

WE NEVER STOP...

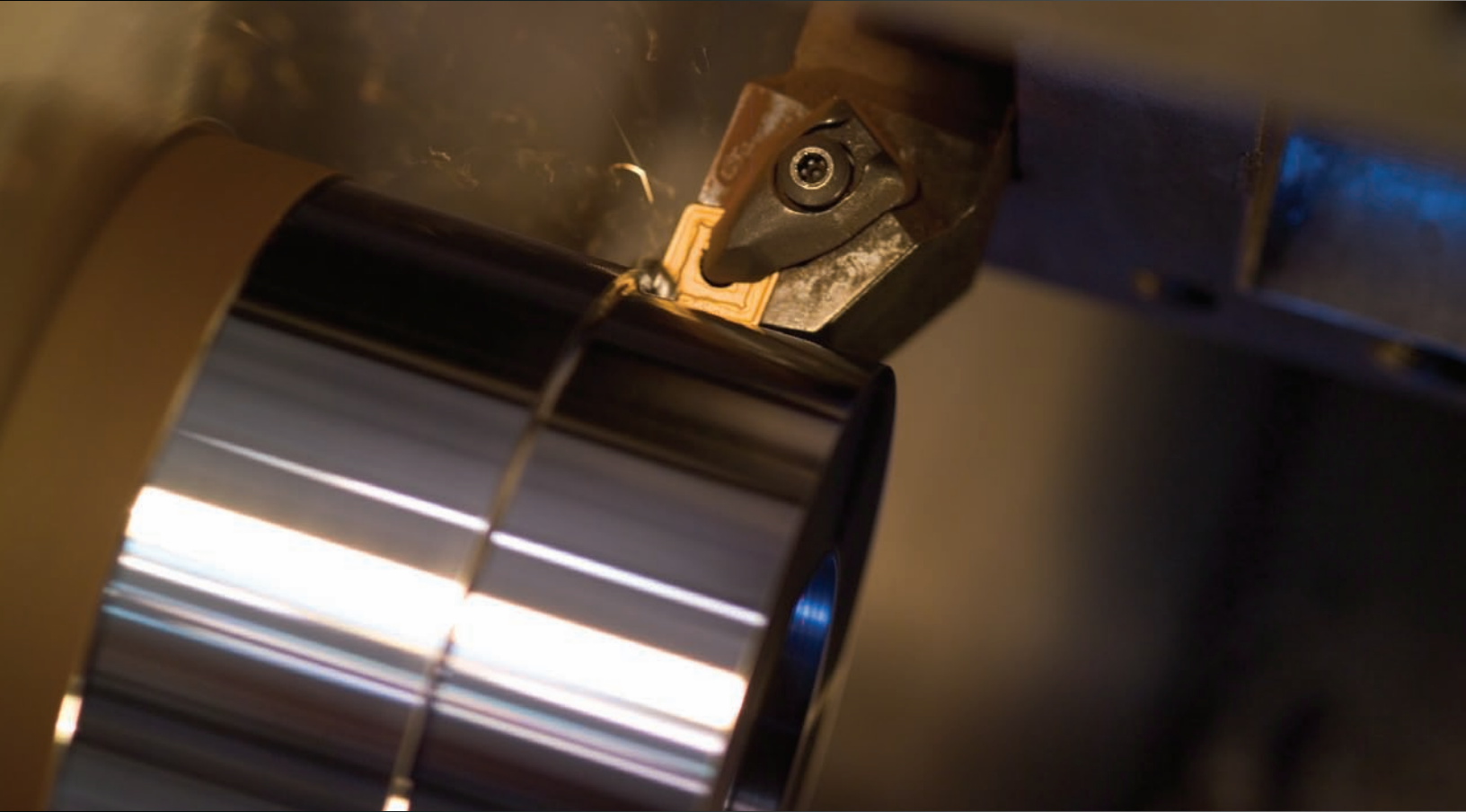


Turning



At Valenite

WE NEVER STOP...



Developing

- **New Stainless Steel Turning System**

Grade VP8515 and VP8525 used in continuous or interrupted cutting without a risk of chipping.

M4 Geometry minimizes edge build-up while reducing cutting forces. Excellent for low horsepower applications

Designed to excel in austenitic and duplex stainless steels, nickel based high-temp alloys and low-carbon steel.

- **Complete Steel and Cast Iron Turning Systems**

Application driven chipbreaker and edge preparation designs.

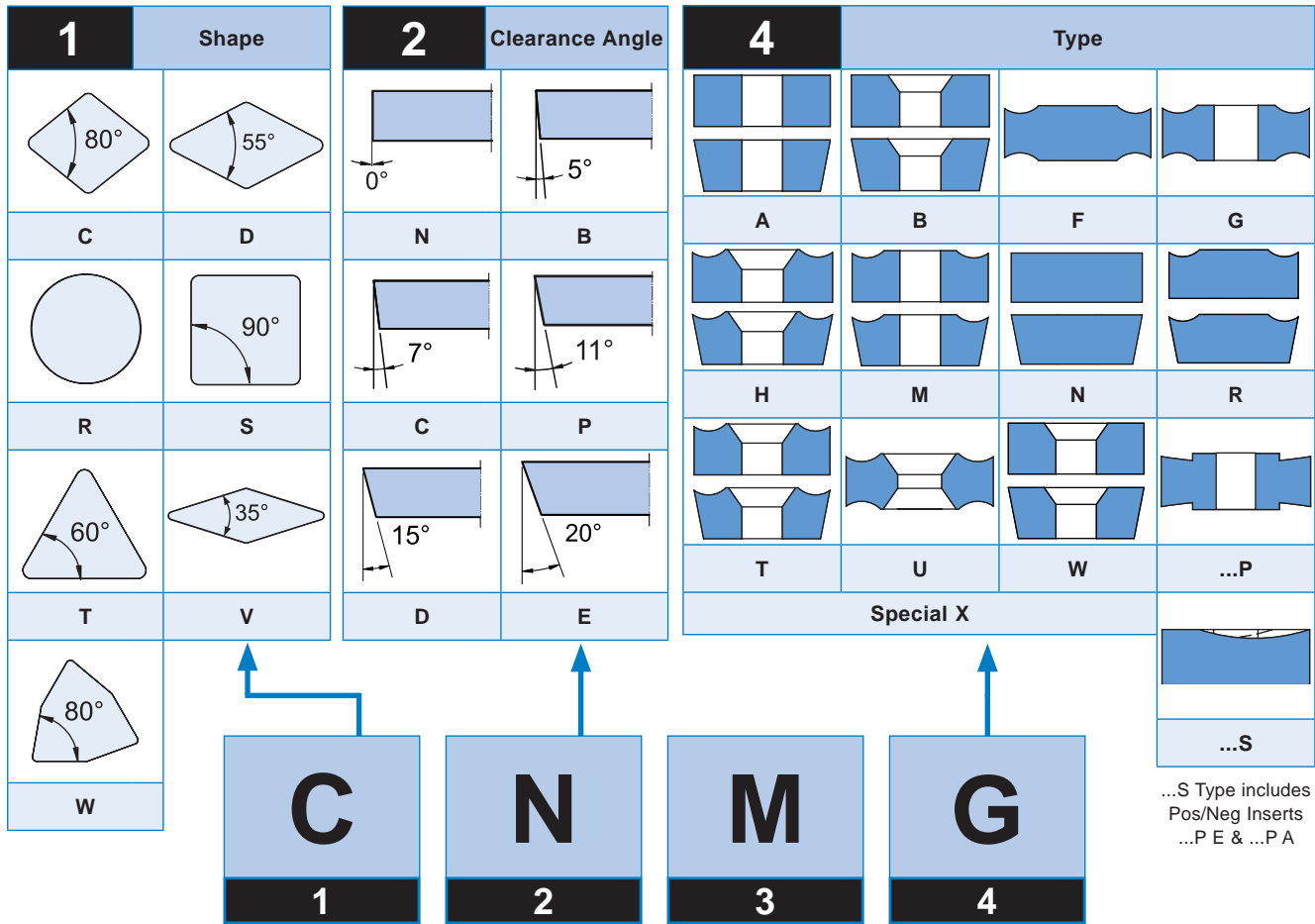
Supporting

We can increase your productivity by 20%. Make us prove it!

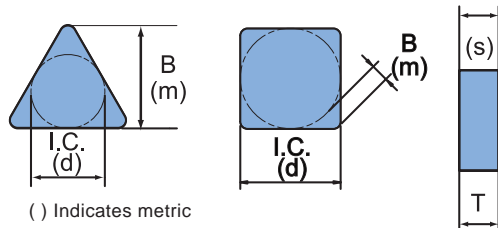
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TURNING INSERTS

Insert Designation



3 Tolerance



ANSI inch			
Symbol	I.C. (Inscribed Circle)	T (Thickness)	B
C	± .001	± .001	± .0005
E	± .001	± .001	± .001
F	± .0005	± .001	± .0002
G	± .001	± .005	± .001
M*	±.002 - ±.004	± .005	± .002-.010
U*	±.005 - ±.010	± .005	± .005-.012
N*	±.002 - ±.004	± .001	± .002-.010

ISO metric			
For insert shapes C, E, S, T, W			
Symbol	d (Inscribed Circle)	s (Thickness)	m
C	± 0,025	± 0,025	± 0,013
E	± 0,025	± 0,025	± 0,025
F	± 0,013	± 0,025	± 0,005
G	± 0,025	± 0,13	± 0,025
H	± 0,013	± 0,025	± 0,013
M*	±0,05 - ±0,015	± 0,13	±0,08 - ±0,20
U*	±0,08 - ±0,25	± 0,13	±0,13 - ±0,38
*For insert shapes D, V			
M, U	±0,05 - ±0,10	± 0,025-0,13	±0,11 - ±0,18

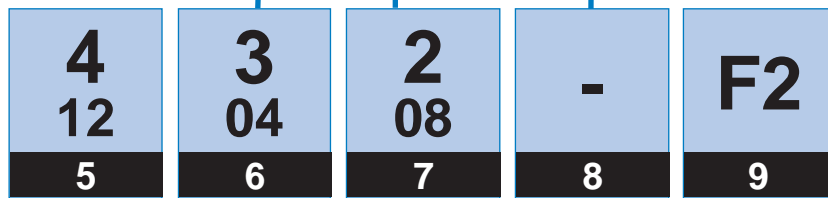
*Exact tolerance is determined by size of insert

6 Thickness			
Symbol		Dimension	
ANSI	ISO	inch	mm
1.2	T1	.079	1.98
1.5	02	.094	2.38
2	03	.125	3.18
2.5	T3	.156	3.97
3	04	.187	4.76
4	06	.250	6.35
5	07	.313	7.94
6	09	.375	9.52

7 Corner Radius			
ANSI	ISO	inch	mm
0	01	0 - .004	0 - .1
0.5	02	.008	0.2
1	04	.016	0.4
2	08	.031	0.8
3	12	.047	1.2
4	16	.063	1.6
5	20	.079	2.0
6	24	.094	2.4
8	32	.1256	3.2

8 Direction
R = Right Hand
L = Left Hand (if required)

9 Chipbreaker Designation	
ANSI Negative	
Finishing	F1, F2, F3, F5
Medium Machining	M2, M3, M4, M5, M6, M7, M8
Roughing	R3, R4, R6, R9
ISO Positive	
Finishing	PF2, 1A, PF3, 2A, PF4, PF5
Medium Machining	PM2, PM3, PM4, PM5
Complementary Geometries	
Negative Rounds	RN5
Positive Rounds	RP4, RP5
Complementary	C2, C3, ..MS, ..GS, C5
Special Geometries	SR, 1L, PN1, PN2, FM, 2B
High Productivity Wipers	W3, WN3, WN5, W6
Special Features	
Polished	J
Sidelock	W



5 I.C. and Cutting Edge Length									
I.C.			C	D	R	S	T	V	W
Symbol	inch	mm							
1.2	.156	3.97	S4	04	03	03	06		
1.5	.187	4.76	04	05	04	04	08	08	S3
1.8	.219	5.56	05	06	05	05	09	09	03
2	.250	6.35	06	07	06	06	11	11	04
2.5	.313	7.94	08	09	07	07	13	13	05
3	.375	9.52	09	11	09	09	16	16	06
4	.500	12.70	12	15	12	12	22	22	08
5	.625	15.88	16	19	15	15	27	27	10
6	.750	19.05	19	23	19	19	33	33	13
8	1.000	25.40	25	31	25	25	44	44	17
08	.315	8.00			08				
10	.394	10.00			10				
12	.472	12.00			12				
16	.630	16.00			16				

TURNING INSERTS

Advanced Materials Insert Designation

(More detail on pages A2 and A3)






ANSI Inch	C	N	G	N	4	5	3	ZD	T7
ISO Metric	C	N	G	A	12	07	12	ZD	T7

Clearance Angle	
N	0°
B	5°
C	7°
P	11°
E	20°

Type	
N	No Hole
A	Hole
W	ISO Style Hole
M	Hole & Chipbreaker

Thickness		
	Inch	Metric
1.5	3/32	02
2	1/8	03
2.5	5/32	T3
3	3/16	04
4	1/4	06
5	5/16	07

Hand/Special Feature	
A (ZZA)	45° Corner
AFTN	45° Corner, 25° Side Clearance, .008 x 20 T-Land, Neutral Handed
K (ZZK)	30° Corner
N	Neutral
R	Right Hand
L	Left Hand
ZD	Dimple Lock
ZZ	V057 Corner

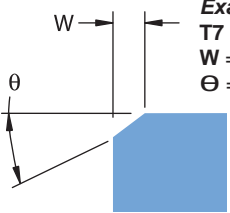
Insert Shape		
	C	80° Diamond
	D	55° Diamond
	V	35° Diamond
	S	Square
	T	Triangle

Tolerance			
	IC	T	M
M	± 0.005	± 0.005	± 0.008
G	± 0.001	± 0.005	± 0.001
E	± 0.001	± 0.001	± 0.001
C	± 0.0005	± 0.001	± 0.0005

Corner Radius		
	Inch	Metric
0	0.004	01
0.5	0.008	02
1	0.016	04
2	0.031	08
3	0.047	12
4	0.063	16
6	0.094	24

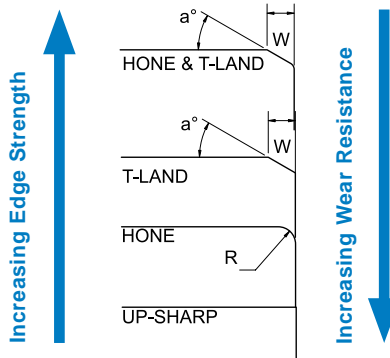
I.C. and Cutting Edge Length								
Inch		Metric Cutting Length						
Symbol	IC	C	D	R	S	T	V	W
1.2	5/32	S4	04	03	03	06	-	-
1.5	3/16	04	05	04	04	08	08	S3
1.8	7/32	05	06	05	05	09	09	03
2	1/4	06	07	06	06	11	11	04
2.5	5/16	08	09	07	07	13	13	05
3	3/8	09	11	09	09	16	16	06
3.5	7/16	11	13	11	11	19	19	07
4	1/2	12	15	12	12	22	22	08
5	5/8	16	19	15	15	27	27	10
6	3/4	19	23	19	19	33	33	13
8	1	25	31	25	25	44	44	17

Tip Configuration/ Number of Cutting Edges/ Edge Preparation	
Tips	
F	Tipped
H	Full Edge
Cutting Edges	
M2	2
M3	3
M4	4
M6	6

T-Land Description
<p>The standard T-Lands and Honed incorporated into each insert were developed for optimum performance.</p> <p>Most ValEDGE Silicon Nitride inserts have a 0.008 X 20 T-Land for general applications.</p>
 <p>Example: T7 = 0.008 x 20° W = 0.008 θ = 20°</p>

Land and Hone Designation & Size (see page A5 for more detail)				
	Inch		Metric	
	Land	Hone	Land	Hone
E	N/A	0.001 - 0.002	N/A	0.025 - 0.050
T3	0.003 x 15°	-	0.08 x 15°	-
T5	0.005 x 25°	-	0.13 x 25°	-
T6	0.006 x 30°	-	0.15 x 30°	-
T7	0.008 x 20°	-	0.20 x 20°	-

Advanced Materials Edge Preparation Designation



Designation	Edge Prep Designations			
	Hone (inch)	T-Land (Inch)	Hone (mm)	T-Land (mm)
E	0.001-0.002	NONE	0.025-0.05	NONE
T1	NONE	0.005X15°	NONE	0.13X15°
T3	NONE	0.003X20°	NONE	0.08X20°
T5	NONE	0.005X25°	NONE	0.13X25°
T6	NONE	0.006X30°	NONE	0.15X30°
T7	NONE	0.008X20°	NONE	0.20X20°
TXX	NONE	SPECIFIED	NONE	SPECIFIED

Designation	Edge Prep Designations			
	Hone (inch)	T-Land (Inch)	Hone (mm)	T-Land (mm)
E	0.001-0.002	NONE	0.025-0.050	NONE
S1	0.001-0.002	0.005X15°	0.025-0.050	0.13X15°
S3	0.001-0.002	0.003X20°	0.025-0.050	0.08X20°
S5	0.001-0.002	0.005X25°	0.025-0.050	0.13X25°
S6	0.001-0.002	0.006X30°	0.025-0.050	0.15X30°
S7	0.001-0.002	0.008X20°	0.025-0.050	0.20X20°
SXX	0.001-0.002	SPECIFIED	0.025-0.050	SPECIFIED

























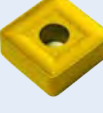
Designation	Edge Prep Designations			
	Hone (inch)	T-Land (Inch)	Hone (mm)	T-Land (mm)
B	0.002-0.003	NONE	0.050-0.075	NONE
S1B	0.002-0.003	0.005X15°	0.050-0.075	0.13X15°
S3B	0.002-0.003	0.003X20°	0.050-0.075	0.08X20°
S5B	0.002-0.003	0.005X25°	0.050-0.075	0.13X25°
S6B	0.002-0.003	0.006X30°	0.050-0.075	0.15X30°
S7B	0.002-0.003	0.008X20°	0.050-0.075	0.20X20°
SXXB	0.002-0.003	SPECIFIED	0.050-0.075	SPECIFIED

TURNING INSERTS

Top Form Geometry

Turning Inserts

















Increasing Edge Strength →

ISO Positive	Finishing		2A 	PF2 	1A 	PF3 	PF4 	PF5 
	Medium Machining		PM2 	PM3 	PM4 	PM5 		
ANSI Negative	Finishing	F1 	F2 	F3 		F5 		
	Medium Machining	M2 	M3 	M4 	M5 	M6 	M7 	M8 
	Roughing			R3 	R4 		R6 	R9 

Increasing Feed Rate →

Complementary Geometries

Increasing Edge Strength →

Negative Rounds					RN5 	
Positive Rounds				RP4 	RP5 	
Complimentary	C2 	C3 		C5 	..GS/..MS*** 	
Special Geometries	SR 	1L 	PN1*/PN2** 	2B 	FM 	
High Productivity Wipers		W3 	WN3 	WN5 	W6 	

Increasing Feed Rate →

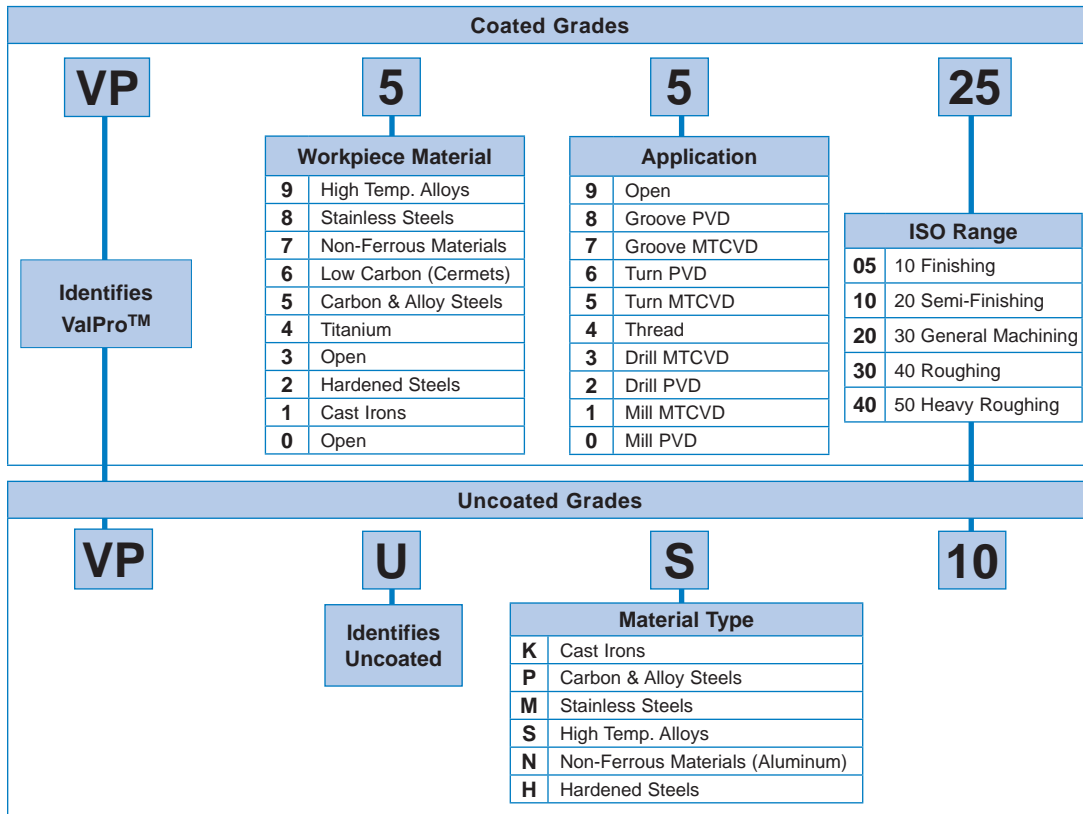
*Legacy: TNFM 432 EL (or ER)
ValPro: TNMM 432 EL (or ER) PN1 = Finishing

**Legacy: TNMM 432 EL (or ER)
ValPro: TNMM 432 EL (or ER) PN2 = Roughing

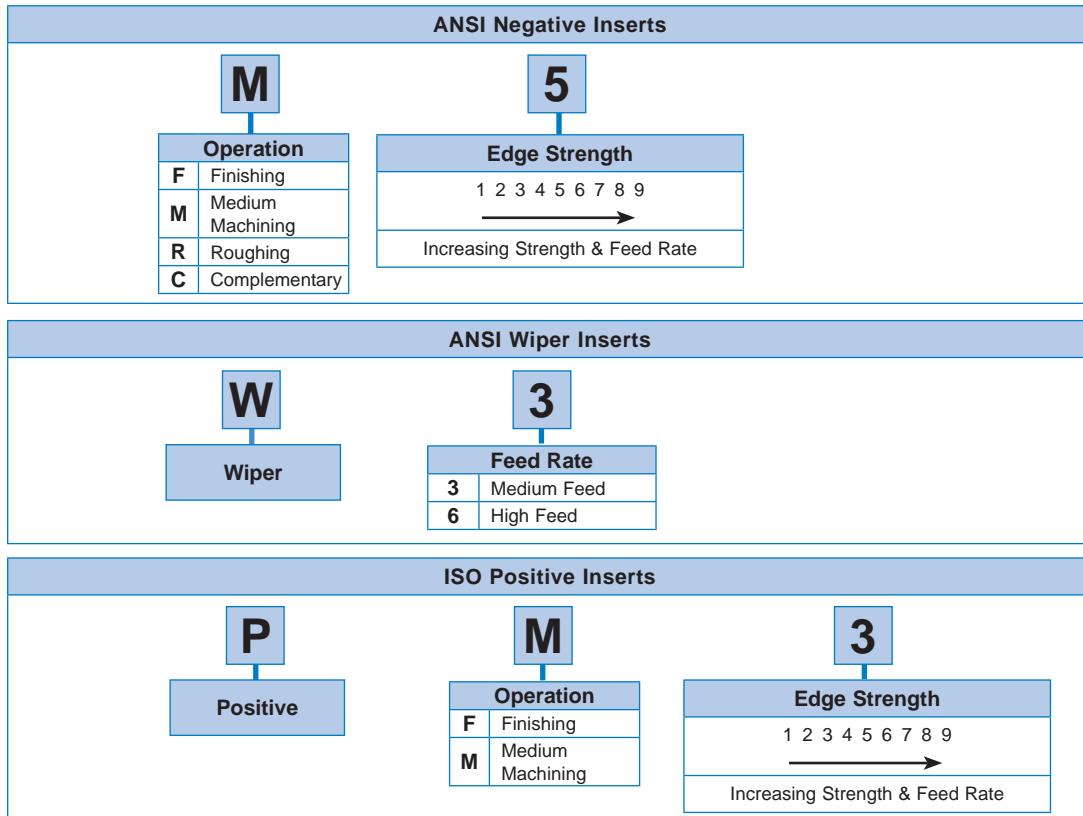
***..MS = Utility
..GS = Precision

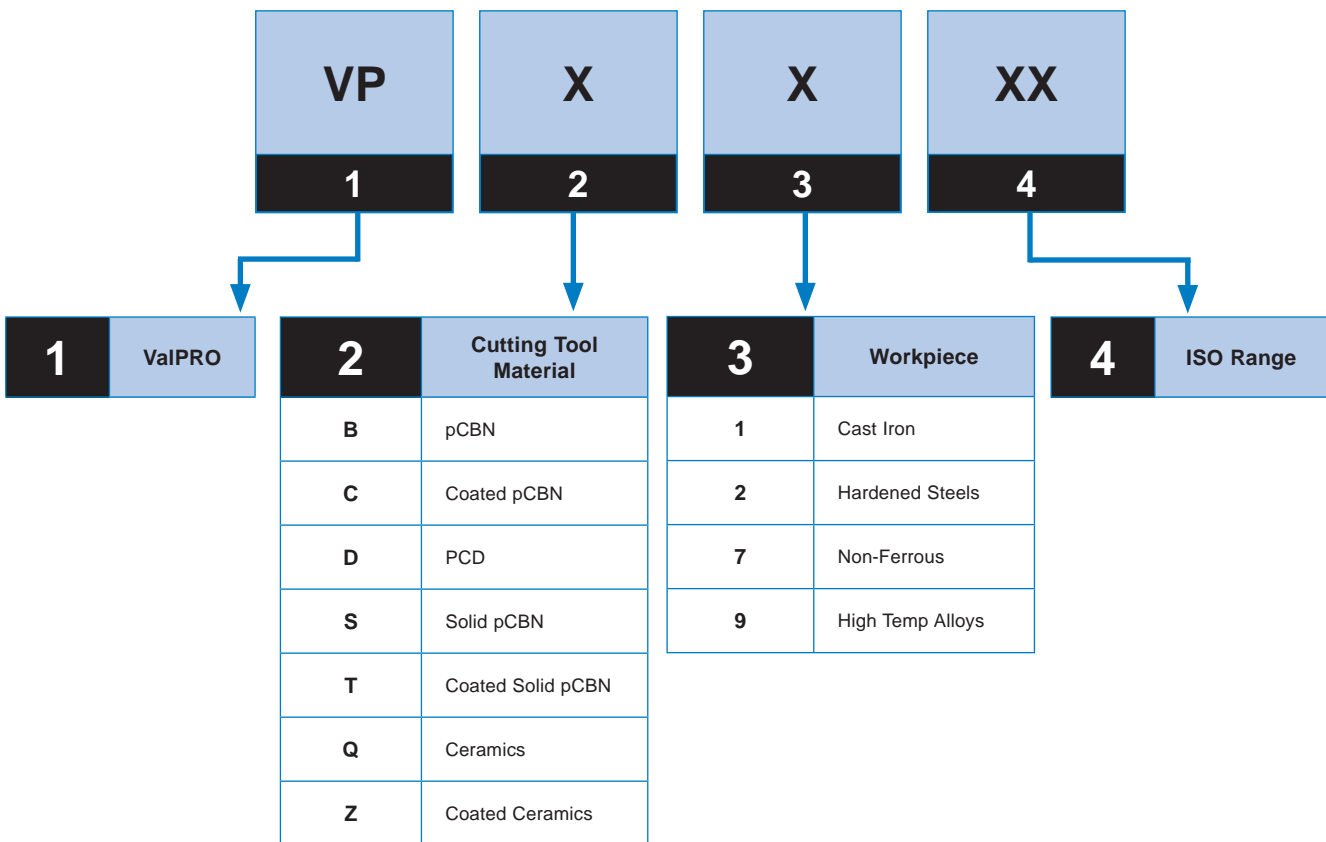
TURNING INSERTS

Carbide Grade Designation



Top Form Geometry Designation





pCBN example:
VP-C225

PCD example:
VP-D720



ValTurn™ High Production Turning System

Answer The Following Three Questions To Help You
Choose The Correct Tool From This Catalog

Example: Steel

- | | |
|--|---------------|
| Q: What material are you cutting? | A: 1040 Steel |
| Q: What is the hardness of the material? | A: 180 BHN |
| Q: What is your operation? | A: Finishing |

- Use the GUIDE TO WORKPIECE MATERIAL chart on page A12 to locate your workpiece material or closest to it.
- Note the material group (color) and category for your workpiece.
Example: 1040 is a Steel (blue) in the Medium Carbon & High Carbon Steels category.
- Turn to the GRADE SELECTION GUIDE for Steel on page A14. (Note: pages are color coded for each material group.) Choose the grade whose mid-point is closest to your operation (Roughing, General Purpose or Finishing.) If more than one grade is applicable, choose the first grade displayed.
Example: VP1505.
- See the APPLICATION GUIDE on page A15. Locate the grade you selected in the last step. Find the column for the category of steel being cut. At the intersection where the grade and the category meet, you will find the recommended SFM (Surface Feet per Minute) and Geometry (chipbreaker). **Red** and/or **Bold** print indicates primary choice for chipbreaker. Black and/or **Bold** indicates alternate choice for chipbreaker.
Example: 1600 SFM and an M5 geometry.
- To determine Depth of Cut (DOC), go back to the first column in the APPLICATION GUIDE. A range is given. To select a DOC, start at mid-point for a half inch I.C. insert (such as SNMG 433). Reduce for smaller inserts (SNMG 322) or increase for larger inserts (SNMG 644).
Example: 0.030. **NOTE:** DOC should never exceed $\frac{1}{2}$ of the insert I.C. or Cutting Edge Length.
- To determine IPR (Inches Per Revolution or Feed Rate), go back to the second column. A range is given. In general, lighter IPR is used for finishing operations and heavier IPR for roughing or heavy stock removal.
Example: 0.004.
- You now have your starting parameters (SFM, DOC, and IPR) and the recommended grade and geometry.
Example: Grade = VP1505, Geometry = M5, SFM = 1600, DOC = 0.030, IPR = 0.004
- You may increase/decrease cutting conditions to optimize your application depending on many factors including: Work piece hardness, surface finish required, insert size, shape and nose radius, lead angle, chipbreaker, cycle time required, desired tool life, desired failure mode and reason for indexing. See page A165 to optimize your application.

TURNING INSERTS

Guide to Workpiece Material







ValPro™ Color System Simplifies Tool Selection Process

Use the ValPro™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
Steels 	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
Stainless Steels 	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304L 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
Cast Irons 	Gray Cast Iron	ASTM A48, Class 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades 70003, 820002, 90001, SAE J158, Grades M7002, M8501
High Temp Alloys 	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
Aluminum And Non-Ferrous Materials 	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
Hardened Materials 	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

TURNING INSERTS

Recommended Grades

ISO Application Range						Material Group
Roughing					Finishing	
50	40	30	20	10	01	
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP5535</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP5525</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP5515</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP1510</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP1505</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VPUP30</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VPUP10</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">Q32</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPZ215</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPZ205</div> </div>						Steels 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP5535</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;"><i>NEW</i> VP8525</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;"><i>NEW</i> VP8515</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VP9610</div> </div>						Stainless Steels 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VPUK20</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VPUK10</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP1510</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP1505</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VC724</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VC733</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VC722</div> </div>						Cast Irons 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP8525</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP8515</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VP9625</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VP9610</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">Q8</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VPUS10</div> </div>						High Temp Alloys 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VP9615</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VP9610</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPD720</div> </div>						Aluminum And Non-Ferrous Materials 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">VP5515</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPZ215</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPZ205</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">VPC225</div> </div>						Hardened Materials 
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">MTCVD</div> <div style="border: 1px solid black; border-radius: 15px; padding: 2px;">UNCOATED</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">PVD</div> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px;">Advanced Materials</div> </div>						Grade Key

TURNING INSERTS

Steels

Grade Selection Guide

STEELS						
ISO	P50	P40	P30	P20	P10	P01
ANSI	C5	C6		C7		C8
Typical Failure Modes	<ul style="list-style-type: none"> Fracture Chipping Deformation 		<ul style="list-style-type: none"> Chipping Deformation Crater 		<ul style="list-style-type: none"> Crater Deformation Wear 	
Application	Roughing		General Purpose		Finishing	
MTCVD COATED CARBIDE	<p>*VP5535</p> <p>VP8525</p>		<p>*VP5525</p> <p>VP8515</p> <p>*VP5515</p>		<p>VP1510</p> <p>VP1505</p>	
UNCOATED CARBIDE			<p>VPUP30</p>		<p>VPUP10</p>	
CERAMICS			<p>Q32**</p> <p>VPZ215**</p>		<p>VPZ205**</p>	

* Indicates preferred grades

** For Hardened Steel ≥ 45 Rc.

ANSI NEGATIVE TOP FORM GEOMETRY												
SFM/CHIPBREAKER DESIGNATION												
	Operation	DOC (mm)	IPR (mm/rev)	Free Machining & Low Carbon Steels		Medium Carbon & High Carbon Steels		Alloy Steels & Easy to Machine Tool Steels		Tool Steels & Die Steels		
				SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	
MTCVD COATED	VP1505	R	-	-	-	-	-	-	-	-	-	-
		GP	-	-	-	-	-	-	-	-	-	-
		F	.020-.040 (0.5-1.0)	.004-.008 (0.1-0.2)	2000 (610)	M5 M5	1600 (488)	M5 M5	1200 (366)	M5 M5	600 (183)	M5 M5
	VP1510	R	-	-	-	-	-	-	-	-	-	-
		GP	.040-125 (1.0-3.2)	.006-.010 (0.15-0.25)	1500 (457)	R3 M5 R3 M5	1200 (366)	R3 M5 R3 M5	1000 (305)	R3 R3	500 (152)	R3 R3
		F	.020-.040 (0.5-1.0)	.004-.008 (0.1-0.2)	1700 (518)	M5 F5 M5 F5	1300 (396)	M5 F5 M5 F5	1000 (305)	M5 F5 M5 F5	525 (160)	M8 M8
	VP5515	R	.080-.300 (2.0-7.6)	.010-.025 (0.25-0.64)	700 (213)	R4 R3 R4 R3	600 (183)	R3 M8 R3 M8	500 (152)	R3 M8 R3 M8	400 (122)	R3 M8 R3 M8
		GP	.040-.150 (1.0-3.8)	.008-.015 (0.2-0.4)	1300 (396)	M8 M5 M8 M5	1000 (305)	M8 M5 M8 M5	900 (274)	M8 M5 M8 M5	500 (152)	M8 M5 M8 M5
		F	.020-.050 (0.5-1.3)	.004-.008 (0.1-0.2)	1500 (457)	F3 F5 F3 F5	1200 (366)	F3 F5 F3 F5	1000 (305)	F3 F5 F3 F5	550 (168)	M5 M6 M5 M6
	VP5525	R	.080-.300 (2.0-7.6)	.010-.025 (0.25-0.64)	600 (183)	R4 R3 R4 R3	500 (152)	R3 M8 R3 M8	400 (122)	R3 M8 R3 M8	250 (76)	R3 M8 R3 M8
		GP	.040-.150 (1.0-3.8)	.008-.015 (0.2-0.4)	1100 (335)	R3 M8 R3 M8	800 (244)	M8 M5 M8 M5	700 (213)	M8 M5 M8 M5	300 (91)	R3 M8 R3 M8
		F	.020-.050 (0.5-1.3)	.004-.008 (0.1-0.2)	1200 (366)	F3 F5 F3 F5	1000 (305)	F3 F5 F3 F5	800 (244)	F3 F5 F3 F5	350 (107)	M5 M6 M5 M6
	VP5535	R	.080-.300 (2.0-7.6)	.010-.025 (0.25-0.64)	500 (152)	R4 M8 R4 M8	400 (122)	R4 M8 R4 M8	300 (91)	R4 M8 R4 M8	175 (53)	M8 M5 M8 M5
		GP	.040-.150 (1.0-3.8)	.008-.015 (0.2-0.4)	800 (244)	R4 M8 R4 M8	600 (183)	R4 M8 R4 M8	500 (152)	R4 M8 R4 M8	200 (61)	M8 M5 M8 M5
		F	-	-	-	-	-	-	-	-	-	-
	VP8515	R	.080-.300 (2.0-7.6)	.010-.025 (0.25-0.64)	600 (183)	M8 R4 M8 R4	500 (152)	M8 R4 M8 R4	-	-	-	-
		GP	.040-.150 (1.0-3.8)	.008-.015 (0.2-0.4)	1000 (305)	M8 M6 M8 M6	800 (244)	M8 M6 M8 M6	-	-	-	-
		F	.020-.050 (0.5-1.3)	.004-.008 (0.1-0.2)	1300 (396)	F5 F5	1000 (305)	F5 F5	-	-	-	-
	VP8525	R	.080-.300 (2.0-7.6)	.010-.025 (0.25-0.64)	450 (137)	R4 M8 R4 M8	350 (107)	M8 M8	-	-	-	-
		GP	.040-.150 (1.0-3.8)	.008-.015 (0.2-0.4)	700 (213)	M8 M6 M8 M6	500 (152)	M8 M6 M8 M6	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-

R = Roughing GP = General Purpose F = Finishing
 Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .
 Black and/or **Bold** indicates alternate choice.

TURNING INSERTS

Steels

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY

SFM/CHIPBREAKER DESIGNATION

	Operation	DOC (mm)	IPR (mm/rev)	Free Machining & Low Carbon Steels		Medium Carbon & High Carbon Steels		Alloy Steels & Easy to Machine Tool Steels		Tool Steels & Die Steels		
				SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	
UNCOATED	VPUP30	R	.080-.200 (2.0-7.6)	.010-.020 (0.25-0.64)	300 (91)	M7 FT M7 FT	250 (76)	M7 FT M7 FT	- -	- -	- -	- -
		GP	.040-.120 (1.0-3.8)	.008-.012 (0.2-0.4)	350 (107)	M7 ..MS M7 ..MS	300 (91)	M7 ..MS M7 ..MS	- -	- -	- -	- -
		F	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	VPUP10	R	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
		GP	.040-.125 (1.0-3.2)	.006-.010 (0.15-0.25)	400 (122)	M7 ..MS M7 ..MS	450 (137)	M7 ..MS M7 ..MS	- -	- -	- -	- -
		F	.020-.040 (0.5-1.0)	.004-.008 (0.1-0.2)	500 (152)	M7 ..MS M7 ..MS	475 (145)	M7 ..MS M7 ..MS	- -	- -	- -	- -
COATED CERAMICS	VPZ205 *	R	-	-	-	-	-	-	-	-	-	
		GP	.015-.030 (0.4-0.76)	.003-.010 (0.08-0.25)	450-800 (137-244)	- -	- -	- -	- -	- -	- -	
		F	<.015 (<0.4)	.003-.006 (0.08-0.15)	500-900 (152-274)	- -	- -	- -	- -	- -	- -	
	VPZ215*	R	<.080 (<2.0)	.003-.012 (0.08-0.3)	400-650 (122-198)	- -	- -	- -	- -	- -	- -	
		GP	.015-.040 (0.4-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	- -	- -	- -	- -	- -	- -	
		F	<.015 (<0.4)	.003-.008 (0.08-0.2)	450-850 (137-259)	- -	- -	- -	- -	- -	- -	
CERAMIC	Q32*	R	<.080 (<2.0)	.003-.012 (0.08-0.3)	150-350 (46-107)	- -	- -	- -	- -	- -	- -	
		GP	.015-.040 (0.38-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	- -	- -	- -	- -	- -	- -	
		F	<.015 (<0.38)	.003-.008 (0.08-0.2)	450-850 (137-259)	- -	- -	- -	- -	- -	- -	

* For Hardened Steel ≥ 45 Rc.

R = Roughing GP = General Purpose F = Finishing FT = Flat Top

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or Bold print indicates primary choice .

Black and/or Bold indicates alternate choice.

ISO POSITIVE TOP FORM GEOMETRY													
SFM/CHIPBREAKER DESIGNATION													
	Operation	DOC (mm)	IPR (mm/rev)	Free Machining & Low Carbon Steels		Medium Carbon & High Carbon Steels		Alloy Steels & Easy to Machine Tool Steels		Tool Steels & Die Steels			
				SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd		
MTCVD COATED	VP1505	R	-	-	-	-	-	-	-	-	-	-	
		GP	-	-	-	-	-	-	-	-	-	-	
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	2000 (610)	PF4* PF4*	1600 (488)	PF4* PF4*	1200 (366)	PF4* PF4*	-	-	-
	VP1510	R	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	1500 (457)	PM2* PM4** PM2* PM4**	1200 (366)	PM2* PM4** PM2* PM4**	1000 (305)	PM2* PM4** PM2* PM4**	-	-	-
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	1700 (518)	PF4* PF4*	1300 (396)	PF4* PF4*	1000 (305)	PF4* PF4*	-	-	-
	VP5515	R	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	1300 (396)	PM2* PM4** PM2* PM4**	1000 (305)	PM2* PM4** PM2* PM4**	900 (274)	PM2* PM4** PM2* PM4**	-	-	-
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	1500 (457)	PF4* PF4*	1200 (366)	PF4* PF4*	1000 (305)	PF4* PF4*	-	-	-
	VP5525	R	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	1100 (335)	PM2* PM4** PM2* PM4**	800 (244)	PM2* PM4** PM2* PM4**	700 (213)	PM2* PM4** PM2* PM4**	-	-	-
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	1200 (366)	PF4* PF4*	1000 (305)	PF4* PF4*	800 (244)	PF4* PF4*	-	-	-
	VP5535	R	.010-.120 (0.3-3.1)	.005-.020 (0.13-0.5)	700 (213)	PM2* PM2*	600 (183)	PM2* PM2*	500 (152)	PM2* PM2*	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	800 (244)	PM2* PM2*	500 (152)	PM2* PM2*	450 (137)	PM2* PM2*	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-
	VP8515	R	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	1000 (305)	PM2 PM2	800 (244)	PM2 PM2	700 (213)	PM2 PM2	-	-	-
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	1200 (366)	PM2 PM2	1000 (305)	PM2 PM2	800 (244)	PM2 PM2	-	-	-
	VP8525	R	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	600 (183)	PM2* PM2*	550 (168)	PM2* PM2*	450 (137)	PM2* PM2*	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	700 (213)	PM2* PM2*	500 (152)	PM2* PM2*	400 (122)	PM2* PM2*	-	-	-
			-	-	-	-	-	-	-	-	-	-	-

R = Roughing GP = General Purpose F = Finishing FT = Flat Top

* Continuous Cut ** Moderate Interruption

Red and/or **Bold** print indicates primary choice .

Black and/or **Bold** indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

TURNING INSERTS

Steels

Application Guide

ISO POSITIVE TOP FORM GEOMETRY													
SFM/CHIPBREAKER DESIGNATION													
	Operation	DOC (mm)	IPR (mm/rev)	Free Machining & Low Carbon Steels		Medium Carbon & High Carbon Steels		Alloy Steels & Easy to Machine Tool Steels		Tool Steels & Die Steels			
				SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd		
UNCOATED	VPUP30	R	.010-.100 (0.3-3.1)	.005-.015 (0.13-0.5)	300 (91)	1A 2A 1A 2A	250 (76)	1A 2A 1A 2A	-	-	-	-	-
		GP	.020-.080 (0.8-3.1)	.003-.012 (0.13-0.5)	350 (107)	1A 2A 1A 2A	300 (91)	1A 2A 1A 2A	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-	-
	VPUP10	R	-	-	-	-	-	-	-	-	-	-	-
		GP	.010-.100 (0.3-3.1)	.005-.012 (0.13-0.5)	400 (122)	2A 2A	450 (137)	2A 2A	-	-	-	-	-
		F	.020-.080 (0.8-3.1)	.003-.010 (0.13-0.5)	500 (152)	2A 2A	475 (145)	2A 2A	-	-	-	-	-
COATED CERAMICS	VPZ205*	R	-	-	-	-	-	-	-	-	-	-	
		GP	.015-.030 (0.4-0.76)	.003-.010 (0.08-0.25)	450-800 (137-244)	-	-	-	-	-	-	-	
		F	<.015 (<0.4)	.003-.006 (0.08-0.15)	500-900 (152-274)	-	-	-	-	-	-	-	
	VPZ215*	R	<.080 (<2.0)	.003-.012 (0.08-0.3)	400-650 (122-198)	-	-	-	-	-	-	-	
		GP	.015-.040 (0.4-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	-	-	-	-	-	-	-	
		F	<.015 (<0.4)	.003-.008 (0.08-0.2)	450-850 (137-259)	-	-	-	-	-	-	-	
CERAMIC	Q32*	R	<.080 (<2.0)	.003-.012 (0.08-0.3)	150-350 (46-107)	-	-	-	-	-	-	-	
		GP	.015-.040 (0.38-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	-	-	-	-	-	-	-	
		F	<.015 (<0.38)	.003-.008 (0.08-0.2)	450-850 (137-259)	-	-	-	-	-	-	-	

* For Hardened Steel ≥ 45 Rc.

R = Roughing GP = General Purpose F = Finishing FT = Flat Top
 Cutting parameters provided for ANSI negative are based on CNMG 433
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STAINLESS STEELS				
ISO	M40	M30	M20	M10
Typical Failure Modes	<ul style="list-style-type: none"> Build-up Fracture Chipping 	<ul style="list-style-type: none"> Build-up Chipping Fracture 	<ul style="list-style-type: none"> Wear Chipping Build-up 	
Application	Roughing	General Purpose		Finishing
PVD COATED CARBIDE	**VP9625		**VP9610	
MTCVD COATED CARBIDE		VP5535	*VP8525	VP5525 *VP8515 VP5515
UNCOATED CARBIDE	VPUK20		VPUS10	

* Indicates first choice for high speeds
 ** Indicates first choice for low speeds

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY												
SFM/CHIPBREAKER DESIGNATION												
	Operation	DOC (mm)	IPR (mm/rev)	Ferritic & Martensitic			Austenitic			pH & Duplex		
				SFM	Geo.		SFM	Geo.		SFM	Geo.	
				(Vm/min)	1st	2nd	(Vm/min)	1st	2nd	(Vm/min)	1st	2nd
PVD COATED	VP9625	R	.100-250 (2.5-6.4)	.005-.020 (0.13-0.51)	50-200 (15-61)	M8 M6 M8 M6	50-150 (15-46)	M8 M6 M8 M6	50-125 (15-38)	M8 M6 M8 M6	M8 M6 M8 M6	M8 M6 M8 M6
		GP	.075-.175 (1.9-4.5)	.007-.015 (0.18-0.38)	50-250 (15-76)	M6 C5 M6 C5	50-200 (15-61)	M6 C5 M6 C5	50-125 (15-38)	M6 C5 M6 C5	M6 C5 M6 C5	M6 C5 M6 C5
		F	.010-.050 (0.25-1.3)	.002-.010 (0.05-0.25)	100-275 (30-84)	C5 F3 C5 F3	100-225 (30-69)	C5 F3 C5 F3	50-150 (15-46)	C5 F3 C5 F3	C5 F3 C5 F3	C5 F3 C5 F3
	VP9610	R	.100-.200 (2.5-5.1)	.005-.015 (0.13-0.38)	100-400 (30-122)	M8 M6 M8 M6	100-300 (30-91)	M8 M6 M8 M6	50-250 (15-76)	M8 M6 M8 M6	M8 M6 M8 M6	M8 M6 M8 M6
		GP	.075-.150 (1.9-3.8)	.007-.012 (0.18-0.3)	150-450 (46-137)	M6 C5 M6 C5	100-350 (30-107)	M6 C5 M6 C5	100-250 (30-76)	M6 C5 M6 C5	M6 C5 M6 C5	M6 C5 M6 C5
		F	.010-.050 (0.25-1.3)	.002-.005 (0.05-0.13)	200-500 (61-152)	C5 F3 C5 F3	100-400 (30-122)	C5 F3 C5 F3	100-300 (30-91)	C5 F3 C5 F3	C5 F3 C5 F3	C5 F3 C5 F3

R = Roughing GP = General Purpose F = Finishing
 Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

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TURNING INSERTS

Stainless Steels

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY												
SFM/CHIPBREAKER DESIGNATION												
	Operation	DOC (mm)	IPR (mm/rev)	Ferritic & Martensitic			Austenitic			pH & Duplex		
				SFM	Geo.		SFM	Geo.		SFM	Geo.	
				(Vm/min)	1st	2nd	(Vm/min)	1st	2nd	(Vm/min)	1st	2nd
MTCVD COATED	VP5515	R	-	-	-	-	-	-	-	-	-	
		GP	.040-.150 (1.0-3.8)	.006-.012 (0.15-0.3)	250-750 (76-229)	M8 M5 M8 M5	250-700 (76-213)	M8 M5 M8 M5	200-550 (61-168)	M8 M5 M8 M5		
		F	.010-.050 (0.25-1.3)	.005-.008 (0.13-0.2)	400-1200 (122-366)	C5 M3 C5 M3	250-800 (76-244)	C5 M3 C5 M3	200-650 (61-198)	C5 M3 C5 M3		
	VP5525	R	.080-.200 (2.0-5.1)	.008-.020 (0.2-0.51)	250-650 (76-198)	M8 R3 M8 R3	200-600 (61-183)	M8 R3 M8 R3	200-500 (61-152)	M8 R3 M8 R3		
		GP	.040-.150 (1.0-3.8)	.006-.012 (0.15-0.3)	300-700 (91-213)	M8 M5 M8 M5	250-700 (76-213)	M8 M5 M8 M5	200-550 (61-168)	M8 M5 M8 M5		
		F	.010-.050 (0.25-1.3)	.005-.008 (0.13-0.2)	300-1000 (91-305)	C5 M3 C5 M3	250-800 (76-244)	C5 M3 C5 M3	200-650 (61-198)	C5 M3 C5 M3		
	VP5535	R	.080-.250 (2.0-6.4)	.008-.025 (0.2-0.64)	200-600 (61-183)	R4 M8 R4 M8	200-500 (61-152)	R4 M8 R4 M8	200-450 (61-137)	R4 M8 R4 M8		
		GP	.040-.150 (1.0-3.8)	.006-.015 (0.15-0.38)	250-750 (76-229)	M8 M6 M8 M6	250-650 (76-198)	M8 M6 M8 M6	200-500 (61-152)	M8 M6 M8 M6		
		F	.010-.050 (0.25-1.3)	.005-.010 (0.13-0.25)	300-850 (91-259)	C5 M3 C5 M3	250-750 (76-229)	C5 M3 C5 M3	200-600 (61-183)	C5 M3 C5 M3		
	VP8515	R	.080-.200 (2.0-5.1)	.008-.020 (0.2-0.51)	250-650 (76-198)	M8 R4 M8 R4	200-600 (61-183)	M8 R4 M8 R4	200-500 (61-152)	R4 M8 R4 M8		
		GP	.040-.150 (1.0-3.8)	.006-.012 (0.15-0.3)	250-700 (76-213)	M6 M4 M6 M4	250-600 (76-183)	M6 M4 M6 M4	200-500 (61-213)	M6 M4 M6 M4		
		F	.010-.050 (0.25-1.3)	.005-.008 (0.13-0.2)	400-1000 (122-305)	M4 C5 M4 C5	250-700 (76-213)	M4 C5 M4 C5	200-600 (61-183)	M4 C5 M4 C5		
	VP8525	R	.080-.250 (2.0-6.4)	.008-.025 (0.2-0.64)	200-550 (61-168)	M8 R4 M8 R4	200-450 (61-137)	M8 R4 M8 R4	200-400 (61-122)	M8 R4 M8 R4		
		GP	.040-.150 (1.0-3.8)	.006-.015 (0.15-0.38)	250-650 (76-198)	M6 M4 M6 M4	250-600 (76-183)	M6 M4 M6 M4	200-450 (61-137)	M6 M4 M6 M4		
		F	.010-.050 (0.25-1.3)	.005-.010 (0.13-0.25)	300-750 (91-229)	M4 C5 M4 C5	250-700 (76-213)	M4 C5 M4 C5	200-500 (61-152)	M4 C5 M4 C5		
	UNCOATED	VPUK20	R	.100-.200 (2.5-5.1)	.005-.018 (0.13-0.46)	75-300 (23-91)	M7 M7	50-250 (15-76)	M7 M7	50-150 (15-46)	M7 M7	
			GP	.075-.150 (1.9-3.8)	.007-.011 (0.18-0.28)	100-350 (30-107)	M7 M7	75-300 (23-91)	M7 M7	75-250 (23-76)	M7 M7	
			F	.010-.050 (0.25-1.3)	.002-.008 (0.05-0.2)	100-400 (30-122)	M7 M7	75-300 (23-91)	M7 M7	75-250 (23-76)	M7 M7	
		VPUS10	R	.100-.200 (2.5-5.1)	.005-.015 (0.13-0.38)	75-300 (23-91)	M6 M7 M6 M7	50-250 (15-76)	M6 M7 M6 M7	50-150 (15-46)	M6 M7 M6 M7	
			GP	.075-.150 (1.9-3.8)	.007-.012 (0.18-0.3)	100-350 (30-107)	M6 C5 M6 C5	75-300 (23-91)	M6 C5 M6 C5	75-250 (23-76)	M6 C5 M6 C5	
			F	.010-.050 (0.25-1.3)	.002-.005 (0.05-0.13)	100-400 (30-122)	M6 C5 M6 C5	75-300 (23-91)	M6 C5 M6 C5	75-250 (23-76)	M6 C5 M6 C5	

R = Roughing GP = General Purpose F = Finishing
 Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .
 Black and/or **Bold** indicates alternate choice.

ISO POSITIVE TOP FORM GEOMETRY										
SFM/CHIPBREAKER DESIGNATION										
	Operation	DOC (mm)	IPR (mm/rev)	Ferritic & Martensitic		Austenitic		pH & Duplex		
				SFM	Geo.	SFM	Geo.	SFM	Geo.	
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	
PVD COATED	VP9625	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	50-250 (15-76)	PM2* PM2*	50-200 (15-61)	PM2* PM2*	50-125 (15-38)	PM2* PM2*
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	100-275 (30-84)	PM2* PM2*	100-225 (30-69)	PM2* PM2*	50-150 (15-46)	PM2* PM2*
	VP9610	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	100-400 (30-122)	PM2* PM2*	100-300 (30-91)	PM2* PM2*	100-250 (30-76)	PM2* PM2*
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	200-500 (61-152)	PM2* 1A* PM2* 1A*	100-350 (30-107)	PM2* 1A* PM2* 1A*	100-300 (30-91)	PM2* 1A* PM2* 1A*
MTCVD COATED	VP5515	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	250-750 (76-229)	PM2* PM4** PM2* PM4**	250-700 (76-213)	PM2* PM4** PM2* PM4**	200-550 (61-168)	PM2* PM4** PM2* PM4**
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	400-1200 (122-366)	PF4* PF4*	250-800 (76-244)	PF4* PF4*	200-650 (61-198)	PF4* PF4*
	VP5525	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	250-650 (76-198)	PM2* PM4** PM2* PM4**	250-700 (76-213)	PM2* PM4** PM2* PM4**	200-550 (61-168)	PM2* PM4** PM2* PM4**
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	300-1000 (91-305)	PF4* PF4*	250-800 (76-244)	PF4* PF4*	200-650 (61-198)	PF4* PF4*
	VP5535	R	.010-100 (0.25-2.5)	.005-.014 (0.13-0.36)	250-600 (76-183)	PM2* PM2*	250-550 (76-168)	PM2* PM2*	200-450 (61-137)	PM2* PM2*
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	250-750 (76-229)	PM2* PM2*	250-650 (76-198)	PM2* PM2*	200-500 (61-152)	PM2* PM2*
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	300-850 (91-259)	PM2* PM2*	250-750 (76-229)	PM2* PM2*	200-600 (61-183)	PM2* PM2*
	VP8515	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	250-700 (76-213)	PM2 PM2	250-600 (76-183)	PM2 PM2	200-500 (61-152)	PM2 PM2
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	400-1000 (122-305)	PM2 PM2	250-700 (76-213)	PM2 PM2	200-600 (61-183)	PM2 PM2
	VP8525	R	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	250-600 (76-183)	PM2 PM2	250-600 (76-183)	PM2 PM2	200-500 (61-152)	PM2 PM2
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	300-800 (91-244)	PM2 PM2	250-700 (76-213)	PM2 PM2	200-600 (61-183)	PM2 PM2

R = Roughing

GP = General Purpose

F = Finishing

Red and/or **Bold** print indicates primary choice.

* Continuous Cut

** Moderate Interruption

Black and/or **Bold** indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

TURNING INSERTS

Stainless Steels

Application Guide

ISO POSITIVE TOP FORM GEOMETRY												
SFM/CHIPBREAKER DESIGNATION												
	Operation	DOC (mm)	IPR (mm/rev)	Ferritic & Martensitic			Austenitic			pH & Duplex		
				SFM	Geo.		SFM	Geo.		SFM	Geo.	
				(Vm/min)	1st	2nd	(Vm/min)	1st	2nd	(Vm/min)	1st	2nd
UNCOATED	VPUK20	R	-	-	-	-	-	-	-	-	-	
		GP	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	100-350 (30-107)	1A* 2A*	75-300 (23-91)	1A* 2A*	75-250 (23-76)	1A* 2A*	75-250 (23-76)	1A* 2A*
		F	.005-.050 (0.13-1.3)	.002-.005 (0.05-0.13)	100-400 (30-122)	1A* 2A*	75-300 (23-91)	1A* 2A*	75-250 (23-76)	1A* 2A*	75-250 (23-76)	1A* 2A*
	VPU10	R	-	-	-	-	-	-	-	-	-	
		GP	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	100-350 (30-107)	1A* 2A*	75-300 (23-91)	1A* 2A*	75-250 (23-76)	1A* 2A*	75-250 (23-76)	1A* 2A*
		F	.005-.050 (0.13-1.3)	.002-.005 (0.05-0.13)	100-400 (30-122)	1A* 2A*	75-300 (23-91)	1A* 2A*	75-250 (23-76)	1A* 2A*	75-250 (23-76)	1A* 2A*

R = Roughing GP = General Purpose F = Finishing

* Continuous Cut ** Moderate Interruption

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .

Black and/or **Bold** indicates alternate choice.

TURNING INSERTS

Cast Irons

Grade Selection Guide

CAST IRONS				
ISO	K30	K20	K10	K01
ANSI	C1	C2	C3	C4
Typical Failure Modes	<ul style="list-style-type: none"> • Fracture • Chipping • Build-up 	<ul style="list-style-type: none"> • Chipping • Wear • Build-up 	<ul style="list-style-type: none"> • Wear • Build-up 	
Application	Roughing	General Purpose		Finishing
PVD COATED CARBIDE			VP9610	
MTCVD COATED CARBIDE	VP5525	*VP5515	*VP1510	*VP1505
UNCOATED CARBIDE		VPUK20	VPUS10	VPUK10
pCBN For Chilled Irons Only			VC722	VC733
			VC724	

* Indicates first choice for high speeds

TURNING INSERTS

Cast Irons

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY

SFM/CHIPBREAKER DESIGNATION

	Operation	DOC (mm)	IPR (mm/rev)	Gray Cast Iron 180 - 220 BHN		Gray Cast Iron 220 - 260 BHN		Ductile & Malleable Cast Iron 140 - 200 BHN		Ductile & Malleable Cast Iron 200 - 260 BHN		Powder Metals			
				SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd
PVD COATED	VP9610	R	.080-.200 (2.0-5.1)	.005-.015 (0.13-0.38)	75-300 (23-91)	FT M8 FT M8	75-275 (23-84)	FT M8 FT M8	75-275 (23-84)	FT M8 FT M8	75-250 (23-76)	FT M8 FT M8	300-550 (94-168)	FT M8 FT M8	
		GP	.060-.150 (1.5-3.8)	.006-.012 (0.15-0.3)	75-325 (23-99)	FT M8 FT M8	75-300 (23-91)	FT M8 FT M8	75-300 (23-91)	FT M8 FT M8	75-275 (23-84)	FT M8 FT M8	400-650 (122-198)	FT M8 FT M8	
		F	.020-.080 (0.5-2.0)	.004-.008 (0.1-0.2)	75-350 (23-107)	FT M6 FT M6	75-325 (23-99)	FT M6 FT M6	75-325 (23-99)	FT M6 FT M6	75-300 (23-91)	FT M6 FT M6	400-750 (122-229)	FT M6 FT M6	
MTCVD COATED	VP1505	R	.080-.250 (2.0-6.4)	.008-.020 (0.2-0.5)	1000-1200 (305-366)	R4 FT R4 FT	800-1000 (244-305)	R4 FT R4 FT	800-1000 (244-305)	R4 FT R4 FT	700-900 (213-274)	R4 FT R4 FT	700-900 (213-274)	R4 FT R4 FT	
		GP	.080-.200 (2.0-5.1)	.008-.014 (0.2-0.36)	1200-1400 (366-427)	R4 M8 R4 M8	1000-1300 (305-396)	R4 M8 R4 M8	1000-1200 (305-366)	R4 M8 R4 M8	800-1000 (244-305)	R4 M8 R4 M8	800-1000 (244-305)	R4 M8 R4 M8	
		F	.010-.080 (0.25-2.0)	.004-.008 (0.1-0.2)	1400-1800 (427-549)	M8 M5 M8 M5	1200-1600 (366-488)	M8 M5 M8 M5	1200-1400 (366-427)	M8 M5 M8 M5	1000-1200 (305-366)	M8 M5 M8 M5	1000-1200 (305-366)	M8 M5 M8 M5	
	VP1510	R	.080-.250 (2.0-6.4)	.008-.022 (0.2-0.56)	900-1100 (274-335)	R3 FT R3 FT	700-900 (213-274)	R3 FT R3 FT	700-850 (213-259)	R3 FT R3 FT	600-750 (183-229)	R3 FT R3 FT	600-750 (183-229)	R3 FT R3 FT	
		GP	.080-.200 (2.0-5.1)	.008-.016 (0.2-0.4)	1000-1200 (305-366)	R3 M8 R3 M8	900-1100 (274-335)	R3 M8 R3 M8	850-1100 (259-335)	R3 M8 R3 M8	750-900 (229-274)	R3 M8 R3 M8	750-900 (229-274)	R3 M8 R3 M8	
		F	.010-.080 (0.25-2.0)	.004-.010 (0.1-0.25)	1200-1400 (366-427)	M8 M5 M8 M5	1100-1300 (335-396)	M8 M5 M8 M5	1100-1300 (335-396)	M8 M5 M8 M5	900-1100 (274-335)	M8 M5 M8 M5	900-1100 (274-335)	M8 M5 M8 M5	
	VP5515	R	.080-.300 (2.0-7.6)	.008-.025 (0.2-0.64)	600-800 (183-244)	R4 R3 R4 R3	600-700 (183-213)	R4 R3 R4 R3	600-750 (183-229)	R4 R3 R4 R3	400-550 (122-168)	R4 R3 R4 R3	- -	- -	
		GP	.080-.250 (2.0-6.4)	.008-.018 (0.2-0.46)	700-900 (213-274)	R4 R3 R4 R3	650-750 (198-229)	R4 R3 R4 R3	650-750 (198-229)	R4 R3 R4 R3	500-600 (152-183)	R4 R3 R4 R3	- -	- -	
		F	-	-	-	-	-	-	-	-	-	-	-	-	
	VP5525	R	.080-.300 (2.0-7.6)	.008-.025 (0.2-0.64)	500-700 (152-213)	R4 R3 R4 R3	400-600 (122-183)	R4 R3 R4 R3	400-600 (122-183)	R4 R3 R4 R3	400-550 (122-168)	R4 R3 R4 R3	- -	- -	
		GP	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	

R = Roughing GP = General Purpose F = Finishing FT = Flat Top

Red and/or **Bold** print indicates primary choice .

Cutting parameters provided for ANSI negative are based on CNMG 433

Black and/or **Bold** indicates alternate choice.

Cutting parameters provided for ISO positive are based on CCMT 432

ANSI NEGATIVE TOP FORM GEOMETRY														
SFM/CHIPBREAKER DESIGNATION														
	Operation	DOC (mm)	IPR (mm/rev)	Gray Cast Iron 180 - 220 BHN		Gray Cast Iron 220 - 260 BHN		Ductile & Malleable Cast Iron 140 - 200 BHN		Ductile & Malleable Cast Iron 200 - 260 BHN		Powder Metals		
				SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	
UNCOATED	VPUK20	R	.080-.200 (2.0-5.1)	.005-.015 (0.13-0.38)	75-200 (23-61)	FT M7 FT M7	75-175 (23-53)	FT M7 FT M7	75-175 (23-53)	FT M7 FT M7	75-150 (23-46)	FT M7 FT M7	-	-
		GP	.060-.150 (1.5-3.8)	.006-.012 (0.15-0.3)	75-225 (23-69)	FT M7 FT M7	75-200 (23-61)	FT M7 FT M7	75-200 (23-61)	FT M7 FT M7	75-175 (23-53)	FT M7 FT M7	-	-
		F	.020-.080 (0.5-2.0)	.004-.008 (0.1-0.2)	75-275 (23-84)	FT M7 FT M7	75-225 (23-69)	FT M7 FT M7	75-225 (23-69)	FT M7 FT M7	75-200 (23-61)	FT M7 FT M7	-	-
	VPUS10	R	.080-.200 (2.0-5.1)	.005-.015 (0.13-0.38)	100-250 (30-76)	FT M8 FT M8	75-225 (23-69)	FT M8 FT M8	75-225 (23-69)	FT M8 FT M8	75-200 (23-61)	FT M8 FT M8	-	-
		GP	.060-.150 (1.5-3.8)	.006-.012 (0.15-0.3)	100-250 (30-76)	FT M8 FT M8	75-225 (23-69)	FT M8 FT M8	75-225 (23-69)	FT M8 FT M8	75-200 (23-61)	FT M8 FT M8	-	-
		F	.020-.080 (0.5-2.0)	.004-.008 (0.1-0.2)	100-300 (30-91)	M8 M6 M8 M6	75-250 (23-76)	M8 M6 M8 M6	75-250 (23-76)	M8 M6 M8 M6	75-225 (23-69)	M8 M6 M8 M6	-	-
	VPUK10	R	.080-.200 (2.0-5.1)	.005-.015 (0.13-0.38)	100-300 (30-91)	M7 MS M7 MS	75-275 (23-84)	M7 MS M7 MS	75-275 (23-84)	M7 MS M7 MS	75-250 (23-76)	M7 MS M7 MS	-	-
		GP	.060-.150 (1.5-3.8)	.006-.012 (0.15-0.3)	100-350 (30-107)	M7 MS M7 MS	75-300 (23-91)	M7 MS M7 MS	75-300 (23-91)	M7 MS M7 MS	75-250 (23-76)	M7 MS M7 MS	-	-
		F	.020-.080 (0.5-2.0)	.004-.008 (0.1-0.2)	100-400 (30-122)	M7 MS M7 MS	75-350 (23-107)	M7 MS M7 MS	75-350 (23-107)	M7 MS M7 MS	75-275 (23-84)	M7 MS M7 MS	-	-
	CERAMIC	VPQ130	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-
			GP	.050-.150 (1.3-3.8)	.005-.012 (0.13-0.36)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-
			F	.007-.050 (0.18-1.3)	.004-.010 (0.1-0.25)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-

R = Roughing GP = General Purpose F = Finishing FT = Flat Top

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .

Black and/or **Bold** indicates alternate choice.

TURNING INSERTS

Cast Irons

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY

SFM/CHIPBREAKER DESIGNATION

	Operation	DOC (mm)	IPR (mm/rev)	Gray Cast Iron 180 - 220 BHN		Gray Cast Iron 220 - 260 BHN		Ductile & Malleable Cast Iron 140 - 200 BHN		Ductile & Malleable Cast Iron 200 - 260 BHN		Powder Metals	
				SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd
Cubic Boron Nitride VC733	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-
	GP	.050-.150 (1.3-3.8)	.005-.014 (0.13-0.36)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-
	F	.007-.050 (0.18-1.3)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-
Polycrystalline VC724	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-
	GP	.050-.150 (1.3-3.8)	.005-.014 (0.13-0.36)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-
	F	.007-.050 (0.18-1.3)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-
pCBN VC722 *	R	-	-	-	-	-	-	-	-	-	-	-	-
	GP	.025-.060* (0.64-1.5)	.006-.020 (0.15-0.51)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-
	F	.007-.025* (0.18-0.64)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-

* VC722 Maximum DOC should not exceed segment Length.

R = Roughing GP = General Purpose F = Finishing FT = Flat Top

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .

Black and/or **Bold** indicates alternate choice.

ISO POSITIVE TOP FORM GEOMETRY														
SFM/CHIPBREAKER DESIGNATION														
	Operation	DOC (mm)	IPR (mm/rev)	Gray Cast Iron 180 - 220 BHN		Gray Cast Iron 220 - 260 BHN		Ductile & Malleable Cast Iron 140 - 200 BHN		Ductile & Malleable Cast Iron 200 - 260 BHN		Powder Metals		
				SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	SFM (Vm/min)	Geo. 1st 2nd	
PVD COATED	VP9610	R	-	-	-	-	-	-	-	-	-	-	-	
		GP	.010-.100 (0.25-2.5)	.005-.012 (0.13-0.3)	75-325 (23-99)	PM2* PM2*	75-300 (23-91)	PM2* PM2*	75-300 (23-91)	PM2* PM2*	75-275 (23-84)	PM2* PM2*	400-650 (122-198)	PM2* PM2*
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	75-350 (23-107)	PM2* 1A* PM2* 1A*	75-325 (23-99)	PM2* 1A* PM2* 1A*	75-325 (23-99)	PM2* 1A* PM2* 1A*	75-300 (23-91)	PM2* 1A* PM2* 1A*	400-750 (122-229)	PM2* 1A* PM2* 1A*
MTCVD COATED	VP1505	R	-	-	-	-	-	-	-	-	-	-	-	
		GP	.030-.080 (0.8-2.0)	.005-.015 (0.13-0.38)	1200-1400 (366-427)	PM2* PM4** PM2* PM4**	1000-1300 (305-396)	PM2* PM4** PM2* PM4**	1000-1200 (305-366)	PM2* PM4** PM2* PM4**	800-1000 (244-305)	PM2* PM4** PM2* PM4**	800-1000 (244-305)	PM2* PM4** PM2* PM4**
		F	.020-.040 (0.5-1.0)	.004-.008 (0.1-0.2)	1400-1800 (427-549)	PF4* PF4*	1200-1600 (366-488)	PF4* PF4*	1200-1400 (366-427)	PF4* PF4*	1000-1200 (305-366)	PF4* PF4*	1000-1200 (305-366)	PF4* PF4*
	VP1510	R	-	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	1000-1200 (305-366)	PM2* PM4** PM2* PM4**	900-1100 (274-335)	PM2* PM4** PM2* PM4**	850-1100 (259-335)	PM2* PM4** PM2* PM4**	750-900 (229-274)	PM2* PM4** PM2* PM4**	750-900 (229-274)	PM2* PM4** PM2* PM4**
		F	.020-.040 (0.5-1.0)	.004-.010 (0.1-0.25)	1200-1400 (366-427)	PF4* PF4*	1100-1300 (335-396)	PF4* PF4*	1100-1300 (335-396)	PF4* PF4*	900-1100 (274-335)	PF4* PF4*	900-1100 (274-335)	PF4* PF4*
	VP5515	R	-	-	-	-	-	-	-	-	-	-	-	-
		GP	.030-.120 (0.8-3.1)	.005-.020 (0.13-0.5)	700-900 (213-274)	PM2* PM4** PM2* PM4**	600-700 (183-213)	PM2* PM4** PM2* PM4**	600-750 (183-229)	PM2* PM4** PM2* PM4**	500-600 (152-183)	PM2* PM4** PM2* PM4**	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-
UNCOATED	VPUK20	R	-	-	-	-	-	-	-	-	-	-	-	
		GP	.010-.100 (0.25-2.5)	.005-.012 (0.13-0.3)	75-225 (23-69)	PM2* 1A* PM2* 1A*	75-200 (23-61)	PM2* 1A* PM2* 1A*	75-200 (23-61)	PM2* 1A* PM2* 1A*	75-175 (23-53)	PM2* 1A* PM2* 1A*	-	-
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	75-275 (23-84)	PM2* 1A* PM2* 1A*	75-225 (23-69)	PM2* 1A* PM2* 1A*	75-225 (23-69)	PM2* 1A* PM2* 1A*	75-200 (23-61)	PM2* 1A* PM2* 1A*	-	-
	VPU510	R	-	-	-	-	-	-	-	-	-	-	-	-
		GP	.010-.100 (0.25-2.5)	.005-.012 (0.13-0.3)	100-250 (30-76)	PM2* PM2*	75-225 (23-69)	PM2* PM2*	75-225 (23-69)	PM2* PM2*	75-200 (23-61)	PM2* PM2*	-	-
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	100-300 (30-91)	PM2* 1A* PM2* 1A*	75-250 (23-76)	PM2* 1A* PM2* 1A*	75-250 (23-76)	PM2* 1A* PM2* 1A*	75-225 (23-69)	PM2* 1A* PM2* 1A*	-	-
	VPUK10	R	-	-	-	-	-	-	-	-	-	-	-	-
		GP	.060-.150 (1.5-3.8)	.006-.012 (0.15-0.3)	100-350 (30-107)	2A 2A	75-300 (23-91)	2A 2A	75-250 (23-76)	2A 2A	75-225 (23-69)	2A 2A	-	-
		F	.020-.080 (0.5-2.0)	.004-.008 (0.1-0.2)	100-400 (30-122)	2A 2A	75-350 (23-107)	2A 2A	75-275 (23-84)	2A 2A	75-250 (23-76)	2A 2A	-	-

R = Roughing GP = General Purpose F = Finishing FT = Flat Top Red and/or Bold print indicates primary choice .
 * Continuous Cut ** Moderate Interruption Black and/or Bold indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

TURNING INSERTS

Cast Irons

Application Guide

ISO POSITIVE TOP FORM GEOMETRY

SFM/CHIPBREAKER DESIGNATION

	Operation	DOC (mm)	IPR (mm/rev)	Gray Cast Iron 180 - 220 BHN		Gray Cast Iron 220 - 260 BHN		Ductile & Malleable Cast Iron 140 - 200 BHN		Ductile & Malleable Cast Iron 200 - 260 BHN		Powder Metals			
				SFM		SFM		SFM		SFM		SFM		SFM	
				(Vm/min)	Geo.	(Vm/min)	Geo.	(Vm/min)	Geo.	(Vm/min)	Geo.	(Vm/min)	Geo.	(Vm/min)	Geo.
				1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ceramic VPC130	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-	-		
	GP	.050-.150 (1.3-3.8)	.005-.012 (0.13-0.36)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-	-		
	F	.007-.050 (0.18-1.3)	.004-.010 (0.1-0.25)	1500-3000 (457-914)	-	1200-2000 (366-610)	-	-	-	-	-	-	-		
Polycrystalline Nitride VC733	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-		
	GP	.050-.150 (1.3-3.8)	.005-.014 (0.13-0.36)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-		
	F	.007-.050 (0.18-1.3)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-		
Polycrystalline Cubic Boron Nitride VC724	R	>.150 (>3.8)	.006-.016 (0.15-0.41)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-		
	GP	.050-.150 (1.3-3.8)	.005-.014 (0.13-0.36)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-		
	F	.007-.050 (0.18-1.3)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-		
pCBN VC722 *	R	-	-	-	-	-	-	-	-	-	-	-	-		
	GP	.025-.060* (0.64-1.5)	.006-.020 (0.15-0.51)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	200-400 (61-122)	-		
	F	.007-.025* (0.18-0.64)	.004-.008 (0.1-2.0)	1500-3500 (457-1067)	-	1000-2000 (305-610)	-	-	-	-	-	300-600 (91-183)	-		

* VC722 Maximum DOC should not exceed segment length.

R = Roughing GP = General Purpose F = Finishing

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or Bold print indicates primary choice .

Black and/or Bold indicates alternate choice.

HIGH TEMP ALLOYS				
ISO	S40	S30	S20	S10
Typical Failure Modes	<ul style="list-style-type: none"> Deformation Fracture Build-up 	<ul style="list-style-type: none"> Chipping Build-up Deformation 	<ul style="list-style-type: none"> Wear Build-up Deformation 	
Application	Roughing	General Purpose	Finishing	
PVD COATED CARBIDE		**VP9625	**VP9610	
MTCVD COATED CARBIDE		*VP8525	VP8515	
UNCOATED CARBIDE		**VPUK20	**VPUS10	
CERAMICS		Q8		

* Recommended for roughing

** Recommended for finishing

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Iron Base Alloys- A-286 Disalloy, Incoloy			Nickel Base Alloys- Monel, Hastelloy, Inconel, Waspaloy			Cobalt Base Alloys- Haynes Stellite			Titanium Alloys - 6Al-4V		
				SFM		Geo.	SFM		Geo.	SFM		Geo.	SFM		Geo.
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd		
PVD COATED	VP9625	R	.050-.250 (1.3-6.4)	.006-.025 (0.15-0.64)	100 (30)	M8 M6 M8 M6	50 (15)	M8 M6 M8 M6	-	-	100 (30)	M8 M6 M8 M6			
		GP	.040-1.50 (1.0-3.8)	.005-.020 (0.13-0.51)	150 (46)	M8 M6 M8 M6	100 (30)	M8 M6 M8 M6	-	-	150 (46)	M8 M6 M8 M6			
		F	.005-.080 (0.13-2.0)	.003-.010 (0.08-0.25)	200 (61)	M6 C5 M6 C5	100 (30)	M6 C5 M6 C5	-	-	200 (61)	M6 C5 M6 C5			
	VP9610	R	.060-.150 (1.5-3.8)	.006-.015 (0.15-0.38)	250 (76)	M8 M6 M8 M6	125 (38)	M8 M6 M8 M6	100 (30)	M8 M6 M8 M6	250 (76)	M8 M6 M8 M6			
		GP	.015-.060 (0.38-1.50)	.004-.010 (0.1-0.25)	300 (91)	M8 M6 M8 M6	150 (46)	M8 M6 M8 M6	125 (38)	M8 M6 M8 M6	300 (91)	M8 M6 M8 M6			
		F	.005-.025 (0.13-0.6)	.002-.005 (0.05-0.13)	325 (99)	C5 M6 C5 M6	200 (61)	C5 M6 C5 M6	175 (53)	C5 M6 C5 M6	350 (107)	C5 M6 C5 M6			

R = Roughing GP = General Purpose F = Finishing

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or Bold print indicates primary choice .

Black and/or Bold indicates alternate choice.

TURNING INSERTS

High Temp Alloys

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY

SFM/CHIPBREAKER DESIGNATION

	Operation	DOC (mm)	IPR (mm/rev)	Iron Base Alloys- A-286 Disicalloy, Incoloy		Nickel Base Alloys- Monel, Hastelloy, Inconel, Waspaloy			Cobalt Base Alloys- Haynes Stellite			Titanium Alloys - 6Al-4V				
				SFM		Geo.		SFM		Geo.	SFM		Geo.	SFM		Geo.
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	
MTCVD COATED	VP8515	R	.080-.200 (2.0-5.1)	.008-.020 (0.2-0.51)	100-200 (30-61)	M8 R4 M8 R4	50-200 (15-61)	M8 R4 M8 R4	100-150 (30-46)	M8 R4 M8 R4	- -	- -				
		GP	.040-.150 (1.0-3.8)	.006-.012 (0.15-0.3)	150-250 (46-76)	M6 M4 M6 M4	100-200 (30-61)	M6 M4 M6 M4	100-150 (30-46)	M6 M4 M6 M4	- -	- -				
		F	.010-.050 (0.25-1.3)	.005-.008 (0.13-0.2)	200-350 (61-107)	M4 C5 M4 C5	100-250 (30-76)	M4 C5 M4 C5	100-200 (30-61)	M4 C5 M4 C5	- -	- -				
	VP8525	R	.080-.200 (2.0-5.1)	.008-.020 (0.2-0.51)	100-150 (30-46)	M8 R4 M8 R4	50-150 (15-46)	M8 R4 M8 R4	75-125 (23-38)	M8 R4 M8 R4	- -	- -				
		GP	.040-.150 (1.0-3.8)	.006-.012 (0.15-0.3)	100-200 (30-61)	M6 M4 M6 M4	75-150 (23-46)	M6 M4 M6 M4	75-125 (23-38)	M6 M4 M6 M4	- -	- -				
		F	.010-.050 (0.25-1.3)	.005-.008 (0.13-0.25)	100-250 (30-76)	M4 C5 M4 C5	75-175 (23-53)	M4 C5 M4 C5	75-150 (23-46)	M4 C5 M4 C5	- -	- -				
UNCOATED	VPUK20	R	.060-.150 (1.5-3.8)	.006-.015 (0.15-0.38)	175 (53)	M7 C5 M7 C5	50 (15)	M7 C5 M7 C5	40 (12)	M7 C5 M7 C5	150 (46)	M7 C5 M7 C5				
		GP	.015-.060 (0.38-1.50)	.004-.010 (0.1-0.25)	200 (61)	M7 C5 M7 C5	75 (23)	M7 C5 M7 C5	60 (18)	M7 C5 M7 C5	200 (61)	M7 C5 M7 C5				
		F	.005-.025 (0.13-0.6)	.002-.005 (0.05-0.13)	225 (69)	M7 C5 M7 C5	115 (35)	M7 C5 M7 C5	100 (30)	M7 C5 M7 C5	250 (76)	M7 C5 M7 C5				
	VPUS10	R	.060-.150 (1.5-3.8)	.006-.015 (0.15-0.38)	200 (61)	M6 M7 M6 M7	70 (21)	M6 M7 M6 M7	50 (15)	M6 M7 M6 M7	200 (61)	M6 M7 M6 M7				
		GP	.015-.060 (0.38-1.50)	.004-.010 (0.1-0.25)	250 (76)	M6 C5 M6 C5	100 (30)	M6 C5 M6 C5	75 (23)	M6 C5 M6 C5	250 (76)	M6 C5 M6 C5				
		F	.005-.025 (0.13-0.6)	.002-.005 (0.05-0.13)	275 (84)	M6 C5 M6 C5	150 (46)	M6 C5 M6 C5	125 (38)	M6 C5 M6 C5	300 (91)	M6 C5 M6 C5				
Ceramic Silicon Nitride	Q8	R	.060-.080 (1.5-2.0)	.006-.015 (0.15-0.38)	- -	- -	300-800 (91-244)	- -	- -	- -	- -					
		GP	.015-.060 (0.38-1.5)	.004-.010 (0.10-0.25)	- -	- -	300-800 (91-244)	- -	- -	- -	- -					
	F	-	-	-	-	-	-	-	-	-	-					

R = Roughing GP = General Purpose F = Finishing

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .

Black and/or **Bold** indicates alternate choice.

ISO POSITIVE TOP FORM GEOMETRY												
SFM/CHIPBREAKER DESIGNATION												
	Operation	DOC (mm)	IPR (mm/rev)	Iron Base Alloys- A-286 Discolloy, Incoloy		Nickel Base Alloys- Monel, Hastelloy, Inconel, Waspaloy		Cobalt Base Alloys- Haynes Stellite		Titanium Alloys - 6Al-4V		
				SFM	Geo.	SFM	Geo.	SFM	Geo.	SFM	Geo.	
				(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	(Vm/min)	1st 2nd	
PVD COATED	VP9625	R	-	-	-	-	-	-	-	-	-	
		GP	.010-.100 (0.25-2.5)	.005-.012 (0.13-0.3)	150 (46)	PM2* PM2*	75 (23)	PM2* PM2*	-	-	150 (46)	PM2* PM2*
		F	.005-.060 (0.13-1.5)	.003-.008 (0.08-0.2)	200 (61)	PM2* PM2*	100 (30)	PM2* PM2*	-	-	200 (61)	PM2* PM2*
	VP9610	R	-	-	-	-	-	-	-	-	-	-
		GP	.010-.040 (0.25-1.0)	.004-.008 (0.1-0.2)	300 (91)	PM2* PM2*	150 (46)	PM2* PM2*	125 (38)	PM2* PM2*	300 (91)	PM2* PM2*
		F	.005-.050 (0.13-1.3)	.003-.008 (0.08-0.2)	325 (99)	1A* 2A* 1A* 2A*	200 (61)	1A* 2A* 1A* 2A*	175 (53)	1A* 2A* 1A* 2A*	350 (107)	1A* 2A* 1A* 2A*
MTCVD COATED	VP8515	R	-	-	-	-	-	-	-	-	-	
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	150-250 (46-76)	PM2 PM2	100-200 (30-61)	PM2 PM2	100-150 (30-46)	PM2 PM2	-	-
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	200-350 (61-107)	PM2 PM2	100-250 (30-76)	PM2 PM2	100-200 (30-61)	PM2 PM2	-	-
	VP8525	R	-	-	-	-	-	-	-	-	-	-
		GP	.010-100 (0.25-2.5)	.005-.012 (0.13-0.3)	100-200 (30-61)	PM2 PM2	75-150 (23-46)	PM2 PM2	75-125 (23-38)	PM2 PM2	-	-
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	100-250 (30-76)	PM2 PM2	75-175 (23-53)	PM2 PM2	75-150 (23-46)	PM2 PM2	-	-
UNCOATED	VPUK20	R	-	-	-	-	-	-	-	-	-	
		GP	.010-.050 (0.25-1.3)	.005-.010 (0.13-0.25)	200 (61)	1A* 2A* 1A* 2A*	75 (23)	1A* 2A* 1A* 2A*	60 (18)	1A* 2A* 1A* 2A*	200 (61)	1A* 2A* 1A* 2A*
		F	.005-.050 (0.13-1.3)	.003-.008 (0.08-0.2)	225 (69)	1A* 2A* 1A* 2A*	115 (35)	1A* 2A* 1A* 2A*	100 (30)	1A* 2A* 1A* 2A*	250 (76)	1A* 2A* 1A* 2A*
	VPUS10	R	-	-	-	-	-	-	-	-	-	-
		GP	.010-.040 (0.25-1.)	.005-.010 (0.13-0.25)	250 (76)	1A* 2A* 1A* 2A*	100 (30)	1A* 2A* 1A* 2A*	75 (23)	1A* 2A* 1A* 2A*	250 (76)	1A* 2A* 1A* 2A*
		F	.005-.050 (0.13-1.3)	.003-.008 (0.08-0.2)	275 (84)	1A* 2A* 1A* 2A*	150 (46)	1A* 2A* 1A* 2A*	125 (38)	1A* 2A* 1A* 2A*	300 (91)	1A* 2A* 1A* 2A*
Ceramic Silicon Nitride	Q8	R	.060-.080 (1.5-2.0)	.006-.015 (0.15-0.38)	-	-	300-800 (91-244)	-	-	-	-	
		GP	.015-.060 (0.38-1.5)	.004-.010 (0.10-0.25)	-	-	300-800 (91-244)	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	

R = Roughing GP = General Purpose F = Finishing Red and/or Bold print indicates primary choice .
 * Continuous Cut ** Moderate Interruption Black and/or Bold indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

TURNING INSERTS

Aluminum & Non-Ferrous

Grade Selection Guide

ALUMINUM & NON-FERROUS				
ISO	N40	N30	N20	N10
ANSI	C1	C2	C3	C4
Typical Failure Modes	<ul style="list-style-type: none"> • Chipping • Wear 	<ul style="list-style-type: none"> • Wear • Build-up • Chipping 	<ul style="list-style-type: none"> • Wear • Build-up 	
Application	Roughing	General Purpose	Finishing	
PVD COATED CARBIDE		VP9625	*VP9610 *VP7615	
UNCOATED CARBIDE		VPUK20	VPUS10	
PCD		*VPD720		

* Indicates first choice

ANSI NEGATIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Aluminum Alloys < 7% Silicon		Aluminum Alloys 7 - 12 % Silicon		Aluminum Alloys > 12% Silicon		Copper Alloys					
				SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.	
					1st	2nd		1st	2nd		1st	2nd		1st	2nd
PVD COATED	VP9625	R	-	-	-	-	-	-	-	-	-	-			
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1500-2000 (457-610)	FT M7 FT M7	1250-1750 (381-533)	FT M7 FT M7	500-600 (152-183)	FT M7 FT M7	500-800 (152-244)	FT M7 FT M7			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	2000-2500 (610-762)	FT M7 FT M7	1750-2250 (533-686)	FT M7 FT M7	600-800 (183-244)	FT M7 FT M7	800-1200 (244-366)	FT M7 FT M7			
	VP9610	R	-	-	-	-	-	-	-	-	-	-			
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1600-2100 (488-640)	C5 C5	1300-1800 (396-549)	C5 C5	550-650 (168-198)	C5 C5	550-850 (168-259)	C5 C5			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	2100-2600 (610-792)	C5 C5	1800-2300 (549-701)	C5 C5	650-850 (198-259)	C5 C5	850-1300 (259-396)	C5 C5			
UNCOATED	VPUK20	R	-	-	-	-	-	-	-	-	-				
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1200-1400 (366-427)	M7 FT M7 FT	900-1100 (274-335)	M7 FT M7 FT	300-400 (91-122)	M7 FT M7 FT	300-450 (91-137)	M7 FT M7 FT			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	1400-1700 (427-518)	M7 FT M7 FT	1100-1400 (335-427)	M7 FT M7 FT	400-500 (122-152)	M7 FT M7 FT	450-750 (137-229)	M7 FT M7 FT			
	VPU510	R	-	-	-	-	-	-	-	-	-	-			
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1250-1500 (381-457)	C5 FT C5 FT	1000-1250 (305-381)	C5 FT C5 FT	400-500 (122-152)	C5 FT C5 FT	400-600 (122-183)	C5 FT C5 FT			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	1500-1750 (457-533)	C5 FT C5 FT	1250-1500 (381-457)	C5 FT C5 FT	600-800 (183-244)	C5 FT C5 FT	600-800 (183-244)	C5 FT C5 FT			
Polycrystalline Diamond PCD	VPD720*	R	.050-.400 (1.3-10.2)	.004-.024 (0.1-0.6)	>3000 (>914)	H or F H or F	2500-4500 (762-1372)	H or F H or F	1500-3000 (457-914)	H or F H or F	800-1200 (244-366)	H or F H or F			
		GP	.050-.110 (1.3-2.5)	.003-.018 (0.08-0.46)	>3000 (>914)	F or H F or H	3000-6000 (914-1829)	F or H F or H	2000-3000 (610-914)	F or H F or H	1000-2000 (305-610)	F or H F or H			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	>6000 (>1829)	F F	>6000 (>1829)	F F	2000-3500 (610-1067)	F F	1500-2500 (457-762)	F F			

*VPD720 - Maximum DOC should not exceed 75% of segment length.
 Example: 1/4" I.C. - Maximum DOC = 0.080
 3/8" & 1/2" I.C. - Maximum DOC = 0.110
 "H" Style Inserts (Full Edge Segments): Maximum DOC up to 0.250 in good cutting conditions

R = Roughing GP = General Purpose F = Finishing FT = Flat Top
 Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

Red and/or **Bold** print indicates primary choice .
 Black and/or **Bold** indicates alternate choice.

TURNING INSERTS

Aluminum & Non-Ferrous

Application Guide

ISO POSITIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Aluminum Alloys < 7% Silicon		Aluminum Alloys 7 - 12 % Silicon		Aluminum Alloys > 12% Silicon		Copper Alloys					
				SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.	
					1st	2nd		1st	2nd		1st	2nd		1st	2nd
PVD COATED	VP 7615	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1500-2000 (457-610)	1L* 1L*	1250-1750 (381-533)	1L* 1L*	500-600 (152-183)	1L* 1L*	500-800 (152-244)	1L* 1L*			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	2000-2500 (610-762)	1L* 1L*	1750-2250 (533-686)	1L* 1L*	600-800 (183-244)	1L* 1L*	800-1200 (244-366)	1L* 1L*			
	VP9625	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.050-.100 (0.5-2.5)	.008-.020 (0.13-0.46)	1500-2000 (457-610)	PM2* PM2*	1250-1750 (381-533)	PM2* PM2*	500-600 (152-183)	PM2* PM2*	500-800 (152-244)	PM2* PM2*			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	2000-2500 (610-762)	1A* 2A* 1A* 2A*	1750-2250 (533-686)	1A* 2A* 1A* 2A*	600-800 (183-244)	1A* 2A* 1A* 2A*	800-1200 (244-366)	1A* 2A* 1A* 2A*			
	VP9610	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1500-2000 (457-610)	PM2* PM2*	1250-1750 (381-533)	PM2* PM2*	500-600 (152-183)	PM2* PM2*	500-800 (152-244)	PM2* PM2*			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	2000-2500 (610-762)	PM2* 1A* PM2* 1A*	1750-2250 (533-686)	PM2* 1A* PM2* 1A*	600-800 (183-244)	PM2* 1A* PM2* 1A*	800-1200 (244-366)	PM2* 1A* PM2* 1A*			
UNCOATED	VPUK20	R	-	-	-	-	-	-	-	-	-	-			
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1200-1400 (366-427)	1A* 2A* 1A* 2A*	900-1100 (274-335)	1A* 2A* 1A* 2A*	300-400 (91-122)	1A* 2A* 1A* 2A*	300-450 (91-137)	1A* 2A* 1A* 2A*			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	1400-1700 (427-518)	1A* 2A* 1A* 2A*	1100-1400 (335-427)	1A* 2A* 1A* 2A*	400-500 (122-152)	1A* 2A* 1A* 2A*	450-750 (137-229)	1A* 2A* 1A* 2A*			
	VPUS10	R	-	-	-	-	-	-	-	-	-	-			
		GP	.050-.100 (1.3-2.5)	.008-.020 (0.2-0.5)	1250-1500 (381-457)	1A* 2A* 1A* 2A*	1250-1500 (381-457)	1A* 2A* 1A* 2A*	1250-1500 (381-457)	1A* 2A* 1A* 2A*	1250-1500 (381-457)	1A* 2A* 1A* 2A*			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	1500-1750 (457-533)	1A* 2A* 1A* 2A*	1500-1750 (457-533)	1A* 2A* 1A* 2A*	1500-1750 (457-533)	1A* 2A* 1A* 2A*	1500-1750 (457-533)	1A* 2A* 1A* 2A*			
Polycrystalline Diamond PCD	VPD720***	R	.050-.400 (1.3-10.2)	.004-.024 (0.1-0.6)	>3000 (>914)	H or F H or F	2500-4500 (762-1372)	H or F H or F	1500-3000 (457-914)	H or F H or F	800-1200 (244-366)	H or F H or F			
		GP	.050-.110 (1.3-2.5)	.003-.018 (0.08-0.46)	>3000 (>914)	F or H F or H	3000-6000 (914-1829)	F or H F or H	2000-3000 (610-914)	F or H F or H	1000-2000 (305-610)	F or H F or H			
		F	.010-.050 (0.25-1.3)	.003-.008 (0.08-0.2)	>6000 (>1829)	F F	>6000 (>1829)	F F	2000-3500 (610-1067)	F F	1500-2500 (457-762)	F F			

***VPD720 - Maximum DOC should not exceed 75% of segment length.
 Example: 1/4" I.C. - Maximum DOC = 0.080
 3/8" & 1/2" I.C. - Maximum DOC = 0.110
 "H" Style Inserts (Full Edge Segments): Maximum DOC up to 0.250 in good cutting conditions

R = Roughing GP = General Purpose F = Finishing

* Continuous Cut ** Moderate Interruption

Red and/or Bold print indicates primary choice .

Black and/or Bold indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433

Cutting parameters provided for ISO positive are based on CCMT 432

TURNING INSERTS

Hardened Materials

Grade Selection Guide

HARDENED MATERIALS				
ISO	H40	H30	H20	H10
Typical Failure Modes	<ul style="list-style-type: none"> Chipping Wear 	<ul style="list-style-type: none"> Wear Chipping Fracture 	<ul style="list-style-type: none"> Wear Chipping Cratering Deformation 	
Application	Roughing	General Purpose	Finishing	
MTCVD COATED CARBIDES		VP5535 *VP5525 *VP5515 **VP1510 **VP1505		
COATED CERAMICS		VPZ215 VPZ205		
CBN		VPC225		

* Indicates first choice for roughing

** Indicates first choice for finishing

TURNING INSERTS

Hardened Materials

Application Guide

ANSI NEGATIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Alloy Steels 40 - 50 Rc		Alloy Steels 50 - 62 Rc		Tool & Die Steels 50 - 60 Rc		Chilled Cast Irons Ni-Resist Irons 40 - 50 Rc		Chilled Cast Irons Ni-Resist Irons 50 - 60 Rc			
				SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.
					1st 2nd		1st 2nd		1st 2nd		1st 2nd		1st 2nd		1st 2nd
MTCVD COATED	VP1505	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	-	-	-	-	-	-	-	-	-	-	-		
		F	.005-.040 (0.13-1.0)	.002-.008 (0.05-.02)	180-350 (55-107)	R4 M8 R4 M8	150-250 (45-76)	R4 M8 R4 M8	125-225 (38-68)	R4 M8 R4 M8	-	-	-	-	
	VP1510	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.020-.080 (0.51-2.0)	.005-.012 (0.13-0.3)	150-270 (45-82)	R3 M5 R3 M5	125-200 (38-61)	R3 M5 R3 M5	100-180 (30-55)	R3 M5 R3 M5	-	-	-	-	
		F	.005-.040 (0.13-1.0)	.002-.008 (0.05-.02)	150-300 (45-91)	R3 M5 R3 M5	125-225 (38-68)	R3 M5 R3 M5	100-200 (30-61)	R3 M5 R3 M5	-	-	-	-	
	VP5515	R	.080-.250 (2.0-6.4)	.010-.023 (0.25-0.58)	140-225 (43-68)	R4 R3 R4 R3	120-200 (37-61)	R4 R3 R4 R3	100-180 (30-55)	R4 R3 R4 R3	-	-	-	-	
		GP	.070-.150 (1.8-3.8)	.008-.016 (0.2-0.41)	140-225 (43-68)	R4 M8 R4 M8	120-200 (37-61)	R4 M8 R4 M8	100-180 (30-55)	R4 M8 R4 M8	-	-	-	-	
		F	.020-.050 (0.5-1.3)	.005-.010 (0.13-0.25)	140-240 (43-73)	F2 F3 F2 F3	120-220 (37-67)	M3 F3 M3 F3	100-200 (30-61)	M3 F3 M3 F3	-	-	-	-	
	VP5525	R	.080-.250 (2.0-6.4)	.010-.023 (0.25-0.58)	120-200 (37-61)	R4 R3 R4 R3	100-180 (30-55)	R4 R3 R4 R3	100-180 (30-55)	R4 R3 R4 R3	-	-	-	-	
		GP	.070-.150 (1.8-3.8)	.008-.016 (0.2-0.41)	120-200 (37-61)	R4 M8 R4 M8	100-180 (30-55)	R4 M8 R4 M8	100-180 (30-55)	R4 M8 R4 M8	-	-	-	-	
		F	.020-.050 (0.5-1.3)	.005-.010 (0.13-0.25)	125-225 (38-68)	F2 F3 F2 F3	100-200 (30-61)	M3 F3 F2 F3	100-200 (30-61)	M3 F3 F2 F3	-	-	-	-	
	VP5535	R	.080-.300 (2.0-7.6)	.010-.035 (0.25-0.89)	100-180 (30-55)	R4 R3 R4 R3	80-150 (24-46)	R4 R3 R4 R3	80-150 (24-46)	R4 R3 R4 R3	-	-	-	-	
		GP	-	-	-	-	-	-	-	-	-	-	-		
		F	-	-	-	-	-	-	-	-	-	-	-		

R = Roughing GP = General Purpose F = Finishing FT = Flat Top Red and/or **Bold** print indicates primary choice .
 Cutting parameters provided for ANSI negative are based on CNMG 433 Black and/or **Bold** indicates alternate choice.
 Cutting parameters provided for ISO positive are based on CCMT 432

ANSI NEGATIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Alloy Steels 40 - 50 Rc		Alloy Steels 50 - 62 Rc		Tool & Die Steels 50 - 60 Rc		Chilled Cast Irons Ni-Resist Irons 40 - 50 Rc		Chilled Cast Irons Ni-Resist Irons 50 - 60 Rc			
				SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.	SFM (Vm/min)	Geo.
					1st		2nd		1st		2nd		1st		2nd
pCBN	VPC225	R	.025-.040 (0.64-1.0*)	.003-.010 (0.08-0.25)	-	-	350-500 (107-152)	-	250-450 (76-137)	-	-	-	-	-	
		GP	.010-.020 (0.25-0.5)	.003-.008 (0.08-0.2)	-	-	400-550 (122-168)	-	300-550 (91-168)	-	-	-	-	-	
		F	<0.01 (<0.25)	.002-.006 (0.05-0.15)	-	-	450-650 (137-198)	-	300-550 (91-168)	-	-	-	-	-	
	VC733 VC724 VC722	R	-	-	-	-	-	-	-	-	-	-	-	-	
		GP	>0.025 (>0.64)	.008-.02 (0.2-0.71)	-	-	-	-	-	-	300-600 (91-183)	-	200-400 (61-122)	-	
		F	.007-.025 (0.18-0.64)	.008-.030 (0.2-0.76)	-	-	-	-	-	-	400-650 (122-198)	-	300-600 (91-183)	-	
COATED CERAMICS	VPZ205	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.015-.030 (0.4-0.76)	.003-.010 (0.08-0.25)	450-800 (137-244)	-	400-550 (122-168)	-	-	-	-	-	-		
		F	<.015 (<.4)	.003-.006 (0.08-0.15)	500-900 (152-274)	-	450-650 (137-198)	-	-	-	-	-	-		
	VPZ215	R	<.080 (<.2)	.003-.012 (0.08-0.3)	400-650 (122-198)	-	300-450 (91-137)	-	-	-	-	-	-		
		GP	.015-.040 (0.4-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	-	350-500 (107-152)	-	-	-	-	-	-		
		F	<.015 (<.4)	.003-.008 (0.08-0.2)	450-850 (137-259)	-	400-600 (122-183)	-	-	-	-	-	-		
CERAMIC	Q32**	R	<.080 (<.2)	.003-.012 (0.08-0.3)	150-350 (46-107)	-	-	-	-	-	-	-			
		GP	.015-.040 (0.38-1.0)	.003-.010 (0.08-0.25)	400-750 (122-229)	-	-	-	-	-	-	-			
		F	<.015 (<.38)	.003-.008 (0.08-0.2)	450-850 (137-259)	-	-	-	-	-	-	-			

** Q32 -FOR HARDNESS BELOW 45Rc

R = Roughing GP = General Purpose F = Finishing
 Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

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TURNING INSERTS

Hardened Materials

Application Guide

ISO POSITIVE TOP FORM GEOMETRY															
SFM/CHIPBREAKER DESIGNATION															
	Operation	DOC (mm)	IPR (mm/rev)	Alloy Steels 40 - 50 Rc		Alloy Steels 50 - 62 Rc		Tool & Die Steels 50 - 60 Rc		Chilled Cast Irons Ni-Resist Irons 40 - 50 Rc		Chilled Cast Irons Ni-Resist Irons 50 - 60 Rc			
				SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.		SFM (Vm/min)	Geo.	
					1st	2nd		1st	2nd		1st	2nd		1st	2nd
MTCVD COATED	VP1505	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	-	-	-	-	-	-	-	-	-	-	-		
		F	.005-.030 (0.13-0.8)	.002-.008 (0.05-0.2)	180-300 (55-91)	PM4* PM2* PM4* PM2*	150-200 (45-61)	PM4* PM2* PM4* PM2*	125-200 (38-61)	PM4* PM2* PM4* PM2*	-	-	-	-	
	VP1510	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	-	-	-	-	-	-	-	-	-	-	-		
		F	.005-.040 (0.13-1.0)	.002-.008 (0.05-0.2)	150-250 (45-76)	PM4* PM2* PM4* PM2*	125-175 (38-53)	PM4* PM2* PM4* PM2*	100-175 (30-53)	PM4* PM2* PM4* PM2*	-	-	-	-	
	VP5515	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.010-.080 (0.25-2.0)	.005-.012 (0.13-0.3)	125-200 (38-61)	PM2* PM4** PM2* PM4**	100-175 (30-53)	PM2* PM4** PM2* PM4**	90-150 (27-45)	PM2* PM4** PM2* PM4**	-	-	-	-	
		F	.005-.060 (0.13-1.5)	.005-.010 (0.13-0.25)	125-220 (38-67)	PF4* PF4*	100-200 (30-61)	PF4* PF4*	90-175 (27-53)	PF4* PF4*	-	-	-	-	
	VP5525	R	-	-	-	-	-	-	-	-	-	-	-		
		GP	.010-0.100 (0.25-2.5)	.005-.012 (0.13-0.3)	100-180 (30-85)	PM2* PM4** PM2* PM4**	80-150 (24-45)	PM2* PM4** PM2* PM4**	70-125 (21-38)	PM2* PM4** PM2* PM4**	-	-	-	-	
		F	.010-.080 (0.25-2.0)	.005-.010 (0.13-0.25)	100-200 (30-61)	PF4* PF4*	80-175 (24-53)	PF4* PF4*	75-140 (23-43)	PF4* PF4*	-	-	-	-	
pCBN	VPC225	R	.025-.040 (0.64-1.0*)	.003-.010 (0.08-0.25)	-	-	350-500 (107-152)	-	250-450 (76-137)	-	-	-	-		
		GP	.010-.020 (0.25-0.5)	.003-.008 (0.8-0.2)	-	-	400-550 (122-168)	-	300-550 (91-168)	-	-	-	-		
		F	<0.01 (<0.25)	.002-.006 (0.05-0.15)	-	-	450-650 (137-198)	-	300-550 (91-168)	-	-	-	-		

R = Roughing GP = General Purpose F = Finishing FT = Flat Top Red and/or **Bold** print indicates primary choice .
 * Continuous Cut ** Moderate Interruption Black and/or **Bold** indicates alternate choice.

Cutting parameters provided for ANSI negative are based on CNMG 433
 Cutting parameters provided for ISO positive are based on CCMT 432

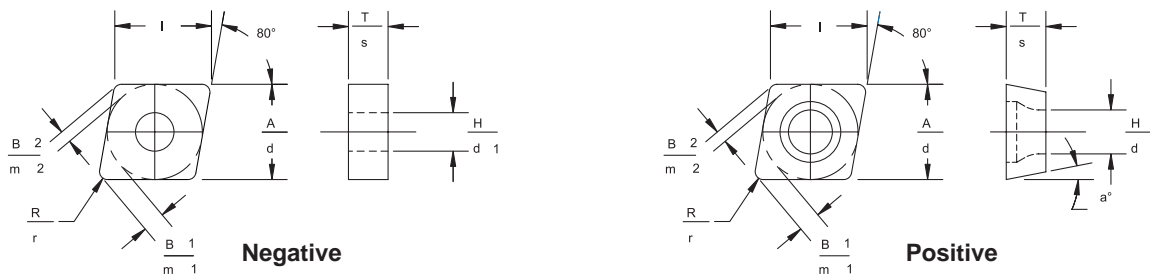


Valenite provides a 5-digit EDP# for ease in ordering specific Insert/Grade combinations.

TURNING INSERTS

Insert Dimensions

80° Diamond



Negative

Positive

Negative

CNGA, CNGP, CNMA, CNMG, CNMM, CNMP, CNMS

Inch Insert Designation	A		Inch Standard				Metric Insert Designation	Metric Standard						
	I.C.	T	R	H	B1	B2		d	l	s	r	d1	m1	m2
322	3/8	1/8	1/32	0.150	0.087	0.048	09 03 08	9.53	9.672	3.18	0.8	3.81	2.206	1.210
332	3/8	3/16	1/32	0.150	0.087	0.048	09 04 08	9.53	9.672	4.76	0.8	3.81	2.206	1.210
421	1/2	1/8	1/64	0.202	0.130	0.072	12 03 04	12.70	12.896	3.18	0.4	5.13	3.308	1.818
422	1/2	1/8	1/32	0.202	0.122	0.067	12 03 08	12.70	12.896	3.18	0.8	5.13	3.088	1.697
43.004	1/2	3/16	1/256	0.202	0.137	0.075	12 04 01	12.70	12.896	4.76	0.1	5.13	3.479	1.905
43.007	1/2	3/16	0.007	0.202	0.135	0.074	12 04 02	12.70	12.896	4.76	0.2	5.13	3.428	1.885
430	1/2	3/16	1/256	0.202	0.136	0.075	12 04 01	12.70	12.896	4.76	0.1	5.13	3.454	1.905
431	1/2	3/16	1/64	0.202	0.130	0.072	12 04 04	12.70	12.896	4.76	0.4	5.13	3.308	1.818
432	1/2	3/16	1/32	0.202	0.122	0.067	12 04 08	12.70	12.896	4.76	0.8	5.13	3.088	1.697
433	1/2	3/16	3/64	0.202	0.113	0.062	12 04 12	12.70	12.896	4.76	1.2	5.13	2.867	1.576
434	1/2	3/16	1/16	0.202	0.104	0.057	12 04 16	12.70	12.896	4.76	1.6	5.13	2.647	1.455
541	5/8	1/4	1/64	0.251	0.165	0.091	16 06 04	15.88	16.120	6.35	0.4	6.38	4.191	2.303
542	5/8	1/4	1/32	0.251	0.156	0.086	16 06 08	15.88	16.120	6.35	0.8	6.38	3.970	2.182
543	5/8	1/4	3/64	0.251	0.148	0.081	16 06 12	15.88	16.120	6.35	1.2	6.38	3.749	2.061
544	5/8	1/4	1/16	0.251	0.139	0.076	16 06 16	15.88	16.120	6.35	1.6	6.38	3.529	1.939
642	3/4	1/4	1/32	0.315	0.191	0.105	19 06 08	19.05	19.344	6.35	0.8	8.00	4.852	2.667
643	3/4	1/4	3/64	0.315	0.182	0.100	19 06 12	19.05	19.344	6.35	1.2	8.00	4.632	2.545
644	3/4	1/4	1/16	0.315	0.174	0.095	19 06 16	19.05	19.344	6.35	1.6	8.00	4.411	2.424

Positive

CCGT, CCMT, CCMW, CPG, CPGA, CPGB, CPGT, CPGW, CPMT, CPMW

Inch Insert Designation	A		Inch Standard				Metric Insert Designation	Metric Standard						
	I.C.	T	R	H	B1	B2		d	l	s	r	d1	m1	m2
1.51.21	3/16	5/64	1/64	0.085	0.043	0.024	04 T1 04	4.76	4.836	1.98	0.4	2.16	1.103	0.606
1.81.50	7/32	3/32	0.005	0.098	0.058	0.033	05 02 01	5.56	5.642	2.38	0.1	2.49	1.473	0.848
1.81.51	7/32	3/32	1/64	0.098	0.052	0.029	05 02 04	5.56	5.642	2.38	0.4	2.49	1.323	0.727
1.81.52	7/32	3/32	1/32	0.098	0.043	0.024	05 02 08	5.56	5.642	2.38	0.8	2.49	1.103	0.606
21.50	1/4	3/32	0.005	0.110	0.067	0.037	06 02 01	6.35	6.448	2.38	0.1	2.79	1.702	0.939
21.50.5	1/4	3/32	0.008	0.110	0.065	0.036	06 02 02	6.35	6.448	2.38	0.2	2.79	1.652	0.908
21.51	1/4	3/32	1/64	0.110	0.061	0.033	06 02 04	6.35	6.448	2.38	0.4	2.79	1.544	0.848
21.52	1/4	3/32	1/32	0.110	0.052	0.029	06 02 08	6.35	6.448	2.38	0.8	2.79	1.321	0.727
32.50	3/8	5/32	0.005	0.173	0.102	0.056	09 T3 01	9.53	9.672	3.97	0.1	4.39	2.590	1.423
32.50.5	3/8	5/32	0.008	0.173	0.100	0.055	09 T3 02	9.53	9.672	3.97	0.2	4.39	2.534	1.392
32.51	3/8	5/32	1/64	0.173	0.096	0.052	09 T3 04	9.53	9.672	3.97	0.4	4.39	2.426	1.333
32.52	3/8	5/32	1/32	0.173	0.087	0.048	09 T3 08	9.53	9.672	3.97	0.8	4.39	2.206	1.212
322	3/8	1/8	1/32	0.156*	0.087	0.048	09 03 08	9.53	9.672	3.18	0.8	3.96	2.206	1.212
421	1/2	1/8	1/64	--	0.130	0.072	12 03 04	12.70	12.896	3.18	0.4	--	3.308	1.818
422	1/2	1/8	1/32	--	0.122	0.067	12 03 08	12.70	12.896	3.18	0.8	--	3.088	1.697
431	1/2	3/16	1/64	0.217	0.130	0.072	12 04 04	12.70	12.896	4.76	0.4	5.51	3.308	1.818
432	1/2	3/16	1/32	0.217	0.122	0.067	12 04 08	12.70	12.896	4.76	0.8	5.51	3.088	1.697
432-W	1/2	3/16	1/32	0.202	0.122	0.067	12 04 08	12.70	12.896	4.76	0.8	5.13	3.088	1.697
433	1/2	3/16	3/64	0.217	0.113	0.062	12 04 12	12.70	12.896	4.76	1.2	5.51	2.867	1.576
633	3/4	3/16	3/64	--	0.182	0.100	19 04 12	19.05	19.344	4.76	1.2	--	4.632	2.545



* - Non ISO Hole

Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering

80° Diamond







Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
PM2 	CCGT 21.50 PM2 CCGT 060201-PM2								23712							
	CCGT 21.50.5 PM2 CCGT 060202-PM2								23713							
	CCGT 21.51 PM2 CCGT 060204-PM2		19753	19756	19757	20054	24800	24801	23714		23715					
	CCGT 21.52 PM2 CCGT 060208-PM2		19760	19761	19762	20106	24802	24803	23716							
	CCGT 32.50 PM2 CCGT 09T301-PM2								23717							
	CCGT 32.50.5 PM2 CCGT 09T302-PM2						24804	24805			23718					
	CCGT 32.51 PM2 CCGT 09T304-PM2		19763	19764	19765	20055	24806	24807	23719							
	CCGT 32.52 PM2 CCGT 09T308-PM2		19768	19769	19772	20056	24808	24809	23720		23721					
	CCGT 32.52 PM2 0025H CCGT 09T3080025H-PM2										23722					
	CCGT 431 PM2 CCGT 120404-PM2						24810	24811	23723							
	CCGT 432 PM2 CCGT 120408-PM2		19773	19775	19776	20057	24812	24813	23724		23725					
	CCGT 433 PM2 CCGT 120412-PM2		19777	19778												
1L 	CCGT 21.50.5 1L CCGT 060202-1L								01705							01727
	CCGT 21.51 1L CCGT 060204-1L								01706							01728
	CCGT 32.50.5 1L CCGT 09T302-1L								01707							01729
	CCGT 32.51 1L CCGT 09T304-1L								01708							01730
	CCGT 32.52 1L CCGT 09T308-1L								01709							01731
	CCGT 432 1L CCGT 120408-1L								01710							01732

Turning Inserts

TURNING INSERTS

Product Offering

80° Diamond




Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
1A 	CCMT 32.51 1A CCMT 09T304-1A		23602			22486										23730
	CCMT 32.52 1A CCMT 09T308-1A			22648		22487			23732							23731
	CCMT 432 1A CCMT 120408-1A			22649		22488										
2A 	CCMT 21.50 2A CCMT 060201-2A					22484										23726
	CCMT 21.51 2A CCMT 060204-2A		22646	22647		22485			23729					23727		23728
PF4 	CCMT 21.50.5 PF4 CCMT 060202-PF4		19962		19963											
	CCMT 21.51 PF4 CCMT 060204-PF4		19964	19965	19966											
	CCMT 32.51 PF4 CCMT 09T304-PF4		19967	19968	19969											
	CCMT 32.52 PF4 CCMT 09T308-PF4	20143	19970	19971	19972											
PM3 	CCMT 21.51 PM3 CCMT 060204-PM3	20141	01662	01663	01664											
	CCMT 32.51 PM3 CCMT 09T304-PM3	20142	01666	01667	01668											
	CCMT 32.52 PM3 CCMT 09T308-PM3			12875	01670											
PM4 	CCMT 32.52 PM4 CCMT 09T308-PM4	20144	01672	01673	01674											
	CCMT 432 PM4 CCMT 120408-PM4	20145	01676	01677	01678											
PM5 	CCMT 21.51 PM5 CCMT 060204-PM5					24814*	24815*									
	CCMT 32.51 PM5 CCMT 09T304-PM5					24816*	24817*									
	CCMT 32.52 PM5 CCMT 09T308-PM5		14505	14500	14501											
	CCMT 432 PM5 CCMT 120408-PM5		14506	14502	14503		24818*	24819*								
	CCMT 433 PM5 CCMT 120412-PM5		14507	14504	14508											

*Available end of August 2007

TURNING INSERTS

Product Offering

80° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	CCMW 21.51 CCMW 060204								23734							23733
	CCMW 32.52 CCMW 09T308	20146				22489										
	CCMW 432 CCMW 120408	20147	00900										23735			
	CNGA 432 CNGA 120408		22650			22490							23744			
	CNGA 543 CNGA 160612					22491										
C5 	CNGP 430 C5 CNGG 120401-C5			20251		20305			23746							23745
	CNGP 431 C5 CNGG 120404-C5								23752							
	CNGP 432 C5 CNGG 120408-C5								23756					23754		
SR 	CNGP 43.004 SR CNGG 120401-SR								23747		23748					
	CNGP 43.007 SR CNGG 120402-SR								23749		23750					
	CNGP 431 SR CNGG 120404-SR								24702		23753					
	CNGP 432 SR CNGG 120408-SR								24703		23757					
	CNMA 431 CNMA 120404	20148	17921													
	CNMA 432 CNMA 120408	20149	01422			22492							23758			23759
	CNMA 433 CNMA 120412	20150	01423													
	CNMA 434 CNMA 120416	20151	01424													
	CNMA 542 CNMA 160608												23760			
	CNMA 543 CNMA 160612	20152	01425			22493							23761			
	CNMA 544 CNMA 160616	20153	01426													
	CNMA 643 CNMA 190612		01427													
	CNMA 644 CNMA 190616		01428													

TURNING INSERTS

Product Offering

80° Diamond



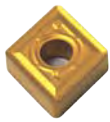
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
2B 	CNMG 432 2B CNMG 120408-2B			22651									23790			
C2 	CNMG 432 C2 CNMG 120408-C2				19624											
C3 	CNMG 432 C3 CNMG 120408-C3			01436	01437											
	CNMG 433 C3 CNMG 120412-C3			01456	01457											
F1 	CNMG 322 F1 CNMG 090308-F1			23762												
	CNMG 432 F1 CNMG 120408-F1			23772												
F2 	CNMG 431 F2 CNMG 120404-F2			01429	01430	20009										
	CNMG 432 F2 CNMG 120408-F2		01438	01439	01440	20011										
	CNMG 433 F2 CNMG 120412-F2			01458	23482											
F3 	CNMG 431 F3 CNMG 120404-F3			23764					23765							
	CNMG 432 F3 CNMG 120408-F3			23774	23775				23776		23777					23773
	CNMG 433 F3 CNMG 120412-F3			23791												
F5 	CNMG 431 F5 CNMG 120404-F5			01431		24820*	24821*									
	CNMG 432 F5 CNMG 120408-F5			01441		24827*	24828*									

*Available end of August 2007

TURNING INSERTS

Product Offering

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Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M2 	CNMG 432 M2 CNMG 120408-M2				01443											
	CNMG 433 M2 CNMG 120412-M2				01459											
M3 	CNMG 432 M3 CNMG 120408-M3		19745	01445	01446	01447										
	CNMG 433 M3 CNMG 120412-M3		19748	01461	01462											
	CNMG 543 M3 CNMG 160612-M3			14509	14510	14511										
	CNMG 544 M3 CNMG 160616-M3			14530	14531	14532										
	CNMG 643 M3 CNMG 190612-M3			17692	17693											
	CNMG 644 M3 CNMG 190616-M3				14539											
M4 	CNMG 431 M4 CNMG 120404-M4						24822	24823								
	CNMG 432 M4 CNMG 120404-M4						02631	24995								
	CNMG 433 M4 CNMG 120412-M4						24833	24834								
	CNMG 643 M4 CNMG 190612-M4						24849	24850								

Turning Inserts

TURNING INSERTS

Product Offering



80° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
M5 	CNMG 322 M5 CNMG 090308-M5	20154	19574	19622		20008											
	CNMG 431 M5 CNMG 120404-M5	20156	14516		01434	20010											
	CNMG 432 M5 CNMG 120408-M5	20157	01448	01449	01450	20012											
	CNMG 433 M5 CNMG 120412-M5	20160	01464	01465	01466	20013											
	CNMG 434 M5 CNMG 120416-M5		19855	19856	19857												
	CNMG 542 M5 CNMG 160608-M5		04714	04932	04937	20014											
	CNMG 543 M5 CNMG 160612-M5		14526	14512	14513	20015											
	CNMG 544 M5 CNMG 160616-M5		14527	14533	14534	20016											
	CNMG 642 M5 CNMG 190608-M5		17688	17689	17690	20017											
	CNMG 643 M5 CNMG 190612-M5		14528	14536	14537	20018											
	CNMG 644 M5 CNMG 190616-M5		14529	14541	14542	20019											
	M6 	CNMG 332 M6 CNMG 090408-M6			23763												
CNMG 431 M6 CNMG 120404-M6				23766	23767		24824	24825	23768		23769						
CNMG 432 M6 CNMG 120408-M6				23780	23781	23782	24829	24830	23783		23784					23778	
CNMG 433 M6 CNMG 120412-M6							24842	24843	23793							23792	
CNMG 434 M6 CNMG 120416-M6									23796							23795	
CNMG 541 M6 CNMG 160604-M6																23797	
CNMG 542 M6 CNMG 160608-M6					23798												
CNMG 543 M6 CNMG 160612-M6				23799	23800			24845									
CNMG 544 M6 CNMG 160616-M6					23801			24848	23802								
CNMG 643 M6 CNMG 190612-M6				23803													
CNMG 644 M6 CNMG 190616-M6								24853									

TURNING INSERTS

Product Offering

80° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
M7 	CNMG 431 M7 CNMG 120404-M7											23770					
	CNMG 432 M7 CNMG 120408-M7							23787				23785		23786			
	CNMG 433 M7 CNMG 120412-M7											23794					
	CNMG 643 M7 CNMG 190612-M7											23804					
M8 	CNMG 322 M8 CNMG 090308-M8	20155															
	CNMG 431 M8 CNMG 120404-M8					20059		23771									
	CNMG 432 M8 CNMG 120408-M8	20158		19625	19626	20132	24996	24997	23788		23789						
	CNMG 433 M8 CNMG 120412-M8	20161		19629	19630	20060	24998	24999									
	CNMG 434 M8 CNMG 120416-M8					20062											
	CNMG 542 M8 CNMG 160608-M8				19634	20064											
	CNMG 543 M8 CNMG 160612-M8			19635	19636	20066	24846	24847									
	CNMG 544 M8 CNMG 160616-M8			19639	19640	20068											
	CNMG 642 M8 CNMG 190608-M8				19642	20070											
	CNMG 643 M8 CNMG 190612-M8			19643	19644	20304	24851	24852			23805						
	CNMG 644 M8 CNMG 190616-M8			19647	19648	20071	24854	24855									

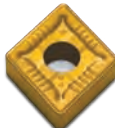



Turning Inserts

TURNING INSERTS

Product Offering

80° Diamond





Turning Inserts

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
R3 	CNMG 432 R3 CNMG 120408-R3		01452	01453	01454	01455										
	CNMG 433 R3 CNMG 120412-R3		01468	01469	01470	01471										
	CNMG 434 R3 CNMG 120416-R3		01472	01473	01474											
	CNMG 543 R3 CNMG 160612-R3		01475	01476	01477	01478										
	CNMG 544 R3 CNMG 160616-R3		01479	01480	01481											
	CNMG 643 R3 CNMG 190612-R3		01483	01484	01485	01486										
	CNMG 644 R3 CNMG 190616-R3		01487	01488	01489	01490										
R4 	CNMG 432 R4 CNMG 120408-R4	20159		19627	19628	20133										
	CNMG 433 R4 CNMG 120412-R4	20162		19631	19632	20061										
	CNMG 434 R4 CNMG 120416-R4	20163		19633		20063										
	CNMG 542 R4 CNMG 160608-R4					20065										
	CNMG 543 R4 CNMG 160612-R4	20164		19637	19638	20067										
	CNMG 544 R4 CNMG 160616-R4			19641		20069										
	CNMG 643 R4 CNMG 190612-R4	20165		19645	19646	20134										
CNMG 644 R4 CNMG 190616-R4	20166		19736	19649	20072											
W3 	CNMG 432 W3 CNMG 120408-W3		14517	14518	14519											
	W6 	CNMG 432 W6 CNMG 120408-W6		14520	14521	14522										
CNMG 433 W6 CNMG 120412-W6			14523	14524	14525											

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Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
WN3 	CNMG 431 WN3 CNMG 120404-WN3			20252			24826									
	CNMG 432 WN3 CNMG 120408-WN3		20253	20254			24831									
WN5 	CNMG 432 WN5 CNMG 120408-WN5		20255	20256	20257		24832									
	CNMG 433 WN5 CNMG 120412-WN5		20258	20259			24844									
R6 	CNMM 432 R6 CNMM 120408-R6			14544	14545											
	CNMM 433 R6 CNMM 120412-R6			14547	14548											
	CNMM 434 R6 CNMM 120416-R6			14550	14551											
	CNMM 543 R6 CNMM 160612-R6			14566	14567	14568										
	CNMM 544 R6 CNMM 160616-R6			14569	14570	14572										
	CNMM 643 R6 CNMM 190612-R6			14573	14574	14575										
	CNMM 644 R6 CNMM 190616-R6			14576	14577	14578										
C5 	CNMP 332 C5 CNMG 090408-C5							23806								
	CNMP 431 C5 CNMG 120404-C5			20260	20261	20073		23809		23810		23807				23808
	CNMP 432 C5 CNMG 120408-C5			20262	20263	20074		23813		23814		23811				23812
	CNMP 433 C5 CNMG 120412-C5					22653										
	CNMP 642 C5 CNMG 190608-C5				20264											


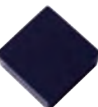

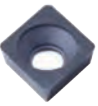

Turning Inserts

TURNING INSERTS

Product Offering

80° Diamond

Turning Inserts

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	CNMS 421 CNMM 120304 EN											23815				
	CNMS 422 CNMM 120308 EN			22654												
	CNMS 431 CNMM 120404 EN			22655		22495						23816				
	CNMS 432 CNMM 120408 EN			20265	22438	22496						23817		23818	23819	
	CNMS 541 CNMM 160604 EN			22656												
	CNMS 542 CNMM 160608 EN			22657								23820				
	CNMS 543 CNMM 160612 EN			22658		22497						23821				
	CNMS 642 CNMM 190608 EN			22659								23822				
	CNMS 643 CNMM 190612 EN			22660	20266											
	CPG 421 CPGN 120304		22663						23847							23846
	CPG 422 CPGN 120308		22664						23850			23848		23849		
	CPG 422 J CPGN 120308 J											23851				
	CPG 633 CPGN 190412											23852				
	CPGA 432 W CPGA 120408 W											23824				
	CPGB 322 CPGB 090308											24704				
	CPGT 1.51.21 2A CPGT 04T104-2A					22498										23826
	CPGT 1.81.50 2A CPGT 050201-2A					22499										
	CPGT 1.81.51 2A CPGT 050204-2A		22661			22500			23831			23829		23830		
	CPGT 1.81.52 2A CPGT 050208-2A					22501										

TURNING INSERTS

Product Offering

80° Diamond

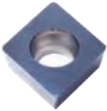
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades							
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10		
PM2 	CPGT 1.51.21 PM2 CPGT 04T104-PM2		19779		19780				23825									
	CPGT 1.81.51 PM2 CPGT 050204-PM2	20167	19781		19782	20075		24856	23827		23828							
	CPGT 21.50 PM2 CPGT 060201-PM2					20076			23832									
	CPGT 21.50.5 PM2 CPGT 060202-PM2								23833		23834							
	CPGT 21.51 PM2 CPGT 060204-PM2	20168	19783	19784	19785	20077	24857	24858	23835		23836							
	CPGT 21.52 PM2 CPGT 060208-PM2	20169	19786	19787	19788		24859	24860	23837		23838							
	CPGT 32.50 PM2 CPGT 09T301-PM2								23839									
	CPGT 32.51 PM2 CPGT 09T304-PM2	20170	19789	19790	19791	20078	24861	24862	23840		23841							
	CPGT 32.52 PM2 CPGT 09T304-PM2	20171	19792	19793	19794	20079	24863	24864	23842		23843							
	CPGT 432 PM2 CPGT 120408-PM2	20172	19795	19796					23844									
	CPGW 1.81.51 CPGW 050204	20173	22662									23845						
	CPGW 1.81.52 CPGW 050208							23484										
1A 	CPMT 32.50 1A CPMT 09T301-1A					22504											23858	
	CPMT 32.51 1A CPMT 09T304-1A		22668	22669		22505			23860								23859	
	CPMT 32.52 1A CPMT 09T308-1A		22670	22671	22439	22506											23861	
	CPMT 432 1A CPMT 120408-1A		22672	22673		22507												
2A 	CPMT 21.50 2A CPMT 060201-2A			22665		22502			23854								23853	
	CPMT 21.51 2A CPMT 060204-2A		22666	22667		22503			23857					23855			23856	

Turning Inserts

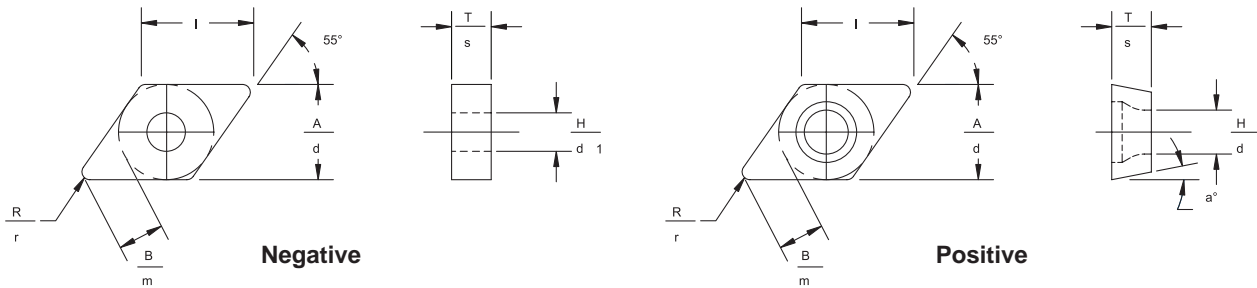
TURNING INSERTS

Product Offering

80° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
	CPMW 1.81.51 <i>CPMW 050204</i>		00902										23862				
	CPMW 1.81.51 J <i>CPMW 050204 J</i>												23863				
	CPMW 1.81.52 <i>CPMW 050208</i>	20174															
	CPMW 21.51 <i>CPMW 060204</i>	20175	00920			22508			23866					23864		23865	
	CPMW 21.51 J <i>CPMW 060204 J</i>												23867			24755	
	CPMW 21.52 <i>CPMW 060208</i>	20176	00930														
	CPMW 32.51 <i>CPMW 09T304</i>		00957						23869								23868
	CPMW 32.52 <i>CPMW 09T308</i>	20177	00809			22509											23870
	CPMW 32.52 J <i>CPMW 09T308 J</i>													23871			
	CPMW 432 <i>CPMW 120408</i>		00978			22510			23873								23872
	CPMW 432 J <i>CPMW 120408 J</i>													23874			

55° Diamond



55° Diamond - NEGATIVE												
DNFM, DNGA, DNGP, DNGS, DNMA, DNMG, DNMM, DNMP, DNMS												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
2.522	5/16	1/8	1/32	0.127	0.146	09 03 08	7.94	9.690	3.18	0.8	3.23	3.701
33.007	3/8	3/16	0.007	0.150	0.210	11 04 02	9.53	11.628	4.76	0.2	3.81	5.344
331	3/8	3/16	1/64	0.150	0.200	11 04 04	9.53	11.628	4.76	0.4	3.81	5.089
332	3/8	3/16	1/32	0.150	0.182	11 04 08	9.53	11.628	4.76	0.8	3.81	4.623
43.004	1/2	3/16	0.004	0.202	0.287	15 04 01	12.70	15.504	4.76	0.1	5.13	7.289
43.007	1/2	3/16	0.007	0.202	0.283	15 04 02	12.70	15.504	4.76	0.2	5.13	7.188
431	1/2	3/16	1/64	0.202	0.273	15 04 04	12.70	15.504	4.76	0.4	5.13	6.939
432	1/2	3/16	1/32	0.202	0.255	15 04 08	12.70	15.504	4.76	0.8	5.13	6.477
433	1/2	3/16	3/64	0.202	0.237	15 04 12	12.70	15.504	4.76	1.2	5.13	6.014
441	1/2	1/4	1/64	0.202	0.273	15 06 04	12.70	15.504	6.35	0.4	5.13	6.939
442	1/2	1/4	1/32	0.202	0.255	15 06 08	12.70	15.504	6.35	0.8	5.13	6.477
443	1/2	1/4	3/64	0.202	0.237	15 06 12	12.70	15.504	6.35	1.2	5.13	6.014
531	5/8	3/16	1/64	0.251	0.346	19 04 04	15.88	19.380	4.76	0.4	6.38	8.790
532	5/8	3/16	1/32	0.251	0.328	19 04 08	15.88	19.380	4.76	0.8	6.38	8.327
533	5/8	3/16	3/64	0.251	0.310	19 04 12	15.88	19.380	4.76	1.2	6.38	7.865
542	5/8	1/4	1/32	0.251	0.328	19 06 08	15.88	19.380	6.35	0.8	6.38	8.327
543	5/8	1/4	3/64	0.251	0.310	19 06 12	15.88	19.380	6.35	1.2	6.38	7.865
544	5/8	1/4	1/16	0.251	0.291	19 06 16	15.88	19.380	6.35	1.6	6.38	7.402

55° Diamond - POSITIVE												
DCGT, DCMT, DCMW, DDGB, DPGA, DPGT, DPMA, DPMT, DPMW												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
21.50	1/4	3/32	0.005	0.110	0.140	07 02 01	6.35	7.752	2.38	0.1	2.79	3.556
21.50.5	1/4	3/32	0.008	0.110	0.137	07 02 02	6.35	7.752	2.38	0.2	2.79	3.480
21.51	1/4	3/32	1/64	0.110	0.127	07 02 04	6.35	7.752	2.38	0.4	2.79	3.238
21.52	1/4	3/32	1/32	0.110	0.109	07 02 08	6.35	7.752	2.38	0.8	2.79	2.776
32.50	3/8	5/32	0.005	0.173	0.213	11 T3 01	9.53	11.628	3.97	0.1	4.39	5.410
32.50.5	3/8	5/32	0.008	0.173	0.209	11 T3 02	9.53	11.628	3.97	0.2	4.39	5.315
32.51	3/8	5/32	1/64	0.173	0.200	11 T3 04	9.53	11.628	3.97	0.4	4.39	5.089
32.52	3/8	5/32	1/32	0.173	0.182	11 T3 08	9.53	11.628	3.97	0.8	4.39	4.626
32.53	3/8	5/32	3/64	0.173	0.164	11 T3 12	9.53	11.628	3.97	1.2	4.39	4.164
322	3/8	1/8	1/32	0.156*	0.182	11 03 08	9.53	11.628	3.18	0.8	3.96	4.626
431	1/2	3/16	1/64	0.217	0.273	15 04 04	12.70	15.504	4.76	0.4	5.51	6.939
431-W	1/2	3/16	1/64	0.202	0.273	15 04 04	12.70	15.504	4.76	0.4	5.13	6.939
432	1/2	3/16	1/32	0.217	0.255	15 04 08	12.70	15.504	4.76	0.8	5.51	6.477
432-W	1/2	3/16	1/32	0.202	0.255	15 04 08	12.70	15.504	4.76	0.8	5.13	6.477
532-W	5/8	3/16	1/32	0.251	0.328	19 04 08	15.88	19.380	4.76	0.8	6.38	8.327
533-W	5/8	3/16	3/64	0.251	0.310	19 04 12	15.88	19.380	4.76	1.2	6.38	7.865



* Non - ISO Hole

Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering

55° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
PM2 	DCGT 21.50 PM2 <i>DCGT 070201-PM2</i>								23875							
	DCGT 21.50.5 PM2 <i>DCGT 070202-PM2</i>		19797	19798												
	DCGT 21.51 PM2 <i>DCGT 070204-PM2</i>		19799	19800	19801			24865*	24866*	23876						
	DCGT 21.52 PM2 <i>DCGT 070208-PM2</i>		19802	19803						23877						
	DCGT 32.50 PM2 <i>DCGT 11T301-PM2</i>									23878						
	DCGT 32.50.5 PM2 <i>DCGT 11T302-PM2</i>							24867*	24868*	23879		23880				
	DCGT 32.51 PM2 <i>DCGT 11T304-PM2</i>		19804	19805	19806	20080	25000*	25001*	23881							
	DCGT 32.52 PM2 <i>DCGT 11T308-PM2</i>		19807	19808	19809	20135	24869*	24870*	23882							
	DCGT 431 PM2 <i>DCGT 150404-PM2</i>							24871*	24872*							
	DCGT 432 PM2 <i>DCGT 150408-PM2</i>		19810	19811				24873*	24874*							
1L 	DCGT 21.50.5 1L <i>DCGT 070202-1L</i>									01711						01733
	DCGT 21.51 1L <i>DCGT 070204-1L</i>									01712						01734
	DCGT 32.50.5 1L <i>DCGT 11T302.5-1L</i>									01713						01735
	DCGT 32.51 1L <i>DCGT 11T304-1L</i>									01714						01736
	DCGT 32.52 1L <i>DCGT 11T308-1L</i>									01715						01737
1A 	DCMT 32.51 1A <i>DCMT 11T304-1A</i>						22513									
	DCMT 32.52 1A <i>DCMT 11T308-1A</i>			22376			22514									
2A 	DCMT 21.50 2A <i>DCMT 070201-2A</i>						22511									
	DCMT 21.51 2A <i>DCMT 070204-2A</i>			22674			22512									23883

*Available end of August 2007

TURNING INSERTS

Product Offering

55° Diamond







Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
PF4 	DCMT 21.50.5 PF4 <i>DCMT 070202-PF4</i>		19973		19974											
	DCMT 21.51 PF4 <i>DCMT 070204-PF4</i>		19975	19976	19977											
	DCMT 21.52 PF4 <i>DCMT 070208-PF4</i>		19978	19979	19980											
	DCMT 32.51 PF4 <i>DCMT 11T304-PF4</i>		19981	19982	19983											
	DCMT 32.52 PF4 <i>DCMT 11T308-PF4</i>	20178	19984	19985	19986											
PM4 	DCMT 32.51 PM4 <i>DCMT 11T304-PM4</i>			01680	01681											
	DCMT 32.52 PM4 <i>DCMT 11T308-PM4</i>	20179	01682	01683	01684											
	DCMT 32.53 PM4 <i>DCMT 11T312-PM4</i>				01686											
	DCMW 21.50 <i>DCMW 070201</i>															23884
	DCMW 32.52 <i>DCMW 11T308</i>															23885
	DDGB 322 <i>DDGB 110308</i>											23886				
	DNGA 432 <i>DNGA 150408</i>		00980									23887		23888		
	DNGA 433 <i>DNGA 150412</i>											23889				
	DNGA 531 <i>DNGA 190404</i>													23890		
	DNGA 542 <i>DNGA 190608</i>											23891				

Turning Inserts

TURNING INSERTS

Product Offering



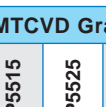
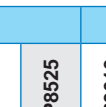

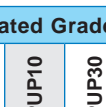
55° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
SR 	DNGP 33.007 SR DNGG 110402-SR								23892							
	DNGP 331 SR DNGG 110404-SR								23893							
	DNGP 43.004 SR DNGG 150401-SR								23894							
	DNGP 43.007 SR DNGG 150402-SR								23895							
	DNGP 431 SR DNGG 150404-SR								24705							
. . GS 	DNGS 431 DNGM 150404 EN												23896			
	DNGS 432 DNGM 150408 EN												23897			
	DNGS 533 DNGM 190412 EN												23898			
	DNMA 432 DNMA 150408	20180	01491													
	DNMA 433 DNMA 150412	20181	01492													
2B 	DNMG 2.522 2B DNMG 090308-2B			22675												
	DNMG 432 2B DNMG 150408-2B			22385									23919			
	DNMG 532 2B DNMG 190408-2B			22677												
C2 	DNMG 432 C2 DNMG 150408-C2				19650	20081										
	DNMG 543 C2 DNMG 190612-C2				22516											
C3 	DNMG 432 C3 DNMG 150408-C3			01498	01499											
	DNMG 433 C3 DNMG 150412-C3			01516	01517											

TURNING INSERTS

Product Offering

55° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
ER PN1 	DNMG 432 ER PN1 DNMG 150408-ER-PN1				11111											
F1 	DNMG 331 F1 DNMG 110404-F1			23899												
	DNMG 332 F1 DNMG 110408-F1			23901												
	DNMG 432 F1 DNMG 150408-F1			23909												
F2 	DNMG 431 F2 DNMG 150404-F2			01495		20020										
	DNMG 432 F2 DNMG 150408-F2		01500	01501	01502	20022										
F3 	DNMG 331 F3 DNMG 110404-F3			23900												
	DNMG 431 F3 DNMG 150404-F3			23903				23904								
	DNMG 432 F3 DNMG 150408-F3			23910	23911			23912		23913						
	DNMG 443 F3 DNMG 150612-F3			23923												
F5 	DNMG 332 F5 DNMG 110408-F5				01493											
	DNMG 432 F5 DNMG 150408-F5				01503											
M2 	DNMG 432 M2 DNMG 150408-M2				01505											



Turning Inserts

TURNING INSERTS

Product Offering

55° Diamond




Turning Inserts

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	DNMG 332 M3 DNMG 110408-M3			19859	19860											
	DNMG 431 M3 DNMG 150404-M3			19861	19862											
	DNMG 432 M3 DNMG 150408-M3		19737	01507	01508	01509										
	DNMG 433 M3 DNMG 150412-M3		19740	19741	19743											
	DNMG 442 M3 DNMG 150608-M3			19744												
	DNMG 542 M3 DNMG 190608-M3			19864	19865											
	DNMG 331 M5 DNMG 110404-M5		14553													
	DNMG 332 M5 DNMG 110408-M5	20182	14554													
	DNMG 431 M5 DNMG 150404-M5	20183	14557		01497	20021										
	DNMG 432 M5 DNMG 150408-M5	20184	01510	01511	01512	20023										
	DNMG 433 M5 DNMG 150412-M5		01518	01519	01520	20024										
	DNMG 442 M5 DNMG 150608-M5			01524		20025										
	DNMG 443 M5 DNMG 150612-M5		01166	01525		20026										
	DNMG 542 M5 DNMG 190608-M5		19540	19541	19542											
	DNMG 543 M5 DNMG 190612-M5		19867	19868	19869	20027										

TURNING INSERTS

Product Offering

55° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M6 	DNMG 332 M6 DNMG 110408-M6			23902												
	DNMG 431 M6 DNMG 150404-M6				23905		24875	24876	23906		23907					
	DNMG 432 M6 DNMG 150408-M6				23914	23915	23916	24877	24878	23917						
	DNMG 433 M6 DNMG 150412-M6							24882*	24883*							23920
	DNMG 441 M6 DNMG 150604-M6				23921											
	DNMG 442 M6 DNMG 150608-M6					23922										
	DNMG 443 M6 DNMG 150612-M6					23924										
	DNMG 542 M6 DNMG 190608-M6						23925									
	DNMG 543 M6 DNMG 190612-M6					23926		23927								
M7* 	DNMG 432 M7 DNMG 150408-M7												23918			
M8 	DNMG 431 M8 DNMG 150404-M8								23908							
	DNMG 432 M8 DNMG 150408-M8	20185		19651	19652	20082		24879*								
	DNMG 433 M8 DNMG 150412-M8			19653	19654	20136		24884								
	DNMG 442 M8 DNMG 150608-M8				19657	20084										
	DNMG 443 M8 DNMG 150612-M8				19658	20085		24885								
	DNMG 532 M8 DNMG 190408-M8				22676		20086									
	DNMG 542 M8 DNMG 190608-M8				22356	19659	20087									
	DNMG 543 M8 DNMG 190612-M8					19660	20088									






*Available end of August 2007

TURNING INSERTS

Product Offering

55° Diamond

Turning Inserts


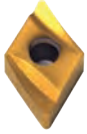



Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	DNMG 432 R3 DNMG 150408-R3		01514	14852	01515											
	DNMG 433 R3 DNMG 150412-R3		01522	14853	01523											
	DNMG 443 R3 DNMG 150612-R3		12879													
	DNMG 432 R4 DNMG 150408-R4	20186														
	DNMG 433 R4 DNMG 150412-R4			19655	19656	20083										
	DNMG 543 R4 DNMG 190612-R4			19661												
	DNMG 544 R4 DNMG 190616-R4					20089										
	DNMG 332 W3 DNMG 110408-W3			14555												
	DNMG 432 W3 DNMG 150408-W3		14558	14559												
	DNMG 332 W6 DNMG 110408-W6			14556												
	DNMG 432 W6 DNMG 150408-W6		14560	14561	14562											
	DNMG 433 W6 DNMG 150412-W6			14563												
	DNMG 442 W6 DNMG 150608-W6			14564												
	DNMG 443 W6 DNMG 150612-W6			14565												
	DNMG 432 WN3 DNMG 150408-WN3		20267	20268			24880*									

*Available end of August 2007

TURNING INSERTS

Product Offering

55° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades							PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
WN5 	DNMG 432 WN5 DNMG 150408-WN5				20269			24881*								
EL PN2 	DNMM 432 EL PN2 DNMM 150408 EL-PN2								24721							
ER PN2 	DNMM 432 ER PN2 DNMM 150408-ER-PN2			22678												
C5 	DNMP 332 C5 DNMG 110408-C5										23929					
	DNMP 431 C5 DNMG 150404-C5			20270	20271				23930		23931					
	DNMP 432 C5 DNMG 150408-C5			20272	20273			24886*	24887*	23932						
	DNMP 433 C5 DNMG 150412-C5			22389				24888*	24889							
..MS 	DNMS 431 DNMM 150404 EN			22679			22518			23935				23933		23934
	DNMS 432 DNMM 150408 EN			22680	20274		22519							23936		
	DNMS 532 DNMM 190408 EN			22681										23937		
	DNMS 533 DNMM 190412 EN			22682												






*Available end of August 2007

TURNING INSERTS

Product Offering

55° Diamond



Turning Inserts

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
 W	DPGA 431 W DPGA 150404 W											23938	23939			
	DPGA 432 W DPGA 150408 W											23940	23941			
	DPGA 532 W DPGA 190408 W											23942				
	DPGA 533 W DPGA 190412 W											23943				
 PM2	DPGT 21.50 PM2 DPGT 070201-PM2					20090			23944							
	DPGT 21.51 PM2 DPGT 070204-PM2								23945		23946					
	DPGT 32.50 PM2 DPGT 11T301-PM2								23947							
	DPGT 32.50.5 PM2 DPGT 11T302-PM2										23948					
	DPGT 32.51 PM2 DPGT 11T304-PM2	20187	19812	19813		20091			23949							
	DPGT 32.52 PM2 DPGT 11T308-PM2								23950							
 W	DPMA 432 W DPMA 150408 W											23951				
 1A	DPMT 32.51 1A DPMT 11T304-1A			22685		22521										23954
	DPMT 32.52 1A DPMT 11T308-1A		22686	22687		22522										
 2A	DPMT 21.51 2A DPMT 070204-2A		22683	22684		22520			23953							23952

TURNING INSERTS

Product Offering

55° Diamond

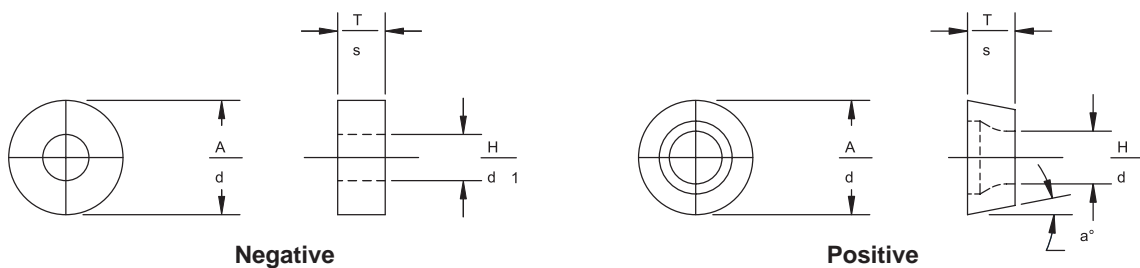
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	DPMW 21.51 <i>DPMW 070204</i>		00996													23955
	DPMW 32.51 <i>DPMW 11T304</i>															23956
	DPMW 32.52 <i>DPMW 11T308</i>	20188	01002													23957
	DPMW 432 <i>DPMW 150408</i>															23958
ER 																
	GNFM 2.522 ER <i>GNMM 080308-ER</i>			22688												

Turning Inserts

TURNING INSERTS

Insert Dimensions

Round



Negative

Positive

Round - NEGATIVE

RNEA, RNFM, RNG, RNMA, RNMF, RNMG

Inch Insert Designation	A	Inch Standard		Metric Insert Designation	Metric Standard		
	I.C.	T	H		d	s	d1
32	3/8	1/8	0.150	09 03 00	9.53	3.18	3.81
33	3/8	3/16	0.150	09 04 00	9.53	4.76	3.81
42	1/2	1/8	--	12 03 00	12.70	3.18	--
43	1/2	3/16	0.202	12 04 00	12.70	4.76	5.13
53	5/8	3/16	--	15 04 00	15.88	4.76	--
54	5/8	1/4	0.251	15 06 00	15.88	6.35	6.38
55	5/8	5/16	--	15 07 00	15.88	7.94	--
64	3/4	1/4	0.315	19 06 00	19.05	6.35	8.00
86	1	3/8	0.362	25 09 00	25.40	9.53	9.19

Round - POSITIVE







RBGHX**, RCGT, RCMT, RCMW, RPC

Inch Insert Designation	A	Inch Standard		Metric Insert Designation	Metric Standard		
	I.C.	T	H		d	s	d1
21.5	1/4	3/32	0.110	06 02 00	6.35	2.38	2.794
22	1/4	1/8	0.110	06 03 00	6.35	3.18	2.794
0803M0	0.315	1/8	0.134	08 03 M0	8.00	3.18	3.400
32	3/8	1/8	--	09 03 00	9.53	3.18	--
32.5	3/8	5/32	0.173	09 T3 00	9.53	3.97	4.394
10T3M0	0.394	0.156	0.173	10 T3 M0	10.00	3.97	4.394
1204M0	0.472	3/16	0.173	12 04 M0	12.00	4.76	4.394
42	1/2	1/8	--	12 03 00	12.70	3.18	--
43	1/2	3/16	0.217	12 04 00	12.70	4.76	5.512
52	5/8	1/8	0.172	15 03 00	15.88	3.18	4.369
63**	0.745	0.172	0.219	19 04 00	18.92	4.37	5.563
64	3/4	1/4	0.256	19 06 00	19.05	6.35	6.502
84	1	1/4	0.281	25 06 00	25.40	6.35	7.137

Value of a° determined by second letter of part number. See page A 2 for details.

