon
- sturdy workpiece clamping required



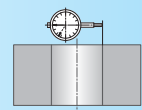
11 Rough boring

- recommended with KUB Quatron
- recommended with KUB Trigon up to 3×D



12 Adjustable

- using adjusting holder (ABS-MV) and eccentric adjusting holder
 - for turning machines over axis
- Note:** please note max. offset Ø in tables

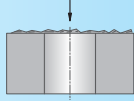


Application Recommendation for KUB® / KUB Trigon®

up to **4 × D**

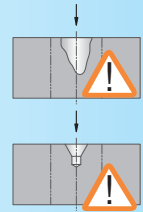
1 Drilling uneven surface (Castings)

- reduce feed rate depending upon the quality of surface finish if necessary



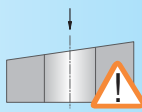
7 Starting on a groove or large center drilled hole

- points for starting bore must be rough machined first



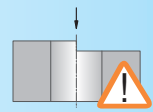
2 Drilling on slanted surface

- **not recommended** for 4×D tools
- starting surface must be spot faced or spot milled



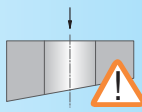
8 Drilling on an edge

- **not recommended** for 4×D tools
- because of the undefined surface for starting the bore, pre-machining is required (spot facing, face milling)
- then continue as described in Point 1



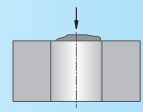
3 Drilling through interruption

- Reduce feed rate up to 50% for 4×D tools



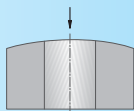
9 Drilling into welded joint

- reduce feed up to 50% for 4×D tools
- if necessary pre-machine point for starting bore



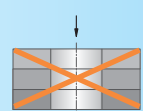
4 Drilling on curved surface

- starting surface must be milled evenly



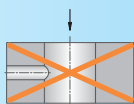
10 Drilling through stackplate

- **not recommended** for 4×D tools



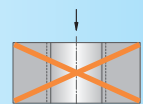
5 Drilling with a cross hole

- **not recommended** for 4×D tools
- if necessary apply cross bore later



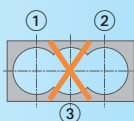
11 Rough boring

- **not recommended**



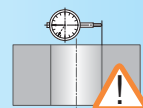
6 Drilling into interrupted cut

- drilling bore ③ is **not recommended**



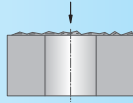
12 Adjustable

- dimensional adjustment is possible within 0.005" of its diameter



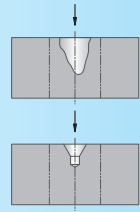
1 Drilling uneven surface (Castings)

- possible in principle
- reduce feed rate when starting drill



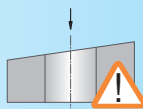
7 Starting on a groove or large center drilled hole

- possible under certain conditions
- reduce feed rate if necessary
- face before hand where center is particularly large



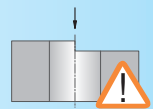
2 Drilling on slanted surface

- spot face surface before starting bore
- avoid chips jams



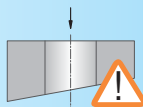
8 Drilling on an edge

- start point must be flat



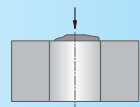
3 Drilling through interruption

- possible under certain conditions
- Reduce feed rate if necessary



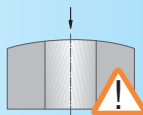
9 Drilling into welded joint

- reduce feed rate when starting bore
- face before hand if necessary



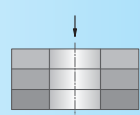
4 Drilling on curved surface

- centered boring can be started with reduced feed rate
- spot facing is required if the point for starting the drill is outside the radius center



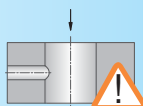
10 Drilling through stackplate

- possible in principle
- avoid large spaces between elements



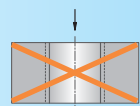
5 Drilling with a cross hole

- during the interruption, reduce feed rate by 1/2
- cross bore max. 1/3 of bore diameter
- off-center cross bore is **not recommended**



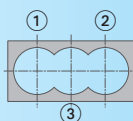
11 Rough boring

- **not recommended**



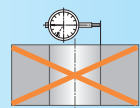
6 Drilling into interrupted cut

- first drill ① + ②, then drill ③
- check distribution is symmetrical
- avoid chip jams
- offset max. 0.8×D



12 Adjustable

- **not recommended**
- dimensional adjustment of diameter via inserts

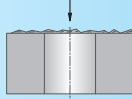


Application Recommendation for KUB V46/V47

up to **9 × D**

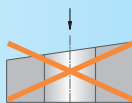
1 Drilling uneven surface (Castings)

- reduce feed rate depending upon the quality of surface finish if necessary
- if necessary adjust centering slightly



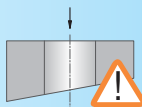
2 Drilling on slanted surface

- **not recommended** with V46/V47
- the starting surface must be even or rough machined



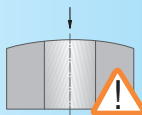
3 Drilling through interruption

- drilling out with interrupted cut may not be possible
- angled length max. 3° (6×D)
- check support element correctly set



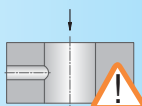
4 Drilling on curved surface

- if drilling is started centrally on the curved surfaces, this can be done without reducing the parameters
- if the point for starting the bore lies outside the radius center, spot facing is required



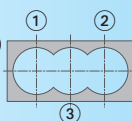
5 Drilling with a cross hole

- the cross bore must not cross with the bore for the center drill
- reduce feed rate



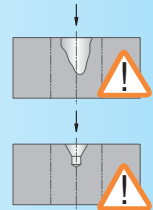
6 Drilling into interrupted cut

- first drill bore ① and ②
- possible to machine bore ③
- reduce feed rate 50%
- check length setting for center drill; should be set acc. to setting table 8×D



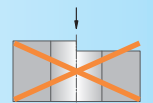
7 Starting on a groove or large center drilled hole

- in principle **not recommended**
- when starting the bore it must be ensured that the center drill is engaged before the inserts cut
- if a center drill is used, the external diameter of the central bore should be smaller than the diameter of the center drill



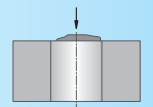
8 Drilling on an edge

- **not recommended**
- the starting position must be flat



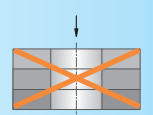
9 Drilling into welded joint

- starting the bore where there are raised areas can cause the center drill to deflect
- if necessary adjust centering slightly
- rough machine starting point



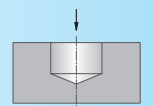
10 Drilling through stackplate

- **not recommended** with V46/V47



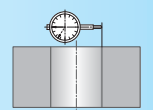
11 Blind hold

- possible
- set guide pads 0.020" (0.5 mm) below actual diameter



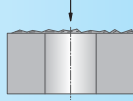
12 Adjustable

- can be adjusted from 2.559" (65 mm) diameter



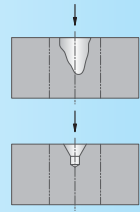
1 Drilling uneven surface (Castings)

- possible in principle
- reduce feed rate when starting bore



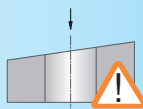
7 Starting on a groove or large center drilled hole

- possible under certain conditions
- reduce feed rate if necessary
- face before hand where center is particularly large



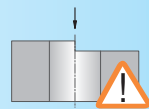
2 Drilling on slanted surface

- spot face surface before starting bore
- avoid chips jams



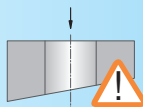
8 Drilling on an edge

- spot face surface before starting bore



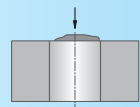
3 Drilling through interruption

- possible under certain conditions
- reduce feed rate if necessary
- drilling angle max. 3°



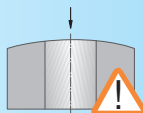
9 Drilling into welded joint

- reduce feed rate when starting bore
- face before hand if necessary



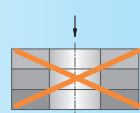
4 Drilling on curved surface

- centered boring can be started with reduced feed rate
- Spot facing is required if the point for starting the bore is outside the radius center



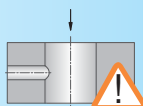
10 Drilling through stackplate

- **not recommended**



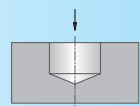
5 Drilling with a cross hole

- during the interruption, reduce feed rate by 1/2
- cross bore max. 1/3 of bore diameter
- off-center cross bore is **not recommended**



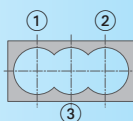
11 Blind hole

- possible
- set guide pads 0.020 " (0.5 mm) below actual diameter



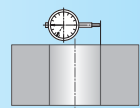
6 Drilling into interrupted cut

- first drill ① + ②, then drill ③
- check distribution is symmetrical
- avoid chip jams
- offset max. 0.8×D



12 Adjustable

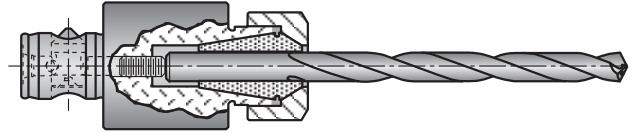
- can be adjusted from 2.559" (65 mm) diameter



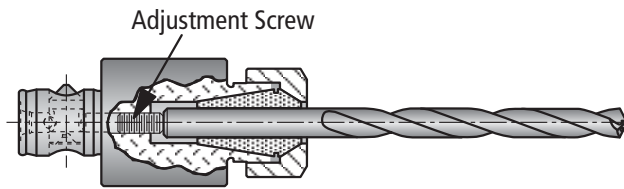
KC5 / KC7 Solid Carbide Drill

Set-Up

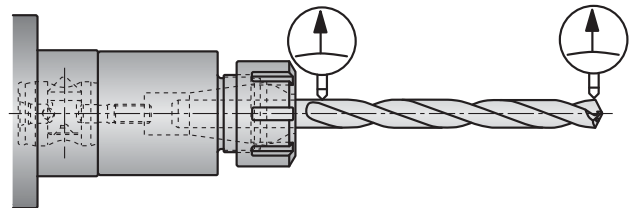
Recommended tool holders are the KOMET ABS Hydraulic Expansion Chuck and the ABS SZV Collet Chuck, both with through-the-tool coolant. Below are special instructions for optimum drill performance.



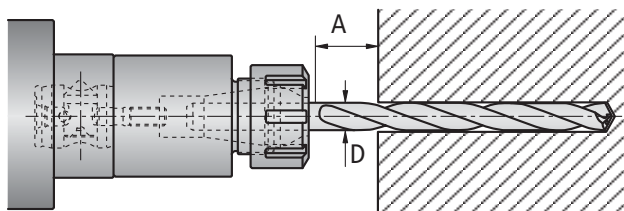
Never chuck drill on the flutes.



Adjustment screw must contact back surface of drill.



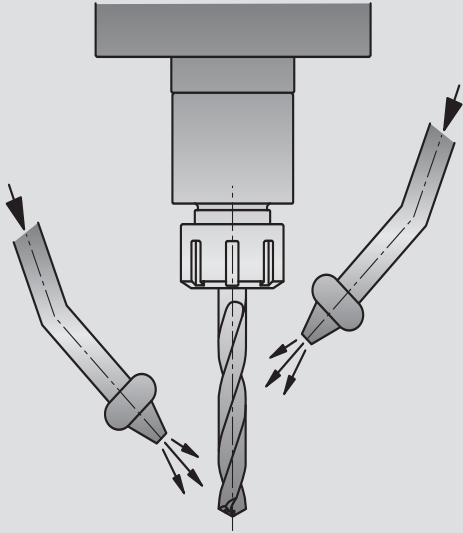
Maximum drill runout is .0012" TIR.



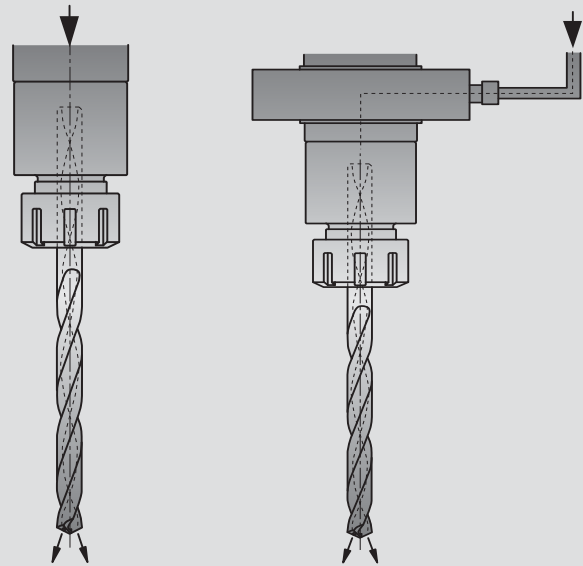
The drill flutes must extend a minimum $1 \frac{1}{2} \times D$ from drilling surface at maximum drill depth.

KC5 / KC7 Solid Carbide Drill

Coolant Set-Up



External coolant must be applied at two positions as shown.



Coolant pressure must be a minimum of 70 PSI and a volume of 0.42 - 1 GPM. Coolant must be filtered.



Performance Calculation

Special value k_s

The K_s values depend on the feed and its upper limiting values are shown in the table. Due to this, it is possible that the calculated performance is higher (~ 10 – 20%) than the actual required production performance. This is intended due to the machine tool efficiency as a safeguard against failure.

Material group	Tensile strength	Hardness HB	Material	Material example AISI / SAE	Special value k_s (lbs/in ²)
1.0	≤500		Unalloyed steel	A570.36 1213 A573.81	252,000
2.0	500-900		Low alloy steel	5120 1055 5115	299,000
2.1	<500		Lead alloy	12L13	181,000
3.0	>900		High alloy steel heat resistant structural, heat treated, nitride steels	4140 1064	355,000
4.0	>900		Tool steel	H13 H21	264,000
4.1			HSS		270,000
5.0		250	Special alloy: Inconel, Hastelloy, Nimonic, etc.	Inconel® 718 Nimonic® 80A	303,000
5.1	400		Titanium, Titanium alloy	AMS R54520	199,000
6.0	≤600		Stainless steel: austenitic 300 series	304L 316	348,000
6.1	<900		Stainless steel	630	367,000
7.0	>900		Stainless steel: martensitic/ferritic 400 series	420 403	374,000
8.0		180	Grey cast iron	No 35 B No 50 B	165,000
8.1		250	Alloy grey cast iron	A436 Type 2	186,000
9.0	≤600	130	Nodular cast iron ferritic	60-40-18	157,000
9.1		230	Nodular cast iron ferritic / pearlitic	80-55-06	165,000
10.0	600	250	Nodular cast iron pearlitic	100-70-03	152,000
10.1		200	Malleable cast iron	70003	
		200	Alloyed nodular cast iron	A43D2	171,000
10.2		300	Vermicular cast iron		152,000
12.0		90	Copper alloy, brass, Lead alloy, Bronze, Lead bronze: good cut	UNS C36000	113,000
12.1		100	Copper alloy, Brass, Bronze: average cut		113,000
13.0		60	Wrought aluminum alloy		94,000
13.1		75	Aluminum alloy: Si content <10%	GD-AISI12	113,000
			Magnesium alloy		
14.0		100	Aluminum alloy: Si content >10%	A360.2	120,000
15.0	1400		Hardened steel < 45 HRC		418,000
16.0	1800		Hardened steel > 45 HRC		479,000

The machine power in H.P.

$$P_{H.P.} = \frac{v_c \times f \times D \times k_c}{132,000 \times \eta}$$

Example: Material - Low Carbon Steel, Diameter - 1.575

f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²
D = Diameter (inch)	= 1.575 inch
v _c = Cutting speed (sf/min)	= 620 sf/min
η = Machine tool efficiency (0.7-0.85)	= 0.8

$$P_{H.P.} = \frac{620 \times 0.0059 \times 1.575 \times 252,000}{132,000 \times 0.8} = 13.7 \text{ H.P.}$$

The axial feed load F_f required is approx.:

$$F_f \approx 0.7 \times \frac{D}{2} \times f \times k_c$$

f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²
D = Diameter (inch)	= 1.575 inch

$$F_f \approx 0.7 \times \frac{1.575}{2} \times 0.0059 \times 252,000 = 820 \text{ lbs}$$

The torque at the spindle in inch-lbs

$$M_s = \frac{D^2}{8} \times f \times k_c$$

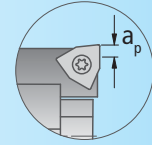
f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²
D = Diameter (inch)	= 1.575 inch

$$M_s = \frac{1.575^2}{8} \times 0.0059 \times 252,000 = 461 \text{ in-lbs}$$

Rough / Finish Boring

The machine power in H.P.

$$P = \frac{a_p \times f \times k_c \times n (D - a_p)}{126,100 \times \eta}$$



Example: Material - Low Carbon Steel, Diameter - 1.575

a _p = Maximum depth of cut (inch)	= 0.2 inch
f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²
D = Diameter (inch)	= 1.575 inch
n = Spindle speed (RPM)	= 1560
η = Machine tool efficiency (0.7-0.85)	= 0.8

$$P_{H.P.} = \frac{0.2 \times 0.0059 \times 252,000 \times 1560 (1.575 - 0.2)}{126,100 \times 0.8} = 6.3 \text{ H.P.}$$

The axial feed load F_f required is approx.:

$$F_f \approx 0.7 \times a_p \times f \times k_c$$

a _p = Maximum depth of cut (inch)	= 0.2 inch
f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²

$$F_f \approx 0.7 \times 0.2 \times 0.0059 \times 252,000 = 208 \text{ lbs}$$

The torque at the spindle in inch-lbs

$$M_s = \frac{D - a_p}{2} \times a_p \times f \times k_c$$

a _p = Maximum depth of cut (inch)	= 0.2 inch
f = Feed (IPR)	= 0.0059 IPR
k _c = Special value (lbs/in ²)	= 252,000 lbs/in ²
D = Diameter (inch)	= 1.575 inch

$$M_s = \frac{1.575 - 0.2}{2} \times 0.2 \times 0.0059 \times 252,000 = 204 \text{ in-lbs}$$



Troubleshooting Guide

for KUB® / KUB Trigon®

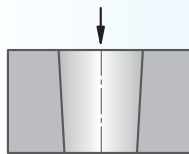
Rotating and Stationary Applications

Short tool life types of wear on inserts



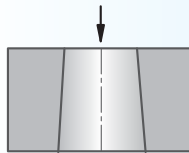
Possible cause	> Solution
<ul style="list-style-type: none">• cutting speed too high• cutting material with low wear resistance• excessive tool overhang• damaged insert pocket• clamping device not stable enough	<ul style="list-style-type: none">> select correct cutting speed> select grade with higher wear resistance> if possible, use shorter tool> check tool, change if necessary> improve stability

Bore narrows at bottom



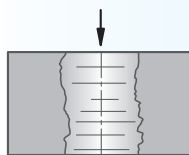
Possible cause	> Solution
<ul style="list-style-type: none">• chip jam on external cutting edge• material very soft	<ul style="list-style-type: none">> use different chip breaker geometry, increase feed if necessary> increase cutting speed, reduce feed. Use positive chip geometry

Bore widens at bottom



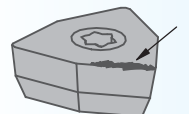
Possible cause	> Solution
<ul style="list-style-type: none">• chip jam on internal cutting edge	<ul style="list-style-type: none">> use different chip breaker geometry, increase feed if necessary

Bad surface finish



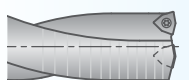
Possible cause	> Solution
<ul style="list-style-type: none">• bad chip removal	<ul style="list-style-type: none">> improve cutting parameters: increase cutting speed reduce feed

Build-up on cutting edge



Possible cause	> Solution
<ul style="list-style-type: none">• cutting speed too low• insert too negative• coating not suitable	<ul style="list-style-type: none">> increase cutting speed> use positive geometry> select correct coating

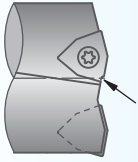
Friction marks on tool body



Possible cause	> Solution
<ul style="list-style-type: none">• drill diameter too small• chip removal problems• cutting edge corner radius too large	<ul style="list-style-type: none">> check setting> improve cutting parameters, check geometry of inserts> use correct cutting edge radius

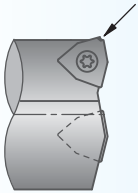
Stationary Applications

Fracture on internal cutting edge



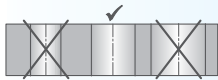
Possible cause	> Solution
• insert height of tool too high/too low	> <i>tool turret/holder may have shifted</i> > <i>readjust machine</i>
• mix-up between heavy duty/ regular duty insert	> <i>use correct insert</i>
• feed rate too high	> <i>reduce feed rate</i>
• insert grade too brittle	> <i>use tougher insert grade</i>
• wrong insert geometry	> <i>use geometry with chamfered cutting edge</i>

Fracture on external cutting edge



Possible cause	> Solution
• feed rate too high	> <i>reduce feed rate</i>
• interrupted cut	> <i>change to tougher insert grade</i>
• cutting edge corner radius too small	> <i>use insert with larger cutting edge radius</i>

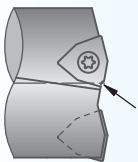
Bore too small/too large



Possible cause	> Solution
• machine not at X-0 position	> <i>move axis to correct position</i>
• machine axis shifted	> <i>readjust machine</i>

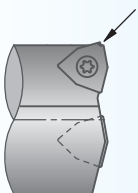
Rotating Applications

Fracture on internal cutting edge



Possible cause	> Solution
• mix-up between heavy duty/ regular duty insert	> <i>use correct insert</i>
• feed rate too high	> <i>reduce feed rate</i>
• insert grade too brittle	> <i>use tougher insert grade</i>
• wrong insert geometry	> <i>use geometry with chamfered cutting edge</i>

Fracture on external cutting edge



Possible cause	> Solution
• feed rate too high	> <i>reduce feed rate</i>
• interrupted cut	> <i>change to tougher insert grade</i>
• cutting edge corner radius too small	> <i>use insert with larger cutting edge radius</i>

Bore too small/too large with adjustable tool



Possible cause	> Solution
• wrong cutting edge radius used	> <i>use correct cutting edge radius</i>
• incorrect setting	> <i>adjust setting to correct parameters</i>



Troubleshooting Guide

for KUB Centron®

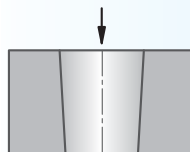
Rotating and Stationary Applications

Short tool life types of wear on inserts



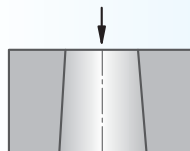
Possible cause	> Solution
• cutting speed too high	> select correct cutting speed
• cutting material with low wear resistance	> select grade with higher wear resistance
• excessive tool overhang	> if possible, use shorter tool
• damaged insert pocket	> check tool, change if necessary
• clamping device not stable enough	> improve stability

Bore narrows at bottom



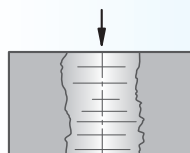
Possible cause	> Solution
• chip jam on external cutting edge	> use different chip fracture geometry, increase feed if necessary
• material very soft	> increase cutting speed, reduce feed use positive chip geometry
• incorrect axial adjustment of center drill	> adjust setting as shown on setting sheet in operating instructions

Bore widens at bottom



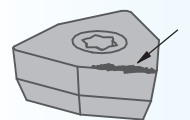
Possible cause	> Solution
• chip jam on internal cutting edge	> use different chip breaker geometry, increase feed if necessary

Bad surface finish



Possible cause	> Solution
• bad chip removal	> improve cutting parameters: increase cutting speed reduce feed

Build-up on cutting edge



Possible cause	> Solution
• cutting speed too low	> increase cutting speed
• insert too negative	> use positive geometry
• coating not suitable	> select correct coating

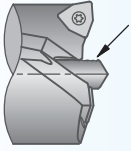
Friction marks on tool body



Possible cause	>Solution
• drill diameter too small	> check setting
• chip removal problems	> improve cutting parameters, check geometry of inserts
• cutting edge corner radius too large	> use correct cutting edge radius
• chip jams on support element, fractured support element	> basic element $6 \times D$, use of support element can be omitted

Stationary Applications

Heavy wear on one side of center drill



Possible cause

- tool not centered

>Solution

- > *tool turret/holder may have shifted*
- > *readjust machine*

Withdrawal groove on one side



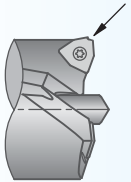
Possible cause

- tool not centered

>Solution

- > *tool turret/holder may have shifted*
- > *readjust machine*

Fracture on external cutting edge



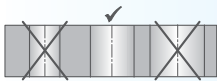
Possible cause

- feed rate too high
- interrupted cut
- cutting edge corner radius too small

>Solution

- > *reduce feed rate*
- > *change to tougher insert grade*
- > *use insert with larger cutting edge radius*

Bore too small/too large



Possible cause

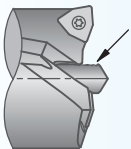
- machine not at X-0 position
- machine axis shifted

>Solution

- > *move axis to correct position*
- > *readjust machine*

Rotating Applications

Heavy wear on one side of center drill



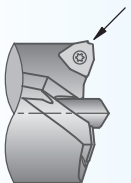
Possible cause

- insufficient guiding

>Solution

- > *check length setting on center drill*

Fracture on external cutting edge



Possible cause

- feed rate too high
- interrupted cut
- cutting edge corner radius too small

> Solution

- > *reduce feed rate*
- > *change to tougher insert grade*
- > *use insert with larger cutting edge radius*

Bore too small/too large with adjustable tool



Possible cause

- wrong cutting edge radius used
- incorrect setting

> Solution

- > *use correct cutting edge radius*
- > *adjust setting to correct parameters*



Troubleshooting Guide

for KUB Quatron®

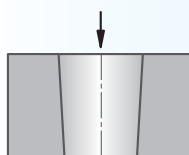
Rotating and Stationary Applications

Short tool life types of wear on inserts



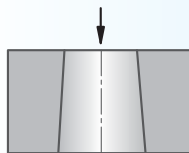
Possible cause	>Solution
<ul style="list-style-type: none">• cutting speed too high• cutting material with low wear resistance• excessive tool overhang• damaged insert pocket• clamping device not stable enough	<ul style="list-style-type: none">> select correct cutting speed> select grade with higher wear resistance> if possible, use shorter tool> check tool, change if necessary> improve stability

Bore narrows at bottom



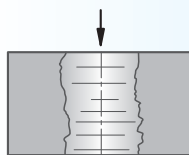
Possible cause	>Solution
<ul style="list-style-type: none">• chip jam on external cutting edge• material very soft	<ul style="list-style-type: none">> use different chip fracture geometry, increase feed if necessary> increase cutting speed, reduce feed use positive chip geometry

Bore widens at bottom



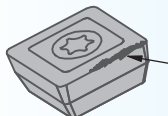
Possible cause	>Solution
<ul style="list-style-type: none">• chip jam on internal cutting edge	<ul style="list-style-type: none">> use different chip breaker geometry, increase feed if necessary

Bad surface finish



Possible cause	>Solution
<ul style="list-style-type: none">• bad chip removal	<ul style="list-style-type: none">> improve cutting parameters: increase cutting speed reduce feed

Build-up on cutting edge



Possible cause	>Solution
<ul style="list-style-type: none">• cutting speed too low• insert too negative• coating not suitable	<ul style="list-style-type: none">> increase cutting speed> use positive geometry> select correct coating

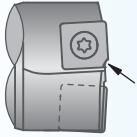
Friction marks on tool body



Possible cause	>Solution
<ul style="list-style-type: none">• drill diameter too small• chip removal problems	<ul style="list-style-type: none">> check setting> improve cutting parameters, check geometry of inserts
<ul style="list-style-type: none">• cutting edge corner radius too large	<ul style="list-style-type: none">> use correct cutting edge radius

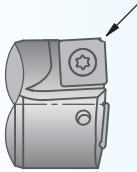
Stationary Applications

Fracture on internal cutting edge



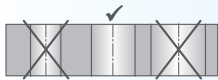
Possible cause	> Solution
• insert height of tool too high/too low	> <i>tool turret/holder may have shifted</i> > <i>readjust machine</i>
• mix-up between heavy duty/ regular duty insert	> <i>use correct insert</i>
• feed rate too high	> <i>reduce feed rate</i>
• insert grade too brittle	> <i>use tougher insert grade</i>
• wrong insert geometry	> <i>use geometry with chamfered cutting edge</i>

Fracture on external cutting edge



Possible cause	>Solution
• feed rate too high	> <i>reduce feed rate</i>
• interrupted cut	> <i>change to tougher insert grade</i>
• cutting edge corner radius too small	> <i>use insert with larger cutting edge radius</i>

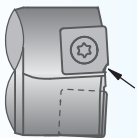
Bore too small/too large



Possible cause	> Solution
• machine not at X-0 position	> <i>move axis to correct position</i>
• machine axis shifted	> <i>readjust machine</i>

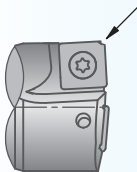
Rotating Applications

Fracture on internal cutting edge



Possible cause	> Solution
• mix-up between heavy duty/ regular duty insert	> <i>use correct insert</i>
• feed rate too high	> <i>reduce feed rate</i>
• insert grade too brittle	> <i>use tougher insert grade</i>
• wrong insert geometry	> <i>use geometry with chamfered cutting edge</i>

Fracture on external cutting edge



Possible cause	> Solution
• feed rate too high	> <i>reduce feed rate</i>
• interrupted cut	> <i>change to tougher insert grade</i>
• cutting edge corner radius too small	> <i>use insert with larger cutting edge radius</i>

Bore too small/too large with adjustable tool



Possible cause	> Solution
• wrong cutting edge radius used	> <i>use correct cutting edge radius</i>
• incorrect setting	> <i>adjust setting to correct parameters</i>



Troubleshooting Guide

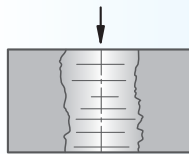
for KUB Duon®

Short tool life types of wear on inserts



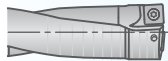
Possible cause	>Solution
• cutting speed too high	> <i>select correct cutting speed</i>
• cutting material with low wear resistance	> <i>select grade with higher wear resistance</i>
• excessive tool overhang	> <i>if possible, use shorter tool</i>
• damaged insert pocket	> <i>check tool, change if necessary</i>
• clamping device not stable enough	> <i>improve stability</i>
• run-out error	> <i>check tool, adapter and spindle</i>

Bad surface finish



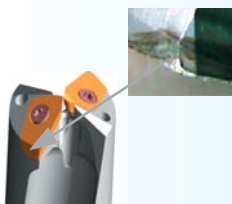
Possible cause	>Solution
• bad chip removal	> <i>improve cutting parameters: increase cutting speed reduce feed</i> > <i>check cutting parameters, reduce feed rate when starting drill</i>

Friction marks on tool body



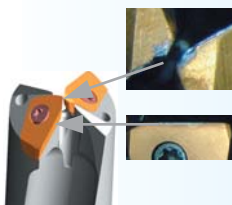
Possible cause	>Solution
• drill diameter too small	> <i>check setting</i>
• chip removal problems	> <i>improve cutting parameters, check geometry of inserts</i>
• cutting edge corner radius too large	> <i>use correct cutting edge radius</i>

Tool wear



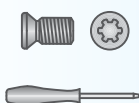
Possible cause	>Solution
• cutting material not sufficiently wear resistant	> <i>better wear resistant material</i>
• cutting speed too high	> <i>reduce cutting speed</i>
• run-out error	> <i>check tool, adapter and spindle</i>

Tool wear, micro fractures

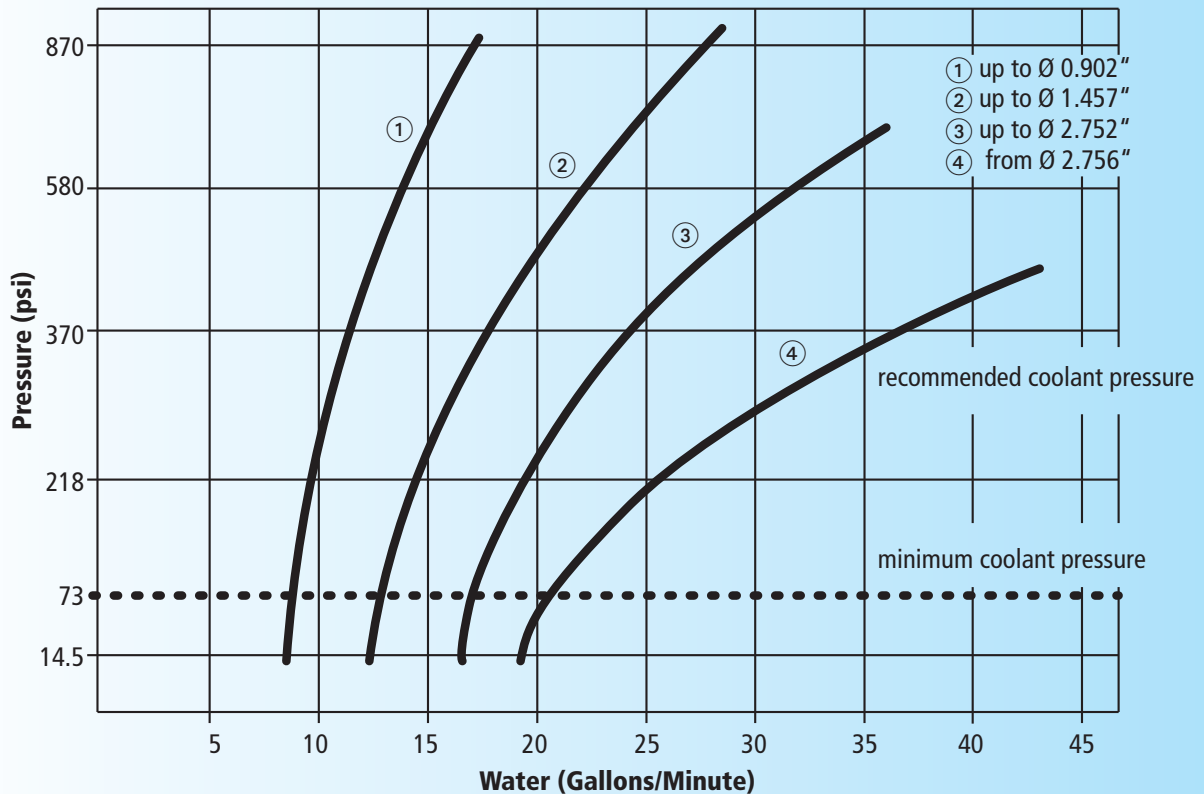


Possible cause	>Solution
• cutting material too hard	> <i>use tougher cutting material with higher tensile strength</i>
• feed rate not reduced when starting drill	> <i>reduce feed rate when starting drill and drilling out</i>
• run-out error	> <i>check tool, adapter and spindle</i>


Securing the inserts



Possible cause	>Solution
• wrong screwdriver used	> <i>only use Torx Plus screws and screwdriver</i>
• starting torque too low	> <i>Check starting torques. Optimum starting torques only possible with Torx Plus</i> > <i>see page 8.49 for correct torque settings</i>



Safety Notes

- **Caution!** When drilling rotating parts, a slug as shown pops out when drill breaks through - and can be thrown free from the chuck with tremendous force. Adequate guards are an absolute necessity. 
- Listed cutting data depends on specific operating conditions (e.g. machine, workpiece, temperature of environment, and lubrication/coolant used). Appropriate operation conditions and proper use of tools are essential.
- To avoid any unnecessary over exertion to the machine and the cutting tool, it is recommended to apply the required machine power consumption prior to using the cutting tool. (see machine power calculation on page 9.15). Please refer to the actual machine power data in the speed / power diagram from the machine.
- Protect yourself from free flying debris such as chips. Adequate guards are an absolute necessity. To guarantee the optimal life span of the cutting tool, it is necessary to change and or index the carbide insert in timely manner
 Acceptable width of flank wear marks on inserts:

W29 10... to W29 18...	VB max = 0.008" (0.20 mm)
W29 24... to W29 34...	VB max = 0.010" (0.25 mm)
W29 42... to W29 58...	VB max = 0.012" (0.30 mm)

Balancing Note

Tool holders or adapters are supplied as balanced unit. No allowance has been made for items used with the unit such as boring tools, milling cutters, inserts and etc. When used at high speeds, we recommend a precision balancing of assembly prior to use.



Application Examples

KUB Quatron® Ø 0.768" (19.5 mm), 2xD / Turret Disc

Material: Unalloyed steel
Inserts: 2x W83 18000.0984

KOMET	Competitor
$v_c = 660$ sf/min	$v_c = 520$ sf/min
$f = 0.008$ in/rev	$f = 0.004$ in/rev
$t_h = 3$ sec	$t_h = 7.5$ sec
Tool life 52.5 ft	Tool life 24.6 ft

+ 100%



KUB Trigon® Ø 0.630" (16,0 mm), 3xD / Perforated Plate

Material: Low alloy steel
Inserts: external W29 10010.0472
internal W29 10010.0479

KOMET	Competitor
$v_c = 590$ sf/min	$v_c = 590$ sf/min
$f = 0.005$ in/rev	$f = 0.004$ in/rev
$t_h = 6.5$ sec	$t_h = 7.5$ sec
Tool life 78.7 ft	Tool life 52.5 ft

+ 50%



Easy Special™ Ø 0.618" (15.7 mm) with Step / Holder for Dehumidifier

0.618" Ø with steps 0.925"/1.004" Ø and 45° chamfer

Material: Aluminum alloy
Inserts: 4x W29 10110.0477
1x W29 18110.0477

$v_c = 650$ sf/min
 $f = 0.003$ in/rev
 $t_h = 10$ sec
Tool life 131.2 ft

+ 70%

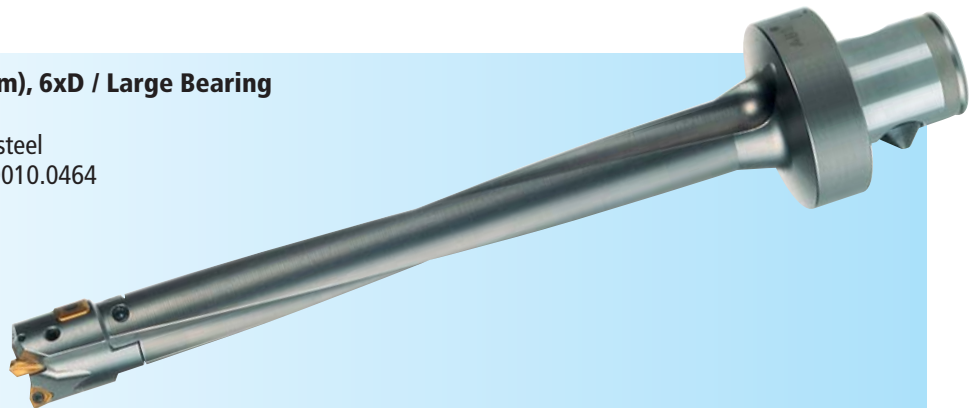


Significant savings compared with conventional machining

KUB Centron® Ø 1.102 (28 mm), 6xD / Large Bearing

Material: Low alloy steel
Inserts: 2x W27 20010.0464

$v_c = 460$ sf/min
 $f = 0.005$ in/rev
 $t_h = 52$ sec
Tool life 39.4 ft



Flank Wear

normal type of wear expected

Remedy:

- use hardened/wear-resistance cutting materials
- reduce cutting speed and feed rate



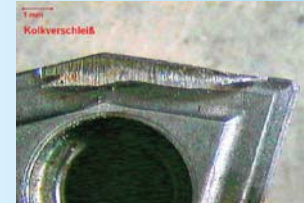
Crater Wear

Possible cause:

- coating/substrate not sufficiently wear-resistant
- chip geometry too negative

Solution:

- use substrate or coatings with better wear resistance
- use positive chip geometries



Chipping

Possible cause:

- coating/substrate too brittle
- vibrations on part or tool
- interrupted cut
- build-up on cutting edges

Solution:

- use tougher coating
- avoid vibrations
- avoid build-up on cutting edges



Catastrophic Breakage

Possible cause:

- wrong/excessively high cutting parameters
- no allowance for tool restrictions
- interrupted cut

Solution:

- check cutting data
- check tool restrictions



Thermal Wear

Possible cause:

- cutting speed too high
- excessive heat

Solution:

- reduce cutting speed
- use more wear-resistant and more thermally stable coatings or substrate



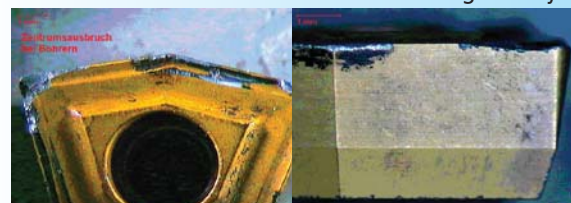
Fracture of center insert

Possible cause:

- basic substrate/coatings too brittle
- central position of internal insert too high (insert protrudes over center)

Solution:

- use tougher coatings and substrate
- check lower central position of internal insert
- use center insert with stronger chamfering
- use internal and external insert with same geometry



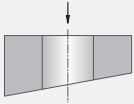
Technical Notes

for Twin Cutter



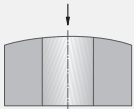
1. Starting on uneven surfaces (cast surfaces)

- subject to the starting angle, the feed must be reduced when starting the bore.
Rule of thumb: $3^\circ = 30\%$; $10^\circ = 40\%$; $25^\circ = 60\%$
- use tough insert
- use stable corner radius



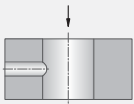
2. Angled bore exit

- from wear cut is interrupted reduce feed rate up to 50%
- use tough insert
- use stable corner radius