**RBGHX only





Round

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
 . . GHX	RBGHX 52 <i>RBGHX 150300</i>					22643										
	RBGHX 63 <i>RBGHX 190400</i>					22644										
	RBGHX 84 <i>RBGHX 250600</i>		23604			22645										
 RP4	RCGT 22 RP4 <i>RCGT 060300-RP4</i>				22478											
	RCGT 32.5 RP4 <i>RCGT 09T300-RP4</i>				22479			23971		23972						
	RCGT 43 RP4 <i>RCGT 120400-RP4</i>			22390	22480			23973		23974						
	RCGT 64 RP4 <i>RCGT 190600-RP4</i>				22689											
 1A	RCMT 32.5 1A <i>RCMT 09T300-1A</i>			22691		22524		23983								
	RCMT 10T3M0 1A <i>RCMT 10T3M0-1A</i>					22523										
	RCMT 1204M0 1A <i>RCMT 1204M0-1A</i>					22690										
 RP5	RCMT 0803M0 RP5 <i>RCMT 0803M0-RP5</i>			23975	23976											
	RCMT 10T3M0 RP5 <i>RCMT 10T3M0-RP5</i>		23977	23978	23979											
	RCMT 1204M0 RP5 <i>RCMT 1204M0-RP5</i>		23980	23981	23982		25008									
	RCMW 0803M0 <i>RCMW 0803M0</i>															23984
	RCMW 21.5 <i>RCMW 060200</i>					22525										
	RCMW 32.5 <i>RCMW 09T300</i>					22526										23985
	RNEA 32 <i>RNEA 090300</i>					22527						23992				
	RNEA 43 <i>RNEA 120400</i>											23993				
	RNEA 54 <i>RNEA 150600</i>					22528										

TURNING INSERTS

Product Offering



Round

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30
	RNFM 32 E <i>RNMM 090300 EN</i>											24756			
	RNG 32 <i>RNGN 090300</i>		22692									23995			
	RNG 42 <i>RNGN 120300</i>								23997				23996		
	RNG 53 <i>RNGN 150400</i>												23998		
	RNMA 32 <i>RNMA 090300</i>											23999			
	RNMA 33 <i>RNMA 090400</i>											24000			
	RNMA 43 <i>RNMA 120400</i>		17944									24001			
	RNMA 54 <i>RNMA 150600</i>											24002			
	RNMA 64 <i>RNMA 190600</i>											24003			
	RNMA 86 <i>RNMA 250900</i>											24004			
	RNMF 55 RN5 <i>RNMF 150700-RN5</i>			20281											
	RNMG 33 M7 <i>RNMG 090400-M7</i>											24006			
	RNMG 43 M7 <i>RNMG 120400-M7</i>	24008	24009		24010							24007			
	RNMG 64 M7 <i>RNMG 190600-M7</i>											24012			
	RNMG 86 M7 <i>RNMG 250900-M7</i>											24013			

TURNING INSERTS

Product Offering

Round

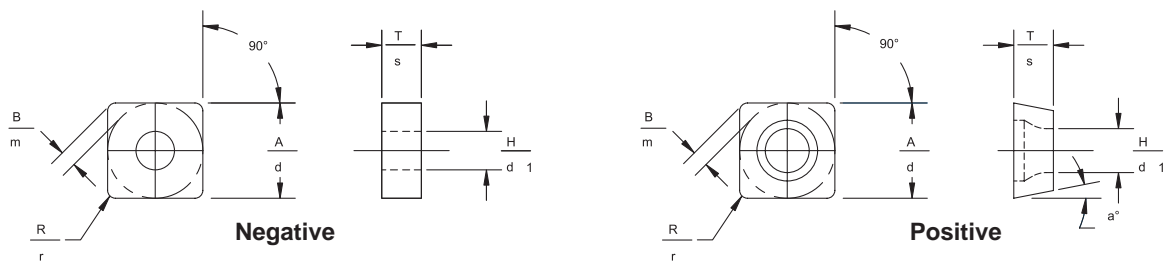
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
RN5 	RNMG 32 RN5 <i>RNMG 090300-RN5</i>			22693												
	RNMG 43 RN5 <i>RNMG 120400-RN5</i>				20283	22529					24011					
	RNMG 54 RN5 <i>RNMG 150600-RN5</i>			22694	20284											
	RNMG 64 RN5 <i>RNMG 190600-RN5</i>			22695	20285	22530										
	RNMG 86 RN5 <i>RNMG 250900-RN5</i>			20286	20287											
	RPC 32 <i>RPHN 090300</i>											24014				
	RPC 42 <i>RPHN 120300</i>											24015				

Turning Inserts

TURNING INSERTS

Insert Dimensions

Square



Square - NEGATIVE

SNEA, SNG, SNMA, SNMG, SNMM, SNMP, SNU

Inch Insert Designation	A		Inch Standard			Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
321	3/8	1/8	1/64	0.150	0.071	09 03 04	9.53	9.525	3.18	0.4	3.81	1.808
322	3/8	1/8	1/32	0.150	0.065	09 03 08	9.53	9.525	3.18	0.8	3.81	1.644
323	3/8	1/8	3/64	--	0.058	09 03 12	9.53	9.525	3.18	1.2	--	1.480
332	3/8	3/16	1/32	0.150	0.065	09 04 08	9.53	9.525	4.76	0.8	3.81	1.644
431	1/2	3/16	1/64	0.202	0.097	12 04 04	12.70	12.700	4.76	0.4	5.13	2.466
432	1/2	3/16	1/32	0.202	0.091	12 04 08	12.70	12.700	4.76	0.8	5.13	2.301
433	1/2	3/16	3/64	0.202	0.084	12 04 12	12.70	12.700	4.76	1.2	5.13	2.137
434	1/2	3/16	1/16	0.202	0.078	12 04 16	12.70	12.700	4.76	1.6	5.13	1.973
543	5/8	1/4	3/64	0.251	0.110	15 06 12	15.88	15.875	6.35	1.2	6.38	2.795
544	5/8	1/4	1/16	0.251	0.104	15 06 16	15.88	15.875	6.35	1.6	6.38	2.642
633	3/4	3/16	3/64	--	0.136	19 04 12	19.05	19.050	4.76	1.2	--	3.452
643	3/4	1/4	3/64	0.315	0.136	19 06 12	19.05	19.050	6.35	1.2	8.00	3.452
644	3/4	1/4	1/16	0.315	0.129	19 06 16	19.05	19.050	6.35	1.6	8.00	3.288
866	1	3/8	3/32	0.362	0.168	25 09 24	25.40	25.400	9.53	2.4	9.19	4.274

Square - POSITIVE

SCGT, SCMT, SCMW, SPC, SPCE, SPG, SPGT, SPMR, SPMT, SPMU, SPMW, SPU






Inch Insert Designation	A		Inch Standard			Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
731	7/32	8/85	1/64	--	0.039	05 02 04	5.56	5.556	2.39	0.4	--	0.986
21.51	1/4	3/32	1/64	0.110	0.045	06 02 04	6.35	6.350	2.38	0.4	2.79	1.151
2.51.52	5/16	3/32	1/32	--	0.052	07 02 08	7.94	7.938	2.38	0.8	--	1.315
2.521	5/16	1/8	1/64	0.134	0.058	07 03 04	7.94	7.938	3.18	0.4	3.40	1.480
32.51	3/8	5/32	1/64	0.173	0.071	09 T3 04	9.53	9.525	3.97	0.4	4.39	1.808
32.52	3/8	5/32	1/32	0.173	0.065	09 T3 08	9.53	9.525	3.97	0.8	4.39	1.644
32.53	3/8	5/32	3/64	0.173	0.058	09 T3 12	9.53	9.525	3.97	1.2	4.39	1.480
321	3/8	1/8	1/64	--	0.071	09 03 04	9.53	9.525	3.18	0.4	--	1.808
322	3/8	1/8	1/32	--	0.065	09 03 08	9.53	9.525	3.18	0.8	--	1.644
325	3/8	1/8	5/64	--	0.045	09 03 20	9.53	9.525	3.18	2.0	--	1.151
421	1/2	1/8	1/64	--	0.097	12 03 04	12.70	12.700	3.18	0.4	--	2.466
422	1/2	1/8	1/32	--	0.091	12 03 08	12.70	12.700	3.18	0.8	--	2.301
423	1/2	1/8	3/64	--	0.084	12 03 12	12.70	12.700	3.18	1.2	--	2.137
424	1/2	1/8	1/16	--	0.078	12 03 16	12.70	12.700	3.18	1.6	--	1.973
431	1/2	3/16	1/64	0.217	0.097	12 04 04	12.70	12.700	4.76	0.4	5.51	2.466
432	1/2	3/16	1/32	0.217	0.091	12 04 08	12.70	12.700	4.76	0.8	5.51	2.301
433	1/2	3/16	3/64	0.217	0.084	12 04 12	12.70	12.700	4.76	1.2	5.51	2.137
633	3/4	3/16	3/64	--	0.136	19 04 12	19.05	19.050	4.76	1.2	--	3.452
634	3/4	3/16	1/16	--	0.129	19 04 16	19.05	19.050	4.76	1.6	--	3.288
643	3/4	1/4	3/64	0.256	0.136	19 06 12	19.05	19.050	6.35	1.2	6.50	3.452

Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering

Square



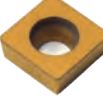
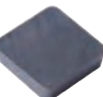

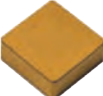
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
PM2 	SCGT 32.51 PM2 SCGT 09T304-PM2		19814		19815		24891*	24892								
	SCGT 32.52 PM2 SCGT 09T308-PM2		19816	19817	19818		24893*	24894			24020					
	SCGT 431 PM2 SCGT 120404-PM2						24895*	24896*								
	SCGT 432 PM2 SCGT 120408-PM2		19819	19820	19821		24897	24898*	24021							
	SCGT 433 PM2 SCGT 120412-PM2		19822	19823	19824											
1L 	SCGT 32.51 1L SCGT 09T304-1L									01717						01738
	SCGT 32.52 1L SCGT 09T308-1L									01718						01739
1A 	SCMT 32.51 1A SCMT 09T304-1A			22697		22532										
	SCMT 32.52 1A SCMT 09T308-1A			22698												
	SCMT 431 1A SCMT 120404-1A					23488										
	SCMT 432 1A SCMT 120408-1A			22535												
2A 	SCMT 21.51 2A SCMT 060204-2A			22696		22531			24023							24022
	SCMT 32.51 2A SCMT 09T304-2A					22533										
	SCMT 32.52 2A SCMT 09T308-2A					22534										
PF4 	SCMT 32.51 PF4 SCMT 09T304-PF4		19987		19988											
	SCMT 32.52 PF4 SCMT 09T308-PF4		19989		19990											

*Available end of August 2007

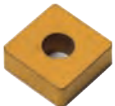

TURNING INSERTS

Product Offering

Square

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
 PM4	SCMT 32.51 PM4 SCMT 09T304-PM4		17908	17909	17910											
	SCMT 32.52 PM4 SCMT 09T308-PM4	20190	01693	01694	01695											
 PM5	SCMT 432 PM5 SCMT 120408-PM5		01201				24899*	24900								
	SCMW 21.51 SCMW 060204		01075			22536			24025							
	SCMW 32.52 SCMW 09T308	20191	01092			22537			24027							24026
	SCMW 432 SCMW 120408		01162			22538										
	SM 1031 SPHN 070204											24088				
	SM 1032 SPHN 070208											24089	24090	24091		
	SNEA 322 SNEA 090308	20192	23509										24093		24094	
	SNEA 432 SNEA 120408												24095			
	SNEA 543 SNEA 150612					23489							24096			
	SNG 322 SNGN 090308		17946	22699									24100			
	SNG 323 SNGN 090312												24101	24102		
	SNG 432 SNGN 120408		22700			22539										
	SNG 434 SNGN 120416		17947													
	-SNGN 190412					22540										
	SNG 643 SNGN 190612			22701												






*Available end of August 2007

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	SNMA 322 SNMA 090308	20193	01168										24107		24108	
	SNMA 332 SNMA 090408		01526													
	SNMA 432 SNMA 120408	20194	01527			22541							24109			
	SNMA 433 SNMA 120412	20195	01528			22542										
	SNMA 434 SNMA 120416		01529													
	SNMA 543 SNMA 150612	20196	17922			22543										
	SNMA 544 SNMA 150616		17923													
	SNMA 643 SNMA 190612		12880											24110		
	SNMA 644 SNMA 190616	20197	12881											24111		
2B 	SNMG 432 2B SNMG 120408-2B			22703												
2T 	SNMG 322 2T SNMG 090308-2T															24118
C2 	SNMG 432 C2 SNMG 120408-C2			22393												
	SNMG 643 C2 SNMG 190612-C2			19674												
F1 	SNMG 321 F1 SNMG 090304-F1			24112												



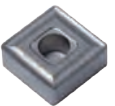
TURNING INSERTS

Product Offering

Square

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades							PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
F2 	SNMG 322 F2 SNMG 090308-F2				01530	20028										
	SNMG 432 F2 SNMG 120408-F2			01531	01532	20030										
	SNMG 433 F2 SNMG 120412-F2			01544												
F3 	SNMG 433 F3 SNMG 120412-F3			24478	24123											
M2 	SNMG 432 M2 SNMG 120408-M2				01533											
	SNMG 433 M2 SNMG 120412-M2				01545											
M3 	SNMG 322 M3 SNMG 090308-M3			14579	14580	14581										
	SNMG 432 M3 SNMG 120408-M3			01535	01536											
	SNMG 433 M3 SNMG 120412-M3			01547	01548	01549										
	SNMG 434 M3 SNMG 120416-M3			14582	14583											
	SNMG 543 M3 SNMG 150612-M3			14588	14589											
	SNMG 643 M3 SNMG 190612-M3			19544	19545											
	SNMG 644 M3 SNMG 190616-M3			14601	14602											
M4 	SNMG 432 M4 SNMG 120408-M4						25002	25003								
	SNMG 433 M4 SNMG 120412-M4						24903	24904								
	SNMG 643 M4 SNMG 190612-M4						24913	24914								
	SNMG 644 M4 SNMG 190616-M4						24915*	24916*								




*Available end of August 2007

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
M5 	SNMG 322 M5 SNMG 090308-M5	20199	17912	17913	17914	20029											
	SNMG 432 M5 SNMG 120408-M5	20200	01537	01538	01539	20031											
	SNMG 433 M5 SNMG 120412-M5	20202	01550	01551	01552	20032											
	SNMG 434 M5 SNMG 120416-M5			14585	14586	20033											
	SNMG 543 M5 SNMG 150612-M5			14591	14593	20034											
	SNMG 544 M5 SNMG 150616-M5			14595	14596	20035											
	SNMG 643 M5 SNMG 190612-M5			14598	14599	20036											
	SNMG 644 M5 SNMG 190616-M5			14604	14605	20037											
M6 	SNMG 322 M6 SNMG 090308-M6			24113	24114												
	SNMG 432 M6 SNMG 120408-M6			24119	24120												
	SNMG 543 M6 SNMG 150612-M6			24125		24126											
	SNMG 644 M6 SNMG 190616-M6				24129	24130											
M7 	SNMG 322 M7 SNMG 090308-M7							24117				24115		24116			
	SNMG 432 M7 SNMG 120408-M7											24121		24122			
	SNMG 433 M7 SNMG 120412-M7											24124					
	SNMG 543 M7 SNMG 150612-M7											24127					
	SNMG 643 M7 SNMG 190612-M7											24128					
	SNMG 644 M7 SNMG 190616-M7											24131					

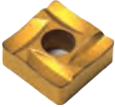


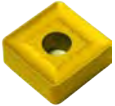

TURNING INSERTS

Product Offering

Square

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades							PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M8 	SNMG 432 M8 SNMG 120408-M8			19662	19663	20092	24901*	24902*								
	SNMG 433 M8 SNMG 120412-M8	20203		19664	19665	20094	24905*	24906								
	SNMG 434 M8 SNMG 120416-M8				19668	20096	24907*	24908								
	SNMG 543 M8 SNMG 150612-M8			19669	19670	20097	24909*	24910*								
	SNMG 544 M8 SNMG 150616-M8				19673	20099	24911*	24912								
	SNMG 643 M8 SNMG 190612-M8			19749	19675	20100										
	SNMG 644 M8 SNMG 190616-M8			19678	19679	20102	24917*	24918								
R3 	SNMG 432 R3 SNMG 120408-R3		01541	01542	01543											
	SNMG 433 R3 SNMG 120412-R3		01554	01555	01556											
	SNMG 543 R3 SNMG 150612-R3		01557	01558	01559											
	SNMG 544 R3 SNMG 150616-R3		01560	01561	01562											
	SNMG 643 R3 SNMG 190612-R3		01563	14607	01564											
	SNMG 644 R3 SNMG 190616-R3		14592	14608	01565	14609										
	SNMG 866 R3 SNMG 250924-R3				14610											
R4 	SNMG 432 R4 SNMG 120408-R4	20201				20093										
	SNMG 433 R4 SNMG 120412-R4	20204		19666	19667	20095										
	SNMG 434 R4 SNMG 120416-R4					20309										
	SNMG 543 R4 SNMG 150612-R4	20306		19671	19672	20098										
	SNMG 643 R4 SNMG 190612-R4			19676	19677	20101		25004*								
	SNMG 644 R4 SNMG 190616-R4			19680	19681	20103										
	SNMG 866 R4 SNMG 250924-R4			19682	19683	20104										

*Available end of August 2007

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
EL PN2 	SNMM 431 EL PN2 SNMM 120404 EL-PN2			22705												
	SNMM 432 EL PN2 SNMM 120408 EL-PN2		22706	22707	22708	22546						24722				
	SNMM 543 EL PN2 SNMM 150612 EL-PN2					22548										
	SNMM 643 EL PN2 SNMM 190612 EL-PN2			22883		23605										
ER PN2 	SNMM 432 ER PN2 SNMM 120408 ER-PN2					22547										
	SNMM 543 ER PN2 SNMM 150612 ER-PN2					22549										
	SNMM 643 ER PN2 SNMM 190612 ER-PN2			22709												
R6 	SNMM 432 R6 SNMM 120408-R6			14612	14613											
	SNMM 433 R6 SNMM 120412-R6			14615	14616											
	SNMM 543 R6 SNMM 150612-R6			14618	14619	14620										
	SNMM 544 R6 SNMM 150616-R6			14621	14624											
	SNMM 643 R6 SNMM 190612-R6			14626	14627											
	SNMM 644 R6 SNMM 190616-R6			14629	14630	14631										
R9 	SNMM 643 T2 R9 SNMM 190612 T2-R9							24919*								
	SNMM 866 T2 R9 SNMM 250924 T2-R9							24920*								
	SNMM 866 T4 R9 SNMM 250924T4-R9				24762											
C5 	SNMP 432 C5 SNMG 120408-C5			20288	20289		24921*		24134							
	SNMP 433 C5 SNMG 120412-C5						24922*									

*Available end of August 2007

TURNING INSERTS

Product Offering

Square






Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades							PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	SNU 433 SNUN 120412												24139			
	SNU 434 SNUN 120416		17948													
	SPC 322 SPHN 090308											24146				
	SPC 322 J SPHN 090308 J											24148*				
	SPC 422 SPHN 120308		23510													
	SPCE 731 SPHN 050204											24143	24144			
	SPCE 731 J SPHN 050204 J											24145*				
	SPG 322 SPGN 090308	20206	17949	22710												
	SPG 325 SPGN 090320													24179		
	SPG 421 SPGN 120304													24180		
	SPG 422 SPGN 120308	20207	17950		22448											
	SPG 424 SPGN 120316		17924	22711	22449											
	SPG 633 SPGN 190412				22450											
	SPG 634 SPGN 190416		17951													
PM2 	SPGT 32.51 PM2 SPGT 09T304-PM2			24172												
	SPGT 32.52 PM2 SPGT 09T308-PM2	20205	19825	19826	19827		24923*	24924*	24173							
	SPGT 432 PM2 SPGT 120408-PM2						24925*	24926*	24174							

* Available end of August 2007

TURNING INSERTS

Product Offering




Square

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
1A 	SPMR 2.51.52 1A SPMR 070208-1A		22396													
	SPMR 322 1A SPMR 090308-1A				22451											
	SPMR 422 1A SPMR 120308-1A					23606										
	SPMR 423 1A SPMR 120312-1A					22550										
PF2 	SPMR 321 PF2 SPMR 090304-PF2			06449												
	SPMR 322 PF2 SPMR 090308-PF2			06508												
	SPMR 421 PF2 SPMR 120304-PF2			06734												
	SPMR 422 PF2 SPMR 120308-PF2			06738												
PF5 	SPMR 321 PF5 SPMR 090304-PF5			06491	06492											
	SPMR 322 PF5 SPMR 090308-PF5		06555		06568											
	SPMR 421 PF5 SPMR 120304-PF5			06735	06736											
	SPMR 422 PF5 SPMR 120308-PF5		06742		06743											
	SPMR 423 PF5 SPMR 120312-PF5				06748											
1A 	SPMT 32.51 1A SPMT 09T304-1A					22552										24198
	SPMT 32.52 1A SPMT 09T308-1A					22553										24199
	SPMT 432 1A SPMT 120408-1A			22713		22555										
2A 	SPMT 2.521 2A SPMT 070304-2A			22712		22551										
	SPMT 32.52 2A SPMT 09T308-2A					22554										

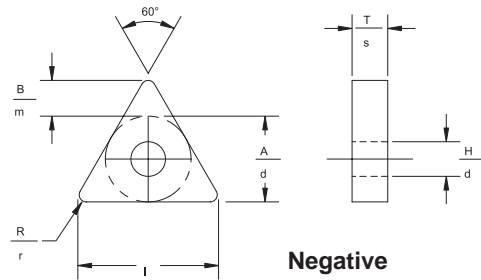
TURNING INSERTS

Product Offering

Square

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	SPMU 731 2A SPMR 050204-2A		23511													
	SPMW 21.51 SPMW 060204							24200								
	SPMW 32.51 SPMW 09T304		01170					24205								
	SPMW 32.52 SPMW 09T308	20208	00818					24207								
	SPMW 32.52 J SPMW 09T308 J							24716								24209
	SPMW 32.53 SPMW 09T312		17925													
	SPMW 432 SPMW 120408	20308	01172													
	SPMW 432 J SPMW 120408 J											24212				
	SPMW 643 SPMW 190612															24213
	SPU 422 SPUN 120308					22556										
	SPU 633 SPUN 190412					22557										

Triangle



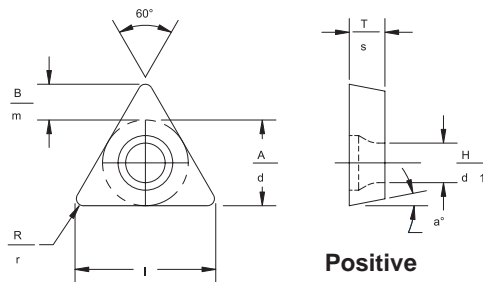
Triangle - NEGATIVE												
TNEA, TNFK, TNFM, TNG, TNGA, TNMA, TNMG, TNMM, TNMP, TNU												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
731	7/32	8/85	1/64	0.080	0.313	09 02 04	5.56	9.624	2.39	0.4	2.03	7.938
22.010	1/4	1/8	0.010	0.089	0.353	11 03 02	6.35	10.999	3.18	0.2	2.26	8.963
221	1/4	1/8	1/64	0.089	0.359	11 03 04	6.35	10.999	3.18	0.4	2.26	9.128
222	1/4	1/8	1/32	0.089	0.344	11 03 08	6.35	10.999	3.18	0.8	2.26	8.731
2.52.010	5/16	1/8	0.010	0.127	0.456	13 03 02	7.94	13.748	3.18	0.2	3.23	11.324
2.521	5/16	1/8	1/64	0.127	0.453	13 03 04	7.94	13.748	3.18	0.4	3.23	11.509
2.522	5/16	1/8	1/32	0.127	0.438	13 03 08	7.94	13.748	3.18	0.8	3.23	11.113
2.522.150	5/16	1/8	1/32	0.150	0.438	13 03 08	7.94	13.748	3.18	0.8	3.81	11.113
321	3/8	1/8	1/64	0.150	0.547	16 03 04	9.53	16.498	3.18	0.4	3.81	13.891
322	3/8	1/8	1/32	0.150	0.531	16 03 08	9.53	16.498	3.18	0.8	3.81	13.494
323	3/8	1/8	3/64	0.150	0.516	16 03 12	9.53	16.498	3.18	1.2	3.81	13.097
331	3/8	3/16	1/64	0.150	0.547	16 04 04	9.53	16.498	4.76	0.4	3.81	13.891
332	3/8	3/16	1/32	0.150	0.531	16 04 08	9.53	16.498	4.76	0.8	3.81	13.494
333	3/8	3/16	3/64	0.150	0.516	16 04 12	9.53	16.498	4.76	1.2	3.81	13.097
431	1/2	3/16	1/64	0.202	0.734	22 04 04	12.70	21.997	4.76	0.4	5.13	18.653
432	1/2	3/16	1/32	0.202	0.719	22 04 08	12.70	21.997	4.76	0.8	5.13	18.256
433	1/2	3/16	3/64	0.202	0.703	22 04 12	12.70	21.997	4.76	1.2	5.13	17.859
434	1/2	3/16	1/16	0.202	0.688	22 04 16	12.70	21.997	4.76	1.6	5.13	17.463
436	1/2	3/16	3/32	0.202	0.656	22 04 24	12.70	21.997	4.76	2.4	5.13	16.669
438	1/2	3/16	1/8	0.202	0.625	22 04 32	12.70	21.997	4.76	3.2	5.13	15.875
542	5/8	1/4	1/32	0.251	0.906	27 06 08	15.88	27.496	6.35	0.8	6.38	23.012
543	5/8	1/4	3/64	0.251	0.891	27 06 12	15.88	27.496	6.35	1.2	6.38	22.622
544	5/8	1/4	1/16	0.251	0.875	27 06 16	15.88	27.496	6.35	1.6	6.38	22.225
548	5/8	1/4	1/8	0.251	0.813	27 06 32	15.88	27.496	6.35	3.2	6.38	20.637
664	3/4	3/8	1/16	0.315	1.063	33 09 16	19.05	32.996	9.53	1.6	8.00	26.988
666	3/4	3/8	3/32	0.315	1.031	33 09 24	19.05	32.996	9.53	2.4	8.00	26.194

Value of a^o determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Insert Dimensions

Triangle



Triangle - POSITIVE

TBE, TBEE, TBEU, TBMU, TCGT, TCMT, TCMW, TEC, TEG, TEGW, TPC, TPCE, TPCN, TPE, TPEE, TPG, TPGA, TPGR, TPGT, TPMT, TPMU, TPMW, TPU

Inch Insert Designation	Inch Standard					Metric Insert Designation	Metric Standard					
	A I.C.	T	R	H	B		d	l	s	r	d1	m
521	5/32	6/97	1/64	--	0.219	06 01 04	3.97	6.874	1.57	0.4	--	5.554
522	5/32	1/16	1/32	--	0.203	06 01 08	3.97	6.874	1.59	0.8	--	5.159
631	3/16	3/32	1/64	--	0.266	08 02 04	4.76	8.249	2.38	0.4	--	6.747
632	3/16	3/32	1/32	--	0.250	08 02 08	4.76	8.249	2.38	0.8	--	6.350
731	7/32	8/85	1/64	--	0.313	09 02 04	5.56	9.624	2.39	0.4	--	7.938
732	7/32	8/85	1/32	--	0.297	09 02 08	5.56	9.624	2.39	0.8	--	7.541
1.81.51	7/32	3/32	1/64	0.098	0.313	09 02 04	5.56	9.624	2.38	0.4	2.49	7.938
21.50.5	1/4	3/32	0.008	0.110	0.367	11 02 02	6.35	10.999	2.38	0.2	2.79	9.322
21.50	1/4	3/32	0.005	0.110	0.370	11 02 01	6.35	10.999	2.38	0.1	2.79	9.398
21.51	1/4	3/32	1/64	0.110	0.359	11 02 04	6.35	10.999	2.38	0.4	2.79	9.128
21.52	1/4	3/32	1/32	0.110	0.344	11 02 08	6.35	10.999	2.38	0.8	2.79	8.737
2.521	5/16	1/8	1/64	0.134	0.453	13 03 04	7.94	13.748	3.18	0.4	3.40	11.509
2.522	5/16	1/8	1/32	--	0.438	13 03 08	7.94	13.748	3.18	0.8	--	11.113
32.010	3/8	1/8	0.010	--	0.302	16 03 02	9.53	16.498	3.18	0.3	--	7.668
32.51	3/8	5/32	1/64	0.173	0.547	16 T3 04	9.53	16.498	3.97	0.4	4.39	13.891
32.52	3/8	5/32	1/32	0.173	0.531	16 T3 08	9.53	16.498	3.97	0.8	4.39	13.494
32.53	3/8	5/32	3/64	0.173	0.516	16 T3 12	9.53	16.498	3.97	1.2	4.39	13.106
220	1/4	1/8	0.005	--	0.370	11 03 01	6.35	10.999	3.18	0.1	--	9.398
221	1/4	1/8	1/64	--	0.359	11 03 04	6.35	10.999	3.18	0.4	--	9.128
222	1/4	1/8	1/32	--	0.344	11 03 08	6.35	10.999	3.18	0.8	--	8.731
320	3/8	1/8	0.005	--	0.558	16 03 01	9.53	16.498	3.18	0.1	--	14.173
321	3/8	1/8	1/64	--	0.547	16 03 04	9.53	16.498	3.18	0.4	--	13.891
322	3/8	1/8	1/32	0.173	0.531	16 03 08	9.525	16.498	3.175	0.794	4.39	13.494
323	3/8	1/8	3/64	--	0.516	16 03 12	9.53	16.498	3.18	1.2	--	13.097
324	3/8	1/8	1/16	--	0.500	16 03 16	9.53	16.498	3.18	1.6	--	12.700
422	1/2	1/8	1/32	--	0.719	22 03 08	12.70	21.997	3.18	0.8	--	18.256
431	1/2	3/16	1/64	--	0.734	22 04 04	12.70	21.997	4.76	0.4	--	18.653
432	1/2	3/16	1/32	0.217	0.719	22 04 08	12.70	21.997	4.76	0.8	5.51	18.256
433	1/2	3/16	3/64	--	0.703	22 04 12	12.70	21.997	4.76	1.2	--	17.859
434	1/2	3/16	1/16	--	0.688	22 04 16	12.70	21.997	4.76	1.6	--	17.463
532	5/8	3/16	1/32	--	0.906	27 04 08	15.88	27.496	4.76	0.8	--	23.019
533	5/8	3/16	3/64	--	0.891	27 04 12	15.88	27.496	4.76	1.2	--	22.622
642	3/4	1/4	1/32	--	1.094	33 06 08	19.05	32.996	6.35	0.8	--	27.781

Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering

Triangle








Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	TBE 222 TBEN 110308											24225			24226	
	TBEE 521 TBEN 060104		22967			22558						24222				
	TBEE 522 TBEN 060108										24223					
	TBEU 521 LH TBER 060104 FL										24224					
	TBMU 521 2A TBMR 060104-2A		22559													
PM2 	TCGT 21.50.5 PM2 TCGT 110202-PM2							24227								
	TCGT 21.51 PM2 TCGT 110204-PM2		19828	19829	19830		24927*	24928*	24228							
	TCGT 21.52 PM2 TCGT 110208-PM2		19831	19832	19833		24929*	24930*	24229							
	TCGT 32.51 PM2 TCGT 16T304-PM2		19834		19835	20105	24931*	24932*	24230							
	TCGT 32.52 PM2 TCGT 16T308-PM2		19836	19837	19838	20107	24933*	24934*	24231							
	TCGT 432 PM2 TCGT 220408-PM2			19839												
1L 	TCGT 21.50.5 1L TCGT 110202-1L								01719							01740
	TCGT 21.51 1L TCGT 110204-1L								01720							01741
	TCGT 32.51 1L TCGT 16T304-1L								01721							01742
	TCGT 32.52 1L TCGT 16T308-1L								01722							01743

*Available end of August 2007

TURNING INSERTS

Product Offering






Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
1A 	TCMT 32.51 1A TCMT 16T304-1A			22716		22561										
	TCMT 32.52 1A TCMT 16T308-1A		22717			22562										24234
2A 	TCMT 21.51 2A TCMT 110204-2A		22714	22715		22560								24232		24233
	TCMT 32.52 2A TCMT 16T308-2A					22563										
PF4 	TCMT 21.51 PF4 TCMT 110204-PF4		19991	19992	19993											
	TCMT 21.52 PF4 TCMT 110208-PF4		19994	20006	19995											
	TCMT 32.51 PF4 TCMT 16T304-PF4		19996	19997	19998											
	TCMT 32.52 PF4 TCMT 16T308-PF4	20211	19999	20000	20001											
	TCMT 32.53 PF4 TCMT 16T312-PF4				20002											
PM4 	TCMT 21.51 PM4 TCMT 110204-PM4	20210	01697		01698											
	TCMT 21.52 PM4 TCMT 110208-PM4		17916	17917	17918											
PM5 	TCMT 32.51 PM5 TCMT 16T304-PM5		00850	14856												
	TCMT 32.52 PM5 TCMT 16T308-PM5		01190	00627												
	TCMW 21.51 TCMW 110204								24237					24235		24236
	TCMW 32.51 TCMW 16T304															24238
	TCMW 32.52 TCMW 16T308		01175													24239
	TD 6P TD 6P													24241		
	TD 8P TD 8P													24242		
	TD 10P TD 10P													24240		

TURNING INSERTS

Product Offering





Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	TEC 2.522 J TEHN 130308 J											24243	24244			
	TEC 321 J TEHN 160304 J												24245			
	TEC 322 J TEHN 160308 J											24246	24247			
	TEG 2.521 J TEGN 130304 J											24255				
	TEG 2.522 J TEGN 130308 J												24256			
	TEG 321 J TEGN 160304 J											24257	24258			
	TEG 322 J TEGN 160308 J											24259	24260			
	TEG 422 J TEGN 220308 J												24261			
	TEGW 2.521 J TEGW 130304 J											24252	24253			
	TEGW 322 J TEGW 160308 J												24254			
	TM 831 J TPHN 110204 J											24263				
	TM 832 TPHN 110208												24264			
	TNEA 2.521 TNEA 130304												24267			
	TNEA 2.522 TNEA 130308												24268		24269	
	TNEA 221 TNEA 110304											24265				
	TNEA 222 TNEA 110308											24266				
	TNEA 322 TNEA 160308												24270			
	TNEA 323 TNEA 160312												24271			
	TNEA 332 TNEA 160408												24272			
	TNEA 432 TNEA 220408												24273			

TURNING INSERTS

Product Offering




Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
EL PN1 	TNFK 731 EL PN1 <i>TNMM 090204 EL-PN1</i>			22718												
RE 	TNFM 2.52.010 RE <i>TNGM 130302 RE</i>			22723								24276				
	TNFM 22.010 RE <i>TNGM 110302 RE</i>			22719												
	TNG 221 <i>TNGN 110304</i>											24282				
	TNG 222 <i>TNGN 110308</i>		22397									24283	24284			
	TNG 2.522 <i>TNGN 130308</i>												24285			
	TNG 322 <i>TNGN 160308</i>												24286			
	TNG 332 <i>TNGN 160408</i>												24287			
	TNG 432 <i>TNGN 220408</i>												24288			
	TNG 433 <i>TNGN 220412</i>		22734													
	TNGA 2.522.150 <i>TNGA 130308 .150</i>							24281								

TURNING INSERTS

Product Offering







Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30
	TNMA 221 TNMA 110304											24289			
	TNMA 222 TNMA 110308		17926									24290			
	TNMA 2.522 TNMA 130308											24291			
	TNMA 322 TNMA 160308	20212										24292			
	TNMA 332 TNMA 160408	20213	01566									24293			
	TNMA 432 TNMA 220408	20214	01567			22564			24295			24294			
	TNMA 433 TNMA 220412	20215	01568									24296			
	TNMA 434 TNMA 220416		01569						24297						
	TNMA 542 TNMA 270608											24298			
	TNMA 544 TNMA 270616		22735												
	TNMA 666 TNMA 330924		23493									24299			
	TNMG 432 2B TNMG 220408-2B			22738											
	TNMG 2.521 2T TNMG 130304-2T			22736											
	TNMG 322 2T TNMG 160308-2T			22737											
	TNMG 332 2T TNMG 160408-2T														24333




TURNING INSERTS

Product Offering

Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
C2 	TNMG 332 C2 TNMG 160408-C2			19686												
	TNMG 432 C2 TNMG 220408-C2				22458			24339								
	TNMG 433 C2 TNMG 220412-C2			22409	24347	22569										
	TNMG 543 C2 TNMG 270612-C2			19700												
EL PN1 	TNMG 431 EL PN1 TNMG 220404 EL-PN1			11115												
ER PN1 	TNMG 431 ER PN1 TNMG 220404 ER-PN1			11124												
F1 	TNMG 221 F1 TNMG 110304-F1			24300												
	TNMG 2.521 F1 TNMG 130304-F1			24303												
	TNMG 2.522 F1 TNMG 130308-F1			24306												
	TNMG 322 F1 TNMG 160308-F1			24314												
F2 	TNMG 331 F2 TNMG 160404-F2			01570												
	TNMG 332 F2 TNMG 160408-F2		01572	01573	01574											
F3 	TNMG 222 F3 TNMG 110308-F3			24301												
	TNMG 331 F3 TNMG 160404-F3			24323												
	TNMG 332 F3 TNMG 160408-F3				24326											
	TNMG 432 F3 TNMG 220408-F3				24340											
	TNMG 433 F3 TNMG 220412-F3				24348											


Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
F5 	TNMG 332 F5 TNMG 160408-F5				01575											
M2 	TNMG 432 M2 TNMG 220408-M2				01587											
	TNMG 433 M2 TNMG 220412-M2				01600											
M3 	TNMG 222 M3 TNMG 110308-M3					20310										
	TNMG 321 M3 TNMG 160304-M3			17708	17709	20311										
	TNMG 322 M3 TNMG 160308-M3			14632	14633											
	TNMG 323 M3 TNMG 160312-M3			17710	17711											
	TNMG 331 M3 TNMG 160404-M3			14636	14637											
	TNMG 332 M3 TNMG 160408-M3			01577	01578											
	TNMG 333 M3 TNMG 160412-M3				14639											
	TNMG 431 M3 TNMG 220404-M3			19547	19548											
	TNMG 432 M3 TNMG 220408-M3			01589	01590	01591										
	TNMG 433 M3 TNMG 220412-M3			19550	19551											

TURNING INSERTS

Product Offering


Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M5 	TNMG 322 M5 <i>TNMG 160308-M5</i>	20216	14622	14634	14635	20040										
	TNMG 331 M5 <i>TNMG 160404-M5</i>				01571	20041										
	TNMG 332 M5 <i>TNMG 160408-M5</i>		01579	01580	01581	20042										
	TNMG 333 M5 <i>TNMG 160412-M5</i>		01583	01584	01585	20043										
	TNMG 431 M5 <i>TNMG 220404-M5</i>		19871	19872	19873	20044										
	TNMG 432 M5 <i>TNMG 220408-M5</i>	20218	01592	01593	01594	20045										
	TNMG 433 M5 <i>TNMG 220412-M5</i>		01602	01603	01604	20046										
	TNMG 434 M5 <i>TNMG 220416-M5</i>		19553	01609	19554	22570										
	TNMG 542 M5 <i>TNMG 270608-M5</i>		19875	19876	19877	20047										
	TNMG 543 M5 <i>TNMG 270612-M5</i>		17712	17713	17714	20048										
	TNMG 544 M5 <i>TNMG 270616-M5</i>		19556	19557	19558											

TURNING INSERTS

Product Offering

Triangle


Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M6 	TNMG 321 M6 <i>TNMG 160304-M6</i>					24310										
	TNMG 322 M6 <i>TNMG 160308-M6</i>			24315	24316	24317					24318					
	TNMG 323 M6 <i>TNMG 160312-M6</i>				24321											
	TNMG 331 M6 <i>TNMG 160404-M6</i>			24324	24325		24935*	24936*								
	TNMG 332 M6 <i>TNMG 160408-M6</i>			24327	24328		24937*	24938*			24329					
	TNMG 333 M6 <i>TNMG 160412-M6</i>				24334		24941*	24942								
	TNMG 431 M6 <i>TNMG 220404-M6</i>			24335	24336	24337										
	TNMG 432 M6 <i>TNMG 220408-M6</i>			24341	24342	24343	24945	24946*								
	TNMG 433 M6 <i>TNMG 220412-M6</i>						24949*	24950*								
	TNMG 434 M6 <i>TNMG 220416-M6</i>						24953*	24954*								
	TNMG 438 M6 <i>TNMG 220432-M6</i>			24353			24957*	24958								
	TNMG 542 M6 <i>TNMG 270608-M6</i>			24354	24355	24356										
	TNMG 543 M6 <i>TNMG 270612-M6</i>															24357
	TNMG 544 M6 <i>TNMG 270616-M6</i>															24358



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TURNING INSERTS

Product Offering

Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M7 	TNMG 222 M7 TNMG 110308-M7											24302				
	TNMG 2.521 M7 TNMG 130304-M7							24305				24304				
	TNMG 2.522 M7 TNMG 130308-M7											24307	24308	24309		
	TNMG 321 M7 TNMG 160304-M7							24313				24311		24312		
	TNMG 322 M7 TNMG 160308-M7			00050								24319		24320		
	TNMG 323 M7 TNMG 160312-M7											24322				
	TNMG 332 M7 TNMG 160408-M7											24330		24331		
	TNMG 431 M7 TNMG 220404-M7														24338	
	TNMG 432 M7 TNMG 220408-M7								24346				24344		24345	
	TNMG 433 M7 TNMG 220412-M7												24349		24350	
	TNMG 434 M7 TNMG 220416-M7												24351			
	TNMG 436 M7 TNMG 220424-M7												24352			
	TNMG 544 M7 TNMG 270616-M7												24359			
	TNMG 548 M7 TNMG 270632-M7			24361									24360			
	TNMG 666 M7 TNMG 330924-M7														24362	



Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
M8 	TNMG 322 M8 <i>TNMG 160308-M8</i>	20217		19684	19685	20108											
	TNMG 332 M8 <i>TNMG 160408-M8</i>			19687	19688	20137	24939*	24940*	24332								
	TNMG 333 M8 <i>TNMG 160412-M8</i>			19689	19690	20109	24943*	24944									
	TNMG 432 M8 <i>TNMG 220408-M8</i>	20219		19691	19692	20110	24947*	24948									
	TNMG 433 M8 <i>TNMG 220412-M8</i>				19695	20112	24951*	24952									
	TNMG 434 M8 <i>TNMG 220416-M8</i>			19698	19699	20114	24955*	24956									
	TNMG 543 M8 <i>TNMG 270612-M8</i>			19701	19704	20118	24959*	24960*									
	TNMG 544 M8 <i>TNMG 270616-M8</i>			19709	19712	20120	24961*	24962*									
	TNMG 666 M8 <i>TNMG 330924-M8</i>				19713	20122	24963*	24964*									
R3 	TNMG 432 R3 <i>TNMG 220408-R3</i>		01596	01597	01598	01599											
	TNMG 433 R3 <i>TNMG 220412-R3</i>		01606	01607	01608												
	TNMG 434 R3 <i>TNMG 220416-R3</i>		14623		01610												
	TNMG 438 R3 <i>TNMG 220432-R3</i>				19555												
	TNMG 543 R3 <i>TNMG 270612-R3</i>		17716	17717	17718												
	TNMG 544 R3 <i>TNMG 270616-R3</i>			14641	14642												
	TNMG 666 R3 <i>TNMG 330924-R3</i>				14644												


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TURNING INSERTS

Product Offering

Triangle



Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
R4 	TNMG 432 R4 <i>TNMG 220408-R4</i>	20220		19693	19694	20111										
	TNMG 433 R4 <i>TNMG 220412-R4</i>	20221		19696	19697	20113										
	TNMG 434 R4 <i>TNMG 220416-R4</i>					20115										
	TNMG 436 R4 <i>TNMG 220424-R4</i>					20116										
	TNMG 438 R4 <i>TNMG 220432-R4</i>					20117										
	TNMG 543 R4 <i>TNMG 270612-R4</i>			19705	19708	20119										
	TNMG 544 R4 <i>TNMG 270616-R4</i>					20121										
	TNMG 664 R4 <i>TNMG 330916-R4</i>					22740										
	TNMG 666 R4 <i>TNMG 330924-R4</i>		23496		19716	20123										
EL PN1 	TNMM 221 EL PN1 <i>TNMM 110304 EL-PN1</i>			22720								24723		24724		
	TNMM 222 EL PN1 <i>TNMM 110308 EL-PN1</i>		23607													
	TNMM 2.521 EL PN1 <i>TNMM 130304 EL-PN1</i>			22724										24725		
	TNMM 2.522 EL PN1 <i>TNMM 130308 EL-PN1</i>			22726											24726	
	TNMM 321 EL PN1 <i>TNMM 160304 EL-PN1</i>			22729								24728				
	TNMM 322 EL PN1 <i>TNMM 160308 EL-PN1</i>			22731												

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
EL PN2 	TNMM 2.521 EL PN2 <i>TNMM 130304 EL-PN2</i>			22741												
	TNMM 2.522 EL PN2 <i>TNMM 130308 EL-PN2</i>											24727				
	TNMM 321 EL PN2 <i>TNMM 160304 EL-PN2</i>			22743											24729	
	TNMM 322 EL PN2 <i>TNMM 160308 EL-PN2</i>			22745		22572									24731	
	TNMM 331 EL PN2 <i>TNMM 160404 EL-PN2</i>			22747												
	TNMM 332 EL PN2 <i>TNMM 160408 EL-PN2</i>			22749									24733			
	TNMM 431 EL PN2 <i>TNMM 220404 EL-PN2</i>			22751					24735							
	TNMM 432 EL PN2 <i>TNMM 220408 EL-PN2</i>			22753	22463	22574							24738		24739	
	TNMM 433 EL PN2 <i>TNMM 220412 EL-PN2</i>			22755												
	TNMM 542 EL PN2 <i>TNMM 270608 EL-PN2</i>			22757												
	TNMM 543 EL PN2 <i>TNMM 270612 EL-PN2</i>			22759		22576										

TURNING INSERTS

Product Offering







Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
ER PN1 	TNMM 221 ER PN1 <i>TNMM 110304 ER-PN1</i>			22721												
	TNMM 222 ER PN1 <i>TNMM 110308 ER-PN1</i>			22722												
	TNMM 2.521 ER PN1 <i>TNMM 130304 ER-PN1</i>			22725												
	TNMM 2.522 ER PN1 <i>TNMM 130308 ER-PN1</i>		22727	22728												
	TNMM 321 ER PN1 <i>TNMM 160304 ER-PN1</i>			22730												
ER PN2 	TNMM 2.521 ER PN2 <i>TNMM 130304 ER-PN2</i>			22742												
	TNMM 321 ER PN2 <i>TNMM 160304 ER-PN2</i>			22744											24730	
	TNMM 322 ER PN2 <i>TNMM 160308 ER-PN2</i>			22746		22573									24732	
	TNMM 331 ER PN2 <i>TNMM 160404 ER-PN2</i>			22748												
	TNMM 332 ER PN2 <i>TNMM 160408 ER-PN2</i>			22750									24734			
	TNMM 431 ER PN2 <i>TNMM 220404 ER-PN2</i>			22752					24737						24736	
	TNMM 432 ER PN2 <i>TNMM 220408 ER-PN2</i>			22754	22464	22575			24742				24740		24741	
	TNMM 433 ER PN2 <i>TNMM 220412 ER-PN2</i>			22756											24743	
	TNMM 542 ER PN2 <i>TNMM 270608 ER-PN2</i>			22758												
	TNMM 543 ER PN2 <i>TNMM 270612 ER-PN2</i>			22760		22577										

TURNING INSERTS

Product Offering

Triangle



Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
R6		TNMM 432 R6 TNMM 220408-R6			14646	14647	14648										
		TNMM 433 R6 TNMM 220412-R6			14649	14650											
C5		TNMP 331 C5 TNMG 160404-C5				20290		24965*		24379							
		TNMP 332 C5 TNMG 160408-C5				20291		24966*		24380							
		TNMP 431 C5 TNMG 220404-C5				20292	20293				24381						
		TNMP 432 C5 TNMG 220408-C5				20294	20124				24382						
		TNMP 433 C5 TNMG 220412-C5				20295											
		TNU 432 TNUN 220408										24383					
		TPC 222 TPHN 110308										24388					
		TPC 2.522 TPHN 130308											24389				
		TPC 32.010R TPHN 160302 R												24390			
		TPC 321 J TPHN 160304 J													24391		
		TPC 322 J TPHN 160308 J											24392	24393			
		TPCE 631 TPHN 080204											24384				
		TPCE 631 J TPHN 080204 J												24385			
		TPCE 632 TPHN 080208													24386		
LH		TPCN 322 LH TPCN 160308 FL													24387		

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TURNING INSERTS

Product Offering


Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30
	TPE 221 TPEN 110304		22761									24403	24404		
	TPE 222 TPEN 110308										24405				
	TPE 321 TPEN 160304										24406				
	TPE 322 TPEN 160308											24407			
	TPEE 731 TPEN 090204		23512			22578						24394	24395	24396	
	TPEE 732 TPEN 090208	20222										24397	24398		

TURNING INSERTS

Product Offering

Triangle





Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	TPG 220 TPGN 110301											24425				
	TPG 221 TPGN 110304		17952			22579	24977*		24430			24426	24427		24428	
	TPG 221 J TPGN 110304 J											24431				
	TPG 222 TPGN 110308		17953			22580			24437			24432	24433		24434	24435
	TPG 2.521 TPGN 130304											24438				
	TPG 2.522 TPGN 130308								24442			24439	24440	24441		
	TPG 2.522 J TPGN 130308 J											24443				
	TPG 320 TPGN 160301					22581						24444				
	TPG 321 TPGN 160304		17954		22465	22582	24978*		24450				24445	24446	24447	24448
	TPG 322 TPGN 160308		17955		22466	22583	24979*		24458			24451	24452	24453	24454	24455
	TPG 322 A TPGN 160308 A															24459
	TPG 322 J TPGN 160308 J											24460				
	TPG 323 TPGN 160312		17956			22584			24463				24461		24462	
	TPG 324 TPGN 160316			22764			22585						24718			
	TPG 431 TPGN 220404	20229	17957			22586	24980*		24466				24464		24465	
	TPG 432 TPGN 220408	20230	17958		22467	22587			24471				24467		24468	24469
	TPG 433 TPGN 220412	20231	17959			22588	24981*		24474				24472		24473	
	TPG 434 TPGN 220416		17960			22589	24982*						24475			
	TPG 532 TPGN 270408												24476			
	TPG 533 TPGN 270412												24477		24478	
	TPG 642 TPGN 330608												24479			

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TURNING INSERTS

Product Offering

Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
2K 	TPGA 1.81.51 2K TPGA 090204-2K		22762						24413			24409	24410		24411	
	TPGA 1.81.51J 2K TPGA 090204J-2K												24408			
	TPGA 1.81.52 2K TPGA 090208-2K		22763													
	TPGA 1.81.53 2K TPGA 090212-2K								24414							
FM 	TPGR 221 FM TPGR 110304-FM											24415				
	TPGR 222 FM TPGR 110308-FM											24416				
PM2 	TPGT 1.81.51 PM2 TPGT 090204-PM2	20223	19840	19841	19842	20138										
	TPGT 21.50 PM2 TPGT 110201-PM2								24417							
	TPGT 21.50.5 PM2 TPGT 110202-PM2								24418							
	TPGT 21.51 PM2 TPGT 110204-PM2	20224		19843		20125	24967*	24968*	24419		24420					
	TPGT 21.52 PM2 TPGT 110208-PM2	20225	19844	19845	19846		24969*	24970*	24421							
	TPGT 32.51 PM2 TPGT 16T304-PM2	20226	19847		19848	20126	24971*	24972*	24422							
	TPGT 32.52 PM2 TPGT 16T308-PM2	20227	19849	19850	19851		24973*	24974*	24423							
	TPGT 32.53 PM2 TPGT 16T312-PM2										24424					
	TPGT 432 PM2 TPGT 220408-PM2	20228	19852		19853		24975*	24976*								
1A 	TPMR 321 1A TPMR 160304-1A								24486				24484		24485	
	TPMR 322 1A TPMR 160308-1A								24488						24487	
	TPMR 432 1A TPMR 220408-1A			22766	22468	22594										
	TPMR 433 1A TPMR 220412-1A			22768												




*Available end of August 2007

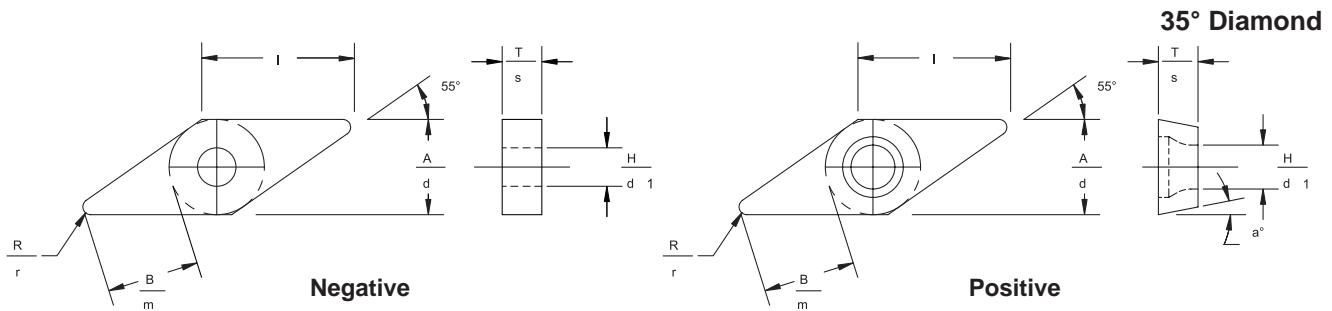
Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUJ10	VPUJ30	VPUS10
2A 	TPMR 221 2A TPMR 110304-2A											24482				
	TPMR 222 2A TPMR 110308-2A											24483				
	TPMR 2.522 2A TPMR 130308-2A			22765												
	TPMR 322 2A TPMR 160308-2A												24489			
	TPMR 432 2A TPMR 220408-2A			22767												
PF2 	TPMR 221 PF2 TPMR 110304-PF2		06752	06755	22590											
	TPMR 222 PF2 TPMR 110308-PF2		06788	06793	22591											
	TPMR 321 PF2 TPMR 160304-PF2			06814	22592											
	TPMR 322 PF2 TPMR 160308-PF2		06844	06845	22593											
PF5 	TPMR 221 PF5 TPMR 110304-PF5		06772		06773	06777										
	TPMR 222 PF5 TPMR 110308-PF5		06797		06800											
	TPMR 321 PF5 TPMR 160304-PF5		06840	06841	06842											
	TPMR 322 PF5 TPMR 160308-PF5		06847	06848	06849											
	TPMR 323 PF5 TPMR 160312-PF5				06947											
1A 	TPMT 32.51 1A TPMT 16T304-1A		23608			23497										
	TPMT 32.52 1A TPMT 16T308-1A		23498			23499		24492								
	TPMT 432 1A TPMT 220408-1A		23609	22773		23513										
2A 	TPMT 1.81.51 2A TPMT 090204-2A			22769												
	TPMT 21.51 2A TPMT 110204-2A		22770	22771		22595		24491							24490	
	TPMT 32.51 2A TPMT 16T304-2A					22596										
	TPMT 32.52 2A TPMT 16T308-2A			22772		22597										

TURNING INSERTS

Product Offering

Triangle

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades						
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10	
2A 	TPMU 731 2A TPMR 090204-2A			22774		22598											
	TPMU 732 2A TPMR 090208-2A					22599											
	TPMW 1.81.51 TPMW 090204												24493				
	TPMW 21.51 TPMW 110204		01191			22600			24496					24494		24495	
	TPMW 21.51 J TPMW 110204 J															24497	
	TPMW 21.52 TPMW 110208	20232	17927														
	TPMW 2.521 TPMW 130304					22601			24499								24498
	TPMW 2.521 J TPMW 130304 J																24500
	TPMW 32.51 TPMW 16T304		01194			22602			24502								24501
	TPMW 32.52 TPMW 16T308	20233	00823			22603			24505					24503			24504
	TPMW 432 TPMW 220408	20234	01198														
	TPU 221 TPUN 110304	20235															
	TPU 222 TPUN 110308	20236															
	TPU 321 TPUN 160304	20237	17961														
	TPU 322 TPUN 160308	20238											24506		24507		
	TPU 323 TPUN 160312	20239															
	TPU 433 TPUN 220412		17962														



35° Diamond - NEGATIVE												
VNGA, VNGP, VNGS, VNMA, VNMG, VNMP, VNMS												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
33.004	3/8	3/16	0.004	0.150	0.427	16 04 01	9.53	16.606	4.76	0.1	3.81	10.839
33.007	3/8	3/16	0.007	0.150	0.420	16 04 02	9.53	16.606	4.76	0.2	3.81	10.662
331	3/8	3/16	1/64	0.150	0.400	16 04 04	9.53	16.606	4.76	0.4	3.81	10.152
332	3/8	3/16	1/32	0.150	0.363	16 04 08	9.53	16.606	4.76	0.8	3.81	9.229
333	3/8	3/16	3/64	0.150	0.327	16 04 12	9.53	16.606	4.76	1.2	3.81	8.306
431	1/2	3/16	1/64	0.202	0.545	22 04 04	12.70	22.142	4.76	0.4	5.13	13.844
432	1/2	3/16	1/32	0.202	0.509	22 04 08	12.70	22.142	4.76	0.8	5.13	12.921
442	1/2	1/4	1/32	0.202	0.509	22 06 08	12.70	22.142	6.35	0.8	5.13	12.921
443	1/2	1/4	3/64	0.202	0.472	22 06 12	12.70	22.142	6.35	1.2	5.13	11.988






35° Diamond - POSITIVE												
VBGT, VBMT, VCGT, VCMT, VCMW, VPGA, VPMA, VPMT												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
21.50.5	1/4	3/32	0.008	0.110	0.272	11 02 02	6.35	11.071	2.38	0.2	2.79	6.911
21.51	1/4	3/32	1/64	0.110	0.254	11 02 04	6.35	11.071	2.38	0.4	2.79	6.461
32.51	3/8	5/32	1/64	0.173	0.400	16 T3 04	9.53	16.606	3.97	0.4	4.39	10.152
32.52	3/8	5/32	1/32	0.173	0.363	16 T3 08	9.53	16.606	3.97	0.8	4.39	9.229
32.53	3/8	5/32	3/64	0.173	0.327	16 T3 12	9.53	16.606	3.97	1.2	4.39	8.306
220.5	1/4	1/8	0.008	0.110	0.272	11 03 02	6.35	11.071	3.18	0.2	2.79	6.911
221	1/4	1/8	1/64	0.110	0.254	11 03 04	6.35	11.071	3.18	0.4	2.79	6.461
222	1/4	1/8	1/32	0.110	0.218	11 03 08	6.35	11.071	3.18	0.8	2.79	5.538
330.5	3/8	3/16	0.008	0.173	0.417	16 04 02	9.53	16.606	4.76	0.2	4.39	10.603
331	3/8	3/16	1/64	0.173	0.400	16 04 04	9.53	16.606	4.76	0.4	4.39	10.152
332	3/8	3/16	1/32	0.173	0.363	16 04 08	9.53	16.606	4.76	0.8	4.39	9.229
442	1/2	1/4	1/32	0.202	0.509	22 06 08	12.70	22.142	6.35	0.8	5.13	12.921
443	1/2	1/4	3/64	0.217	0.472	22 06 12	12.70	22.142	6.35	1.2	5.51	11.998

Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering







35° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
PF3 	VBGT 220.5 PF3 VBGT 110302-PF3								24510							
	VBGT 221 PF3 VBGT 110304-PF3				24511						24512					
	VBGT 222 PF3 VBGT 110308-PF3								24513							
	VBGT 330.5 PF3 VBGT 160402-PF3								24514							
	VBGT 331 PF3 VBGT 160404-PF3				24515				24516							
	VBGT 332 PF3 VBGT 160408-PF3				24517				24518							
	1A 	VBMT 331 1A VBMT 160404-1A				22413										
VBMT 332 1A VBMT 160408-1A					22471											
PF4 	VBMT 331 PF4 VBMT 160404-PF4		20003	20004	20005											
PM4 	VBMT 331 PM4 VBMT 160404-PM4				01700											
	VBMT 332 PM4 VBMT 160408-PM4	20240	01701	01702	01703											
1L 	VCGT 21.50.5 1L VCGT 110202-1L								01723							01744
	VCGT 21.51 1L VCGT 110204-1L								01724							01745
	VCGT 331 1L VCGT 160404-1L								01725							01746
	VCGT 332 1L VCGT 160408-1L								01726							01747

TURNING INSERTS

Product Offering

35° Diamond








Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30
1A 	VCMT 32.51 1A VCMT 16T304-1A			22775											24519
	VCMT 32.52 1A VCMT 16T308-1A			22776		22604									
	VCMW 32.51 VCMW 16T304														24520
	VNGA 332 VNGA 160408											24606			
SR 	VNGP 33.004 SR VNGG 160401-SR							24607		24608					
	VNGP 33.007 SR VNGG 160402-SR							24609		24610					
	VNGP 331 SR VNGG 160404-SR							24611		24612					
. . GS 	VNGS 331 VNGM 160404							24613							
	VNGS 333 VNGM 160412							24615				24614			
	VNMA 332 VNMA 160408	20241	01611									24616			
	VNMA 432 VNMA 220408		17928												

Turning Inserts

TURNING INSERTS

Product Offering







35° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
C2 	VNMG 332 C2			19717				24628								
	VNMG 160408-C2															
	VNMG 431 C2			19719												
	VNMG 220404-C2															
F1 	VNMG 331 F1		24617		24618											
	VNMG 160404-F1															
	VNMG 332 F1			24629												
	VNMG 160408-F1															
F3 	VNMG 331 F3			24619				24620		24621						
	VNMG 160404-F3															
	VNMG 332 F3			24630				24631		24632						
	VNMG 160408-F3															
F5 	VNMG 431 F3									24641						
	VNMG 220404-F3															
F5 	VNMG 332 F5				01614											
	VNMG 160408-F5															
M2 	VNMG 332 M2				01616											
	VNMG 160408-M2															
M3 	VNMG 331 M3			19560	19561											
	VNMG 160404-M3															
	VNMG 332 M3			01618	01619											
	VNMG 160408-M3															

TURNING INSERTS

Product Offering

35° Diamond



Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M5 	VNMG 331 M5 VNMG 160404-M5	20242	14667		01612	20049										
	VNMG 332 M5 VNMG 160408-M5	20243	01620	01621	01622	20303										
	VNMG 432 M5 VNMG 220408-M5		19879	19880	19881											
	VNMG 442 M5 VNMG 220608-M5			19883	19884											
M6 	VNMG 331 M6 VNMG 160404-M6			24622	24623	24624			24625		24626					
	VNMG 332 M6 VNMG 160408-M6			24633	24634	24635			24636		24637					
	VNMG 432 M6 VNMG 220408-M6			24642	24643				24644							
	VNMG 442 M6 VNMG 220608-M6				24645											
M7 	VNMG 331 M7 VNMG 160404-M7											24627				
	VNMG 332 M7 VNMG 160408-M7					24639						24638				
M8 	VNMG 332 M8 VNMG 160408-M8			19718					24640							
C5 	VNMP 331 C5 VNMG 160404-C5			20296	20297				24647							24646
	VNMP 332 C5 VNMG 160408-C5				20298	20127			24649							24648
MS 	VNMS 331 VNMM 160404 EN			22777	20299	22607			24652				24650	24651		
	VNMS 332 VNMM 160408 EN			22778	20300	22608							24653		24654	
	VNMS 442 VNMM 220608 EN			22779		22609			24657				24655		24656	
	VNMS 443 VNMM 220612 EN			22780												

Turning Inserts

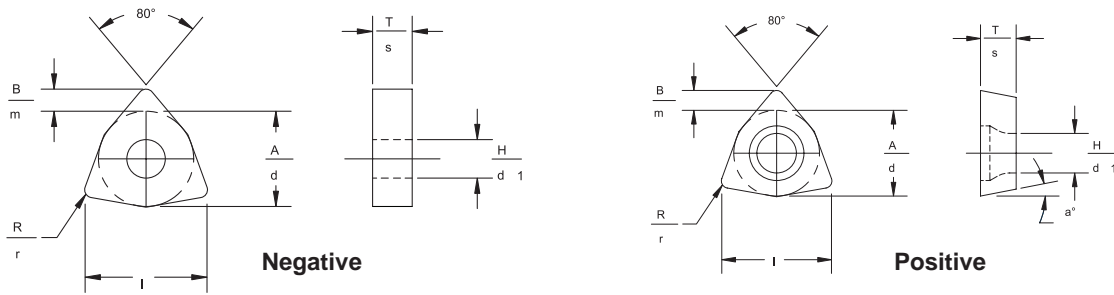
TURNING INSERTS

Product Offering

35° Diamond

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades				
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30
 W	VPGA 442 W											24658			
	VPGA 220608 W														
	VPMA 442 W											24659			
	VPMA 220608 W														
 2V	VPMT 32.53 2V												24660		
	VPMT 16T312-2V														
	VPMT 443 2V												24661		
	VPMT 220612-2V														

Trigon



Trigon - NEGATIVE												
WNMA, WNMG, WNMP												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
331	3/8	3/16	1/64	0.150	0.096	06 04 04	9.53	6.515	4.76	0.4	3.81	2.438
332	3/8	3/16	1/32	0.150	0.087	06 04 08	9.53	6.515	4.76	0.8	3.81	2.209
431	1/2	3/16	1/64	0.202	0.130	08 04 04	12.70	8.687	4.76	0.4	5.13	3.302
432	1/2	3/16	1/32	0.202	0.122	08 04 08	12.70	8.687	4.76	0.8	5.13	3.088
433	1/2	3/16	3/64	0.202	0.113	08 04 12	12.70	8.687	4.76	1.2	5.13	2.870
434	1/2	3/16	1/16	0.202	0.104	08 04 16	12.70	8.687	4.76	1.6	5.13	2.647
644	3/4	1/4	1/16	0.315	0.174	13 06 16	19.05	13.031	6.35	1.6	8.00	4.420









Trigon - POSITIVE												
WPGT												
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B		d	l	s	r	d1	m
21.51	1/4	3/32	1/64	0.110	0.061	04 02 04	6.35	4.344	2.38	0.4	2.79	1.549
32.51	3/8	5/32	1/64	0.173	0.096	06 T3 04	9.53	6.515	3.97	0.4	4.39	2.426
32.52	3/8	5/32	1/32	0.173	0.087	06 T3 08	9.53	6.515	3.97	0.8	4.39	2.206







Value of a° determined by second letter of part number. See page A 2 for details.

TURNING INSERTS

Product Offering

Trigon






Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
	WNMA 432 WNMA 080408	20244	01624													
	WNMA 433 WNMA 080412	20307	01625													
C2 	WNMG 432 C2 WNMG 080408-C2				19721	20128										
	WNMG 433 C2 WNMG 080412-C2			19728												
F2 	WNMG 332 F2 WNMG 060408-F2		17720	17721	17722											
	WNMG 431 F2 WNMG 080404-F2			01629												
	WNMG 432 F2 WNMG 080408-F2		01632	01633	14652	20051										
F3 	WNMG 431 F3 WNMG 080404-F3							24673								
	WNMG 432 F3 WNMG 080408-F3			24676	24677					24678						
F5 	WNMG 332 F5 WNMG 060408-F5				01626											
	WNMG 431 F5 WNMG 080404-F5				01630											
	WNMG 432 F5 WNMG 080408-F5				01634											
M2 	WNMG 432 M2 WNMG 080408-M2				01636											
	WNMG 433 M2 WNMG 080412-M2				01648											
M3 	WNMG 432 M3 WNMG 080408-M3			01638	01639	01640										
	WNMG 433 M3 WNMG 080412-M3			01650	01651	01652										
M4 	WNMG 432 M4 WNMG 080408-M4						24983	24984								
	WNMG 433 M4 WNMG 080412-M4						24985	24986								

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
M5 	WNMG 331 M5 WNMG 060404-M5		01202													
	WNMG 332 M5 WNMG 060408-M5				01628											
	WNMG 431 M5 WNMG 080404-M5					20050										
	WNMG 432 M5 WNMG 080408-M5	20245	01641	01642	01643	20052										
	WNMG 433 M5 WNMG 080412-M5		01653	01654	01655	20053										
M6 	WNMG 332 M6 WNMG 060408-M6				24671	24672										
	WNMG 431 M6 WNMG 080404-M6			24674				24675								
	WNMG 432 M6 WNMG 080408-M6			24679	24680			24681								
M8 	WNMG 332 M8 WNMG 060408-M8			19720												
	WNMG 432 M8 WNMG 080408-M8	20246		19724	19725	20139										
	WNMG 433 M8 WNMG 080412-M8			19729	19732	20129										
R3 	WNMG 432 R3 WNMG 080408-R3		01645	01646	01647											
	WNMG 433 R3 WNMG 080412-R3		01657	01658	01659											
	WNMG 434 R3 WNMG 080416-R3		01660		01661											
R4 	WNMG 432 R4 WNMG 080408-R4	20247														
	WNMG 433 R4 WNMG 080412-R4	20249		19733												
	WNMG 644 R4 WNMG 130616-R4					20130										
W3 	WNMG 332 W3 WNMG 060408-W3			14697												

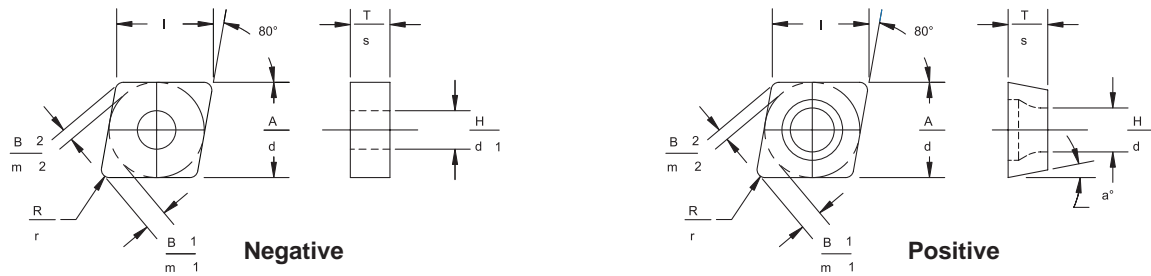
TURNING INSERTS

Product Offering

Trigon

Chipbreaker	Part Number (ANSI) (ISO)	MTCVD Grades						PVD Grades			Uncoated Grades					
		VP1505	VP1510	VP5515	VP5525	VP5535	VP8515	VP8525	VP9610	VP7615	VP9625	VPUK10	VPUK20	VPUP10	VPUP30	VPUS10
W6 	WNMG 332 W6 WNMG 060408-W6			14698												
	WNMG 432 W6 WNMG 080408-W6		14699	14700	14701											
WN3 	WNMG 431 WN3 WNMG 080404-WN3			23505												
	WNMG 432 WN3 WNMG 080408-WN3			20301												
WN5 	WNMG 432 WN5 WNMG 080408-WN5				20302											
C5 	WNMP 332 C5 WNMG 060408-C5				22781											
	WNMP 431 C5 WNMG 080404-C5							24682								
	WNMP 432 C5 WNMG 080408-C5					22782		24683								
PM2 	WPGT 21.51 PM2 WPGT 040204-PM2						24987	24988	24684							
	WPGT 32.51 PM2 WPGT 06T304-PM2					20131										
	WPGT 32.52 PM2 WPGT 06T308-PM2	20250			19892	20140	24989	24990								

80° Diamond



80° Diamond - NEGATIVE														
Inch Insert Designation	CNG, CNGA, CNGM, CNGN							CNxx - a° = 0°						
	A	Inch Standard					Metric Insert Designation	Metric Standard						
	I.C.	T	R	H	B1	B2		d	l	s	r	d1	m1	m2
431	1/2	3/16	1/64	0.202	0.130	0.072	12 04 04	12.70	12.896	4.76	0.4	5.13	3.308	1.818
432	1/2	3/16	1/32	0.202	0.122	0.067	12 04 08	12.70	12.896	4.76	0.8	5.13	3.088	1.697
433	1/2	3/16	3/64	0.202	0.113	0.062	12 04 12	12.70	12.896	4.76	1.2	5.13	2.867	1.576
434	1/2	3/16	1/16	0.202	0.104	0.057	12 04 16	12.70	12.896	4.76	1.6	5.13	2.647	1.455
543	5/8	1/4	3/64	0.251	0.148	0.081	16 06 12	15.88	16.120	6.35	1.2	6.38	3.749	2.061
452	1/2	5/16	1/32	0.202	0.122	0.067	12 07 08	12.70	12.896	7.94	0.8	5.13	3.088	1.697
453	1/2	5/16	3/64	0.202	0.113	0.062	12 07 12	12.70	12.896	7.94	1.2	5.13	2.867	1.576
454	1/2	5/16	1/16	0.202	0.104	0.057	12 07 16	12.70	12.896	7.94	1.6	5.13	2.647	1.455
544	5/8	1/4	1/16	0.251	0.139	0.076	16 06 16	15.88	16.120	6.35	1.6	6.38	3.529	1.939
643	3/4	1/4	3/64	0.315	0.182	0.100	19 06 12	19.05	19.344	6.35	1.2	8.00	4.632	2.545
644	3/4	1/4	1/16	0.315	0.174	0.095	19 06 16	19.05	19.344	6.35	1.6	8.00	4.411	2.424


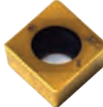
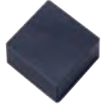
80° Diamond - POSITIVE														
Inch Insert Designation	CCGW, CPEW, CPEX, CPG, CPGW, CPMW							CCxx - a° = 7°			CPxx - a° = 11°			
	A	Inch Standard					Metric Insert Designation	Metric Standard						
	I.C.	T	R	H	B1	B2		d	l	s	r	d1	m1	m2
1.81.51	7/32	3/32	1/64	0.098	0.054	0.030	05 02 04	5.72	5.803	2.38	0.4	2.49	1.367	0.751
1.81.52	7/32	3/32	1/32	0.098	0.045	0.025	05 02 08	5.72	5.803	2.38	0.8	2.49	1.147	0.630
21.51	1/4	3/32	1/64	0.110	0.061	0.033	06 02 04	6.35	6.448	2.38	0.4	2.79	1.544	0.848
21.52	1/4	3/32	1/32	0.110	0.052	0.029	06 02 08	6.35	6.448	2.38	0.8	2.79	1.323	0.727
21.53	1/4	3/32	3/64	0.110	0.043	0.024	06 02 12	6.35	6.448	2.38	1.2	2.79	1.103	0.606
32.51	3/8	5/32	1/64	0.173	0.096	0.052	09 T3 04	9.53	9.672	3.97	0.4	4.39	2.426	1.333
32.52	3/8	5/32	1/32	0.173	0.087	0.048	09 T3 08	9.53	9.672	3.97	0.8	4.39	2.206	1.212
32.53	3/8	5/32	3/64	0.173	0.078	0.043	09 T3 12	9.53	9.672	3.97	1.2	4.39	1.985	1.091
421	1/2	1/8	1/64	--	0.130	0.072	12 03 04	12.70	12.896	3.18	0.4	--	3.308	1.818
422	1/2	1/8	1/32	--	0.122	0.067	12 03 08	12.70	12.896	3.18	0.8	--	3.088	1.697
431	1/2	3/16	1/64	0.217	0.130	0.072	12 04 04	12.70	12.896	4.76	0.4	5.51	3.308	1.818
432	1/2	3/16	1/32	0.217	0.122	0.067	12 04 08	12.70	12.896	4.76	0.8	5.51	3.088	1.697
433	1/2	3/16	3/64	0.217	0.113	0.062	12 04 12	12.70	12.896	4.76	1.2	5.51	2.867	1.576

TURNING INSERTS

Advanced Materials Product Offering

80° Diamond



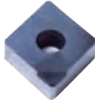
Turning Inserts

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F 	CCGW 21.51 F CCGW 060204 F	41097										
	CCGW 21.52 F CCGW 060208 F	41098										
	CCGW 431 F CCGW 120404 F	41099										
	CCGW 432 F CCGW 120408 F	41100										
	CCGW 433 F CCGW 120412 F	41101										
M2 	CCGW 21.51 M2 S5 CCGW 060204 M2 S5		40014									
	CCGW 21.52 M2 S5 CCGW 060208 M2S5		40015									
	CCGW 21.52W M2 S5 CCGW 060208W M2 S5		40151									
Flat Top 	CNG 431 CNGN 120404							40326				

TURNING INSERTS

Advanced Materials Product Offering

80° Diamond

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades					
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8		
T		CNG 432 T00320 CNGN 120408 T00320										40593	
		CNG 433 T00320 CNGN 120412 T00320										40594	
		CNG 432 T00325 CNGN 120408 T00325							40329				
		CNG 431 T00630 CNGN 120404 T00630							40327				
		CNG 432 T00630 CNGN 120408 T00630							40330				
		CNG 433 T00630 CNGN 120412 T00630							40333				
		CNG 434 T00630 CNGN 120416 T00630							40335				
		CNG 543 T00630 CNGN 160612 T00630							40338				
		CNG 432 T00820 CNGN 120408 T00820							40331				
		CNG 433 T00820 CNGN 120412 T00820							40334				
		CNG 432 T7 CNGN 120408 T7						41200					
		CNG 433 T7 CNGN 120412 T7						41201					
		CNG 434 T7 CNGN 120416 T7						41202					
		Flat Top		CNGA 432 CNGA 120408						40339			
CNGA 433 CNGA 120412								40343					
4F		CNGA 432 4F CNGA 120408 4F			40235								
		CNGA 432 4FA CNGA 120408 4FA			40236								




Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering

80° Diamond

Turning Inserts

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
E 	CNGA 432 E CNGA 120408 E						41187					
	CNGA 433 E CNGA 120412 E						41189					
	CNGA 434 E CNGA 120416 E						41191					
M2 	CNGA 432 M2 S1 CNGA 120408 M2 S1		40245									
	CNGA 432W M2 S1 CNGA 120408W M2 S1		40310									
	CNGA 433 M2 S1 CNGA 120412 M2 S1		40315									
	CNGA 431 M2 S5 CNGA 120404 M2 S5		40226									
	CNGA 432 M2 S5 CNGA 120408 M2 S5		40263									
	CNGA 432W M2 S5 CNGA 120408W M2 S5		40311									
	CNGA 433 M2 S5 CNGA 120412 M2 S5		40316									
M4 	CNGA 431 M4 S1 CNGA 120404 M4 S1		41156									
	CNGA 432 M4 S1 CNGA 120408 M4 S1		41158									
	CNGA 432W M4 S1 CNGA 120408W M4 S1		41160									
	CNGA 433 M4 S1 CNGA 120412 M4 S1		41162									
	CNGA 431 M4 S5 CNGA 120404 M4 S5		41157									
	CNGA 432 M4 S5 CNGA 120408 M4 S5		41159									
	CNGA 432W M4 S5 CNGA 120408W M4 S5		41161									
	CNGA 433 M4 S5 CNGA 120412 M4 S5		41179									

TURNING INSERTS

Advanced Materials Product Offering

80° Diamond





Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
S 	CNGA 431 S5 CNGA 120404 S5								40231	40232		
	CNGA 432 S5 CNGA 120408 S5								40303	40306		
	CNGA 432W S5 CNGA 120408W S5								40312	40314		
	CNGA 433 S5 CNGA 120412 S5								40317	40318		
	CNGA 432 S7 CNGA 120408 S7								40307	40309		
	CNGA 433 S7 CNGA 120412 S7								40321	40322		
T 	CNGA 432 T00820 CNGA 120408 T00820							40341				
	CNGA 433 T00820 CNGA 120412 T00820							40345				
	CNGA 432 T7 CNGA 120408 T7						41188					
	CNGA 433 T7 CNGA 120412 T7						41190					
	CNGA 434 T7 CNGA 120416 T7						41192					
	CNGA 543 T7 CNGA 160612 T7						41193					
	CNGA 544 T7 CNGA 160616 T7						41194					
	CNGA 643 T7 CNGA 190612 T7						41195					
	CNGA 644 T7 CNGA 190616 T7						41196					
F 	CNGM 431 F CNGM 120404 F	41106										
	CNGM 432 F CNGM 120408 F	41107										
	CNGM 433 F CNGM 120412 F	41108										

Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering




80° Diamond

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
A 	CNGN 432 A CNGN 120408 A					40169						
	CNGN 433 A CNGN 120412 A					40994						
	CNGN 434 A CNGN 120416 A					40995						
T 	CNGN 432 T CNGN 120408 T					40170						
	CNGN 433 T CNGN 120412 T					40172						
	CNGN 434 T CNGN 120416 T					40174						
ZD T7 	CNGN 452 ZD T7 CNGN 120708 ZD T7						41197					
	CNGN 453 ZD T7 CNGN 120712 ZD T7						41198					
	CNGN 454 ZD T7 CNGN 120716 ZD T7						41199					
F 	CPG 421 F CPGN 120304 F	41124										
	CPG 422 F CPGN 120308 F	41125										

TURNING INSERTS

Advanced Materials Product Offering

80° Diamond

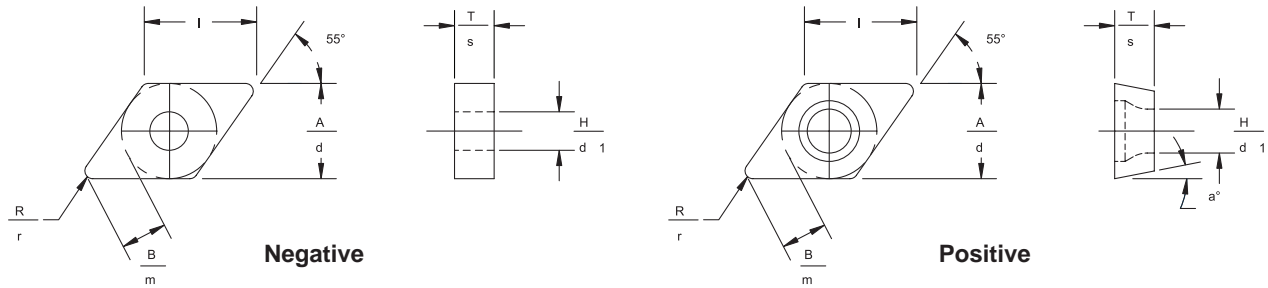
Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F		CPGW 1.81.51 F CPGW 050204 F	41113									
		CPGW 1.81.52 F CPGW 050208 F	41114									
		CPGW 21.51 F CPGW 060204 F	41115									
		CPGW 21.52 F CPGW 060208 F	41116									
		CPGW 21.53 F CPGW 060212 F	41117									
		CPGW 32.51 F CPGW 09T304 F	41118									
		CPGW 32.52 F CPGW 09T308 F	41119									
		CPGW 32.53 F CPGW 09T312 F	41120									
		CPGW 431 F CPGW 120404 F	41121									
		CPGW 432 F CPGW 120408 F	41122									
		CPGW 433 F CPGW 120412 F	41123									
		M2		CPGW 21.51 M2 S5 CPGW 060204 M2 S5		40323						
CPGW 21.52 M2 S5 CPGW 060208 M2 S5				40324								
CPGW 21.52W M2 S5 CPGW 060208W M2 S5				40357								
CPGW 32.51 M2 S5 CPGW 09T304 M2 S5				40365								
CPGW 32.52 M2 S5 CPGW 09T308 M2 S5				40394								
CPGW 32.52W M2 S5 CPGW 09T308W M2 S5				40515								
4F		CPMW 1.81.51 4F CPMW 050204 4F			40251							
		CPMW 21.51 4FA CPMW 060204 4FA			40252							
		CPMW 32.52 4FA CPMW 09T308 4FA			40253							

Turning Inserts

TURNING INSERTS

Advanced Materials Insert Dimensions

55° Diamond



55° Diamond - NEGATIVE

DNGA, DNGM, DNGN							DNxx - a° = 0°					
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
431	1/2	3/16	1/64	0.202	0.273	15 04 04	12.70	15.504	4.76	0.4	5.13	6.939
432	1/2	3/16	1/32	0.202	0.255	15 04 08	12.70	15.504	4.76	0.8	5.13	6.477
433	1/2	3/16	3/64	0.202	0.237	15 04 12	12.70	15.504	4.76	1.2	5.13	6.014
453	1/2	5/16	3/64	0.202	0.237	15 07 12	12.70	15.504	7.94	1.2	5.13	6.014
454	1/2	5/16	1/16	0.202	0.219	15 07 16	12.70	15.504	7.94	1.6	5.13	5.552

55° Diamond - POSITIVE





DCGW, DPGW, DPMW							DCxx - a° = 7°			DPxx - a° = 11°		
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
21.51	1/4	3/32	1/64	0.110	0.127	07 02 04	6.35	7.752	2.38	0.4	2.79	3.238
21.52	1/4	3/32	1/32	0.110	0.109	07 02 08	6.35	7.752	2.38	0.8	2.79	2.776
21.53	1/4	3/32	3/64	0.110	0.091	07 02 12	6.35	7.752	2.38	1.2	2.79	2.313
32.51	3/8	5/32	1/64	0.173	0.200	11 T3 04	9.53	11.628	3.97	0.4	4.39	5.089
32.52	3/8	5/32	1/32	0.173	0.182	11 T3 08	9.53	11.628	3.97	0.8	4.39	4.626
32.53	3/8	5/32	3/64	0.173	0.164	11 T3 12	9.53	11.628	3.97	1.2	4.39	4.164

TURNING INSERTS

Advanced Materials Product Offering

55° Diamond







Turning Inserts

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F		DCGW 21.51 F DCGW 070204 F	41126									
		DCGW 21.52 F DCGW 070208 F	41127									
		DCGW 21.53 F DCGW 070212 F	41128									
M2		DCGW 21.51 M2 S5 DCGW 070204 M2 S5		40723								
		DCGW 21.52 M2 S5 DCGW 070208 M2 S5		40731								
		DCGW 21.53 M2 S5 DCGW 070212 M2 S5		40745								
4F		DNGA 432 4F DNGA 150408 4F			40256							
		DNGA 432 4FA DNGA 150408 4FA			40257							
E		DNGA 433 E DNGA 150412 E						41204				
M2		DNGA 431 M2 S5 DNGA 150404 M2 S5		40762								
		DNGA 432 M2 S5 DNGA 150408 M2 S5		40770								
		DNGA 433 M2 S5 DNGA 150412 M2 S5		40786								
M4		DNGA 432 M4 S1 DNGA 150408 M4 S1		41165								
		DNGA 433 M4 S1 DNGA 150412 M4 S1		41167								
		DNGA 431 M4 S5 DNGA 150404 M4 S5		41164								
		DNGA 432 M4 S5 DNGA 150408 M4 S5		41166								
		DNGA 433 M4 S5 DNGA 150412 M4 S5		41168								

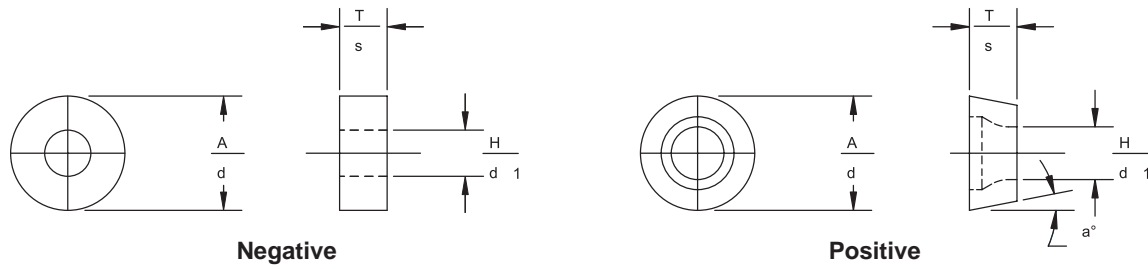
TURNING INSERTS

Advanced Materials Product Offering

55° Diamond

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
S		DNGA 431 S5 DNGA 150404 S5							40763	40766		
		DNGA 432 S5 DNGA 150408 S5							40772	40775		
		DNGA 433 S5 DNGA 150412 S5							40808	40809		
		DNGA 432 S7 DNGA 150408 S7							40777	40784		
		DNGA 433 S7 DNGA 150412 S7							40811	40813		
T7		DNGA 432 T7 DNGA 150408 T7					41203					
		DNGA 433 T7 DNGA 150412 T7					41205					
F		DNGM 431 F DNGM 150404 F	41129									
		DNGM 432 F DNGM 150408 F	41130									
		DNGM 433 F DNGM 150412 F	41131									
ZDE		DNGN 453 ZDE DNGN 150712 ZDE					41206					
		DNGN 454 ZDE DNGN 150716 ZDE					41207					
F		DPGW 21.51 F DPGW 070204 F	41132									
		DPGW 21.52 F DPGW 070208 F	41133									
		DPGW 32.51 F DPGW 11T304 F	41134									
		DPGW 32.52 F DPGW 11T308 F	41135									
		DPGW 32.53 F DPGW 11T312 F	41136									
4F		DPMW 21.51 4FA DPMW 070204 4FA			40266							
		DPMW 32.52 4FA DPMW 11T308 4FA			40267							

Round



Negative

Positive







Round - NEGATIVE							
RNG, RNGN				RNxx - $a^\circ = 0^\circ$			
Inch Insert Designation	A	Inch Standard		Metric Insert Designation	Metric Standard		
	I.C.	T	H		d	s	d1
32	3/8	1/8	0.150	09 03 00	9.53	3.18	3.81
42	1/2	1/8	0.202	12 03 00	12.70	3.18	5.13
43	1/2	3/16	0.202	12 04 00	12.70	4.76	5.13
45	1/2	5/16	0.202	12 07 00	12.70	7.94	5.13

Round - POSITIVE							
RCGX				RCxx - $a^\circ = 7^\circ$			
Inch Insert Designation	A	Inch Standard		Metric Insert Designation	Metric Standard		
	I.C.	T	H		d	s	d1
35	3/8	5/16	0.150	09 07 00	9.53	7.94	3.81
45	1/2	5/16	0.202	12 07 00	12.70	7.94	5.13

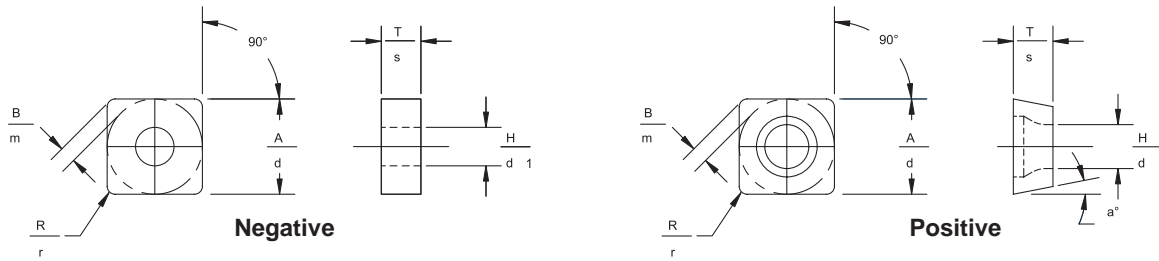
TURNING INSERTS

Advanced Materials Product Offering

Round

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
T00320		RCGX 35 T00320 <i>RCGX 090700 T00320</i>									40606	
		RCGX 45 T00320 <i>RCGX 120700 T00320</i>									40608	
SHARP		RNG 32 <i>RNGN 090300</i>						40360				
		RNG 43 <i>RNGN 120400</i>						40362				
T		RNG 43 T00320 <i>RNGN 120400 T00320</i>									40613	
		RNG 45 T00320 <i>RNGN 120700 T00320</i>									40614	
		RNG 32 T00630 <i>RNGN 090300 T00630</i>							40361			
		RNG 43 T00630 <i>RNGN 120400 T00630</i>							40363			
		RNG 43 T00820 <i>RNGN 120400 T00820</i>							40364			
		RNG 45 T01230 <i>RNGN 120700 T01230</i>							40367			
		RNGN 32T <i>RNGN 090300 T</i>					40176					
		RNGN 42T <i>RNGN 120300 T</i>					40178					
		RNGN 43T <i>RNGN 120400 T</i>				40180						
A		RNGN 32A <i>RNGN 090300 A</i>					40996					
		RNGN 42A <i>RNGN 120300 A</i>					40997					
		RNGN 43A <i>RNGN 120400 A</i>				40179						
E		RNGN 43 E <i>RNGN 120400 E</i>					41212					
T7		RNGN 43 T7 <i>RNGN 120400 T7</i>					41213					
		RNGN 45 T7 <i>RNGN 120700 T7</i>					41214					

Square






Square - NEGATIVE												
Inch Insert Designation	SNCN, SNEA, SNG, SNGA, SNGM, SNGN					SNxx - a° = 0°						
	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
322	3/8	1/8	1/32	0.150	0.065	09 03 08	9.53	9.525	3.18	0.8	3.81	1.644
323	3/8	1/8	3/64	0.150	0.058	09 03 12	9.53	9.525	3.18	1.2	3.81	1.480
324	3/8	1/8	1/16	0.150	0.052	09 03 16	9.53	9.525	3.18	1.6	3.81	1.315
422	1/2	1/8	1/32	0.202	0.091	12 03 08	12.70	12.700	3.18	0.8	5.13	2.301
423	1/2	1/8	3/64	0.202	0.084	12 03 12	12.70	12.700	3.18	1.2	5.13	2.137
424	1/2	1/8	1/16	0.202	0.078	12 03 16	12.70	12.700	3.18	1.6	5.13	1.973
431	1/2	3/16	1/64	0.202	0.097	12 04 04	12.70	12.700	4.76	0.4	5.13	2.466
432	1/2	3/16	1/32	0.202	0.091	12 04 08	12.70	12.700	4.76	0.8	5.13	2.301
433	1/2	3/16	3/64	0.202	0.084	12 04 12	12.70	12.700	4.76	1.2	5.13	2.137
434	1/2	3/16	1/16	0.202	0.078	12 04 16	12.70	12.700	4.76	1.6	5.13	1.973
454	1/2	5/16	1/16	--	0.078	12 07 16	12.70	12.700	7.94	1.6	--	1.973
543	5/8	1/4	3/64	0.251	0.110	15 06 12	15.88	15.875	6.35	1.2	6.38	2.795
544	5/8	1/4	1/16	0.251	0.104	15 06 16	15.88	15.875	6.35	1.6	6.38	2.630
63A	3/4	3/16	--	--	--	19 04 A	19.05	19.050	4.76	--	--	--
643	3/4	1/4	3/64	0.315	0.136	19 06 12	19.05	19.050	6.35	1.2	8.00	3.452
644	3/4	1/4	1/16	0.315	0.129	19 06 16	19.05	19.050	6.35	1.6	8.00	3.288

Square - POSITIVE												
Inch Insert Designation	SPC, SPG, SPMW					SPxx - a° =11°						
	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
1.81.51	7/32	3/32	1/64	--	0.040	05 02 04	5.72	5.715	2.38	0.4	--	1.019
1.81.52	7/32	3/32	1/32	--	0.034	05 02 08	5.72	5.715	2.38	0.8	--	0.855
32.52	3/8	5/32	1/32	0.173	0.065	09 T3 08	9.53	9.525	3.97	0.8	4.39	1.644
322	3/8	1/8	1/32	--	0.065	09 03 08	9.53	9.525	3.18	0.8	--	1.644
323	3/8	1/8	3/64	--	0.058	09 03 12	9.53	9.525	3.18	1.2	--	1.480
422	1/2	1/8	1/32	--	0.091	12 03 08	12.70	12.700	3.18	0.8	--	2.301

TURNING INSERTS

Advanced Materials Product Offering




Square

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
A		SNCN 422 A					40181					
		SNHN 120308 A										
4FA		SNEA 322 4F SNEA 090308 4F			40268							
		SNEA 322 4FA SNEA 090308 4FA			40319							
		SNEA 433 4FA SNEA 120412 4FA			40270							
		SNG 322 SNGN 090308						40368				
E		SNG 322 E SNGN 090308 E					41229					
		SNG 432 E SNGN 120408 E					41231					
		SNG 433 E SNGN 120412 E					41233					
		SNG 434 E SNGN 120416 E					41235					

TURNING INSERTS

Advanced Materials Product Offering

Square



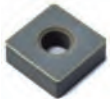

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades					
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8		
T		SNG 433 T00320 SNGN 120412 T00320										40626	
		SNG 644 T00320 SNGN 190616 T00320										40632	
		SNG 322 T00325 SNGN 090308 T00325							40369				
		SNG 643 T00620 SNGN 190612 T00620											40631
		SNG 433 T00630 SNGN 120412 T00630							40373				
		SNG 434 T00630 SNGN 120416 T00630							40375				
		SNG 454 T00630 SNGN 120716 T00630							40377				
		SNG 643 T00630 SNGN 190612 T00630							40379				
		SNG 644 T00630 SNGN 190616 T00630							40380				
		SNG 432 T00820 SNGN 120408 T00820							40372				
		SNG 322 T7 SNGN 090308 T7						41230					
		SNG 432 T7 SNGN 120408 T7						41232					
		SNG 433 T7 SNGN 120412 T7						41234					
		SNG 434 T7 SNGN 120416 T7						41236					
		SNG 63A T7 SNGN 1904 A T7						41239					
E		SNGA 432 E SNGA 120408 E						41220					
		SNGA 434 E SNGA 120416 E						41223					
M2		SNGA 431 M2 S5 SNGA 120404 M2 S5		40815									
		SNGA 432 M2 S5 SNGA 120408 M2 S5		40822									
		SNGA 433 M2 S5 SNGA 120412 M2 S5		40922									

Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering




Square

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
M8 	SNGA 432 M8 S1 SNGA 120408 M8 S1		41169									
	SNGA 433 M8 S1 SNGA 120412 M8 S1		41171									
	SNGA 432 M8 S5 SNGA 120408 M8 S5		41170									
	SNGA 433 M8 S5 SNGA 120412 M8 S5		41172									
S 	SNGA 431 S5 SNGA 120404 S5								40819	40820		
	SNGA 432 S5 SNGA 120408 S5								40869	40875		
	SNGA 433 S5 SNGA 120412 S5								40926	40927		
	SNGA 432 S7 SNGA 120408 S7								40897	40911		
	SNGA 433 S7 SNGA 120412 S7								40928	40929		
T7 	SNGA 432 T7 SNGA 120408 T7						41221					
	SNGA 433 T7 SNGA 120412 T7						41222					
	SNGA 434 T7 SNGA 120416 T7						41224					
	SNGA 543 T7 SNGA 150612 T7						41225					
	SNGA 544 T7 SNGA 150616 T7						41226					
	SNGA 643 T7 SNGA 190612 T7						41227					
	SNGA 644 T7 SNGA 190616 T7						41228					
F 	SNGM 322 F SNGM 090308 F	41014										
	SNGM 431 F SNGM 120404 F	41015										
	SNGM 432 F SNGM 120408 F	41016										
	SNGM 433 F SNGM 120412 F	41017										

TURNING INSERTS

Advanced Materials Product Offering

Square

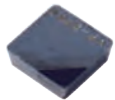

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
A 	SNGN 322 A SNGN 090308 A						40182					
	SNGN 323 A SNGN 090312 A						40184					
	SNGN 324 A SNGN 090316 A						40187					
	SNGN 422 A SNGN 120308 A						40189					
	SNGN 424 A SNGN 120316 A						40191					
	SNGN 432 A SNGN 120408 A					40193						
	SNGN 433 A SNGN 120412 A					40195						
	SNGN 434 A SNGN 120416 A					40197						
T 	SNGN 322 T SNGN 090308 T						40183					
	SNGN 323 T SNGN 090312 T						40186					
	SNGN 324 T SNGN 090316 T						40188					
	SNGN 423 T SNGN 120312 T						40190					
	SNGN 424 T SNGN 120316 T						40192					
	SNGN 432 T SNGN 120408 T				40194							
	SNGN 433 T SNGN 120412 T				40196							
	SNGN 434 T SNGN 120416 T				40198							
F 	SPC 1.81.51 F SPHN 050204 F	41018										
	SPC 1.81.52 F SPHN 050208 F	41019										

Turning Inserts

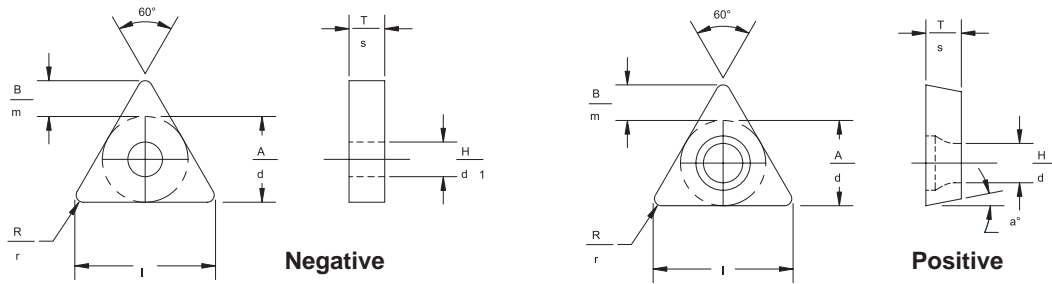
TURNING INSERTS

Advanced Materials Product Offering

Square

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
 F	SPG 322 F SPGN 090308 F	41028										
	SPG 323 F SPGN 090312 F	41030										
	SPG 422 F SPGN 120308 F	41032										
 4F	SPMW 32.52 4F SPMW 09T308 4F			40279								
	SPMW 32.52 4FA SPMW 09T308 4FA			40012								

Triangle



Triangle - NEGATIVE												
Inch Insert Designation	TNEA, TNG, TNGA, TNGM, TNGN					Metric Insert Designation	TNxx - a° = 0°					
	A I.C.	T	R	H	B1		d	l	s	r	d1	m1
221	1/4	1/8	1/64	0.110	0.359	11 03 04	6.35	10.999	3.18	0.4	2.79	9.128
222	1/4	1/8	1/32	0.110	0.344	11 03 08	6.35	10.999	3.18	0.8	2.79	8.731
223	1/4	1/8	3/64	0.110	0.328	11 03 12	6.35	10.999	3.18	1.2	2.79	8.334
322	3/8	1/8	1/32	0.150	0.531	16 03 08	9.53	16.498	3.18	0.8	3.81	13.494
331	3/8	3/16	1/64	0.150	0.547	16 04 04	9.53	16.498	4.76	0.4	3.81	13.891
332	3/8	3/16	1/32	0.150	0.531	16 04 08	9.53	16.498	4.76	0.8	3.81	13.494
333	3/8	3/16	3/64	0.150	0.516	16 04 12	9.53	16.498	4.76	1.2	3.81	13.097
432	1/2	3/16	1/32	0.202	0.719	22 04 08	12.70	21.997	4.76	0.8	5.13	18.256
433	1/2	3/16	3/64	0.202	0.703	22 04 12	12.70	21.997	4.76	1.2	5.13	17.859
434	1/2	3/16	1/16	--	0.688	22 04 16	12.70	21.997	4.76	1.6	--	17.463
443	1/2	1/4	3/64	--	0.703	22 06 12	12.70	21.997	6.35	1.2	--	17.859
543	5/8	1/4	3/64	--	0.891	27 06 12	15.88	27.496	6.35	1.2	--	22.622

Triangle - POSITIVE												
Inch Insert Designation	TCGW, TCMW, TEC, TEGW, TPE, TPG, TPGA, TPGW, TPMW					Metric Insert Designation	TCxx - a° = 7°		TExx - a° = 15°		TPxx - a° = 11°	
	A I.C.	T	R	H	B1		d	l	s	r	d1	m1
1.81.50.5	7/32	3/32	0.008	0.102	0.330	09 02 02	5.72	9.899	2.38	0.2	2.59	8.369
1.81.51	7/32	3/32	1/64	0.102	0.322	09 02 04	5.72	9.899	2.38	0.4	2.59	8.176
1.81.52	7/32	3/32	1/32	0.102	0.306	09 02 08	5.72	9.899	2.38	0.8	2.59	7.779
1.81.53	7/32	3/32	3/64	0.102	0.291	09 02 12	5.72	9.899	2.38	1.2	2.59	7.382
1.81.54	7/32	3/32	1/16	0.102	0.275	09 02 16	5.72	9.899	2.38	1.6	2.59	6.985
21.51	1/4	3/32	1/64	0.110	0.359	11 02 04	6.35	10.999	2.38	0.4	2.79	9.128
21.52	1/4	3/32	1/32	0.110	0.344	11 02 08	6.35	10.999	2.38	0.8	2.79	8.731
221	1/4	1/8	1/64	--	0.359	11 03 04	6.35	10.999	3.18	0.4	--	9.128
222	1/4	1/8	1/32	--	0.344	11 03 08	6.35	10.999	3.18	0.8	--	8.731
2.521	5/16	1/8	1/64	0.134	0.453	13 03 04	7.94	13.748	3.18	0.4	3.40	11.509
2.522	5/16	1/8	1/32	0.134	0.438	13 03 08	7.94	13.748	3.18	0.8	3.40	11.113
321	3/8	1/8	1/64	--	0.547	16 03 04	9.53	16.498	3.18	0.4	--	13.891
322	3/8	1/8	1/32	--	0.531	16 03 08	9.53	16.498	3.18	0.8	--	13.494
323	3/8	1/8	3/64	--	0.516	16 03 12	9.53	16.498	3.18	1.2	--	13.097
32.51	3/8	5/32	1/64	0.173	0.547	16 T3 04	9.53	16.498	3.97	0.4	4.39	13.891
32.52	3/8	5/32	1/32	0.173	0.531	16 T3 08	9.53	16.498	3.97	0.8	4.39	13.494
431	1/2	3/16	1/64	--	0.734	22 04 04	12.70	21.997	4.76	0.4	--	18.653
432	1/2	3/16	1/32	--	0.719	22 04 08	12.70	21.997	4.76	0.8	--	18.256

TURNING INSERTS

Advanced Materials Product Offering





Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F		TCGW 21.51 F TCGW 110204 F	41034									
		TCGW 21.52 F TCGW 110208 F	41035									
M3		TCGW 21.51 M3 S5 TCGW 110204 M3 S5		40930								
		TCGW 21.52 M3 S5 TCGW 110208 M3 S5		40933								
4F		TCMW 21.51 4F TCMW 110204 4F			40280							
		TCMW 21.52 4F TCMW 110208 4F			40281							
F		TEC 2.521 F TEHN 130304 F	41036									
		TEC 2.522 F TEHN 130308 F	41038									
		TEC 321 F TEHN 160304 F	41040									
		TEC 322 F TEHN 160308 F	41041									
H		TEC 2.521 H TEHN 130304 H	41037									
		TEC 2.522 H TEHN 130308 H	41039									
		TEC 322 H TEHN 160308 H	41042									
F		TEGW 2.521 F TEGW 130304 F	41043									
		TEGW 2.522 F TEGW 130308 F	41045									

TURNING INSERTS

Advanced Materials Product Offering

Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
H	 TEGW 2.521 H TEGW 130304 H	41044										
4F	 TNEA 222 4F TNEA 110308 4F TNEA 322 4F TNEA 160308 4F TNEA 332 4F TNEA 160408 4F TNEA 432 4F TNEA 220408 4F			40282								
				40283								
				40284								
				40285								
Flat Top	 TNG 322 TNGN 160308 TNG 332 TNGN 160408 TNG 432 TNGN 220408 TNG 433 TNGN 220412						40381					
							40382					
							40388					
							40391					
E	 TNG 332 E TNGN 160408 E						41252					

Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering

Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
T		TNG 433 T00320 TNGN 220412 T00320										40639
		TNG 222 T00325 TNGN 110308 T00325							40571			
		TNG 332 T00630 TNGN 160408 T00630							40383			
		TNG 333 T00630 TNGN 160412 T00630							40386			
		TNG 432 T00630 TNGN 220408 T00630							40389			
		TNG 433 T00630 TNGN 220412 T00630							40392			
		TNG 434 T00630 TNGN 220416T00630							40393			
		TNG 443 T00630 TNGN 220612 T00630							40395			
		TNG 543 T00630 TNGN 270612 T00630							40396			
		TNG 332 T00820 TNGN 160408 T00820							40384			
		TNG 432 T00820 TNGN 220408 T00820							40390			
		TNG 322 T7 TNGN 160308 T7						41251				
		TNG 332 T7 TNGN 160408 T7						41253				
		TNG 432 T7 TNGN 220408 T7						41254				
		TNG 433 T7 TNGN 220412 T7						41255				
M3		TNGA 331 M3 S5 TNGA 160404 M3 S5		40935								
		TNGA 332 M3 S5 TNGA 160408 M3 S5		40980								
		TNGA 333 M3 S5 TNGA 160412 M3 S5		40986								
		TNGA 432 M3 S5 TNGA 220408 M3 S5		41090								
		TNGA 433 M3 S5 TNGA 220412 M3 S5		41139								

TURNING INSERTS

Advanced Materials Product Offering

Triangle





Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
M6 	TNGA 332 M6 S1 TNGA 160408 M6 S1		41175									
	TNGA 333 M6 S1 TNGA 160412 M6 S1		41177									
	TNGA 331 M6 S5 TNGA 160404 M6 S5		41174									
	TNGA 332 M6 S5 TNGA 160408 M6 S5		41176									
	TNGA 333 M6 S5 TNGA 160412 M6 S5		41178									
S 	TNGA 331 S5 TNGA 160404 S5								40938	40977		
	TNGA 332 S5 TNGA 160408 S5								40982	40983		
	TNGA 333 S5 TNGA 160412 S5								40987	41026		
	TNGA 432 S5 TNGA 220408 S5									41138		
	TNGA 433 S5 TNGA 220412 S5									41140		
	TNGA 332 S7 TNGA 160408 S7								40984	40985		
	TNGA 333 S7 TNGA 160412 S7								41027	41053		
F 	TNGM 322 F TNGM 160308 F	41046										
	TNGM 332 F TNGM 160408 F	41047										
	TNGM 432 F TNGM 220408 F	41048										
A 	TNGN 221 A TNGN 110304 A					40199						
	TNGN 222 A TNGN 110308 A					40201						
	TNGN 223 A TNGN 110312 A					40203						
T 	TNGN 222 T TNGN 110308 T					40202						
	TNGN 333 T00320 TNGN 160412 T00320										40642	

Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering




Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F		TPE 1.81.51 F TPEN 090204 F	41054									
		TPE 1.81.52 F TPEN 090208 F	41056									
H		TPE 1.81.51 H TPEN 090204 H	41055									
Sharp		TPG 221 TPGN 110304						40401				
		TPG 321 TPGN 160304						40403				
		TPG 322 TPGN 160308						40404				
		TPG 432 TPGN 220408						40408				
F		TPG 2.521 F TPGN 130304 F	41076									
		TPG 2.522 F TPGN 130308 F	41077									
		TPG 221 F TPGN 110304 F	41072									
		TPG 222 F TPGN 110308 F	41074									
		TPG 321 F TPGN 160304 F	41079									
		TPG 322 F TPGN 160308 F	41080									
		TPG 323 F TPGN 160312 F	41082									
		TPG 431 F TPGN 220404 F	41083									
		TPG 432 F TPGN 220408 F	41084									

TURNING INSERTS

Advanced Materials Product Offering

Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
H		TPG 2.522 H TPGN 130308 H	41078									
		TPG 221 H TPGN 110304 H	41073									
		TPG 222 H TPGN 110308 H	41075									
		TPG 322 H TPGN 160308 H	41081									
T7		TPG 322 T00515 TPGN 160308 T00515						40405				
		TPG 222 T00630 TPGN 110308 T00630						40402				
		TPG 322 T00630 TPGN 160308 T00630							40406			
		TPG 322 T00820 TPGN 160308 T00820							40407			
		TPG 432 T00820 TPGN 220408 T00820							40410			
		TPG 322 T7 TPGN 160308 T7						41256				
		TPG 432 T7 TPGN 220408 T7						41257				
2K F		TPGA 1.81.50.5 2K F TPGA 090202 2K F	41057									
		TPGA 1.81.51 2K F TPGA 090204 2K F	41058									
		TPGA 1.81.52 2K F TPGA 090208 2K F	41060									
		TPGA 1.81.53 2K F TPGA 090212 2K F	41061									
		TPGA 1.81.54 2K F TPGA 090216 2K F	41062									
2K H		TPGA 1.81.51 2K H TPGA 090204 2K H	41059									

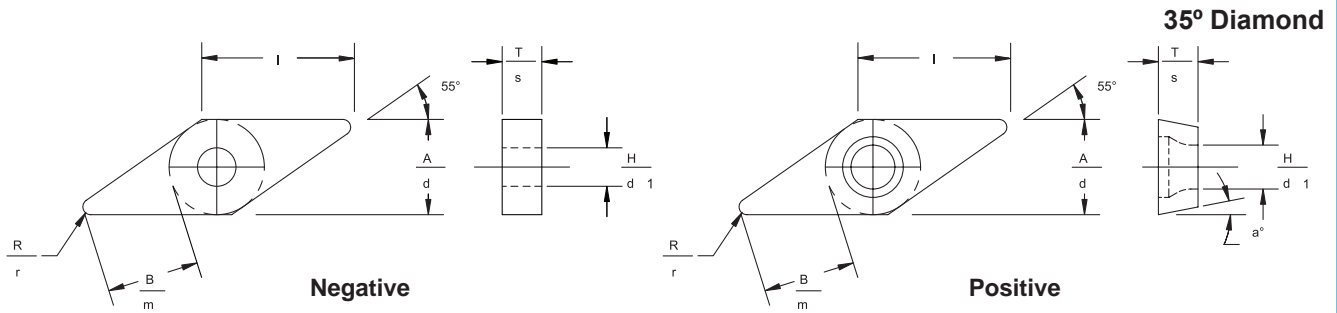
Turning Inserts

TURNING INSERTS

Advanced Materials Product Offering

Triangle

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F 	TPGW 2.521 F TPGW 130304 F	41066										
	TPGW 2.522 F TPGW 130308 F	41067										
	TPGW 21.51 F TPGW 110204 F	41063										
	TPGW 21.52 F TPGW 110208 F	41065										
	TPGW 32.51 F TPGW 16T304 F	41068										
	TPGW 32.52 F TPGW 16T308 F	41070										
H 	TPGW 21.51 H TPGW 110204 H	41064										
	TPGW 32.51 H TPGW 16T304 H	41069										
	TPGW 32.52 H TPGW 16T308 H	41071										
M3 	TPGW 21.51 M3 S5 TPGW 110204 M3 S5		41141									
	TPGW 21.52 M3 S5 TPGW 110208 M3 S5		41142									
4F 	TPMW 21.51 4F TPMW 110204 4F			40293								
	TPMW 32.52 4FA TPMW 16T308 4FA			40294								



35° Diamond - NEGATIVE												
VNGA, VNGM						VNxx - a° = 0°						
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
331	3/8	3/16	1/64	0.150	0.400	16 04 04	9.53	16.606	4.76	0.4	3.81	10.152
332	3/8	3/16	1/32	0.150	0.363	16 04 08	9.53	16.606	4.76	0.8	3.81	9.229
333	3/8	3/16	3/64	0.150	0.327	16 04 12	9.53	16.606	4.76	1.2	3.81	8.306
432	1/2	3/16	1/32	0.202	0.509	22 04 08	12.70	22.142	4.76	0.8	5.13	12.921



35° Diamond - POSITIVE												
VBGW, VCGW						VBxx - a° = 5°		VCxx - a° = 7°				
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
32.51	3/8	5/32	1/64	0.173	0.400	16 T3 04	9.53	16.606	3.97	0.4	4.39	10.152
32.52	3/8	5/32	1/32	0.173	0.363	16 T3 08	9.53	16.606	3.97	0.8	4.39	9.229
32.53	3/8	5/32	3/64	0.173	0.327	16 T3 12	9.53	16.606	3.97	1.2	4.39	8.306
331	3/8	3/16	1/64	0.173	0.400	16 04 04	9.53	16.606	4.76	0.4	4.39	10.152
332	3/8	3/16	1/32	0.173	0.363	16 04 08	9.53	16.606	4.76	0.8	4.39	9.229
333	3/8	3/16	3/64	0.173	0.327	16 04 12	9.53	16.606	4.76	1.2	4.39	8.306

TURNING INSERTS

Advanced Materials Product Offering

35° Diamond


Turning Inserts

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades			
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8
F		VBGW 331 F VBGW 160404 F	41085								
		VBGW 332 F VBGW 160408 F	41086								
		VBGW 333 F VBGW 160412 F	41087								
F		VCGW 32.51 F VCGW 16T304 F	41088								
		VCGW 32.52 F VCGW 16T308 F	41089								
		VCGW 32.53 F VCGW 16T312 F	41091								
4G		VNGA 332 4G VNGA 160408 4G			40296						
M2		VNGA 331 M2 S5 VNGA 160404 M2 S5		41143							
		VNGA 332 M2 S5 VNGA 160408 M2 S5		41146							
		VNGA 333 M2 S5 VNGA 160412 M2 S5		41151							
S5		VNGA 331 S5 VNGA 160404 S5							41144	41145	
		VNGA 332 S5 VNGA 160408 S5							41147	41148	
		VNGA 333 S5 VNGA 160412 S5							41152	41153	
S7		VNGA 332 S7 VNGA 160408 S7							41149	41150	
		VNGA 333 S7 VNGA 160412 S7							41154	41155	

TURNING INSERTS

Advanced Materials Product Offering

35° Diamond

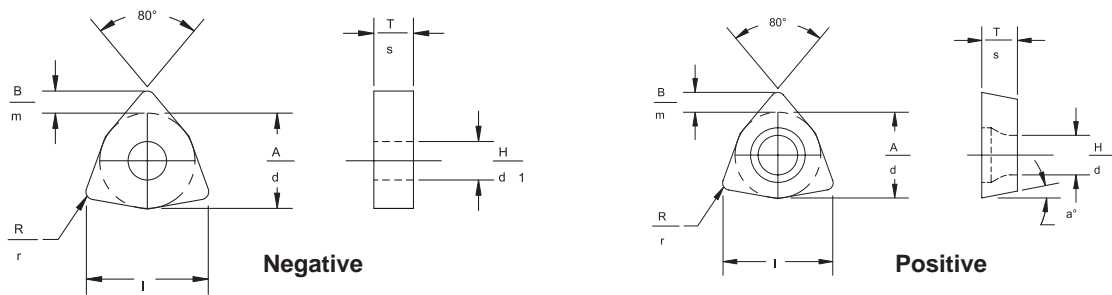
Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades				
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8	
F		VNGM 331 F VNGM 160404 F	41092									
		VNGM 332 F VNGM 160408 F	41093									
		VNGM 333 F VNGM 160412 F	41094									
		VNGM 432 F VNGM 220408 F	41095									

Turning Inserts

TURNING INSERTS

Advanced Materials Insert Dimensions

Trigon



Dimensions for Trigon Inserts - Negative							WNxx - $a^\circ = 0^\circ$					
Inch Insert Designation	A	Inch Standard				Metric Insert Designation	Metric Standard					
	I.C.	T	R	H	B1		d	l	s	r	d1	m1
WN.. 432	1/2	3/16	1/32	0.202	0.122	08 04 08	12.70	8.687	4.76	0.8	5.13	3.088
WN.. 433	1/2	3/16	3/64	0.202	0.113	08 04 12	12.70	8.687	4.76	1.2	5.13	2.867
WN.. 434	1/2	3/16	1/16	0.202	0.104	08 04 16	12.70	8.687	4.76	1.6	5.13	2.647

Advanced Materials Product Offering

Style	Part Number (ANSI) (ISO)	PCD Grade	pCBN Grades					Ceramic Grades			
		VPD720	VPC225	VC722	VC724	VC733	VPQ130	Q32	VPZ205	VPZ215	Q8
T5	WNGA 432 T5 WNGA 080408 T5						41258				
	WNGA 433 T5 WNGA 080412 T5						41259				
	WNGA 434 T5 WNGA 080416 T5						41260				

Grade Description	A142 - A145
Insert Geometry Application Data	A146 - A154
Wiper Guidelines.....	A155
Back Facing Guidelines	A156
Insert Failure Modes	A157 - A158
Insert Shape/Lead Angles Combinations Guide.....	A159
Insert Template Instructions	A160
Insert Templates.....	A161 - A163
Turning Formulas.....	A164
Unit Power Factor Reference Charts	A165
PCD / VPD720	A166
Hard Line System / pCBN and Ceramics	A167 - A168
Silicon Nitride.....	A169

TURNING INSERTS

Grade Description

MTCVD

Grade	Description	Performance	ISO Material	Application
VP1505 	MTCVD Coated Carbide Thick TiCN/Al ₂ O ₃ /TiC Coating Micrograin Substrate Unique Gray/Black Insert Polished Rake Surface High hardness	High Speed Grade Enhanced Flaking Resistance Excellent Wear Resistance Enhanced Plastic Deformation Resistance Easy Identification of Used Edges Reduces Build-up of Ferritic Nodular Iron	K05	Cast Irons: Gray, Ductile, Malleable & Powder Metals Finishing and Semi-finishing Continuous Cuts
			P05	Steels: Carbon, Alloy, Finishing Operations; Continuous Cuts
			H10	Tool & Die & Hardened Steels Finishing Operations; Continuous Cuts
VP1510 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Fine Grain Substrate Polished Rake Surface	General Machining Grade Excellent Wear Resistance Enhanced Toughness Enhanced Build-up Resistance	K10	Cast Irons: Gray, Ductile, Malleable & Powder Metals Finishing, Semi-Finishing & General Machining Continuous & Light Interrupted Cuts
			P10	Steel: Carbon, Alloy, Tool & Die Finishing & Semi-Finishing Continuous Cuts
			H20	Tool & Die & Hardened Steels Finishing Operations; Continuous Cuts
VP5515 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Gradient Substrate Polished Edge	High Speed Grade Enhanced Wear Resistance Chipping Resistance Enhanced Build-Up Resistance	P15	Steels: Carbon, Alloy, Tool & Die Finishing, Semi-Finishing & General Machining Continuous Cuts
			K15	Cast Irons: Gray, Ductile, Malleable Semi-Finishing, General Machining & Light Roughing Continuous & Mild Interrupted Cuts
VP5525 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Gradient Substrate Polished Edge	Light Machining Grade Enhanced Wear Resistance Chipping Resistance Build-Up Resistance	P25	Steels: Carbon, Alloy, Tool, & Die Semi-Finishing, General Machining & Roughing Continuous & Interrupted Cuts
			M20	Stainless Steels: Ferritic, Martensitic, Austenitic, PH & Duplex Semi-Finishing & General Machining Continuous & Light Interrupted Cuts
			K25	Cast Irons: Gray, Ductile & Malleable General Machining & Roughing Short Continuous & Interrupted Cuts
VP5535 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating High Cobalt Substrate Gradient Substrate Polished Edge	Roughing Grade Very High Toughness Enhanced Chipping Resistance, Build-up Resistance	P35	Steels: Carbon, Alloy, Tool & Die General Machining, Roughing Continuous & Interrupted Cuts
			M30	Stainless Steels: Ferritic, Martensitic General Machining & Roughing Short Continuous & Interrupted Cuts

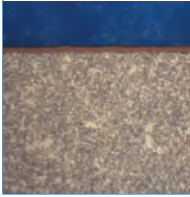


TURNING INSERTS

Grade Description

MTCVD

Grade	Description	Performance	ISO Material	Application
VP8515 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Gradient Substrate Thin Coating Polished Edge	High Speed Grade Chipping Resistance Build-up Resistance Notch Wear Resistance Flaking Resistance	M15	Stainless Steels: Ferritic, Austenitic, PH & Duplex Finishing & Semi-Finishing Continuous & Light Interrupted Cuts
			P20	Steels: Low Carbon, Alloy General Machining; Continuous Cuts
			S10	High temperature Alloys Semi-Finishing; Continuous Cuts
VP8525 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Thin Coating Polished Edge	General Machining Grade Enhanced Plastic Deformation Resistance High Toughness Chipping Resistance Enhanced Build-up Resistance Notch Wear Resistance Flaking Resistance	M25	Stainless Steels: Ferritic, Austenitic, PH & Duplex General Machining & Roughing Continuous & Interrupted Cuts
			P30	Steels: Low Carbon, Alloy General Machining; Interrupted Cuts
			S15	High temperature Alloys Semi-Finishing; Continuous Cuts


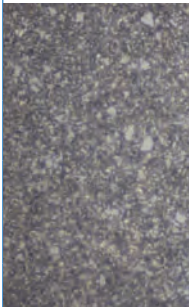
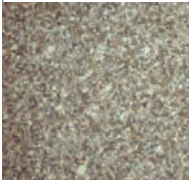

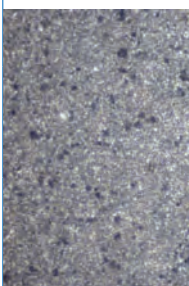
PVD

VP7615 	PVD Coated Carbide TiAlN Coating	Light Duty Grade	N15	Aluminum & Non-Ferrous Materials
VP9625 	PVD Coated Carbide TiAlN Coating Micro Grain Substrate High Cobalt Substrate	Medium Duty Grade Enhanced Crater Resistance Good Wear Resistance Less Build-Up and Friction at Cutting Edge Excellent Toughness with Chipping Resistance	M20	Steels, Stainless Steels, High Temperature Alloys, Cast Irons, Titanium Alloys And Non-Ferrous Alloys
			S20	
			N20	General Purpose Machining
			K15	Low To Medium Speeds
			P15	Interruptions And High Feed Rates
VP9610 	PVD Coated Carbide TiAlN Coating Micro Grain Substrate Dense Smooth Coating	Light Duty Grade Enhanced Crater Resistance Outstanding Wear Resistance without any Loss in Toughness Less Build-Up and Friction at Cutting Edge	M10	Aluminum, Steels, Stainless Steels, Powder Metal, Bi-Metal, High Temperature Alloys, Cast Irons, Titanium Alloys And Non-Ferrous Alloys
			S10	
			N10	Light To General Purpose Machining
			K05	Medium To High Speeds Where Cutting Conditions Are Good
			P05	

TURNING INSERTS

Grade Description

Uncoated

VPUK10 	Uncoated Carbide Fine Grain Substrate Low Cobalt Substrate	Finishing Grade High Abrasive Wear Resistance	K10	Cast Irons: Gray, Ductile, Malleable & Powder Metals Finishing & Light Machining
			N10	Aluminium & Non-Ferrous materials Finishing & Light Machining
VPUK20 	Uncoated Carbide Fine Grain Substrate Medium Hardness	Roughing Grade Excellent Toughness Good Wear Resistance and Chipping Resistance	K20	Cast Irons: Gray, Ductile, Malleable General Machining with Good Surface Finish Low to Medium Speed Under a Wide Range of Conditions Continuous and Interrupted Cuts
			M25	Stainless Steels: Ferritic, Austenitic, PH & Duplex
			N20	Aluminium & Non-Ferrous materials
			S25	High Temperature Alloys, Titanium Alloys
			P20	Steels
VPUP10 	Uncoated Carbide Fine Grain Substrate	General Grade Good Abrasive Wear Resistance Good Toughness	P10	Steels Finishing & General Machining
VPUP30 	Uncoated Carbide Fine Grain Substrate	Roughing Grade Good Abrasive Wear Resistance Good Toughness	P30	Steels Roughing & General Machining
			M25	Stainless Steels, Ferritic, Austenitic, PH & Duplex Roughing & General Machining
			S25	High Temp Alloys, Titanium Alloys Roughing & General Machining
VPUS10 	Uncoated Carbide Micro Grain Substrate High Hardness	Finishing Grade Enhanced Notch Resistance Excellent Wear Resistance Enhanced Edge Strength	S10	High Temperature Alloys, Titanium Alloys Finishing Type Applications Continuous Cuts
			N10	Aluminum & Non-ferrous Materials Finishing to Semi-finishing Continuous Cuts
			M10	Stainless Steels: Ferritic, Austenitic, PH & Duplex Finishing Type Applications, Continuous Cuts

Advanced Materials

VPD720	PCD Polycrystalline diamond grade Medium granulometry	High Speed Machining Grade Very high wear resistance Resistance to chips and pull out Long tool life	N10	Finishing and light roughing of aluminium and other non ferrous materials such as Zinc and Manganese alloys as well as highly abrasive non-metallic materials. Used extensively in the production of Aluminium engine blocks.
VPC225	pCBN 55% cubic boron nitride (CBN) with a ceramic bonding agent Yellow TiN coating	Hard Part Turning Grade High resistance to abrasion Good chemical stability Very good resistance to cratering	H05	Finishing turning operations with continuous or slightly interrupted cutting in extra-hard steels. (45 – 62 HRC hardened steels) High cutting speed with possibility of dry machining. Excellent surface finishes and precise tolerances.
VPZ205	Ceramic Alumina base (Al ₂ O ₃) and titanium carbide (TiC) TiN Coated Micro-Grain	High Speed Finish Grade High heat resistance Allows cutting with or without coolant.	K05	Basic choice under stable cutting conditions for turning of grey and nodular cast irons.
			H10	Alternative to pCBN, for hard turning of steels and tempered cast irons up to 65 HRC
			P10	
VPZ215	Ceramic Alumina base (Al ₂ O ₃) and titanium carbide (TiC) Tin Coated	High Speed Finish Grade High heat resistance Allows cutting with or without coolant.	K05	Basic choice under stable cutting conditions for turning of grey and nodular cast irons.
			H10	Alternative to CBN, for hard turning of steels and tempered cast irons up to 65 HRC
			P10	
Q8	Ceramic Silicon nitride base ceramic grade (Si ₃ N ₄)	Top Quality Grade for High Speed Outstanding wear resistance Stable tool life	S10	High Temp Alloys Continuous or slightly interrupted cutting. Good alternative to whisker reinforced ceramics Suitable for both roughing and semi-finishing operations. Stable machining conditions.
VPQ130	Ceramic High Density Silicon nitride base ceramic grade (Si ₃ N ₄)	High Speed Grade for Cast Iron Superior notch wear resistance	K25	Cast Iron Machining Good wear resistance for higher speeds Excellent tool life on "as cast" parts Improved toughness for interrupted cuts

TURNING INSERTS

Insert Geometry Application Data

ISO Positive	Chipbreaker Profile	Material	Application Range	Description
PF2		Steels		<ul style="list-style-type: none"> Single-sided insert for low feed finishing Positive land reduces cutting forces Excellent chip-control at low depths of cut <p>Main Application Area: .003 - .011 ipr - feed rate (0,08 - 0,28 mm) .010 - .080 in. - depth of cut (0,25 - 2,03 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
1A		Steels		<ul style="list-style-type: none"> Finishing and semi-finishing applications Low positive cutting edge for increased strength Excellent for turning and boring operations Produces excellent surface finishes <p>Main Application Area: .004 - .013 ipr - feed rate (0,10 - 0,33 mm) .010 - .100 in. - depth of cut (0,25 - 2,54 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
2A		Steels		<ul style="list-style-type: none"> Fine finishing applications Low positive cutting edge for increased strength Produces small chips in boring operations Produces excellent surface finishes <p>Main Application Area: .003 - .011 ipr - feed rate (0,08 - 0,28 mm) .005 - .080 in. - depth of cut (0,13 - 2,03 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PF5		Steels		<ul style="list-style-type: none"> Single-sided insert for light / medium machining Negative cutting land for improved edge strength Unique positive step chipbreaker at corner radius <p>Main Application Area: .008 - .016 ipr - feed rate (0,20 - 0,41 mm) .020 - .120 in. - depth of cut (0,51 - 3,05 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PF3		Steels		<ul style="list-style-type: none"> Finishing applications Positive screw-down insert style High positive cutting edge Produces excellent surface finishes <p>Main Application Area: 0.004 - 0.010 ipr - feed rate (0,10 - 0,25 mm) .005 - .080 in. - depth of cut (0,13 - 2,03 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		

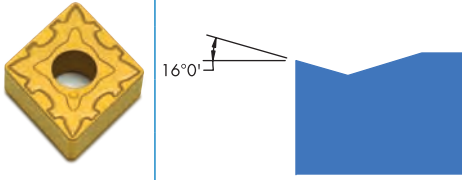
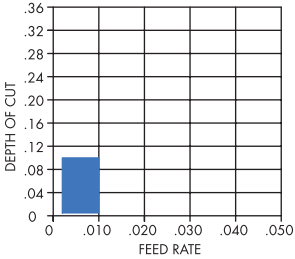
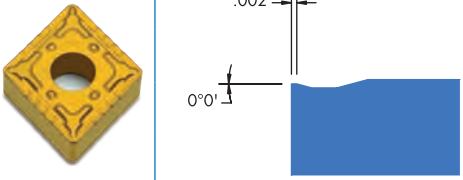
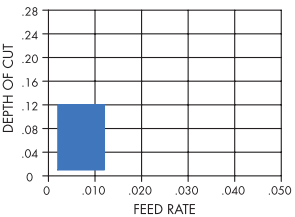
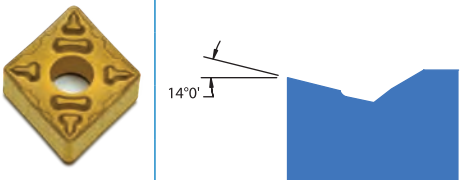
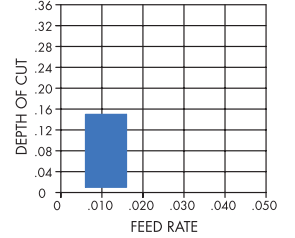
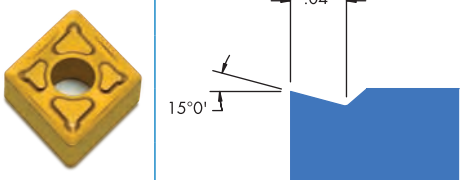
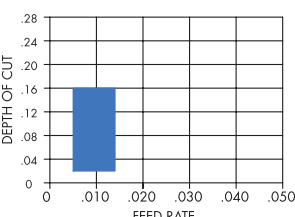
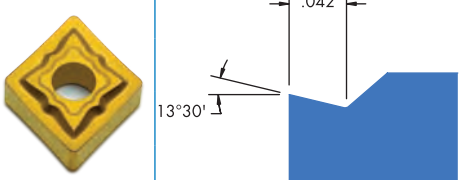
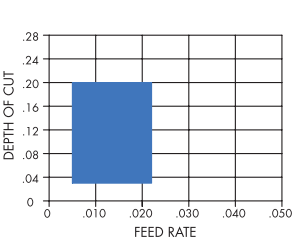
Highlighted material groups indicate primary application.

ISO Positive	Chipbreaker Profile	Material	Application Range	Description
PF4		Steels		<ul style="list-style-type: none"> Fine finishing applications Positive cutting edge reduces forces Excellent chip control at low depths of cut Produces excellent surface finishes <p>Main Application Area: .002 - .010 ipr feed rate (0,05 - 0,25 mm) .005 - .090 in. - depth of cut (0,13 - 2,29 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PM2		Steels		<ul style="list-style-type: none"> Finishing / semi-finishing applications Positive cutting edge for reduced forces Broad chip-control application range Excellent profiling capability <p>Main Application Area: .003 - 0.016 ipr - feed rate (0,08 - 0,41mm) .005 - .120 in. - depth of cut (0,13 - 3,05 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PM3		Steels		<ul style="list-style-type: none"> Finishing and semi-finishing applications High positive cutting angle Low cutting forces Good chip control at light feed / depth of cut <p>Main Application Area: .003 - .012 ipr - feed rate (0,08 - 0,30mm) .015 - .100 in. - depth of cut (0,38 - 2,54 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PM4		Steels		<ul style="list-style-type: none"> Semi-finishing to medium machining Positive geometry with neutral land Low to medium feed rates / medium depths of cut Good chip control on wide variety of applications <p>Main Application Area: .005 - .016 ipr - feed rate (0,13 - 0,41 mm) .025 - .150 in. - depth of cut (0,64 - 3,81 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
PM5		Steels		<ul style="list-style-type: none"> Semi-finishing to light roughing Available only in round inserts Negative land for additional edge strength Medium feed rates and medium depths of cut <p>Main Application Area: .008 - .018 ipr - feed rate (0,20 - 0,46 mm) .030 - .160 in. - depth of cut (0,76 - 4,06 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		

Highlighted material groups indicate primary application.

TURNING INSERTS

Insert Geometry Application Data

ANSI Negative	Chipbreaker Profile	Material	Application Range	Description
F1		Steels		<ul style="list-style-type: none"> Fine finishing application High positive cutting angle Produces excellent finishes <p>Main Application Area: .002 - .010 ipr - feed rate (0,05 - 0,25 mm) .005 - .100 in. - depth of cut (0,13 - 2,54 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
F2		Steels		<ul style="list-style-type: none"> Finishing applications Good chip control on light cuts <p>Main Application Area: .002 - .012 ipr - feed rate (0,05 - 0,30 mm) .010 - .120 in. - depth of cut (0,25 - 3,05 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
F3		Steels		<ul style="list-style-type: none"> Semi-finishing application Medium positive cutting angle Excellent profiling capability <p>Main Application Area: .006 - .016 ipr - feed rate (0,08 - 0,41 mm) .010 - .150 in. - depth of cut (0,25 - 3,81 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
F5		Steels		<ul style="list-style-type: none"> Finishing to medium machining High positive cutting angle Low cutting forces – ideal for soft materials, work hardening materials <p>Main Application Area: .005 - .014 ipr - feed rate (0,13 - 0,36 mm) .020 - .160 in. - depth of cut (0,51 - 4,06 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
M2		Steels		<ul style="list-style-type: none"> Semi-finishing to light roughing High positive cutting angle Low cutting forces – ideal for soft materials, work hardening materials <p>Main Application Area: .005 - .022 ipr - feed rate (0,13 - 0,56 mm) .030 - .200 in. - depth of cut (0,76 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		

Highlighted material groups indicate primary application.



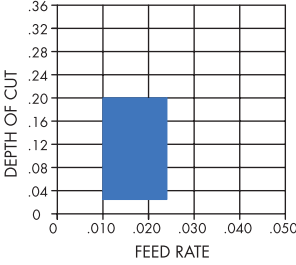

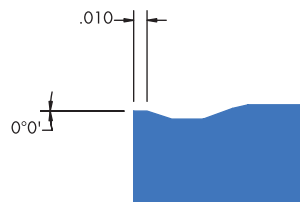
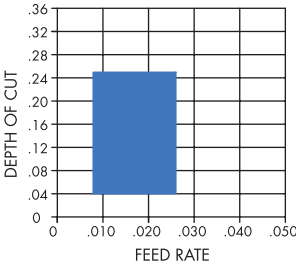


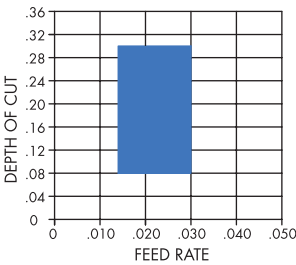

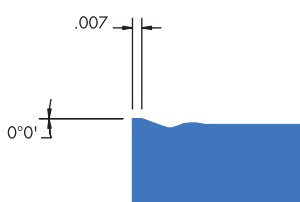
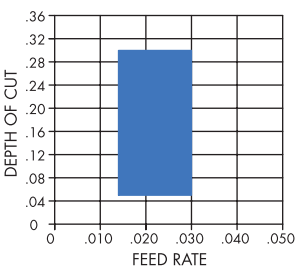
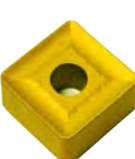
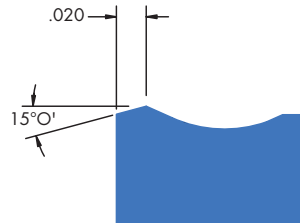
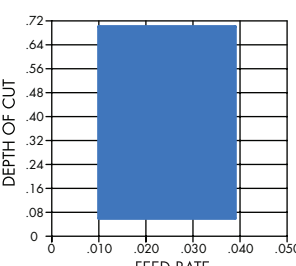
Insert Geometry Application Data

ANSI Negative	Chipbreaker Profile	Material	Application Range	Description
M3		Steels		<ul style="list-style-type: none"> Finishing to semi-finishing Neutral land for greater edge strength Medium to high feed rates Good for slight to moderate interrupted cuts <p>Main Application Area: .004 - .016 ipr - feed rate (0,10 - 0,41 mm) .015 - .150 in. - depth of cut (0,38 - 3,81 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
M4		Steels		<ul style="list-style-type: none"> General purpose application High positive cutting angle High shear to minimize edge build-up Eliminates burr formation <p>Main Application Area: .006 - .020 ipr - feed rate (0,15 - 0,51 mm) .040 - .200 in. - depth of cut (1,0 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
M5		Steels		<ul style="list-style-type: none"> General machining / semi-finishing to light roughing Wide range of materials Positive cutting angle Medium feed rates and medium depths of cut <p>Main Application Area: .005 - .022 ipr - feed rate (0,13 - 0,56 mm) .025 - .200 in. - depth of cut (0,64 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
M6		Steels		<ul style="list-style-type: none"> General purpose application Medium positive cutting angle Wide chipbreaking capability <p>Main Application Area: .006 - .022 ipr - feed rate (0,13 - 0,56 mm) .020 - .200 in. - depth of cut (0,51 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
M7		Steels		<ul style="list-style-type: none"> General purpose to light roughing Low positive cutting edge Broad chip-control application area <p>Main Application Area: .010 - .028 ipr - feed rate (0,25 - 0,71 mm) .025 - .250 in. - depth of cut (0,64 - 6,35 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		

Highlighted material groups indicate primary application.



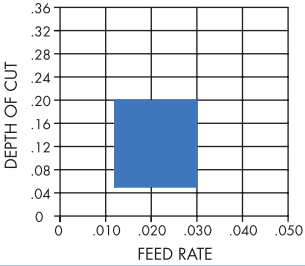


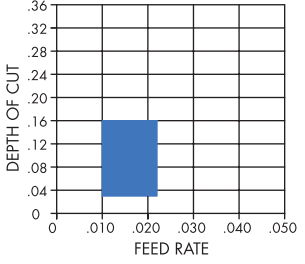

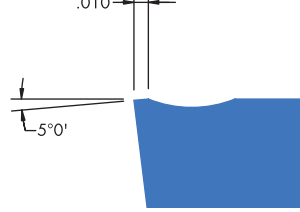
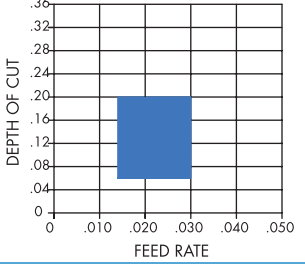

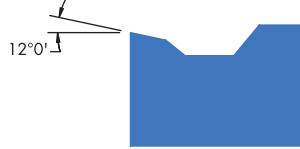
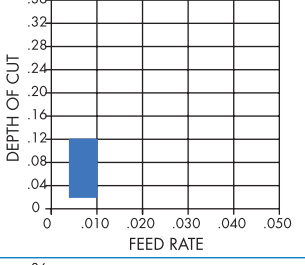

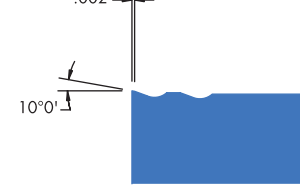
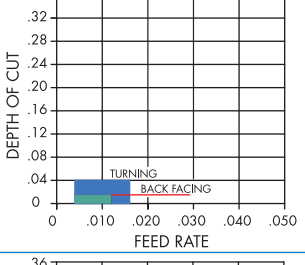


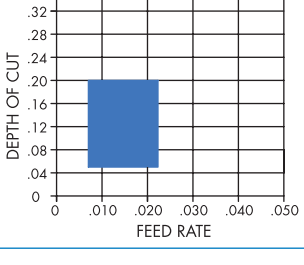
TURNING INSERTS

Insert Geometry Application Data

ANSI Negative	Chipbreaker Profile	Material	Application Range	Description
M8	 	Steels		<ul style="list-style-type: none"> General purpose to light roughing Strong cutting edge for reliability Excellent on forged and cast components First choice for cast iron materials <p>Main Application Area: .010 - .024 ipr - feed rate (0,25 - 0,61 mm) .025 - .200 in. - depth of cut (0,64 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
R3	 	Steels		<ul style="list-style-type: none"> Roughing applications Neutral land for strong edge Suitable for interrupted cuts Medium to high feed rates and depths of cut <p>Main Application Area: .008 - .026 ipr - feed rate (0,20 - 0,66 mm) .040 - .250 in. - depth of cut (1,02 - 6,35 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
R4	 	Steels		<ul style="list-style-type: none"> Semi-roughing and roughing applications Neutral cutting angle for strong edge Best for interrupted cutting conditions Maximum chip control capability <p>Main Application Area: .012 - .030 ipr - feed rate (0,30 - 0,76 mm) .060 - .300 in. - depth of cut (1,52 - 7,62 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous Material		
		High Temp Alloys		
		Hardened Material		
R6	 	Steels		<ul style="list-style-type: none"> High feed roughing Positive cutting angle Reduced cutting forces, smooth chip flow Primarily for continuous cuts <p>Main Application Area: .014 - .030 ipr - feed rate (0,30 - 0,76 mm) .050 - .300 in. - depth of cut (1,27 - 7,62 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		
R9	 	Steels		<ul style="list-style-type: none"> Heavy roughing applications Negative cutting land for high edge security Capable of high metal removal rates Available in multiple edge profiles <p>Main Application Area: .010 - .040 ipr - feed rate (0,25 - 1,0 mm) .060 - .700 in. - depth of cut (1,5 - 18,0 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
		Hardened Material		

Highlighted material groups indicate primary application.

Insert Geometry Application Data

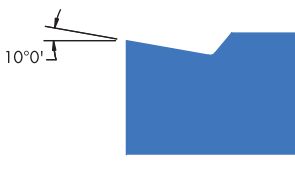
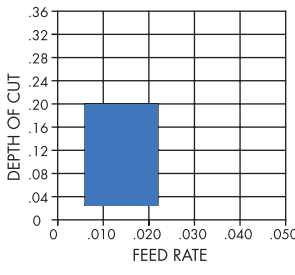
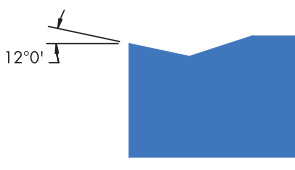
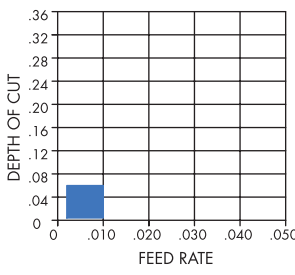
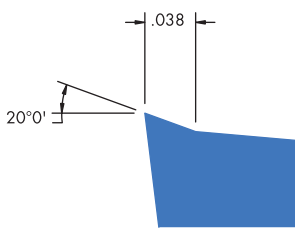
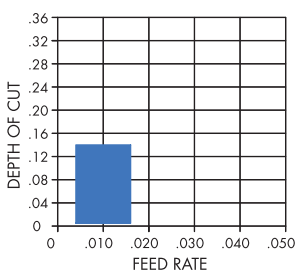
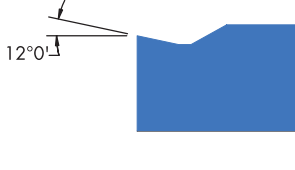
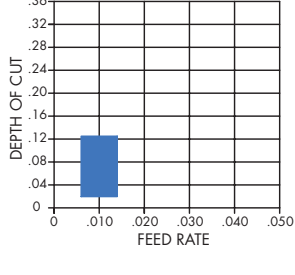
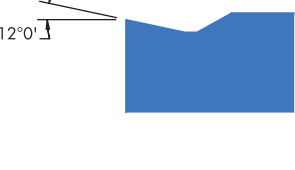
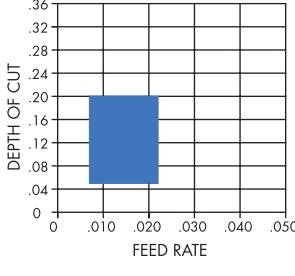
Complementary Geometries		Chipbreaker Profile	Material	Application Range	Description
RN5			Steels		<ul style="list-style-type: none"> General purpose / light roughing applications Extremely tough / reliable cutting edge Effective chip-control at high feeds Good choice for interrupted cutting conditions <p>Main Application Area: .012 - .030 ipr - feed rate (0,30 - 0,76 mm) .050 - .200 in. - depth of cut (1,27 - 5,08 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
RP4			Steels		<ul style="list-style-type: none"> General purpose applications Neutral cutting edge for reliable performance Effective profiling capability Broad chipbreaking capability <p>Main Application Area: .010 - .022 ipr - feed rate (0,25 - 0,56 mm) .030 - .160 in. - depth of cut (0,76 - 4,06 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
RP5			Steels		<ul style="list-style-type: none"> Semi-finishing to light roughing Available only in round inserts Negative land for additional edge strength Medium feed rates and medium depths of cut <p>Main Application Area: .014 - .030 ipr - feed rate (0,36 - 0,76 mm) .060 - .200 in. - depth of cut (1,52 - 5,08 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
C2			Steels		<ul style="list-style-type: none"> Engineered for low carbon automotive materials Positive cutting edge for reduced cutting forces Effective chip-control at low depths of cut Produces excellent surface finishes <p>Main Application Area: .004 - .010 ipr - feed rate (0,10 - 0,25 mm) .020 - .120 in. - depth of cut (0,51 - 3,05 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
C3			Steels		<ul style="list-style-type: none"> Unique insert shape for back facing Good chip control on very light finishing cuts <p>Turning Application Area: .004 - .012 ipr - feed rate (0,10 - 0,30 mm) .010 - .040 - depth of cut (0,25 - 1,01 mm) Back Facing Application Range: .004 - .012 ipr - feed rate 014 - max - depth of cut</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
..MS ..GS			Steels		<ul style="list-style-type: none"> General purpose to light roughing applications Medium positive cutting edge for edge strength Single-sided for improved stability Double positive rake angles <p>Main Application Area: .008 - .026 ipr - feed rate (0,20 - 0,66 mm) .050 - .250 in. - depth of cut (1,27 - 6,35 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		

*..MS = Utility, ..GS = Precision Ground,

Highlighted material groups indicate primary application.



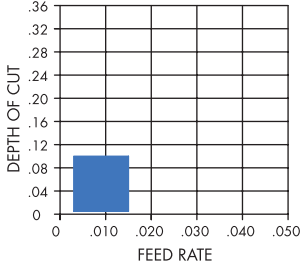

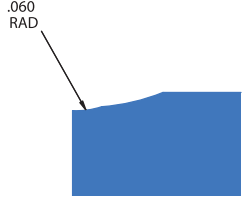
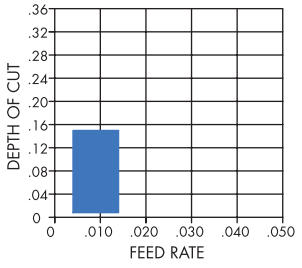
TURNING INSERTS

Insert Geometry Application Data

Complementary Geometries	Chipbreaker Profile	Material	Application Range	Description
C5		Steels		<ul style="list-style-type: none"> General purpose / light roughing application Double positive rake angles Excellent for high-temperature alloys Superior chip-control at light feeds rates <p>Main Application Area: .006 - .022 ipr - feed rate (0,13 - 0,56 mm) .025 - .200 in. - depth of cut (0,64 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
SR		Steels		<ul style="list-style-type: none"> Finishing application High positive cutting angle First choice on high-temp and stainless material Produces excellent surface finishes <p>Main Application Area: .002 - .010 ipr - feed rate (0,05 - 0,25 mm) .004 - .060 in. - depth of cut (0,10 - 1,52 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
1L		Steels		<ul style="list-style-type: none"> High positive cutting angle Finishing to roughing on aluminum Finishing on high temp alloys Low cutting forces, good chip control <p>Main Application Area: .004 - .016 ipr - feed rate (0,10 - 0,41 mm) .005 - .140 in. - depth of cut (0,13 - 3,56 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
PN1*		Steels		<ul style="list-style-type: none"> Semi-finishing applications Double positive rake angles High positive cutting edge Reduced cutting forces <p>Main Application Area: .006 - .014 ipr - feed rate (0,15 - 0,36 mm) .020 - .125 in. - depth of cut (0,51 - 3,18 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
PN2**		Steels		<ul style="list-style-type: none"> General purpose applications Double positive rake angles High positive cutting edge Reduced cutting forces <p>Main Application Area: .007 - .022 ipr - feed rate (0,18 - 0,56 mm) .050 - .200 in. - depth of cut (1,27 - 5,08 mm)</p>
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		

* PN1=Finishing. **PN2=Roughing.

Highlighted material groups indicate primary application.

Complementary Geometries		Chipbreaker Profile	Material	Application Range	Description
FM			Steels		<ul style="list-style-type: none"> Finishing / semi-finishing applications Neutral cutting edge for edge security Excellent for turning and boring Produces excellent surface finishes <p>Main Application Area: .008 - .015 ipr - feed rate (0,08 - 0,38 mm) .005 - .100 in. - depth of cut (0,13 - 2,54 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		
2B			Steels		<ul style="list-style-type: none"> General purpose application Medium positive (radius) cutting angle Produces excellent finishes <p>Main Application Area: .004 - .014 ipr - feed rate (0,10 - 0,36 mm) .008 - .150 in. - depth of cut (0,20 - 3,81 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
			Hardened Material		

Highlighted material groups indicate primary application.

TURNING INSERTS

Insert Geometry Application Data

Complementary Geometries		Chipbreaker Profile	Material	Application Range	Description
W3			Steels		<ul style="list-style-type: none"> Wiper geometry for finishing Produces good surface finishes at high feed rates Can be used to improve surface finish Light to medium depths of cut <p>Main Application Area: .006 - .020 ipr - feed rate (0,13 - 0,51 mm) .020 - .080 in. - depth of cut (0,51 - 2,03 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
Hardened Material					
WN3			Steels		<ul style="list-style-type: none"> Finishing wiper application High productivity by increased feed rates Produces excellent surface finishes Light to medium depths of cut <p>Main Application Area: .005 - .022 ipr - feed rate (0,13 - 0,56 mm) .010 - .080 in. - depth of cut (0,25 - 2,03 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
Hardened Material					
WN5			Steels		<ul style="list-style-type: none"> Semi-finishing wiper application High productivity by increased feed rates Produces excellent surface finishes Medium to heavy depths of cut <p>Main Application Area: .010 - .028 ipr - feed rate (0,25 - 0,71 mm) .020 - .150 in. - depth of cut (0,51 - 3,81 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
Hardened Material					
W6			Steels		<ul style="list-style-type: none"> Wiper geometry for semi-finishing and finishing Produces good surface finishes at high feed rates Can be used to improve surface finish Medium to heavy depths of cut <p>Main Application Area: .005 - .022 ipr - feed rate (0,13 - 0,56 mm) .030 - .200 in. - depth of cut (0,76 - 5,08 mm)</p>
			Stainless Steels		
			Cast Irons		
			Non-Ferrous		
			High Temp Alloys		
Hardened Material					

Highlighted material groups indicate primary application.

Insert Geometries Selection

W3



Used for finishing operations. Capable of producing quality finishes at high rates. Can be used at conventional feed rates for superior finishes.

WN3



WN5



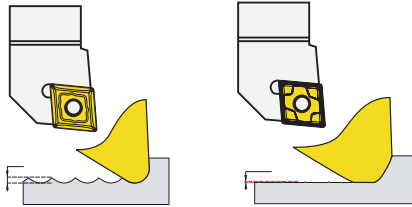
W6



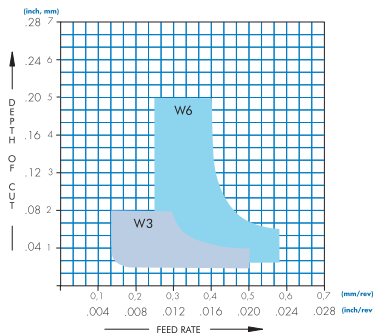
Used for semi-finish and finishing operations. Allows increased productivity while producing surfaces as good as those produced by conventional inserts.

How Wiper Inserts Work

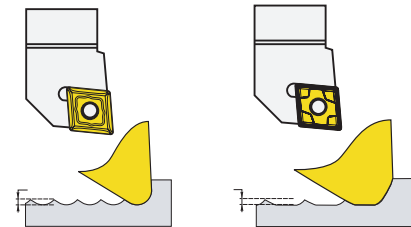
Conventional inserts produce a certain finish (Ra) at a given feed rate (ipr). Inserts can improve finish or increase feed rate.



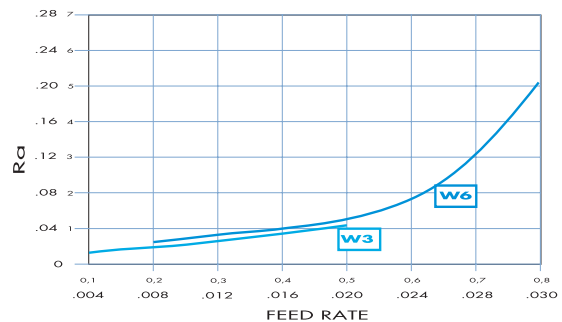
Wiper inserts operating at the same feed rate (ipr) as conventional inserts can improve surface finish by up to 100%.



Get improved chip control and improved tool life at existing feed rates while improving surface finishes by 100%.

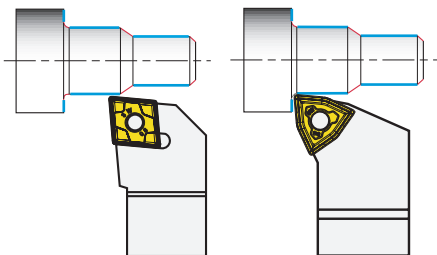


Wiper inserts can also produce surfaces equal to those of conventional inserts while doubling the feed rate (ipr).

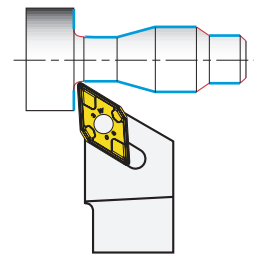


Innovative wiper corner radius design improves surface finish compared to conventional inserts with the same corner radius.

Wiper Usage Guidelines



CNMG and WNMG wiper inserts produce a "true corner radius" equal to the radius produced by non-wiper inserts.



DNMG wiper inserts produce corner radius that is **not** "true"; but is within tolerance range of most manufacturing requirements.

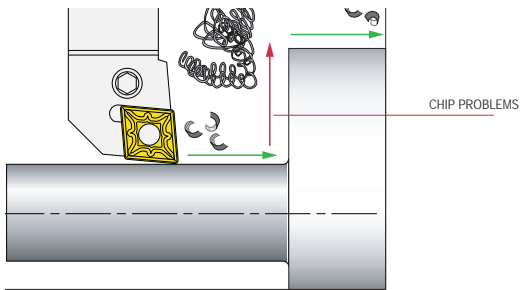
TURNING INSERTS

Back Facing Guidelines

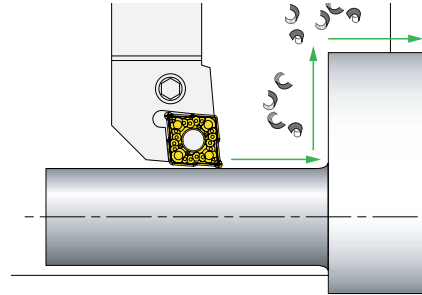
C3 Chipbreaker

Facing Cuts

Special corner radius shape provides chip control on difficult to control back-facing operations



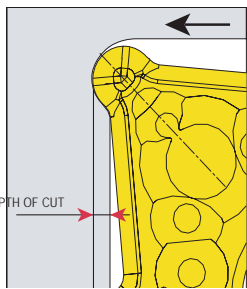
Problem: Standard inserts produce an uncontrolled chip when working up the face.



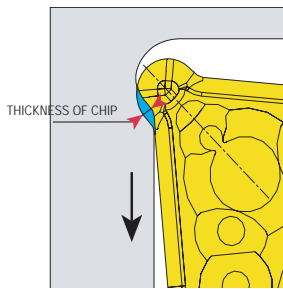
Solution: Due to its special radius shape, the C3 geometry provides excellent chip control when working up faces.

How to Position for Facing Cuts

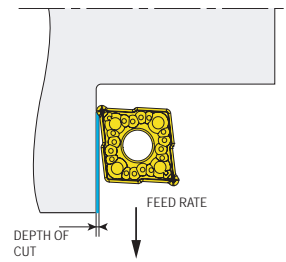
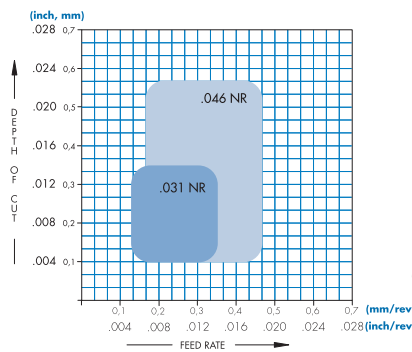
Position of insert at the end of lathe cutting



Removing material while "working up" the face

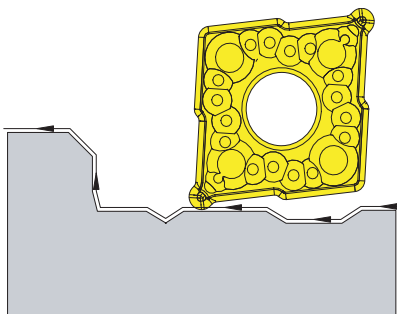


Application Range for Facing Cuts



Rough Finishing

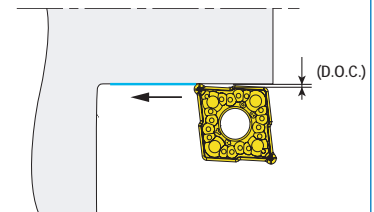
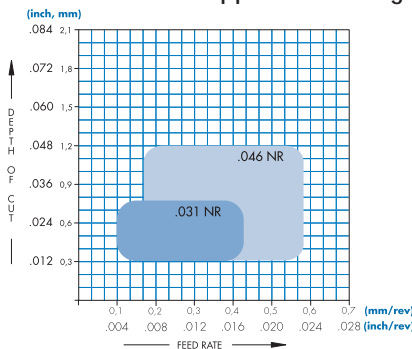
Can be used for corner cuts, rough finishing of cylindrical contact surfaces or recesses on shoulders without interruption of machining.



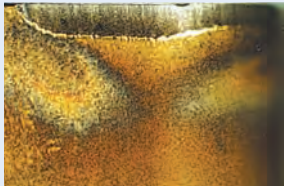

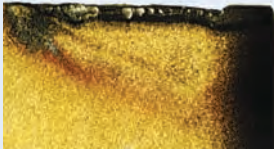
Turning Cuts

Excellent chip control where light depth of cut and low feed rate is required.

Application Range for Turning



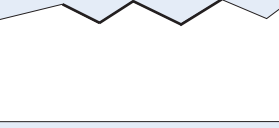




The recommended depth of cut should not exceed the nose radius.

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Rapid Flank Wear</p> 	<ul style="list-style-type: none"> Excessive cutting speed Work material micro-structure contains carbides 	<ul style="list-style-type: none"> Reduce cutting speed Use harder grade Select more positive rake chipbreaker Flood cutting zone with coolant
<p>Crater</p> 	<ul style="list-style-type: none"> Excessive cutting speed Excessive feed Ineffective use of coolant 	<ul style="list-style-type: none"> Reduce cutting speed and feed Select harder grade with oxide coating Select more positive rake chipbreaker Flood cutting zone with coolant
<p>Built-Up Edge, Torn Finish, Chip Welding</p> 	<ul style="list-style-type: none"> Low cutting speed High feed rate Poor shearing action 	<ul style="list-style-type: none"> Increase cutting speed and or decrease feed Select more positive rake chipbreaker Select tougher grade (use PVD coated insert) Flood cutting zone with coolant
<p>Edge Chipping</p> 	<ul style="list-style-type: none"> Excessive feed rate Interrupted cut 	<ul style="list-style-type: none"> Reduce feed rate Select tougher grade Select stronger chipbreaker Improve rigidity Increase lead angle or increase hone
<p>Excessive Depth of Cut Notching</p> 	<ul style="list-style-type: none"> Scale part High work hardening materials 	<ul style="list-style-type: none"> Increase lead angle Increase cutting speed Select tougher grade Select stronger chipbreaker Vary depth of cut if possible (Ramping)

TURNING INSERTS

Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Fracture</p> 	<ul style="list-style-type: none"> Improper selection of grade/ chipbreaker and/or cutting conditions 	<ul style="list-style-type: none"> Reduce feed rate Select tougher grade Select stronger chipbreaker Make sure set-up is as rigid as possible Replace Shim Seat
<p>Thermal Cracks</p> 	<ul style="list-style-type: none"> Extreme variation in cutting temperatures Interrupted cut 	<ul style="list-style-type: none"> Reduce feed rate Increase cutting speed Select stronger chipbreaker Turn off coolant
<p>Poor Surface Finish</p> 	<ul style="list-style-type: none"> High feed rate Low cutting speed Nose radius too small 	<ul style="list-style-type: none"> Reduce feed rate and increase cutting speed Select more positive rake chipbreaker Flood cutting zone with coolant Use larger nose radius Select a grade with smoother surface
<p>Workpiece Chatter Vibration</p> 	<ul style="list-style-type: none"> Poor set-up Improper insert selection 	<ul style="list-style-type: none"> Use sharp inserts Select more positive rake chipbreaker Increase feed rate Decrease lead angle Use smaller nose radius
<p>Unacceptable Chip Control (Low Carbon Steel)</p> 	<ul style="list-style-type: none"> Low feed rate Large nose radius 	<ul style="list-style-type: none"> Increase feed rate Use smaller nose radius Decrease lead angle Ensure use of correct chipbreaker run at recommended parameters

Insert Shape/Lead Angle Combinations Guide

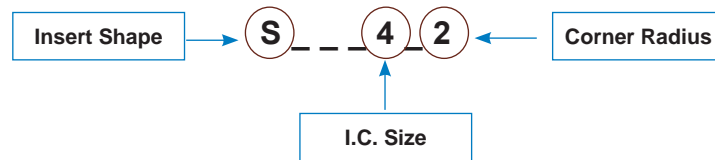
Operation	Insert Shape	Lead Angle
Roughing	Square	15°, 45°
	Triangle	0°, 15°
	80° Diamond/ 100° Corner	15°
	Round	-
General Purpose	Square	15°
	Triangle	0°, 15°
	80° Diamond	0°, -5°
	80° Trigon	-5°
	55° Diamond	-3°
	Round	-
Facing	80° Diamond	-5°, 0°, 15°
	Triangle	0°
Finishing	Square	15°
	Triangle	0°, -3°
	80° Diamond	0°, -5°
	80° Trigon	-5°
	55° Diamond	-3°
	35° Diamond	-3°
	Round	-
	Round	-
Profiling	55° Diamond	-3°, -17°, 27°
	35° Diamond	17°, 22°
	Round	-
Chamfering	Square	45°
	Triangle	30°
	80° Diamond	40°, 50°

TURNING INSERTS

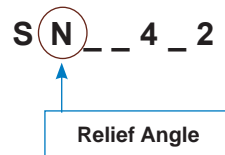
Insert Template Instructions

To Determine The Part Number For A Given Insert

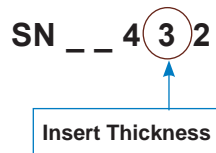
- **Step 1.** Determine insert shape (1st letter of part number), I.C. size (1st digit of part number) and corner radius (3rd digit of part number). Lay the insert flat on the appropriate template shape (square, 80° diamond, trigon, etc.), size and corner radius. Sides (perimeter) of insert should line up to lines of correct template. Pay special attention to the corner radius area. When you have the correct template, write down the information.



- **Step 2.** Determine insert relief angle (2nd letter of part number). Stand insert on edge and line up to appropriate template. Add the appropriate letter to the 2nd position of the part number.



- **Step 3.** Determine insert thickness (2nd digit of part number). Stand insert on edge and line up to appropriate template. Add the correct number to the second digit of the part number.



ANSI standard part numbers (insert identification) usually have 4 letters and 3 digits.

Example: SNMG 432

One exception would be flat top inserts with no hole. They only require 3 letters and 3 digits.

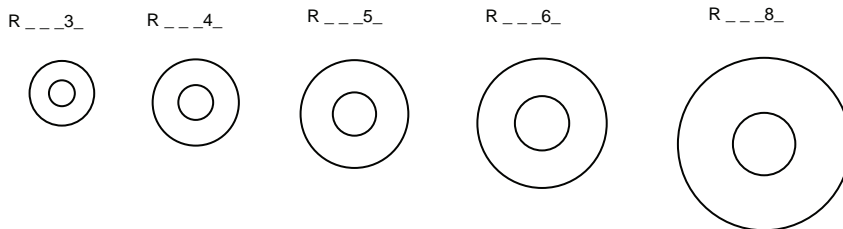
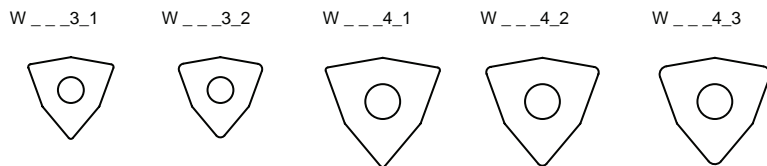
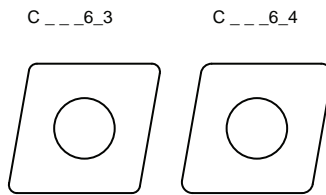
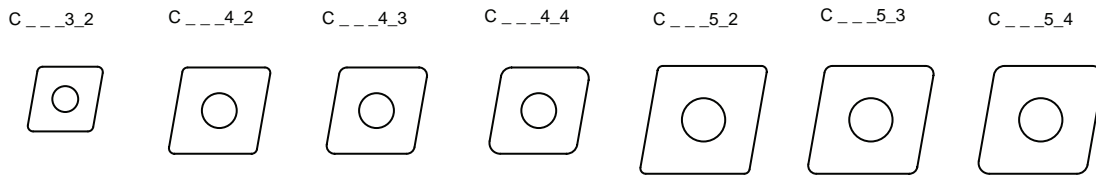
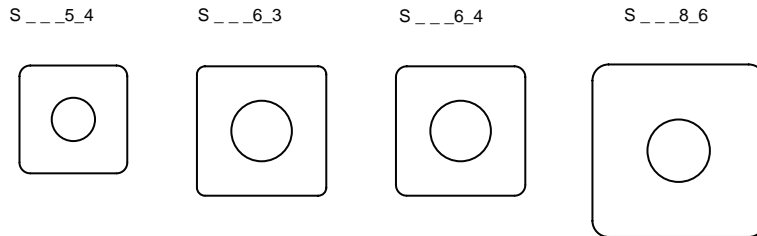
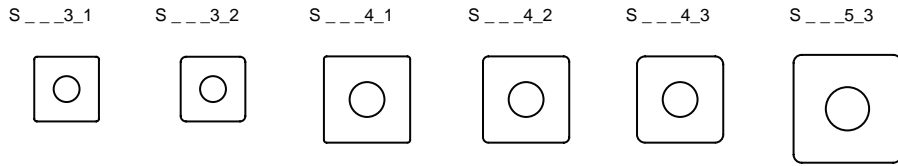
Example: SNG 432

A second exception would be for round inserts. They may have 3 or 4 letters but only 2 digits.

Example: RNMG 43 or RNG 43

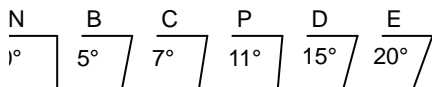
Letters 3 and 4 refer to tolerances and insert characteristics such as hole and/or chipbreaker.

See INSERT DESIGNATION charts on pages A2 & A3 for more details.



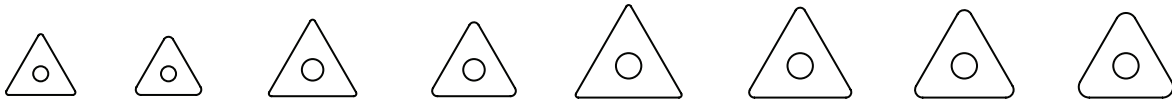
Relief Angle = Second Letter of Part Number

Thickness = Middle Digit of Part Number



TURNING INSERTS

Insert Templates



T__4.1

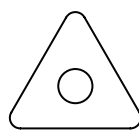
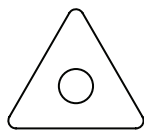
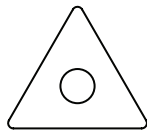
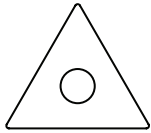
T__4.2

T__4.3

T__4.4

T__4.6

T__4.8

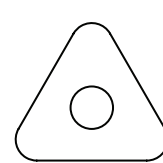
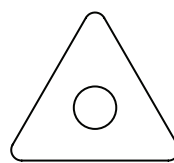
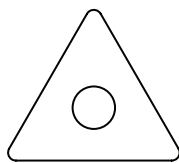
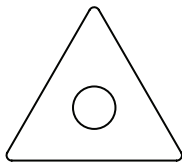


T__5.2

T__5.3

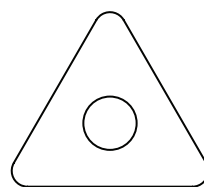
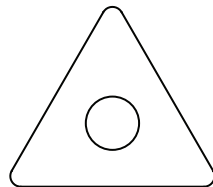
T__5.4

T__5.8



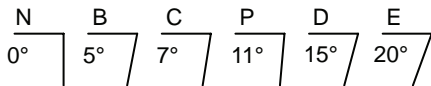
T__6.4

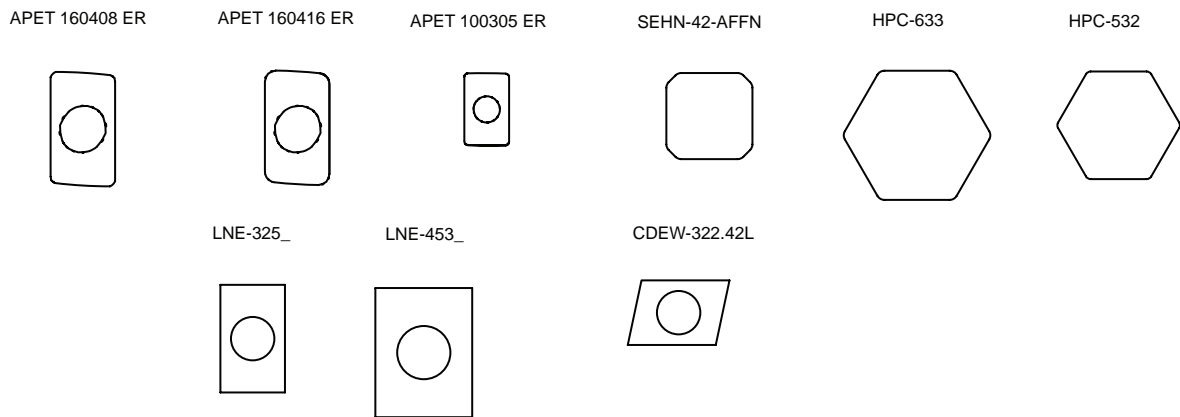
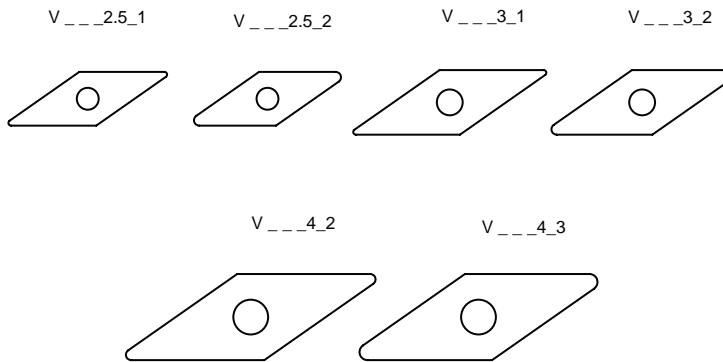
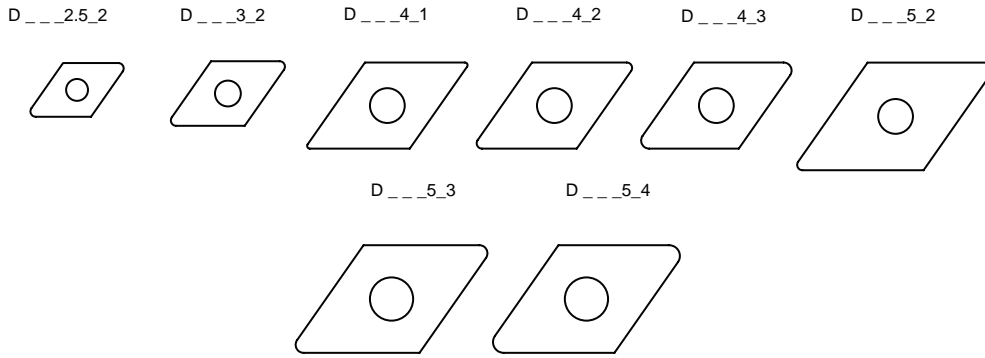
T__6.6



Relief Angle = Second Letter of Part Number

Thickness = Middle Digit of Part Number





Relief Angle = Second Letter of Part Number

N	B	C	P	D	E
0°	5°	7°	11°	15°	20°

Thickness = Middle Digit of Part Number

2		3	
2.5		4	

TURNING INSERTS

Turning Formulas

Cutting Speed (surface feet/min.)

$$\text{SFM} = 0.262 \times \text{DIA} \times \text{RPM}$$

Rate of Removal (cubic inch/min.)

$$Q = 12 \times \text{DOC} \times \text{IPR} \times \text{SFM}$$

Revolutions Per Minute

$$\text{RPM} = \frac{3.82 \times \text{SFM}}{\text{DIA}}$$

Horsepower Required at Spindle

$$\text{HP}_S = Q \times P$$

See page 51 for "P" values

Feed Rate (inch/min.)

$$\text{IPM} = \text{IPR} \times \text{RPM}$$

Horsepower Required at Motor

$$\text{HP}_m = \frac{\text{HP}_S}{E}$$

Cutting Time (min.)

$$T = \frac{L}{\text{IPM}}$$

Torque Required at Spindle (inch - lbs.)

$$T_S = \frac{63030 \times \text{HP}_S}{\text{RPM}}$$

Surface Finish - AA Calculation

$$\text{AA} = \frac{\text{IPR}^2}{24 \times \text{NR}}$$

AA to RMS Conversion

$$\text{RMS} = 1.11 \times \text{A.A.}$$

Surface Finish - RMS Calculation

$$\text{RMS} = \frac{\text{IPR}^2}{21 \times \text{NR}}$$

Rockwell C to BHN Conversion

$$\text{BHN} \approx \text{Rockwell C} \times 10$$

For Materials $\geq 20 R_C$

- AA = Arithmetical average surface finish measurement
- AA = Ra (roughness average), surface finish in mm
- BHN = Brinell hardness number
- DIA = Diameter of workpiece in inches
- DOC = Depth of cut in inches
- E = Efficiency of spindle drive (typically 45%)
- HPm = Horsepower at the motor
- HPs = Horsepower at the spindle
- IPR = Feed rate in inches per revolution
- IPM = Feed rate in inches per minute
- L = Length of cut in inches

- NR = Nose radius
- P = Unit power factor, horsepower per cubic inch per minute
- Q = Metal removal rate in cubic inches per minute
- R_C = Rockwell C hardness scale
- RMS = Root mean square surface finish measurement
- RPM = Revolutions per minute
- SFM = Cutting speed in surface feet per minute
- T = Cutting time in minutes
- T_s = Torque at spindle

To Optimize The Application

1. Check to make sure your machine is capable of the amount of material removal. See page A164 for TURNING FORMULAS. Calculate Rate of Stock Removal (cubic inches/minute).

Example (from page A11):

$$Q = 12 \times .030 \times .004 \times 1600 = 2.3$$

2. Find the Horsepower Required at the Spindle. $HP_s = Q \times P$ To find "P" see below for Unit Power Factors. Locate the Alloy Steels group and find P for 180 BHN. Complete the formula.

Example: $HP_s = 2.3 \times 0.75 = 1.73$. If machine has HP rating higher than 1.73, there should be no problem. If you calculate a number higher than machine horsepower rating, you will need to make adjustments to one of the parameters, SFM, IPR or DOC to reduce Q.

3. Run the insert and track the insert tool life. Analyze the failure mode. See pages A157 - A158 to use the charts for INSERT FAILURE MODES analysis to optimize your application.

Calculate Rate of Stock Removal: "Q" $Q = 12 \times DOC \times IPR \times SFM$

Use "P" factor to calculate horsepower requirements at the spindle: $HP_s = Q \times P$

Carbon Steels	
BHN	P
100-300	0.50
130-160	0.60
160-190	0.73
190-220	0.84
220-250	0.90
250-275	1.05
275-320	1.20

Stainless Steels	
BHN	P
120-140	0.61
140-190	0.75
190-210	0.85
210-230	0.90
230-260	1.00
260-290	1.10

Gray Cast Irons	
BHN	P
130-150	0.45
160-180	0.52
180-200	0.60
200-220	0.72
220-250	0.93

Alloys Steels	
BHN	P
160-200	0.75
200-230	0.85
230-260	1.00
260-290	1.10
290-330	1.22
330-360	1.30
360-390	1.40

High Temperature Alloys	
BHN	P
150-170	0.80
170-190	0.90
190-240	1.10
240-300	1.30
300-320	1.40
320-360	1.50

Nodular & Malleable Irons	
BHN	P
110-130	0.47
130-180	0.65
180-240	0.70
240-270	0.95
270-350	1.20

Tool Steels	
BHN	P
175-200	0.85
200-250	0.90
250-300	1.15
300-350	1.25
350-400	1.45
400-490	1.60

Titanium Alloys	
BHN	P
200-240	0.90
240-280	1.00
280-320	1.15
320-380	1.30

Aluminium Alloys	
BHN	P
45-70	0.25
70-90	0.28
90-100	0.30
100-120	0.40
120-150	0.50

Rockwell C to BHN Conversion for materials $\geq 20 Rc$ $BHN \approx Rc \times 10$

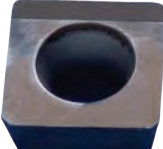
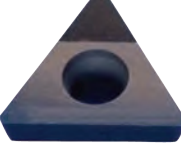
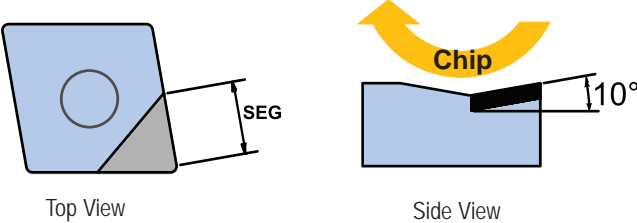
TURNING INSERTS

PCD - Polycrystalline Diamond

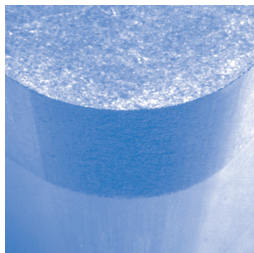
VPD720

Engineered for your most demanding Non-Ferrous applications

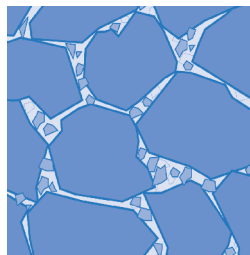
Features	Benefits
<p>Complete product offering</p>	<ul style="list-style-type: none"> Covers all applications; Turning, Boring and Milling Pos/Neg styles for standard ANSI toolholders Tipped and Full Edge inserts to cover all operations; finishing to roughing
<p>Integrated Diamond Matrix™ (IDM) for higher diamond concentration and controlled sintering for increased diamond to diamond bonding</p>	<ul style="list-style-type: none"> Sharper cutting edges Improved wear resistance Increased resistance to chips and pull out Excellent surface finishes For long tool life

<p>Full Edge Insert</p> 	<p>Tipped Insert</p> 	<p>Pos/Neg Insert</p> 
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Integrated Diamond Matrix (IDM)

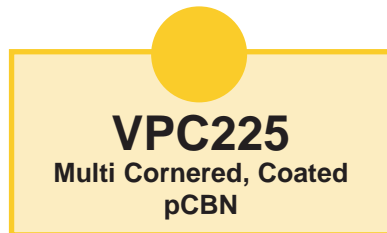


Insert Edges
Valenite's IDM is a proprietary process which provides a more durable PCD insert with sharper cutting edges that last longer than most other PCD inserts.



Method of Construction
Controlled sintering of a blended mix of proprietary diamond particles forms a highly durable microstructure. Concentrating the diamond packing and then increasing diamond diamond bonding produces the backbone of IDM.

pCBN (Polycrystalline Cubic Boron Nitrides) Ceramic Grades



VPC225
Multi Cornered, Coated
pCBN



VPZ205
Coated Micro-Grain
Ceramic



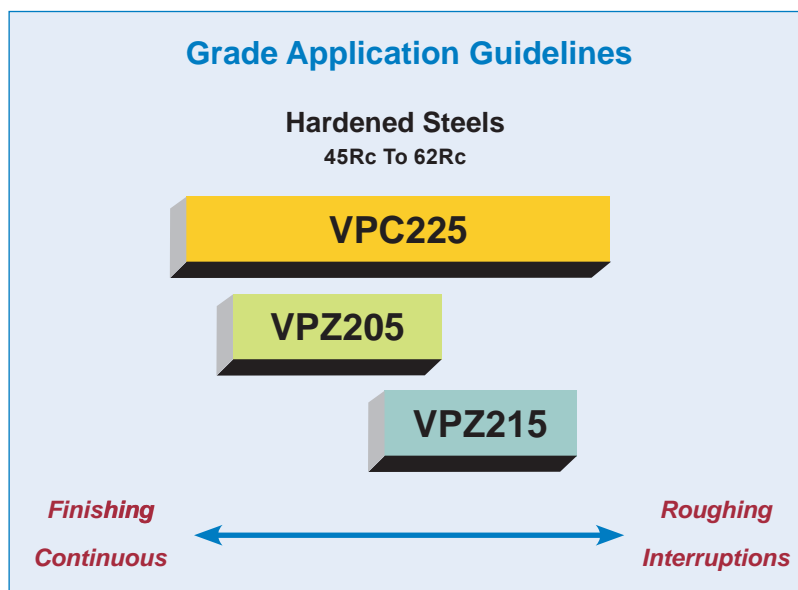
VPZ215
Coated Ceramic

The ValEDGE™ Hard Line System consists of premium, high performance cutting tools for your most demanding applications and provides options for:

Economic production solutions

Critical surface finishes

Tight tolerance specifications



TURNING INSERTS

Hard Line System - pCBN & Ceramics

VPC225 – Multi-Corner Coated pCBN For machining materials with a hardness >45Rc

Features	Benefits
<i>Unique grade development</i>	<ul style="list-style-type: none"> Resists cratering and impact type fracturing Ultra-hard cutting tool material Chemically resistant Thermal stability
<i>Carbide backed segments</i>	<ul style="list-style-type: none"> Dissipate heat generated during machining Stops cracks from progressing Increases brazing contact area

VPZ205 – Coated Ceramic

Features	Benefits
<i>Alumina - TiC base ceramics</i>	<ul style="list-style-type: none"> Chemically inert
<i>PVD titanium nitride coating</i>	<ul style="list-style-type: none"> Improved indexability
<i>Sub-micron particle size</i>	<ul style="list-style-type: none"> High, hot hardness Improved finishes Excels in continuous, dry machining
<i>pCBN alternative</i>	<ul style="list-style-type: none"> Excellent for materials with "soft" inner core, - $\geq 40R_C$ materials

VPZ215 – Coated Ceramic

Features	Benefits
<i>Alumina - TiC base ceramics</i>	<ul style="list-style-type: none"> Chemically inert
<i>PVD titanium nitride coating</i>	<ul style="list-style-type: none"> Improved indexability
<i>General purpose ceramic</i>	<ul style="list-style-type: none"> Increased toughness Performs well in mild interruptions Can be used with coolants May be used on some cast and ductile irons
<i>pCBN alternative</i>	<ul style="list-style-type: none"> Excellent for $\geq 40R_C$ steels

VPQ130 - Silicon Nitride Ceramic

One grade with the toughness and wear resistance for use in most Turning & Boring Cast Iron machining applications



Turning Application



Boring Application

Features	Benefits
<p><i>High density silicon nitride</i></p> <p><i>Low binder content</i></p> <p><i>Superior notch wear resistance</i></p> <p><i>Comprehensive product offering, including many time-proven systems</i></p>	<ul style="list-style-type: none"> • Increased toughness for interrupted cutting • Increased wear resistance for higher speed range in turning • Provides extra tool life when machining “as cast” components • Appropriate for turning and milling applications



Q8- Silicon Nitride Ceramic

For use on nickel-based, high-temperature alloys

Features	Benefits
<p><i>Microwave sintered</i></p>	<ul style="list-style-type: none"> • Alternative to whisker-reinforced ceramics for a fraction of the price • Doubles feed rates over whisker-reinforced ceramics • 60% increase in tool life • Wear resistant (fine grain) and tough • Cutting speeds up to 10 times faster than carbide

At Valenite
WE NEVER STOP...



Supporting

We can increase your productivity by 20%. Make us prove it!

Program Overview	B2 - B3
Toolholder Designation	B4
ProGRIP™	B5 - B14
Negative Rake Common Hardware	B16 - B44
ISO Screw Down Designation	B45
ISO Screw Down.....	B46 - B60
Swiss Tools	B61 - B68
Small Shank Economy	B69 - B73
Positive Rake with Top Clamp.....	B74 - B80
Negative Rake with Wedge Lock	B81 - B88
Brazed Tools	B89 - B94

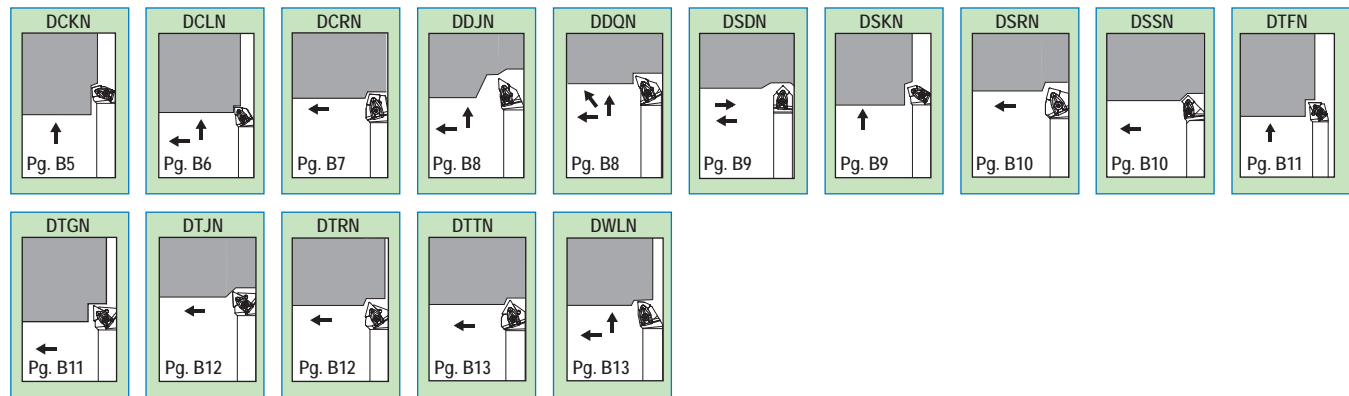
TOOLHOLDERS

Program Overview

Negative Inserts

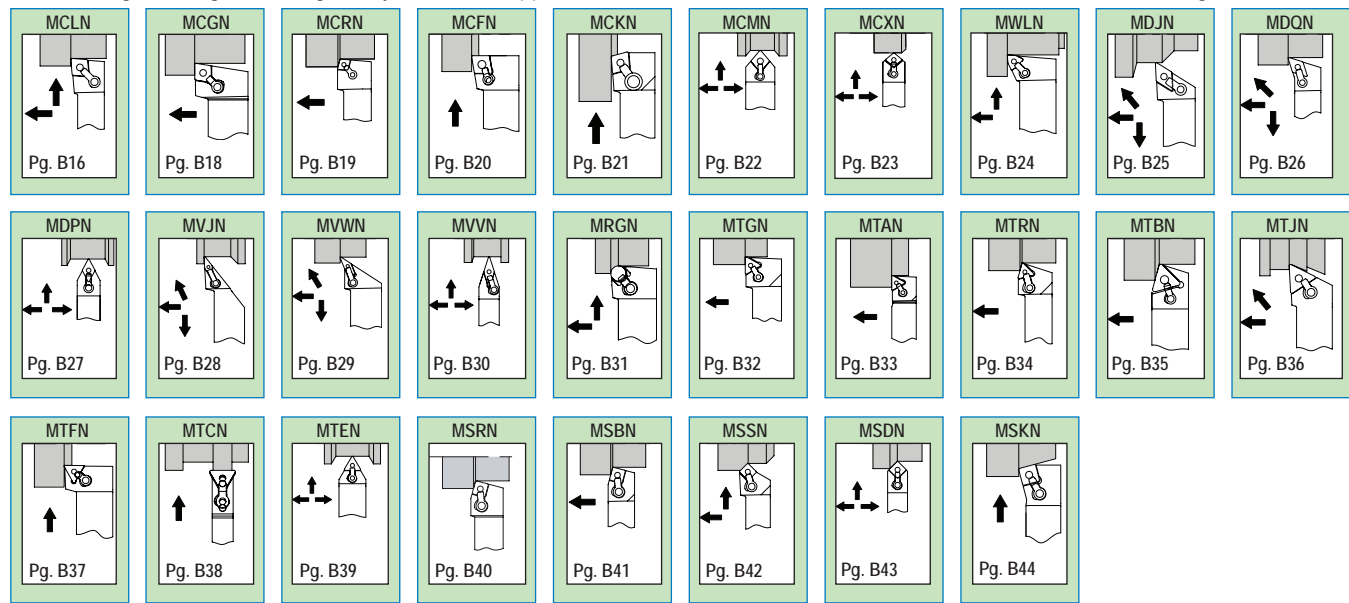
D System ProGRIP™

The first choice when security and stability are required. This allows for higher feed rates without vibration and closer tolerances.



M System Negative Rake Common Hardware

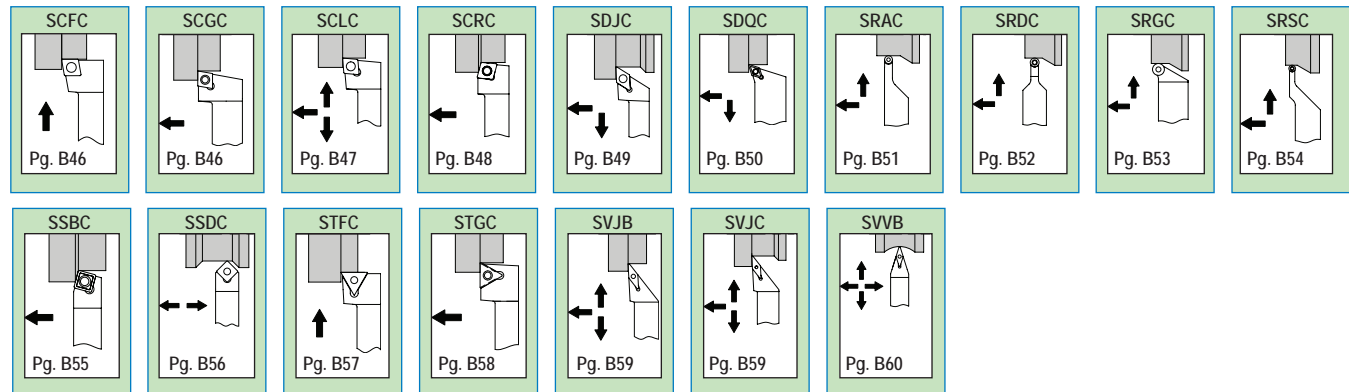
A broad range offering interchangeability with other suppliers who adhere to common hardware standards. This reduces tooling inventories.



Positive Inserts

OS System ISO Screw Down

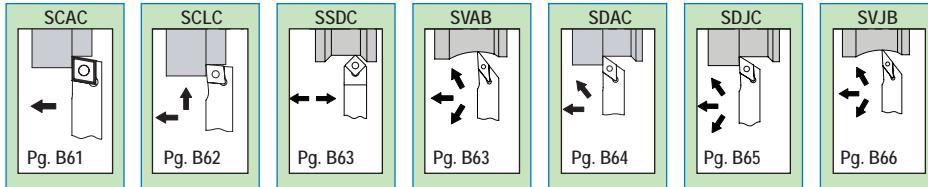
Ideal for high-precision, medium-duty operations. No clamp design allows for access to limited clearance applications.



Positive Inserts

Swiss Tools – ISO Positive Rake

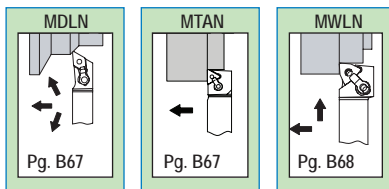
ISO positive rake toolholders designed specifically for use with swiss-type machines.



Negative Inserts

Swiss Tools – ANSI Negative Rake

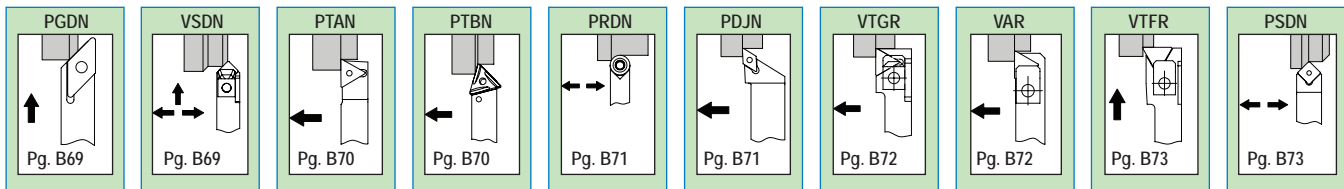
ANSI negative rake toolholders are designed specifically for use with swiss-type machines. The negative rake style allows for utilization of both sides of the insert, thus doubling your indexes.



Negative and Positive Inserts

Small Shank – Economy

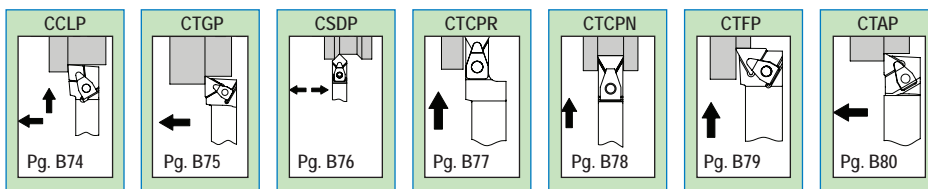
Low cost alternative for lighter-duty applications.



Positive Inserts

C System Positive Rake With Top Clamp

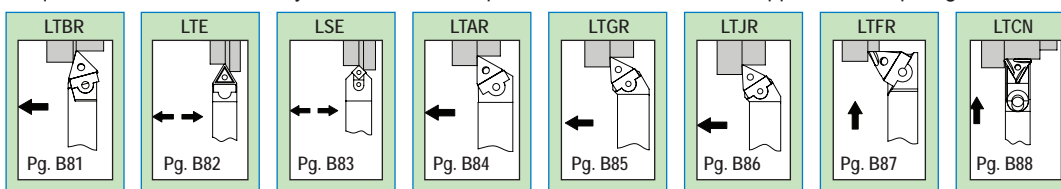
Positive rake promotes free cutting action ideal for low-horsepower applications. Top clamp provides strength required for your toughest applications.



Negative Inserts

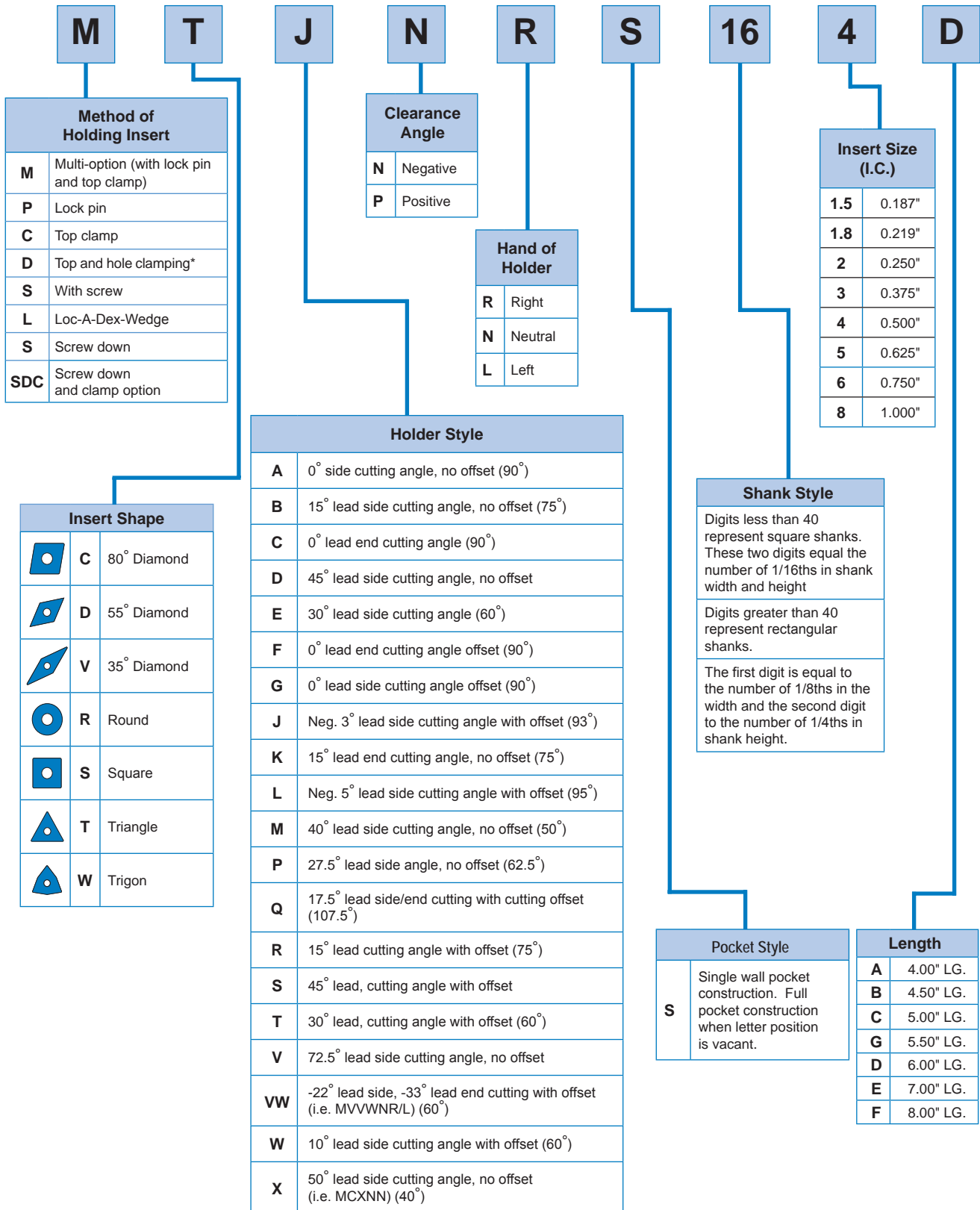
L System Negative Rake With Wedge Lock

Unique Lock-A-Dex retention system eliminates chip flow interference. Ideal for applications requiring heavier feeds and deeper cuts.



TOOLHOLDERS

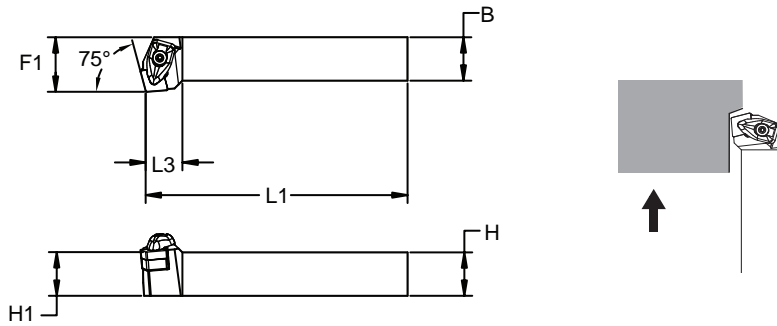
Toolholder Designation



All dimensions are in inches.
*ProGRIP™

DCKN R/L 75° Lead Facing

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DCKN R/L 164D	432	1.000	1.000	1.250	6.000	.83	-6°	-6°	62295	62294

Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322234-01	62512	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

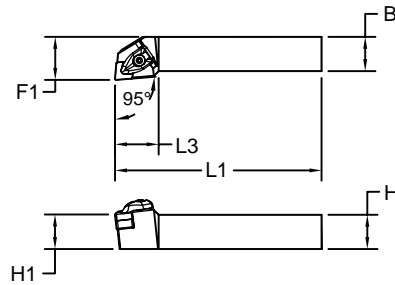
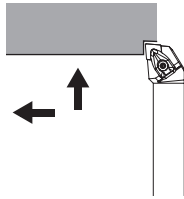
* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

TOOLHOLDERS

ProGRIP™

DCLN R/L 95° Lead Turning and Facing

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DCLN R/L 124B	432	0.750	0.750	1.000	4.500	1.260	-6°	-6°	62306	62296
DCLN R/L 164C	432	1.000	1.000	1.250	5.000	1.260	-6°	-6°	62307	62297
DCLN R/L 164D	432	1.000	1.000	1.250	6.000	1.260	-6°	-6°	62308	62298
DCLN R/L 204D	432	1.250	1.250	1.500	6.000	1.260	-6°	-6°	62311	62301
DCLN R/L 244D	432	1.500	1.500	2.000	6.000	1.260	-6°	-6°	62314	62304
DCLN R/L 165D	543	1.000	1.000	1.250	6.000	1.540	-6°	-6°	62309	62299
DCLN R/L 205D	543	1.250	1.250	1.500	6.000	1.540	-6°	-6°	62312	62302
DCLN R/L 166D	643	1.000	1.000	1.250	6.000	1.700	-6°	-6°	62310	62300
DCLN R/L 206D	643	1.250	1.250	1.500	6.000	1.700	-6°	-6°	62313	62303
DCLN R/L 246D	643	1.500	1.500	2.000	6.000	1.700	-6°	-6°	62315	62305

Spare Parts

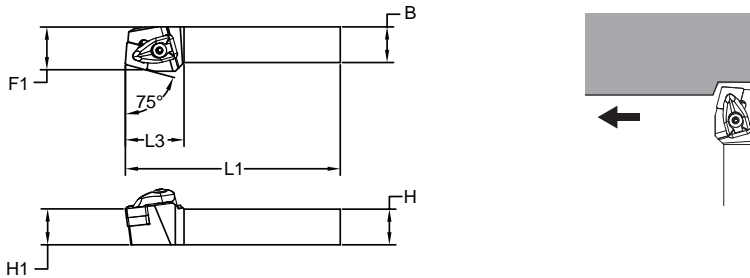


Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 234-01	62512	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
543	5322 234-03	62513	5513 020-07	62474	VP5680043-14	62435	5412 028-031	62515	4.7
643	5322 236-01	62458	5513 020-07	62474	VP5680043-14	62435	5412 028-041	62517	4.7

* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

DCRN R/L 75° Lead Turning

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DCRN R/L 164D	432	1.000	1.000	1.128	6.000	1.360	-6°	-6°	62321	62316
DCRN R/L 204D	432	1.250	1.250	1.378	6.000	1.360	-6°	-6°	62322	62317
DCRN R/L 244D	432	1.500	1.500	1.628	6.000	1.360	-6°	-6°	62325	62320
DCRN R/L 205D	543	1.250	1.250	1.291	6.000	1.640	-6°	-6°	62323	62318
DCRN R/L 206D	643	1.250	1.250	1.291	6.000	1.820	-6°	-6°	62324	62319

Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 234-01	62512	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
543	5322 234-03	62513	5513 020-07	62474	VP5680043-14	62435	5412 028-031	62515	4.7
643	5322 236-01	62458	5513 020-07	62474	VP5680043-14	62435	5412 028-041	62517	4.7

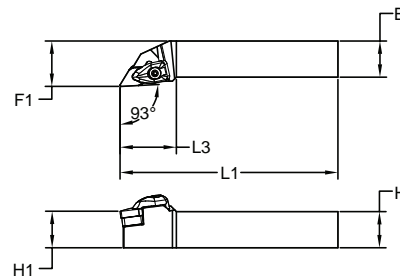
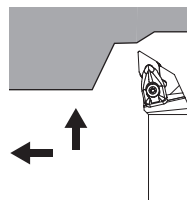
* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

TOOLHOLDERS

ProGRIP™

DDJN R/L 93° Lead Turning and Profiling

55° Diamond Insert
Use Insert Style DNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DDJN R/L 163D	332	1.000	1.000	1.250	6.000	1.190	-6°	-7°	62332	62327
DDJN R/L 124B	432	0.750	0.750	1.000	6.000	1.550	-6°	-7°	62331	62326
DDJN R/L 164C	432	1.000	1.000	1.250	5.000	1.550	-6°	-7°	62333	62328
DDJN R/L 164D	432	1.000	1.000	1.250	6.000	1.640	-6°	-7°	62334	62318

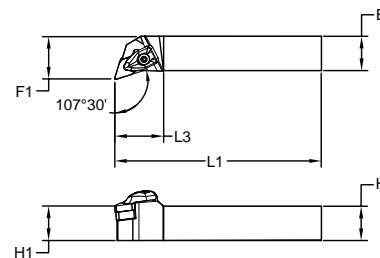
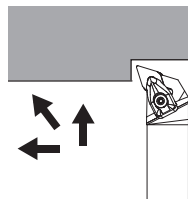
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 267-01	62460	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 266-01	62459	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

DDQN R/L 107.5° Lead Turning and Profiling

55° Diamond Insert
Use Insert Style DNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DDQN R/L 164D	432	1.000	1.000	1.250	6.000	1.420	-6°	-7°	62338	62336
DDQN R/L 204D	432	1.250	1.250	1.500	6.000	1.420	-6°	-7°	62339	62337

Spare Parts

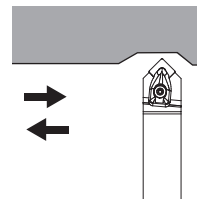
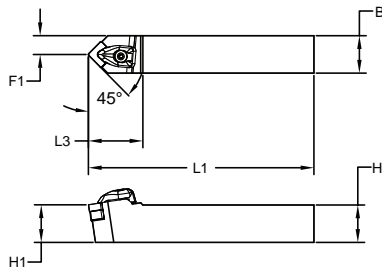


Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 266-01	62459	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

DSDNN 45° Lead Turning and Chamfering

Square Insert
Use Insert Style SNxx



Part Number	Dimensions								EDP#
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	
DSDNN 124B	432	.750	.750	0.386	4.500	1.450	-6°	-6°	62340
DSDNN 164D	432	1.000	1.000	0.512	6.000	1.450	-6°	-6°	62341
DSDNN 165D	543	1.000	1.000	0.520	6.000	1.760	-6°	-6°	62342
DSDNN 206D	643	1.250	1.250	0.646	6.000	1.970	-6°	-6°	62343

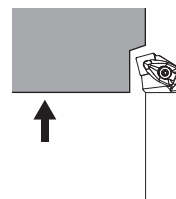
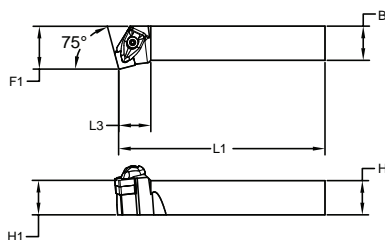
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 425-01	62465	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
543	5322 425-03	62466	5513 020-07	62474	VP5680043-14	62435	5412 028-031	62515	4.7
643	5322 425-04	62467	5513 020-07	62474	VP5680043-14	62435	5412 028-041	62517	4.7

DSKN R/L 75° Lead Facing

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DSKN R/L 164D	432	1.000	1.000	1.250	6.000	0.930	-6°	-6°	62346	62344
DSKN R/L 205D	543	1.250	1.250	1.500	6.000	1.140	-6°	-6°	62347	62345

Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 425-01	62465	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
543	5322 425-03	62466	5513 020-07	62474	VP5680043-14	62435	5412 028-031	62515	4.7

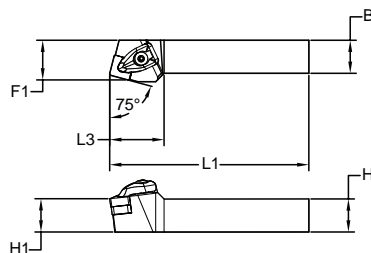
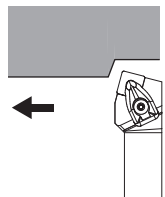
* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

TOOLHOLDERS

ProGRIP™

DSRN R/L 75° Lead Turning

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DSRN R/L 124B	432	0.750	0.750	0.878	4.500	1.350	-6°	-6°	62353	62348
DSRN R/L 164D	432	1.000	1.000	1.128	6.000	1.350	-6°	-6°	62354	62349
DSRN R/L 165D	543	1.000	1.000	1.047	6.000	1.640	-6°	-6°	62355	62350
DSRN R/L 205D	543	1.250	1.250	1.291	6.000	1.640	-6°	-6°	62356	62351
DSRN R/L 206D	643	1.250	1.250	1.321	6.000	1.830	-6°	-6°	62357	62352

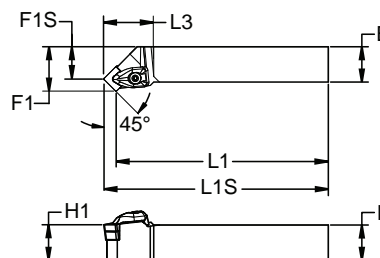
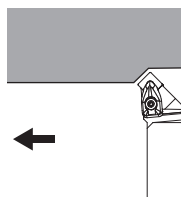
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 425-01	62465	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
543	5322 425-03	62466	5513 020-07	62474	VP5680043.-14	62435	5412 028-031	62515	4.7
643	5322 425-04	62467	5513 020-07	62474	VP5680043-14	62435	5412 028-041	62517	4.7

DSSN R/L 45° Lead Turning and Chamfering

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions									EDP#		
	Insert	H/H1	B	F1	F1S	L1	L1S	L3	Axial	Radial	Right Hand	Left Hand
DSSN R/L 164D	432	1.000	1.000	1.250	0.921	6.000	6.327	1.075	-8°	0	62360	62358
DSSN R/L 206D	643	1.250	1.250	1.500	1.008	6.000	6.492	1.413	-8°	0	62361	62359

Spare Parts

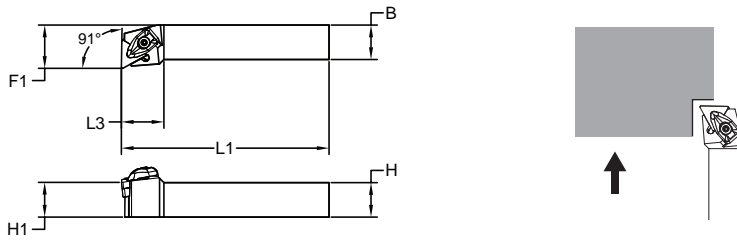


Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 425-01	62465	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9
643	5322 425-04	62467	5513 020-07	62474	VP5680043-14	62435	5412 028-041	62517	4.7

* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

DTFN R/L 91° Lead Facing

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DTFN R/L 123B	332	.0750	.0750	1.000	4.500	0.933	-6°	-6°	62364	62362
DTFN R/L 164D	432	1.000	1.000	1.250	6.000	1.228	-6°	-6°	62365	62363

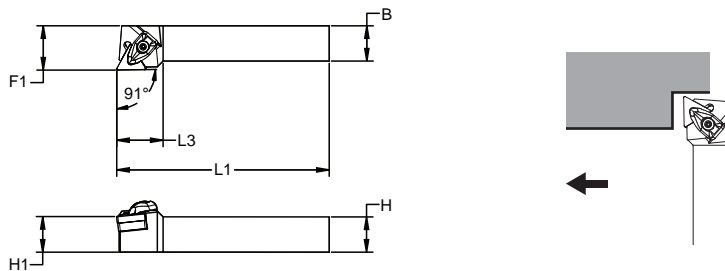
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 315-02	62461	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 315-04	62462	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

DTGN R/L 91° Lead Turning

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DTGN R/L 123B	332	0.750	0.750	1.000	4.500	0.970	-6°	-6°	62369	62366
DTGN R/L 164D	432	1.000	1.000	1.250	6.000	1.260	-6°	-6°	62370	62367
DTGN R/L 204D	432	1.250	1.250	1.500	6.000	1.310	-6°	-6°	62371	62378

Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 315-02	62461	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 315-04	62462	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

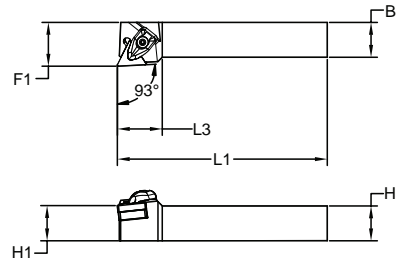
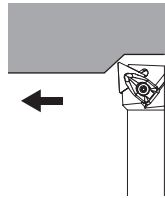
* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

TOOLHOLDERS

ProGRIP™

DTJN R/L 93° Lead Turning and Profiling

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DTJN R/L 123B	332	0.750	0.750	1.000	4.500	0.953	-6°	-6°	62376	62372
DTJN R/L 163D	332	1.000	1.000	1.250	6.000	0.980	-6°	-6°	62377	62373
DTJN R/L 164D	432	1.000	1.000	1.250	6.000	1.283	-6°	-6°	62378	62374
DTJN R/L 204D	432	1.250	1.250	1.516	6.000	1.283	-6°	-6°	62379	62375

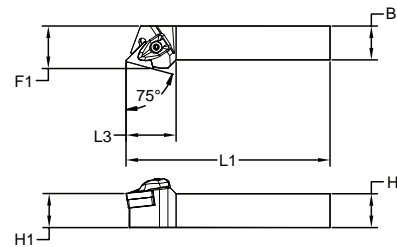
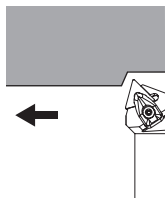
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 315-02	62461	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 315-04	62462	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

DTRN R/L 75° Lead Turning

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DTRN R/L 164D	432	1.000	1.000	1.047	6.000	1.472	-6°	-6°	62381	62380

Spare Parts

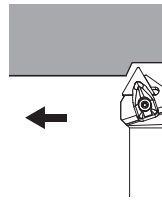
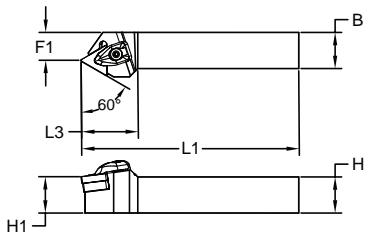


Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
432	5322 315-04	62462	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

DTTN R/L 60° Lead Turning and Chamfering

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DTTN R/L 123B	332	0.750	0.750	0.598	4.500	1.190	-6°	-6°	62384	62382
DTTN R/L 164D	432	1.000	1.000	0.791	6.000	1.560	-6°	-6°	62385	62383

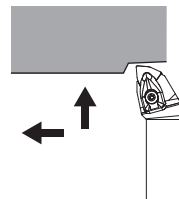
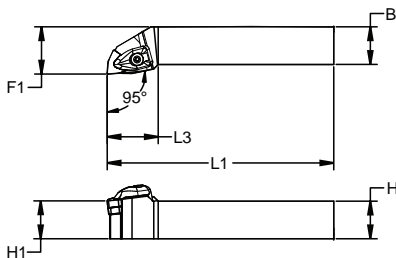
Spare Parts



Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 315-02	62461	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 315-04	62462	5513 020-02	62472	PT8004	66131	5412 028-021	62516	2.9

DWLN R/L 95° Lead Turning and Facing

Trigon Insert
Use Insert Style WNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	H/H1	B	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
DWLN R/L 163D	332	1.000	1.000	1.250	6.000	1.067	-6°	-6°	62389	62386
DWLN R/L 164D	432	1.000	1.000	1.250	6.000	1.378	-6°	-6°	62390	62387
DWLN R/L 204D	432	1.250	1.250	1.500	6.000	1.378	-6°	-6°	62391	62388

Spare Parts



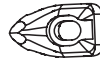
Insert	Shim		Shim Screw*		Wrench*		Clamp Set**		Torque (ft-lbs)
	Part #	EDP#	Part #	EDP#	Part #	EDP#	Part #	EDP#	
332	5322 328-01	62463	5513 020-04	62473	PT8002	66129	5412 028-011	62514	1.3
432	5322 331-12	62464	5513 020-02	62472	PT8004	66139	5412 028-021	62516	2.9

* Advanced Torx Plus® locking mechanism. ** Clamp Set includes screw, clamp, and spring. Optional clamp sets available in spare parts section on page B14.

TOOLHOLDERS

ProGRIP™

Additional Toolholder Spare Parts

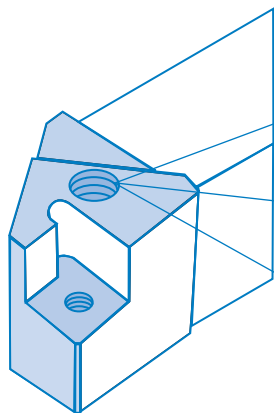


Description	Insert Size	Clamp Set		Clamp		Clamp Screw	
		Part #	EDP#	Part #	EDP#	Part #	EDP#
Standard Parts Supplied with Holder	332	5412028011	62514	541202801	50427	551208601	50627
	432	5412028021	62516	541202802	50916	551208602	50628
	543	5412028031	62515	541202803	50431	551208603	50631
	643	5412028041	62517	541202804	50432	551208603	50631
Extra Clamping Security	432	5412032021	50497	541203202	50488	551208602	50628
	543	5412032031	50499	541203203	50498	551208603	50631
Use with Solid Inserts	432	5412034021	50517	541203402	50500	551208602	50628
	543	5412034031	50522	541203403	50521	551208603	50631



Description	Insert Size	Compression Spring		Pin		Wrench	
		Part #	EDP#	Part #	EDP#	Part #	EDP#
Standard Parts Supplied with Holder	332	556100157	50652	3113030255	50417	PT8002	66129
	432	556100158	50779	3113030307	50418	PT8004	66139
	543	556100159	50814	3113030307	50418	VP568004314	62435
	643	556100159	50814	3113030307	50418	VP568004314	62435
Extra Clamping Security	432	556100158	50779	3113030307	50418	VP568005102	50165
	543	556100159	50814	3113030307	50418	VP568005102	50165
Use with Solid Inserts	432	556100158	50779	3113030307	50418	VP568005102	50165
	543	556100159	50814	3113030307	50418	VP568005102	50165

Available Clamp Sets



Standard Clamp Set

Designed for inserts with holes and chipbreakers



Optional Clamp Set

Designed for flat inserts with holes for improved security



Optional Clamp Set

Designed for ceramic and carbide flat top inserts without holes



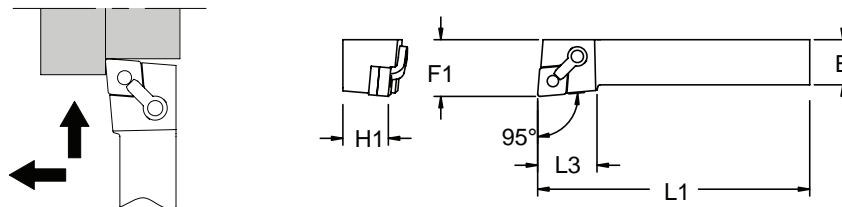
Multiple toolholder options to support our comprehensive assortment of ValPro geometries and grades.

TOOLHOLDERS

Negative Rake Common Hardware

MCLNR/L 95° Lead Turning and Facing

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MCLNR/L 08-3A	322	0.500	0.500	0.750	4.000	1.000	-5°	-5°	60413	60387
MCLNR/L 10-3B	322	0.625	0.625	0.875	4.500	1.000	-5°	-5°	60414	60388
MCLNR/L 12-3B	322	0.750	0.750	1.000	4.500	1.000	-5°	-5°	60415	60389
MCLNR/L 12-4A	432	0.750	0.750	1.000	4.000	1.190	-5°	-5°	60416	60390
MCLNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.190	-5°	-5°	60417	60391
MCLNR/L 16-3C	322	1.000	1.000	1.250	5.000	1.000	-5°	-5°	60418	60392
MCLNR/L 16-3D	322	1.000	1.000	1.250	6.000	1.000	-5°	-5°	60419	60393
MCLNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.190	-5°	-5°	60420	60394
MCLNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.190	-5°	-5°	60421	60395
MCLNR/L 16-5C	543	1.000	1.000	1.250	5.000	1.380	-5°	-5°	60422	60396
MCLNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60423	60397
MCLNR/L 16-6C	643	1.000	1.000	1.250	5.000	1.500	-5°	-5°	60424	60398
MCLNR/L 16-6D	643	1.000	1.000	1.250	6.000	1.500	-5°	-5°	60425	60399
MCLNR/L 85-4D	432	1.000	1.250	1.250	6.000	1.190	-5°	-5°	60436	60410
MCLNR/L 85-6D	643	1.000	1.250	1.250	6.000	1.500	-5°	-5°	60437	60411
MCLNR/L 86-6E	643	1.000	1.500	1.250	7.000	1.500	-5°	-5°	60438	60412
MCLNR/L 20-3D	322	1.250	1.250	1.500	6.000	1.000	-5°	-5°	60426	60400
MCLNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.190	-5°	-5°	60427	60401
MCLNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60428	60402
MCLNR/L 20-6D	643	1.250	1.250	1.500	6.000	1.500	-5°	-5°	60429	60403
MCLNR/L 24-3D	322	1.500	1.500	2.000	6.000	1.000	-5°	-5°	60430	54035
MCLNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.190	-5°	-5°	60431	60405
MCLNR/L 24-5D	543	1.500	1.500	2.000	6.000	1.380	-5°	-5°	60432	60406
MCLNR/L 24-6D	643	1.500	1.500	2.000	6.000	1.500	-5°	-5°	60433	60407
MCLNR/L 24-6E	643	1.500	1.500	2.000	7.000	1.500	-5°	-5°	60434	60408
MCLNR/L 32-6F	643	2.000	2.000	2.500	8.000	1.500	-5°	-5°	60435	60409

See Page B17 for Spare Parts

Negative Rake Common Hardware

Spare Parts
(MCLNR/L)



Insert Size	Part#	Shim Seat	Lock Pin**	Clamp	Clamp Screw**	Optional Parts			
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr	
322 w/"B" dimension of .5" or .625"	Part #	–	NL-33	CLI-6	XNS-36	–	–	–	–
	EDP#	–	59230	59053	53055	–	–	–	–
322	Part #	CSN-332	NL-34L	CLI-6	XNS-36	CSN-322	S-34	–	–
	EDP#	09109	52957	59053	53055	09377	53022	–	–
432	Part #	CSN-433	NL-46	CLI-20	XNS-48	CSN-442	S-46	CBR-40-08	CBL-40-8
	EDP#	09143	52959	59048	53058	09145	53023	08930	00887
543	Part #	CSN-533	NL-58	CLI-12	XNS-510	–	S-58	CBR-42-15	CBL-42-15
	EDP#	09147	52960	59046	53059	–	53024	08935	RFQ*
643	Part #	CSN-633	NL-68	CLI-12	XNS-510	CSN-642	S-68	CBR-41-15	CBL-41-15
	EDP#	09150	52961	59046	53059	09151	52354	08933	00889

* RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

**For recommended torque drive values and lubrication see Reference Material section.

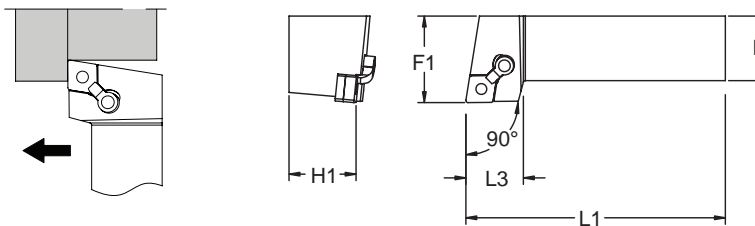
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MCGNR/L 90° Lead Turning

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MCGNR/L 124B	432	0.750	0.750	1.000	4.500	1.140	-5°	-5°	60351	60337
MCGNR/L 164C	432	1.000	1.000	1.250	5.000	1.140	-5°	-5°	60352	60338
MCGNR/L 164D	432	1.000	1.000	1.250	6.000	1.140	-5°	-5°	60353	60339
MCGNR/L 165C	543	1.000	1.000	1.250	5.000	1.380	-5°	-5°	60354	60340
MCGNR/L 165D	543	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60355	60341
MCGNR/L 166D	643	1.000	1.000	1.250	6.000	1.630	-5°	-5°	60356	60342
MCGNR/L 854D	432	1.000	1.250	1.250	6.000	1.140	-5°	-5°	54034	54031
MCGNR/L 204D	432	1.250	1.250	1.500	6.000	1.140	-5°	-5°	60357	60343
MCGNR/L 205D	543	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60358	60344
MCGNR/L 206D	643	1.250	1.250	1.500	6.000	1.630	-5°	-5°	60359	60345
MCGNR/L 244D	432	1.500	1.500	2.000	6.000	1.140	-5°	-5°	60360	60346
MCGNR/L 245D	543	1.500	1.500	2.000	6.000	1.380	-5°	-5°	54032	60347
MCGNR/L 246D	643	1.500	1.500	2.000	6.000	1.630	-5°	-5°	60362	60348
MCGNR/L 246E	643	1.500	1.500	2.000	7.000	1.630	-5°	-5°	60363	60349

Spare Parts



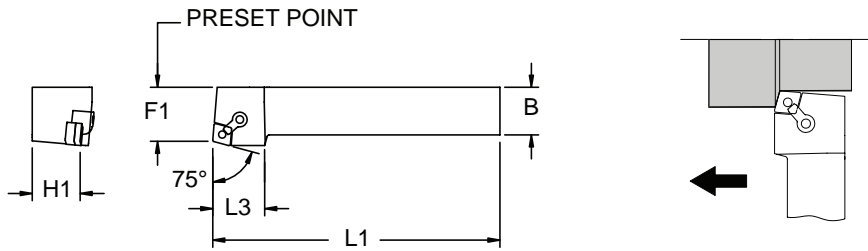
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr	
432	Part#	CSN433	NL46	CLI20	XNS48	CSN442	S46	CBR4508	CBL4508
	EDP#	09143	52959	59048	53058	09145	53023	08936	08888
543	Part#	CSN533	NL58	CLI12	XNS510	-	S58	NCBCR3150	NCBCL3150
	EDP#	09147	52960	59046	53059	-	53024	08977	08968
643	Part#	CSN633	NL68	CLI12	XNS510	CSN642	S68	CBR4115	CBL4115
	EDP#	09150	52961	59046	53059	09151	52354	08933	00889

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MCRNR/L 75° Lead Turning

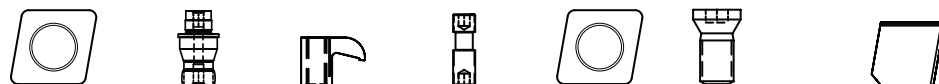
80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MCRNR/L 124B	432	0.750	0.750	0.878	4.500	1.180	-5°	-5°	60463	60451
MCRNR/L 163D	322	1.000	1.000	1.128	6.000	1.180	-5°	-5°	60464	60452
MCRNR/L 164C	432	1.000	1.000	1.128	5.000	1.180	-5°	-5°	60465	60453
MCRNR/L 164D	432	1.000	1.000	1.128	6.000	1.180	-5°	-5°	60466	60454
MCRNR/L 165C	543	1.000	1.000	1.101	5.000	1.250	-5°	-5°	54037	60455
MCRNR/L 165D	543	1.000	1.000	1.101	6.000	1.250	-5°	-5°	60468	60456
MCRNR/L 166D	643	1.000	1.000	1.068	6.000	1.500	-5°	-5°	60469	60457
MCRNR/L 204D	432	1.250	1.250	1.318	6.000	1.180	-5°	-5°	60470	60458
MCRNR/L 205D	543	1.250	1.250	1.351	6.000	1.250	-5°	-5°	60471	60459
MCRNR/L 206D	643	1.250	1.250	1.318	6.000	1.500	-5°	-5°	60472	60460
MCRNR/L 246D	643	1.500	1.500	1.818	6.000	1.500	-5°	-5°	60473	60461
MCRNR/L 246E	643	1.500	1.500	1.818	7.000	1.500	-5°	-5°	60474	60462

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin**	Clamp	Clamp Screw**	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
322	Part #	CSN322	NL34L	CLI6	XNS36	-	-	-	-
	EDP#	09377	52957	59053	53055	-	-	-	-
432	Part #	CSN433	NL46	CLI9	XNS58	CSN442	S46	NCCBR44100	NCCBL44100
	EDP#	09143	52959	59055	53060	09145	53023	00911	RFQ*
543	Part #	CSN533	NL58	CLI9	XNS510	-	S58	NCCBR5150	NCCBL5150
	EDP#	09147	52960	59055	53059	-	53024	09072	09065
643	Part #	CSN633	NL68	CLI12	XNS510	CSN642	S68	NCCBR6150	NCCBL6150
	EDP#	09150	52961	59046	53059	09151	52354	09074	09066

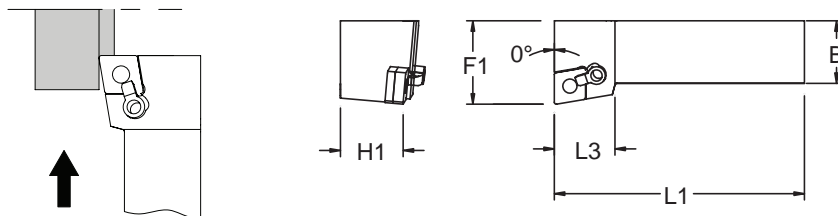
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service
 **For recommended torque drive values and lubrication see Reference Material section.
 Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MCFNR/L 0° Lead Facing

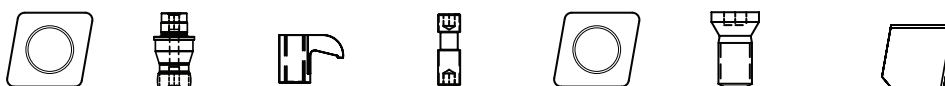
80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MCFNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.140	-5°	-5°	60323	60309
MCFNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.140	-5°	-5°	60324	60310
MCFNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.140	-5°	-5°	60325	60311
MCFNR/L 16-5C	543	1.000	1.000	1.250	5.000	1.380	-5°	-5°	50010	60312
MCFNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60327	60313
MCFNR/L 16-6D	643	1.000	1.000	1.250	6.000	1.440	-5°	-5°	54025	60314
MCFNR/L 85-4D	432	1.000	1.250	1.250	6.000	1.140	-5°	-5°	54030	54021
MCFNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.140	-5°	-5°	60329	60315
MCFNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60330	60316
MCFNR/L 20-6D	643	1.250	1.250	1.500	6.000	1.440	-5°	-5°	60331	54017
MCFNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.140	-5°	-5°	54026	54019
MCFNR/L 24-5D	543	1.500	1.500	2.000	6.000	1.380	-5°	-5°	54028	60319
MCFNR/L 24-6D	643	1.500	1.500	2.000	6.000	1.440	-5°	-5°	54029	54020
MCFNR/L 24-6E	643	1.500	1.500	2.000	7.000	1.440	-5°	-5°	60335	60321

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
432	Part #	CSN-433	NL-46	CLI-20	XNS-48	CSN-442	S-46	CBR-45-08	CBL-45-08
	EDP#	09143	52959	59048	53058	09145	53023	08936	08888
543	Part #	CSN-533	NL-58	CLI-12	XNS-510	-	S-58	NCBCR-3-150	NCBCL-3-150
	EDP#	09147	52960	59046	53059	-	53024	08977	08968
643	Part #	CSN-633	NL-68	CLI-9	XNS-510	CSN-642	S-68	CBR-46-15	CBL-46-15
	EDP#	09150	52961	59055	53059	09151	52354	RFQ*	RFQ*

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

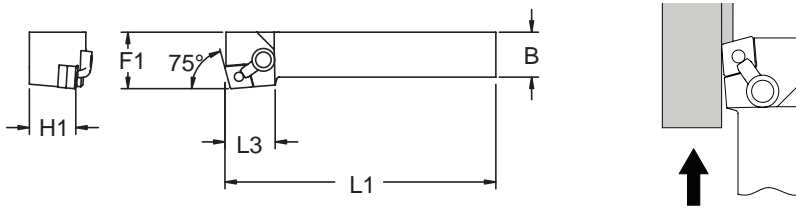
*For recommended torque drive values and lubrication see Reference Material section.

Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MCKNR/L 75° Lead Facing

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MCKNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.200	-5°	-5°	60376	60365
MCKNR/L 16-4C	432	1.100	1.000	1.250	5.000	1.200	-5°	-5°	60377	60366
MCKNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.200	-5°	-5°	60378	60367
MCKNR/L 16-5C	543	1.000	1.000	1.250	5.000	1.430	-5°	-5°	60379	60368
MCKNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.430	-5°	-5°	60380	60369
MCKNR/L 16-6D	643	1.000	1.000	1.250	6.000	1.520	-5°	-5°	60381	60370
MCKNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.200	-5°	-5°	60382	60371
MCKNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.430	-5°	-5°	60383	60372
MCKNR/L 20-6D	643	1.250	1.250	1.500	6.000	1.520	-5°	-5°	60384	60373
MCKNR/L 24-6D	643	1.500	1.500	2.000	6.000	1.520	-5°	-5°	60385	60374
MCKNR/L 24-6E	643	1.500	1.500	2.000	7.000	1.520	-5°	-5°	60386	60375

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
432	Part #	CSN-433	NL-46	CLI-20	XNS-48	CSN-442	S-46	NCCBR-4-100	NCCBL-4-100
	EDP #	09143	52959	59048	53058	09145	53023	09068	09061
543	Part #	CSN-533	NL-58	CLI-9	XNS-59	-	S-58	NCCBR-5-150	NCCBL-5-150
	EDP #	09147	52960	59055	53061	-	53024	09072	09065
643	Part #	CSN-633	NL-68	CLI-12	XNS-510	CSN-642	S-68	NCCBR-6-150	NCCBL-6-150
	EDP #	09150	52961	59046	53059	09151	52354	09074	09066

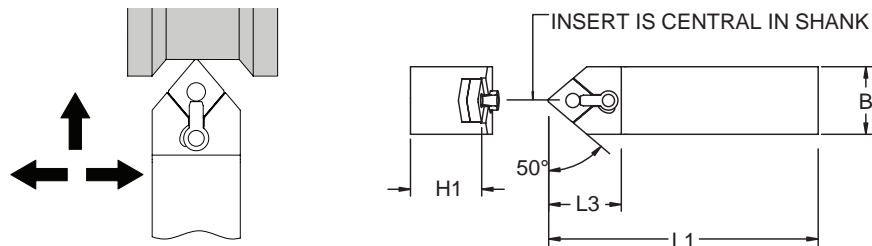
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MCMNN 50° Lead Turning and Profiling

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MCMNN 12-4B	432	0.750	0.750	-	4.500	1.380	0°	-8°	60439
MCMNN 16-4C	432	1.000	1.000	-	5.000	1.380	0°	-8°	60440
MCMNN 16-4D	432	1.000	1.000	-	6.000	1.380	0°	-8°	60441
MCMNN 16-5C	543	1.000	1.000	-	5.000	1.630	0°	-8°	60442
MCMNN 85-4D	432	1.000	1.250	-	6.000	1.380	0°	-8°	60450
MCMNN 20-4D	432	1.250	1.250	-	6.000	1.380	0°	-8°	60443
MCMNN 20-5D	543	1.250	1.250	-	6.000	1.630	0°	-8°	60444
MCMNN 20-6D	643	1.250	1.250	-	6.000	1.750	0°	-8°	60445
MCMNN 24-4D	432	1.500	1.500	-	6.000	1.380	0°	-8°	60446
MCMNN 24-5D	543	1.500	1.500	-	6.000	1.630	0°	-8°	60447
MCMNN 24-6D	643	1.500	1.500	-	6.000	1.750	0°	-8°	60448
MCMNN 24-6E	643	1.500	1.500	-	7.000	1.750	0°	-8°	60449

Spare Parts



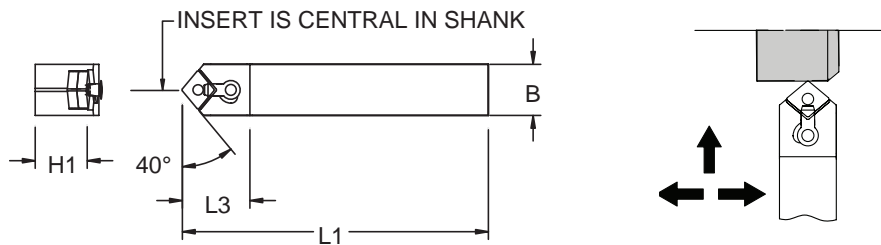
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
432	Part #	CSN-433	NL-46	CLI-20	XNS-48	CSN-442	S-46	CBR-40-08
	EDP#	09143	52959	59048	53058	09145	53023	08930
543	Part #	CSN-533	NL-58	CLI-12	XNS-510	-	S-58	CBR-42-15
	EDP#	09147	52960	59046	53059	-	53024	08935
643	Part #	CSN-633	NL-68	CLI-12	XNS-510	CSN-642	S-68	CBR-41-15
	EDP#	09150	52961	09151	52354	08933	52354	08933

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MCXNN 40° Lead Turning and Chamfering

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MCXNN 16-4D	432	1.000	1.000	-	6.000	0.380	0°	-10°	60475
MCXNN 16-5D	543	1.000	1.000	-	6.000	0.630	0°	-10°	60476
MCXNN 20-5D	543	1.250	1.250	-	6.000	0.630	0°	-10°	60477
MCXNN 24-5D	543	1.500	1.500	-	6.000	0.630	0°	-10°	60478

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
432	Part #	CSN-433	NL-46	CLI-20	XNS-48	CSN-442	S-46	-
	EDP#	09143	52959	59048	53058	09145	53023	-
543	Part #	CSN-533	NL-58	CLI-12	XNS-510	-	S-58	-
	EDP#	09147	52960	59046	53059	-	53024	-

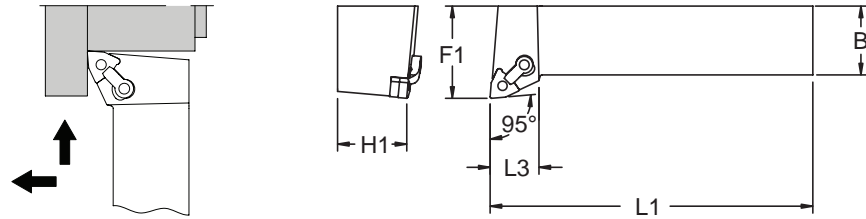
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MWLNR/L 95° Lead Turning and Facing

Trigon Insert
Use Insert Style WNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MWLNR/L 12-3B	332	0.750	0.750	1.000	4.500	1.000	-5°	-5°	60887	60876
MWLNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.130	-5°	-5°	60888	60877
MWLNR/L 16-3C	332	1.000	1.000	1.250	5.000	1.000	-5°	-5°	60889	60878
MWLNR/L 16-3D	332	1.000	1.000	1.250	6.000	1.000	-5°	-5°	60890	60879
MWLNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.130	-5°	-5°	60891	60880
MWLNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.130	-5°	-5°	60892	60881
MWLNR/L 20-3D	332	1.250	1.250	1.500	6.000	1.000	-5°	-5°	60893	60882
MWLNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.130	-5°	-5°	60894	60883
MWLNR/L 24-3D	332	1.500	1.500	2.000	6.000	1.000	-5°	-5°	60895	54934
MWLNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.130	-5°	-5°	60896	60885
MWLNR/L 24-4E	432	1.500	1.500	2.000	7.000	1.130	-5°	-5°	60897	60886

Spare Parts



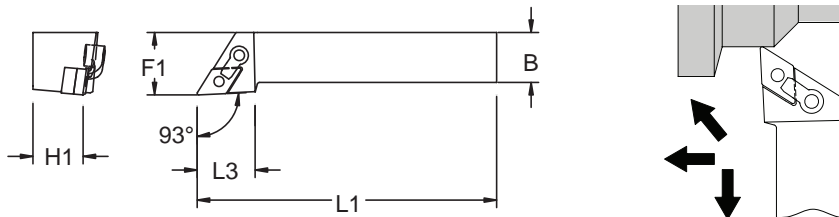
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
332	Part #	IWSN-322	NL-34L	CLI-6	XNS-36	-	-	-
	EDP#	52388	52957	59053	53055	-	-	-
432	Part #	IWSN-433	NL-46	CLI-20	XNS-48	-	S-46	-
	EDP#	09180	52959	59048	53058	-	53023	-

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MDJNR/L 93° Lead Turning and Profiling

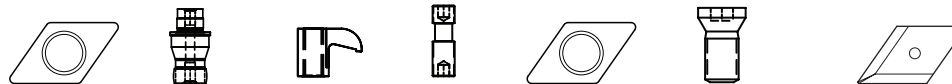
55° Diamond Insert
Use Insert Style WNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MDJNR/L 12-3B	332	0.750	0.750	1.000	4.500	0.250	-5°	-5°	60496	60479
MDJNR/L 12-4B	432	0.750	0.750	1.000	4.500	0.420	-5°	-5°	60497	60480
MDJNR/L 16-3C	332	1.000	1.000	1.250	5.000	0.250	-5°	-5°	60498	60481
MDJNR/L 16-3D	332	1.000	1.000	1.250	6.000	0.250	-5°	-5°	60499	60482
MDJNR/L 16-4C	432	1.000	1.000	1.250	5.000	0.290	-5°	-5°	60500	60483
MDJNR/L 16-4D	432	1.000	1.000	1.250	6.000	0.290	-5°	-5°	60501	60484
MDJNR/L 16-5D	543	1.000	1.000	1.250	6.000	0.500	-5°	-5°	60502	60485
MDJNR/L 85-4D	432	1.000	1.250	1.250	6.000	0.290	-5°	-5°	60510	60493
MDJNR/L 85-5D	543	1.000	1.250	1.250	6.000	0.500	-5°	-5°	50011	60494
MDJNR/L 86-5E	543	1.000	1.500	1.250	7.000	0.500	-5°	-5°	60512	60495
MDJNR/L 20-3D	332	1.250	1.250	1.500	6.000	0.250	-5°	-5°	60503	60486
MDJNR/L 20-4D	432	1.250	1.250	1.500	6.000	0.290	-5°	-5°	60504	60487
MDJNR/L 20-5D	543	1.250	1.250	1.500	6.000	0.500	-5°	-5°	60505	60488
MDJNR/L 24-3D	332	1.500	1.500	2.000	6.000	0.250	-5°	-5°	60506	60489
MDJNR/L 24-4E	432	1.500	1.500	2.000	7.000	0.290	-5°	-5°	60507	60490
MDJNR/L 24-5D	543	1.500	1.500	2.000	6.000	0.500	-5°	-5°	60508	60491
MDJNR/L 24-5E	543	1.500	1.500	2.000	7.000	0.500	-5°	-5°	60509	60492

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
332	Part #	DSN-322	NL-34L	CLI-7	XNS-36	-	-	-	-
	EDP#	09158	52957	59054	53055	-	-	-	-
432	Part #	DSN-443	NL-46L	CLI-20	XNS-48	DSN-433	S-46	CBR-21-100	CBL-21-100
	EDP#	09160	59232	59048	53058	09159	53023	08907	08886
543	Part #	DSN-533	NL-58	CLI-12	XNS-510	DSN-543	S-58	CBR-19-100	CBL-19-100
	EDP#	09161	52960	59046	53059	09162	53024	08900	08883

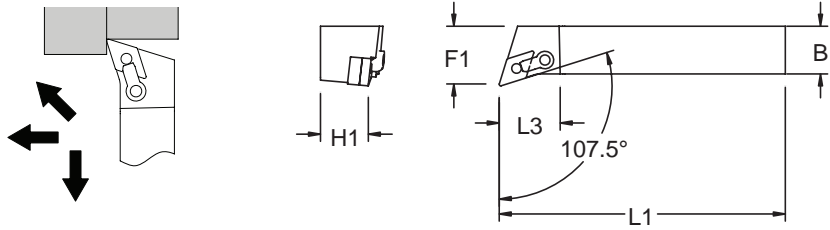
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MDQNR/L 107.5° Lead Turning and Profiling

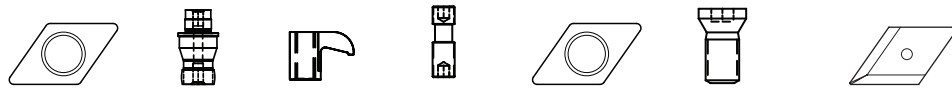
55° Diamond Insert
Use Insert Style DNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MDQNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.380	-5°	-5°	60534	60527
MDQNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60535	60528
MDQNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.630	-5°	-5°	60536	54039
MDQNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60537	60530
MDQNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.630	-5°	-5°	54060	60531
MDQNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.380	-5°	-5°	60539	60532
MDQNR/L 24-5E	543	1.500	1.500	2.000	7.000	1.630	-5°	-5°	60540	60533

Spare Parts



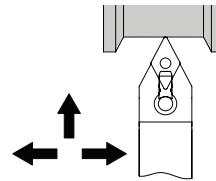
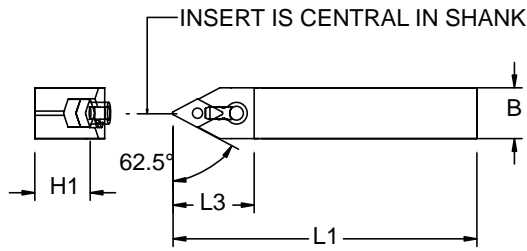
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr	
432	Part #	DSN-443	NL-46L	CLI-20	XNS-48	DSN-433	S-46	CBR-22-050	CBR-22-050
	EDP#	09160	59232	59048	53058	09159	53023	08908	08908
543	Part #	DSN-533	NL-58L	CLI-12	XNS-510	DSN-543	S-58	CBR-20-050	CBR-20-050
	EDP#	09161	00914	59046	53059	09162	53024	08903	08903

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MDPNN 62.5° Lead Turning and Profiling

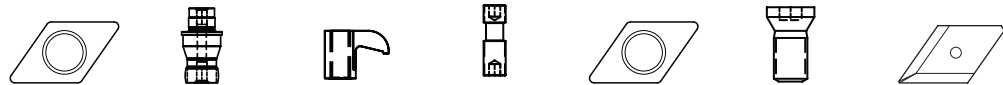
55° Diamond Insert
Use Insert Style DNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MDPNN 12-3B	332	0.750	0.750	-	4.500	1.500	0°	-10°	60513
MDPNN 12-4B	432	0.750	0.750	-	4.500	1.750	0°	-10°	60514
MDPNN 16-3C	332	1.000	1.000	-	5.000	1.500	0°	-10°	60515
MDPNN 16-3D	332	1.000	1.000	-	6.000	1.500	0°	-10°	60516
MDPNN 16-4D	432	1.000	1.000	-	6.000	1.750	0°	-10°	60517
MDPNN 16-5D	543	1.000	1.000	-	6.000	2.000	0°	-10°	60518
MDPNN 85-5D	543	1.000	1.250	-	6.000	2.000	0°	-10°	60525
MDPNN 86-5D	543	1.000	1.500	-	6.000	2.000	0°	-10°	60526
MDPNN 20-3D	332	1.250	1.250	-	6.000	1.500	0°	-10°	60519
MDPNN 20-4D	432	1.250	1.250	-	6.000	1.750	0°	-10°	60520
MDPNN 20-5D	543	1.250	1.250	-	6.000	2.000	0°	-10°	60521
MDPNN 24-3D	332	1.500	1.500	-	6.000	1.500	0°	-10°	54038
MDPNN 24-5D	543	1.500	1.500	-	6.000	2.000	0°	-10°	60523
MDPNN 24-5E	543	1.500	1.500	-	7.000	2.000	0°	-10°	60524

Toolholders

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
332	Part #	DSN-322	NL-34L	CLI-7	XNS-36	-	-	-
	EDP#	09158	52957	59054	53055	-	-	-
432	Part #	DSN-443	NL-46L	CLI-12	XNS-510	DSN-433	S-46	CBR-22-050
	EDP#	09160	59232	59046	53059	09159	53023	08908
543	Part #	DSN-533	NL-58	CLI-12	XNS-510	DSN-543	S-58	CBR-20-050
	EDP#	09161	52960	59046	53059	09162	53024	08903

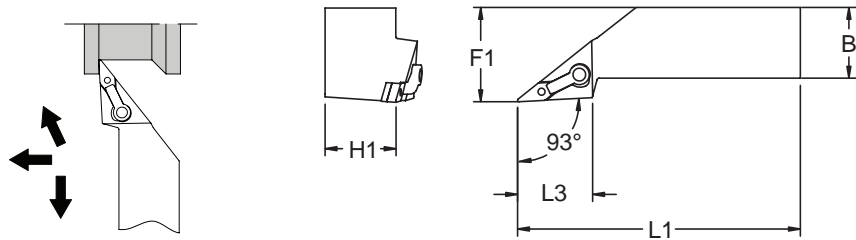
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MVJNR/L 93° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MVJNR/L 12-3B	332	0.750	0.750	1.000	4.500	1.730	-10°	-4°	60847	60836
MVJNR/L 16-3C	332	1.000	1.000	1.250	5.000	1.730	-10°	-4°	60848	60837
MVJNR/L 16-3D	332	1.000	1.000	1.250	6.000	1.730	-10°	-4°	60849	60838
MVJNR/L 16-4C	442	1.000	1.000	1.250	5.000	1.940	-10°	-4°	60850	60839
MVJNR/L 16-4D	442	1.000	1.000	1.250	6.000	1.940	-10°	-4°	60851	60840
MVJNR/L 85-4D	442	1.000	1.250	1.250	6.000	1.940	-10°	-4°	54159	60845
MVJNR/L 86-4D	442	1.000	1.500	1.250	6.000	1.940	-10°	-4°	60857	60846
MVJNR/L 20-3D	332	1.250	1.250	1.500	6.000	1.730	-10°	-4°	60852	60841
MVJNR/L 20-4D	442	1.250	1.250	1.500	6.000	1.940	-10°	-4°	60853	60842
MVJNR/L 24-3D	332	1.500	1.500	2.000	6.000	1.730	-10°	-4°	60854	60843
MVJNR/L 24-4E	442	1.500	1.500	2.000	7.000	1.940	-10°	-4°	60855	60844

Spare Parts



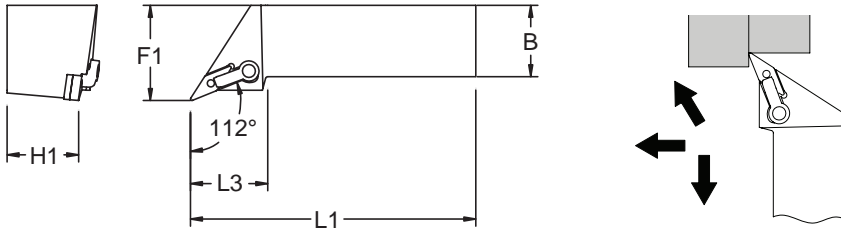
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
332	Part #	IVSN-324	NL-34L	CLI-30	XNS-510	-	S-34	-
	EDP#	09177	52957	59051	53059	-	53022	-
442	Part #	IVSN-433	NL-46L	CLI-30	XNS-510	IVSN-443	S-46	-
	EDP#	09178	59232	59051	53059	09179	53023	-

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MVWNR/L 112° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MVWNR/L 12-3B	332	0.750	0.750	1.000	4.500	1.630	-5°	-5°	60871	60866
MVWNR/L 16-3D	332	1.000	1.000	1.250	6.000	1.630	-5°	-5°	60872	60867
MVWNR/L 86-3E	332	1.000	1.500	1.250	7.000	1.630	-5°	-5°	60875	00145
MVWNR/L 20-3D	332	1.250	1.250	1.500	6.000	1.630	-5°	-5°	60873	60868
MVWNR/L 24-3D	332	1.500	1.500	2.000	6.000	1.630	-5°	-5°	60874	60869

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
332	Part #	IVSN-324	NL-34L	CLI-30	XNS-510	-	S-34	-
	EDP#	09177	52957	59051	53059	-	53022	-

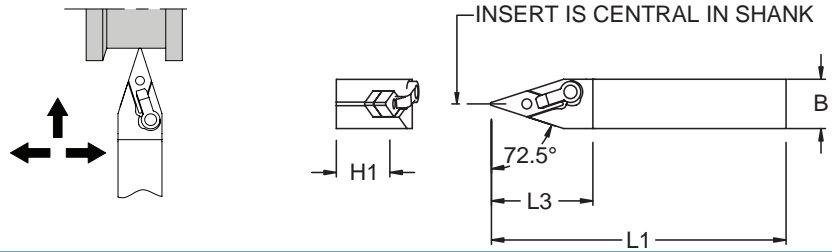
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MVVNN 72.5° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MVVNN 12-3B	332	0.750	0.750	–	4.500	1.750	0°	-13°	60858
MVVNN 16-3C	332	1.000	1.000	–	5.000	1.750	0°	-13°	60859
MVVNN 16-3D	332	1.000	1.000	–	6.000	1.750	0°	-13°	60860
MVVNN 16-4D	442	1.000	1.000	–	6.000	2.130	0°	-13°	60861
MVVNN 20-3D	332	1.250	1.250	–	6.000	1.750	0°	-13°	60862
MVVNN 20-4D	442	1.250	1.250	–	6.000	2.130	0°	-13°	60863
MVVNN 24-3D	332	1.500	1.500	–	6.000	1.750	0°	-13°	60864
MVVNN 24-4E	442	1.500	1.500	–	7.000	2.130	0°	-13°	60865

Spare Parts



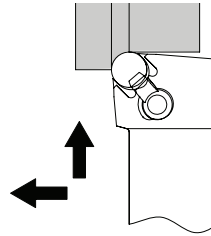
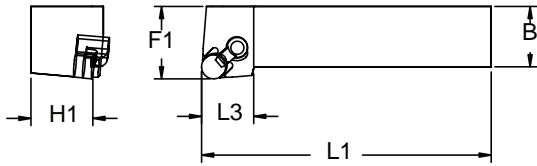
Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332	Part #	IVSN-324	NL-34L	CLI-22	XNS-48	–	S-34	–
	EDP#	09177	52957	59049	53058	–	53022	–
442	Part #	IVSN-433	NL-46L	CLI-30	XNS-510	IVSN-443	S-46	–
	EDP#	09178	59232	59051	53059	09179	53023	–

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MRGNR/L Turning and Facing

Round Insert
Use Insert Style RNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MRGNR/L 08-38	32	0.500	0.500	0.750	4.500	0.890	-5°	-5°	60556	RFQ*
MRGNR/L 12-3B	32	0.750	0.750	1.000	4.500	0.890	-5°	-5°	60557	60542
MRGNR/L 12-4B	43	0.750	0.750	1.000	4.500	1.130	-5°	-5°	60558	60543
MRGNR/L 16-3D	32	1.000	1.000	1.250	6.000	0.890	-5°	-5°	60559	60544
MRGNR/L 16-4C	43	1.000	1.000	1.250	5.000	1.130	-5°	-5°	60560	60545
MRGNR/L 16-4D	43	1.000	1.000	1.250	6.000	1.130	-5°	-5°	60561	60546
MRGNR/L 16-5D	54	1.000	1.000	1.250	6.000	1.250	-5°	-5°	60562	60547
MRGNR/L 16-6D	64	1.000	1.000	1.250	6.000	1.500	-5°	-5°	60563	60548
MRGNR/L 85-4D	43	1.000	1.250	1.250	6.000	1.130	-5°	-5°	54062	60554
MRGNR/L 86-4D	43	1.000	1.500	1.250	6.000	1.130	-5°	-5°	60570	60555
MRGNR/L 20-4D	43	1.250	1.250	1.500	6.000	1.130	-5°	-5°	60564	60549
MRGNR/L 20-5D	54	1.250	1.250	1.500	6.000	1.250	-5°	-5°	60565	60550
MRGNR/L 20-6D	64	1.250	1.250	1.500	6.000	1.500	-5°	-5°	60566	60551
MRGNR/L 24-6E	64	1.500	1.500	2.000	7.000	1.500	-5°	-5°	60567	60552
MRGNR/L 24-8E	86	1.500	1.500	2.000	7.000	1.440	-5°	-5°	60568	60553

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
32	Part #	-	NL-33	CLI-6	XNS-36	-	-	-
	EDP#	-	59230	59053	53055	-	-	-
43	Part #	IRSN-43	NL-46	CLI-9	XNS-59	IRSN-44	S-46	-
	EDP#	09163	52959	59055	53061	09164	53023	-
54	Part #	RSN-53	NL-58	CLI-9	XNS-58	-	-	-
	EDP#	09181	52960	59055	53060	-	-	-
64	Part #	RSN-63	NL-68	CLI-12	XNS-58	-	-	-
	EDP#	09182	52961	59046	53060	-	-	-

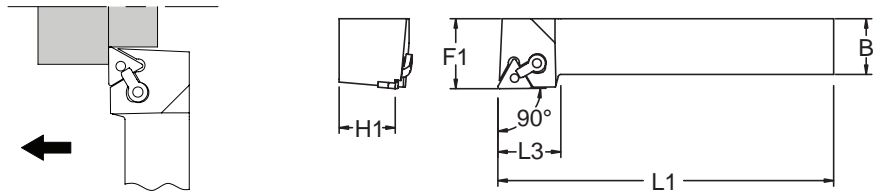
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MTGNR/L 90° Lead Turning

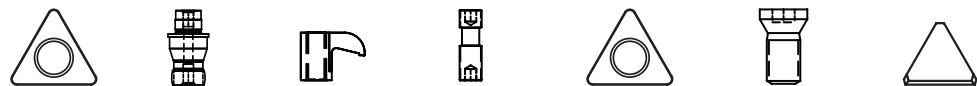
Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTGNR/L 08-2	221	0.500	0.500	0.625	4.500	0.970	-5°	-5°	60782	60758
MTGNR/L 10-2	221	0.625	0.625	0.750	4.500	0.970	-5°	-5°	60783	60759
MTGNR/L 10-3B	322	0.625	0.625	0.875	4.500	1.130	-5°	-5°	60784	60760
MTGNR/L 12-3A	322	0.750	0.750	1.000	4.000	1.130	-5°	-5°	60785	60761
MTGNR/L 12-3B	322	0.750	0.750	1.000	4.500	1.130	-5°	-5°	60786	60762
MTGNR/L 16-2D	221	1.000	1.000	1.250	6.000	0.970	-5°	-5°	60787	60763
MTGNR/L 16-3C	322	1.000	1.000	1.250	5.000	1.130	-5°	-5°	60788	60764
MTGNR/L 16-3D	322	1.000	1.000	1.250	6.000	1.130	-5°	-5°	60789	60765
MTGNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.380	-5°	-5°	60790	60766
MTGNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60791	60767
MTGNR/L 16-5C	543	1.000	1.000	1.250	5.000	1.500	-5°	-5°	60792	60768
MTGNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.500	-5°	-5°	60793	60769
MTGNR/L 85-4D	432	1.000	1.250	1.250	6.000	1.380	-5°	-5°	60802	60778
MTGNR/L 85-5D	543	1.000	1.250	1.250	6.000	1.500	-5°	-5°	00143	60779
MTGNR/L 86-4D	432	1.000	1.500	1.250	6.000	1.380	-5°	-5°	60804	60780
MTGNR/L 86-5E	543	1.000	1.500	1.250	7.000	1.500	-5°	-5°	60805	00142
MTGNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60794	60770
MTGNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.500	-5°	-5°	60795	60771
MTGNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.380	-5°	-5°	60796	60772
MTGNR/L 24-5D	543	1.500	1.500	2.000	6.000	1.500	-5°	-5°	60797	60773
MTGNR/L 24-5E	543	1.500	1.500	2.000	7.000	1.500	-5°	-5°	60798	60774
MTGNR/L 24-6D	666	1.500	1.500	2.000	6.000	1.630	-5°	-5°	60799	60775
MTGNR/L 24-6E	666	1.500	1.500	2.000	7.000	1.630	-5°	-5°	60800	60776
MTGNR/L 32-6F	666	2.000	2.000	2.500	8.000	1.630	-5°	-5°	60801	60777

Spare Parts



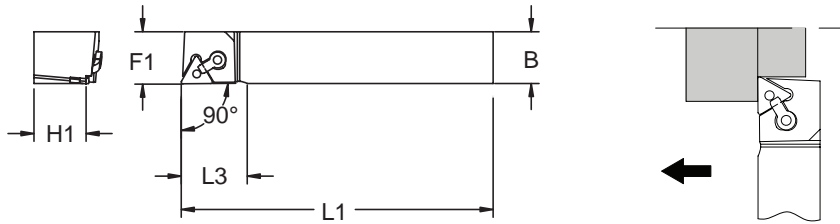
Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
221	Part #	-	NL-23	CLI-19	XNS-36	-	-	CBR-34-075
	EDP#	-	59229	59047	53055	-	-	08920
322	Part #	ITSN-333	NL-34L	CLI-6	XNS-36	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59053	53055	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-9	XNS-510	TSN-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53059	00981	53023	08916
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	-	S-58	CBR-33-15
	EDP#	09176	52960	59055	53059	-	53024	08918
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	-	S-68	NCBT-5-150
	EDP#	09375	59233	59046	53059	-	52354	09057

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MTANR/L 90° Lead Turning

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTANR/L 08-2	221	0.500	0.500	0.500	4.500	0.970	-5°	-5°	60684	60676
MTANR/L 10-2	221	0.625	0.625	0.625	4.500	0.970	-5°	-5°	60685	60677
MTANR/L 10-3B	322	0.625	0.625	0.625	4.500	1.130	-5°	-5°	60686	60678
MTANR/L 12-3B	322	0.750	0.750	0.750	4.500	1.130	-5°	-5°	60687	60679
MTANR/L 16-3D	322	1.000	1.000	1.000	6.000	1.130	-5°	-5°	60688	60680
MTANR/L 16-4D	432	1.000	1.000	1.000	6.000	1.380	-5°	-5°	60689	60681
MTANR/L 20-5D	543	1.250	1.250	1.250	6.000	1.500	-5°	-5°	60690	60682
MTANR/L 24-5D	543	1.500	1.500	1.500	6.000	1.500	-5°	-5°	60691	54078

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
221	Part #	–	NL-23	CLI-19	XNS-36	–	–	CBR-34-075
	EDP#	–	59229	59047	53055	–	–	08920
322	Part #	ITSN-333	NL-34L	CLI-6	XNS-36	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59053	53055	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-9	XNS-59	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53061	09373	53023	08916
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	–	S-58	CBR-33-15
	EDP#	09176	52960	59055	53059	–	53024	08918

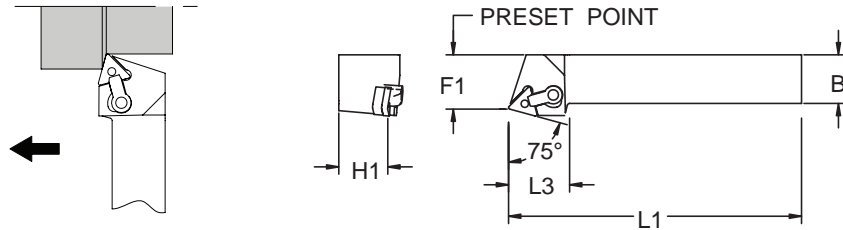
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MTRNR/L 75° Lead Turning

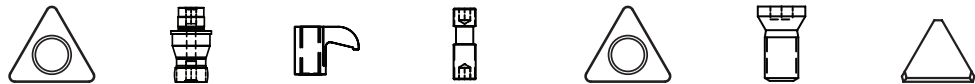
Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTRNR/L 12-3B	322	0.750	0.750	0.855	4.500	1.250	-5°	-5°	60825	60818
MTRNR/L 16-3D	322	1.000	1.000	1.105	6.000	1.250	-5°	-5°	60826	54107
MTRNR/L 16-4D	432	1.000	1.000	1.048	6.000	1.500	-5°	-5°	60827	60820
MTRNR/L 20-4D	432	1.250	1.250	1.298	6.000	1.500	-5°	-5°	60828	60821
MTRNR/L 20-5D	543	1.250	1.250	1.252	6.000	1.630	-5°	-5°	60829	60822
MTRNR/L 24-5E	543	1.500	1.500	1.752	7.000	1.630	-5°	-5°	60830	60823
MTRNR/L 24-6E	666	1.500	1.500	1.697	7.000	1.880	-5°	-5°	60831	60824

Spare Parts



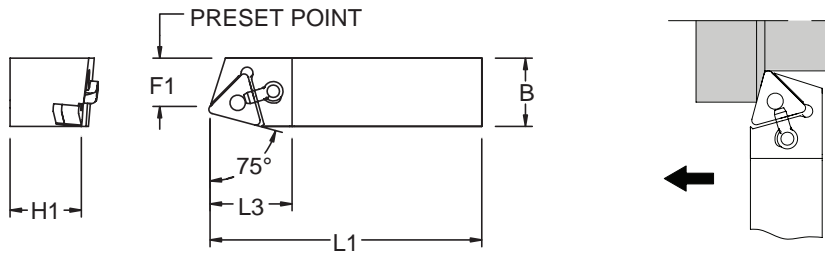
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ITSN-333	NL-34L	CLI-20	XNS-46	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59048	53056	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-9	XNS-510	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53059	09373	53023	08916
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	-	S-58	CBR-33-15
	EDP#	09176	52960	59055	53059	-	53024	08918
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	-	S-68	NCBT-5-150
	EDP#	09375	59233	59046	53059	-	52354	09057

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MTBNR/L 75° Lead Turning

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTBNR/L 10-3B	322	0.625	0.625	0.483	4.500	1.250	-5°	-5°	60699	60692
MTBNR/L 12-3B	322	0.750	0.750	0.608	4.500	1.250	5°	5°	60700	60693
MTBNR/L 16-4D	432	1.000	1.000	0.798	6.000	1.500	5°	5°	60701	60694
MTBNR/L 20-5D	543	1.250	1.250	1.002	6.000	1.630	5°	5°	60702	60695
MTBNR/L 20-6D	666	1.250	1.250	1.002	6.000	1.880	5°	5°	60703	60696
MTBNR/L 24-5D	543	1.500	1.500	1.198	6.000	1.630	5°	5°	54088	54086
MTBNR/L 24-6D	666	1.500	1.500	1.198	6.000	1.880	5°	5°	50039	60698

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ITSN-333	NL-34L	CLI-20	XNS-46	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59048	53056	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-9	XNS-510	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53059	09373	53023	08916
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	-	S-58	CBR-33-15
	EDP#	09176	52960	59055	53059	-	53024	08918
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	-	S-68	NCBT-5-150
	EDP#	09375	59233	59046	53059	-	52354	09057

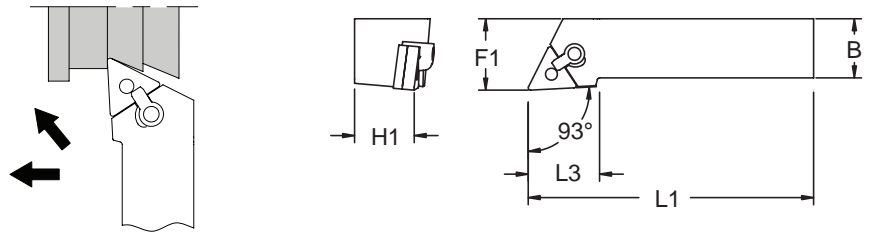
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MTJNRS/LS 93° Lead Turning and Profiling

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTJNR/LS 12-3B	322	0.750	0.750	1.000	4.500	1.040	-5°	-5°	60812	60806
MTJNR/LS 16-3D	322	1.000	1.000	1.250	6.000	1.040	-5°	-5°	60813	60807
MTJNR/LS 16-4D	432	1.000	1.000	1.250	6.000	1.380	-5°	-5°	60814	60808
MTJNR/LS 20-4D	432	1.250	1.250	1.500	6.000	1.380	-5°	-5°	60815	60809
MTJNR/LS 20-5D	543	1.250	1.250	1.500	6.000	1.500	-5°	-5°	60816	60810
MTJNR/LS 24-6E	666	1.500	1.500	2.000	7.000	1.750	-5°	-5°	60817	60811

Spare Parts



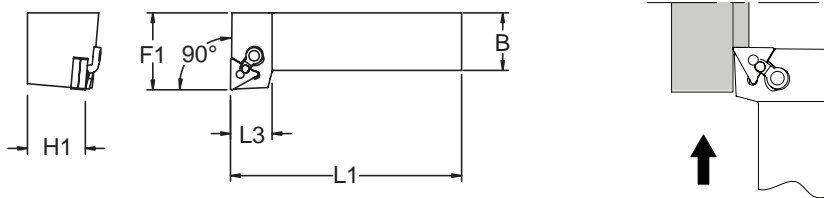
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ITSN-333	NL-34L	CLI-6	XNS-36	ITSN-323	-	-
	EDP#	09172	52957	59053	53055	09171	-	-
432	Part #	ITSN-433	NL-46	CLI-9	XNS-510	TS-424	-	-
	EDP#	09173	52959	59055	53059	09373	-	-
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	-	-	-
	EDP#	09176	52960	59055	53059	-	-	-
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	-	-	-
	EDP#	09375	59233	59046	53059	-	-	-

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MTFNR/L 90° Lead Facing

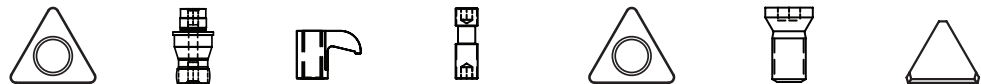
Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTFNR/L 08-2	221	0.500	0.500	0.750	4.500	0.820	-5°	-5°	60737	60716
MTFNR/L 10-2	221	0.625	0.625	0.875	4.500	0.820	-5°	-5°	60738	60717
MTFNR/L 10-3B	322	0.625	0.625	0.875	4.500	1.000	-5°	-5°	60739	60718
MTFNR/L 12-3B	322	0.750	0.750	1.000	4.500	1.000	-5°	-5°	60740	60719
MTFNR/L 16-3C	322	1.000	1.000	1.250	5.000	1.000	-5°	-5°	60741	60720
MTFNR/L 16-3D	322	1.000	1.000	1.250	6.000	1.000	-5°	-5°	60742	60721
MTFNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.130	-5°	-5°	60743	60722
MTFNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.130	-5°	-5°	60744	60723
MTFNR/L 16-5C	543	1.000	1.000	1.250	5.000	1.500	-5°	-5°	54098	60724
MTFNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.500	-5°	-5°	60746	60725
MTFNR/L 85-4D	432	1.000	1.250	1.250	6.000	1.130	-5°	-5°	60754	60733
MTFNR/L 85-5D	543	1.000	1.250	1.250	6.000	1.500	-5°	-5°	60755	60734
MTFNR/L 86-4D	432	1.000	1.500	1.250	6.000	1.130	-5°	-5°	54100	54091
MTFNR/L 86-5E	543	1.000	1.500	1.250	7.000	1.500	-5°	-5°	60757	60736
MTFNR/L 20-4D	432	1.250	1.250	1.500	6.000	1.130	-5°	-5°	60747	60726
MTFNR/L 20-5D	543	1.250	1.250	1.500	6.000	1.500	-5°	-5°	60748	60727
MTFNR/L 24-4D	432	1.500	1.500	2.000	6.000	1.130	-5°	-5°	60749	60728
MTFNR/L 24-5D	543	1.500	1.500	2.000	6.000	1.500	-5°	-5°	60750	60729
MTFNR/L 24-5E	543	1.500	1.500	2.000	7.000	1.500	-5°	-5°	60751	60730
MTFNR/L 24-6E	666	1.500	1.500	2.000	7.000	1.500	-5°	-5°	60752	60731
MTFNR/L 32-6F	666	2.000	2.000	2.500	8.000	1.500	-5°	-5°	60753	54090

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
221	Part #	-	NL-23	CLI-19	XNS-36	-	-	CBR-34-075
	EDP#	-	59229	59047	53055	-	-	08920
322	Part #	ITSN-333	NL-34L	CLI-6	XNS-36	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59053	53055	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-9	XNS-510	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53059	09373	53023	08916
543	Part #	ITSN-533	NL-58	CLI-12	XNS-510	-	S-58	CBR-33-15
	EDP#	09176	52960	59046	53059	-	53024	08918
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	-	S-68	NCBT-5-150
	EDP#	09375	59233	59046	53059	-	52354	09057

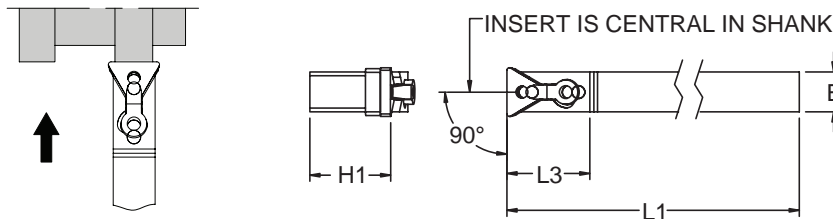
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

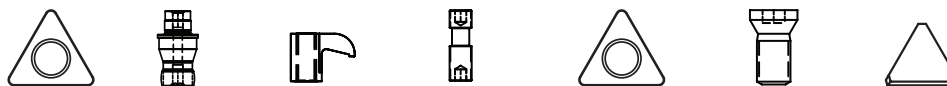
MTCNN 90° Lead Turning

Triangular Insert
Use Insert Style TNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MTCNN 44-3	322	0.500	1.000	-	8.000	1.130	0°	-7°	60707
MTCNN 12-4B	432	0.750	0.750	-	4.500	1.380	0°	-7°	60706
MTCNN 64-4	432	0.750	1.000	-	8.000	1.380	0°	-7°	60708

Spare Parts



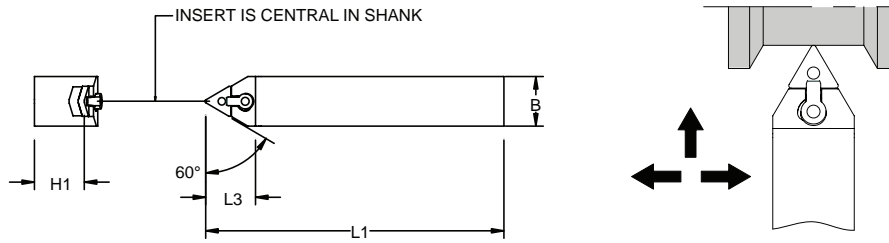
Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ITSN-333	NL-34L	CLI-7	XNS-36	ITSN-323	S-34	CBR-31-12
	EDP#	09172	52957	59054	53055	09171	53022	08914
432	Part #	ITSN-433	NL-46	CLI-12	XNS-59	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59046	53061	09373	53023	08916

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MTENNS 60° Lead Turning and Chamfering

Triangular Insert
Use Insert Style TNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MTENNS 08-2	221	0.500	0.500	–	4.500	1.000	0°	-10°	60709
MTENNS10-3B	322	0.620	0.620	–	4.500	1.130	0°	-10°	60710
MTENNS 12-3B	322	0.750	0.750	–	4.500	1.130	0°	-10°	60711
MTENNS 16-3D	322	1.000	1.000	–	6.000	1.130	0°	-10°	60712
MTENNS 16-4D	432	1.000	1.000	–	6.000	1.500	0°	-10°	60713
MTENNS 20-5D	543	1.250	1.250	–	6.000	1.630	0°	-10°	60714
MTENNS 24-6D	666	1.500	1.500	–	6.000	2.000	0°	-10°	60715

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
221	Part #	–	NL-23	CLI-6	XNS-36	–	–	–
	EDP#	–	59229	59053	53055	–	–	–
322	Part #	ITSN-333	NL-34L	CLI-6	XNS-36	ITSN-323	–	–
	EDP#	09172	52957	59053	53055	09171	–	–
432	Part #	ITSN-433	NL-46	CLI-9	XNS-59	–	–	–
	EDP#	09173	52959	59055	53061	–	–	–
543	Part #	ITSN-533	NL-58	CLI-9	XNS-510	–	–	–
	EDP#	09176	52960	59055	53059	–	–	–
666	Part #	TSN-637	NL-68L	CLI-12	XNS-510	–	–	–
	EDP#	09375	59233	59046	53059	–	–	–

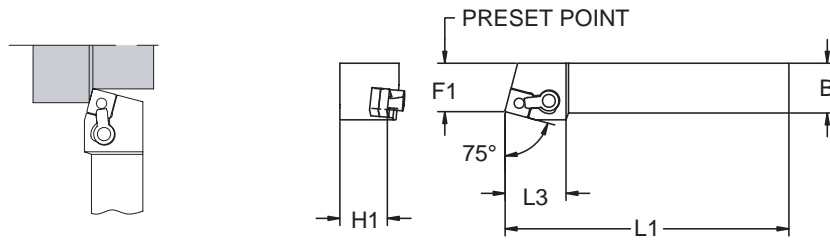
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MSRNR/L 75° Lead Turning

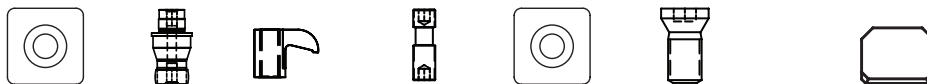
Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MSRNR/L 08-3B	322	0.500	0.500	0.659	4.500	1.040	-5°	-5°	60646	60634
MSRNR/L 10-3B	322	0.625	0.625	0.756	4.500	1.040	-5°	-5°	60647	60635
MSRNR/L 12-3B	322	0.750	0.750	0.880	4.500	1.040	-5°	-5°	60648	60636
MSRNR/L 12-4B	432	0.750	0.750	0.880	4.500	1.380	-5°	-5°	60649	60637
MSRNR/L 16-4C	432	1.000	1.000	1.130	5.000	1.380	-5°	-5°	60650	60638
MSRNR/L 16-4D	432	1.000	1.000	1.130	6.000	1.380	-5°	-5°	60651	60639
MSRNR/L 16-5D	543	1.000	1.000	1.103	6.000	1.500	-5°	-5°	60652	60640
MSRNR/L 20-5D	543	1.250	1.250	1.353	6.000	1.500	-5°	-5°	60653	60641
MSRNR/L 20-6D	643	1.250	1.250	1.321	6.000	1.630	-5°	-5°	60654	60642
MSRNR/L 24-6D	643	1.500	1.500	1.821	6.000	1.630	-5°	-5°	60655	60643
MSRNR/L 24-6E	643	1.500	1.500	1.821	7.000	1.630	-5°	-5°	60656	60644
MSRNR/L 24-8E	866	1.500	1.500	1.770	7.000	2.020	-5°	-5°	60657	60645

Spare Parts



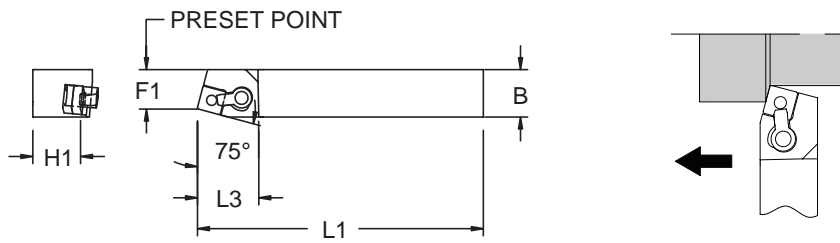
Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
								Right Hand	Left Hand
322	Part #	ISSN-322	NL-34L	CLI-6	XNS-36	-	S-34	CBR-35-10	-
	EDP#	09165	52957	59053	53055	-	53022	08923	-
432	Part #	ISSN-433	NL-46	CLI-9	XNS-59	ISSN-443	S-46	CBR-36-12	-
	EDP#	09166	52959	59055	53061	09167	53023	08925	-
543	Part #	SSN-533	NL-58	CLI-12	XNS-510	ISSN-543	S-58	CBR-37-15	-
	EDP#	09263	52960	59046	53059	09168	53024	08927	-
643	Part #	ISSN-633	NL-68L	CLI-12	XNS-510	ISSN-643	S-68	CBR-38-15	-
	EDP#	09169	59233	59046	53059	09170	52354	08929	-
866	Part #	SSN-846	NL-810	CLI-24	XNS-610	SSN-844	S-810	NCBSR-8-200	NCBSL-8-200
	EDP#	09275	59234	59050	53062	09274	52357	09035	09017

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

MSBNR/L 75° Lead Turning

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MSBNR/L 08-3B	322	0.500	0.500	0.437	4.500	1.040	-5°	-5°	60582	60571
MSBNR/L 10-3B	322	0.625	0.625	0.562	4.500	1.040	-5°	-5°	60583	60572
MSBNR/L 12-3B	322	0.750	0.750	0.630	4.500	1.040	-5°	-5°	60584	60573
MSBNR/L 12-4B	432	0.750	0.750	0.630	4.500	1.380	-5°	-5°	60585	60574
MSBNR/L 16-4C	432	1.000	1.000	0.822	5.000	1.380	-5°	-5°	60586	60575
MSBNR/L 16-4D	432	1.000	1.000	0.822	6.000	1.380	-5°	-5°	60587	60576
MSBNR/L 86-5D	543	1.000	1.500	0.828	6.000	1.500	-5°	-5°	54068	50012
MSBNR/L 20-6D	643	1.250	1.250	1.071	6.000	1.630	-5°	-5°	60588	60577
MSBNR/L 24-6D	643	1.500	1.500	1.253	6.000	1.630	-5°	-5°	60589	60578
MSBNR/L 24-8E	866	1.500	1.500	1.253	7.000	2.000	-5°	-5°	60590	60579
MSBNR/L 32-8	866	2.000	2.000	1.751	7.000	2.000	-5°	-5°	60591	60580

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
								Right Hand	Left Hand
322	Part #	ISSN-322	NL-34	CLI-6	XNS-36	-	S-34	CBR-35-10	-
	EDP#	09165	59231	59053	53055	-	53022	08923	-
432	Part #	ISSN-433	NL-46	CLI-9	XNS-59	ISSN-443	S-46	CBR-36-12	-
	EDP#	09166	52959	59055	53061	09167	53023	08925	-
543	Part #	SSN-533	NL-58	CLI-12	XNS-510	-	-	CBR-37-15	-
	EDP#	09263	52960	59046	53059	-	-	08927	-
643	Part #	ISSN-633	NL-68	CLI-12	XNS-510	ISSN-643	S-68	CBR-38-15	-
	EDP#	09169	52961	59046	53059	09170	52354	08929	-
866	Part #	SSN-846	NL-810	CLI-24	XNS-610	SSN-844	S-810	NCBSR-8-200	NCBSL-8-200
	EDP#	09275	59234	59050	53062	09274	52357	09035	09017

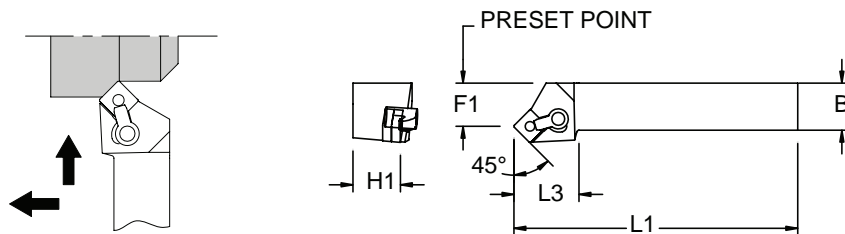
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MSSNR/L 45° Lead Turning, Facing, Chamfering

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MSSNR/L 12-3B	322	0.750	0.750	0.641	4.500	1.140	0°	-10°	60667	60658
MSSNR/L 12-4B	432	0.750	0.750	0.675	4.500	1.380	0°	-10°	60668	60659
MSSNR/L 16-4C	432	1.000	1.000	0.925	5.000	1.380	0°	-10°	60669	60660
MSSNR/L 16-4D	432	1.000	1.000	0.925	6.000	1.380	0°	-10°	60670	60661
MSSNR/L 16-5D	534	1.000	1.000	0.847	6.000	1.500	0°	-10°	60671	60662
MSSNR/L 86-6E	643	1.000	1.500	0.761	7.000	1.630	0°	-10°	54075	50034
MSSNR/L 20-5D	543	1.250	1.250	1.097	6.000	1.500	0°	-10°	60672	60663
MSSNR/L 20-6D	643	1.250	1.250	1.011	6.000	1.630	0°	-10°	60673	60664
MSSNR/L 24-6E	643	1.500	1.500	1.511	7.000	1.630	0°	-10°	60674	60665

Spare Parts



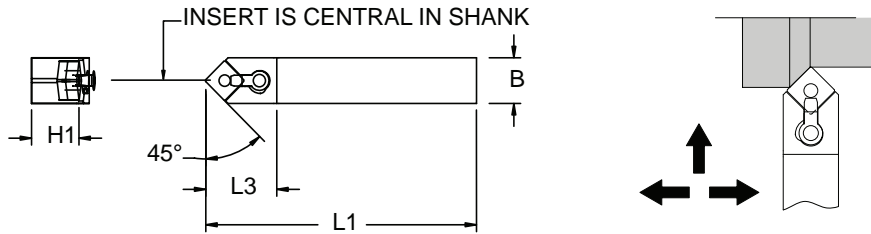
Insert Size	Part#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ISSN-322	NL-34	CLI-6	XNS-36	-	S-34	CBR-35-05
	EDP#	09165	59231	59053	53055	-	53022	08922
432	Part #	ISSN-433	NL-46	CLI-9	XNS-59	ISSN-443	S-46	CBR-36-08
	EDP#	09166	52959	59055	53061	09167	53023	08924
543	Part #	SSN-533	NL-58	CLI-9	XNS-510	-	-	CBR-37-08
	EDP#	09263	52960	59055	53059	-	-	08928
643	Part #	ISSN-633	NL-68	CLI-9	XNS-510	ISSN-643	S-68	CBR-38-08
	EDP#	09169	52961	59055	53059	09170	52354	08928

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake Common Hardware

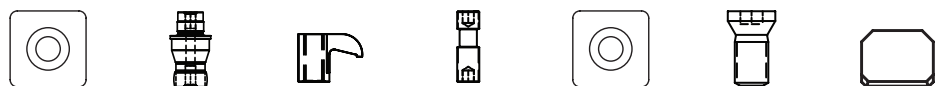
MSDNN 45° Lead Turning and Chamfering

Square Insert
Use Insert Style SNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
MSDNN 08-3B	322	0.500	0.500	-	4.500	1.040	0°	-10°	60593
MSDNN 10-3B	322	0.625	0.625	-	4.500	1.040	0°	-10°	60594
MSDNN 12-3B	322	0.750	0.750	-	4.500	1.040	0°	-10°	60595
MSDNN 12-4B	432	0.750	0.750	-	4.500	1.380	0°	-10°	60596
MSDNN 16-3D	322	1.000	1.000	-	6.000	1.040	0°	-10°	60597
MSDNN16-4C	432	1.000	1.000	-	5.000	1.380	0°	-10°	60598
MSDNN 16-4D	432	1.000	1.000	-	6.000	1.380	0°	-10°	60599
MSDNN 16-5D	543	1.000	1.000	-	6.000	1.630	0°	-10°	60600
MSDNN 16-6D	643	1.000	1.000	-	6.000	1.750	0°	-10°	60601
MSDNN 85-4D	432	1.000	1.250	-	6.000	1.380	0°	-10°	60605
MSDNN 85-5D	543	1.000	1.250	-	6.000	1.630	0°	-10°	60606
MSDNN 85-6D	643	1.000	1.250	-	6.000	1.750	0°	-10°	60607
MSDNN 20-5D	543	1.250	1.250	-	6.000	1.630	0°	-10°	60602
MSDNN 20-6D	643	1.250	1.250	-	6.000	1.750	0°	-10°	60603
MSDNN 24-6E	643	1.500	1.500	-	7.000	1.750	0°	-10°	60604

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Optional Parts		
	EDP#					Shim Seat	Shim Screw	Mech. C'Bkr
322	Part #	ISSN-322	NL-34	CLI-6	XNS-36	-	S-34	NCBDN-1-100
	EDP#	09165	59231	59053	53055	-	53022	08985
432	Part #	ISSN-433	NL-46	CLI-9	XNS-59	ISSN-443	S-46	NCBDN-2-100
	EDP#	09166	52959	59055	53061	09167	53023	08987
543	Part #	SSN-533	NL-58	CLI-12	XNS-510	ISSN-543	S-58	NCBDN-4-100
	EDP#	09263	52960	59046	53059	09168	53024	08992
643	Part #	ISSN-633	NL-68	CLI-12	XNS-510	ISSN-643	S-68	NCBDN-3-100
	EDP#	09169	52961	59046	53059	09170	52354	08990

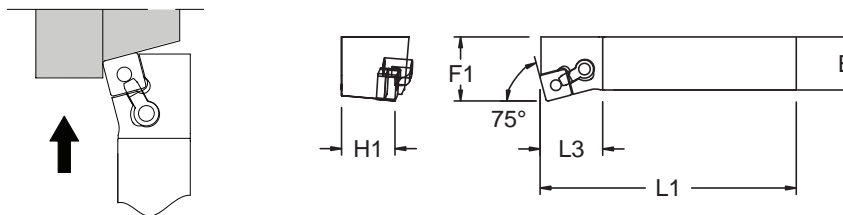
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Negative Rake Common Hardware

MSKNR/L 75° Lead Facing

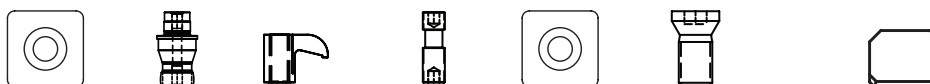
Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MSKNR/L 08-3B	322	0.500	0.500	0.750	4.500	1.020	-5°	-5°	60621	60608
MSKNR/L 10-3B	322	0.625	0.625	0.875	4.500	1.020	-5°	-5°	60622	54069
MSKNR/L 12-3B	322	0.750	0.750	1.000	4.500	1.020	-5°	-5°	60623	54072
MSKNR/L 12-4B	432	0.750	0.750	1.000	4.500	1.370	-5°	-5°	60624	60611
MSKNR/L 16-4C	432	1.000	1.000	1.250	5.000	1.370	-5°	-5°	60625	60612
MSKNR/L 16-4D	432	1.000	1.000	1.250	6.000	1.370	-5°	-5°	60626	60613
MSKNR/L 16-5D	543	1.000	1.000	1.250	6.000	1.520	-5°	-5°	60627	60614
MSKNR/L 85-5D	543	1.000	1.250	1.250	6.000	1.520	-5°	-5°	60633	54073
MSKNR/L 20-6D	643	1.250	1.250	1.500	6.000	1.550	-5°	-5°	60629	60616
MSKNR/L 24-6E	643	1.500	1.500	2.000	7.000	1.550	-5°	-5°	60630	60617
MSKNR/L 24-8E	866	1.500	1.500	2.000	7.000	1.950	-5°	-5°	60631	60618
MSKNR/L 32-8	866	2.000	2.000	2.500	14.000	1.950	-5°	-5°	54074	60619

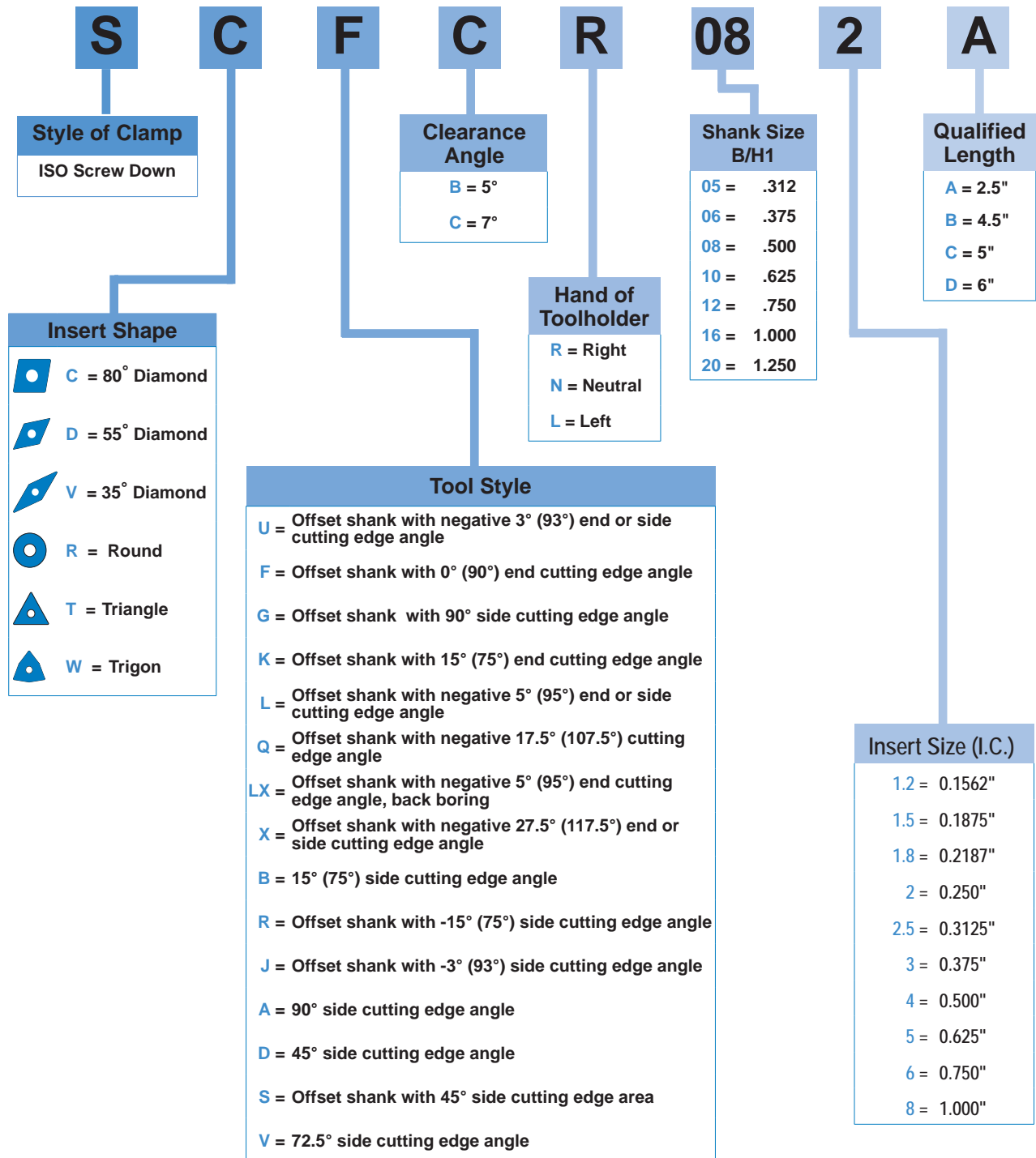
Spare Parts



Insert Size	Part# EDP#	Shim Seat	Lock Pin*	Clamp	Clamp Screw*	Optional Parts			
						Shim Seat	Shim Screw	Mech. C'Bkr	
								Right Hand	Left Hand
322	Part #	ISSN-322	NL-34	CLI-6	XNS-36	-	S-34	CBR-35-10	-
	EDP#	09165	59231	59053	53055	-	53022	08923	-
432	Part #	ISSN-433	NL-46	CLI-9	XNS-59	ISSN-443	S-46	CBR-36-12	-
	EDP#	09166	52959	59055	53061	09167	53023	08925	-
543	Part #	SSN-533	NL-58	CLI-12	XNS-510	ISSN-543	S-58	CBR-37-15	-
	EDP#	09263	52960	59046	53059	09168	53024	08927	-
643	Part #	ISSN-633	NL-68	CLI-12	XNS-510	ISSN-643	S-68	CBR-38-15	-
	EDP#	09169	52961	59046	53059	09170	52354	08929	-
866	Part #	SSN-846	NL-810	CLI-24	XNS-610	SSN-844	S-810	NCBSR-8-200	NCBSL-8-200
	EDP#	09275	59234	59050	53062	09274	52357	09035	09017

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, lock pin, clamp, clamp screw, pin, shim seat and shim screw, less insert.

ISO Screw Down Designation



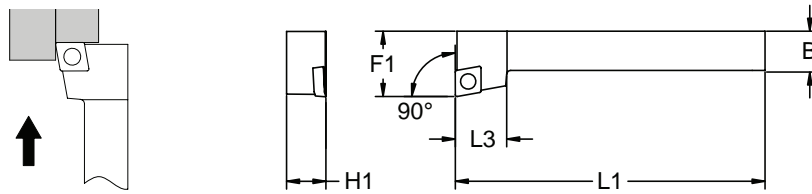
All dimensions are in inches.

TOOLHOLDERS

ISO Screw Down

SCFCR/L 90° Lead Facing

80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCFCR/L 05215	21.51	0.312	0.312	0.562	2.500	0.500	2.5°	0°	61039	54773
SCFCR/L 06215	21.51	0.375	0.375	0.625	3.000	0.500	2.5°	0°	61040	61037
SCFCR/L 08215B	21.51	0.500	0.500	0.750	4.500	0.500	2.5°	0°	61041	61038

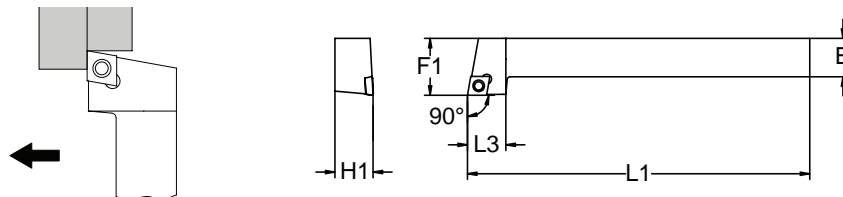
Spare Parts



Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101

SCGCR/L 90° Lead Turning

80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCGCR/L 05215	21.51	0.312	0.312	0.562	2.500	0.500	2.5°	0°	61046	54164
SCGCR/L 06215	21.51	0.375	0.375	0.625	3.000	0.500	2.5°	0°	61047	61042
SCGCR/L 08215B	21.51	0.500	0.500	0.750	4.500	0.500	2.5°	0°	61048	61043

Spare Parts

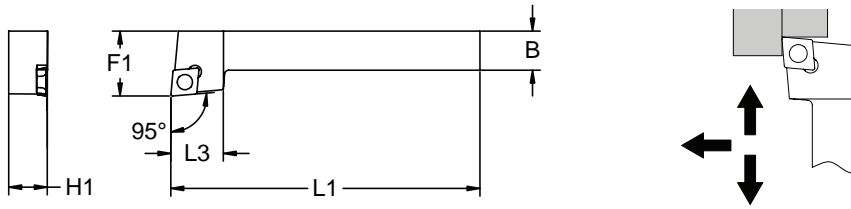


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101

ISO Screw Down

SCLCR/L 95° Lead Turning and Facing

80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCLCR/L 05-21.5	21.51	0.312	0.312	0.562	2.500	0.500	2.5°	0°	61073	61052
SCLCR/L 06-21.5	21.51	0.375	0.375	0.625	3.000	0.500	2.5°	0°	61074	61053
SCLCR/L 08-21.5B	21.51	0.500	0.500	0.750	4.500	0.500	2.5°	0°	61076	61054
SCLCR/L 10-21.5	21.51	0.625	0.625	0.875	4.500	5.000	2.5°	0°	61078	54173
SCLCR/L 12-3B	32.52	0.750	0.750	1.000	4.500	0.830	0°	0°	61080	61056
SCLCR/L 16-3D	32.52	1.000	1.000	1.250	6.000	0.830	0°	0°	61082	61059
SCLCR/L 12-4B	432	0.750	0.750	1.000	4.500	0.830	0°	0°	61081	61057
SCLCR/L 16-4D	432	1.000	1.000	1.250	6.000	0.830	0°	0°	61083	61060
SCLCR/L 20-4D	432	1.250	1.250	1.500	6.000	0.830	0°	0°	61084	61061

Spare Parts



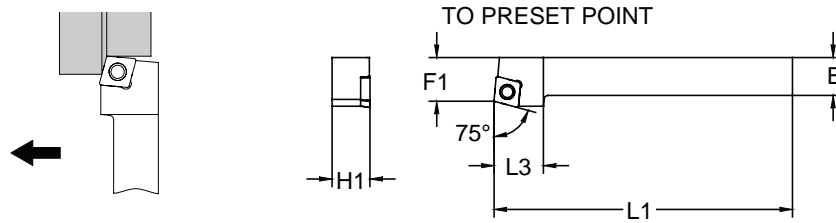
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52	Part#	SCCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	09184	52325	52327	50087
432	Part#	SCCN-433	PT-777	PT-782T	T-15 Torx® Wrench
	EDP#	57402	52326	52328	50087

TOOLHOLDERS

ISO Screw Down

SCRCL/L 75° Lead Turning

80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCRCL/L 05-21.5	21.51	0.312	0.312	0.377	2.500	0.500	0°	0°	61104	61096
SCRCL/L 06-21.5	21.51	0.375	0.375	0.439	3.000	0.500	0°	0°	61105	61097
SCRCL/L 08-21.5B	21.51	0.500	0.500	0.564	4.500	0.500	0°	0°	61106	61098
SCRCL/L 12-3B	32.52	0.750	0.750	0.911	4.500	0.830	0°	0°	61107	00175
SCRCL/L 16-3D	32.52	1.000	1.000	1.161	6.000	0.830	0°	0°	61109	54176
SCRCL/L 12-4B	432	0.750	0.750	0.878	4.500	0.830	0°	0°	54180	00177
SCRCL/L 16-4D	432	1.000	1.000	1.128	6.000	0.830	0°	0°	61110	61102
SCRCL/L 20-4D	432	1.250	1.250	1.378	6.000	0.830	0°	0°	61111	61103

Spare Parts

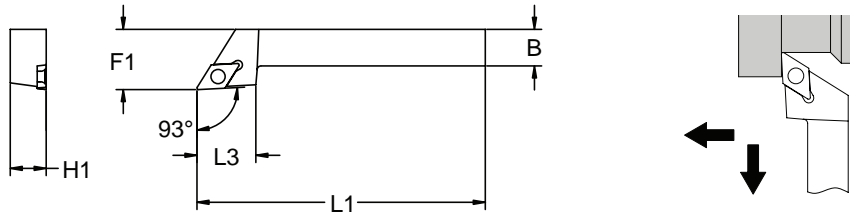


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part #	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52	Part #	SCCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	09184	52325	52327	50087
432	Part #	SCCN-433	PT-777	PT-782T	T-15 Torx® Wrench
	EDP#	57402	52326	52328	50087

ISO Screw Down

SDJCR/L 93° Lead Turning and Profiling

55° Diamond Insert
Use Insert Style DCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SDJCR/L 05-21.5	21.51	0.312	0.312	0.562	2.500	0.620	0°	0°	61144	61128
SDJCR/L 06-21.5	21.51	0.375	0.375	0.625	3.000	0.620	0°	0°	61145	61129
SDJCR/L 08-21.5B	21.51	0.500	0.500	0.750	4.500	0.620	0°	0°	61147	61131
SDJCR/L 10-21.5	21.51	0.625	0.625	0.875	4.500	0.620	0°	0°	61149	00178
SDJCR/L 12-32.5B	32.52	0.750	0.750	1.000	4.500	1.000	0°	0°	61151	61133
SDJCR/L 16-3C	32.52	1.000	1.000	1.250	5.000	0.830	0°	0°	61153	61135
SDJCR/L 16-3D	32.52	1.000	1.000	1.250	6.000	0.830	0°	0°	61154	61136
SDJCR/L 20-3D	32.52	1.250	1.250	1.500	6.000	1.000	0°	0°	61155	61137

Spare Parts



Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52*	Part#	–	–	PT-544T	T-7 Torx® Wrench
	EDP#	–	–	52288	50101
32.52	Part#	SDCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57403	52325	52327	50087

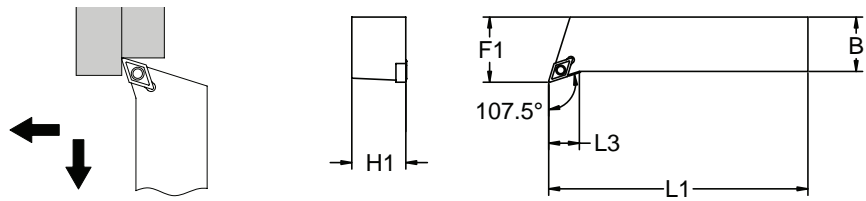
*SDJCR/L 12-32.5B Only

TOOLHOLDERS

ISO Screw Down

SDQCR/L 107.5° Lead Turning and Profiling

55° Diamond Insert
Use Insert Style DCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SDQCR/L 05-21.5	21.51	0.312	0.312	0.562	2.500	0.620	0°	0°	61172	61165
SDQCR/L 06-21.5	21.51	0.375	0.375	0.625	3.000	0.620	0°	0°	61173	61166
SDQCR/L 08-21.5B	21.51	0.500	0.500	0.750	4.500	0.620	0°	0°	61174	61167
SDQCR/L 12-32.5B	32.52	0.750	0.750	0.875	4.500	0.750	0°	0°	61175	61168
SDQCR/L 16-3C	32.52	1.000	1.000	1.250	5.000	0.710	0°	0°	61176	61169
SDQCR/L 16-3D	32.52	1.000	1.000	1.250	6.000	0.710	0°	0°	61177	61170
SDQCR/L 20-3D	32.52	1.250	1.250	1.500	6.000	0.710	0°	0°	61178	54194

Spare Parts



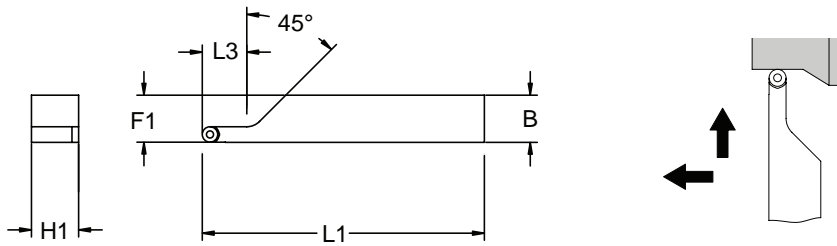
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52*	Part#	–	–	PT-544T	T-15 Torx® Wrench
	EDP#	–	–	52288	50087
32.52	Part#	SDCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57403	52325	52327	50087

*SDQCR/L 12-32.5B Only

ISO Screw Down

SRACR/L Round Insert Profiling

Round Insert
Use Insert Style RCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SRACR/L 16-32.5D	32.5	1.000	1.000	1.020	6.000	1.000	0°	0°	61193	61181
SRACR/L 16-4D	43	1.000	1.000	1.015	6.000	1.000	0°	0°	61194	61182
SRACR/L 16-2D	22	1.000	1.000	1.015	6.000	1.000	0°	0°	61192	61180
SRACR/L 20-4D	43	1.250	1.250	1.265	6.000	1.000	0°	0°	61199	61187

Spare Parts



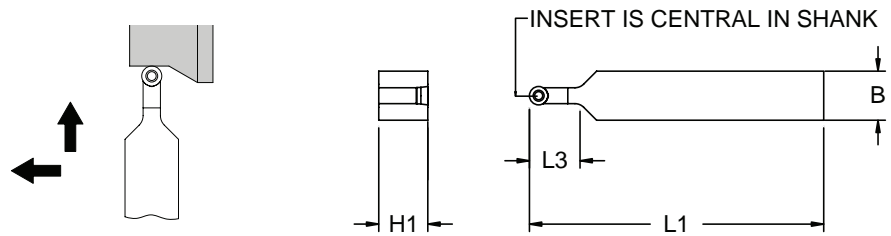
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
22	Part#	-	-	PT-542T	T-7 Torx® Wrench
	EDP#	-	-	52286	50101
32.5	Part#	-	-	PT-818T	T-15 Torx® Wrench
	EDP#	-	-	52332	50087
43	Part#	SRCN 43	PT 777	PT-782T	T-15 Torx® Wrench
	EDP#	09235	52326	52328	50087

TOOLHOLDERS

ISO Screw Down

SRDCN Round Insert Profiling

Round Insert
Use Insert Style RCxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
SRDCN 12-3B	32.5	0.750	0.750	–	4.500	1.000	0°	0°	61203
SRDCN 16-3D	32.5	1.000	1.000	–	6.000	1.000	0°	0°	61205
SRDCN 16-4D	43	1.000	1.000	–	6.000	1.000	0°	0°	61206
SRDCN 20-4D	43	1.250	1.250	–	6.000	1.000	0°	0°	61210

Spare Parts

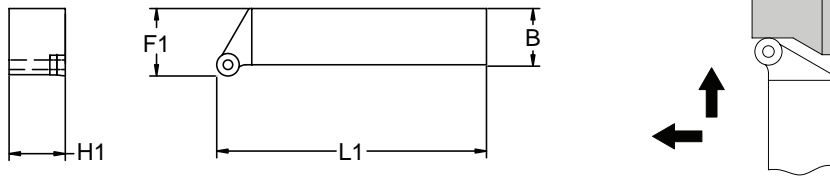


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
32.5	Part#	SRCN-32.5A	–	PT-818T	T-15 Torx® Wrench
	EDP#	09234	–	52332	50087
43	Part#	SRCN-43	PT-777	PT-782T	T-15 Torx® Wrench
	EDP#	09235	52326	52328	50087

ISO Screw Down

SRGCR/L Round Insert Turning and Facing

Round Insert
Use Insert Style RCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions							EDP#	
	Insert Size	B	H1	F1	L1	Axial	Radial	Right Hand	Left Hand
SRGCR/L 12-2B	22	0.750	0.750	1.000	4.500	0°	0°	61221	00939
SRGCR/L 16-2D	22	1.000	1.000	1.250	6.000	0°	0°	61223	61215
SRGCR/L 12-3B	32.5	0.750	0.750	1.000	4.500	0°	0°	61222	61214
SRGCR/L 16-3D	32.5	1.000	1.000	1.250	6.000	0°	0°	61224	61216
SRGCR/L 16-4D	43	1.000	1.000	1.250	6.000	0°	0°	61225	61217
SRGCR/L 20-4D	43	1.250	1.250	1.500	6.000	0°	0°	61226	61218
SRGCR/L 20-5D	54	1.250	1.250	1.500	6.000	0°	0°	61227	61219
SRGCR/L 24-6D	64	1.500	1.500	2.000	6.000	0°	0°	61228	61220

Spare Parts



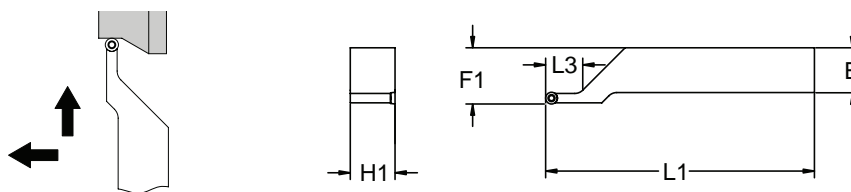
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
22	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.5	Part#	SRCN-32.5A	–	PT-818T	T-15 Torx® Wrench
	EDP#	09234	–	52332	50087
43	Part#	SRCN-43	PT-777	PT-782T	T-15 Torx® Wrench
	EDP#	09235	52326	52328	50087
54	Part#	SRCN-54	PT-778T	PT-783T	T-20 Torx® Wrench
	EDP#	RFQ	00919	00921	50091
64	Part#	SRCN-64	–	PT548T	T-25 Torx® Wrench
	EDP#	00934	–	52291	50094

TOOLHOLDERS

ISO Screw Down

SRSCR/L Round Insert Offset Profiling

Round Insert
Use Insert Style RCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SRSCR/L 16-2D	22	1.000	1.000	1.250	6.000	0.750	0°	0°	61239	61230
SRSCR/L 12-3B	32.5	0.750	0.750	1.000	4.500	0.750	0°	0°	61238	61229
SRSCR/L 16-3C	32.5	1.000	1.000	1.250	5.000	1.000	0°	0°	61240	61231
SRSCR/L 16-3D	32.5	1.000	1.000	1.250	6.000	1.000	0°	0°	61241	61232
SRSCR/L 20-3D	32.5	1.250	1.250	1.500	6.000	1.000	0°	0°	61244	61235
SRSCR/L 16-5D	54	1.000	1.000	1.250	6.000	1.000	0°	0°	61243	61234
SRSCR/L 20-6D	64	1.250	1.250	1.500	6.000	1.000	0°	0°	61246	61237

Spare Parts

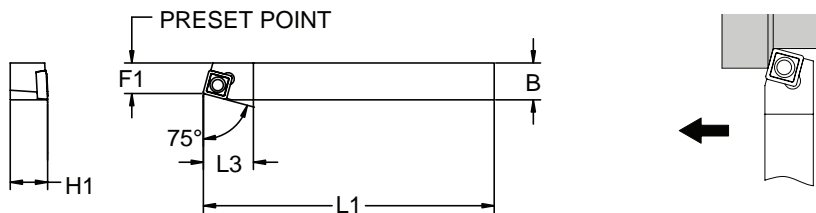


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
22	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.5	Part#	SRCN-32.5A	–	PT-818T	T-15 Torx® Wrench
	EDP#	09234	–	52332	50087
54	Part#	SRCN-54	PT-778T	PT-783T	T-20 Torx® Wrench
	EDP#	RFQ	00919	00921	50091
64	Part#	SRCN-64	–	PT-548T	T-25 Torx® Wrench
	EDP#	00934	–	52291	50094

ISO Screw Down

SSBCR/L 75° Lead Turning

Square Insert
Use Insert Style SCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SSBCR/L 05-21.5	21.51	0.312	0.312	0.252	2.500	0.500	0°	0°	61250	61247
SSBCR/L 06-21.5	21.51	0.375	0.375	0.314	3.000	0.500	0°	0°	61251	61248
SSBCR/L 08-21.5B	21.51	0.500	0.500	0.439	4.500	0.500	0°	0°	61252	61249

Spare Parts



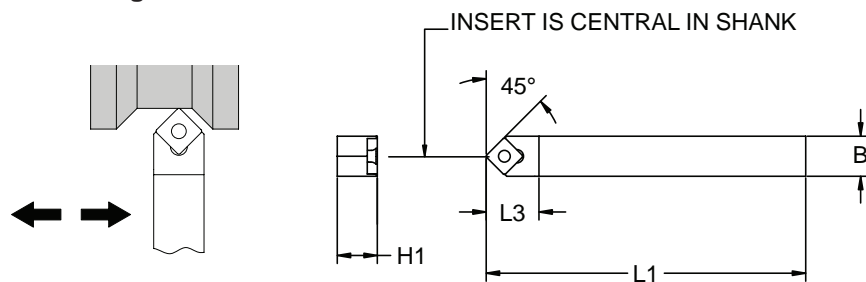
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101

TOOLHOLDERS

ISO Screw Down

SSDCN 45° Lead Turning and Chamfering

Square Insert
Use Insert Style SCxx



Part Number	Dimensions							EDP#
	Insert Size	B	H1	F1	L1	Axial	Radial	
SSDCN 05-21.5	21.51	0.312	0.312	2.500	0.500	0°	0°	61253
SSDCN 06-21.5	21.51	0.375	0.375	3.000	0.500	0°	0°	61254
SSDCN 08-21.5B	21.51	0.500	0.500	4.500	0.500	0°	0°	61256
SSDCN 12-3B	32.52	0.750	0.750	4.500	0.830	0°	0°	61259
SSDCN 16-3C	32.52	1.000	1.000	5.000	0.830	0°	0°	61261
SSDCN 16-3D	32.52	1.000	1.000	6.000	0.830	0°	0°	61262
SSDCN 20-3D	32.52	1.250	1.250	6.000	0.830	0°	0°	61263

Spare Parts

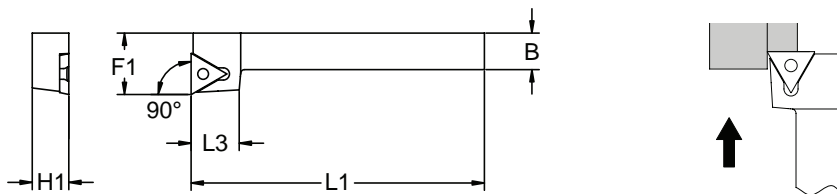


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52	Part#	SSCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	09250	52325	52327	50087

ISO Screw Down

STFCR/L 90° Lead Facing

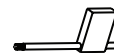
Triangular Insert
Use Insert Style TCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
STFCR/L 06-21.5	21.51	0.375	0.375	0.625	3.000	0.500	0°	0°	61278	61272
STFCR/L 08-21.5B	21.51	0.500	0.500	0.750	4.500	0.500	0°	0°	61279	61273
STFCR/L 12-3B	32.52	0.750	0.750	1.000	4.500	0.830	0°	0°	61280	61274
STFCR/L 16-3C	32.52	1.000	1.000	1.250	5.000	0.830	0°	0°	RFQ*	61275
STFCR/L 16-3D	32.52	1.000	1.000	1.250	6.000	0.830	0°	0°	61282	61276
STFCR/L 20-3D	32.52	1.250	1.250	1.500	6.000	0.830	0°	0°	61283	61277

Spare Parts



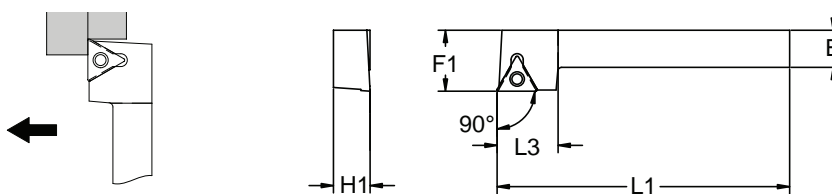
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52	Part#	STCN-32.53	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57406	52325	52327	50087

TOOLHOLDERS

ISO Screw Down

STGCR/L 90° Lead Turning

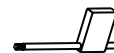
Triangular Insert
Use Insert Style TCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
STGCR/L 05-21.5	21.51	0.312	0.312	0.562	2.500	0.620	3°	0°	61291	61284
STGCR/L 06-21.5	21.51	0.375	0.375	0.625	3.000	0.620	3°	0°	61292	61285
STGCR/L 08-21.5B	21.51	0.500	0.500	0.750	4.500	0.620	3°	0°	61293	61286
STGCR/L 12-3B	32.52	0.750	0.750	1.000	4.500	0.830	0°	0°	61294	61287
STGCR/L 16-3C	32.52	1.000	1.000	1.250	5.000	0.830	0°	0°	61295	61288
STGCR/L 16-3D	32.52	1.000	1.000	1.250	6.000	0.830	0°	0°	61296	54200
STGCR/L 20-3D	32.52	1.250	1.250	1.500	6.000	0.830	0°	0°	00181	54201

Spare Parts

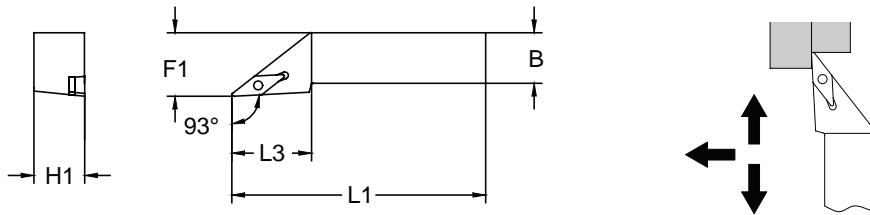


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
21.51	Part#	–	–	PT-542T	T-7 Torx® Wrench
	EDP#	–	–	52286	50101
32.52	Part#	STCN-32.53	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57406	52325	52327	50087

ISO Screw Down

SVJBR/L 93° Lead Turning and Profiling

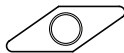
35° Diamond Insert
Use Insert Style VBxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SVJBR/L 12-3B	332	0.750	0.750	1.000	4.500	1.250	0°	0°	61318	61310
SVJBR/L 16-3C	332	1.000	1.000	1.250	5.000	1.560	0°	0°	61319	61311

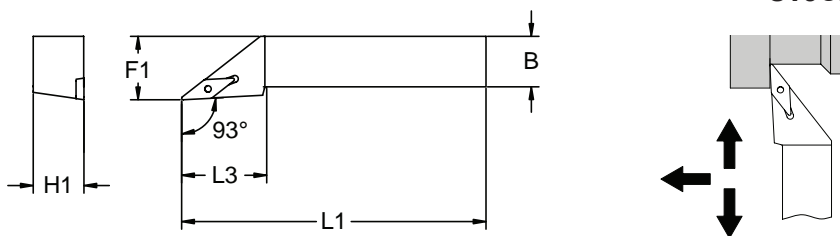
Spare Parts



Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
332	Part #	SVCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57407	52325	52327	50087

SVJCR/L 93° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SVJCR/L 12-32.5B	32.52	0.750	0.750	1.000	4.500	1.470	0°	0°	61328	61326
SVJCR/L 16-32.5D	32.52	1.000	1.000	1.250	6.000	1.720	0°	0°	61329	61327

Spare Parts



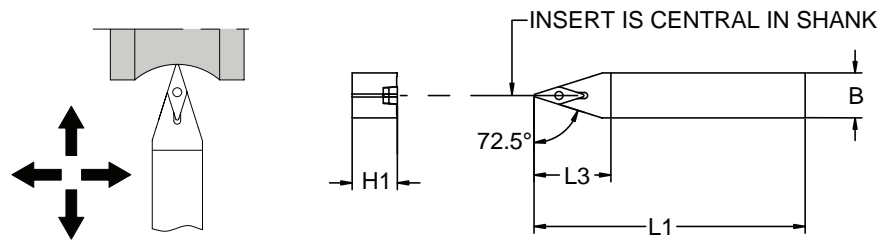
Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
32.52	Part#	-	-	PT-544T	T-15 Torx® Wrench
	EDP#	-	-	52288	50087

TOOLHOLDERS

ISO Screw Down

SVVBN 72.5° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VBxx



Part Number	Dimensions							
	Insert Size	B	H1	L1	L3	Axial	Radial	EDP#
SVVBN 12-3B	332	0.750	0.750	4.500	1.300	0°	0°	61330
SVVBN 16-3C	332	1.000	1.000	5.000	1.300	0°	0°	61331
SVVBN 16-3D	332	1.000	1.000	6.000	1.300	0°	0°	61332
SVVBN 20-3D	332	1.250	1.250	6.000	1.300	0°	0°	61333

Spare Parts

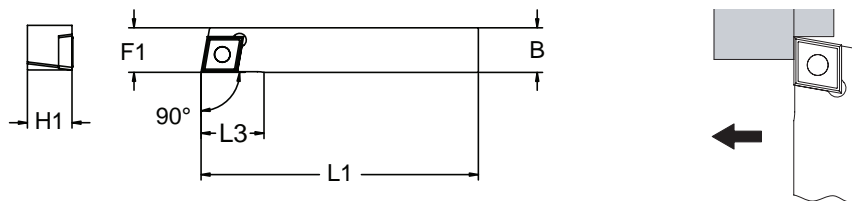


Insert Size	Part#	Shim Seat	Shim Filler	Lock Screw	Torx® Wrench
	EDP#				
332	Part#	SVCN-32.52	PT-776	PT-781T	T-15 Torx® Wrench
	EDP#	57407	52325	52327	50087

Swiss Machine ISO Positive Rake

SCACR/L 90° Lead Turning

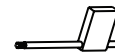
80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCACR/L 04.5-2D	21.51	0.281	0.281	0.375	6.000	0.280	0°	0°	61027	61017
SCACR/L 05-2D	21.51	0.312	0.312	0.312	6.000	0.430	0°	0°	61028	61018
SCACR/L 06-2D	21.51	0.375	0.375	0.375	6.000	0.430	0°	0°	61029	61019
SCACR/L 08-3D	32.52	0.500	0.500	0.500	6.000	0.620	0°	0°	61030	61020
SCACR/L 10-3B	32.52	0.625	0.625	0.625	4.500	0.470	0°	0°	61032	61022
SCACR/L 52-3Z	32.52	0.500	0.500	0.625	3.250	0.590	0°	0°	61036	61026

Spare Parts



Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
21.51	PT-542T	Part #	-	-	T-7 Torx® Wrench
		EDP#	-	-	50101
32.52	PT-544T	Part #	-	-	T-15 Torx® Wrench
		EDP#	-	-	50087
32.52*	PT-781T	Part #	SCCN-32.52	PT-776	T-15 Torx® Wrench
		EDP#	09184	52325	50087

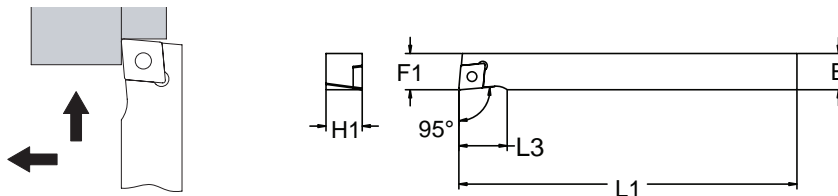
*SCACR/L 10-3B Only

TOOLHOLDERS

Swiss Machine ISO Positive Rake

SCLCR/L-F 95° Lead Turning and Facing

80° Diamond Insert
Use Insert Style CCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SCLCR/LF 04.5-2D	21.51	0.281	0.281	0.375	6.000	0.270	0°	0°	61085	61062
SCLCR/LF 05-2D	21.51	0.312	0.312	0.312	6.000	0.500	0°	0°	61086	61063
SCLCR/LF 06-2D	21.51	0.375	0.375	0.375	6.000	0.500	0°	0°	61087	61064
SCLCR/LF 08-2D	21.51	0.500	0.500	0.500	6.000	0.500	0°	0°	61088	61065
SCLCR/LF 08-3D	32.52	0.500	0.500	0.500	6.000	0.610	0°	0°	61089	61066
SCLCR/LF 10-3B	32.52	0.625	0.625	0.625	4.500	0.470	0°	0°	61091	61068

Spare Parts

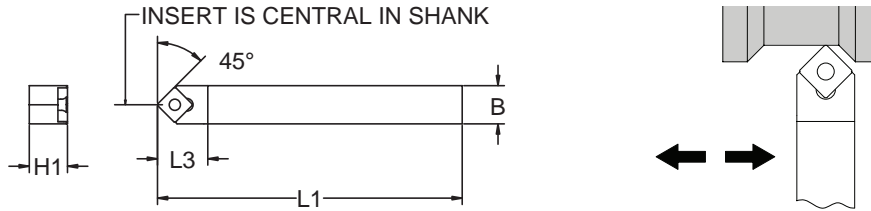


Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
21.51	PT-542T	Part #	-	-	T-7 Torx® Wrench
		EDP#	-	-	50101
32.52	PT-544T	Part #	-	-	T-15 Torx® Wrench
		EDP#	-	-	50087
32.52*	PT-781T	Part #	SCCN-32.52	PT-776	T-15 Torx® Wrench
		EDP#	09184	52325	50087

*SCLCR/LF 10-3B Only

Swiss Machine ISO Positive Rake SSDCN 45° Lead Turning and Chamfering

Square Insert
Use Insert Style SCxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
SSDCN 05-21.5	21.51	0.312	0.312	–	2.500	0.500	0°	0°	61253
SSDCN 06-21.5	21.51	0.375	0.375	–	3.000	0.500	0°	0°	61254
SSDCN 08-21.5B	21.51	0.500	0.500	–	4.500	0.500	0°	0°	61256

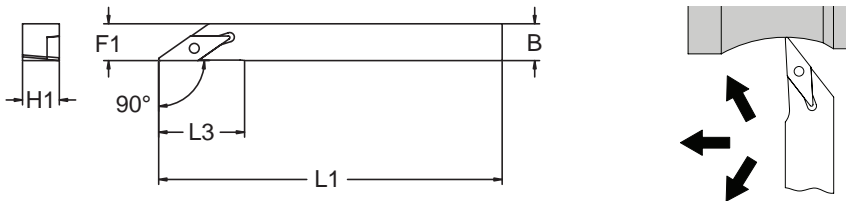
Spare Parts



Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
21.51	PT-542T	Part#	–	–	T-7 Torx® Wrench
		EDP#	–	–	50101

SVABR/L 90° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VBxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SVABR/L 06-2D	221	0.375	0.375	0.375	6.000	0.870	0°	0°	61304	61298
SVABR/L 08-2D	221	0.500	0.500	0.500	6.000	0.870	0°	0°	61305	61299
SVABR/L 10-3B	332	0.625	0.625	0.625	4.500	1.360	0°	0°	61307	61301

Spare Parts



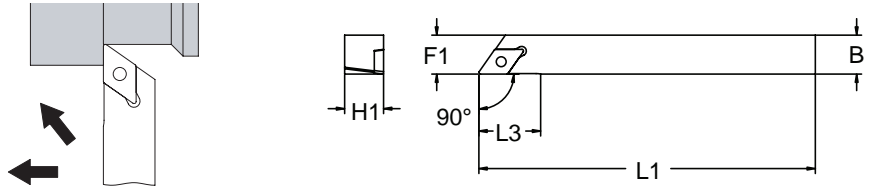
Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
221	PT-542T	Part #	–	–	T-7 Torx® Wrench
		EDP#	–	–	50101
332	PT-544T	Part #	–	–	T-15 Torx® Wrench
		EDP #	–	–	50087

TOOLHOLDERS

Swiss Machine ISO Positive Rake

SDACR/L 90° Lead Turning and Profiling

55° Diamond Insert
Use Insert Style DCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SDACR/L 06-2D	21.51	0.375	0.375	0.375	6.000	0.620	0°	0°	61118	61112
SDACR/L 08-2D	21.51	0.500	0.500	0.500	6.000	0.620	0°	0°	61119	61113
SDACR/L 10-3B	32.52	0.625	0.625	0.625	4.500	0.880	0°	0°	61121	61115

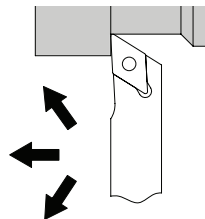
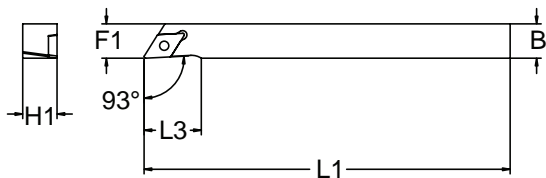
Spare Parts



Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
21.51	PT-542T	Part #	-	-	T-7 Torx® Wrench
		EDP#	-	-	50101
32.52	PT-781T	Part #	SDCN-32.52	PT-776	T-15 Torx® Wrench
		EDP#	57403	52325	50087

Swiss Machine ISO Positive Rake SDJCR/L-F 93° Lead Turning and Profiling

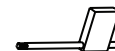
55° Diamond Insert
Use Insert Style DCxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SDJCR/LF 06-2D	21.51	0.375	0.375	0.375	6.000	0.620	0°	0°	61156	61138
SDJCR/LF 08-2D	21.51	0.500	0.500	0.500	5.998	0.620	0°	0°	61157	61139
SDJCR/LF 10-3B	32.52	0.625	0.625	0.625	4.500	0.880	0°	0°	61159	61141

Spare Parts



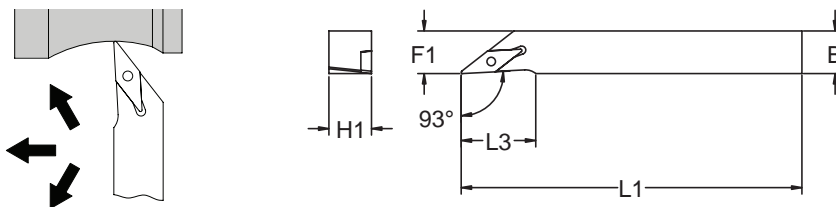
Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
21.51	PT-542T	Part #	-	-	T-7 Torx® Wrench
		EDP#	-	-	50101
32.52	PT-781T	Part #	SDCN-32.52	PT-776	T-15 Torx® Wrench
		EDP#	57403	52325	50087

TOOLHOLDERS

Swiss Machine ISO Positive Rake

SVJBR/L-F 93° Lead Turning and Profiling

35° Diamond Insert
Use Insert Style VBxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
SVJBR/LF 06-2D	221	0.375	0.375	0.375	6.000	0.870	0°	0°	61320	61312
SVJBR/LF 08-2D	221	0.500	0.500	0.500	6.000	0.870	0°	0°	61321	61313
SVJBR/LF 10-3B	332	0.625	0.625	0.625	4.500	1.360	0°	0°	61323	61315

Spare Parts

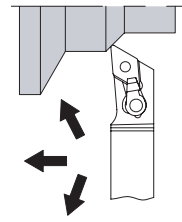
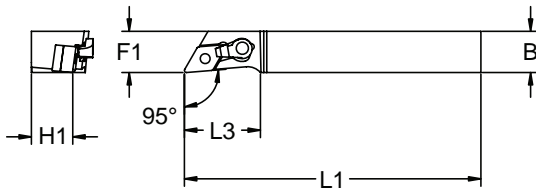


Insert Size	Lock Screw	Part#	Shim Seat	Shim Screw	Torx® Wrench
		EDP#			
221	PT-542T	Part #	-	-	T-7 Torx® Wrench
		EDP#	-	-	50101
332	PT-544T	Part #	-	-	T-15 Torx® Wrench
		EDP#	-	-	50087

Swiss Machine ANSI Negative Rake

MDLNR/L-F 95° Lead Turning and Facing

55° Diamond Insert
Use Insert Style DNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MDLNR/LF 10-3B	332	0.625	0.625	0.625	4.500	1.200	5°	5°	61012	61011

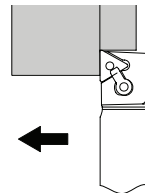
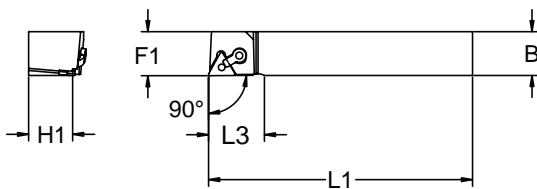
Spare Parts



Insert Size	Lock Screw	Part#	Shim Seat	Clamp	Clamp Screw
		EDP#			
332	NL-34L	Part #	DSN-322	CLI-7	XNS-36
		EDP#	09158	59054	53055

MTANR/L 90° Lead Turning

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MTANR/L 10-3B	322	0.620	0.620	0.625	4.500	1.060	7°	7°	60686	60678

Spare Parts



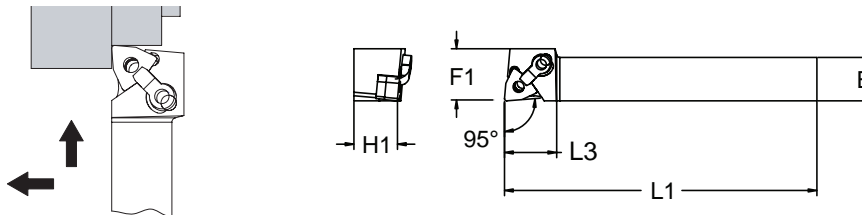
Insert Size	Lock Screw	Part#	Shim Seat	Clamp	Clamp Screw
		EDP#			
322	NL-34L	Part #	ITSN-333	CLI-6	XNS-36
		EDP#	09172	59053	53055

TOOLHOLDERS

Swiss Machine ANSI Negative Rake

MWLNR/L-F 95° Lead Turning and Facing

Trigon Insert
Use Insert Style WNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
MWLNR/LF 10-3B	332	0.625	0.625	0.750	4.500	0.750	5°	5°	61014	61013

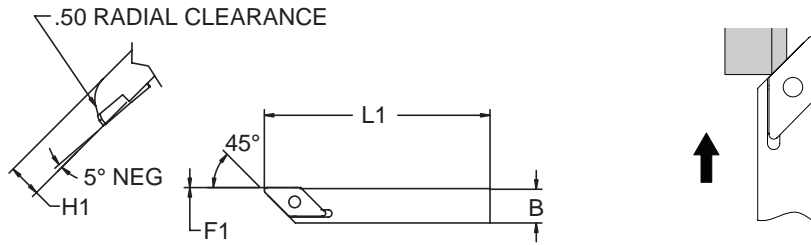
Spare Parts



Insert Size	Lock Screw	Part#	Shim Seat	Clamp	Clamp Screw
		EDP#			
332	NL-34L	Part #	IWSN-322	CLI-5	XNS-36
		EDP#	52388	59052	53055

Small Shank Economy

PGDNR/L 45° Lead Plunge and Chamfering Negative Rake



45° Diamond Insert
Use Insert Style GNxx

Right-hand shown, Left-hand opposite.

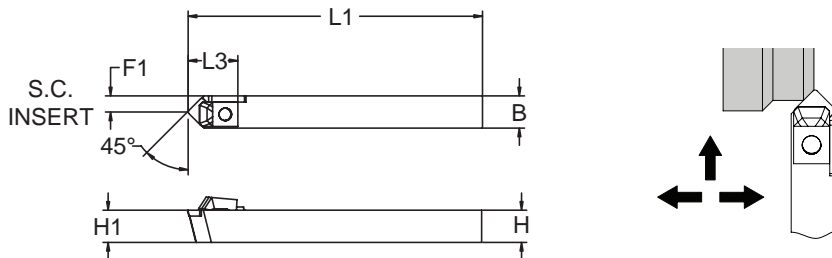
Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
PGDNR/L 06-2.5UR	GNFM-2.522ER	0.375	0.375	-	2.500	-	0°	5°	60905	54163

Spare Parts



Insert Size	Part#		Lock Pin*
	Part #	EDP#	
2.522ER	Part #		H-402-1B
	EDP#		52851

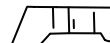
VSDN 45° Lead Turning and Chamfering Neutral Rake



Square Insert
Use Insert Style SPxx

Part Number	Dimensions								EDP#
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	
VSDN 6	731	0.375	0.375	0.180	2.500	0.640	0°	0°	61356
VSDN 8	10-3-2	0.500	0.500	0.250	3.000	0.890	0°	0°	61357

Spare Parts



Insert Size	Part#		Clamp	Clamp Screw*
	Part #	EDP#		
731	Part #		AC-6-1	CS-6
	EDP#		59034	59038
10-3-2	Part #		AC-8-1	CS-8
	EDP#		52814	59179

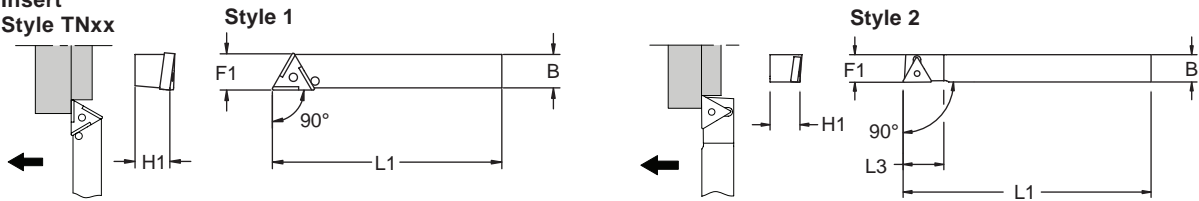
*For recommended torque drive values and lubrication see Reference Material section.

TOOLHOLDERS

Small Shank Economy

PTANR/L 90° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
Style 1										
PTANR/L 06-2U	221	0.375	0.375	0.380	2.500	-	-6°	-6°	60918	60917
Style 2										
PTANR/L 08-2.5U	2.521	0.500	0.500	0.500	4.500	0.750	-7°	-7°	60919	54756

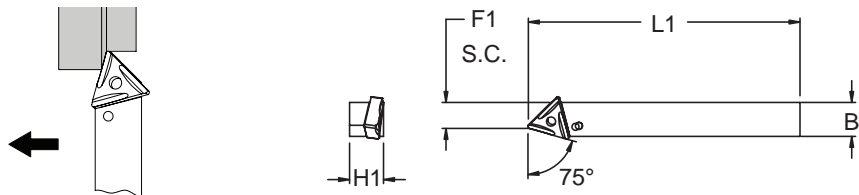
Spare Parts



Insert Size	Part#		Lock Pin*	Pin
	Part #	EDP#		
221	Part #		H-402-1B	LP-12
	EDP#		52851	59201
2.521	Part #		H-402-1B	-
	EDP#		52851	-

PTBNR/L 75° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions							EDP#	
	Insert Size	B	H1	F1	L1	Axial	Radial	Right Hand	Left Hand
PTBNR/L 05-07U	731	0.312	0.312	0.220	2.500	-6°	-6°	60921	00916
PTBNR/L 06-2U	221	0.375	0.375	0.260	2.500	-6°	-6°	60922	60920

Spare Parts

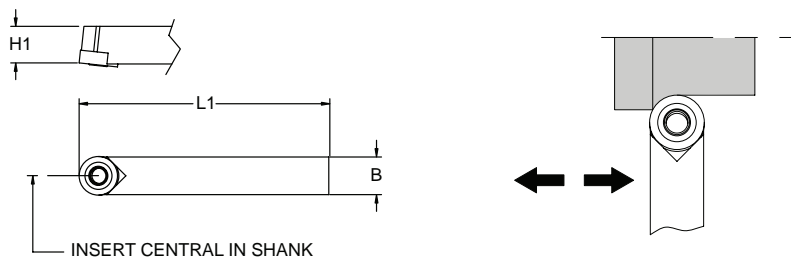


Insert Size	Part#		Lock Pin*	Pin
	Part #	EDP#		
731	Part #		H-402-1B	LP-11
	EDP#		52851	59200
221	Part #		H-402-1B	LP-12
	EDP#		59201	52851

*For recommended torque drive values and lubrication see Reference Material section.

Small Shank Economy

PRDNN Round Insert Turning Negative Rake



Round Insert
Use Insert Style RNxx

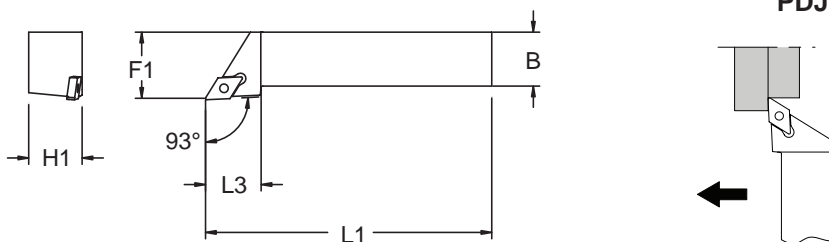
Part Number	Dimensions						EDP#
	Insert Size	B	H1	L1	Axial	Radial	
PRDNN 06-3U	32	0.375	0.375	2.500	0°	-6°	60906

Spare Parts



Insert Size	Part#	Lock Pin*
	EDP#	
32	Part #	H-404-1B
	EDP#	52854

PDJNL 93° Lead Turning Negative Rake



55° Diamond Insert
Use Insert Style DNxx

Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
PDJNR/L 06-2.5U	2.522	0.375	0.375	0.562	3.000	0.750	-5°	-5°	54753	60904

Spare Parts



Insert Size	Part#	Lock Pin*
	EDP#	
2.522	Part #	H-402-1B
	EDP#	52581

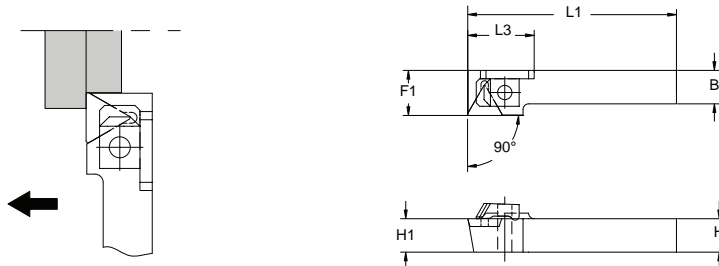
*For recommended torque drive values and lubrication see Reference Material section.

TOOLHOLDERS

Small Shank Economy

VTGR/L 90° Lead Turning Neutral Rake

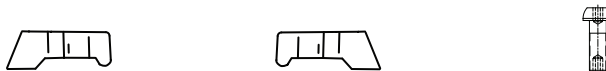
Triangular Insert
Use Insert Style TMxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
VTGR/L 6	8-3-2	0.375	0.375	0.500	2.500	0.640	0°	0°	61361	61360
VTGR/L 8	8-3-2	0.500	0.500	0.625	3.000	0.640	0°	0°	61362	54897

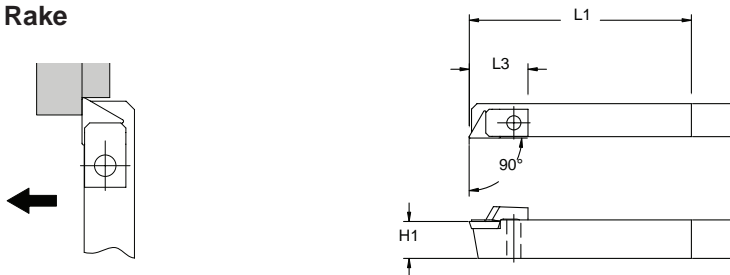
Spare Parts



Insert Size	Part#	Clamp		Clamp Screw*
	EDP#	Right Hand	Left Hand	
8-3-2	Part #	BC-8-L	BC-8-R	CS-6
	EDP#	59042	59043	59179
8-3-2	Part #	BC-8-L	BC-8-R	CS-8
	EDP#	59042	59043	52814

VAR/L 90° Lead Turning Neutral Rake

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
VAR/L 6	631	0.375	0.375	-	2.500	0.630	0°	0°	61355	61354

Spare Parts

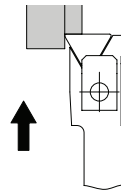
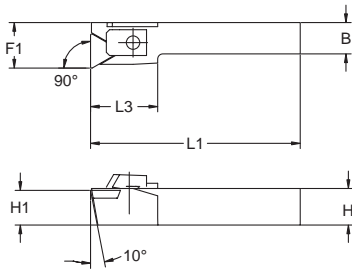


Insert Size	Part#	Clamp	Clamp Screw*
	EDP#		
631	Part #	AC-6-1	CS-6
	EDP#	59034	59179

Small Shank Economy

VTFR/L 90° Lead Facing Neutral Rake

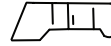
Triangular Insert
Use Insert Style TMxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
VTFR/L 6	8-3-2	0.375	0.375	0.500	2.500	0.800	0°	0°	61359	61358

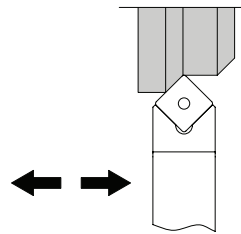
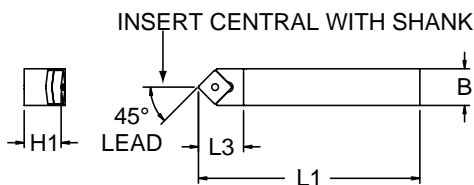
Spare Parts



Insert Size	Part#	Clamp	Clamp Screw*
	EDP#		
8-3-2	Part #	AC-8-1	CS-8
	EDP#	59038	59179

PSDNN 45° Lead Turning Negative Rake

Square Insert
Use Insert Style SNxx



Part Number	Dimensions							EDP#
	Insert Size	B	H1	L1	L3	Axial	Radial	
PSDNN 08-3U	322	0.500	0.500	4.500	0.625	0°	-7°	60910
PSDNN 10-3U	322	0.625	0.625	4.500	0.625	0°	-7°	60911
PSDNN 12-4U	432	0.750	0.750	4.500	1.000	0°	-7°	60913

Spare Parts



Insert Size	Part#	Shim Seat	Lock Pin*
	EDP#		
322	Part #	-	H-404-1
	EDP#	-	52852
432	Part #	SSN-43	H-508-1C
	EDP#	09261	52872

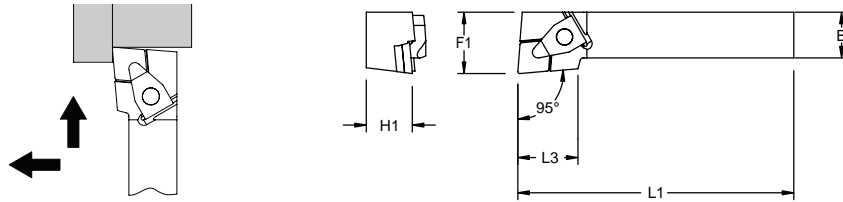
*For recommended torque drive values and lubrication see Reference Material section.

TOOLHOLDERS

Positive Rake with Top Clamp

CCLPR/L 95° Lead Turning and Facing Positive Rake

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
CCLPR/L-12-4B	422	0.750	0.750	1.000	4.500	1.130	5°	5°	59611	59607
CCLPR/L-16-4D	422	1.000	1.000	1.250	6.000	1.130	5°	5°	59613	59609

Spare Parts



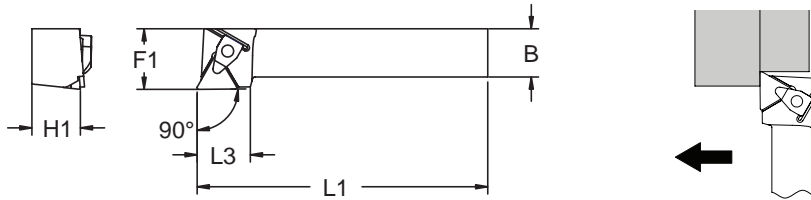
Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
422	Part #	SCPGN-42	SSS-1	NC-2S	CSC-1B	NCGD-4-050	NC-2
	EDP#	09199	53039	59083	52819	09085	59078

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Positive Rake with Top Clamp

CTGPR/L 90° Lead Turn Positive Rake

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
CTGPR/L-08-2A	221	0.500	0.500	0.750	4.000	0.640	0°	5°	59673	59665
CTGPR/L-12-3B	322	0.750	0.750	1.000	4.500	1.090	0°	5°	59676	59667
CTGPR/L16-3C	322	1.000	1.000	1.250	5.000	1.090	0°	5°	59678	59669
CTGPR/L-16-4D	432	1.000	1.000	1.250	6.000	1.200	0°	5°	59680	59670

Spare Parts



Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
221	Part #	-	-	NC-1S	CS-8E	NCBT-1-050	NC-1
	EDP#	-	-	59077	52817	09036	59069
322	Part #	STBC-12-3	SSS-1	NC-2S	CSC-1B	NCBT-2-100	NC-2
	EDP#	00940	53039	59083	52819	09039	59078
432	Part #	STBC-16-3	SSS-2	NC-2S	CSC-1B	NCBT-3-150	NC-2
	EDP#	09326	52358	59083	52819	09049	59078

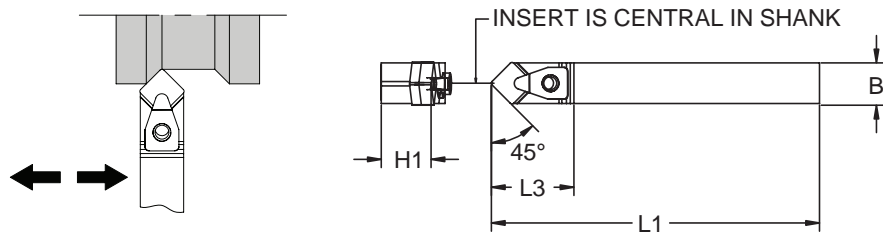
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Positive Rake with Top Clamp

CSDPN 45° Lead Turning and Chamfering Positive Rake

Square Insert
Use Insert Style SPxx



Part Number	Dimensions							EDP#
	Insert Size	B	H1	L1	L3	Axial	Radial	
CSDPN-08-3A	322	0.500	0.500	4.000	0.98	0°	5°	59617
CSDPN-10-3B	322	0.625	0.625	4.500	0.98	0°	5°	59618
CSDPN-12-3B	322	0.750	0.750	4.500	0.980	0°	5°	59620
CSDPN-12-4B	422	0.750	0.750	4.500	1.220	0°	5°	59621
CSDPN-16-4D	422	1.000	1.000	6.000	1.220	0°	5°	59624
CSDPN-64-4	422	0.750	1.000	6.000	1.220	0°	5°	59626
CSDPN-85-6	633	1.000	1.250	7.000	1.630	0°	5°	59627

Spare Parts



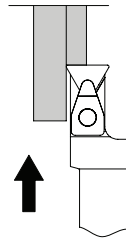
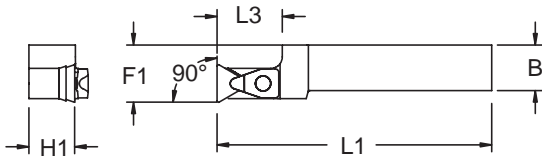
Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C' Bkr	Clamp
322 (.500 & .625 Shank Size Only)	Part #	SSQC-12-2	SSS-1	NC-1AS	CS-8E	NCBDN-1-050	NC-1A
	EDP#	09288	53039	59076	52817	08984	52783
322 (.750 Shank Size Only)	Part #	SSQC-12-2	SSS-1	NC-1AS	CS-8C	NCBDN-1-050	NC-1A
	EDP#	09288	53039	59076	59180	08984	52783
422	Part #	SSQC-16-2	SSS-1	NC-2S	CSC-1B	NCBDN-2-100	NC-2
	EDP#	09289	53039	59083	52819	08987	59078
633	Part #	SSQC-24-3	SSS-2	NC-3SS	CSC-2B	NCBDN-3-100	NC-3A
	EDP#	09290	52358	59088	52820	08990	59084

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Positive Rake with Top Clamp

CTCPR 90° Lead Face and Plunge Positive Rake

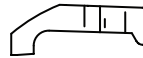
Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
CTCPR/L-16-3C	322	1.000	1.000	1.250	5.000	1.120	5°	5°	59644	59712

Spare Parts



Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
322	Part #	STBC-12-2	SSS-1	NC-2S	CSC-1B	NCBT-2-100	NC-2
	EDP#	09324	53039	59083	52819	09039	59078

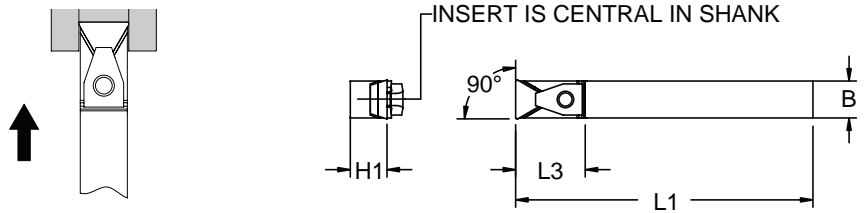
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Positive Rake with Top Clamp

CTCPN 90° Lead Face and Plunge Positive Rake

Triangular Insert
Use Insert Style TPxx



Part Number	Dimensions								EDP#
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	
CTCPN-12-4	432	0.750	0.750	-	6.000	1.440	0°	5°	59639
CTCPN-44-33	322	0.500	1.000	-	8.000	1.120	0°	5°	00890
CTCPN-64-4	432	0.750	1.000	-	8.000	1.440	0°	5°	59641

Spare Parts



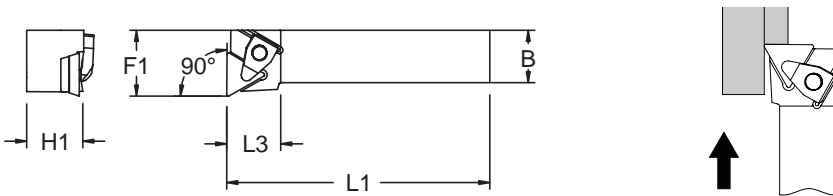
Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
322	Part #	STBC-12-2	SSS-1	NC-2S	CSC-1B	NCBT-2-100	NC-2
	EDP#	09324	53039	59083	52819	09039	59078
432	Part #	STBC-16-3	SSS-2	NC-3ST	CSC-2B	NCBT-31-100	NC-3A
	EDP#	09326	52358	59089	52820	09047	59084

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Positive Rake with Top Clamp

CTFPR/L 90° Lead Facing Positive Rake

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
CTFPR/L08-2A	221	0.500	0.500	0.750	4.000	0.640	0°	5°	59656	59651
CTFPR/L-12-3B	322	0.750	0.750	1.000	4.500	1.000	0°	5°	59658	59653
CTFPR/L-16-3C	322	1.000	1.000	1.250	5.000	1.000	0°	5°	59659	59654

Spare Parts



Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
221	Part #	–	–	NC-1S	CS-8E	NCBT-1-050	NC-1
	EDP#	–	–	59077	52817	09036	59069
322	Part #	STBC-12-2	SSS-1	NC-2S	CSC-1B	NCBT-2-100	NC-2
	EDP#	09324	53039	59083	52819	09039	59078

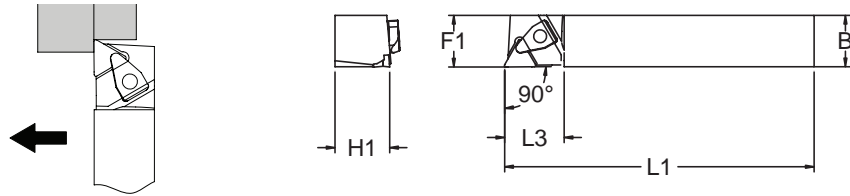
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

TOOLHOLDERS

Positive Rake with Top Clamp

CTAPR/L 90° Lead Turning Positive Rake

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
CTAPR/L-08-2	221	0.500	0.500	0.500	4.500	0.750	5°	0°	59633	59631
CTAPR/L-10-2	221	0.625	0.625	0.625	4.500	0.750	5°	0°	59634	66200
CTAPR/L-12-3	322	0.750	0.750	0.750	4.500	1.110	5°	0°	59635	59632
CTAPR/L-16-3	322	1.000	1.000	1.000	6.000	1.110	5°	0°	59636	59710

Spare Parts



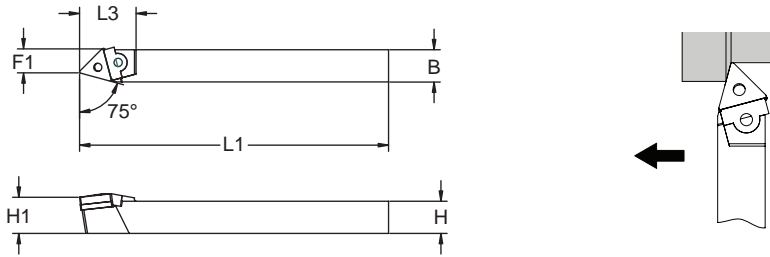
Insert Size	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	OPTIONAL PARTS	
	EDP#					Mech. C'Bkr	Clamp
221	Part #	-	-	NC-1S	CS-8E	NCBT-1-050	NC-1
	EDP#	-	-	59077	52817	09036	59069
322	Part #	STBC-12-2	SSS-1	NC-2S	CSC-1B	NCBT-2-100	NC-2
	EDP#	09324	53039	59083	52819	09039	59078

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, clamp, clamp screw, pin, shim seat and shim screw, less insert.

Negative Rake with Wedge Lock

LTBR/L 75° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
LTBR/L-8	222	0.500	0.500	0.380	4.500	0.750	-7°	-7°	60189	60183
LTBR/L-12	322	0.750	0.750	0.590	4.500	1.060	-7°	-7°	60185	60179
LTBR/L-16	432	1.000	1.000	0.780	6.000	1.380	-7°	-7°	60186	60180

Spare Parts



Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw
	EDP#				Right Hand	Left Hand	
222	Part #	-	-	LP-10	W-1	W-1	LS-10
	EDP#	-	-	59199	59123	59123	59216
322	Part #	STN-32	57320	LP-20	W-2	W-2	LS-20
	EDP#	09336	RFQ*	59202	59131	59131	59219
432	Part #	STN-43	5103-21	LP-30	W-3	W-3	LS-30
	EDP#	09341	57321	59205	59143	59143	59221

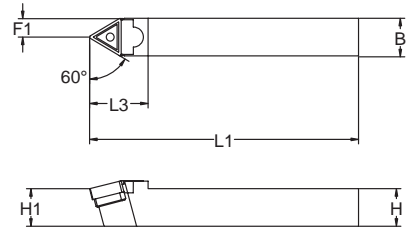
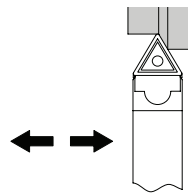
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

TOOLHOLDERS

Negative Rake with Wedge Lock

LTE 60° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	
LTE-8	222	0.500	0.500	0.250	4.500	0.720	0°	-14°	60204
LTE-10	322	0.625	0.625	0.310	4.500	1.000	0°	-14°	60196
LTE-12	322	0.750	0.750	0.380	4.500	1.000	0°	-14°	60197
LTE-16	432	1.000	1.000	0.500	6.000	1.380	0°	-14°	60199
LTE-24	666	1.500	1.500	0.750	7.000	1.880	0°	-14°	60201

Spare Parts



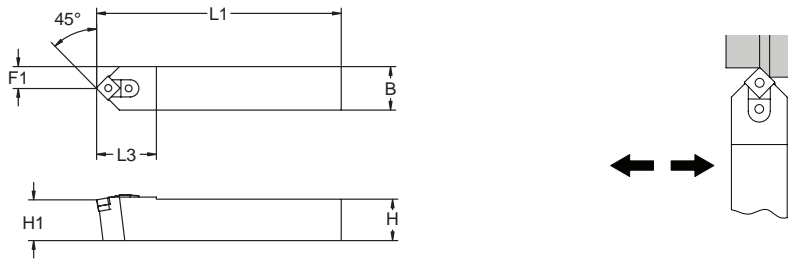
Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
	EDP#				Right Hand	Left Hand	
222	Part #	–	–	LP-10	W-1	W-1	LS-10
	EDP#	–	–	59199	59123	59123	59216
322	Part #	STN-32	5103-15	LP-20	W-2	W-2	LS-20
	EDP#	09336	57320	59202	59131	59131	59219
432	Part #	STN-43	5103-21	LP-30	W-3	W-3	LS-30
	EDP#	09341	57321	59205	59146	59146	59221
666	Part #	STN-66	5103-31	LP-60	W-5	W-5	LS-40
	EDP#	09351	57323	59212	59154	59154	59225

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

Negative Rake with Wedge Lock

LSE 45° Lead Turning and Chamfering Negative Rake

Square Insert
Use Insert Style SNxx



Part Number	Dimensions								EDP#
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	
LSE-8	322	0.500	0.500	0.250	4.500	0.940	0°	-10°	60158
LSE-16	432	1.000	1.000	0.500	6.000	1.380	0°	-10°	60154

Spare Parts



Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
	EDP#				Right Hand	Left Hand	
322	Part #	SSN-32S	5103-15	LP-21	W-10	W-10	LS-10
	EDP#	09260	57320	59203	59124	59124	59216
432	Part #	SSN-43	5103-21	LP-30	W-11	W-11	LS-30
	EDP#	09261	57321	59205	00862	00862	59221

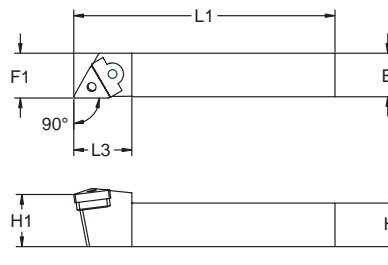
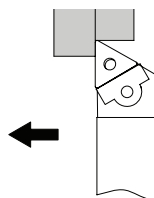
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

TOOLHOLDERS

Negative Rake with Wedge Lock

LTAR/L 90° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
LTAR/L-8	222	0.500	0.500	0.500	4.500	0.680	-7°	-7°	60176	60169
LTAR/L-10	322	0.620	0.620	0.620	4.500	1.000	-7°	-7°	60170	60163
LTAR/L-12	322	0.750	0.750	0.750	4.500	1.000	-7°	-7°	60171	60164
LTAR/L-16	432	1.000	1.000	1.000	6.000	1.380	-7°	-7°	60172	60165
LTAR/L-20	543	1.250	1.250	1.250	7.000	1.560	-7°	-7°	60174	60167

Spare Parts



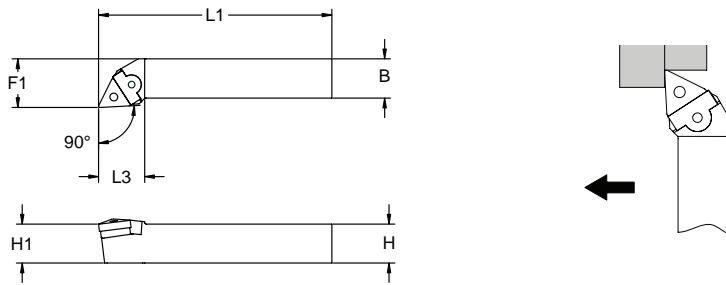
Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
					Right Hand	Left Hand	
222	Part #	-	-	LP-10	W-1	W-1	LS-10
	EDP#	-	-	59199	59123	59123	59216
322 LTAR-10 Only	Part #	STN-32	5103-15	LP-20	WR-7	WL-7	LS-20
	EDP#	09336	57320	59202	59171	59162	599219
322 LTAR-12 Only	Part #	STN-32	5103-15	LP-20	WR-8	WL-8	LS-20
	EDP#	09336	57320	59202	59172	59163	59219
432	Part #	STN-43	5103-21	LP-30	W-3	W-3	LS-30
	EDP#	09341	57321	59205	59143	59143	59221
543	Part #	STN-54	5103-25	LP-40	W-4	W-4	LS-31
	EDP#	09348	57322	59208	59150	59150	59222

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

Negative Rake with Wedge Lock

LTGR/L 90° Lead Turning Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
LTGR/L-10	322	0.620	0.620	0.880	4.500	0.940	-7°	-7°	60230	60221
LTGR/L-12	322	0.750	0.750	1.000	4.500	0.940	-7°	-7°	60231	60222
LTGR/L-16	432	1.000	1.000	1.250	6.000	1.250	-7°	-7°	60232	60223

Spare Parts



Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
	EDP#				Right Hand	Left Hand	
322	Part #	STN-32	5103-15	LP-20	W-2	W-2	LS-20
	EDP#	09336	57320	59202	59131	59131	59219
432	Part #	STN-43	5103-21	LP-30	W-3	W-3	LS-30
	EDP#	09341	57321	59205	59143	59143	59221

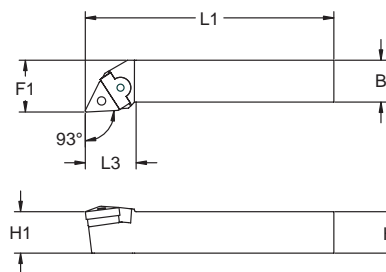
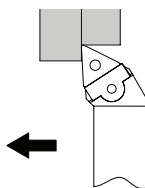
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

TOOLHOLDERS

Negative Rake with Wedge Lock

LTJR/L 93° Lead Turn and Profile Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
LTJR/L-12-3	332	0.750	0.750	1.000	4.500	1.000	-7°	-7°	60247	60241
LTJR/L-16	332	1.000	1.000	1.250	6.000	1.000	-7°	-7°	60248	60242
LTJR/L-16-4	432	1.000	1.000	1.250	6.000	1.180	-7°	-7°	60249	60243

Spare Parts



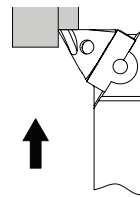
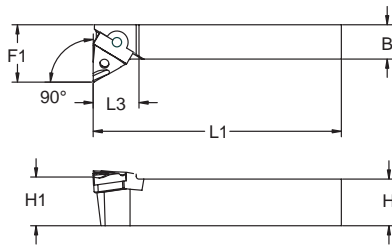
Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*	Optional Parts
	EDP#				Right Hand	Left Hand		Shim Seat
332	Part #	STN-32	5103-15	LP-23	W-29	W-29	LS-20	-
	EDP#	09336	57320	59204	59141	59141	59219	-
332 LTJR/L-16 Only	Part #	STN-32	5103-15	LP-23	W-29	W-29	LS-21	STN-32C
	EDP#	09336	57320	59204	59141	59141	59220	09337
432	Part #	STN-43C	5103-21	LP-32	W-4	W-4	LS-30	STN-43
	EDP#	09345	57321	59207	59150	59150	59221	09341

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

Negative Rake with Wedge Lock

LTFR/L 90° Lead Facing Negative Rake

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Dimensions								EDP#	
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	Right Hand	Left Hand
LTFR/L-16	432	1.000	1.000	1.500	6.000	0.940	-7°	-7°	60214	60208
LTFR/L-20	543	1.250	1.250	2.000	7.000	1.000	-7°	-7°	60215	60211

Spare Parts



Insert Size	Part#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
	EDP#				Right Hand	Left Hand	
432	Part #	STN-43	5103-21	LP-30	W-3	W-3	LS-30
	EDP#	09341	57321	59205	59143	59143	59221
543	Part #	STN-54	5103-25	LP-40	W-4	W-4	LS-31
	EDP#	09348	57322	59208	59150	59150	59222

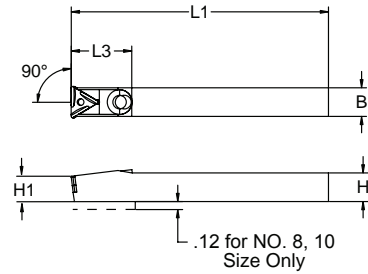
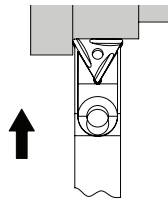
*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.