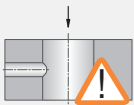
3. Starting on cambered surfaces

- no problems
- reduce feed rate if necessary



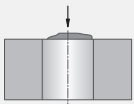
4. Roughing through a cross bore

- reduce feed rate 50% if necessary
- watch for chip jamming around tool
- use tough insert
- use stable corner radius



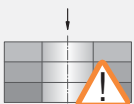
5. Starting on an edge

- reduce feed rate by 50%
- use tough insert
- use stable corner radius



6. Starting on a welded seam

- reduce feed rate
- use max. $3 \times D$ tools

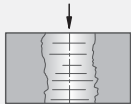


7. Roughing through stacked plates

- use holder with 80° approach angle
- good workpiece clamping required
- max. gap = 0.039" (1 mm)

long chips

- not optimum geometry
- select correct cutting depth
- select correct cutting values



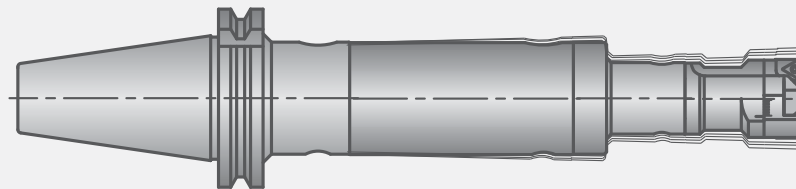
bad surface finish

- feed rate too high → improve cutting parameters: increase cutting speed, reduce feed
- long chips



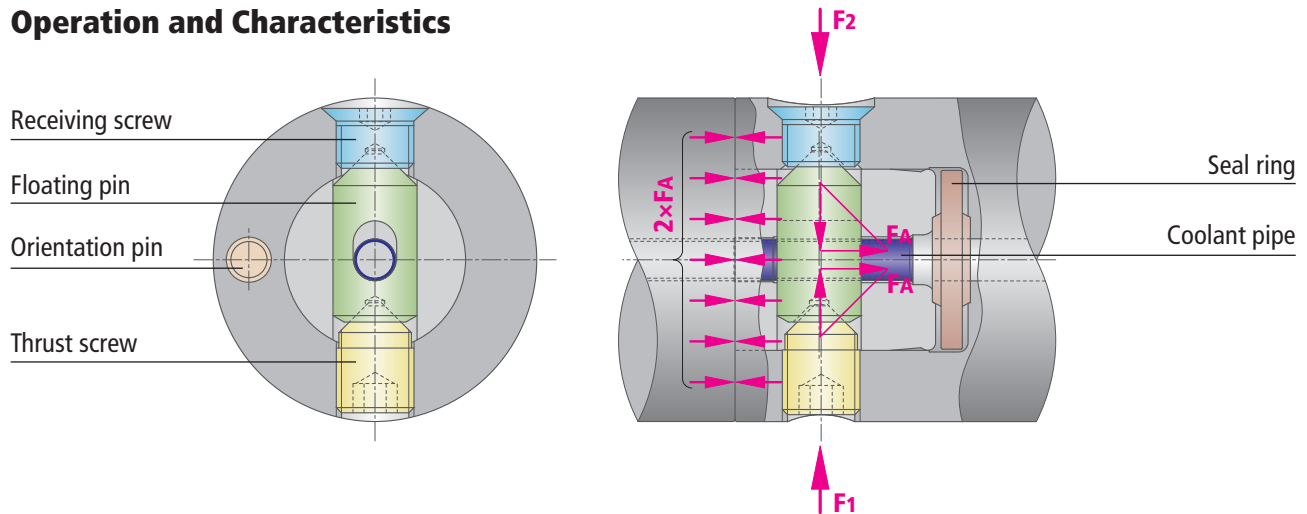
vibrations

- feed rate too high
- cutting speed too high
- geometry too obtuse
- check axial / radial setting
- check tool assembly



ABS® / ABS® N

Operation and Characteristics



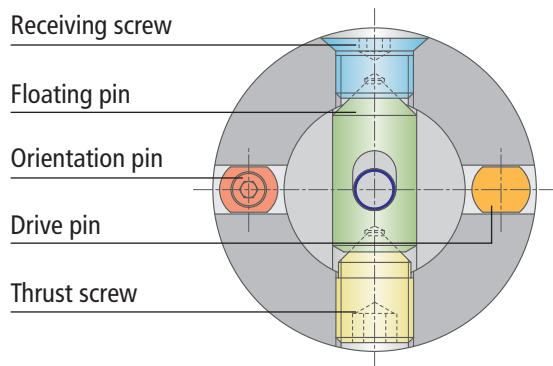
The ABS® connection consists of the female or **receiving part** (spindle or adapter) and the **male** (pilot) portion of the actual tool. A **thrust** and a **receiving screw** are situated radially on the receiving part (spindle or adapter). The **pilot** portion of the tool carries the **floating pin**. The **orientation pin** is located radially on the face next to the pilot.

Thrust and receiving screw are axially offset from the centerline of the floating pin. When the thrust screw is tightened, and the tapered surfaces make contact, forces F_1 and F_2 are compounded to $2 \times F_A$. When cutting forces are introduced, minimal "torsional slip" will occur which will actually make an even better connection. In order to allow for minor slippage, sufficient clearance is provided between the orientation pin and the matching bore. "Torsional slip" is not desirable for stationary applications and accurate positioning is accomplished by means of two precision location keys on the tool and with two keyways. "The exact dimensioning of the ABS® System in conjunction with the minimal tolerance of the fit, leads to a minute deformation to the self centering four point construction. This achieves high flexible strength, higher accuracy in change-over, and a greater vibration dampening device". Often the ABS® is built right into the spindle. Contrary to tapered shank tools, this method will provide for better vibration dampening and significantly reduce tool overhang.

Tools with the Original ABS® connection system are manufactured and/or marketed exclusively by KOMET and companies specifically authorised by KOMET. All authorized (licenced) manufacturers are contractually bound to use manufacturing specifications supplied by KOMET.

Original ABS® systems are identified with ABS® ... under licence to KOMET. All authorized ABS® manufacturers guarantee a quality standard which complies with KOMET manufacturing specifications. Quality and safety is guaranteed subject to original ABS® tools being correctly used. No guarantee can be given where tools are used with modular connections which are not identified as original ABS® tools. This particularly applies for connections which are designed to be combined and used with original ABS® tools. Please ensure that tools are used with original ABS® connections only.

ABS® N – the ABS® Version with Keys

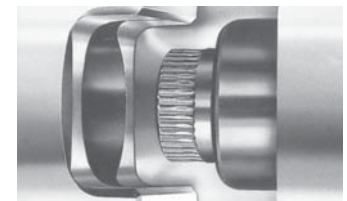


Features:

For the extended demands of the machining, the ABS® was modified in such a way that the torques and the cutting forces are transmitted to precision keys. This allows the constant and full connection of ABS® and ABS® N at any given moment.

Compatibility:

- the Standard tools with ABS® male connection are compatible with ABS® N female connection
- the ABS® N connection is interchangeable with standard ABS® tools.



high stability through ABS® with face contact and ABS® N keys

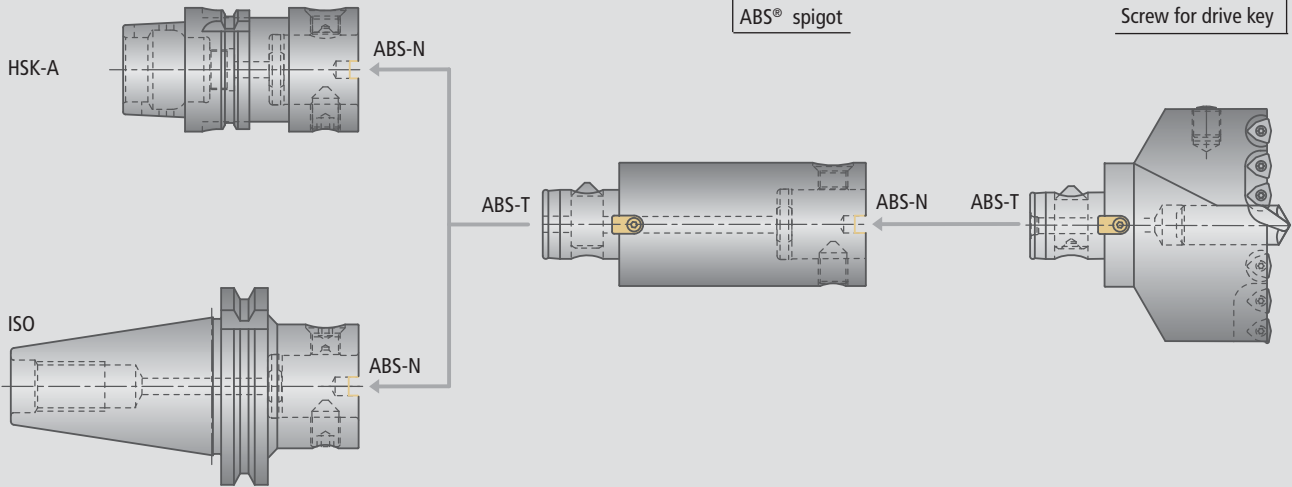
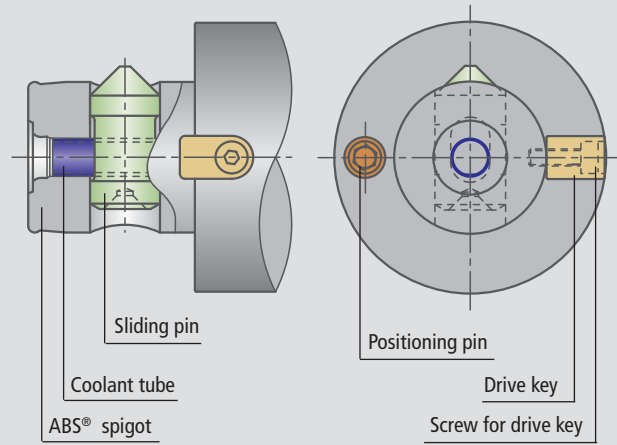
ABS® T – for increased torque requirements

Features:

For cutting operations which set high demands, the ABS® system has been modified so that moment and cutting forces can be absorbed by high-precision slots. This of course ensures that the results from ABS® N and ABS® T are consistently high.

Compatibility:

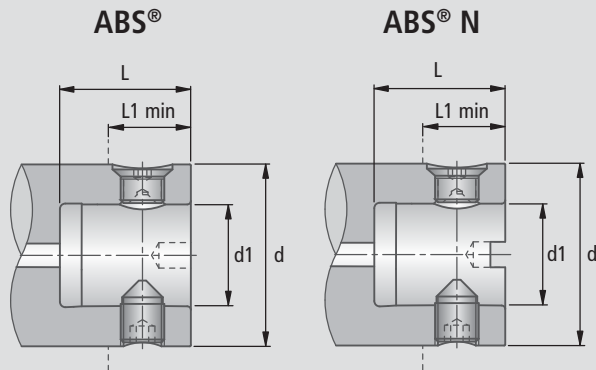
- standard ABS® T tools can be used in ABS® N adaptors
- removal the drive key, ABS® T tool can be held in standard adaptors ABS®.



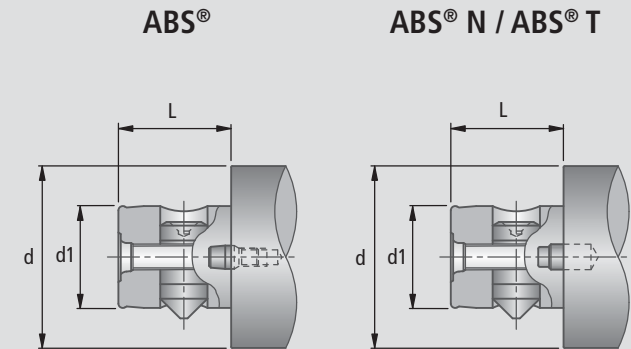
ABS® / ABS® N / ABS® T Nominal Dimensions

A colour code system is used for the ABS and ABS-N d size so that selection of tools with a specific location size can be made quickly and accurately.

Female connection



Male connection

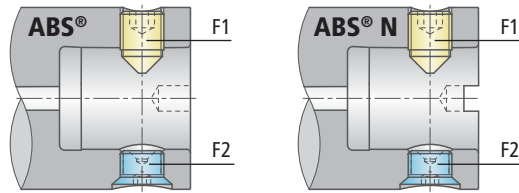


ABS size	ABS-N size	d inch (mm)	d1 inch (mm)	L inch (mm)	L1 min inch (mm)
ABS 25	ABS 25 N	25	0.512 (13)	0.945 (24)	0.512 (13.0)
ABS 32	ABS 32 N	32	0.630 (16)	1.063 (27)	0.630 (16.0)
ABS 40	ABS 40 N	40	0.787 (20)	1.220 (31)	0.728 (18.5)
ABS 50	ABS 50 N	50	1.102 (28)	1.417 (36)	0.866 (22.0)
ABS 63	ABS 63 N	63	1.339 (34)	1.693 (43)	1.102 (28.0)
ABS 80	ABS 80 N	80	1.811 (46)	1.890 (48)	1.339 (34.0)
ABS 100	ABS 100 N	100	2.205 (56)	2.362 (60)	1.594 (40.5)
ABS 125	ABS 125 N	125	2.756 (70)	2.992 (76)	2.008 (51.0)
ABS 160	ABS 160 N	160	3.543 (90)	3.780 (96)	2.559 (65.0)

ABS size	ABS-N size	ABS-T size	d inch (mm)	d1 inch (mm)	L inch (mm)
ABS 25	ABS 25 N		25	0.512 (13)	0.787 (20)
ABS 32	ABS 32 N		32	0.630 (16)	0.906 (23)
ABS 40	ABS 40 N		40	0.787 (20)	1.024 (26)
ABS 50	ABS 50 N	ABS 50 T	50	1.102 (28)	1.220 (31)
ABS 63	ABS 63 N	ABS 63 T	63	1.339 (34)	1.496 (38)
ABS 80	ABS 80 N	ABS 80 T	80	1.811 (46)	1.693 (43)
ABS 100	ABS 100 N		100	2.205 (56)	2.165 (55)
ABS 125	ABS 125 N		125	2.756 (70)	2.756 (70)
ABS 160	ABS 160 N		160	3.543 (90)	3.543 (90)

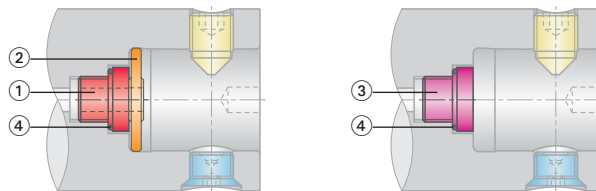


ABS® / ABS® N Replacement parts



Replacement parts are supplied for replacement purposes only. Any other use is not permitted and represents patent infringement.

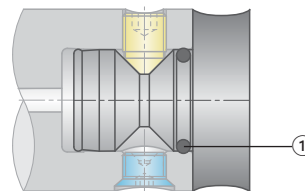
	ABS / ABS-N								
	25	32	40	50	63	80	100	125	160
Spares assortment ①	N00 15250 ABS 25-FS-W	N00 15260 ABS 32-FS-W	N00 15270 ABS 40-FS-W	N00 15280 ABS 50-FS-W	N00 15290 ABS 63-FS-W	N00 15300 ABS 80-FS-W	N00 15310 ABS100-FS-W	N00 15320 ABS125-FS-W	N00 15330 ABS160-FS-W
Thrust screw F1	N00 02051 ABS 25-F1	N00 02061 ABS 32-F1	N00 02071 ABS 40-F1	N00 02081 ABS 50-F1	N00 02091 ABS 63-F1	N00 02101 ABS 80-F1	N00 02111 ABS100-F1	N00 02121 ABS125-F1	N00 02131 ABS160-F1
Starting Torque (in-lbf)									
Light cutting Reaming, finish boring, finish milling	27 - 40	80 - 115	115 - 195	133 - 248	266 - 398	336 - 478	407 - 620	487 - 690	
Heavy cutting Drilling, rough boring, milling	35 - 44	133 - 168	204 - 266	266 - 354	407 - 531	487 - 620	664 - 885	797 - 1062	
Receiving screw F2	N00 03051 ABS 25-F2	N00 03061 ABS 32-F2	N00 03071 ABS 40-F2	N00 03081 ABS 50-F2	N00 03091 ABS 63-F2	N00 03101 ABS 80-F2	N00 03111 ABS100-F2	N00 03121 ABS125-F2	N00 03131 ABS160-F2



	ABS / ABS-N								
	25	32	40	50	63	80	100	125	160
Sealing screw ①	L02 30510 M8×1	L02 30510 M8×1	L02 30520 M10×1	L02 30520 M10×1	L02 30530 M12×1.5	L02 30540 M12×1.5	L02 30550 M16×1.5	N00 07100 M36×1.5	
Sealing disc ②	L01 02011 ABS25-E9	L01 02021 ABS32-E9	L01 02031 ABS40-E9	L01 02041 ABS50-E9	L01 02051 ABS63-E9	L01 02061 ABS80-E9	L01 02071 ABS100-E9		
Plug screw ③	5504100810 M8×1	5504100810 M8×1	5504101010 M10×1	5504101010 M10×1	5504101215 M12×1.5	5504101215 M12×1.5	5504101615 M16×1.5	5504103615 M36×1.5	
Sealing ring ④	5694100811	5694100811	5694101013	5694101013	5694101215	5694101215	5694101620		

ABS® Cover

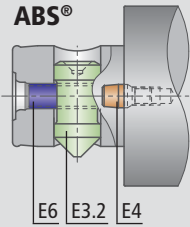
for covering ABS / ABS-N spindle adapter when not in use



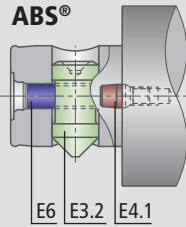
Delivery: Cover complete with seal ring

	ABS / ABS-N								
	25	32	40	50	63	80	100	125	160
Cover	L01 03020 0.04	L01 03030 0.06	L01 03040 0.11	L01 03050 0.21	L01 03060 0.38	L01 03070 0.65	L01 03080 1.08		
Sealing ring ④	5291101010	5291101315	5291101615	5291102515	5291103215	5291104220	5291105030		

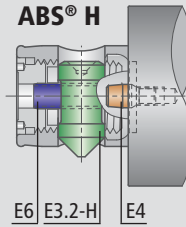
ABS® / ABS® N / ABS® T and ABS® H Replacement parts



Spares assortment ②

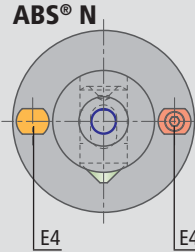


Spares assortment ⑤
for milling cutter adapter

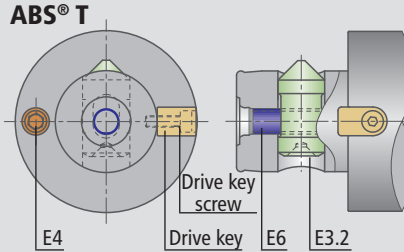
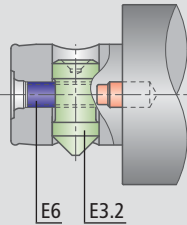


Spares assortment ④











Individual replacement parts (spares assortment) are supplied for replacement purposes only. Any other use is not permitted and represents an infringement of the patent.


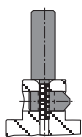
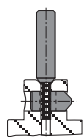
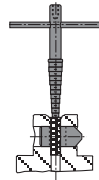
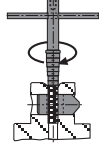
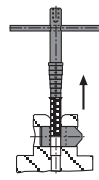


Spares assortment ③



Spares assortment ⑥

	ABS / ABS-N / ABS-T								
	25	32	40	50	63	80	100	125	160
Spares assortment ②	N00 17650 ABS25-ES-M3	N00 17660 ABS32-ES-M3	N00 17670 ABS40-ES-M3	N00 17680 ABS50-ES-M3	N00 17690 ABS63-ES-M3	N00 17700 ABS80-ES-M3	N00 17710 ABS100-ES-M3	N00 17720 ABS125-ES-M3	N00 17730 ABS160-ES-M3
Spares assortment ③	N00 19251 SBA25-ES-M1	N00 19262 SBA32-ES-M1	N00 19272 SBA40-ES-M1	N00 19282 SBA50-ES-M1	N00 19292 SBA63-ES-M1	N00 19302 SBA80-ES-M1	N00 19312 SBA100-ES-M1		
Spares assortment ④		N00 20060 ABS32-H-ES	N00 20070 ABS40-H-ES	N00 20080 ABS50-H-ES	N00 20090 ABS63-H-ES	N00 20100 ABS80-H-ES			
Spares assortment ⑤	N00 17850 ABS25-ES-M4	N00 17861 ABS32-ES-M4	N00 17871 ABS40-ES-M4	N00 17881 ABS50-ES-M4	N00 17891 ABS63-ES-M4	N00 17901 ABS80-ES-M4	N00 17911 ABS100-ES-M4		
Spares assortment ⑥				N00 18180 ABS50-T-ES	N00 18190 ABS63-T-ES	N00 18200 ABS80-T-ES			
Floating pin E3.2 	N00 00450 ABS25-E3.2	N00 00460 ABS32-E3.2	N00 00470 ABS40-E3.2	N00 00480 ABS50-E3.2	N00 00490 ABS63-E3.2	N00 00500 ABS80-E3.2	N00 00510 ABS100-E3.2	N00 00520 ABS125-E3.2	N00 00530 ABS160-E3.2
Floating pin E3.2-H 		N00 01661 ABS32-E3.2-H	N00 01670 ABS40-E3.2-H	N00 01680 ABS50-E3.2-H	N00 01690 ABS63-E3.2-H	N00 01700 ABS80-E3.2-H			
Orientation pin E4 	N00 04050 ABS25-E4	N00 04060 ABS32-E4	N00 04070 ABS40-E4	N00 04080 ABS50-E4	N00 04090 ABS63-E4	N00 04100 ABS80-E4	N00 04110 ABS100-E4	N00 04120 ABS125-E4	N00 04130 ABS160-E4
Orientation pin E4.1 	N00 04250 ABS25-E4.1	N00 04261 ABS32-E4.1	N00 04271 ABS40-E4.1	N00 04281 ABS50-E4.1	N00 04291 ABS63-E4.1	N00 04301 ABS80-E4.1	N00 04311 ABS100-E4.1		
Drive key for ABS® T				N12 20280 T50	N12 20290 T63	N12 20300 T80			
Drive key screw for ABS® T				5501103010	5501104012	5501105016			
Drive pin E4 	N00 05051 SBA25-E4	N00 05062 SBA32-E4	N00 05072 SBA40-E4	N00 05082 SBA50-E4	N00 05092 SBA63-E4	N00 05102 SBA80-E4	N00 05112 SBA100-E4		
Orientation pin E4.1 	N00 05251 SBA25-E4.1	N00 05262 SBA32-E4.1	N00 05272 SBA40-E4.1	N00 05282 SBA50-E4.1	N00 05292 SBA63-E4.1	N00 05302 SBA80-E4.1	N00 05312 SBA100-E4.1		
Coolant pipe E6 	N00 06050 ABS25-E6	N00 06060 ABS32-E6	N00 06070 ABS40-E6	N00 06080 ABS50-E6	N00 06090 ABS63-E6	N00 06100 ABS80-E6	N00 06110 ABS100-E6	N00 06120 ABS125-E6	N00 06130 ABS160-E6
Extraction tool 	L05 01590	L05 01590	L05 01590	L05 01590	L05 01590	L05 01590	L05 01590	L05 01590	L05 01590
Seating mandrel 	N75 80000	N75 80010	N75 80020	N75 80030	N75 80040	N75 80050	N75 80060	N75 80070	N75 80080
Flaring mandrel 	N75 80100	N75 80110	N75 80120	N75 80130	N75 80140	N75 80150	N75 80160	N75 80170	N75 80170

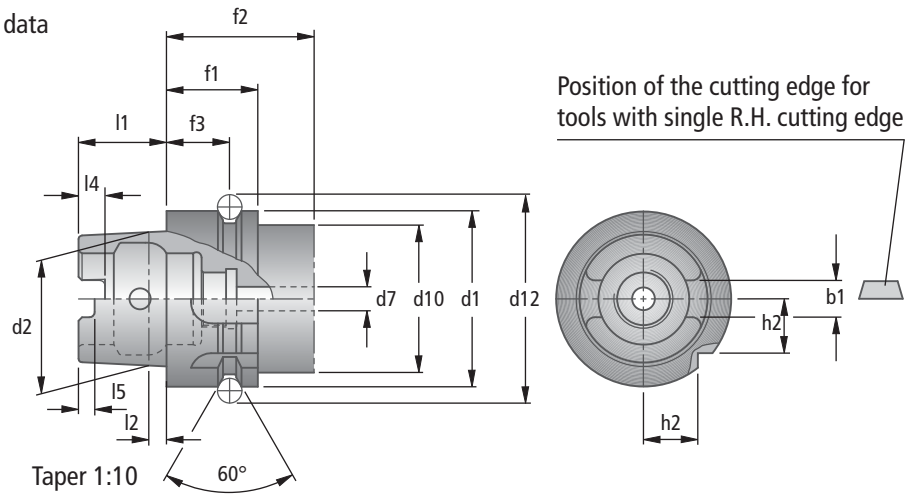
Coolant Pipe Installation Procedure			Coolant Pipe Extraction Procedure		
					
1. Insert coolant pipe by hand until it stops.	2. Press fit coolant pipe into ABS® connection until seating mandrel bottoms on ABS® face.	3. Flare coolant pipe with flaring mandrel until the tube is flared to countersink in ABS® connection.	1. Insert extraction tool LO 01590 into coolant pipe.	2. Turn tool clockwise as if tapping a hole until threads are engaged.	3. Pull tool with pipe attached from ABS® connection



HSK-A

Hollow Shank HSK-A to ISO 12164-1

(as DIN 69893-1)
Version with hole for data carrier to DIN 69873.

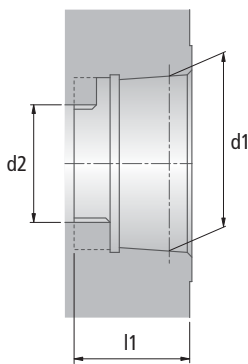


Position of the cutting edge for tools with single R.H. cutting edge

Dimensions														
HSK size	$d1_{h10}$	$d2$	$d10_{max}$	$d12$	$d7_{max}$	$b1_{\pm 0.04}$	$h2_{-0.3}$	$f1_{-0.1}$	$f2_{min}$	$f3_{\pm 0.1}$	$l1_{-0.2}$	$l2$	$l4^{+0.2}$	$l5^{+0.2}$
HSK-A 32	32.0	24.0	26.0	37.00	4.2	7.05	9.50	20.0	35.0	16.0	16.0	3.2	3.5	3.0
HSK-A 40	40.0	30.0	34.0	45.00	5.0	8.05	12.00	20.0	35.0	16.0	20.0	4.0	6.0	5.0
HSK-A 50	50.0	38.0	42.0	59.30	6.8	10.54	15.50	26.0	42.0	18.0	25.0	5.0	7.5	4.5
HSK-A 63	63.0	48.0	53.0	72.30	8.4	12.54	20.00	26.0	42.0	18.0	32.0	6.3	10.0	6.0
HSK-A 80	80.0	60.0	67.0	88.80	10.2	16.04	25.00	26.0	42.0	18.0	40.0	8.0	12.0	8.0
HSK-A100	100.0	75.0	88.0	109.75	12.0	20.02	31.50	29.0	45.0	20.0	50.0	10.0	15.0	10.0

Adapters for Hollow Taper Shanks Form A and C to ISO 12164-2

(as DIN 69063)



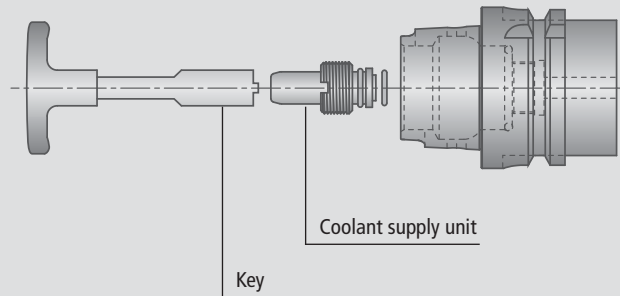
Dimensions			
HSK size	$d1$	$d2$	$l1^{+0.2}$
HSK-A/C 32	23.998	17	16.5
HSK-A/C 40	29.998	21	20.5
HSK-A/C 50	37.998	26	25.5
HSK-A/C 63	47.998	34	33
HSK-A/C 80	59.997	42	41
HSK-A/C 100	74.997	53	51



HSK-A
Adapters

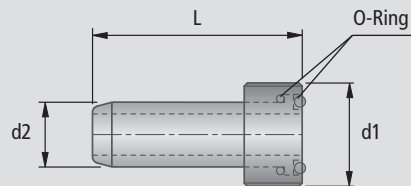
HSK-A Replacement Parts

Mounting of the Coolant Supply Unit



Note:

The coolant supply unit should be fitted in the tool with the key to ensure a proper seal. A coolant supply unit specifically for the machine can also be fitted, if required, using the thread in the tool.



Coolant supply unit							
for HSK size	Order No.	d1	d2	L	Assembly parts		
					O-Ring face side and over tube		Order No.
					Description		
32	5139100032	M10×1.0	6	26	5×1.2	2x	5291400512
40	5139100040	M12×1.0	8	29.1	7.5×1.5	2x	5291400751
50	5139100050	M16×1.0	10	32.7	9×2	2x	5291400920
63	5139100063	M18×1.0	12	36.2	10×2.5 10×2	1x 1x	5291401025 5291401020
80	5139100080	M20×1.5	14	39.7	13×2	2x	5291401320
100	5139100100	M24×1.5	16	43.6	14×3	2x	5291401430

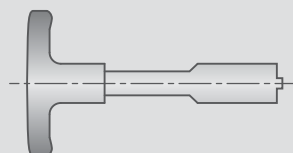
Delivery: Coolant tube, locking collar and two O rings.

Note:

The coolant supply connection for the tool adapters must be ordered separately.

Use only the keys listed below for assembly.

This will prevent coolant flowing back into the machine spindle/clamping system. A specific coolant hose for the machine can also be fitted on all HSK adapters.



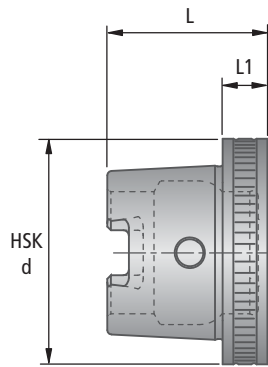
Key	
for HSK size	Order No.
32	1802101032
40	1802101040
50	1802101050
63	1802101063
80	1802101080
100	1802101100



HSK-C Replacement Parts

HSK-C Plug

For sealing HSK units against dirt or other contamination.



inch (mm)

Description	Order No.	HSK d	L	L1
HSK-C 40	A06 13470	40	1.181 (30)	0.394 (10)
HSK-C 50	A06 23470	50	1.476 (37.5)	0.492 (12.5)
HSK-C 63	A06 33470	63	1.752 (44.5)	0.492 (12.5)
HSK-C 80	A06 43470	80	2.205 (56)	0.630 (16)
HSK-C100	A06 53470	100	2.598 (66)	0.630 (16)

- Hollow taper shanks are used as a connection between machine and tool.
- HSK is covered by ISO 12164
- Face contact between the taper shank and the machine spindle is then produced.
- **This provides the following important advantages: maximum tool change accuracy, high static rigidity, high radial stability, compact design, low weight, use at high spindle speeds, shorter tool change times due to lower weight and higher acceleration on the machine.**
- For standardized hollow taper shanks, KOMET has concentrated on the HSK-A version. This version is used for automatic tool change on machining centers, turning and milling centers and other machine tools.
- HSK-A can also be used on machines with manual tool change and HSK-C connections.
- KOMET can also supply other HSK versions on request.

Note:

The application details shown depend on the environmental and application conditions (e.g. machine, ambient temperature, use of lubricant/coolant and the machining result required). These are subject to correct operating conditions, correct application and compliance with the spindle speed limits given for the tools.

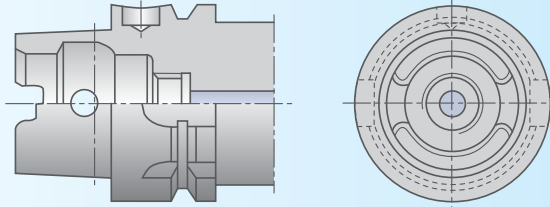


HSK Versions

Hollow Taper Shanks

for automatic tool change DIN 69893 Part 1 and 2 – with gripper groove

Form A

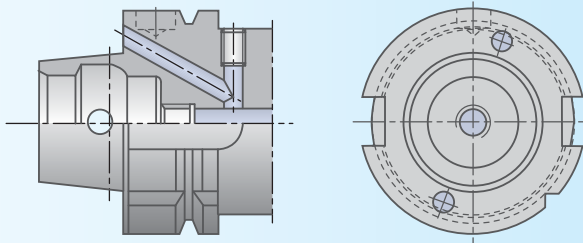


- used on machining centers, milling machines, turning machines, special machines with automatic tool change
- central, axial coolant supply through coolant tube
- torque transmission via two key slots at end of taper
- two slots on collar for tool magazine, location edge hole for data carrier DIN 69873 in collar

Hollow Taper Shanks

for automatic tool change DIN 69893 Part 1 and 2 – with gripper groove

Form B

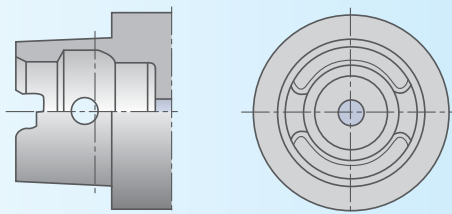


- use on machining centers, milling machines for heavy-duty cutting, turning machines
- enlarged collar
- off-center coolant supply through collar or central supply through coolant tube
- torque transmission via two slots on collar
- location edge
- hole for data carrier DIN 69873 in collar

Hollow Taper Shanks

for manual tool change DIN 69893 Part 1 and 2 – without gripper groove

Form C

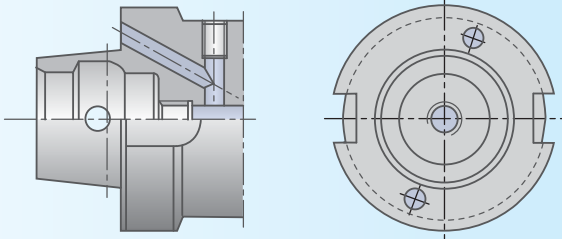


- preferably used for spindles on transfer lines and special machines with no automatic tool change or for short bore spindles and tool extensions and reducers
- central, axial coolant supply
- torque transmission via two key slots at end of taper

Hollow Taper Shanks

for manual tool change DIN 69893 Part 1 and 2 – without gripper groove

Form D

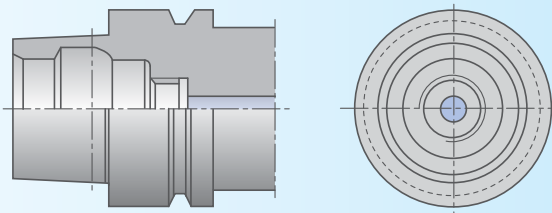


- for use in all areas which require better support from a large contact surface during manual tool change
- with larger collar
- off-center coolant supply through collar or central supply through coolant tube
- torque transmission via two collar slots

Hollow Taper Shanks

for higher spindle speeds (HSC). Provisional standard DIN 69893 Part 5 and 6 – with gripper groove

Form E

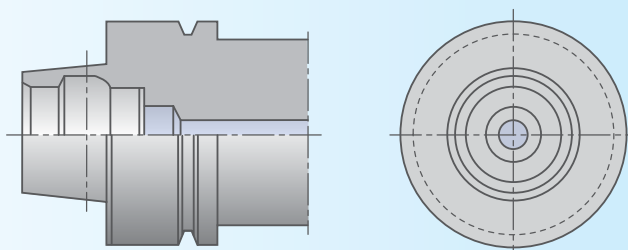


- used for high frequency spindles and wood machining
- rotationally symmetrical, without key slots
- torque transmission via friction resistance
- central coolant supply possible through coolant tube

Hollow Taper Shanks

for higher spindle speeds (HSC). Provisional standard DIN 69893 Part 5 and 6 – with gripper groove

Form F



- with larger collar
- central coolant supply possible through coolant hose



KomLoc® HSK - Clamping System

Features of the KomLoc® HSK - Clamping System

- Simple and low cost spindle contour
- Minimum number of extremely sturdy components
- Maximum clamping force
- Specially designed for high speed machining (HSC)
- Internal coolant supply
- Practical ejector function

Applications

There are numerous occasions that require manual clamping of hollow taper shank (HSK) tools. The new KOMET HSK clamping system is used throughout transfer lines, machining centers, turning lathes, multi-head machines and pre-setting devices.

- Direct mounting on multi-head machines and short boring spindles
- Spindle mounted and location adapter flanges are available
- Adapters for extension and reduction

Using the KomLoc® HSK - Clamping System

Operation of the KomLoc® clamping system is quite simple by the turn of a hexagonal key. A low draw-in moment automatically produces a sturdy and effective clamping action. In addition, an axial movement or turning of the locking ring prevents dirt and chips from penetrating into the clamping mechanism.

HSC (High Speed Cutting) Ability

The new KomLoc® clamping system is predestined to be utilized at high cutting speeds due to the radial expanding effect of the clamping action. The clamping cartridge is designed to be completely symmetrical in rotation.

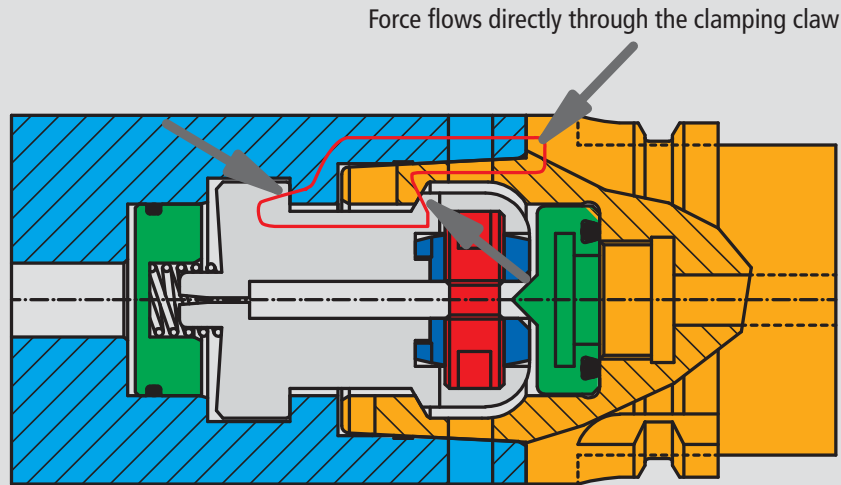
Coolant Supply

Internal coolant supply is introduced by two coolant hoses which form a cage with the ejector and the distributor. This cage is supported on floating bearings and produces a seal for a coolant pressure of $p > 30\text{psi}$

Application Details

The clamping adapter ensures an excellent transmission of the bending and torsion moments by maintaining the correct draw-in moments and clamping forces. The direction of these moments is not affected by the position of the clamping cartridge.

Function



Clamping Mechanism

- The two clamping nuts are expanded radially by using a hexagonal key on the threaded spindle
- The two clamping elements are applied to the clamping shoulder of the hollow taper shank (HSK)
- The high axial clamping force produces a positive connection

Release Mechanism

Clamping is released by moving the two clamping elements inwards back to the block. This activates the ejector which releases the connection.

Clamping Force / Rigidity

The high clamping forces (see table) produce excellent bending resistance. Depending on the operation temperature and the lubrication on the clamping element, clamping forces may vary by +/- 15%.

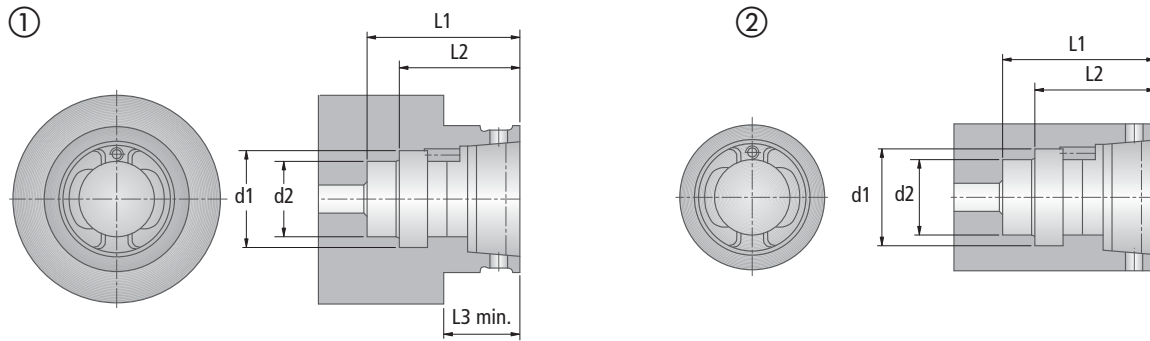


HSK size	a/f for operating	Torque setting ft-lbs	Tension force lbs	Torque setting ft-lbs	Tension force lbs	KOMET Standard Value		Torque setting ft-lbs	Tension force lbs
						Torque setting ft-lbs	Tension force lbs		
25	2	-	-	0.74	787	1.11	1236	1.48	1574
32	2.5	1.11	1461	1.48	1798	1.84	2023	2.58	2473
40	3	2.95	3597	3.69	4047	4.43	4496	5.90	5620
50	4	3.69	4271	5.53	5620	7.38	6969	11.06	9217
63	5	7.38	6295	9.22	7194	11.06	8992	12.91	11465
80	6	11.06	8318	14.75	10116	18.44	11240	22.13	13489
100	8	22.13	8992	36.88	13489	44.25	15737	44.25	15737



KomLoc® HSK - Clamping System K

Spindle Contour



Assembly

The KomLoc® clamping cartridge is extremely easy to assemble. Insert the KomLoc® cartridge, rotate 90° and secure with threaded pin. This can be done from any side and requires no alignment.