TOOLHOLDERS

Negative Rake with Wedge Lock

LTCN 90° Lead Face and Plunge Negative Rake

Triangular Insert
Use Insert Style TNxx



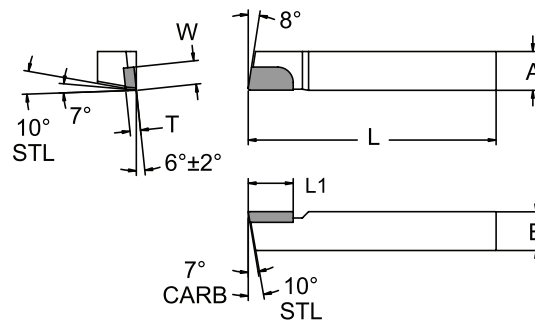
Part Number	Dimensions								EDP#
	Insert Size	B	H/H1	F1	L1	L3	Axial	Radial	
LTCN-8	222	0.375	0.375	-	4.500	0.720	0°	-7°	60195
LTCN-12	432	0.750	0.750	-	6.000	1.410	0°	-7°	60191
LTCN-44	322	0.500	1.000	-	8.000	1.060	0°	-7°	60192
LTCN-64	432	0.750	1.000	-	8.000	1.410	0°	-7°	60193

Spare Parts



Insert Size	Part# EDP#	Shim Seat	Shim Seat Retainer Clip	Pin	Wedge Lock		Wedge Screw*
					Right Hand	Left Hand	
222	Part #	-	-	LP-10	W-35	W-35	LS-10
	EDP#	-	-	59199	00878	00878	59216
432 LTCN-12 Only	Part #	STN-43	5103-21	LP-31	W-34	W-34	LS-32
	EDP#	09341	57321	59205	59146	59146	59223
322	Part #	STN-32	5103-15	LP-20	W-33	W-33	LS-20
	EDP#	09336	57320	59202	59145	59145	59219
432 LTCN-64 Only	Part #	STN-43	5103-21	LP-30	W-34	W-34	LS-30
	EDP#	09341	57321	59205	59146	59146	59221

*For recommended torque drive values and lubrication see Reference Material section.
Tool includes holder, wedge, wedge screw, pin, shim seat and retaining clip, less insert.



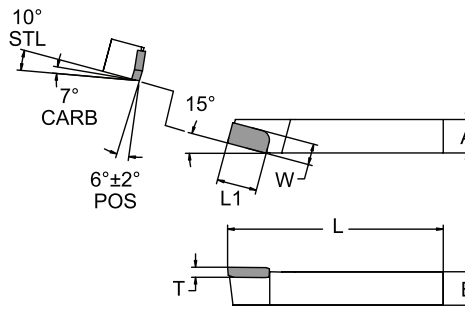
Right-hand shown, Left-hand opposite.

Part Number	Dimensions							R.H. L.H.	Grades/EDP#			
	Shank			Tip					UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R					
AR/L-4	0.250	0.250	2.000	0.094	0.188	0.313	0.016	R.H.	-	66051	-	-
								L.H.	66033	66034	-	-
AR/L-5	0.313	0.313	2.250	0.094	0.250	0.500	0.016	R.H.	66052	66054	66053	-
								L.H.	66035	66036	-	-
AR/L-6	0.375	0.375	2.500	0.094	0.250	0.500	0.016	R.H.	66055	66056	66181	66057
								L.H.	66037	66039	66038	66040
AR/L-7	0.438	0.438	3.000	0.094	0.250	0.500	0.031	R.H.	-	66058	-	-
								L.H.	-	66041	-	-
AR/L-8	0.500	0.500	3.500	0.125	0.313	0.625	0.031	R.H.	66059	66060	-	66061
								L.H.	66042	66044	66043	66045
AR/L-10	0.625	0.625	4.000	0.156	0.375	0.750	0.031	R.H.	66046	66047	-	-
								L.H.	66030	-	-	-
AR/L-12	0.750	0.750	4.500	0.188	0.438	0.813	0.031	R.H.	66048	66049	-	-
								L.H.	66031	66032	-	-
AR-16	1.000	1.000	7.000	0.250	0.563	1.000	0.031	R.H.	-	66050	-	-
								L.H.	-	-	-	-

TOOLHOLDERS

Brazed Tools

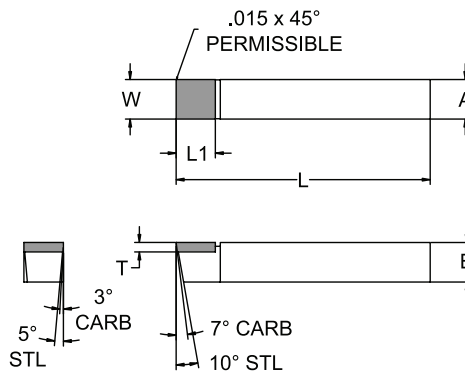
BR & BL Styles 15° Lead



Right-hand shown, Left-hand opposite.

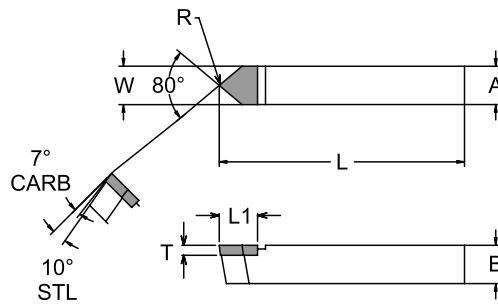
Part Number	Dimensions							R.H. L.H.	Grades/EDP#			
	Shank			Tip					UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R					
BR/L-6	0.375	0.375	2.500	0.094	0.250	0.500	0.016	R.H.	66068	66069	-	-
								L.H.	-	66064	-	-
BR-7	0.438	0.438	3.000	0.094	0.250	0.500	0.031	R.H.	-	66070	-	-
								L.H.	-	-	-	-
BR/L-8	0.500	0.500	3.500	0.125	0.313	0.625	0.031	R.H.	-	66071	-	-
								L.H.	-	66065	-	-
BR/L-10	0.625	0.625	4.000	0.156	0.375	0.750	0.031	R.H.	-	66066	-	-
								L.H.	-	66063	-	-
BR-12	0.750	0.750	4.500	0.188	0.438	0.813	0.031	R.H.	-	66067	-	-
								L.H.	-	-	-	-

C Style Square Nose



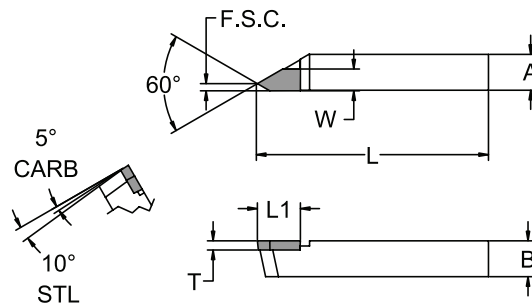
Part Number	Dimensions						Grades/EDP#			
	Shank			Tip			UKD	UPF	UPB	USE
	A	B	L	T	W	L1				
C-4	0.250	0.250	2.000	0.063	0.188	0.313	66077	66078	-	-
C-5	0.313	0.313	2.250	0.094	0.250	0.375	-	66080	-	-
C-6	0.375	0.375	2.500	0.094	0.250	0.375	66081	66083	66082	-
C-7	0.438	0.438	3.000	0.094	0.250	0.500	-	66084	-	-
C-8	0.500	0.500	3.500	0.125	0.313	0.500	66085	66087	-	-
C-10	0.625	0.625	4.000	0.156	0.375	0.625	66072	66073	-	-
C-12	0.750	0.750	4.500	0.188	0.438	0.750	-	66074	-	-
C-16	1.000	1.000	7.000	0.250	1.000	0.750	66075	66076	-	-
C-44	0.500	1.000	7.000	0.188	0.500	0.500	66079	-	66086	-

D Style 80° Included Angle



Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
D-4	0.250	0.250	2.000	0.063	0.250	0.313	0.016	-	66089	-	-
D-5	0.313	0.313	2.250	0.094	0.313	0.375	0.016	66090	66091	-	-
D-6	0.375	0.375	2.500	0.094	0.375	0.500	0.016	66092	66094	66093	-
D-7	0.438	0.438	3.000	0.094	0.438	0.500	0.031	66095	-	-	-
D-8	0.500	0.500	3.500	0.125	0.500	0.500	0.031	-	66096	-	-
D-10	0.625	0.625	4.000	0.156	0.625	0.625	0.031	-	66088	-	-

ER Styles Offset Threading



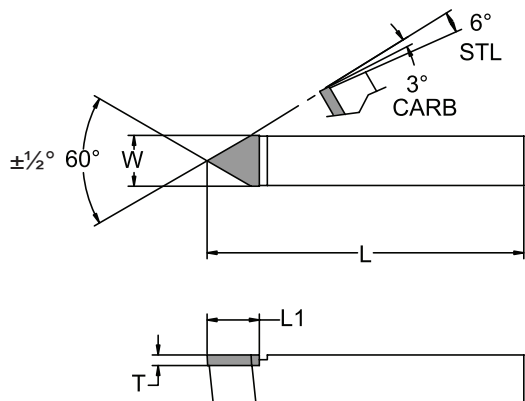
Right-hand shown, Left-hand opposite.

Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
ER-8	0.500	0.500	3.500	0.125	0.313	0.500	0.125	-	66098	-	-
ER-10	0.625	0.625	4.000	0.125	0.375	0.750	0.156	-	66097	-	-

TOOLHOLDERS

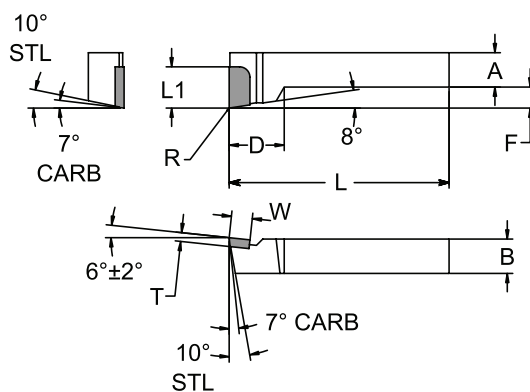
Brazed Tools

E Style 60° "V" Thread



Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
E-5	0.313	0.313	2.250	0.094	0.313	0.375	0.016	66102	66103	-	-
E-6	0.375	0.375	2.500	0.094	0.375	0.500	0.016	66104	66106	66105	-
E-8	0.500	0.500	3.500	0.125	0.500	0.563	0.031	66107	66108	-	-
E-10	0.625	0.625	4.000	0.156	0.625	0.625	0.031	-	66099	-	-
E-12	0.750	0.750	4.500	0.188	0.750	0.625	0.031	66100	66101	-	-

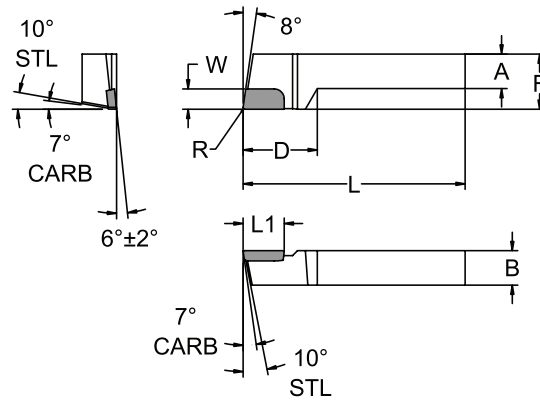
FR & FL Styles Offset Facing



Right-hand shown, Left-hand opposite.

Part Number	Dimensions									R.H. L.H.	Grades/EDP#			
	Shank					Tip					UKD	UPF	UPB	USE
	A	B	L	D	F	T	W	L1	R					
FR/L-8	0.500	0.500	3.500	0.625	0.250	0.125	0.313	0.625	0.031	R.H.	-	61111	-	-
										L.H.	-	66109	-	-
FR-12	0.750	0.750	4.500	1.125	0.625	0.188	0.438	0.813	0.031	R.H.	-	66110	-	-
										L.H.	-	-	-	-

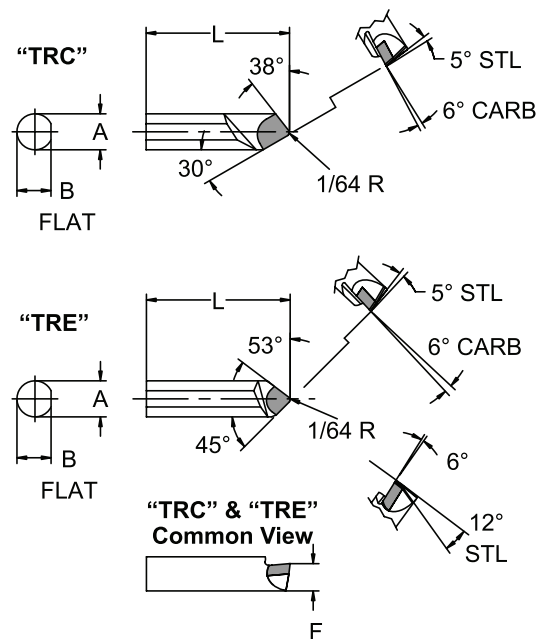
GR & GL Styles Offset Turning



Right-hand shown, Left-hand opposite.

Part Number	Dimensions									R.H. L.H.	Grades/EDP#			
	Shank					Tip					UKD	UPF	UPB	USE
	A	B	L	D	F	T	W	L1	R					
GR-8	0.500	0.500	3.500	1.000	0.250	0.125	0.313	0.625	0.031	R.H.	-	66114	-	-
										L.H.	-	-	-	-
GR/L-10	0.625	0.625	4.000	1.250	0.375	0.156	0.375	0.750	0.031	R.H.	-	66113	-	-
										L.H.	-	66112	-	-

TRC & TRE Styles Round Shank



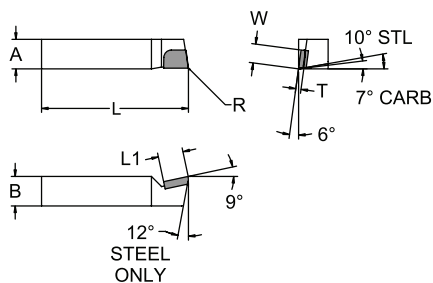
Left-hand shown, Right-hand opposite.

Part Number	Dimensions								Grades/EDP#			
	Shank			Tip					UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R					
TRC-5	0.313	0.297	1.500	0.063	0.219	0.188	0.250	66115	-	-	-	
TRC-6	0.375	0.344	1.750	0.063	0.281	0.188	0.250	66116	-	-	-	
TRE-5	0.313	0.297	1.500	0.063	0.219	0.188	0.250	66117	-	-	-	

TOOLHOLDERS

Brazed Tools

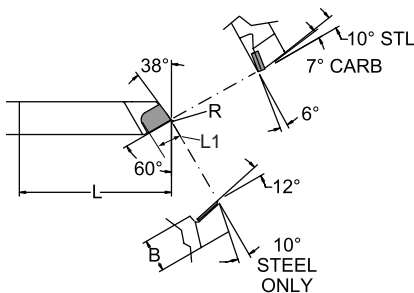
TSA Style Boring



Left-hand shown, Right-hand opposite.

Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
TSA-6	0.375	0.375	1.750	0.094	0.188	0.313	0.016	-	66118	-	-

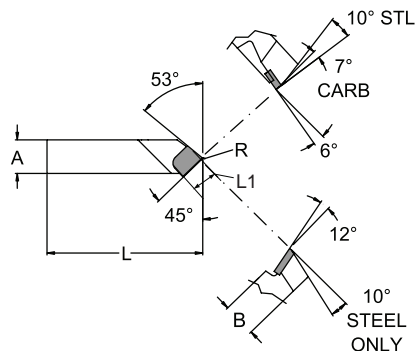
TSC Style 60° Lead Boring



Left-hand shown, Right-hand opposite.

Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
TSC-5	0.313	0.313	1.500	0.094	0.188	0.313	0.016	-	66119	-	-
TSC-6	0.375	0.375	1.750	0.094	0.188	0.313	0.016	-	66120	-	-
TSC-8	0.500	0.500	2.500	0.125	0.313	0.438	0.031	-	66121	-	-

TSE Style 45° Lead Boring

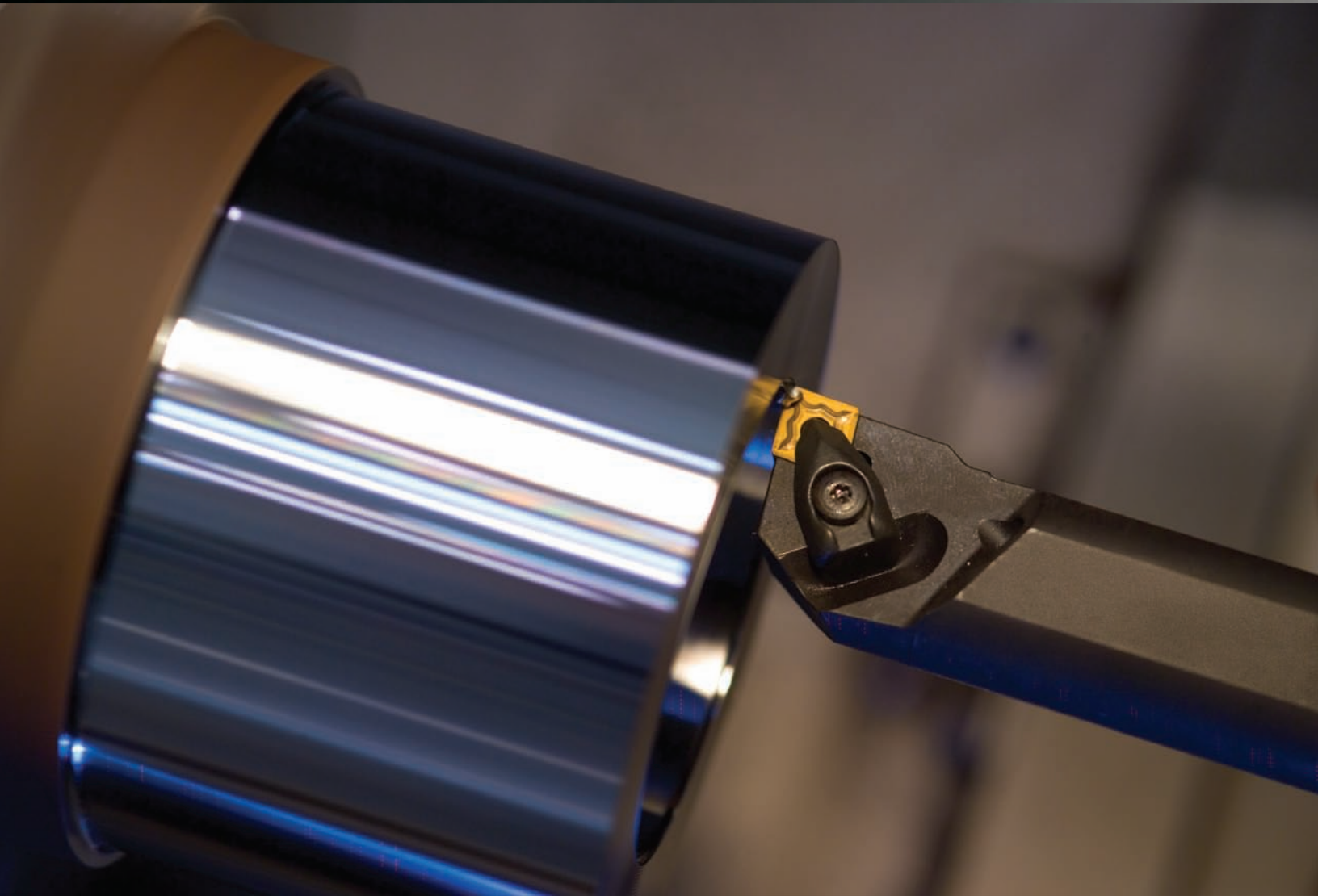


Left-hand shown, Right-hand opposite.

Part Number	Dimensions							Grades/EDP#			
	Shank			Tip				UKD	UPF	UPB	USE
	A	B	L	T	W	L1	R				
TSE-5	0.313	0.313	1.500	0.094	0.188	0.313	0.016	-	66122	-	-

At Valenite

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Supporting

We can increase your productivity by 20%. Make us prove it!

Boring Bars Program Overview..... C2 - C3

Inch Straight Shank Boring Bar Designation C4

ProGRIP™ C5 - C9

Negative Rake Common Hardware..... C10 - C20

ISO Screw Down Designation C21

ISO Screw Down C22 - C36

Positive Rake with Top Clamp..... C37 - C39

Flex-A-Dex..... C40 - C43

Boring Bushings..... C44 - C45

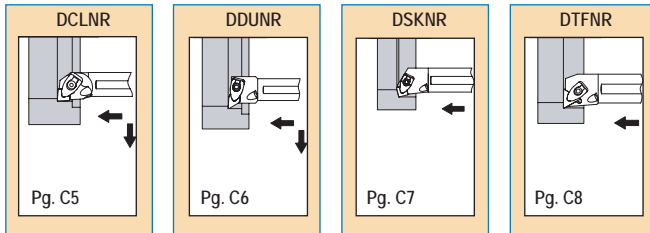
BORING BARS

Program Overview

Negative Inserts

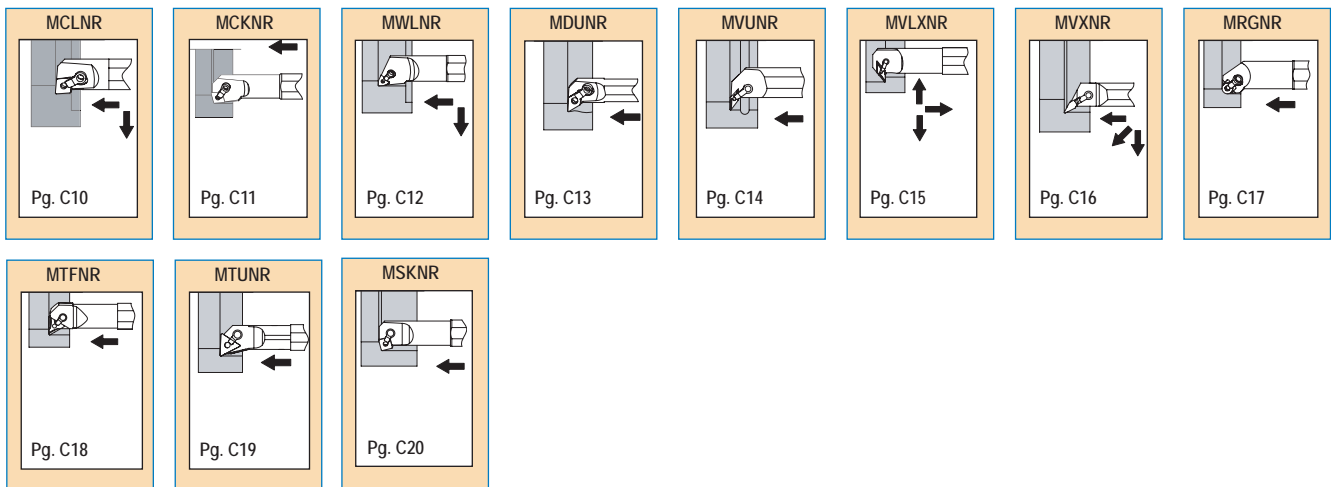
D System ProGRIP™

The first choice when security and stability are required. This allows for higher feed rates without vibration and closer tolerances.



M System Negative Rake Common Hardware

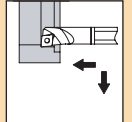
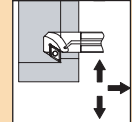
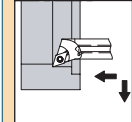
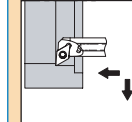
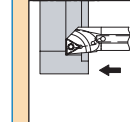
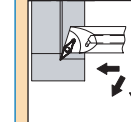
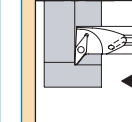
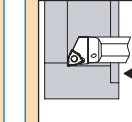
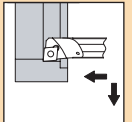
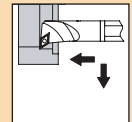
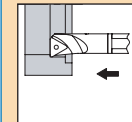
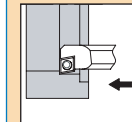
A broad range offering interchangeability with other suppliers who adhere to common hardware standards. This reduces tooling inventories.



Positive Inserts

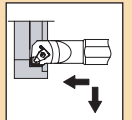
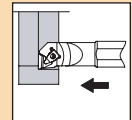
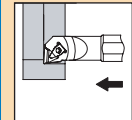
S System ISO Screw Down

Ideal for high-precision, medium-duty operations. No clamp design allows for access to limited clearance applications.

 <p>SCLPR</p> <p>Pg. C22 & C34</p>	 <p>SDLXPR</p> <p>Pg. C23</p>	 <p>SDQPR</p> <p>Pg. C24</p>	 <p>SDUPR</p> <p>Pg. C25 & C35</p>	 <p>STFPR</p> <p>Pg. C26 & C36</p>	 <p>SVQBR</p> <p>Pg. C27</p>	 <p>SVUBR</p> <p>Pg. C28</p>	 <p>SWLPR</p> <p>Pg. C29</p>
 <p>SCLPR / Carbide</p> <p>Pg. C30</p>	 <p>SDUPR / Carbide</p> <p>Pg. C31</p>	 <p>STFPR / Carbide</p> <p>Pg. C32</p>	 <p>SCFPR</p> <p>Pg. C33</p>				

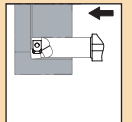
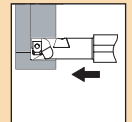
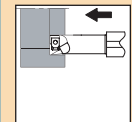
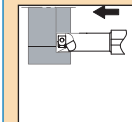
Positive Rake with Top Clamp

Positive rake promotes free cutting action ideal for low-horsepower applications. Top clamp provides strength required for your toughest applications.

 <p>BNV-CLR</p> <p>Pg. C37</p>	 <p>BNV-TFR</p> <p>Pg. C38</p>	 <p>BNV-TUR</p> <p>Pg. C39</p>
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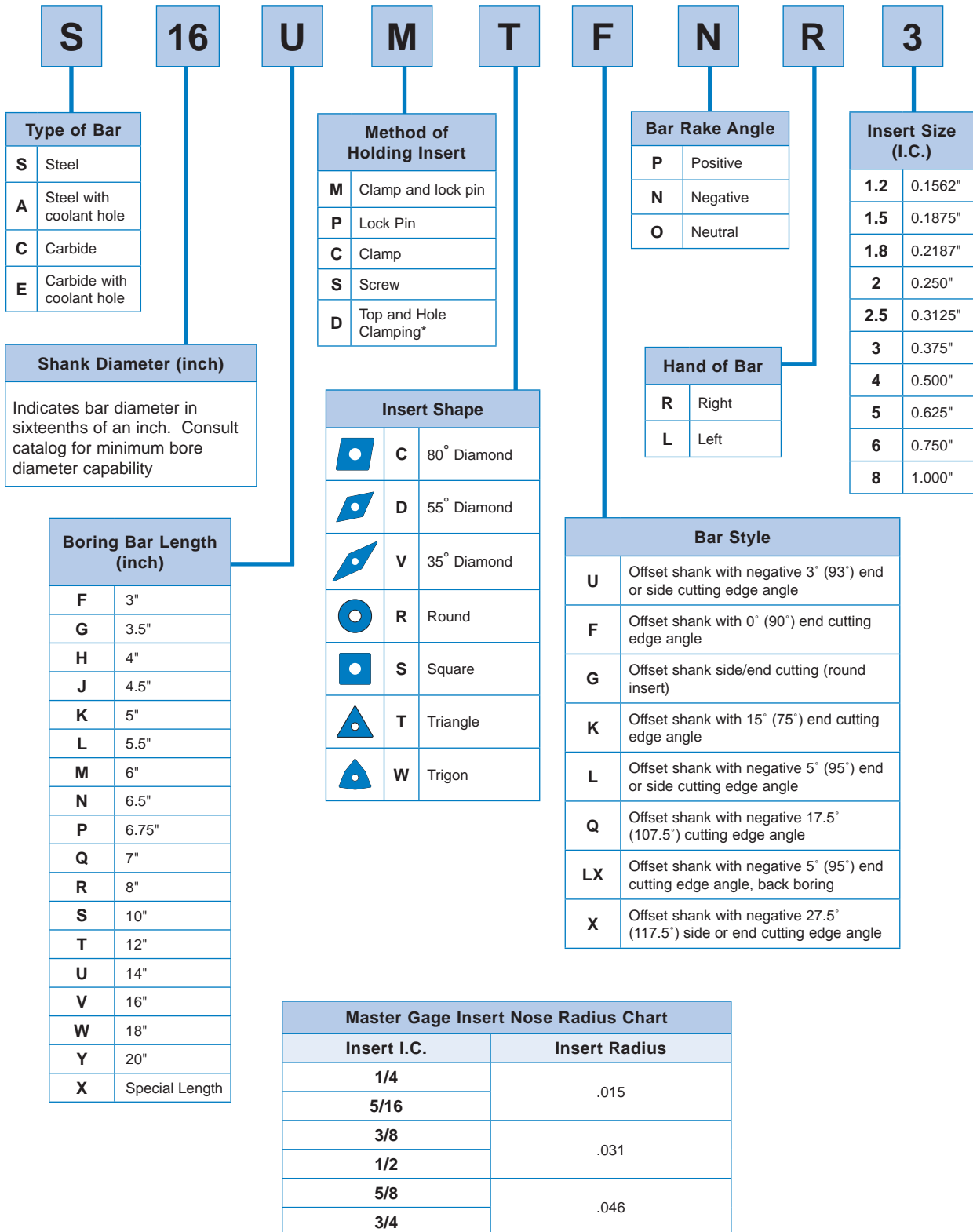
Flex-A-Dex

Adjustable diameter from $-.003''$ to $+.010''$ over nominal for precision size control for holes down to $.375''$ diameter.

 <p>SDS</p> <p>Pg. C40</p>	 <p>FDTW</p> <p>Pg. C41</p>	 <p>SDT 90°</p> <p>Pg. C42</p>	 <p>SDT-3°</p> <p>Pg. C43</p>
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BORING BARS

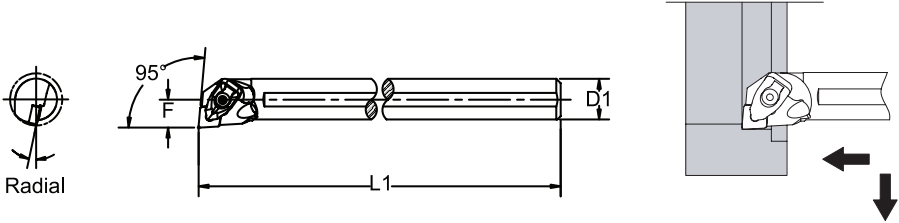
Inch Straight Shank Boring Bar Designation



*ProGrip™

A-DCLNR/L 95° Lead Boring & Facing with Coolant

80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
A12T-DCLNR/L 3	CNMG 322	0.750	1.000	0.500	-14	-6	12.000	62698	62697
A16T-DCLNR/L 3	CNMG 322	1.000	1.280	0.640	-11	-6	12.000	62705	62703
A16T-DCLNR/L 4	CNMG 432	1.000	1.280	0.640	-11	-6	12.000	62757	62704
A20U-DCLNR/L 3	CNMG 322	1.250	1.530	0.765	-10	-6	14.000	62716	62714
A20U-DCLNR/L 4	CNMG 432	1.250	1.530	0.765	-11	-6	14.000	62758	62715
A24V-DCLNR/L 4	CNMG 432	1.500	1.780	0.890	-10	-6	15.750	62727	62725
A24V-DCLNR/L 5	CNMG 542	1.500	1.780	0.890	-17	-6	15.750	62728	62726
A32W-DCLNR/L 5	CNMG 542	2.000	2.560	1.281	-13	-6	17.750	62738	62737
A40W-DCLNR/L 5	CNMG 542	2.500	3.060	1.530	-13	-6	17.750	62744	62743

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Shim Screw*	Wrench*	Clamp Set**	Torque (ft-lbs.)
322	Part#	5322236-04	5513020-04	PT8002	5412028-011	1.3
	EDP#	65758	62473	66129	62514	
432	Part#	5322236-03	5513020-02	PT8004	5412028-021	2.9
	EDP#	65764	62472	66131	62516	
543	Part#	5322234-03	5513020-07	VP5680043-14	5412028-031	4.7
	EDP#	62513	62474	62435	62515	

See page C 9 for additional spare parts.

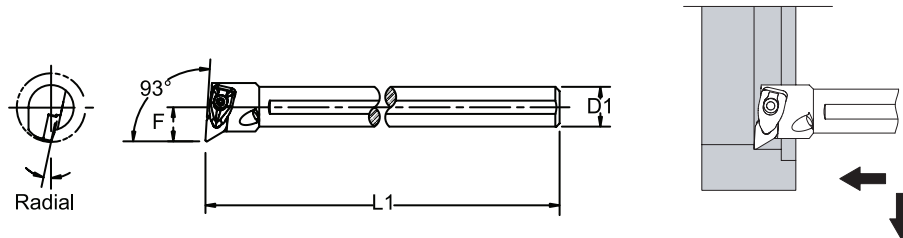
* Advanced Torx Plus® locking mechanism.
** Clamp set includes screw, clamp and spring.

BORING BARS

ProGRIP™

A-DDUNR/L 93° Lead Boring & Profiling with Coolant

55° Diamond Insert
Use Insert Style DNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
A12T-DDUNR/L 3	DNMG 332	0.750	1.250	0.625	-12	-6	12.000	62700	62699
A16T-DDUNR/L 3	DNMG 332	1.000	1.500	0.750	-11	-6	12.000	62708	62706
A16T-DDUNR/L 4	DNMG 442	1.000	1.500	0.750	-16	-6	12.000	62709	62707
A20U-DDUNR/L 3	DNMG 332	1.250	2.000	1.000	-9	-6	14.000	62719	62717
A20U-DDUNR/L 4	DNMG 442	1.250	2.000	1.000	-11	-6	14.000	62720	62718
A24V-DDUNR/L 4	DNMG 442	1.500	2.250	1.125	-11	-6	15.750	62730	62729
A32W-DDUNR/L 4	DNMG 442	2.000	3.000	1.500	-8	-6	17.750	62740	62739
A40W-DDUNR/L 4	DNMG 442	2.500	3.500	1.750	-8	-6	17.750	RFQ***	62745

***Contact your local Valenite Distributor or Valenite Customer Service.

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Shim Screw*	Wrench*	Clamp Set**	Torque (ft-lbs.)
332	Part#	5322267-01	5513020-04	PT8002	5412028-011	1.3
	EDP#	62460	62473	66129	62514	
432	Part#	5322266-01	5513020-02	PT8004	5412028-021	2.9
	EDP#	62459	62472	66131	62516	
442	Part#	5322266-02	5513020-02	PT8004	5412028-021	2.9
	EDP#	RFQ***	62472	66131	62516	

See page C 9 for additional spare parts.

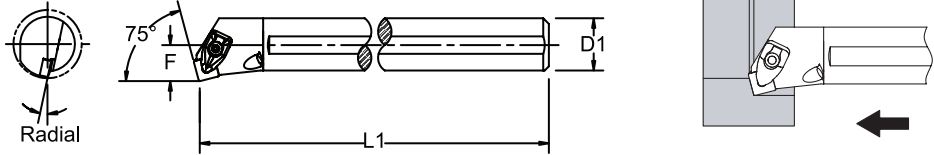
*Advanced Torx Plus® locking mechanism.

**Clamp set includes screw, clamp and spring.

***Contact your local Valenite Distributor or Valenite Customer Service.

A-DSKNR/L 75° Lead Boring & Facing with Coolant

Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
A16T-DSKNR/L 4	SNMG 432	1.000	1.260	0.640	-11	-6	12.000	62711	62710
A20U-DSKNR/L 4	SNMG 432	1.250	1.530	0.765	-10	-6	14.000	62722	62721
A24V-DSKNR/L 4	SNMG 432	1.500	1.780	0.890	-14	-6	15.750	62732	62731

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Shim Screw*	Wrench*	Clamp Set**	Torque (ft-lbs.)
432	Part#	5322426-02	5513020-02	PT8004	5412028-021	2.9
	EDP#	65760	62472	66131	62516	

See page C 9 for additional spare parts.

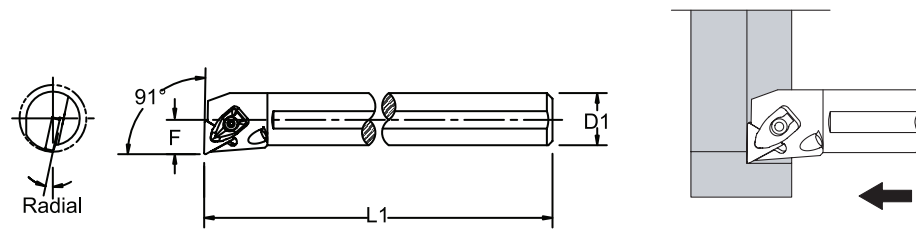
* Advanced Torx Plus® locking mechanism.
** Clamp set includes screw, clamp and spring.

BORING BARS

ProGRIP™

A-DTFNR/L 91° Lead Boring with Coolant

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
A12T-DTFNR/L 3	TNMG 332	0.750	1.000	0.500	-14	-6	12.000	62702	62701
A16T-DTFNR/L 3	TNMG 332	1.000	1.280	0.640	-12	-6	12.000	62713	62712
A20U-DTFNR/L 3	TNMG 332	1.250	1.530	0.765	-11	-6	14.000	62724	62423
A24V-DTFNR/L 3	TNMG 332	1.500	1.780	0.890	-14	-6	15.750	62735	62733
A24V-DTFNR/L 4	TNMG 432	1.500	1.780	0.890	-14	-6	15.750	62736	62734
A32W-DTFNR/L 4	TNMG 432	2.000	2.560	1.281	-10	-6	17.750	62742	62741

Spare Parts



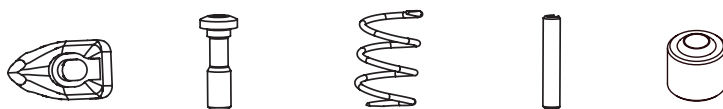
Insert Size	Part#/EDP#	Shim Seat	Shim Screw*	Wrench*	Clamp Set**	Torque (ft-lbs)
332	Part#	5322316-01	5513020-04	PT8002	5412028-011	1.3
	EDP#	62759	62473	66129	62514	
432	Part#	5322315-04	5513020-02	PT8004	5412028-021	2.9
	EDP#	62462	62472	66131	62516	

See page C 9 for additional spare parts.

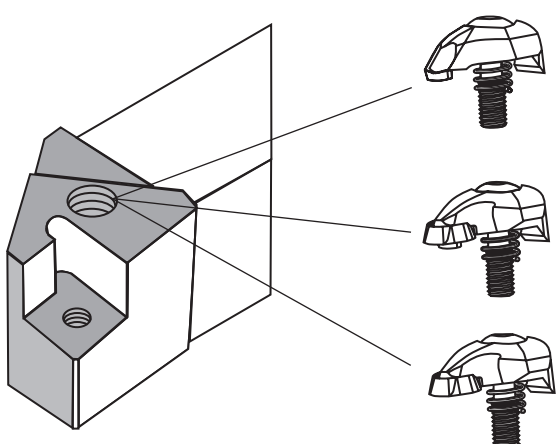
* Advanced Torx Plus® locking mechanism.

** Clamp set includes screw, clamp and spring.

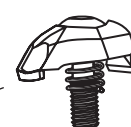
Additional Boring Bars Spare Parts





Description	Insert Size		Clamp Set	Clamp	Clamp Screw	Compression Spring	Pin	Coolant Nozzles
Standard Parts Supplied with Holder	322	Part#	5412028-011	5412028-01	5512086-01	5561001-57	3113030-255	5691029-06
		EDP#	62514	50247	50627	50652	50417	65646
	332	Part#	5412028-011	5412028-01	5512086-01	5561001-57	3113030-255	5691029-06
		EDP#	62514	50247	50627	50652	50417	65646
	432	Part#	5412028-021	5412028-02	5512086-01	5561001-58	3113030-307	5691029-06
		EDP#	62516	50916	50627	50779	50418	65646
	442	Part#	5412028-021	5412028-02	5512086-01	5561001-58	3113030-307	5691029-06
		EDP#	62516	50916	50627	50779	50418	65646
	543	Part#	5412028-031	5412028-03	5512086-03	5561001-59	3113030-307	5691029-06
		EDP#	62515	50431	50631	50814	50418	65646
Extra Clamping Security	432	Part#	5412032-021	5412032-02	5512086-02	5561001-58	3113030-307	5691029-06
		EDP#	50497	50488	50628	50779	50418	65646
	543	Part#	5412032-031	5412032-03	5512086-03	5561001-59	3113030-307	5691029-06
		EDP#	50499	50498	50631	50814	50418	65646
Use with Solid Inserts	432	Part#	5412034-021	5412034-02	5512086-02	5561001-58	3113030-307	5691029-06
		EDP#	50517	50500	50628	50779	50418	65646
	543	Part#	5412034-031	5412034-03	5512086-03	5561001-59	3113030-307	5691029-06
		EDP#	50522	50521	50631	50814	50418	65646



Available Clamp Sets

- 

Standard Clamp Set
Designed for inserts with holes & chipbreakers
- 

Optional Clamp Set
Designed for flat inserts with holes for improved security
- 

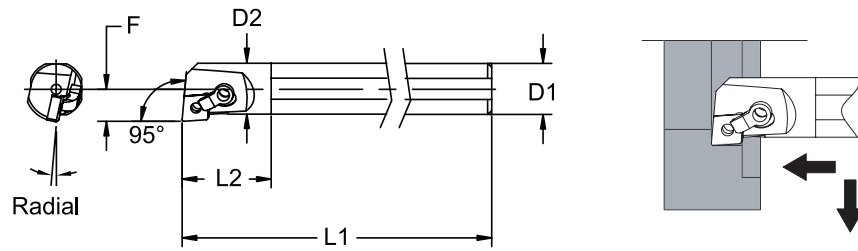
Optional Clamp Set
Designed for ceramic and carbide flat top inserts without holes

BORING BARS

Negative Rake Common Hardware

S-MCLNR/L 95° Lead Boring & Facing / No Coolant

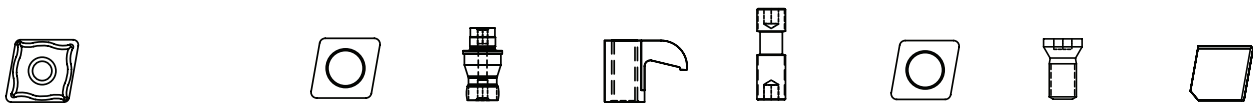
80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S16T-MCLNR/L32	322	1.000	1.280	0.640	—	-12°	-5°	12.000	—	55036	55034
S16T-MCLNR/L 4	422	1.000	1.280	0.640	—	-12°	-5°	12.000	—	55037	55035
S20U-MCLNR/L32	322	1.250	1.530	0.765	1.120	-12°	-5°	14.000	3.000	55060	55058
S20U-MCLNR/L 4	422	1.250	1.530	0.765	1.120	-12°	-5°	14.000	3.000	55061	55059
S24U-MCLNR/L 4	432	1.500	1.780	0.890	1.310	-12°	-5°	14.000	3.000	55085	55084
S28U-MCLNR/L 4	432	1.750	2.030	1.015	1.560	-12°	-5°	14.000	4.000	55105	55104
S32V-MCLNR/L 4	432	2.000	2.562	1.281	1.810	-12°	-5°	16.000	4.000	55112	55109
S32V-MCLNR/L 5	543	2.000	2.562	1.281	1.810	-12°	-5°	16.000	4.000	55113	55110
S32V-MCLNR/L 6	643	2.000	4.000	1.281	1.810	-12°	-5°	16.000	4.000	55114	55111
S40V-MCLNR/L 4	432	2.500	3.062	1.531	2.310	-10°	-5°	16.000	4.000	55138	55135
S40V-MCLNR/L 5	543	2.500	3.062	1.531	2.310	-10°	-5°	16.000	4.000	55139	55136
S40V-MCLNR/L 6	643	2.500	3.062	1.531	2.310	-10°	-5°	16.000	4.000	55140	55137

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
322	Part#	—	NL-33	CLI-6	XNS-36	—	—	—
	EDP#	—	59230	59053	53055	—	—	—
422	Part#	—	NL-44	CLI-20	XNS-47	—	—	CBR-40-12
	EDP#	—	52958	59048	53057	—	—	08931
432	Part#	CSN-433	NL-46	CLI-20	XNS-47	CSN-442	S-46	CBR-40-12
	EDP#	09143	52959	59048	53057	09145	53023	08931
543	Part#	CSN-533	NL-58	CLI-12	XNS-510	—	S-58	CBR-42-15
	EDP#	09147	52960	59046	53059	—	53024	08935
643	Part#	CSN-633	NL-68	CLI-12	XNS-510	CSN-642	S-68	CBR-41-15
	EDP#	09150	52961	59046	53059	09151	52354	08933

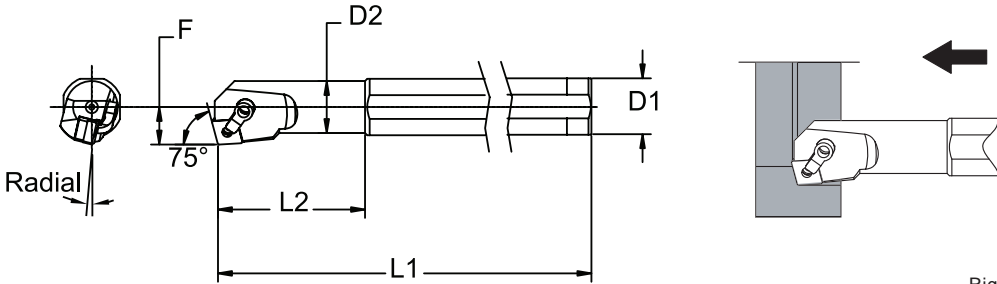
* For recommended torque drive values and lubrication see Reference Materials Section.

Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

Negative Rake Common Hardware

S-MCKNR/L 75° Lead Boring / No Coolant

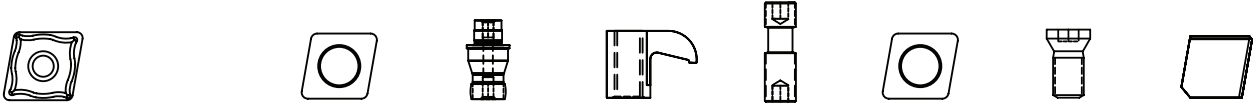
80° Diamond Insert
Use Insert Style CNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S20U-MCKNR/L 4	432	1.250	1.500	0.765	1.060	14°	5°	14.000	3.120	55057	55056
S24U-MCKNR/L 4	432	1.500	3.000	0.890	1.310	12°	5°	14.000	3.000	55083	55082

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
432	Part#	CSN-433	NL-46	CLI-20	XNS-47	CSN-442	S-46	NCCBL-4-100
	EDP#	RFQ	52959	59048	53057	09145	53023	09061

* For recommended torque drive values and lubrication see Reference Materials Section.

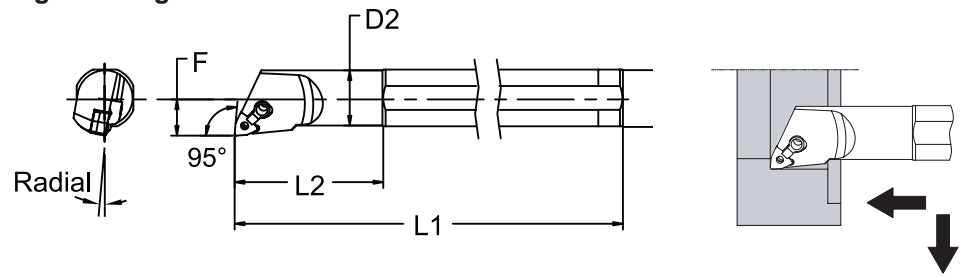
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

BORING BARS

Negative Rake Common Hardware

S-MWLNR/L 95° Lead Boring & Facing / No Coolant

Trigon Insert
Use Insert Style WNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S16T-MWLNR/L 3	332	1.000	1.280	0.640	-	-10°	-5°	12.000	-	55054	55052
S16T-MWLNR/L 4	432	1.000	1.280	0.640	-	-12°	-5°	12.000	-	55055	55053
S20U-MWLNR/L 3	332	1.250	1.530	0.765	1.120	-10°	-5°	14.000	3.000	55080	55078
S20U-MWLNR/L 4	432	1.250	1.530	0.765	1.060	-14°	-5°	14.000	3.000	55081	55079
S24U-MWLNR/L 4	432	1.500	1.780	0.890	1.310	-14°	-5°	14.000	3.000	55103	55102
S32V-MWLNR/L 4	432	2.000	2.562	1.281	1.810	-14°	-5°	16.000	4.000	55134	00989

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332 (D1 = 1.00)	Part#	-	NL-33L	CLI-6	XNS-36	-	-	-
	EDP#	-	52956	59053	53055	-	-	-
432 (D1 = 1.00)	Part#	-	NL-44L	CLI-20	XNS-47	-	S-46	-
	EDP#	-	00913	59048	53057	-	53023	-
332 (D1 = 1.25)	Part#	IWSN-322	NL-34L	CLI-6	XNS-38	-	-	-
	EDP#	52388	52957	59053	55536	-	-	-
432	Part#	IWSN-433	NL-46	CLI-20	XNS-48	-	S-46	-
	EDP#	09180	52959	59048	53058	-	53023	-

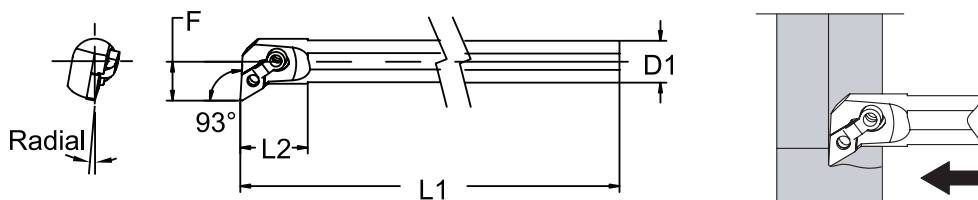
* For recommended torque drive values and lubrication see Reference Materials Section.

Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

Negative Rake Common Hardware

S-MDUNR/L 93° Lead Boring & Profiling / No Coolant

55° Diamond Insert
Use Insert Style DNxx

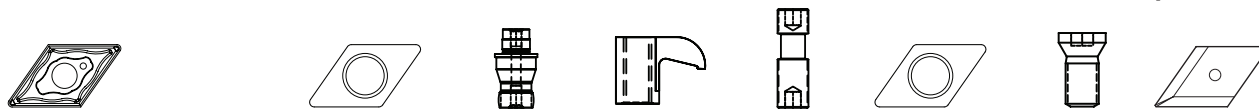


Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
S16T-MDUNR/L 3	332	1.000	1.500	0.750	12°	5°	12.000	55040	55038
S16T-MDUNR/L 4	432	1.000	1.750	0.875	10°	5°	12.000	55041	55039
S20U-MDUNR/L 3	332	1.250	1.500	0.875	10°	5°	14.000	55064	55062
S20U-MDUNR/L 4	432	1.250	2.000	1.000	12°	5°	14.000	55065	55063
S24U-MDUNR/L 4	432	1.500	2.250	1.125	10°	5°	14.000	55087	55086
S32V-MDUNR/L 4	432	2.000	3.000	1.500	10°	5°	16.000	55117	55115
S32V-MDUNR/L 5	543	2.000	3.000	1.500	10°	5°	16.000	55118	55116
S40V-MDUNR/L 5	543	2.500	3.500	1.750	10°	5°	16.000	55142	55141

Boring Bars

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332 (D1 = 1.00)	Part#	-	NL-44	CLI-12	XNS-58	-	-	-
	EDP#	-	52958	59046	53060	-	-	-
432 (D1 = 1.00)	Part#	-	NL-33L	CLI-7	XNS-35	-	-	CBR-220-50
	EDP#	-	52956	59054	53054	-	-	08908
332 (D1 = 1.250)	Part#	DSN-322	NL-34L	CLI-7	XNS-35	-	-	-
	EDP#	09158	52957	59054	53054	-	-	-
432	Part#	DSN-443	NL-46L	CLI-12	XNS-59	DSN-433	S-46	CBR-220-50
	EDP#	09160	59232	59046	53061	09159	53023	08908
543	Part#	DSN-533	NL-58	CLI-30	XNS-510	-	S-58	CBR-220-50
	EDP#	09161	52960	59051	53059	-	53024	08908

* For recommended torque drive values and lubrication see Reference Materials Section.

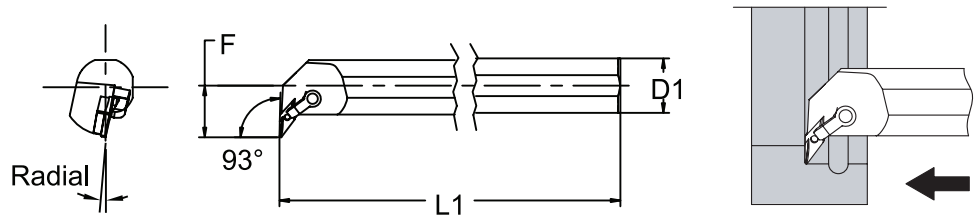
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

BORING BARS

Negative Rake Common Hardware

S-MVUNR/L 93° Lead Boring & Profiling / No Coolant

35° Diamond Insert
Use Insert Style VNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
S16T-MVUNR/L 3	332	1.000	2.000	1.000	-10°	-5°	12.000	55051	55050
S20U-MVUNR/L 3	332	1.250	2.250	1.125	-12°	-5°	14.000	55075	55074
S24U-MVUNR/L 3	332	1.500	2.500	1.250	-12°	-5°	14.000	55101	55100
S32V-MVUNR/L 4	432	2.000	3.250	1.625	-12°	-5°	16.000	55131	55130
S40V-MVUNR/L 4	432	2.500	3.750	1.875	-12°	-5°	16.000	55148	55147

Spare Parts



Insert Size	Part#/ EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332	Part#	IVSN-324	NL-34L	CLI-30	XNS-59	-	S-34	-
	EDP#	09177	52957	59051	53061	-	53022	-
432	Part#	IVSN-433	NL-46	CLI-30	XNS-510	-	S-46	-
	EDP#	09178	52959	59051	53059	-	53023	-

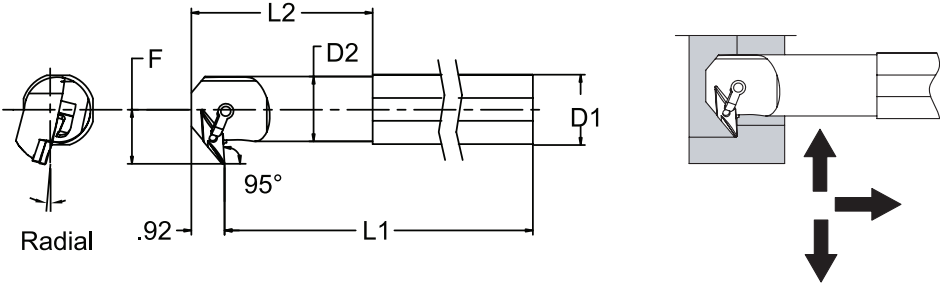
* For recommended torque drive values and lubrication see Reference Materials Section.

Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

Negative Rake Common Hardware

S-MVLXNR/L 95° Lead Back Boring / No Coolant

35° Diamond Insert
Use Insert Style VNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S24U-MVLXNR/L 3	332	1.500	2.250	1.125	1.310	-12°	-5°	14.000	4.000	55099	55098
S28U-MVLXNR/L 3	332	1.750	2.500	1.250	1.560	-12°	-5°	14.000	5.000	55108	00972
S32V-MVLXNR/L 4	432	2.000	3.000	1.500	1.810	-12°	-5°	16.000	5.000	55129	55128

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332	Part#	IVSN-324	NL-34L	CLI-20	XNS-47	-	S-34	-
	EDP#	09177	52957	59048	53057	-	53022	-
432	Part#	IVSN-433	NL-46	CLI-12	XNS-510	-	S-46	-
	EDP#	09178	52959	59046	53059	-	53023	-

* For recommended torque drive values and lubrication see Reference Materials Section.

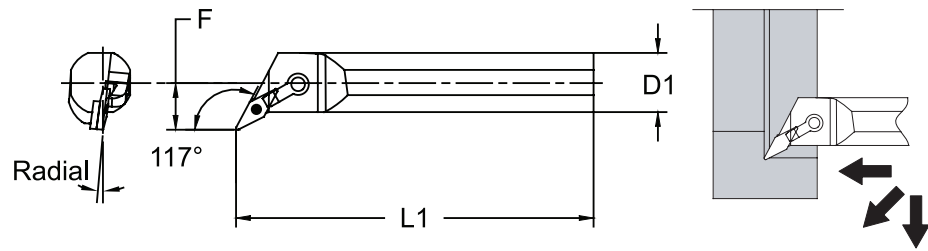
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

BORING BARS

Negative Rake Common Hardware

S-MVXNR/L 117° Lead Boring & Profiling / No Coolant

35° Diamond Insert
Use Insert Style VNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP#	
		D1	Min. Bore	F	Radial	Axial	L1	Right Hand	Left Hand
S20U-MVXNR/L 3	332	1.250	1.750	0.875	13°	9°	14.000	55077	55076
S32V-MVXNR/L 3	332	2.000	2.500	1.250	13°	9°	16.000	55133	55132

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
332	Part#	IVBN-324	NL-34L	CLI-30	XNS-58	-	S-34	-
	EDP#	00910	52957	59051	53060	-	53022	-

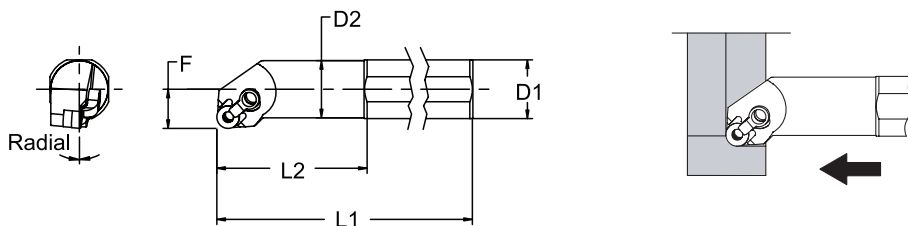
* For recommended torque drive values and lubrication see Reference Materials Section.

Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

Negative Rake Common Hardware

S-MRGNR/L Round Insert Boring & Facing / No Coolant

Round Insert
Use Insert Style RNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S20U-MRGNR/L32	32	1.250	1.530	0.765	1.120	-12°	-5°	14.000	3.000	55067	55066
S24U-MRGNR/L32	32	1.500	1.780	0.890	1.310	-12°	-5°	14.000	3.000	55089	55088
S32V-MRGNR/L 4	43	2.000	2.562	1.281	1.810	-12°	-5°	16.000	4.000	55119	00974

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
32	Part#	-	NL-33	CLI-6	XNS-36	-	-	NCP-1
	EDP#	-	59230	59053	53055	-	-	09094
43	Part#	IRSN-43	NL-46	CLI-9	XNS-59	IRSN-44	S-46	NCP-2
	EDP#	09163	52959	59055	53061	09164	53023	09095

* For recommended torque drive values and lubrication see Reference Materials Section.

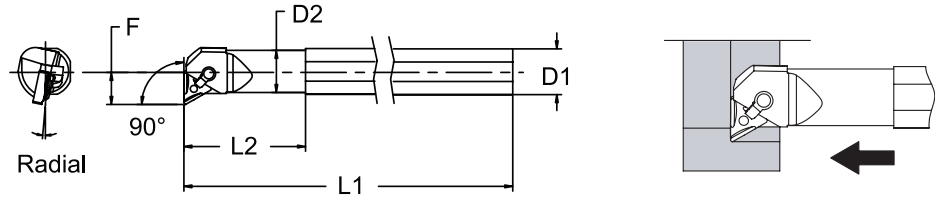
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

BORING BARS

Negative Rake Common Hardware

S-MTFNR/L 90° Lead Boring / No Coolant

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S16T-MTFNR/L32	322	1.000	1.250	0.625	0.880	-12°	-5°	12.000	2.500	55044	55042
S16T-MTFNR/L33	332	1.000	1.280	0.640	0.880	-12°	-5°	12.000	2.500	55045	55043
S20U-MTFNR/L32	322	1.250	1.500	0.750	1.060	-12°	-5°	14.000	3.000	55072	55070
S20U-MTFNR/L33	332	1.250	1.530	0.765	1.060	-12°	-5°	14.000	3.000	55073	55071
S24U-MTFNR/L 3	332	1.500	1.780	0.890	1.310	-12°	-5°	14.000	3.000	55094	55092
S24U-MTFNR/L 4	432	1.500	2.062	1.031	1.310	-10°	-5°	14.000	3.000	55095	55093
S28U-MTFNR/L 4	432	1.750	2.312	1.156	1.560	-8°	-5°	14.000	4.000	55107	55106
S32V-MTFNR/L 4	432	2.000	2.562	1.281	1.810	-8°	-5°	16.000	4.000	55126	55124
S32V-MTFNR/L 5	543	2.000	2.562	1.281	1.810	-10°	-5°	16.000	4.000	55127	55125
S40V-MTFNR/L 4	432	2.500	3.062	1.531	2.310	-8°	-5°	16.000	4.000	55146	55145

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
322	Part#	-	NL-33	CLI-7	XNS-35	-	-	CBR-31-08
	EDP#	-	59230	59054	53054	-	-	08913
332	Part#	-	NL-33L	CLI-7	XNS-35	-	-	CBR-31-08
	EDP#	-	52956	59054	53054	-	-	08913
432	Part#	ITSN-433	NL-46	CLI-9	XNS-59	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53061	09373	53023	08916
543	Part#	ITSN-533	NL-58	CLI-9	XNS-510	-	S-58	CBR-33-15
	EDP#	09176	52960	59055	53059	-	53024	08918

* For recommended torque drive values and lubrication see Reference Materials Section.

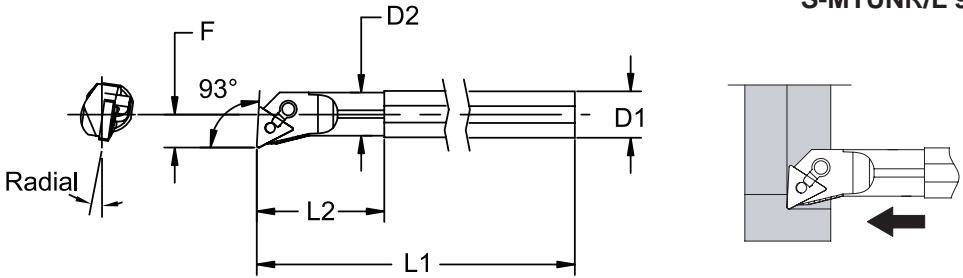
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

When using PN1/PN2 inserts, right hand bars (shown) uses left hand (L) inserts and left hand bars use right (R) inserts.

Negative Rake Common Hardware

S-MTUNR/L 93° Lead Boring / No Coolant

Triangular Insert
Use Insert Style TNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S16T-MTUNR/L32	322	1.000	1.250	0.625	0.880	-12°	-5°	12.000	2.500	55048	55046
S16T-MTUNR/L33	332	1.000	1.280	0.640	0.880	-12°	-5°	12.000	2.500	55049	55047
S24U-MTUNR/L 4	432	1.500	1.780	0.890	1.310	-10°	-5°	14.000	3.000	55097	55096

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
322	Part#	-	NL-33	CLI-7	XNS-35	-	-	CBR-31-08
	EDP#	-	59230	59054	53054	-	-	08913
332	Part#	-	NL-33L	CLI-7	XNS-35	-	-	CBR-31-08
	EDP#	-	52956	59054	53054	-	-	08913
432	Part#	ITSN-433	NL-46	CLI-9	XNS-59	TS-424	S-46	CBR-32-15
	EDP#	09173	52959	59055	53061	09373	53023	08916

* For recommended torque drive values and lubrication see Reference Materials Section.

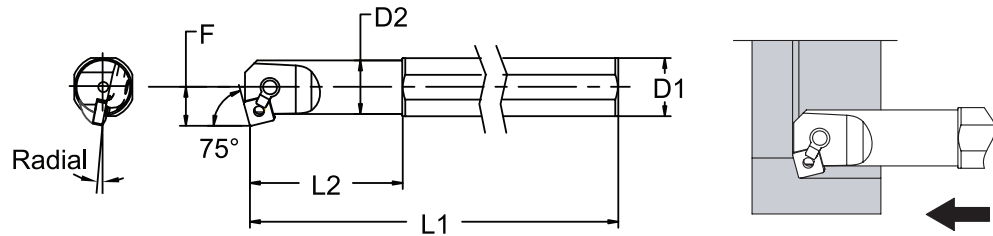
Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.
When using PN1/PN2 inserts, right hand bars (shown) uses left hand (L) inserts and left hand bars use right (R) inserts.

BORING BARS

Negative Rake Common Hardware

S-MSKNR/L 75° Lead Boring / No Coolant

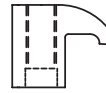
Square Insert
Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
S20U-MSKNR/L4	432	1.250	1.530	0.765	1.060	-12°	-5°	14.000	3.100	55069	55068
S24U-MSKNR/L4	432	1.500	1.780	0.890	1.310	-12°	-5°	14.000	3.080	55091	55090
S32V-MSKNR/L5	543	2.000	2.562	1.281	1.750	-12°	-5°	16.000	4.100	55122	55120
S32V-MSKNR/L6	643	2.000	2.562	1.281	1.750	-12°	-5°	16.000	4.000	55123	55121
S40V-MSKNR/L6	643	2.500	3.062	1.531	2.250	-10°	-5°	16.000	3.870	55144	55143

Spare Parts

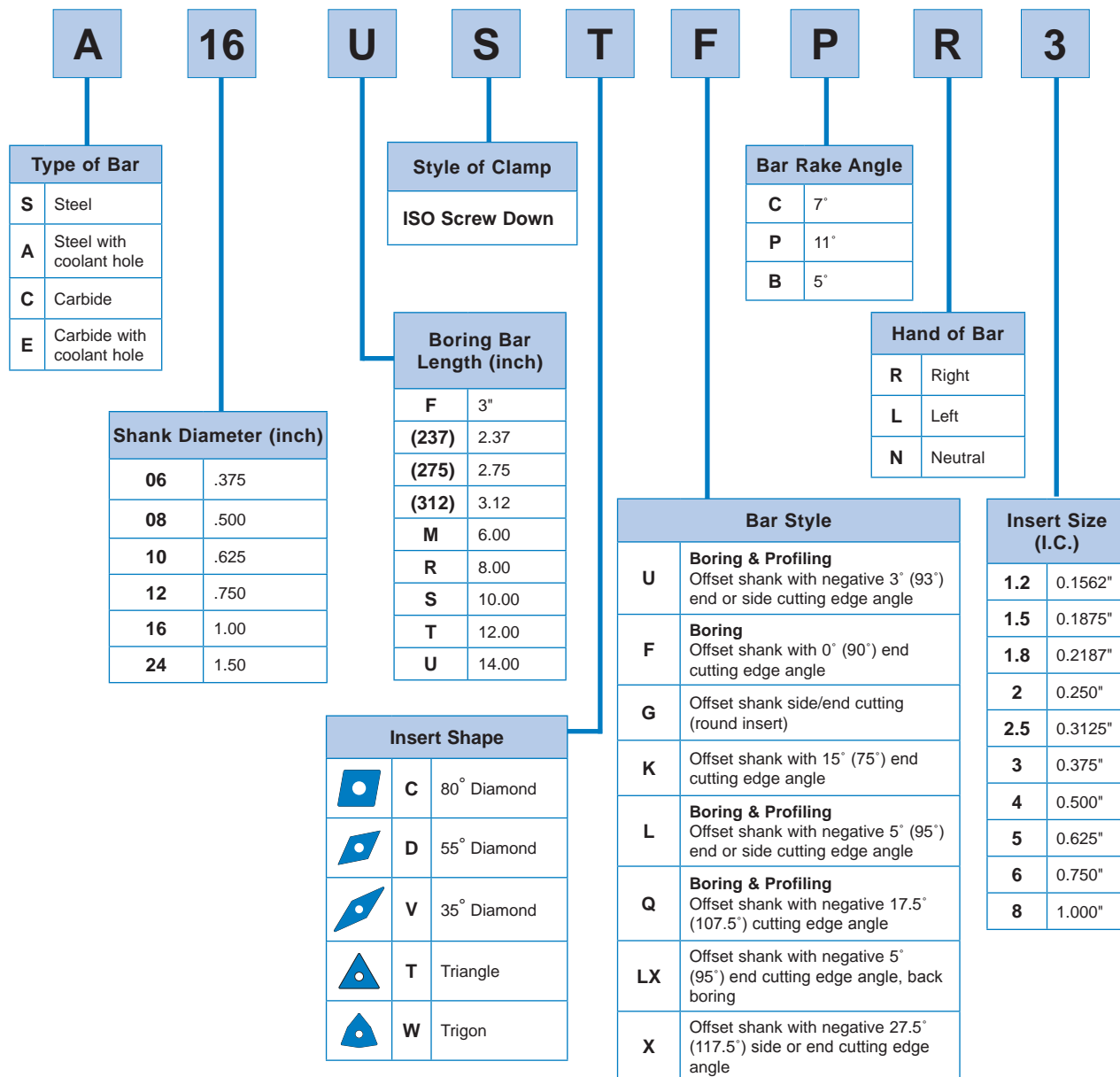


Insert Size	Part#/EDP#	Shim Seat	Lock Pin*	Clamp	Clamp* Screw	Optional Parts		
						Shim Seat	Shim Screw	Mech. C'Bkr
432 (D1 = 1.250)	Part#	-	NL-44	CLI-9	XNS-59	-	-	CBR-36-08
	EDP#	-	52958	59055	53061	-	-	08924
432	Part#	ISSN-433	NL-44	CLI-9	XNS-59	ISSN-443	S-46	CBR-36-08
	EDP#	09166	52958	59055	53061	09167	53023	08924
543	Part#	ISSN-533	NL-58	CLI-12	XNS-510	ISSN-543	S-58	CBR-37-15
	EDP#	RFQ	52960	59046	53059	09168	53024	08927
643	Part#	ISSN-633	NL-68	CLI-12	XNS-510	ISSN-643	S-68	CBR-38-15
	EDP#	09169	52961	59046	53059	09170	52354	08929

* For recommended torque drive values and lubrication see Reference Materials Section.

Tool includes holder, lock pin, clamp, clamp screw and shim seat, less insert.

When using PN1/PN2 inserts, right hand bars (shown) uses left hand (L) inserts and left hand bars use right (R) inserts

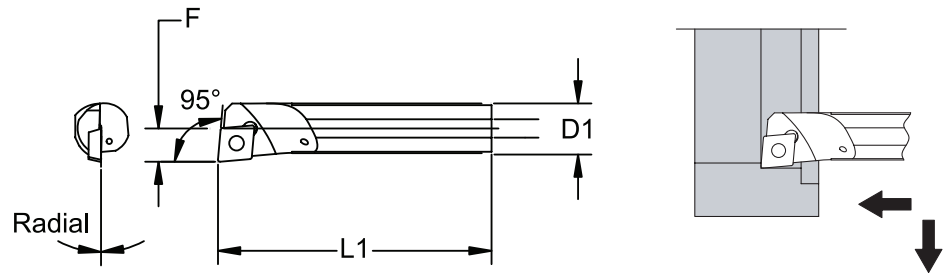


BORING BARS

ISO Screw Down

A-SCLPR/L 95° Lead Boring & Profiling / With Coolant

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A16T-SCLPR/L 3	32.52	1.000	1.190	0.625	12.000	1°	0°	¼-18	54792	54790
A16T-SCLPR/L 4	432	1.000	1.280	0.640	12.000	0°	0°	¼-18	54793	54791
A20U-SCLPR/L 4	432	1.250	1.530	0.765	14.000	0°	0°	¾-18	54813	54812
A24U-SCLPR/L 4	432	1.500	1.780	0.890	14.000	0°	0°	¾-18	54823	54822

Spare Parts

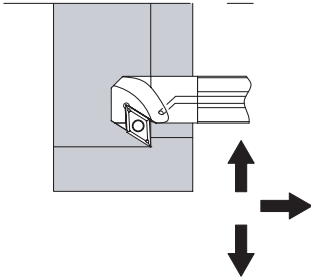
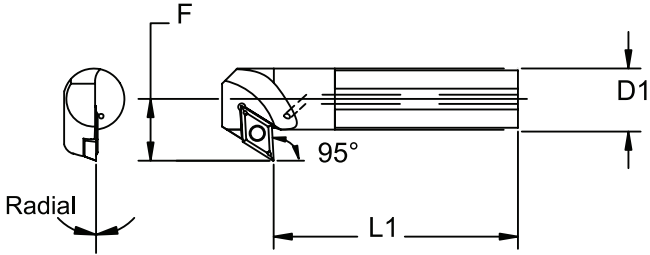


Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
32.52	Part #	PT-544T	T-15 Torx® Wrench
	EDP #	52288	50087
432 (D1 = 1.000 & 1.500)	Part #	PT-588T	T-20 Torx® Wrench
	EDP #	52294	50091
432 (D1 = 1.250)	Part #	PT-546T	T-20 Torx® Wrench
	EDP #	52290	50091

BORING BARS

ISO Screw Down

A-SDLXPR/L 95° Lead Back Boring / With Coolant



55° Diamond Insert
Use Insert Style DPxx

Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A12S-SDLXPR/L 3	35.52	0.750	0.980	0.562	10.000	2°	0°	①	54783	54782
A16T-SDLXPR/L 3	35.52	1.000	1.300	0.750	12.000	0°	0°	¼-18	54796	54794
A24U-SDLXPR/L 3	35.52	1.500	2.000	1.000	14.000	0°	0°	⅜-18	54826	54824
A16T-SDLXPR/L 4	432	1.000	1.300	0.750	12.000	0°	0°	¼-18	54797	54795
A24U-SDLXPR/L 4	432	1.500	2.000	1.000	14.000	0°	0°	⅜-18	54827	54825
A32V-SDLXPR/L 4	432	2.000	3.000	1.500	16.000	0°	0°	⅜-18	54841	54840

① 3/16 Drill Hole

Spare Parts



Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
32.52 (D1 = 750)	Part #	PT-559T	T-15 Torx® Wrench
	EDP #	52292	50087
32.52 (D1 = 1.000 & 1.500)	Part #	PT-544T	T-15 Torx® Wrench
	EDP #	52288	50087
432	Part #	PT-546T	T-20 Torx® Wrench
	EDP #	52290	50091

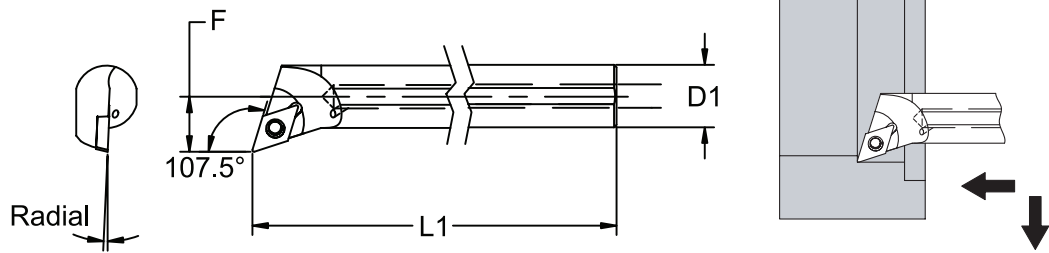
Boring Bars

BORING BARS

ISO Screw Down

A-SDQPR/L 107.5° Lead Profiling / With Coolant

55° Diamond Insert
Use Insert Style DPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A12S-SDQPR/L 3	32.52	0.750	1.125	0.562	10.000	0°	0°	①	54785	54784
A16T-SDQPR/L 3	32.52	1.000	1.300	0.750	12.000	0°	0°	¼-18	54800	54798
A24U-SDQPR/L 3	32.52	1.500	2.000	1.000	14.000	0°	0°	⅜-18	54830	54828
A-16T-SDQPR/L 4	432	1.000	1.300	0.750	12.000	0°	0°	¼-18	54801	54799
A24U-SDQPR/L 4	432	1.500	2.000	1.000	14.000	0°	0°	⅜-18	54831	54829
A32V-SDQPR/L 4	432	2.000	2.500	1.250	16.000	0°	0°	⅝-18	54843	54842

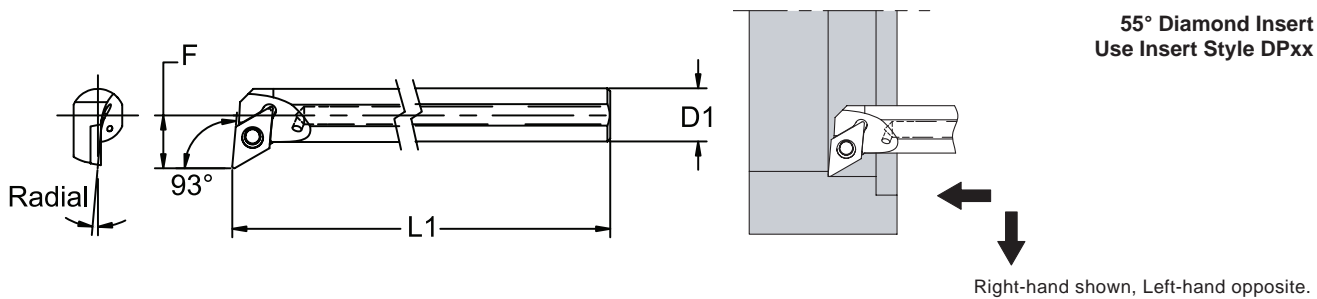
① 3/16 Drill Hole

Spare Parts



Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
32.52 (D1 = .750)	Part#	PT-559T	T-15 Torx® Wrench
	EDP#	52292	50087
32.52 (D1 = 1.000 & 1.500)	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087
432	Part#	PT-546T	T-20 Torx® Wrench
	EDP#	52290	50091

A-SDUPR/L 93° Lead Boring & Profiling / With Coolant



Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A16T-SDUPR/L 3	32.52	1.000	1.300	0.750	12.000	0°	0°	¼-18	54803	54802
A20U-SDUPR/L 3	32.52	1.250	1.750	0.875	14.000	0°	0°	⅜-18	54815	54814
A24U-SDUPR/L 3	32.52	1.500	2.000	1.000	14.000	0°	0°	⅜-18	54833	54832

Spare Parts



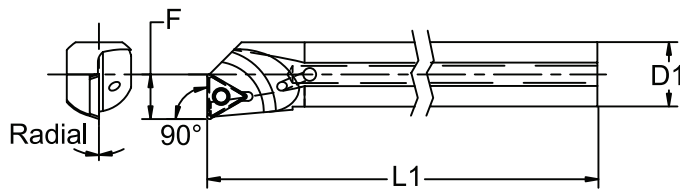
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
32.52	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

BORING BARS

ISO Screw Down

A-STFPR/L 90° Lead Boring / With Coolant

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A16T-STFPR/L 3	32.52	1.000	1.190	0.625	12.000	0°	0°	¼-18	54805	54804
A20U-STFPR/L 3	32.52	1.250	1.530	0.765	14.000	0°	0°	⅜-18	54817	54816
A24U-STFPR/L 3	32.52	1.500	1.780	0.890	14.000	0°	0°	⅝-18	54835	54834

Spare Parts



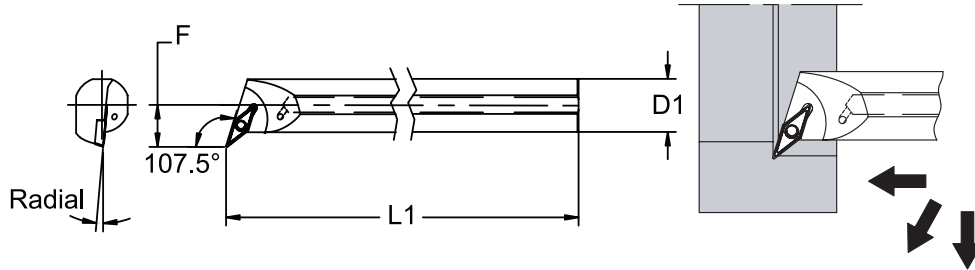
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
32.52	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

BORING BARS

ISO Screw Down

A-SVQBR/L 107.5° Lead Boring & Profiling / With Coolant

35° Diamond Insert
Use Insert Style VBxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A16T-SVQBR/L 3	332	1.000	1.375	0.750	12.000	-6°	0°	¼-18	54807	54806
A20U-SVQBR/L 3	332	1.250	1.625	0.875	14.000	-8°	0°	⅜-18	54819	54818
A24U-SVQBR/L 3	332	1.500	2.000	1.000	14.000	-8°	0°	⅜-18	54837	54836

Spare Parts



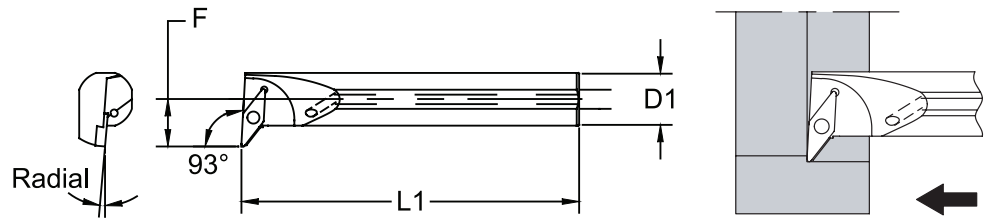
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
332	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

BORING BARS

ISO Screw Down

A-SVUBR/L 93° Lead Boring & Profiling / With Coolant

35° Diamond Insert
Use Insert Style VBxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A12S-SVUBR/L 3	332	0.750	1.500	0.750	10.000	-5°	0°	①	54787	54786
A16T-SVUBR/L 3	332	1.000	1.750	0.875	12.000	-5°	0°	¼-18	54809	54808
A20U-SVUBR/L 3	332	1.250	2.000	1.000	14.000	-5°	0°	⅜-18	54821	54820
A24U-SVUBR/L 3	332	1.500	2.250	1.125	14.000	-5°	0°	⅜-18	54839	54838
A32V-SVUBR/L 3	332	2.000	2.750	1.375	14.000	-5°	0°	⅜-18	54845	54844

① 3/16 Drill Hole

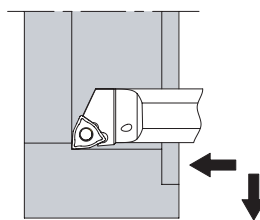
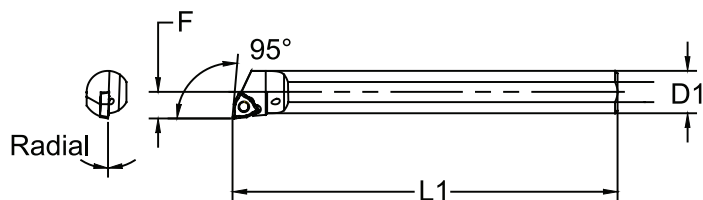
Spare Parts



Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
332	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

A-SWLPR/L 95° Lead Turning / With Coolant

Trigon Insert
Use Insert Style WPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	NPT	Right Hand	Left Hand
A06M-SWLPR/L 2	21.51	0.375	0.480	0.250	6.000	-5°	0°	①	54777	54776
A08R-SWLPR/L 2	21.51	0.500	0.600	0.312	8.000	-2°	0°	1/16-27	54779	54778
A10S-SWLPR/L 3	32.52	0.625	0.770	0.406	10.000	-3°	0°	1/8-27	54781	54780
A12S-SWLPR/L 3	32.52	0.750	0.930	0.500	10.000	-2°	0°	1/8-27	54789	54788
A16T-SWLPR/L 3	32.52	1.000	1.200	0.640	12.000	0°	0°	1/4-18	54811	54810

① 3/16 Drill Hole

Spare Parts



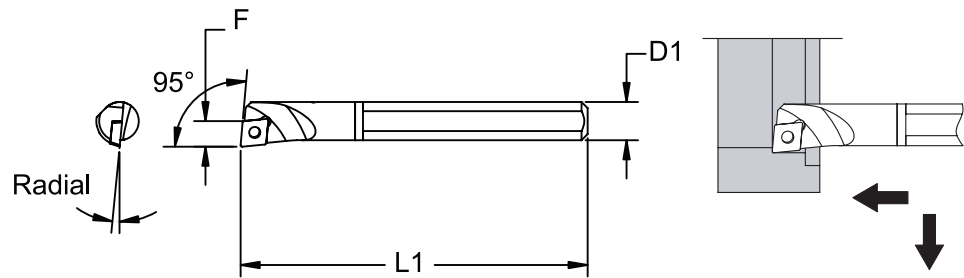
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part#	PT-542T	T-7 Torx® Wrench
	EDP#	52286	50101
32.52	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

BORING BARS

ISO Screw Down

C-SCLPR/L 95° Lead Boring & Facing / Carbide Bar / No Coolant

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
C06M-SCLPR/L 2	21.51	0.375	0.500	0.250	6.000	-6°	0°	55260	55259
C08R-SCLPR/L 2	21.51	0.500	0.625	0.312	8.500	-6°	0°	55265	55264
C10S-SCLPR/L 2	21.51	0.625	0.812	0.406	10.000	-2°	0°	55271	55270
C12S-SCLPR/L 3	32.52	0.750	1.000	0.500	10.000	-2°	0°	55275	55274

Spare Parts



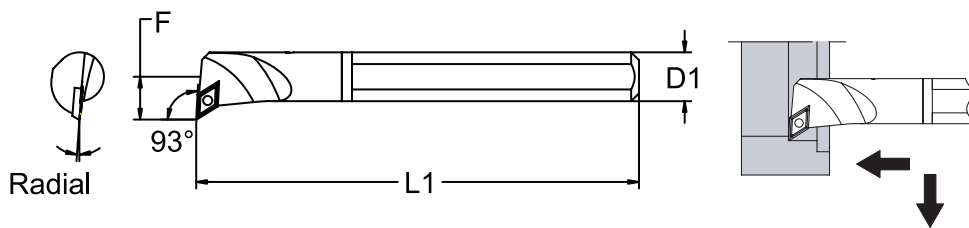
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part#	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101
32.52	Part#	PT-559T	T-15 Torx® Wrench
	EDP#	52292	50087

BORING BARS

ISO Screw Down

C-SDUPR/L 93° Lead Boring & Profiling / Carbide Bar / No Coolant

55° Diamond Insert
Use Insert Style DPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
C06M-SDUPR/L 2	21.51	0.375	0.750	0.375	6.000	-3°	0°	55261	55278
C08R-SDUPR/L 2	21.51	0.500	0.812	0.406	8.500	-3°	0°	55267	55266

Spare Parts



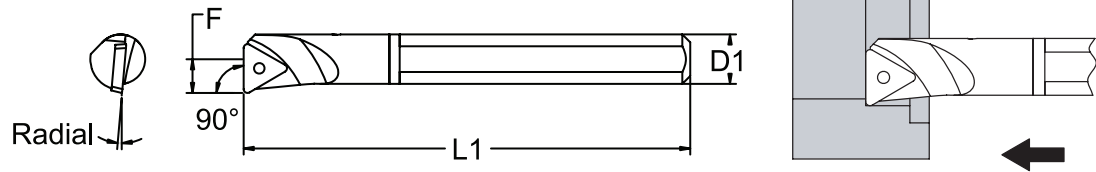
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part#	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101

BORING BARS

ISO Screw Down

C-STFPR/L 90° Lead Boring / Carbide Bar / No Coolant

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
C06M-STFPR/L 2	21.51	0.375	0.500	0.250	6.000	-6°	0°	55263	55262
C08R-STFPR/L 2	21.51	0.500	0.625	0.312	8.500	-6°	0°	55269	55268
C10S-STFPR/L 2	21.51	0.625	0.812	0.406	10.000	-2°	0°	55273	55272
C12S-STFPR/L 3	32.52	0.750	1.000	0.500	10.000	-2°	0°	55277	55276

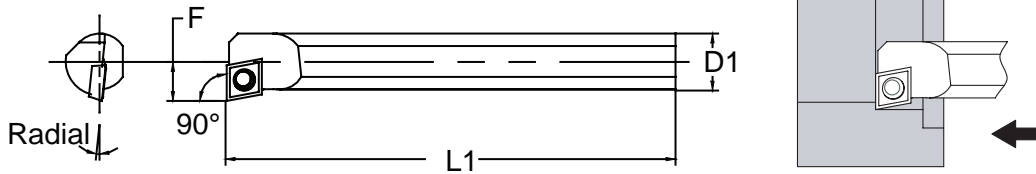
Spare Parts



Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51 (D1 = .375 & .500)	Part#	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101
21.51 (D1 = .625)	Part#	PT-542T	T-7 Torx® Wrench
	EDP#	52286	50101
32.52	Part#	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

S-SCFPR/L 90° Lead Boring / No Coolant

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
S06(237)-SCFPR/L 2	21.51	0.375	0.500	0.250	2.370	-6°	0°	54858	00942
S06M-SCFPR/L 2	21.51	0.375	0.500	0.250	6.000	-6°	0°	54863	54862
S08(275)-SCFPR/L 2	21.51	0.500	0.625	0.312	2.750	-6°	0°	54870	00947
S08R-SCFPR/L 2	21.51	0.500	0.625	0.312	8.000	-6°	0°	54879	54878
S10(312)-SCFPR/L 2	21.51	0.625	0.812	0.406	3.120	-2°	0°	54886	00953
S10S-SCFPR/L 2	21.51	0.625	0.812	0.406	10.000	-2°	0°	54900	54946
S12S-SCFPR/L 3	32.52	0.750	1.000	0.500	10.000	-2°	0°	54917	54916

Spare Parts



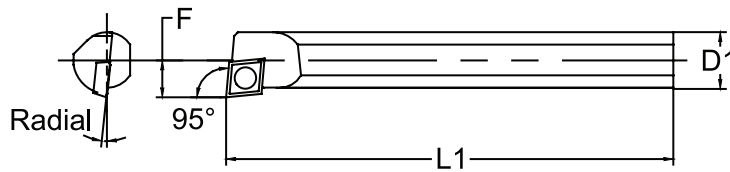
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part#	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101
32.52	Part#	PT-559T	T-15 Torx® Wrench
	EDP#	52292	50087

BORING BARS

ISO Screw Down

S-SCLPR/L 95° Lead Boring & Facing / No Coolant

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
S04H-SCLPR/L 1512	1.51.21	0.250	0.312	0.156	4.000	-9°	0°	54856	54203
S05H-SCLPR/L 1815	1.81.51	0.312	0.375	0.188	4.000	-8.5°	0°	54857	00941
S06(237)-SCLPR/L 2	21.51	0.375	0.500	0.250	2.380	-6°	0°	54859	00946
S06M-SCLPR/L 2	21.51	0.375	0.500	0.250	6.000	-6°	0°	54865	54864
S08(275)-SCLPR/L 2	21.51	0.500	0.625	0.312	2.750	-6°	0°	54871	54204
S08R-SCLPR/L 2	21.51	0.500	0.625	0.312	8.000	-6°	0°	54881	54880
S10(312)-SCLPR/L 2	21.51	0.625	0.812	0.406	3.120	-2°	0°	54887	00954
S10S-SCLPR/L 2	21.51	0.625	0.812	0.406	10.000	-2°	0°	54902	54901
S12S-SCLPR/L 3	32.52	0.750	1.000	0.500	10.000	-2°	0°	54919	54918

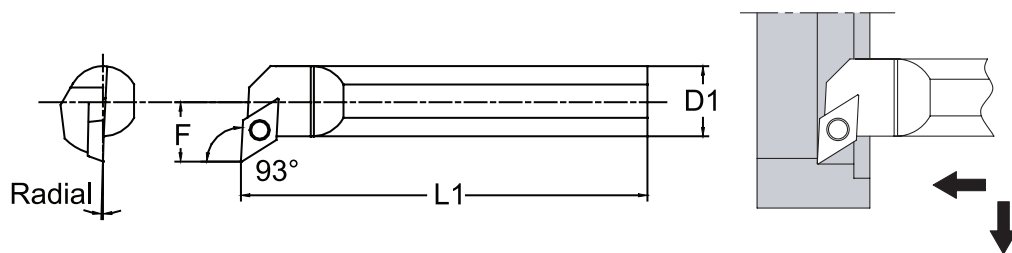
Spare Parts



Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
1.51.21	Part#	PT-670T	T-6 Torx® Wrench
	EDP#	52305	50098
1.81.51	Part#	PT-718T	T-7 Torx® Wrench
	EDP#	52309	50101
21.51	Part#	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101
32.52	Part#	PT-559T	T-15 Torx® Wrench
	EDP#	52292	50087

S-SDUPR/L 93° Lead Boring & Profiling / No Coolant

55° Diamond Insert
Use Insert Style DPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
S06(237)-SDUPR/L 2	21.51	0.375	0.750	0.375	2.380	-3°	0°	54860	00944
S06M-SDUPR/L 2	21.51	0.375	0.750	0.375	6.000	-3°	0°	54867	54866
S08(275)-SDUPR/L 2	21.51	0.500	0.812	0.406	2.750	-3°	0°	54872	66269
S08R-SDUPR/L 2	21.51	0.500	0.812	0.406	8.000	-3°	0°	54883	54882
S10(312)-SDUPR/L 2	21.51	0.625	1.000	0.500	3.120	-3°	0°	54888	00955
S10S-SDUPR/L 2	21.51	0.625	1.000	0.500	10.000	-3°	0°	54904	54903
S12S-SDUPR/L 3	32.52	0.750	1.500	0.750	10.000	-0°	0°	54921	54920

Spare Parts



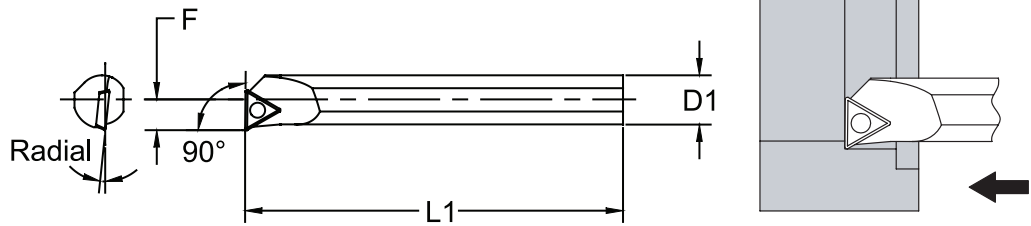
Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part #	PT-589T	T-7 Torx® Wrench
	EDP#	52295	50101
32.52	Part #	PT-544T	T-15 Torx® Wrench
	EDP#	52288	50087

BORING BARS

ISO Screw Down

S-STFPR/L 90° Lead Boring / No Coolant

Triangular Insert
Use Insert Style TPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions						EDP #	
		D1	Min. Bore	F	L1	Radial	Axial	Right Hand	Left Hand
S06(237)-STFPR/L2	21.51	0.375	0.500	0.250	2.380	-6°	0°	54861	00946
S06M-STFPR/L 2	21.51	0.375	0.500	0.250	6.000	-6°	0°	54869	54868
S08(275)-STFPR/L 2	21.51	0.500	0.625	0.312	2.750	-6°	0°	54873	54205
S08R-STFPR/L 2	21.51	0.500	0.625	0.312	8.000	-6°	0°	54885	54884
S10(312)-STFPR/L 2	21.51	0.625	0.812	0.406	3.120	-2°	0°	54889	00966
S10S-STFPR/L 2	21.51	0.625	0.812	0.406	10.000	-2°	0°	54906	54905
S12S-STFPR/L 3	32.52	0.750	1.000	0.500	10.000	-2°	0°	54923	54922

Spare Parts

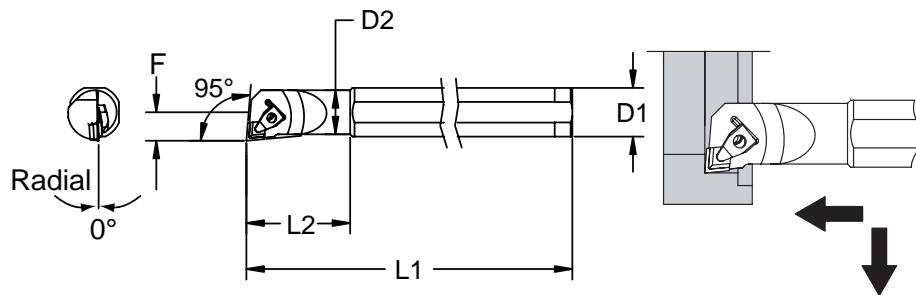


Insert Size	Part#/EDP#	Components	
		Lock Pin	Torx® Wrench
21.51	Part #	PT-589T	T-7 Torx® Wrench
	EDPT#	52295	50101
21.51 (S10S-STFPR/L2 Only)	Part #	PT-542T	T-7 Torx® Wrench
	EDPT#	52286	50101
32.52	Part #	PT-544T	T-15 Torx® Wrench
	EDPT#	52288	50087

Positive Rake with Top Clamp

BNV-CLR 95° Bore & Face / No Coolant

80° Diamond Insert
Use Insert Style CPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
BNV-CLR/L-100-42	422	1.000	1.500	0.750	0.88	0°	5°	14.00	2.50	54659	54658

Spare Parts



Insert Size	Part#/EDP#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	Mech. C'Bkr
422	Part#	SCPGN-42	SSS-1	NC-2	CSC-1B	NCGD-4-050
	EDP#	09199	53039	59078	52819	09061

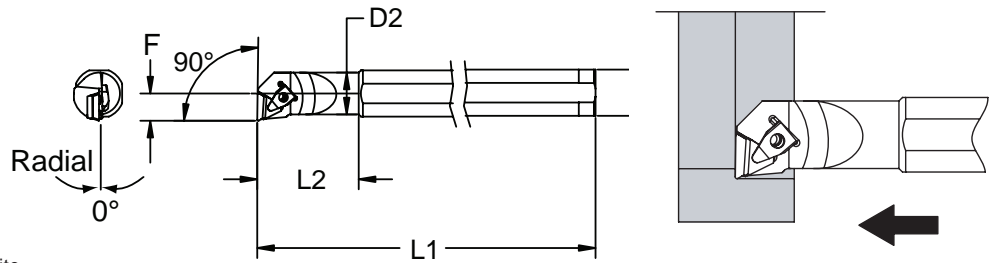
* For recommended torque drive values and lubrication see Reference Materials Section.

BORING BARS

Positive Rake with Top Clamp

BNV-TFR/L 90° Lead Boring / No Coolant

Triangular Insert
Use Insert Style TFxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
BNV-TFR/L-100-32	322	1.000	1.250	0.625	0.88	0°	5°	14.00	3.00	54664	54661
BNV-TFR/L-125-32	322	1.250	1.500	0.750	1.06	0°	5°	14.00	3.00	54665	54662
BNV-TFR/L-150-43	432	1.500	1.625	0.812	1.25	0°	5°	14.00	3.00	54666	54663

Spare Parts

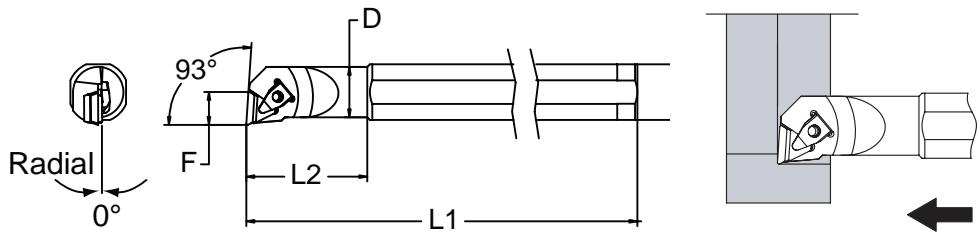


Insert Size	D1	Part#/EDP#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	Mech. C'Bkr
322	1.000	Part#	-	-	NC-2	CSC-1B	NCBT-2-100
		EDP#	-	-	59078	52819	09039
	1.250	Part#	STBC-12-2A	SSS-1	NC-2	CSC-1B	NCBT-2-100
		EDP#	09325	53039	59078	52819	09039
432	1.500	Part#	STBC-16-3A	SSS-2	NC-2	CSC-1B	NCBT-3-150
		EDP#	09328	52358	59078	52819	09049

* For recommended torque drive values and lubrication see Reference Materials Section.

Positive Rake with Top Clamp

BNV-TUR/L 93° Lead Boring / No Coolant



Triangular Insert
Use Insert Style TPxx

Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions								EDP#	
		D1	Min. Bore	F	D2	Radial	Axial	L1	L2	Right Hand	Left Hand
BNV-TUR/L-100-32	322	1.000	1.250	0.625	0.88	0°	5°	14.00	2.50	54668	54667
BNV-TUR/L-125-32	322	1.250	1.500	0.750	1.06	0°	5°	14.00	3.00	54669	54676
BNV-TUR/L-150-43	432	1.500	1.625	0.812	1.25	0°	5°	14.00	3.00	54670	54016

Spare Parts



Insert Size	D1	Part#/EDP#	Shim Seat	Shim Screw	Clamp	Clamp Screw*	Mech. C'Bkr
322	1.000	Part#	-	-	NC-2	CSC-1B	NCBT-2-100
		EDP#	-	-	59078	52819	09039
	1.250	Part#	STBC-12-2A	SSS-1	NC-2	CSC-1B	NCBT-2-100
		EDP#	09325	53039	59078	52819	09039
432	1.500	Part#	STBC-16-3A	SSS-2	NC-2	CSC-1B	NCBT-3-150
		EDP#	09328	52358	59078	52819	09049

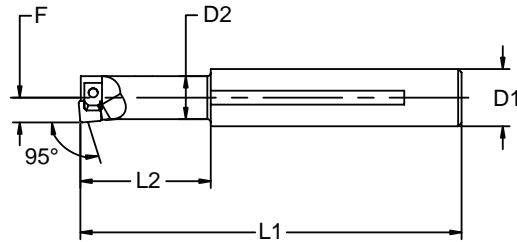
* For recommended torque drive values and lubrication see Reference Materials Section.

BORING BARS

Flex-A-Dex - Clamp Style

SDS 95° Lead / Non-Adjustable / Negative Radial Rake / No Coolant

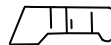
Square Insert
Use Insert Style SPxx, SMxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP#
		Min. Bore	F	D1	D2	L1	L2	Axial	
SDS-37	731	0.365	0.183	0.375	0.320	4.620	0.990	0°	54993
SDS-50	731	0.490	0.245	0.500	0.430	5.120	1.310	0°	54994
SDS-62	SM10-3-2	0.615	0.308	0.750	0.500	5.620	1.500	0°	54995
SDS-75	SM10-3-2	0.740	0.370	0.750	0.620	6.120	1.870	5°	54996
SDS-87	322	0.865	0.433	1.000	0.750	6.620	2.250	5°	54997
SDS-100	322	0.990	0.495	1.000	0.870	7.120	2.620	5°	54991

Spare Parts



Insert Size	Part#/EDP#	Clamp	Clamp Screw*
SPxx 731	Part#	FDC-37	#3-48 x 3/16 SHCS
	EDP#	62200	52048
SPxx 731	Part#	FDC-37	#3-48 x 1/4 SHCS
	EDP#	62200	52046
SM-10-3-2	Part#	AC-6-2	CS-8B
	EDP#	59035	52815
SPxx 322	Part#	AC-6-2	CS-8D
	EDP#	59035	52816

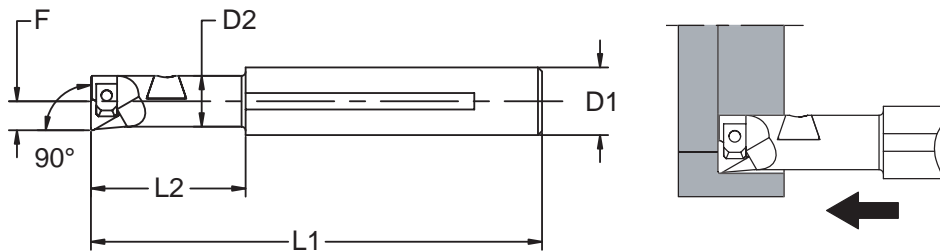
* For recommended torque drive values and lubrication see Reference Materials Section.

* Non-adjustable bars are manufactured to .010 below nominal diameters.
Adjustment must be provided by the machine.

Flex-A-Dex - Clamp Style

FDTW 90° Lead Boring / Adjustable / Negative Radial Rake / No Coolant

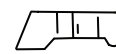
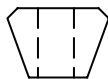
Triangular Insert
Use Insert Style TBxx, TPxx



Right-hand shown, Left-hand opposite.

Part Number	Insert Size	Dimensions							EDP#
		Min. Bore	F	D1	D2	L1	L2	Axial	
FDTW-3715	TB521	0.375	0.187	0.375	0.320	4.620	0.990	0°	54986
FDTW-5015	TB521	0.500	0.250	0.500	0.430	5.120	1.310	0°	54987
FDTW-6215	TP731	0.625	0.312	0.750	0.500	5.620	1.500	0°	54988
FDTW-7520	TP221	0.750	0.375	0.750	0.620	6.120	1.870	5°	54989
FDTW-8720	TP221	0.875	0.437	1.000	0.750	6.620	2.250	5°	54990
FDTW-10020	TP321	1.000	0.500	1.000	0.870	7.120	2.620	5°	54978

Spare Parts



Insert Size	Part#/EDP#	Adjusting Wedge	Soc-Set Screw (PCSSS)	Ball Dia.	Clamp	Clamp Screw*
TBxx 521	Part#	FW-3215	#8-32x1/8	0.063	FDC-37	#3-48x3/16 SHCS
	EDP#	53090	00987	-	62200	52048
TBxx 521	Part#	FW-4315	#8-32x3/16	0.094	FDC-37	#3-48x1/4 SHCS
	EDP#	53091	00988	-	62200	52046
TPxx 731	Part#	FW-5015	#8-32x3/16	0.094	AC-6-2	CS-8B
	EDP#	53092	00988	-	59035	52815
TPxx 221	Part#	FW-6220	1/4-28x3/16	0.125	AC-6-2	CS-8B
	EDP#	53093	00982	-	59035	52815
TPxx 221	Part#	FW-7520	1/4-28x1/4	0.125	AC-6-2	CS-8B
	EDP#	53094	RFQ**	-	59035	52815
TPxx 321	Part#	FW-8720	5/16-24x3/8	0.125	AC-6-2	CS-8D
	EDP#	53095	00986	-	59035	52816

Adjustment $+0.010''$ from nominal diameter.
 $-0.003''$

* For recommended torque drive values and lubrication see Reference Materials Section.

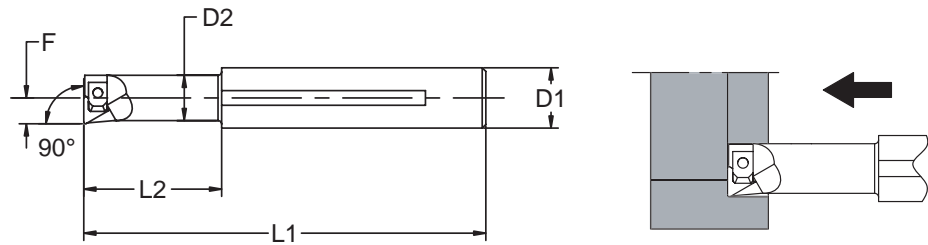
**Contact your local Valenite Distributor or call Valenite Customer Service

BORING BARS

Flex-A-Dex - Clamp Style

SDT 90° Lead / Non-Adjustable / Negative Radial Rake / No Coolant

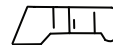
Triangular Insert
Use Insert Style TBxx, TPxx



Right-hand shown, Left-hand opposite.

Part Number		Insert Size	Dimensions							EDP#	
Right Hand	Left Hand		Min. Bore	F	D1	D2	L1	L2	Axial	Right Hand	Left Hand
SDT-37	SDT-37 LH	TB521	0.365	0.183	0.375	0.320	4.620	0.990	0°	55015	55018
SDT-50	SDT-50 LH	TB521	0.490	0.245	0.500	0.430	5.120	1.310	0°	55019	55022
SDT-62	SDT-62 LH	TP731	0.615	0.308	0.750	0.500	5.620	1.500	0°	55023	55025
SDT-75	SDT-75 LH	TP221	0.740	0.370	0.750	0.620	6.120	1.870	5°	55026	55029
SDT-87	SDT-87 LH	TP221	0.865	0.433	1.000	0.750	6.620	2.250	5°	55030	55033
SDT-100	SDT-100 LH	TP321	0.990	0.495	1.000	0.870	7.120	2.620	5°	54999	55001

Spare Parts



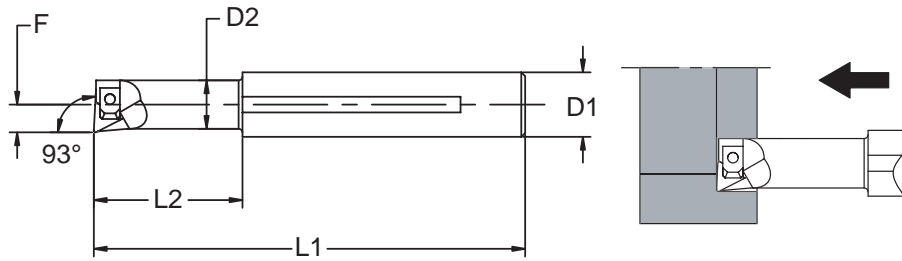
Insert Size	Part#/EDP#	Clamp	Clamp Screw*
TBxx 521	Part#	FDC-37	#3-48x3/16 SHCS
	EDP#	62200	52048
TBxx 521	Part#	FDC-37	#3-48x1/4 SHCS
	EDP#	62200	52046
TPxx 731	Part#	AC-6-2	CS-8B
	EDP#	59035	52815
TPxx 221	Part#	AC-6-2	CS-8B
	EDP#	59035	52815
TPxx 321	Part#	AC-6-2	CS-8D
	EDP#	59035	52816

Non-adjustable bars are manufactured to .010 below nominal diameters.
Adjustment must be provided by the machine.

* For recommended torque drive values and lubrication see Reference Materials Section.

Flex-A-Dex - Clamp Style

SDT-3° 93° Lead / Non-Adjustable / Negative Radial Rake / No Coolant

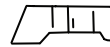


Triangular Insert
Use Insert Style TBxx, TPxx

Right-hand shown, Left-hand opposite.

Part Number		Insert Size	Dimensions							EDP#	
Right Hand	Left Hand		Min. Bore	F	D1	D2	L1	L2	Axial	Right Hand	Left Hand
SDT-37-3°	SDT-37-3° LH	TB521	0.365	0.183	0.375	0.320	4.620	0.990	0°	55016	55017
SDT-50-3°	SDT-50-3° LH	TB521	0.490	0.245	0.500	0.430	5.120	1.310	0°	55020	55021
SDT-62-3°	SDT-62-3° LH	TP731	0.615	0.308	0.750	0.500	5.620	1.500	0°	55024	54199
SDT-75-3°	SDT-75-3° LH	TP221	0.740	0.370	0.750	0.620	6.120	1.870	5°	55027	55028
SDT-87-3°	SDT-87-3° LH	TP221	0.865	0.433	1.000	0.750	6.620	2.250	5°	55031	54875
SDT-100-3°	SDT-100-3° LH	TP321	0.990	0.495	1.000	0.870	7.120	2.620	5°	55000	54874

Spare Parts



Insert Size	Part#/EDP#	Clamp	Clamp Screw*
TBxx 521	Part#	FDC-37	#3-48x3/16 SHCS
	EDP#	62200	52048
TBxx 521	Part#	FDC-37	#3-48x1/4 SHCS
	EDP#	62200	52046
TPxx 731	Part#	AC-6-2	CS-8B
	EDP#	59035	52815
TPxx 221	Part#	AC-6-2	CS-8B
	EDP#	59035	52815
TPxx 321	Part#	AC-6-2	CS-8D
	EDP#	59035	52816

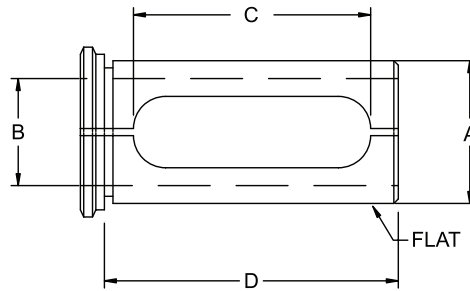
Non-adjustable bars are manufactured to .010 below nominal diameters.
Adjustment must be provided by the machine.

* For recommended torque drive values and lubrication see Reference Materials Section.

BORING BARS

VEAB Split & Non-Split Bushings

Split Bushings / Inch To Inch



Multi-Functional

Elongated Slot for Clamping through the Bushing

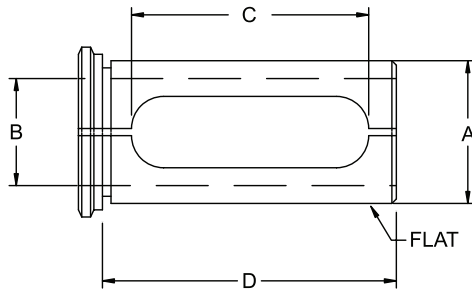
Flat and Split for Bars without Flats

Through-Harden Alloy Steel and Precision Ground

Part Number	Bushing Diameter A	Bore Size B	Slot Length C	Length From Shoulder D	EDP#
VEAB 16 08 CX	1.000	0.500	2.380	2.750	62682
VEAB 16 10 CX	1.000	0.625	2.380	2.750	62683
VEAB 16 12 CX	1.000	0.750	2.380	2.750	62684
VEAB 20 06 CX	1.250	0.375	2.750	3.250	57360
VEAB 20 08 CX	1.250	0.500	2.750	3.250	57361
VEAB 20 10 CX	1.250	0.625	2.750	3.250	57362
VEAB 20 12 CX	1.250	0.750	2.750	3.250	57363
VEAB 20 16 CX	1.250	1.000	2.750	3.250	57352
VEAB 24 06 CX	1.500	0.375	3.000	3.375	57364
VEAB 24 08 CX	1.500	0.500	3.000	3.375	57365
VEAB 24 10 CX	1.500	0.625	3.000	3.375	57366
VEAB 24 12 CX	1.500	0.750	3.000	3.375	57367
VEAB 24 16 CX	1.500	1.000	3.000	3.375	57368
VEAB 24 20 CX	1.500	1.250	3.000	3.375	57369
VEAB 28 08 CX	1.750	0.500	3.125	3.500	57370
VEAB 28 10 CX	1.750	0.625	3.125	3.500	57371
VEAB28 12 CX	1.750	0.750	3.125	3.500	57372
VEAB 28 16 CX	1.750	1.000	3.125	3.500	57373
VEAB 28 20 CX	1.750	1.250	3.125	3.500	57374
VEAB 28 24 CX	1.750	1.500	3.125	3.500	57375
VEAB 32 08 CX	2.000	0.500	3.625	4.000	57376
VEAB 32 10 CX	2.000	0.625	3.625	4.000	57377
VEAB 32 12 CX	2.000	0.750	3.625	4.000	57378
VEAB 32 16 CX	2.000	1.000	3.625	4.000	57379
VEAB32 20 CX	2.000	1.250	3.625	4.000	57380
VEAB 32 24 CX	2.000	1.500	3.625	4.000	57381
VEAB 32 28 CX	2.000	1.750	3.625	4.000	57382

VEAB Split & Non-Split Bushings

Split Bushings / Inch To Metric



- Multi-Functional
- Elongated Slot for Clamping through the Bushing
- Flat and Split for Bars without Flats
- Through-Harden Alloy Steel and Precision Ground

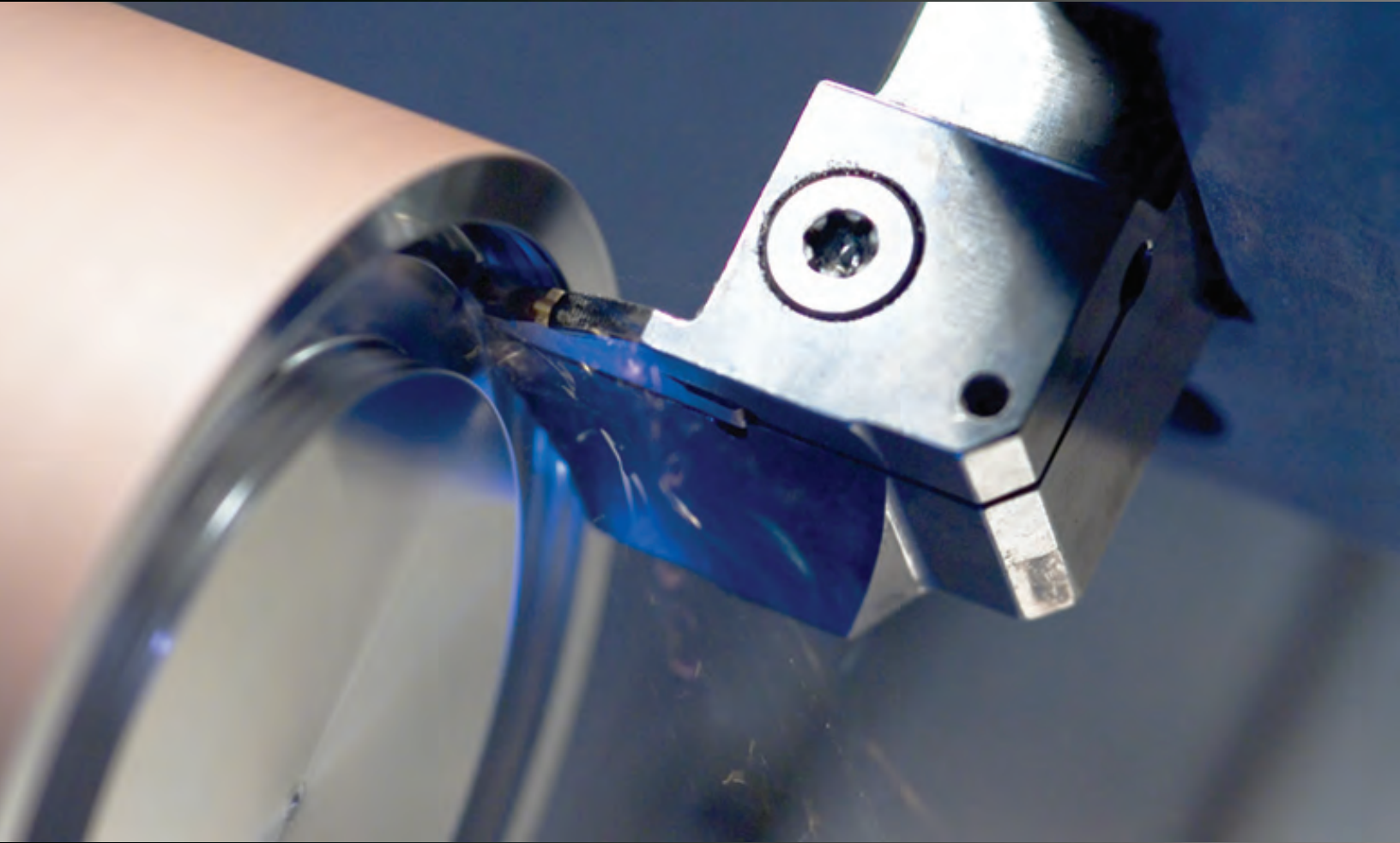
Part Number	Bushing Diameter A	Bore Size B (mm)	Slot Length C	Length From Shoulder D	EDP#
VEAB 68 72 CX20MM	1.250	20	2 3/4	3 1/4	57385
VEAB 68 72 CX25MM	1.250	25	2 3/4	3 1/4	57386
VEAB 68 73 CX20MM	1.500	20	3	3 3/8	57389
VEAB 68 73 CX25MM	1.500	25	3	3 3/8	57390
VEAB 68 73 CX32MM	1.500	32	3	3 3/8	57391
VEAB 68 74 CX20MM	1.750	20	3 1/8	3 1/2	57392
VEAB 68 74 CX25MM	1.750	25	3 1/8	3 1/2	57393
VEAB 68 74 CX32MM	1.750	32	3 1/8	3 1/2	57394
VEAB 68 75 CX20MM	2.000	20	3 5/8	4	57396
VEAB 68 75 CX25MM	2.000	25	3 5/8	4	57397
VEAB 68 75 CX32MM	2.000	32	3 5/8	4	57398

Non-Split Bushings

Part Number	Bushing Diameter A	Bore Size B	Slot Length C	Length From Shoulder D	EDP#
VEAB 24 05 CS	1.500	0.313	2.120	2.500	56529
VEAB 24 06 CS	1.500	0.375	2.120	2.500	56530
VEAB 24 08 CS	1.500	0.500	2.120	2.500	56531
VEAB 24 10 CS	1.500	0.625	2.120	2.500	56532
VEAB 24 12 CS	1.500	0.750	2.120	2.500	56533
VEAB 24 16 CS	1.500	1.000	2.120	2.500	56534
VEAB 24 20 CS	1.500	1.250	2.120	2.500	56535

At Valenite

WE NEVER STOP...



Advancing

- **VTG Two-edge Grooving & Turning System**
Grooving, parting, turning/profiling and face grooving for OD and ID
Productivity Benefits: Increased speed/feed capability, fewer tool changes, better surface finish, excellent repeatability
- **VSG One-edge Parting & Grooving System**
Parting, grooving, profiling and precision grooves for OD and ID
From interrupted cuts at high feed rates to small parts, the VSG system handles it superbly.
- **V-LOC Grooving & Threading System**
Proven V-LOC system versatility with new ValPRO system grades for increased productivity in a wide variety of materials.

Supporting

We can increase your productivity by 20%. Make us prove it!

ValGROOVE™

VTG and VSG Parting and Grooving System.....	D2 - D3
Toolholder Designation	D4
Insert Designation	D5
VTG Toolholder & Insert Geometry Descriptions.....	D6
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V-LOC®

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EconoGROOVE®

Grooving Product Offering	D104 - D110
Grade Description.....	D111 - D113

PARTING & GROOVING

ValGROOVE™ VTG Parting and Grooving System



* Available 2Q-3Q 2007. Contact your Valenite Distributor or Sales for availability.

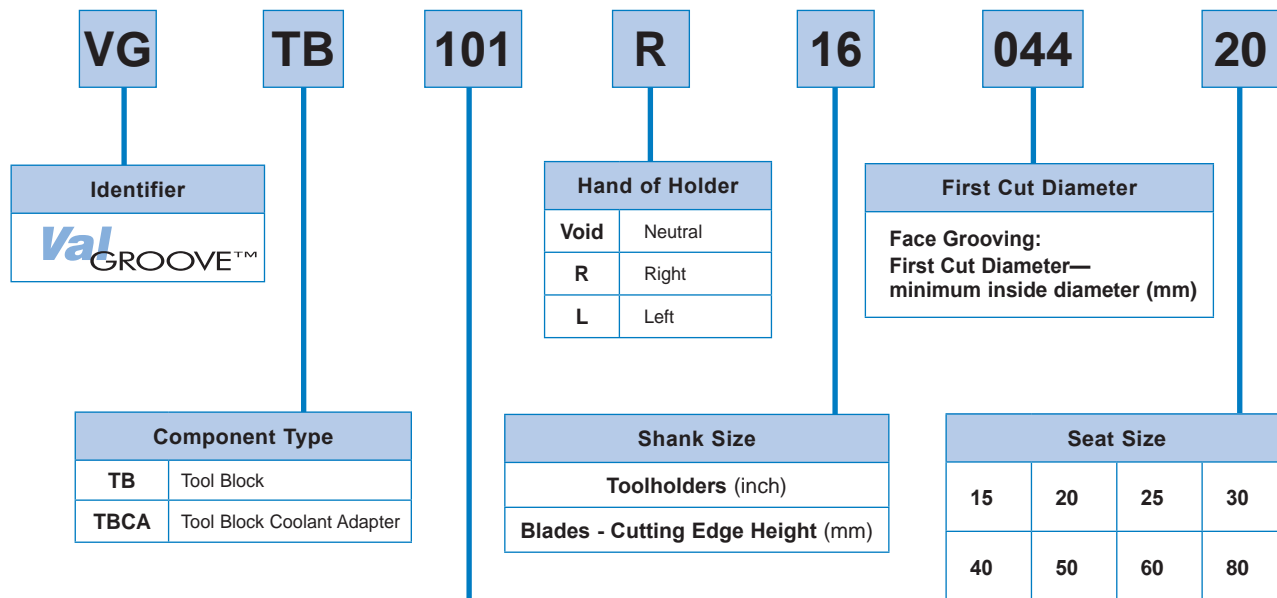
PARTING & GROOVING


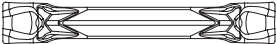
ValGROOVE™ VSG Parting and Grooving System

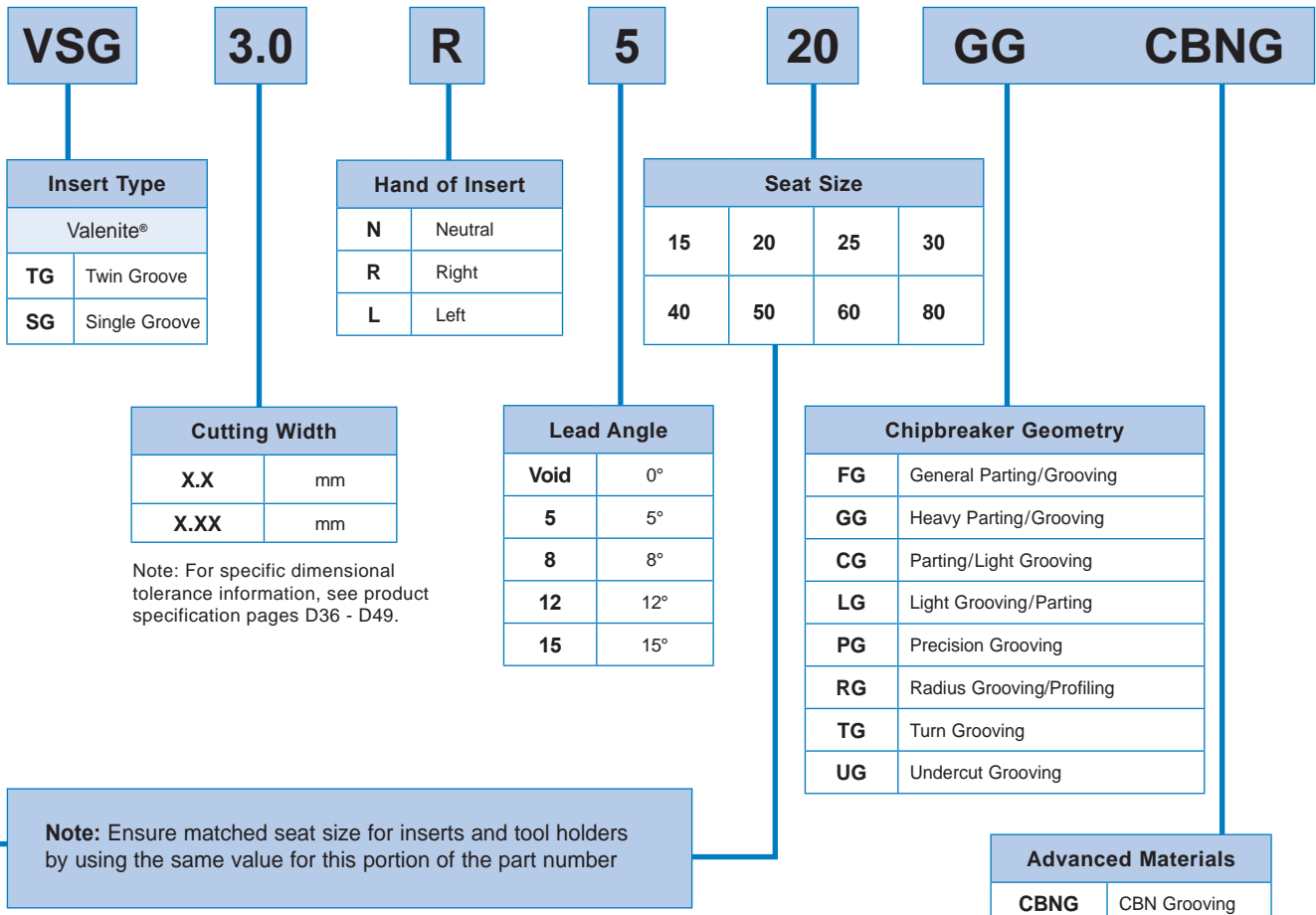


PARTING & GROOVING

ValGROOVE™ Toolholder Designation



Toolholder Style			
Single Ended System		Double Ended System	
			
VG101	Double Ended Parting Blade	VG102	VTG Double Ended Parting Blade
VG103	VDG Double Ended Parting Blade	VG104	VTG Single Ended Parting Blade
VG105	Reinforced Spring Clamp Holder	VG110	Grooving/Turning Holder
VG107	Spring Clamp Parting/Grooving Holder	VG112	Parting/Deep Grooving Holder
VG109	Deep Groove/Parting Holder	VG114	Face Grooving Holder
VG111	Grooving/Turning/Profiling Holder	VG116	90° Face Holder
VG115	Undercut Turning Holder	VG118	ID Turning/Grooving/Boring Bars
VG117	ID Turning/Grooving/Boring Bar	VG130	Shallow Groove/Face Groove Holder
VG121	Swiss/Screw Machine Holder	VG132	90° Shallow Groove/Face Groove Holder
VG123	Manchester Blade	VGSCA	Screw Clamp Anvil
VGWCA	Wedge Clamp Anvil	VGDG	VIDG Replacement Blades
VGBT	MTS System Blades		
VGDG	VIDG Replacement Blades		



VSG Insert Seat Interchangeability

Insert Seat Size	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

- Check for sufficient clearance between tool body & insert.
- Inserts from ValMILL V350 system are also interchangeable with ValGROOVE inserts in the above chart.

VTG Insert Seat Interchangeability

Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 & 40
30	30, 25 & 20	80	80

- When using two edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

PARTING & GROOVING

ValGROOVE™ VTG System Description

VTG System Toolholders for Two-Edge Inserts	VG102	Double-Ended VTG Spring Clamp Parting Blade <ul style="list-style-type: none"> Ideal for parting of bars and tubes up to 1.8 inch diameter
	VG104	Single-Ended VTG Screw Clamp Parting Blade <ul style="list-style-type: none"> Ideal for parting of bars and tubes up to 1.8 inch diameter
	VG110	VTG System Grooving and Turning Toolholder <ul style="list-style-type: none"> Insert clamping designed to resist axial forces when turning Increased speed/feed without encountering vibration problems
	VG112	Deep Grooving and Parting Toolholder <ul style="list-style-type: none"> Deep grooving and parting with VTG inserts Insert clamping designed to resist axial forces Increased speed/ feed without encountering vibration problems
	VG114/VG116	VTG System Face Grooving and Turning Toolholders <ul style="list-style-type: none"> Insert clamping designed to resist axial forces when face grooving and turning Increased speed/feed without encountering vibration problems
	VG118	VTG System I.D. Grooving and Turning Boring Bars <ul style="list-style-type: none"> For internal grooving applications Excellent for internal turning/profiling operations.
	VG 130/132	Shallow Radial Grooving/Face Grooving Toolholders <ul style="list-style-type: none"> VG130 for 0° applications, VG132 for 90° grooving/face grooving Excellent for turning/profiling applications up to .315" deep
	VGSCA	Modular Machining Heads <ul style="list-style-type: none"> Screw clamp anvil (VGSCA) for all VTG inserts Modular system using VHDBS style shanks
VTG System Two-Edge Inserts	VTG-GG	First Choice for Parting and Grooving Operations on All Materials <ul style="list-style-type: none"> Lower cutting forces resulting in reduced vibration Recommended for thin walled tubes and small diameters
	VTG-PG	First Choice for Precision Grooving <ul style="list-style-type: none"> Excellent chip control, especially for stainless steel
	VTG-TG	Excellent Choice for General Plunge Turning <ul style="list-style-type: none"> Medium feed rate capability with good chip control Recommended on steels and stainless steels
	VTG-RG	First Choice for Profiling/Radius Grooving <ul style="list-style-type: none"> Precision ground cutting edge excellent for stainless steel Strong geometry for high temp alloys and interrupted cuts
VTG System Tipped Inserts	VTG-PCD	Alternative for Finish Grooving and Profiling of Both Hardened and Non-Ferrous Materials <ul style="list-style-type: none"> Maintains close tolerance and excellent surface finish Outstanding productivity
	VTG-CBN	

VaIGROOVE™ VSG System Description

VSG System Toolholders for One-Edge Inserts	VG101	Double Ended Parting Blades (VGTB tool block required) <ul style="list-style-type: none"> • Ideal for parting off bars and tubes • Economical system for many applications
	VG103	Double Ended Parting Blades (VDG tool block required) <ul style="list-style-type: none"> • Ideal for parting off bars and tubes • Use only with Valenite VDG Tool Blocks
	VG105	Reinforced Spring Clamp Parting Toolholder <ul style="list-style-type: none"> • Reinforced clamping for better insert seating and lower vibration • Small shanks for lower horsepower machines
	VG107	Spring Clamp Parting Toolholder <ul style="list-style-type: none"> • Parting of bars and tubes • Deep grooving capability with quick change spring clamp design
	VG109	Deep Grooving and Parting Toolholder <ul style="list-style-type: none"> • Excellent for deep grooving operations • Screw clamp for secure insert seating and lower vibration
	VG111	Grooving, Turning and Profiling Toolholder <ul style="list-style-type: none"> • Short reach for minimal deflection in turning and profiling • Screw clamp for secure insert seating and lower vibration
	VG115	Grooving and Undercut Turning Toolholder <ul style="list-style-type: none"> • Designed for undercutting and turning at 45°
	VG117	ID Grooving and Turning Boring Bar <ul style="list-style-type: none"> • For internal grooving and turning applications
	VG 121	Small Shank Toolholders for Swiss Machines <ul style="list-style-type: none"> • "No offset" design for use on small parts • Shank sizes 3/8 to 3/4 inch use insert widths .063" to .203"
	VGWCA	Modular Machining Heads <ul style="list-style-type: none"> • Wedge clamp design for VSG Inserts. • Modular system using VHDBS style shanks
VGDG/VGBT	VIDG Replacement Blades/MTS System Parting Blades	
VSG System One-Edge Inserts	VSG-FG	First Choice for General Parting and Grooving Operations <ul style="list-style-type: none"> • Good chip control and moderate cutting forces • Recommended for tubes and stainless steel applications
	VSG-GG	Ideal for Heavy Parting and Grooving Operations <ul style="list-style-type: none"> • Strong geometry ideal for interrupted cuts or high feed rate operations • For parting off and grooving of steel and cast iron bars
	VSG-CG	Parting and Light Grooving Geometry <ul style="list-style-type: none"> • Minimizes chips and burrs when parting bars and tubes • Excellent for stainless and low carbon steel, ductile and work hardening alloys
	VSG-LG	Optimized for Lower Radial Feed Rates <ul style="list-style-type: none"> • Generates lower cutting forces resulting in reduced vibration • For stainless steels, ductile and work hardening materials
	VSG-PG	Precision Grooving on All Materials <ul style="list-style-type: none"> • Excellent repeatability due to tight tolerances on insert • Low cutting forces and good chip control on many materials
	VSG-RG	Designed for Profiling and Turning on All Materials <ul style="list-style-type: none"> • Generates excellent surface finish • Recommended for stainless and heat resistant materials
	VSG-UG	First Choice for Turning of Reliefs and Undercuts <ul style="list-style-type: none"> • Increased clearance angle permits undercutting • Good chip control provides added value

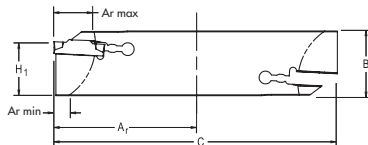
PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG102—Double-Ended Spring Clamp Parting Blades

Use Insert Style:

VTG-xx



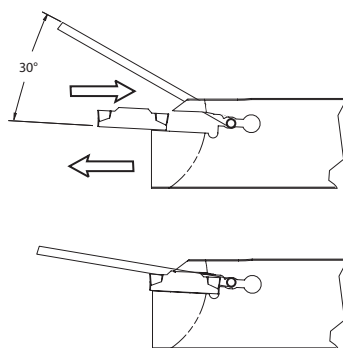
Ar	Seat Size	Part Number	Dimensions					EDP #
			W	A	B	C	H1	
0.590	15	VG102 21 15	0.063	0.047	1.020	3.937	0.827	52218
0.590	15	VG102 25 15	0.063	0.047	1.256	5.906	0.984	52237
0.590	20	VG102 21 20	.073 - .094	0.059	1.020	3.937	0.827	52220
0.787	20	VG102 25 20	.073 - .094	0.059	1.256	5.906	0.984	52238
1.181	25	VG102 21 25	.094 - .125	0.079	1.020	3.937	0.827	52226
2.165	25	VG102 25 25	.094 - .125	0.079	1.256	5.906	0.984	52239
1.181	30	VG102 21 30	.118 - .130	0.093	1.020	3.937	0.827	52231
2.165	30	VG102 25 30	.118 - .130	0.093	1.256	5.906	0.984	52260
2.165	40	VG102 25 40	.156 - .197	0.132	1.256	5.906	0.984	52266
2.165	50	VG102 25 50	.199 - .250	0.171	1.256	5.906	0.984	52267
2.165	60	VG102 25 60	.238 - .255	0.211	1.256	5.906	0.984	52270

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut. Insert key must be ordered separately.

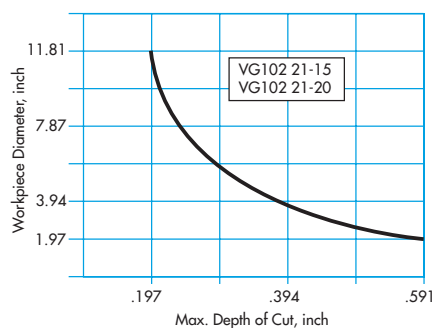
VG102 Spare Parts

Seat Size	Insert Key	EDP#
15	PT1202	56817
20	PT1202	56817
25	PT1202	56817
30	PT1202	56817
40	PT1202	56817
50	PT1202	56817
60	PT1202	56817

VG102 Insert Indexing



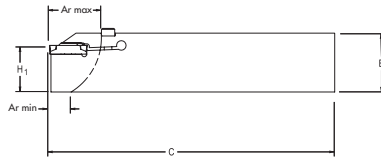
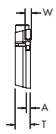
Application Information



ValGROOVE™ VTG Toolholder System

VG104—Single-Ended Screw Clamp Parting Blades

Use Insert Style:
VTG-txx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Right Hand	Left Hand	Dimensions						Right EDP#	Left EDP#
				W	A	B	C	H1	T		
.197-.984	20	VG104 R 25 20	VG104 L 25 20	.073- .094	0.059	1.256	5.906	0.984	0.315	52318	52271
.197-.984	25	VG104 R 25 25	VG104 L 25 25	.094 - .125	0.079	1.256	5.906	0.984	0.315	52320	52273
.197-.984	30	VG104 R 25 30	VG104 L 25 30	.118 - .130	0.093	1.256	5.906	0.984	0.315	52322	52274
.197-1.260	40	VG104 R 25 40	VG104 L 25 40	.156 - .197	0.132	1.256	5.906	0.984	0.315	52336	52276

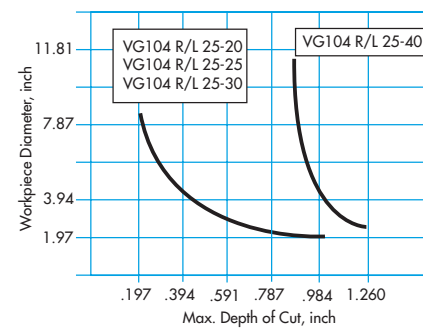
Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG104 Spare Parts

Seat Size	Torx® Wrench	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	3.3	62393	62400
25-40	PT1204T	PT1214T	3.7	62393	62400

*Advanced Torx Plus® locking mechanism

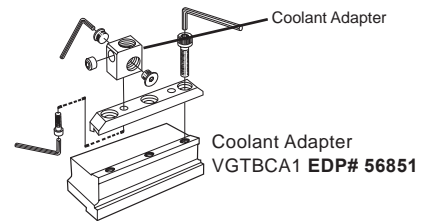
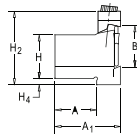
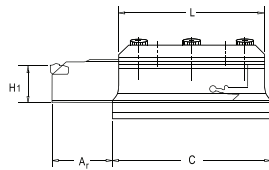
Application Information



PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VGTB Tool Blocks



Part Number	Dimensions								EDP#
	A	A1	H	H1	H2	H4	C	L	
VGTB10 16	0.63	1.30	0.63	0.62	1.34	0.16	3.15	2.76	58321
VGTB12 21	0.73	1.46	0.75	0.84	1.79	0.43	3.15	2.76	58322
VGTB16 21	1.03	1.70	1.00	0.84	1.75	0.20	4.72	4.32	58323
VGTB16 25	0.98	1.71	1.00	0.98	1.79	0.43	4.72	4.33	58324
VGTB20 25	1.23	1.96	1.25	0.98	2.15	0.21	4.72	4.33	58326
VGTB24 25	1.48	2.21	1.50	0.98	2.40	0.20	4.72	4.33	62415

Notes:

- The blade height, H1 must match the H1 - dimension of the tool block. Example: Blade - VG101 16 15 , Tool block VGTB 10 16.
- Blade height refers to dimension H1 from the base of the blade to the insert cutting edge.

VGTB Spare Parts

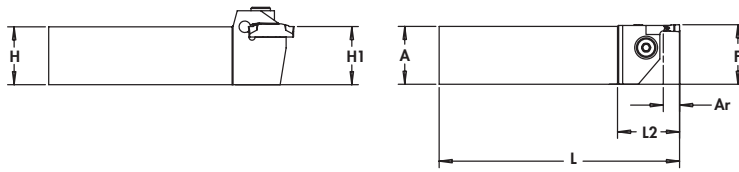
Part Number	Hex Wrench	Screw	Clamp	Wrench EDP#	Screw EDP#	Clamp EDP#
VGTB10 16	PT1212	PT1218	CL1221	62398	62404	62292
VGTB12 21	PT1212	PT1218	CL1221	62398	62404	62292
VGTB16 21	PT1212	PT1219	CL1225	62398	62405	62293
VGTB16 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB20 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB24 25	PT1212	PT1219	CL1225	62398	62405	62293

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG110—Grooving/Profiling

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.320	15	0.047	VG110 R 08 15	VG110 L 08 15	0.063	0.500	0.512	0.500	0.500	5.00	1.004	51106	51094
0.320	15	0.047	VG110 R 10 15	VG110 L 10 15	0.063	0.625	0.669	0.625	0.625	4.00	1.004	51115	51095
0.320	20	0.059	VG110 R 08 20	VG110 L 08 20	.073- .094	0.500	0.512	0.500	0.500	4.50	1.004	58408	58387
0.320	20	0.059	VG110 R 10 20	VG110 L 10 20	.073- .094	0.625	0.669	0.625	0.625	4.50	1.004	58409	58388
0.320	20	0.059	VG110 R 12 20	VG110 L 12 20	.073- .094	0.750	0.827	0.750	0.750	4.50	1.004	58411	58390
0.320	20	0.059	VG110 R 16 20	VG110 L 16 20	.073- .094	1.000	1.028	1.000	1.000	5.00	1.004	58415	58394
0.400	25	0.079	VG110 R 10 25	VG110 L 10 25	.094 - .125	0.625	0.669	0.625	0.625	4.50	1.004	58410	58389
0.400	25	0.079	VG110 R 12 25	VG110 L 12 25	.094 - .125	0.750	0.827	0.750	0.750	4.50	1.142	58412	58391
0.400	25	0.079	VG110 R 16 25	VG110 L 16 25	.094 - .125	1.000	1.024	1.000	1.000	5.00	1.142	58416	58395
0.400	25	0.079	VG110 R 20 25	VG110 L 20 25	.094 - .125	1.250	1.299	1.250	1.250	6.00	1.142	58422	58401
0.400	30	0.093	VG110 R 12 30	VG110 L 12 30	.118 - .130	0.750	0.827	0.750	0.750	4.50	1.181	58413	58392
0.400	30	0.093	VG110 R 16 30	VG110 L 16 30	.118 - .130	1.000	1.024	1.000	1.000	5.00	1.181	58417	58396
0.400	30	0.093	VG110 R 20 30	VG110 L 20 30	.118 - .130	1.250	1.299	1.250	1.250	6.00	1.181	58423	58402
0.510	40	0.132	VG110 R 12 40	VG110 L 12 40	.156 - .197	0.750	0.827	0.750	0.750	4.50	1.338	58414	58393
0.510	40	0.132	VG110 R 16 40	VG110 L 16 40	.156 - .197	1.000	1.024	1.000	1.000	5.00	1.338	58418	58397
0.510	40	0.132	VG110 R 20 40	VG110 L 20 40	.156 - .197	1.250	1.299	1.250	1.250	6.00	1.338	58424	58403
0.510	50	0.171	VG110 R 16 50	VG110 L 16 50	.199 - .250	1.000	1.024	1.000	1.000	5.00	1.338	58419	58398
0.510	50	0.171	VG110 R 20 50	VG110 L 20 50	.199 - .250	1.250	1.299	1.250	1.250	6.00	1.338	58425	58404
0.510	50	0.171	VG110 R 24 50	VG110 L 24 50	.199 - .250	1.500	1.614	1.500	1.500	8.00	1.338	58427	58406
0.630	60	0.211	VG110 R 16 60	VG110 L 16 60	.238 - .255	1.000	1.024	1.000	1.000	5.00	1.535	58420	58399
0.630	60	0.211	VG110 R 20 60	VG110 L 20 60	.238 - .255	1.250	1.299	1.250	1.250	6.00	1.535	58426	58405
0.630	60	0.211	VG110 R 24 60	VG110 L 24 60	.238 - .255	1.500	1.614	1.500	1.500	8.00	1.535	58428	58407
0.630	80	0.255	VG110 R 16 80	VG110 L 16 80	.312 - .317	1.000	1.028	1.000	1.000	6.00	1.614	58421	58400

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VTG Insert Seat Interchangeability

Insert seat size:	Fits in Toolholder seat:	Insert seat size:	Fits in Toolholder seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 & 40
30	30, 25 & 20	80	80

VG110 Spare Parts

Seat Size	Shank Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15	0.5	PT1204T	PT1213T	1.8	62393	62399
15	0.625	PT1204T	PT1214T	1.8	62393	62400
20	0.5	PT1204T	PT1213T	2.9	62393	62399
20	0.625-1.000	PT1204T	PT1214T	2.9	62393	62400
25	0.625-1.250	PT1204T	PT1214T	2.9	62393	62400
30	0.750-1.250	PT1205T	PT1215T	3.6	62394	62401
40	0.75	PT1206T	PT1217T	5.4	62395	62403
40	1.000-1.250	PT1206T	PT1220T	5.4	62395	50130
50	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
60	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
80	1.000	PT1206T	PT1220T	5.5	62395	50130

*Advanced Torx Plus® locking mechanism

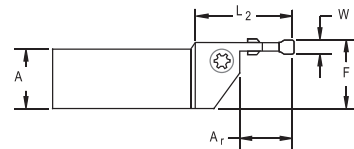
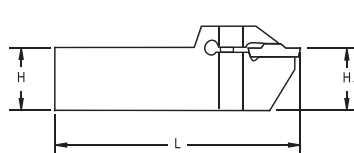
PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG112-Deep Grooving/Parting/Profiling

Use Insert Style:

VTG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.590	20	0.059	VG112 R 08 20	VG112 L 08 20	.073 - .094	0.500	0.512	0.500	0.500	4.50	1.319	51311	51122
0.590	15	0.047	VG112 R 10 15	VG112 L 10 15	0.063	0.625	0.669	0.625	0.625	4.00	1.319	51312	51140
0.590	15	0.047	VG112 R 12 15	VG112 L 12 15	0.063	0.750	0.827	0.750	0.750	5.00	1.319	51315	51176
0.590	20	0.059	VG112 R 10 20	VG112 L 10 20	.073 - .094	0.625	0.669	0.625	0.625	4.50	1.319	51313	51155
0.590	20	0.059	VG112 R 12 20	VG112 L 12 20	.073 - .094	0.750	0.827	0.750	0.750	5.00	1.319	51316	51177
0.590	20	0.059	VG112 R 16 20	VG112 L 16 20	.073 - .094	1.000	1.024	1.000	1.000	5.00	1.319	51322	51182
0.790	25	0.079	VG112 R 10 25	VG112 L 10 25	.094 - .125	0.625	0.669	0.625	0.625	4.50	1.575	51314	51168
0.790	25	0.079	VG112 R 12 25	VG112 L 12 25	.094 - .125	0.750	0.827	0.750	0.750	5.00	1.575	51319	51178
0.790	25	0.079	VG112 R 16 25	VG112 L 16 25	.094 - .125	1.000	1.024	1.000	1.000	6.00	1.575	51323	51183
0.790	25	0.079	VG112 R 20 25	VG112 L 20 25	.094 - .125	1.250	1.299	1.250	1.250	6.00	1.575	51332	51191
0.790	30	0.093	VG112 R 12 30	VG112 L 12 30	.118 - .130	0.750	0.827	0.750	0.750	5.00	1.614	51320	51180
0.790	30	0.093	VG112 R 16 30	VG112 L 16 30	.118 - .130	1.000	1.024	1.000	1.000	6.00	1.614	51324	51184
0.790	30	0.093	VG112 R 20 30	VG112 L 20 30	.118 - .130	1.250	1.299	1.250	1.250	6.00	1.614	51333	51192
0.790	30	0.093	VG112 R 24 30	VG112 L 24 30	.118 - .130	1.500	1.614	1.500	1.500	8.00	1.614	51340	51233
0.980	40	0.132	VG112 R 12 40	VG112 L 12 40	.156 - .197	0.750	0.827	0.750	0.750	5.00	1.850	51321	51181
0.980	40	0.132	VG112 R 16 40	VG112 L 16 40	.156 - .197	1.000	1.024	1.000	1.000	6.00	1.850	51326	51185
0.980	40	0.132	VG112 R 20 40	VG112 L 20 40	.156 - .197	1.250	1.299	1.250	1.250	6.00	1.850	51334	51193
0.980	40	0.132	VG112 R 24 40	VG112 L 24 40	.156 - .197	1.500	1.614	1.500	1.500	8.00	1.850	51341	51237
1.260	50	0.171	VG112 R 16 50	VG112 L 16 50	.199 - .250	1.000	1.024	1.000	1.000	6.00	2.244	51327	51186
1.260	50	0.171	VG112 R 20 50	VG112 L 20 50	.199 - .250	1.250	1.299	1.250	1.250	6.00	2.244	51335	51194
1.260	50	0.171	VG112 R 24 50	VG112 L 24 50	.199 - .250	1.500	1.614	1.500	1.500	8.00	2.244	51342	51308
1.260	60	0.211	VG112 R 16 60	VG112 L 16 60	.238 - .255	1.000	1.024	1.000	1.000	6.00	2.283	51329	51187
1.260	60	0.211	VG112 R 20 60	VG112 L 20 60	.238 - .255	1.250	1.299	1.250	1.250	6.00	2.283	55310	51195
1.260	60	0.211	VG112 R 24 60	VG112 L 24 60	.238 - .255	1.500	1.614	1.500	1.500	8.00	2.283	55341	51309
1.000	80	0.255	VG112 R 16 80	VG112 L 16 80	.312 - .317	1.000	1.028	1.000	1.000	6.00	2.047	51330	51188
1.000	80	0.255	VG112 R 20 80	VG112 L 20 80	.312 - .317	1.250	1.300	1.250	1.250	7.000	2.047	51338	51197
1.380	80	0.255	VG112 R 20 80EX	VG112 L 20 80EX	.312 - .317	1.250	1.300	1.250	1.250	7.000	2.362	51339	51225
1.380	80	0.255	VG112 R 24 80EX	VG112 L 24 80EX	.312 - .317	1.500	1.614	1.500	1.500	7.000	2.362	51344	51310

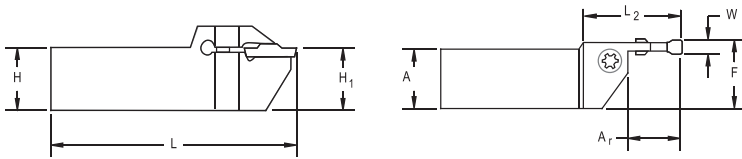
Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG112-Deep Grooving/Parting/Profiling

Use Insert Style:
VTG-xx



VG112 Spare Parts

Seat Size	Shank Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15	0.625	PT1204T	PT1214T	2.5	62393	62400
20	0.5	PT1204T	PT1213T	2.9	62393	62399
20	0.625-1.000	PT1204T	PT1214T	2.9	62393	62400
25	0.625-1.250	PT1204T	PT1214T	2.9	62393	62400
30	0.750-1.250	PT1205T	PT1215T	3.6	62394	62401
40	0.75	PT1206T	PT1217T	5.4	62395	62403
40	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
50	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
60	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
80	1.000-1.500	PT1206T	PT1220T	5.5	62395	50130

VTG Insert Seat Interchangeability

Insert Seat size:	Fits in Toolholder seat:	Insert Seat Size:	Fits in Toolholder seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 & 40
30	30, 25 & 20	80	80

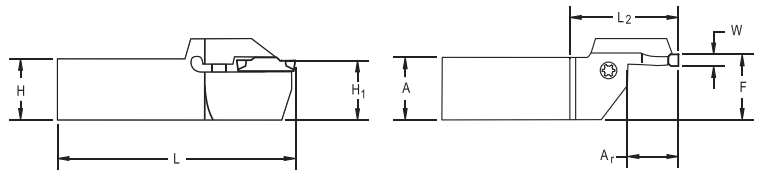
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG114—Face Grooving Ar .470 - 1.000

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Ar	First Cut Dia. min - max	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions						Right EDP#	Left EDP#	
						W	A	F	H	H1	L			L2
0.470	1.339 - 1.732	30	0.093	VG114 R 16 034 30	VG114 L 16 034 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.257	58276	58231
0.750	1.654 - 2.362	30	0.093	VG114 R 16 042 30	VG114 L 16 042 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58285	58239
0.750	2.126 - 2.953	30	0.093	VG114 R 16 054 30	VG114 L 16 054 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58289	58243
0.750	2.638 - 3.937	30	0.093	VG114 R 16 067 30	VG114 L 16 067 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58297	58251
0.870	3.543 - 6.299	30	0.093	VG114 R 16 090 30	VG114 L 16 090 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.697	58303	58257
0.870	5.118 - 11.811	30	0.093	VG114 R 16 130 30	VG114 L 16 130 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.697	58309	58263
0.790	1.575 - 2.362	40	0.132	VG114 R 16 040 40	VG114 L 16 040 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.656	58281	58235
0.790	2.047 - 2.835	40	0.132	VG114 R 16 052 40	VG114 L 16 052 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.656	58287	58241
1.000	2.520 - 3.937	40	0.132	VG114 R 16 064 40	VG114 L 16 064 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58295	58249
1.000	3.622 - 5.512	40	0.132	VG114 R 16 092 40	VG114 L 16 092 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58305	58259
1.000	5.197 - 9.055	40	0.132	VG114 R 16 132 40	VG114 L 16 132 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58311	58265
1.000	8.661 - 19.685	40	0.132	VG114 R 16 220 40	VG114 L 16 220 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58319	58273
0.790	1.575 - 2.756	50	0.171	VG114 R 16 040 50	VG114 L 16 040 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.696	58282	58236
1.000	2.362 - 3.740	50	0.171	VG114 R 16 060 50	VG114 L 16 060 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58293	58247
1.000	3.346 - 5.118	50	0.171	VG114 R 16 085 50	VG114 L 16 085 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58299	58253
1.000	4.724 - 7.087	50	0.171	VG114 R 16 120 50	VG114 L 16 120 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58307	58261
1.000	6.890 - 19.685	50	0.171	VG114 R 16 175 50	VG114 L 16 175 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58315	58269
0.790	1.575 - 2.756	60	0.211	VG114 R 16 040 60	VG114 L 16 040 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.735	58283	58237
1.000	2.283 - 3.937	60	0.211	VG114 R 16 058 60	VG114 L 16 058 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58291	58245
1.000	3.465 - 7.087	60	0.211	VG114 R 16 088 60	VG114 L 16 088 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58301	58255
1.000	6.614 - 15.748	60	0.211	VG114 R 16 168 60	VG114 L 16 168 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58313	58267

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG114 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Torx® Wrench EDP#	Screw EDP#
30	PT1205T	PT1215T	2.6	62394	62401
40	PT1206T	PT1220T	2.6	62395	50130
50	PT1206T	PT1220T	3	62395	50130
60	PT1206T	PT1220T	3.3	62395	50130

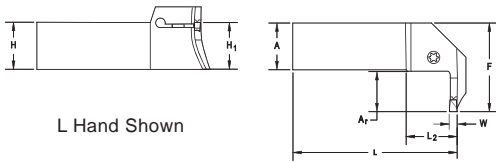
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG116—90° Face Grooving Ar .790

Use Insert Style:
VTG-xx



Ar	First Cut Dia. min - max	Seat Size	Seat Width	Right - Hand	Left - Hand	Dimensions							Right EDP#	Left EDP#
						W	A	F	H	H1	L	L2		
0.790	2.520 - 3.937	40	0.132	VG116 R 16 064 40	VG116 L 16 064 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62428	62419
0.790	3.622 - 5.512	40	0.132	VG116 R 16 092 40	VG116 L 16 092 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62431	62422
0.790	5.197 - 9.055	40	0.132	VG116 R 16 132 40	VG116 L 16 132 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62432	62423
0.790	2.283 - 3.937	60	0.211	VG116 R 16 058 60	VG116 L 16 058 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62427	62418
0.790	3.465 - 7.087	60	0.211	VG116 R 16 088 60	VG116 L 16 088 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62430	62421
0.790	6.614 - 15.748	60	0.211	VG116 R 16 168 60	VG116 L 16 168 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62434	62425
0.790	1.969 - 3.150	80	0.255	VG116 R 16 050 80	VG116 L 16 050 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62426	62417
0.790	2.953 - 5.906	80	0.255	VG116 R 16 075 80	VG116 L 16 075 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62429	62420
0.790	5.512 - 15.748	80	0.255	VG116 R 16 140 80	VG116 L 16 140 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62433	62424

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG116 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Torx® Wrench EDP#	Screw EDP#
40	PT1206T	PT1220T	2.6	62395	50130
60	PT1206T	PT1220T	3.3	62395	50130
80	PT1206T	PT1220T	3.7	62395	50130

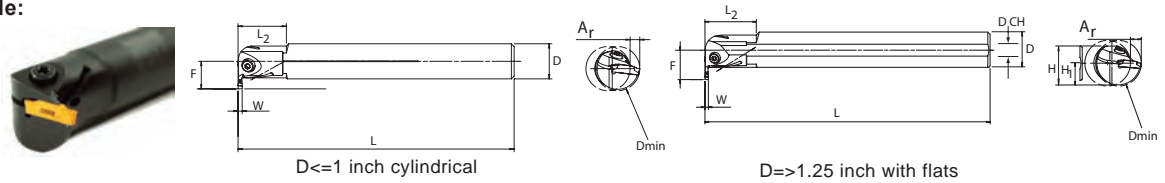
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VG118—ID Turning/Grooving

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

D min.	Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions								Right EDP#	Left EDP#
						W	F	H	H1	L	L2	D	D CH		
0.984	0.177	15	0.047	VG118 R 10 15	VG118 L 10 15	0.063	0.489	-	-	5.91	0.984	0.625	0.236	52071	51983
1.260	0.197	15	0.047	VG118 R 12 15	VG118 L 12 15	0.063	0.592	-	-	7.09	1.181	0.750	0.236	52073	51999
1.260	0.197	20	0.059	VG 118 R 12 20	VG 118 L 12 20	.073- .094	0.592	-	-	7.08	1.180	0.750	0.236	52077	52001
1.260	0.276	20	0.059	VG 118 R 16 20	VG 118 L 16 20	.073- .094	0.785	-	-	7.87	1.370	1.000	0.354	52098	52018
1.575	0.374	20	0.059	VG 118 R 20 20	VG 118 L 20 20	.073- .094	1.014	0.910	0.450	9.84	1.770	1.250	0.354	52119	52035
1.260	0.197	30	0.093	VG 118 R 12 30	VG 118 L 12 30	.118 - .130	0.592	-	-	7.08	1.180	0.750	0.236	52097	52013
1.260	0.276	30	0.093	VG 118 R 16 30	VG 118 L 16 30	.118 - .130	0.785	-	-	7.87	1.370	1.000	0.354	52100	52021
1.575	0.374	30	0.093	VG 118 R 20 30	VG 118 L 20 30	.118 - .130	1.014	0.910	0.450	9.84	1.770	1.250	0.354	52123	52036
1.969	0.433	30	0.093	VG 118 R 24 30	VG 118 L 24 30	.118 - .130	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52131	52043
1.260	0.276	40	0.132	VG 118 R 16 40	VG 118 L 16 40	.156 - .197	0.785	-	-	7.87	1.370	1.000	0.354	52101	52030
1.575	0.413	40	0.132	VG 118 R 20 40	VG 118 L 20 40	.156 - .197	1.053	0.910	0.450	9.84	1.770	1.250	0.354	52126	52037
1.969	0.433	40	0.132	VG 118 R 24 40	VG 118 L 24 40	.156 - .197	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52134	52044
1.260	0.276	50	0.171	VG 118 R 16 50	VG 118 L 16 50	.199 - .250	0.785	-	-	7.87	1.370	1.000	0.354	52117	52031
1.575	0.433	50	0.171	VG 118 R 20 50	VG 118 L 20 50	.199 - .250	1.073	0.910	0.450	9.84	1.770	1.250	0.354	52130	52039
1.969	0.433	50	0.171	VG 118 R 24 50	VG 118 L 24 50	.199 - .250	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52135	52049
1.969	0.433	60	0.211	VG 118 R 24 60	VG 118 L 24 60	.238 - .255	1.189	1.460	0.730	11.80	2.160	1.500	0.472	52136	52070

Notes:

- H&H1 noted for bars with flats: Cylindrical Bars $D \leq 1.000$ "; Bars with Flats $D \Rightarrow 1.250$ "
- When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG118 Spare Parts

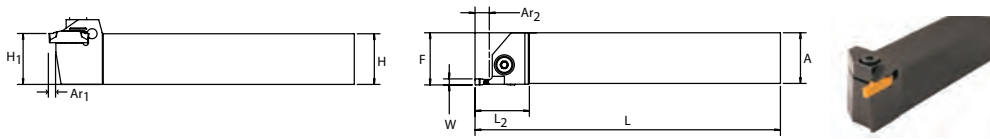
Seat	Bar Diameter	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15, 20, 30	.625 - 0.750	PT1203T	PT1221T	2.6	56818	56819
20	1.000-1.250	PT1204T	PT1214T	3.0	62393	62400
30	1.000 - 1.500	PT1205T	PT1222T	3.3	62394	56820
40, 50	1.000	PT1205T	PT1222T	3.5	62394	56820
40, 50	1.250	PT1206T	PT1216T	3.5	62395	62402
40, 50,60	1.500	PT1206T	PT1217T	4.0	62395	62403

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VG130—Shallow Grooving/Face Grooving

Use Insert Style:
VTG-xx



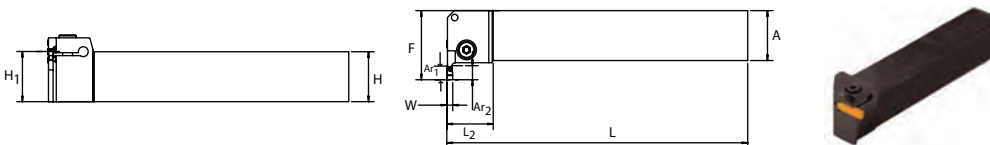
Right-hand shown, Left-hand opposite

Right Hand	Left Hand	Seat	Seat Width	Dimensions									Right EDP#	Left EDP#
				Ar1	Ar2	W	A	F	H	H1	L	L2		
VG130 R 16 30	VG130 L 16 30	30	0.093	0.138	0.275	.081-.120	1.000	1.024	1.000	1.000	6.000	1.063	56509	56507
VG130 R 16 60	VG130 L 16 60	60	0.211	0.177	0.315	.159-.238	1.000	1.024	1.000	1.000	6.000	1.081	56510	56508

NOTES:

- Use Ar1 for face grooves
- Use Ar2 for radial grooves
- VG130/132 shallow groove holders use several insert sizes:
 - Seat size 30 toolholder can use insert seat sizes 30, 25 and 20
 - Seat size 60 toolholder can use insert seat sizes 60, 50 and 40

VG132—Shallow Grooving/Face Grooving



Right-hand shown, Left-hand opposite

Right Hand	Left Hand	Seat	Seat Width	Dimensions									Right EDP#	Left EDP#
				Ar1	Ar2	W	A	F	H	H1	L	L2		
VG132 R 16 30	VG132 L 16 30	30	0.093	0.138	0.275	.081-.120	1.000	1.378	1.000	1.000	6.000	0.925	56513	56511
VG132 R 16 60	VG132 L 16 60	60	0.211	0.177	0.315	.159-.238	1.000	1.417	1.000	1.000	6.000	1.130	56514	56512

NOTES:

- Use Ar1 for face grooves
- Use Ar2 for radial grooves
- VG130/132 shallow groove holders use several insert sizes:
 - Seat size 30 toolholder can use insert seat sizes 30, 25 and 20
 - Seat size 60 toolholder can use insert seat sizes 60, 50 and 40

Spare Parts VG130 & VG132

Seat	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
30	PT1205T	PT1215T	2.6	62394	62401
60	PT1206T	PT1220T	3.3	62395	50130

*Advanced Torx Plus® locking mechanism

Face Grooving with VG130/132

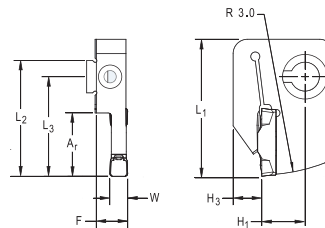
Holder Seat	Insert Seat	First Cut Diameter	Ar1
30	30	2.244	0.138
30	25	3.268	0.138
30	20	3.937	0.138
60	60, 50, 40	1.811	0.177

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

VGSCA—Modular Machining

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Depth Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	L1	L2	L3	F	H1	H3		
0.810	20	0.059	VGSCA R 20	VGSCA L 20	.073 - .094	2.09	1.721	1.44	0.546	0.75	0.5	58482	58475
0.810	25	0.079	VGSCA R 25	VGSCA L 25	.094 - .125	2.09	1.721	1.44	0.546	0.75	0.5	58483	58476
0.810	30	0.093	VGSCA R 30	VGSCA L 30	.118 - .130	2.09	1.721	1.44	0.549	0.75	0.5	58484	58477
1.000	40	0.132	VGSCA R 40	VGSCA L 40	.156 - .197	2.28	1.911	1.63	0.548	0.75	0.5	58485	58478
1.000	50	0.171	VGSCA R 50	VGSCA L 50	.199 - .250	2.28	1.911	1.63	0.549	0.75	0.5	58486	58479
1.000	60	0.211	VGSCA R 60	VGSCA L 60	.238 - .255	2.28	1.911	1.63	0.548	0.75	0.5	58487	58480
1.100	80	0.255	VGSCA R 80	VGSCA L 80	.312 - .317	2.38	2.011	1.73	0.567	0.75	0.5	58488	58481

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

Note: Use with VHDBS Style Shanks Page D19 - D20.

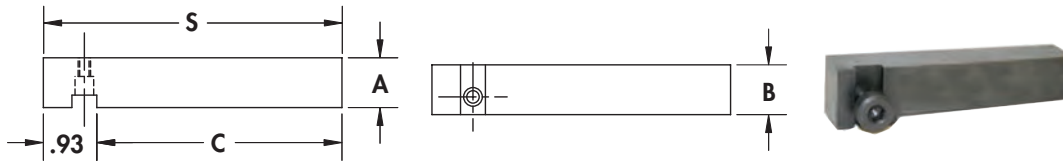
VGSCA Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1206T	PT1217T	1.8	62395	62403
25	PT1206T	PT1217T	2.2	62395	62403
30	PT1206T	PT1217T	2.5	62395	62403
40	PT1206T	PT1217T	3.2	62395	62403
50	PT1206T	PT1217T	3.6	62395	62403
60	PT1206T	PT1217T	3.9	62395	62403
80	PT1206T	PT1217T	4.8	62395	62403

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VHDBS R/L Toolholders—Heavy-Duty Axial Shank

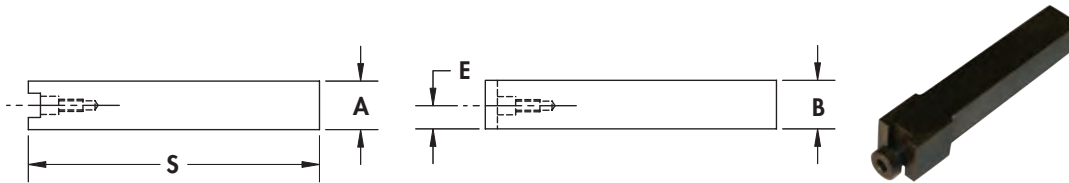


Right-hand shown, Left-hand opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	A	B	C	L	Right Hand	Left Hand
VHDBS 12R	VHDBS 12L	0.750	0.750	4.320	5.250	61771	61770
VHDBS 16R	VHDBS 16L	1.000	1.000	4.320	5.250	61773	61772
VHDBS 20R	VHDBS 20L	1.250	1.250	5.320	6.250	61775	61774
VHDBS 24*		1.500	1.500	6.320	7.250	61776	

*Shank can be inverted for opposite hand application

VHDBSN Toolholders—Heavy-Duty 90° Shank



Part Number	Dimensions				EDP#
	A	B	L	E	
VHDBSN-12	0.750	0.750	6.000	0.000	61782
VHDBSN-16	1.000	1.000	6.000	0.250	61783
VHDBSN-20	1.250	1.250	7.000	0.500	61784
VHDBSN-24	1.500	1.500	8.000	0.750	61785

Spare Parts

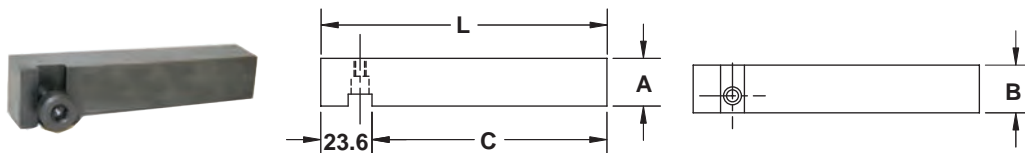
Part-Number		Wrench	Screw	Torque ft-lbs
VHDBS & VHDBSN	Part#	5/16-Hex-Wrench	PT527	32
	EDP#	57330	53003	32

Note: Shanks complete with screw & wrench. Anvils must be purchased separately
 Note: For use with all VGSCA, VGWCA, VHDBA & VHDBTA anvils

PARTING & GROOVING

ValGROOVE™ VTG Toolholder System

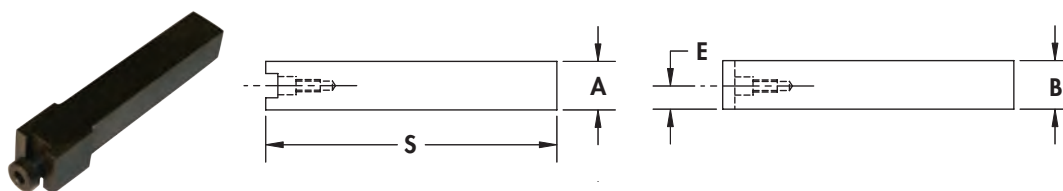
VHDBS R/L Toolholders—Heavy-Duty Metric Axial Shank



Right-hand shown, Left-hand opposite

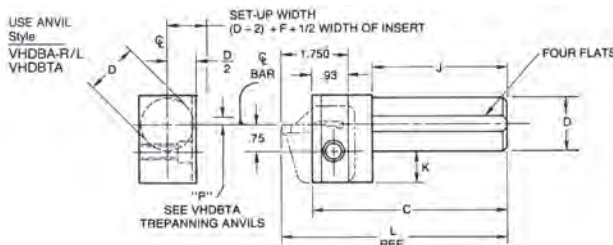
Part Number		Dimensions				Mounting Screw	EDP# Mounting Screw	EDP#	
Right Hand	Left Hand	A	B	C	L Ref.			Right Hand	Left Hand
VHDBS 2525R	VHDBS 2525L	25	25	106	130	PT-527,H-5/16	53003	61778	61777
VHDBS 3232R	VHDBS 3232L	32	32	126	130	PT-527,H-5/16		61781	61780

VHDBSN Toolholders—Heavy-Duty Metric 90° Shank



Part Number	Dimensions				Mounting Screw	EDP# Mounting Screw	EDP#
	A	B	L	E			
VHDBSN-2525	25	25	150	12.5	PT-527,H-5/16	53003	61786
VHDBSN-3232	32	32	175	16	PT-527,H-5/16		61788

VHDBBR— Heavy-Duty Axial Round Shank



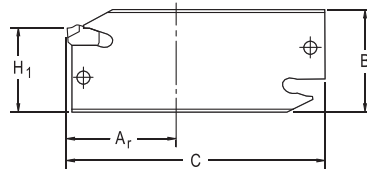
Right-hand shown, Left-hand opposite

Part Number		Dimensions					Mounting Screw	EDP# Mounting Screw	EDP#	
Right Hand	Left Hand	C	D	J	K	L			Right Hand	Left Hand
VHDBBR 125	-	6.000	1.250	4.500	0.620	6.820	PT-527, H=5/16	53003	61794	-
VHDBBR 150	VHDBBL 150	8.000	1.500	6.500	0.500	8.820	PT-527, H=5/16		61795	61793

ValGROOVE™ VSG Toolholder System

VG101—VSG Double-Ended Parting Blades

Use Insert Style:
VSG-xx



Ar	Seat Size	Part Number	Dimensions					EDP#
			W	A	B	C	H1	
0.750	15	VG101 16 15	0.059	0.047	0.750	3.38	0.620	58171
0.750	15	VG101 21 15	0.059	0.047	1.020	4.33	0.840	58173
1.250	15	VG101 25 15	0.059	0.047	1.250	5.90	0.980	58178
1.300	20	VG101 16 20	.065 - .088	0.059	0.750	3.38	0.620	58172
1.400	20	VG101 21 20	.065 - .088	0.059	1.020	4.33	0.840	58174
1.500	20	VG101 25 20	.065 - .088	0.059	1.260	5.91	0.980	56536
1.378	25	VG101 21 25	.098 - .133	0.079	1.020	4.33	0.840	58175
2.362	25	VG101 25 25	.098 - .133	0.079	1.260	5.91	0.980	58179
1.378	30	VG101 21 30	.118 - .163	0.093	1.020	4.33	0.840	58176
2.362	30	VG101 25 30	.118 - .163	0.093	1.260	5.91	0.980	58180
1.378	40	VG101 21 40	.156 - .203	0.132	1.020	4.33	0.840	58177
2.362	40	VG101 25 40	.156 - .203	0.132	1.260	5.91	0.980	58181
2.362	50	VG101 25 50	.197 - .250	0.171	1.260	5.91	0.980	58182
2.362	60	VG101 25 60	.236 - .315	0.211	1.260	5.91	0.980	58183

VG101 blades are used with VGTB & V-Cut tool blocks.
Insert key must be ordered separately.