Note:

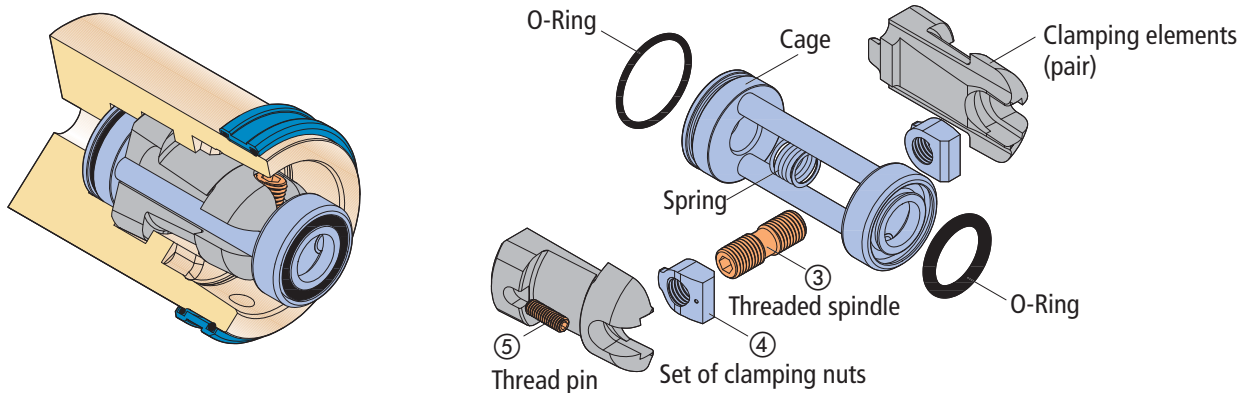
Sealing ring for use on short bore spindles to DIN 69002 in conjunction with centrifuge ring is available on request. Detailed dimensional drawings are available on request.

Fitting Dimensions

inch (mm)

for HSK size	L1	L2	d1	d2	①		②	
					Seal ring shifting	L3 min	Seal ring turning	Ball pressure screw
						Order No.	Order No.	Order No.
25	1.091 (27.7)	0.831 (21.1)	0.661 (16.8)	0.531 (13.5)	L07 01420	0.551 (14)	L07 01720	N10 30736
32	1.350 (34.3)	1.075 (27.3)	0.831 (21.1)	0.669 (17.0)	L07 01430	0.630 (16)	L07 01730	N10 30737
40	1.669 (42.4)	1.331 (33.8)	1.039 (26.4)	0.827 (21.0)	L07 01440	0.748 (19)	L07 01740	N10 30738
50	2.087 (53.0)	1.661 (42.2)	1.299 (33.0)	1.024 (26.0)	L07 01450	0.945 (24)	L07 01750	N10 30739
63	2.559 (65.0)	2.079 (52.8)	1.673 (42.5)	1.339 (34.0)	L07 01460	1.142 (29)	L07 01761	N10 30740
80	3.339 (84.8)	2.661 (67.6)	2.079 (52.8)	1.654 (42.0)	L07 01470	1.457 (37)	L07 01771	N10 30741
100	4.173 (106.0)	3.323 (84.4)	2.598 (66.0)	2.047 (52.0)	L07 01480	1.850 (47)	L07 01780	N10 30742

Components



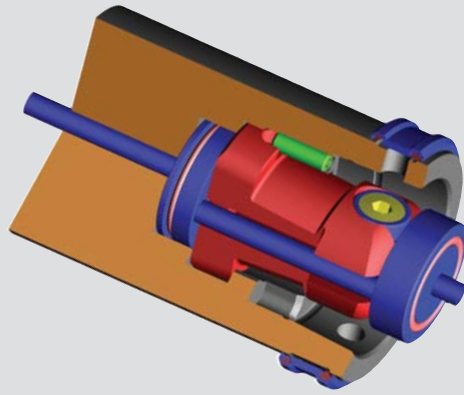
KomLoc® clamping devices are available for sizes HSK-25 to HSK-100

Delivery:

KomLoc® clamping cartridge, fully assembled, including O-rings and threaded pin.

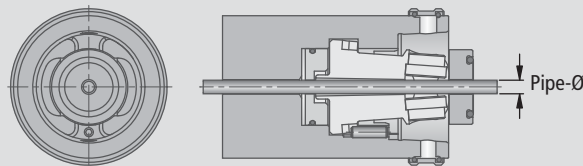
KomLoc® Clamping cartridge		Replacement Parts			
Description	Order No.	Threaded spindle	Set of clamping nuts	Threaded pin	
		③ Order No.	④ Order No.	Description	⑤ Order No.
System K IKZ-HSK25	L07 01020	L07 01120	L07 01220	M2×5 SW0.9	N00 70820
System K IKZ-HSK32	L07 01030	L07 01130	L07 01230	M2.5×8 SW1.3	N00 70830
System K IKZ-HSK40	L07 01040	L07 01140	L07 01240	M3×10 SW1.5	N00 70840
System K IKZ-HSK50	L07 01050	L07 01150	L07 01250	M4×12 SW2	N00 70850
System K IKZ-HSK63	L07 01060	L07 01160	L07 01260	M5×16 SW2.5	N00 70860
System K IKZ-HSK80	L07 01070	L07 01170	L07 01270	M6×20 SW3	N00 70870
System K IKZ-HSK100	L07 01080	L07 01180	L07 01280	M8×25 SW4	N00 70880

KomLoc® HSK - Clamping System K for MQL



Description / Features

- KomLoc® minimal lubrication clamping element with open central area
- through hose for supply of minimal lubrication
- high clamping force similar to KomLoc®
- integral ejector
- compatible with existing KomLoc® contour
- available in sizes HSK 40, 50, 63, 80 and 100
- operating key can be held on both sides



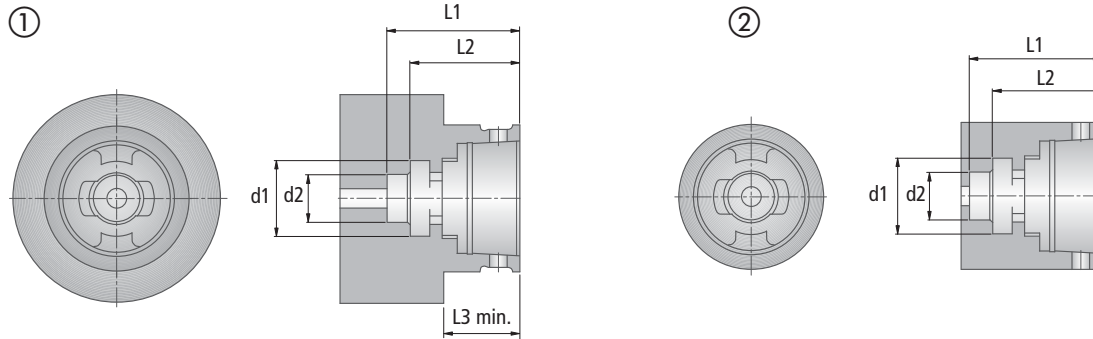
inch (mm)

Description	Order No. with ejector	Pipe-Ø	Clamping force in lbf
System K MMS-HSK40	L07 02040	0.154 (3.9)	4500
System K MMS-HSK50	L07 02050	0.193 (4.9)	6750
System K MMS-HSK63	L07 02060	0.272 (6.9)	9000
System K MMS-HSK80	L07 02070	0.311 (7.9)	11250
System K MMS-HSK100	L07 02080	0.390 (9.9)	15750



KomLoc® HSK - Clamping System M

Spindle Contour



Note:

Sealing ring for use on short bore spindles to DIN 69002 in conjunction with centrifuge ring is available on request. Detailed dimensional drawings are available on request.

Fitting Dimensions

inch (mm)

for HSK size	L1 min	L2	d1	d2	①		②	
					Order No.	L3 min	Seal ring turning	Ball pressure screw
40	1.654 (42)	1.307 (33.2)	0.906 (23)	0.591 (15)	L07 01440	0.748 (19)	L07 01740	N10 30738
50	1.870 (47.5)	1.504 (38.2)	1.063 (27)	0.709 (18)	L07 01450	0.945 (24)	L07 01750	N10 30739
63	2.224 (56.5)	1.823 (46.3)	1.260 (32)	0.787 (20)	L07 01460	1.142 (29)	L07 01761	N10 30740
80	2.539 (64.5)	2.138 (54.3)	1.496 (38)	0.906 (23)	L07 01470	1.457 (37)	L07 01771	N10 30741
100	3.346 (85)	2.795 (71)	1.89 (48)	1.142 (29)	L07 01480	1.850 (47)	L07 01780	N10 30742

Description / Features

- Can be mounted onto existing spindle with current HSK clamping cartridge contour
- Central lubricant supply without roundabout routes
- Maximum clamping force with low moment used
- Easy to handle without torque wrench
- Pressure responsive face seal on HSK A/C tool adapters



Description	Order No.	$S_{-0.004}$	Torque MD (ft-lbs)	Clamping force F (lbf)	Key size SW
System M IKZ-HSK40	L07 05140	0.331	3	3370	3
System M IKZ-HSK50	L07 05150	0.413	6	5170	4
System M IKZ-HSK63	L07 05160	0.417	11	7420	5
System M IKZ-HSK80	L07 05170	0.524	20	11250	6
System M IKZ-HSK100	L07 05180	0.531	33	13500	8

Accessories for KomLoc® HSK Clamping System M

- Clamping device can be mounted without additional tools
- Where fitting system is frequently applied, we recommend the use of an assembly grip and withdrawal device

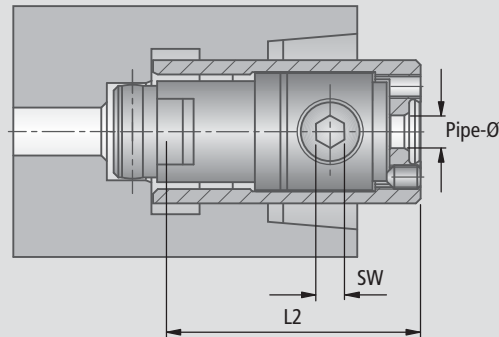
HSK size	Assembly grip	Withdrawal device
	Order No.	Order No.
32	L07 05330	L07 05430
40	L07 05340	L07 05440
50	L07 05350	L07 05450
63	L07 05360	L07 05460
80	L07 05370	L07 05470
100	L07 05380	L07 05480

KomLoc® HSK - Clamping System M for MQL



Description / Features

- can be mounted onto existing spindle with current HSK clamping cartridge contour
- central open area for holding HSK clamping cartridge contour
- maximum clamping force with low moment used
- easy to handle without torque wrench



inch (mm)

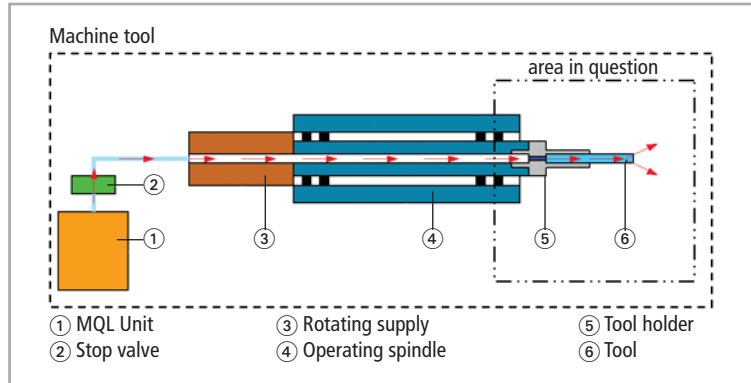
HSK size	Order No.	L2	Torque MD (ft-lbs)	Clamping force F (lbf)	Key size SW	Pipe - Ø
32	L07 05030	1.110 (28.2)	1.8	1800	2.5	0.114 (2.9)
40	L07 05040	1.307 (33.2)	3	3370	3	0.154 (3.9)
50	L07 05050	1.504 (38.2)	6	5170	4	0.193 (4.9)
63	L07 05060	1.823 (46.3)	11	7420	5	0.272 (6.9)
80	L07 05070	2.138 (54.3)	20	11250	6	0.311 (7.9)
100	L07 05080	2.795 (71.0)	33	13500	8	0.390 (9.9)



Machining with Minimal Lubrication

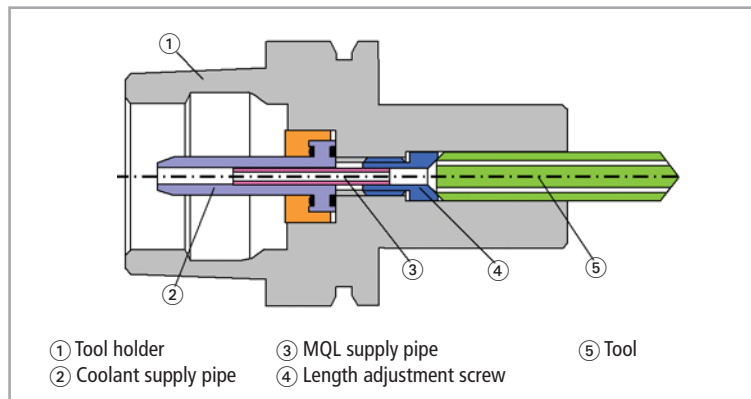
Overall System (MQL)

One important aspect of trouble-free functioning of the MQL system is the interplay of the individual elements in the overall minimal lubrication system. For example, it is generally not sufficient for the tool to be suitable for use with minimal lubrication. In fact all the elements need to be appropriately matched with one another.

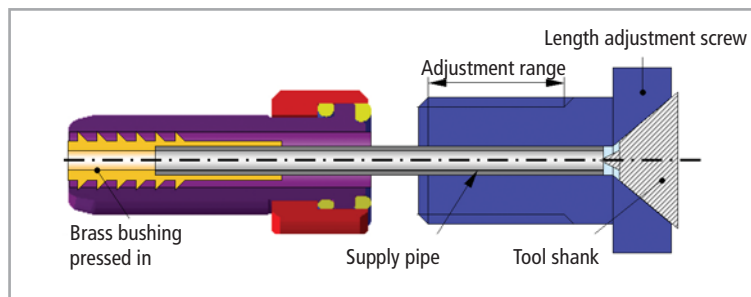


Components for an MQL machine tool

Automatic Tool Change



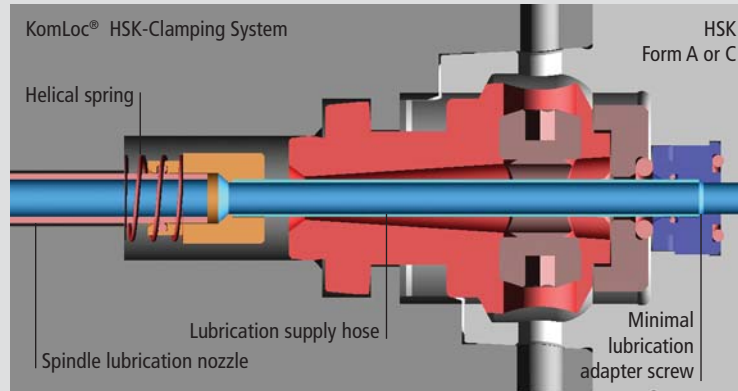
View of elements in question using a HSK connection as an example



Accessories such as adjusting screws can be supplied for any chucks and supply pipes.

Manual Tool Change

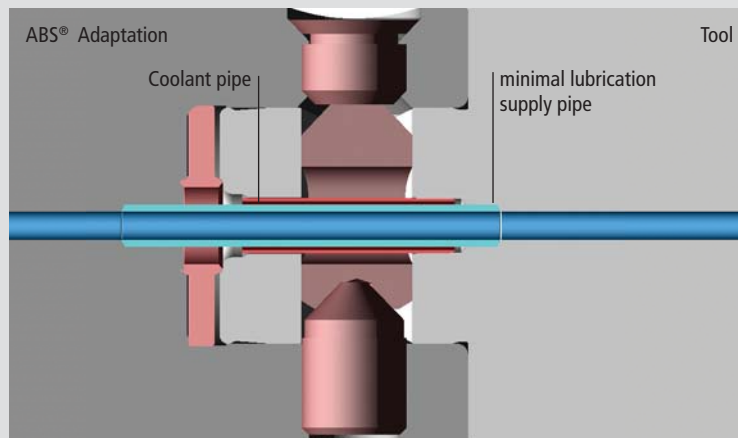
To successfully implement the manual clamping system, a solution for minimal lubrication supply on the machine was found for OEM projects. Here a system was applied which allowed the lubricant to be used in the best possible way. This solution involved connection by means of an HSK Form C adapter with additional thread (as Form A) for the minimal lubricant adapter screw to be fitted.



Layout for minimal lubrication with KomLoc® HSK clamping system

ABS® Modular Connection

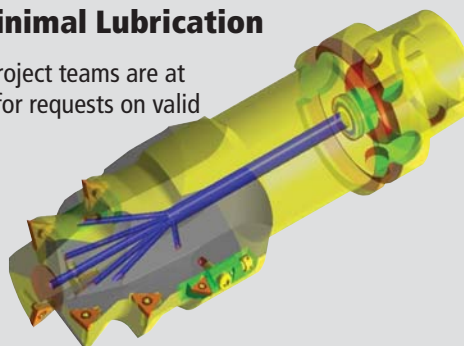
For ABS® connections and ABS® adapters, there are standard KOMET GROUP solutions. Please ask for information on the relevant projects. ABS® connections usually involve connections with a tool or a form of adaptation with which an extension or a reduction is required.



ABS® supply solution for minimal lubrication

Tool Design for Minimal Lubrication

Our sales engineers and project teams are at your disposal at any time for requests on valid projects.

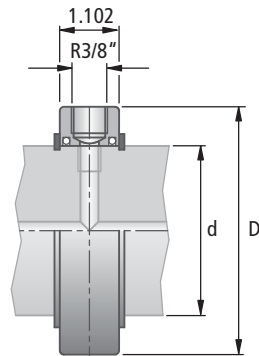


Coolant Supply System

Coolant Ring

KRD

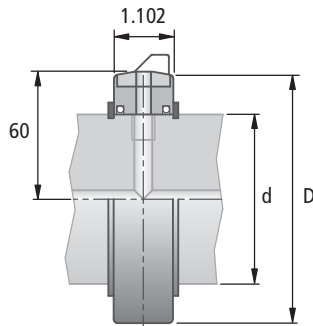
- For machines with manual tool change.
- Peripheral speed: 50 - 65 ft/sec.
- **Coolant pressure up to approx. 140 PSI**



Coolant Ring

KRSD

- For machining centers and machines with automatic tool change, an automatic coolant supply system AKV is available with coolant rings with **lip seals**.
- Peripheral speed: 50 - 65 ft/sec.
- **Coolant pressure up to approx. 140 PSI**



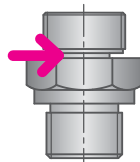
Order No. Description	d	D	lbs	Max. spindle speed (RPM)	Replacement Parts	
					Seal Order No.	Snap ring DIN 471 Order No. Description
L01 00001 KRD 40	1.575	3.189	1.83	7300	L01 00900	5523104017 40×1.75
L01 00011 KRD 50	1.969	3.583	2.38	5800	L01 00910	5523105020 50×2
L01 00021 KRD 60	2.362	3.780	–	4800	L01 00920	5523106020 60×2
L01 00031 KRD 70	2.756	4.331	2.93	4200	L01 00930	5523107025 70×2.5
L01 00041 KRD 80	3.150	4.724	3.28	3600	L01 00940	5523108025 80×2.5
L01 00051 KRD 100	3.937	5.512	3.96	2900	L01 00950	5523110030 100×3
L01 00061 KRD 125	4.921	6.496	4.88	2300	L01 00960	5523112540 125×4
L01 00071 KRD 140	5.512	7.087	4.73	2000	L01 00970	–

Order No. Description	d	D	lbs	Max. spindle speed (RPM)	Replacement Parts	
					Seal Order No.	Snap ring DIN 471 Order No. Description
L01 00411 KRSD 50	1.969	4.606	4.51	5800	L01 00910	5523105020 50×2
L01 00421 KRSD 60	2.362	4.606	–		L01 00920	5523106020 60×2
L01 00431 KRSD 70	2.756	4.606	3.52	4200	L01 00930	5523107025 70×2.5
L01 00441 KRSD 80	3.150	4.606	2.53	3600	L01 00940	5523108025 80×2.5
L01 00451 KRSD 100	3.937	4.606	–	2900	L01 00950	5523110030 100×3

Note:

Coolant rings come complete with seals, snap rings and coolant connections.