VG101 & VG103 Spare Parts

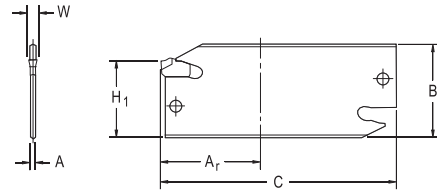
Seat Size	Insert Key	EDP#
15	PT1211	62397
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG103—VSG Double-Ended Parting Blades

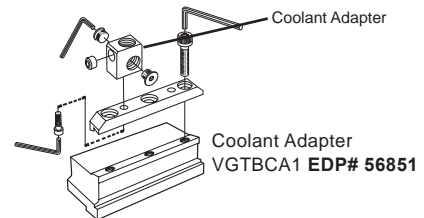
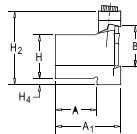
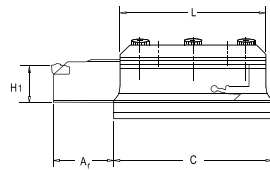
Use Insert Style:
VSG-xx



Ar	Seat Size	Part Number	Dimensions					EDP#
			W	A	B	C	H1	
2.362	30	VG103 25 30	.118 - .163	0.093	1.260	5.91	0.980	58184
2.362	40	VG103 25 40	.156 - .203	0.132	1.260	5.91	0.980	58185
2.362	50	VG103 25 50	.197 - .250	0.171	1.260	5.91	0.980	58186

Note: • VG103 blades are used only with VDG tool blocks. • Insert key must be ordered separately. See page D21.

VGTB Tool Blocks



Part Number	Dimensions								EDP#
	A	A1	H	H1	H2	H4	C	L	
VGTB10 16	0.63	1.30	0.63	0.62	1.34	0.16	3.15	2.76	58321
VGTB12 21	0.73	1.46	0.75	0.84	1.79	0.43	3.15	2.76	58322
VGTB16 21	1.03	1.70	1.00	0.84	1.75	0.20	4.72	4.32	58323
VGTB16 25	0.98	1.71	1.00	0.98	1.79	0.43	4.72	4.33	58324
VGTB20 25	1.23	1.96	1.25	0.98	2.15	0.21	4.72	4.33	58326
VGTB24 25	1.48	2.21	1.50	0.98	2.40	0.20	4.72	4.33	62415

Notes:

- The blade height, H1 must match the H1 - dimension of the tool block. Example: Blade - VG101 16 15 , Tool block VGTB 10 16.
- Blade height refers to dimension H1 from the base of the blade to the insert cutting edge.

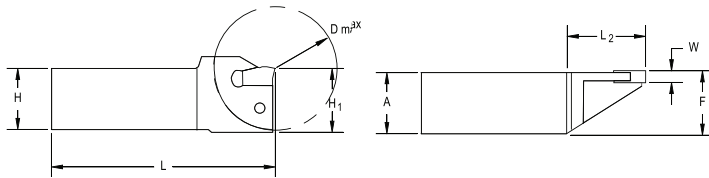
VGTB Spare Parts

Part Number	Hex Wrench	Screw	Clamp	Wrench EDP#	Screw EDP#	Clamp EDP#
VGTB10 16	PT1212	PT1218	CL1221	62398	62404	62292
VGTB12 21	PT1212	PT1218	CL1221	62398	62404	62292
VGTB16 21	PT1212	PT1219	CL1225	62398	62405	62293
VGTB16 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB20 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB24 25	PT1212	PT1219	CL1225	62398	62405	62293

ValGROOVE™ VSG Toolholder System

VG105—Grooving Reinforced Spring Clamp

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

D max	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.76	20	0.059	VG105 R 06 20	VG105 L 06 20	.063 - .090	0.375	0.385	0.375	0.375	4.72	0.630	58190	58187
1.18	20	0.059	VG105 R 08 20	VG105 L 08 20	.063 - .090	0.500	0.510	0.500	0.500	5.91	0.810	58191	58188
1.18	20	0.059	VG105 R 10 20	VG105 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	5.91	0.810	56399	56395
1.18	25	0.079	VG105 R 08 25	VG105 L 08 25	.094 - .130	0.500	0.510	0.500	0.500	5.91	0.810	58192	58189
1.18	25	0.079	VG105 R 10 25	VG105 L 10 25	.094 - .130	0.625	0.634	0.625	0.625	5.91	0.810	56400	56396
1.38	30	0.093	VG105 R 10 30	VG105 L 10 30	.094 - .130	0.625	0.638	0.625	0.625	4.00	1.020	56401	56397
1.77	30	0.093	VG105 R 12 30	VG105 L 12 30	.094 - .130	0.750	0.764	0.750	0.750	4.50	1.240	56402	56398

Note: Insert key must be ordered separately.

VG105 Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397

VSG Insert Seat Interchangeability

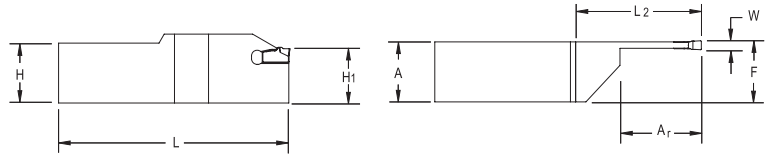
Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG107—Deep Grooving Spring Clamp

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right - Hand	Left - Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.590	20	0.059	VG107 R 10 20	VG107 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	4.00	0.810	52402	52340
0.590	25	0.079	VG107 R 10 25	VG107 L 10 25	.094 - .130	0.625	0.634	0.625	0.625	4.00	0.810	52422	52344
0.790	25	0.079	VG107 R 12 25	VG107 L 12 25	.094 - .130	0.750	0.760	0.750	0.750	4.50	1.020	52423	50171
0.790	30	0.093	VG107 R 12 30	VG107 L 12 30	.094 - .130	0.750	0.760	0.750	0.750	4.50	1.020	52445	52345
0.980	30	0.093	VG107 R 16 30	VG107 L 16 30	.123 - .163	1.000	1.012	1.000	1.000	6.00	1.260	52704	52351
0.980	40	0.132	VG107 R 12 40	VG107 L 12 40	.162 - .203	0.750	0.764	0.750	0.750	4.50	1.250	52703	52350
1.260	40	0.132	VG107 R 16 40	VG107 L 16 40	.162 - .203	1.000	1.012	1.000	1.000	6.00	1.640	52705	52355
1.260	40	0.132	VG107 R 20 40	VG107 L 20 40	.162 - .203	1.250	1.264	1.250	1.250	6.00	1.640	52708	52371
1.260	50	0.171	VG107 R 16 50	VG107 L 16 50	.202 - .236	1.000	1.012	1.000	1.000	6.00	1.640	52706	52356
1.260	50	0.171	VG107 R 20 50	-	.202 - .236	1.250	1.264	1.250	1.250	6.00	1.640	52709	-
1.260	60	0.211	VG107 R 16 60	VG107 L 16 60	.241 - .312	1.000	1.012	1.000	1.000	6.00	1.630	52707	52369
1.260	60	0.211	VG107 R 20 60	VG107 L 20 60	.241 - .312	1.250	1.260	1.250	1.250	6.00	1.640	52710	52392

Note: Insert key must be ordered separately

VG107 Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396

VSG Insert Seat Interchangeability

Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

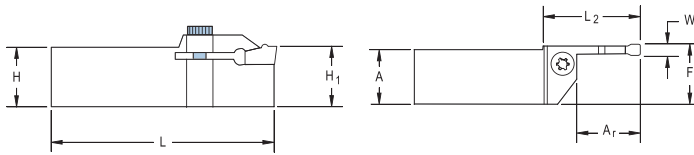
Notes:

- Check for sufficient clearance between tool body & insert.
- Inserts from ValMILL V350 system are also interchangeable with ValGROOVE inserts in the above chart.

ValGROOVE™ VSG Toolholder System

VG109—Deep Grooving/Parting

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#	
					W	A	F	H	H1	L	L2			
0.590	20	0.059	VG109 R 08 20	VG109 L 08 20	.065 - .088	0.500	0.750	0.500	0.500	0.500	4.50	1.319	58443	58429
0.590	20	0.059	VG109 R 10 20	VG109 L 10 20	.065 - .088	0.625	0.875	0.625	0.625	0.625	4.50	1.319	58445	58431
0.790	25	0.079	VG109 R 08 25	VG109 L 08 25	.098 - .133	0.500	0.750	0.500	0.500	0.500	4.50	1.575	58444	58430
0.790	25	0.079	VG109 R 10 25	VG109 L 10 25	.098 - .133	0.625	0.875	0.625	0.625	0.625	4.50	1.575	58446	62416
0.790	25	0.079	VG109 R 12 25	VG109 L 12 25	.098 - .133	0.750	1.000	0.750	0.750	0.750	5.00	1.575	58447	58433
0.790	30	0.093	VG109 R 12 30	VG109 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	0.750	5.00	1.614	58448	58434
0.790	30	0.093	VG109 R 16 30	VG109 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	1.000	6.00	1.614	58450	58436
0.980	40	0.132	VG109 R 12 40	VG109 L 12 40	.156 - .203	0.750	1.000	0.750	0.750	0.750	5.00	1.850	58449	58435
0.980	40	0.132	VG109 R 16 40	VG109 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	1.000	6.00	1.850	58451	58437
0.980	40	0.132	VG109 R 20 40	VG109 L 20 40	.156 - .203	1.250	1.500	1.250	1.250	1.250	6.00	1.850	58454	58440
1.260	50	0.171	VG109 R 16 50	VG109 L 16 50	.197 - .250	1.000	1.250	1.000	1.000	1.000	6.00	2.244	58452	58438
1.260	60	0.211	VG109 R 16 60	VG109 L 16 60	.236 - .315	1.000	1.250	1.000	1.000	1.000	6.00	2.283	58453	58439
1.260	60	0.211	VG109 R 20 60	VG109 L 20 60	.236 - .315	1.250	1.500	1.250	1.250	1.250	6.00	2.283	58455	58441
1.500	80	0.211	VG109 R 24 80	VG109 L 24 80	.315 - .394	1.450	1.500	1.500	1.500	1.500	8.75	2.760	58456	58442

VG109 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	2.9	62393	62400
25	PT1204T	PT1214T	2.9	62393	62400
30	PT1205T	PT1215T	3.7	62394	62401
40	PT1206T	PT1217T	5.5	62395	62403
50	PT1206T	PT1217T	5.5	62395	62403
60	PT1206T	PT1217T	5.5	62395	62403
80	PT1206T	PT1217T	4.5	62395	62403

*Advanced Torx Plus® locking mechanism

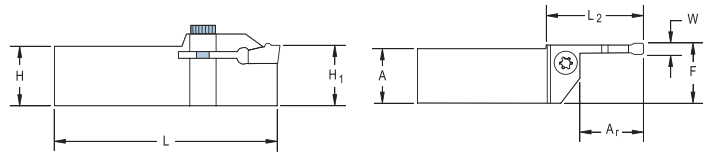
PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG 121—Grooving/Parting Swiss Screw Machine

Use Insert Style:

VSG-xx



Note: Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions						Right EDP#	Left EDP#	
					W	A	F	H	H1	L			L2
0.350	20	0.059	VG121 R 06 20	VG121 L 06 20	.063 - .090	0.375	0.390	0.375	0.375	4.00	1.038	63015	63003
0.350	20	0.059	VG121 R 08 20	VG121 L 08 20	.063 - .090	0.500	0.510	0.500	0.500	4.00	1.039	63018	63006
0.350	20	0.059	VG121 R 10 20	VG121 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	4.00	1.039	63021	63009
0.390	25	0.079	VG121 R 06 25	VG121 L 06 25	.098-.133	0.375	0.386	0.375	0.375	4.00	1.138	63016	63004
0.390	25	0.079	VG121 R 08 25	VG121 L 08 25	.098-.133	0.500	0.510	0.500	0.500	4.00	1.138	63019	63007
0.390	25	0.079	VG121 R 10 25	VG121 L 10 25	.098-.133	0.625	0.634	0.625	0.625	4.00	1.138	63022	63010
0.400	30	0.093	VG121 R 06 30	VG121 L 06 30	.118-.163	0.375	0.389	0.375	0.375	4.00	1.187	63017	63005
0.400	30	0.093	VG121 R 08 30	VG121 L 08 30	.118-.163	0.500	0.512	0.500	0.500	4.00	1.187	63020	63008
0.400	30	0.093	VG121 R 10 30	VG121 L 10 30	.118-.163	0.625	0.634	0.625	0.625	4.00	1.187	63023	63011
0.400	30	0.093	VG121 R 12 30	VG121 L 12 30	.118-.163	0.750	0.758	0.750	0.750	5.00	1.187	63025	63013
0.510	40	0.132	VG121 R 10 40	VG121 L 10 40	.162-.203	0.625	0.634	0.625	0.625	4.00	1.337	63024	63012
0.510	40	0.132	VG121 R 12 40	VG121 L 12 40	.162-.203	0.750	0.758	0.750	0.750	5.00	1.337	63026	63014

VG121 Spare Parts

Shank Size	Seat	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP	Screw EDP
06 & 08	20, 25 & 30	PT1204T	PT1213T	1.9	62393	62399
10	20 & 25	PT1204T	PT1214T	2.2	62393	62400
10	30 & 40	PT1205T	PT1222T	2.6	62394	56820
12	30	PT1205T	PT1215T	2.6	62394	62401
12	40	PT1206T	PT1217T	3.3	62395	62403

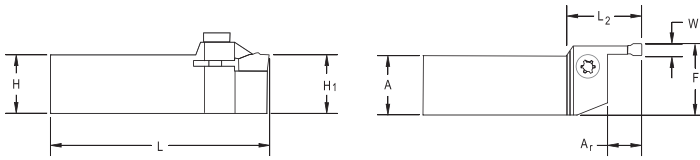
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG111—Grooving/Profiling

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.320	20	0.059	VG111 R 10 20	VG111 L 10 20	.063 - .090	0.625	0.875	0.625	0.625	4.500	1.180	52721	52712
0.320	20	0.059	VG111 R 12 20	VG111 L 12 20	.063 - .090	0.750	1.000	0.750	0.750	4.500	1.180	58203	58195
0.320	20	0.059	VG111 R 16 20	VG111 L 16 20	.063 - .090	1.000	1.250	1.000	1.000	5.000	1.180	52723	52714
0.400	25	0.079	VG111 R 10 25	VG111 L 10 25	.094 - .130	0.625	0.875	0.625	0.625	4.500	1.300	58202	58194
0.400	25	0.079	VG111 R 12 25	VG111 L 12 25	.094 - .130	0.750	1.000	0.750	0.750	4.500	1.300	52722	52713
0.400	25	0.079	VG111 R 16 25	VG111 L 16 25	.094 - .130	1.000	1.250	1.000	1.000	5.000	1.300	52724	52715
0.400	30	0.093	VG111 R 12 30	VG111 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	4.500	1.340	58204	58196
0.400	30	0.093	VG111 R 16 30	VG111 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	5.000	1.340	58206	58198
0.400	30	0.093	VG111 R 20 30	VG111 L 20 30	.123 - .163	1.250	1.500	1.250	1.250	6.000	1.340	52752	52717
0.510	40	0.132	VG111 R 12 40	VG111 L 12 40	.156 - .203	0.750	1.000	0.750	0.750	4.500	1.430	58205	58197
0.510	40	0.132	VG111 R 16 40	VG111 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	5.000	1.430	58207	58199
0.510	40	0.132	VG111 R 20 40	VG111 L 20 40	.162 - .203	1.250	1.500	1.250	1.250	6.000	1.430	52812	50175
0.510	50	0.171	VG111 R 16 50	VG111 L 16 50	.202 - .236	1.000	1.250	1.000	1.000	5.000	1.490	52729	52716
0.510	50	0.171	VG111 R 20 50	VG111 L 20 50	.202 - .236	1.250	1.500	1.250	1.250	6.000	1.490	52909	52718
0.630	60	0.211	VG111 R 16 60	VG111 L 16 60	.236 - .312	1.000	1.250	1.000	1.000	5.000	1.690	58208	58200
0.630	60	0.211	VG111 R 20 60	VG111 L 20 60	.241 - .312	1.250	1.500	1.250	1.250	6.000	1.690	53228	52719
0.930	80	0.255	VG111 R 24 80	VG111 L 24 80	.320 - .394	1.450	1.500	1.500	1.500	8.000	1.970	53229	52720

VG 111 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	1.9	62393	62400
25	PT1204T	PT1214T	2.2	62393	62400
30	PT1204T	PT1214T	2.6	62393	62400
40	PT1206T	PT1217T	3.3	62395	62403
50	PT1206T	PT1217T	3.7	62395	62403
60	PT1206T	PT1217T	3.7	62395	62403
80	PT1206T	PT1217T	4.5	62395	62403

VSG Insert Seat Interchangeability

Insert Seat Size:	Fits in Tool holder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
40	40, 30 & 20	80	80

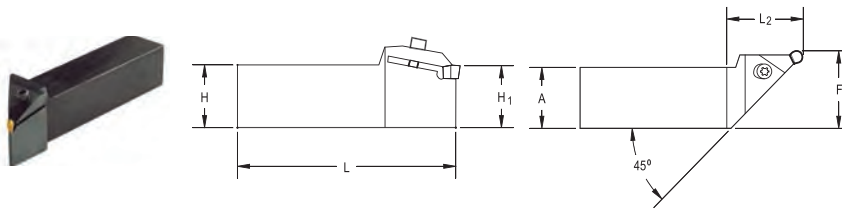
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG115—Undercut Turning

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
				W	A	F	H	H1	L	L2		
20	0.059	VG115 R 12 20	VG115 L 12 20	.065 - .088	0.750	1.000	0.750	0.750	4.50	1.190	58219	58209
25	0.079	VG115 R 12 25	VG115 L 12 25	.098 - .133	0.750	1.000	0.750	0.750	4.50	1.320	58220	58210
25	0.079	VG115 R 16 25	VG115 L 16 25	.098 - .133	1.000	1.250	1.000	1.000	5.00	1.320	58222	58212
30	0.093	VG115 R 12 30	VG115 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	4.50	1.360	58221	58211
30	0.093	VG115 R 16 30	VG115 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	5.00	1.360	58223	58213
40	0.132	VG115 R 16 40	VG115 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	5.00	1.430	58224	58214
50	0.171	VG115 R 20 50	VG115 L 20 50	.197 - .250	1.250	1.500	1.250	1.250	6.00	1.490	58227	58217

VG115 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	1.9	62393	62400
25	PT1204T	PT1214T	2.2	62393	62400
30	PT1204T	PT1214T	2.6	62393	62400
40	PT1206T	PT1217T	3.3	62395	62403
50	PT1206T	PT1217T	3.7	62395	62403

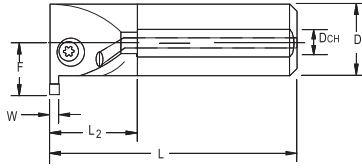
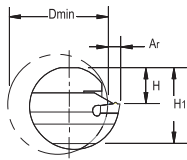
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG117—ID Turning/Grooving

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

D min.	Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions								Right EDP#	Left EDP#
						W	F	H1	H	L	L2	D	D CH		
1.26	0.197	20	0.059	VG117 R 16 20	VG117 L 16 20	.065 - .088	0.697	0.910	0.450	8.00	1.270	1.000	0.35	58342	58328
1.58	0.197	20	0.059	VG117 R 20 20	VG117 L 20 20	.065 - .088	0.846	1.180	0.590	10.00	1.430	1.250	0.35	58345	58331
1.97	0.240	25	0.079	VG117 R 16 25	VG117 L 16 25	.098 - .133	0.732	0.910	0.450	8.00	1.270	1.000	0.35	58343	58329
1.97	0.240	25	0.079	VG117 R 20 25	-	.098 - .133	0.870	1.180	0.590	10.00	1.430	1.250	0.35	58346	-
1.97	0.236	25	0.079	VG117 R 24 25	-	.098 - .133	1.031	1.460	0.730	12.00	1.670	1.500	0.47	58351	-
1.97	0.236	30	0.093	VG117 R 16 30	VG117 L 16 30	.118 - .163	0.728	0.910	0.450	8.00	1.270	1.000	0.35	58344	58330
1.97	0.236	30	0.093	VG117 R 20 30	VG117 L 20 30	.118 - .163	0.870	1.180	0.590	10.00	1.430	1.250	0.35	58347	58333
1.97	0.236	30	0.093	VG117 R 24 30	VG117 L 24 30	.118 - .163	1.024	1.460	0.730	11.96	1.690	1.500	0.35	58352	58338
2.36	0.319	40	0.132	VG117 R 20 40	VG117 L 20 40	.156 - .203	0.949	1.180	0.590	10.00	1.430	1.250	0.35	58348	58334
2.36	0.319	40	0.132	VG117 R 24 40	VG117 L 24 40	.156 - .203	1.106	1.460	0.730	12.00	1.670	1.500	0.47	58353	58339
2.36	0.315	50	0.171	VG117 R 20 50	VG117 L 20 50	.197 - .250	0.945	1.180	0.590	10.00	1.430	1.250	0.35	58349	58335
2.36	0.315	50	0.171	VG117 R 24 50	-	.197 - .250	1.102	1.460	0.730	12.00	1.670	1.500	0.47	58354	-
2.76	0.394	60	0.211	VG117 R 20 60	VG117 L 20 60	.236 - .315	1.024	1.180	0.590	10.00	1.430	1.250	0.35	58350	58336
2.76	0.394	60	0.211	VG117 R 24 60	VG117 L 24 60	.236 - .315	1.181	1.460	0.730	12.00	1.670	1.500	0.47	58355	58341

VG117 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1213T	1.8	62393	62399
25	PT1204T	PT1213T	2.2	62393	62399
30	PT1204T	PT1213T	2.6	62393	62399
40	PT1206T	PT1216T	3.3	62395	62402
50	PT1206T	PT1216T	3.7	62395	62402
60	PT1206T	PT1216T	3.7	62395	62402

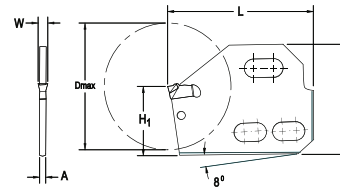
*Advanced Torx Plus® locking mechanism

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VG 123—Manchester Blades

Use Insert Style:
VSG-xx



Dmax	Seat Size	Seat Width	Part Number	Dimensions					EDP#
				W	A	B	H1	L	
3.00	20	0.059	VG123 40 20	.065 - .088	0.060	2.250	1.580	3.06	58364
2.00	20	0.059	VG123 27 20	.065 - .088	0.060	1.750	1.060	2.34	58358
3.00	30	0.093	VG123 40 30	.118 - .163	0.090	2.250	1.580	3.06	58366
2.00	30	0.093	VG123 27 30	.118 - .163	0.090	1.750	1.060	2.34	58360
3.00	30	0.093	VG123 36 30	.118 - .163	0.090	1.900	1.440	3.06	58363
3.00	50	0.171	VG123 40 50	.197 - .250	0.170	2.250	1.580	3.06	58368
2.00	50	0.171	VG123 27 50	.197 - .250	0.170	1.750	1.060	2.34	58362
5.00	60	0.211	VG123 56 60	.236 - .315	0.210	3.130	2.210	4.43	58370

VG123 Spare Parts

Seat Size	Torx® Wrench*	Wrench EDP#
20	PT1211	62397
30	PT1211	62397
50	PT1210	62396
60	PT1210	62396

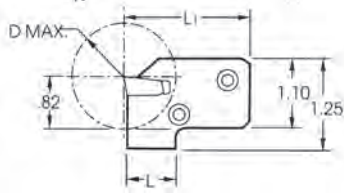
Note: Insert key must be ordered separately

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VSG Toolholder System

VGBT Blades

Use Insert Style:
VSG-xx

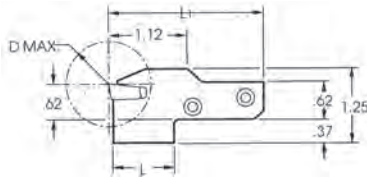


Right-hand shown, Left-hand opposite

Dmax	Seat Size	Seat Width	Part Number	Dimensions				EDP
				W	A	L	L1	
0.79	30	0.093	VGBT25L58 30	0.123	0.093	0.80	1.920	50168
0.79	30	0.093	VGBT25R58 30	0.123	0.093	0.80	1.920	50169

VGDG Blades

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Dmax	Seat Size	Seat Width	Part Number	Dimensions				EDP
				W	A	L	L1	
1.50	30	0.093	VGDGL125078 30	0.123	0.093	0.78	2.250	50173
1.50	30	0.093	VGDGR125078 30	0.123	0.093	0.78	2.250	50184
2.00	50	0.171	VGDGL188103 50	0.202	0.171	1.03	2.500	50188
2.00	50	0.171	VGDGR188103 50	0.202	0.171	1.03	2.500	50179
3.00	60	0.211	VGDG250153 60	0.241	0.211	1.53	3.000	50177

VGBT & VGDG Spare Parts

Seat Size	Insert Key	EDP#
30	PT1211	62397
50	PT1210	62396
60	PT1210	62396

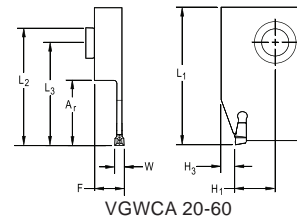
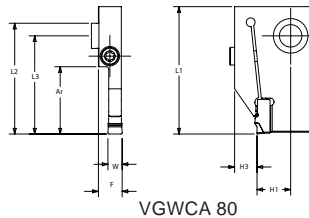
Note: Insert key must be ordered separately

PARTING & GROOVING

ValGROOVE™ VSG Toolholder System

VGWCA Modular Machining

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	L1	L2	L3	F	H1	H3		
0.875	20	0.059	VGWCA R 20	VGWCA L 20	.065 - .088	2.215	1.845	1.564	0.523	0.75	0.25	58496	58489
1.000	25	0.079	VGWCA R 25	VGWCA L 25	.098 - .133	2.34	1.97	1.689	0.523	0.75	0.25	58497	58490
1.125	30	0.093	VGWCA R 30	VGWCA L 30	.118 - .163	2.465	2.095	1.814	0.525	0.75	0.25	58498	58491
1.250	40	0.132	VGWCA R 40	VGWCA L 40	.156 - .203	2.59	2.2	1.939	0.526	0.75	0.25	58499	58492
1.250	50	0.171	VGWCA R 50	VGWCA L 50	.197 - .250	2.59	2.2	1.939	0.526	0.75	0.25	58500	58493
1.250	60	0.211	VGWCA R 60	VGWCA L 60	.236 - .315	2.59	2.2	1.939	0.527	0.75	0.25	58501	58494
1.500	80	0.255	VGWCA R 80	VGWCA L 80	.315 - .394	2.84	2.47	2.189	0.530	0.75	0.25	58502	58495

Note:

- Use with VHDBS Style Shanks page D19-D20.
- Insert key must be ordered separately.

VGWCA Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396
80	PT1210	62396











ValGroove VTG inserts for high productivity grooving, profiling, and parting in proven ValPro carbide grades and PCD/CBN tipped styles

PARTING & GROOVING

ValGROOVE™ Insert Geometry Descriptions

VTG System

Insert Style	Description	Insert Style	Description
VTG-GG 	Parting / Grooving First choice for parting and grooving on all materials. Positive geometry eliminates the risk of edge build-up. Low cutting forces reduce vibration. Recommended for thin walled tubes and small diameter components.	VTG-CBNG 	Grooving General and finish grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.
VTG-TG 	Turn-Grooving Excellent choice for general plunge-turning. Medium feed rate capability with good chip control.	VTG-PCDG 	Grooving High performance parting and grooving in non-ferrous materials High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.
VTG-RG 	Profiling / Radius Grooving First choice for profiling/turning and radius grooving operations. Precision ground cutting edge for low forces and excellent surface finish. Strong geometry resists chipping in work hardening materials and interrupted cuts.	VTG-CBNP 	Profiling / Radius Grooving General and finish profiling/radius grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.
VTG-PG 	Precision Grooving First choice for precision grooving and turning operations. Excellent chip control in stainless steel and high temp alloys.	VTG-PCDP 	Profiling/Radius Grooving High performance profiling and radius grooving in non-ferrous materials High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.

ValGROOVE™ Insert Geometry Descriptions

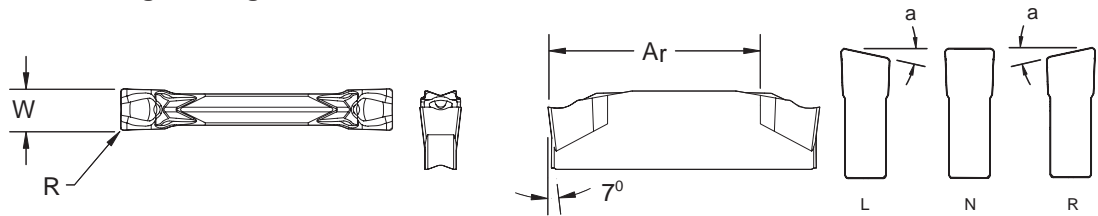
VSG System

Insert Style	Description	Insert Style	Description
VSG-FG 	Parting / Grooving First choice for general parting and grooving operations. Good chip control and moderate cutting forces. Recommended for tubes and stainless steel.	VSG-PG 	Precision Grooving Best choice for precision grooving. Excellent repeatability due to tight tolerances. Low cutting forces and good chip control on many materials.
VSG-GG 	Parting / Grooving Ideal for heavy parting and grooving operations. Strong geometry for interrupted cuts.	VSG-RG 	Radius Grooving / Profiling Designed for radius grooving and profiling on all materials. Generates excellent surface finish.
VSG-CG 	Parting / Grooving Optimal parting and light grooving geometry. Minimizes chips and burrs when parting bars and tubes. Excellent for stainless, low carbon steel, high temp alloys.	VSG-UG 	Undercut Grooving First choice for turning of undercuts and reliefs. Increased clearance angle permits undercutting. Good chip control in a wide variety of materials.
VSG-LG 	Grooving / Parting Alternate light grooving and parting geometry. Generates low cutting forces. For stainless steels, ductile and work hardening materials.	VSG-SC 	Grooving Designed for slot milling applications in V350 Slot Mills. Excellent in heavily interrupted cuts and at high feed rates in poor machining conditions.

PARTING & GROOVING

ValGROOVE™ VTG Insert System

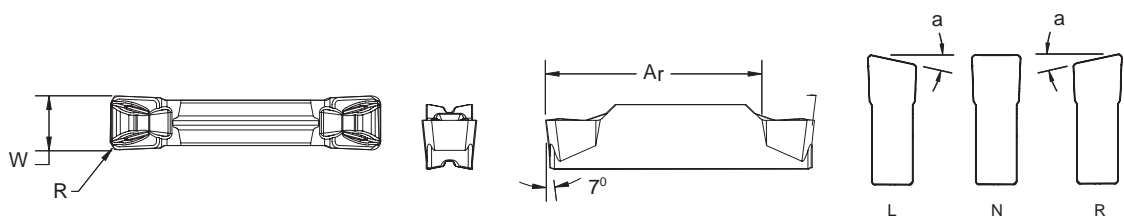
VTG GG—General Grooving/Parting



Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection						
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#						
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20	
	VTG 2.0 L5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°	02776						
	VTG 2.0 N 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	0	02777			02759			
	VTG 2.0 R5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°	02778						
	VTG 2.5 L5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°	02779						
	VTG 2.5 N 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	0	02780			02761			
	VTG 2.5 R5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°	02781						
	VTG 3.0 L5 30 GG	30	0.120	3.05	0.008	0.20	0.744	18.9	5°	02782			02762			
	VTG 3.0 N 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	0	02783			02763			
	VTG 3.0 R5 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	5°	02785			02765			
	VTG 4.0 L5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02786			02766			
	VTG 4.0 N 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	0°	02787			02767	22483		
	VTG 4.0 R5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02789			02769			
	VTG 5.0 N 50 GG	50	0.199	5.05	0.008	0.20	0.949	24.1	0	02790			02770			
	VTG 6.0 N 60 GG	60	0.238	6.05	0.016	0.40	0.925	23.5	0	02792			02772	19893		

Width Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$), Radius Tolerance $\pm 0.004"$ ($\pm 0.1\text{mm}$)

VTG TG—Turn Grooving



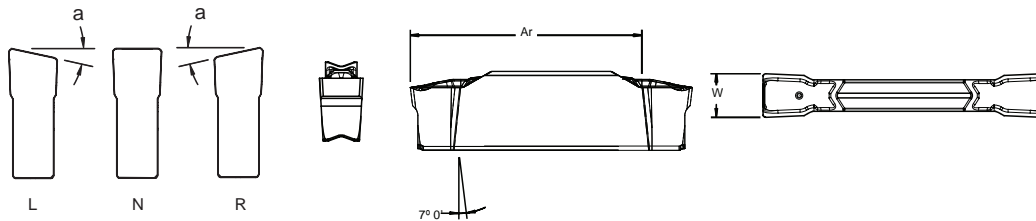
Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection						
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#						
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20	
	VTG 3.0 N 30 TG	30	0.120	3.05	0.016	0.40	0.724	18.4	0	02784			02764			
	VTG 4.0 N 40 TG	40	0.159	4.05	0.031	0.80	0.921	23.4	0	02788			02768			
	VTG 5.0 N 50 TG	50	0.199	5.05	0.031	0.80	0.906	23.0	0	02791			02771			
	VTG 6.0 N 60 TG	60	0.238	6.05	0.031	0.80	0.906	23.0	0	02793			02773			
	VTG 8.0 N 80 TG	80	0.317	8.05	0.047	1.20	1.090	27.6	0	02794			02774			

Width Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$), Radius Tolerance $\pm 0.004"$ ($\pm 0.1\text{mm}$)

PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG-PG—Precision Grooving



Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-PG	VTG 1.60 L10 15 PG ¹	15	0.063	1.60	0.004	0.10	0.524	13.3	10°	23617					
	VTG 1.60 N 15 PG ¹	15	0.063	1.60	0.004	0.10	0.524	13.3	0	23620		23619	23618		
	VTG 1.60 R10 15 PG ¹	15	0.063	1.60	0.004	0.10	0.524	13.3	10°	23657					
	VTG 1.85 N 20 PG*	20	0.073	1.85	0.004	0.10	0.750	19.0	0	23621					
	VTG 1.98 N 20 PG*	20	0.078	1.98	0.008	0.20	0.750	19.0	0	23622					
	VTG 2.39 N 25 PG*	25	0.094	2.39	0.008	0.20	0.750	19.0	0	23625		23624	23623		
	VTG 2.65 N 25 PG ¹	25	0.104	2.65	0.008	0.20	0.750	19.0	0	23626					
	VTG 3.00 N 30 PG*	30	0.118	3.00	0.008	0.20	0.750	19.0	0	23628		23627			
	VTG 3.10 N 30 PG*	30	0.122	3.10	0.008	0.20	0.750	19.0	0	23629					
	VTG 3.18 N 30 PG*	30	0.125	3.18	0.008	0.20	0.750	19.0	0	23633		23632	23631		23630
	VTG 3.30 N 30 PG*	30	0.130	3.30	0.008	0.20	0.750	19.0	0	23634					
	VTG 3.96 N 40 PG ¹	40	0.156	3.96	0.008	0.20	0.960	24.4	0	23637		23636	23635		
	VTG 4.00 N 40 PG ¹	40	0.157	4.00	0.008	0.20	0.960	24.4	0	23640		23639	23638		
	VTG 4.32 N 40 PG ¹	40	0.170	4.32	0.016	0.40	0.960	24.4	0	23641					
	VTG 4.50 N 40 PG ¹	40	0.177	4.50	0.016	0.40	0.960	24.4	0	23642					
	VTG 4.75 N 40 PG ¹	40	0.187	4.75	0.020	0.51	0.960	24.4	0	23646		23645	23644		23643
	VTG 5.56 N 50 PG ¹	50	0.218	5.56	0.020	0.51	0.960	24.4	0	23647					
	VTG 6.35 N 60 PG ¹	60	0.250	6.35	0.020	0.51	0.960	24.4	0	23651		23650	23649		23648
	VTG 6.48 N 60 PG ¹	60	0.255	6.48	0.024	0.60	0.960	24.4	0	23653			23652		
	VTG 7.92 N 80 PG ¹	80	0.312	7.92	0.016	0.40	1.140	29.0	0	23656		23658	23655		23654

*Available June 2007

¹Available 3Q 2007. Check with Valenite Customer Service for details.

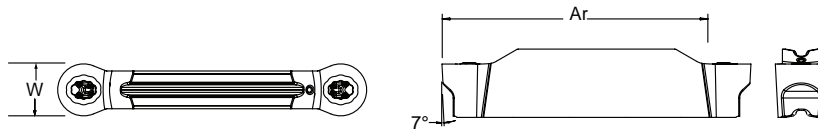
Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$)



PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG-RG—Profiling/Radius Grooving



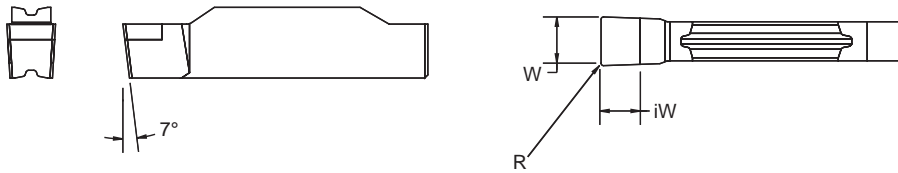
Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-RG	VTG 2.00 N 20 RG	20	0.079	2.00	0.0395	1.00	0.759	19.3	0	20325	20337		20324		
	VTG 2.39 N 20 RG	20	0.094	2.39	0.047	1.19	0.750	19.0	0	20326	20339		20338		
	VTG 3.00 N 25 RG	25	0.118	3.00	0.059	1.50	0.750	19.0	0	20327	20341		20340		
	VTG 3.18 N 25 RG	25	0.125	3.18	0.063	1.59	0.750	19.0	0	20328	20344		20343		20342
	VTG 4.00 N 40 RG	40	0.156	4.00	0.078	2.00	0.920	23.4	0	20329	20347		20346		20345
	VTG 4.75 N 40 RG	40	0.187	4.75	0.094	2.38	0.900	22.9	0	20330	20350		20349		20348
	VTG 5.00 N 40 RG	40	0.197	5.00	0.099	2.50	0.900	22.9	0	20331	20352		20351		
	VTG 6.00 N 50 RG	40	0.236	6.00	0.118	3.00	0.875	22.2	0	20332	20355		20354		20353
	VTG 6.35 N 50 RG	50	0.250	6.35	0.125	3.18	0.875	22.2	0	20333	20358		20357		20356
	VTG 8.00 N 80 RG	80	0.315	8.00	0.157	4.00	1.080	27.4	0	20334	20359		22351		


Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$)

PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG CBNG—CBN Grooving



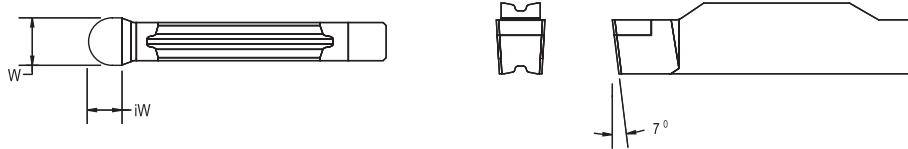
Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
	VTG 2.39 N 25 CBNG	25	0.094	2.39	0.008	0.20	0.126	3.2	0		40227
	VTG 3.00 N 30 CBNG	30	0.118	3.00	0.008	0.20	0.126	3.2	0		40228
	VTG 3.18 N 30 CBNG	30	0.125	3.18	0.008	0.20	0.126	3.2	0		40229
	VTG 4.00 N 40 CBNG	40	0.157	4.00	0.008	0.20	0.126	3.2	0		40230
	VTG 4.75 N 40 CBNG	40	0.187	4.75	0.008	0.20	0.126	3.2	0		40233
	VTG 5.00 N 40 CBNG	40	0.197	5.00	0.008	0.20	0.126	3.2	0		40254
	VTG 6.00 N 50 CBNG	50	0.236	6.00	0.008	0.20	0.126	3.2	0		00361
	VTG 6.35 N 60 CBNG	60	0.250	6.35	0.008	0.20	0.126	3.2	0		40271
	VTG 7.94 N 80 CBNG	80	0.312	7.94	0.008	0.20	0.126	3.2	0		40273
	VTG 8.00 N 80 CBNG	80	0.315	8.00	0.008	0.20	0.126	3.2	0		40276


Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$)

PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG CBNP—CBN Profiling



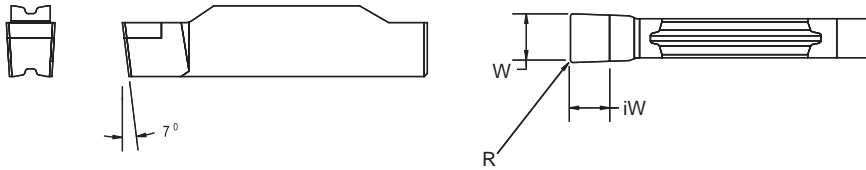
Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
	VTG 2.39 N 25 CBNP	25	0.094	2.39	0.047	1.19	0.098	2.5	0		40277
	VTG 3.00 N 30 CBNP	30	0.118	3.00	0.059	1.50	0.098	2.5	0		40278
	VTG 3.18 N 30 CBNP	30	0.125	3.18	0.063	1.59	0.098	2.5	0		40288
	VTG 4.00 N 40 CBNP	40	0.157	4.00	0.079	2.00	0.118	3.0	0		40291
	VTG 4.75 N 40 CBNP	40	0.187	4.75	0.093	2.38	0.138	3.5	0		40292
	VTG 5.00 N 40 CBNP	40	0.197	5.00	0.098	2.50	0.138	3.5	0		40295
	VTG 6.00 N 50 CBNP	50	0.236	6.00	0.118	3.00	0.157	4.0	0		40300
	VTG 6.35 N 50 CBNP	50	0.250	6.35	0.125	3.18	0.157	4.0	0		40302
	VTG 7.94 N 80 CBNP	80	0.312	7.94	0.156	3.97	0.197	5.0	0		40304
	VTG 8.00 N 80 CBNP	80	0.315	8.00	0.157	4.00	0.197	5.0	0		40305


Width Tolerance $\pm 0.0008''$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.0004''$ ($\pm 0.01\text{mm}$)

PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG PCDG—PCD Grooving



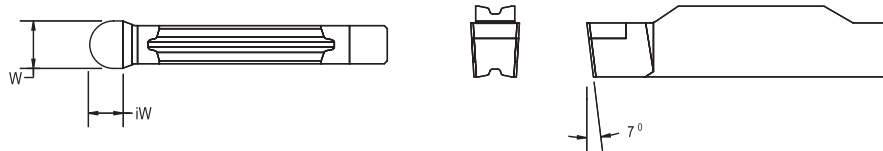
Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
	VTG 3.00 N 30 PCDG	30	0.118	3.00	0.008	0.20	0.126	3.2	0	40056	
	VTG 3.18 N 30 PCDG	30	0.125	3.18	0.008	0.20	0.126	3.2	0	40064	
	VTG 4.00 N 40 PCDG	40	0.157	4.00	0.008	0.20	0.126	3.2	0	40073	
	VTG 4.75 N 40 PCDG	40	0.187	4.75	0.008	0.20	0.126	3.2	0	40084	
	VTG 5.00 N 40 PCDG	40	0.197	5.00	0.008	0.20	0.126	3.2	0	40086	
	VTG 6.00 N 50 PCDG	50	0.236	6.00	0.008	0.20	0.126	3.2	0	40091	
	VTG 6.35 N 60 PCDG	60	0.250	6.35	0.008	0.20	0.126	3.2	0	40105	
	VTG 7.94 N 80 PCDG	80	0.312	7.94	0.008	0.20	0.126	3.2	0	40148	
	VTG 8.00 N 80 PCDG	80	0.315	8.00	0.008	0.20	0.126	3.2	0	40154	


Width Tolerance $\pm 0.0008''$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.002''$ ($\pm 0.05\text{mm}$)

PARTING & GROOVING

ValGROOVE™ VTG Insert System

VTG PCDP—PCD Profiling

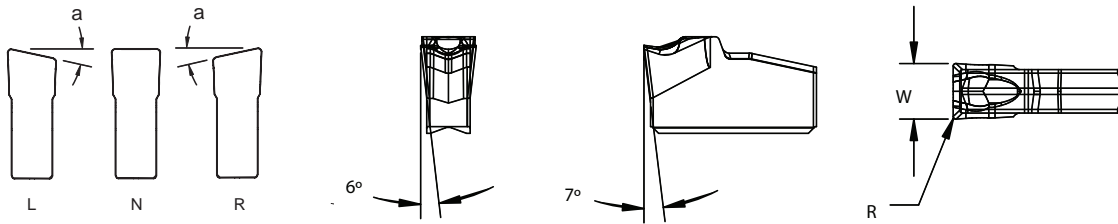


Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
	VTG 3.00 N 30 PCDP	30	0.118	3.00	0.059	1.50	0.098	2.5	0	40213	
	VTG 3.18 N 30 PCDP	30	0.125	3.18	0.063	1.59	0.098	2.5	0	40214	
	VTG 4.00 N 40 PCDP	40	0.157	4.00	0.079	2.00	0.118	3.0	0	40215	
	VTG 4.75 N 40 PCDP	40	0.187	4.75	0.093	2.38	0.138	3.5	0	40216	
	VTG 5.00 N 40 PCDP	40	0.197	5.00	0.098	2.50	0.138	3.5	0	40217	
	VTG 6.00 N 50 PCDP	50	0.236	6.00	0.118	3.00	0.157	4.0	0	40218	
	VTG 6.35 N 50 PCDP	50	0.250	6.35	0.125	3.18	0.157	4.0	0	40219	
	VTG 7.94 N 80 PCDP	80	0.312	7.94	0.156	3.97	0.197	5.0	0	40220	
	VTG 8.00 N 80 PCDP	80	0.315	8.00	0.157	4.00	0.197	5.0	0	40221	

Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.0004"$ ($\pm 0.01\text{mm}$)

ValGROOVE™ VSG Insert System

VSG-FG—General Grooving/Parting



Chipbreaker	Part Number	Insert Dimensions					ValPro Grade Selection							
		Seat Size	Width		Radius		α	Available Grades - EDP#						
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845	
VSG-FG	VSG 1.5 L5 15 FG	15	0.063	1.60	0.004	0.10	5°		04963				04960	
	VSG 1.5 N 15 FG	15	0.063	1.60	0.008	0.20	0	23532	22363	23531		23530		
	VSG 1.5 R5 15 FG	15	0.063	1.60	0.004	0.10	5°	04986	04985	22364			04979	
	VSG 2.0 L5 20 FG	20	0.084	2.13	0.008	0.20	5°	05003	04995				04993	
	VSG 2.0 N 20 FG	20	0.084	2.13	0.008	0.20	0	23535	05509	23534			23533	
	VSG 2.0 R5 20 FG	20	0.084	2.13	0.008	0.20	5°	05552	05546	23536			05542	
	VSG 2.4 L5 25 FG	25	0.094	2.39	0.008	0.20	5°	05564	05560				05558	
	VSG 2.4 N 25 FG	25	0.094	2.39	0.008	0.20	0	05573	05572				05569	
	VSG 2.4 R5 25 FG	25	0.094	2.39	0.008	0.20	5°	05717	05716				05574	
	VSG 3.0 L5 30 FG	30	0.123	3.13	0.008	0.20	5°	05815	05814	05812			05727	
	VSG 3.0 N 30 FG	30	0.123	3.13	0.008	0.20	0	05891	05877	05876	22360		05821	
	VSG 3.0 R5 30 FG	30	0.123	3.13	0.008	0.20	5°	06101	06097	06093			06092	
	VSG 4.0 L5 40 FG	40	0.162	4.13	0.008	0.20	5°	06122	06119	06117			06115	
	VSG 4.0 N 40 FG	40	0.162	4.13	0.008	0.20	0	06132	06130	06129			06124	
	VSG 4.0 R5 40 FG	40	0.162	4.13	0.008	0.20	5°	06163	06144	06143			06138	
	VSG 4.7 L5 40 FG	40	0.189	4.80	0.008	0.20	5°	06362	06354	06243			06231	
	VSG 4.7 N 40 FG	40	0.189	4.80	0.008	0.20	0	06377	06375	06366			06365	
	VSG 4.7 R5 40 FG	40	0.189	4.80	0.008	0.20	5°	06389	06387	06382			07013	
	VSG 5.0 L5 50 FG	50	0.202	5.13	0.008	0.20	5°	07015	07014					
	VSG 5.0 N 50 FG	50	0.202	5.13	0.008	0.20	0	07226	07081	07031			07025	
VSG 5.0 R5 50 FG	50	0.202	5.13	0.008	0.20	5°	07234	07227						
VSG 6.0 L5 60 FG	60	0.241	6.13	0.008	0.20	5°	07303	07242	17684			07237		
VSG 6.0 N 60 FG	60	0.241	6.13	0.008	0.20	0	07324	07310	07309			07308		
VSG 6.0 R5 60 FG	60	0.241	6.13	0.008	0.20	5°	07682	07673	07551			07481		
VSG 6.4 N 60 FG	60	0.250	6.35	0.008	0.20	0	07893	07892	07891			07858		

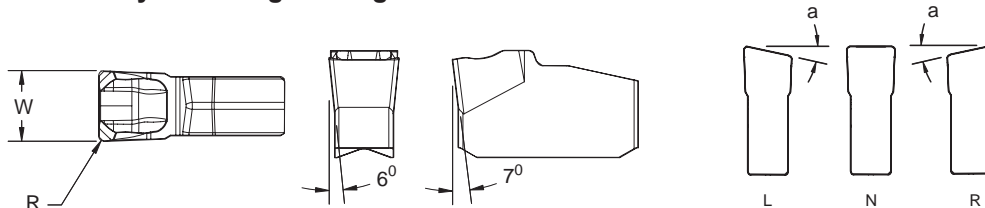


Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm)

PARTING & GROOVING

ValGROOVE™ VSG Insert System

VSG-GG One Edge Inserts—Heavy Grooving/Parting



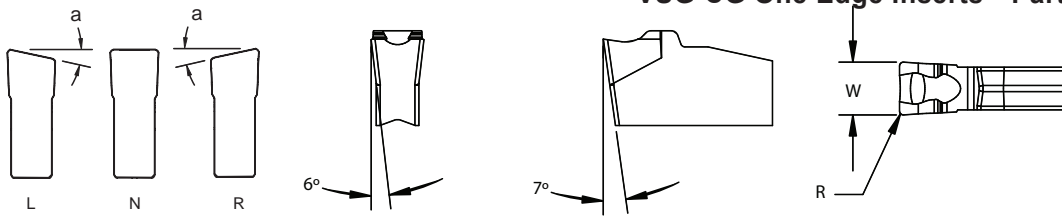
Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-GG	VSG 2.5 N 25 GG	25	0.103	2.63	0.012	0.30	0	02697		02663		02731	
	VSG 3.0 L5 30 GG	30	0.123	3.13	0.012	0.30	5°	02699		02665		02733	
	VSG 3.0 N 30 GG	30	0.123	3.13	0.012	0.30	0	02701		02667		02735	
	VSG 3.0 R5 30 GG	30	0.123	3.13	0.012	0.30	5°	02703		02669		02737	
	VSG 4.0 L5 40 GG	40	0.162	4.13	0.012	0.30	5°	12835		12808		12863	
	VSG 4.0 N 40 GG	40	0.162	4.13	0.012	0.30	0	02711		02677		02744	
	VSG 4.0 R5 40 GG	40	0.162	4.13	0.012	0.30	5°	02713		02679		02746	
	VSG 4.7 N 40 GG	40	0.189	4.80	0.012	0.30	0	02714		02680		02747	
	VSG 4.7 R5 40 GG	40	0.189	4.80	0.012	0.30	5°	02715		02681		02748	
	VSG 5.0 L5 50 GG	50	0.202	5.13	0.012	0.30	5°	12840		12811		12866	
	VSG 5.0 N 50 GG	50	0.202	5.13	0.015	0.38	0	02718		02684		02751	
	VSG 5.0 R5 50 GG	50	0.202	5.13	0.012	0.30	5°	12842		12813		12868	
	VSG 6.0 L5 60 GG	60	0.241	6.13	0.012	0.30	5°	02721	02775	02686		02752	
	VSG 6.0 N 60 GG	60	0.241	6.13	0.012	0.30	0	02723		02688		02754	
	VSG 6.0 R5 60 GG	60	0.241	6.13	0.012	0.30	5°	12847		12816		12871	
	VSG 6.4 L5 60 GG	60	0.250	6.35	0.014	0.35	5°	19565	19564	19563		19562	
	VSG 6.4 N 60 GG	60	0.250	6.35	0.014	0.35	0	19569	19568	19567		19566	
	VSG 6.4 R5 60 GG	60	0.250	6.35	0.014	0.35	5°	19573	19572	19571		19570	
	VSG 8.0 N 80 GG	80	0.320	8.13	0.024	0.60	0	02727		02692		02758	

Width Tolerance: $\pm 0.005"$ ($\pm 0.125\text{mm}$), Radius Tolerance $\pm 0.004"$ ($\pm 0.1\text{mm}$)



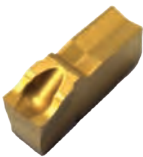
ValGROOVE™ VSG Insert System

VSG-CG One Edge Inserts—Parting/Light Grooving



Chipbreaker	Part Number	Insert Dimensions					ValPro Grade Selection						
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-CG	VSG 2.0 L5 20 CG	20	0.083	2.10	0.004	0.10	5°		17724			17723	
	VSG 2.0 N 20 CG	20	0.083	2.10	0.008	0.20	0	17728	17727	17726		17725	
	VSG 2.0 R5 20 CG	20	0.084	2.10	0.004	0.10	5°		17730			17729	
	VSG 2.5 L12 25 CG	25	0.102	2.60	0.004	0.10	12°	17820	17819	17818		17817	
	VSG 2.5 L5 25 CG	25	0.102	2.60	0.004	0.10	5°	17738	17737	17736		17735	
	VSG 2.5 L8 25 CG	25	0.102	2.60	0.004	0.10	8°	17742	17741	17740		17739	
	VSG 2.5 N 25 CG	25	0.102	2.60	0.008	0.20	0	17746	17745	17744		17743	
	VSG 2.5 R12 25 CG	25	0.102	2.60	0.004	0.10	12°	17824	17823	17822		17821	
	VSG 2.5 R5 25 CG	25	0.102	2.60	0.004	0.10	5°	17754	17753	17752		17751	
	VSG 2.5 R8 25 CG	25	0.102	2.60	0.004	0.10	8°	17758	17757	17756		17755	
	VSG 3.0 L12 30 CG	30	0.123	3.13	0.004	0.10	12°	17828	17827	17826		17825	
	VSG 3.0 L5 30 CG	30	0.123	3.13	0.004	0.10	5°	17766	17765	17764		17763	
	VSG 3.0 L8 30 CG	30	0.123	3.13	0.004	0.10	8°	17770	17769	17768		17767	
	VSG 3.0 N 30 CG	30	0.123	3.13	0.008	0.20	0	17774	17773	17772		17771	
	VSG 3.0 R12 30 CG	30	0.123	3.13	0.004	0.10	12°	17832	17831	17830		17829	
	VSG 3.0 R5 30 CG	30	0.123	3.13	0.004	0.10	5°	17782	17781	17780		17779	
	VSG 3.0 R8 30 CG	30	0.123	3.13	0.004	0.10	8°	17786	17785	17784		17783	
	VSG 4.0 L5 40 CG	40	0.161	4.10	0.004	0.10	5°	17789	17788	17971		17787	
	VSG 4.0 L8 40 CG	40	0.161	4.10	0.004	0.10	8°	17794	17793	17792		17791	
	VSG 4.0 N 40 CG	40	0.161	4.10	0.008	0.20	0	17798	17797	17796		17795	
	VSG 4.0 R5 40 CG	40	0.161	4.10	0.004	0.10	5°	17802	17801	17800		17799	
	VSG 4.0 R8 40 CG	40	0.161	4.10	0.004	0.10	8°	17806	17805	17804		17803	
	VSG 4.7 N 40 CG	40	0.189	4.80	0.008	0.20	0	17810	17809	17808		17807	
	VSG 5.0 L5 50 CG	50	0.202	5.13	0.004	0.10	5°	17812	17811				
	VSG 5.0 N 50 CG	50	0.202	5.13	0.008	0.20	0	17814	17813				
	VSG 5.0 R5 50 CG	50	0.202	5.13	0.004	0.10	5°	17972	17816				

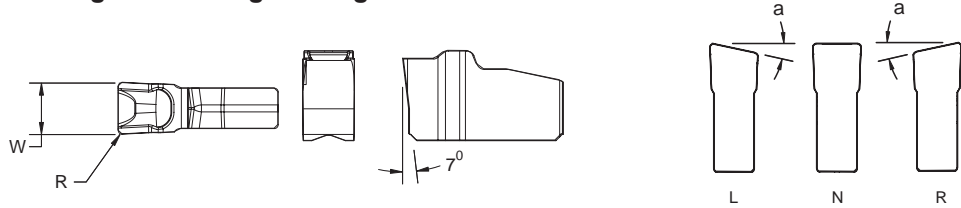
Width Tolerance: $\pm 0.005"$ ($\pm 0.125\text{mm}$), Radius Tolerance $\pm 0.004"$ ($\pm 0.1\text{mm}$)



PARTING & GROOVING

ValGROOVE™ VSG Insert System

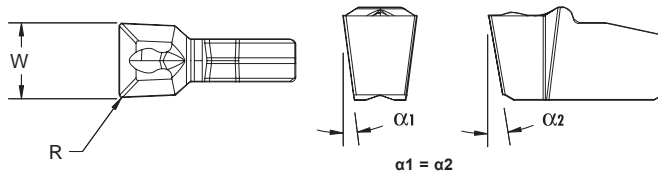
VSG LG One Edge Inserts—Light Grooving/Parting



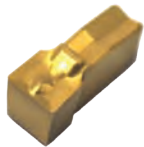
Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
	VSG 3.0 L15 30 LG	30	0.123	3.13	.008x45°	0.20x45°	15°	12828		12803		12858	
	VSG 3.0 L8 30 LG	30	0.123	3.13	.008x45°	0.20x45°	8°	12829		12804		12859	
	VSG 3.0 N 30 LG	30	0.123	3.13	0.012	0.30	0	02702		02668		02736	
	VSG 3.0 R15 30 LG	30	0.123	3.13	.008x45°	0.20x45°	15°	12831		12806		12861	
	VSG 3.0 R8 30 LG	30	0.123	3.13	.008x45°	0.20x45°	8°	02704		02670		02738	
	VSG 4.0 L15 40 LG	40	0.162	4.13	.008x45°	0.20x45°	15°	12834		12807		12862	
	VSG 4.0 N 40 LG	40	0.162	4.13	0.012	0.30	0	02712		02678		02745	
	VSG 4.0 R15 40 LG	40	0.162	4.13	.008x45°	0.20x45°	15°	12836		12809		12864	

Width Tolerance: $\pm 0.005''$ ($\pm 0.125\text{mm}$), Radius Tolerance $\pm 0.004''$ ($\pm 0.1\text{mm}$)

VSG PG One-Edge Inserts—Precision Grooving



Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-PG	VSG 1.85 N 20 PG	20	0.073	1.85	0.008	0.20	7°	14703		14702		14704	
	VSG 1.98 N 20 PG	20	0.078	1.98	0.008	0.20	7°	12822		14671		12856	
	VSG 2.24 N 20 PG	20	0.088	2.24	0.008	0.20	7°	12825		12802		12857	
	VSG 2.29 N 20 PG	20	0.090	2.29	0.008	0.20	7°	01240		01235			
	VSG 2.39 N 25 PG	25	0.094	2.39	0.008	0.20	7°	01248	01243				
	VSG 2.46 N 25 PG	25	0.097	2.46	0.013	0.33	7°	01250					
	VSG 2.67 N 25 PG	25	0.105	2.67	0.008	0.20	7°	02698	22359	02664		02732	
	VSG 2.79 N 25 PG	25	0.110	2.79	0.013	0.33	7°			06495			
	VSG 2.90 N 25 PG	25	0.114	2.90	0.031	0.80	7°	06837					
	VSG 3.00 N 25 PG	25	0.118	3.00	0.008	0.20	7°	01252	01251				
	VSG 3.10 N 25 PG	25	0.122	3.10	0.008	0.20	7°	02705		02671		02739	
	VSG 3.18 N 25 PG	25	0.125	3.18	0.008	0.20	7°	02706	22361	02672		02740	
	VSG 3.30 N 25 PG	25	0.130	3.30	0.008	0.20	7°	02707	01254	02673		02741	
	VSG 3.61 N 30 PG	30	0.142	3.61	0.013	0.33	7°	01256	01255				
	VSG 3.96 N 30 PG	30	0.156	3.96	0.008	0.20	7°	02709		02675		02742	
	VSG 4.00 0.40 N30 PG	30	0.157	4.00	0.016	0.40	7°	17844	17843				
	VSG 4.00 N 30 PG	30	0.157	4.00	0.008	0.20	7°	01258	01257				
	VSG 4.15 N 30 PG	30	0.163	4.15	0.008	0.20	7°	12839		12810		12865	
	VSG 4.32 N 40 PG	40	0.170	4.32	0.015	0.38	7°	01261	01259				
	VSG 4.50 N 40 PG	40	0.177	4.50	0.016	0.40	7°	01274	01268	01262			
	VSG 4.52 N 40 PG	40	0.178	4.50	0.008	0.20	7°	01280	01278			01277	
	VSG 4.70 N 40 PG	40	0.185	4.70	0.023	0.57	7°	01286	01285			01284	
	VSG 4.80 N 40 PG	40	0.189	4.80	0.023	0.57	7°	02716	01287	02682		02749	
	VSG 5.00 0.40 N40 PG	40	0.197	5.00	0.0160	0.40	7°	01293					
	VSG 5.00 N 40 PG	40	0.197	5.00	0.008	0.20	7°	01288					
	VSG 5.15 N 40 PG	40	0.203	5.15	0.008	0.20	7°	12845		12814		12869	
	VSG 5.33 N 50 PG	50	0.210	5.33	0.024	0.60	7°	01332	01329				
	VSG 5.41 N 50 PG	50	0.213	5.41	0.008	0.20	7°	01433	01432				
	VSG 5.56 N 50 PG	50	0.219	5.56	0.023	0.57	7°	01435					
	VSG 6.00 N 50 PG	50	0.236	6.00	0.008	0.20	7°	12848		02685		12872	
	VSG 6.35 N 60 PG	60	0.250	6.35	0.023	0.57	7°	02724	01442	02689		02755	
	VSG 6.48 N 60 PG	60	0.255	6.48	0.023	0.57	7°	02725		02690		02756	
	VSG 7.92 N 60 PG	60	0.312	7.92	0.033	0.83	7°	12851		12817		12873	
	VSG 9.52 N 80 PG	80	0.375	9.52	0.033	0.83	7°	12852		12818		12874	
	VSG 10.0 N 80 PG	80	0.394	10.00	0.012	0.30	7°	12819		12798		12853	

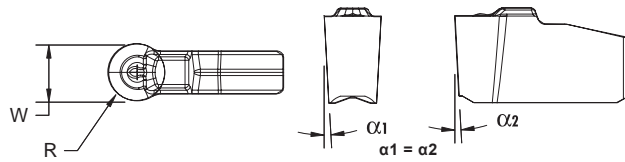


Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ± 0.0004" (± 0.01mm)

PARTING & GROOVING

ValGROOVE™ VSG Insert System

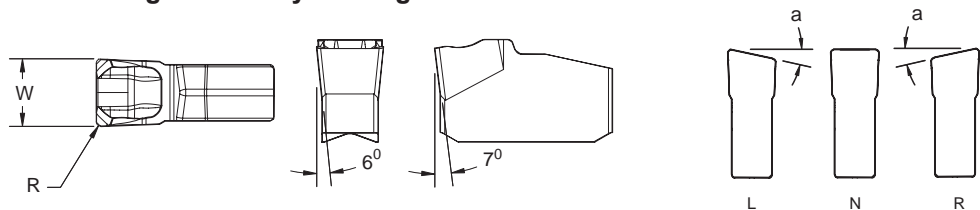
VSG RG One-Edge Inserts—Radius Grooving/Profiling



Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
	VSG 3.0 N 30 RG	30	0.118	3.00	0.059	1.50	0	12830		12805		12860	
	VSG 3.18 N 30 RG	30	0.125	3.18	0.063	1.59	0	14676		14675		14677	
	VSG 3.30 N 30 RG	30	0.130	3.30	0.065	1.65	0	02708	22362	02674		14678	
	VSG 3.96 N 40 RG	40	0.156	3.96	0.078	1.98	0	14680		14679		14681	
	VSG 4.0 N 40 RG	40	0.157	4.00	0.079	2.00	0	14683		14682		14684	
	VSG 4.32 N 40 RG	40	0.170	4.35	0.085	2.18	0	02661	02660				
	VSG 4.75 N 40 RG	40	0.187	4.75	0.094	2.38	0	14686		14685		14687	
	VSG 5.0 N 40 RG	40	0.197	5.00	0.098	2.50	0	12841		12812		12867	
	VSG 5.33 N 50 RG	50	0.210	5.33	0.105	2.67	0	02694	02693				
	VSG 6.0 N 50 RG	50	0.236	6.00	0.118	3.00	0	12846		12815		12870	
	VSG 6.35 N 50 RG	50	0.250	6.35	0.125	3.18	0	14689		14688		14690	
	VSG 6.48 N 50 RG	50	0.255	6.48	0.128	3.24	0	02728	02720	02719		02695	
	VSG 7.93 N 60 RG	60	0.312	7.93	0.156	3.97	0	14692		14691		14693	
	VSG 9.53 N 80 RG	80	0.375	9.53	0.188	4.77	0	14695		14694		14696	
	VSG 10.0 N 80 RG	80	0.394	10.00	0.197	5.00	0	12820		12799		12854	

Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.0004"$ ($\pm 0.01\text{mm}$)

VSG-SC One-Edge Inserts—Slotting Mill/Heavy Parting

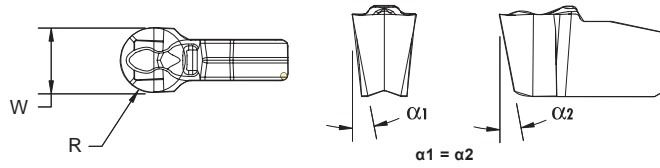


Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
	VSG 2.06 N 20 SC	20	0.081	2.06	0.008	0.20	0		12823				12824
	VSG 2.60 N 25 SC	25	0.102	2.60	0.008	0.20	0		12826				12827
	VSG 3.10 N 30 SC	30	0.123	3.10	0.012	0.30	0		12832				12833
	VSG 4.12 N 40 SC	40	0.162	4.12	0.012	0.30	0		12837				12838
	VSG 5.14 N 50 SC	50	0.202	5.14	0.015	0.38	0		12843				12844
	VSG 6.12 N 60 SC	60	0.241	6.12	0.015	0.38	0		12849				12850

Width Tolerance $\pm 0.002"$ ($\pm 0.05\text{mm}$), Radius Tolerance $\pm 0.004"$ ($\pm 0.1\text{mm}$)

ValGROOVE™ VSG Insert System

VSG UG One Edge Inserts—Undercut Grooving



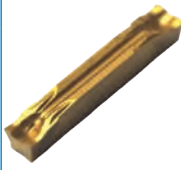
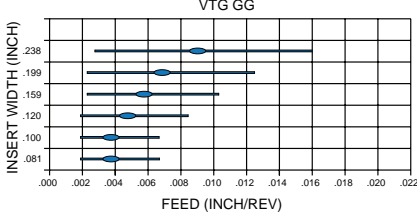

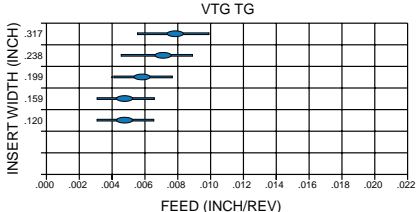

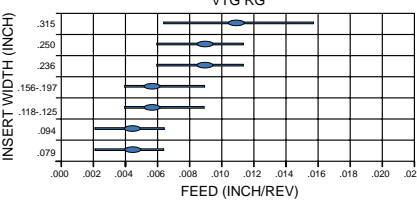

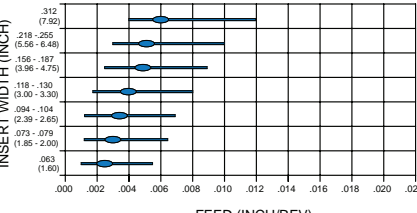
Chipbreaker	Part Number	Insert Dimensions					ValPro Grade Selection						
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-UG	VSG 2.0 N 20 UG	20	0.079	2.00	0.039	1.00	5°	02696		02662		02730	
	VSG 3.0 N 25 UG	25	0.118	3.00	0.059	1.50	7°	02700		02666		02734	
	VSG 4.0 N 30 UG	30	0.157	4.00	0.079	2.00	11°	02710		02676		02743	
	VSG 5.0 N 40 UG	40	0.197	5.00	0.098	2.50	11°	02717		02683		02750	
	VSG 6.0 N 50 UG	50	0.236	6.00	0.118	3.00	11°	02722		02687		02753	
	VSG 8.0 N 60 UG	60	0.315	8.00	0.158	4.00	11°	02726		02691		02757	

Width Tolerance $\pm 0.0008"$ ($\pm 0.02\text{mm}$), Radius Tolerance $\pm 0.0004"$ ($\pm 0.01\text{mm}$)


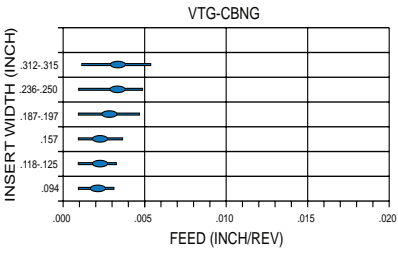
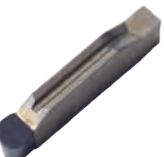
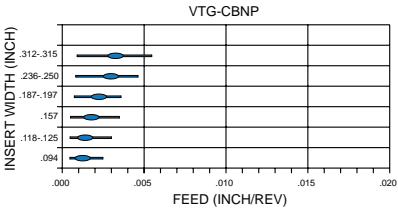

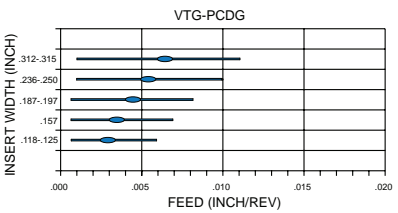

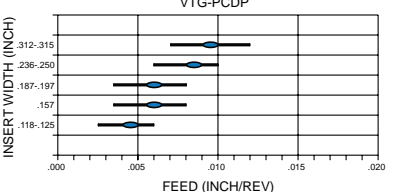
PARTING & GROOVING

ValGROOVE™ Insert Geometry Application Data

VTG System

Insert Style	Description	Radial Feed Rate	Materials	Application
● = Optimum feed rate for most applications				
VTG-GG 	Parting / Grooving First choice for parting and grooving on all materials.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General Machining to Finishing operations Light to medium feed rates
	Positive geometry eliminates the risk of edge build-up. Low cutting forces reduce vibration. Recommended for thin walled tubes and small diameter components.			
VTG-TG 	Turn-Grooving Excellent choice for general plunge-turning.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General Machining operations Medium feed rates
	Medium feed rate capability with good chip control.			
VTG-RG 	Profiling / Radius Grooving First choice for profiling/turning and radius grooving operations.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General Machining to Finishing operations Light to medium feed rates
	Precision ground cutting edge for low forces and excellent surface finish. Strong geometry resists chipping in work hardening materials and interrupted cuts.			
VTG-PG 	Precision Grooving First choice for precision grooving and turning operations.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: Precision grooves at light to medium feed rates Turning operations in difficult materials General machining to finishing operations
	Excellent chip control in stainless steel and high temp alloys.			

Note: See Pages D54-D55 for Turning/Grooving/Profiling Application Charts.

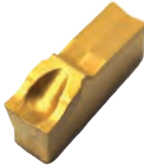
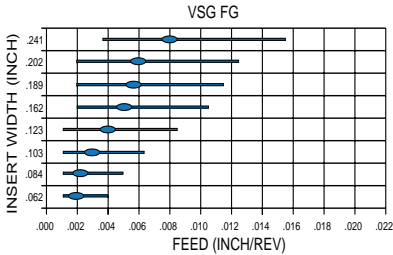

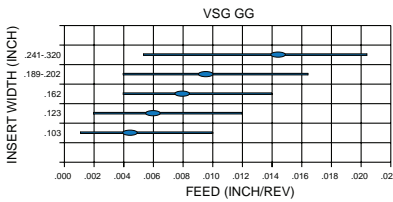
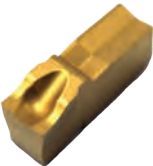
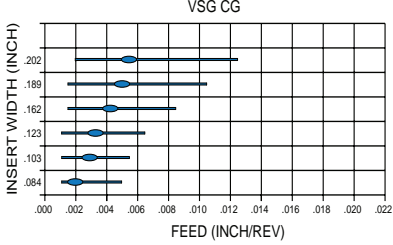
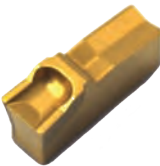
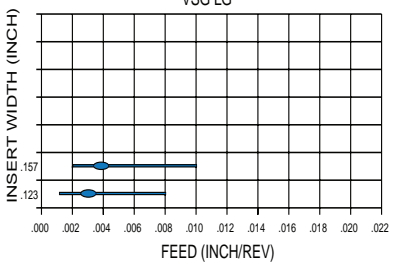
Insert Style	Description	Radial Feed Rate	Materials	Application
● = Optimum feed rate for most applications				
VTG-CBNG 	Grooving General and finish grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.		Steels	Main application area: General high speed machining in irons. Finishing operations in hard materials
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				
VTG-CBNP 	Profiling / Radius Grooving General and finish profiling/radius grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.		Steels	Main application area: General high speed machining in irons. Finishing operations in hard materials
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				
VTG-PCDG 	Grooving High performance parting and grooving in non-ferrous materials. High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.		Steels	Main application area: General machining to finishing at high speeds
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				
VTG-PCDP 	Profiling / Radius Grooving High performance profiling and radius grooving in non-ferrous materials. High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.		Steels	Main application area: General machining to finishing at high speeds
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				

Note: See Pages D57-D58 for Turning/Grooving Application Charts.

PARTING & GROOVING


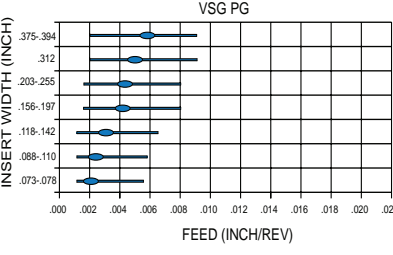

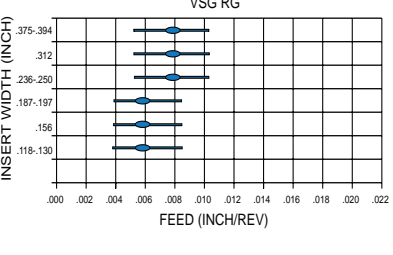

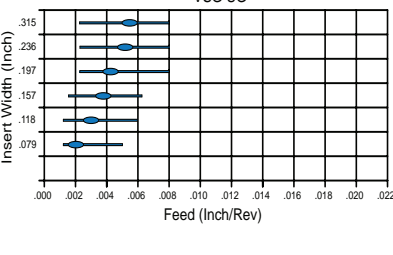
ValGROOVE™ Insert Geometry Application Data

VSG System

Insert Style	Description	Radial Feed Rate	Materials	Application
● = Optimum feed rate for most applications				
VSG-FG 	Parting / Grooving First choice for general parting and grooving operations. Good chip control and moderate cutting forces. Recommended for tubes and stainless steel.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General machining to finishing operations Light to medium feed rates
VSG-GG 	Parting / Grooving Ideal for heavy parting and grooving operations. Strong geometry for interrupted cuts.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General machining to heavy roughing Medium to high feed rates
VSG-CG 	Parting / Grooving Optimal parting and light grooving geometry. Minimizes pips and burrs when parting bars and tubes. Excellent for stainless, low carbon steel, high temp alloys.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General machining to finishing operations Light to medium feed rates
VSG-LG 	Grooving / Parting Alternate light grooving and parting geometry. Generates low cutting forces. For stainless steels, ductile and work hardening materials.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	Main application area: General machining to finishing operations Light to medium feed rates

ValGROOVE™ Insert Geometry Application Data

VSG System

Insert Style	Description	Radial Feed Rate	Materials	Application
● = Optimum feed rate for most applications				
VSG-PG 	Precision Grooving Excellent repeatability due to tight tolerances. Low cutting forces and good chip control on many materials.		Steels	Main application area: Precision grooves at light to medium feed rates General machining to finishing operations
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				
VSG-RG 	Radius Grooving / Profiling Designed for radius grooving and profiling on all materials. Generates excellent surface finish.		Steels	Main application area: General machining to finishing operations Medium feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				
VSG-UG 	Undercut Grooving First choice for turning of undercuts and reliefs. Increased clearance angle permits undercutting. Good chip control in a wide variety of materials.		Steels	Main application area: General machining to finishing operations Light feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/Non-Ferrous				
Hardened Material				

Note: See page D56 for profiling/turning application charts for VSG-RG

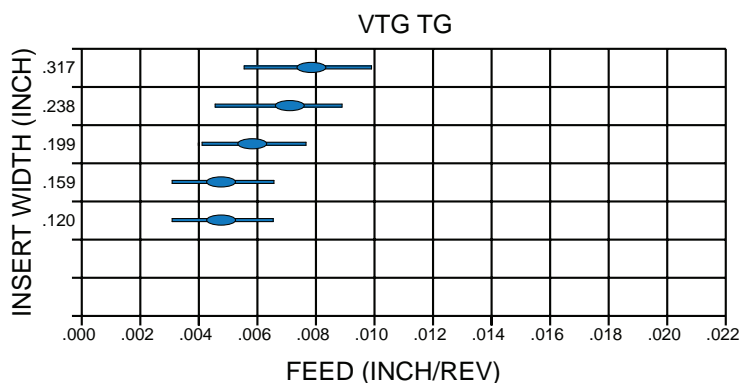
PARTING & GROOVING

ValGROOVE™ Insert Geometry Application Data

VTG-TG



Radial Feed Rate



Description

Designed for Turn-Grooving on all materials.

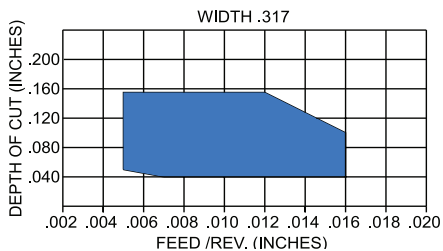
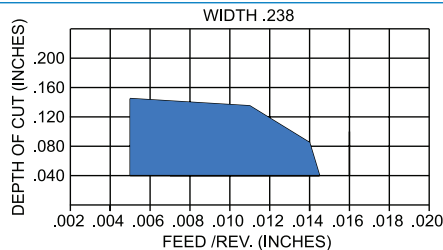
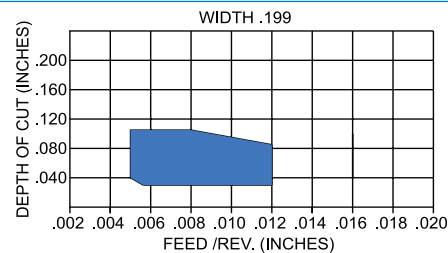
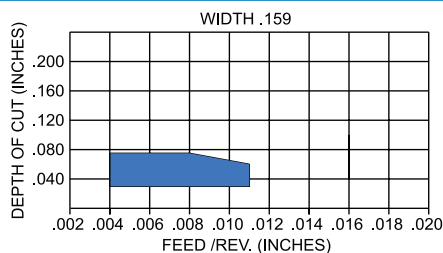
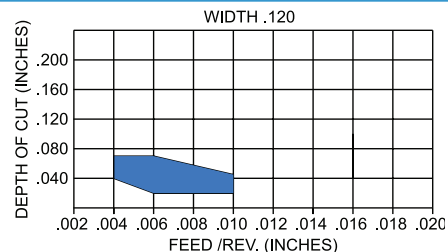
- Generates excellent surface finish.
- Recommended for stainless and heat resistant materials.

Materials

Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/Non-Ferrous
Hardened Material

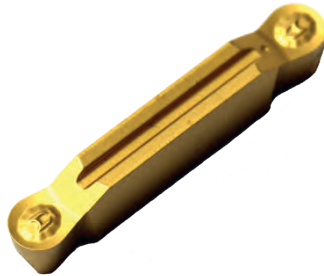
Turn-Grooving

Axial Feed Rate/Depth of Cut

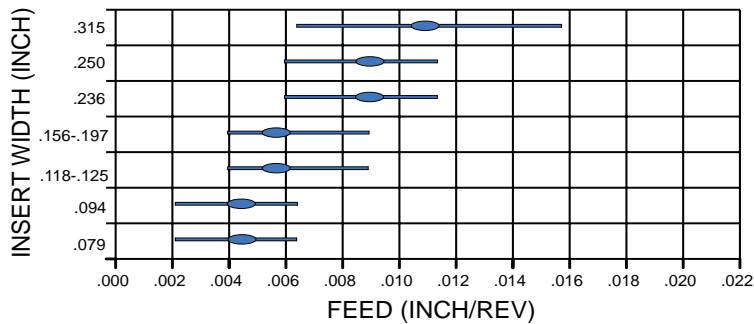


ValGROOVE™ Insert Geometry Application Data

VTG-RG

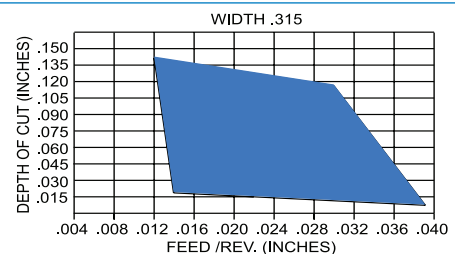
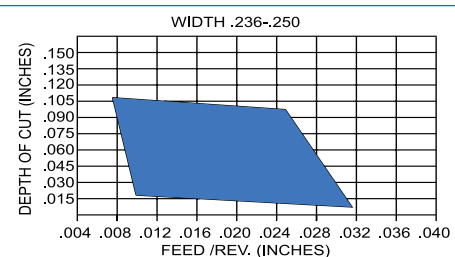
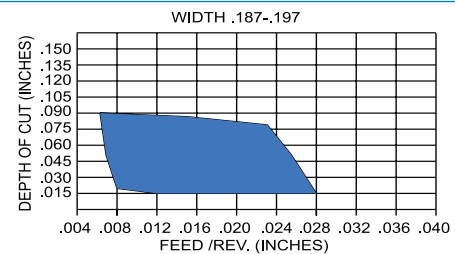
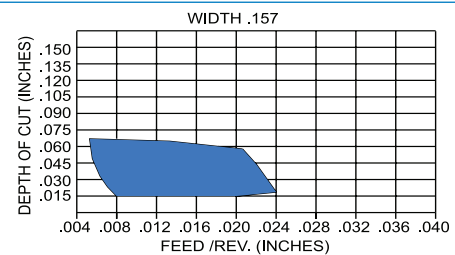
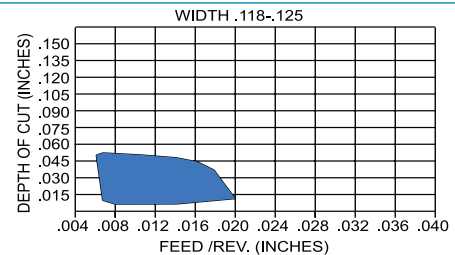
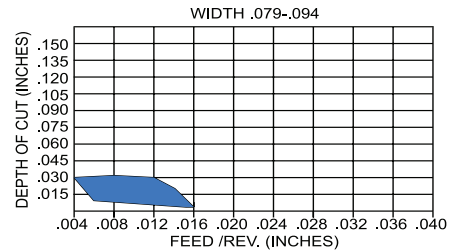


Radial Feed Rate VTG RG



Profiling/Radius Grooving

Axial Feed Rate/Depth of Cut



Description

First choice for profiling and turning operations.

- Precision ground cutting edge for low forces and excellent surface finish.
- Strong geometry resists chipping in work hardening materials.

Materials

Steels

Stainless Steels

Cast Irons

High Temperature Alloys

Aluminum/Non-Ferrous

Hardened Material

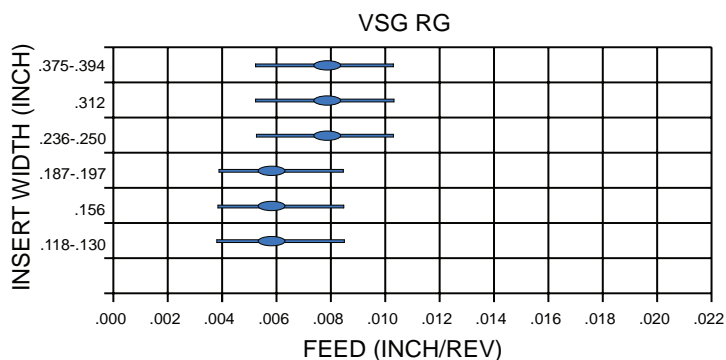
PARTING & GROOVING

ValGROOVE™ Insert Geometry Application Data

VSG-RG

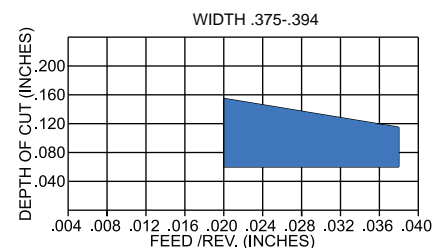
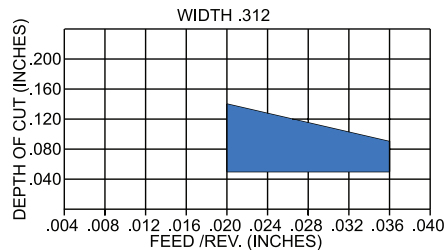
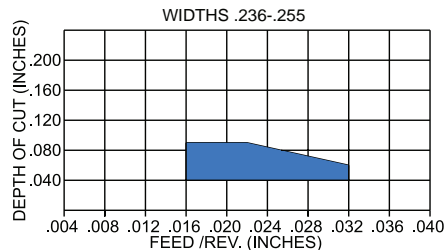
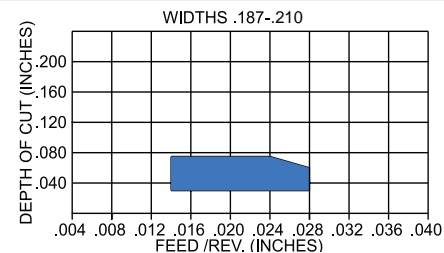
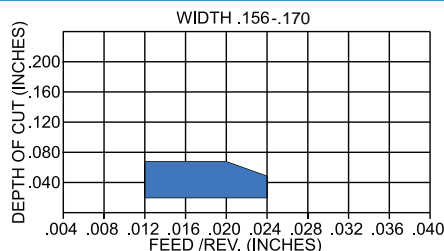
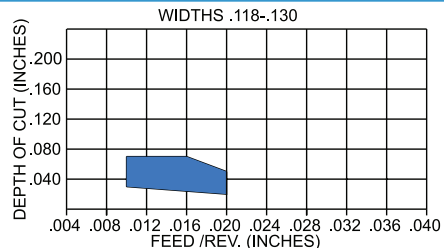


Radial Feed Rate



Radius Grooving/Profiling

Axial Feed Rate/Depth of Cut



Description

Designed for radius grooving and profiling on all materials.

- Generates excellent surface finish.
- Good chip control in a wide variety of materials.

Materials

Steels

Stainless Steels

Cast Irons

High Temperature Alloys

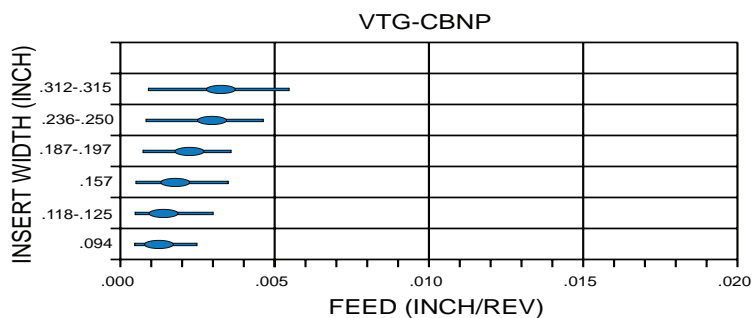
Aluminum/Non-Ferrous

Hardened Material

VTG-CBNP

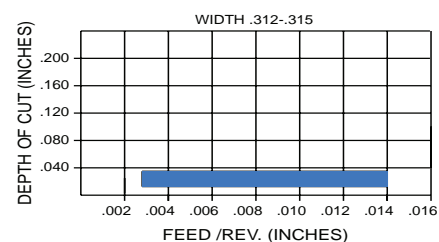
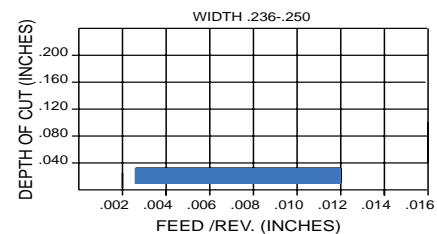
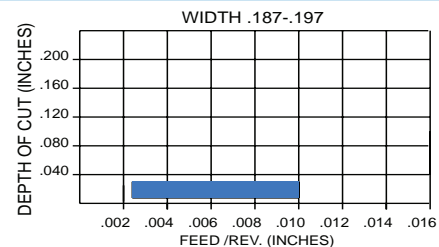
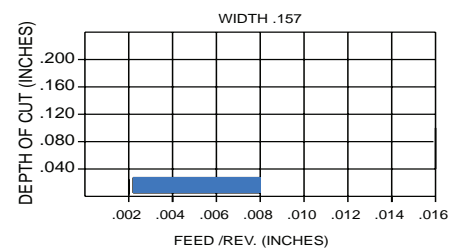
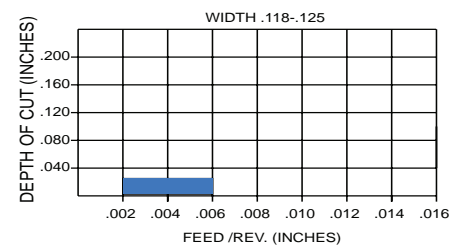
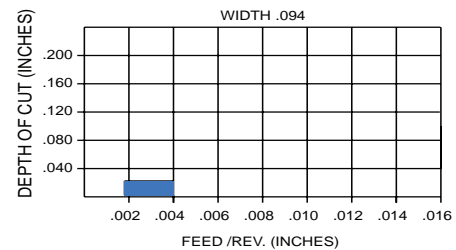


Radial Feed Rate



Profiling/Radius Grooving

Axial Feed Rate/Depth of Cut



Description

General and finish profiling/radius grooving of irons and hard materials.

- Good impact resistance.
- Maintains close tolerances and excellent surface finish.

Materials

Steels

Stainless Steels

Cast Irons

High Temperature Alloys

Aluminum/Non-Ferrous

Hardened Material

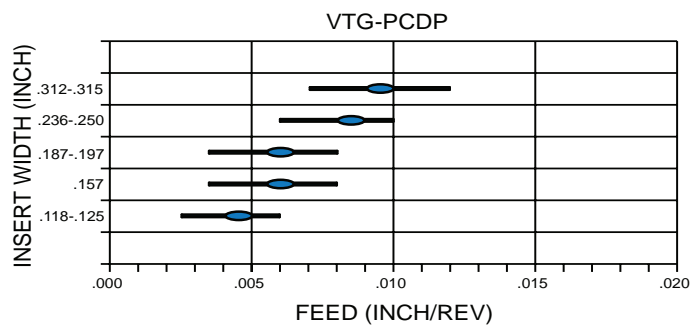
PARTING & GROOVING

ValGROOVE™ Insert Geometry Application Data

VTG-PCDP

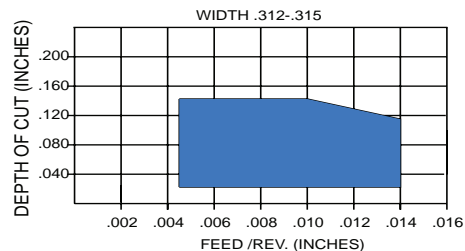
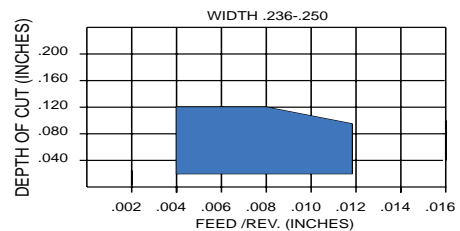
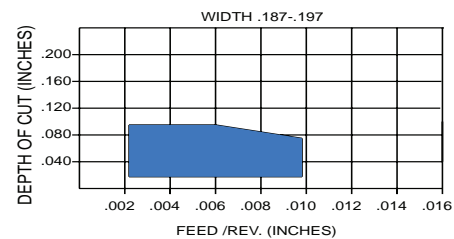
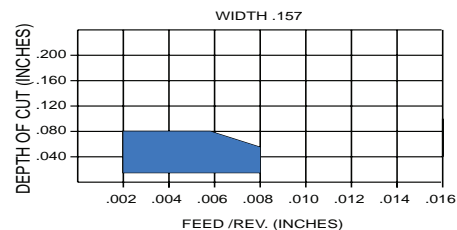
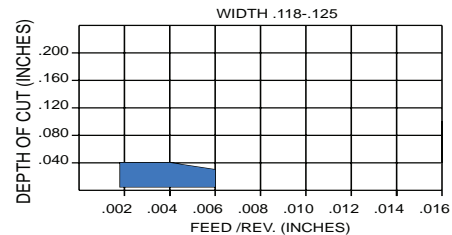


Radial Feed Rate



Profiling/Radius Grooving

Axial Feed Rate/Depth of Cut



Description

High performance profiling and radius grooving in non-ferrous materials.

- High speed/long tool life for aluminum and non-ferrous materials.
- Excellent in highly abrasive aluminum or other non-ferrous alloys.
- Maintains close tolerances and excellent surface finish.

Materials

Steels

Stainless Steels

Cast Irons

High Temperature Alloys

Aluminum/Non-Ferrous

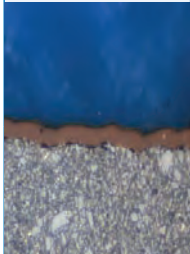

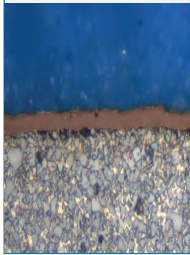
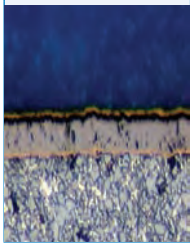
Hardened Material

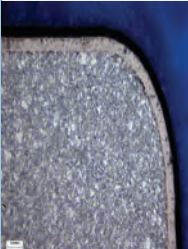
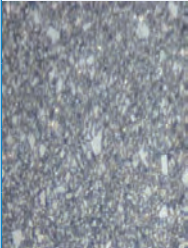


The ValPRO™ Color System simplifies the tool selection process. Use the ValGROOVE™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
Steels 	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
Stainless Steels 	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304i 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
Cast Irons 	Gray Cast Iron	ASTM A48, Class 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades 70003, 820002, 90001, SAE J158, Grades M7002, M8501
High Temp Alloys 	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
Aluminum And Non-Ferrous Materials 	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
Hardened Materials 	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

PARTING & GROOVING

ValGROOVE™ Grade Description

Grade	Description	Performance	ISO Class	Application
VP5815 	PVD Coated Carbide TiAlN/TiN Multi-Layer Coating Fine Grain Substrate	Medium Duty Grade Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge.	P15	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds.
			M15	
			K15	
			S15	
			N15	
VP5820 	PVD Coated Carbide TiAlN/ TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate.	General Machining Grade Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-up.	P20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
			M20	
			K20	
			S20	
			N20	
VP5845 	PVD Coated Carbide TiAlN Coating Super Tough High Cobalt Substrate	Roughing Grade Highest Toughness and Chipping Resistance Excellent Wear Resistance	P45	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Rough to General Machining. Low to Medium Speeds. Interrupted Cuts, Demanding High Feed Operations.
			M40	
			K45	
			S40	
			N40	
VP5735 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating High Cobalt Substrate	Roughing Grade Excellent Wear Resistance Very High Toughness and Chipping Resistance.	P35	Steels, Stainless Steels, Cast Iron, High Temperature Alloys. Roughing to General Purpose Machining, Medium Speeds, Continuous and Interrupted Cuts, and High Feed Rates.
			M35	
			K35	
			S30	

Grade	Description	Performance	ISO Class	Application
VP1710	 <p>MTCVD Coated Carbide TiCN/Al₂O₃ Coating Fine Grain Substrate Polished Surface</p>	<p>General and Light Machining Grade Excellent Wear Resistance Enhanced Toughness Enhanced Build-Up Resistance</p>	P10	<p>Cast Irons: Gray, Ductile, Malleable, Powder Metals. Steels: Carbon, Alloy, Tool & Die. General Machining, Semi-Finishing and Finishing. Continuous and Light Interrupted Cuts.</p>
			K10	
VPUK20	 <p>Uncoated Carbide Fine Grain Substrate Medium Hardness</p>	<p>General Purpose Grade Excellent Toughness Good Wear Resistance and Chipping Resistance</p>	M25	<p>Aluminum, Stainless Steels- Ferritic and Austenitic, Gray Iron, Ductile Iron, Malleable Iron, Bi-Metal Components. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.</p>
			K20	
			S25	
			N25	
VPB125	 <p>CBN Tipped Carbide</p>	<p>High Speed Grade for Iron General Purpose Grade for Hardened Steels High Impact Resistance Excellent Wear Resistance</p>	K01-05	<p>Gray Irons, Most Ductile Irons, Hardened Steels 45-60 Rc High Speeds in Iron, Medium Speeds in Hard Steels. Continuous and Light Interrupted Cuts.</p>
			H10-15	
VPD720	 <p>Diamond Tipped Carbide</p>	<p>High Speed Grade for Aluminum and Non-Ferrous Materials Excellent Toughness Excellent Wear Resistance</p>	N10-40	<p>Aluminum & Non-Ferrous Alloys. Medium Speed to High Speed Under a Wide Range of Cutting Conditions Roughing to Finishing with Good Surface Finish.</p>

PARTING & GROOVING

ValGROOVE™ Steels

Grade Selection Guide

Steels						
ISO	P50	P40	P30	P20	P10	P01
ANSI	C5		C6	C7		C8
Typical Failure Modes	<ul style="list-style-type: none"> • Chipping • Deformation • Wear 			<ul style="list-style-type: none"> • Wear • Deformation • Chipping 		
	Application	General Machining			Light Machining	
PVD Coated	VP5820			VP5815		
	VP5735			VP1710		
MTCVD Coated	VP5735			VP1710		

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	1100-800 (335-244)	1000-800 (305-244)	1200-900 (366-274)	800-700 (244-213)	- -	- -
	G	.007-.018 (0.18-0.46)	900-600 (274-183)	800-600 (244-183)	1000-750 (305-229)	700-500 (213-152)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	900-700 (274-213)	800-650 (244-198)	1000-700 (305-213)	700-600 (213-183)	- -	- -
	G	.006-.015 (0.15-0.38)	700-500 (213-152)	650-500 (198-152)	900-600 (274-183)	600-400 (183-122)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	800-600 (244-183)	700-500 (213-152)	850-600 (259-183)	600-450 (183-137)	- -	- -
	G	.006-.012 (0.15-0.30)	(600-400) 183-122	500-400 (152-122)	700-500 (213-152)	450-350 (137-107)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	600-450 (183-137)	500-400 (152-122)	650-400 (198-122)	400-300 (122-91)	- -	- -
	G	.005-.008 (0.13-0.20)	450-350 (137-107)	400-350 (122-107)	500-350 (152-107)	300-250 (91-76)	- -	- -

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	1100-800 (335-244)	1000-800 (305-244)	1200-900 (366-274)	800-700 (244-213)	- -	- -
	G	.007-.018 (0.18-0.46)	900-600 (274-183)	800-600 (244-183)	1000-750 (305-229)	700-500 (213-152)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	900-700 (274-213)	800-650 (244-198)	1000-700 (305-213)	700-600 (213-183)	- -	- -
	G	.006-.015 (0.15-0.38)	700-500 (213-152)	650-500 (198-152)	900-600 (274-183)	600-400 (183-122)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	800-600 (244-183)	700-500 (213-152)	850-600 (259-183)	600-450 (183-137)	- -	- -
	G	.006-.012 (0.15-0.30)	600-400 (183-122)	500-400 (152-122)	700-500 (213-152)	450-350 (137-107)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	600-450 (183-137)	500-400 (152-122)	650-400 (198-122)	400-300 (122-91)	- -	- -
	G	.005-.008 (0.13-0.20)	450-350 (137-107)	400-350 (122-107)	500-350 (152-107)	300-250 (91-76)	- -	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	850-650 (259-198)	750-600 (229-183)	1000-750 (305-229)	600-450 (183-137)	- -	- -
	G	.007-.018 (0.18-0.46)	675-500 (206-152)	600-450 (183-137)	800-600 (244-183)	500-400 (152-122)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	700-550 (213-168)	600-500 (183-152)	800-600 (244-183)	475-350 (145-107)	- -	- -
	G	.006-.015 (0.15-0.38)	550-375 (168-114)	500-350 (152-107)	700-450 (213-137)	375-275 (114-84)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	600-500 (183-152)	550-450 (168-137)	700-550 (213-168)	350-250 (107-76)	- -	- -
	G	.006-.012 (0.15-0.30)	450-325 (137-99)	400-300 (122-91)	550-400 (168-122)	325-225 (99-69)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	425-300 (130-91)	350-250 (107-76)	500-325 (152-99)	275-200 (84-61)	- -	- -
	G	.005-.008 (0.13-0.20)	325-250 (99-76)	275-200 (84-61)	400-275 (122-84)	250-180 (76-55)	- -	- -

L = Light Machining G = General Machining

PARTING & GROOVING

ValGROOVE™ Stainless Steels

Grade Selection Guide

Stainless Steels				
ISO	M40	M30	M20	M10
Typical Failure Modes	<ul style="list-style-type: none"> • Build-up • Wear • Chipping 		<ul style="list-style-type: none"> • Wear • Build-up • Chipping 	
Application	General Machining		Light Machining	
PVD Coated	VP5820		VP5815	
MTCVD Coated	VP5735			
Uncoated	VPUK20			

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	L	.002-.006 (0.05-0.15)	700-550 (213-168)	650-500 (198-152)	-	600-450 (183-137)	320-220 (98-67)	-
	G	.007-.012 (0.18-0.30)	550-450 (168-137)	500-400 (152-122)	-	450-350 (137-107)	300-200 (91-61)	-
Austenitic Stainless Steels 140 - 180 BHN	L	.002-.004 (0.05-0.10)	700-500 (213-152)	600-450 (183-137)	-	500-400 (152-122)	320-220 (98-67)	-
	G	.005-.010 (0.13-0.25)	500-400 (152-122)	450-350 (137-107)	-	400-350 (122-107)	300-200 (91-61)	-
PH and Duplex Stainless Steels 220 - 260 BHN	L	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	-	400-300 (122-91)	210-150 (64-46)	-
	G	.005-.010 (0.13-0.25)	400-300 (122-91)	350-250 (107-76)	-	300-200 (91-61)	180-130 (55-40)	-

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	L	.002-.006 (0.05-0.15)	700-550 (213-168)	650-500 (198-152)	- -	600-450 (183-137)	320-220 (98-67)	- -
	G	.007-.012 (0.18-0.30)	550-450 (168-137)	500-400 (152-122)	- -	450-350 (137-107)	300-200 (91-61)	- -
Austenitic Stainless Steels 140 - 180 BHN	L	.002-.004 (0.05-0.10)	700-500 (213-152)	600-450 (183-137)	- -	500-400 (152-122)	320-220 (98-67)	- -
	G	.005-.010 (0.13-0.25)	500-400 (152-122)	450-350 (137-107)	- -	400-350 (122-107)	300-200 (91-61)	- -
PH and Duplex Stainless Steels 220 - 260 BHN	L	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	- -	400-300 (122-91)	210-150 (64-46)	- -
	G	.005-.010 (0.13-0.25)	400-300 (122-91)	350-250 (107-76)	- -	300-200 (91-61)	180-130 (55-40)	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	L	.002-.006 (0.05-0.15)	550-450 (168-137)	500-400 (152-122)	- -	450-350 (137-107)	300-200 (91-61)	- -
	G	.007-.012 (0.18-0.30)	500-400 (152-122)	450-350 (137-107)	- -	350-300 (107-91)	250-170 (76-52)	- -
Austenitic Stainless Steels 140 - 180 BHN	L	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	- -	400-300 (122-91)	300-200 (91-61)	- -
	G	.005-.010 (0.13-0.25)	400-325 (122-99)	350-275 (107-84)	- -	300-250 (91-76)	275-170 (84-52)	- -
PH and Duplex Stainless Steels 220 - 260 BHN	L	.002-.004 (0.05-0.10)	450-350 (137-107)	400-300 (122-91)	- -	350-250 (107-76)	200-140 (61-43)	- -
	G	.005-.010 (0.13-0.25)	375-250 (114-76)	350-225 (107-69)	- -	250-175 (76-53)	170-110 (52-34)	- -

L = Light Machining G = General Machining

PARTING & GROOVING

ValGROOVE™ Cast Irons

Grade Selection Guide

Cast Irons				
ISO	K40	K30	K20	K10
ANSI	C1	C2	C3	C4
Typical Failure Modes	<ul style="list-style-type: none"> Wear Build-up Chipping 		<ul style="list-style-type: none"> Wear Build-up 	
Application	General Machining		Light Machining	
PVD Coated	VP5820		VP5815	
MTCVD Coated	VP5735	VP1710		
Uncoated	VPUK20			
PCBN			VPB125	

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	675-360 (206-110)	600-325 (183-99)	1000-450 (305-137)	650-300 (198-91)	270-220 (82-67)	3000-2000 (914-610)
	G	.007-.016 (0.18-0.41)	500-325 (152-99)	550-300 (168-91)	900-400 (274-122)	550-250 (168-76)	250-200 (76-61)	3000-2000 (914-610)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	550-350 (168-107)	500-300 (152-91)	900-400 (274-122)	425-250 (130-76)	250-200 (76-61)	2000-1500 (610-457)
	G	.007-.016 (0.18-0.41)	500-300 (152-91)	450-250 (137-76)	800-350 (244-107)	400-200 (122-61)	225-175 (69-53)	2000-1500 (610-457)
Ductile & Malleable Cast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	750-375 (229-114)	700-350 (213-107)	1100-500 (335-152)	500-300 (152-91)	325-250 (99-76)	1500-1000* (457-305)
	G	.006-.012 (0.15-0.30)	650-325 (198-99)	600-300 (183-91)	800-375 (244-114)	450-275 (137-84)	275-225 (84-69)	1500-1000* (457-305)
Ductile & Malleable Cast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	575-300 (175-91)	500-275 (152-84)	850-400 (259-122)	350-220 (107-67)	220-170 (67-52)	N/A
	G	.006-.010 (0.15-0.25)	450-260 (137-79)	425-225 (130-69)	700-325 (213-99)	300-200 (91-61)	175-150 (53-46)	N/A

L = Light Machining G = General Machining * For low pearlite content ductile iron

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	675-360 (206-110)	600-325 (183-99)	1000-450 (305-137)	650-300 (198-91)	270-220 (82-67)	3000-2000 (914-610)
	G	.007-.016 (0.18-0.41)	500-325 (152-99)	550-300 (168-91)	900-400 (274-122)	550-250 (168-76)	250-200 (76-61)	3000-2000 (914-610)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	550-350 (168-107)	500-300 (152-91)	900-400 (274-122)	425-250 (130-76)	250-200 (76-61)	2000-1500 (610-457)
	G	.007-.016 (0.18-0.41)	500-300 (152-91)	450-250 (137-76)	800-350 (244-107)	400-200 (122-61)	225-175 (69-53)	2000-1500 (610-457)
Ductile & Malleable Cast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	750-375 (229-114)	700-350 (213-107)	1100-500 (335-152)	500-300 (152-91)	325-250 (99-76)	1500-1000* (457-305)
	G	.006-.012 (0.15-0.30)	650-325 (198-99)	600-300 (183-91)	800-375 (244-114)	450-275 (137-84)	275-225 (84-69)	1500-1000* (457-305)
Ductile & Malleable Cast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	575-300 (175-91)	500-275 (152-84)	850-400 (259-122)	350-220 (107-67)	220-170 (67-52)	N/A
	G	.006-.012 (0.15-0.30)	450-260 (137-79)	425-225 (130-69)	700-325 (213-99)	300-200 (91-61)	175-150 (53-46)	N/A

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	500-270 (152-82)	480-250 (146-76)	800-360 (244-110)	450-210 (137-64)	240-180 (73-55)	2500-1500 (762-457)
	G	.007-.016 (0.18-0.41)	375-240 (114-73)	400-210 (122-64)	825-320 (251-98)	375-175 (114-53)	200-150 (61-46)	2500-1500 (762-457)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	420-250 (128-76)	375-210 (114-64)	825-320 (251-98)	300-175 (91-53)	200-150 (61-46)	1800-1300 (549-396)
	G	.007-.016 (0.18-0.41)	375-225 (114-69)	340-190 (104-58)	640-280 (195-85)	280-140 (85-43)	150-125 (46-38)	1800-1300 (549-396)
Ductile & Malleable Cast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	550-300 (168-91)	525-270 (160-82)	850-400 (259-122)	350-210 (107-64)	200-150 (61-46)	1300-900* (396-274)
	G	.006-.012 (0.15-0.30)	500-250 (152-76)	450-225 (137-69)	640-300 (195-91)	315-190 (96-58)	150-125 (46-38)	1300-900* (396-274)
Ductile & Malleable Cast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	430-225 (131-69)	375-210 (114-64)	680-320 (207-98)	250-150 (76-46)	175-125 (53-38)	N/A
	G	.006-.010 (0.15-0.25)	340-195 (104-59)	325-170 (99-52)	560-260 (171-79)	210-140 (64-43)	125-100 (38-30)	N/A

L = Light Machining G = General Machining * For low pearlite content ductile iron

PARTING & GROOVING

ValGROOVE™ High Temp Alloys

Grade Selection Guide

High Temp Alloys				
ISO	S40	S30	S20	S10
Typical Failure Modes	<ul style="list-style-type: none"> • Build-up • Deformation • Chipping 		<ul style="list-style-type: none"> • Wear • Build-up • Deformation 	
Application	General Machining		Light Machining	
PVD Coated	VP5820		VP5815	
MTCVD Coated	VP5735			
Uncoated			VPUK20	

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.006 (0.05-0.15)	250-110 (76-34)	230-100 (70-30)	- -	170-80 (52-24)	170-80 (52-24)	- -
	G	.005-.008 (0.13-0.20)	170-60 (52-18)	150-50 (46-15)	- -	100-35 (30-11)	125-50 (38-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	190-110 (58-34)	170-100 (52-30)	- -	145-75 (44-23)	120-60 (37-18)	- -
	G	.005-.008 (0.13-0.20)	120-60 (37-18)	110-50 (34-15)	- -	120-45 (37-14)	110-40 (34-12)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	250-150 (76-46)	225-130 (69-40)	- -	- N/A	260-200 (79-61)	- -
	G	.005-.008 (0.13-0.20)	220-120 (67-37)	200-110 (67-34)	- -	-	210-170 (64-52)	- -

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.004 (0.05-0.10)	250-110 (76-34)	230-100 (70-30)	- -	170-80 (52-24)	170-80 (52-24)	- -
	G	.005-.008 (0.13-0.20)	170-60 (52-18)	150-50 (46-15)	- -	100-35 (30-11)	125-50 (38-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	190-110 (58-34)	170-100 (52-30)	- -	145-75 (44-23)	120-60 (37-18)	- -
	G	.005-.008 (0.13-0.20)	120-60 (37-18)	110-50 (34-15)	- -	120-45 (37-14)	110-40 (34-12)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	250-150 (76-46)	225-130 (69-40)	- -	- N/A	260-200 (79-61)	- -
	G	.005-.008 (0.13-0.20)	220-120 (67-37)	200-110 (67-34)	- -	- -	210-170 (64-52)	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.004 (0.05-0.10)	225-100 (69-300)	210-90 (64-27)	- -	160-75 (49-23)	150-70 (46-21)	- -
	G	.005-.008 (0.13-0.20)	150-50 (46-15)	135-50 (41-15)	- -	100-35 (30-11)	120-50 (37-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	180-100 (55-30)	160-90 (49-27)	- -	140-70 (43-21)	110-60 (34-18)	- -
	G	.005-.008 (0.13-0.20)	110-60 (34-18)	100-50 (30-15)	- -	110-45 (34-14)	100-55 (30-17)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	230-130 (70-40)	215-120 (66-37)	- -	- N/A	240-180 (73-55)	- -
	G	.005-.008 (0.13-0.20)	210-110 (64-34)	190-100 (58-30)	- -	- -	200-160 (61-49)	- -

L = Light Machining G = General Machining

PARTING & GROOVING

ValGROOVE™ Aluminum & Non-Ferrous

Grade Selection Guide

Aluminum & Non-Ferrous				
ISO	N40	N30	N20	N10
ANSI	C1	C2	C3	C4
Typical Failure Modes	<ul style="list-style-type: none"> • Build-up • Wear • Chipping 		<ul style="list-style-type: none"> • Wear • Build-up 	
Application	General Machining		Light Machining	
PVD Coated	VP5820		VP5815	
Uncoated	VPUK20			
PCD	VPD720			

Application Guide

Parting and Grooving								
MATERIAL	OPERATION	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	3500-2500 (914-762)	3000-2500 (914-762)	-	-	2500-1750 (762-533)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	3000-2000 (914-610)	2500-1750 (762-533)	-	-	1750-1250 (533-381)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	3000-2000 (914-610)	2500-1750 (762-533)	-	-	1750-1250 (533-381)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2000-1500 (610-457)	1750-1250 (533-381)	-	-	1250-1000 (381-305)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	2000-1500 (610-457)	1500-1250 (457-381)	-	-	1000-800 (305-244)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1500-800 (457-244)	1250-800 (381-244)	-	-	800-600 (244-183)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1300-900 (396-274)	1200-800 (366-244)	-	-	800-600 (244-183)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	1000-600 (305-183)	800-500 (244-152)	-	-	600-400 (183-122)	1200-600 (366-183)

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	3500-2500 (914-762)	3000-2500 (914-762)	- -	- -	2500-1750 (762-533)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2000-1500 (610-457)	1750-1250 (533-381)	- -	- -	1250-1000 (381-305)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	2000-1500 (610-457)	1500-1250 (457-381)	- -	- -	1000-800 (305-244)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1500-800 (457-244)	1250-800 (381-244)	- -	- -	800-600 (244-183)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1300-900 (396-274)	1200-800 (366-244)	- -	- -	800-600 (244-183)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	1000-600 (305-183)	800-500 (244-152)	- -	- -	600-400 (183-122)	1200-600 (366-183)

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	2800-2000 (853-610)	2400-2000 (732-610)	- -	- -	2000-1400 (610-427)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2400-1600 (732-488)	2000-1400 (610-427)	- -	- -	1400-1000 (427-305)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	2400-1600 (732-488)	2000-1400 (610-427)	- -	- -	1400-1000 (427-305)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	1600-1200 (488-366)	1400-1000 (427-305)	- -	- -	1000-800 (305-244)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	1600-1200 (488-366)	1200-1000 (366-305)	- -	- -	800-650 (244-198)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1200-640 (366-195)	1000-640 (305-195)	- -	- -	650-500 (198-152)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1000-720 (305-219)	1000-640 (305-195)	- -	- -	650-500 (198-152)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	800-480 (244-146)	640-400 (195-122)	- -	- -	480-320 (146-98)	1200-600 (366-183)

L = Light Machining G = General Machining

PARTING & GROOVING

ValGROOVE™ Hardened Materials

Grade Selection Guide

Hardened Materials				
ISO		H30	H20	H10
Typical Failure Modes	<ul style="list-style-type: none"> Wear Chipping 		<ul style="list-style-type: none"> Wear Deformation Chipping 	
Application	General Machining		Light Machining	
PVD Coated		VP5820	VP5815	
MTCVD Coated			VP1710	
PCBN			VPB125	

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.001-.003 (0.03-0.08)	375-220 (114-67)	350-200 (107-61)	400-300 (122-91)	-	-	600-400 (183-122)
	G	.003-.005 (0.08-0.13)	330-170 (101-52)	300-150 (91-46)	350-250 (107-76)	-	-	500-350 (152-107)
Steels 50-60 Rc	L	.001-.003 (0.03-0.08)	300-170 (91-52)	275-150 (84-46)	325-250 (99-76)	-	-	450-375 (137-114)
	G	.003-.005 (0.08-0.13)	200-130 (61-40)	180-120 (55-37)	300-220 (91-61)	-	-	400-300 (122-91)
Chilled Irons 40-50 Rc	L	.001-.003 (0.03-0.08)	340-225 (104-69)	300-200 (91-61)	425-350 (130-107)	-	-	650-500 (198-152)
	G	.003-.005 (0.08-0.13)	275-200 (84-61)	250-175 (76-53)	375-300 (114-91)	-	-	550-400 (168-122)

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.002-.004 (0.05-0.10)	375-220 (114-67)	350-200 (107-61)	400-300 (122-91)	- -	- -	600-400 (183-122)
	G	.002-.004 (0.05-0.10)	330-170 (101-52)	300-150 (91-46)	350-250 (107-76)	- -	- -	500-350 (152-107)
Steels 50-60 Rc	L	.002-.004 (0.05-0.10)	300-170 (91-52)	275-150 (84-46)	325-250 (99-76)	- -	- -	450-375 (137-114)
	G	.002-.004 (0.05-0.10)	200-130 (61-40)	180-120 (55-37)	300-220 (91-61)	- -	- -	400-300 (122-91)
Chilled Irons 40-50 Rc	L	.002-.004 (0.05-0.10)	340-225 (104-69)	300-200 (91-61)	425-350 (130-107)	- -	- -	650-500 (198-152)
	G	.002-.004 (0.05-0.10)	275-200 (84-61)	250-175 (76-53)	375-300 (114-91)	- -	- -	550-400 (168-122)

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.002-.004 (0.05-0.10)	300-175 (91-53)	280-160 (85-49)	340-260 (104-79)	- -	- -	550-360 (168-110)
	G	.002-.004 (0.05-0.10)	260-135 (79-41)	240-120 (73-37)	300-220 (91-67)	- -	- -	450-320 (137-98)
Steels 50-60 Rc	L	.002-.004 (0.05-0.10)	240-135 (73-41)	220-120 (67-37)	280-210 (85-64)	- -	- -	400-340 (122-104)
	G	.002-.004 (0.05-0.10)	165-110 (50-34)	150-100 (46-30)	260-190 (79-58)	- -	- -	360-275 (110-84)
Chilled Irons 40-50 Rc	L	.002-.004 (0.05-0.10)	260-175 (79-53)	240-160 (73-49)	390-320 (119-98)	- -	- -	600-450 (183-137)
	G	.002-.004 (0.05-0.10)	220-150 (67-46)	200-140 (61-43)	340-270 (104-82)	- -	- -	500-360 (152-110)

L= Light Machining G = General Machining

PARTING & GROOVING

ValGROOVE™ Machining Guidelines

Toolholder Overhang

To minimize deflection and vibration, choose the toolholder size with the least possible overhang, Ar, part configuration will allow.



Choose a Shank Size with Adequate Strength

The larger the shank size, the more rigid the toolholder. If the shank is too small in relation to feed rate and width of cut, deflection and vibration can occur.

Choose an Insert Size with Adequate Strength

The wider the insert, the more secure the seating in the pocket. The insert should be as large as possible, relative to the dimensions of the workpiece. Make sure the insert is wide enough for the cutting conditions. For small parts and thin walls choose a smaller width to minimize cutting forces. For profiling when the depth of cut is small, the width of the insert should be proportionately smaller to guarantee the required deflection (see Turning Guidelines).

Insert

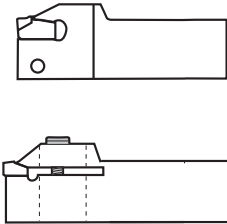
Holder

Match the Toolholder Seat Size to the Insert Seat Size

Example: (seat sizes in blue)

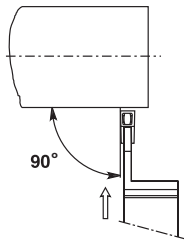
Toolholder	VG	111 R 16	30
Insert Number	VSG	3.0 N	30 GG

Correct Insert Clamping



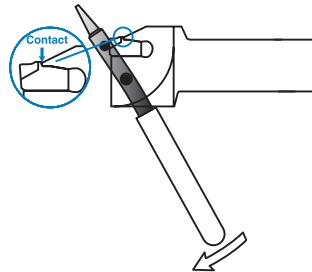
Choose the correct toolholder style for the operation. Screw clamp toolholders provide the most secure clamping for both radial (plunging) and axial (turning) machining. Wedge clamp toolholders are recommended only for radial machining.

Positioning the Tool in the Tool Block



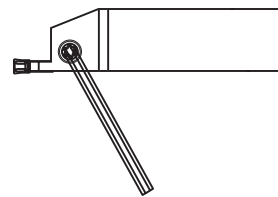
It is essential that the tool be correctly positioned in the tool block. The toolholder must be perpendicular to the workpiece. Deviation will cause part distortion. The front edge of the insert should be parallel to the workpiece to minimize vibration.

Installing and Extracting the Insert



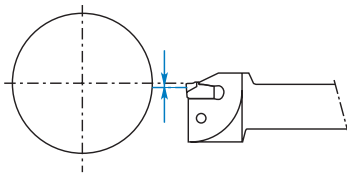
Wedge Style

Clean holder seat and insert seat. Lubricate (light oil) the seat surfaces. Slide the insert into pocket; make sure angle surfaces match. Locate with wrench to a positive stop.



Screw Style

Clean holder seat and insert. Slide insert into contact position. Tighten torque screw. Do not over-tighten. (see torque values for each toolholder).

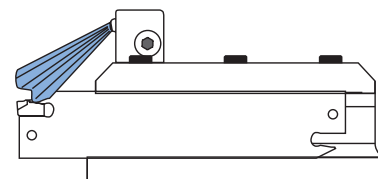


Check the Center Height of the Edge of the Insert

To optimize tool performance, the center height of the insert should be maintained within +/- .004 inch. This is critical when machining parts with a smaller diameter.

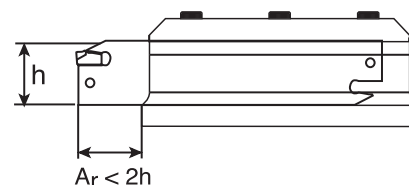
Cutting Fluid

Cutting fluid must be continuously applied throughout the operation with adequate volume and pressure. It is critical that the cutting fluid be directed at the cutting edge.



Choosing Blade Size

For maximum stability, the insertion depth, A_r , should not exceed twice the blade height, h .

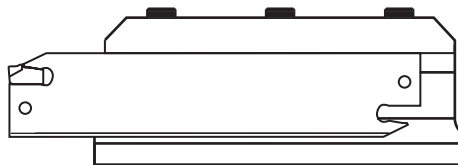


PARTING & GROOVING

ValGROOVE™ Parting Machining Guidelines

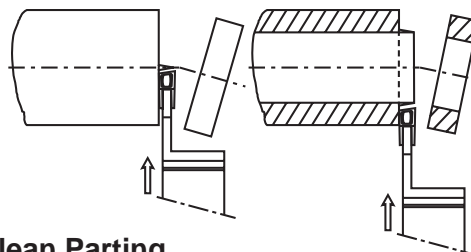
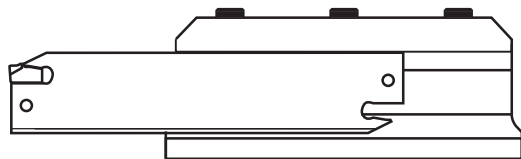
Minimize Overhang

For maximum stability, position the blade for the least possible overhang.



Parting Large Diameters

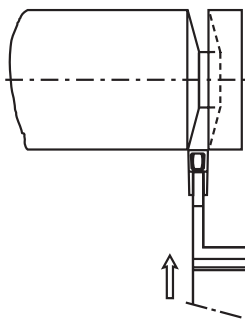
Use double ended blades for large depths.



Clean Parting

To minimize pips when parting solid parts, or burrs when parting tubing, use R or L inserts (point toward finished surface).

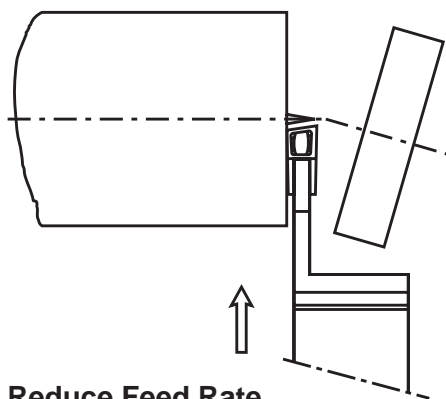
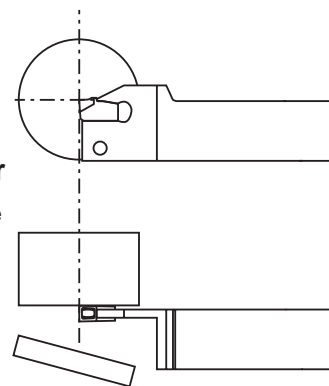
Convex or Concave Surfaces



If convex or concave surfaces are produced, reduce the feed rate or use a wider insert.

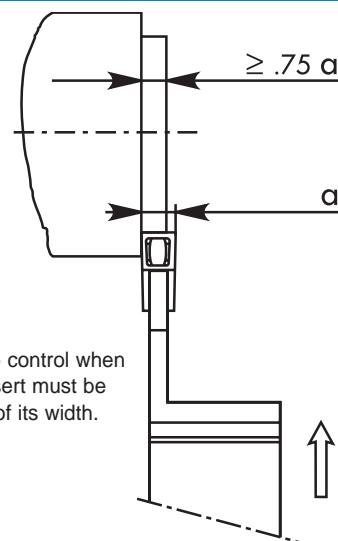
Parting to Center

Exceeding the center line of the workpiece after parting will damage the insert.



Reduce Feed Rate

The tool life of the insert will be improved by reducing the feed rate in the final revolutions just before separating the workpiece.



Facing Cuts

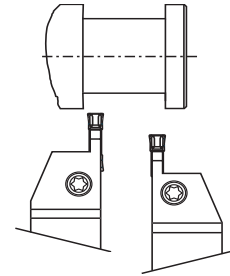
To ensure good chip control when facing a part, the insert must be engaged over 75% of its width.

Toolholder Selection

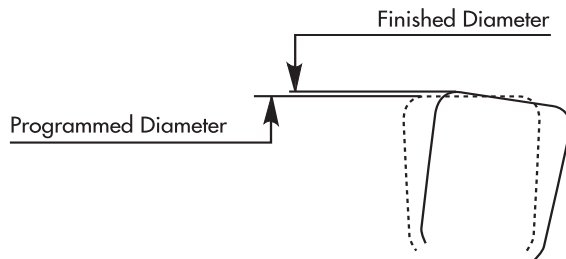
A screw clamp toolholder provides maximum insert stability for turning and profiling operations. Wedge style holders are not recommended.

Turning and Profiling Machining Practice

VTG style holders provide maximum insert security for turning and profiling operations. VSG system screw clamp style toolholders can also be used for turning and profiling operations at reduced feed rates and depths of cut.

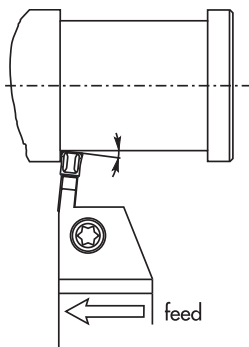


Compensation for Deflection when Axial Turning



The cutting force from axial turning causes a slight deflection of the tool, resulting in a difference between the finished diameter and programmed diameter.

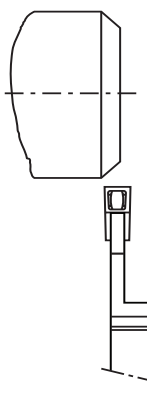
Determine the compensation during set up by measuring the difference between the programmed diameter and the finished diameter. Values will vary depending on workpiece material as well as feed and depth of cut.



Turning Depth of Cut and Feed Rate

Sufficient axial force is required to guarantee adequate frontal clearance angle (α). It is normally recommended to use larger depths of cut and higher feed rates with ValGROOVE™ inserts than with conventional turning inserts. When the depth of cut and feed rate are too small, the low axial force is not sufficient to cause the required deflection and vibration can result.

Entering Chamfer

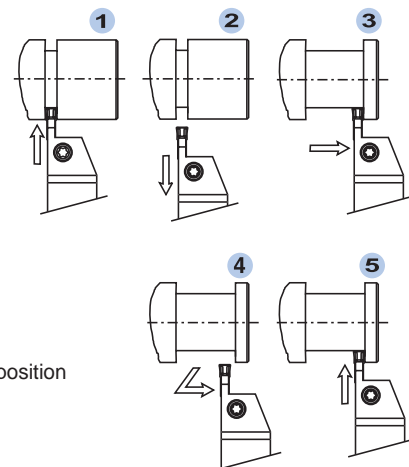


An entering chamfer cut is recommended for increased tool life and to reduce chipping and notching of the cutting edge.

Roughing a Wide Groove

In order to avoid insert damage it is necessary to release the axial cutting forces on the insert when turning before beginning a grooving cut. The following machining sequence is suggested:

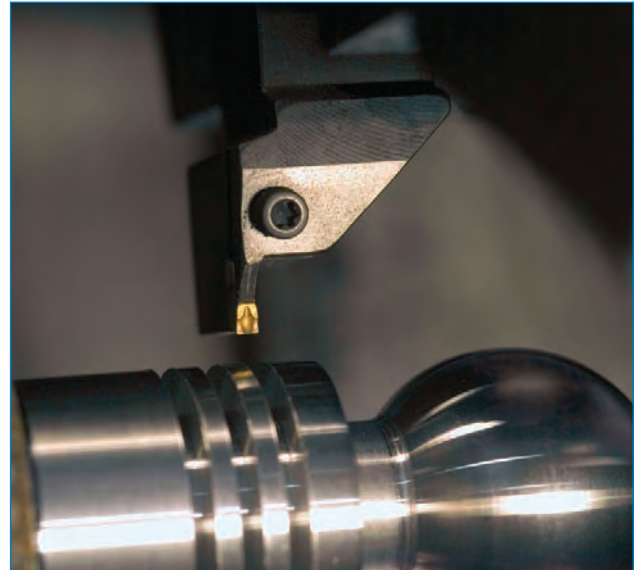
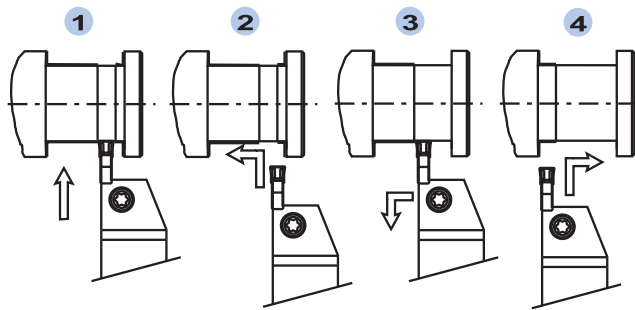
- 1 Radial feed to DOC
- 2 Retract to compensate
- 3 Turn along axis
- 4 Retract on an angle and feed to finish position
- 5 Radial feed to DOC



Finishing a Wide Groove

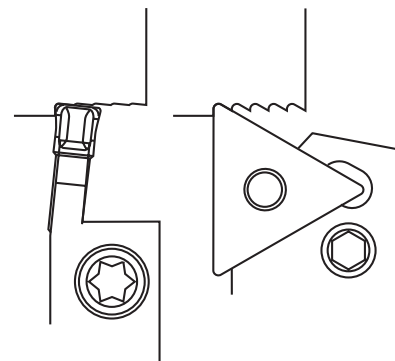
Generating a radius at the bottom of a wide groove produces a very thin chip. The result is vibration and tool wear which can be addressed by the following actions:

- 1 Plunge parallel to finished surface
- 2 Retract and finish wall and radius
- 3 Turn diameter and retract tool
- 4 Radially feed and generate radius to finish diameter



Surface Finish

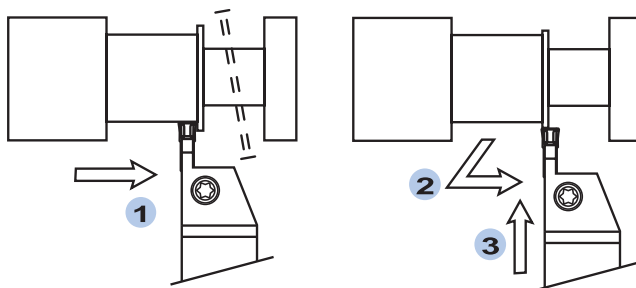
The wiper effect from deflecting the insert produces surface finishes much superior to those produced by conventional inserts. This wiper effect makes it possible to increase the feed rate resulting in productivity gain.



Trapped Ring

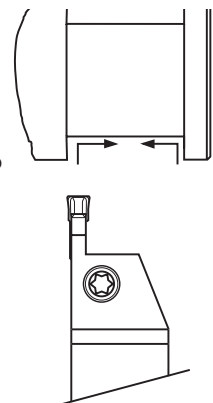
An unwanted trapped ring of material can result when turning toward the end of a bar or a recess between two walls. To prevent a trapped ring:

- 1 Turn toward the recess
- 2 Pull back and reposition
- 3 Radially feed to finish the side wall



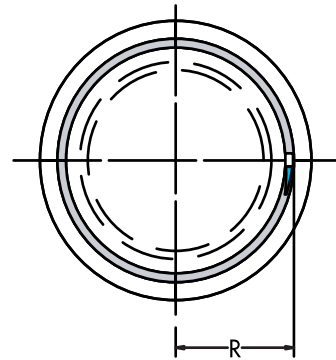
In Copying

For increased tool life and better chip control, in copying is recommended. Doing so uses both corners of the insert, minimizing tool wear.



General Recommendations

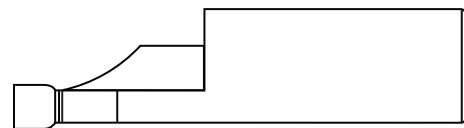
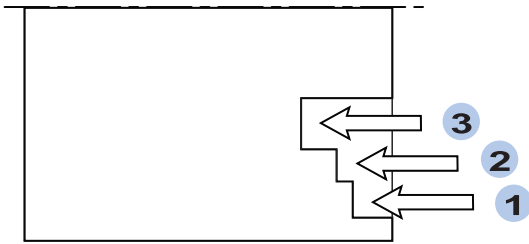
- Always start with the largest possible diameter and work inward.
- Use the tool with the largest possible diameter range.
- To avoid chatter minimize overhang.



Roughing

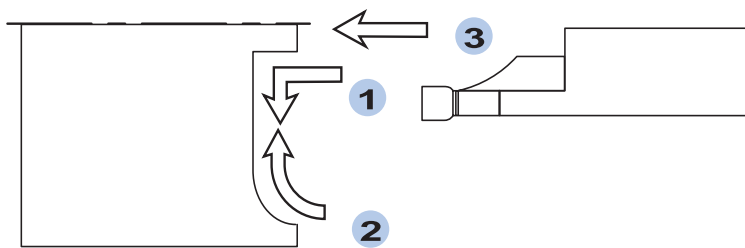
1 Starting cut chip control but no breaking.

2 & 3 Width of cut should be 50% to 80% of insert width - insert will break chips.



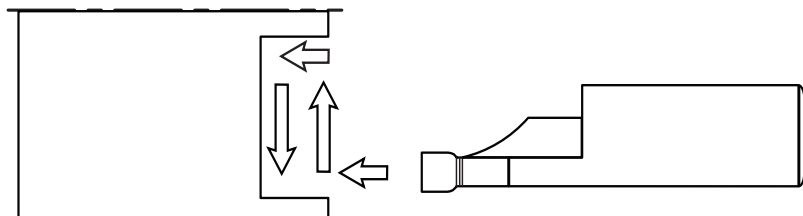
Finishing

- 1 Position within diameter range and feed toward the radius.
- 2 Finish the outside diameter and radius and face turn inward.
- 3 Finish the inside diameter to the correct dimension.



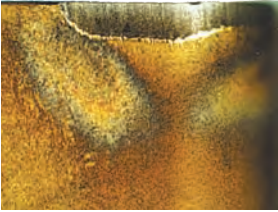
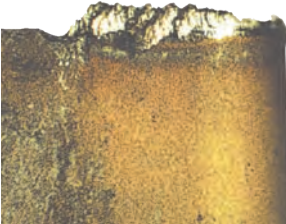


Plunge Turning

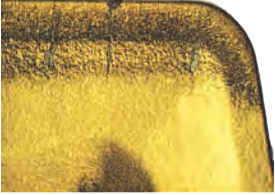
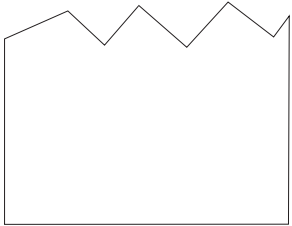
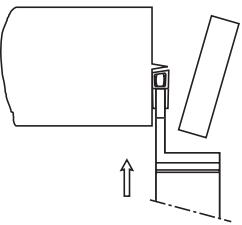
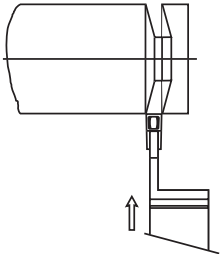
Axial depth of cut should not be deeper than 75% width of insert.



PARTING & GROOVING



ValGROOVE™ Insert Failure Modes

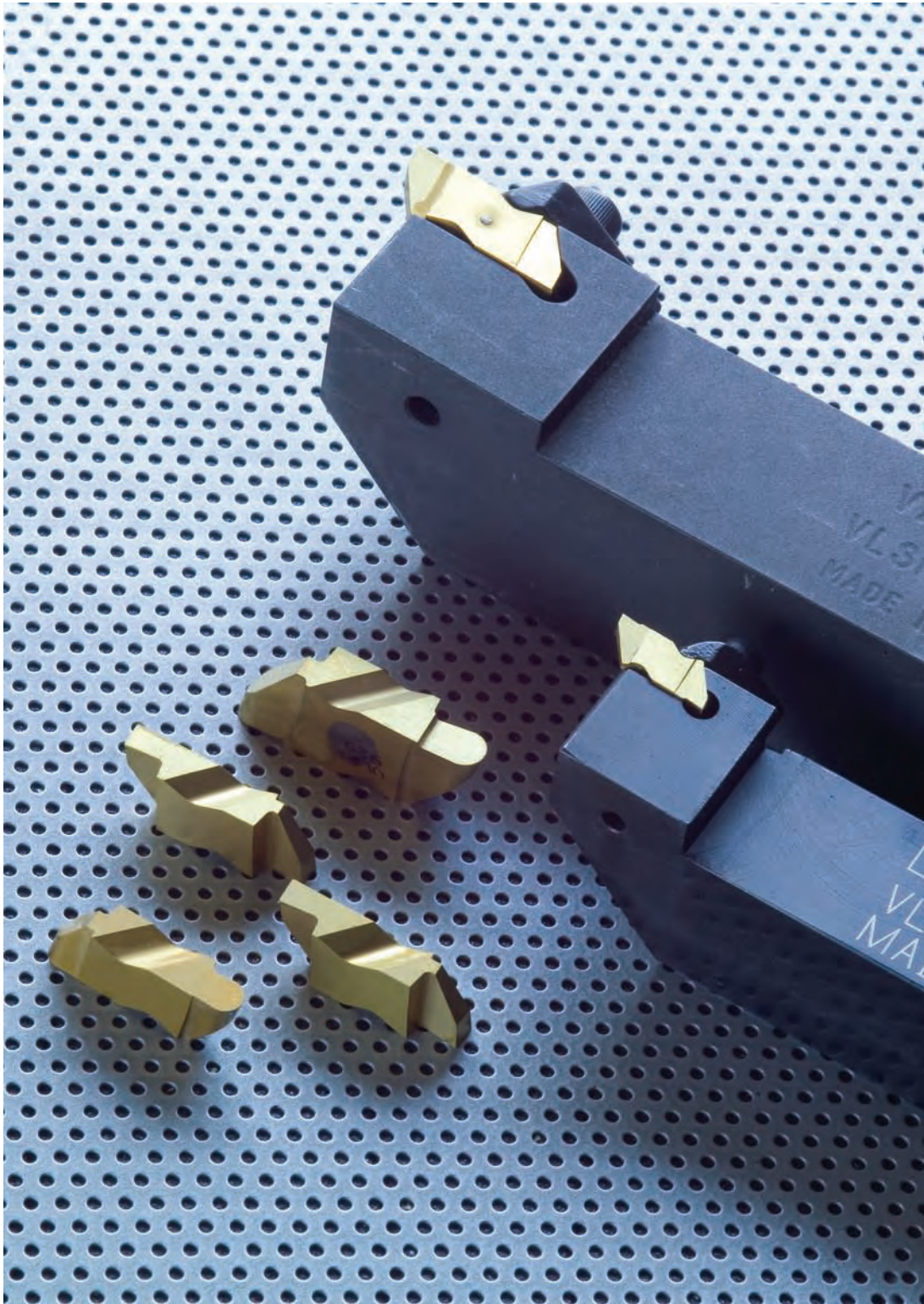
Problem/Failure Mode	Cause	Control Action/Remedy
<p>Rapid Flank Wear</p> 	<ul style="list-style-type: none"> • Excessive cutting speed • Work material micro-structure contains carbides 	<ul style="list-style-type: none"> • Reduce cutting speed • Use more wear resistant grade • Select more positive rake chipbreaker • Flood cutting zone with coolant
<p>Built-Up Edge, Torn Finish, Chip Welding</p> 	<ul style="list-style-type: none"> • Low cutting speed • High feed rate • Poor shearing action 	<ul style="list-style-type: none"> • Increase cutting speed and/or decrease feed • Select more positive rake chipbreaker • Select tougher grade (use PVD coated insert) • Flood cutting zone with coolant
<p>Edge Chipping</p> 	<ul style="list-style-type: none"> • Excessive feed rate • Interrupted cut 	<ul style="list-style-type: none"> • Increase speed • Reduce feed rate • Select tougher grade • Check for edge build-up • Select stronger chipbreaker • Improve rigidity, minimize overhang
<p>Fracture</p> 	<ul style="list-style-type: none"> • Improper selection of grade/ chipbreaker and/or cutting conditions 	<ul style="list-style-type: none"> • Reduce feed rate • Select tougher grade • Select stronger chipbreaker • Ensure set-up rigidity, minimize tool overhang

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Thermal Cracks</p> 	<ul style="list-style-type: none"> • Extreme variation in cutting temperatures • Interrupted cut 	<ul style="list-style-type: none"> • Reduce feed rate • Increase cutting speed • Select stronger chipbreaker
<p>Poor Surface Finish</p> 	<ul style="list-style-type: none"> • High feed rate • Low cutting speed 	<ul style="list-style-type: none"> • Reduce feed rate and increase cutting speed • Check set-up, minimize overhang of tool • Select more positive rake chipbreaker/PVD coated insert • Flood cutting zone with coolant • Select a precision ground insert style • Dwell at bottom of groove (3 rev. max)
<p>Residual Burrs/Nibs</p> 	<ul style="list-style-type: none"> • Improper feed • Improper set-up 	<ul style="list-style-type: none"> • Use sharp inserts • Adjust feed rate • Adjust tool center height • Use a lead angle insert for parting
<p>Convex or Concave Surfaces</p> 	<ul style="list-style-type: none"> • High feed rate • Excessive tool overhang • Small insert width 	<ul style="list-style-type: none"> • Check set-up, minimize overhang of tool • Check tool alignment for square • Use a correct hand insert • Use a sharper tool • Use a wider insert

PARTING & GROOVING

ValGROOVE™ Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Workpiece Chatter Vibration</p> 	<ul style="list-style-type: none"> • Poor set-up • Improper insert selection 	<ul style="list-style-type: none"> • Check set-up, minimize tool overhang • Check tool center height • Increase feed rate • Increase speed • Use sharp inserts • Select more positive rake chipbreaker
<p>Unacceptable Chip Control (Low Carbon Steel)</p> 	<ul style="list-style-type: none"> • Low feed rate 	<ul style="list-style-type: none"> • Increase feed rate • Use more aggressive chipbreaker style • Decrease speed • Adjust coolant flow and concentration



The versatility of the V-Loc system provides grooving and threading capability combined with productivity boosting ValPro grades.

PARTING & GROOVING

V-LOC® Grooving Toolholders Designation

VL

Holding Method

V-Loc

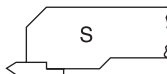


S

Insert Location

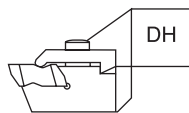


Side Mount Offset



R

Drop Head



Hand of Tool

End Mount



Side Mount



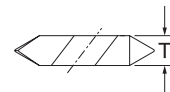
16

Shank Size

For shanks 5/8" square and larger, the number of 1/16" width and height.
For shanks under 5/8" square, the number of 1/16" of cross-section will be preceded by a zero.

3

Insert Size



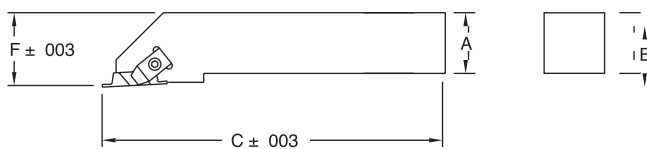
Insert Number	T
2	.150
3	.195
4	.255

D

Qualified Back and End

A	4.00" LG
B	4.50" LG
C	5.00" LG
D	6.00" LG
V	3.50" LG

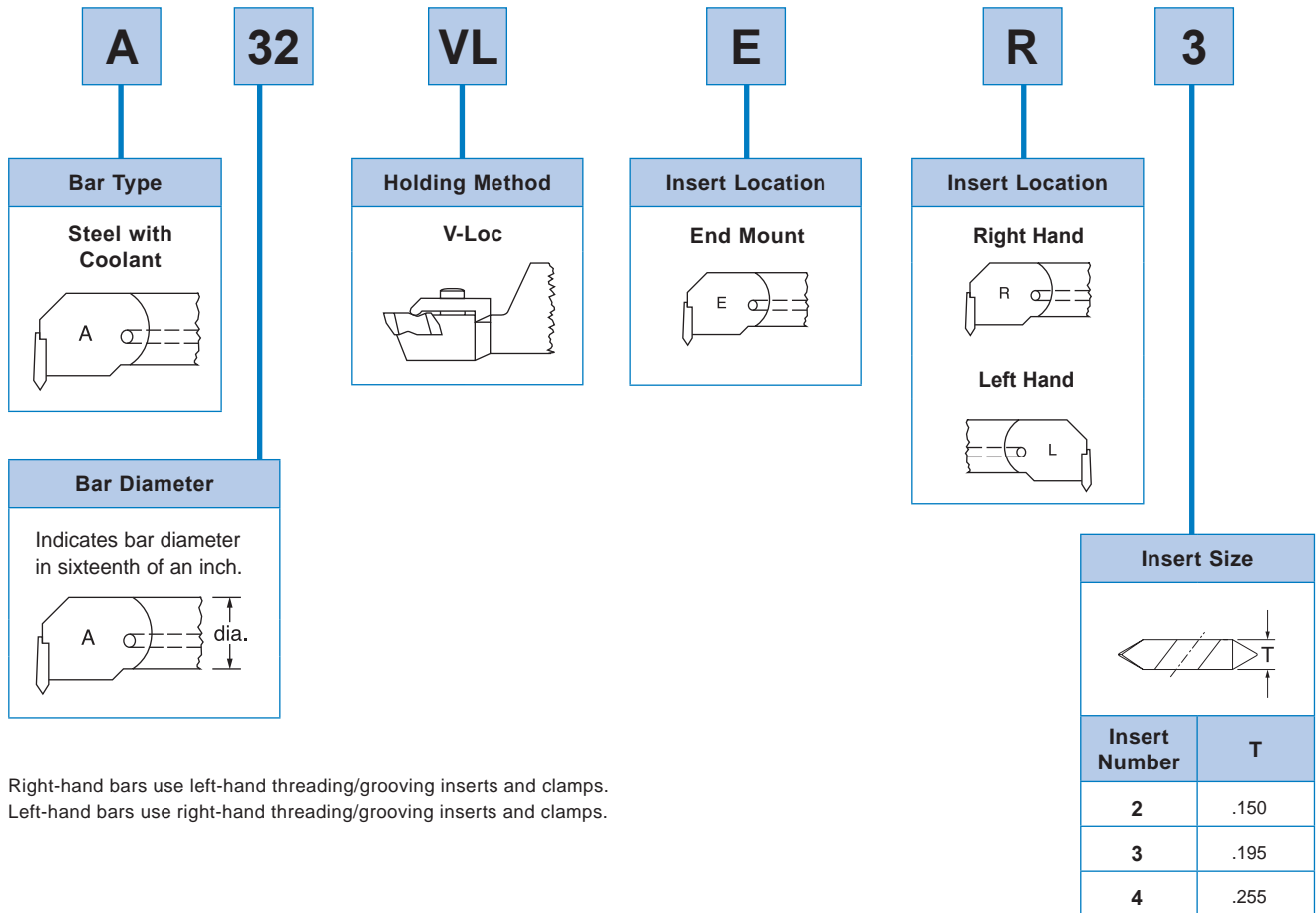
Qualified Back and End



Toolholders are qualified over sharp corner of gage grooving insert.

PARTING & GROOVING

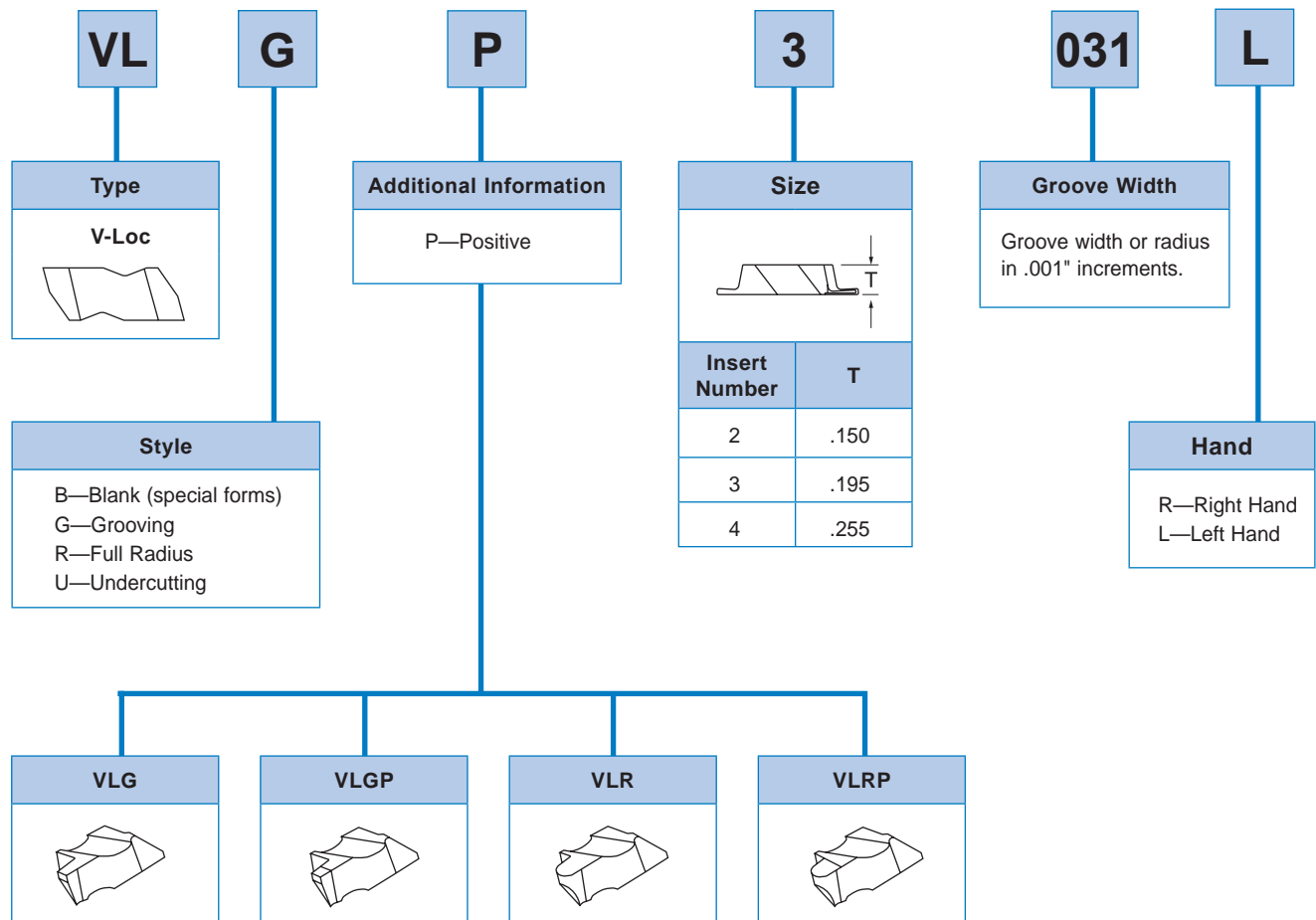
V-LOC® Boring Bars Designation

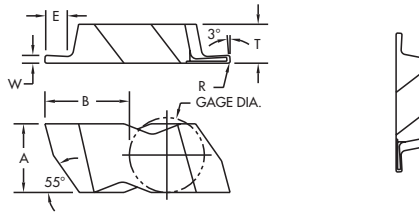


Right-hand bars use left-hand threading/grooving inserts and clamps.
Left-hand bars use right-hand threading/grooving inserts and clamps.


PARTING & GROOVING

V-LOC® Designation for Grooving Inserts





Right-hand shown, Left-hand opposite

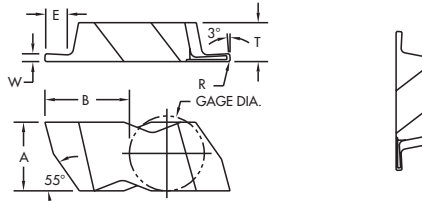
Chipbreaker	Part Number		Insert Dimensions*							ValPro Selection			
			Insert Size	Width		R		E		Available Grades - EDP#			
	Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLG-2 	VLG 2 031R		2	0.031	0.79	0.0035	0.09	0.050	1.27	22987	23539		
		VLG 2 031L	2	0.031	0.79	0.0035	0.09	0.050	1.27	22986	23538		
	VLG 2 041R		2	0.041	1.04	0.0035	0.09	0.050	1.27	22989	23541		
		VLG 2 041L	2	0.041	1.04	0.0035	0.09	0.050	1.27	22988	23540		
	VLG 2 047R		2	0.047	1.19	0.0035	0.09	0.050	1.27	22991	23543		
		VLG 2 047L	2	0.047	1.19	0.0035	0.09	0.050	1.27	22990	23542		
	VLG 2 058R		2	0.058	1.47	0.0075	0.19	0.050	1.27	22993	23545		
		VLG 2 058L	2	0.058	1.47	0.0075	0.19	0.110	2.79	22992	23544		
	VLG 2 062R		2	0.062	1.57	0.0075	0.19	0.110	2.79	22995	23547		
		VLG 2 062L	2	0.062	1.57	0.0075	0.19	0.110	2.79	22994	23546		
	VLG 2 094R		2	0.094	2.39	0.0075	0.19	0.110	2.79	22997	23549		
		VLG 2 094L	2	0.094	2.39	0.0075	0.19	0.110	2.79	22996	23548		
VLG 2 125R		2	0.125	3.18	0.0075	0.19	0.110	2.79	22999	23551			
	VLG 2 125L	2	0.125	3.18	0.0075	0.19	0.110	2.79	22998	23550			

*See V-LOC Common Insert Dimensions page D97 for references

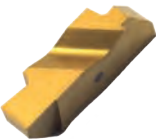
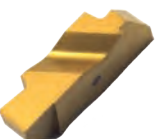
PARTING & GROOVING

V-LOC® Grooving Inserts

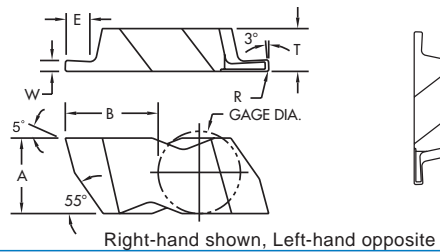
VLG Inserts



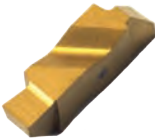
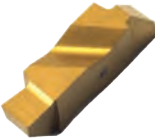
Right-hand shown, Left-hand opposite

Chipbreaker	Part Number		Insert Dimensions*							ValPro Selection			
			Insert Size	Width		R		E		Available Grades - EDP#			
	Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLG-3 	VLG 3 047R		3	0.047	1.19	0.0075	0.19	0.075	1.91	23001	23553	23392	24549
		VLG 3 047L	3	0.047	1.19	0.0075	0.19	0.075	1.91	23000	23552	23390	
	VLG 3 062R		3	0.062	1.57	0.0075	0.19	0.094	2.39	23004	23555	23396	24551
		VLG 3 062L	3	0.062	1.57	0.0075	0.19	0.094	2.39	23003	23554	23394	24550
	VLG 3 072R		3	0.072	1.83	0.0075	0.19	0.094	2.39	23006	23557		24552
		VLG 3 072L	3	0.072	1.83	0.0075	0.19	0.094	2.39	23005	23556		
	VLG 3 078R		3	0.078	1.98	0.0075	0.19	0.094	2.39	23012	23559	23400	24553
		VLG 3 078L	3	0.078	1.98	0.0075	0.19	0.094	2.39	23011	23558	23347	
	VLG 3 088R		3	0.088	2.24	0.0075	0.19	0.094	2.39	23015	23599		
		VLG 3 088L	3	0.088	2.24	0.0075	0.19	0.094	2.39	23013	23598		
	VLG 3 094R		3	0.094	2.39	0.0075	0.19	0.150	3.81	23021	23562	23406	24555
		VLG 3 094L	3	0.094	2.39	0.0075	0.19	0.150	3.81	23019	23600	23404	24554
	VLG 3 097R		3	0.097	2.46	0.0125	0.32	0.150	3.81	23027	23564		
		VLG 3 097L	3	0.097	2.46	0.0125	0.32	0.150	3.81	23025	23563		
	VLG 3 105R		3	0.105	2.67	0.0075	0.19	0.150	3.81	23035	23566		
		VLG 3 105L	3	0.105	2.67	0.0075	0.19	0.150	3.81	23034	23565		
	VLG 3 110R		3	0.110	2.79	0.0125	0.32	0.150	3.81	23036			
		VLG 3 110L	3	0.110	2.79	0.0125	0.32	0.150	3.81	23411			
	VLG 3 125R		3	0.125	3.18	0.0075	0.19	0.150	3.81	23041	23601	23415	24557
		VLG 3 125L	3	0.125	3.18	0.0075	0.19	0.150	3.81	23040	23567	23413	24556
VLG 3 142R		3	0.142	3.61	0.0125	0.32	0.150	3.81	23042				
	VLG 3 142L	3	0.142	3.61	0.0125	0.32	0.150	3.81	24839				
VLG 3 156R		3	0.156	3.96	0.0075	0.19	0.150	3.81	23080	23569		24559	
	VLG 3 156L	3	0.156	3.96	0.0075	0.19	0.150	3.81	23079	23568		24558	
VLG 3 178R		3	0.178	4.52	0.0075	0.19	0.150	3.81		23571			
	VLG 3 178L	3	0.178	4.52	0.0075	0.19	0.150	3.81		23570			
VLG 3 189R		3	0.189	4.80	0.0225	0.57	0.150	3.81	23097	23573		24561	
	VLG 3 189L	3	0.189	4.80	0.0225	0.57	0.150	3.81	23081	23572		24560	
VLG-4 	VLG 4 125R		4	0.125	3.18	0.0075	0.19	0.150	3.81	23099	23575		
		VLG 4 125L	4	0.125	3.18	0.0075	0.19	0.150	3.81	23098	23574		
	VLG 4 189R		4	0.189	4.80	0.0225	0.57	0.250	6.35	23100			
		VLG 4 189L	4	0.189	4.80	0.0225	0.57	0.250	6.35		23576		
	VLG 4 250R		4	0.250	6.35	0.0225	0.57	0.250	6.35	23101	23578		
	VLG 4 250L	4	0.250	6.35	0.0225	0.57	0.250	6.35	23438	23577			

*See V-LOC Common Insert Dimensions page D97 for references



Right-hand shown, Left-hand opposite

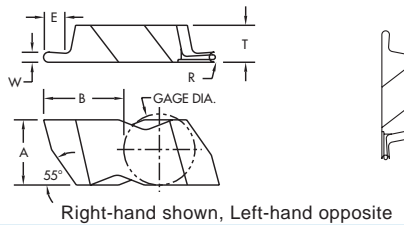
Chipbreaker	Part Number		Insert Dimensions*							ValPro Selection			
			Insert Size	Width		R		E		Available Grades - EDP#			
	Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLGP 2 	VLGP 2 031R		2	0.031	0.79	0.0035	0.09	0.050	1.27			23363	
		VLGP 2 031L	2	0.031	0.79	0.0035	0.09	0.050	1.27			23362	
	VLGP 2 062R		2	0.062	1.57	0.0075	0.19	0.110	2.79		23537	23365	
		VLGP 2 062L	2	0.062	1.57	0.0075	0.19	0.110	2.79			23346	
	VLGP 2 125R		2	0.125	3.18	0.0075	0.19	0.110	2.79			23367	
		VLGP 2 125L	2	0.125	3.18	0.0075	0.19	0.110	2.79			23366	
VLGP 3 	VLGP 3 088R		3	0.088	2.24	0.0075	0.19	0.094	2.39			22985	
		VLGP 3 088L	3	0.088	2.24	0.0075	0.19	0.094	2.39	22984		23368	
	VLGP 3 125R		3	0.125	3.18	0.0075	0.19	0.150	3.81			23370	
		VLGP 3 125L	3	0.125	3.18	0.0075	0.19	0.150	3.81			23369	
	VLGP 3 156R		3	0.156	3.96	0.0075	0.19	0.150	3.81			23372	
		VLGP 3 156L	3	0.156	3.96	0.0075	0.19	0.150	3.81			23371	
	VLGP 3 189R		3	0.189	4.80	0.0225	0.57	0.150	3.81			23374	
		VLGP 3 189L	3	0.189	4.80	0.0225	0.57	0.150	3.81			23373	

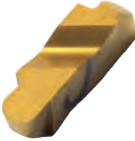
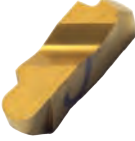
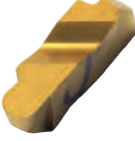
*See V-LOC Common Insert Dimensions page D97 for references

PARTING & GROOVING

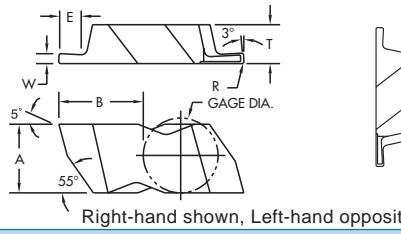
V-LOC® Grooving Inserts

VLR Inserts



Chipbreaker	Part Number		Insert Dimensions*							ValPro Selection			
			Insert Size	Width		R		E		Available Grades - EDP#			
	Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLR-2 	VLR 2031R		2	0.062	1.57	0.031	0.79	0.110	2.79			23453	
		VLR 2031L	2	0.062	1.57	0.031	0.79	0.110	2.79			23452	
	VLR 2047R		2	0.094	2.39	0.047	1.19	0.110	2.79			23455	
		VLR 2047L	2	0.094	2.39	0.047	1.19	0.110	2.79			23454	
	VLR 2062R		2	0.125	3.18	0.062	1.57	0.110	2.79			23459	
		VLR 2062L	2	0.125	3.18	0.062	1.57	0.110	2.79			23458	
VLR-3 	VLR 3031R		3	0.062	1.57	0.031	0.79	0.094	2.39	23103	23579	23462	24566
		VLR 3031L	3	0.062	1.57	0.031	0.79	0.094	2.39	23102		23460	24565
	VLR 3047R		3	0.094	2.39	0.047	1.19	0.150	3.81	23104		23464	
		VLR 3047L	3	0.094	2.39	0.047	1.19	0.150	3.81			23463	
	VLR 3062R		3	0.125	3.18	0.062	1.57	0.150	3.81	23106	23580	23467	24568
		VLR 3062L	3	0.125	3.18	0.062	1.57	0.150	3.81	23105		23465	24567
	VLR 3078R		3	0.156	3.96	0.078	1.98	0.150	3.81			23468	24570
		VLR 3078L	3	0.156	3.96	0.078	1.98	0.150	3.81			24840	24569
VLR 3094R		3	0.188	4.78	0.094	2.39	0.150	3.81			23470		
	VLR 3094L	3	0.188	4.78	0.094	2.39	0.150	3.81	23107		23469		
VLR-4 	VLR 4062R		4	0.125	3.18	0.062	1.57	0.150	3.81			23472	24572
		VLR 4062L	4	0.125	3.18	0.062	1.57	0.150	3.81			23471	24571
	VLR 4094R		4	0.188	4.78	0.094	2.39	0.250	6.35			23474	24574
		VLR 4094L	4	0.188	4.78	0.094	2.39	0.250	6.35	23108		23473	24573
	VLR 4125R		4	0.250	6.35	0.125	3.18	0.250	6.35			23476	24576
		VLR 4125L	4	0.250	6.35	0.125	3.18	0.250	6.35			23475	24575

*See V-LOC Common Insert Dimensions page D97 for references



Chipbreaker	Part Number		Insert Dimensions*							ValPro Selection			
			Insert Size	Width		R		E		Available Grades - EDP#			
	Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
	VLRP 3031R		3	0.062	1.57	0.031	0.79	0.094	2.39			23441	24562
		VLRP 3031L	3	0.062	1.57	0.031	0.79	0.094	2.39			23440	
	VLRP 3047R		3	0.094	2.39	0.047	1.19	0.150	3.81			23443	
		VLRP 3047L	3	0.094	2.39	0.047	1.19	0.150	3.81			23442	
	VLRP 3062R		3	0.125	3.18	0.062	1.57	0.150	3.81			23447	24564
		VLRP 3062L	3	0.125	3.18	0.062	1.57	0.150	3.81			23446	24563
	VLRP 3094R		3	0.188	4.78	0.094	2.39	0.150	3.81			23449	
		VLRP 3094L	3	0.188	4.78	0.094	2.39	0.150	3.81			23448	

*See V-LOC Common Insert Dimensions page D97 for references

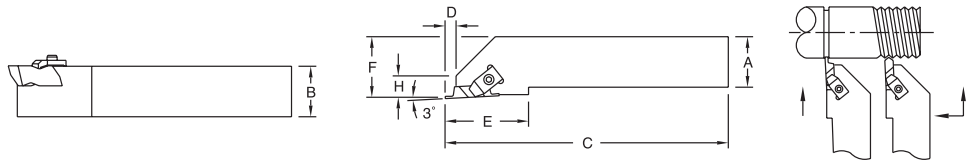
PARTING & GROOVING

V-LOC® Grooving and Threading Toolholders

VLS-R/L—Offset Grooving & Threading 3° Lead

Use Insert Style:

VLGx



Right-hand shown, Left-hand opposite

Part Number		Insert	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F	H	Right Hand	Left Hand
VLSR 06 2		VL-2R	0.375	0.375	2.500	0.138	0.750	0.562	0.350	58681	
	VLSL 06 2	VL-2L									58671
VLSR 08 2V		VL-2R	0.500	0.500	3.500	0.138	0.750	0.750	0.350	58682	
	VLSL 08 2V	VL-2L									58672
VLSR 12 2B		VL-2R	0.750	0.750	4.500	0.138	0.750	1.000	0.350	58683	
	VLSL 12 2B	VL-2L									58673
VLSR 16 2C*		VL-2R*	1.000	1.000	5.000	0.138	0.750	1.250	0.350	58685	
	VLSL 16 2C*	VL-2L*									58675
VLSR 12 3B		VL-3R	0.750	0.750	4.500	0.210	1.250	1.000	0.500	58684	
	VLSL 12 3B	VL-3L									58674
VLSR 16 3C		VL-3R	1.000	1.000	5.000	0.210	1.250	1.250	0.500	58686	
	VLSL 16 3C	VL-3L									58676
VLSR 16 3D		VL-3R	1.000	1.000	6.000	0.210	1.250	1.250	0.500	58687	
	VLSL 16 3D	VL-3L									58677
VLSR 85 3D		VL-3R	1.000	1.250	6.000	0.210	1.250	1.250	0.500	58689	
	VLSL 85 3D	VL-3L									58679
VLSR 20 3D		VL-3R	1.250	1.250	6.000	0.210	1.250	1.500	0.500	58689	
	VLSL 20 3D	VL-3L									58678
VLSR 16 4D		VL-4R	1.000	1.000	6.000	0.294	1.330	1.250	0.540	58688	
	VLSL 16 4D	VL-4L									61906
VLSR 20 4D		VL-4R	1.250	1.250	6.000	0.294	1.380	1.500	0.540	61908	
	VLSL 20 4D	VL-4L									61907

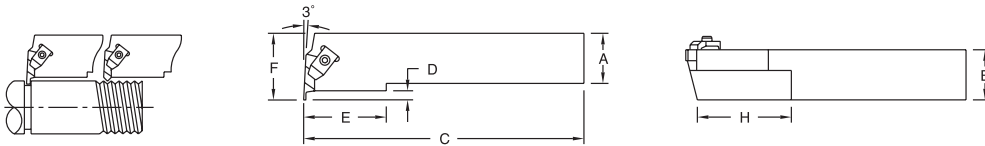
Insert		Part #/ EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw
Right Hand	Left Hand				Right Hand	Left Hand	
VL-2R	VL-2L	Part#	-	-	VL-74	VL-75	6-32 x 1/2 SHCS
		EDP#			58721	58722	52090
VL-2R*	VL-2L*	Part#	-	-	VL-74	VL-75	10-32 x 3/4 SHCS
		EDP#			58721	58722	51991
VL-3R	VL-3L	Part#	-	-	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#			58719	58720	51991
VL-4R	VL-4L	Part#	SM 420	SL-344	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#	58712	58711	58719	58720	51991

*Use indicated Spare Parts for these toolholders

V-LOC® Grooving and Threading Toolholders

VLER/L—End Pocket Grooving & Threading 3° LEAD

Use Insert Style:
VLGx



Right-hand shown, Left-hand opposite

Part Number		Insert	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F	H	Right Hand	Left Hand
VLER 08 2V		VL-2L	0.500	0.500	3.500	0.138	0.500	0.750	1.000	58664	
	VLEL 08 2V	VL-2R									58657
VLER 12 2B		VL-2L	0.750	0.750	4.500	0.138	0.500	1.000	1.000	58665	
	VLEL 12 2B	VL-2R									58658
VLER 16 2C		VL-2L	1.000	1.000	5.000	0.138	0.500	1.250	1.000	58667	
	VLEL 16 2C	VL-2R									58660
VLER 12 3B		VL-3L	0.750	0.750	4.500	0.210	0.750	1.125	2.000	58666	
	VLEL 12 3B	VL-3R									58659
VLER 16 3C		VL-3L	1.000	1.000	5.000	0.210	0.750	1.250	2.000	58668	
	VLEL 16 3C	VL-3R									58661
VLER 16 3D		VL-3L	1.000	1.000	6.000	0.210	0.750	1.250	2.000	58669	
	VLEL 16 3D	VL-3R									58662
VLER 16 4D		VL-4L	1.000	1.000	6.000	0.294	0.750	1.375	2.000	61904	
	VLEL 16 4D	VL-4R									61902
VLER 20 3D		VL-3L	1.250	1.250	6.000	0.210	0.750	1.500	2.000	58670	
	VLEL 20 3D	VL-3R									58663
VLER 20 4D		VL-4L	1.250	1.250	6.000	0.294	0.750	1.625	2.000	61905	
	VLEL 20 4D	VL-4R									61903

Note: VLER Toolholders use left hand inserts and clamps.
VLEL Toolholders use right hand inserts and clamps.

Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

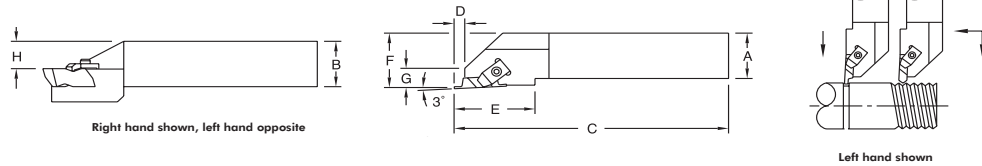
PARTING & GROOVING

V-LOC® Grooving and Threading Toolholders

VLS-DH-R/L—Drop Head Grooving & Threading 3° Lead

Use Insert Style:

VLx



Part Number		Insert	Dimensions								EDP#	
Right Hand	Left Hand		A	B	C	D	E	F	G	H	Right Hand	Left Hand
VLSR DH 12 2B	-	VL-2R	0.750	0.750	4.500	0.125	1.200	1.000	0.400	0.750	58691	
VLSR DH 12 3A		VL-3R	0.750	0.750	4.000	0.180	1.500	1.250	0.580	0.750	58692	
VLSR DH 16 2C		VL-2R	1.000	1.000	5.000	0.125	1.200	1.250	0.400	1.000	58693	
VLSR DH 16 3C		VL-3R	1.000	1.000	5.000	0.180	1.500	1.250	0.580	1.000	58694	
VLSR DH 16 3D		VL-3R	1.000	1.000	6.000	0.180	1.530	1.250	0.580	1.250	58695	
VLSR DH 20 3D*		VL-3R*	1.250	1.250	6.000	0.180	1.630	1.500	0.620	1.250	58696	
	VLSL DH 20 3D*	VL-3L*										58680
VLSR DH 20 4D		VL-4R	1.250	1.250	6.000	0.280	1.630	1.500	0.620	1.250	61909	
VLSR DH 24 4D		VL-4R	1.500	1.500	6.000	0.280	1.630	2.000	1.000	1.500	61910	

Insert		Part #/ EDP#	Clamp		Clamp Screw	Set Screw
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	-	Part#	VL-74	-	6-32 x 1/2 SHCS	1/4 x 3/4 OPSS
		EDP#	58721		52090	RFQ
VL-3R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	-
		EDP#	58719		51991	
VL-3R*	VL-3L*	Part#	VL-72	VL-73	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719	58720	51991	00885
VL-4R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719		51991	00885

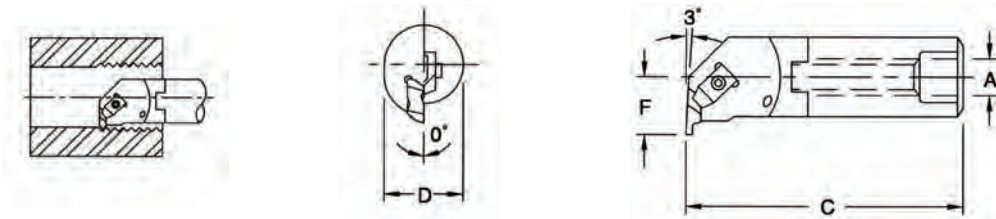
*Use indicated Spare Parts for these toolholders

PARTING & GROOVING

V-LOC® Grooving & Threading Boring Bars

A-VLER/L—Grooving & Threading with Coolant Hole 3° Lead

Use Insert Style:
VLGx



Right-hand shown, Left-hand opposite

Part Number		Insert	Dimensions					EDP#	
Right Hand	Left Hand		D	C	F	Min. Bore	A	Right Hand	Left Hand
A10 VLER 2		VL-2L	0.625	10.000	0.500	1.000	1/8-27NPT	58698	
	A10 VLEL 2	VL-2R							58697
A12 VLER 2		VL-2L	0.750	10.000	0.562	1.125	1/8-27NPT	58700	
	A12 VLEL 2	VL-2R							58699
A16 VLER 2		VL-2L	1.000	12.000	0.688	1.375	1/4-18NPT	58703	
	A16 VLEL 2	VL-2R							58701
A16 VLER 3		VL-3L	1.000	12.000	0.688	1.375	1/4-18NPT	58704	
	A16 VLEL 3	VL-3R							58702
A20 VLER 3		VL-3L	1.250	14.000	0.875	1.750	1/4-18NPT	58706	
	A20 VLEL 3	VL-3R							58705
A24 VLER 3		VL-3L	1.500	14.000	1.000	2.000	1/4-18NPT	58708	
	A24 VLEL 3	VL-3R							58707
A32 VLER 3		VL-3L	2.000	16.000	1.250	2.500	1/4-18NPT	58710	
	A32 VLEL 3	VL-3R							58709
A28 VLER 4		VL-4L	1.750	14.000	1.250	2.500	1/4-18NPT	55306	
	A28 VLEL 4	VL-4R							55305
A32 VLER 4		VL-4L	2.000	16.000	1.375	2.750	1/4-18NPT	55308	
	A32 VLEL 4	VL-4R							55307

Note: Axx VLER Boring Bars use left hand inserts and clamps.
Axx VLEL Boring Bars use right hand inserts and clamps.

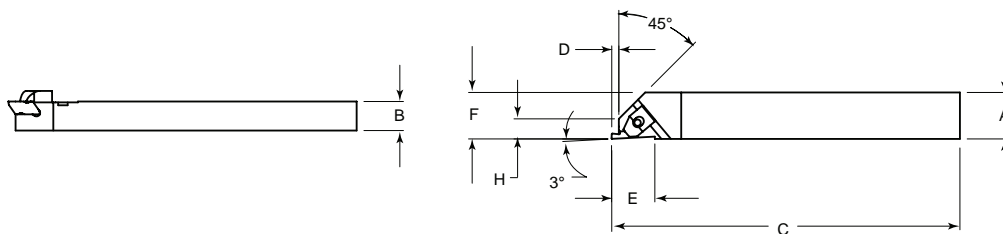
Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

PARTING & GROOVING

V-LOC® Grooving and Threading Toolholders

VLASR/L—Swiss/Screw Machine Grooving & Threading

Use Insert Style:
VLTx



Inch Toolholders

Right-hand shown, Left-hand opposite

Part Number		Insert (1)	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F(2)	H	Radial	Axial	Right Hand	Left Hand
VLASR 06 2D		VL-R	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°	61895	
	VLASL 06 2D	VL-2L	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°		61888
VLASR 08 2D		VL-2R	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°	61896	
	VLASL 08 2D	VL-2L	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°		61889
VLASR 10 3B		VL-3R	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°	61899	
	VLASL 10 3B	VL-3L	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°		61892
VLASR 61.5 2D		VL-3R	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°	61901	
	VLASL 61.5 2D	VL-3L	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°		61894

Metric Toolholders

Part Number		Insert (1)	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F	H	Radial	Axial	Right Hand	Left Hand
VLASR 1010M2Q		VL-2R	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°	61897	
	VLASL 1010M2Q	VL-2L	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°		61890
VLASR 1020M2Q		VL-2R	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°	61898	
	VLASL 1020M2Q	VL-2L	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°		61891
VLASR 1212M2Q*		VL-2R*	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°	61900	
	VLASL 1212M2Q*	VL-2L*	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°		61893

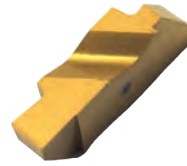
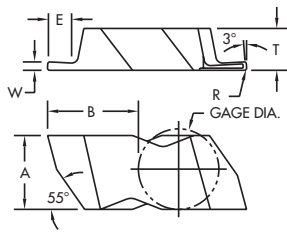
Insert		Part #/ EDP#	Clamp		Clamp Screw	Hex Wrench
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	VL-2L	Part#	VL-182	VL-183	6-32x1/2 SHCS	7/64 Hex Wrench
		EDP#	59111	59112		
VL-3R	VL-3L	Part#	VL-184	VL-185	10-32x3/4 SHCS	5/32 Hex Wrench
		EDP#	59113	59114		
VL-2R*	VL-2L*	Part#	VL-182	VL-183	VLS 1025	M25DIN911
		EDP#	59111	59112		

Note:

- V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.
- "F" dimension over sharp point of grooving insert.

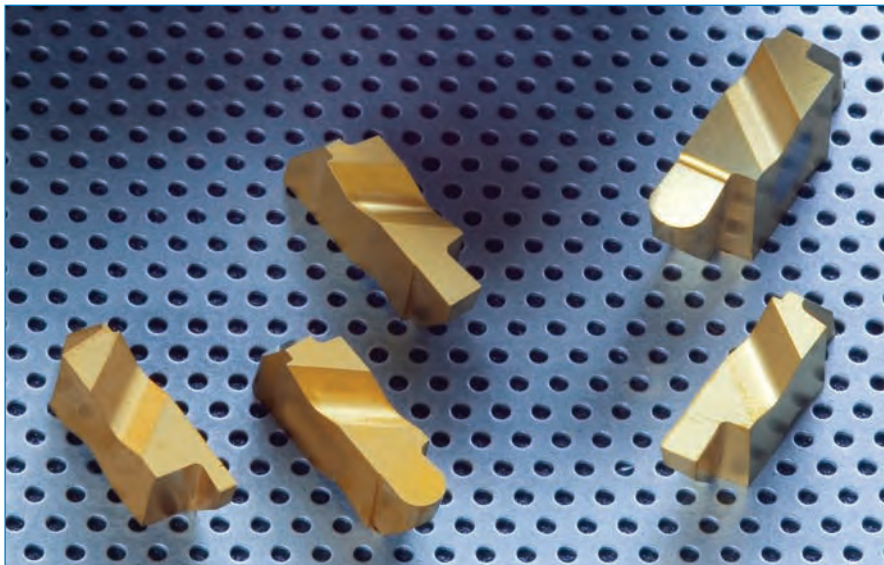
*Use indicated Spare Parts for these toolholders

V-LOC® Grooving and Threading Common Insert Dimensions




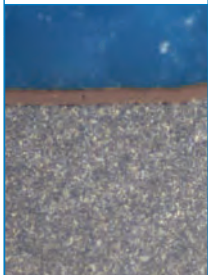
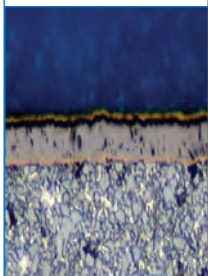
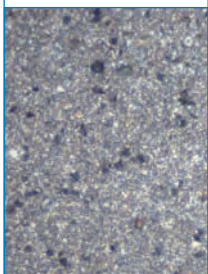
See Product pages D88-D91 for E,R, & W dimensions.

Insert Size	A		T		Gage Dia		B	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2	0.219	5.56	0.15	3.81	0.1875	4.75	0.27	6.86
3	0.344	8.74	0.195	4.95	0.375	9.53	0.405	10.29
4	0.453	11.51	0.255	6.48	0.375	9.53	0.636	16.15



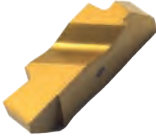
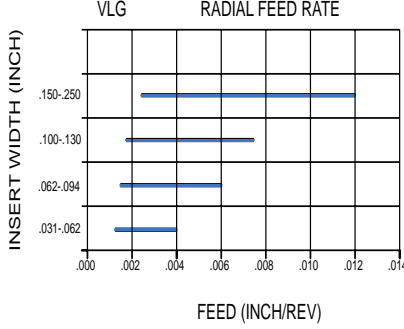
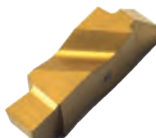
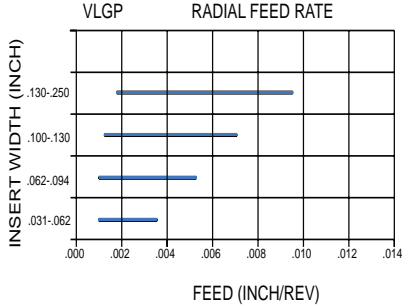
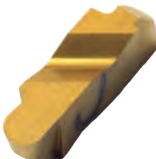
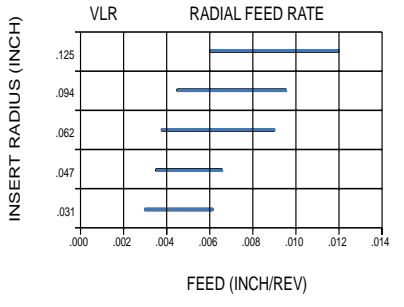
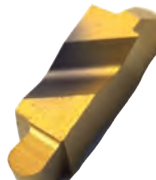
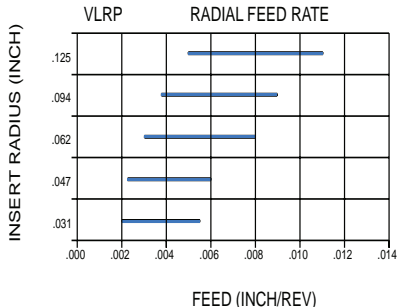
PARTING & GROOVING

V-LOC® Grooving Grade Description

Grade	Description	Performance	ISO Class	Application
VP5810 	PVD Coated Carbide TiAlN/TiN Multi-Layer Coating Micro Grain Substrate	Light Duty Grade Excellent Wear Resistance Enhanced Crater Resistance Low Cutting Edge Build-Up Outstanding Edge Integrity	P10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds In Good Machining Conditions.
			M10	
			K10	
			S10	
			N10	
VP5820 	PVD Coated Carbide TiAlN/TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate.	General Machining Grade Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-Up	P20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
			M20	
			K20	
			S20	
			N20	
VP5735 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating High Cobalt Substrate	Roughing Grade Excellent Wear Resistance Very High Toughness and Chipping Resistance.	P35	Steels, Stainless Steels, Cast Iron, High Temperature Alloys. Roughing to General Purpose Machining, Medium Speeds, Continuous and Interrupted Cuts, and High Feed Rates.
			M35	
			K35	
			S30	
VPUS10 	Uncoated Carbide Micro Grain High Hardness	Finishing Grade Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.
			K10	
			S10	
			N15	

V-LOC® Grooving Insert Geometry Application Data

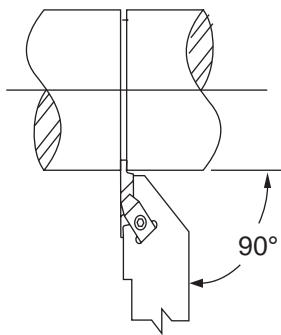
V-LOC® Grooving System

Insert Style	Description	Radial Feed Rate	Materials	Application
		Feed Rate by Insert Width	● = Optimum feed rate for most applications	
VLG 	Grooving General grooving applications. O-ring grooves, circlip grooves		Steels	Main application area: General Machining to Finishing operations Light to medium feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/ Non-Ferrous				
			Hardened Material	
VLGP 	Grooving General grooving applications with 5° positive rake. O-ring grooves, circlip grooves Good for stainless, non-ferrous, and high temp alloys.		Steels	Main application area: General Machining to Finishing operations Light to medium feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/ Non-Ferrous				
			Hardened Material	
VLR 	Profiling / Radius Grooving Full radius grooving. Turning and profiling.		Steels	Main application area: General Machining to Finishing operations Light to medium feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/ Non-Ferrous				
			Hardened Material	
VLRP 	Profiling / Radius Grooving Full radius grooving with 5° positive rake. Turning and profiling. Good for stainless, non-ferrous, and high temp alloys.		Steels	Main application area: General Machining to Finishing operations Light to medium feed rates
			Stainless Steels	
Cast Irons				
High Temperature Alloys				
Aluminum/ Non-Ferrous				
			Hardened Material	

PARTING & GROOVING

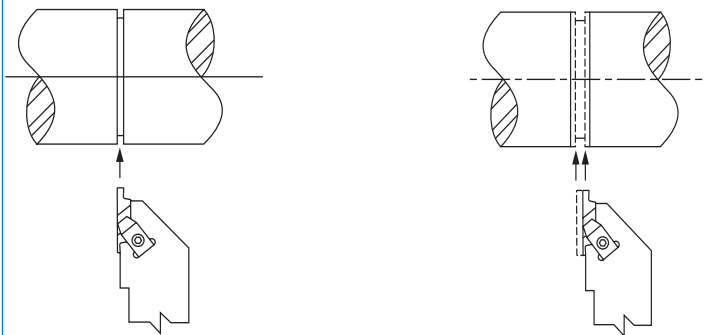
V-LOC® Grooving Machining Guidelines

Tool Holder Set-Up



Cut groove to insert width.

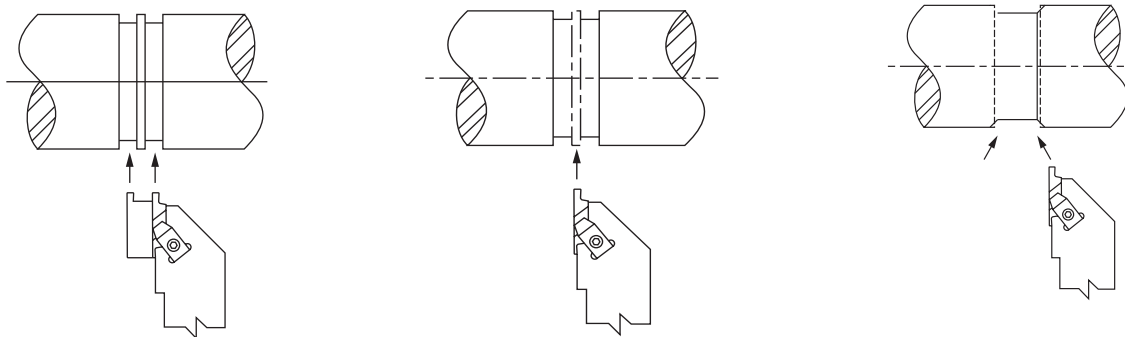
Machining Slightly Wider Grooves than the Tool



Plunge the center of the desired groove.

Using a slower feed rate, plunge both sides of the groove to obtain the required width.

Machining Wide Grooves

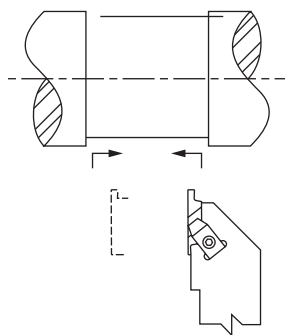


Plunge both sides of the groove width.

Plunge the center area to remove web of the remaining material.

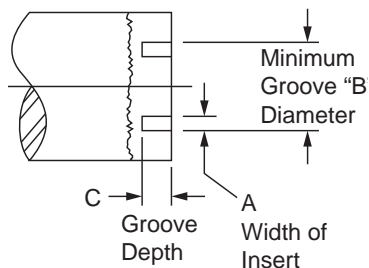
Plunge the sides of the groove at the required angle. The width of the cut should be half of the width of the grooving tool.

Finishing the Wide Groove



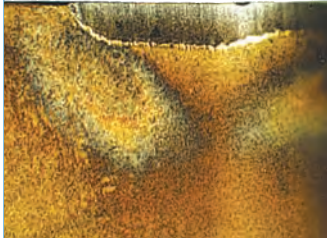



Plunge the center area to remove web of the remaining material.

Machining Guidelines for Face Grooving Operations with Standard VLG Inserts



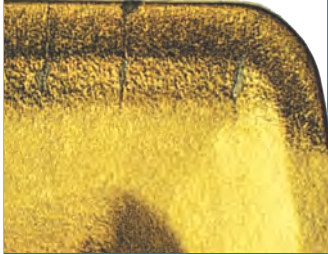
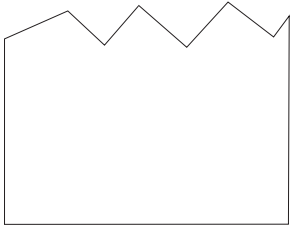
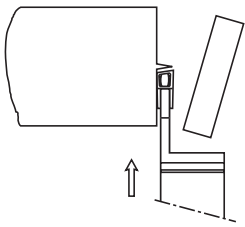
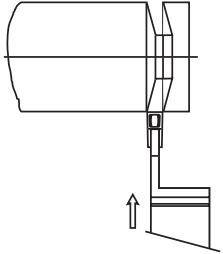
Insert Family	Groove Depth "C"	Min. Groove Dia. "B"
VLG-2	0.050	2.125
VLG-2	0.110	3.500
VLG-3	0.094	4.000
VLG-3	0.125	5.000
VLG-3	0.150	5.500
VLG-4	0.150	6.000
VLG-4	0.250	8.250
VLG-5	0.375	13.000



Clockwise rotation of the workpiece requires left-hand holder and right-hand insert. Counter-clockwise rotation of the workpiece requires right-hand holder with left-hand insert.

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Rapid Flank Wear</p> 	<ul style="list-style-type: none"> • Excessive cutting speed • Work material micro-structure contains carbides 	<ul style="list-style-type: none"> • Reduce cutting speed • Use more wear resistant grade • Select more positive rake • Flood cutting zone with coolant
<p>Built-Up Edge, Torn Finish, Chip Welding</p> 	<ul style="list-style-type: none"> • Low cutting speed • High feed rate • Poor shearing action 	<ul style="list-style-type: none"> • Increase cutting speed and/or decrease feed • Select more positive rake • Select tougher grade (use PVD coated insert) • Flood cutting zone with coolant
<p>Edge Chipping</p> 	<ul style="list-style-type: none"> • Excessive feed rate • Interrupted cut 	<ul style="list-style-type: none"> • Increase speed • Reduce feed rate • Select tougher grade • Check for edge build-up • Select stronger geometry • Improve rigidity, minimize overhang
<p>Fracture</p> 	<ul style="list-style-type: none"> • Improper selection of grade/ geometry and/or cutting conditions 	<ul style="list-style-type: none"> • Reduce feed rate • Select tougher grade • Select stronger geometry • Ensure set-up rigidity, minimize tool overhang

PARTING & GROOVING

V-LOC® Grooving Insert Failure Modes

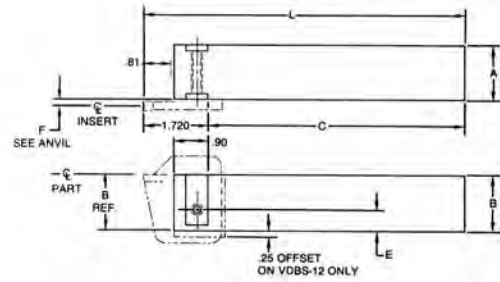
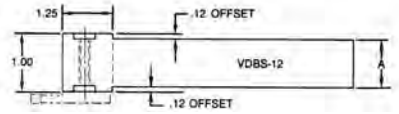
Problem/Failure Mode	Cause	Control Action/Remedy
<p>Thermal Cracks</p> 	<ul style="list-style-type: none"> • Extreme variation in cutting temperatures • Interrupted cut 	<ul style="list-style-type: none"> • Reduce feed rate • Increase cutting speed • Select stronger geometry
<p>Poor Surface Finish</p> 	<ul style="list-style-type: none"> • High feed rate • Low cutting speed 	<ul style="list-style-type: none"> • Reduce feed rate and increase cutting speed • Check set-up, minimize overhang of tool • Select more positive rake chipbreaker/PVD coated insert • Flood cutting zone with coolant • Select a precision ground insert style • Dwell at bottom of groove (3 rev. max)
<p>Residual Burrs/Nibs</p> 	<ul style="list-style-type: none"> • Improper feed • Improper set-up 	<ul style="list-style-type: none"> • Use sharp inserts • Adjust feed rate • Adjust tool center height • Use a lead angle insert for parting
<p>Convex or Concave Surfaces</p> 	<ul style="list-style-type: none"> • High feed rate • Excessive tool overhang • Small insert width 	<ul style="list-style-type: none"> • Check set-up, minimize overhang of tool • Check tool alignment for square • Use a correct hand insert • Use a sharper tool • Use a wider insert

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Workpiece Chatter Vibration</p> 	<ul style="list-style-type: none"> • Poor set-up • Improper insert selection 	<ul style="list-style-type: none"> • Check set-up, minimize tool overhang • Check tool center height • Increase feed rate • Increase speed • Use sharp inserts • Select more positive rake
<p>Unacceptable Chip Control (Low Carbon Steel)</p> 	<ul style="list-style-type: none"> • Low feed rate 	<ul style="list-style-type: none"> • Increase feed rate • Decrease speed • Adjust coolant flow and concentration

PARTING & GROOVING

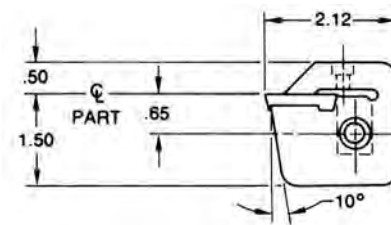
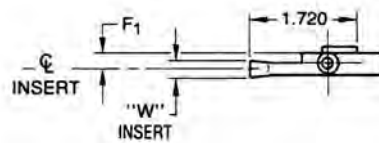
EconoGROOVE® Grooving Toolholders

General Purpose-VDBS—Side Mounting Shanks



Part Number	Dimensions					EDP#	Mounting Screw	EDP# Mounting Screw
	A	B	C	E	L			
VDBS 12	0.750	0.750	4.280	0.090	6.000	61759	5/16-24 x 5/8 SHCS, H=1/4	52081
VDBS 16	1.000	1.000	4.280	0.340	6.000	61760	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 20	1.250	1.250	5.280	0.590	7.000	61761	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 24	1.500	1.500	6.280	0.840	8.000	61762	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 85	1.000	1.250	5.280	0.590	7.000	61766	5/16-24 x 5/8 SHCS, H=1/4	

General Purpose VDBA—Anvil



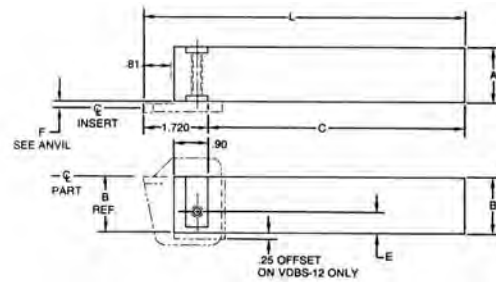
Part Number		Dimensions						Insert Series	EDP#		Clamp Screw	EDP# Clamp Screw
Right Hand	Left Hand	F	W Inch Inserts		W Metric Inserts		Right Hand		Left Hand			
			Min.	Max.	Min.	Max.						
VDBA 125 188RA	VDBA 125 188LA	0.337	0.125	0.188	-	0.157	A	61800	61799	10-32 x 5/8 SHCS, H=5/32	51998	
VDBA 188 218RA	VDBA 188 218LA	0.318	0.188	0.250	0.197	0.236	A	61802	61801	10-32 x 5/8 SHCS, H=5/32		
VDBA 250 281RB	VDBA 250 281LB	0.318	0.250	0.281	0.236	0.276	B	61804	61803	10-32 x 5/8 SHCS, H=5/32		
VDBA 281 344RB	VDBA 281 344LB	0.289	0.281	0.344	0.275	0.315	B	61806	61805	10-32 x 5/8 SHCS, H=5/32		
VDBA 344 375RB	VDBA 344 375LB	0.250	0.344	0.375	-	0.354	B	61808	61807	10-32 x 5/8 SHCS, H=5/32		

Use with VDB-Style inserts, page D110.

PARTING & GROOVING

EconoGROOVE® Grooving Toolholders

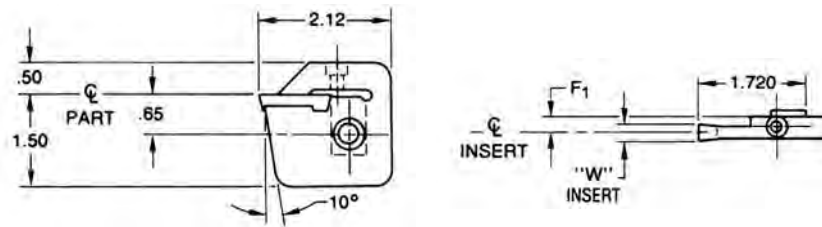
General Purpose Metric Shanks



Shank No.	Dimensions			Shank EDP#	Screw	EDP# Screw
	A=B	C	L			
VDBS 2525	25 (0.984)	107 (4.218)	150.8 (5.94)	61763	M 8x16 DIN 6912	RFQ*

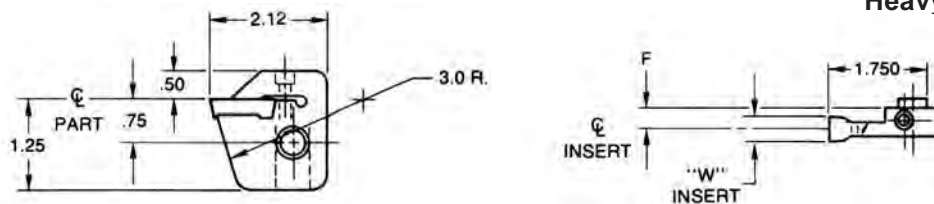
*Contact your local Valenite Distributor or Valenite Customer Service.

General Purpose Metric VDBA Anvil



Size	Part Number		Dimensions			EDP#		Clamp Screw DIN 912	EDP# Clamp Screw
	Right Hand	Left Hand	f1	W Min.	W Nominal	Right Hand	Left Hand		
A	VDBA 3 4RA	VDBA 3 4LA	8,6	3,5	4	61810	61809	M 4x16 DIN 912	52181
A	VDBA 4 5RA	VDBA 4 5LA	8,1	4	5	61812	61811	M 4x16 DIN 912	52181
B	VDBA 5 6RB	-	8,1	5	6	61814	-	M 4x16 DIN 912	52181
B	VDBA 6 7RB	VDBA 6 7LB	7,8	6	7	61816	61815	M 4x16 DIN 912	52181
B	VDBA 7 8RB	VDBA 7 8LB	7,3	7	8	61818	61817	M 4x16 DIN 912	52181
B	-	VDBA 8 9LB	6,7	8	9	-	61819	M 4x16 DIN 912	52181

Heavy-Duty VHDBA R/L Anvils



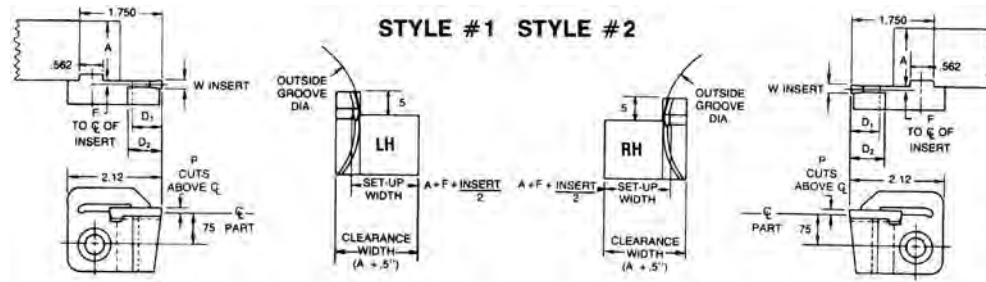
Part Number		Dimensions				EDP#		Insert Series	Clamp Screw	EDP# Clamp Screw	
Right Hand	Left Hand	F	"W" Inch		"W" Metric		Right Hand				Left Hand
			Min.	Max.	Min.	Max.					
VHDBA 125 188RA	VHDBA 125 188LA	0.458	0.125	0.188	4.000	4.800	61883	61882	A	1/4-28 x 5/8 SHCS	52029
VHDBA 188 250RA	VHDBA 188 250LA	0.438	0.188	0.250	4.800	6.000	61885	61884	A	1/4-28 x 5/8 SHCS	
VHDBA 250 375RB	VHDBA 250 375LB	0.401	0.250	0.375	6.400	9.000	61887	61886	B	1/4-28 x 5/8 SHCS	

Note: Must be used with Heavy-Duty Shanks

PARTING & GROOVING

EconoGROOVE® Grooving Toolholders

VHDBTA—Heavy-Duty Face Grooving Anvils



Part-Number		Dimensions						EDP#	Clamp Screw	EDP# Clamp Screw
		F	P	Outside Groove Dia.		Max. Depth of Cut				
Style-1	Style-2			Min.	Max.	D1	D2			
VHDBTA 1215 1020		0.110	0.094	2.000	2.380	0.500	0.625	61821	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1215 2020	0.110	0.094	2.000	2.380	0.500	0.625	61827	1/4-28 x 5/8 SHCS	
VHDBTA 1215 10238		0.110	0.094	2.380	3.000	0.500	0.625	61822	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 20238	0.110	0.094	2.380	3.000	0.500	0.625	61828	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1030		0.110	0.094	3.000	4.000	0.500	0.625	61823	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2030	0.110	0.094	3.000	4.000	0.500	0.625	61829	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1040		0.110	0.094	4.000	6.000	0.500	0.625	61824	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2040	0.110	0.094	4.000	6.000	0.500	0.625	61830	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1060		0.110	0.094	6.000	12.000	0.500	0.625	61825	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2060	0.110	0.094	6.000	12.000	0.500	0.625	61831	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1120		0.110	0.094	12.000	18.000	0.500	0.625	61826	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2120	0.110	0.094	12.000	18.000	0.500	0.625	61832	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1180		0.110	0.094	18.000	40.000	0.500	0.625	61871	1/4-28 x 5/8 SHCS	

Inserts to be used with these anvils: VDB 125 A 015; VDB 156 A 015; VDB 188 A 015; VDB 125R A; VDB 156R A; VDB 188R A

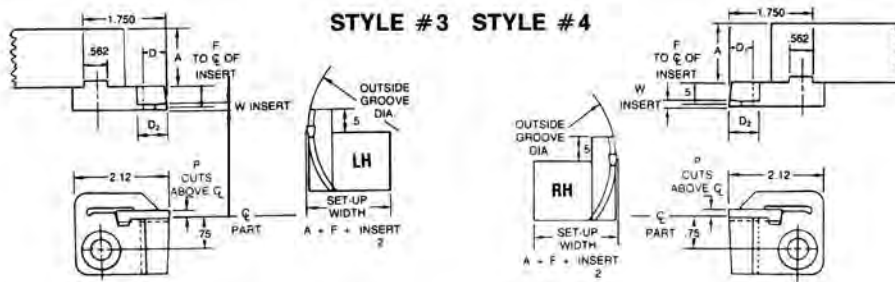
VHDBTA 1825 1020		0.140	0.094	2.000	2.380	0.625	0.750	61845	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1825 2020	0.140	0.094	2.000	2.380	0.625	0.750	61852	1/4-28 x 5/8 SHCS	
VHDBTA 1825 10238		0.140	0.094	2.380	3.000	0.625	0.750	61846	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 20238	0.140	0.094	2.380	3.000	0.625	0.750	61853	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1030		0.140	0.094	3.000	4.000	0.625	0.750	61847	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2030	0.140	0.094	3.000	4.000	0.625	0.750	61854	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1040		0.140	0.094	4.000	6.000	0.625	0.750	61848	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2040	0.140	0.094	4.000	6.000	0.625	0.750	61855	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1060		0.140	0.094	6.000	12.000	0.625	0.750	61849	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2060	0.140	0.094	6.000	12.000	0.625	0.750	61856	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1120		0.140	0.094	12.000	18.000	0.625	0.750	61850	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2120	0.140	0.094	12.000	18.000	0.625	0.750	61857	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1180		0.140	0.094	18.000	40.000	0.625	0.750	61851	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2180	0.140	0.094	18.000	40.000	0.625	0.750	61873	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2400	0.140	0.094	40.000	-	0.625	0.750	61874	1/4-28 x 5/8 SHCS	

Note:

- Must be used with Heavy-Duty Shanks
- Inserts to be used with these anvils: VDB 188 A 015; VDB 218 A 015; VDB 188 A 015; VDB 250 A 015; VDB 188R A; VDB 250R A

EconoGROOVE® Grooving Toolholders

VHDBTA—Heavy-Duty Face Grooving Anvils



Part Number		Dimensions						EDP#	Clamp Screw	EDP# Clamp Screw
		F	P	Outside Groove Dia.		Max. Depth of Cut				
Style 3	Style 4			Min.	Max.	D1	D2			
VHDBTA 12 15 3020		0.460	0.094	2.000	2.380	0.500	0.625	61833	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1215 4020	0.460	0.094	2.000	2.380	0.500	0.625	61839	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3030		0.460	0.094	3.000	4.000	0.500	0.625	61822	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4030	0.460	0.094	3.000	4.000	0.500	0.625	61841	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3040		0.460	0.094	4.000	6.000	0.500	0.625	61836	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4040	0.460	0.094	4.000	6.000	0.500	0.625	61842	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3060		0.460	0.094	6.000	12.000	0.500	0.625	61837	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4060	0.460	0.094	6.000	12.000	0.500	0.625	61843	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3120		0.460	0.094	12.000	18.000	0.500	0.625	61838	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4120	0.460	0.940	12.000	18.000	0.500	0.625	61872	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4180	0.460	0.094	18.000	40.000	0.500	0.625	61844	1/4-28 x 5/8 SHCS	

Inserts to be used with these anvils: VDB 125 A 015; VDB 156 A 015; VDB 188 A 015; VDB 125R A; VDB 156R A; VDB 188R A

VHDBTA 18 25 3020		0.430	0.094	2.000	2.380	0.625	0.750	61858	1/4-28 x 5/8 SHCS	52029
	VHDBTA 18 25 4020	0.430	0.094	2.000	2.380	0.625	0.750	61864	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3030		0.430	0.094	3.000	4.000	0.625	0.750	61860	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4030	0.430	0.094	3.000	4.000	0.625	0.750	61866	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3040		0.430	0.094	4.000	6.000	0.625	0.750	61861	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4040	0.430	0.094	4.000	6.000	0.625	0.750	61867	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3060		0.430	0.094	6.000	12.000	0.625	0.750	61862	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4060	0.430	0.094	6.000	12.000	0.625	0.750	61868	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3120		0.430	0.094	12.000	18.000	0.625	0.750	61863	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4120	0.430	0.094	12.000	18.000	0.625	0.750	61869	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4180	0.430	0.094	18.000	48.000	0.625	0.750	61870	1/4-28 x 5/8 SHCS	

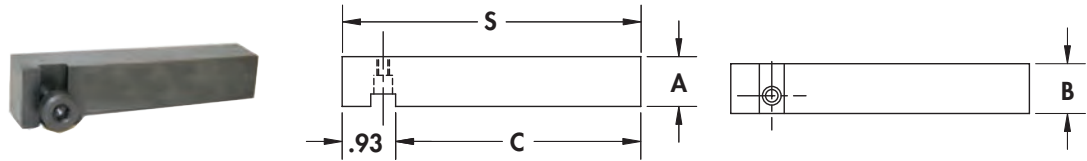
Note:

- Must be used with Heavy-Duty Shanks
- Inserts to be used with these anvils: VDB 188 A 015; VDB 218 A 015; VDB 250 A 015; VDB 188R A; VDB218R A; VDB 250R A

PARTING & GROOVING

EconoGROOVE® Grooving Toolholders

VHDBS R/L Toolholders—Heavy-Duty Axial Shank

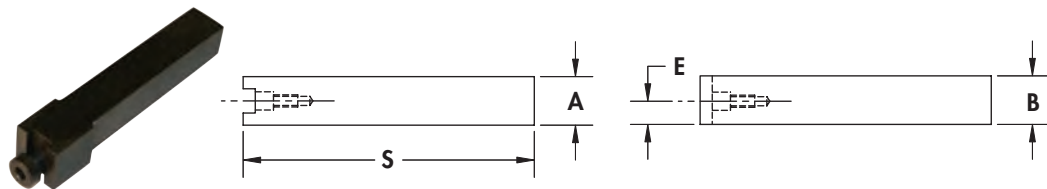


Right-hand shown, Left-hand opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	A	B	C	L	Right Hand	Left Hand
VHDBS 12R	VHDBS 12L	0.750	0.750	4.320	5.250	61771	61770
VHDBS 16R	VHDBS 16L	1.000	1.000	4.320	5.250	61773	61772
VHDBS 20R	VHDBS 20L	1.250	1.250	5.320	6.250	61775	61774
VHDBS 24*		1.500	1.500	6.320	7.250	61776	

*Shank can be inverted for opposite hand application

VHDBSN Toolholders—Heavy-Duty 90° Shank



Part Number	Dimensions				EDP#
	A	B	L	E	
VHDBSN-12	0.750	0.750	6.000	0.000	61782
VHDBSN-16	1.000	1.000	6.000	0.250	61783
VHDBSN-20	1.250	1.250	7.000	0.500	61784
VHDBSN-24	1.500	1.500	8.000	0.750	61785

Spare Parts

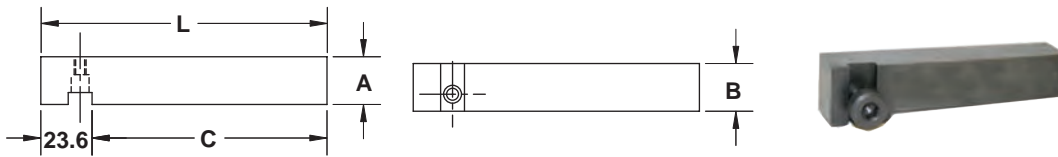
Part-Number		Wrench	Screw	Torque ft-lbs
VHDBS & VHDBSN	Part#	5/16 Hex Wrench	PT527	32
	EDP#	57330	53003	32

Note: Shanks complete with screw & wrench. Anvils must be purchased separately.

Note: For use with all VGSCA, VGWCA, VHDBA & VHDBTA anvils

EconoGROOVE® Grooving Toolholders

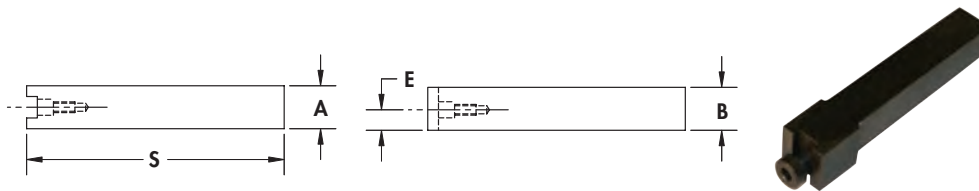
VHDBS—Heavy-Duty Metric Axial Shank



Right-hand shown, Left-hand opposite

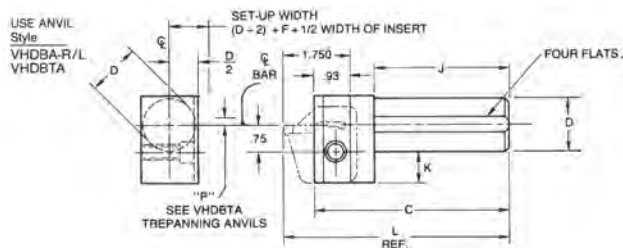
Part Number		EDP#		Dimensions				Mounting Screw	EDP# Mounting Screw
Right Hand	Left Hand	Right Hand	Left Hand	A	B	C	L Ref.		
VHDBS 2525R	VHDBS 2525L	61778	61777	25	25	106	130	PT-527,H-5/16	53003
VHDBS 3232R	VHDBS 3232L	61781	61780	32	32	126	150		

VHDBSN Toolholders—Heavy-Duty Metric 90° Shank



Part Number	EDP#	Dimensions				Mounting Screw	EDP# Mounting Screw
		A	B	L	E		
VHDBSN-2525	61786	25	25	150	18.5	PT-527,H-5/16	53003
VHDBSN-3232	61788	32	32	175	16		

VHDBBR— Heavy-Duty Axial Round Shank



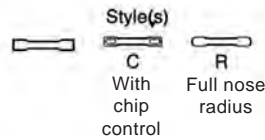
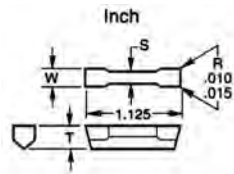
Right-hand shown, Left-hand opposite

Part Number		EDP#		Dimensions					Mounting Screw	EDP# Mounting Screw
Right Hand	Left Hand	Right Hand	Left Hand	C	D	J	K	L		
VHDBBR 125	-	61794	-	6.000	1.250	4.500	0.620	6.820	PT-527, H=5/16	53003
VHDBBR 150	VHDBBL 150	61795	61793	8.000	1.500	6.500	0.500	8.820		

PARTING & GROOVING

EconoGROOVE® Insert Product Offering

VDB Inserts



Part Number	Insert Dimensions						ValPro Grade Selection					
	Width		S		T		Available Grades - EDP #					
	Inch	mm	Inch	mm	Inch	mm	VP5715	VP5825	VP5815	VP5845	VPUK20	VPUP30
VDB 125 A015	0.125	3.18	0.106	2.69	0.250	6.35	22976	22864	23352	23328	24521	24522
VDB 125 A015C	0.125	3.18	0.106	2.69	0.250	6.35	22977			23329	24523	
VDB 125 RA	0.125	3.18	0.106	2.69	0.250	6.35	22978			23330	24524	24525
VDB 156 A015	0.156	3.96	0.106	2.69	0.250	6.35	22979			23331	24526	
VDB 156 A015C	0.156	3.96	0.106	2.69	0.250	6.35				23332		
VDB 156 RA	0.156	3.96	0.106	2.69	0.250	6.35					24527	
VDB 188 A015	0.188	4.78	0.144	3.66	0.250	6.35	22980	22866		23333	24528	24529
VDB 188 A015C	0.188	4.78	0.144	3.66	0.250	6.35	22981			23334		
VDB 188 RA	0.188	4.78	0.144	3.66	0.250	6.35				23335	24530	
VDB 218 A015	0.218	5.54	0.144	3.66	0.250	6.35				23336	24531	24532
VDB 250 A015	0.250	6.35	0.144	3.66	0.250	6.35	22982			23337	24533	
VDB 250 A015C	0.250	6.35	0.144	3.66	0.250	6.35				23338		
VDB 250 B015	0.250	6.35	0.144	3.66	0.337	8.56	22983			23339	24534	24535
VDB 250 B015C	0.250	6.35	0.144	3.66	0.337	8.56				23340		
VDB 250 RA	0.250	6.35	0.144	3.66	0.250	6.35				23341		
VDB 250 RB	0.250	6.35	0.144	3.66	0.337	8.56				23342	24536	
VDB 281 B015	0.281	7.14	0.202	5.13	0.337	8.56					24537	
VDB 312 B015	0.312	7.92	0.202	5.13	0.337	8.56				23343		
VDB 312 RB	0.312	7.92	0.202	5.13	0.337	8.56						24538
VDB 375 B015	0.375	9.53	0.276	7.00	0.337	8.56				23344	24539	
VDB 375 B015C	0.375	9.53	0.276	7.01	0.337	8.56				23345		
VDB 4A	0.157	4.00	0.106	2.70	0.250	6.30			23353		24540	
VDB 4RA	0.157	4.00	0.106	2.70	0.250	6.30					24541	
VDB 5A	0.197	5.00	0.144	3.60	0.250	6.30					24542	
VDB 5RA	0.197	5.00	0.144	3.60	0.250	6.30					24543	
VDB 6B	0.236	6.00	0.144	3.60	0.250	6.30					24544	
VDB 6RB	0.236	6.00	0.144	3.60	0.250	6.30					24545	
VDB 8B	0.315	8.00	0.202	5.10	0.337	8.50					24546	
VDB 9B	0.354	9.00	0.276	7.00	0.337	8.50					24547	

The ValPRO™ Color System simplifies the tool selection process. Use the ValGROOVE™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

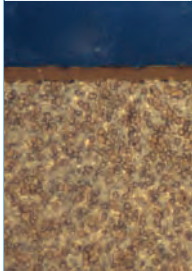
Material Group	Category	Material Designation
Steels 	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
Stainless Steels 	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304L 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
Cast Irons 	Gray Cast Iron	ASTM A48, Class 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades 70003, 820002, 90001, SAE J158, Grades M7002, M8501
High Temp Alloys 	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
Aluminum And Non-Ferrous Materials 	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
Hardened Materials 	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

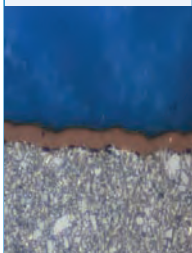
PARTING & GROOVING

EconoGROOVE® Grade Description


PVD

Grade	Description	Performance	ISO Class	Application
VP5845 	PVD Coated Carbide TiAlN Coating Super Tough High Cobalt Substrate	Roughing Grade Highest Toughness and Chipping Resistance Excellent Wear Resistance	P45	Steels Rough to General Machining. Low to Medium Speeds. Interrupted Cuts, Demanding High Feed Operations.
			M40	Stainless Steels
			K45	Cast Irons
			S40	High Temperature Alloys, Titanium Alloys
			N40	Aluminum & Non-Ferrous Alloys

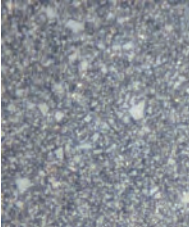
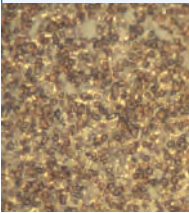
VP5825 	PVD Coated Carbide TiAlN Coating Medium Grain Substrate	General Machining Grade Enhanced Crater Resistance Good Wear Resistance High Toughness and Chipping Resistance Low Build-Up at the Cutting Edge.	P25	Steels General Purpose Machining. Low to Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
			M25	Stainless Steels
			K30	Cast Irons
			S25	High Temperature Alloys, Titanium Alloys
			N25	Aluminum & Non-Ferrous Alloys

VP5815 	PVD Coated Carbide TiAlN/TiN Multi-Layer Coating Fine Grain Substrate	Medium Duty Grade Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge.	P15	Steels Finish to General Purpose Machining. Medium to High Speeds.
			M15	Stainless Steels
			K15	Cast Irons
			S15	High Temperature Alloys, Titanium Alloys
			N15	Aluminum & Non-Ferrous Alloys

MTCVD

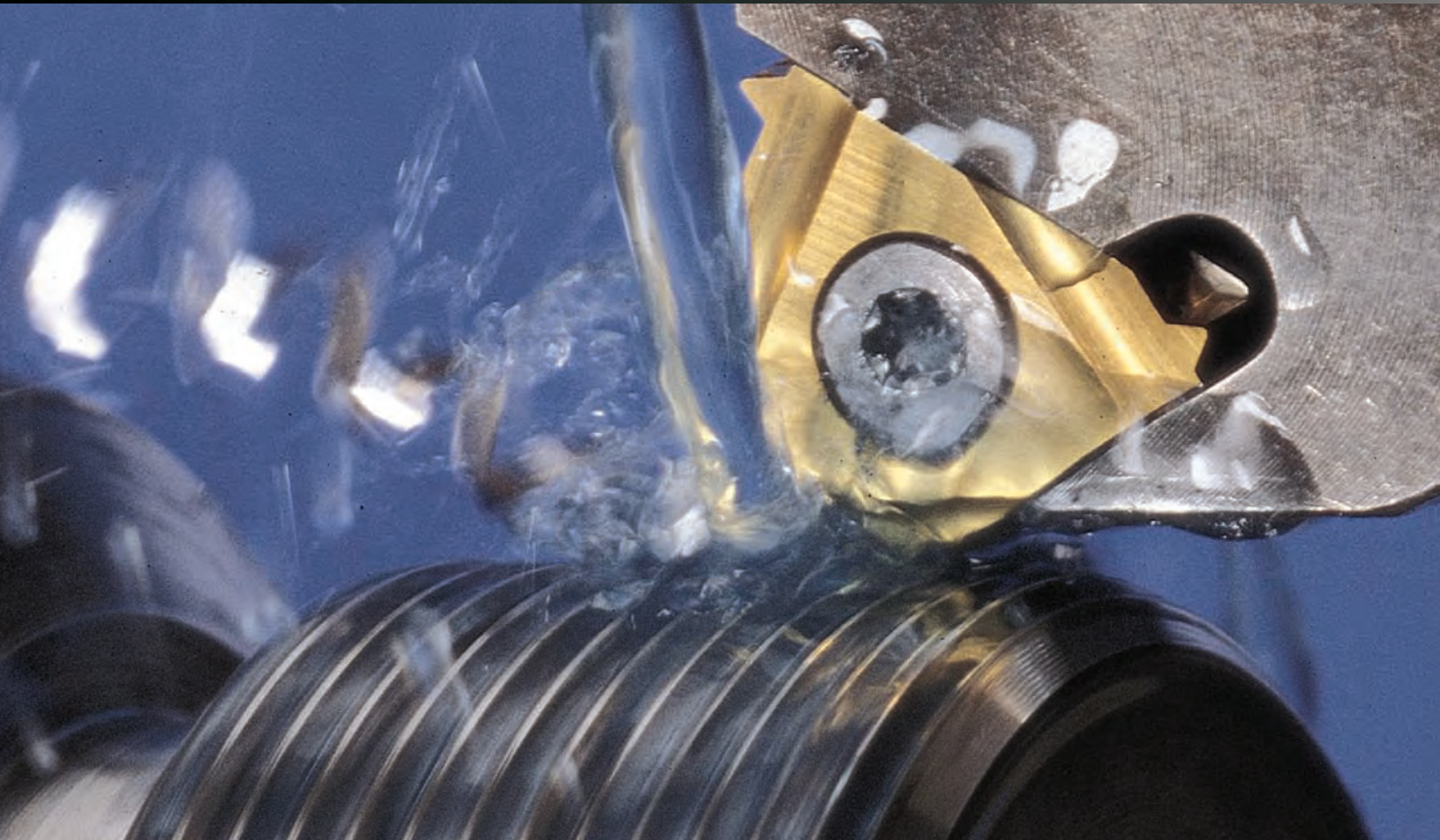
VP5715 	MTCVD Coated Carbide TiCN/Al ₂ O ₃ /TiN Coating Medium Grain Substrate	Light Machining Grade High Wear Resistance Enhanced Edge Strength and Chipping Resistance	P15	Steels Finish to General Purpose Machining. Medium to High Speeds
			M15	Stainless Steels
			K15	Cast Irons

EconoGROOVE® Grade Description

Grade	Description	Performance	ISO Class	Application
VPUK20 	Uncoated Carbide Fine Grain Substrate Medium Hardness	General Purpose Grade Excellent Toughness Good Wear Resistance and Chipping Resistance	M25	Stainless Steels-Ferritic and Austenitic.
			K20	Gray, Ductile, and Malleable Irons. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			S25	High Temperature Alloys
			N25	Aluminum, Bi-Metal Components.
VPUP30 	Uncoated Carbide Medium Grain Size Medium Hardness	General Purpose Grade Excellent Toughness Good Wear Resistance and Chipping Resistance	P30	Steels and Cast Steels. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			M25	Stainless Steels
			S25	High Temperature Alloys

At Valenite

WE NEVER STOP...



Advancing

- **V-Thread Laydown Threading System:**
First choice for all types of threading applications
Increased productivity with PVD TiAlN grade 922
New B-style inserts offer precision tolerances combined with exceptional chip control
- **V-Loc Threading and Grooving System:**
New ValPro system coated and uncoated grades for increased productivity
Strength and rigidity to handle tough operations as well as light finishing cuts
One system for grooving and threading reduces tooling requirements

Supporting

We can increase your productivity by 20%. Make us prove it!

V-THREAD Laydown System

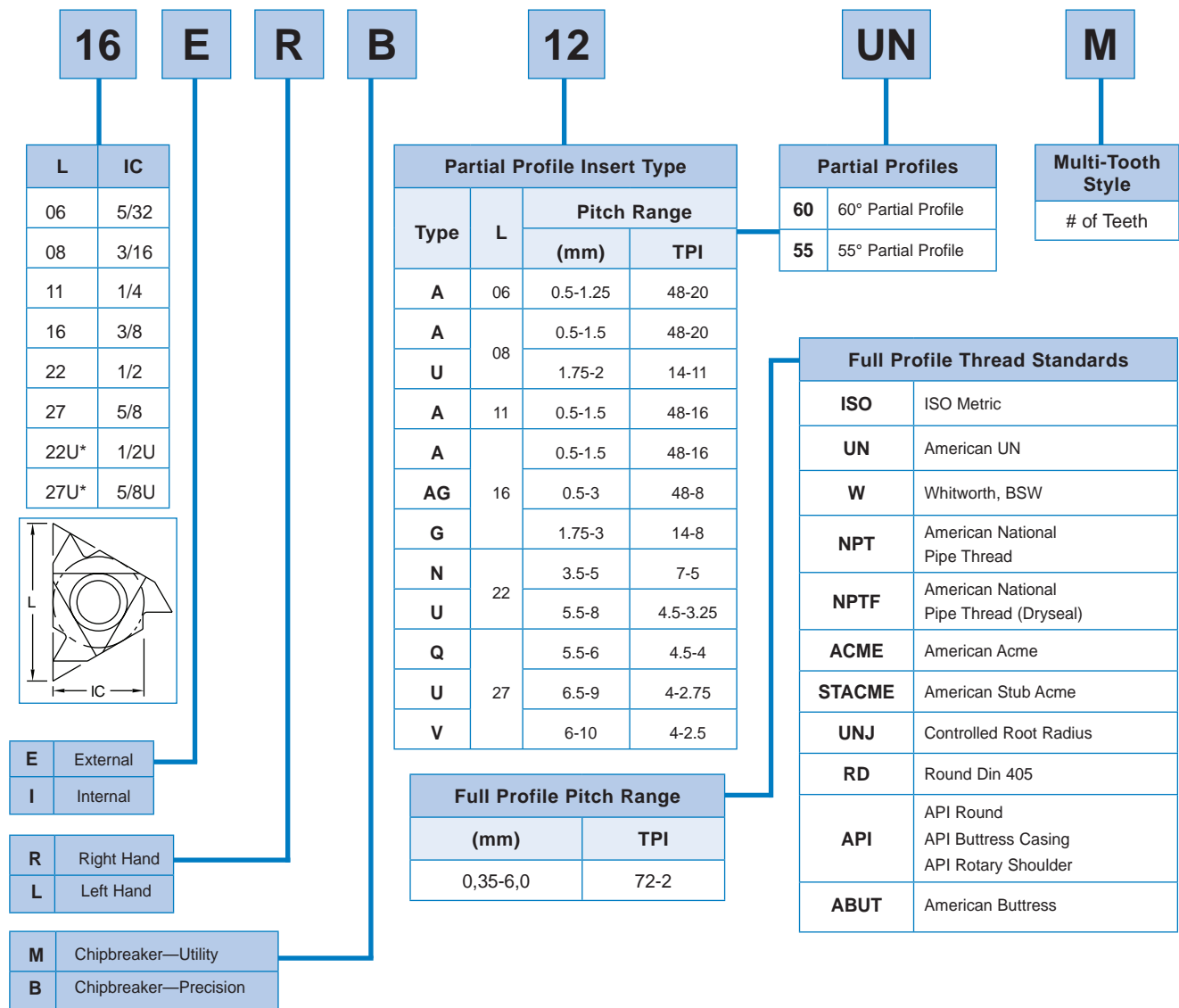
Designation and Application Guides.....	E2 - E5
Insert Product Offering.....	E6 - E31
Toolholder Product Offering.....	E32 - E34
Boring Bar Product Offering.....	E35 - E38
Common Insert Dimension Chart.....	E40
Spare Parts and Anvils.....	E40 - E41
Grade Descriptions and Application Guide.....	E42 - E45
Machining Guidelines.....	E46 - E50

V-LOC Threading System

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Grade Description and Application Guide.....	E54 - E55
Insert Product Offering.....	E56 - E57
Toolholder Product Offering.....	E58 - E61
Boring Bar Product Offering.....	E62
Common Insert Dimensions Chart.....	E63
Workpiece and Application Guide.....	E64 - E65
Machining Guidelines.....	E66 - E68

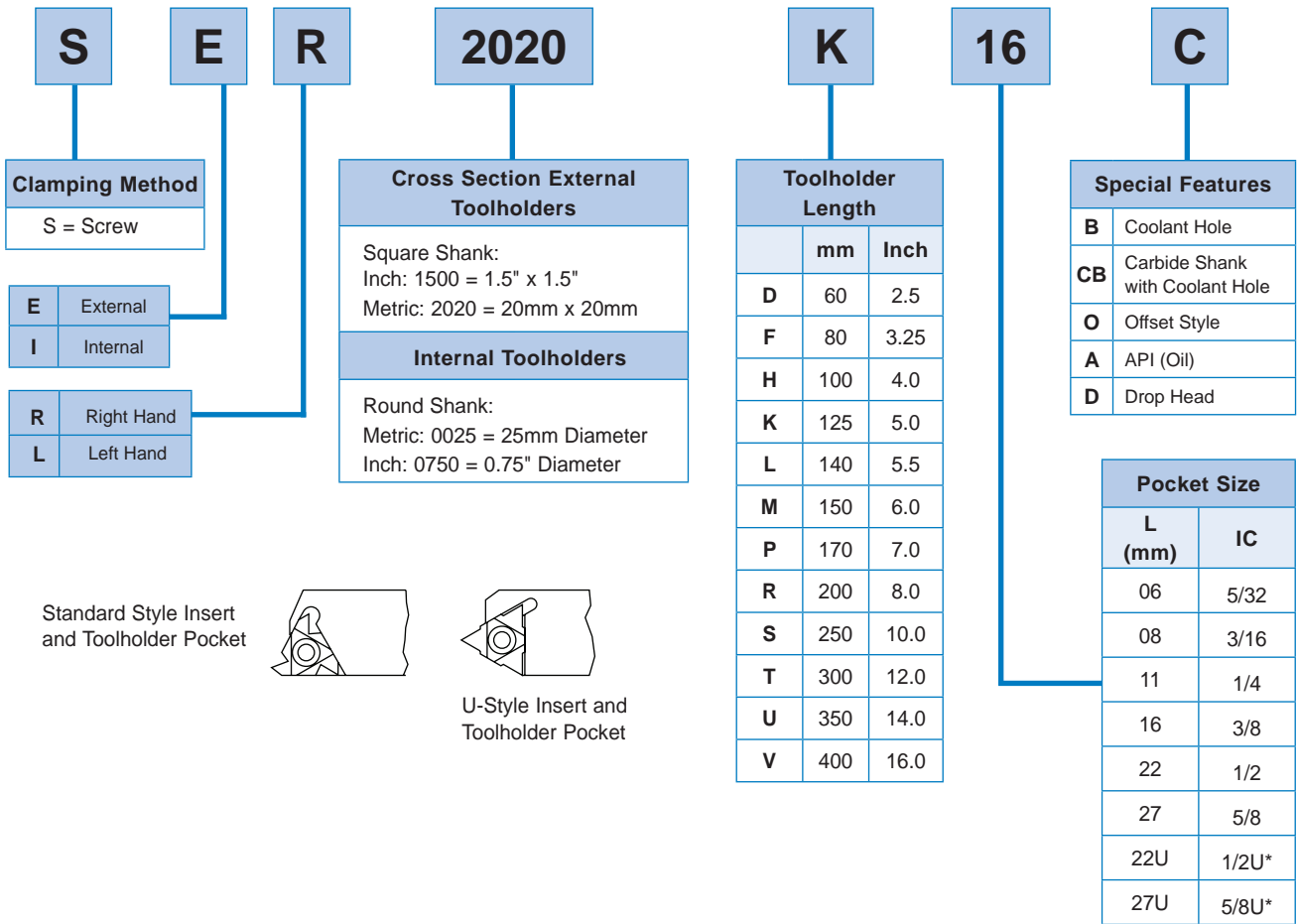
THREADING

VaITHREAD™ Insert Designation



* Note: U Style Insert and Toolholder Pocket

VaITHREAD™ Toolholder Designation



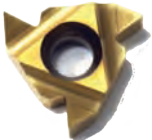







* Note: U-Style Insert and Toolholder Pocket

THREADING


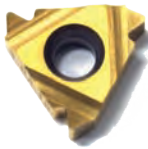

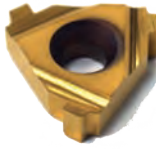

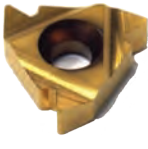
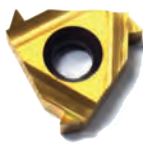

ValTHREAD™ Insert Geometry Application Data

Threading System

Insert Style	Description	Insert Style	Description
60		NPT	
	Threading Partial Profile Non-Cresting 60° Page E6		Threading American National Pipe Thread 60° Page E15
55		NPTF	
	Threading Partial Profile Non-Cresting 55° Page E8		Threading American NPT Dryseal 60° Page E17
UN		ISO	
	Threading American UN 60° Page E9		Threading ISO - Metric 60° Page E18
UNJ		ACME	
	Threading Controlled Root Radius 60° Page E14		Threading American Acme Page E22

VaI THREAD™ Insert Geometry Application Data

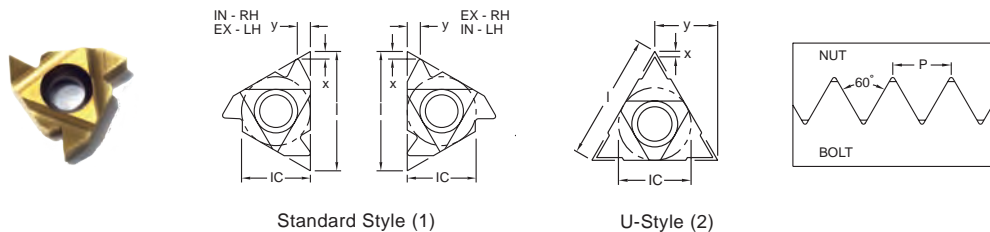
Threading System

Insert Style	Description	Insert Style	Description
STACME		APIRD	
	Threading American Stub Acme Page E24		Threading API Round Page E29
W		BUT	
	Threading Whitworth 55° Page E26		Threading API Buttress Casing Page E30
RD		API	
	Threading Round DIN 405 Page E29		Threading API Rotary Shoulder Page E30
ABUT		MULTI	
	Threading American Buttress Thread Page E31		Threading UN, ISO, and API Round Page E28

THREADING

ValTHREAD™ Product Offering

Partial Profiles - 60° - External



Part Number		Dimensions						Pitch TPI	Available Grades-EDP#						
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	VC942	
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch								
11 ER A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16	07995	13308		01812	01813		
	11 EL A60		0.031	0.035	0,8	0,9	0.002	48-16					01862		
16 ER A60		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16	08001	08002	01820	01821	01822	10948	
	16 EL A60			0.031	0.035	0,8	0,9	0.002	48-16				01864	15443	
16 ER AG60				0.047	0.067	1,2	1,7	0.002	48-8	08004	08005	01825	01826	01827	
	16 EL AG60			0.047	0.067	1,2	1,7	0.002	48-8				01818	01866	
16 ER G60				0.047	0.067	1,2	1,7	0.007	14-8	08007		01829	01830	01831	
	16 EL G60			0.047	0.067	1,2	1,7	0.007	14-8					01867	
22 ER N60		.500 (22,5)	0.067	0.098	1,7	2,5	0.013	7-5	08015			01848	01849		
	22 EL N60			0.067	0.098	1,7	2,5	0.013	7-5					16875	
22 ER L U60			0.024	0.433	0,6	11	0.011	4.5-3.25	08014					01846	
27 ER Q60		.625 (27,5)	0.083	0.122	2,1	3,1	0.025	4.5-4				01856	01857		
	27 EL Q60			0.083	0.122	2,1	3,1	0.025	4.5-4					01873	
27 ER L U60				0.039	0.539	1,0	13,7	0.011	4-2.75					01855	

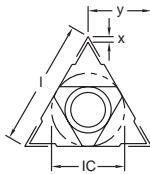
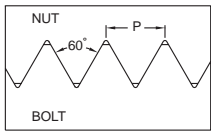
Partial Profiles - 60° - Internal

Part Number		Dimensions						Pitch TPI	Available Grades-EDP#						
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	VC942	
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch								
06 IR A60		.156 (6,9)	0.024	0.024	0,6	0,6		48-20				01807			10945
08 IR A60		.187 (8,7)	0.024	0.028	0,6	0,7		48-20				01809			14083
	08 IL A60			0.024	0.028	0,6	0,7		48-20			08816			08820
08 IR L U60			0.031	0.157	0,8	4,0		14-11				01811			
11 IR A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16	07996	07997		01816	01817		
	11 IL A60			0.031	0.035	0,8	0,9	0.002	48-16					01815	
16 IR A60		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16				01835	01836	01837	14084
	16 IL A60			0.031	0.035	0,8	0,9	0.002	48-16					01832	
16 IR AG60				0.047	0.067	1,2	1,7	0.002	48-8	08010	08011	01839	01840	01841	10951
	16 IL AG60			0.047	0.067	1,2	1,7	0.002	48-8				01833	16133	
16 IR G60				0.047	0.067	1,2	1,7	0.005	14-8	08012	08013	01842	01843	01844	
	16 IL G60			0.047	0.067	1,2	1,7	0.005	14-8						16145
22 IR N60		.500 (22,5)	0.067	0.098	1,7	2,5	0.009	7-5	08018	08019		01852	01853		
	22 IL N60			0.067	0.098	1,7	2,5	0.009	7-5				17057	17058	
22 IR L U60			0.024	0.433	0,6	11	0.011	4.5-3.25				01850	01851		
27 IR Q60		.625 (27,5)	0.083	0.122	2,1	3,1	0.012	4.5-4				01860	01861		
	27 IL Q60			0.083	0.122	2,1	3,1	0.012	4.5-4					17478	
27 IR L U60				0.039	0.539	1,0	13,7	0.011	4-2.75				01858	01859	

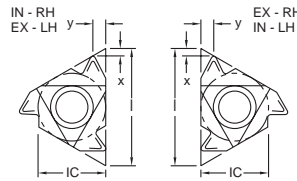
*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ValTHREAD™ Product Offering

Partial Profiles - 60° - Chipbreaker - External



U-Style (2)



Standard Style (1)



Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	Inch							
16 ERB A 60*		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16					08821	
16 ERB AG 60*			0.047	0.067	1,2	1,7	0.002	48-8					08819	
16 ERB G 60*			0.047	0.067	1,2	1,7	0.002	48-8					08823	
22 ERM N 60		.500 (22,5)	0.067	0.098	1,7	2,5	0.013	7-5				01763		

Partial Profiles - 60° - Chipbreaker - Internal

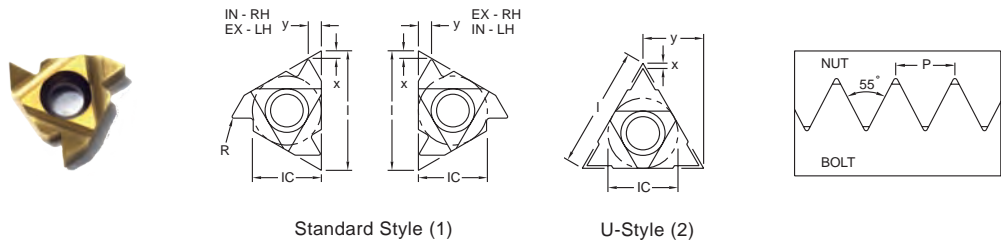
Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	Inch							
06 IRM A60		.156 (6,9)	0.024	0.024	0,6	0,6	0.002	48-20			01748			
08 IRM A60		.187 (8,7)	0.024	0.028	0,6	0,7	0.002	48-20			01749			
11 IRM A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16				01750	07895	
16 IRB AG 60*		.375 (16,5)	0.047	0.067	1,2	1,7	0.007	48-8					10922	
16 IRB G 60*		.375 (16,5)	0.047	0.067	1,2	1,7	0.007	14-8					10923	

* B-Style inserts have a ground profile and pressed-in chipform

THREADING

ValTHREAD™ Product Offering

Partial Profiles - 55° - External



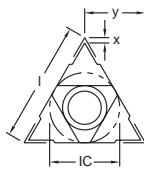
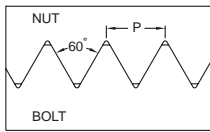
Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch							
11 ER A55		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16					13300	
	11 EL A55		0.031	0.035	0,8	0,9	0.002	48-16					11890	
16 ER A55		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16				01819	15877	
	16 EL A55			0.031	0.035	0,8	0,9	0.002	48-16					15440
16 ER AG55		.375 (16,5)	0.047	0.067	1,2	1,7	0.002	48-8				01823	01824	
16 ER G55			0.047	0.067	1,2	1,7	0.008	14-8				01828	15878	
	16 EL G55			0.047	0.067	1,2	1,7	0.008	14-8			15446	15447	
22 ER N55		.500 (22,5)	0.067	0.098	1,7	2,5	0.017	7-5				01847	16956	
	22 EL N55			0.067	0.098	1,7	2,5	0.017	7-5					16873
22 ER L U55*			0.035	0.433	0,9	11	0.024	4.5-3.25					16953	
27 ER Q55		.625 (27,5)	0.079	0.114	2,0	2,9	0.024	4.5-4					17421	
	27 EL Q55			0.079	0.114	2,0	2,9	0.024	4.5-4					17370
27 ER L U55				0.047	0.539	1,2	13,7	0.024	4-2.75					17418

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

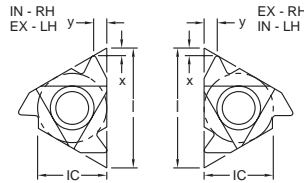
Partial Profiles - 55° - Internal

Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R		VC5	VC29	VC901	VC905	VC929	
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch							
08 IR A55		.187 (8,7)	0.024	0.028	0,6	0,7		48-20			01808			
	08 IL A55		0.024	0.028	0,6	0,7		48-20			08809			
11 IR A55		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16				15213		
	11 IL A55		0.031	0.035	0,8	0,9	0.002	48-16					14933	
16 IR A55		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16				16571	16572	
	16 IL A55			0.031	0.035	0,8	0,9	0.002	48-16					16137
16 IR AG55		.375 (16,5)	0.047	0.067	1,2	1,7	0.002	48-8				01838	01868	
16 IR G55			0.047	0.067	1,2	1,7	0.002	48-8					16130	
	16 IL AG55			0.047	0.067	1,2	1,7	0.008	14-8			01869	16576	
22 IR N55		.500 (22,5)	0.067	0.098	1,7	2,5	0.017	7-5				01872	17150	
	22 IL N55			0.067	0.098	1,7	2,5	0.017	7-5					17053
22 IR L U55*			0.035	0.433	0,9	11	0.024	4.5-3.25				17146		
27 IR Q55		.625 (27,5)	0.079	0.114	2,0	2,9	0.024	4.5-4					17527	
	27 IL Q55			0.079	0.114	2,0	2,9	0.024	4.5-4					17475
27 IR L U55				0.047	0.539	1,2	13,7	0.024	4-2.75					17523

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.



U-Style (2)



Standard Style (1)

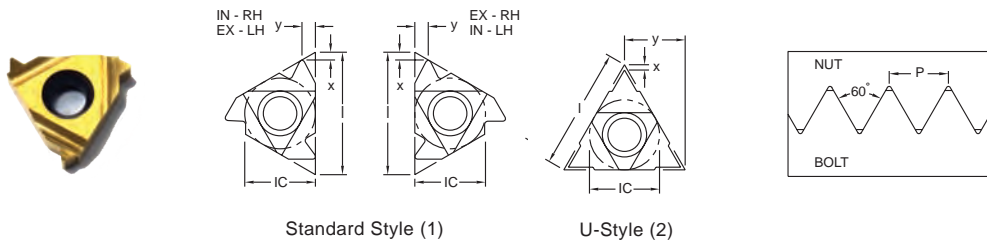


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm							
11 ER 32 UN		.250 (11)	0.024	0.024	0.6	0.6	32					01892	
16 ER 72 UN		.375 (16,5)	0.031	0.016	0.8	0.4	72					01950	
16 ER 64 UN			0.031	0.016	0.8	0.4	64					16098	
16 ER 56 UN			0.028	0.016	0.7	0.4	56					01948	
16 ER 48 UN			0.024	0.024	0.6	0.6	48					16074	
16 ER 40 UN			0.024	0.024	0.6	0.6	40				01945	01946	
	16 EL 40 UN		0.024	0.024	0.6	0.6	40					15770	
16 ER 36 UN			0.024	0.024	0.6	0.6	36				01943	01944	
	16 EL 36 UN		0.024	0.024	0.6	0.6	36					15758	
16 ER 32 UN			0.024	0.024	0.6	0.6	32	08061	08062		01941	01942	
	16 EL 32 UN		0.024	0.024	0.6	0.6	32				15745	15746	
16 ER 28 UN			0.024	0.028	0.6	0.7	28				01939	01940	
	16 EL 28 UN		0.024	0.028	0.6	0.7	28					15726	
16 ER 27 UN			0.028	0.031	0.7	0.8	27				16035	01938	
	16 EL 27 UN		0.028	0.031	0.7	0.8	27					15718	
16 ER 24 UN			0.028	0.031	0.7	0.8	24		08058		01936	01937	
	16 EL 24 UN		0.028	0.031	0.7	0.8	24					02043	
16 ER 20 UN			0.031	0.035	0.8	0.9	20		08056		01934	01935	
	16 EL 20 UN		0.031	0.035	0.8	0.9	20					02041	
16 ER 18 UN			0.031	0.039	0.8	1.0	18		08054		01932	01933	
	16 EL 18 UN		0.031	0.039	0.8	1.0	18					02040	
16 ER 16 UN			0.035	0.043	0.9	1.1	16	08051	08052		01929	01930	
	16 EL 16 UN		0.035	0.043	0.9	1.1	16				01914	01915	
16 ER 14 UN			0.039	0.047	1.0	1.2	14				01927	01928	
	16 EL 14 UN		0.039	0.047	1.0	1.2	14				15593	02039	
16 ER 13 UN			0.039	0.051	1.0	1.3	13				01925	01926	
	16 EL 13 UN		0.039	0.051	1.0	1.3	13					15566	
16 ER 12 UN			0.043	0.055	1.1	1.4	12		08048		01923	01924	
	16 EL 12 UN		0.043	0.055	1.1	1.4	12				01912	01913	
16 ER 11.5 UN			0.043	0.059	1.1	1.5	11.5					01920	
	16 EL 11.5 UN		0.043	0.059	1.1	1.5	11.5					15536	
16 ER 11 UN			0.043	0.059	1.1	1.5	11				01921	01922	
	16 EL 11 UN		0.043	0.059	1.1	1.5	11					15518	
16 ER 10 UN		0.043	0.059	1.1	1.5	10				01917	01918		
	16 EL 10 UN	0.043	0.059	1.1	1.5	10					15502		
16 ER 9 UN		0.047	0.067	1.2	1.7	9					16119		
	16 EL 9 UN	0.047	0.067	1.2	1.7	9					15865		
16 ER 8 UN		0.047	0.063	1.2	1.6	8		16113		01951	01952		
	16 EL 8 UN	0.047	0.063	1.2	1.6	8				01916	02044		

THREADING

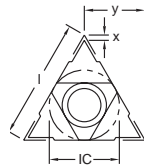
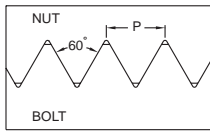
ValTHREAD™ Product Offering

UN - 60° - External

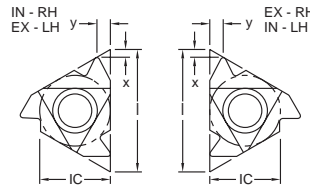


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#						
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942	
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm								
22 ER 7 UN		.500 (22)	0.063	0.091	1,6	2,3	7				02006	02007		
	22 EL 7 UN		0.063	0.091	1,6	2,3	7					16942		
22 ER 6 UN			0.063	0.091	1,6	2,3	6	08100				02005		
	22 EL 6 UN		0.063	0.091	1,6	2,3	6					16934		
22 ER 5 UN			0.067	0.098	1,7	2,5	5				02002	02003		
	22 EL 5 UN		0.067	0.098	1,7	2,5	5					16909		
22U ER L 4.5 UN*			0.079	0.433	2,0	11	4.5				17289	02018		
22U ER L 4 UN*			0.079	0.433	2,0	11	4					17282		
27 ER 4.5 UN			.625 (27,5)	0.075	0.106	1,9	2,7	4.5					02022	
	27 EL 4.5 UN			0.075	0.106	1,9	2,7	4.5					17399	
27 ER 4 UN		0.083		0.118	2,1	3,0	4				02023	17452		
	27 EL 4 UN	0.083		0.118	2,1	3,0	4					17391		
27U ER L 3 UN*		0.098		0.539	2,5	13,7	3					17600		

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.



U-Style (2)



Standard Style (1)

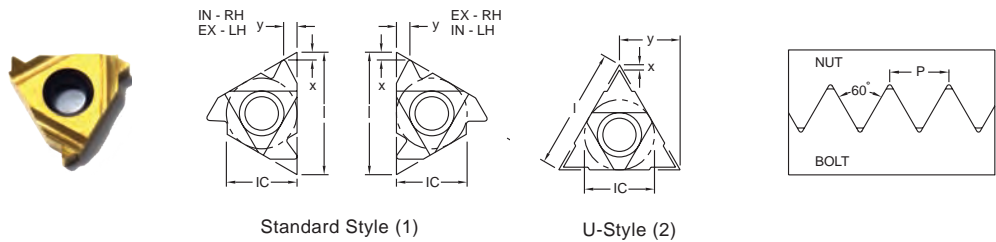


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#							
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942		
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm									
06 IR 32 UN		.156 (6,9)	0.031	0.020	0,8	0,5	32			01880					
06 IR 28 UN			0.031	0.024	0,8	0,6	28			01879					
06 IR 24 UN			0.028	0.024	0,7	0,6	24			01878					
06 IR 20 UN			0.024	0.024	0,6	0,6	20			01877					
06 IR 18 UN			0.024	0.028	0,6	0,7	18			01876					
08 IR 32 UN		.187 (8,7)	0.024	0.020	0,6	0,5	32			01886					
08 IR 24 UN			0.024	0.024	0,6	0,6	24			01884				10955	
08 IR 20 UN			0.024	0.028	0,6	0,7	20			01883				14085	
08 IR 18 UN			0.024	0.028	0,6	0,7	18			01882				10953	
08 IR 16 UN			0.024	0.028	0,6	0,7	16			01881					
	08 IL 16 UN		0.024	0.028	0,6	0,7	16			09445					
08 IR 14 UN			0.024	0.031	0,6	0,8	14			02031					
08U IR L 14 UN			0.039	0.157	1,0	4,0	14			10891					
08U IR L 13 U			0.039	0.157	1,0	4,0	13			01889					
08U IR L 12 UN			0.035	0.157	0,9	4,0	12			10771					
08U IR L 11 UN		0.035	0.157	0,9	4,0	11			01888						
11 IR 72 UN		.250 (11)	0.031	0.012	0,8	0,3	72							15428	
11 IR 64 UN			0.031	0.016	0,8	0,4	64								15425
11 IR 56 UN			0.028	0.016	0,7	0,4	56								15413
11 IR 48 UN			0.024	0.024	0,6	0,6	48								15401
11 IR 44 UN			0.024	0.024	0,6	0,6	44								15393
11 IR 40 UN			0.024	0.024	0,6	0,6	40								01910
11 IR 32 UN			0.024	0.024	0,6	0,6	32								01908
11 IR 28 UN			0.024	0.028	0,6	0,7	28								01907
11 IR 27 UN			0.028	0.031	0,7	0,8	27								02036
11 IR 24 UN			0.028	0.031	0,7	0,8	24						01904	01905	
11 IR 20 UN			0.031	0.035	0,8	0,9	20						01902	01903	
11 IR 18 UN			0.031	0.039	0,8	1,0	18						01900	01901	
11 IR 16 UN			0.035	0.043	0,9	1,1	16						01898	01899	
11 IR 14 UN			0.035	0.043	0,9	1,1	14						01896	01897	

THREADING

ValTHREAD™ Product Offering

UN - 60° - Internal

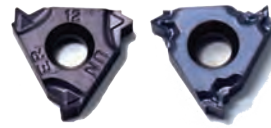
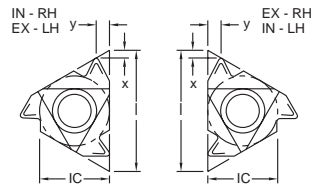
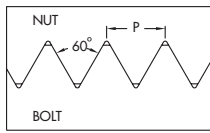


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#						
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942	
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm								
16 IR 40 UN		.375 (16,5)	0.024	0.024	0,6	0,6	40						02049	
16 IR 36 UN			0.024	0.024	0,6	0,6	36						16794	
16 IR 32 UN			0.024	0.024	0,6	0,6	32						01984	
	16 IL 32 UN		0.024	0.024	0,6	0,6	32						16442	
16 IR 28 UN			0.024	0.028	0,6	0,7	28				01981		01982	
	16 IL 28 UN		0.024	0.028	0,6	0,7	28						16422	
	16 IL 27 UN		0.028	0.031	0,7	0,8	27						16414	
16 IR 24 UN			0.028	0.031	0,7	0,8	24				01977		01978	
	16 IL 24 UN		0.028	0.031	0,7	0,8	24						16386	
16 IR 20 UN			0.031	0.035	0,8	0,9	20		08084		01975		01976	
	16 IL 20 UN		0.031	0.035	0,8	0,9	20						02046	
16 IR 18 UN			0.031	0.039	0,8	1,0	18				01973		01974	
	16 IL 18 UN		0.031	0.039	0,8	1,0	18				01958		02045	
16 IR 16 UN			0.035	0.043	0,9	1,1	18		08082		01971		01972	
	16 IL 16 UN		0.035	0.043	0,9	1,1	18						01957	
16 IR 14 UN			0.035	0.047	0,9	1,2	14				01969		01970	
	16 IL 14 UN		0.035	0.047	0,9	1,2	14						16286	
16 IR 13 UN			0.039	0.051	1,0	1,3	13						01968	
	16 IL 13 UN		0.039	0.051	1,0	1,3	13						16258	
16 IR 12 UN			0.043	0.055	1,1	1,4	12	08077	08078		01965		01966	
	16 IL 12 UN		0.043	0.055	1,1	1,4	12				01955		01956	
16 IR 11.5 UN			0.043	0.059	1,1	1,5	11.5						01962	
	16 IL 11.5 UN		0.043	0.059	1,1	1,5	11.5						16232	
16 IR 11 UN			0.043	0.059	1,1	1,5	11				01963		01964	
	16 IL 11 UN		0.043	0.059	1,1	1,5	11						16213	
16 IR 10 UN			0.043	0.059	1,1	1,5	10				01960		01961	
16 IR 9 UN			0.047	0.067	1,2	1,7	9				01995		01996	
16 IR 8 UN			0.043	0.059	1,1	1,5	8	08098	08099		01993		01994	
22 IR 7 UN			.005 (22)	0.063	0.091	1,6	2,3	7				02016		02017
	22 IL 7 UN			0.063	0.091	1,6	2,3	7						17135
22 IR 6 UN				0.063	0.091	1,6	2,3	6	08102			02014		02015
	22 IL 6 UN			0.063	0.091	1,6	2,3	6						17127
22 IR 5 UN		0.063		0.091	1,6	2,3	5						02013	
	22 IL 5 UN	0.063		0.091	1,6	2,3	5						17102	
22U IR L 4.5 UN*		0.094	0.433	2,4	11	4.5						02021		
27 IR 4.5 UN		.625 (27,5)	0.067	0.114	1,7	2,4	4.5	08111			02026		02027	
27 IR 4 UN			0.071	0.106	1,8	2,7	4				02028		02029	
	27 IL 4 UN		0.071	0.106	1,8	2,7	4				17494			
27U IR L 3 UN*			0.106	0.539	2,7	13,7	3						17652	

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ValTHREAD™ Product Offering

UN - 60° - Chipbreaker - External



Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC922	VC929
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm						
16 ERB 24 UN		.375 (16,5)	0.028	0.031	0,7	0,8	24				10917	
16 ERB 20 UN			0.031	0.035	0,8	0,9	20				10915	
16 ERB 18 UN			0.031	0.039	0,8	1,0	18				10912	
16 ERB 16 UN			0.035	0.043	0,9	1,1	16				10909	
16 ERB 14 UN			0.039	0.047	1,0	1,2	14				10906	
16 ERB 12 UN			0.043	0.055	1,1	1,4	12				09474	
16 ERB 10 UN			0.043	0.059	1,1	1,5	10				20335	
16 ERB 8 UN			0.047	0.063	1,2	1,6	8				10921	

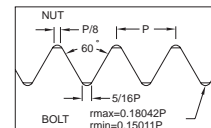
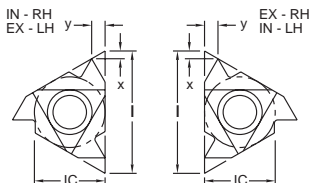
UN - 60° - Chipbreaker - Internal

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC922	VC929
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm						
16 IRB 18 UN		.375 (16,5)	0.031	0.039	0,8	1,0	18				10934	
16 IRB 16 UN			0.035	0.043	0,9	1,1	16				10933	
16 IRB 14 UN			0.035	0.047	0,9	1,2	14				10930	
16 IRB 12 UN			0.043	0.055	1,1	1,4	12				10926	
16 IRB 10 UN			0.043	0.059	1,1	1,5	10				20336	
16 IRB 8 UN			0.043	0.059	1,1	1,5	8				12769	

THREADING

ValTHREAD™ Product Offering

UNJ - 60° - External



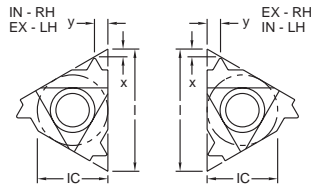
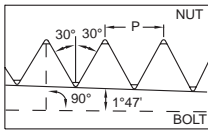
Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm							
16 ER 32 UNJ		.375 (16,5)	0.024	0.024	0,6	0,6	32				02332	02333	
	16 EL 32 UNJ		0.024	0.024	0,6	0,6	32						15750
16 ER 28 UNJ			0.024	0.024	0,6	0,6	28				02330	02331	
	16 EL 28 UNJ		0.024	0.024	0,6	0,6	28						15730
16 ER 24 UNJ			0.027	0.031	0,7	0,8	24				02328	02329	
	16 EL 24 UNJ		0.027	0.031	0,7	0,8	24						15692
16 ER 20 UNJ			0.031	0.035	0,8	0,9	20				02326	02327	
	16 EL 20 UNJ		0.031	0.035	0,8	0,9	20						15678
16 ER 18 UNJ			0.031	0.039	0,8	1,0	18				02324	02325	
	16 EL 18 UNJ		0.031	0.039	0,8	1,0	18						15651
16 ER 16 UNJ			0.031	0.039	0,8	1,0	16				02322	02323	
	16 EL 16 UNJ		0.031	0.039	0,8	1,0	16						15626
16 ER 14 UNJ			0.039	0.047	1,0	1,2	14				02320	02321	
	16 EL 14 UNJ		0.039	0.047	1,0	1,2	14						15599
16 ER 12 UNJ			0.043	0.055	1,1	1,4	12				02318	02319	
16 ER 10 UNJ			0.043	0.059	1,21	1,5	10						15922
	16 EL 10 UNJ	0.043	0.059	1,21	1,5	10						15506	
	16 EL 8 UNJ	0.047	0.063	1,2	1,6	8						15857	

UNJ - 60° - Internal

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm							
16 IR 32 UNJ		.375 (16,5)	0.024	0.024	0,6	0,6	32					16786	
16 IR 28 UNJ			0.024	0.024	0,6	0,6	28					16772	
16 IR 24 UNJ			0.027	0.031	0,7	0,8	24					16747	
16 IR 20 UNJ			0.031	0.035	0,8	0,9	20				16733	16734	
16 IR 18 UNJ			0.031	0.039	0,8	1,0	18					16711	
16 IR 16 UNJ			0.031	0.039	0,8	1,0	16				16692	16693	
16 IR 14 UNJ			0.039	0.047	1,0	1,2	14					16670	
16 IR 12 UNJ			0.043	0.055	1,1	1,4	12				02339	16645	
16 IR 8 UNJ			0.047	0.063	1,2	1,6	8					16857	

NPT - External



Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm							
16 ER 27 NPT		.375 (16,5)	0.028	0.031	0,7	0,8	27					02187	
16 ER 18 NPT			0.031	0.039	0,8	1,0	18		08182		02184	02185	
	16 EL 18 NPT		0.031	0.039	0,8	1,0	18					15640	
16 ER 14 NPT			0.035	0.047	0,9	1,2	14		08181		02182	02183	
	16 EL 14 NPT		0.035	0.047	0,9	1,2	14					02209	
16 ER 11.5 NPT			0.043	0.059	1,1	1,5	11.5				02179	02180	
	16 EL 11.5 NPT		0.043	0.059	1,1	1,5	11.5					02178	
16 ER 8 NPT			0.051	0.071	1,3	1,8	8				02188	02189	
	16 EL 8 NPT		0.051	0.071	1,3	1,8	8					15839	

NPT - Internal

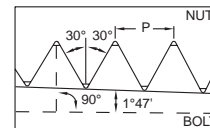
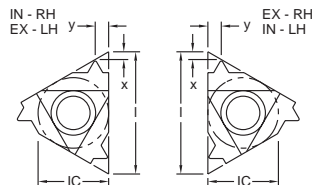
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm							
08 IR 27 NPT*		.187 (8,7)	0.024	0.024	0,6	0,6	27			02172			10962
08 IR 18 NPT*			0.024	0.024	0,6	0,6	18			02170			10960
11 IR 18 NPT		.250 (11)	0.031	0.039	0,8	1,0	18				02175	02176	
11 IR 14 NPT			0.031	0.039	0,8	1,0	14				02173	02174	
16 IR 27 NPT		.375 (16,5)	0.028	0.031	0,7	0,8	27					02211	
16 IR 18 NPT			0.031	0.039	0,8	1,0	18				16702		
16 IR 14 NPT			0.035	0.047	0,9	1,2	14				02194	02195	
	16 IL 14 NPT		0.035	0.047	0,9	1,2	14					16274	
16 IR 11.5 NPT			0.043	0.059	1,1	1,5	11.5				02190	02191	
	16 IL 11.5 NPT		0.043	0.059	1,1	1,5	11.5					16224	
16 IR 8 NPT			0.051	0.071	1,3	1,8	8				02196	02197	
	16 IL 8 NPT		0.051	0.071	1,3	1,8	8					16532	

*For Thread Types: 1/8" - 27 NPT; 1/4" - 18 NPT

THREADING

ValTHREAD™ Product Offering

NPT - Chipbreaker - External



Standard Style (1)

Part Number		Dimensions						Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	Pitch	VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	TPI						
16 ERB 18 NPT*		.375 (16,5)	0.031	0.039	0,8	1,0	18					10911	
16 ERB 14 NPT*			0.035	0.047	0,9	1,2	14					10905	
16 ERB 115 NPT*			0.043	0.059	1,1	1,5	11.5					08825	
16 ERB 8 NPT*			0.051	0.071	1,3	1,8	8					10920	

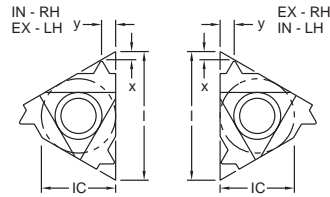
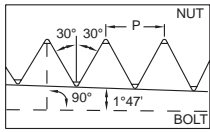
NPT - Chipbreaker - Internal

Part Number		Dimensions						Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	Pitch	VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	TPI						
16 IRB 14 NPT*		.375 (16,5)	0.035	0.047	0,9	1,2	14					10927	
16 IRB 115 NPT*			0.043	0.059	1,1	1,5	11.5					10924	
16 IRB 8 NPT*			0.051	0.071	1,3	1,8	8					10944	

* B-Style inserts have a ground profile and pressed-in chipform

ValTHREAD™ Product Offering

NPTF - External



Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm							
11 ER 18 NPTF		.250 (11)	0.031	0.039	0,8	1,0	18					14333	
	11 EL 18 NPTF		0.031	0.039	0,8	1,0		18					12175
16 ER 27 NPTF		.375 (16,5)	0.028	0.028	0,7	0,7	27					16033	
16 ER 18 NPTF			0.031	0.039	0,8	1,0	18					15997	
16 ER 14 NPTF			0.035	0.047	0,9	1,2	14					15965	
	16 EL 14 NPTF		0.035	0.047	0,9	1,2	14					15586	
16 ER 11.5 NPTF			0.043	0.059	1,1	1,5	11.5					15938	
	16 EL 11.5 NPTF		0.043	0.059	1,1	1,5	11.5					15532	
16 ER 8 NPTF			0.051	0.071	1,3	1,8	8					02210	
	16 EL 8 NPTF		0.051	0.071	1,3	1,8	8					15843	

NPTF - Internal

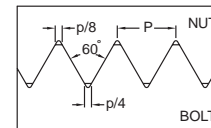
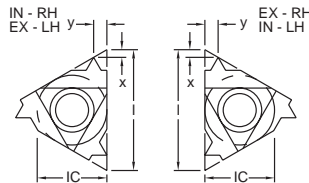
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929	VC942
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm							
08 IR 18 NPTF*		.187 (6,9)	0.024	0.024	0,6	0,6	18			02171			10961
11 IR 14 NPTF		.250 (11)	0.031	0.039	0,8	1,0	14					02207	
16 IR 14 NPTF		.375 (16,5)	0.035	0.047	0,9	1,2	14					16664	
16 IR 11.5 NPTF			0.043	0.059	1,1	1,5	11.5			02192	02193		

*For Thread Types 1/4" - 18 NPT

THREADING

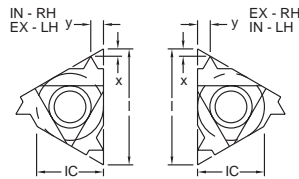
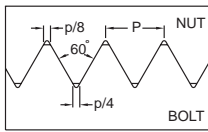
ValTHREAD™ Product Offering

ISO - 60° - External



Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929	
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm						
11 ER 0.5 ISO		.250 (11)	0.024	0.024	0,6	0,6	0,5				13593	
11 ER 0.75 ISO			0.024	0.024	0,6	0,6	0,75				13705	
11 ER 1.0 ISO			0.028	0.028	0,7	0,7	1,0				13715	
11 ER 1.25 ISO			0.031	0.035	0,8	0,9	1,25				13819	
11 ER 1.5 ISO			0.031	0.039	0,8	1,0	1,5				02115	
11 ER 1.75 ISO			0.031	0.043	0,8	1,1	1,75				14323	
16 ER 0.35 ISO		.375 (16,5)	0.031	0.016	0,8	0,4	0,35				15883	
16 ER 0.5 ISO			0.024	0.024	0,6	0,6	0,5				02057	
	16 EL 0.5 ISO		0.024	0.024	0,6	0,6	0,5				15465	
16 ER 0.75 ISO			0.024	0.024	0,6	0,6	0,75				02059	
	16 EL 0.75 ISO		0.024	0.024	0,6	0,6	0,75				02119	
16 ER 0.8 ISO			0.024	0.024	0,6	0,6	0,8				15903	
	16 EL 0.8 ISO		0.024	0.024	0,6	0,6	0,8				15480	
16 ER 1.0 ISO			0.028	0.028	0,7	0,7	1,0			02060	02061	
	16 EL 1.0 ISO		0.028	0.028	0,7	0,7	1,0				02120	
16 ER 1.25 ISO			0.031	0.035	0,8	0,9	1,25			02062	02063	
	16 EL 1.25 ISO		0.031	0.035	0,8	0,9	1,25				02121	
16 ER 1.5 ISO			0.031	0.039	0,8	1,0	1,5	08128		02064	02065	
	16 EL 1.5 ISO		0.031	0.039	0,8	1,0	1,5				02122	
16 ER 1.75 ISO			0.035	0.047	0,9	1,2	1,75			02066	02067	
	16 EL 1.75 ISO		0.035	0.047	0,9	1,2	1,75				15636	
16 ER 2.0 ISO			0.039	0.051	1,0	1,3	2,0			02068	02069	
	16 EL 2.0 ISO		0.039	0.051	1,0	1,3	2,0			02123	02124	
16 ER 2.5 ISO			0.043	0.059	1,1	1,5	2,5			02070		
	16 EL 2.5 ISO		0.043	0.059	1,1	1,5	2,5				15700	
16 ER 3.0 ISO			0.047	0.063	1,2	1,6	3,0			02072	02073	
	16 EL 3.0 ISO		0.047	0.063	1,2	1,6	3,0				15742	
22 ER 3.5 ISO			.500 (22)	0.063	0.091	1,6	2,3	3,5			02091	
	22 EL 3.5 ISO			0.063	0.091	1,6	2,3	3,5				16879
22 ER 4.0 ISO				0.063	0.091	1,6	2,3	4,0			02093	02094
	22 EL 4.0 ISO	0.063		0.091	1,6	2,3	4,0				16890	
22 ER 4.5 ISO		0.067		0.094	1,7	2,4	4,5			02095		
	22 EL 4.5 ISO	0.067		0.094	1,7	2,4	4,5				16894	
22 ER 5.0 ISO		0.067		0.098	1,7	2,5	5,0			02097		
	22 EL 5.0 ISO	0.067		0.098	1,7	2,5	5,0				16917	
27 ER 5.5 ISO		.625 (27,5)	0.075	0.106	1,9	2,7	5,5				02104	
	27 EL 5.5 ISO		0.075	0.106	1,9	2,7	5,5				17407	
27 ER 6.0 ISO			0.079	0.114	2,0	2,9	6,0			02105	02106	
	27 EL 6.0 ISO		0.079	0.114	2,0	2,9	6,0				17414	



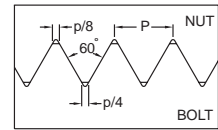
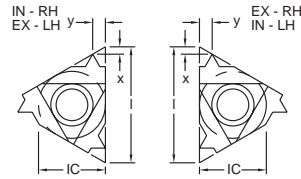
Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm						
06 IR 0.75 ISO		.156 (6,9)	0.031	0.020	0,8	0,5	0,75			02050		
	06 IL 0.75 ISO		0.031	0.020	0,8	0,5	0,75			07925		
06 IR 1.0 ISO			0.028	0.024	0,7	0,6	1,0			02110		
	06 IL 1.0 ISO		0.028	0.024	0,7	0,6	1,0			02109		
06 IR 1.25 ISO			0.024	0.024	0,6	0,6	1,25			08466		
	06 IL 1.25 ISO		0.024	0.024	0,6	0,6	1,25			07928		
08 IR 0.75 ISO		.187 (8,7)	0.024	0.020	0,6	0,5	0,75			10066		
	08 IL 0.75 ISO		0.024	0.020	0,6	0,5	0,75			08847		
08 IR 1.0 ISO			0.024	0.024	0,6	0,6	1,0			02111		
	08 IL 1.0 ISO		0.024	0.024	0,6	0,6	1,0			08855		
08 IR 1.25 ISO			0.024	0.028	0,6	0,7	1,25			02112		
	08 IL 1.25 ISO		0.024	0.028	0,6	0,7	1,25			08870		
08 IR 1.5 ISO			0.024	0.028	0,6	0,7	1,5			02113		
11 IR 0.5 ISO		.250 (11)	0.024	0.024	0,6	0,6	0,5					15231
11 IR 0.75 ISO			0.024	0.024	0,6	0,6	0,75					02116
11 IR 1.0 ISO			0.024	0.028	0,6	0,7	1,0					02117
11 IR 1.25 ISO			0.031	0.031	0,8	0,8	1,25					15252
11 IR 1.5 ISO			0.031	0.039	0,8	1,0	1,5			02054		02118
11 IR 1.75 ISO			0.031	0.043	0,8	1,1	1,75					15288
16 IR 0.5 ISO		.375 (16,5)	0.024	0.024	0,6	0,6	0,5					16591
	16 IL 0.5 ISO		0.024	0.024	0,6	0,6	0,5					16161
16 IR 0.75 ISO			0.024	0.024	0,6	0,6	0,75					02075
	16 IL 0.75 ISO		0.024	0.024	0,6	0,6	0,75					16173
16 IR 1.0 ISO			0.024	0.028	0,6	0,7	1,0					02076
	16 IL 1.0 ISO		0.024	0.028	0,6	0,7	1,0					02128
16 IR 1.25 ISO			0.031	0.035	0,8	0,9	1,25					02079
	16 IL 1.25 ISO		0.031	0.035	0,8	0,9	1,25					16254
16 IR 1.5 ISO			0.031	0.039	0,8	1,0	1,5				02080	02081
	16 IL 1.5 ISO		0.031	0.039	0,8	1,0	1,5					16298
16 IR 1.75 ISO			0.035	0.047	0,9	1,2	1,75					02083
	16 IL 1.75 ISO		0.035	0.047	0,9	1,2	1,75					16329
16 IR 2.0 ISO			0.039	0.051	1,0	1,3	2,0				02084	02085
	16 IL 2.0 ISO		0.039	0.051	1,0	1,3	2,0					16367
16 IR 2.5 ISO			0.043	0.059	1,1	1,5	2,5				02086	02087
	16 IL 2.5 ISO		0.043	0.059	1,1	1,5	2,5					16398
16 IR 3.0 ISO			0.043	0.059	1,1	1,5	3,0				02088	02089
	16 IL 3.0 ISO		0.043	0.059	1,1	1,5	3,0					16438

THREADING

ValTHREAD™ Product Offering

ISO - 60° - Internal

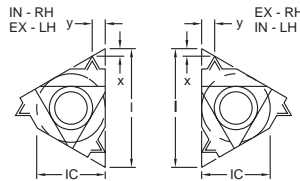
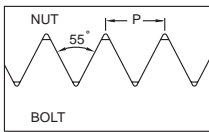


Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC901	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm						
22 IR 3.5 ISO		.500 (22)	0.063	0.091	1,6	2,3	3,5				02098	02099
	22 IL 3.5 ISO		0.063	0.091	1,6	2,3	3,5					17063
22 IR 4.0 ISO			0.063	0.091	1,6	2,3	4,0				02100	02101
	22 IL 4.0 ISO		0.063	0.091	1,6	2,3	4,0					17076
22 IR 4.5 ISO			0.063	0.094	1,6	2,4	4,5					17193
	22 IL 4.5 ISO		0.063	0.094	1,6	2,4	4,5					17082
22 IR 5.0 ISO			0.063	0.091	1,6	2,3	5,0				02102	02103
	22 IL 5.0 ISO		0.063	0.091	1,6	2,3	5,0					17110
27 IR 5.5 ISO		.625 (27,5)	0.063	0.091	1,6	2,3	5,5					02107
	27 IL 5.5 ISO		0.063	0.091	1,6	2,3	5,5					17511
27 IR 6.0 ISO			0.071	0.098	1,8	2,5	6,0				02133	02108
	27 IL 6.0 ISO		0.071	0.098	1,8	2,5	6,0					17519

ValTHREAD™ Product Offering

ISO - Chipbreaker - 55° - External



Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929	VC922
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm						
16 ERB 1.5 ISO*	16 ERB 1.5 ISO*	.375 (16,5)	0.031	0.039	0,8	1,0	1,5					10907
16 ERB 2.0 ISO*	16 ERB 2.0 ISO*		0.039	0.051	1,0	1,3	2,0					10913
16 ERB 3.0 ISO*	16 ERB 3.0 ISO*		0.047	0.063	1,2	1,6	3,0					10918

ISO - Chipbreaker - 55° - Internal

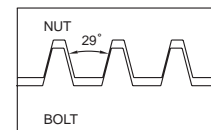
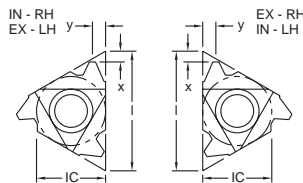
Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929	VC922
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm						
16 IRB 1.5 ISO*		.375 (16,5)	0.031	0.039	0,8	1,0	1,5					10932
16 IRB 2.0 ISO*			0.039	0.051	1,0	1,3	2,0					10935
16 IRB 3.0 ISO*			0.043	0.059	1,1	1,5	3,0					24746

* B-Style inserts have a ground profile and pressed-in chipform

THREADING

ValTHREAD™ Product Offering

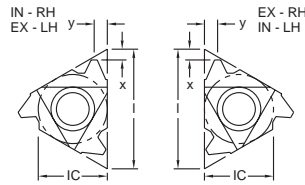
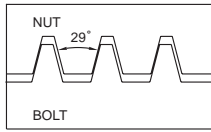
ACME - 29° - External



Standard Style (1)
U-Style not shown

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm					
11 ER 16 ACME		0.250 (11)	0.035	0.039	0,9	1,0	16			14047	14281
16 ER 16 ACME		0.375 (16, 5)	0.039	0.043	1,0	1,1	16			02224	02225
	16 EL 16 ACME		0.039	0.043	1,0	1,1	16				15616
16 ER 14 ACME			0.039	0.047	1,0	1,2	14				02265
	16 EL 14 ACME		0.039	0.047	1,0	1,2	14				15574
16 ER 12 ACME			0.043	0.047	1,1	1,2	12			02222	02223
	16 EL 12 ACME		0.043	0.047	1,1	1,2	12				15544
16 ER 10 ACME			0.051	0.051	1,3	1,3	10	08191		02220	02221
	16 EL 10 ACME		0.051	0.051	1,3	1,3	10				15488
16 ER 8 ACME			0.059	0.059	1,5	1,5	8		08195	02226	02227
	16 EL 8 ACME		0.059	0.059	1,5	1,5	8				15833
22 ER 6 ACME		0.500 (22)	0.071	0.083	1,8	2,1	6			02242	02243
	22 EL 6 ACME		0.071	0.083	1,8	2,1	6				02239
22 ER 5 ACME			0.079	0.091	2,0	2,3	5	08202		02240	02241
	22 EL 5 ACME		0.079	0.091	2,0	2,3	5				16897
22U ER 4 ACME*			0.091	0.433	2,3	11	4			02250	02251
27 ER 4 ACME		.625 (27)	0.091	0.106	2,3	2,7	4			02255	02256
27U ER 3 ACME*			0.110	0.539	2,8	13,7	3			02260	02261

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.



Standard Style (1)
U-Style not shown

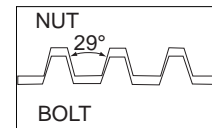
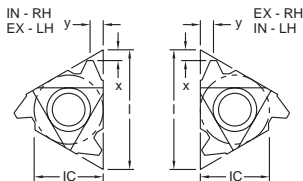
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm					
11 IR 16 ACME		0.250 (11)	0.039	0.039	1,0	1,0	16			02219	15274
16 IR 16 ACME		0.375 (16, 5)	0.039	0.043	1,0	1,1	16				02235
	16 IL 16 ACME		0.039	0.043	1,0	1,1	16				16310
16 IR 14 ACME			0.039	0.047	1,0	1,2	14				16657
	16 IL 14 ACME		0.039	0.047	1,0	1,2	14				16266
16 IR 12 ACME			0.043	0.047	1,1	1,2	12			02231	02232
	16 IL 12 ACME		0.043	0.047	1,1	1,2	12				02267
16 IR 10 ACME			0.051	0.051	1,3	1,3	10			02229	02230
	16 IL 10 ACME		0.051	0.051	1,3	1,3	10				02266
16 IR 8 ACME			0.059	0.059	1,5	1,5	8	08200	08201	02236	02237
	16 IL 8 ACME		0.059	0.059	1,5	1,5	8				02228
22 IR 6 ACME		0.500 (22)	0.071	0.083	1,8	2,1	6		08207	02248	02249
	22 IL 6 ACME		0.071	0.083	1,8	2,1	6			02245	17116
22 IR 5 ACME			0.079	0.091	2,0	2,3	5	08205	08206	02246	02247
	22 IL 5 ACME		0.079	0.091	2,0	2,3	5			02244	17086
22U IR 4 ACME*			0.091	0.433	2,3	11	4				02253
	22U IL 4 ACME*		0.091	0.433	2,3	11	4				17326
27 IR 4 ACME		.625 (27)	0.091	0.106	2,3	2,7	4		08213	02258	02259
	27 IL 4 ACME		0.091	0.106	2,3	2,7	4				02271
27U IR 3 ACME*			0.110	0.539	2,8	13,7	3			02262	02263

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

THREADING

ValTHREAD™ Product Offering

Stub ACME - 29° - External



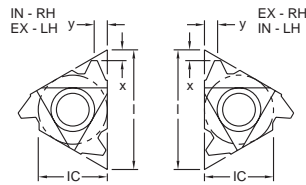
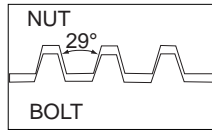
Standard Style (1)
U-Style not shown

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm					
11 ER 16 ST ACME		.250 (11)	0.039	0.039	1,0	1,0	16				14291
16 ER 16 ST ACME		.375 (16,5)	0.039	0.039	1,0	1,0	16			02279	02280
	16 EL 16 ST ACME		0.039	0.039	1,0	1,0	16				15620
16 ER 14 ST ACME			0.043	0.043	1,1	1,1	14			02278	15968
	16 EL 14 ST ACME		0.043	0.043	1,1	1,1	14				15590
16 ER 12 ST ACME			0.047	0.047	1,2	1,2	12			02276	02277
	16 EL 12 ST ACME		0.047	0.047	1,2	1,2	12				15549
16 ER 10 ST ACME			0.051	0.051	1,3	1,3	10			02274	02275
	16 EL 10 ST ACME		0.051	0.051	1,3	1,3	10				02310
16 ER 8 ST ACME			0.059	0.059	1,5	1,5	8			02283	02284
	16 EL 8 ST ACME		0.059	0.059	1,5	1,5	8				15851
16 ER 6 ST ACME		0.071	0.071	1,8	1,8	6			02281	02282	
22 ER 5 ST ACME		.625 (27)	0.079	0.091	2,0	2,3	5				02298
	22 EL 5 ST ACME		0.079	0.091	2,0	2,3	5				16901
22U ER 4 ST ACME*			0.098	0.433	2,5	11	4			02303	02312
	22U EL 4 ST ACME*		0.098	0.433	2,5	11	4			17268	17269
22U ER 3 ST ACME*			.130	0.433	3,3	11	3				02302
27 ER 4 ST ACME		0.091	0.094	2,3	2,4	4			02306	02307	
	27 EL 4 ST ACME	0.091	0.094	2,3	2,4	4				17387	
27 ER 3 ST ACME		.110	0.114	2,8	2,9	3			02315	17428	
	27 EL 3 ST ACME	.110	0.114	2,8	2,9	3				17377	

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ValTHREAD™ Product Offering

Stub ACME - 29° - Internal



Standard Style (1)
U-Style not shown

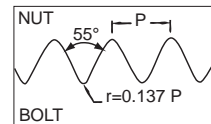
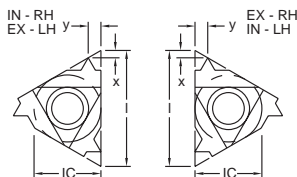
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm					
11 IR 16 ST ACME		.250 (11)	0.039	0.039	1,0	1,0	16				02273
16 IR 16 ST ACME		.375 (16,5)	0.039	0.039	1,0	1,0	16			02291	02292
	16 IL 16 ST ACME		0.039	0.039	1,0	1,0	16				16314
	16 IL 14 ST ACME		0.043	0.043	1,1	1,1	14				16282
16 IR 12 ST ACME			0.047	0.047	1,2	1,2	12			02287	02288
	16 IL 12 ST ACME		0.047	0.047	1,2	1,2	12				16242
16 IR 10 ST ACME			0.051	0.051	1,3	1,3	10		16617	02285	02286
	16 IL 10 ST ACME		0.051	0.051	1,3	1,3	10			16193	16194
16 IR 8 ST ACME			0.059	0.059	1,5	1,5	8			02295	02296
	16 IL 8 ST ACME		0.059	0.059	1,5	1,5	8				16544
16 IR 6 ST ACME			0.071	0.071	1,8	1,8	6			02293	02294
	16 IL 6 ST ACME		0.071	0.071	1,8	1,8	6				16510
22 IR 5 ST ACME			.500 (22)	0.098	0.091	2,5	2,3	5			
	22 IL 5 ST ACME	0.098		0.091	2,5	2,3	5				02311
22U IR 4 ST ACME*		0.098		0.433	2,5	11	4				02305
	22U IL 4 ST ACME*	0.098		0.433	2,5	11	4				02313
27 IR 4 ST ACME		.625 (27)	0.091	0.094	2,3	2,4	4			02308	02309
	27 IL 4 ST ACME		0.091	0.094	2,3	2,4	4				02316
27 IR 3 ST ACME			.110	0.114	2,8	2,9	3			17535	17536

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

THREADING

ValTHREAD™ Product Offering

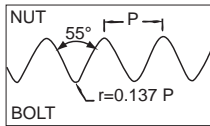
BSW - 55° - External



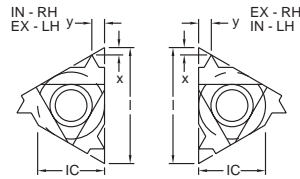
British BSW

Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm					
16 ER 24 W		.375 (16,5)	0.028	0.031	0,7	0,8	24			16025	02157
16 ER 20 W			0.031	0.035	0,8	0,9	20				16017
	16 EL 20 W		0.031	0.035	0,8	0,9	20				15682
16 ER 19 W			0.031	0.039	0,8	1,0	19				02156
16 ER 18 W			0.031	0.039	0,8	1,0	18				16001
	16 EL 18 W		0.031	0.039	0,8	1,0	18				15655
	16 EL 16 W		0.035	0.043	0,9	1,1	16				15630
16 ER 14 W			0.039	0.047	1,0	1,2	14			02136	02137
	16 EL 14 W		0.039	0.047	1,0	1,2	14				02151
16 ER 12 W			0.043	0.055	1,1	1,4	12			02135	15948
	16 EL 12 W		0.043	0.055	1,1	1,4	12				15560
16 ER 11 W			0.043	0.059	1,1	1,5	11				02154
	16 EL 11 W		0.043	0.059	1,1	1,5	11				02150
16 ER 10 W			0.043	0.059	1,1	1,5	10			02153	15925
	16 EL 10 W		0.043	0.059	1,1	1,5	10				15510
16 ER 9 W			0.047	0.067	1,2	1,7	9			02160	
16 ER 8 W			0.047	0.059	1,2	1,5	8			02159	
22 ER 5 W			.500 (22)	0.067	0.094	1,7	2,4	5			02166



British BSW



Standard Style (1)

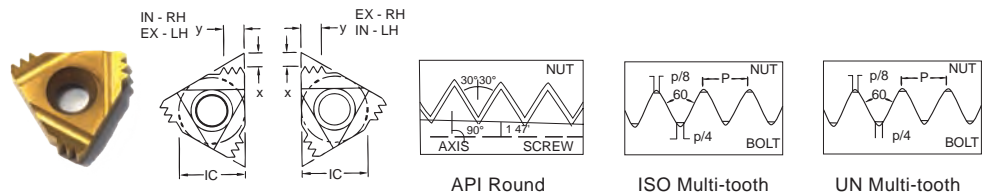


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm					
16 IR 20 W		.375 (16,5)	0.031	0.035	0,8	0,9	20				16738
	16 IL 20 W		0.031	0.035	0,8	0,9	20				16378
16 IR 18 W			0.031	0.039	0,8	1,0	18				16715
	16 IL 18 W		0.031	0.039	0,8	1,0	18				16347
16 IR 16 W			0.035	0.043	0,9	1,1	16				16699
	16 IL 16 W		0.035	0.043	0,9	1,1	16				16325
16 IR 14 W			0.039	0.047	1,0	1,2	14			02145	02162
	16 IL 14 W		0.039	0.047	1,0	1,2	14				16294
16 IR 12 W			0.043	0.055	1,1	1,4	12				16648
	16 IL 12 W		0.043	0.055	1,1	1,4	12				16250
16 IR 11 W			0.043	0.059	1,1	1,5	11			02143	02144
16 IR 10 W			0.043	0.059	1,1	1,5	10				16624
	16 IL 10 W		0.043	0.059	1,1	1,5	10				16205
16 IR 9 W			0.047	0.067	1,2	1,7	9				16869
16 IR 8 W			0.047	0.059	1,2	1,5	8				02147
	16 IL 8 W		0.047	0.059	1,2	1,5	8				16555
22 IR 5 W		.500 (22)	0.067	0.094	1,7	2,4	5				17219

THREADING

ValTHREAD™ Product Offering

Multi-Tooth



Part Number		Dimensions			Pitch mm	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
16 ER 1.0 ISO 3M		.375	0.067	0.098	(1,00)	3	2	0.015	0.010					15913	
16 ER 1.5 ISO 2M			0.059	0.091	(1,5)	2	3	0.016	0.012	0.008				02127	
22 ER 1.5 ISO 3M		.500	0.091	0.146	(1,5)	3	2	0.021	0.015					16979	
	22 IR 1.5 ISO 3M		0.091	0.146	(1,5)	3	2	0.021	0.015					17172	
22 ER 2.0 ISO 2M			0.079	0.118	(2,0)	2	3	0.021	0.015	0.011				16985	
	22 IR 2.0 ISO 2M		0.079	0.118	(2,0)	2	3	0.021	0.015	0.011				17179	
22 ER 2.0 ISO 3M			0.122	0.197	(2,0)	3	2	0.029	0.019					02090	
	22 IR 2.0 ISO 3M		0.122	0.197	(2,0)	3	2	0.029	0.019				02130		
27 ER 3.0 ISO 2M		.625	0.114	0.177	(3,0)	2	4	0.022	0.020	0.017	0.013			17432	
	27 IR 3.0 ISO 2M		0.114	0.177	(3,0)	2	4	0.022	0.020	0.017	0.013			17540	

UN - Multi-Tooth

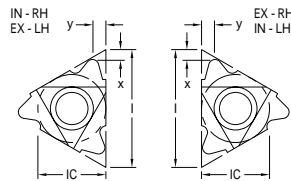
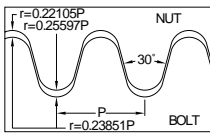
Part Number		Dimensions			Pitch TPI	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
16 ER 16 UN 2M		.375	0.059	0.091	16	2	3	0.017	0.011	0.009				15989	01931
	16 IR 16 UN 2M		0.059	0.091	16	2	3	0.017	0.011	0.009					02048
22 ER 16 UN 3M		.500	0.098	0.157	16	3	2	0.022	0.015					02001	
	22 IR 16 UN 3M		0.098	0.157	16	3	2	0.022	0.015					17175	
22 ER 12 UN 2M			0.087	0.134	12	2	3	0.022	0.017	0.012				01998	
27 ER 8 UN 2M		.625	0.122	0.193	8	2	4	0.028	.020	0.017	0.013			02025	
	27 IR 8 UN 2M		0.122	0.193	8	2	4	0.028	.020	0.017	0.013			17576	

API (OIL) - Round - Multi-Tooth

Part Number		Dimensions			Pitch TPI	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
22 ER 10 API RD 2M		.500	0.094	0.146	10	2	3	0.024	0.020	0.012				16959	
	22 IR 10 API RD 2M		0.094	0.146	10	2	3	0.024	0.020	0.012				02369	
27 ER 8 API RD 2M		.625	0.118	0.177	8	2	3	0.031	0.024	0.016				02373	17467
	27 IR 8 API RD 2M		0.118	0.177	8	2	3	0.031	0.024	0.016				02384	

ValTHREAD™ Product Offering

Round (DIN 405) Threading Inserts - External



Standard Style (1)

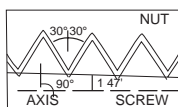


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand		Inch	Inch	mm	mm					
16 ER 6 RD		.375	0.059	0.067	1,5	1,7	6				16092
22 ER 4 RD		.500	0.087	0.091	2,2	2,3	4				16993
22 ER 6 RD		.500	0.059	0.067	1,5	1,7	6				17033

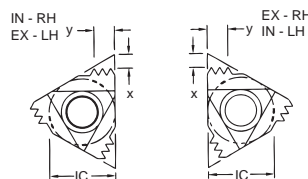
Round (DIN 405) Threading Inserts - Internal

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y		VC5	VC29	VC905	VC929
Right Hand	Left Hand		Inch	Inch	mm	mm					
16 IR 6 RD		.375	0.055	0.059	1,4	1,5	6				16833
22 IR 4 RD		.500	0.087	0.091	2,2	2,3	4				17186
22 IR 6 RD		.500	0.059	0.067	1,5	1,7	6				17229

API (Oil) - Round



API Round

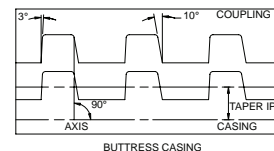
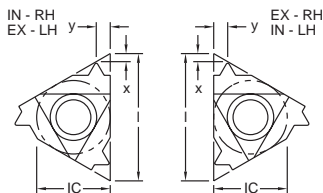
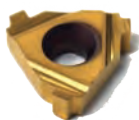


Part Number		Dimensions			Pitch	Taper	Size or Connection #	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y	TPI	IPF		VC5	VC29	VC905	VC929
16 ER 8 API RD		.375	0.051	0.063	8	0.75	4 1/2 - 20			02360	02361
	16 IR 8 API RD		0.051	0.063	8	0.75	4 1/2 - 20			02364	02365
16 ER 10 API RD			0.059	0.055	10	0.75	1.050 - 3 1/2			02359	02374
	16 IR 10 API RD		0.059	0.055	10	0.75	1.050 - 3 1/2			02362	02363

THREADING

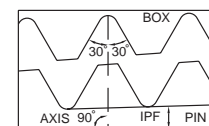
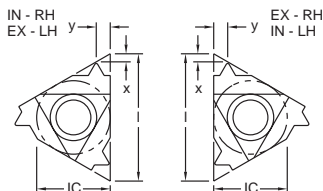
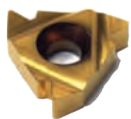
ValTHREAD™ Product Offering

API Buttress Casing



Part Number		Dimensions			Pitch	Taper	Size or Connection #	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y	TPI	IPF		VC5	VC29	VC905	VC929
22 ER 5 BUT 0.75		.500	0.087	0.094	5	0.75	4 1/2 - 13 3/8				02368
	22 IR 5 BUT 0.75		0.087	0.094	5	0.75	4 1/2 - 13 3/8			17198	

API Rotary Shoulder Connections

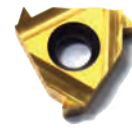
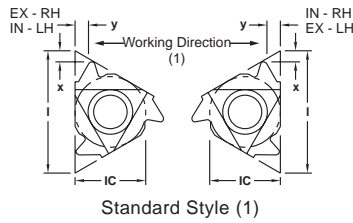
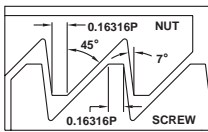


Rotary Shouldered Connections

Part Number		Dimensions			Pitch	Taper	Size or Connection #	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y	TPI	IPF		VC5	VC29	VC905	VC929
22 ER 5 API 403		.500	0.071	0.098	5	3	2 3/8 - 4 1/2 REG			02375	02367
	22 IR 5 API 403		0.071	0.098	5	3	2 3/8 - 4 1/2 REG			02370	02371
27 ER 4 API 382		.625	0.083	0.110	4	2	NC 23 - NC 50			02378	17436
	27 IR 4 API 382		0.083	0.110	4	2	NC 23 - NC 50			02381	02382
	27 IR 4 API 503		0.079	0.118	4	3	5 1/2, 7 5/8, 8 5/8 REG			17552	
27 ER 4 API 502			0.079	0.118	4	2	6 5/8 REG			17443	
	27 IR 4 API 502		0.079	0.118	4	2	6 5/8 REG			17549	02383

ValTHREAD™ Product Offering

American Buttress - External



Standard Style (1)

Part Number		Dimensions			Pitch TPI	Available Grades-EDP#			
Right Hand	Left Hand	I.C. (in.) I (mm)	X	Y		VC5	VC29	VC905	VC929
16 ER 16 ABUT		0.375 (16,5)	0.039	0.059	16				15983
	16 EL 16 ABUT		0.039	0.059	16				15612
16 ER 12 ABUT			0.055	0.079	12			02386	02387
	16 EL 12 ABUT		0.055	0.079	12			15539	
16 ER 10 ABUT			0.059	0.091	10			02395	15906
	16 EL 10 ABUT		0.059	0.091	10			02395	15906
22 ER 8 ABUT		0.500 (22)	0.083	0.130	8			02391	17049

American Buttress - Internal

Part Number		Dimensions			Pitch TPI	Available Grades-EDP#			
Right Hand	Left Hand	I.C. (in.) I (mm)	X	Y		VC5	VC29	VC905	VC929
16 IR 16 ABUT		0.375 (16,5)	0.039	0.059	16				16687
	16 IL 16 ABUT		0.039	0.059	16				16306
16 IR 12 ABUT			0.055	0.079	12			02388	02389
16 IR 10 ABUT			0.059	0.091	10			02396	02397
22 IR 8 ABUT			0.083	0.130	8				02392
	22 IL 8 ABUT		0.083	0.130	8				02392
22 IR 6 ABUT		0.500 (22)	0.083	0.134	6			17221	

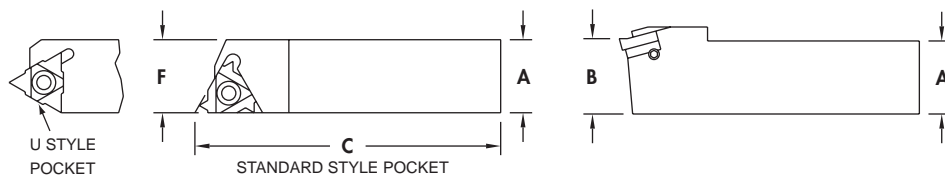
Note:

- The flank with the large angle is the leading edge.

THREADING

ValTHREAD™ External Toolholders

Inch Toolholders



Right Hand Shown, Left Hand Opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0310 H11*	SEL 0310 H11*	0.250	0.312	4.000	0.430	58518	58279
SER 0375 H11*	SEL 0375 H11*	0.250	0.375	4.000	0.430	58520	58280
SER 0375 D16	SEL 0375 D16	0.375	0.375	2.500	0.630	58519	58555
SER 0500 F16	SEL 0500 F16	0.375	0.500	3.250	0.630	58521	58556
SER 0625 H16	SEL 0625 H16	0.375	0.625	4.000	0.630	58522	58557
SER 0750 K16	SEL 0750 K16	0.375	0.750	5.000	0.750	58523	58558
SER 1000 M16	SEL 1000 M16	0.375	1.000	6.000	1.000	58525	58514
SER 1250 P16	SEL 1250 P16	0.375	1.250	7.000	1.250	58534	58559
SER 1000 M22	SEL 1000 M22	0.500	1.000	6.000	1.000	58527	58515
SER 1000 M22U	SEL 1000 M22U	0.500U	1.000	6.000	1.100	58529	58292
SER 1250 P22	SEL 1250 P22	0.500	1.250	7.000	1.250	58535	58300
SER 1250 P22U	SEL 1250 P22U	0.500U	1.250	7.000	1.250	58536	58302
SER 1500 R22	SEL 1500 R22	0.500	1.500	8.000	1.500	58539	58306
SER 1500 R22U	SEL 1500 R22U	0.500U	1.500	8.000	1.500	58540	58308
SER 1000 M27	SEL 1000 M27	0.625	1.000	6.000	1.250	58530	58517
SER 1250 P27	SEL 1250 P27	0.625	1.250	7.000	1.250	58537	58560
SER 1250 P27U	SEL 1250 P27U	0.625U	1.250	7.000	1.250	58538	58304
SER 1500 R27	SEL 1500 R27	0.625	1.500	8.000	1.500	58541	58310
SER 1500 R27U	SEL 1500 R27U	0.625U	1.500	8.000	1.500	58542	58312

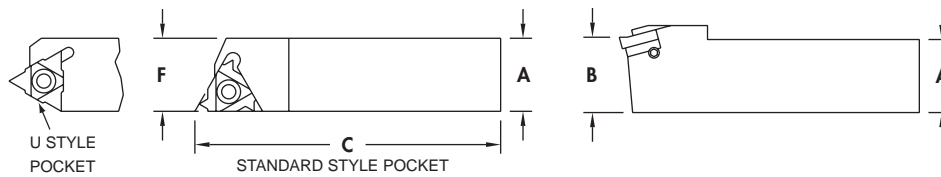
* Complete without anvil

Note:

- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ External Toolholders

Metric Toolholders



Right Hand Shown, Left Hand Opposite

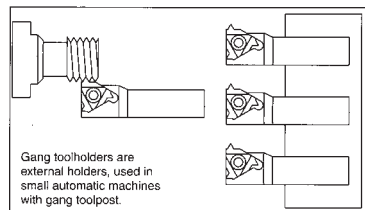
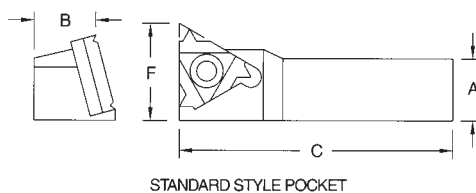
Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0808 H11*	SEL 0808 H11*	11	8	100	11	58371	58286
SER 1010 H11*	SEL 1010 H11*	11	10	100	11	58531	58294
SER 1212 F16	SEL 1212 F16	16	12	80	16	58533	58298
SER 1616 H16	SEL 1616 H16	16	16	100	16	58543	58314
SER 2020 K16	SEL 2020 K16	16	20	125	20	58545	58561
SER 2525 M16	SEL 2525 M16	16	25	150	25	58546	58562
SER 3232 P16	SEL 3232 P16	16	32	170	32	58549	58563
SER 2525 M22	SEL 2525 M22	22	25	150	25	58547	58320
SER 2525 M22U	SEL 2525 M22U	22U	25	150	28	58548	58327
SER 3232 P22	SEL 3232 P22	22	32	170	32	58376	58337
SER 3232 P22U	SEL 3232 P22U	22U	32	170	32	58377	58340
SER 4040 R22	SEL 4040 R22	22	40	200	40	58551	58359
SER 4040 R22U	SEL 4040 R22U	22U	40	200	40	58552	58361
SER 2525 M27	SEL 2525 M27	27	25	150	25	58564	58332
SER 3232 P27	SEL 3232 P27	27	32	170	32	58550	58356
SER 3232 P27U	SEL 3232 P27U	27U	32	170	32	58378	58357
SER 4040 R27	SEL 4040 R27	27	40	200	40	58553	58365
SER 4040 R27U	SEL 4040 R27U	27U	40	200	40	58554	58367

* Complete without anvil

Note:

- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

Gang Toolholders—Metric



Right Hand Shown, Left Hand Opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0808 H11G*	SEL 0808 H11G*	11	8	100	12,0	58372	58288
SER 1010 H11G*	SEL 1010 H11G*	11	10	100	14,0	58532	58296
SER 1616 K16G	SEL 1616 K16G	16	16	125	21,7	58544	58316

* Complete without anvil

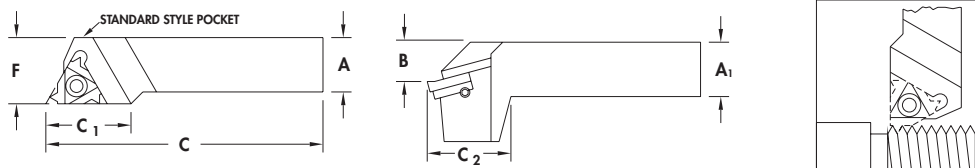
Note:

- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

THREADING

ValTHREAD™ External Drophead Toolholders

Inch Toolholders



Right Hand Shown, Left Hand Opposite

Part Number		Dimensions							EDP #	
Right Hand	Left Hand	IC	A=B	A1	C	C1	C2	F	Right Hand	Left Hand
SER 0750 K16D	SEL 0750 K16D	0.375	0.750	0.750	5.000	0.840	1.500	1.000	58369	58284
SER 1000 K16D	SEL 1000 K16D	0.375	1.000	1.000	5.000	0.840	1.500	1.250	58524	58513
SER 1000 M16D	SEL 1000 M16D	0.375	1.000	1.000	6.000	0.840	1.500	1.250	58526	58290
SER 1000 M22D	SEL 1000 M22D	0.500	1.000	1.000	6.000	1.000	1.500	1.250	58528	58516

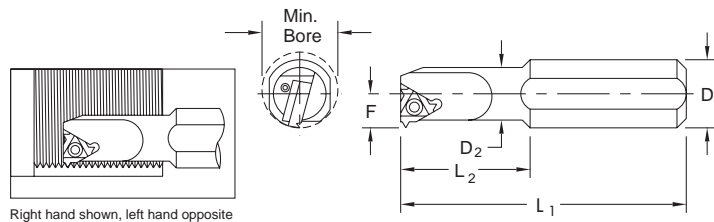
Metric Toolholders

Part Number		Dimensions							EDP #	
Right Hand	Left Hand	IC (mm)	A (mm)	A1 (mm)	C (mm)	C1 (mm)	C2 (mm)	F (mm)	Right Hand	Left Hand
SER 2020 K16D	SEL 2020 K16D	16	20	20	125	21	38	25	58373	58317
SER 2525M 16D	SEL 2525 M16D	16	25	25	150	21	38	32	58374	58318
SER 2525 M22D	SEL 2525 M 22D	22	25	25	150	21	38	32	58375	58375

- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

VaIThread™ Internal Boring Bars

Inch Boring Bars



Standard Style Pocket
U-Style pocket not shown

Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0205 H06	SIL 0205 H06	*	0.156	0.500	0.200	0.240	4.000	0.470	0.170	58599	58825
SIR 0265 K08	SIL 0265 K08	*	0.187	0.625	0.260	0.310	5.000	0.700	0.210	58601	58830
SIR 0310 K08U	SIL 0310 K08U	*	0.187U	0.625	0.290	0.350	5.000	0.830	0.260	58603	58862
SIR 0375 H11	SIL 0375 H11	*	0.250	0.375	0.375	0.470	4.000	-	0.280	58605	58565
SIR 0375 K11	SIL 0375 K11	*	0.250	0.625	0.375	0.470	5.000	1.000	0.280	58606	58633
SIR 0500 L11	SIL 0500 L11	*	0.250	0.625	0.500	0.580	5.500	1.250	0.340	58608	58635
SIR 0500 M16	SIL 0500 M16	*	0.375	0.625	0.500	0.640	6.000	1.250	0.390	58609	58566
SIR 0625 P16	SIL 0625 P16	*	0.375	0.750	0.625	0.750	7.000	1.570	0.450	58611	58637
SIR 0750 P16	SIL 0750 P16		0.375	0.750	0.750	0.900	7.000	-	0.510	58613	58567
SIR 1000 R16	SIL 1000 R16		0.375	1.000	1.000	1.160	8.000	-	0.650	58615	58569
SIR 1250 S16	SIL 1250 S16		0.375	1.250	1.250	1.400	10.000	-	0.770	58617	58571
SIR 1500 T16	SIL 1500 T16		0.375	1.500	1.500	1.650	12.000	-	0.900	58622	58643
SIR 0750 P22	SIL 0750 P22	*	0.500	0.750	0.750	0.900	7.000	-	0.590	58614	58568
SIR 1000 R22	SIL 1000 R22		0.500	1.000	1.000	1.160	8.000	-	0.710	58616	58570
SIR 1250 S22	SIL 1250 S22		0.500	1.250	1.250	1.500	10.000	-	0.850	58618	58639
SIR 1250 S22U	SIL 1250 S22U		0.500U	1.250	1.250	1.500	10.000	-	0.950	58619	58640
SIR 1500 T22	SIL 1500 T22		0.500	1.500	1.500	1.750	12.000	-	0.980	58623	58901
SIR 1500 T22U	SIL 1500 T22U		0.500U	1.500	1.500	1.750	12.000	-	1.080	58624	58911
SIR 1250 S27	SIL 1250 S27		0.625	1.250	1.250	1.560	10.000	-	0.880	58620	58641
SIR 1250 S27U	SIL 1250 S27U		0.625U	1.250	1.250	1.560	10.000	-	1.000	58621	58642
SIR 1500 T27	SIL 1500 T27		0.625	1.500	1.500	1.800	12.000	-	1.000	58625	58918
SIR 1500 T27U	SIL 1500 T27U		0.625U	1.500	1.500	1.800	12.000	-	1.130	58646	58933
SIR 2000 U27	SIL 2000 U27		0.625	2.000	2.000	2.300	14.000	-	1.250	58626	58572
SIR 2000 U27U	SIL 2000 U27U		0.625U	2.000	2.000	2.300	14.000	-	1.370	59149	58940
SIR 2500 V27	SIL 2500 V27		0.625	2.500	2.500	2.800	16.000	-	1.500	58627	58952
SIR 2500 V27U	SIL 2500 V27U		0.625U	2.500	2.500	2.800	16.000	-	1.610	58628	58967

* Complete without anvil

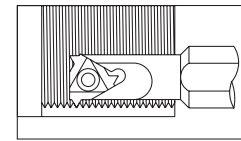
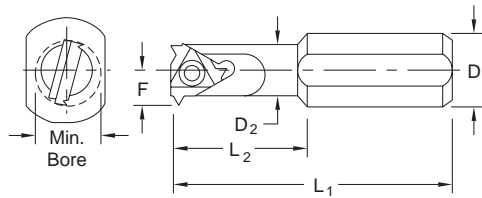
Note:

- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

THREADING

ValTHREAD™ Internal Boring Bars

Inch Boring Bars with Coolant Hole



Right hand shown, left hand opposite

Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0625 P16B	SIL 0625 P16B	*	0.375	0.750	0.625	0.750	7.000	1.570	0.450	59041	58874
SIR 0750 P16B	SIL 0750 P16B		0.375	0.750	0.750	0.900	7.000	-	0.510	59095	58884
SIR 1000 R16B	SIL 1000 R16B		0.375	1.000	1.000	1.160	8.000	-	0.650	59144	58900

*Complete without anvil

Inch Boring Bars, Carbide Shank with Coolant Hole

Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0205 H06CB	SIL 0205 H06CB		0.156	0.250	0.200	0.240	4.0	0.470	0.170	56521	62776
SIR 0265 K08CB	SIL 0265 K08CB		0.187	0.312	0.260	0.310	5.0	1.220	0.210	61125	62777
SIR 0310 K08UCB	SIL 0310 K08UCB		.187U	0.312	0.290	0.350	5.0	1.380	0.260	56523	62778
SIR 0375 M11CB	SIL 0375 M11CB		0.250	0.375	0.375	0.470	6.0	-	0.280	56524	62779
SIR 0500 P11CB	SIL 0500 P11CB		0.250	0.500	0.500	0.580	7.0	-	0.340	56526	62780
SIR 0625 R16CB	SIL 0625 R16CB		0.375	0.625	0.625	0.750	8.0	-	0.460	56527	62781
SIR 0750 S16CB		*	0.375	0.750	0.750	0.900	10.0	-	0.540	56541	-
SIR 1000 S16CB		*	0.375	1.000	1.000	1.100	10.0	-	0.640	56528	-

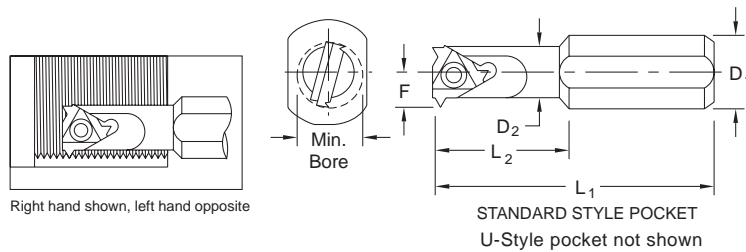
* With anvil

Note:

- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

VaIThread™ Internal Boring Bars

Metric Boring Bars



Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC (mm)	D1 (mm)	D2 (mm)	Min. Bore (mm)	L1 (mm)	L2 (mm)	F (mm)	Right Hand	Left Hand
SIR 0005 H06	SIL 0005 H06	*	6	12	5,1	6,0	100	12	4,3	58573	58629
SIR 0007 K08	SIL 0007 K08	*	8	16	6,6	7,8	125	18	5,3	58575	58380
SIR 0008 K08U	SIL 0008 K08U		8U	16	7,3	9,0	125	21	6,6	58970	58382
SIR 0010 H11	SIL 0010 H11	*	11	10	10	12	100	-	7,4	58578	58384
SIR 0010 K11	SIL 0010 K11	*	11	16	10	12	125	25	7,4	58579	58385
SIR 0013 L11	SIL 0013 L11	*	11	16	13	15	140	32	8,9	58582	58457
SIR 0013 M16	SIL 0013 M16	*	16	16	13	16	150	32	10,2	58583	58630
SIR 0016 P16	SIL 0016 P16	*	16	20	16	19	170	40	11,7	58584	58458
SIR 0020 P16	SIL 0020 P16		16	20	20	24	170	-	13,7	58586	58461
SIR 0025 R16	SIL 0025 R16		16	25	25	29	200	-	16,2	58588	58631
SIR 0032 S16	SIL 0032 S16		16	32	32	36	250	-	19,7	58590	58466
SIR 0040 T16	SIL 0040 T16		16	40	40	44	300	-	23,7	58593	58471
SIR 0020 P22	SIL 0020 P22	*	22	20	20	24	170	-	15,6	58587	58463
SIR 0025 R22	SIL 0025 R22		22	25	25	29	200	-	18,1	58589	58465
SIR 0032 S22	SIL 0032 S22		22	32	32	38	250	-	21,6	58591	58467
SIR 0032 S22U	SIL 0032 S22U		22U	32	32	38	250	-	24,4	58592	58468
SIR 0040 T22	SIL 0040 T22		22	40	40	46	300	-	25,6	59031	58472
SIR 0040 T22U	SIL 0040 T22U		22U	40	40	46	300	-	28,1	58594	58473
SIR 0032 S27	SIL 0032 S27		27	32	32	40	250	-	22,6	58644	58469
SIR 0032 S27U	SIL 0032 S27U		27U	32	32	40	250	-	25,8	59026	58470
SIR 0040 T27	SIL 0040 T27		27	40	40	48	300	-	26,6	58645	58474
SIR 0040 T27U	SIL 0040 T27U		27U	40	40	48	300	-	29,4	58595	58506
SIR 0050 U27	SIL 0050 U27		27	50	50	58	350	-	31,6	59039	58507
SIR 0050 U27U	SIL 0050 U27U		27U	50	50	58	350	-	34,3	58596	58508
SIR 0060 V27	SIL 0060 V27		27	60	60	68	400	-	36,6	58597	58726
SIR 0060 V27U	SIL 0060 V27U		27U	60	60	68	400	-	39,7	58598	58780

*Complete without anvil

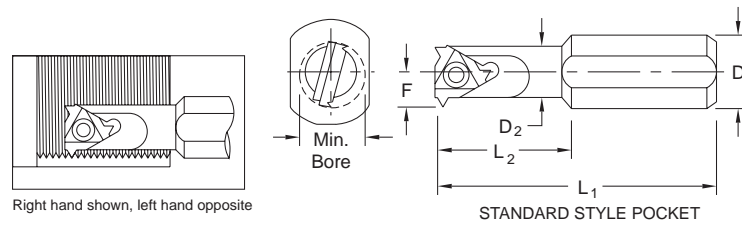
Note:

- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

THREADING

ValTHREAD™ Internal Boring Bars

Metric Boring Bars with Coolant Hole



Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		I.C.	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0016 P16B	SIL 0016 P16B	*	16	20	16	19	170	40	11,7	58994	58459
SIR 0020 P16B	SIL 0020 P16B		16	20	20	24	170	-	13,7	59013	58462
SIR 0025 R16B	SIL 0025 R16B		16	25	25	29	200	-	16,2	59021	58464

*Complete without anvil

Note:

- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

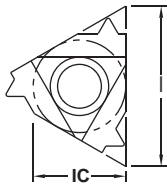


The ValTHREAD system combined with ValPro support sets new standards for productivity.

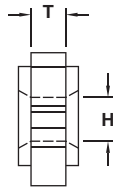
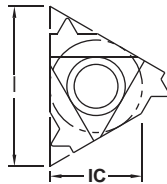
THREADING

ValTHREAD™ Common Insert Dimensions Chart

IN - RH
EX - LH



EX - RH
IN - LH



Designation

IC= Inscribed Circle
L= Theoretical Cutting Edge Length
T= Insert Thickness
H= Insert Hole Size

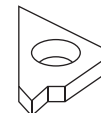
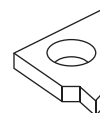
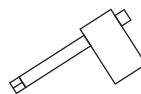
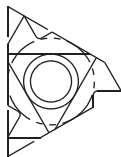
External

ISO Number	IC	I	T	H
06 ER / L	5/32	0.273	0.073	0.089
08 ER / L	3/16	0.341	0.087	0.100
11 ER / L	1/4	0.433	0.126	0.128
16 ER / L	3/8	0.650	0.143	0.157
22 ER / L	1/2	0.866	0.188	0.197
27 ER / L	5/8	1.083	0.257	0.240

Internal

ISO Number	IC	I	T	H
06 IR / L	5/32	0.273	0.073	0.089
08 IR / L	3/16	0.341	0.087	0.100
11 IR / L	1/4	0.433	0.126	0.128
16 IR / L	3/8	0.650	0.143	0.157
22 IR / L	1/2	0.866	0.188	0.197
27 IR / L	5/8	1.083	0.257	0.240

Spare Parts

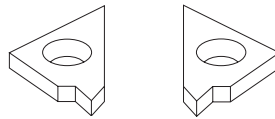


Insert Size	Insert Style	Insert Screw	Anvil Screw	Torx Wrench	Anvil Right Hand	Anvil Left Hand
06 (5/32 inch)	Internal	PT-807	---	T-6 Torx Wrench	---	---
08 (3/16 inch)	Internal	PT-808	---	T-6 Torx Wrench	---	---
11 (1/4 Inch)	Ext./Int.	PT-809	---	T-8 Torx Wrench	---	---
16 (3/8 Inch)	External	PT-810	PT-804	T-10 Torx Wrench	CAE16	CAI16
16 (3/8 Inch)	Internal	PT-810	PT-804	T-10 Torx Wrench	CAI16	CAE16
16 (3/8 Inch)*	Internal	PT-810S	PT-804	T-10 Torx Wrench	CAI16	CAE16
22 (1/2 Inch)	External	PT-811	PT-805	T-20 Torx Wrench	CAE22	CAI22
22 (1/2 Inch)	Internal	PT-811	PT-805	T-20 Torx Wrench	CAI22	CAE22
22U (1/2 Inch)	External	PT-811	PT-805	T-20 Torx Wrench	CAE22U	CAI22U
22U (1/2 Inch)	Internal	PT-811	PT-805	T-20 Torx Wrench	CAI22U	CAE22U
27 (5/8 Inch)	External	PT-812	PT-806	T-25 Torx Wrench	CAE27	CAI27
27 (5/8 Inch)	Internal	PT-812	PT-806	T-25 Torx Wrench	CAI27	CAE27
27U (5/8 Inch)	External	PT-812	PT-806	T-25 Torx Wrench	CAE27U	CAI27U
27U (5/8 Inch)	Internal	PT-812	PT-806	T-25 Torx Wrench	CAI27U	CAE27U

* Use insert screw PT-810S for boring bars:

SIR/L 0500 M16
SIR/L 0625 P16
SIR/L 0013 M16
SIR/L 0016 P16

Standard and Slanted Anvils—Standard Positive Helix Anvils



Dimensions											
Toolholder	A (I.C.)	4.5°	EDP#	3.5°	EDP#	2.5°	EDP#	1.5°	EDP#	0.5°	EDP#
EX, RH, or IN, LH	.375	CAE 16 4.5P	08265	CAE 16 3.5P	08264	CAE 16 2.5P	08263	CAE 16	08260	CAE 16 0.5P	08310
EX, LH, or IN, RH	.375	CAI 16 4.5P	08291	CAI 16 3.5P	08290	CAI 16 2.5P	08289	CAI 16	08286	CAI 16 0.5P	08287
EX, RH, or IN, LH	.500	CAE 22 4.5P	08269	CAE 22 3.5P	08268	CAE 22.2 5P	24782	CAE 22	08266	CAE 22 0.5P	24781
EX, LH, or IN, RH	.500	CAI 22 4.5	24792	CAI 22 3.5P	08297	CAI 22 2.5P	08296	CAI 22	08293	CAI 22 0.5P	08294
EX, RH, or IN, LH	.625	CAE 27 4.5P	08278	CAE 27 3.5P	24787	CAE 27 2.5P	24786	CAE 27	08275	CAE 27 0.5P	24784
EX, LH, or IN, RH	.625	CAI 27 4.5P	24799	CAI 27 3.5P	08313	CAI 27 2.5P	08312	CAI 27	08304	CAI 27 0.5P	24797
EX, RH, or IN, LH	.500U	CAE 22U 4.5P	24779	CAE 22U 3.5P	24772	CAE 22U 2.5P	24771	CAE 22U	08271	CAE 22U 0.5P	08273
EX, LH, or IN, RH	.500U	CAI 22U 4.5P	08303	CAI 22U 3.5P	24789	CAI 22U 2.5P	08302	CAI 22U	08299	CAI 22U 0.5P	08300
EX, RH, or IN, LH	.625U	CAE 27U 4.5P	08285	CAE 27U 3.5P	08284	CAE 27U 2.5P	08283	CAE 27U	08280	CAE 27U 0.5P	08282
EX, LH, or IN, RH	.625U	CAI 27U 4.5P	08309	CAI 27U 3.5P	24795	CAI 27U 2.5P	08308	CAI 27U	08306	CAI 27U 0.5P	08307

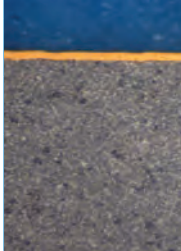



Standard Negative Helix Anvils

Dimensions							
Toolholder	A (I.C.)	-0.5°	EDP#	-1.5°	EDP#	Multi-Tooth Anvils	EDP#
EX, RH, or IN, LH	.375	CAE 16 0.5N	08261	CAE 16 1.5N	08262	CAE 16M	24770
EX, LH, or IN, RH	.375	CAI 16 0.5N	08311	CAI 16 1.5N	08288	CAI 16M	08292
EX, RH, or IN, LH	.500	CAE 22 0.5N	24780	CAE 22 1.5N	08267	CAE 22M	08270
EX, LH, or IN, RH	.500	CAI 22 0.5N	24790	CAI 22 1.5N	08295	CAI 22M	08298
EX, RH, or IN, LH	.625	CAE 27 0.5N	08276	CAE 27 1.5N	08277	CAE 27M	08279
EX, LH, or IN, RH	.625	CAI 27 0.5N	24796	CAI 27 1.5N	24798	CAI 27M	08305
EX, RH, or IN, LH	.500U	CAE 22U 0.5N	08272	CAE 22U 1.5N	08274		
EX, LH, or IN, RH	.500U	CAI 22U 0.5N	24788	CAI 22U 1.5N	08301		
EX, RH, or IN, LH	.625U	CAE 27U 0.5N	08281	CAE 27U 1.5N	24783		
EX, LH, or IN, RH	.625U	CAI 27U 0.5N	24793	CAI 27U 1.5N	24794		

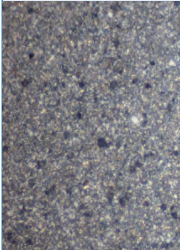
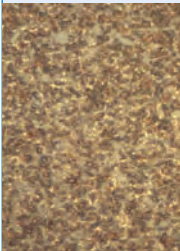

Note: See pages E48-49 for thread helix angle data.

THREADING

ValTHREAD™ Threading Grade Descriptions

Grade	Description	Performance	ISO Class	Application
VC929 	PVD Coated Carbide TiN Coating Micro Grain Substrate	Light Duty Grade Excellent Wear Resistance Low Build-Up at the Cutting Edge Outstanding Edge Integrity	P10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds.
			M15	
			K15	
			S10	
			N10	
VC922 	PVD Coated Carbide TiAlN Coating Micro Grain Substrate High Cobalt Substrate	Medium Duty Grade Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge	P20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
			M20	
			K25	
			S20	
			N20	
VC905 	PVD Coated Carbide TiN Coating Medium Hardness	Medium Duty Grade Good Deformation Resistance Good Chipping Resistance	P25	Steels, Cast Steels, Ferritic and Martensitic Stainless Steels. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			M20	
VC901 	PVD Coated Carbide TiN Coating Micro Grain Substrate	Medium Duty Grade Excellent Toughness and Chipping Resistance Good Deformation Resistance	P30	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. General Purpose Machining. Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
			M25	
			K30	
			S25	
			N25	

VaIThread™ Threading Grade Descriptions

Grade	Description	Performance	ISO Class	Application
VC29 	Uncoated Carbide Micro Grain High Hardness	Finishing Grade Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.
			K10	
			S10	
			N15	
VC5 	Uncoated Carbide Medium Grain Size Medium Hardness	General Purpose Grade Excellent Toughness Good Wear Resistance and Chipping Resistance	P30	Steels, Cast Steels, Stainless Steels. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			S25	
VC942 	PVD Coated HSS TiN Coating	Light Duty Grade Excellent Edge Strength	P25	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Very Low Speed Grade Especially for Small Diameter Internal Threads.
			M25	
			K25	
			S25	
			N25	

THREADING

V-ValTHREAD™ Guide to Workpiece Material

ValPRO™ Color System Simplifies Tool Selection Process

Use the ValPRO™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
 Steels	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
 Stainless Steels	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304I 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
 Cast Irons	Gray Cast Iron	ASTM A48, CClass 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades 70003, 820002, 90001, SAE J158, Grades M7002, M8501
 High Temp Alloys	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
 Aluminum And Non-Ferrous Materials	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
 Hardened Materials	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

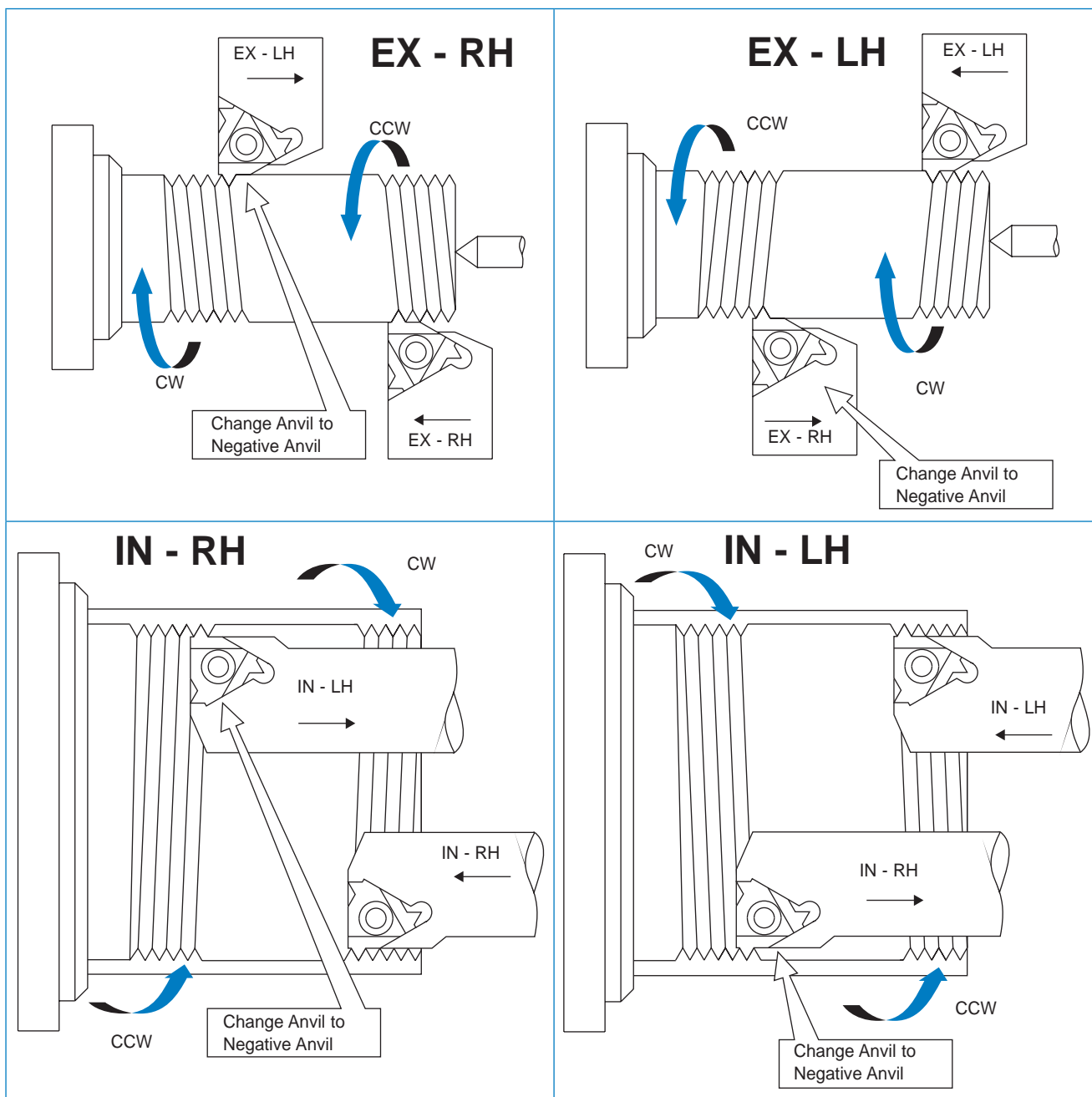
VaI THREAD™ Application Guide for Threading

Material Group	Category	Threading Grade and Speed Selection SFM (V m/min)						
		VC922	VC929	VC901	VC905	VC5	VC29	VC942
P Steels	Free Machining and Low Carbon Steels 120 - 170 BHN	300 - 600 (90 - 180)	330 - 650 (100 - 200)	200 - 500 (60 - 150)	260 - 550 (80 - 170)	230 - 400 (70 - 125)	-	30 - 130 (10 - 40)
	Medium Carbon and High Carbon Steels 180 - 220 BHN	275 - 550 (85 - 170)	300 - 600 (90 - 180)	180 - 450 (55 - 135)	240 - 450 (75 - 140)	200 - 330 (60 - 100)	-	30 - 130 (10 - 40)
	Alloy Steels and Easy to Machine Tool Steels 200 - 240 BHN	275 - 450 (85 - 140)	275 - 450 (85 - 140)	150 - 350 (45 - 110)	160 - 330 (50 - 100)	160 - 260 (50 - 80)	-	30 - 130 (10 - 40)
	Tool Steels and Die Steels 220 - 260 BHN	225 - 400 (70 - 120)	225 - 400 (70 - 120)	125 - 225 (40 - 70)	140 - 275 (45 - 85)	100 - 200 (30 - 60)	-	30 - 130 (10 - 40)
M Stainless Steels	Ferritic and Martensitic Stainless Steels 180 - 240 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	150 - 350 (45 - 110)	-	200 - 300 (60 - 90)	250 - 350 (80 - 110)	15 - 100 (5 - 30)
	Austenitic Stainless Steels 140 - 180 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	100 - 300 (30 - 90)	-	200 - 300 (60 - 90)	250 - 350 (80 - 110)	15 - 100 (5 - 30)
	PH and Duplex Stainless Steels 220 - 260 BHN	200 - 400 (60 - 120)	250 - 350 (75 - 110)	85 - 250 (25 - 75)	-	150 - 250 (45 - 75)	200 - 300 (60 - 90)	15 - 100 (5 - 30)
K Cast Iron	Gray Cast Irons 180 - 220 BHN	275 - 500 (85 - 150)	275 - 550 (85 - 170)	250 - 450 (75 - 140)	-	-	200 - 350 (60 - 110)	15 - 100 (5 - 30)
	Gray Cast Irons 220 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	200 - 400 (60 - 120)	-	-	180 - 300 (55 - 90)	15 - 100 (5 - 30)
	Ductile & Malleable Cast Irons 140 - 200 BHN	300 - 550 (90 - 170)	300 - 600 (90 - 180)	150 - 250 (45 - 75)	-	-	200 - 350 (60 - 110)	15 - 100 (5 - 30)
	Ductile & Malleable Cast Irons 200 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	125 - 200 (40 - 60)	-	-	180 - 300 (55 - 90)	15 - 100 (5 - 30)
S High Temp Alloys	Iron & Nickel Based Alloys, Monel, Hastelloy, Inconel, Waspaloy	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	45 - 125 (15 - 40)	15 - 50 (5 - 15)
	Cobalt Based Alloys, Haynes Stellite	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	45 - 125 (15 - 40)	15 - 50 (5 - 15)
	Titanium Alloys 6Al-4V	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	30 - 100 (15 - 35)	15 - 50 (5 - 15)
N Aluminum & Non-Ferrous Materials	Aluminum Alloys <7% Silicon	1200 - 2600 (365 - 800)	1200 - 1800 (365 - 550)	150 - 800 (45 - 245)	-	-	400 - 650 (120 - 200)	100 - 350 (30 - 110)
	Aluminum Alloys 7% - 12% Silicon	1000 - 2400 (305 - 730)	1000 - 1600 (305 - 490)	100 - 650 (35 - 200)	-	-	350 - 600 (110 - 180)	100 - 350 (30 - 110)
	Aluminum Alloys 12% - 18% Silicon	900 - 1500 (275 - 460)	900 - 1400 (275 - 430)	50 - 400 (15 - 120)	-	-	200 - 400 (60 - 120)	75 - 200 (25 - 60)
	Copper Alloys	600 - 1000 (180 - 305)	600 - 1000 (180 - 305)	500 - 900 (150 - 275)	-	-	175 - 300 (55 - 90)	100 - 350 (30 - 110)
H Hardened Materials	Steels 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-	-	-	-
	Steels 50 - 60 Rc	60 - 175 (18 - 55)	50 - 125 (15 - 40)	50 - 100 (15 - 30)	-	-	-	-
	Chilled Irons 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-	-	-	-

THREADING

ValTHREAD™ Machining Guidelines

Threading Methods



Number of Cutting Passes Selection

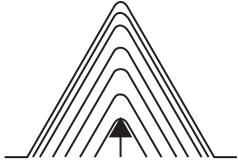
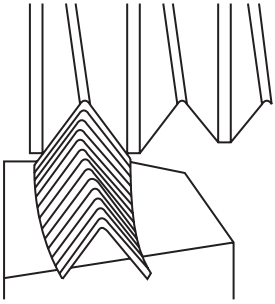

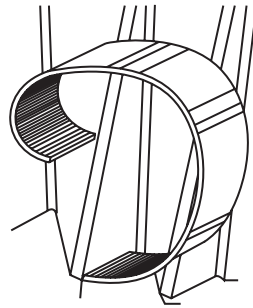
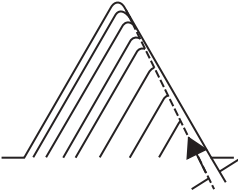
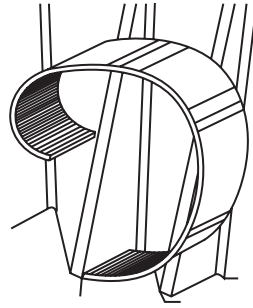

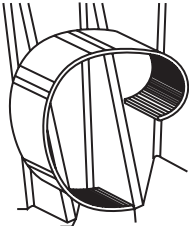
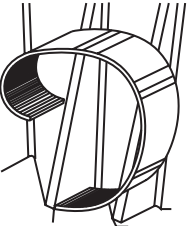
Pitch Millimeters	0.5	1.0	1.5	2.0	2.5	3.0	4.0	6.0
Threads Per Inch	48	24	16	12	10	8	6	4
Number of Passes	3-6	4-9	5-11	6-13	7-15	8-17	10-20	11-22

Thread Pass Notes:


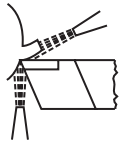

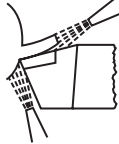

- For most standard applications, choose the middle of the range as a good starting point.
- In most cases, the tougher the material, the higher the number of cutting passes required.
- As a general rule of thumb, less passes are better than increasing speed.

Infeed Angle Selection and Chip Formation

Typical Chip Formation

<p>Infeed Angle 0°</p> <p>Benefit: Cutting edge is protected from chipping by both sides in cut.</p> <p>Problem: Both sides of insert are heated by the workpiece. Produces “Vee” chips which can be very difficult to handle.</p>			
<p>Infeed Angle 30°</p> <p>Benefit: Chip is curled away from thread form.</p> <p>Problem: Trailing edge may drag rather than cut, which may cause chipping.</p>			
<p>Infeed Angle 29°</p> <p>Benefit: Cutting edge is protected from chipping by both sides in cut. Chip is curled away from thread form. Part of the heat generated is dissipated to the trailing edge. Final pass infeed angle should be 0°.</p>			
<p>Alternating Flank Infeed</p> <p>For very large thread forms</p> <p>Benefit: Increased tool life because both edges are used effectively. Final pass should be 0°.</p>			

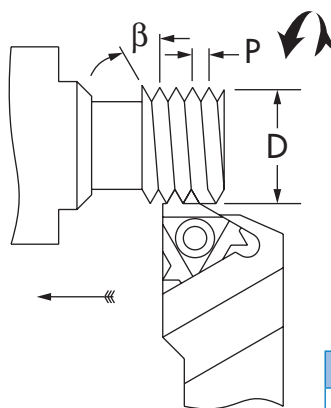
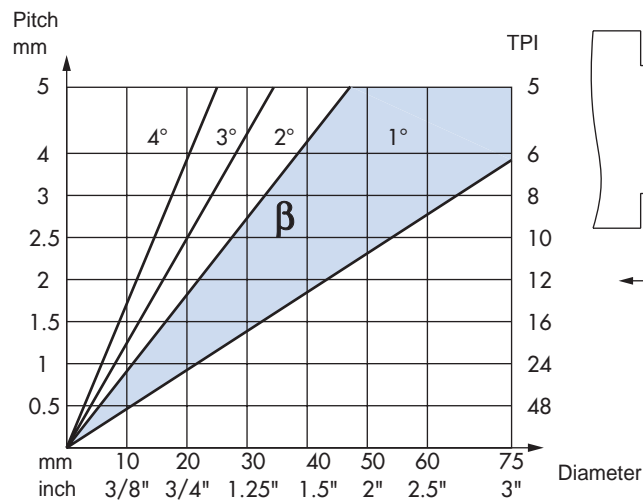
The coolant should provide:

 <p>Fast heat removal</p>	 <p>Good surface coverage</p>	 <p>Non-corrosiveness</p>	 <p>Homogeneity and stability</p>	 <p>Good lubricant qualities</p>
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THREADING

ValTHREAD™ Machining Guidelines

Thread Helix Angle



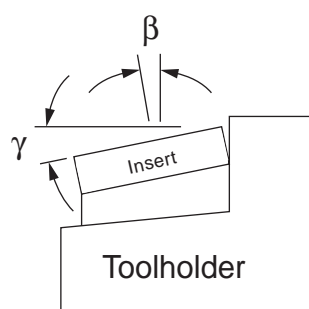
$$\tan \beta = \frac{P}{\pi \times D}$$

Simplified Formula
 Metric: $\beta = 20P/D$
 Inch: $\beta = 20/PD$

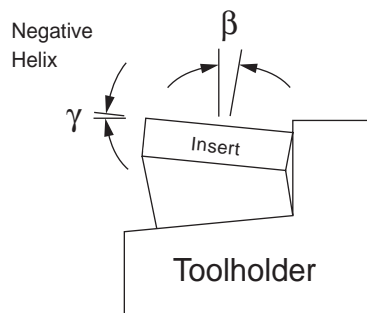
Example
 D = 30 mm (1.18")
 P = 1.5 mm (16 TPI)
 Metric: $\beta = 20 \times 1.5/30 = 1$
 Inch: $\beta = 20/16 \times 1.18 = 1$

Standard and Slanted Anvils

Valenite toolholder and boring bar pockets have a built-in 1.5 helix compensation angle. This angle may be adjusted to match the helix angle of the thread being produced by replacing the anvil.



Positive Helix Angles
 Applicable when turning RH thread with RH holder or LH thread with LH holder.