Coolant Connection



Description	Order No.
KUB-3/8	L01 00800

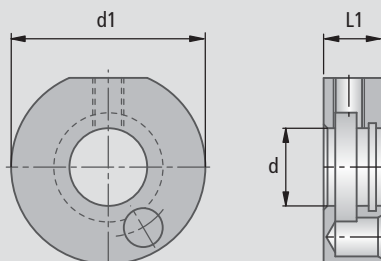
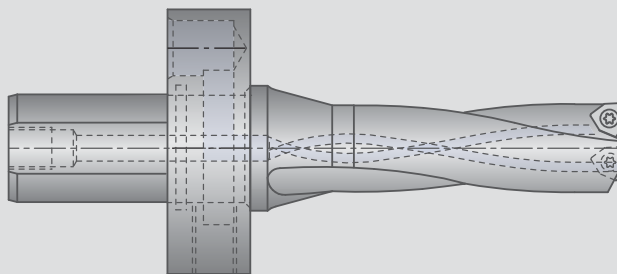
Attention:

For safety reasons, only use a pipe connection with a definite shear point. Switch on coolant supply before starting operation.

We recommend use of KOMET pipe connections to prevent any risk of accident from torn pipes, should the coolant ring seize. The use of coolant is absolutely essential when drilling with KUB® drills and is also recommended for other machining operations. Use of coolant improves insert wear, reduces the machining noise and helps chip removal.

Coolant Supply Ring for NC Adapters

Coolant supply ring
for axial coolant supply
Coolant supply to DIN 69880



Order No.	d	d1	L1	kg	Assembly parts
					Sealing ring
					Order No.
L01 01140	20	50	15	0,17	52914 02015
L01 01120	25	58	15	0,22	52914 02515
L01 01100	30	68	15	0,34	52914 03015
L01 01000	40	83	15	0,46	52914 04015

Supply includes:
Coolant supply ring with sealing ring.



Coolant Supply System

Mounting Instructions

1. A KUB® drill with a KRSD coolant supply gland is inserted into the spindle.
2. Opposite the tool changing side, i. e. where there is no obstruction, look for two tapped holes at the headstock and attach the slide block in the two tapped holes (a) then the basic holder (b, Fig. 2).
The swivel and basic holders (b) can be assembled in several different ways. Two elongated holes on the slide block (a) would offer additional movement, so that it may be moved into the correct position.
3. Now the coolant pipe holder (c, Fig. 2) is inserted and lightly clamped. It is axially moveable and can be rotated so that the inserted coolant pipe (d, Fig. 3) with its nose piece can be pushed lightly against receiver located on the coolant ring (e, Fig. 2.). Care should be taken to align the coolant ring receiver with the coolant pipe holder (alignment tool is used).

The system is aligned by putting the end of the special alignment tool into coolant ring receiver. The special alignment tool is moved in and out of the receiver until no binding or resistance is felt.
4. Tighten all screws holding the coolant pipe holder in position. Remove special tool insert coolant pipe and push with light pressure against the seal and lock pipe in position.
5. Now the clamp for the coolant pipe as well as all screws are tightened, and the coolant hose is connected. The fitting work is now completed (see Fig. 1).
6. A trial run is now carried out to test correct functioning of the attachment and to check that there is no obstruction when tool changing.
7. Coolant must be on when spindle is started.

Note: The application details shown depend on the environmental and application conditions (e.g. machine, ambient temperature, use of lubricant/coolant and the machining result required). These are subject to correct operating conditions, correct application and compliance with the spindle speed limits given for the tools.

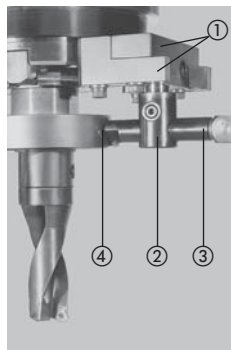


Fig. 1

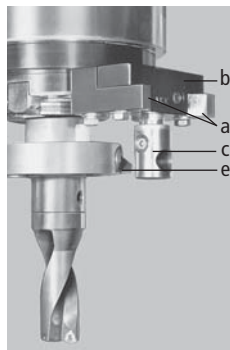


Fig. 2

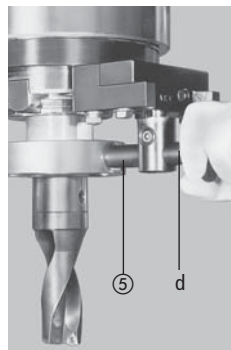


Fig. 3

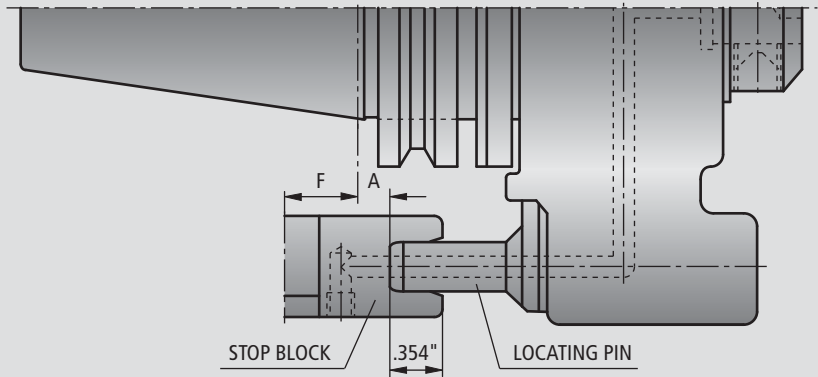
This fixture facilitates the coolant supply to tools used on machining centers with automatic tool changers.

Coolant supply system complete	L01 05000 (AKV1)
① Basic holder	L01 05000.11 L01 05000.12 L01 05000.18
② Pipe holder	L01 05000.13 (AKV-V-004) L01 05000.17
③ Coolant pipe	L01 05000.14 (AKV-Z-001)
④ Seal	L01 05000.15 (AKV-D-001)
⑤ Alignment pin	L01 05000.16

Stop Block and mounting information

The coolant inducer is locked until the locating pin engages in the stop block during tool changing, enabling rotation of the holder. The actuating stroke length of the locating pin is .24". The stop block should be mounted next to the machine spindle.

The stop block is made with only the locating pin contact area being hardened to allow minor machining when fitting on a machining center.



Determine Stop Block size

1. Measure distance 'F' from spindle face to spindle housing flange.
2. Take 'A' dimension from chart at right.
3. Add: $A + F + .354$ = stop block overall height required. Choose stop block nearest to size required or slightly larger. Stop blocks may be milled to size.

Determine Stop Block mounting

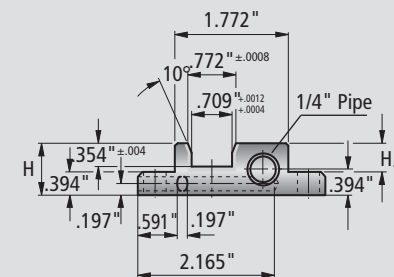
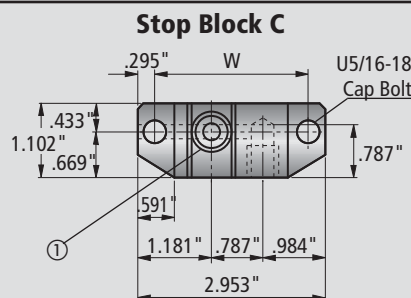
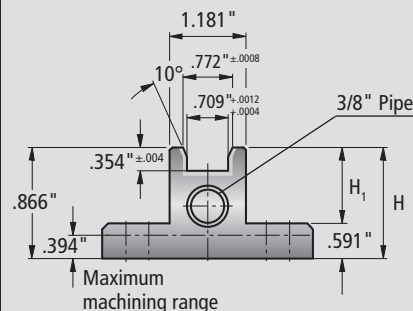
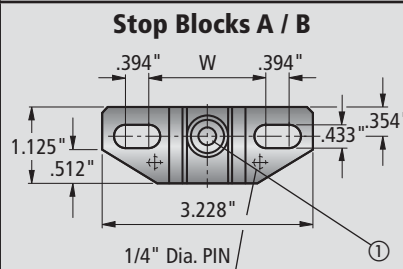
If possible, use existing spindle flange holes. Other options include drilling and tapping into spindle flange or making a sub-plate or ring to avoid drilling into machine flange.

Note! When using sub-plate, thickness of plate must be subtracted from formula in height calculation.

	Taper Size	$A \pm .125$
	CAT 40/50	0
	BT 40	0.24
	BT 50	0.59

MOUNTING PLATE
(Optional, customer manufactured if needed)

Stop Block Dimensions



Additional mounting instructions will be shipped with each coolant inducer.

Additional information is available from KOMET's Application Engineering Department.

Description	Order No.	W	H	H ₁
Stop Block A	L01 01200	1.772	2.087	1.496
Stop Block B	L01 01210	1.772	1.693	1.102
Stop Block C	L01 01220	2.362	0.787	0.393

① Spare O-Ring
Order No: 52911 01125
Description: 11.0mm x 2.5mm

NOTE:

For delivery status information, see our current Price List.

Shaded area in drawings at right indicate the hardened area.

Note: Mounting hardware is not included with the stop blocks.



KOMET TORX PLUS® Clamping Screws

Special Features

KOMET will be using the TORX PLUS® system for clamping screws for inserts and holding screws for insert cartridges, drill heads and replacement parts.

Improvements to detail for greater effect

The new geometry of the head engagement with the TORX PLUS® system has been designed so that only a minimum wear results when the tightening torque is applied.

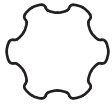
Advantages:

- 100% longer life for screwdriver
- 25% higher torque transmission
- improvement to torsion resistance and production reliability

Cross section

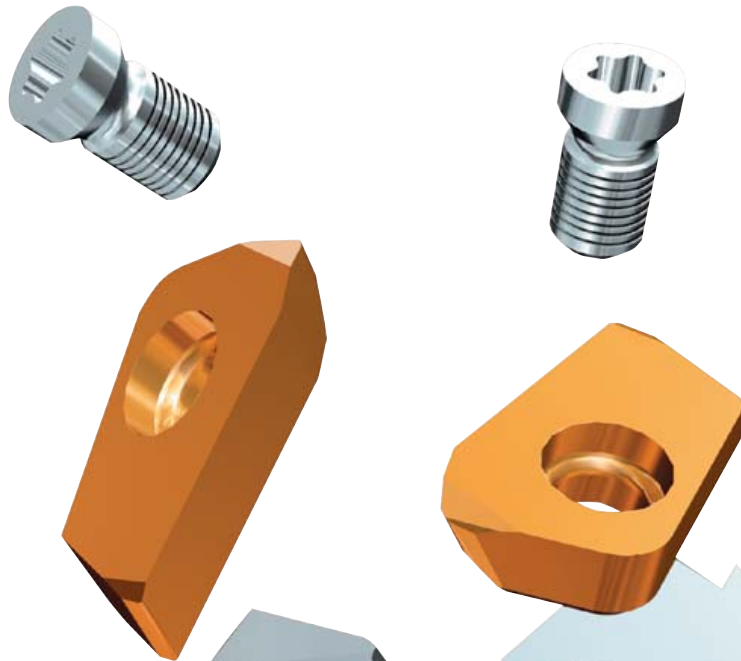
TORX PLUS®

TORX

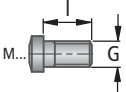
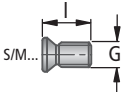




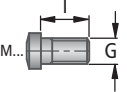
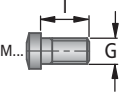
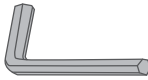
Safer screw connection

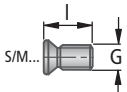
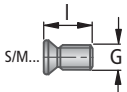


The effect of applying greater forces (clamping torque) has a direct effect on the safety of your screw connection. This advantage also applies when loosening existing screw connections.



Clamping Screws for Inserts

	For insert size	Clamping screw				Clamping torque in-lbs	Size	Screwdriver	Flag key
		 Description ▼ G x l	Order No.	 Description ▼ G x l	Order No.			 Order No.	 Order No.
W00	W00 04..	S/M1.8x2.9-8IP	N00 56011			3.4	5IP	L05 00800	L05 01110
	W00 10..	S/M2x4.9-8IP	N00 56031	S/M2x3.8-8IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W00 17..	M2.5x4.5-8IP	N00 55581	M2.5x2.8-8IP	N00 55551	11.3	8IP	L05 00830	L05 01240
				M2.5x4-8IP	N00 55561				
	W00 24..	M2.5x6-8IP	N00 55571	M2.5x4-8IP	N00 55561	11.3	8IP	L05 00830	L05 01240
				M2.5x4.5-8IP	N00 55581				
	W00 34..	M3.5x5-8IP	N00 55701			20	8IP	L05 00830	L05 01240
		M3.5x7.4-8IP	N00 55711						
	W00 42..	M4.5x7-10IP	N00 55811	M4.5x6-10IP	N00 55801	38	10IP	L05 00850	L05 01260
				M4.5x9-10IP	N00 55821				
	W00 50..	M4.5x7-10IP	N00 55811	M4.5x9-10IP	N00 55821	38	10IP	L05 00850	L05 01260
	W00 58..	M5.5x8.5-20IP	N00 55891	M5.5x13.5-20IP	N00 55901	55.3	20IP	L05 00870	-
	S/M5.5x11-20IP	N00 57541							
W01	W01 10..	S/M2x4.3-6IP	N00 56041			5.5	6IP	L05 00810	L05 01120
	W01 18..	S/M2.2x5.5-6IP	N00 57553			1.01	6IP	L05 00810	L05 01120
	W01 24..	S/M2.5x7.2-8IP	N00 57511			11.3	8IP	L05 00830	L05 01240
	W01 34..	S/M3.5x7.3-10IP	N00 57521			25	10IP	L05 00850	L05 01260
	W01 42..	S/M4.5x9-15IP	N00 57531			55.3	15IP	L05 00860	-
	W01 50..	S/M4.5x9-15IP	N00 57531			55.3	15IP	L05 00860	-
	W01 58..	S/M5.5x11-20IP	N00 57541			55.3	20IP	L05 00870	-

	For insert size	Clamping screw				Clamping torque in-lbs	Allen key	
		 Description ▼ G x l	Order No.	 Description ▼ G x l	Order No.		 Key Size inch (mm)	Order No.
W04	W04 22..	M3x7.8 /75°	N00 55050	M3x7.8 /75°	N00 55050	16	0.06 (1.5)	1859110015
	W04 34..	M3.5x9.4/60°	N00 55060	M3.5x11.4/60°	N00 55070	25	0.06 (1.5)	1859110015
	W04 42..	M4.5x12.4	N00 55100	M4.5x18.7	N00 55130	40	0.10 (2.5)	1859110025
		M4.5x14.5	N00 55110					
	W04 50..	M4.5x16.4	N00 55120	M4.5x22.5	N00 55140	40	0.10 (2.5)	1859110025
	W04 58..	M5.5x29.2	N00 55180	M5.5x29.2	N00 55180	57.5	0.12 (3.0)	1859110030

	For insert size	Clamping screw				Clamping torque in-lbs	Size	Screwdriver	Flag key
		 Description ▼ G x l	Order No.	 Description ▼ G x l	Order No.			 Order No.	 Order No.
W24	W24 12..	S/M2x4.9-6IP	N00 56031	S/M2x3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W24 20..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01240
	W27 12..	S/M2x4.9-6IP	N00 56031	S/M2x3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W27 20..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01240



Clamping Screws for Inserts



	For insert size	Clamping screw				Clamping torque in-lbs	Size	Screwdriver	Flag key
		 Description ▼ G × l Order No.	 Description ▼ G × l Order No.	Only to be used with custom engineered tools Description ▼ G × l Order No.	Order No.			 Order No.	 Order No.
W28	W28 10..	S/M2×4.9-6IP	N00 56031	S/M2×3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W28 17..	M2.5×4.5-8IP	N00 55581	M2.5×2.8-8IP	N00 55551	11.3	8IP	L05 00830	L05 01240
				M2.5×4-8IP	N00 55561				
	W28 24..	M2.5×6-8IP	N00 55571	M2.5×4-8IP	N00 55561	11.3	8IP	L05 00830	L05 01240
				M2.5×4.5-8IP	N00 55581				
	W28 34..	M3.5×5-8IP	N00 55701			20	8IP	L05 00830	L05 01240
		M3.5×7.4-8IP	N00 55711						
	W28 42..	M4.5×7-10IP	N00 55811	M4.5×6-10IP	N00 55801	38	10IP	L05 00850	L05 01260
M4.5×9-10IP				N00 55821					
W28 50..	M4.5×7-10IP	N00 55811	M4.5×9-10IP	N00 55821	38	10IP	L05 00850	L05 01260	
W28 58..	M5.5×8.5-20IP	N00 55891	M5.5×13.5-20IP	N00 55901	55.3	20IP	L05 00870	-	
	S/M5.5×11-20IP	N00 57541							
W28 72..	M5.5×13.5-20IP	N00 55901			55.3	20IP	L05 00870	-	
W29	W29 04..	S/M1.8×3.8-5IP	N00 56051			3.4	5IP	L05 00800	L05 01110
	W29 10..	S/M2×4.3-6IP	N00 56041			5.5	6IP	L05 00810	L05 01120
	W29 18..	S/M2.2×5.5-6IP	N00 57553			8.9	6IP	L05 00810	L05 01120
	W29 24..	S/M2.5×7.2-8IP	N00 57511			11.3	8IP	L05 00830	L05 01240
	W29 34..	S/M3.5×7.3-10IP	N00 57521			25	10IP	L05 00850	L05 01260
	W29 42..	S/M4.5×9-15IP	N00 57531			55.3	15IP	L05 00860	-
	W29 50..	S/M4.5×9-15IP	N00 57531			55.3	15IP	L05 00860	-
	W29 58..	S/M5.5×11-20IP	N00 57541			55.3	20IP	L05 00870	-
W30	W30 04..	S/M2×4.9-6IP	N00 56031	S/M2×3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W30 14..	S/M2.6×6.2-8IP	N00 56111	S/M2.6×5.2-8IP	N00 56101	11.3	8IP	L05 00830	L05 01240
				S/M2.6×4.7-8IP	N00 56121				
	W30 26..	S/M3.5×6.2-10IP	N00 56201	S/M3.5×7.3-10IP	N00 56211	25	10IP	L05 00850	L05 01260
W30 44..	S/M5×9.4-20IP	N00 56401	S/M5×13.4-20IP	N00 56411	55.3	20IP	L05 00870	-	
W32	W32 03..	S/M2×4.9-6IP	N00 56031	S/M2×3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W32 13.. / W32 18..	S/M2.6×6.2-8IP	N00 56111	S/M2.6×5.2-8IP	N00 56101	11.3	8IP	L05 00830	L05 01240
				S/M2.6×4.7-8IP	N00 56121				
	W32 23..	S/M3.5×6.2-10IP	N00 56201	S/M3.5×7.3-10IP	N00 56211	25	10IP	L05 00850	L05 01260
	W32 32..	S/M4×8-10IP	N00 56301			38	10IP	L05 00850	L05 01260
W32 44..	S/M5×9.4-20IP	N00 56401	S/M5×13.4-20IP	N00 56411	55.3	20IP	L05 00870	-	
W34	W34 18..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01140
	W34 32..	S3574-10IP	N00 56751			25	10IP	L05 00850	L05 01260
		S35102-10IP	N00 56771						
W37	W37 18..	S/M2.6×6.2-8IP	N00 56111	S/M2.6×5.2-8IP	N00 56101	11.3	8IP	L05 00830	L05 01240
				S/M2.6×4.7-8IP	N00 56121				
	W37 23..	S/M3.5×6.2-10IP	N00 56201	S/M3.5×7.3-10IP	N00 56211	25	10IP	L05 00850	L05 01260
W37 32..	S/M4×8-10IP	N00 56301			38	10IP	L05 00850	L05 01260	
W57	W57 04..	S/M2×4.9-6IP	N00 56031	S/M2×3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W57 14..	S/M2.6×6.2-8IP	N00 56111	S/M2.6×5.2-8IP	N00 56101	11.3	8IP	L05 00830	L05 01240
				S/M2.6×4.7-8IP	N00 56121				
W57 26..	S/M3.5×6.2-10IP	N00 56201	S/M3.5×7.3-10IP	N00 56211	25	10IP	L05 00850	L05 01260	
W58	W58 03..	S/M2×4.9-6IP	N00 56031	S/M2×3.8-6IP	N00 56021	5.5	6IP	L05 00810	L05 01120
	W58 13.. / W58 18..	S/M2.6×6.2-8IP	N00 56111	S/M2.6×5.2-8IP	N00 56101	11.3	8IP	L05 00830	L05 01240
				S/M2.6×4.7-8IP	N00 56121				
	W58 23..	S/M3.5×6.2-10IP	N00 56201	S/M3.5×7.3-10IP	N00 56211	25	10IP	L05 00850	L05 01260
W58 32..	S/M4×8-10IP	N00 56301			38	10IP	L05 00850	L05 01260	
W59	W59 18..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01140
	W59 32..	S3574-10IP	N00 56751			25	10IP	L05 00850	L05 01260
		S35102-10IP	N00 56771						