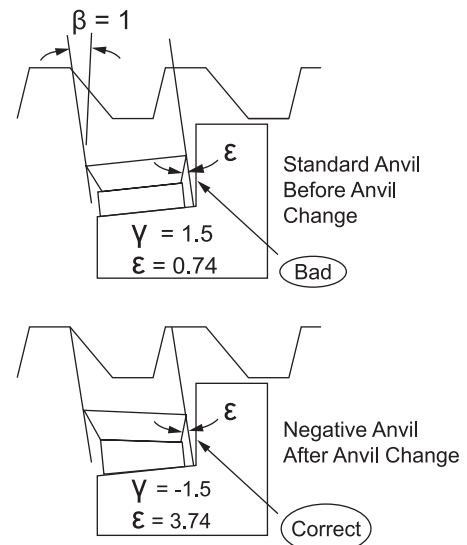
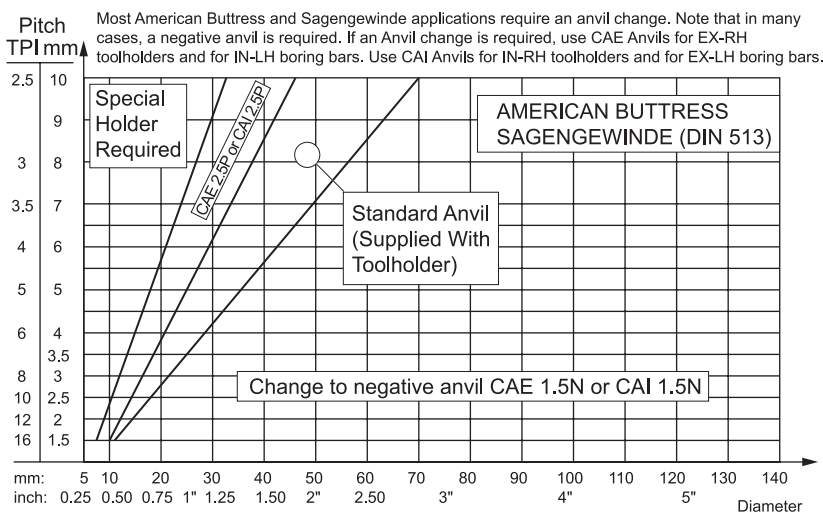
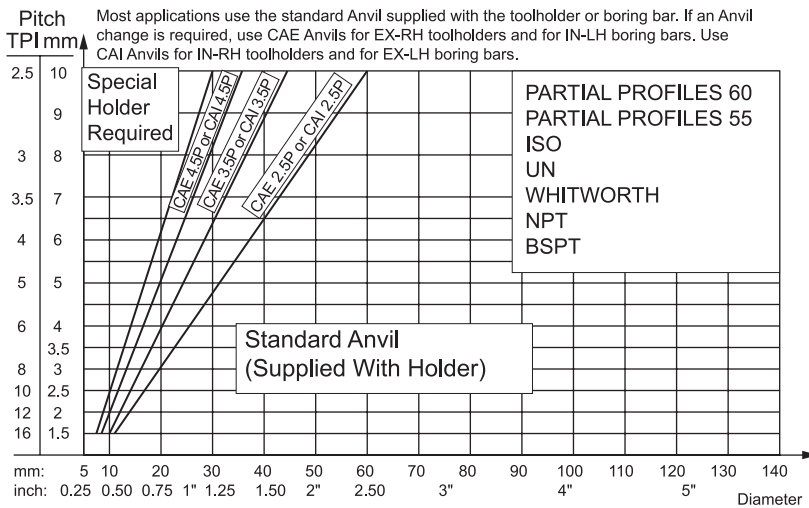
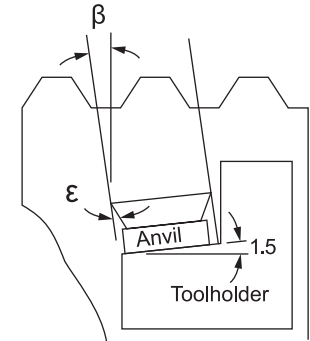
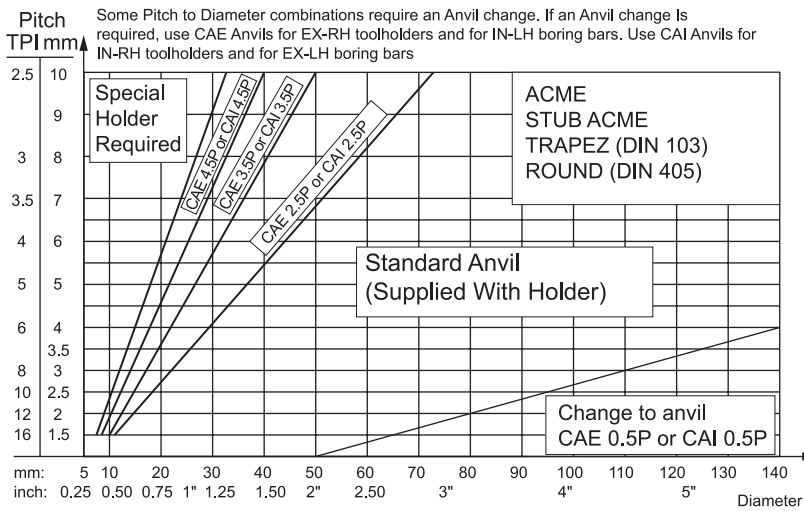


Negative Helix Angles
 Applicable when turning RH thread with LH holder or LH thread with RH holder.

See Page E41 for Standard and Slanted Anvil product listing.

VaTHREAD™ Machining Guidelines

Recommended Anvil Replacements

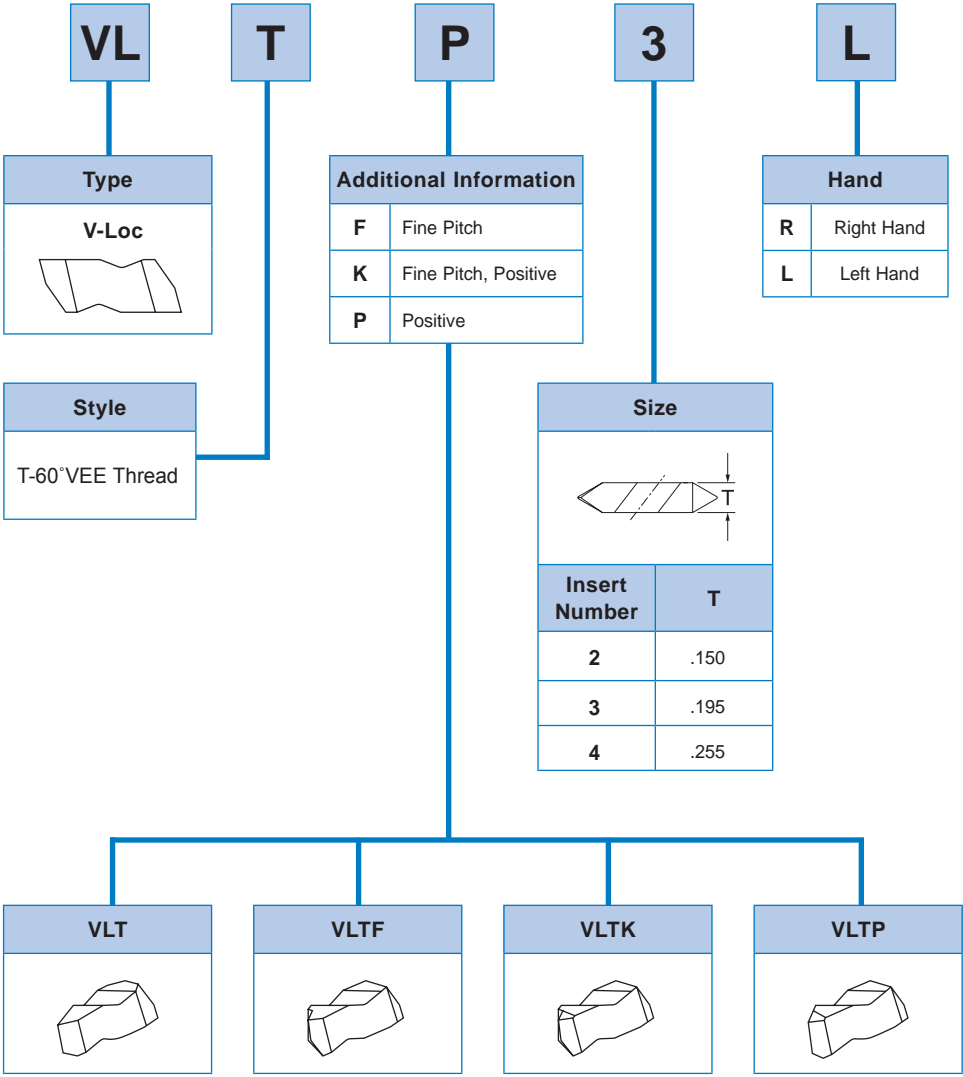


THREADING

ValTHREAD™ Failure Modes

Problem	Control Action/Remedy
Shallow Thread Profile	<ul style="list-style-type: none"> Adjust center height Replace insert
Uneven Flank Wear	<ul style="list-style-type: none"> Decrease number of passes Change infeed angle
Trailing Edge Chipping	<ul style="list-style-type: none"> Select tougher grade Change infeed angle
Leading Edge Chipping	<ul style="list-style-type: none"> Reduce DOC on first pass Select tougher grade
Crest Burr or Torn Finish	<ul style="list-style-type: none"> Use topping insert Change infeed angle
Poor Tool Life	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Apply coolant
Excessive Flank Wear	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Change Infeed Angle

Problem	Control Action/Remedy
Deformation	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Apply coolant Reduce DOC on first pass
Fracture	<ul style="list-style-type: none"> Reduce DOC on first pass Change infeed angle Adjust center height Select tougher grade
Chatter	<ul style="list-style-type: none"> Reduce tool overhang Adjust center height Check insert for movement and reseat Increase speed (SFM)
Built-Up Edge	<ul style="list-style-type: none"> Increase speed (SFM) Decrease number of passes Apply coolant Select positive rake angle Use PVD coated insert



THREADING

V-LOC® Toolholders Designation

VL

Holding Method

V-Loc



S

Insert Location

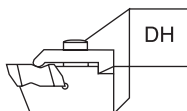


Side Mount Offset



R

Drop Head



Hand of Tool

End Mount



Side Mount



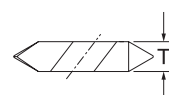
16

Shank Size

For shanks 5/8" square and larger, the number of 1/16" width and height.
For shanks under 5/8" square, the number of 1/16" of cross-section will be preceded by a zero.

3

Insert Size



Insert Number

T

2

.150

3

.195

4

.255

D

Qualified Back and End

A 4.00" LG

B 4.50" LG

C 5.00" LG

D 6.00" LG

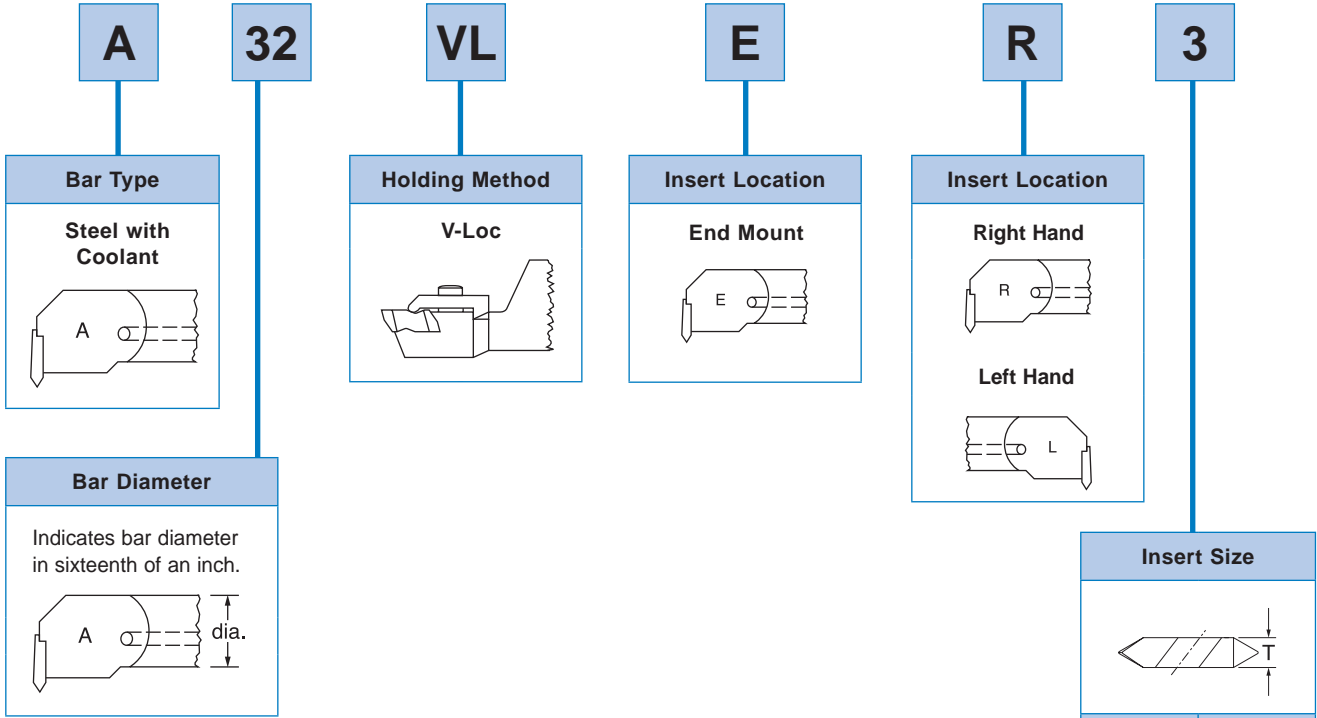
V 3.50" LG

Qualified Back and End



Toolholders are qualified over sharp corner of gage grooving insert.

V-LOC® Boring Bars Designation




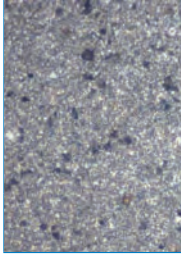


Right-hand bars use left-hand threading/grooving inserts and clamps.
Left-hand bars use right-hand threading/grooving inserts and clamps.

THREADING

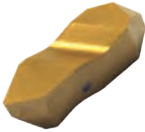
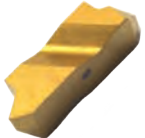
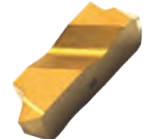
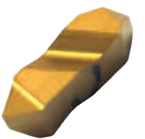
V-LOC® Grade Description

Threading System

Grade	Description	Performance	ISO Class	Application
VP5820 	PVD Coated Carbide TiAlN/TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate	General Machining Grade Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-Up	P20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
			M20	
			K20	
			S20	
			N20	
VP5410 	PVD Coated Carbide TiN Coating Micro Grain Substrate Dense Smooth Coating	Light Duty Grade Excellent Wear Resistance Low Cutting Edge Build-Up Outstanding Edge Integrity	P10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds in Good Machining Conditions.
			M15	
			K15	
			S10	
			N10	
VP5425 	PVD Coated Carbide TiN Coating Micro Grain Substrate Dense Smooth Coating	Medium Duty Grade Excellent Toughness and Chipping Resistance Good Deformation Resistance	P30	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. General Purpose Machining. Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
			M25	
			K30	
			S25	
			N25	
VPUS10 	Uncoated Carbide Micro Grain High Hardness	Finishing Grade Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.
			K10	
			S10	
			N15	

V-LOC® Insert Geometry Application Data

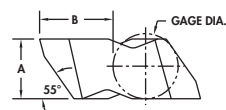
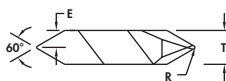
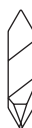
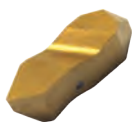
Threading System

Insert Style	Description	Materials	Application
VLT 	Threading Partial profile 60° threading. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	Main application area: General threading operations Light to medium feed rates
VLTF 	Threading Fine pitch partial profile 60° threading. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Capability to thread close to a shoulder.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	Main application area: General threading operations Light to medium feed rates
VLTK 	Threading Fine pitch partial profile 60° threading, with positive rake. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Good for stainless, non-ferrous, and high temp alloys.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	Main application area: General threading operations Light to medium feed rates
VLTP 	Threading Partial profile 60° threading, with positive rake. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Good for stainless, non-ferrous, and high temp alloys.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	Main application area: General threading operations Light to medium feed rates

THREADING

V-LOC® Product Offering

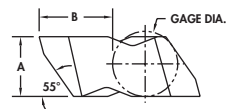
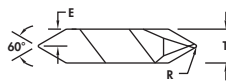
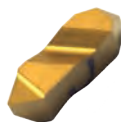
VLT



For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLT 2R		2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23119	24597		24596
	VLT 2L	2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23118	24595		
VLT 3R		3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23121	24602	24753	24601
	VLT 3L	3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23120	24599	24752	24598
VLT 4R		4	4-20	4-12	1.25-6.25	2.00-6.25	0.007	0.17	0.128	3.25	23123	24605		
	VLT 4L	4	4-20	4-12	1.25-6.26	2.00-6.25	0.007	0.17	0.128	3.25	23122	24604		

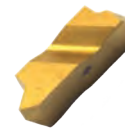
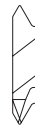
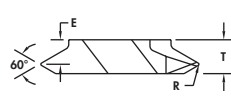
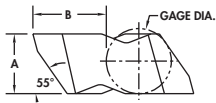
VLTP



For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTP 2R		2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23113	24589		
	VLTP 2L	2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23112	24588		
VLTP 3R		3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23115	24593	24751	24592
	VLTP 3L	3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23114	24590	24750	
VLTP 4R		4	4-20	4-12	1.25-6.25	2.00-6.25	0.007	0.17	0.128	3.25	23117			
	VLTP 4L	4	4-20	4-12	1.25-6.26	2.00-6.25	0.007	0.17	0.128	3.25	23116			

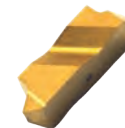
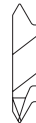
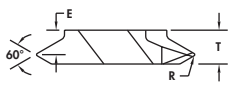
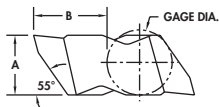
VLTF



For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTF 2R		2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23109	24578		
	VLTF 2L	2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23348	24577		
VLTF 3R		3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23478	24581		24580
	VLTF 3L	3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23477	24579		
VLTF 4R		4	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.201	5.11	23480			
	VLTF 4L	4	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.201	5.11	23479			

VLTK



For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTK 2R		2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23350	24583		
	VLTK 2L	2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23349	24582		
VLTK 3R		3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23111	24586	24749	24585
	VLTK 3L	3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23110	24584		

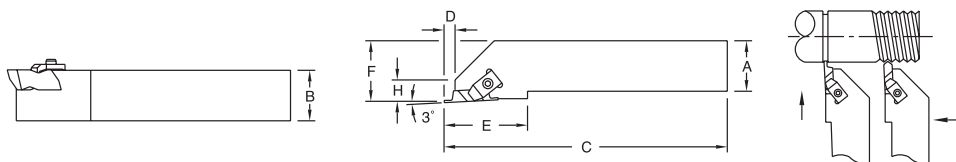
THREADING

V-LOC® Grooving and Threading Toolholders

VLS-R/L—Offset Grooving & Threading 3° Lead

Use Insert Style:

VLTx



Left Hand shown

Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	H	Right Hand	Left Hand
VLSR 06 2		VL-2R	0.375	0.375	2.500	0.138	0.750	0.562	0.350	58681	
	VLSL 06 2	VL-2L									58671
VLSR 08 2V		VL-2R	0.500	0.500	3.500	0.138	0.750	0.750	0.350	58682	
	VLSL 08 2V	VL-2L									58672
VLSR 12 2B		VL-2R	0.750	0.750	4.500	0.138	0.750	1.000	0.350	58683	
	VLSL 12 2B	VL-2L									58673
VLSR 16 2C		VL-2R***	1.000	1.000	5.000	0.138	0.750	1.250	0.350	58685	
	VLSL 16 2C	VL-2L***									58675
VLSR 12 3B		VL-3R	0.750	0.750	4.500	0.210	1.250	1.000	0.500	58684	
	VLSL 12 3B	VL-3L									58674
VLSR 16 3C		VL-3R	1.000	1.000	5.000	0.210	1.250	1.250	0.500	58686	
	VLSL 16 3C	VL-3L									58676
VLSR 16 3D		VL-3R	1.000	1.000	6.000	0.210	1.250	1.250	0.500	58687	
	VLSL 16 3D	VL-3L									58677
VLSR 85 3D		VL-3R	1.000	1.250	6.000	0.210	1.250	1.250	0.500	58689	
	VLSL 85 3D	VL-3L									58679
VLSR 20 3D		VL-3R	1.250	1.250	6.000	0.210	1.250	1.500	0.500	58689	
	VLSL 20 3D	VL-3L									58678
VLSR 16 4D		VL-4R	1.000	1.000	5.000	0.294	1.330	1.250	0.540	58688	
	VLSL 16 4D	VL-4L									61906
VLSR 20 4D		VL-4R	1.250	1.250	6.000	0.294	1.380	1.500	0.540	61908	
	VLSL 20 4D	VL-4L									61907

Insert		Part #/ EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw
Right Hand	Left Hand				Right Hand	Left Hand	
VL-2R	VL-2L	Part#	-	-	VL-74	VL-75	6-32 x 1/2 SHCS
		EDP#			58721	58722	52090
VL-2R***	VL-2L***	Part#	-	-	VL-74	VL-75	10-32 x 3/4 SHCS
		EDP#			58721	58722	51991
VL-3R	VL-3L	Part#	-	-	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#			58719	58720	51991
VL-4R	VL-4L	Part#	SM 420	SL-344	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#	58712	58711	58719	58720	51991

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

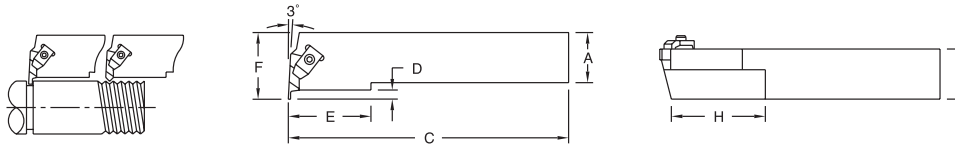
** "F" dimension over sharp point of grooving insert.

***VLSR162C and VLSL162C use the noted clamp and screw spare parts.

V-LOC® Grooving and Threading Toolholders

VLER/L—End Pocket Grooving & Threading 3° Lead

Use Insert Style:
VLTx



Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	H	Right Hand	Left Hand
VLER 08 2V		VL-2L	0.500	0.500	3.500	0.138	0.500	0.750	1.000	58664	
	VLEL 08 2V	VL-2R									58657
VLER 12 2B		VL-2L	0.750	0.750	4.500	0.138	0.500	1.000	1.000	58665	
	VLEL 12 2B	VL-2R									58658
VLER 16 2C		VL-2L	1.000	1.000	5.000	0.138	0.500	1.250	1.000	58667	
	VLEL 16 2C	VL-2R									58660
VLER 12 3B		VL-3L	0.750	0.750	4.500	0.210	0.750	1.125	2.000	58666	
	VLEL 12 3B	VL-3R									58659
VLER 16 3C		VL-3L	1.000	1.000	5.000	0.210	0.750	1.250	2.000	58668	
	VLEL 16 3C	VL-3R									58661
VLER 16 3D		VL-3L	1.000	1.000	6.000	0.210	0.750	1.250	2.000	58669	
	VLEL 16 3D	VL-3R									58662
VLER 16 4D		VL-4L	1.000	1.000	6.000	0.294	0.750	1.375	2.000	61904	
	VLEL 16 4D	VL-4R									61902
VLER 20 3D		VL-3L	1.250	1.250	6.000	0.210	0.750	1.500	2.000	58670	
	VLEL 20 3D	VL-3R									58663
VLER 20 4D		VL-4L	1.250	1.250	6.000	0.294	0.750	1.625	2.000	61905	
	VLEL 20 4D	VL-4R									61903

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

** "F" dimension over sharp point of grooving insert.

Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

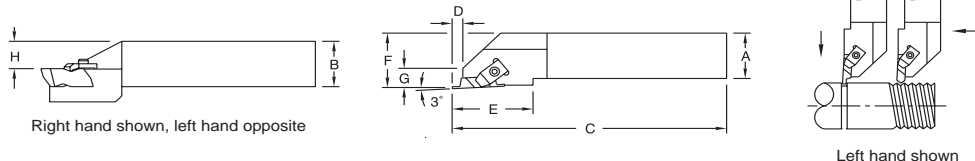
THREADING

V-LOC® Grooving and Threading Toolholders

VLS-DH-R/L—Drop Head Grooving & Threading 3° Lead

Use Insert Style:

VLTx



Part Number		Insert*	Dimensions								EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	G	H	Right Hand	Left Hand
VLSR DH 12 2B	-	VL-2R	0.750	0.750	4.500	0.125	1.200	1.000	0.400	0.750	58691	
VLSR DH 12 3A		VL-3R	0.750	0.750	4.000	0.180	1.500	1.250	0.580	0.750	58692	
VLSR DH 16 2C		VL-2R	1.000	1.000	5.000	0.125	1.200	1.250	0.400	1.000	58693	
VLSR DH 16 3C		VL-3R	1.000	1.000	5.000	0.180	1.500	1.250	0.580	1.000	58694	
VLSR DH 16 3D		VL-3R	1.000	1.000	6.000	0.180	1.530	1.250	0.580	1.250	58695	
VLSR DH 20 3D		VL-3R***	1.250	1.250	6.000	0.180	1.630	1.500	0.620	1.250	58696	
	VLSL DH 20 3D	VL-3L***										58680
VLSR DH 20 4D		VL-4R	1.250	1.250	6.000	0.280	1.630	1.500	0.620	1.250	61909	
VLSR DH 24 4D		VL-4R	1.500	1.500	6.000	0.280	1.630	2.000	1.000	1.500	61910	

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

** "F" dimension over sharp point of grooving insert.

***VLSRDH203D and VLSLDH203D use the noted clamp and screw spare parts.

Insert		Part #/ EDP#	Clamp		Clamp Screw	Set Screw
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	-	Part#	VL-74	-	6-32 x 1/2 SHCS	1/4 x 3/4 OPSS
		EDP#	58721		52090	RFQ*
VL-3R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	-
		EDP#	58719		51991	
VL-3R***	VL-3L***	Part#	VL-72	VL-73	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719	58720	51991	00885
VL-4R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719		51991	00885

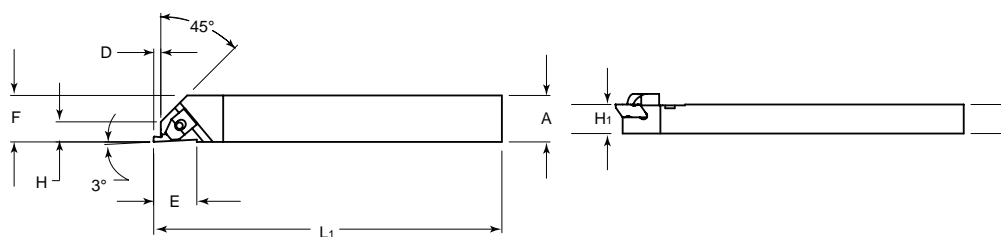
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service.

***VLSRDH203D and VLSLDH203D use the noted clamp and screw spare parts.

V-LOC® Grooving and Threading Toolholders

VLASR/L—Swiss/Screw Machine Grooving & Threading

Use Insert Style:
VLTx



Inch Toolholders

Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F**	H	Radial	Axial	Right Hand	Left Hand
VLASR 06 2D		VL-R	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°	61895	
	VLASL 06 2D	VL-2L	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°		61888
VLASR 08 2D		VL-2R	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°	61896	
	VLASL 08 2D	VL-2L	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°		61889
VLASR 10 3B		VL-3R	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°	61899	
	VLASL 10 3B	VL-3L	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°		61892
VLASR 61.5 2D		VL-3R	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°	61901	
	VLASL 61.5 2D	VL-3L	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°		61894

Metric Toolholders

Part Number		Insert*	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F**	H	Radial	Axial	Right Hand	Left Hand
VLASR 1010M2Q		VL-2R	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°	61897	
	VLASL 1010M2Q	VL-2L	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°		61890
VLASR 1020M2Q		VL-2R	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°	61898	
	VLASL 1020M2Q	VL-2L	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°		61891
VLASR 1212M2Q		VL-2R***	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°	61900	
	VLASL 1212M2Q	VL-2L***	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°		61893

Insert		Part #/ EDP#	Clamp		Clamp Screw	Hex Wrench
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	VL-2L	Part#	VL-182	VL-183	6-32x1/2 SHCS	7/64
		EDP#	59111	59112		
VL-3R	VL-3L	Part#	VL-184	VL-185	10-32x3/4 SHCS	5/32
		EDP#	59113	59114		
VL-2R***	VL-2L***	Part#	VL-182	VL-183	VLS 1025	M25DIN911
		EDP#	59111	59112		

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

** "F" dimension over sharp point of grooving insert.

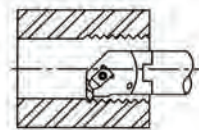
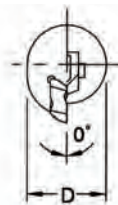
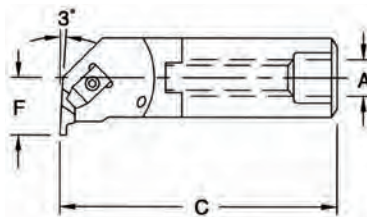
***VLASR1212M2Q and VLASL1212M2Q use the noted clamp and screw spare parts.

THREADING

V-LOC® Grooving & Threading Boring Bars

A-VLER/L—Grooving & Threading with Coolant Hole 3° Lead

Use Insert Style:
VLTx



Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions					EDP#	
Right Hand	Left Hand		D	C	F	Min. Bore	A	Right Hand	Left Hand
A10 VLER 2		VL-2L	0.625	10.000	0.500	1.000	1/8-27NPT	58698	
	A10 VLEL 2	VL-2R							58697
A12 VLER 2		VL-2L	0.750	10.000	0.562	1.125	1/8-27NPT	58700	
	A12 VLEL 2	VL-2R							58699
A16 VLER 2		VL-2L	1.000	12.000	0.688	1.375	1/4-18NPT	58703	
	A16 VLEL 2	VL-2R							58701
A16 VLER 3		VL-3L	1.000	12.000	0.688	1.375	1/4-18NPT	58704	
	A16 VLEL 3	VL-3R							58702
A20 VLER 3		VL-3L	1.250	14.000	0.875	1.750	1/4-18NPT	58706	
	A20 VLEL 3	VL-3R							58705
A24 VLER 3		VL-3L	1.500	14.000	1.000	2.000	1/4-18NPT	58708	
	A24 VLEL 3	VL-3R							58707
A32 VLER 3		VL-3L	2.000	16.000	1.250	2.500	1/4-18NPT	58710	
	A32 VLEL 3	VL-3R							58709
A28 VLER 4		VL-4L	1.750	14.000	1.250	2.500	1/4-18NPT	55306	
	A28 VLEL 4	VL-4R							55305
A32 VLER 4		VL-4L	2.000	16.000	1.375	2.750	1/4-18NPT	55308	
	A32 VLEL 4	VL-4R							55307

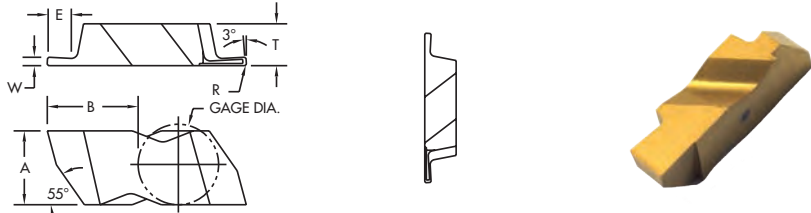
*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

Note:

- Axx VLER Boring Bars use left hand inserts and clamps.
- Axx VLEL Boring Bars use right hand inserts and clamps.

Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

V-LOC® Grooving and Threading Common Insert Dimensions



See Product pages E56-57 for E,R, & W dimensions.

Insert Size	A		T		Gage Dia		B	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2	0.219	5.56	0.15	3.81	0.1875	4.75	0.27	6.86
3	0.344	8.74	0.195	4.95	0.375	9.53	0.405	10.29
4	0.453	11.51	0.255	6.48	0.375	9.53	0.636	16.15



THREADING

V-LOC® Guide to Workpiece Material

ValPRO™ Color System Simplifies Tool Selection Process

Use the ValPRO™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
 Steels	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
 Stainless Steels	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304L 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
 Cast Irons	Gray Cast Iron	ASTM A48, CClass 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades 70003, 820002, 90001, SAE J158, Grades M7002, M8501
 High Temp Alloys	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
 Aluminum And Non-Ferrous Materials	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
 Hardened Materials	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

V-LOC® Application Guide for Threading

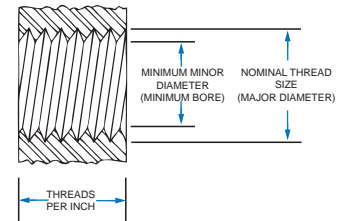
Material Group	Category	Threading Grade and Speed Selection SFM (V m/min)			
		VP5820 m/min	VP5410 m/min	VP5425 m/min	VPUS10 m/min
 Steels	Free Machining and Low Carbon Steels 120 - 170 BHN	300 - 600 (90 - 180)	330 - 650 (100 - 200)	200 - 500 (60 - 150)	-
	Medium Carbon and High Carbon Steels 180 - 220 BHN	275 - 550 (85 - 170)	300 - 600 (90 - 180)	180 - 450 (55 - 135)	-
	Alloy Steels and Easy to Machine Tool Steels 200 - 240 BHN	275 - 450 (85 - 140)	275 - 450 (85 - 140)	150 - 350 (45 - 110)	-
	Tool Steels and Die Steels 220 - 260 BHN	225 - 400 (70 - 120)	225 - 400 (70 - 120)	125 - 225 (40 - 70)	-
 Stainless Steels	Ferritic and Martensitic Stainless Steels 180 - 240 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	150 - 350 (45 - 110)	250 - 350 (80 - 110)
	Austenitic Stainless Steels 140 - 180 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	100 - 300 (30 - 90)	250 - 350 (80 - 110)
	PH and Duplex Stainless Steels 220 - 260 BHN	200 - 400 (60 - 120)	250 - 350 (75 - 110)	85 - 250 (25 - 75)	200 - 300 (60 - 90)
 Cast Iron	Gray Cast Irons 180 - 220 BHN	275 - 500 (85 - 150)	275 - 550 (85 - 170)	250 - 450 (75 - 140)	200 - 350 (60 - 110)
	Gray Cast Irons 220 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	200 - 400 (60 - 120)	180 - 300 (55 - 90)
	Ductile & Malleable Cast Irons 140 - 200 BHN	300 - 550 (90 - 170)	300 - 600 (90 - 180)	150 - 250 (45 - 75)	200 - 350 (60 - 110)
	Ductile & Malleable Cast Irons 200 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	125 - 200 (40 - 60)	180 - 300 (55 - 90)
 High Temp Alloys	Iron & Nickel Based Alloys, Monel, Hastelloy, Inconel, Waspaloy	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	45 - 125 (15 - 40)
	Cobalt Based Alloys, Haynes Stellite	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	45 - 125 (15 - 40)
	Titanium Alloys 6Al-4V	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	30 - 100 (15 - 35)
 Aluminum & Non-Ferrous	Aluminum Alloys <7% Silicon	1200 - 2600 (365 - 800)	1200 - 1800 (365 - 550)	150 - 800 (45 - 245)	400 - 650 (120 - 200)
	Aluminum Alloys 7% - 12% Silicon	1000 - 2400 (305 - 730)	1000 - 1600 (305 - 490)	100 - 650 (35 - 200)	350 - 600 (110 - 180)
	Aluminum Alloys 12% - 18% Silicon	900 - 1500 (275 - 460)	900 - 1400 (275 - 430)	50 - 400 (15 - 120)	200 - 400 (60 - 120)
	Copper Alloys	600 - 1000 (180 - 305)	600 - 1000 (180 - 305)	500 - 900 (150 - 275)	175 - 300 (55 - 90)
 Hardened Materials	Steels 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-
	Steels 50 - 60 Rc	60 - 175 (18 - 55)	50 - 125 (15 - 40)	50 - 100 (15 - 30)	-
	Chilled Irons 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-

THREADING

V-LOC® Machining Guidelines

Internal Threading Limits With Standards

The following charts list the largest pitch that can be applied for VEE threading using insert sizes 2, 3, and 4.



VLT-2

Internal Threading Limitations VEE Threading Inserts.

Threads per Inch	Normal Thread Size	Minimum Minor Diameter
6	1 7/8	1.695
7	1 3/4	1.595
8	1 5/8	1.490
9	1 9/16	1.442
10	1 1/2	1.392
11	1 7/16	1.339
11 1/2	1 3/8	1.281
12	1 3/8	1.285
13	1 5/16	1.229
14	1 1/4	1.173
16	1 1/4	1.182
18	1 1/8	1.065
20	1 1/8	1.071
24*	1 1/16	1.017

* Sixteen threads per inch and finer can be cut providing minor diameter is 1.000" or larger.

VLT-3 & VLT-4

Internal Threading Limitations VEE Threading Inserts.

Threads per Inch	Normal Thread Size	Minimum Minor Diameter
4*	3	2.729
4 1/2*	2 7/8	2.634
5	2 3/4	2.534
6	2 1/2	2.230
7	2 1/4	2.095
8	2	1.865
9	1 15/16	1.817
10	1 7/8	1.767
11	1 13/16	1.714
11 1/2	1 3/4	1.656
12	1 3/4	1.660
13	1 5/8	1.542
14	1 9/16	1.485
16**	1 7/16	1.370

* VLT-4 insert only.

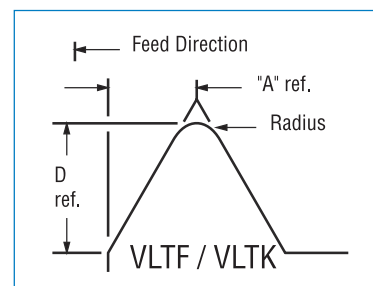
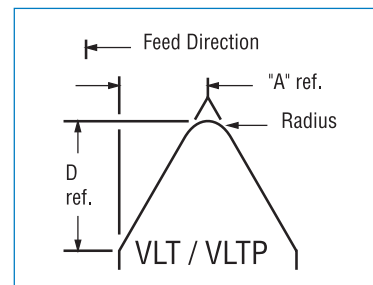
** Sixteen threads per inch and finer can be cut providing minor diameter is 1.000" or larger.

Threading Limits

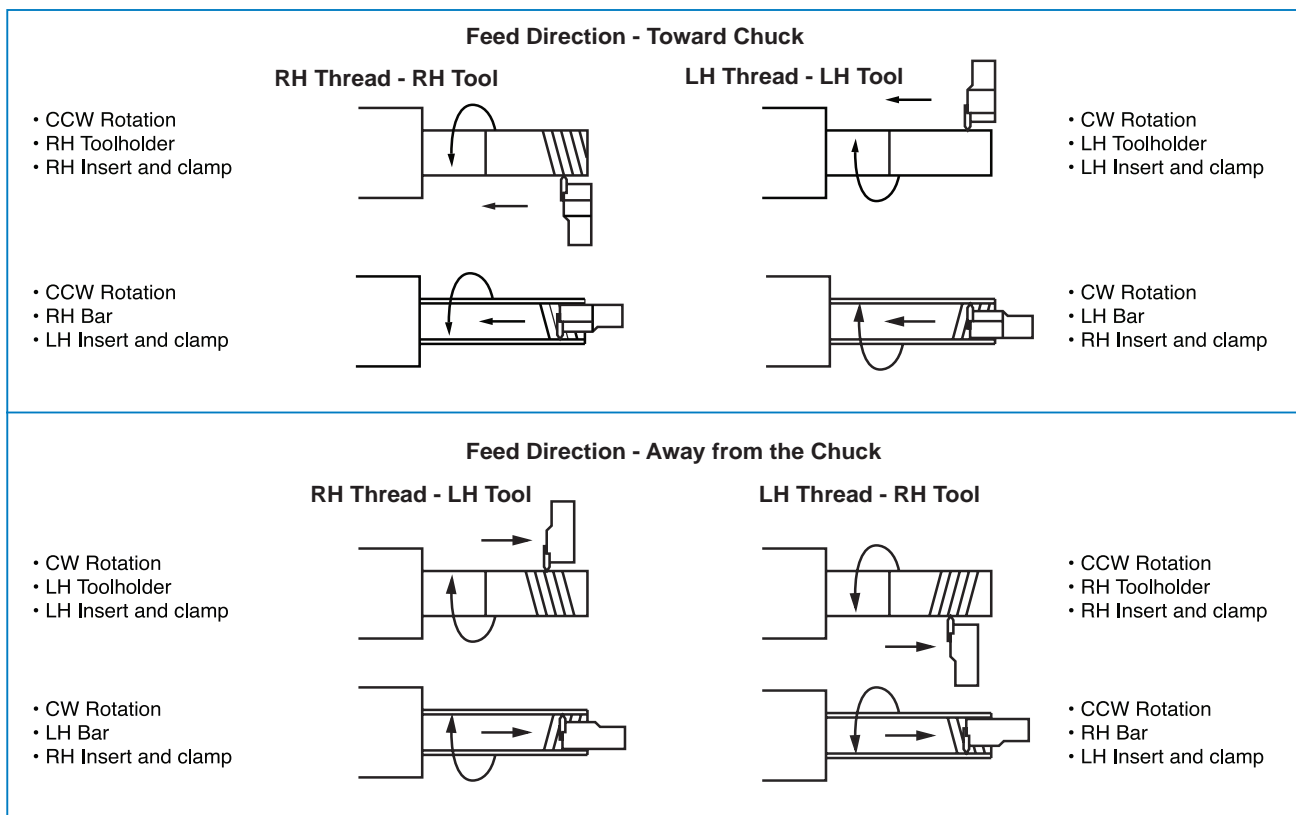
60° VEE Threading Application for Standard Inserts

Insert	Ref. D	Ref. A	Recommended threads per inch (tpi)*	
			External	Internal
VLT-2	.113	.075	36 tpi to 8 tpi	20 tpi to 7 tpi
VLT-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi
VLT-3-C	.148	.097	11 tpi to 6 tpi	6 tpi (only)
VLT-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi
VLT-4-C	.196	.127	11 tpi to 4½ tpi	6 tpi to 4½ tpi
VLTF-2	.062	.040	44 tpi to 14 tpi	24 to 12 tpi
VLTF-3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTF-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTK-2	.062	.090	44 tpi to 14 tpi	24 tpi to 12 tpi
VLTK3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTK-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTP-2	.113	.075	38 tpi to 8 tpi	20 tpi to 7 tpi
VLTP-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi
VLTP-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi

*Recommended threads per inch are based on the maximum insert radius and class 2A and 2B thread specifications.



Alternate Ways Of Turning A Thread



The workpiece can be rotated clockwise or counter-clockwise and the tool can be fed into or away from the chuck. In addition, the tool can also be in the normal position on one side of the workpiece or in the upside-down position on the other side of the workpiece regardless of the rotation direction. The alternate ways of turning a thread depends upon which operation is being performed with respect to machine, workpiece and chip clearance limitations. Choose the method best suited to your conditions as depicted in the above illustrations of right-hand and left-hand threading alternatives.

Thread Orientation	Thread Location	Workpiece Rotation	Feed Direction In Relation To Chuck	Toolholder/Bar*	Insert & Clamp
Right Hand	External	CCW	TOWARDS	RH	RH
		CW	AWAY	LH	LH
	Internal	CCW	TOWARDS	RH	LH
		CW	AWAY	LH	RH
Left Hand	External	CCW	AWAY	RH	RH
		CW	TOWARDS	LH	LH
	Internal	CCW	AWAY	RH	LH
		CW	TOWARDS	LH	RH

* Right-hand bars use left-hand threading and grooving inserts and clamps. Left-hand bars use right-hand threading and grooving inserts and clamps.

THREADING

V-LOC® Failure Modes

Problem	Control Action/Remedy
Shallow Thread Profile	<ul style="list-style-type: none"> Adjust center height Replace insert

Uneven Flank Wear	<ul style="list-style-type: none"> Decrease number of passes Change infeed angle
-------------------	--

Trailing Edge Chipping	<ul style="list-style-type: none"> Select tougher grade Change infeed angle
------------------------	---

Leading Edge Chipping	<ul style="list-style-type: none"> Reduce DOC on first pass Select tougher grade
-----------------------	--

Crest Burr or Torn Finish	<ul style="list-style-type: none"> Use topping insert Change infeed angle
---------------------------	---

Poor Tool Life	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Apply coolant
----------------	--

Excessive Flank Wear	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Change Infeed Angle
----------------------	--

Problem	Control Action/Remedy
Deformation	<ul style="list-style-type: none"> Decrease speed (SFM) Select wear resistant grade Apply coolant Reduce DOC on first pass

Fracture	<ul style="list-style-type: none"> Reduce DOC on first pass Change infeed angle Adjust center height Select tougher grade
----------	---

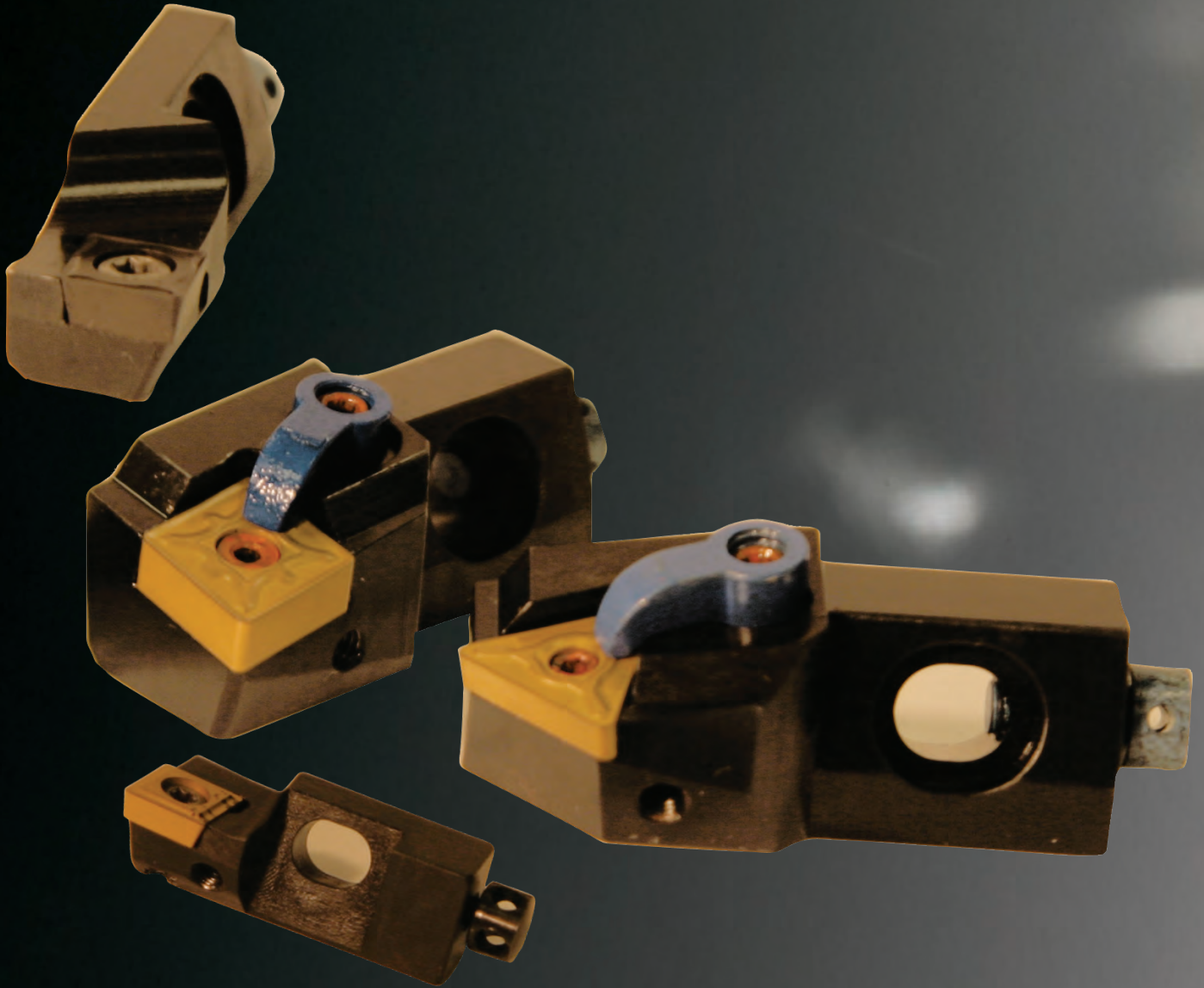
Chatter	<ul style="list-style-type: none"> Reduce tool overhang Adjust center height Check insert for movement and reseat Increase speed (SFM)
---------	--

Built-Up Edge	<ul style="list-style-type: none"> Increase speed (SFM) Decrease number of passes Apply coolant Select positive rake angle Use PVD coated insert
---------------	---



At Valenite

WE NEVER STOP...



Supporting

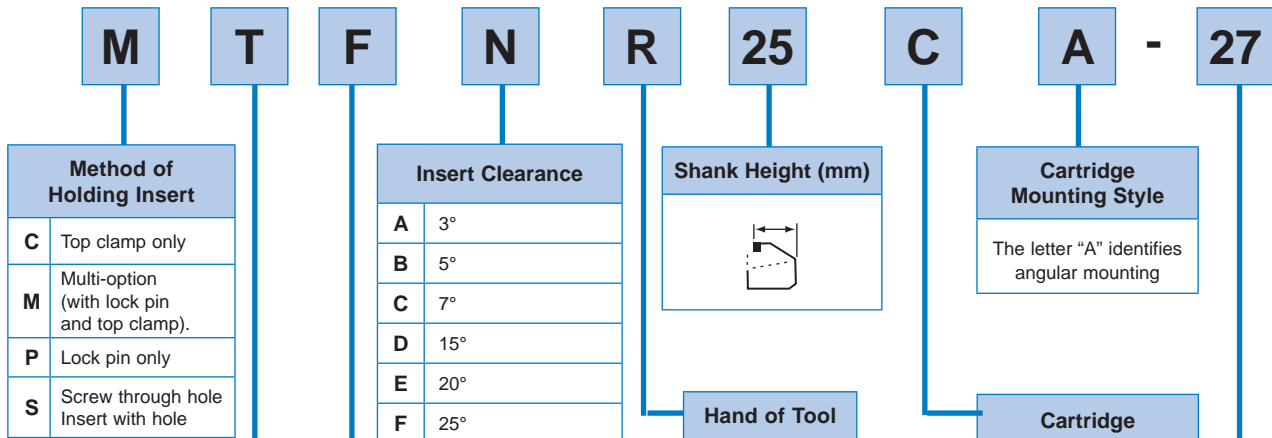
We can increase your productivity by 20%. Make us prove it!

Cartridge Designation - Inch,Metric.....	F2
Common Dimensions - International Standard Cartridges	F3
Common Hardware - Negative Rake	F4 - F27
ISO Screw Down	
Positive Rake.....	F28 - F37
High Shear Positive Rake	F38 - F41
Mini Positive - Rake	F42 - F48
Super Mini - Positive Rake.....	F49 - F51
Top Clamp	
Square/Triangle Insert Neutral, Positive Rake	F52 - F70
High Shear Positive Rake	F71 - F80
AE Top Clamp	F81 - F90
H-AE Economy	F91 - F94
Mounting Information	F95 - F99

CARTRIDGES

Designation

Inch/Metric



Method of Holding Insert	
C	Top clamp only
M	Multi-option (with lock pin and top clamp).
P	Lock pin only
S	Screw through hole Insert with hole

Insert Shape		
	C	80° Diamond
	D	55° Diamond
	R	Round
	S	Square
	T	Triangle

Insert Clearance	
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Detailed specification of cutting edge geometry by description required.

Shank Height (mm)

Hand of Tool	
R	Right
L	Left

Cartridge Mounting Style
The letter "A" identifies angular mounting

Cartridge
The letter "C" indicates cartridge

Cartridge Style	
F	90° End cutting angle
G	90° Side cutting angle
J	93° Side cutting angle
K	75° End cutting angle
L	95° Side and end cutting angles
R	75° Side cutting angle
S	45° Side cutting angle
T	60° Side cutting angle
U	93° End cutting angle
W	60° End cutting angle
Y	85° End cutting angle

Cutting Edge Length (mm)			
Cutting Edge Length "L" in mm			I.C. Ref.
11	06	06	1/4
13	07	-	5/16
16	09	09	3/8
22	12	12	1/2
27	15	16	5/8
33	19	19	3/4

Inscribed Circle of Insert (Inch)			
I.C.	I.C.	I.C.	I.C.
Inscribed Circle		I.C. Ref.	
1/4"			2
5/16"			2.5
3/8"			3
1/2"			4
5/8"			5
3/4"			6

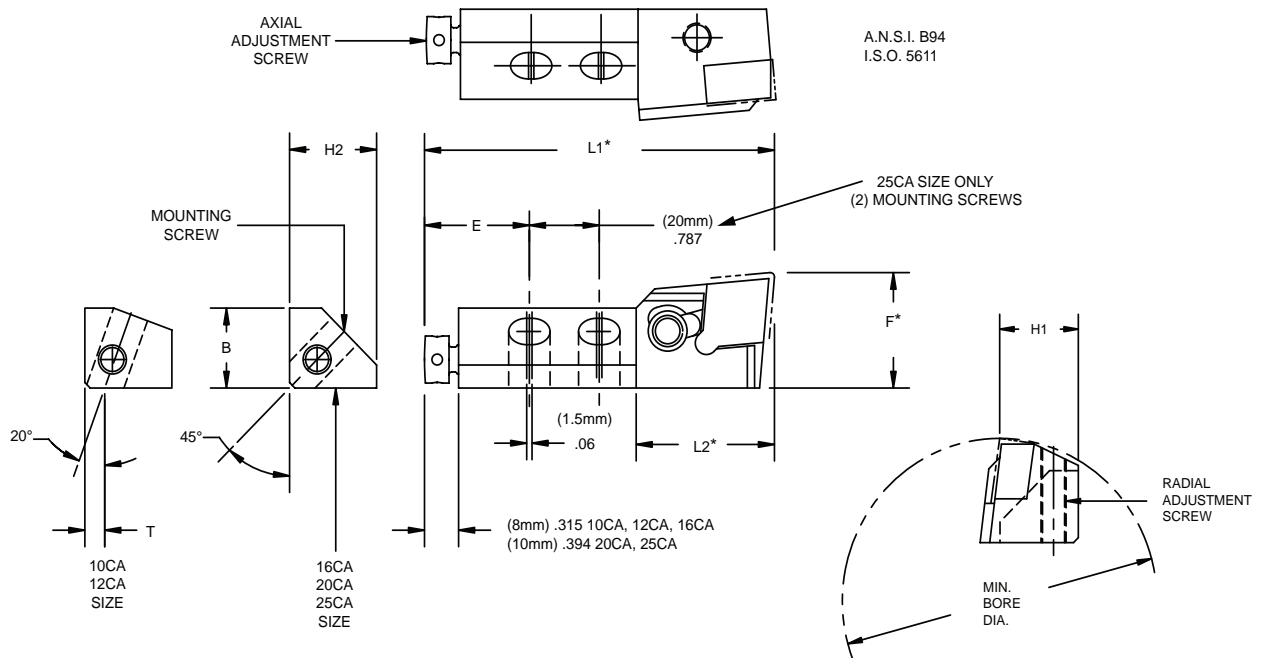
Master Gage Insert Nose Radius Chart	
Insert I.C.	Insert Radius
1/4	.015
5/16	
3/8	
1/2	.031
5/8	
3/4	
	.046

Orders specifying insert size with inch designation will be shipped with inch socket screws for use with inch Hex Wrenches.

NOTE: Valenite Common Hardware Cartridges are manufactured for use with metric components. Orders specifying insert size with metric designation will be shipped with metric socket screws for use with metric Hex Wrenches.

Common Dimensions

International Standard Cartridges



Right-hand shown, left-hand opposite.

Cartridge Size	Min. Bore Diameter	H1	E	H2	B	T	Mounting Screw (not supplied)	Number Required
10CA	1.575 (40mm)	.394 (10mm)	.787 (20mm)	.540 (13,7mm)	.394 (10mm)	.197 (5mm)	1/4-20 x 3/4 LHSCS, M6 x 20 DIN 66912	1
12CA	1.968 (50mm)	.472 (12mm)	.787 (20mm)	.630 (16mm)	.500 (12,7mm)	.236 (6mm)	1/4-20 x 3/4 SHCS, M6 x 20 DIN 912 (ISO-R861)	1
16CA	2.362 (60mm)	.630 (16mm)	.984 (25mm)	.670 (17mm)	.630 (16mm)	-	5/16-24 x 11/4 SHCS, M8 x 30 DIN 912 (ISO-R861)	1
20CA	2.756 (70mm)	.787 (20mm)	1.181 (30mm)	.790 (20mm)	.630 (16mm)	-	5/16-24 x 11/4 SHCS, M8 x 30 DIN 912 (ISO-R861)	1
25CA	3.937 (100mm)	.984 (25mm)	1.181 (30mm)	.980 (25mm)	.870 (22mm)	-	3/8-24 x 11/4 SHCS, M10 x 35 DIN 912 (ISO-R861)	2

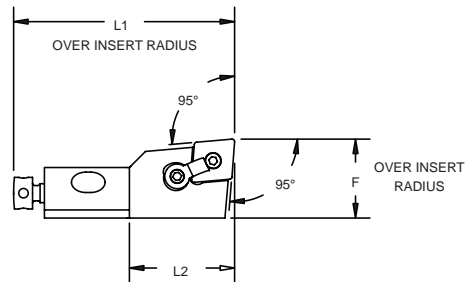
*Applies to specific cartridges, see appropriate page for correct dimensions.

CARTRIDGES

Common Hardware

MCLNR/L 80° Diamond Insert/Negative Rake

Use Insert Style CNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MCLNR/L 12CA-4	432	1.968	0.787	2.165	1.020	-9°	-5°	54430	54422
MCLNR/L 16CA-4	432	2.362	0.984	2.480	1.180	-9°	-5°	54432	54424
MCLNR/L 20CA-4	432	2.756	0.984	2.756	1.300	-8°	-5°	54434	54426
MCLNR/L 25CA-6	643	3.937	1.260	3.937	1.550	-8°	-5°	54436	54428
Metric Standard									
MCLNR/L 12CA-12	120408	50	20	55	25,9	-9°	-5°	54429	54421
MCLNR/L 16CA-12	120408	60	25	63	30	-9°	-5°	54431	54423
MCLNR/L 20CA-12	120408	70	25	70	33	-8°	-5°	54433	54425
MCLNR/L 25CA-19	190612	100	32	100	39,4	-8°	-5°	54435	54427

Cartridges do not include chipbreakers, mounting screws or inserts.

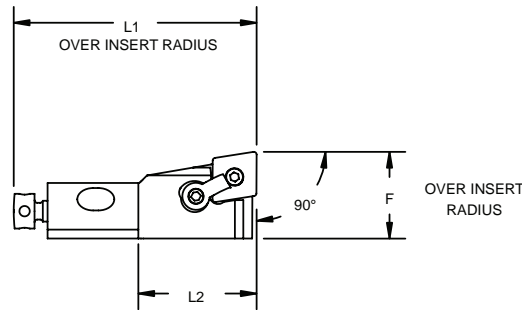
Spare Parts



Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
								EDP#	Shim Screw
Inch Standard									
MCLNR/L 12CA-4	Part #	-	NLC-43	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-40-08
	EDP#	-	52966	59057	53063	53026	52835	-	08930
MCLNR/L 16CA-4	Part #	CSN-433	NLC-46S	CLM-27	XNSC-0515	SASC-0516	EASM-0610F	S-46CS	CBR-40-08
	EDP#	09143	52968	59060	53063	53027	52836	52349	08930
MCLNR/L 20CA-4	Part #	CSN-433	NLC-46	CLM-6	XNSC-0515	SASC-0516	EASM-0610F	S-46C	CBR-40-08
	EDP#	09143	52967	59063	53063	53027	52836	52348	08930
MCLNR/L 25CA-6	Part #	CSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-41-15
	EDP#	09150	52971	59056	53065	53029	52837	00841	08933
Metric Standard									
MCLNR/L 12CA-12	Part #	-	NLM-43	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-40-08
	EDP#	-	52977	59057	53067	53031	52835	-	08930
MCLNR/L 16CA-12	Part #	CSN-433	NLM-46S	CLM-27	XNSM-0515	SASM-0516	EASM-0610F	S-46MS	CBR-40-08
	EDP#	09143	52979	59060	53067	53032	52835	00836	08930
MCLNR/L 20CA-12	Part #	CSN-433	NLM-46	CLM-6	XNSM-0515	SASM-0516	EASM-0610F	S-46M	CBR-40-08
	EDP#	09143	52978	59063	53067	53032	52836	00979	08930
MCLNR/L 25CA-19	Part #	CSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-41-15
	EDP#	09150	52982	59056	53070	53034	52837	00843	08933

MCFNR/L 80° Diamond Insert/Negative Rake

Use Insert Style CNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MCFNR/L 12CA-4	432	1.968	0.787	2.165	1.020	-9°	-5°	54418	54412
MCFNR/L 16CA-4	432	2.362	0.984	2.480	1.180	-9°	-5°	53865	54414
MCFNR/L 20CA-4	432	2.756	0.984	2.756	1.130	-8°	-5°	53867	54416
MCFNR/L 25CA-6	643	3.937	1.260	3.937	1.550	-8°	-5°	54420	53863
Metric Standard									
MCFNR/L 12CA-12	12408	50	20	55	25,9	-9°	-5°	54417	54411
MCFNR/L 16CA-12	12408	60	25	63	30	-9°	-5°	53864	54413
MCFNR/L 20CA-12	12408	70	25	70	33	-8°	-5°	53866	54415
MCFNR/L 25CA-19	190612	100	32	100	39,4	-8°	-5°	54419	53862

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts		
								Shim Seat	Chipbreaker	
	EDP#							Right Hand	Left Hand	
Inch Standard										
MCFNR/L 12CA-4	Part #	-	NLC-43	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-45-08	CBL-45-08
	EDP#	-	52966	59057	53063	53026	52835	-	08936	08888
MCFNR/L 16CA-4	Part #	CSN-433	NLC-46S	CLM-27	XNSC-0515	SASC-0516	EASM-0610F	S-46CS	CBR-45-08	CBL-45-08
	EDP#	09143	52968	59060	53063	53027	52836	52349	08936	08888
MCFNR/L 20CA-4	Part #	CSN-433	NLC-46	CLM-6	XNSC-0515	SASC-0516	EASM-0610F	S-46C	CBR-45-08	CBL-45-08
	EDP#	09143	52967	59063	53063	53027	52836	52348	08936	08888
MCFNR/L 25CA-6	Part #	CSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-46-15	CBL-46-15
	EDP#	09150	52971	59056	53065	53029	52837	00841	RFQ*	RFQ*
Metric Standard										
MCFNR/L 12CA-12	Part #	-	NLM-43	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-45-08	CBL-45-08
	EDP#	-	52977	59057	53067	53031	52835	-	08936	08888
MCFNR/L 16CA-12	Part #	CSN-433	NLM-46S	CLM-27	XNSM-0515	SASM-0516	EASM-0610F	S-46MS	CBR-45-08	CBL-45-08
	EDP#	09143	52979	59060	53067	53032	52836	00836	08936	08888
MCFNR/L 20CA-12	Part #	CSN-433	NLM-46	CLM-6	XNSM-0515	SASM-0516	EASM-0610F	S-46M	CBR-45-08	CBL-45-08
	EDP#	09143	52978	59063	53067	53032	52836	00979	08936	08888
MCFNR/L 25CA-19	Part #	CSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-46-15	CBL-46-15
	EDP#	09150	52982	59056	53070	53034	52837	00843	RFQ*	RFQ*

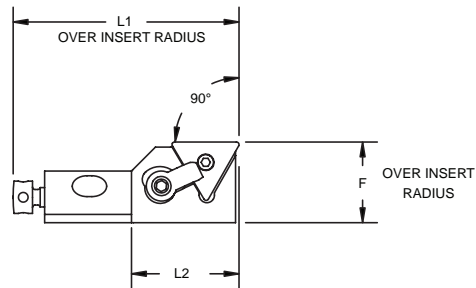
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Common Hardware

MTGNR/L Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MTGNR 10CA-2	221	1.575	0.551	1.968	0.900	-8°	-5°	54523	-
MTGNR 10CA-2.5	2.521	1.575	0.551	1.968	0.900	-8°	-5°	54524	-
MTGNR/L 12CA-3	322	1.968	0.787	2.165	1.060	-9°	-5°	54526	53897
MTGNR/L 16CA-3	322	2.362	0.984	2.480	1.180	-9°	-5°	54528	53899
MTGNR/L 20CA-4	432	2.756	0.984	2.756	1.300	-8°	-5°	54530	54520
MTGNR 25CA-5	543	3.937	1.260	3.937	1.550	-7°	-5°	62245	-
Metric Standard									
MTGNR 10CA-11	110304	40	14	50	23	-8°	-5°	54521	-
MTGNR 10CA-13	130304	40	14	50	23	-8°	-5°	54522	-
MTGNR/L 12CA-16	160308	50	20	55	26,9	-9°	-5°	54525	53896
MTGNR/L 16CA-16	160308	60	25	63	30	-9°	-5°	54527	53898
MTGNR/L 20CA-22	220408	70	25	70	33	-8°	-5°	54529	53900
MTGNR 25CA-27	270612	100	32	100	39,4	-7°	-5°	62244	-

Cartridges do not include chipbreakers, mounting screws or inserts.

MTGNR/L Triangle Insert/Negative Rake

Spare Parts



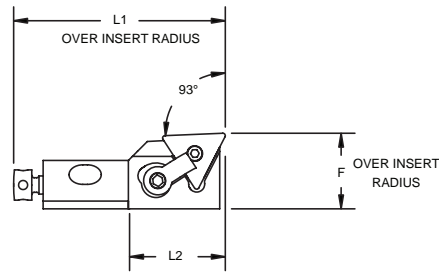
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTGNR 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52962	59062	53063	53025	52835	-	08920
MTGNR 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52963	59062	53063	53025	52835	-	08912
MTGNR/L 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52964	59057	53063	53026	52835	-	08914
MTGNR/L 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-12
	EDP#	09172	52965	59057	53063	53027	52836	52347	08914
MTGNR/L 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-15
	EDP#	09173	52967	59058	53064	53027	52836	52348	08916
MTGNR 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-58C	CBR-33-15
	EDP#	09374	52970	59056	53065	53029	52837	52352	08918
Metric Standard									
MTGNR 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52972	59062	53067	53030	52835	-	08920
MTGNR 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52973	59062	53067	53030	52835	-	08912
MTGNR/L 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52974	59057	53067	53031	52835	-	08914
MTGNR/L 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-12
	EDP#	09172	52976	59057	53067	53032	52836	00979	08914
MTGNR/L 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM0610F	S-46M	CBR-32-15
	EDP#	09173	52978	59058	53069	53032	52836	00834	08916
MTGNR 25CA-27	Part #	TSN-534	NLM-58	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-58M	CBR-33-15
	EDP#	09374	52981	59056	53070	53034	52837	52353	08918

CARTRIDGES

Common Hardware

MTJNR/L Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MTJNR 10CA-2	221	1.575	0.551	1.968	0.900	-8°	-5°	54531	-
MTJNR 10CA-2.5	2.521	1.575	0.551	1.968	0.900	-8°	-5°	54532	-
MTJNR/L 12CA-3	322	1.968	0.787	2.165	1.020	-9°	-5°	54534	53904
MTJNR/L 16CA-3	322	2.362	0.984	2.480	1.180	-9°	-5°	54536	53906
MTJNR/L 20CA-4	432	2.756	0.984	2.756	1.260	-7°	-5°	62250	62248
MTJNR 25CA-5	543	3.937	1.260	3.937	1.550	-7°	-5°	54537	-
Metric Standard									
MTJNR 10CA-11	110304	40	14	50	23	-8°	-5°	53909	-
MTJNR 10CA-13	130304	40	14	50	23	-8°	-5°	62249	-
MTJNR/L 12CA-16	160308	50	20	55	25,9	-9°	-5°	54533	62246
MTJNR/L 16CA-16	160308	60	25	63	30	-9°	-5°	54535	62247
MTJNR/L 20CA-22	220408	70	25	70	32	-7°	-5°	53911	53907
MTJNR 25CA-27	270612	100	32	100	39,4	-7°	-5°	53913	-

Cartridges do not include chipbreakers, mounting screws or inserts.

MTJNR/L Triangle Insert/Negative Rake

Spare Parts



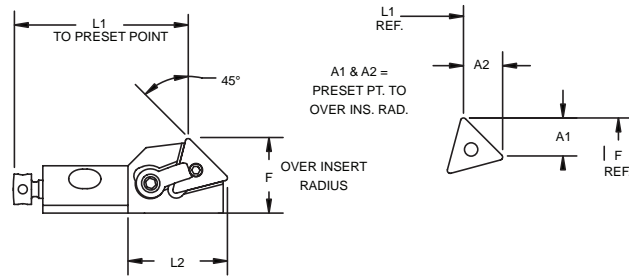
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTJNR 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52962	59062	53063	53025	52835	-	08920
MTJNR 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52963	59062	53063	53025	52835	-	08912
MTJNR/L 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52964	59057	53063	53026	52835	-	08914
MTJNR/L 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-12
	EDP#	09172	52965	59057	53063	53027	52836	52347	08914
MTJNR/L 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-15
	EDP#	09173	52967	59058	53064	53027	52836	52348	08916
MTJNR 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0620	EASM-0816F	S-58C	CBR-33-15
	EDP#	09374	52970	59056	53065	53028	52837	52352	08918
Metric Standard									
MTJNR 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52972	59062	53067	53030	52835	-	08920
MTJNR 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52973	59062	53067	53030	52835	-	08912
MTJNR/L 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52974	59057	53067	53031	52835	-	08914
MTJNR/L 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-12
	EDP#	09172	52976	59057	53067	53032	52836	00979	08914
MTJNR/L 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM-0610F	S-46M	CBR-32-15
	EDP#	09173	52978	59058	53069	53032	52836	00834	08916
MTJNR 25CA-27	Part #	TSN-534	NLM-58	CLM-12	XNSM-0825	SASM-0620	EASM-0816F	S-58M	CBR-33-15
	EDP#	09374	52981	59056	53070	53033	52837	52353	08918

CARTRIDGES

Common Hardware

MTSNR Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
Inch Standard										
MTSNR 10CA-2	221	1.575	0.551	1.732	0.940	0.227	0.227	-8°	-8°	54539
MTSNR 10CA-2.5	2.521	1.575	0.551	1.732	1.020	0.353	0.353	-8°	-8°	54540
MTSNR 12CA-3	322	1.968	0.787	1.850	1.040	0.401	0.401	-9°	-9°	54542
MTSNR 16CA-3	322	2.362	0.984	2.087	1.180	0.401	0.401	-9°	-9°	62251
MTSNR 20CA-4	432	2.756	0.984	2.362	1.430	0.554	0.554	-8°	-8°	54544
MTSNR 25CA-5	543	3.937	1.260	3.425	1.720	0.678	0.678	-7°	-7°	62252
Metric Standard										
MTSNR 10CA-11	110304	40	14	44	24	5, 8	5, 8	-8°	-8°	53914
MTSNR 10CA-13	130304	40	14	44	25,9	9	9	-8°	-8°	54538
MTSNR 12CA-16	160308	50	20	47	26,5	10,2	10,2	-9°	-9°	54541
MTSNR 16CA-16	160308	60	25	53	30	10,2	10,2	-9°	-9°	53915
MTSNR 20CA-22	220408	70	25	60	36,3	14,1	14,1	-8°	-8°	54543
MTSNR 25CA-27	270612	100	32	87	43,7	17,2	17,2	-7°	-7°	53917

Cartridges do not include chipbreakers, mounting screws or inserts.

MTSNR Triangle Insert/Negative Rake

Spare Parts



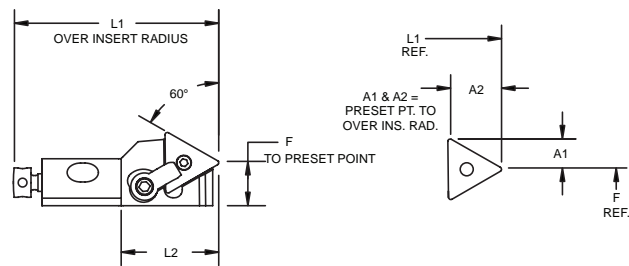
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTSNR 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-05
	EDP#	-	52962	59062	53063	53025	52835	-	08919
MTSNR 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-05
	EDP#	-	52963	59062	53063	53025	52835	-	08911
MTSNR 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-08
	EDP#	-	52964	59057	53063	53026	52835	-	08913
MTSNR 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-08
	EDP#	09172	52965	59057	53063	53027	52836	52347	08913
MTSNR 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-08
	EDP#	09173	52967	59058	53064	53027	52836	52348	08915
MTSNR 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-58C	CBR-33-08
	EDP#	09374	52970	59056	53065	53029	52837	52352	08917
Metric Standard									
MTSNR 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-05
	EDP#	-	52972	59062	53067	53030	52835	-	08919
MTSNR 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-05
	EDP#	-	52973	59062	53067	53030	52835	-	08911
MTSNR 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-08
	EDP#	-	52974	59057	53067	53031	52835	-	08913
MTSNR 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-08
	EDP#	09172	52976	59057	53067	53032	52836	00979	08913
MTSNR 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM0610F	S-46M	CBR-32-08
	EDP#	09173	52978	59058	53069	53032	52836	00834	08915
MTSNR 25CA-27	Part #	TSN-534	NLM-58	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-58M	CBR-33-08
	EDP#	09374	52981	59056	53070	53034	52837	52353	08917

CARTRIDGES

Common Hardware

MTTNR Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
Inch Standard										
MTTNR 10CA-2	221	1.575	0.408	1.874	0.810	0.196	0.339	-8°	-4.5°	54547
MTTNR 10CA-2.5	2.521	1.575	0.354	1.968	0.900	0.250	0.433	-8°	-4.5°	54548
MTTNR 12CA-3	322	1.968	0.512	2.165	1.110	0.284	0.492	-9°	-5°	54550
MTTNR 16CA-3	322	2.362	0.591	2.480	1.180	0.284	0.492	-9°	-5°	54552
MTTNR 20CA-4	432	2.756	0.591	2.756	1.220	0.392	0.679	-8°	-4.5°	53920
MTTNR 25CA-5	543	3.937	0.787	3.937	1.550	0.480	0.831	-7°	-4.5°	53922
Metric Standard										
MTTNR 10CA-11	110304	40	10,3	47,6	20,5	5	8,6	-8°	-4.5°	54545
MTTNR 10CA-13	130304	40	9	50	23	6,4	11	-8°	-4.5°	54546
MTTNR 12CA-16	160308	50	13	55	28,2	7,2	12,5	-9°	-5°	54549
MTTNR 16CA-16	160308	60	15	63	30	7,2	12,5	-9°	-5°	54551
MTTNR 20CA-22	220408	70	15	70	31	10	17,2	-8°	-4.5°	53919
MTTNR 25CA-27	270612	100	20	100	39,4	12,2	21,1	-7°	-4.5°	53921

Cartridges do not include chipbreakers, mounting screws or inserts.

MTTNR Triangle Insert/Negative Rake

Spare Parts



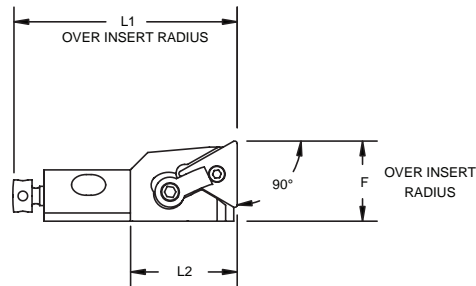
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTTNR 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-05
	EDP#	-	52962	59062	53063	53025	52835	-	08919
MTTNR 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-05
	EDP#	-	52963	59062	53063	53025	52835	-	08911
MTTNR 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-08
	EDP#	-	52964	59057	53063	53026	52835	-	08913
MTTNR 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-08
	EDP#	09172	52965	59057	53063	53027	52836	52347	08913
MTTNR 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-08
	EDP#	09173	52967	59058	53064	53027	52836	52348	08915
MTTNR 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-58C	CBR-33-08
	EDP#	09374	52970	59056	53065	53029	52837	52352	08917
Metric Standard									
MTTNR 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-05
	EDP#	-	52972	59062	53067	53030	52835	-	08919
MTTNR 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-05
	EDP#	-	52973	59062	53067	53030	52835	-	08911
MTTNR 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-08
	EDP#	-	52974	59057	53067	53031	52835	-	08913
MTTNR 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-08
	EDP#	09172	52976	59057	53067	53032	52836	00979	08913
MTTNR 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM0610F	S-46M	CBR-32-08
	EDP#	09173	52978	59058	53069	53032	52836	00834	08915
MTTNR 25CA-27	Part #	TSN-534	NLM-58	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-58M	CBR-33-08
	EDP#	09374	52981	59056	53070	53034	52837	52353	08917

CARTRIDGES

Common Hardware

MTFNR/L Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MTFNR/L 10CA-2	221	1.575	0.551	1.968	0.890	-8°	-5°	54510	54500
MTFNR/L 10CA-2.5	2.521	1.575	0.551	1.968	0.890	-8°	-5°	54511	53893
MTFNR/L 12CA-3	322	1.968	0.787	2.165	1.040	-9°	-5°	54513	54502
MTFNR/L 16CA-3	322	2.362	0.984	2.480	1.180	-9°	-5°	54515	54504
MTFNR/L 20CA-4	432	2.756	0.984	2.756	1.180	-7°	-5°	54517	54506
MTFNR/L 25CA-5	543	3.937	1.260	3.937	1.500	-7°	-5°	54519	54508
Metric Standard									
MTFNR/L 10CA-11	110304	40	14	50	22,5	-8°	-5°	53894	54499
MTFNR/L 10CA-13	130304	40	14	50	22,5	-8°	-5°	54509	53892
MTFNR/L 12CA-16	160308	50	20	55	26,5	-9°	-5°	54512	54501
MTFNR/L 16CA-16	160308	60	25	63	30	-9°	-5°	54514	54503
MTFNR/L 20CA-22	220408	70	25	70	30	-7°	-5°	54516	54505
MTFNR/L 25CA-27	270612	100	32	100	38	-7°	-5°	54518	54507

Cartridges do not include chipbreakers, mounting screws or inserts.

MTFNR/L Triangle Insert/Negative Rake

Spare Parts



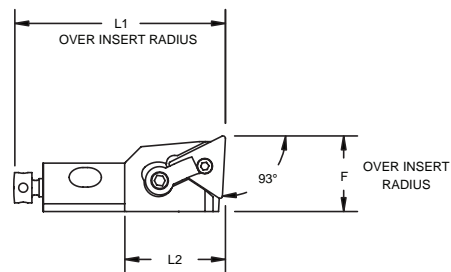
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTFNR/L 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52962	59062	53063	53025	52835	-	08920
MTFNR/L 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52963	59062	53063	53025	52835	-	08912
MTFNR/L 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52964	59057	53063	53026	52835	-	08914
MTFNR/L 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-12
	EDP#	09172	52965	59057	53063	53027	52836	52347	08914
MTFNR/L 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-15
	EDP#	09173	52967	59058	53064	53027	52836	52348	08916
MTFNR/L 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-58C	CBR-33-15
	EDP#	09374	52970	59056	53065	53029	52837	52352	08918
Metric Standard									
MTFNR/L 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52972	59062	53067	53030	52835	-	08920
MTFNR/L 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52973	59062	53067	53030	52835	-	08912
MTFNR/L 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52974	59057	53067	53031	52835	-	08914
MTFNR/L 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-12
	EDP#	09172	52976	59057	53067	53032	52836	00979	08914
MTFNR/L 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM0610F	S-46M	CBR-32-15
	EDP#	09173	52978	59058	53069	53032	52836	00834	08916
MTFNR/L 25CA-27	Part #	TSN-534	NLM-58	CLM-30	XNSM-0825	SASM-0820	EASM-0816F	S-58M	CBR-33-15
	EDP#	09374	52981	59056	53070	53034	52837	52353	08918

CARTRIDGES

Common Hardware

MTUNR/L Triangle Insert/Negative Rake

Use Insert Style TNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
MTUNR/L 10CA-2	221	1.575	0.551	1.968	0.890	-8°	-5°	54560	54554
MTUNR/L 10CA-2.5	2.521	1.575	0.551	1.968	0.890	-8°	-5°	54561	54555
MTUNR/L 12CA-3	322	1.968	0.787	2.165	1.040	-9°	-5°	54563	53925
MTUNR/L 16CA-3	322	2.362	0.984	2.480	1.180	-9°	-5°	62255	62254
MTUNR/L 20CA-4	432	2.756	0.984	2.756	1.180	-7°	-5°	53933	54557
MTUNR/L 25CA-5	543	3.937	1.260	3.937	1.500	-7°	-5°	53934	54558
Metric Standard									
MTUNR/L 10CA-11	110304	40	14	50	22,5	-8°	-5°	53929	62253
MTUNR/L 10CA-13	130304	40	14	50	22,5	-8°	-5°	54559	54553
MTUNR/L 12CA-16	160308	50	20	55	26,5	-9°	-5°	54562	53924
MTUNR/L 16CA-16	160308	60	25	63	30	-9°	-5°	53930	53926
MTUNR/L 20CA-22	220408	70	25	70	30	-7°	-5°	53932	54556
MTUNR/L 25CA-27	270612	100	32	100	38	-7°	-5°	54564	53928

Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

Common Hardware

MTUNR/L Triangle Insert/Negative Rake

Spare Parts



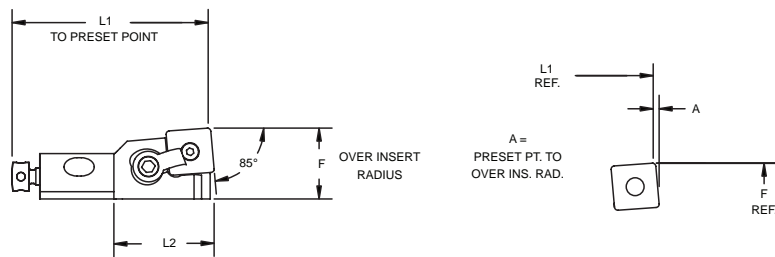
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MTUNR/L 10CA-2	Part #	-	NLC-23	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52962	59062	53063	53025	52835	-	08920
MTUNR/L 10CA-2.5	Part #	-	NLC-2.53	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52963	59062	53063	53025	52835	-	08912
MTUNR/L 12CA-3	Part #	-	NLC-33	CLM-17	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52964	59057	53063	53026	52835	-	08914
MTUNR/L 16CA-3	Part #	ITSN-333	NLC-34L	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-34C	CBR-31-12
	EDP#	09172	52965	59057	53063	53027	52836	52347	08914
MTUNR/L 20CA-4	Part #	ITSN-433	NLC-46	CLM-20	XNSC-0620	SASC-0516	EASM-0610F	S-46C	CBR-32-15
	EDP#	09173	52967	59058	53064	53027	52836	52348	08916
MTUNR/L 25CA-5	Part #	TSN-534	NLC-58	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-58C	CBR-33-15
	EDP#	09374	52970	59056	53065	53029	52837	52352	08918
Metric Standard									
MTUNR/L 10CA-11	Part #	-	NLM-23	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-34-075
	EDP#	-	52972	59062	53067	53030	52835	-	08920
MTUNR/L 10CA-13	Part #	-	NLM-2.53	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-30-10
	EDP#	-	52973	59062	53067	53030	52835	-	08912
MTUNR/L 12CA-16	Part #	-	NLM-33	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-31-12
	EDP#	-	52974	59057	53067	53031	52835	-	08914
MTUNR/L 16CA-16	Part #	ITSN-333	NLM-34L	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-34M	CBR-31-12
	EDP#	09172	52976	59057	53067	53032	52836	00979	08914
MTUNR/L 20CA-22	Part #	ITSN-433	NLM-46	CLM-20	XNSM-0620	SASM-0516	EASM0610F	S-46M	CBR-32-15
	EDP#	09173	52978	59058	53069	53032	52836	00834	08916
MTUNR/L 25CA-27	Part #	TSN-534	NLM-58	CLM-30	XNSM-0825	SASM-0820	EASM-0816F	S-58M	CBR-33-15
	EDP#	09374	52981	59061	53070	53034	52837	52353	08918

CARTRIDGES

Common Hardware

MSYNR/L Square Insert/Negative Rake

Use Insert Style SNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
MSYNR/L 10CA-3	322	1.575	0.551	1.968	0.930	0.030	-8°	-5°	54492	54486
MSYNR/L 12CA-4	432	1.968	0.787	2.165	1.090	0.041	-9°	-5°	54494	54488
MSYNR/L 16CA-4	432	2.362	0.984	2.480	1.210	0.041	-9°	-5°	54496	53887
MSYNR/L 20CA-5	543	2.756	0.984	2.756	1.250	0.050	-9°	-5°	54498	54490
MSYNR/L 25CA-6	643	3.937	1.260	3.937	1.610	0.061	-7°	-5°	53891	53889
Metric Standard										
MSYNR/L 10CA-09	90308	40	14	50	23,7	0,8	-8°	-5°	54491	54485
MSYNR/L 12CA-12	120408	50	20	55	27,7	1,04	-9°	-5°	54493	54487
MSYNR/L 16CA-12	120408	60	25	63	30,7	1,04	-9°	-5°	54495	53886
MSYNR/L 20CA-15	150612	70	25	70	31,8	1,3	-9°	-5°	54497	54489
MSYNR/L 25CA-19	190612	100	32	100	40,9	1,55	-7°	-5°	53890	53888

Cartridges do not include chipbreakers, mounting screws or inserts.

MSYNR/L Square Insert/Negative Rake

Spare Parts



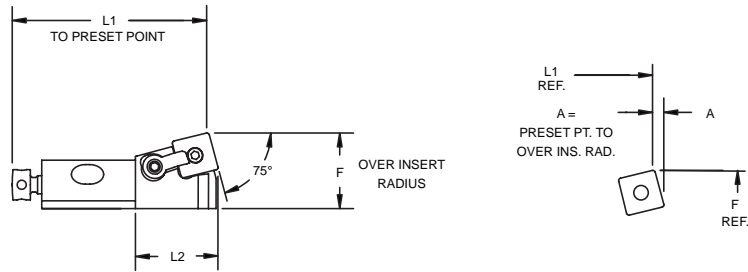
Cartridge Part #	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MSYNR/L 10CA-3	Part #	-	NLC-33	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52964	59062	53063	53025	52835	-	08923
MSYNR/L 12CA-4	Part #	-	NLC-43	CLM-6	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52966	59063	53063	53026	52835	-	08925
MSYNR/L 16CA-4	Part #	ISSN-433	NLC-46S	CLM-17	XNSC-0515	SASC-0412	EASM-0610F	S-46CS	CBR-36-12
	EDP#	09166	52968	59057	53063	53026	52836	52349	08925
MSYNR/L 20CA-5	Part #	SSN-538M	NLC-54	CLM-9	XNSC-0825	SASC-0516	EASM-0610F	S-46C	CBR-37-15
	EDP#	09265	52969	59065	53065	53027	52836	52348	08927
MSYNR/L 25CA-6	Part #	ISSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-38-15
	EDP#	09169	52971	59056	53065	53029	52837	00841	08929
Metric Standard									
MSYNR/L 10CA-09	Part #	-	NLM-33	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52974	59062	53067	53030	52835	-	08923
MSYNR/L 12CA-12	Part #	-	NLM-43	CLM-6	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52977	59063	53067	53031	52835	-	08925
MSYNR/L 16CA-12	Part #	ISSN-433	NLM-46S	CLM-17	XNSM-0515	SASM-0412	EASM-0510F	S-46MS	CBR-36-12
	EDP#	09166	52979	59057	53067	53031	52835	00836	08925
MSYNR/L 20CA-15	Part #	SSN-538M	NLM-54	CLM-9	XNSM-0825	SASM-0516	EASM-0610F	S-46M	CBR-37-15
	EDP#	09265	52980	59065	53070	53032	52836	00834	08927
MSYNR/L 25CA-19	Part #	ISSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-38-15
	EDP#	09169	52982	59056	53070	53034	52837	00843	08929

CARTRIDGES

Common Hardware

MSKNR/L Square Insert/Negative Rake

Use Insert Style SNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
MSKNR/L 10CA-3	322	1.575	0.551	1.968	0.850	0.088	-8°	-6°	54442	54438
MSKNR/L 12CA-4	422	1.968	0.787	2.165	1.200	0.120	-9°	-6°	54444	54440
MSKNR/L 16CA-4	432	2.362	0.984	2.480	1.080	0.120	-9°	-6°	54446	53869
MSKNR/L 20CA-5	543	2.756	0.984	2.756	1.380	0.148	-9°	-6°	54448	53871
MSKNR/L 25CA-6	643	3.937	1.260	3.937	1.500	0.181	-7°	-6°	54450	53873
Metric Standard										
MSKNR/L 10CA-09	90308	40	14	50	21,6	2,2	-8°	-6°	54441	54437
MSKNR/L 12CA-12	120408	50	20	55	25,9	3,0	-9°	-6°	54443	54439
MSKNR/L 16CA-12	120408	60	25	63	27,4	3,0	-9°	-6°	54445	53868
MSKNR/L 20CA-15	150612	70	25	70	35	3,8	-9°	-6°	54447	53870
MSKNR/L 25CA-19	190612	100	32	100	38,1	4,6	-7°	-6°	54449	53872

Cartridges do not include chipbreakers, mounting screws or inserts.

MSKNR/L Square Insert/Negative Rake

Spare Parts



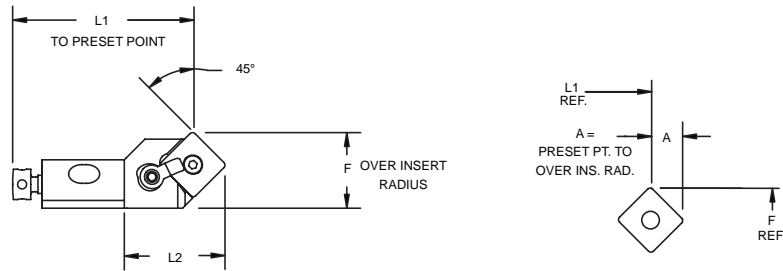
Insert Shape	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MSKNR/L 10CA-3	Part #	-	NLC-33	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52964	59062	53063	53025	52835	-	08923
MSKNR/L 12CA-4	Part #	-	NLC-43	CLM-6	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52966	59063	53063	53026	52835	-	08925
MSKNR/L 16CA-4	Part #	ISSN-433	NLC-46S	CLM-17	XNSC-0515	SASC-0412	EASM-0610F	S-46CS	CBR-36-12
	EDP#	09166	52968	59057	53063	53026	52836	52349	08925
MSKNR/L 20CA-5	Part #	SSN-538M	NLC-54	CLM-9	XNSC-0825	SASC-0516	EASM-0610F	S-46C	CBR-37-15
	EDP#	09265	52969	59065	53065	53027	52836	52348	08927
MSKNR/L 25CA-6	Part #	ISSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-38-15
	EDP#	09169	52971	59056	53065	53029	52837	00841	08929
Metric Standard									
MSKNR/L 10CA-09	Part #	-	NLM-33	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52974	59062	53067	53030	52835	-	08923
MSKNR/L 12CA-12	Part #	-	NLM-43	CLM-6	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52977	59063	53067	53031	52835	-	08925
MSKNR/L 16CA-12	Part #	ISSN-433	NLM-46S	CLM-17	XNSM-0515	SASM-0412	EASM-0610F	S-46MS	CBR-36-12
	EDP#	09166	52979	59057	53067	53031	52836	00836	08925
MSKNR/L 20CA-15	Part #	SSN-538M	NLM-54	CLM-9	XNSM-0825	SASM-0516	EASM-0610F	S-46M	CBR-37-15
	EDP#	09265	52980	59065	53070	53032	52836	00834	08927
MSKNR/L 25CA-19	Part #	ISSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-38-15
	EDP#	09169	52982	59056	53070	53034	52837	00843	08929

CARTRIDGES

Common Hardware

MSSNR/L Square Insert/Negative Rake

Use Insert Style SNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
MSSNR/L 10CA-3	322	1.575	0.551	1.732	0.900	0.239	-9°	-9°	54469	54463
MSSNR/L 12CA-4	432	1.968	0.787	1.850	1.060	0.328	-9°	-9°	54471	54465
MSSNR/L 16CA-4	432	2.362	0.984	2.087	1.110	0.328	-9°	-9°	53882	54467
MSSNR/L 20CA-5	543	2.756	0.984	2.362	1.310	0.403	-9°	-9°	54473	53880
MSSNR/L 25CA-6	643	3.937	1.260	3.425	1.530	0.491	-7°	-7°	54474	52925
Metric Standard										
MSSNR/L 10CA-09	90308	40	14	44	22,8	6,1	-9°	-9°	54468	54462
MSSNR/L 12CA-12	120408	50	20	47	26,9	8,3	-9°	-9°	54470	54464
MSSNR/L 16CA-12	120408	60	25	53	28,2	8,3	-9°	-9°	53881	54466
MSSNR/L 20CA-15	150612	70	25	60	33,3	10,2	-9°	-9°	54472	53879
MSSNR/L 25CA-19	190612	100	32	87	38,9	12,5	-7°	-7°	53883	52910

Cartridges do not include chipbreakers, mounting screws or inserts.

MSSNR/L Square Insert/Negative Rake

Spare Parts



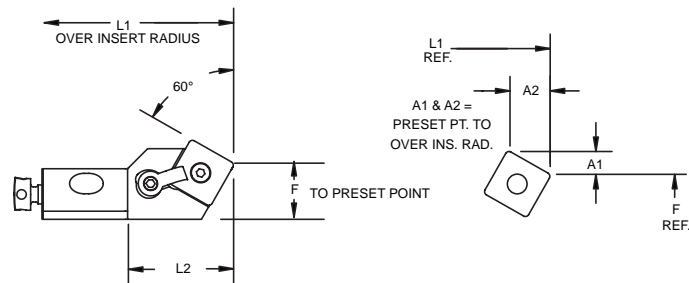
Insert Shape	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MSSNR/L 10CA-3	Part #	-	NLC-33	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-35-05
	EDP#	-	52964	59062	53063	53025	52835	-	08922
MSSNR/L 12CA-4	Part #	-	NLC-43	CLM-6	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-36-08
	EDP#	-	59063	59063	53063	53026	52835	-	08924
MSSNR/L 16CA-4	Part #	ISSN-433	NLC-46S	CLM-6	XNSC-0515	SASC-0412	EASM-0610F	S-46CS	CBR-36-08
	EDP#	09166	52968	59063	53063	53026	52836	52349	08924
MSSNR/L 20CA-5	Part #	SSN-538M	NLC-54	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-46C	CBR-37-08
	EDP#	09265	52969	59057	53063	53027	52836	52348	08926
MSSNR/L 25CA-6	Part #	ISSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-38-08
	EDP#	09169	52971	59056	53065	53029	52837	00841	08928
Metric Standard									
MSSNR/L 10CA-09	Part #	-	NLM-33	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-35-05
	EDP#	-	52974	59062	53067	53030	52835	-	08922
MSSNR/L 12CA-12	Part #	-	NLM-43	CLM-6	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-36-08
	EDP#	-	52977	59063	53067	53031	52835	-	08924
MSSNR/L 16CA-12	Part #	ISSN-433	NLM-46S	CLM-17	XNSM-0515	SASM-0412	EASM-0610F	S-46MS	CBR-36-08
	EDP#	09166	52979	59057	53067	53031	52836	00836	08924
MSSNR/L 20CA-15	Part #	SSN-538M	NLM-54	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-46M	CBR-37-08
	EDP#	09265	52980	59057	53067	53032	52836	00834	08926
MSSNR/L 25CA-19	Part #	ISSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-38-08
	EDP#	09169	52982	59056	53070	53034	52837	00843	08928

CARTRIDGES

Common Hardware

MSTNR/L Square Insert/Negative Rake

Use Insert Style SNxx



Right-hand shown, Left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#	
										Right Hand	Left Hand
Inch Standard											
MSTNR 10CA-3	322	1.575	0.354	1.968	0.890	0.17	0.293	-8°	-4 1/2°	54478	-
MSTNR/L 12CA-4	432	1.968	0.512	2.165	1.070	0.232	0.402	-9°	-5°	54480	54476
MSTNR 16CA-4	432	2.362	0.591	2.480	1.180	0.232	0.402	-9°	-5°	54481	-
MSTNR 20CA-5	543	2.756	0.591	2.756	1.300	0.285	0.494	-8°	-5°	54483	-
MSTNR 25CA-6	643	3.937	0.787	3.937	1.570	0.348	0.603	-8°	-4 1/2°	54484	-
Metric Standard											
MSTNR 10CA-09	90308	40	9	50	22,7	4,3	7,4	-8°	-4 1/2°	54477	-
MSTNR/L 12CA-12	120408	50	13	55	27,2	5,9	10,2	-9°	-5°	54479	54475
MSTNR 16CA-12	120408	60	15	63	30	5,9	10,2	-9°	-5°	53884	-
MSTNR 20CA-15	150612	70	15	70	33	7,2	12,5	-8°	-5°	54482	-
MSTNR 25CA-19	190612	100	20	100	40	8,8	15,3	-8°	-4 1/2°	53885	-

Cartridges do not include chipbreakers, mounting screws or inserts.

MSTNR/L Square Insert/Negative Rake

Spare Parts



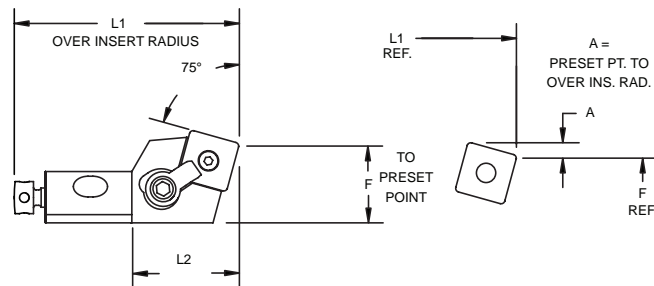
Insert Shape	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MSTNR 10CA-3	Part #	-	NLC-33	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-35-05
	EDP#	-	52964	59062	53063	53025	52835	-	08922
MSTNR/L 12CA-4	Part #	-	NLC-43	CLM-6	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-36-08
	EDP#	-	52966	59063	53063	53026	52835	-	08924
MSTNR 16CA-4	Part #	ISSN-433	NLC-46S	CLM-6	XNSC-0515	SASC-0412	EASM-0610F	S-46CS	CBR-36-08
	EDP#	09166	52968	59063	53063	53026	52836	52349	08924
MSTNR 20CA-5	Part #	SSN-538M	NLC-54	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-46C	CBR-37-08
	EDP#	09265	52969	59057	53063	53027	52836	52348	08926
MSTNR 25CA-6	Part #	ISSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-38-08
	EDP#	09169	52971	59056	53065	53029	52837	00841	08928
Metric Standard									
MSTNR 10CA-09	Part #	-	NLM-33	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-35-05
	EDP#	-	52974	59062	53067	53030	52835	-	08922
MSTNR/L 12CA-12	Part #	-	NLM-43	CLM-6	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-36-08
	EDP#	-	52977	59063	53067	53031	52835	-	08924
MSTNR 16CA-12	Part #	ISSN-433	NLM-46S	CLM-6	XNSM-0515	SASM-0412	EASM-0610F	S-46MS	CBR-36-08
	EDP#	09166	52979	59063	53067	53031	52836	00836	08924
MSTNR 20CA-15	Part #	SSN-538M	NLM-54	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-46M	CBR-37-08
	EDP#	09265	52980	59057	53067	53032	52836	00834	08926
MSTNR 25CA-19	Part #	ISSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-38-08
	EDP#	09169	52982	59056	53070	53034	52837	00843	08928

CARTRIDGES

Common Hardware

MSRNR/L Square Insert/Negative Rake

Use Insert Style SNxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
MSRNR 10CA-3	322	1.575	0.551	1.968	0.900	0.088	-8°	-5°	54456	-
MSRNR/L 12CA-4	432	1.968	0.787	2.165	1.020	0.120	-9°	-5°	54458	54452
MSRNR/L 16CA-4	432	2.362	0.984	2.480	1.180	0.120	-9°	-5°	54460	54454
MSRNR/L 20CA-5	543	2.756	0.984	2.756	1.270	0.148	-9°	-5°	53877	53875
MSRNR 25CA-6	643	3.937	1.260	3.937	1.550	0.181	-7°	-5°	53878	-
Metric Standard										
MSRNR 10CA-09	90308	40	14	50	23	2,2	-8°	-5°	54455	-
MSRNR/L 12CA-12	120408	50	20	55	25,9	3,0	-9°	-5°	54457	54451
MSRNR/L 16CA-12	120408	60	25	63	30	3,0	-9°	-5°	54459	54453
MSRNR/L 20CA-15	150612	70	25	70	32,2	3,7	-9°	-5°	53876	53874
MSRNR 25CA-19	190612	100	32	100	39,4	4,6	-7°	-5°	54461	-

Cartridges do not include chipbreakers, mounting screws or inserts.

MSRNR/L Square Insert/Negative Rake

Spare Parts



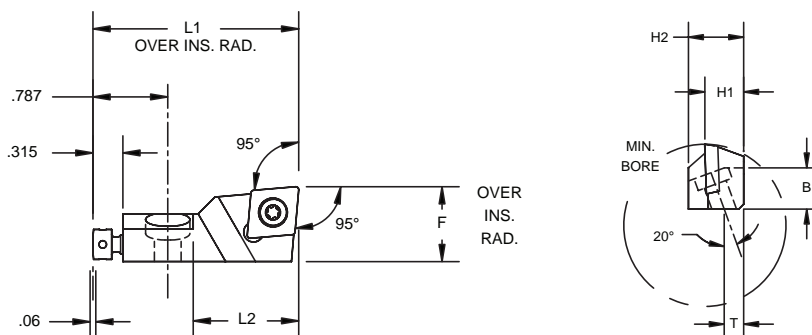
Insert Shape	Part#	Shim Seat	Lock Pin	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts	
	EDP#							Shim Screw	Chipbreaker
Inch Standard									
MSRNR 10CA-3	Part #	-	NLC-33	CLM-5	XNSC-0515	SASC-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52964	59062	53063	53025	52835	-	08923
MSRNR/L 12CA-4	Part #	-	NLC-43	CLM-6	XNSC-0515	SASC-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52966	59063	53063	53026	52835	-	08925
MSRNR/L 16CA-4	Part #	ISSN-433	NLC-46S	CLM-17	XNSC-0515	SASC-0516	EASM-0610F	S-46CS	CBR-36-12
	EDP#	09166	52968	59057	53063	53027	52836	52349	08925
MSRNR/L 20CA-5	Part #	SSN-538M	NLC-54	CLM-9	XNSC-0825	SASC-0516	EASM-0610F	S-46C	CBR-37-15
	EDP#	09265	52969	59065	53065	53027	52836	52348	08927
MSRNR 25CA-6	Part #	ISSN-633	NLC-68	CLM-12	XNSC-0825	SASC-0820	EASM-0816F	S-68C	CBR-38-15
	EDP#	09169	52971	59056	53065	53029	52837	00841	08929
Metric Standard									
MSRNR 10CA-09	Part #	-	NLM-33	CLM-5	XNSM-0515	SASM-0406	EASM-0510F	-	CBR-35-10
	EDP#	-	52974	59062	53067	53030	52835	-	08923
MSRNR/L 12CA-12	Part #	-	NLM-43	CLM-6	XNSM-0515	SASM-0412	EASM-0510F	-	CBR-36-12
	EDP#	-	52977	59063	53067	53031	52835	-	08925
MSRNR/L 16CA-12	Part #	ISSN-433	NLM-46S	CLM-17	XNSM-0515	SASM-0516	EASM-0610F	S-46MS	CBR-36-12
	EDP#	09166	52979	59057	53067	53032	52836	00836	08925
MSRNR/L 20CA-15	Part #	SSN-538M	NLM-54	CLM-9	XNSM-0825	SASM-0516	EASM-0610F	S-46M	CBR-37-15
	EDP#	09265	52980	59065	53070	53032	52836	00834	08927
MSRNR 25CA-19	Part #	ISSN-633	NLM-68	CLM-12	XNSM-0825	SASM-0820	EASM-0816F	S-68M	CBR-38-15
	EDP#	09169	52982	59056	53070	53034	52837	00843	08929

CARTRIDGES

ISO Screw Down

SCLPR/L 80° Diamond Insert/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Inch Standard													
SCLPR/L 10CA-3	35.52	1.575	0.551	1.968	0.890	1°	5°	0.394	0.550	0.370	0.197	62266	62265
SCLPR/L 12 CA-4	432	1.968	0.787	2.165	1.060	2°	5°	0.472	0.670	0.500	0.236	54111	54109
Metric Standard													
SCLPR/L 10CA-09	09T308	40	14	50	22,6	1°	5°	10	14	9,4	5	54149	54147
SCLPR/L 12CA-12	120408	50	20	55	27	2°	5°	12	17	12,7	6	66142	54148

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

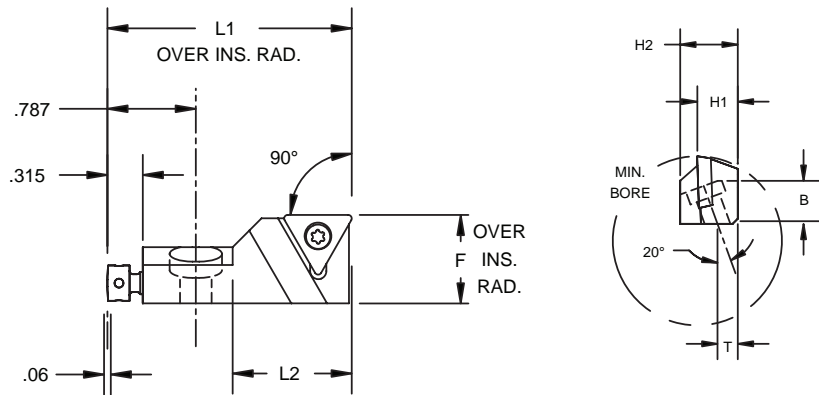


Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
32.52	Part#	PT-559-T	SASC-0406	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53025	52835	50087	57333
432	Part#	PT-546-T	SASC-0412	EASM-0510F	T-20 Torx® Wrench	5/64 Hex Wrench
	EDP#	52290	53026	52835	50091	57333
Metric Standard						
09T308	Part#	PT-559-T	SASM-0406	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53030	52835	50087	57345
120408	Part#	PT-546-T	SASM-0412	EASM-0510F	T-20 Torx® Wrench	M2-DIN 911
	EDP#	52290	53031	52835	50091	57345

ISO Screw Down

STGPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Inch Standard													
STGPR/L 10CA-2	21.51	1.575	0.551	1.968	0.890	1°	5°	0.394	0.550	0.370	0.197	54129	62271
STGPR/L 12CA-3	32.52	1.968	0.787	2.165	1.060	2°	5°	0.472	0.670	0.500	0.236	54130	54128
Metric Standard													
STGPR/L 10CA-11	110204	40	14	50	22,6	1°	5°	10	14	9,4	5	66156	66155
STGPR/L 12CA-16	16T308	50	20	55	27	2°	5°	12	17	12,7	6	66157	54156

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



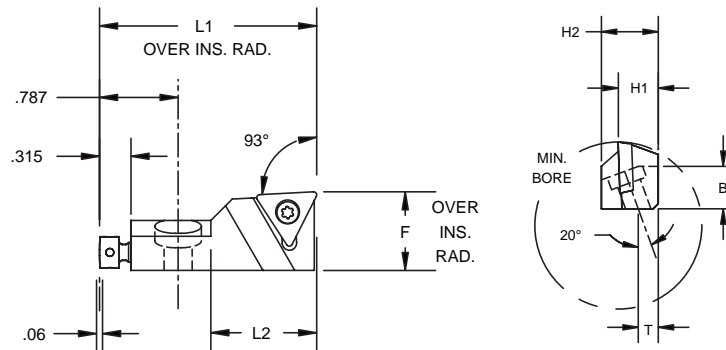
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-589T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52295	53025	52835	50101	57333
32.52	Part#	PT-559-T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-589-T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52295	53030	52835	50101	57345
16T308	Part#	PT-559-T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53031	52835	50087	57345

CARTRIDGES

ISO Screw Down

STJPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Inch Standard													
STJPR/L 10CA-2	21.51	1.575	0.551	1.968	0.890	1°	5°	0.394	0.550	0.370	0.197	54132	62272
STJPR/L 12CA-3	32.52	1.968	0.787	2.165	1.060	2°	5°	0.472	0.670	0.500	0.236	54158	00199
Metric Standard													
STJPR/L 10CA-11	110204	40	14	50	22.6	1°	5°	10	14	9.4	5	66174	66173
STJPR/L 10CA-16	16T308	50	20	55	27	2°	5°	12	17	12.7	6	66160	66159

Cartridges do not include chipbreakers, mounting screws or inserts.

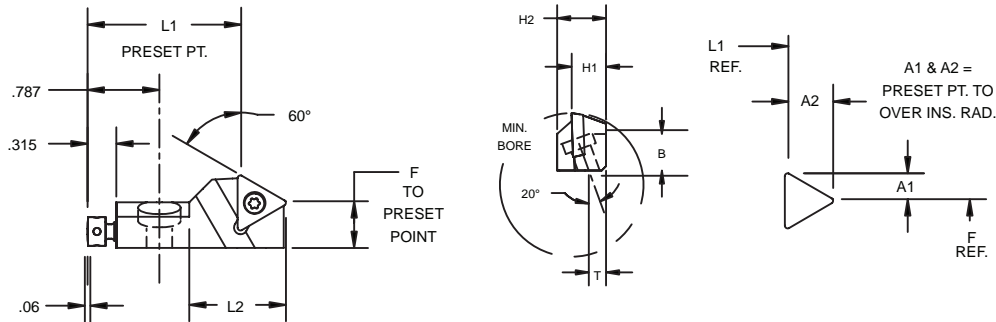
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-589T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52295	53025	52835	50101	57333
32.52	Part#	PT-559-T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-589-T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52295	53030	52835	50101	57345
16T308	Part#	PT-559-T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53031	52835	50087	57345

STTPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	H1	H2	B	T	EDP#	
														Right Hand	Left Hand
Inch Standard															
STTPR/L 10CA-2	21.51	1.575	0.354	1.631	0.890	0.196	0.337	1°	5°	0.394	0.550	0.370	0.197	54137	54136
STTPR/L 12CA-3	32.52	1.968	0.511	1.673	1.060	0.284	0.492	2°	5°	0.472	0.670	0.500	0.236	54138	54162
Metric Standard															
STTPR/L 10CA-11	110204	40	9	41,4	22,6	4,98	8,56	1°	5°	10	14	9,4	5	66165	54161
STTPR/L 12CA-16	16T308	50	13	42,5	27	7,21	12,5	2°	5°	12	17	12,7	6	66166	66164

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

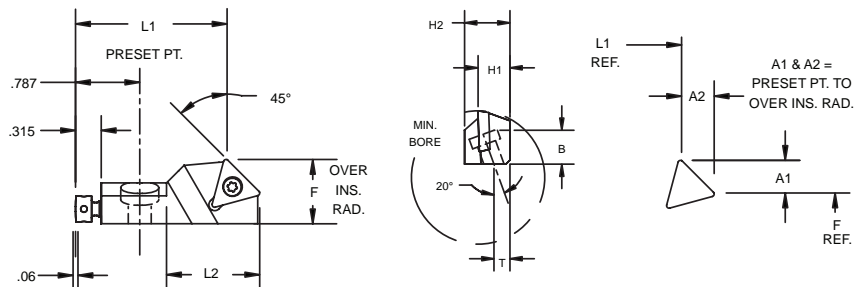
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-542T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52286	53025	52835	50101	57333
32.52	Part#	PT-544T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52288	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-542T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52286	53030	52835	50101	57345
16T308	Part#	PT-544T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52288	53031	52835	50087	57345

CARTRIDGES

ISO Screw Down

STSPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	H1	H2	B	T	EDP#	
														Right Hand	Left Hand
Inch Standard															
STSPR/L 10CA-2	21.51	1.575	0.551	1.732	0.920	0.277	0.277	1°	5°	0.394	0.550	0.370	0.197	54134	54133
STSPR/L 12CA-3	32.52	1.968	0.787	1.850	1.130	0.401	0.401	2°	5°	0.472	0.670	0.500	0.236	62273	59737
Metric Standard															
STSPR/L 10CA-11	110204	40	14	44	23,4	7,0	7,0	1°	5°	10	14	9,4	5	00810	66162
STSPR/L 10CA-16	16T308	50	20	47	28,7	10,2	10,2	2°	5°	12	17	12,7	6	-	66163

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

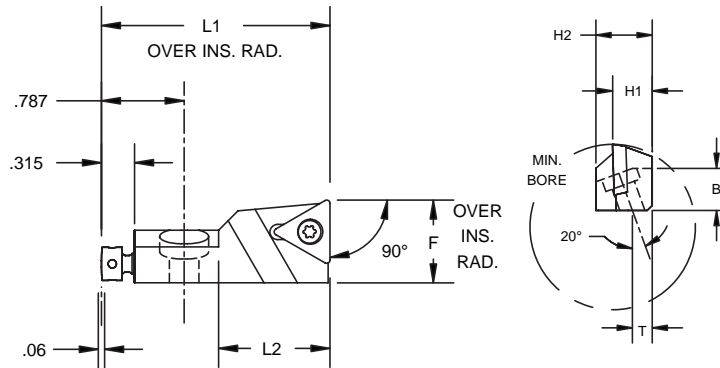


Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-542T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52286	53025	52835	50101	57333
32.52	Part#	PT-544T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52288	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-542T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52286	53030	52835	50101	57345
16T308	Part#	PT-544T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52288	53031	52835	50087	57345

ISO Screw Down

STFPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx

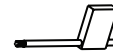


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Inch Standard													
STFPR/L 10CA-2	21.51	1.575	0.551	1.968	0.890	1°	5°	0.394	0.550	0.370	0.197	54125	62270
STFPR/L 12CA-3	32.52	1.968	0.787	2.165	1.060	2°	5°	0.472	0.670	0.500	0.236	54126	54124
Metric Standard													
STFPR/L 10CA-11	110204	40	14	50	22,6	1°	5°	10	14	9,4	5	54154	66153
STFPR/L 12CA-16	16T308	50	20	55	27	2°	5°	12	17	12,7	6	62277	66154

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



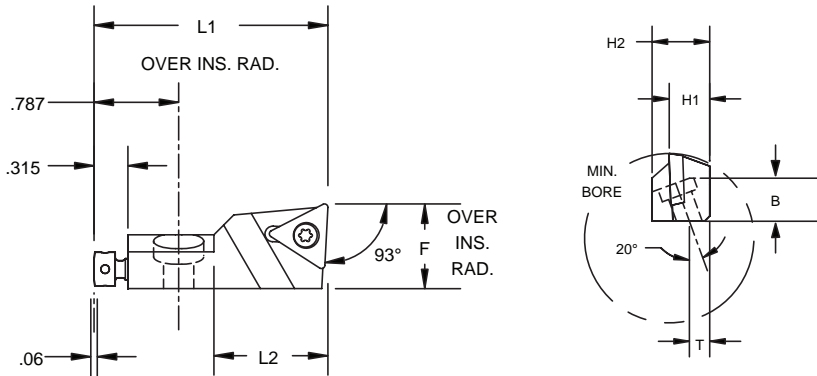
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-542T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52286	53025	52835	50101	57333
32.52	Part#	PT-544T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52288	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-542T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52286	53030	52835	50101	57345
16T308	Part#	PT-544T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52288	53031	52835	50087	57345

CARTRIDGES

ISO Screw Down

STUPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx

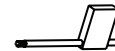


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Inch Standard													
STUPR/L 10CA-2	21.51	1.575	0.551	1.968	0.890	1°	5°	0.394	0.550	0.370	0.197	54139	66168
STUPR/L 12CA-3	32.52	1.968	0.787	2.165	1.060	2°	5°	0.472	0.670	0.500	0.236	62274	00824
Metric Standard													
STUPR/L 10CA-11	110204	40	14	50	22,6	1°	5°	10	14	9,4	5	66170	66167
STUPR/L 12CA-16	16T308	50	20	55	27	2°	5°	12	17	12,7	6	66171	66169

Cartridges do not include chipbreakers, mounting screws or inserts.

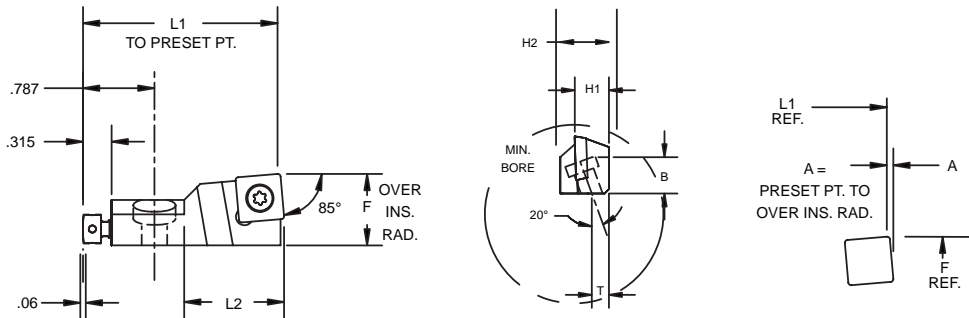
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
21.51	Part#	PT-542T	SASC-0406	EASM-0510F	T-7 Torx® Wrench	5/64 Hex Wrench
	EDP#	52286	53025	52835	50101	57333
32.52	Part#	PT-544T	SASC-0412	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52288	53026	52835	50087	57333
Metric Standard						
110204	Part#	PT-542T	SASM-0406	EASM-0510F	T-7 Torx® Wrench	M2-DIN 911
	EDP#	52286	53030	52835	50101	57345
16T308	Part#	PT-544T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52288	53031	52835	50087	57345

SSYPR/L Square Insert/Positive Rake

Use Insert Style SPxx

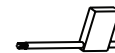


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	H1	H2	B	T	EDP#	
													Right Hand	Left Hand
Inch Standard														
SSYPR/L 10CA-3	32.52	1.575	0.551	1.968	0.920	0.030	1°	5°	0.394	0.550	0.370	0.197	54121	54120
SSYPR/L 12CA-4	432	1.968	0.787	2.165	1.100	0.041	2°	5°	0.472	0.670	0.500	0.236	54122	54152
Metric Standard														
SSYPR/L 10CA-09	09T308	40	14	50	23,4	0,76	1°	5°	10	14	9,4	5	62276	66149
SSYPR/L 12CA-12	120408	50	20	55	28	1,04	2°	5°	12	17	12,7	6	66151	66150

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



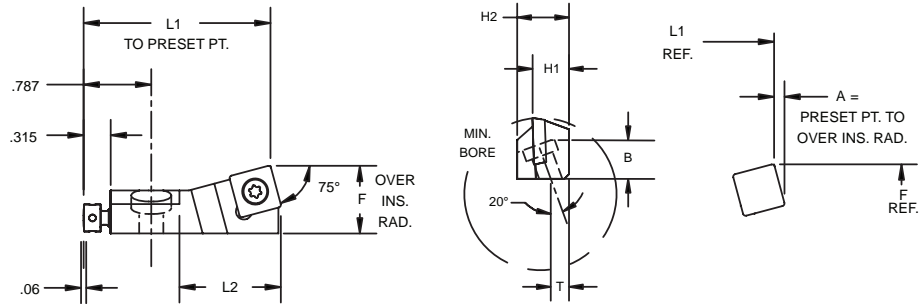
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
32.52	Part#	PT-559T	SASC-0406	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53025	52835	50087	57333
432	Part#	PT-588T	SASC-0412	EASM-0510F	T-20 Torx® Wrench	5/64 Hex Wrench
	EDP#	52294	53026	52835	50091	57333
Metric Standard						
09T308	Part#	PT-559T	SASM-0406	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53030	52835	50087	57345
120408	Part#	PT-588T	SASM-0412	EASM-0510F	T-20 Torx® Wrench	M2-DIN 911
	EDP#	52294	53031	52835	50091	57345

CARTRIDGES

ISO Screw Down

SSKPR/L Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	H1	H2	B	T	EDP#	
													Right Hand	Left Hand
Inch Standard														
SSKPR/L 10CA-3	32.52	1.575	0.551	1.968	0.980	0.088	1°	5°	0.394	0.550	0.370	0.197	54114	62267
SSKPR/L 12CA-4	432	1.968	0.787	2.165	1.180	0.120	2°	5°	0.472	0.670	0.500	0.236	54115	54113
Metric Standard														
SSKPR/L 10CA-09	09T308	40	14	50	24,9	2,24	1°	5°	10	14	9,4	5	54150	66143
SSKPR/L 12CA-12	120408	50	20	55	29,9	3,05	2°	5°	12	17	12,7	6	54151	66144

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

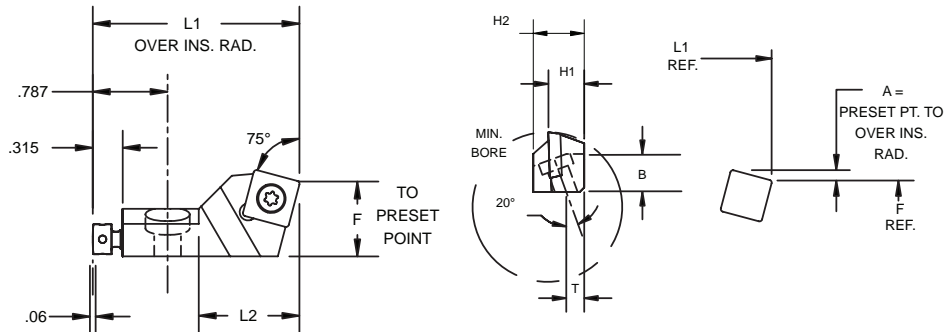


Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
32.52	Part#	PT-559T	SASC-0406	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53025	52835	50087	57333
432	Part#	PT-588T	SASC-0412	EASM-0510F	T-20 Torx® Wrench	5/64 Hex Wrench
	EDP#	52294	53026	52835	50091	57333
Metric Standard						
09T308	Part#	PT-559T	SASM-0406	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53030	52835	50087	57345
120408	Part#	PT-588T	SASM-0412	EASM-0510F	T-20 Torx® Wrench	M2-DIN 911
	EDP#	52294	53031	52835	50091	57345

ISO Screw Down

SSRPR/L Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	H1	H2	B	T	EDP#		
													Right Hand	Left Hand	
Inch Standard															
SSRPR/L 10CA-3	32.52	1.575	0.551	1.968	0.890	0.088	1°	5°	0.394	0.550	0.370	0.197	62269	62268	
SSRPR/L 12CA-4	432	1.968	0.787	2.165	1.060	0.120	2°	5°	0.472	0.670	0.500	0.236	54119	54117	
Metric Standard															
SSRPR/L 10CA-09	09T308	40	14	50	22,6	2,24	1°	5°	10	14	9,4	5	66147	66145	
SSRPR/L 12CA-12	120408	50	20	55	27	3,05	2°	5°	12	17	12,7	6	66148	66146	

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



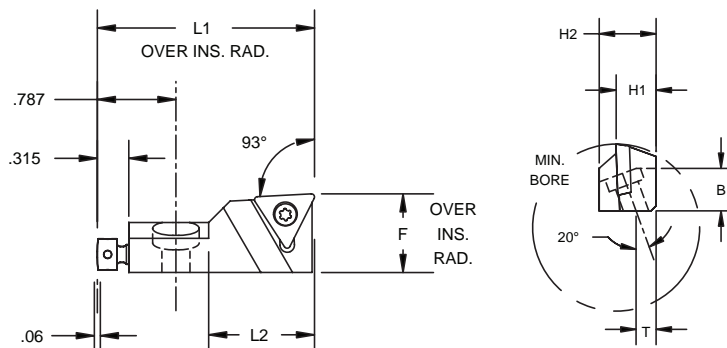
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Inch Standard						
32.52	Part#	PT-559T	SASC-0406	EASM-0510F	T-15 Torx® Wrench	5/64 Hex Wrench
	EDP#	52292	53025	52835	50087	57333
432	Part#	PT-588T	SASC-0412	EASM-0510F	T-20 Torx® Wrench	5/64 Hex Wrench
	EDP#	52294	53026	52835	50091	57333
Metric Standard						
09T308	Part#	PT-559T	SASM-0406	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53030	52835	50087	57345
120408	Part#	PT-588T	SASM-0412	EASM-0510F	T-20 Torx® Wrench	M2-DIN 911
	EDP#	52294	53031	52835	50091	57345

CARTRIDGES

ISO Screw Down

STJER/L High Shear Triangle Cartridge/Positive Rake

Use Insert Style TExx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Metric Standard													
STJER/L 10CA-13	2.521J	1.575	0.551	1.968	0.910	7°	7°	0.394	0.512	0.370	0.197	54196	54190
STJER/L 12CA-16	322J	1.968	0.787	2.165	1.060	7°	10°	0.472	0.670	0.500	0.236	54197	66158

Cartridges do not include chipbreakers, mounting screws or inserts.

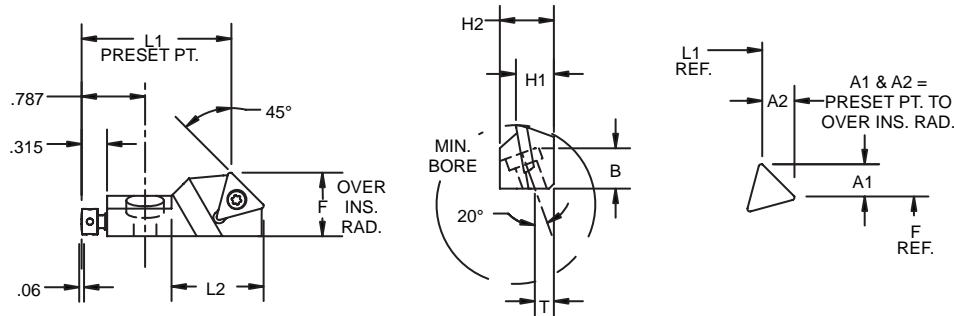
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
2.521J	Part#	PT-543T	DJS-10	EASM-0510F	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52287	52824	52835	50104	57345
322J	Part#	PT-559T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53031	52835	50087	57345

STSER/L High Shear Triangle Cartridge/Positive Rake

Use Insert Style TExx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	H1	H2	B	T	EDP#	
														Right Hand	Left Hand
Metric Standard															
STSER/L 10CA-13	2.521J	1.575	0.551	1.732	1.020	0.353	0.353	7°	7°	0.394	0.512	0.370	0.197	54192	54191
STSER/L 12CA-16	322J	1.968	0.787	1.850	1.060	0.401	0.401	7°	7°	0.472	0.670	0.500	0.236	54193	66161

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

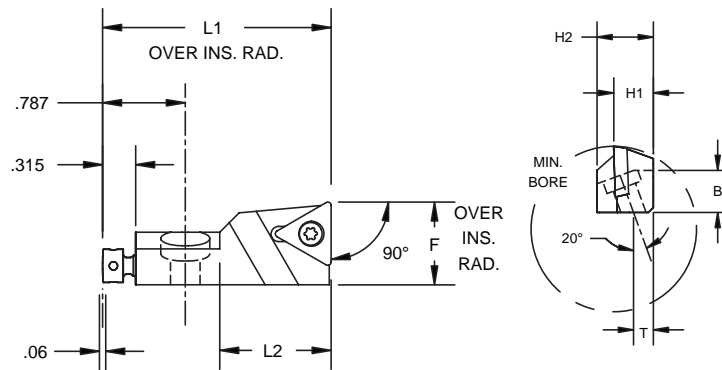
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
2.521J	Part#	PT-543T	DJS-10	EASM-0510F	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52287	52824	52835	50104	57345
16T308	Part#	PT-599T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52303	53031	52835	50087	57345

CARTRIDGES

ISO Screw Down

STFER/L High Shear Triangle Cartridge/Positive Rake

Use Insert Style TExx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Metric Standard													
STFER/L 10CA-13	2.521J	1.575	0.551	1.968	0.900	10°	10°	0.394	0.512	0.370	0.197	54188	54187
STFER/L 12CA-16	322J	1.968	0.787	2.165	1.060	10°	10°	0.472	0.670	0.500	0.236	54189	66152

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

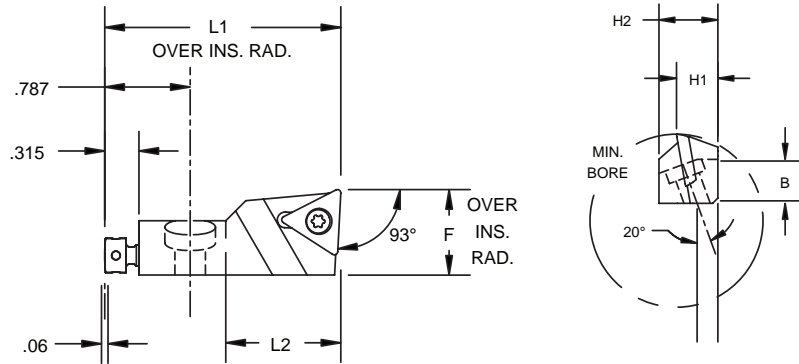


Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
2.521J	Part#	PT-543T	DJS-10	EASM-0510F	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52287	52824	52835	50104	57345
322J	Part#	PT-559T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53031	52835	50087	57345

ISO Screw Down

STUER/L High Shear Triangle Cartridge/Positive Rake

Use Insert Style TExx

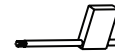


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	H1	H2	B	T	EDP#	
												Right Hand	Left Hand
Metric Standard													
STUER/L 10CA-13	2.521J	1.575	0.551	1.968	0.900	10°	10°	0.394	0.512	0.370	0.197	54195	00815
STUER/L 12CA-16	322J	1.968	0.787	2.165	1.060	10°	10°	0.472	0.670	0.500	0.236	00819	54198

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



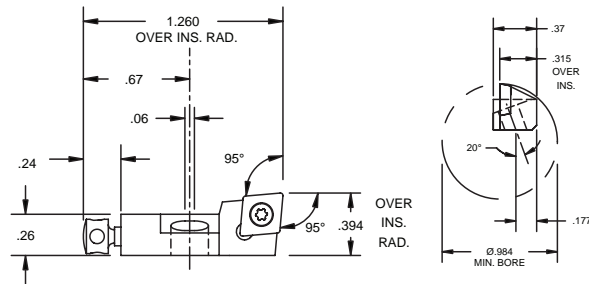
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
2.521J	Part#	PT-543T	DJS-10	EASM-0510F	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52287	52824	52835	50104	57345
322J	Part#	PT-559T	SASM-0412	EASM-0510F	T-15 Torx® Wrench	M2-DIN 911
	EDP#	52292	53031	52835	50087	57345

CARTRIDGES

ISO Screw Down

SCLPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCLPR/L 08CA-06	21.51	0.984	0°	4°	54212	54211

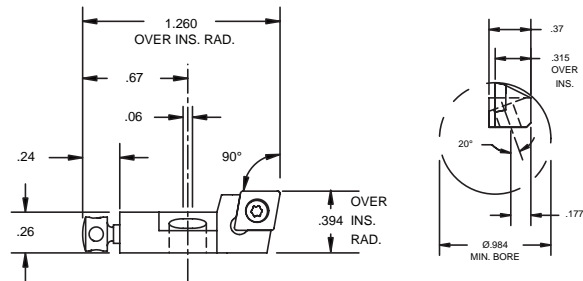
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

SCGPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCGPR/L 08CA-06	21.51	0.984	0°	4°	54210	54209

Spare Parts



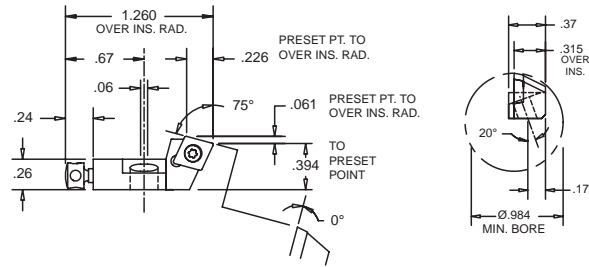
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

*Cartridges do not include chipbreakers, mounting screws or inserts.

ISO Screw Down

SCRPR/L Mini Cartridges/Positive Rake

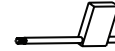
Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCRPR/L 08CA-06	21.51	0.984	0°	0°	54214	54213

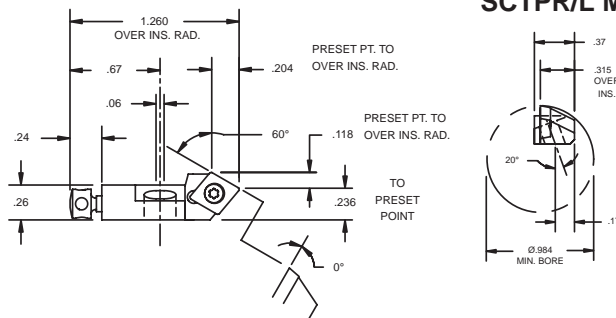
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

SCTPR/L Mini Cartridges/Positive Rake

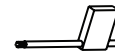
Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCTPR/L 08CA-06	21.51	0.984	0°	0°	54218	54217

Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

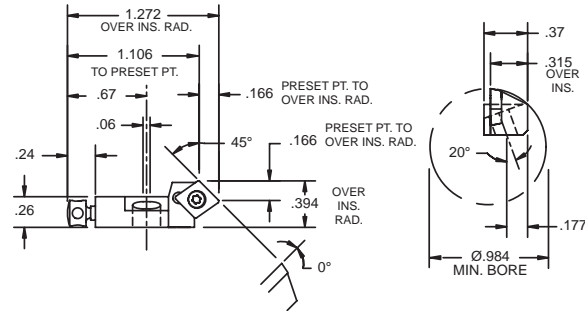
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

ISO Screw Down

SCSPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCSPR/L 08CA-06	21.51	0.984	0°	0°	54216	54215

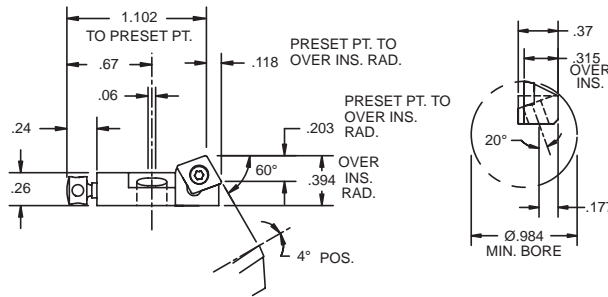
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

SCWPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCWPR/L 08CA-06	21.51	0.984	0°	4°	54219	54233

Spare Parts



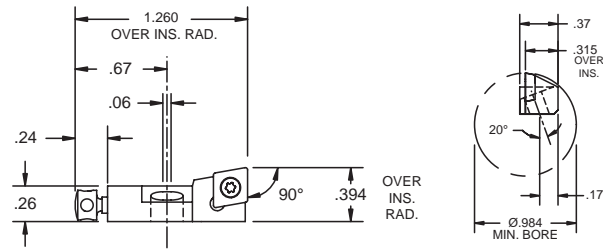
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

*Cartridges do not include chipbreakers, mounting screws or inserts.

ISO Screw Down

SCFPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCFPR/L 08CA-06	21.51	0.984	0°	4°	54208	54207

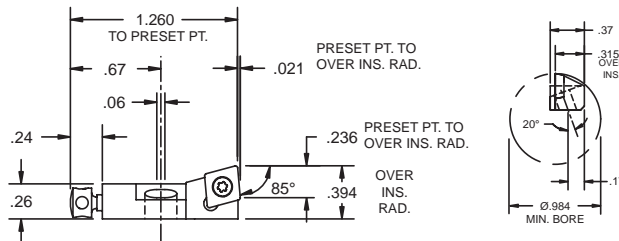
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

SCYPR/L Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCYPR/L 08CA-06	21.51	0.984	0°	4°	54220	54234

Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
21.51	Part#	PT-589T	M3x6 DIN 913LW	M-AS-4B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52295	52174	52915	50101	57342

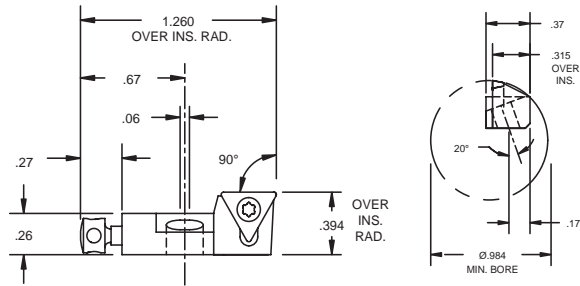
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

ISO Screw Down

STGPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STGPR/L 08CA-09VA	090204	0.984	0°	4°	54224	54223

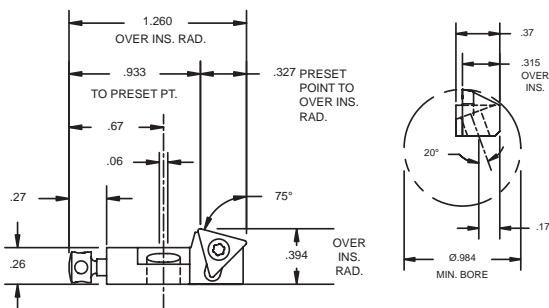
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

STRPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STRPR/L 08CA-09VA	090204	0.984	0°	0°	54226	54225

Spare Parts



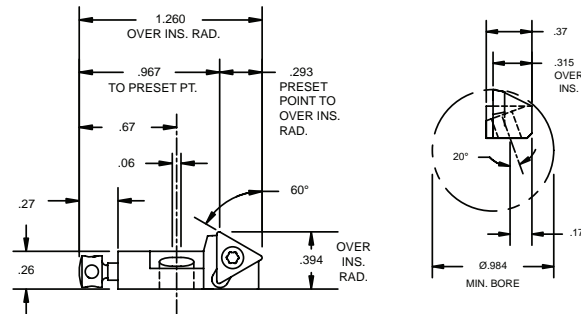
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

*Cartridges do not include chipbreakers, mounting screws or inserts.

ISO Screw Down

STTPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STTPR/L 08CA-09VA	090204	0.984	0°	0°	54230	54229

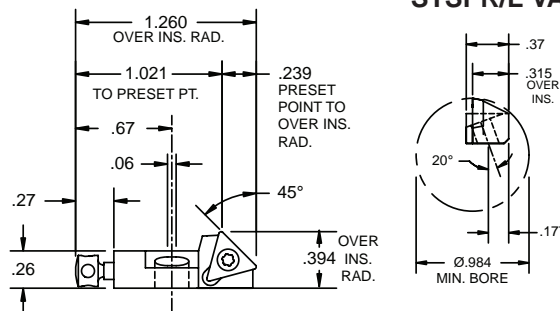
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

STSPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STSPR/L 08CA-09VA	090204	0.984	0°	0°	54228	54227

Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

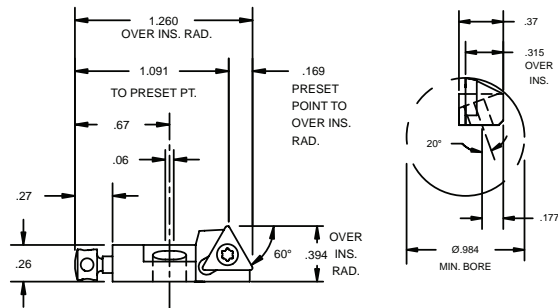
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

ISO Screw Down

STWPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STWPR/L 08CA-09VA	090204	0.984	0°	4°	54232	54231

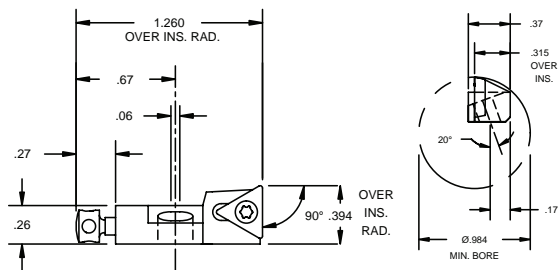
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

STFPR/L VA Mini Cartridges/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
STFPR/L 08CA-09VA	090204	0.984	0°	4°	54222	54221

Spare Parts



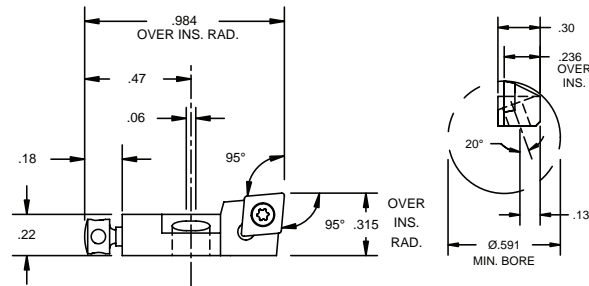
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
090204	Part#	PT-464	M4x6 DIN 913LW	M-AS-4B	T-8 Torx® Wrench	M2-DIN 911
	EDP#	52275	52186	52915	50104	57345

*Cartridges do not include chipbreakers, mounting screws or inserts.

ISO Screw Down

SCLPR/L Super-Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCLPR/L 06CA-05	050204	0.591	0°	0°	54242	54241

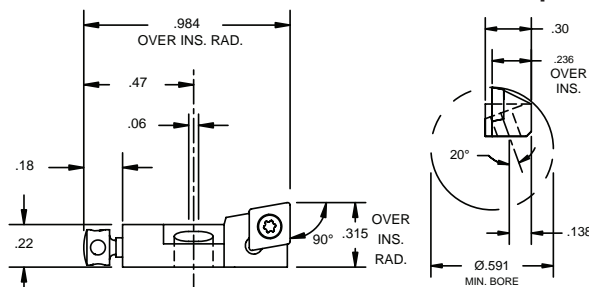
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
050204	Part#	PT-526T	M3x5 DIN 913LW	M-AS-6B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52284	52171	52916	50101	57342

SCFPR/L Super-Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCFPR/L 06CA-05	050204	0.591	0°	0°	54237	54235

Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
050204	Part#	PT-526T	M3x5 DIN 913LW	M-AS-6B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52284	52171	52916	50101	57342

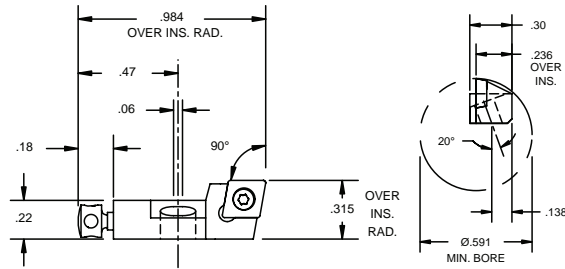
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

ISO Screw Down

SCGPR/L Super-Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCGPR/L 06CA-05	050204	0.591	0°	0°	54240	51076

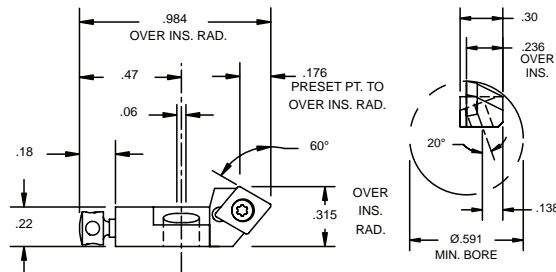
Spare Parts



Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
050204	Part#	PT-526T	M3x5 DIN 913LW	M-AS-6B	T-7 Torx® Wrench	M15-DIN 911
	EDP#	52284	52171	52916	50101	57342

SCTPR/L Super-Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCTPR/L 06CA-05	050204	0.591	0°	0°	54246	54251

Spare Parts



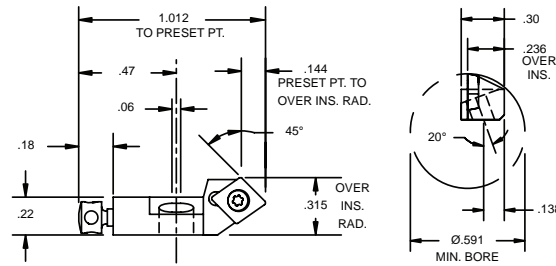
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
050204	Part#	PT-526T	-	M-AS-6B	T-7 Torx® Wrench	-
	EDP#	52284	-	52916	50101	-

*Cartridges do not include chipbreakers, mounting screws or inserts.

ISO Screw Down

SCSPR/L Super-Mini Cartridges/Positive Rake

Use Insert Style CPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	Radial	Axial	EDP#	
					Right Hand	Left Hand
Metric Standard						
SCSPR/L 06CA-05	050204	0.591	0°	0°	54244	54249

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



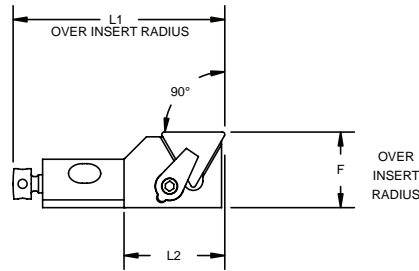
Insert Shape	Part#	Insert Screw	Radial Adjust Screw	Axial Adjust Screw	Torx® Wrench	Radial Adjust Wrench
	EDP#					
Metric Standard						
050204	Part#	PT-526T	-	M-AS-6B	T-7 Torx® Wrench	-
	EDP#	52284	-	52916	50101	-

CARTRIDGES

Top Clamp

CTGPR/L Triangle Insert/Neutral Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTGPR 10CA-2.5	2.521	1.575	0.551	1.968	0.900	0°	0°	54385	-
CTGPR/L 12CA-3	322	1.968	0.787	2.165	1.070	0°	0°	54387	54382
CTGPR/L 16CA-3	322	2.362	0.984	2.480	1.180	0°	0°	54085	54383
CTGPR/L 20CA-4	432	2.756	0.984	2.756	1.300	0°	0°	50230	62555
CTGPR 25CA-5	533	3.937	1.260	3.937	1.550	0°	0°	00074	-
Metric Standard									
CTGPR 10CA-11	110304	32	14	50	22,9	0°	0°	54049	-
CTGPR 10CA-13	130304	40	14	50	22,9	0°	0°	54386	-
CTGPR/L 12CA-16	160308	50	20	55	27,2	0°	0°	54391	62558
CTGPR/L 16CA-16	160308	60	25	63	30,0	0°	0°	54092	54087
CTGPR/L 20CA-22	220408	70	25	70	33,0	0°	0°	54093	54089
CTGPR 25CA-27	270412	100	32	100	39,4	0°	0°	54094	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTGPR/L Triangle Insert/Neutral Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	52902	52827	52911	08912
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52903	52828	52911	08914
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52903	RFQ*	52911	08914
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-22	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52904	RFQ*	52913	08916
533	Part#	STBC-20-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52905	RFQ*	52913	08918
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	00090	52824	52911	08912
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52894	52825	52911	08914
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52894	RFQ*	52911	08914
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-12	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52897	RFQ*	52913	08916
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52893	RFQ*	52913	08918

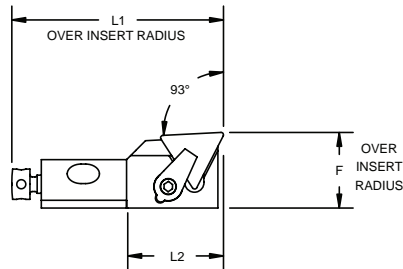
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTJPR/L Triangle Insert/Neutral Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTJPR 10CA-2.5	2.521	1.575	0.551	1.968	0.900	0°	0°	54390	-
CTJPR/L 12CA-3	322	1.968	0.787	2.165	1.030	2°	5°	54392	54389
CTJPR/L 16CA-3	322	2.362	0.984	2.480	1.180	3°	5°	50239	54088
CTJPR/L 20CA-4	432	2.756	0.984	2.756	1.180	0°	5°	54050	50238
Metric Standard									
CTJPR 10CA-11	110304	32	14	50	22,9	0°	0°	54090	-
CTJPR 10CA-13	130304	40	14	50	22,9	0°	0°	54091	-
CTJPR/L 12CA-16	160308	50	20	55	26,2	2°	5°	54391	62558
CTJPR/L 16CA-16	160308	60	25	63	30,0	3°	5°	54092	54087
CTJPR/L 20CA-22	220408	70	25	70	33,0	0°	5°	54093	54089
CTJPR 25CA-27	270412	100	32	100	39,4	0°	5°	54094	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTJPR/L Triangle Insert/Neutral Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	52902	52827	52911	08912
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52903	52828	52911	08914
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52903	RFQ*	52911	08914
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-22	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52904	RFQ*	52913	08916
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	00090	52824	52911	08912
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52894	52825	52911	08914
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52894	RFQ*	52911	08914
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-12	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52897	RFQ*	52913	08916
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52893	RFQ*	52913	08918

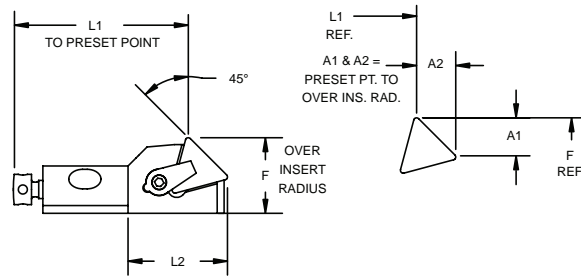
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTSPR Triangle Insert/Neutral Rake

Use Insert Style TPxx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
										Right Hand
Inch Standard										
CTSPR 10CA-2.5	2.521	1.575	0.551	1.732	1.020	0.353	0.353	0°	0°	54396
CTSPR 12CA-3	322	1.968	0.787	1.850	1.140	0.401	0.401	0°	0°	54398
CTSPR 16CA-3	322	2.362	0.984	2.087	1.180	0.401	0.401	0°	0°	54052
CTSPR 20CA-4	432	2.756	0.984	2.362	1.440	0.554	0.554	0°	0°	54096
Metric Standard										
CTSPR 10CA-11	110304	32	14	44	26	9	9	0°	0°	54051
CTSPR 10CA-13	130304	40	14	44	26	9	9	0°	0°	54395
CTSPR 12CA-16	160308	50	20	47	29	10,2	10,2	0°	0°	54397
CTSPR 16CA-16	160308	60	25	53	30	10,2	10,2	0°	0°	54095
CTSPR 20CA-22	220408	70	25	60	36,5	14,1	14,1	0°	0°	51317
CTSPR 25CA-27	270412	100	32	87	43,6	17,2	17,2	0°	0°	51965

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTSPR/L Triangle Insert/Neutral Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-05
	EDP#	-	-	59071	52902	52827	52911	08911
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-08
	EDP#	-	-	59072	52903	52828	52911	08913
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-08
	EDP#	09324	52175	59072	52903	RFQ*	52911	08913
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-23	M-AS-2B	CBR-32-08
	EDP#	09327	52951	52781	52904	RFQ*	52913	08915
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-05
	EDP#	-	-	59071	00090	52824	52911	08911
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-08
	EDP#	-	-	59072	52894	52825	52911	08913
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-08
	EDP#	09324	52175	59072	52894	RFQ*	52911	08913
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-13	M-AS-2B	CBR-32-08
	EDP#	09327	52951	52781	52897	RFQ*	52913	08915
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-08
	EDP#	09329	52951	52782	52893	RFQ*	52913	08917

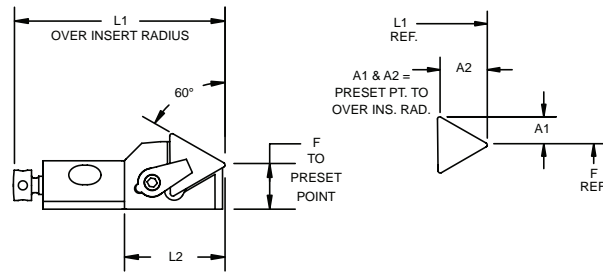
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTTPR Triangle Insert/Neutral Rake

Use Insert Style TPxx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
Inch Standard										
CTTPR 10CA-2.5	2.521	1.575	0.354	1.534	0.900	0.250	0.433	0°	0°	54055
CTTPR 12CA-3	322	1.968	0.512	1.673	1.070	0.284	0.492	0°	0°	54402
CTTPR 16CA-3	322	2.362	0.591	1.988	1.180	0.284	0.492	0°	0°	56886
CTTPR 20CA-4	432	2.756	0.591	2.077	1.250	0.392	0.679	0°	0°	54056
CTTPR 25CA-5	533	3.937	0.787	3.106	1.550	0.480	0.831	0°	0°	66135
Metric Standard										
CTTPR 10CA-11	110304	32	9	38,96	22,9	5	9	0°	0°	54053
CTTPR 10CA-13	130304	40	9	38,96	22,9	6,4	11	0°	0°	54054
CTTPR 12CA-16	160308	50	13	42,52	27,2	7,2	12,5	0°	0°	54401
CTTPR 16CA-16	160308	60	15	49,53	30,0	7,2	12,5	0°	0°	54403
CTTPR 20CA-22	220408	70	15	52,75	31,8	10	17,2	0°	0°	56887
CTTPR 25CA-27	270412	100	20	78,89	39,4	12,2	21,1	0°	0°	62527

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTTPR Triangle Insert/Neutral Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-05
	EDP#	-	-	59071	52902	52827	52911	08911
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-08
	EDP#	-	-	59072	52903	52828	52911	08913
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-08
	EDP#	09324	52175	59072	52903	RFQ*	52911	08913
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-23	M-AS-2B	CBR-32-08
	EDP#	09327	52951	52781	52904	RFQ*	52913	08915
533	Part#	STBC-20-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-33-08
	EDP#	09329	52951	52782	52905	RFQ*	52913	08917
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-05
	EDP#	-	-	59071	00090	52824	52911	08911
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-08
	EDP#	-	-	59072	52894	52825	52911	08913
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-08
	EDP#	09324	52175	59072	52894	RFQ*	52911	08913
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-13	M-AS-2B	CBR-32-08
	EDP#	09327	52951	52781	52897	RFQ*	52913	08915
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-08
	EDP#	09329	52951	52782	52893	RFQ*	52913	08917

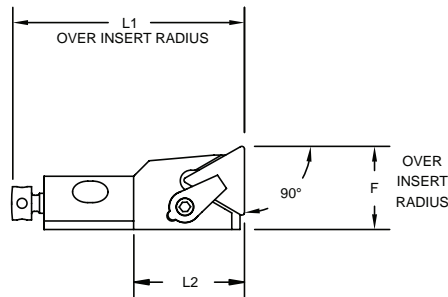
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTFPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTFPR/L 10CA-2	221	1.260	0.551	1.968	0.820	0°	5°	62284	54363
CTFPR/L 10CA-2.5	2.521	1.575	0.551	1.968	0.820	0°	5°	54373	54364
CTFPR/L 12CA-3	322	1.968	0.787	2.165	1.050	2°	5°	54375	54366
CTFPR/L 16CA-3	322	2.362	0.984	2.480	1.180	3°	5°	54048	62283
CTFPR/L 20CA-4	432	2.756	0.984	2.756	1.170	2°	5°	54378	54369
CTFPR 25CA-5	533	3.937	1.260	3.937	1.550	2°	5°	54082	-
Metric Standard									
CTFPR/L 10CA-11	110304	32	9	50	20,8	0°	5°	54370	54361
CTFPR/L 10CA-13	130304	40	14	50	20,8	0°	5°	54371	54362
CTFPR/L 12CA-16	160308	50	20	55	26,7	2°	5°	54374	54365
CTFPR/L 16CA-16	160308	60	25	63	30,0	3°	5°	62285	54080
CTFPR/L 20CA-22	220408	70	25	70	29,7	2°	5°	54377	54368
CTFPR/L 25CA-27	270412	100	32	100	39,4	2°	5°	50223	54081

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTFPR/L Triangle Insert/Positive Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
221	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	52902	52827	52911	08919
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	52902	52827	52911	08912
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52903	52828	52911	08914
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52903	RFQ*	52911	08914
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-22	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52904	RFQ*	52913	08916
533	Part#	STBC-20-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52905	RFQ*	52913	08918
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	00090	52824	52911	08912
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52894	52825	52911	08914
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52894	RFQ*	52911	08914
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-12	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52897	RFQ*	52913	08916
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52893	RFQ*	52913	08918

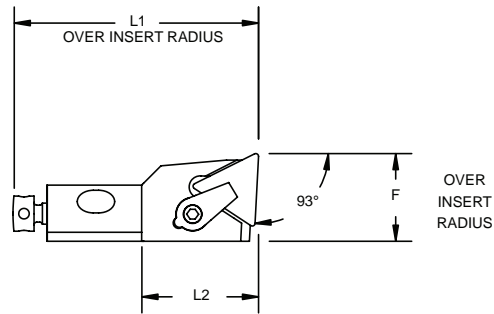
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CARTRIDGES

Top Clamp

CTUPR/L Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTUPR/L 10CA-2	221	1.260	0.551	1.968	0.820	0°	5°	54407	00081
CTUPR/L 10CA-2.5	2.521	1.575	0.551	1.968	0.820	0°	5°	54408	54057
CTUPR/L 12CA-3	322	1.968	0.787	2.165	1.050	2°	5°	54410	54405
CTUPR/L 16CA-3	322	2.362	0.984	2.480	1.180	3°	5°	54058	66139
CTUPR/L 20CA-4	432	2.756	0.984	2.756	1.170	2°	5°	62264	66140
CTUPR/L 25CA-5	533	3.937	1.260	3.937	1.550	2°	5°	54107	62262
Metric Standard									
CTUPR/L 10CA-11	110304	32	9	50	20,8	0°	5°	54406	00080
CTUPR/L 10CA-13	130304	40	14	50	20,8	0°	5°	66141	54097
CTUPR/L 12CA-16	160308	50	20	55	26,7	2°	5°	54409	66138
CTUPR/L 16CA-16	160308	60	25	63	30,0	3°	5°	62263	54099
CTUPR/L 20CA-22	220408	70	25	70	29,7	2°	5°	54104	00082
CTUPR/L 25CA-27	270412	100	32	100	39,4	2°	5°	54106	62261

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CTUPR/L Triangle Insert/Positive Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
221	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	52902	52827	52911	08919
2.521	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	52902	52827	52911	08912
322	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52903	52828	52911	08914
322	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52903	RFQ*	52911	08914
432	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-92	DJS-22	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52904	RFQ*	52913	08916
533	Part#	STBC-20-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52905	RFQ*	52913	08918
Metric Standard								
110304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-34-05
	EDP#	-	-	59071	00090	52824	52911	08919
130304	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-30-10
	EDP#	-	-	59071	00090	52824	52911	08912
160308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-31-12
	EDP#	-	-	59072	52894	52825	52911	08914
160308	Part#	STBC-12-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-31-12
	EDP#	09324	52175	59072	52894	RFQ*	52911	08914
220408	Part#	STBC-16-3 1/32	M-SSS-2	NC-16	LS-130	DJS-12	M-AS-2B	CBR-32-15
	EDP#	09327	52951	52781	52897	RFQ*	52913	08916
270412	Part#	STBC-20-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-33-15
	EDP#	09329	52951	52782	52893	RFQ*	52913	08918

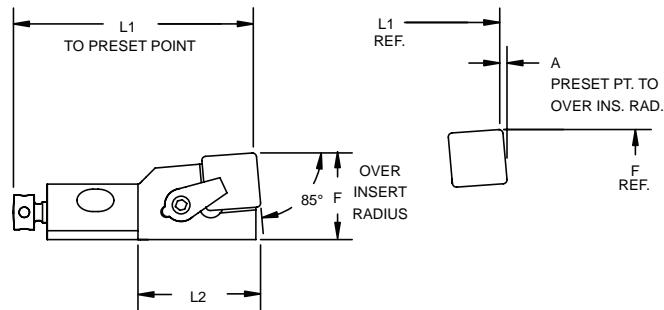
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CARTRIDGES

Top Clamp

CSYPR/L Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
CSYPR/L 10CA-3	322	1.575	0.551	1.968	0.930	0.030	0°	5°	54347	54343
CSYPR/L 12CA-4	422	1.968	0.787	2.165	1.090	0.041	2°	5°	62281	54345
CSYPR/L 16CA-4	422	2.362	0.984	2.480	1.210	0.041	2°	5°	54350	00065
CSYPR 20CA-5	533	2.756	0.984	2.756	1.250	0.050	2°	5°	54047	-
CSYPR 25CA-6	633	3.937	1.260	3.937	1.610	0.061	3°	5°	54079	-
Metric Standard										
CSYPR/L 10CA-09	090308	40	14	50	23,6	0,8	0°	5°	54346	54342
CSYPR/L 12CA-12	120308	50	20	55	27,7	1,04	2°	5°	54348	54344
CSYPR/L 16CA-12	120308	60	25	63	30,7	1,04	2°	5°	54076	00064
CSYPR/L 20CA-15	150412	70	25	70	31,8	1,3	2°	5°	54077	00067
CSYPR 25CA-19	190412	100	32	100	40,9	1,55	3°	5°	00069	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CSYPR/L Square Insert/Positive Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
322	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	52902	52827	52911	08923
422	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52903	52828	52911	08925
422	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52903	RFQ*	52911	08925
533	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-92	DJS-23	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52904	RFQ*	52913	08927
633	Part#	B-SSQC-24-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-38-15
	EDP#	09138	52951	52782	52905	RFQ*	52913	08929
Metric Standard								
090308	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	00090	52824	52911	08923
120308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52894	52825	52911	08925
120308	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52894	RFQ*	52911	08925
150412	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-130	DJS-13	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52897	RFQ*	52913	08927
190412	Part#	B-SSQC-24-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-38-15
	EDP#	09138	52951	52782	52893	RFQ*	52913	08929

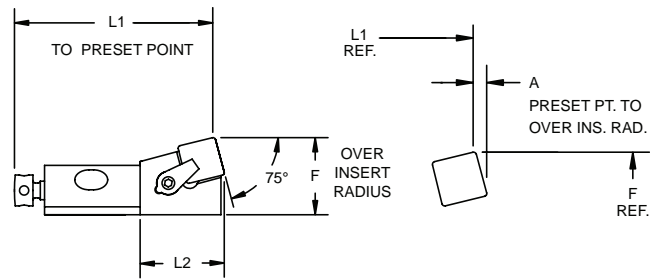
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CARTRIDGES

Top Clamp

CSKPR Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#
Inch Standard									
CSKPR 10CA-3	322	1.575	0.551	1.968	0.710	0.088	0°	5°	54321
CSKPR 12CA-4	422	1.968	0.787	2.165	0.810	0.120	2°	5°	54323
CSKPR 16CA-4	422	2.362	0.984	2.480	1.300	0.120	2°	5°	54324
CSYPR 20CA-5	533	2.756	0.984	2.756	1.340	0.148	2°	5°	54047
CSYPR 25CA-6	633	3.937	1.260	3.937	1.400	0.181	3°	5°	54079
Metric Standard									
CSKPR 10CA-09	090308	40	14	50	18,0	2,20	0°	5°	54320
CSKPR 12CA-12	120308	50	20	55	20,6	3,05	2°	5°	54322
CSKPR 16CA-12	120308	60	25	63	33,0	3,05	2°	5°	54040
CSKPR 20CA-15	150412	70	25	70	34,0	3,76	2°	5°	54059
CSYPR 25CA-19	190412	100	32	100	35,6	4,60	3°	5°	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Top Clamp

CSKPR Square Insert/Positive Rake

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
322	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	52902	52827	52911	08923
422	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52903	52828	52911	08925
422	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52903	RFQ*	52911	08925
533	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-92	DJS-23	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52904	RFQ*	52913	08927
633	Part#	B-SSQC-24-3	M-SSS-2	NC-17	LS-93	DJS-23	M-AS-2B	CBR-38-15
	EDP#	09138	52951	52782	52905	RFQ*	52913	08929
Metric Standard								
090308	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	00090	52824	52911	08923
120308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52894	52825	52911	08925
120308	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52894	RFQ*	52911	08925
150412	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-130	DJS-13	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52897	RFQ*	52913	08927
190412	Part#	B-SSQC-24-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	CBR-38-15
	EDP#	09138	52951	52782	52893	RFQ*	52913	08929

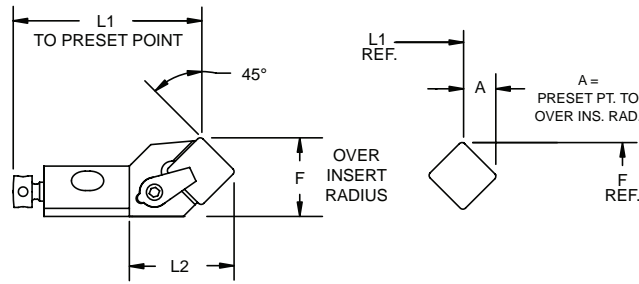
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CARTRIDGES

Top Clamp

CSSPR/L Square Insert/Neutral Rake

Use Insert Style SPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
CSSPR/L 10CA-3	322	1.575	0.551	1.732	0.900	0.239	0°	0°	54333	54331
CSSPR/L 12CA-4	422	1.968	0.787	1.850	1.060	0.328	0°	0°	54335	54043
CSSPR/L 16CA-4	422	2.362	0.984	2.087	1.110	0.328	0°	0°	54336	54065
CSSPR/L 20CA-5	533	2.756	0.984	2.362	1.31	0.402	0°	0°	62280	54067
Metric Standard										
CSSPR/L 10CA-09	090308	40	14	44	23	6,1	0°	0°	54332	54330
CSSPR/L 12CA-12	120308	50	20	47	27	8,3	0°	0°	54334	54042
CSSPR/L 16CA-12	120308	60	25	53	28,2	8,3	0°	0°	00061	54064
CSSPR/L 20CA-15	150412	70	25	60	33,0	10,2	0°	0°	50220	54066
CSSPR 25CA-19	190412	100	32	87	39	12,5	0°	0°	00062	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

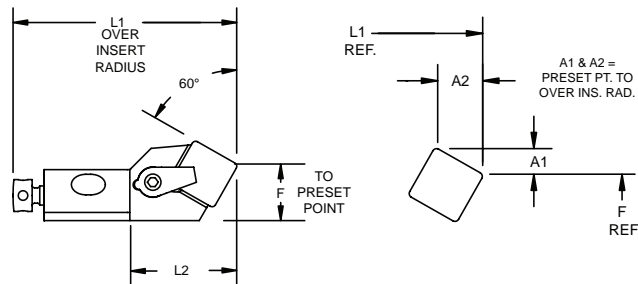


Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
322	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-35-05
	EDP#	-	-	59071	52902	52827	52911	08922
422	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-36-08
	EDP#	-	-	59072	52903	52828	52911	08924
422	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-36-08
	EDP#	09128	52175	59072	52903	RFQ*	52911	08924
533	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-92	DJS-23	M-AS-2B	CBR-37-08
	EDP#	09132	52175	52781	52904	RFQ*	52913	08926
Metric Standard								
090308	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-35-05
	EDP#	-	-	59071	00090	52824	52911	08922
120308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-36-08
	EDP#	-	-	59072	52894	52825	52911	08924
120308	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-36-08
	EDP#	09128	52175	59072	52894	RFQ*	52911	08924
150412	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-130	DJS-13	M-AS-2B	CBR-37-08
	EDP#	09132	52175	52781	52897	RFQ*	52913	08926
190412	Part#	B-SSQC-24-3	M-SSS-2	NC-17	LS-101	DJS-13	M-AS-2B	-
	EDP#	09138	52951	52782	52893	RFQ*	52913	-

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CSTPR Square Insert/Neutral Rake

Use Insert Style SPxx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
Inch Standard										
CSTPR 10CA-3	322	1.575	0.354	1.968	0.890	0.170	0.293	0°	0°	54338
CSTPR 12CA-4	422	1.968	0.512	2.165	1.070	0.232	0.402	0°	0°	54046
CSTPR 16CA-4	422	2.362	0.591	2.480	1.180	0.232	0.402	0°	0°	62470
CSTPR 25CA-6	633	3.937	0.787	3.937	1.550	0.348	0.603	0°	0°	00063
Metric Standard										
CSTPR 10CA-09	090308	40	9	50	22,7	4,3	7,4	0°	0°	54044
CSTPR 12CA-12	120308	50	13	55	27,2	5,9	10,2	0°	0°	54045
CSTPR 16CA-12	120308	60	15	63	30	5,9	10,2	0°	0°	54070
CSTPR 20CA-15	150412	70	15	70	33	7,2	12,5	0°	0°	54071

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



Insert Shape	Part#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#							Chipbreaker
Inch Standard								
322	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-35-05
	EDP#	-	-	59071	52902	52827	52911	08922
422	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-36-08
	EDP#	-	-	59072	52903	52828	52911	08924
422	Part#	B-SSQC-16-2	M3x8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-36-08
	EDP#	09128	52175	59072	52903	RFQ*	52911	08924
633	Part#	B-SSQC-24-3	M-SSS-2	NC-16	LS-92	DJS-23	M-AS-2B	CBR-38-08
	EDP#	09138	52951	52781	52904	RFQ*	52913	08928
Metric Standard								
090308	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-35-05
	EDP#	-	-	59071	00090	52824	52911	08922
120308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-36-08
	EDP#	-	-	59072	52894	52825	52911	08924
120308	Part#	B-SSQC-16-2	M3x8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-36-08
	EDP#	09128	52175	59072	52894	RFQ*	52911	08924
150412	Part#	B-SSQC-20-3	M3x8 DIN 7991	NC-16	LS-130	DJS-13	M-AS-2B	CBR-37-08
	EDP#	09132	52175	52781	52897	RFQ*	52913	08926

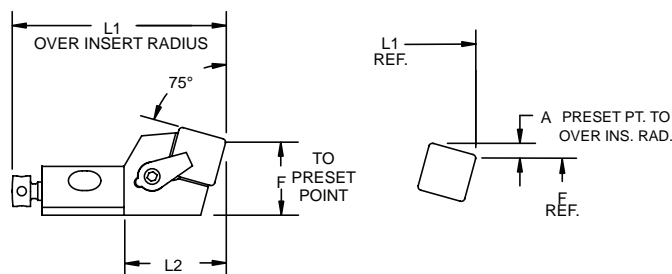
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CARTRIDGES

Top Clamp

CSRPR/L Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#	
									Right Hand	Left Hand
Inch Standard										
CSRPR/L 10CA-3	322	1.575	0.551	1.968	0.900	0.088	0°	5°	54326	54041
CSRPR 12CA-4	422	1.968	0.787	2.165	1.060	0.120	2°	1/2°	54328	-
CSRPR 16CA-4	422	2.362	0.984	2.480	1.180	0.120	2°	1/2°	54329	-
CSRPR 20CA-5	533	2.756	0.984	2.756	1.260	0.148	2°	1/2°	50217	-
Metric Standard										
CSRPR 10CA-09	090308	40	14	50	23	2,2	0°	5°	62279	-
CSRPR 12CA-12	120308	50	20	55	27	3	2°	1/2°	54327	-
CSRPR 16CA-12	120308	60	25	63	30	3	2°	1/2°	54063	-
CSRPR 20CA-15	150412	70	25	70	32	3,7	2°	1/2°	50216	-
CSRPR 25CA-19	190412	100	32	100	39,4	4,6	3°	0°	50219	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

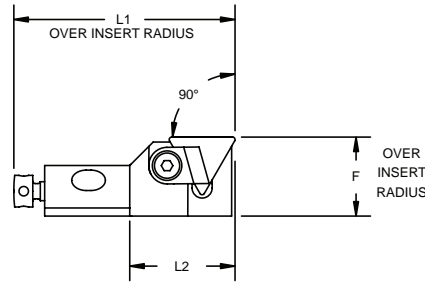


Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp	Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
								Chipbreaker
Inch Standard								
322	Part#	-	-	NC-14	LS-90	DJS-20	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	52902	52827	52911	08923
422	Part#	-	-	NC-15	LS-91	DJS-21	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52903	52828	52911	08925
422	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-91	DJS-22	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52903	RFQ*	52911	08925
533	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-92	DJS-23	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52904	RFQ*	52913	08927
Metric Standard								
090308	Part#	-	-	NC-14	LS-102	DJS-10	M-AS-1B	CBR-35-10
	EDP#	-	-	59071	00090	52824	52911	08923
120308	Part#	-	-	NC-15	LS-103	DJS-11	M-AS-1B	CBR-36-12
	EDP#	-	-	59072	52894	52825	52911	08925
120308	Part#	B-SSQC-16-2	M3 x 8 DIN 7991	NC-15	LS-103	DJS-12	M-AS-1B	CBR-36-12
	EDP#	09128	52175	59072	52894	RFQ*	52911	08925
150412	Part#	B-SSQC-20-3	M3 x 8 DIN 7991	NC-16	LS-130	DJS-13	M-AS-2B	CBR-37-15
	EDP#	09132	52175	52781	52897	RFQ*	52913	08927
190412	Part#	B-SSQC-24-3	M-SSS-2	NC-16	LS-130	DJS-13	M-AS-2B	CBR-38-15
	EDP#	09138	52951	52781	52897	RFQ*	52913	08929

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CTGER/L High Shear Triangle Insert/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTGER/L 10CA-2.5	2.521	1.575	0.551	1.968	0.900	10°	7°	54379	50224
CTGER 12CA-3	322	1.968	0.787	2.165	1.060	10°	7°	54380	-
CTGER 20CA-4	422	2.756	0.984	2.756	1.270	10°	10°	50225	-
Metric Standard									
CTGER/L 10CA-13	130304	40	14	50	22,9	10°	7°	00070	54169
CTGER 12CA-16	160308	50	20	55	26,9	10°	7°	54181	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-1	-	PT-330	DJS-24	M-AS-1B
	EDP#	-	-	62205	-	53001	52829	52911
322	Part #	-	-	M-CL-3	-	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62208	-	53001	52827	52911
422	Part #	C-STBC-16-2	M3x8 DIN 7991	M-CL-10	-	PT-331	DJS-23	M-AS-2B
	EDP#	09157	52175	52764	-	53002	RFQ*	52913
Metric Standard								
130304	Part #	-	-	M-CL-1	-	M4x8 DIN 6912	DJS-14	M-AS-1B
	EDP#	-	-	62205	-	52187	52826	52911
160308	Part #	-	-	M-CL-3	-	M4x8 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62208	-	52187	52824	52911

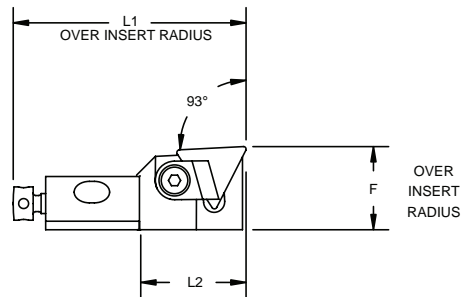
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTJER/L High Shear Triangle/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTJER/L 10CA-2.5	2.521	1.575	0.551	1.968	0.900	10°	10°	62557	54388
Metric Standard									
CTJER/L 10CA-13	130304	40	14	50	23	10°	10°	62556	50234
CTJER 12CA-16	160308	50	20	55	23,4	10°	10°	50235	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

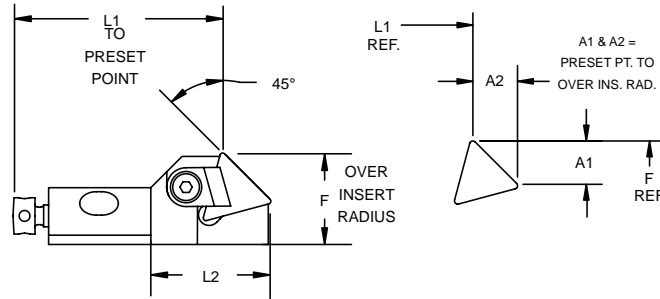


Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-3	M-CL-3L	PT-330	DJS-24	M-AS-1B
	EDP#	-	-	62208	62209	53001	52829	52911
Metric Standard								
130304	Part #	-	-	M-CL-3	M-CL-3L	M4x8 DIN 6912	DJS-14	M-AS-1B
	EDP#	-	-	62208	62209	52187	52826	52911
160308	Part #	-	-	M-CL-3	-	M5x10 DIN 6912	DJS-14	M-AS-1B
	EDP#	-	-	62208	-	52188	52826	52911

Top Clamp

CTSER/L High Shear Triangle Insert/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#	
										Right Hand	Left Hand
Inch Standard											
CTSER/L 10CA-2.5	2.521	1.575	0.551	1.732	1.100	0.353	0.353	7°	7°	54394	54183
CTSEL 12CA-3	322	1.968	0.787	1.850	1.150	0.401	0.401	7°	7°	-	50614
Metric Standard											
CTSER/L 10CA-13	130304	40	14	44	28	9	9	7°	7°	54393	54182
CTSER/L 12CA-16	160308	50	20	47	29,2	10,2	10,2	7°	7°	54185	54184

Cartridges do not include chipbreakers, mounting screws or inserts.