Clamping Screws for Inserts

	For insert size	Clamping screw						Screwdriver	Flag key
		Description	Order No.	Description	Order No.	Clamping torque in-lbs	Size		
W60	W60 18..	S2560-8IP	N00 56651		–	11.3	8IP	L05 00830	L05 01140
	W60 32..	S3574-10IP	N00 56751	S35102-10IP	N00 56771	25	10IP	L05 00850	L05 01260
W78	W78 18..	S2560-8IP	N00 56651		–	11.3	8IP	L05 00830	L05 01140
	W78 32..	S3574-10IP	N00 56751	S35102-10IP	N00 56771	25	10IP	L05 00850	L05 01260
W79	W79 18..	S2560-8IP	N00 56651		–	11.3	8IP	L05 00830	L05 01140
	W79 32..	S3574-10IP	N00 56751	S35102-10IP	N00 56771	25	10IP	L05 00850	L05 01260
W83	W83 13000.01..	S/M2×4.3-6IP	N00 56041			5.5	6IP	L05 00810	L05 01120
	W83 13000.02..								
	W83 18000.01..	S2553-7IP	N00 57221			8.0	7IP	L05 00820	L05 01130
	W83 18000.03..								
	W83 18000.09..	S/M2.2×5.5-6IP	N00 57553			8.9	6IP	L05 00810	L05 01120
	W83 18000.10..								
	W83 18000.13..	S2553-7IP	N00 57221			8.0	7IP	L05 00820	L05 01130
	W83 18000.15..								
	W83 18000.16..								
	W83 18000.19..								
	W83 23000.01..	S/M2.5×6.3-8IP	N00 57571			11.3	8IP	L05 00830	L05 01240
	W83 23000.02..								
	W83 32000.01..	S3575-15IP	N00 57261			25	15IP	L05 00860	–
	W83 32000.02..								
	W83 32000.03..								
	W83 32000.05..								
	W83 32000.13..								
	W83 32000.14..								
	W83 32000.15..								
	W83 32000.17..								
	W83 32000.18..								
	W83 32000.19..								
	W83 44000.08..	S45111-20IP	N00 56851			55.3	20IP	L05 00870	–
	W83 44000.09..								
W83 44000.14..									
W83 44000.15..									
W83 44000.16..									
W83 44000.17..									
W83 44000.18..	S45100-20IP	N00 57301			55.3	20IP	L05 00870	–	
W83 44000.19..									
W83 44000.20..	S45111-20IP	N00 56851			55.3	20IP	L05 00870	–	
W83 44000.21..									
W84	W84 18000.01..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01140
	W84 32000.07..	S35102-10IP	N00 56771			25	10IP	L05 00850	L05 01260
W85	W85 09000...	S2043-6IP	N00 57191			5.5	6IP	L05 00810	L05 01120
	W85 18000.01..	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01240
	W85 18000.02..								
	W85 18000...	S2553-7IP	N00 57221			8.0	7IP	L05 00820	L05 01130
	W85 32000.02..	S3574-10IP	N00 56751			25	10IP	L05 00850	L05 01260
	W85 32000.03..								
	W85 32000.04..								
	W85 32000.05..								
W85 32000...	S3575-15IP	N00 57261			25	15IP	L05 00860	–	
W85 44000...	S45111-20IP	N00 56851			55.3	20IP	L05 00870	–	
W86	W86 18000...	S2560-8IP	N00 56651			11.3	8IP	L05 00830	L05 01240
	W86 32000...		1630100537				Tx15	L05 00070	–



Clamping Screws for Inserts

	For insert size	Clamping screw				Screwdriver 	Flag key 	
		G x l	Description	Order No.	Clamping torque in-lbs			Size
W89	W89 23000...			5156074551		Tx9	L05 00050	-
	W89 32000.05..			1630100537		Tx15	L05 00070	-
	W89 32000.06..							
	W89 32000.07..	3.5x8.5	S3585-15IP	N00 57271	25	15IP	L05 00860	-
	W89 32000.08..							
H60 / H62	XOHX0802..	2.2x4.8	S/M2.2x4.8-6IP	N00 57660	9	6IP	L05 00810	L05 01120
	XOHX1003..	3x5.8	S/M3x5.8-8IP	N00 57630	20	8IP	L05 00830	L05 01240
	XOHX12T3..	3.5x6.9	S/M3.5x6.9-10IP	N00 57640	25	10IP	L05 00850	L05 01260
	XOHX1504..	4x8.7	S/M4x8.7-15IP	N00 57650	38	15IP	L05 00860	-
	XOHX2205..	5x10.4	S/M5x10.4-20IP	N00 57670	53	20IP	L05 00870	-
Q09	Q09 13../ Q09 18..	2.5x5.3	S2553-7IP	N00 57221	11.3	7IP	L05 00820	L05 01130
	Q09 44../ Q09 53..	4.5x10	S45100-20IP	N00 57301	55.3	20IP	L05 00870	-
Q12	Q12 18..	2.5x3.6	S2536-7IP	N00 57201	8	7IP	L05 00820	L05 01130
		2.5x4.2	S2542-8IP	N00 57211	11.3	8IP	L05 00830	L05 01240
		2.5x5.3	S2553-7IP	N00 57221	8	7IP	L05 00820	L05 01130
	Q12 32000.05..	3x5.6	S3056-8IP	N00 57231	20	8IP	L05 00830	L05 01240
	Q12 32000.06..	3x5.6	S3056-8IP	N00 57231				
	Q12 32000.07..	3x7	S3070-8IP	N00 57241				
	Q12 32000.08..	3.5x8.5	S3585-15IP	N00 57271	25	15IP	L05 00860	-
	Q12 32000.09..	3.5x8.5	S3585-15IP	N00 57271				
	Q12 32000.15..	3.5x9.8	S3598-15IP	N00 57281	25	15IP	L05 00860	-
	Q12 32000.16..							
	Q12 32000.17..							
	Q12 32000.18..	3x7.6	S3076-8IP	N00 57251	20	8IP	L05 00830	L05 01240
	Q12 32000.19..							
	Q12 32000.20..							
	Q12 32000.38..	3.5x9.8	S3598-15IP	N00 57281	25	15IP	L05 00860	-
	Q12 32000.41..							
	Q12 32000.42..							
	Q12 32000.43..							
	Q12 32000.52..	3x6.6	S3066-8IP	N00 57431	20	8IP	L05 00830	L05 01240
Q12 32000.53..								
Q12 44..	4.5x10	S45100-20IP	N00 57301	55.3	20IP	L05 00870	-	
Q15	Q15 18..	2.5x5.3	S2553-7IP	N00 57221	11.3	7IP	L05 00820	L05 01130
	Q15 32..	3.5x7.5	S3575-15IP	N00 57261	25	15IP	L05 00860	-
Q21	Q21 24..	3x7.6	S3076-8IP	N00 57251	20	8IP	L05 00830	L05 01240
	Q21 32..	3.5x7.5	S3575-15IP	N00 57261	25	15IP	L05 00860	-
	Q21 44..	4.5x10	S45100-20IP	N00 57301	55.3	20IP	L05 00870	-
Q33	Q33 18..	2.5x6	S2560-8IP	N00 56651	11.3	8IP	L05 00830	L05 01240
	Q33 23..	3x7	S3070-8IP	N00 57241	20	8IP	L05 00830	L05 01240
		3x7.6	S3076-8IP	N00 57251				
Q36	Q36 18..	2.5x5.6	S2556-8IP	N00 57321	11.3	8IP	L05 00830	L05 01240
	Q36 24..	3x6.6	S3066-9IP	N00 57341	20	9IP	L05 00840	L05 01250
	Q36 38..	4x10.1	S40101-15IP	N00 57411	38	15IP	L05 00860	-

Special Features

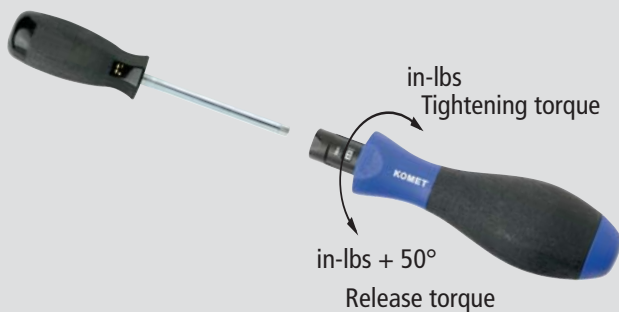
To ensure the correct starting torque on screws, the TORX PLUS® screwdriver system has:

- Ergonomically designed cellulose acetate handle - chemical and oil resistant
- Fine grained surface on handle ensures maximum force transmission even if hands are oily
- Compact and particularly light construction
- Chrome plated blade in high quality chrome vanadium molybdenum steel for heavy duty use
- Anti-roll design - stops the tool from rolling off the bench
- Optimum handle size for torque range
- KOMET supplies screw drivers with fixed torques and torque handles with variable settings



Special Note

Preset tightening torque and approx. 50% higher release torque to prevent screws from being damaged when releasing.



The keys for TORX PLUS® do not fit into Torx screws. The old Torx keys do fit the new TORX PLUS® shape but we recommend only TORX PLUS® keys be used for tightening screws.
TORX PLUS® is a registered trademark for the Camcar Division of Textron Inc.

Order Numbers

Fixed torque screw driver *TorqueFix®*

Delivery: Torque screwdriver without replaceable blade

Screwdriver			Replaceable Blade	
Description	Order No.	Clamping torque in-lbs	Description	Order No.
Fixed Torque 5IP	L05 00901	3.4	Blade 5IP	L05 00700
Fixed Torque 6IP	L05 00911	5.5	Blade 6IP	L05 00710
Fixed Torque 6IP	L05 03301	9	Blade 6IP	L05 00710
Fixed Torque 7IP	L05 00921	8	Blade 7IP	L05 00720
Fixed Torque 8IP	L05 00931	11.3	Blade 8IP	L05 00730
Fixed Torque 8IP	L05 03311	20	Blade 8IP	L05 00730
Fixed Torque 9IP	L05 00941	22	Blade 9IP	L05 00740
Fixed Torque 10IP	L05 00951	25	Blade 10IP	L05 00750
Fixed Torque 15IP	L05 00961	38	Blade 15IP	L05 00760
Fixed Torque 20IP	L05 00971	55.3	Blade 20IP	L05 00770

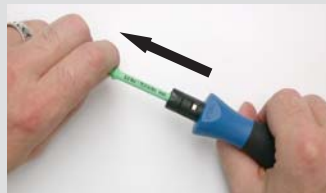
Torque handles *TorqueVario®* variable with graduated scale

Delivery: Torque handle complete with adjusting key without replaceable blade

Torque Handle		Adjusting key	
Description	Order No.	Description	Order No.
Var. Torq. IP 5 - 7	L05 00781	Adjusting key for <i>TorqueVario®</i>	L05 00990
Var. Torq. IP 9 - 20	L05 00791		

Changing the Torque

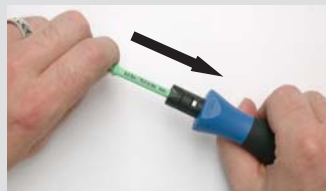
Insert adjusting key in variable torque handle and turn to set the required torque. The appropriate IP size can be read from the graduated scale.



Remove blade











Insert adjusting key and set



Push blade in again



International Material Cross Reference List

AISI / SAAE	Material	DIN	BS	EN	AFNOR	SS	UNI	UNE	JIS
									
301	1.4310	X12CrNi17 7			Z12CN17.07	2331	X12CrNi17 07	F.3517	SUS301
303	1.4305	X12CrNiS18 8	303S21	58M	Z10CNF18.09	2346	X10CrNiS18.09	F.3508	SUS303
304	1.4350	X5CrNi189	304S31	58E	Z6CN18.09	2332/2333	X5CrNi18 10	F.3551	SUS304
309	1.4828	X15CrNiSi20 12	309S24		Z15CNS20.12				SUH309
316	1.4401	X5CrNiMo18 10	316S16	58J	Z2CND17.11	2347	X5CrNiMo17 12	F.3543	SUS316
318	1.4583	X10CrNiMoNb18			Z6CNDNb17 13B		X6CrNiMoNb	F.17 13	
321	1.4541	X10CrNiTi18 9	321S12	58B	Z6CNT18.10	2337	X6CrNiTi18 11	F.3553	SUS321
330	1.4864	X12NiCrSi			Z12NCS35.16				SUH330
347	1.4550	X10CrNiNb	347S17	58F	Z6CNNb18.10	2338	X6CrNiNb18 11	F.3552	SUS347
356.1	-		LM25	4244					
403	1.4000	X7Cr13	403S17		Z6C13	2301	X6Cr13	F.3110	SUS403
405	1.4724	X10CrA113	403S17		Z10C13		X10CrA112	F.3111	SUS405
410	1.4006	X10Cr13	410S21	56A	Z10C14	2302	X12Cr13	F.3401	SUS410
420	1.4021		420S37		Z20C13	2303	X20Cr13		
430	1.4742	X10CrA118	439S15	60	Z10CAS18		X8Cr17	F.3113	SUS430
431	1.4057	X22CrNi17	431S29	57	Z15CNI6.02	2321	X16CrNi16	F.3427	SUS431
434	1.4113	X6CrMo17	434S17		Z8CD17.01	2325	X8CrMo17		SUS434
446	1.4762	X10CrA124			Z10CAS24	2322	X16Cr26		SUH446
630	1.4542/1.4548				Z7CNU17-04				
1006	1.0201	St36			Fd5	1160			
1010	1.1121	Ck10	045M10		XC10	1265	C10	F-1510-C10K	
1025	1.1158	C25E;Ck25	070M26		2C25;XC25	1450	C25	F.1120-C25k	S25C; S28C
1035	1.0501	C35	060A35		CC35	1550	C35	F.113	
1035	1.1183	Cf35	060A35		XC38TS	1572	C36		S35C
1039	1.1157	40Mn4	150M36	15	35M5				
1040	1.0511	C40	080M40		AF60C40		C40	F.114.A	
1042	1.1191	Ck45	080A47		XC45	1660	C45	F-1140	
1043	1.0503	C45	080M46		AF65C45	1650	C45	F-5110	
1045	1.0503	C45	080M46		CC45	1650	C45	F.114	
1050	1.1213	Cf53	060A52		XC48TS	1674	C53		S50C
1055	1.0535	C55	070M55			1655	C55	F.115	
1055	1.1203	Ck55	070M55		XC55		C50	F.1203-36MnG	S55C
1060	1.0601	C60	080A62	43D	CC55		C60		
1064	1.1221	Ck60	060A62		XC65	1678	C60	F-1150	
1070	1.1231	Ck67	070A72		XC68	1770	C70	F-141	
1080	1.1248	Ck75	060A78		XC75	1774		F-5107	
1095	1.1274	Ck101	060A96		XC100	1870		F-5117	
1140	1.0726	35S20	212M36	8M	35M F6	1957		F.210.G	
1146	1.0727	45S20			45M F4	1973			
1213	1.0715	9 SMn28	230M07		S250	1912	CF9SMn28	11SMn28	SUM22
1215	1.0736	9SMn36	240M07	1b	S300		CF9SMn36	12SMn35	SUM25
1330	1.1170	28Mn6	150M28	14A	20M5		C28Mn		SCMn1
1335	1.1167	36Mn5	150M36		40M5	2120		36Mn5	SMn438(H)
3135	1.5710	36NiCr6	640A35	111A	35NC6				SNC236
3310	1.5752	14NiCr14	655M13	36A	12NC15				SNC815(H)
3415	1.5732	14NiCr10			14NC11		16NiCr11	15NiCr11	SNC415(H)
4130	1.7218	25CrMo4	1717CDS110		25CD4	2225	25CrMo4(KB)	55Cr3	SCM420/430
4140	1.7225	42CrMo4	708M40	19A	42CD4	2244	42CrMo4	42CrMo4	SCM440(H)
4142	1.7223	41CrMo4					41CrMo4	42CrMo4	SNB 22-1
4317	1.6587	17CrNiMo6	820A16		18NCD6			14NiCrMo13	
4340	1.6582	35CrNiMo6	817M40	24	35NCD6	2541	35NiCrMo6(KB)	F127	
4520	1.5423	16Mo5	1503-245-420				16Mo5	16Mo5	
4676	2.4375	NiCu30Al	3072-76						
5015	1.7015	15Cr3	523M15		12C3				SCr415(H)
5115	1.7131	16MnCr5	(527M20)		16MC5	2511	16MnCr5	16MnCr5	
5120	1.0841	St52-3	150M19		20MC5	2172	Fe52	F-431	
5132	1.7033	34Cr4	530A32	18B	32C4		34Cr4(KB)	35Cr4	SCr430(H)
5140	1.7035	41Cr4	530M40	18	42C4		41Cr4	42Cr4	SCr440(H)
5140	1.7045	42Cr4				2245		42Cr4	SCr440
5155	1.7176	55Cr3	527A60	48	55C3			42Cr4	SUP9(A)
5383	LW2.466	NiCr19Fe19	HR8		NC19FeNb				
5391	LW2.467	S-NiCr13Al16	3146-3		NC12AD				
5660	LW2.466	NiFe35Cr14			Z5NCDT42				
5666	2.4856	NiCr22Mo9N			NC22FeDNB				
6150	1.8159	50CrV4					50CrV4	F143	
9255	1.0904	55Si7	250A53	45	55S7	2085	55Si8	56Si7	
9262	1.0961	1.0961			60SC6		60SiCr8	60SiCr8	
9310	1.6657	14NiCrMo13-4	832M13	36C			15NiCrMo13	14NiCrMo131	
9840	1.6511	36CrNiMo4	816M40	110	40NCD3		36NiCrMo4(KB)	F128	
32510	-	GTS-35	B340/12		MN35-10	08 15			
50005	-	GTS-55	P510/4		MP50-5	08 54			
52100	1.3505	100Cr6	534A99	31	100C6	2258	100Cr6	F.131	SUJ2
70003	-	GTS-65	P570/3		MP60-3	08 58			
100-70-03	0.7070	GGG70	SNG700/2		FGS700-2	07 37-0 1	GS700/2		FCD70
1015, 1017	1.1141	CK 15	080M15		XC18	1370		F.1511	
1015;1016;1017	1.0401	C15	080M15		CC12	1350	C15C16	F.111	
1020;1023	1.0402	C22	055M15;070M20 2C		AF42C20;XC25;1C22	1450	C20; C21; C25	1C22F.112	S20C; S22C
1022;1518	1.1133	20Mn5	120M19		20M5	1132	G22Mn3;20Mn7	F.1515-20Mn6	SMnC420
11 L 08	1.0722	10 SPb20			10PbF2		CF10 SPb20	10SPb20	
12 L 13	1.0718	9 SMnPb28			S250Pb	1914	CF9SMnPb28	11SMnPb28	SUM22,3,4L
12 L 14	1.0737	9SMnPb36			S300Pb	1926	CF9SMnPb36	12SMnP35	
17-7PH	1.4568/1.4504		316S111				Z8CNA17-07	X2CrNiMo1712	
2515 (2517)	1.5680	12Ni19	12Ni19		Z18N5		12Ni19	12Ni19	SL5N60
304L	1.4306	X2CrNiN18 9	304S12		Z2CrNi18 10	2352	X2CrNi18 11	F.3503	SCS19
304LN	1.4311	X4CrNiN18 10	304S62		Z2CN18.10	2371			SUS304LN
310S	1.4845	X12CrNi25 21	310S24		Z12CN25 20	2361	X6CrNi25 20	F.331	SUH310
316L	1.4435	X2CrNiMo18 12	316S13		Z2CND17.12	2353			X2CrNiMo17 12
316LN	1.4429	X2CrNiMoN1813			Z2CND17.13	2375			SUS316LN
316Ti	1.4571	X10CrNiMoTi18	320S17	58J	Z6NDT17.12	2350	X6CrNiMoTi17 12	F.3535	

AISI / SAAE	Material	DIN	BS	EN	AFNOR	SS	UNI	UNE	JIS
317L	1.4438	X2CrNiMo18 16	317S12		Z2CND19.15	2367			X2CrNiMo18 16
400 10	–	GTS-45	P440/7			08 52			
4135, 4137	1.7220	34CrMo4	34CrMo4		34CD4	2234	35CrMo4	34CrMo4	SCM435TK
430F	1.4104	X12CrMoS17			Z10CF17	2383	X10CrS17	F.3117	SUS430F
440B	1.4112	X90 CrMoV 18							
5390A	2.4603				NC22FeD				
5537C	LW2.496	CoCr20W15			KC20WN				
60-40-18	0.7040	GGG40	SNG420/12		FGS400-12	07 17-0 2	GS400-12		FCD40
80-55-06	0.7050	GGG50	SNG500/7		FGS500-7	07 27-0 2	GS500/7		FCD50
8620, 8617	1.6523	21NiCrMo2	805M20	362	20NCD2	2506	20NiCrMo2	20NiCrMo2	SNMCM220(H)
8740, 8640, 8742	1.6546	40NiCrMo22	311-Tyre 7		40NCD2		40NiCrMo2(KB)	F129	SNMCM240
A148 80-40	1.0553	GS-60	A3		320-560M	1606			
A2	1.2363	X100CrMoV5 1	BA2		Z100CDV5	2260	X100CrMoV51KU	F-5227	SKD12
A27 65-35	1.0443	GS-45	A1		E23-45M				
A27 70-36	1.0551	GS-52	A2		280-480M	1505			
A356-72	–				2789;1973	NF A32-201			
A360.2	–	G-ALSi10Mg	LM9						
A380.1	–	GD-ALSi8Cu3	LM24			4253			
A413.0	–	GD-ALSi12				4250			
A413.1	–	G-ALSi12(Cu)	LM20			4247			
A413.2	–	G-ALSi12	LM6			4260			
A48 20 B	0.6010	GG10			Ft10D	01 10-00	G10	FG10	
A48 25 B	0.6015	GG15	Grade 150		Ft15D	01 15-00	G14	FG15	
A48 30 B	0.6020	GG20	Grade 220		Ft20D	01 20-00	G20	FG20	
A48 35 B	0.6025	GG25	Grade 260		Ft25D	01 25-00	G25	FG25	
A48 40 B	–								
A48 45 B	0.6030	GG30	Grsdle 300		Ft30D	01 30-00	G30	FG30	
A48 50 B	0.6035	GG35	Grade 350		Ft35D	01 35-00	G35	FG35	
A48 60 B	0.6040	GG40	Grade 400		Ft40D	01 40-00			
A515 65	1.0345	H1	1 501 161		A37CP	1330			
A537 1	1.0473	19Mn6	1 501 224		A52CP	2101			
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A573-81 65	1.0116	St37-3	4360 40B		E24-U	1312			
A662C	1.0436	Ast45	1 501 224		A48FP	2103			
A738	1.0577	Ast 52	1 501 224		A52FP	2107			
AMS 5397	LW2.467	NiCo15Cr10							
AMS 5399	2.4973	NiCr19Co11			NC19KDT				
AMS 5544	LW2.466	NiCr19Fe19			NC20K14				
AMS 5772	–	CoCr22W14			KC22				
AMS R54520	–	TiAl5Sn2.5	TA14/17		T-A5E				
AMS R56400	–	TiAl6V4	TA10-13/TA2		T-A6V				
AMS R56401	–	TiAl6V4ELI	TA11						
ASM A353	1.5662	X8Ni9	502-650		9 Ni		X10Ni9	F-2645	SL9N60(53)
ASTM A128 75	1.3401	G-X120Mn12	BW10		Z120M12	2183	GX120Mn12	AM-X120Mn12	SCMnH/1
ASTM A182 F-12	1.7335	13CrMo4 4					14CrMo4 5	14CrMo45	
ASTM A204Gr.A	1.5415	15Mo3	1501-240		15D3	2912	16Mo3KW	16Mo3	STBA 12
ASTM A290	1.8509	41CrAlMo7	905M39	41B	40CAD6, 12	2940	41CrAlMo7	41CrAlMo7	
ASTM A350LF5	1.5622	14Ni6			16N6		14Ni6	15Ni6	
ASTM A387 12-2	1.7337	16CrMo44	1501 620		15CD 4.5	2216	12CrMo910		
D2	1.2379	X155CrVMo121	BD2		Z160CDV12	2310	X155CrVMo12 1KU	F-520.A	SKD11
D3	1.2080	X210Cr12	BD3		Z200C12		X210Cr13KU	X210Cr12	SKD1
D4 (D6)	1.2436	X210 CrW 12	BD6		Z200CD12-01	2312	X215CrW12 1KU	F-5213	
EV8	1.4871	X53CrMnNiN219	349S54		Z52CMN21.09		X53CrMnNiN		SUH35,SUH36
H13	1.2344	X40CrMoV5 1	BH13		Z40CDV5	2242	X40CrMoV511KU	F-5318	SKD61
H21	1.2581	X30WCrV9 3	BH21		Z30WCV9		X30WCrV9 3KU	F-526	SKD5
HNV6	1.4747	X80CrNiSi20	443S65	59	Z80CSN20.02		X80CrSiNi20	F.320B	SUH4
HW 3	1.4718	X45CrSi9 3	401S45	52	Z45CS9		X45CrSi8	F-3220	SUH1
L1	1.7039	34MoCrS4 G	524A14			2092	105WCR 5		
L3	1.2067	100Cr6	BL3		Y100C6			100Cr6	
L6	1.2713	55NiCrMoV6			55NCDV7			F.520.S	SKT4
L6	1.2721	50NiCr13			55NCV6	2550		F.528.S	
M2	1.3343	S6/5/2	BM2		Z85WDCV	2722	HS6 5 2	F-5604	SKH51
M35	1.3243	S6/5/2/5	BM35		6-5-2-5	2723	HS6 5 2 5	F-5613	SKH55
M7	1.3348	S2/9/2			2 9 2	2782	HS2 9 2		
S1	1.2542	45WCrV7	BS1		45WCrV8	2710	45WCrV8KU	F-524	
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S31803	–	X2CrNiMoN2253			Z2CND22-05-03	2377			
S32304	–	X2CrNiN23 4			Z2CN23-04AZ	2327			
S32900	–	X8CrNiMo				2324			
W110	1.1545	C105W1	BW1A		Y105	1880	C36KU	F-5118	SK3
	0.7033	GGG35.3				07 17-1			
	0.7060	GGG60	SNG600/3		FGS600-3	07 32-0 3	GS600/3		FCD60
	1.2083	X42Cr13			X40Cr14	2314		F-5263	
	1.2419	105WCr6			105WC13	2140	107WCr5	105WCr5	SKS31
	1.2601	X165CrMoV12				2310	X165CrMoW12KU	F-5211	
	1.4034	X46Cr13	420S45	56D	Z40CM	2304	X40Cr14	F.3405	SUS420J2
	1.4313	X5CrNi13 4	425C11		Z4CND13.4M				SCS5
	1.4865	G-X40NiCrSi	330C11				XG50NiCr		SCH15
	1.7139	16MnCr5				2127			
	1.7262	15CrMo5			12CD4	2216		12CrMo4	SCM415(H)
	1.7361	32CrMo12	722M24	40B	30CD12	2240	32CrMo12	F.124.A	
	1.7715	14MoV6 3	1503-660-440					13MoCrV6	
	1.8515	31 CeMo 12	722M24		30 CD 12	2240	30CrMo12	F01712	
	1.8523	39CrMoV13 9	897M39	40C			36CrMoV12		
	2.4630	NiCr20Ti	HR5,203-4		NC20T				
	2.4631	NiCr20TiAk	HR40,601		NC20TA				
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A33 52010 0350	1.75	A33 54000 0600	1.72	A33 55000 1300	1.73	A33 56000 1400	1.73	A33 56010 2550	1.77
A33 52010 0400	1.75	A33 54000 0650	1.72	A33 55000 1350	1.73	A33 56000 1450	1.73	A33 56010 2600	1.77
A33 52010 0450	1.75	A33 54000 0700	1.72	A33 55000 1400	1.73	A33 56000 1500	1.73	A33 57000 0600	1.74
A33 52010 0500	1.75	A33 54000 0750	1.72	A33 55000 1450	1.73	A33 56000 1550	1.73	A33 57000 0800	1.74
A33 52010 0550	1.75	A33 54000 0800	1.72	A33 55000 1500	1.73	A33 56000 1600	1.73	A33 57000 1000	1.74
A33 52010 0600	1.75	A33 54000 0850	1.72	A33 55000 1550	1.73	A33 56000 1650	1.73	A33 57000 1200	1.74
A33 52010 0650	1.75	A33 54000 0900	1.72	A33 55000 1600	1.73	A33 56000 1700	1.73	A33 57000 1400	1.74
A33 52010 0700	1.75	A33 54000 0950	1.72	A33 55000 1650	1.73	A33 56000 1750	1.73	A33 57000 1600	1.74
A33 52010 0750	1.75	A33 54000 1000	1.72	A33 55000 1700	1.73	A33 56000 1800	1.73	A33 57000 1800	1.74
A33 52010 0800	1.75	A33 54000 1050	1.72	A33 55000 1750	1.73	A33 56000 1850	1.73	A33 57000 2000	1.74
A33 52010 0850	1.75	A33 54000 1100	1.72	A33 55000 1800	1.73	A33 56000 1900	1.74	A33 57000 2200	1.74
A33 52010 0900	1.75	A33 54000 1150	1.72	A33 55000 1850	1.73	A33 56000 1950	1.74	A33 57000 2400	1.74
A33 52010 0950	1.75	A33 54000 1200	1.72	A33 55000 1900	1.73	A33 56000 2000	1.74	A33 57000 2600	1.74
A33 52010 1000	1.75	A33 54000 1250	1.72	A33 55000 1950	1.73	A33 56000 2050	1.74	A33 57000 2800	1.74
A33 53000 0100	1.72	A33 54000 1300	1.72	A33 55000 2000	1.73	A33 56000 2100	1.74	A33 57000 3000	1.74
A33 53000 0150	1.72	A33 54000 1350	1.72	A33 55010 0200	1.76	A33 56000 2150	1.74	A33 57000 3200	1.74
A33 53000 0200	1.72	A33 54000 1400	1.72	A33 55010 0250	1.76	A33 56000 2200	1.74	A33 57000 3400	1.74
A33 53000 0250	1.72	A33 54000 1450	1.72	A33 55010 0300	1.76	A33 56000 2250	1.74		
A33 53000 0300	1.72	A33 54000 1500	1.73	A33 55010 0350	1.76	A33 56000 2300	1.74	A34 14020	1.64
A33 53000 0350	1.72	A33 54000 1550	1.73	A33 55010 0400	1.76	A33 56000 2350	1.74	A34 14030	1.64
A33 53000 0400	1.72	A33 54000 1600	1.73	A33 55010 0450	1.76	A33 56000 2400	1.74	A34 14040	1.64
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A34 34020	1.65	A34 882000760	1.66	A37 821000318	1.68	A37 932602200	1.69	A52 10880	1.8
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A34 34060	1.65	A34 882200896	1.66	A37 821200323	1.68	A37 961000350	1.69	A52 11160	1.12
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A34 820000542	1.66	A34 961000350	1.67	A37 871100381	1.68	A50 55350	1.12	A55 00130	1.10
A34 820000562	1.66	A34 961200450	1.67	A37 871200323	1.68	A50 55360	1.12	A55 00140	1.10
A34 820000590	1.66	A34 961400600	1.67	A37 871300367	1.68	A50 55370	1.12	A55 00150	1.10
A34 820000652	1.66	A34 961500600	1.67	A37 871400429	1.68	A50 55380	1.12	A55 00160	1.10
A34 820000687	1.66	A34 961600600	1.67	A37 871500480	1.68	A50 55390	1.12	A55 00330	1.10
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A34 830000652	1.66	A34 971600800	1.67	A37 871800652	1.68	A52 10130	1.8	A55 00360	1.10
A34 830000697	1.66	A34 971701000	1.67	A37 871900697	1.68	A52 10140	1.8	A55 00370	1.10
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A34 830001021	1.66	A34 972201600	1.67	A37 881900697	1.68	A52 10220	1.8	A55 10640	1.10
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A34 830001125	1.66	A34 982001200	1.67	A37 882100800	1.68	A52 10240	1.8	A55 10850	1.10
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A34 860600168	1.66	A34 982201600	1.67	A37 882301021	1.68	A52 10260	1.8	A55 10870	1.10
A34 860700194	1.66	A34 982301800	1.67	A37 882401108	1.68	A52 10270	1.8	A55 10950	1.13
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A34 860900255	1.66	A34 982502000	1.67	A37 885500687	1.68	A52 10330	1.8	A55 56150	1.12
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A34 861400429	1.66	A35 04321	1.84	A37 911500600	1.69	A52 10370	1.8	A71 50160	1.11
A34 865100313	1.66	A35 04331	1.84	A37 911600600	1.69	A52 10380	1.8	A71 50340	1.11
A34 865200438	1.66	A35 04341	1.84	A37 911700700	1.69	A52 10390	1.8	A71 50350	1.11
A34 871000318	1.66	A35 04351	1.84	A37 911800900	1.69	A52 10400	1.8	A71 50360	1.11
A34 871100381	1.66	A35 04361	1.84	A37 921600800	1.69	A52 10460	1.8	A71 50370	1.11
A34 871200323	1.66	A35 04371	1.84	A37 921701000	1.69	A52 10470	1.8	A71 50850	1.11
A34 871300367	1.66	A35 04381	1.84	A37 921800900	1.69	A52 10480	1.8	A71 50860	1.11
A34 871400429	1.66	A35 14061	1.84	A37 921901100	1.69	A52 10490	1.8	A71 50870	1.11
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V90 60420	2.107	V95 10340.008445	2.94			W29 50110.04..	7.35	W30 14830.02..	7.46
V90 60430	2.107			W24 12010.04..	7.25	W29 50130.04..	7.36	W30 14830.04..	7.46
V90 60440	2.107	W00 04120.01..	7.15	W24 12110.04..	7.26	W29 50200.04..	7.39	W30 14940.04..	7.52
V90 60450	2.107	W00 04120.02..	7.15	W24 12130.04..	7.27	W29 58000.08..	7.31	W30 14990.02..	7.51
V90 60460	2.108	W00 04420.01..	7.15	W24 20010.04..	7.25	W29 58010.08..	7.32	W30 14990.04..	7.51
V90 60470	2.108	W00 04420.02..	7.15	W24 20110.04..	7.26	W29 58020.08..	7.33	W30 14990.08..	7.51
V90 60480	2.108	W00 04600.01..	7.15	W24 20130.04..	7.27	W29 58030.08..	7.34	W30 26060.02..	7.40
V90 60490	2.108					W29 58130.08..	7.36	W30 26060.04..	7.40
V90 60500	2.108	W01 10060.04..	7.16	W27 12000.04..	7.28			W30 26060.05..	7.40
V90 60510	2.108	W01 10120.04..	7.16	W27 12010.04..	7.29	W30 04060.02..	7.40	W30 26060.08..	7.40
V90 60520	2.108	W01 10360.04..	7.17	W27 12100.04..	7.30	W30 04060.03..	7.40	W30 26060.31..	7.47
V90 60530	2.108	W01 10420.04..	7.17	W27 20000.04..	7.28	W30 04060.04..	7.40	W30 26120.02..	7.40
V90 60540	2.108	W01 10600.04..	7.18	W27 20010.04..	7.29	W30 04060.30..	7.40	W30 26120.04..	7.40
V90 60550	2.108	W01 18060.04..	7.16	W27 20100.04..	7.30	W30 04060.31..	7.47	W30 26120.05..	7.40
V90 60560	2.108	W01 18120.04..	7.16			W30 04120.02..	7.40	W30 26120.08..	7.40
V90 60570	2.108	W01 18360.04..	7.17	W29 04010.02..	7.32	W30 04120.03..	7.40	W30 26120.31..	7.47
V90 60580	2.108	W01 18420.04..	7.17	W29 10010.04..	7.32	W30 04120.04..	7.40	W30 26120.32..	7.49
V90 60590	2.108	W01 18600.04..	7.18	W29 10030.04..	7.34	W30 04120.30..	7.40	W30 26120.39..	7.48
V90 60600	2.108	W01 24060.02..	7.16	W29 10110.04..	7.35	W30 04120.31..	7.47	W30 26200.02..	7.40
V90 60610	2.108	W01 24060.04..	7.16	W29 10130.04..	7.36	W30 04120.32..	7.49	W30 26200.05..	7.40
V90 60620	2.108	W01 24120.02..	7.16	W29 10150.04..	7.37	W30 04120.39..	7.48	W30 26360.02..	7.42
V90 60630	2.108	W01 24120.04..	7.16	W29 10160.04..	7.38	W30 04200.02..	7.40	W30 26360.04..	7.42
V90 60640	2.108	W01 24360.04..	7.17	W29 10200.04..	7.39	W30 04200.03..	7.40	W30 26360.05..	7.42
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V90 60660	2.108	W01 24600.04..	7.18	W29 18030.04..	7.34	W30 04360.03..	7.42	W30 26420.04..	7.42
V90 60670	2.108	W01 24600.08..	7.18	W29 18110.04..	7.35	W30 04360.04..	7.42	W30 26420.05..	7.42
V90 60680	2.108	W01 24600.75..	7.21	W29 18130.04..	7.36	W30 04420.02..	7.42	W30 26500.05..	7.42
V90 60690	2.108	W01 24600.90..	7.20	W29 18150.04..	7.37	W30 04420.03..	7.42	W30 26600.05..	7.43
V90 60700	2.108	W01 24940.04..	7.19	W29 18160.04..	7.38	W30 04420.04..	7.42	W30 26600.08..	7.43
V90 60710	2.108	W01 34060.02..	7.16	W29 18200.04..	7.39	W30 04500.02..	7.42	W30 26660.05..	7.44
V90 60720	2.108	W01 34060.04..	7.16	W29 24000.04..	7.31	W30 04500.03..	7.42	W30 26720.05..	7.44
V90 60730	2.108	W01 34120.02..	7.16	W29 24010.04..	7.32	W30 04600.03..	7.43	W30 26820.02..	7.45
V90 60740	2.108	W01 34120.04..	7.16	W29 24010.08..	7.32	W30 04660.03..	7.44	W30 26820.04..	7.45
V90 60750	2.108	W01 34360.02..	7.17	W29 24020.04..	7.33	W30 04720.03..	7.44	W30 26820.05..	7.45
V90 60760	2.108	W01 34360.04..	7.17	W29 24020.08..	7.33	W30 04820.02..	7.45	W30 26820.32..	7.50
V90 60770	2.108	W01 34360.34..	7.22	W29 24030.04..	7.34	W30 04820.03..	7.45	W30 26940.05..	7.52
V90 60780	2.108	W01 34360.35..	7.22	W29 24030.08..	7.34	W30 04820.04..	7.45	W30 26990.02..	7.51
V90 60790	2.108	W01 34420.02..	7.17	W29 24110.04..	7.35	W30 04820.32..	7.50	W30 26990.04..	7.51
V90 60800	2.108	W01 34600.04..	7.18	W29 24130.04..	7.36	W30 04830.02..	7.46	W30 26990.05..	7.51
V90 60810	2.108	W01 34600.08..	7.18	W29 24150.04..	7.37	W30 04990.02..	7.51	W30 44060.08..	7.40
V90 60820	2.108	W01 34600.75..	7.21	W29 24160.04..	7.38	W30 04990.03..	7.51	W30 44120.08..	7.40
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V90 60850	2.108	W01 42060.02..	7.16	W29 34010.04..	7.32	W30 14060.04..	7.40	W30 44600.08..	7.43
V90 60860	2.108	W01 42060.04..	7.16	W29 34010.08..	7.32	W30 14060.08..	7.40	W30 44660.08..	7.44
V90 60870	2.108	W01 42120.02..	7.16	W29 34020.04..	7.33	W30 14060.30..	7.40	W30 44720.08..	7.44
V90 60880	2.108	W01 42120.04..	7.16	W29 34020.08..	7.33	W30 14060.31..	7.47		
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V90 60900	2.108	W01 42360.04..	7.17	W29 34030.08..	7.34	W30 14120.04..	7.40	W32 03450.04..	7.54
V90 60910	2.109	W01 42360.34..	7.22	W29 34110.04..	7.35	W30 14120.08..	7.40	W32 03600.04..	7.55
V90 60920	2.109	W01 42420.02..	7.17	W29 34130.04..	7.36	W30 14120.30..	7.40	W32 03990.04..	7.56
V90 60930	2.109	W01 42420.04..	7.17	W29 34150.04..	7.37	W30 14120.31..	7.47	W32 13150.04..	7.53
V90 60940	2.109	W01 42600.04..	7.18	W29 34160.04..	7.38	W30 14120.32..	7.49	W32 13150.08..	7.53
V90 60950	2.109	W01 42600.08..	7.18	W29 34200.04..	7.39	W30 14120.39..	7.48	W32 13450.04..	7.54
V90 60960	2.109	W01 42600.75..	7.21	W29 42000.04..	7.31	W30 14200.02..	7.40	W32 13600.04..	7.55

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W60 18600.04..	7.68	W83 44000.18..	7.74						

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