Spare Parts

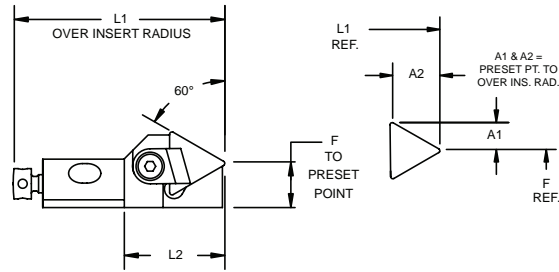
Insert Shape	Part # EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-5	M-CL-5L	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62212	52774	53001	52827	52911
322	Part #	-	-	M-CL-10	M-CL-10L	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	52764	62206	53002	52827	52911
Metric Standard								
130304	Part #	-	-	M-CL-5	M-CL-5L	M4x8 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62212	52774	52187	52824	52911
160308	Part #	-	-	M-CL-10	M-CL-10L	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	52764	62206	52188	52824	52911

CARTRIDGES

Top Clamp

CTTER/L High Shear Triangle/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#	
										Right Hand	Left Hand
Inch Standard											
CTTER 10CA-2.5	2.521	1.575	0.354	1.534	0.900	0.250	0.433	9°	5°	54400	-
CTTER/L 12CA-3	322	1.968	0.512	1.060	1.060	0.284	0.492	9°	5°	54172	56885
Metric Standard											
CTTER/L 10CA-13	130304	40	9	23	23	6,4	11	9°	5°	54399	53075
CTTER 12CA-16	160308	50	13	27	27	7,2	12,5	9°	5°	54171	-

Cartridges do not include chipbreakers, mounting screws or inserts.

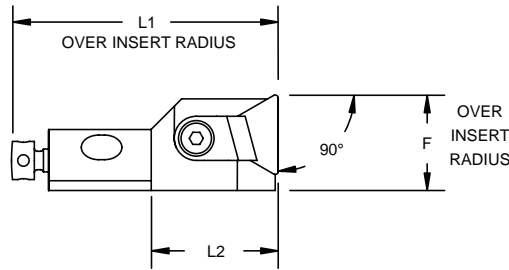
Spare Parts



Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-5	-	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62212	-	53001	52827	52911
322	Part #	-	-	M-CL-4	M-CL-4L	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	62210	62211	53002	52827	52911
Metric Standard								
130304	Part #	-	-	M-CL-5	M-CL-5L	M4x8 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62212	52774	52187	52824	52911
160308	Part #	-	-	M-CL-4	-	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62210	-	52188	52824	52911

CTFER/L High Shear Triangle Insert/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTFER/L 10CA-2.5	2.521	1.575	0.551	1.968	0.900	10°	10°	54356	54352
CTFER/L 12CA-3	322	1.968	0.787	2.165	1.040	10°	10°	54358	54354
CTFER 20CA-4	422	2.756	0.984	2.756	1.120	10°	10°	54360	-
Metric Standard									
CTFER/L 10CA-13	130304	40	14	50	22,9	10°	10°	54355	54351
CTFER/L 12CA-16	160308	50	20	55	26,4	10°	10°	54357	54353
CTFER 20CA-22	220308	70	25	70	28,4	10°	10°	62282	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



Insert Shape	Part # EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-1	-	PT-330	DJS-24	M-AS-1B
	EDP#	-	-	62205	-	53001	52829	52911
322	Part #	-	-	M-CL-10	M-CL-10L	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	52764	62206	53002	52827	52911
422	Part #	C-STBC-16-2	M3x8 DIN 7991	NC-16	-	LS-92	DJS-22	M-AS-2B
	EDP#	09157	52175	52781	-	52904	RFQ*	52913
Metric Standard								
130304	Part #	-	-	M-CL-1	-	M4x8 DIN 6912	DJS-14	M-AS-1B
	EDP#	-	-	62205	-	52187	52826	52911
160308	Part #	-	-	M-CL-10	M-CL-10L	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	52764	62206	52188	52824	52911
220308	Part #	C-STBC-16-2	M3x8 DIN 7991	NC-16	-	LS-130	DJS-12	M-AS-2B
	EDP#	09157	52175	52781	-	52897	RFQ*	52913

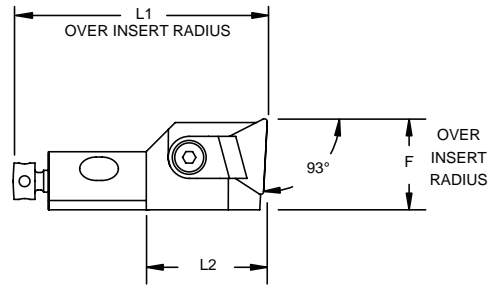
*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

CARTRIDGES

Top Clamp

CTUER/L High Shear Triangle/Positive Rake

Use Insert Style TEx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	Radial	Axial	EDP#	
								Right Hand	Left Hand
Inch Standard									
CTUER/L 10CA-2.5	2.521	1.575	0.551	1.968	0.900	10°	10°	54175	00079
CTUER 12CA-3	322	1.968	0.787	2.165	1.040	10°	10°	66137	-
CTUER 20CA-4	422	2.756	0.984	2.756	1.120	10°	10°	66172	-
Metric Standard									
CTUER/L 10CA-13	130304	40	14	50	22,9	10°	10°	54174	54186
CTUER 12CA-16	160308	50	20	55	26,4	10°	10°	51075	-
CTUER 20CA-22	220308	70	25	70	28,4	10°	10°	RFQ*	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



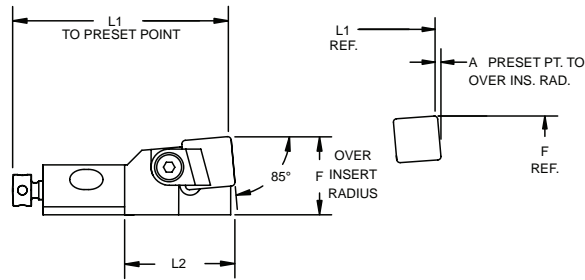
Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
2.521	Part #	-	-	M-CL-1	-	PT-330	DJS-24	M-AS-1B
	EDP#	-	-	62205	-	53001	52829	52911
322	Part #	-	-	M-CL-10	-	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	52764	-	53002	52827	52911
422	Part #	C-STBC-16-2	M3x8 DIN 7991	NC-16	-	LS-92	DJS-22	M-AS-2B
	EDP#	09157	52175	52781	-	52904	RFQ*	52913
Metric Standard								
130304	Part #	-	-	M-CL-1	-	M4x8 DIN 6912	DJS-14	M-AS-1B
	EDP#	-	-	62205	-	52187	52826	52911
160308	Part #	-	-	M-CL-10	M-CL-10L	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	52764	62206	52188	52824	52911
220308	Part #	C-STBC-16-2	M3x8 DIN 7991	NC-16	-	LS-130	DJS-12	M-AS-2B
	EDP#	09157	52175	52781	-	52897	RFQ*	52913

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

Top Clamp

CSYER High Shear Square Insert/Positive Rake

Use Insert Style SEx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#
Inch Standard									
CSYER 10CA-3	322	1.575	0.551	1.968	0.940	0.030	7°	10°	54340
CSYER 12CA-4	422	1.968	0.787	2.165	1.090	0.041	7°	10°	54341
Metric Standard									
CSYER 10CA-09	90308	40	14	50	23,9	0,8	7°	10°	54339
CSYER 12CA-12	120308	50	20	55	27,7	1,04	7°	10°	50221

Cartridges do not include chipbreakers, mounting screws or inserts.



Spare Parts



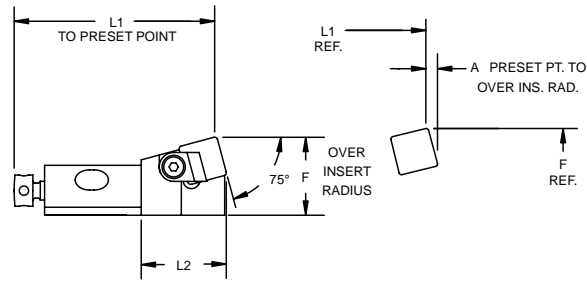
Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
322	Part #	-	-	M-CL-3	-	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62208	-	53001	52827	52911
422	Part #	-	-	M-CL-4	-	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	62210	-	53002	52827	52911
Metric Standard								
90308	Part #	-	-	M-CL-3	-	M4x8 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62208	-	52187	52824	52911
120308	Part #	-	-	M-CL-4	-	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62210	-	52188	52824	52911

CARTRIDGES

Top Clamp

CSKER High Shear Square/Positive Rake

Use Insert Style SEx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#
Inch Standard									
CSKER 10CA-3	322	1.575	0.551	1.968	0.900	0.088	7°	10°	54319
CSKER 12CA-4	422	1.968	0.787	2.165	1.020	0.12	7°	10°	RFQ*
Metric Standard									
CSKER 10CA-09	90308	40	14	50	23	2,24	7°	10°	54318
CSKER 12CA-12	120308	50	20	55	26	3,05	7°	10°	54177

Cartridges do not include chipbreakers, mounting screws or inserts.

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

Spare Parts



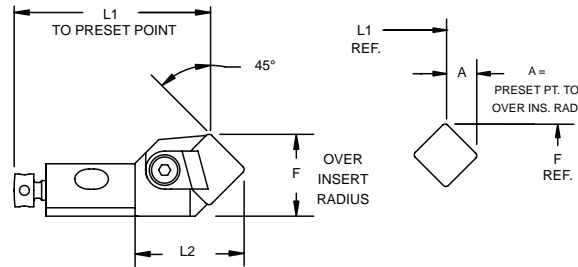
Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
322	Part #	-	-	M-CL-3	-	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62208	-	53001	52827	52911
422	Part #	-	-	M-CL-4	-	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	62210	-	53002	52827	52911
Metric Standard								
90308	Part #	-	-	M-CL-3	-	M4x8 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62208	-	52187	52824	52911
120308	Part #	-	-	M-CL-4	-	M5x10 DIN 6912	DJS-10	M-AS-1B
	EDP#	-	-	62210	-	52188	52824	52911

*Contact your local Valenite Distributor or Valenite Customer Service

Top Clamp

CSSER High Shear Square Insert/Positive Rake

Use Insert Style SEx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#
Inch Standard									
CSSER 10CA-3	322	1.575	0.551	1.732	.900	0.239	7°	7°	54167
CSSER 12CA-4	422	1.968	0.787	1.850	1.060	0.328	5°	5°	54168

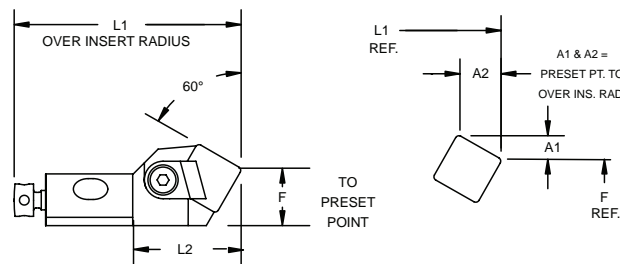
Spare Parts



Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
322	Part #	-	-	M-CL-1	-	PT-330	DJS-20	M-AS-1B
	EDP#	-	-	62205	-	53001	52827	52911
422	Part #	-	-	M-CL-12	-	PT-331	DJS-20	M-AS-1B
	EDP#	-	-	62207	-	53002	52827	52911

CSTER High Shear Square Insert/Positive Rake

Use Insert Style SEx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A1	A2	Radial	Axial	EDP#
Inch Standard										
CSTER 10CA-3	322	1.575	0.354	1.968	.900	0.170	0.293	3°	10°	54179

Spare Parts



Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
322	Part #	-	-	M-CL-3	-	PT-330	DJS-24	M-AS-1B
	EDP#	-	-	62208	-	53001	52829	52911

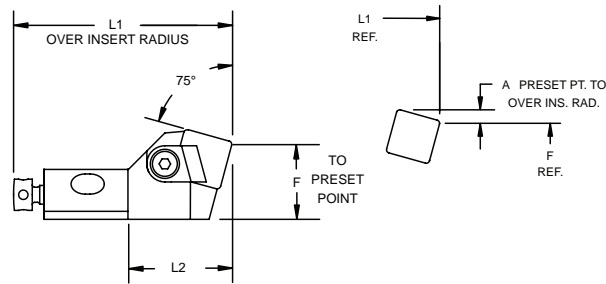
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

Top Clamp

CSRER High Shear Square/Positive Rake

Use Insert Style SEx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	L2	A	Radial	Axial	EDP#
Inch Standard									
CSRER 10CA-3	322	1.575	0.551	1.968	0.900	0.088	7°	2°	54166
CSRER 12CA-4	422	1.968	0.787	2.165	1.060	0.120	10°	5°	50213
CSRER 20CA-5	533	2.756	0.984	2.756	1.280	0.148	10°	5°	RFQ*
Metric Standard									
CSRER 10CA-09	90308	40	14	50	22,8	2,24	7°	2°	54178

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



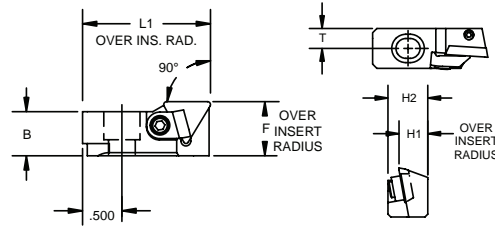
Insert Shape	Part# EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw	Radial Adjust	Axial Adjust
				Right Hand	Left Hand			
Inch Standard								
322	Part # EDP#	- -	- -	M-CL-3 62208	- -	PT-330 53001	DJS-20 52827	M-AS-1B 52911
422	Part # EDP#	- -	- -	M-CL-12 62207	- -	PT-331 53002	DJS-20 52827	M-AS-1B 52911
533	Part # EDP#	C-SSQC-20-3 09154	M3x8 DIN 7991 52175	NC-16 52781	- -	LS-92 52904	DJS-23 RFQ*	M-AS-2B 52913
Metric Standard								
90308	Part # EDP#	- -	- -	M-CL-3 62208	- -	M4x8 DIN 6912 52187	DJS-10 52824	M-AS-1B 52911

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service

AE Top Clamp

90° Lead Triangle Insert/Positive Rake

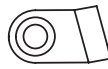
Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-60R/LSXY	322	2.500	0.687	1.625	5°	5°	0.406	0.562	0.500	0.281	54286	54285

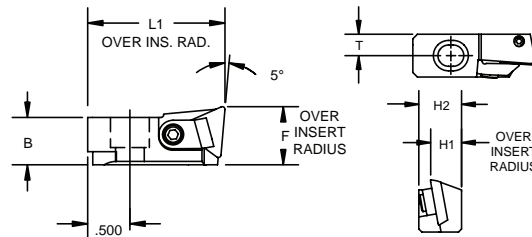
Spare Parts



Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-3	CL-3L	#6-32 x 3/8 SHCS	#8-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	52733	52095	52110	51995	52805

-5° Lead Triangle Insert/Positive Rake

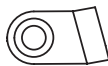
Use Insert Style TPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-58-R/LSXY	322	1.890	0.710	1.625	3°	5°	0.406	0.562	0.560	0.281	54284	54283

Spare Parts



Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-10	CL-10L	#10-32 x 3/8 SHCS	#8-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	1
	EDP#	52726	52727	51993	52110	51995	52805

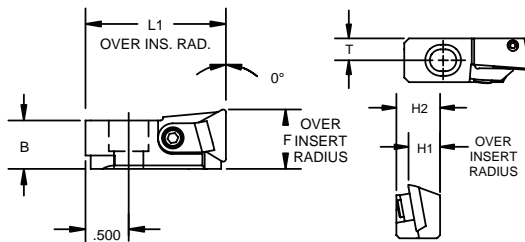
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

AE Top Clamp

0° Lead Triangle Insert/Positive Rake

Use Insert Style TPxx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-10R/LSXY	222	1.890	0.531	1.625	3°	5°	0.406	0.562	0.440	0.281	54253	54252
AE-18-R/LSXY	322	2.000	0.687	1.625	3°	5°	0.406	0.562	0.560	0.281	54260	54259
AE-62-R/LSXY	433	2.500	0.875	2.125	5°	5°	0.593	0.750	0.750	0.375	54288	54287

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

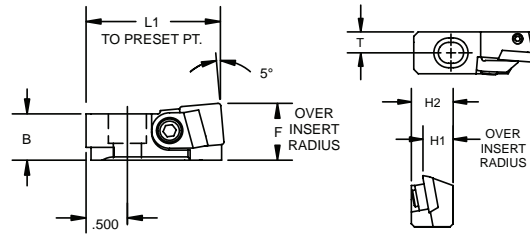


Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
222	Part#	CL-3	CL-3L	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	52733	52095	51992	51995	52805
322	Part#	CL-10	CL-10L	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52726	52727	51993	51992	51995	52805
433	Part#	VBU-C3	VBU-C3	CSC-2H	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	59110	59110	52821	51992	51995	52805

AE Top Clamp

5° Lead Square Insert/Positive Rake

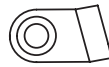
Use Insert Style SPxx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-44-R/LSXY	322	2.250	0.531	1.625	3°	5°	0.406	0.562	0.440	0.281	54274	54273
AE-48-R/LSXY	422	2.250	0.687	1.625	3°	5°	0.406	0.562	0.560	0.281	54277	54276

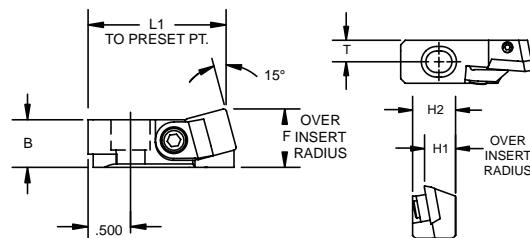
Spare Parts



Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts Axial Adjust Screw
		Right Hand	Left Hand				
Inch Standard							
322	Part#	CL-3	CL-3L	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	52733	52095	51992	51995	52805
422	Part#	CL-4	CL-4L	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52734	52735	51993	51992	51995	52805

15° Lead Square Insert/Positive Rake

Use Insert Style SPxx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
AE-30-RSXY	322	2.000	0.531	1.625	3°	5°	0.406	0.562	0.440	0.281	54264
AE-36-RSXY	422	2.000	0.687	1.625	3°	5°	0.406	0.562	0.560	0.281	54268

Spare Parts



Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts Axial Adjust Screw
		Right Hand	Left Hand				
Inch Standard							
322	Part#	CL-3	CL-3L	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	52733	52095	51992	51995	52805
422	Part#	CL-4	CL-4L	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52734	52735	51993	51992	51995	52805

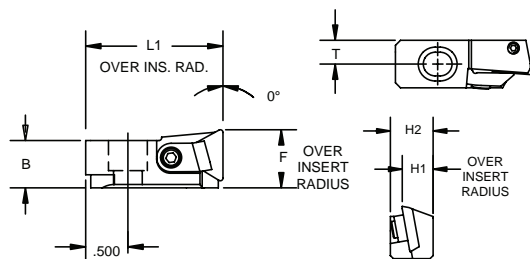
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

AE Top Clamp

0° Lead Triangle Insert/High Shear

Use Insert Style TEx



Right-hand shown, left-hand opposite.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-14-R/LSXY	2.522J	1.290	0.531	1.625	10°	10°	0.406	0.562	0.440	0.281	54256	54255
AE-22-RSXY	322J	1.500	0.687	1.625	10°	10°	0.406	0.562	0.560	0.281	54263	-

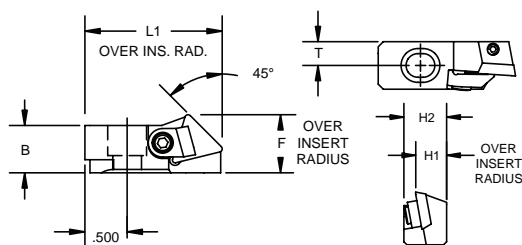
Spare Parts



Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
2.522J	Part#	CL-7	CL-7L	#6-32 x 3/8 SHCS	#6-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52739	52740	52095	52094	51995	52805
322J	Part#	CL-11	CL-11	#10-32 x 3/8 SHCS	#6-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52728	52728	51993	52094	51995	52805

45° Lead Triangle Insert/High Shear

Use Insert Style TEx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
AE-56-RSXY	2.522J	1.575	0.594	1.625	7°	7°	0.406	0.562	0.500	0.281	54282

Spare Parts



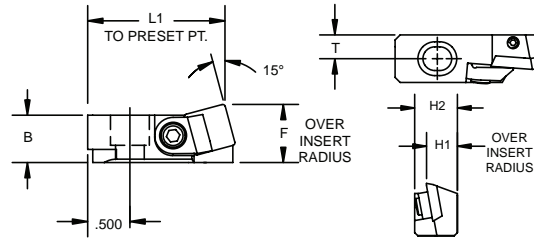
Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
2.522J	Part#	CL-5	CL-5L	#6-32 x 3/8 SHCS	#6-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52736	52737	52095	52094	51995	52805

*Cartridges do not include chipbreakers, mounting screws or inserts.

AE Top Clamp

15° Lead Square Insert/High Shear

Use Insert Style SEx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
AE-34-RSXY	322	1.500	0.531	1.625	10°	10°	0.406	0.562	0.440	0.281	54267
AE-40-RSXY	422	1.830	0.687	1.625	10°	10°	0.406	0.562	0.500	0.281	54271

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



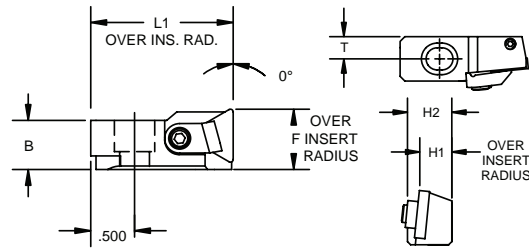
Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-7	CL-7	#6-32x3/8 SHCS	#6-32x3/8 OPSSLW	#10-32x5/16 SSSLW	AS-1B
	EDP#	52739	52739	52095	52094	51995	52805
422	Part#	CL-9	CL-9	#10-32x3/8 SHCS	#6-32x3/8 OPSSLW	#10-32x5/16 SSSLW	AS-1B
	EDP#	52741	52741	51993	52094	51995	52805

CARTRIDGES

AE Top Clamp

0° Lead Triangle Insert/Negative Rake

Use Insert Style TNx

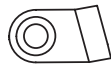


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-12-RSXY	222	1.890	0.531	1.625	-8°	-5°	0.406	0.562	0.440	0.281	54254	-
AE-20-R/LSXY	332	1.890	0.687	1.625	-8°	-5°	0.406	0.562	0.500	0.281	54262	54261
AE-64-R/LSXY	433	2.500	0.875	2.125	-7°	-5°	0.593	0.750	0.750	0.375	54290	54289

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

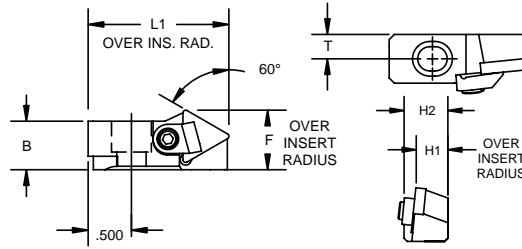


Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
222	Part#	CL-3	-	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	-	52095	51992	51995	52805
332	Part#	CL-10	CL-10L	#10-32 x 3/8 SHCS	#8-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52726	52727	51993	52110	51995	52805
433	Part#	VBU-C3	VBU-C3	CSC-2B	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	59110	59110	52820	51992	51995	52805

AE Top Clamp

60° Lead Triangle Insert/Negative Rake

Use Insert Style TNx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-16-R/LSXY	222	2.559	0.531	1.625	-6°	-4°	0.406	0.562	0.440	0.281	54258	54257
AE-54-RSXY	332	2.559	0.687	1.625	-6°	-4°	0.406	0.562	0.560	0.281	54281	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



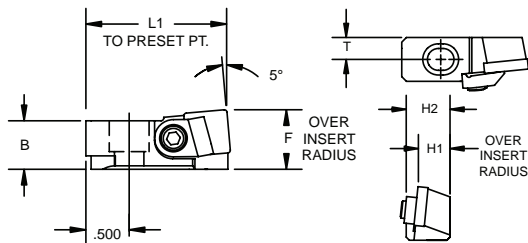
Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
222	Part#	CL-5	CL-5L	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52736	52737	52095	51992	51995	52805
332	Part#	CL-5	-	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52736	-	52095	51992	51995	52805

CARTRIDGES

AE Top Clamp

5° Lead Square Insert/ Negative Rake

Use Insert Style SNx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-46-R/LSXY	322	1.700	0.531	1.625	-8°	-5°	0.406	0.562	0.440	0.281	54275	50180
AE-50-R/LSXY	432	2.030	0.687	1.625	-8°	-6°	0.406	0.562	0.500	0.281	54279	54278

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

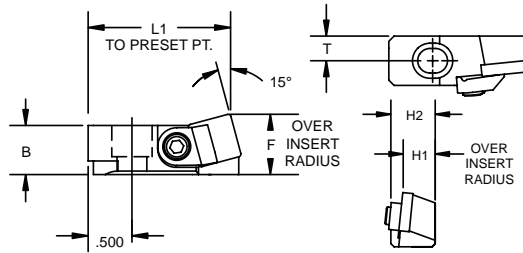


Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-3	CL-3L	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	52733	52095	51992	51995	52805
432	Part#	CL-4	CL-4L	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52734	52735	51993	51992	51995	52805

AE Top Clamp

15° Lead Square Insert/ Negative Rake

Use Insert Style SNx

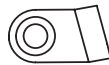


Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-32-RSXY	322	1.500	0.531	1.625	-8°	-6°	0.406	0.562	0.440	0.281	54265	-
AE-38-R/LSXY	432	1.830	0.687	1.625	-8°	-6°	0.406	0.562	0.500	0.281	54270	54269

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



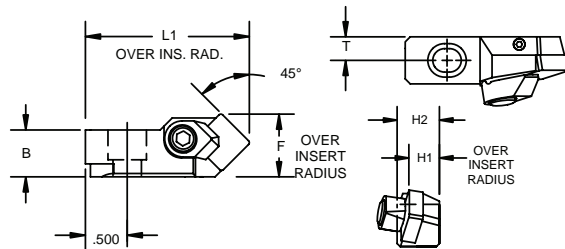
Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-3	-	#6-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52732	-	52095	51992	51995	52805
432	Part#	CL-4	CL-4L	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52734	52735	51993	51992	51995	52805

CARTRIDGES

AE Top Clamp

45° Lead Square Insert/ Negative Rake

Use Insert Style SNx



Right-hand shown, left-hand opposite.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#	
											Right Hand	Left Hand
Inch Standard												
AE-42-R/LSXY	322	-	0.594	1.625	0°	-10°	0.406	0.562	0.500	0.281	54272	54304
AE-52-RSXY	432	-	0.750	1.960	0°	-10°	0.406	0.562	0.500	0.281	54280	-

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

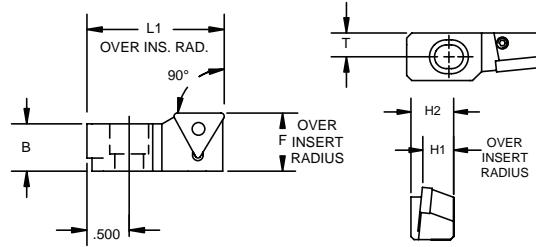


Insert Shape	Part#	Clamp		Clamp Screw	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#	Right Hand	Left Hand				Axial Adjust Screw
Inch Standard							
322	Part#	CL-12	CL-12	#10-32 x 3/8 SHCS	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52730	52730	51993	51992	51995	52805
432	Part#	CL-12	-	#10-32 x 3/8 SHCS	#632 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52730	-	51993	52094	51995	52805

H-AE Economy

90° Lead Triangle Insert/ Negative Rake

Use Insert Style TNx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
H-AE-60	332	-	0.687	1.625	-7°	-5°	0.406	0.562	0.500	0.281	54317

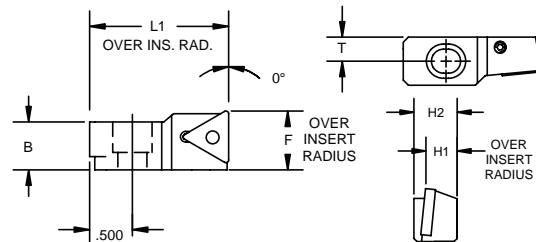
Spare Parts



Insert Shape	Part#	Lock Pin	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#				Axial Adjust Screw
Inch Standard					
332	Part#	H-404-1A	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52853	51992	51995	52805

0° Lead Triangle Insert/ Negative Rake

Use Insert Style TNx



Right-hand shown.

*Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
H-AE-12	2.522	1.500	0.531	1.625	-8°	-5°	0.406	0.562	0.440	0.281	54309
H-AE-20	332	2.250	0.687	1.625	-8°	-5°	0.406	0.562	0.500	0.281	54310

Spare Parts



Insert Shape	Part#	Lock Pin	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#				Axial Adjust Screw
Inch Standard					
2.522	Part#	H-402-1B	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52851	51992	51995	52805
332	Part#	H-404-1A	#8-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52853	52110	51995	52805

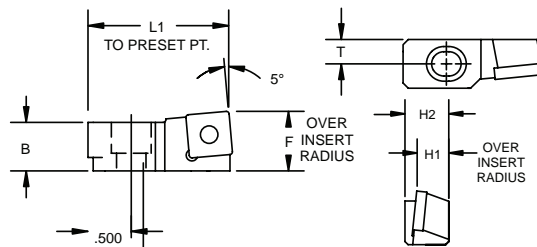
*Cartridges do not include chipbreakers, mounting screws or inserts.

CARTRIDGES

H-AE Economy

5° Lead Square Insert/ Negative Rake

Use Insert Style SNx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
H-AE-46	322	2.000	0.531	1.625	-8°	-5°	0.406	0.562	0.440	0.281	54314
H-AE-50	432	2.030	0.687	1.625	-8°	-5°	0.406	0.562	0.500	0.281	54315

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts

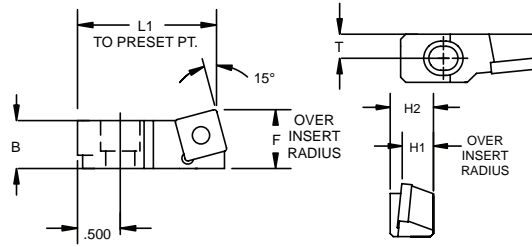


Insert Shape	Part#	Lock Pin	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#				Axial Adjust Screw
Inch Standard					
322	Part#	H-404-1B	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52854	51992	51995	52805
432	Part#	H-408-1A	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52861	51992	51995	52805

H-AE Economy

15° Lead Square Insert/ Negative Rake

Use Insert Style SNx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
H-AE-32	322	2.000	0.531	1.625	-8°	-6°	0.406	0.562	0.440	0.281	54311
H-AE-38	432	2.250	0.687	1.625	-8°	-6°	0.406	0.562	0.500	0.281	54312

Cartridges do not include chipbreakers, mounting screws or inserts.

Spare Parts



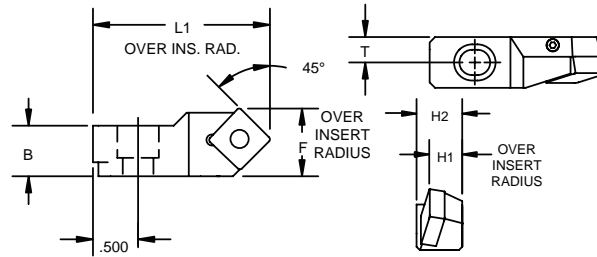
Insert Shape	Part#	Lock Pin	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#				Axial Adjust Screw
Inch Standard					
322	Part#	H-404-1B	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52854	51992	51995	52805
432	Part#	H-408-1A	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52861	51992	51995	52805

CARTRIDGES

H-AE Economy

45° Lead Square Insert/ Negative Rake

Use Insert Style SNx



Right-hand shown.

Cartridge Part #	Insert Size	Min. Bore	F	L1	Radial	Axial	H1	H2	B	T	EDP#
Inch Standard											
H-AE-42	322	-	0.594	1.625	-0°	-10°	0.406	0.562	0.500	0.281	54313
H-AE-52	432	-	0.750	1.960	-0°	-10°	0.406	0.562	0.500	0.281	54316

Cartridges do not include chipbreakers, mounting screws or inserts.

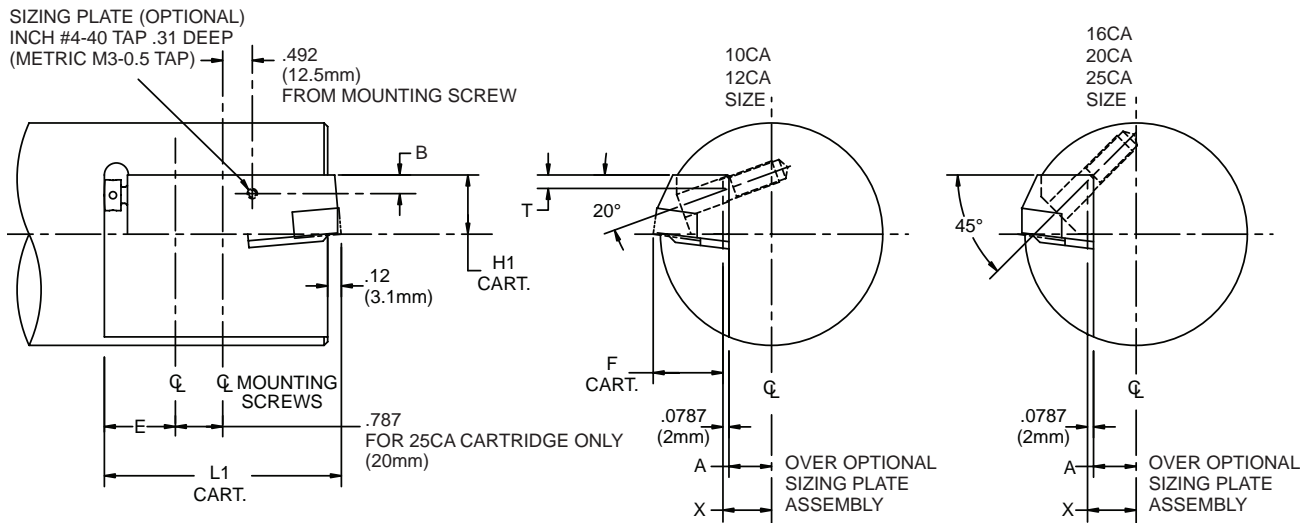
Spare Parts



Insert Shape	Part#	Lock Pin	Radial Adjust Screw	Axial Adjust Screw	Optional Parts
	EDP#				Axial Adjust Screw
Inch Standard					
322	Part#	H-404-1B	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52854	51992	51995	52805
432	Part#	H-408-1A	#10-32 x 3/8 OPSSLW	#10-32 x 5/16 SSSLW	AS-1B
	EDP#	52861	51992	51995	52805

Mounting Information

International Standard Cartridges

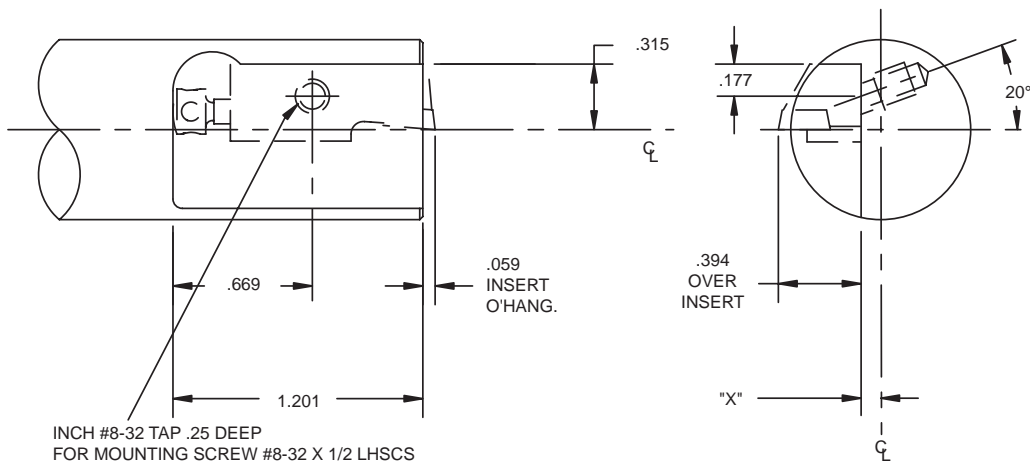


Cartridge Size	±.003 (±.008) H1	L1	F1	Mounting Screw Hole		±.005 (±.013) T	±.005 (±.013) B	±.005 (±.013) E	Sizing Plate Ass'y (Optional)			
				Inch	Metric				Inch		Metric	
10CA	.394 (10mm)	1.968 (50mm)	0.551 (14mm)	¼-20 x ½ DP	M6	.168 (4,27mm)	.256 (6,5mm)	.787 (20mm)	RH	PT-297	RH	PT-307
12CA	.472 (12mm)	2.165 (55mm)	.787 (20mm)	¼-20 x ½ DP	1,0 x ½ DP	.208 (5,27mm)	.335 (8,5mm)		RH	PT-299	RH	PT-309
16CA	.630 (16mm)	2.480 (63mm)	.984 (25mm)	5/16-24 x ¾ DP	M8 1,25 x ¾ DP	.0787 (2mm)	.394 (10mm)	.984 (25mm)	RH	PT-301	RH	PT-311
20CA	.787 (20mm)	2.756 (70mm)	.984 (25mm)						LH	PT-302	LH	PT-312
25CA	.984 (25mm)	3.937 (100mm)	1.260 (32mm)	3/8-24 x ¾ DP	M10 1,50 x ¾ DP	.492 (12,5mm)	1.181 (30mm)	RH	PT-303	RH	PT-313	
								RH	PT-304	RH	PT-314	
									RH	PT-305	RH	PT-315
									LH	PT-306	LH	PT-316

CARTRIDGES

Mounting Information for Mini Cartridges

Without Sizing Plate



INCH #8-32 TAP .25 DEEP
FOR MOUNTING SCREW #8-32 X 1/2 LHSCS
(METRIC M4-0,7 TAP
FOR MOUNTING SCREW M4 -12 DIN 7984)

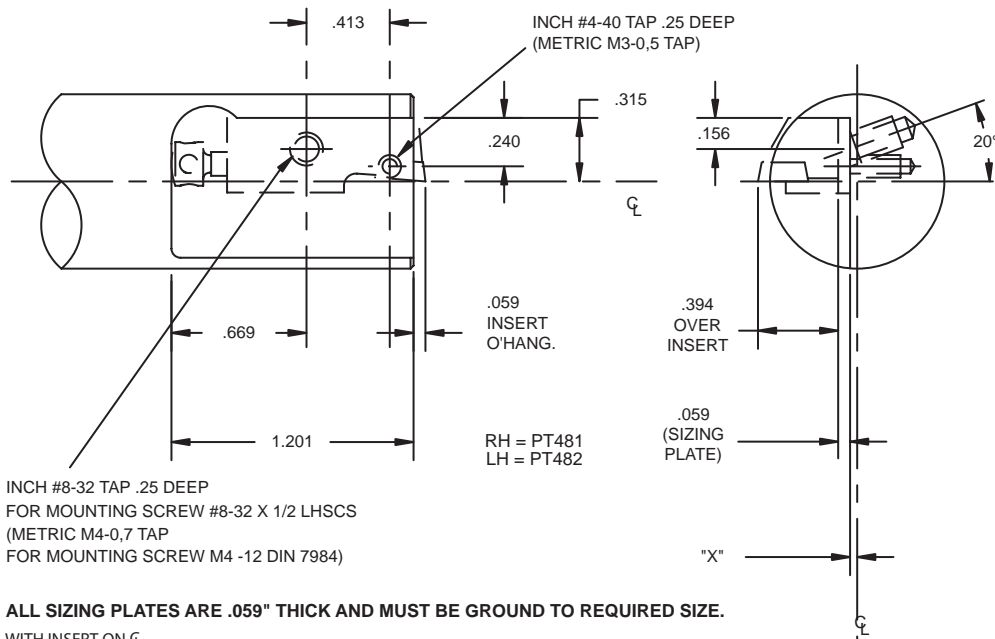
WITH INSERT ON ϕ

$$"X" = \frac{\text{BORE DIA.} - .394 \text{ (CARTRIDGE HEIGHT)}}{2} \text{ \& \text{ WHEN USING CARTRIDGE RADIAL ADJUSTMENT SCREW}} \\ \text{SUBTRACT AN ADDITIONAL .004 FOR CARTRIDGE PRELOAD.}$$

NOTE: USE CAUTION WHEN USING STRPR AND STTPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

With Optional Sizing Plate

SIZING PLATE RECOMMENDED FOR NON-HARDENED BAR STEEL WHEN USING THE RADIAL ADJUSTING SCREW.



INCH #8-32 TAP .25 DEEP
FOR MOUNTING SCREW #8-32 X 1/2 LHSCS
(METRIC M4-0,7 TAP
FOR MOUNTING SCREW M4 -12 DIN 7984)

ALL SIZING PLATES ARE .059" THICK AND MUST BE GROUND TO REQUIRED SIZE.

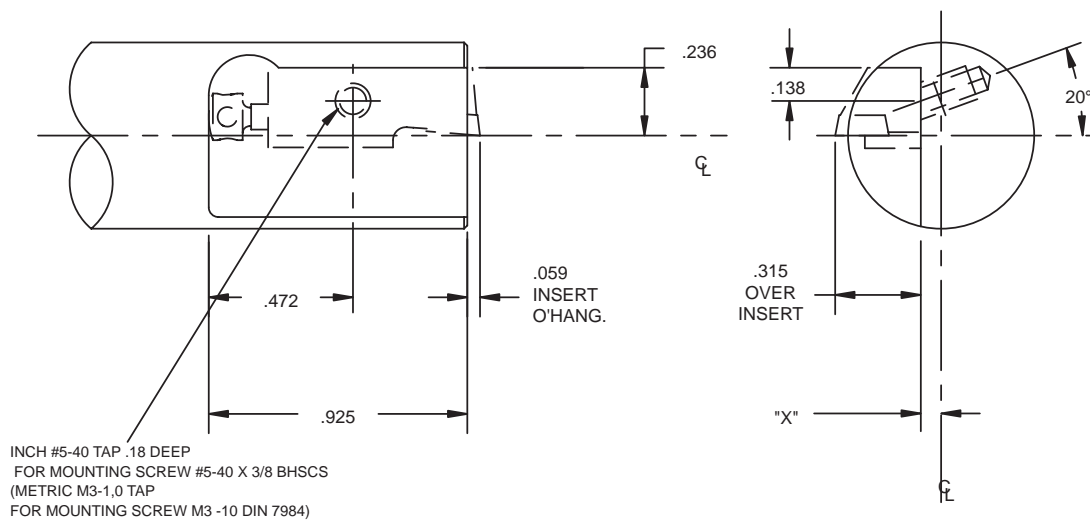
WITH INSERT ON ϕ

$$"X" = \frac{\text{BORE DIA.} - .394 \text{ (CARTRIDGE HEIGHT)} - .059 \text{ (SIZING PLATE)} - .004 \text{ (CARTRIDGE PRELOAD)}}{2}$$

NOTE: USE CAUTION WHEN USING STRPR AND STTPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

20° Mounting Information for Mini Cartridges

Without Sizing Plate



INCH #5-40 TAP .18 DEEP
FOR MOUNTING SCREW #5-40 X 3/8 BHSCS
(METRIC M3-1,0 TAP
FOR MOUNTING SCREW M3 -10 DIN 7984)

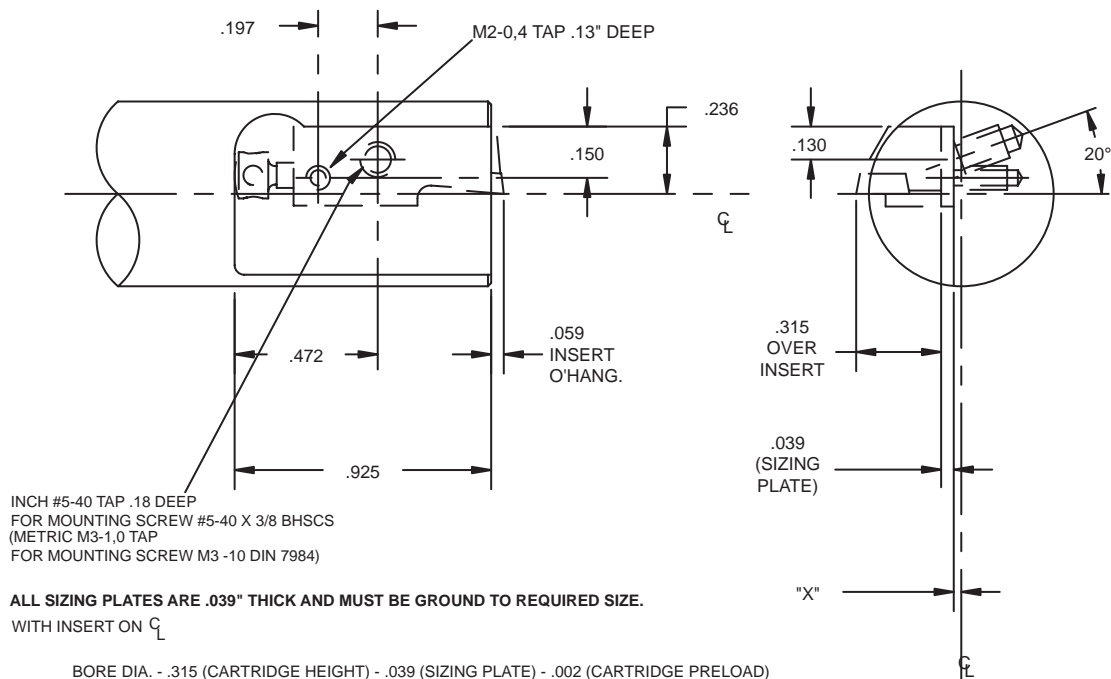
WITH INSERT ON ϕ

$$"X" = \frac{\text{BORE DIA.} - .315 \text{ (CARTRIDGE HEIGHT)}}{2} \quad \text{\& \text{ WHEN USING CARTRIDGE RADIAL ADJUSTMENT SCREW}} \\ \text{SUBTRACT AN ADDITIONAL .002 FOR CARTRIDGE PRELOAD.}$$

NOTE: USE CAUTION WHEN USING SCTPR AND SCSPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

With Optional Sizing Plate

SIZING PLATE RECOMMENDED FOR NON-HARDENED BAR STEEL WHEN USING THE RADIAL ADJUSTING SCREW.



INCH #5-40 TAP .18 DEEP
FOR MOUNTING SCREW #5-40 X 3/8 BHSCS
(METRIC M3-1,0 TAP
FOR MOUNTING SCREW M3 -10 DIN 7984)

ALL SIZING PLATES ARE .039" THICK AND MUST BE GROUND TO REQUIRED SIZE.

WITH INSERT ON ϕ

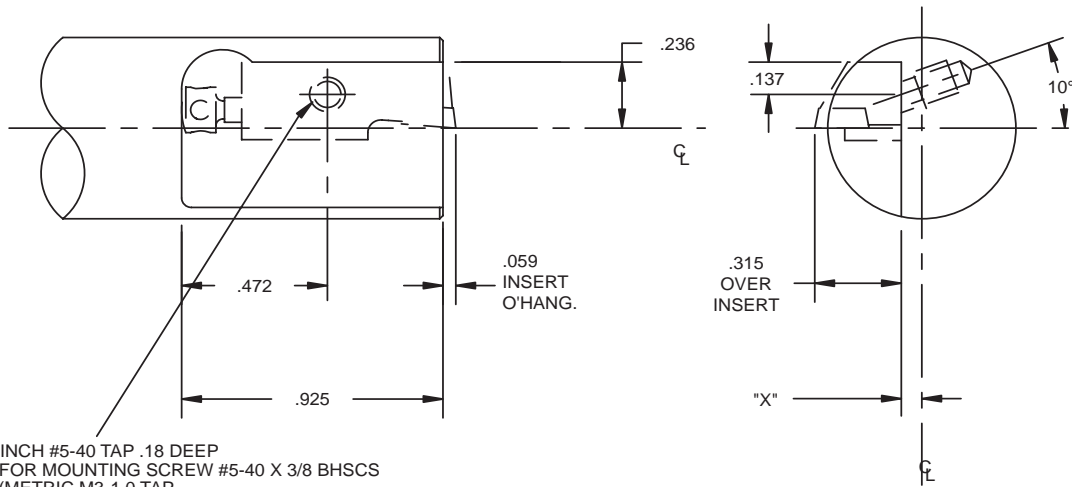
$$"X" = \frac{\text{BORE DIA.} - .315 \text{ (CARTRIDGE HEIGHT)} - .039 \text{ (SIZING PLATE)} - .002 \text{ (CARTRIDGE PRELOAD)}}{2}$$

NOTE: USE CAUTION WHEN USING SCTPR AND SCSPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

CARTRIDGES

10° Mounting Information for Super-Mini VA Cartridges

Without Sizing Plate



INCH #5-40 TAP .18 DEEP
FOR MOUNTING SCREW #5-40 X 3/8 BHSCS
(METRIC M3-1,0 TAP
FOR MOUNTING SCREW M3 -10 DIN 7984)

WITH INSERT ON ϕ

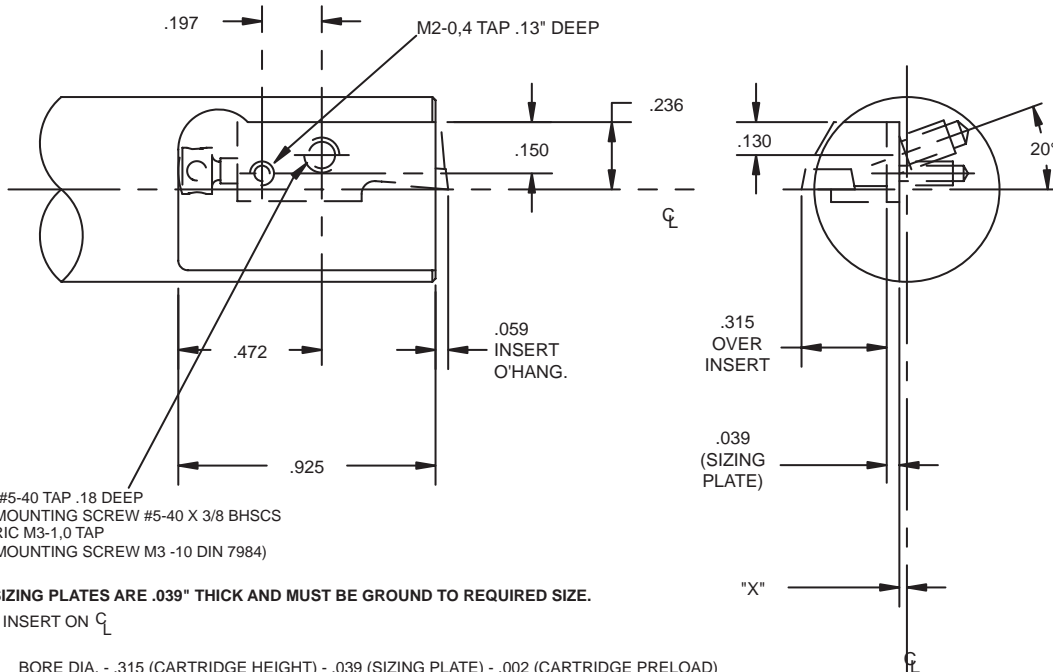
$$"X" = \frac{\text{BORE DIA.} - .315 \text{ (CARTRIDGE HEIGHT)}}{2} \text{ WHEN USING CARTRIDGE RADIAL ADJUSTMENT SCREW}$$

SUBTRACT AN ADDITIONAL .002 FOR CARTRIDGE PRELOAD.

NOTE: USE CAUTION WHEN USING SCTPR AND SCSPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

With Optional Sizing Plate

SIZING PLATE RECOMMENDED FOR NON-HARDENED BAR STEEL WHEN USING THE RADIAL ADJUSTING SCREW.



INCH #5-40 TAP .18 DEEP
FOR MOUNTING SCREW #5-40 X 3/8 BHSCS
(METRIC M3-1,0 TAP
FOR MOUNTING SCREW M3 -10 DIN 7984)

ALL SIZING PLATES ARE .039" THICK AND MUST BE GROUND TO REQUIRED SIZE.

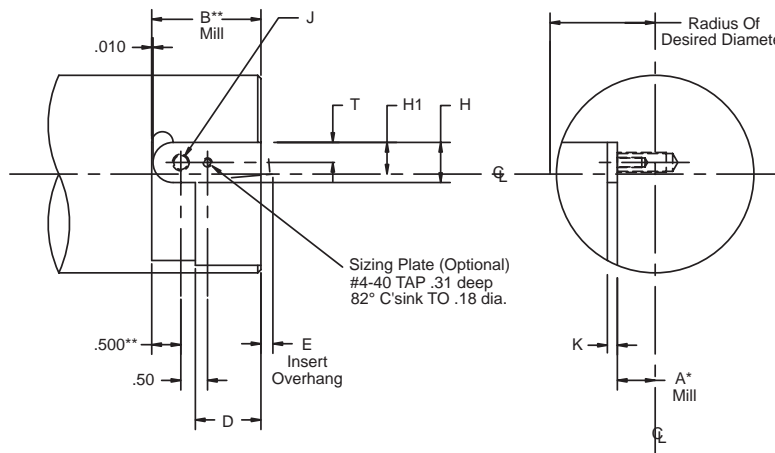
WITH INSERT ON ϕ

$$"X" = \frac{\text{BORE DIA.} - .315 \text{ (CARTRIDGE HEIGHT)} - .039 \text{ (SIZING PLATE)} - .002 \text{ (CARTRIDGE PRELOAD)}}{2}$$

NOTE: USE CAUTION WHEN USING SCTPR AND SCSPR STYLE CARTRIDGES FOR CHAMFERING OPERATIONS.

Mounting Information

AE & H-AE Cartridges



*To find "A" dimension when insert is on center line, subtract "F" dimension (Cartridge Height) from Radius of desired bore diameter.

If using Radial Adjustment Screw, subtract an additional .007" for cartridge preload.

If using the optional hardened sizing plate under cartridge, subtract an additional .060".

Example if using Radial Adjustment Screw and sizing plate:
 $A = \text{Radius of Bore} - F - .007" - .060"$

Sizing Plate recommended for non-hardened bar steel when using the Radial Adjusting screw.

**Add .060" if Axial adjusting screw is used.

Add .340" if optional adjusting screw as 1B is used.

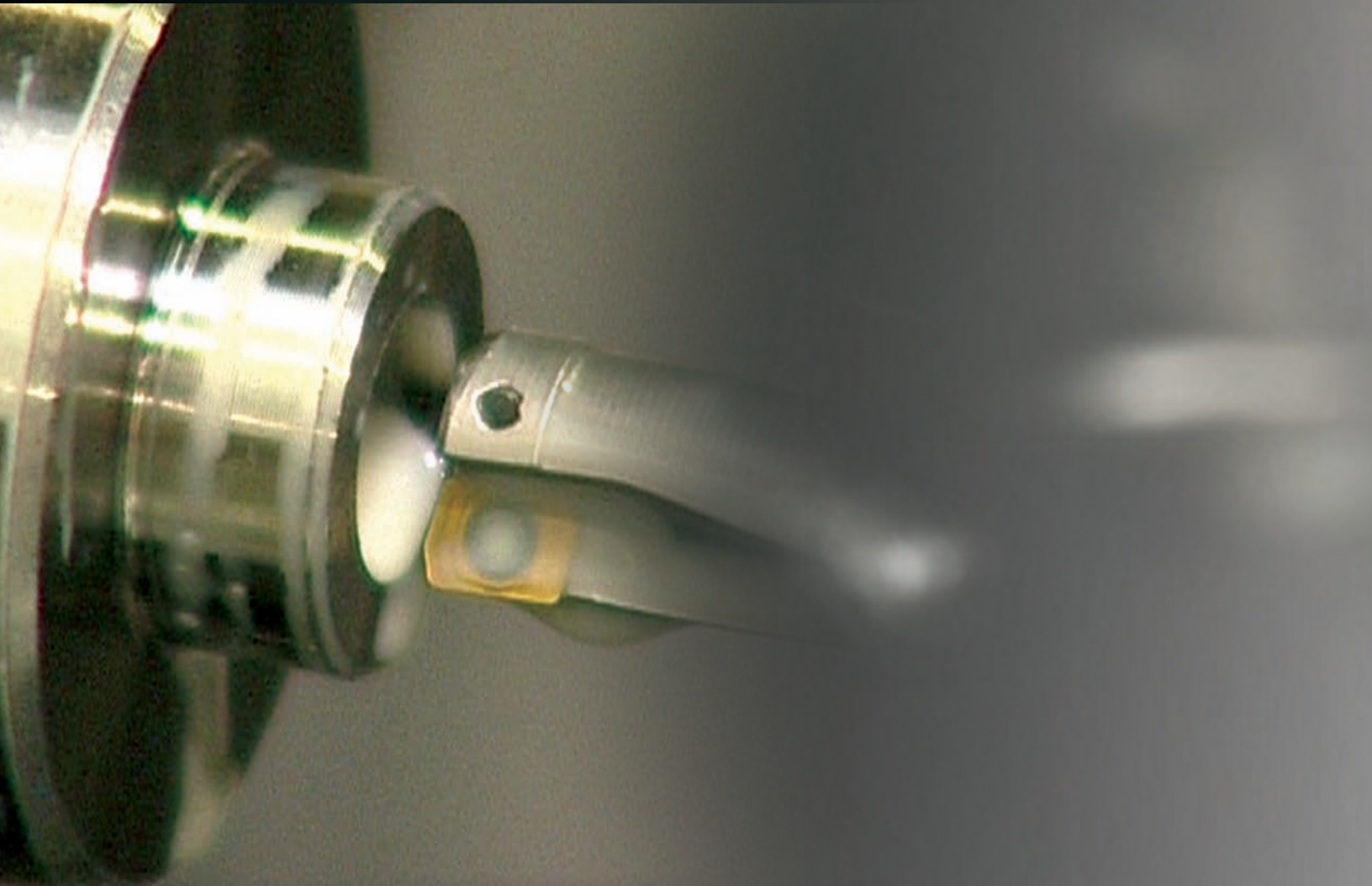
Sizing plates are .0605" thick and must be ground to required size.

Plate Assembly includes plate and screw.

Cartridge Number		B	D Chip Gash	E	±.001 _0 H	±.001 H1	J	K	±.005 T	F (Cart. Hgt.)
AE Series	HAE Series									
AE-10-RSXY	-	1.500	0.560	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-12-RSXY	H-AE-12	1.500	0.560	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-14-RSXY	-	1.500	0.600	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-16-RSXY	-	1.500	0.530	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-18-RSXY	-	1.500	0.750	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-20-RSXY	H-AE-20	1.500	0.750	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-22-RSXY	-	1.500	0.750	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-30-RSXY	-	1.625	0.640	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-32-RSXY	H-AE-32	1.625	0.640	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-34-RSXY	-	1.625	0.650	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-36-RSXY	-	1.625	0.810	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-38-RSXY	H-AE-38	1.625	0.810	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-40-RSXY	-	1.625	0.810	0	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-42-RSXY	H-AE-42	1.375	0.680	0.250	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.594
AE-44-RSXY	-	1.500	0.610	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-46-RSXY	H-AE-46	1.500	0.610	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.531
AE-48-RSXY	-	1.500	0.710	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-50-RSXY	H-AE-50	1.500	0.710	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-52-RSXY	H-AE-52	1.620	0.710	0.340	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.750
AE-54-RSXY	-	1.500	0.710	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-56-RSXY	-	1.500	0.650	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.594
AE-58-RSXY	-	1.500	0.750	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-60-RSXY	H-AE-60	1.500	0.710	0.125	0.563	0.406	¼-28 Tap .44 Deep for ¼-28 x 5/8 SHCS	0.187	0.281	0.687
AE-62-RSXY	-	1.938	1.250	0.187	0.751	0.593	5/16-241 Tap .56 Deep for 5/16-24 x ¾ SHCS	0.125	0.375	0.875
AE-64-RSXY	-	1.938	1.250	0.187	0.751	0.593	5/16-241 Tap .56 Deep for 5/16-24 x ¾ SHCS	0.125	0.375	0.875

At Valenite

WE NEVER STOP...



Supporting

We can increase your productivity by 20%. Make us prove it!

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DRILL PRODUCTS

Program Overview

VD100 Indexable 2X, 3X and 4X Diameter Helical Drill

Diameter .500" - 1.187"

Application Rotary and stationary drilling for all work piece materials

Coolant Options Through and flange coolant



Val-U-Dex Indexable 3X Diameter Helical Drill

Diameter 1.22" - 2.50"

Application Rotary and stationary drilling for all work piece materials

Coolant Options Through and flange coolant



Val-U-Dex Indexable Short Hole Straight Flute

Diameter .750" - 2.00"

Application Rotary and stationary drilling for all work piece materials

Coolant Options Through coolant



VD100 Drill Product Overview



VD100 - Inch Drills

From 0.500" to 1.187" and in 2x, 3x and 4x diameters
Up to 4 insert indexes based on diameter
For stationary and rotating applications
Through the shank and flange coolant ports
Coated drill body for corrosion and chip erosion resistance
Helical flute design for excellent chip evacuation

SD100 - Metric Drills

From 12-30mm, with 2x and 4x diameters.
Available as a non-stock standard.

Three ValPro Grades: VP1310, VP5225, VP8335 Two Chipbreaker Styles: 47 & 57

57



LCMT

Shown in Grade VP5225

47



XPMT

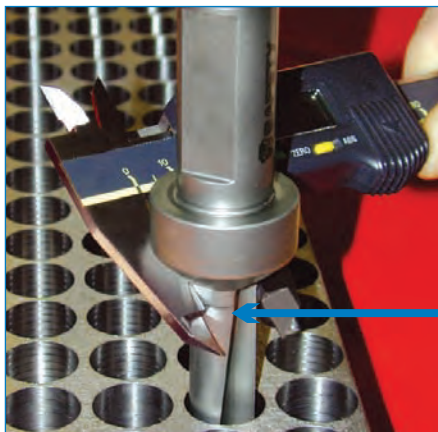
Shown in Grade VP1310

57



XPMT

Shown in Grade VP8335



A step on the drill body indicates the maximum drilling depth.

The drill creates consistent on-size holes and provides the operator with an easy way to check the drilling diameter without interfering with the setup.

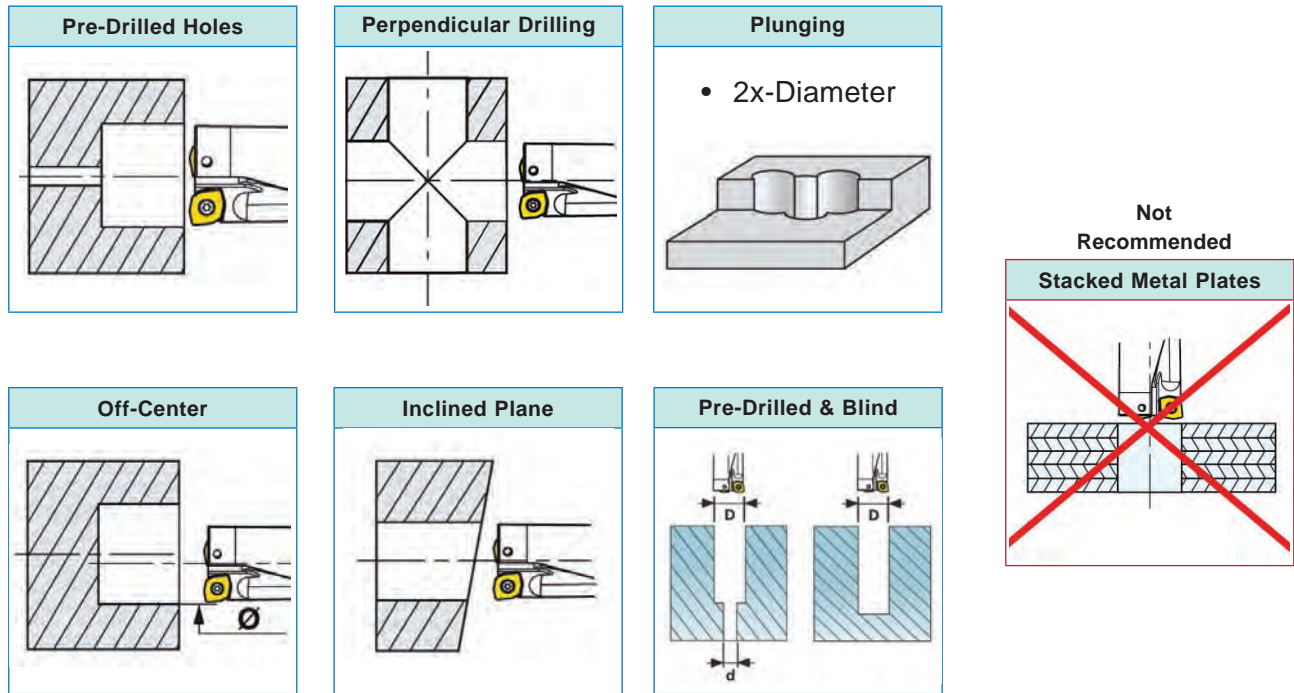
Specials

VD100 Drills can also be produced on request for all special applications.



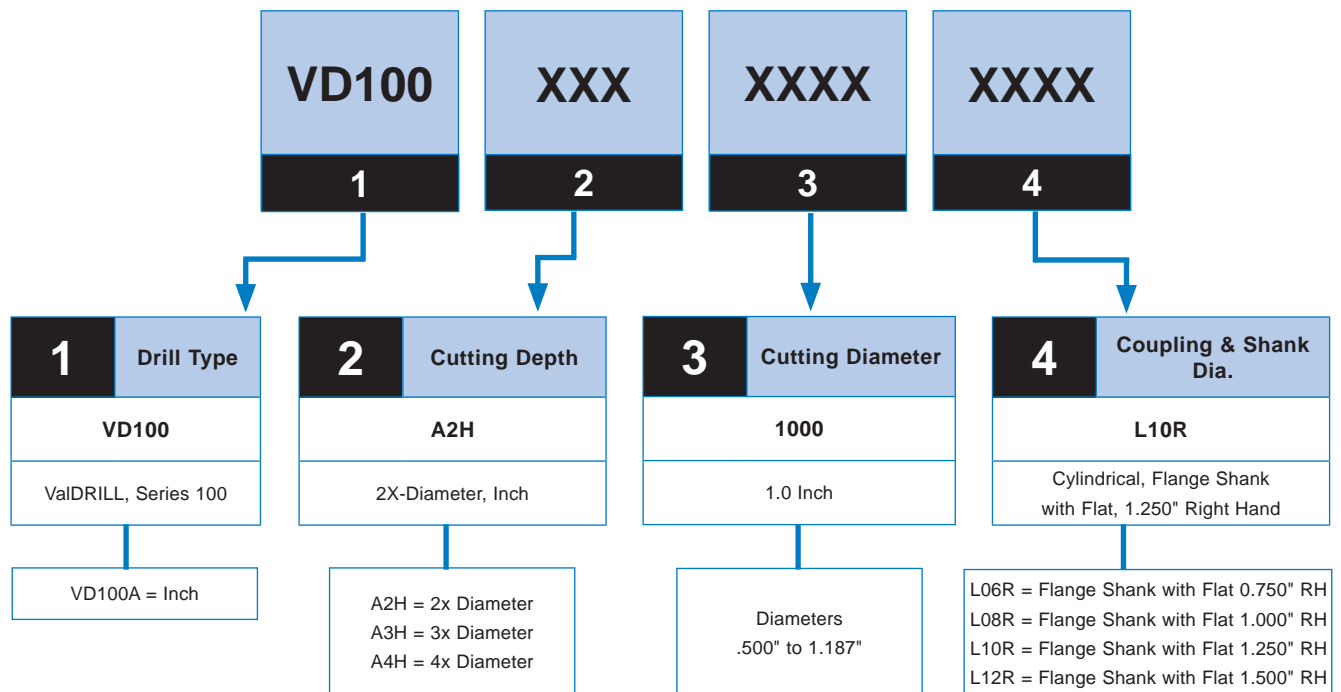
DRILL PRODUCTS

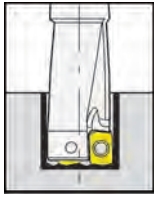
VD100 Drilling Applications



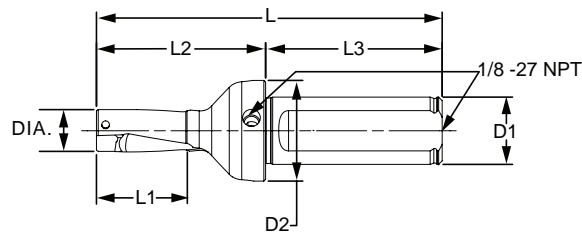
Drill Body Part Number Designation

example:
VD100 A2H 1000L10R





Hole Tolerance (2xD & 3xD)	+ .004" - .012"
Hole Tolerance (4xD)	+ .008" - .012"

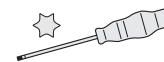


Right-hand shown

	Part Number	DIA	Dimensions						EDP#	Insert
			D1	D2	L	L1	L2	L3		
2x-Dia	VD100 A2H 0500 L06R	0.500	0.750	1.319	4.173	1.000	2.205	1.969	62910	LCMT 04 02 05
	VD100 A2H 0531 L06R	0.531	0.750	1.319	4.213	1.062	2.244	1.968	62911	
	VD100 A2H 0562 L06R	0.562	0.750	1.319	4.252	1.124	2.283	1.968	62912	
	VD100 A2H 0594 L06R	0.594	0.750	1.319	4.331	1.188	2.362	1.969	62913	
	VD100 A2H 0625 L06R	0.625	0.750	1.319	4.370	1.250	2.402	1.968	62914	
3x-Dia	VD100 A3H 0500 L06R	0.500	0.750	1.319	4.685	1.500	2.717	1.968	62870	LCMT 04 02 05
	VD100 A3H 0531 L06R	0.531	0.750	1.319	4.764	1.593	2.795	1.969	62887	
	VD100 A3H 0562 L06R	0.562	0.750	1.319	4.843	1.686	2.874	1.969	62888	
	VD100 A3H 0594 L06R	0.594	0.750	1.319	4.882	1.782	2.913	1.968	62889	
	VD100 A3H 0625 L06R	0.625	0.750	1.319	4.961	1.875	2.992	1.968	62890	
4x-Dia	VD100 A4H 0500 L06R	0.500	0.750	1.319	5.197	2.000	3.228	1.969	62934	LCMT 04 02 05
	VD100 A4H 0531 L06R	0.531	0.750	1.319	5.276	2.124	3.307	1.968	62935	
	VD100 A4H 0562 L06R	0.562	0.750	1.319	5.394	2.248	3.425	1.968	62936	
	VD100 A4H 0594 L06R	0.594	0.750	1.319	5.472	2.376	3.504	1.969	62937	
	VD100 A4H 0625 L06R	0.625	0.750	1.319	5.591	2.500	3.622	1.969	62939	

Part Number Code

Drill Type	Cutting Depth & Unit	Cutting Diameter	Coupling & Shank Dia., Hand
VD100	A2H	0500	L06R
ValDRILL, Series 100	2x-dia, Inch	0.500 Inch	Cylindrical Flange Shank with Flat, 0.750", Right



Spare Parts

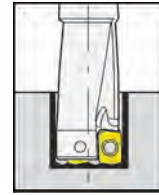
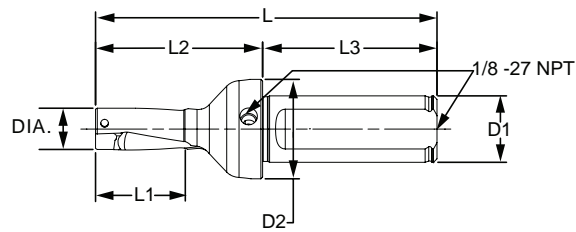
Insert Series	Drill Diameter	Insert Screw*		Driver		Torque
		Part Number	EDP#	Part Number	EDP#	
LCMT 04	0.500"-0.625"	DVF 3632	62964	TX 207PLUS	50147	6-8 In-lbs.

*Valenite recommends the use of "PT745 antiseize" lubricant, EDP #50050, on insert screw threads and head.

DRILL PRODUCTS

VD100 Drill Body

0.656" to 0.813"



Hole Tolerance (2xD & 3xD)	+ .004" - .012"
Hole Tolerance (4xD)	+ .008" - .012"

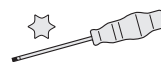
Right-hand shown

	Part Number	DIA	Dimensions						EDP#	Insert
			D1	D2	L	L1	L2	L3		
2x-Dia	VD100 A2H 0656 L08R	0.656	1.000	1.575	4.764	1.314	2.559	2.205	62966	XPMT 06 02 04
	VD100 A2H 0688 L08R	0.688	1.000	1.575	4.803	1.376	2.598	2.204	62916	
	VD100 A2H 0719 L08R	0.719	1.000	1.575	4.882	1.438	2.677	2.205	62917	
	VD100 A2H 0750 L08R	0.750	1.000	1.575	4.921	1.500	2.717	2.205	62918	
	VD100 A2H 0781 L08R	0.781	1.000	1.575	4.961	1.562	2.756	2.205	62919	
	VD100 A2H 0813 L08R	0.813	1.000	1.575	5.000	1.630	2.795	2.205	62920	
3x-Dia	VD100 A3H 0656 L08R	0.656	1.000	1.575	5.394	1.971	3.189	2.205	62967	XPMT 06 02 04
	VD100 A3H 0688 L08R	0.688	1.000	1.575	5.512	2.064	3.307	2.205	62892	
	VD100 A3H 0719 L08R	0.719	1.000	1.575	5.591	2.157	3.386	2.204	62893	
	VD100 A3H 0750 L08R	0.750	1.000	1.575	5.669	2.250	3.465	2.205	62894	
	VD100 A3H 0781 L08R	0.781	1.000	1.575	5.748	2.343	3.543	2.205	62895	
	VD100 A3H 0813 L08R	0.813	1.000	1.575	5.827	2.440	3.622	2.205	62896	
4x-Dia	VD100 A4H 0656 L08R	0.656	1.000	1.575	6.063	2.628	3.858	2.205	62968	XPMT 06 02 04
	VD100 A4H 0688 L08R	0.688	1.000	1.575	6.181	2.752	3.976	2.204	62941	
	VD100 A4H 0719 L08R	0.719	1.000	1.575	6.299	2.876	4.094	2.204	62959	
	VD100 A4H 0750 L08R	0.750	1.000	1.575	6.417	3.000	4.213	2.205	62943	
	VD100 A4H 0781 L08R	0.781	1.000	1.575	6.535	3.124	4.331	2.205	62944	
	VD100 A4H 0813 L08R	0.813	1.000	1.575	6.654	3.250	4.449	2.205	62945	

Part Number Code

Drill Type	Cutting Depth & Unit	Cutting Diameter	Coupling & Shank Dia., Hand
VD100	A2H	0656	L08R
ValDRILL, Series 100	2x-dia, Inch	0.656 Inch	Cylindrical Flange Shank with Flat, 1.00", Right

Spare Parts

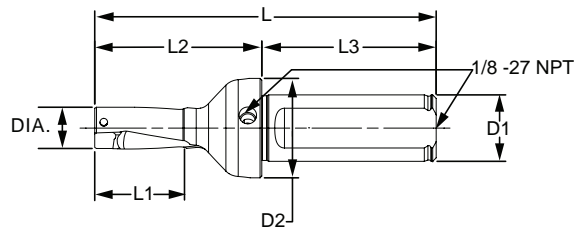


Insert Series	Drill Diameter	Insert Screw*		Driver		Torque
		Part Number	EDP#	Part Number	EDP#	
XPMT 06	0.656"-0.813"	DVF 0939	62963	TX 207PLUS	50147	6-8 In-lbs.

*Valenite recommends the use of "PT745 antiseize" lubricant, EDP #50050, on insert screw threads and head.



Hole Tolerance (2xD & 3xD)	+ .004" - .012"
Hole Tolerance (4xD)	+ .008" - .012"

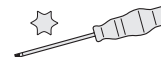


Right-hand shown

	Part Number	DIA	Dimensions						EDP#	Insert
			D1	D2	L	L1	L2	L3		
2x-Dia	VD100 A2H 0843 L08R	0.843	1.000	1.575	5.039	1.630	2.835	2.205	62921	XPMT 08 03 08
	VD100 A2H 0875 L08R	0.875	1.000	1.575	5.118	1.750	2.913	2.205	62922	
	VD100 A2H 0906 L10R	0.906	1.250	1.811	5.443	1.810	3.071	2.362	62923	
	VD100 A2H 0938 L10R	0.938	1.250	1.811	5.472	1.880	3.110	2.362	62924	
	VD100 A2H 0969 L10R	0.969	1.250	1.811	5.512	1.940	3.150	2.362	62925	
3x-Dia	VD100 A3H 0843 L08R	0.843	1.000	1.575	5.906	2.440	3.701	2.205	62897	XPMT 08 03 08
	VD100 A3H 0875 L08R	0.875	1.000	1.575	5.984	2.630	3.780	2.205	62933	
	VD100 A3H 0906 L10R	0.906	1.250	1.811	6.339	2.720	3.976	2.362	62899	
	VD100 A3H 0938 L10R	0.938	1.250	1.811	6.417	2.810	4.055	2.362	62900	
	VD100 A3H 0969 L10R	0.969	1.250	1.811	6.496	2.910	4.134	2.362	62901	
4x-Dia	VD100 A4H 0843 L08R	0.843	1.000	1.575	6.732	3.250	4.528	2.205	62969	XPMT 08 03 08
	VD100 A4H 0875 L08R	0.875	1.000	1.575	6.850	3.500	4.646	2.205	62946	
	VD100 A4H 0906 L10R	0.906	1.250	1.811	7.244	3.620	4.882	2.362	62947	
	VD100 A4H 0938 L10R	0.938	1.250	1.811	7.362	3.750	5.000	2.362	62948	
	VD100 A4H 0969 L10R	0.969	1.250	1.811	7.441	3.880	5.079	2.362	62949	

Part Number Code

Drill Type	Cutting Depth & Unit	Cutting Diameter	Coupling & Shank Dia., Hand
VD100	A2H	0843	L08R
ValDRILL, Series 100	2x-dia, Inch	0.843 Inch	Cylindrical Flange Shank with Flat, 1.00", Right



Spare Parts

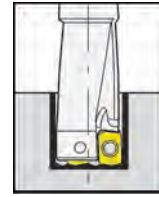
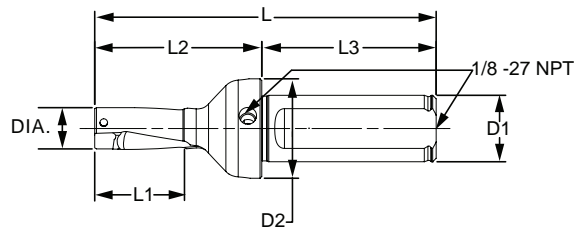
Insert Series	Drill Diameter	Insert Screw*		Driver		Torque
		Part Number	EDP#	Part Number	EDP#	
XPMT 08	0.843"-0.969"	DVF 3509	62526	TX 208PLUS	61930	8-12 In-lbs.

*Valenite recommends the use of "PT745 antiseize" lubricant, EDP #50050, on insert screw threads and head.

DRILL PRODUCTS

VD100 Drill Body

1.000" to 1.187"



Hole Tolerance (2xD & 3xD)	+ .004" - .012"
Hole Tolerance (4xD)	+ .008" - .012"

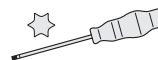
Right-hand shown

	Part Number	DIA	Dimensions						EDP#	Insert
			D1	D2	L	L1	L2	L3		
2x-Dia	VD100 A2H 1000 L10R	1.000	1.250	1.811	5.551	2.000	3.189	2.362	62926	XPMT 09 T3 08
	VD100 A2H 1031 L10R	1.031	1.250	1.811	5.630	2.060	3.268	2.362	62927	
	VD100 A2H 1063 L10R	1.063	1.250	1.811	5.669	2.130	3.307	2.362	62928	
	VD100 A2H 1094 L10R	1.094	1.250	1.811	5.709	2.190	3.346	2.362	62929	
	VD100 A2H 1125 L10R	1.125	1.250	1.811	5.748	2.250	3.386	2.362	62930	
	VD100 A2H 1156 L12R	1.156	1.500	1.968	6.260	2.310	3.504	2.756	62931	
	VD100 A2H 1187 L12R	1.187	1.500	1.968	6.339	2.370	3.583	2.756	62932	
3x-Dia	VD100 A3H 1000 L10R	1.000	1.250	1.811	6.575	3.000	4.213	2.362	62902	XPMT 09 T3 08
	VD100 A3H 1031 L10R	1.031	1.250	1.811	6.654	3.090	4.291	2.362	62903	
	VD100 A3H 1063 L10R	1.063	1.250	1.811	6.732	3.190	4.370	2.362	62904	
	VD100 A3H 1094 L10R	1.094	1.250	1.811	6.811	3.280	4.449	2.362	62905	
	VD100 A3H 1125 L10R	1.125	1.250	1.811	6.890	3.380	4.528	2.362	62906	
	VD100 A3H 1156 L12R	1.156	1.500	1.968	7.441	3.470	4.685	2.756	62907	
	VD100 A3H 1187 L12R	1.187	1.500	1.968	7.520	3.560	4.764	2.756	62908	
4x-Dia	VD100 A4H 1000 L10R	1.000	1.250	1.811	7.559	4.000	5.197	2.362	62950	XPMT 09 T3 08
	VD100 A4H 1031 L10R	1.031	1.250	1.811	7.677	4.120	5.315	2.362	62951	
	VD100 A4H 1063 L10R	1.063	1.250	1.811	7.795	4.250	5.433	2.362	62952	
	VD100 A4H 1094 L10R	1.094	1.250	1.811	7.913	4.380	5.551	2.362	62953	
	VD100 A4H 1125 L10R	1.125	1.250	1.811	7.992	4.500	5.630	2.362	62954	
	VD100 A4H 1156 L12R	1.156	1.500	1.968	8.583	4.620	5.827	2.756	62955	
	VD100 A4H 1187 L12R	1.187	1.500	1.968	8.701	4.750	5.945	2.756	62956	

Part Number Code

Drill Type	Cutting Depth & Unit	Cutting Diameter	Coupling & Shank Dia., Hand
VD100	A2H	1000	L10R
ValDRILL, Series 100	2x-dia, Inch	1.000 Inch	Cylindrical Flange Shank with Flat, 1.250", Right

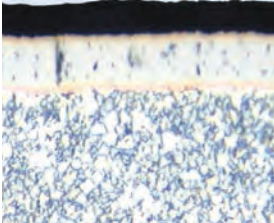

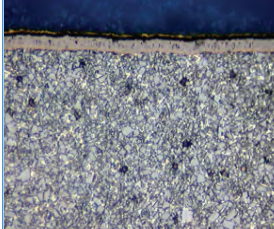
Spare Parts



Insert Series	Drill Diameter	Insert Screw*		Driver		Torque
		Part Number	EDP#	Part Number	EDP#	
XPMT 09	1.000"-1.187"	DVF 0943	62519	TX 209PLUS	62530	11-16 In-lbs.

*Valenite recommends the use of "PT745 antiseize" lubricant, EDP #50050, on insert screw threads and head.

VD100 Insert Grade Description

Grade	Description	Performance	ISO Material
VP1310 	MTCVD Coated Carbide MT CVD TiCN/Al ₂ O ₃ Coating Fine Grain Substrate Polished Surface	General & Light Machining Grade Excellent Wear Resistance Enhanced Build-up Resistance 1st Choice for Drilling Cast Irons	K10 P10
VP5225 	PVD Coated Carbide PVD TiAlN/TiN Coating Strong Micrograin Substrate Polished Edge	General Purpose Grade Enhanced Wear Resistance Good Chipping Resistance Superior Build-Up Resistance 1st Choice for Drilling Steels and Stainless Steels	P25 M20 K25
VP8335 	MTCVD Coated Carbide MT CVD TiCN/Al ₂ O ₃ /TiN Coating Tough High Cobalt Substrate Polished Edge	Roughing Grade Very High Toughness Superior Chipping Resistance and Edge Strength Enhanced Build-up Resistance 1st Choice for Drilling Steel, Stainless-Steel, and High Temperature Alloys on Less Rigid Setups	P35 M30

DRILL PRODUCTS

VD100 Insert Geometry Application Data

ISO Positive		Material	Description	Part Number
47	 XPMT	Steels	Special cutting profile produces excellent results when drilling cast iron materials.	XPMT 06 02 04 EN47
		Stainless Steels		XPMT 08 03 08 EN47
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
57	 LCMT	Steels	Special cutting profile produces excellent results when drilling steels and stainless steels.	LCMT 04 02 05 EN57 Designed for use in all materials.
		Stainless Steels		
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		
57	 XPMT	Steels	Special cutting profile produces excellent results when drilling steels and stainless steels.	XPMT 06 02 04 EN57
		Stainless Steels		XPMT 08 03 08 EN57
		Cast Irons		
		Non-Ferrous		
		High Temp Alloys		

Material Group	Category	Hardness / Type	Chipbreaker / Grade	SFM	LCMT040205				XPMT060204		XPMT080308		XPMT09T308	
					Drill Size .500" - .562"		Drill Size .594" - .625"		Drill Size .656" - .813"		Drill Size .843" - .969"		Drill Size 1.000" - 1.187"	
					IPR 2x, 3x Ø	IPR 4x Ø	IPR 2x, 3x Ø	IPR 4x Ø	IPR 2x, 3x Ø	IPR 4x Ø	IPR 2x, 3x Ø	IPR 4x Ø	IPR 2x, 3x Ø	IPR 4x Ø
Steels 	Low Carbon	80-200 HBN	EN57 VP5225 EN57 VP8335	590 919 1115										
	Medium Carbon	150-250 HBN	EN57 VP5225 EN57 VP8335	490 640 950	.0020	.0008	.0024	.0012	.0032	.0024	.0039	.0032	.0039	.0032
	Alloy Steel	220-450 HBN	EN57 VP5225 EN57 VP8335	360 640 755	.0024	.0012	.0028	.0020	.0039	.0032	.0047	.0039	.0055	.0047
	Tool Steel	250-450 HBN	EN57 VP5225 EN57 VP1310	250 410 490	.0028	.0016	.0032	.0024	.0047	.0039	.0055	.0047	.0071	.0063
Stainless Steels 	PH & Martensitic Stainless	90-225 HBN	EN57 VP5225 EN57 VP8335	460 558 750	.0020	.0008	.0024	.0012	.0032	.0024	.0039	.0032	.0039	.0032
	Austenitic Stainless	150-250 HBN	EN57 VP5225 EN57 VP8335	260 361 492	.0024	.0012	.0028	.0020	.0039	.0032	.0047	.0039	.0055	.0047
Cast Irons 	Ductile Iron	120-320 HBN	EN47 VP1310 EN47 VP5225	330 509 690	.0032	.0024	.0039	.0032	.0047	.0039	.0055	.0047	.0063	.0055
	Grey Cast Iron	120-320 HBN	EN47 VP1310 EN47 VP5225	490 688 1050	.0039	.0032	.0047	.0039	.0063	.0055	.0071	.0063	.0079	.0071
High Temperature Alloys 	Titanium Alloy	110-450 HBN	EN57 VP8335 EN57 VP5225	100 130 180	.0020	.0008	.0024	.0012	.0032	.0024	.0032	.0024	.0032	.0024
	Hastelloy/ Inconel	135-425 HBN	EN57 VP8335 EN57 VP5225	75 95 110	.0024	.0012	.0028	.0020	.0039	.0032	.0039	.0032	.0039	.0032
Aluminum And Non-Ferrous 	Wrought Aluminum	< 12.2% Si	EN57 VP5225	800 1300 1800	.0020	.0008	.0024	.0012	.0032	.0024	.0039	.0032	.0039	.0032
	Brass, Bronze, Free Cutting Non-Ferrous	-		600 1100 500	.0024	.0012	.0028	.0020	.0039	.0032	.0047	.0039	.0055	.0047

First Choice Recommendation in Bold

Choose the grade that best fits your needs

Wear Resistant

VP1310

VP5225

VP8335

Tougher



Carbide Grade Options for Drills

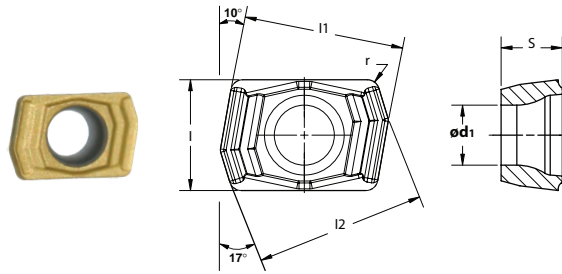
Harder Materials
Good Conditions
Newer Machines
Rigid Part Fixturing

Softer Materials
Poor Conditions
Old Machines
Bad Part Fixturing

DRILL PRODUCTS

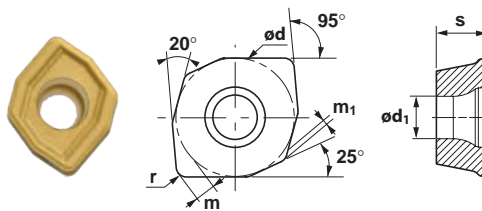
VD100 Inserts

LCMT



Part Number	Dimensions (mm)						Grade/EDP#		
	l	s	d1	l1	l2	r	VP1310	VP5225	VP8335
LCMT 04 02 05 EN57	4.6	2.38	2.5	6.682	7.082	0.5	19942	22624	19944

XMPT



Part Number	Dimensions (mm)						Grade/EDP#		
	d	s	d1	m	m1	r	VP1310	VP5225	VP8335
XPMT 06 02 04 EN57	6.35	2.38	2.5	1.308	0.287	0.4	19947	22635	19949
XPMT 08 03 08 EN57	7.94	3.18	2.8	1.338	0.328	0.8	19953	22637	19955
XPMT 09 T3 08 EN57	9.52	3.97	3.4	1.619	0.410	0.8	19959	22639	19961
XPMT 06 02 04 EN47	6.35	2.38	2.5	1.308	0.287	0.4	19945	22634	19946
XPMT 08 03 08 EN47	7.94	3.18	2.8	1.338	0.328	0.8	19950	22636	19952
XPMT 09 T3 08 EN47	9.52	3.97	3.4	1.619	0.410	0.8	19956	22638	19958



Val-U-Dex 3X Diameter Helical Drill

- From 1.22" to 2.50" diameters
- For stationary and rotating applications
- Three indexes per insert
- Through the shank and flange coolant ports
- Optional coolant collar for machining centers and lathes without through the tool coolant capability
- Helical flute design for excellent chip evacuation

Trigon Style Indexable Drill Inserts in Four ValPro Grades: VP1310, VP5225, VP8335, VPUK20 Two Chipbreaker Styles: 1P & 3P

1P



3P



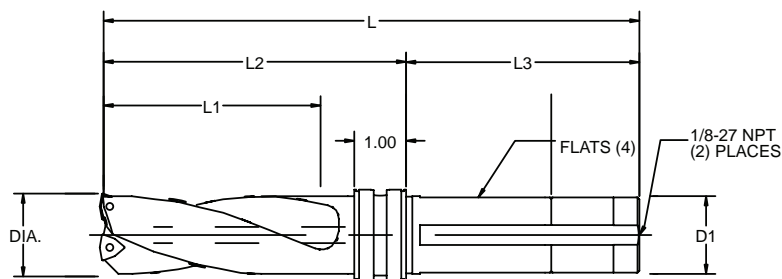
Val-U-Dex Short Hole Drill

- From 0.75" to 2.00" diameters
- 1.4X - 1.8X diameter depth capability based on drill size
- Three indexes per insert
- Through the shank coolant port
- Stub length and Weldon style shank for maximum rigidity

DRILL PRODUCTS

Val-U-Dex Drill Helical Flute

VWDR, 1.220" to 2.500"



Hole Tolerance + .008"
- .008"

Right-hand shown, left-hand RFQ

Part Number	Dimensions						EDP#	Insert WCEM	Optional Coolant Collar*	
	DIA	D1	L	L1	L2	L3			Part#	EDP#
VWDR-122-125-531	1.220	1.25	9.31	3.66	5.31	4.00	56834	2.521	PT-509	56459
VWDR-125-125-540	1.250	1.25	9.40	3.75	5.40	4.00	56835		PT-509	56459
VWDR-131-125-554	1.312	1.25	9.54	3.94	5.54	4.00	56837	321	PT-509	56459
VWDR-133-125-590	1.338	1.25	9.90	4.02	5.90	4.00	56838		PT-509	56459
VWDR-138-125-590	1.375	1.25	9.90	4.14	5.90	4.00	56839		PT-509	56459
VWDR-143-125-591	1.437	1.25	9.91	4.31	5.91	4.00	56840		PT-509	56459
VWDR-149-125-610	1.496	1.25	10.10	4.49	6.10	4.00	62678		PT-509	56459
VWDR-150-125-612	1.500	1.25	10.12	4.50	6.12	4.00	56842		PT-509	56459
VWDR-156-125-629	1.562	1.25	10.29	4.68	6.29	4.00	56844		PT-509	56459
VWDR-161-125-649	1.614	1.25	10.49	4.84	6.49	4.00	50207		PT-509	56459
VWDR-162-125-652	1.625	1.25	10.52	4.88	6.52	4.00	56845		PT-509	56459
VWDR-168-150-659	1.687	1.50	11.09	5.06	6.59	4.50	56846		PT-510	56460
VWDR-173-150-689	1.732	1.50	11.39	5.19	6.89	4.50	56847	421	PT-510	56460
VWDR-175-150-695	1.750	1.50	11.45	5.25	6.95	4.50	56849		PT-510	56460
VWDR-181-150-706	1.812	1.50	11.56	5.43	7.06	4.50	56850		PT-510	56460
VWDR-185-150-728	1.850	1.50	11.78	5.55	7.28	4.50	62679		PT-510	56460
VWDR-188-150-737	1.875	1.50	11.87	5.62	7.37	4.50	56852		PT-510	56460
VWDR-193-150-740	1.937	1.50	11.90	5.81	7.40	4.50	56854		PT-510	56460
VWDR-196-150-748	1.969	1.50	11.98	5.91	7.48	4.50	62680		PT-510	56460
VWDR-200-150-760	2.000	1.50	12.10	6.00	7.60	4.50	56857		PT-510	56460
VWDR-208-200-787	2.087	2.00	13.58	6.26	8.08	5.50	50208		PT-511	56461
VWDR-212-200-799	2.125	2.00	13.70	6.38	8.20	5.50	62617		PT-511	56461
VWDR-224-200-846	2.244	2.00	14.17	6.73	8.67	5.50	50209	PT-511	56461	
VWDR-225-200-849	2.250	2.00	14.20	6.75	8.70	5.50	56862	PT-511	56461	
VWDR-236-200-905A	2.362	2.00	14.77	7.10	9.27	5.50	50211	52.51	PT-511	56461
VWDR-238-200-911A	2.375	2.00	14.82	7.13	9.32	5.50	56864		PT-511	56461
VWDR-248-200-925A	2.480	2.00	14.96	7.44	9.46	5.50	50212		PT-511	56461
VWDR-250-200-931A	2.500	2.00	15.02	7.50	9.52	5.50	56867		PT-511	56461

Spare Parts



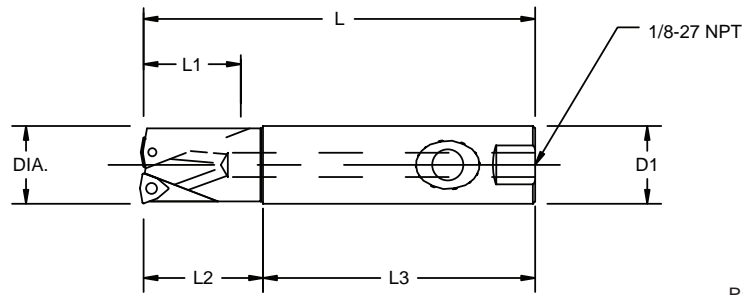
Insert Size	Drill Diameter	Lock Screw		Torx® Wrench	
		Part Number	EDP#	Part Number	EDP#
2...	1.220 - 1.250	PT-487T	52280	T-7 Torx® Wrench	50101
3...	1.312 - 1.687	PT-488T	52281	T-10 Torx® Wrench	50083
4...	1.732 - 2.250	PT-489T	52282	T-20 Torx® Wrench	50091
5...	2.362 - 2.500	PT-546T	52290	T-20 Torx® Wrench	50091

* See section H-Spare Parts for additional Optional Coolant Collar information.

Val-U-Dex Drill Weldon Shank, Straight Flute

VWDR, .750" to 2.000"

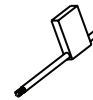
Hole Tolerance + .008"
- .008"



Right-hand shown, left-hand RFQ

	Part Number	Dimensions						EDP#	Insert WCEM
		DIA	D1	L	L1	L2	L3		
Stub Length	VWDR-075-075W-218	0.750	0.750	4.24	1.000	1.360	2.880	56822	221
	VWDR-100-100W-162	1.000	1.000	5.12	1.250	1.620	3.500	56828	2.521
	VWDR-125-125W-200	1.250	1.250	5.50	1.500	2.000	3.500	56836	
	VWDR-150-125W-200	1.500	1.250	5.50	1.620	2.250	3.250	56843	321
	VWDR-175-125W-200	1.750	1.250	5.50	1.880	2.500	3.000	56848	421
	VWDR-200-125W-200	2.000	1.250	6.00	2.120	2.750	3.250	56856	

Spare Parts

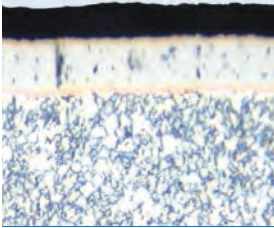

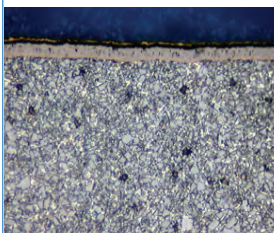
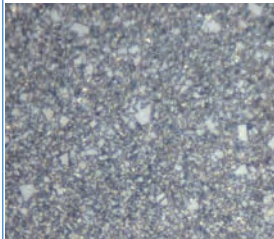


Insert Size	Drill Diameter	Lock Screw		Torx® Wrench	
		Part Number	EDP#	Part Number	EDP#
2...	.750 - 1.25	PT-487T	52280	T-7 Torx® Wrench	50101
3...	1.50	PT-488T	52281	T-10 Torx® Wrench	50083
4...	1.75 - 2.00	PT-489T	52282	T-20 Torx® Wrench	50091


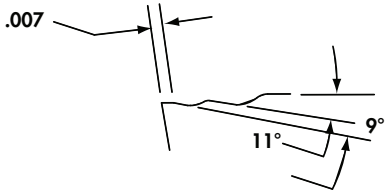

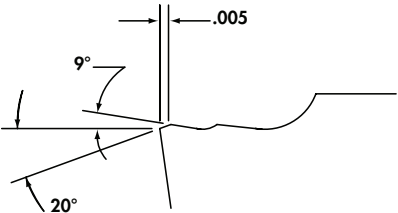
DRILL PRODUCTS

Val-U-Dex Insert Grade Description

Grade Description

Grade	Description	Performance	ISO Material
VP1310 	MTCVD Coated Carbide MT CVD TiCN/Al ₂ O ₃ Coating Fine Grain Substrate Polished Surface	General & Light Machining Grade Excellent Wear Resistance Enhanced Build-up Resistance 1st Choice for Drilling Cast Irons	K10
			P10
VP5225 	PVD Coated Carbide PVD TiAlN/TiN Coating Strong Micrograin Substrate Polished Edge	General Purpose Grade Enhanced Wear Resistance Good Chipping Resistance Superior Build-Up Resistance 1st Choice for Drilling Steels and Stainless Steels	P25
			M20
			K25
VP8335 	MTCVD Coated Carbide MT CVD TiCN/Al ₂ O ₃ /TiN Coating Tough High Cobalt Substrate Polished Edge	Roughing Grade Very High Toughness Superior Chipping Resistance and Edge Strength Enhanced Build-up Resistance 1st Choice for Drilling Steel, Stainless-Steel, and High Temperature Alloys on Less Rigid Setups	P35
			M30
VPUK20 	Uncoated Carbide Fine Grain Substrate Medium Hardness	Finishing, Semi-Finishing and General Grades Reliable Performance with Good Balance of Wear Resistance and Toughness.	M25
			K20
			S25
			N25

Val-U-Dex Insert Geometry Application Data

Insert		Material	Description	Chipbreaker Profile
1P		Steels	Use with Aluminum, Copper Alloys, Plastic, Low Carbon Steel, and Titanium.	
		Stainless Steels		
		Cast Irons	Has a neutral land and is slightly more positive than "3P".	
		Non-Ferrous	Use "1P" if build-up or adhesion is suspected after trying uncoated-grade.	
		High Temp Alloys		
3P		Steels	Use with Stainless Steels, Inconels, Medium Carbon Steel, and High Temp Alloys.	
		Stainless Steels		
		Cast Irons	Has a narrow negative land and is slightly more negative than "1P".	
		Non-Ferrous		
		High Temp Alloys		

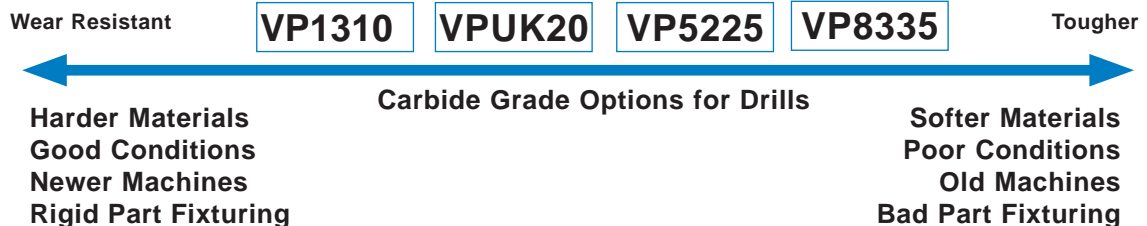
DRILL PRODUCTS

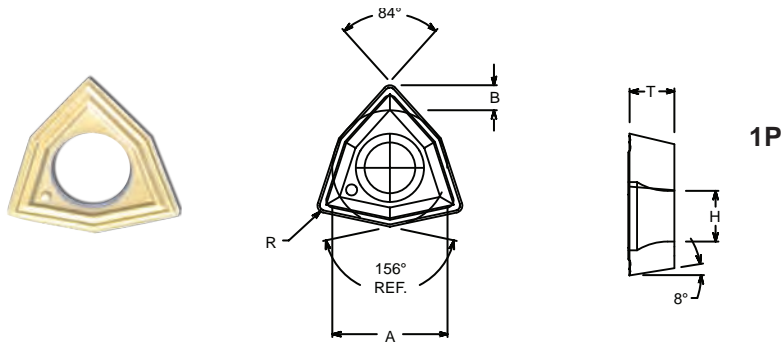
Val-U-Dex Insert Application Guide

Material Group	Category	Material Hardness/Type	Insert Grades	Chipbreaker	SFM	Inch/Rev.
P Steels	Low Carbon	80-200 HBN	VP5225 VP8335	1P, 3P	500 900 1100	.004 .006 .008
	Medium Carbon	150-250 HBN	VP5225 VP8335	3P,1P	350 650 850	.004 .006 .008
	Alloy Steel	220-450 HBN	VP5225 VP8335	3P,1P	320 550 650	.004 .006 .008
	Tool Steel	250-450 HBN	VP5225 VP1310	3P,1P	250 350 450	.005 .006 .008
M Stainless Steels	PH & Martensitic Stainless	90-225 HBN	VP5225 VP8335	1P, 3P	350 500 700	.004 .006 .008
	Austenitic Stainless	150-250 HBN	VP8335 VP5225	1P	300 450 550	.002 .004 .006
K Cast Irons	Ductile Iron	120-320 HBN	VP1330 VP5225	3P,1P	300 550 700	.005 .009 .015
	Grey Cast Iron	120-320 HBN	VP1330 VP5225	3P	400 650 900	.005 .009 .015
S High Temperature Alloys	Titanium Alloy	110-450 HBN	VPUK20 VP8335	1P	75 90 120	.002 .004 .006
	Hastelloy/Inconel	135-425 HBN	VPUK20 VP8335	1P, 3P	75 90 120	.002 .004 .006
N Aluminum And Non-Ferrous	Wrought Aluminum	< 12.2% Si	VPUK20	1P	600 1000 1500	.006 .009 .012
	Brass, Bronze, Free Cutting Non-Ferrous	-	VPUK20	1P	550 900 1200	.006 .008 .010

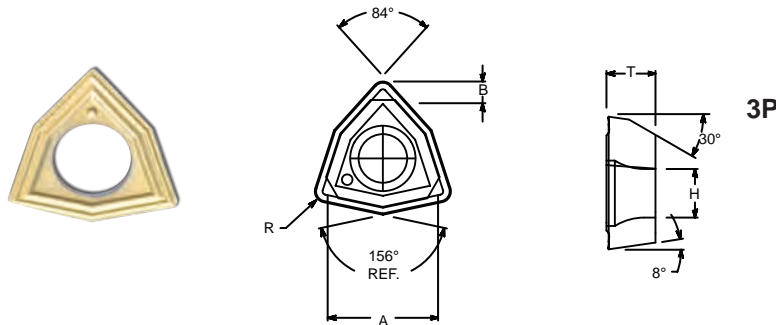
First Choice Recommendation in Bold

Choose the grade that best fits your needs





Part Number	Dimensions					Grades/EDP#			
	A (I.C.)	T	R	H	B	UK20	VP1310	VP5225	VP8335
WCEM221 1P	1/4	.093	.015	.110	.054	22323	22324	22626	22326
WCEM2521 1P	5/16	.113	.015	.110	.069	22327	22352	22627	22328
WCEM321 1P	3/8	.125	.015	.160	.085	22332	22333	22629	22334
WCEM421 1P	1/2	.125	.015	.200	.116	22338	22339	22631	22341



Part Number	Dimensions					Grades/EDP#			
	A (I.C.)	T	R	H	B	UK20	VP1310	VP5225	VP8335
WCEMX221 3P	1/4	.093	.015	.148	.054	22319	22320	22625	22322
WCEM2521 3P	5/16	.113	.015	.110	.069	22329	22365	22628	22331
WCEM321 3P	3/8	.125	.015	.160	.085	22335	22336	22630	22337
WCEM421 3P	1/2	.125	.015	.200	.116	22342	22343	22632	22345
WCEM5251 3P	5/8	.156	.015	.216	.146	22346	22347	22633	22349

DRILL PRODUCTS

VD100 Off-Center Drilling for Lathe Applications

Insert	Metric Drill Diameter	Inch Drill Diameter	Max Off-Set Recommended with 3x & 4x Diameter	2x Diameter Theoretical Max Off-Set Value
LCMT0400205 EN-57	12 (.472)	-	0,5 mm max (.020)	1,4 mm (.055)
	12,5 (.492)	0.500	0,5 mm max (.020)	1,3 mm (.051)
	13 (.511)	-	0,5 mm max (.020)	1,2 mm (.047)
	13,5 (.531)	0.531	0,5 mm max (.020)	1,05 mm (.041)
	14 (.551)	0.562	0,5 mm max (.020)	0,95 mm (.037)
	14,5 (.571)	-	0,5 mm max (.020)	0,8 mm (.031)
	15 (.591)	0.594	0,5 mm max (.020)	0,7 mm (.028)
	15,5 (.610)	-	0,5 mm max (.020)	0,55 mm (.022)
	16 (.630)	0.625	0,45 mm max (.018)	0,45 mm (.018)
XPMT060207 EN-57	16,5 (.650)	0.656	0,5 mm max (.020)	1,3 mm (.051)
	17 (.669)	-	0,5 mm max (.020)	1,2 mm (.047)
	17,5 (.689)	0.688	0,5 mm max (.020)	1,05 mm (.041)
	18 (.709)	0.719	0,5 mm max (.020)	0,95 mm (.037)
	18,5 (.728)	-	0,5 mm max (.020)	0,8 mm (.031)
	19 (.748)	0.750	0,5 mm max (.020)	0,7 mm (.028)
	20 (.787)	0.781	0,45 mm max (.018)	0,45 mm (.018)
XPMT080308 EN-57	21 (.827)	0.813	0,2 mm max (.008)	0,2 mm (.008)
	22 (.866)	0.843	0,5 mm max (.020)	1,1 mm (.043)
	-	0.875	0,5 mm max (.020)	0,8 mm (.031)
	23 (.906)	0.906	0,5 mm max (.020)	0,8 mm (.031)
	24 (.945)	0.938	0,5 mm max (.020)	0,55 mm (.022)
XPMT09T308 EN-57	25 (.984)	0.969	0,35 mm max (.014)	0,35 mm (.014)
	26 (1.024)	1.000	0,5 mm max (.020)	1,45 mm (.057)
	-	1.031	0,5 mm max (.020)	1,2 mm (.047)
	27 (1.063)	1.063	0,5 mm max (.020)	1,2 mm (.047)
	28 (1.102)	1.094	0,5 mm max (.020)	0,9 mm (.035)
	-	1.125	0,5 mm max (.020)	0,7 mm (.028)
	29 (1.142)	1.156	0,5 mm max (.020)	0,7 mm (.028)
30 (1.181)	1.187	0,45 mm max (.018)	0,7 mm (.028)	

Off-sets are valid only when the part is not pre-drilled.
Do not use the 4x diameter drill to rebores an existing hole.

Parameters to Determine		Known Parameters		Formula
Cutting speed	sfm	Drill diameter	D	$\text{sfm} = \frac{D \times \text{rpm}}{3.82}$
		Revolutions per minute	rpm	
Revolutions per minute	rpm	Cutting speed	sfm	$\text{rpm} = \frac{\text{sfm} \times 3.82}{D}$
		Drill diameter	D	
Inches per minute	ipm	Feed per revolution	ipr	$\text{ipm} = \text{ipr} \times \text{rpm}$
		Revolutions per minute	rpm	
Inches per revolution (ipr)	ipr	Inches per minute	ipm	$\text{ipr} = \frac{\text{ipm}}{\text{rpm}}$
		Revolutions per minute	rpm	

Valenite's Free ValDRILL Calculator CD

- Order #27-00-177
- Or download at www.valenite.com (Microsoft Excel required)



DRILL PRODUCTS

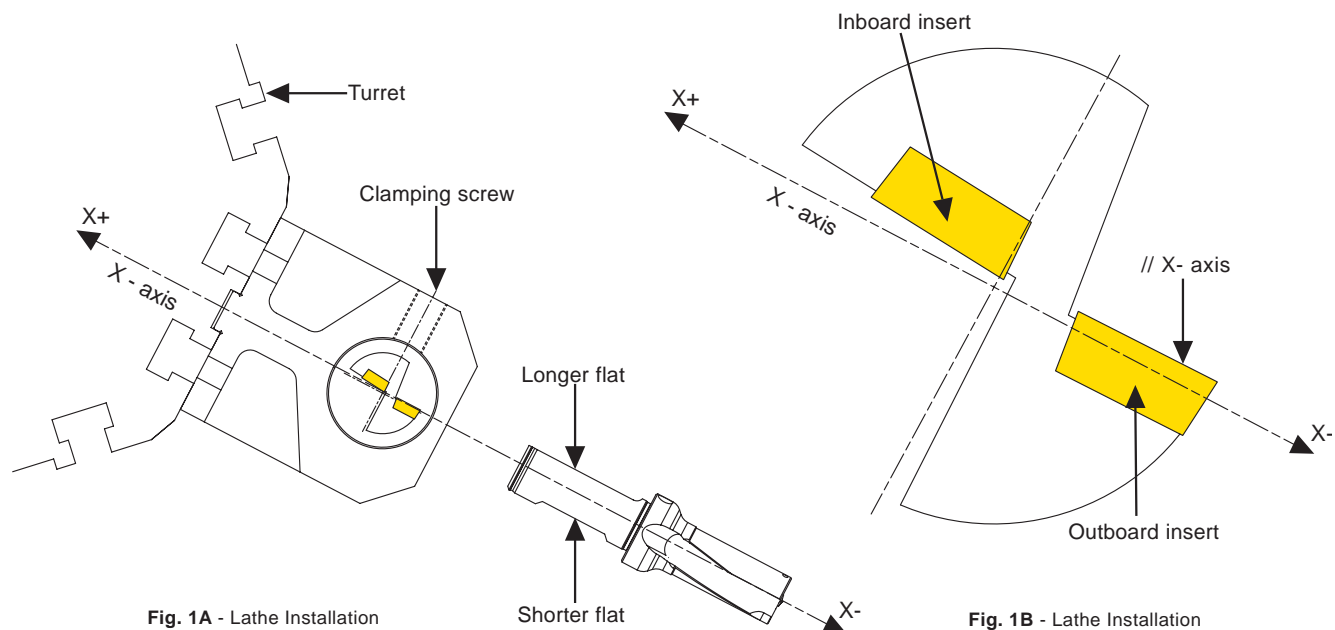
VD100 Drill - Lathe Set-Up

Installation Instructions (Fig. 1)

To expand a hole diameter by off-center drilling, the top face (rake) of the outboard insert should be parallel with the X-axis as shown in Fig. 1A

It is preferable to install the drill by using the longer flat on the shank. In this position the outboard insert is facing up and towards the operator, as shown below in Fig. 1B.

The shorter flat is an optional flat which allows you to put the drill at 180° if necessary. This is shown on the next page in Fig. 4.



Center Height Adjustment (Fig. 2)

Be sure that the top face of the inboard insert is set around .004 below the centerline.

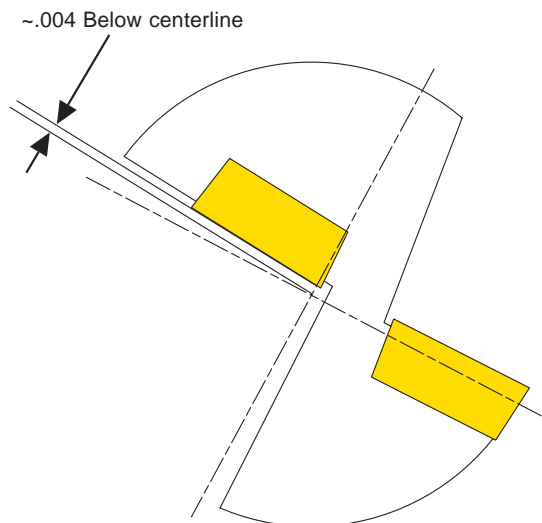


Fig. 2 - Center height adjustment

Please note: The insert's top (rake) faces are not parallel.

Cutting Diameter Adjustment (Figs. 3 and 4)

The shank of the drill has two flats at 180°. Therefore, according to the inserts orientation, the adjustment of the cutting diameter is possible towards the X+ or X- direction.

Scenario 1: To increase the cutting diameter, move towards the X- direction.

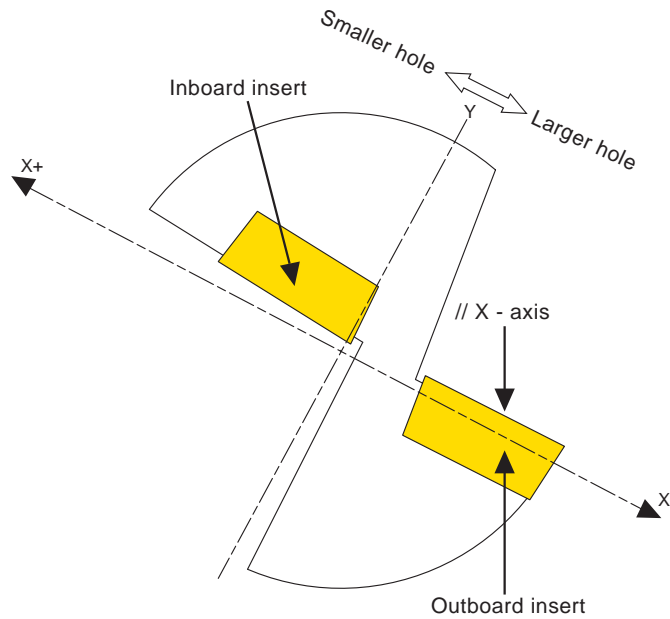


Fig. 3 Outboard insert facing up

Scenario 2: To increase the cutting diameter, move towards the X+ direction.
(For example, when programming a negative motion is a problem.)

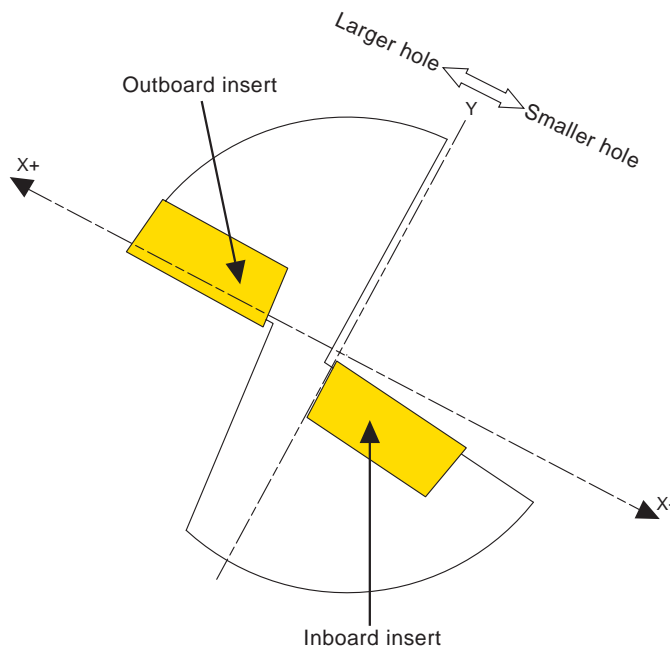


Fig. 4 Outboard insert facing down

DRILL PRODUCTS

VD100 Drill - Lathe Set-Up

Off-Center Drilling (Figs. 5 and 6)

It is possible to obtain a bigger hole than the theoretical drill diameter. (See the Off-Center Drilling chart on page G20 for information.)

If the drill is set too much off-center, interference with the front part of the drill body and the bottom part of the hole will occur (Fig. 5).

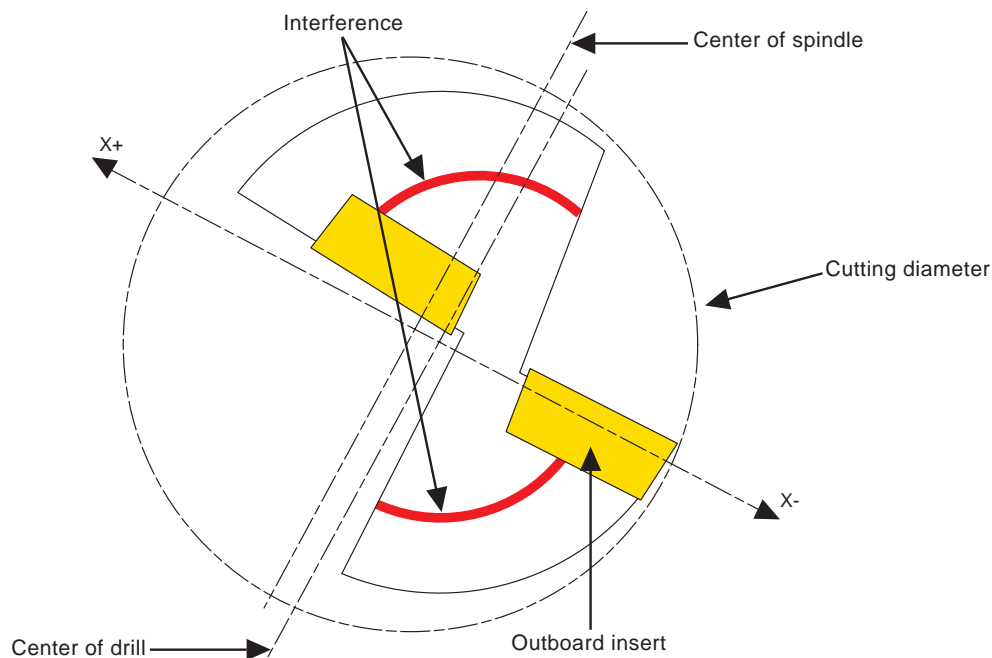


Fig. 5 - Interference if excessive offset for a larger hole

It is also possible to obtain a *slightly* smaller hole than the theoretical drill diameter if the offset is under .002. Again, if it is too much off-center, interference with the drill body diameter and the hole diameter will occur (Fig. 6).

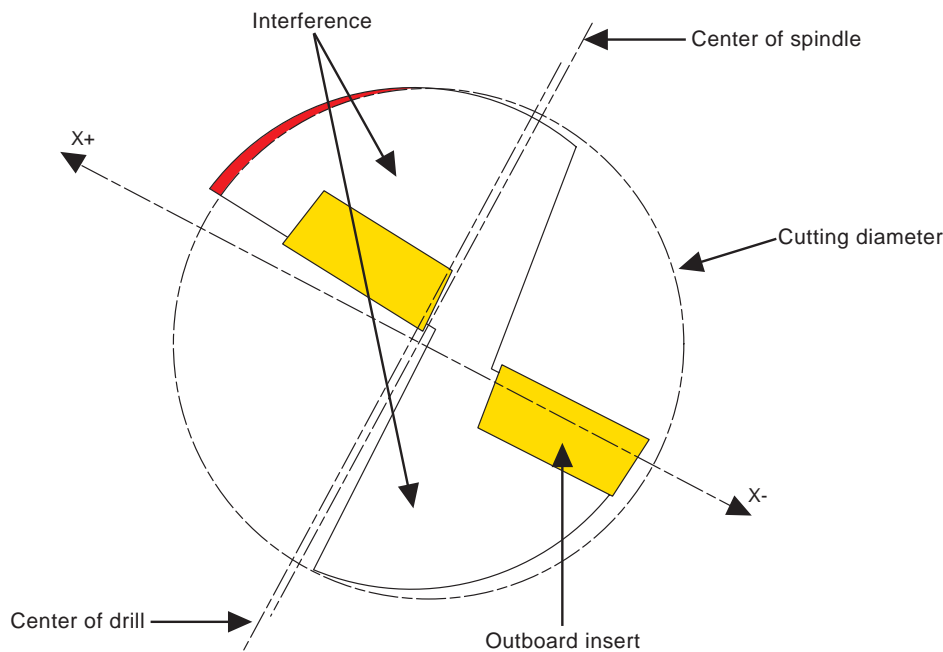


Fig. 6 - Interference if excessive offset for a smaller hole

Checking Drill Position (Figs. 7 and 8)

Because the cutting forces, the alignment of the turret, and the different lathe clearances can all affect the drill performance, it is strongly recommended to check the drill position before drilling a final hole.

- a.) Drill a shallow *blind* hole which is 10% to 15% of the hole diameter.
- b.) Check the shallow hole to verify that a core which has a diameter between .004" and .016" remains in the center (Fig. 7).

If the core is smaller or non-existent then the inboard insert is on or above center and insert breakage near the center of the drill may occur.

If the core is larger than .016", then the inboard insert is positioned too far below center and the drill can bend and deflect more than normal.

In both cases it is necessary to adjust the drill position relative to the turret centerline. However, a simple rotation of the drill at 180° will solve most of these problems.

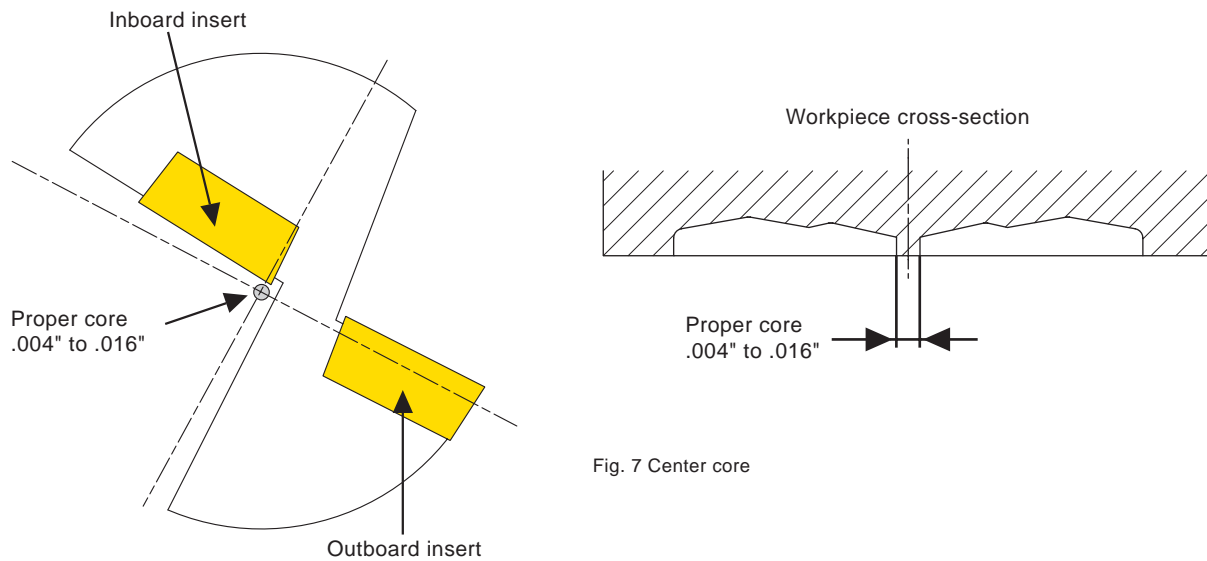


Fig. 7 Center core

- c.) Drill a hole 1 times the diameter deep with a moderate feed rate (~25% of the minimum recommended feed rate) to verify you have good chip evacuation.

To easily check for good chip evacuation put a chip that was cut into the matching flute and then check to see if it fits well (Fig. 8).

- d.) Afterwards, optimize the cutting conditions

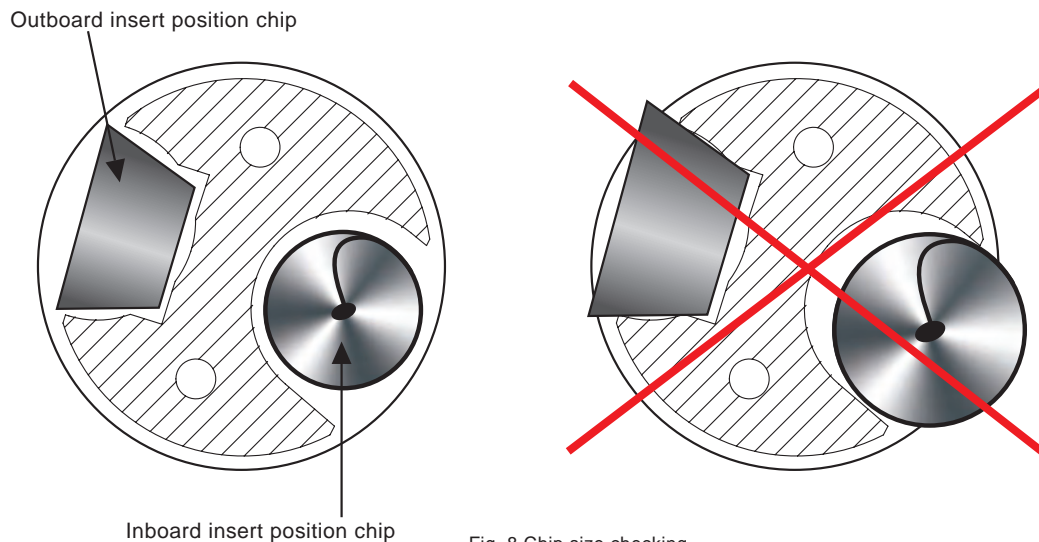
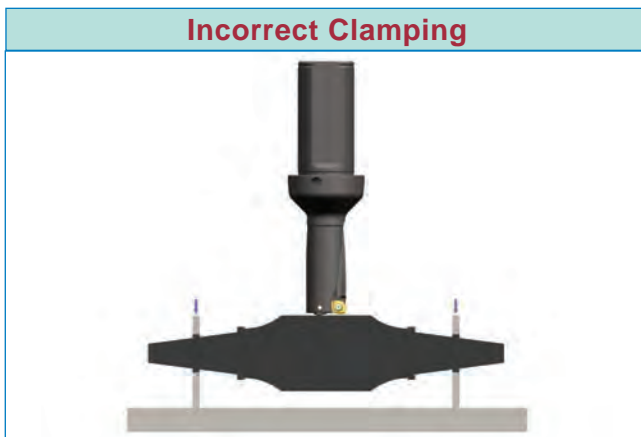


Fig. 8 Chip size checking

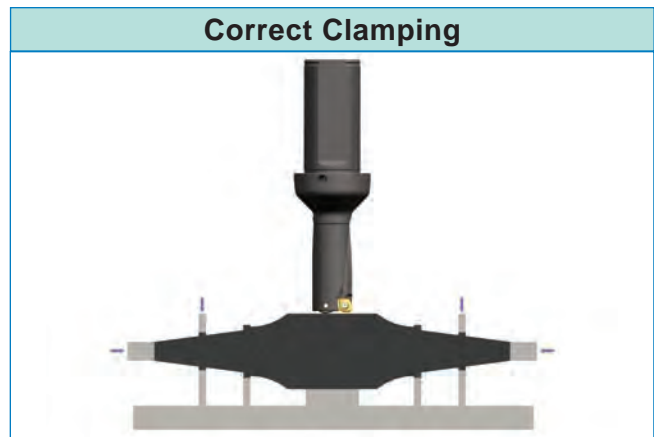
Technical

Precautions for Use

- **To obtain correct chipbreaking**, it is advised not to reduce the cutting speed to less than those recommended in the cutting data table.
- **In cases of interrupted cutting**, inclined entries, exits or transverse holes, it is recommended to work with reduced feed rates.
- **Drilling exit burrs** can be avoided by reducing the feed rate on exit of the hole.
- **For optimum use of the drills** it is necessary to have rigid machines with high RPM capability, particularly for the use of small-diameter drills.
- **When drilling parts with thin walls**, it is essential to provide clamping systems which eliminate bending or vibrations of the part during machining.

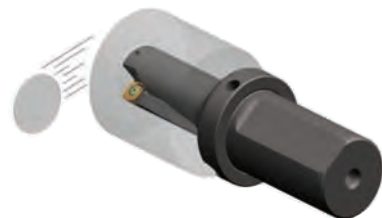


Risk of bending and eccentric motion



No risk of bending or movement

- **When drilling a through-hole**, a disc will be formed as the drill breaks through. This is often ejected at high speed, which could cause injury or damage. To prevent any accident, the chuck should be fitted with an adequate guard.



- **With certain materials the chips cannot be fragmented during machining** (certain stainless steels, heat resistant materials, soft steels). For the chips to be evacuated correctly, the feed rate must be reduced and the speed increased in order to form a folded chip.



Drilling with Coolant Conditions/Pressure/Flow Rates

Good coolant practices are essential for optimizing drill tool life and chip removal.

Key elements are

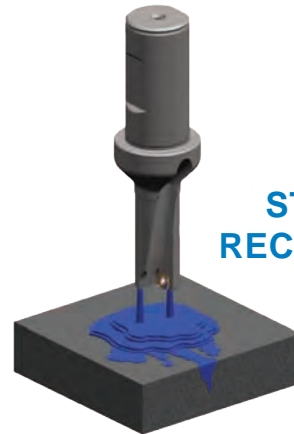
- Volume
- Pressure
- Direction

The use of internal coolant is strongly recommended in all cases.

However if internal coolant is not available, see the recommendations below.

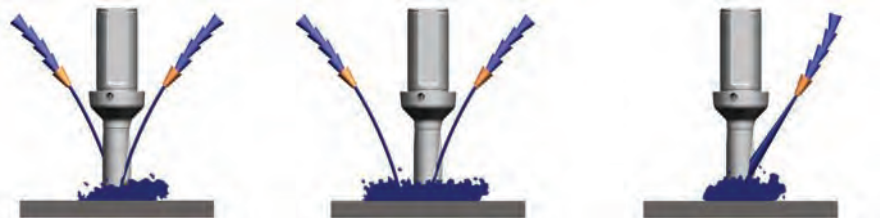
All drills do not require any high-pressure pumps.

The coolant pressure available is generally sufficient.

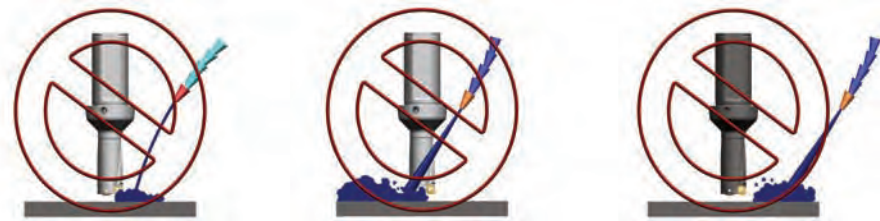


Recommendations for External Coolant Application

CORRECT

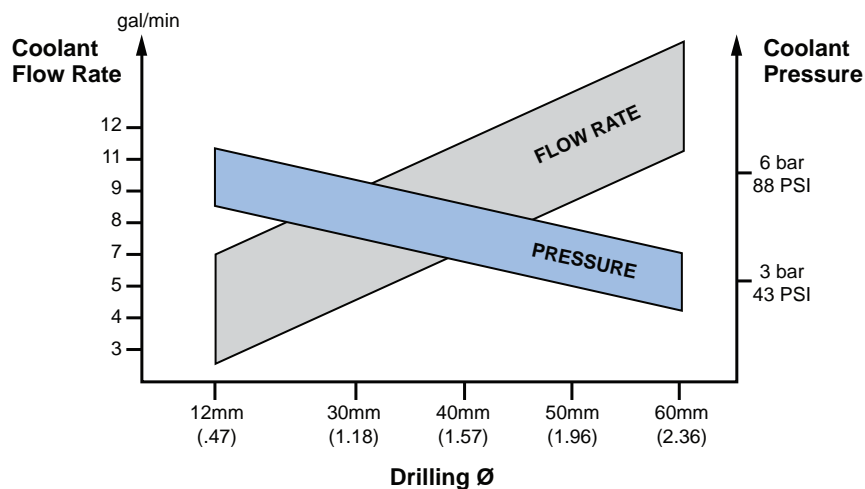


WRONG



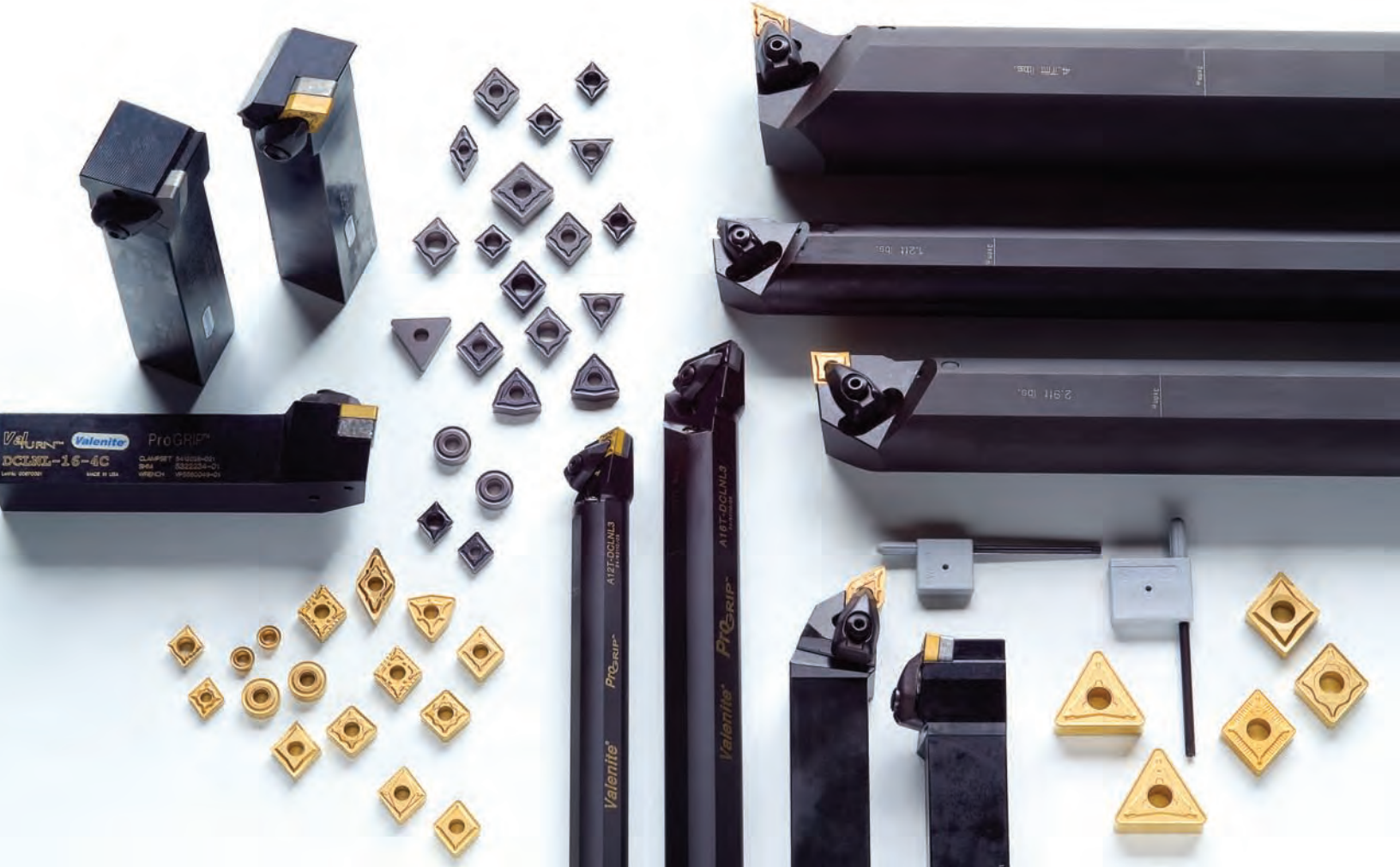
Pressure And Flow Rate Values

This diagram provides the recommended pressure and flow rate values.



Problem	Solution
Vibrations	<ul style="list-style-type: none"> - Reduce the overhang as much as possible - Check if the tool and part are tight - Increase the feed rate - Increase the cutting speed for soft materials - Reduce the cutting speed for hard materials
Chip Jam	<ul style="list-style-type: none"> - Increase the feed rate to obtain fragmenting - Increase the coolant pressure
Chipped Inserts	<ul style="list-style-type: none"> - Reduce the feed rate at the drilling entry - Select a softer insert grade - Reduce the feed - Check if the assembly is correct - Reduce the cutting speed with hard materials
Insert Incorrectly Seated	<ul style="list-style-type: none"> - Clean insert seat - Check if insert seat is damaged, replace drill
Poor Tool Life	<ul style="list-style-type: none"> - Check material reference and cutting data - Increase coolant flow - Clamp tool and/or secure part better - Inspect/repair spindle
Insert Wear	<ul style="list-style-type: none"> - Reduce the cutting speed - Increase the coolant pressure - Increase the feed - Select a harder insert grade
Conical Drilling	<ul style="list-style-type: none"> - Check the insert wear - Increase the coolant pressures - Check the fragmenting of the chip - Reduce the feed rate while retaining correct fragmenting of the chip - Clamp tool or part better
Drilled Hole, Undersize Or Oversize	<ul style="list-style-type: none"> - Check the insert wear - Increase the coolant pressure - Reduce the feed - Clamp tool and/or secure part better - Realign drill - Check machine spindle

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WE NEVER STOP...



Supporting
We can increase your productivity by 20%. Make us prove it!

Clamp Screws	H2 - H4
Lock Screws	H5 - H6
Lock Pins	H7 - H10
Shim Screws	H11 - H12
Adjusting Screws	H13 - H14
Locator Pins	H15
Common Hardware Shim Seats	H16 - H18
Wedge Lock Shim Seats	H19 - H24
Screw Down Shim Seats	H25 - H30
Chipbreakers	H31 - H42
Clamps	H43 - H50
Wedge Lock Wedges	H51 - H52
Boring Bars	H53 - H56
Drilling Parts and E-Z Set Wrench	H57

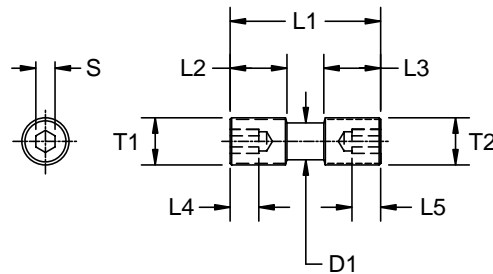
Note:

- This section for reference only, specifications may change without notice.
- Contact your Valenite Representative for part availability.

SPARE PARTS

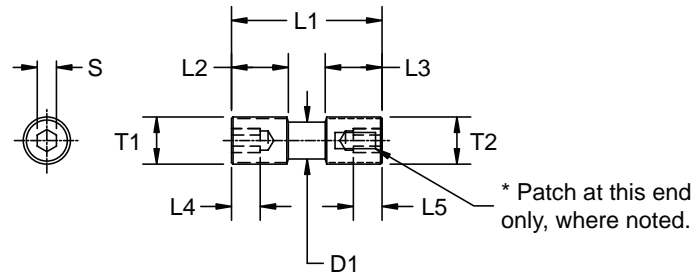
Clamp Screws

Metric Thread Differential Screw



Screw No.	Thread Size Metric		Dimensions							EDP#
	T1	T2	D1	L1	L2	L3	L4 MIN	L5 MIN	Socket S	
LS-90	M4-0,7 L.H.	M4-0,7 R.H.	0.120	0.500	0.210	0.210	0.120	0.120	5/64	52902
LS-91	M5-0,8 L.H.	M5-0,8 R.H.	0.160	0.620	0.250	0.250	0.140	0.140	3/32	52903
LS-92	M6-0,75 L.H.	M6-0,75 R.H.	0.190	0.920	0.410	0.350	0.150	-	7/64	52904
LS-93	M8-1,0 L.H.	M8-1,0 R.H.	0.260	1.020	0.390	0.390	0.235	0.235	5/32	52905
LS-94	M6-0,75 L.H.	M6-0,75 R.H.	0.190	0.750	0.270	0.310	0.150	-	7/64	50643
LS-101	M8-1,0L.H.	M8-1,0 R.H.	0.260	1.020	0.390	0.390	0.270	-	5/32	52893
LS-102	M4-0,7 L.H.	M4-0,7 R.H.	0.120	0.500	0.210	0.210	0.120	0.120	5/64	00090
LS-103	M5-0,8 L.H.	M5-0,8 R.H.	0.160	0.620	0.250	0.250	0.140	0.140	2,5 mm	52894
LS-130	M6-0,75 L.H.	M6-0,75 R.H.	0.190	0.920	0.410	0.350	0.150	-	3.0 mm	52897
XNSC-0515	M5-0,8 L.H.	M5-0,8 R.H.	0.120	0.590	0.190	0.190	0.110	0.110	3/32	53063
XNSC-0620	M6-1,0 L.H.	M6-1,0 R.H.	0.180	0.787	0.270	0.270	0.130	0.130	1/8	53064
XNSC-0825	M8-1,0 L.H.	M8-1,0 R.H.	0.240	0.980	0.490	0.250	0.160	0.160	5/32	53065
XNSC-1035	M10-1,25 L.H.	M10-1,25 R.H.	0.320	1.380	0.550	0.550	0.350	0.350	3/16	53066
XNSM-0515	M5-0,8 L.H.	M5-0,8 R.H.	0.120	0.590	0.190	0.190	0.110	0.110	2,5 mm	53067
XNSM-0620	M6-1,0 L.H.	M6-1,0 R.H.	0.180	0.787	0.270	0.270	0.130	0.130	3,0 mm	53069
XNSM-0825	M8-1,0 L.H.	M8-1,0 R.H.	0.240	0.980	0.470	0.250	0.160	0.160	4,0 mm	53070

Inch Thread Differential Screw

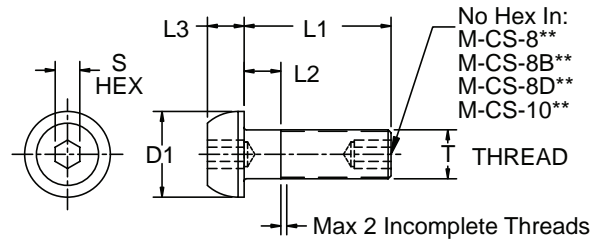


Screw No.	Thread Size Inch		Dimensions							EDP#
	T1	T2	D1	L1	L2	L3	L4 MIN	L5 MIN	Socket S	
AWS-1*	10-32 UNF-3A L.H.	10-32 UNF-3A R.H.	0.140	0.620	0.250	0.250	0.140	-	3/32	52810
AWS-5*	10-32 UNF-3A L.H.	1/4-32 UNF-3A R.H.	0.180	0.750	0.280	0.280	0.140	1/8	1/8	52811
DLS-6	10-32 UNF-3A L.H.	10-24 UNF-3A R.H.	0.130	0.620	0.250	0.250	0.140	-	3/32	50641
DLS-7	1/4-28 UNF-3A L.H.	1/4-20 UNC-3A R.H.	0.180	0.750	0.280	0.280	0.180	-	1/8	52833
DLS-8	5/16-24 UNF-3A L.H.	5/16-18 UNC-3A R.H.	0.230	0.750	0.280	0.280	0.180	-	5/32	50642
DLS-9	5/16-24 UNF-3A L.H.	5/16-18 UNC-3A R.H.	0.230	0.870	0.370	0.370	0.250	-	5/32	52834
DLS-10	5/16-24 UNF-3A L.H.	5/16-18 UNC-3A R.H.	0.230	1.000	0.370	0.370	0.250	-	5/32	52830
DLS-14	3/8-24 UNF-3A L.H.	3/8-16 UNC-3A R.H.	0.280	1.500	0.560	0.560	0.250	-	3/16	52832
LS-10	8-32 UNF-3A L.H.	8-32 UNC-3A R.H.	0.120	0.500	0.210	0.210	0.120	0.120	5/64	59216
LS-11	8-32 UNF-3A L.H.	8-32 UNC-3A R.H.	0.120	0.750	0.210	0.430	0.120	0.120	5/64	59217
LS-20	10-32 UNF-3A L.H.	10-32 UNF-3A R.H.	0.140	0.620	0.250	0.250	0.140	0.140	3/32	59219
LS-21	10-32 UNF-3A L.H.	10-32 UNF-3A R.H.	0.140	0.870	0.250	0.500	0.140	0.140	3/32	59220
LS-30	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	1.000	0.400	0.400	0.180	0.180	1/8	59221
LS-31	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	1.250	0.400	0.650	0.180	0.180	1/8	59222
LS-32	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	0.750	0.280	0.280	0.180	0.180	1/8	59223
LS-33	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	1.250	0.500	0.530	0.180	-	1/8	59224
LS-40	5/16-24 UNF-3A L.H.	5/16-24 UNF-3A R.H.	0.260	1.500	0.500	0.810	0.230	0.230	5/32	59225
LS-41	5/16-24 UNF-3A L.H.	5/16-24 UNF-3A R.H.	0.260	1.250	0.500	0.560	0.230	0.230	5/32	59226
LS-50	3/8-24 UNF-3A L.H.	3/8-24 UNF-3A R.H.	0.310	2.000	0.800	0.800	0.250	-	3/16	52901
PT-212	1/2-20 UNF-3A L.H.	1/2-20 UNF-3A R.H.	0.440	2.000	0.880	0.810	0.250	0.250	1/4	00146
PT-230	3/8-24 UNF-3A L.H.	3/8-24 UNF-3A R.H.	0.310	2.000	0.800	0.800	0.180	0.250	3/16	53107
XNS-36	10-32 UNF-3A L.H.	10-32 UNF-3A R.H.	0.140	0.750	0.250	0.250	0.140	0.140	3/32	53055
XNS-46	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	0.750	0.310	0.310	0.180	0.180	1/8	53056
XNS-48	1/4-28 UNF-3A L.H.	1/4-28 UNF-3A R.H.	0.200	1.000	0.380	0.380	0.180	0.180	1/8	53058
XNS-58	5/16-24 UNF-3A L.H.	5/16-24 UNF-3A R.H.	0.260	1.000	0.500	0.280	0.210	0.210	5/32	53060
XNS-59	5/16-24 UNF-3A L.H.	5/16-24 UNF-3A R.H.	0.260	1.120	0.460	0.400	0.210	0.210	5/32	53061
XNS-510	5/16-24 UNF-3A L.H.	5/16-24 UNF-3A R.H.	0.260	1.250	0.500	0.500	0.210	0.210	5/32	53059
XNS-610	3/8-24 UNF-3A L.H.	3/8-24 UNF-3A R.H.	0.310	1.250	0.500	0.500	0.260	0.260	3/16	53062

SPARE PARTS

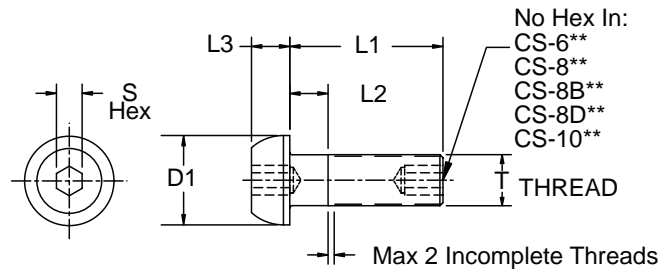
Clamp Screws

Button Head Metric



Screw No.	Thread Size Metric T	Dimensions					EDP#
		D1	L1	L2	L3	Socket S	
M-CS-8**	M5-0,8	0.310	0.430	0.120	0.130	2,5	52918
M-CS-8B**	M5-0,8	0.280	0.380	0.120	0.120	2,5	52919
M-CS-8C	M5-0,8	0.310	0.750	0.120	0.120	2,5	52920
M-CS-8D**	M5-0,8	0.310	0.430	0.120	0.110	2,5	52921
M-CS-8E**	M5-0,8	0.310	0.630	0.120	0.120	2,5	52922
M-CSC-1B**	M6-1,0	0.440	0.750	0.200	0.180	3,0	52923
M-CSC-1D	M6-1,0	0.410	0.470	0.120	0.180	3,0	RFQ*
M-CS-10**	M6-1,0	0.440	0.550	0.120	0.180	3,0	52917
M-CSC-2	M8-1,25	0.500	1.300	0.220	0.180	4,0	RFQ*
M-CSC-2B	M8-1,25	0.500	0.870	0.220	0.180	4,0	52924
M-CSC-2H	M8-1,25	0.500	0.750	0.220	0.180	4,0	52925
M-CSC-2K	M8-1,25	0.500	0.630	0.220	0.180	4,0	53072

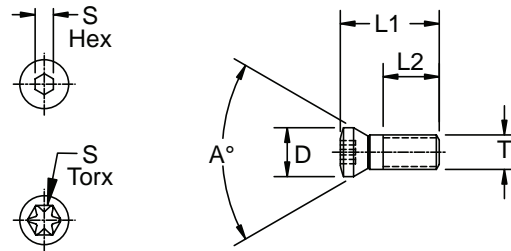
Button Head Inch



Screw No.	Thread Size T	Dimensions					EDP#
		D1	L1	L2	L3	Socket S	
CSC-1	1/4-28 UNF-3A	0.437	1.000	0.218	0.188	1/8	59181
CSC-1B	1/4-28 UNF-3A	0.437	0.750	0.218	0.188	1/8	52819
CSC-1D	1/4-28 UNF-3A	0.406	0.468	0.125	0.188	1/8	RFQ*
CSC-1E	1/4-28 UNF-3A	0.437	1.250	0.218	0.188	1/8	59182
CSC-2	5/16-24 UNF-3A	0.500	1.312	0.218	0.188	5/32	59183
CSC-2B	5/16-24 UNF-3A	0.500	0.875	0.218	0.188	5/32	52820
CSC-2H	5/16-24 UNF-3A	0.500	0.750	0.218	0.188	5/32	52821
CSC-2K	5/16-24 UNF-3A	0.500	0.625	0.218	0.188	5/32	52822
CSC-3	1/2-20 UNF-3A	0.875	1.500	0.375	0.375	1/4	59184
CSC-3A	1/2-20 UNF-3A	0.875	1.250	0.375	0.375	1/4	52823
CS-6**	#10-32 UNF-3A	0.312	0.375	0.125	0.125	3/32	59179
CS-8**	#10-32 UNF-3A	0.312	0.437	0.125	0.125	3/32	52814
CS-8B**	#10-32 UNF-3A	0.280	0.375	0.125	0.125	3/32	52815
CS-8C	#10-32 UNF-3A	0.312	0.750	0.125	0.125	3/32	59180
CS-8D**	#10-32 UNF-3A	0.312	0.430	0.125	0.110	3/32	52816
CS-8E	#10-32 UNF-3A	0.312	0.625	0.125	0.125	3/32	52817
CS-10**	1/4-28 UNF-3A	0.437	0.562	0.125	0.180	1/8	52813

*Contact your local Valenite Distributor or Valenite Customer Service.

Insert Screw Down Style



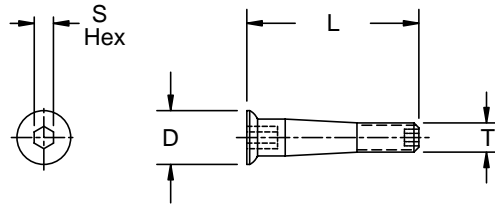
Screw No.	Thread T	Dimensions					EDP#
		D	L1	L2	Incl. A°	Socket S	
PT-323	#3-48	0.120	0.370	0.150	82°	1/16 HEX	52996
PT-324	#5-40	0.200	0.370	0.280	82°	1/16 HEX	52997
PT-325	#4-40	0.150	0.250	0.170	20°	1/6 HEX	52998
PT-326	#3-48	0.150	0.250	0.180	82°	1/16 HEX	52999
PT-464	M2,5	0.150	0.230	0.130	43°	T-8 TORX	52275
PT-317T	M3,5	0.210	0.315	0.200	90°	T-10 TORX	52261
PT-318T	M4	0.260	0.390	0.250	90°	T-10 TORX	52262
PT-319T	M5	0.290	0.470	0.310	90°	T-20 TORX	52263
PT-327T	#5-40	0.170	0.370	0.230	120°	T-10 TORX	52264
PT-328T	#10-32	0.260	0.620	0.410	120°	T-25 TORX	52265
PT-466T	1/4-28	0.450	1.000	0.840	82°	T-30 TORX	00171
PT-483T	M4	0.210	0.400	0.280	52°	T-15 TORX	52277
PT-484T	M5	0.270	0.500	0.320	52°	T-20 TORX	52278
PT-485T	M5	0.285	0.560	0.350	52°	T-20 TORX	52279
PT-487T	M2,5	0.130	0.270	0.170	52°	T-7 TORX	52280
PT-488T	M3,5	0.200	0.390	0.250	52°	T-10 TORX	52281
PT-489T	M4,5	0.270	0.470	0.310	52°	T-20 TORX	52282
PT-523T	M5	0.340	0.710	0.480	90°	T-20 TORX	52283
PT-526T	M2,2	0.120	0.210	0.150	60°	T-7 TORX	52284
PT-542T	M2,5	0.140	0.290	0.220	60°	T-7 TORX	52286
PT-543T	M3	0.170	0.270	0.170	60°	T-8 TORX	52287
PT-544T	M4	0.210	0.430	0.300	60°	T-15 TORX	52288
PT-545T	M4	0.210	0.630	0.410	60°	T-15 TORX	52289
PT-546T	M5	0.270	0.430	0.270	60°	T-20 TORX	52290
PT-547T	M5	0.270	0.700	0.360	60°	T-20 TORX	RFQ*
PT-548T	M6	0.330	0.630	0.440	60°	T-25 TORX	52291
PT-549T	M6	0.330	0.860	0.440	60°	T-25 TORX	00172
PT-550T	M8	0.450	0.860	0.660	60°	T-30 TORX	RFQ*
PT-551T	M8	0.450	1.100	0.670	60°	T-30 TORX	RFQ*
PT-559T	M4	0.210	0.310	0.180	60°	T-15 TORX	52292
PT-586T	M3	0.200	0.410	0.260	60°	T-8 TORX	52293
PT-588T	M5	0.270	0.390	0.220	60°	T-20 TORX	52294
M-PT-324	M3	0.200	0.390	0.300	82°	2mm HEX	52946
M-PT-325	M3	0.150	0.240	0.170	20°	2mm HEX	52947
VSE-02-01	#6-32	0.240	0.500	0.360	60°	T-15 TORX	61958
VSE-02-02	#6-32	0.240	0.270	0.130	60°	T-15 TORX	50132
VSE-02-04	#6-32	0.240	0.380	0.230	60°	T-15 TORX	50133
VSE-03-02	#10-32	0.280	0.750	0.620	82°	T-15 TORX	61959
VSE-03-10	#10-32	0.280	0.620	0.500	82°	T-15 TORX	50135
VSE-03-23	#10-32	0.280	0.500	0.380	82°	T-15 TORX	50136

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

Lock Screws

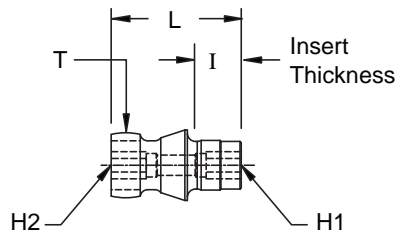
Inch & Metric Screw Down “SD” Thread and Groove



Screw No.	Insert		Dimensions				EDP#
	I.C.	Thickness	D	L	Thread T	Hex Socket S	
SD-1	3/8	1/8	0.220	0.500	6-40	5/64	53035
SD-2	1/2	3/16	0.310	0.750	10-32	3/32	53036
SD-3	5/8	1/4	0.350	0.750	10-32	1/8	53037
SD-4	3/4	1/4 & 3/8	0.410	1.250	1/4-20	1/8	53038
SD-5	-	0.472	0.350	1.120	10-32	1/8	RFQ*
M-SD-1	3/8	1/8	0.220	0.500	M3,5-0,6	2,0mm	52948
M-SD-2	1/2	3/16	0.310	0.750	M5-0,8	2,5mm	52949
M-SD-3	5/8	1/4	0.350	0.750	M5-0,8	3,0mm	52950
M-SD-4	3/4	1/4 & 3/8	0.410	1.250	M6-1,0	3,0mm	59227

*Contact your local Valenite Distributor or Valenite Customer Service.

Common Hardware “NL” Negative Without Shim



Part No.	Dimensions					EDP#
	I	L	T	H1	H2	
NL-23	1/8	0.320	8-32	-	1/16	59229
NL-33	1/8	0.340	10-32	5/64	5/64	59230
NL-33L	3/16	0.410	10-32	5/64	5/64	52956
NL-44	3/16	0.520	1/4-28	3/32	3/32	52958
NLC-23	1/8	0.320	M4-0.7	-	1/16	52962
NLC-2.53	1/8	0.320	M4-0.7	1/16	1/16	52963
NLC-33	1/8	0.340	M5-0.8	5/64	5/64	52964
NLC-33L	3/16	0.410	M5-0.8	5/64	5/64	59235
NLC-43	3/16	0.420	M5-0.8	5/64	5/64	52966
NLM-23	1/8	0.320	M4-0.7	-	1,5 mm	52972
NLM-2.53	1/8	0.320	M4-0.7	1,5 mm	1,5 mm	52973
NLM-33	1/8	0.340	M5-0.8	2 mm	2 mm	52974
NLM-33L	3/16	0.410	M5-0.8	2 mm	2 mm	52975
NLM-43	3/16	0.420	M5-0.8	2 mm	2 mm	52977

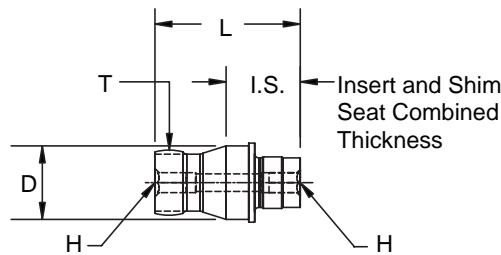
NL2 = 1/4 I.C. Insert Size
 NL2.5 = 5/16 I.C. Insert Size
 NL3 = 3/8 I.C. Insert Size
 NL4 = 1/2 I.C. Insert Size

NL = Painted Black
 NLC = Painted Orange
 NLM = Painted Blue

SPARE PARTS

Lock Pins

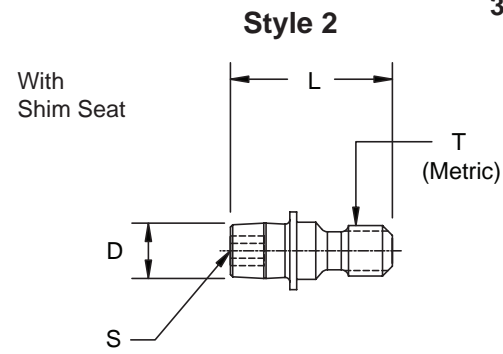
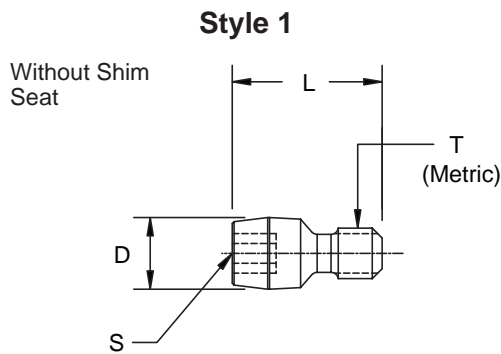
Common Hardware “NL” Negative With Shim



Part No.	I.S. Thickness		Dimensions					EDP#
	Insert	Shim	D	L	T	H	Insert I.C.	
NL-34	1/8	1/8	0.219	0.450	10-32	5/64	3/8	59231
NL-34L	1/8	3/16	0.219	0.510	10-32	5/64	3/8	52957
NL-46	3/16	3/16	0.281	0.670	1/4-28	3/32	1/2	52959
NL-58	1/4	3/16	0.373	0.850	5/16-24	1/8	5/8	52960
NL-68	1/4	3/16	0.435	0.850	3/8-24	9/64	3/4	52961
NL-68L	3/8	3/16	0.435	0.940	3/8-24	9/64	3/4	59233
NL-810	3/8	1/4	0.560	1.160	7/16-20	5/32	1"	59234
NLC-34L	1/8	3/16	0.219	0.510	M5-0.8	5/64	3/8	52965
NLC-46	3/16	3/16	0.281	0.670	M6,3-1,0	3/32	1/2	52967
NLC-46S	3/16	3/16	0.281	0.610	M6,3-1,0	3/32	1/2	52968
NLC--54	1/4	3/16	0.281	0.730	M6,3-1,0	3/32	5/8	52969
NLC-58	1/4	3/16	0.373	0.850	M8-1,0	1/8	5/8	52970
NLC-68	1/4	3/16	0.435	0.850	M10-1,0	9/64	3/4	52971
NLM-34L	1/8	3/16	0.219	0.510	M5-0.8	2 mm	3/8	52976
NLM-46	3/16	3/16	0.281	0.670	M6,3-1,0	2,5 mm	1/2	52978
NLM-46S	3/16	3/16	0.281	0.610	M6,3-1,0	2,5 mm	1/2	52979
NLM-54	1/4	3/16	0.281	0.730	M6,3-1,0	2,5 mm	5/8	52980
NLM-58	1/4	3/16	0.373	0.850	M8-1,0	3 mm	5/8	52981
NLM-68	1/4	3/16	0.435	0.850	M10-1,0	3 mm	3/4	52982

NL3 =3/8 I.C. Insert Size
 NL4 =1/2 I.C. Insert Size
 NL5 =5/8 I.C. Insert Size
 NL6 =3/4 I.C. Insert Size
 NL8 =1 I.C. Insert Size

NL = Painted Black
 NLC = Painted Orange
 NLM = Painted Blue

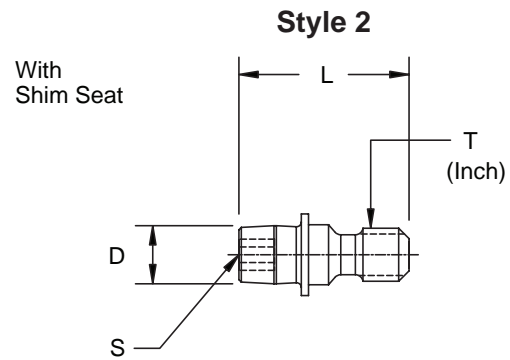
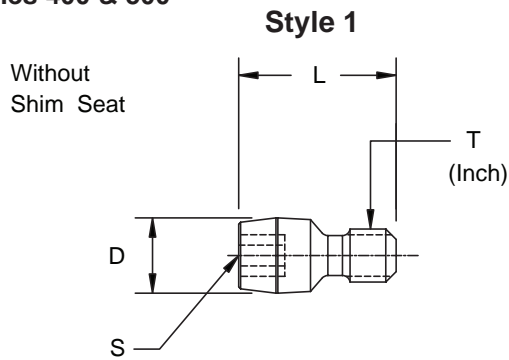


Style	Screw No.	Insert/Shim		Dimensions				EDP#
		I.C.	Pack	D	L	Metric Thread T	Hex Socket S	
1	I-H-302-1B	5/16	1/8	0.121	0.370	M3,5	1/16	52877
1	I-H-304-1A	3/8	3/16	0.144	0.470	M4	5/64	52878
1	I-H-304-1B	3/8	1/8	0.144	0.390	M4	5/64	52879
2	I-H-308-1C	1/2	5/16	0.196	0.630	M5	3/32	52880
1	I-H-308-1D	1/2	3/16	0.196	0.470	M5	3/32	52882
1	I-H-310-1	5/8	1/4	0.245	0.670	M5	7/64	52883
2	I-H-310-1C	5/8	7/16	0.245	0.780	M6	1/8	52884
2	I-H-312-1C	3/4	7/16	0.309	0.940	M7	5/32	00088
2	I-H-318-1C	3/8	5/16	0.144	0.590	M4	5/64	52887
1	H-302-1B	5/16	1/8	0.121	0.370	M3,5	1,5 mm	52838
1	H-304-1A	3/8	3/16	0.144	0.470	M4	2,0 mm	52839
1	H-304-1B	3/8	1/8	0.144	0.390	M4	2,0 mm	52840
2	H-307-1C	1/2	3/8	0.196	0.750	M5	2,5 mm	59185
2	H-308-1C	1/2	5/16	0.196	0.630	M5	2,5 mm	52841
2	H-308-1CA	1/2	3/8	0.196	0.750	M5	2,5 mm	59186
1	H-308-1D	1/2	3/16	0.196	0.470	M5	2,5 mm	52843
1	H-310-1	5/8	1/4	0.245	0.670	M5	2,5 mm	52844
2	H-310-1C	5/8	7/16	0.245	0.780	M6	3,0 mm	52845
2	H-312-1C	3/4	7/16	0.309	0.940	M7	4,0 mm	52847
2	H-314-1C	1"	9/16	0.356	1.070	M7	4,0 mm	59187
2	H-318-1C	3/8	5/16	0.144	0.590	M4	2,0 mm	52849

SPARE PARTS

Lock Pins

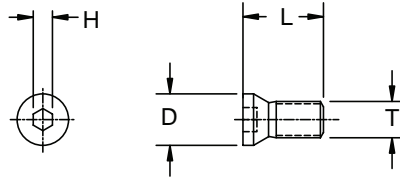
Inch Series 400 & 500



Style	Screw No.	Insert/Shim		Dimensions				EDP#
		I.C.	Pack	D	L	Inch Thread T	Hex Socket S	
1	H-402-1B	5/16	1/8	0.121	0.350	#5-40	1/16	52851
1	H-404-1	3/8	1/8	0.144	0.470	#6-32	5/64	52852
1	H-404-1A	3/8	3/16	0.144	0.400	#5-40	5/64	52853
1	H-404-1B	3/8	1/8	0.144	0.320	#5-40	5/64	52854
2	H-404-1C	3/8	1/4	0.144	0.530	#6-32	5/64	52855
1	H-404-1D	3/8	3/16	0.144	0.480	#6-32	5/64	52857
1	H-405-1A	5/8	3/16	0.245	0.550	#8-32	5/64	52858
2	H-405-1C	5/8	5/16	0.245	0.680	#8-32	3/32	52859
1	H-407-1	1/2	1/4	0.196	0.660	#8-32	3/32	59188
2	H-407-1C	1/2	3/8	0.196	0.720	#8-32	3/32	59189
1	H-408-1	1/2	3/16	0.196	0.560	#8-32	3/32	52860
1	H-408-1A	1/2	3/16	0.196	0.410	#6-32	3/32	52861
1	H-408-1B	1/2	1/8	0.196	0.320	#6-32	3/32	59190
2	H-408-1C	1/2	5/16	0.196	0.580	#8-32	3/32	59191
2	H-408-1CS	1/2	1/4	0.196	0.600	#8-32	3/32	52862
1	H-408-1D	1/2	3/16	0.196	0.440	#6-32	3/32	52863
1	H-410-1	5/8	1/4	0.245	0.670	#10-24	1/8	59193
2	H-410-1C	5/8	7/16	0.245	0.750	#10-24	1/8	59194
2	H-411-1C	3/4	7/16	0.309	0.860	#10-24	1/8	52865
2	H-411-1CS	3/4	3/8	0.309	0.800	#10-24	1/8	52866
2	H-412-1C	3/4	7/16	0.309	0.830	1/4-20	5/32	52868
2	H-413-1C	1/2	5/16	0.196	0.590	#6-32	5/64	59195
2	H-414-1CA	1"	9/16	0.356	1.070	1/4-20	5/32	59196
2	H-414-1CB	1"	9/16	0.356	1.070	1/4-20	5/32	52870
2	H-415-1C	1"	11/16	0.356	1.260	1/4-20	5/32	RFQ*
2	H-417-1C	3/4	9/16	0.309	1.060	1/4-20	5/32	52871
2	H-418-1C	3/8	5/16	0.144	0.590	#6-32	5/64	59197
2	H-419-1C	1/2	3/8	0.196	0.730	#8-32	3/32	59198
2	H-508-1C	1/2	5/16	0.196	0.580	#8-32	3/32	52872
2	H-510-1C	5/8	7/16	0.245	0.750	#10-24	1/8	52874
2	H-511-1C	3/4	7/16	0.309	0.860	#10-24	1/8	52875
2	H-512-1C	3/4	7/16	0.309	0.830	1/4-20	5/32	52876

*Contact your local Valenite Distributor or Valenite Customer Service.

Common Hardware Shim Seat Screws



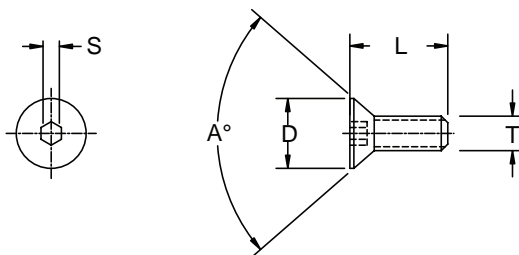
Part No.	Dimensions					EDP#
	D	L	H	Thread T	To Replace Lock Screw	
S-34	0.240	0.310	0.078	10-32	NL34 & NL34L	53022
S-46	0.300	0.500	0.093	1/4-28	NL46	53023
S-58	0.400	0.620	0.125	5/16-24	NL58	53024
S-68	0.460	0.620	0.562	3/8-24	NL68 & NL68L	52354
S-810	0.620	0.620	0.250	7/16-20	NL810	52357
S-34C	0.240	0.310	0.078	M5-0,8	NLC34L	52347
S-46C	0.300	0.500	0.093	M6,3-1,0	NLC46	52348
S-46CS	0.300	0.300	0.093	M6,3-1,0	NLC46S	52349
S-58C	0.400	0.620	0.125	M8-1,0	NLC58	52352
S-68C	0.460	0.620	0.562	M10-1,0	NCL68	00841
S-34M	0.240	0.310	2 mm	M5-0,8	NLM34L	00979
S-46M	0.300	0.500	2,5 mm	M6,3-1,0	NLM46	00834
S-46MS	0.300	0.300	2,5 mm	M6,3-1,0	NLM46S	00836
S-58M	0.400	0.620	3 mm	M8-1,0	NLM58	52353
S-68M	0.460	0.620	4 mm	M10-1,0	NLM68	00843

S = Painted Black
 SC = Painted Orange
 SM = Painted Blue

SPARE PARTS

Screws and Shim Screws

Flat Head Style



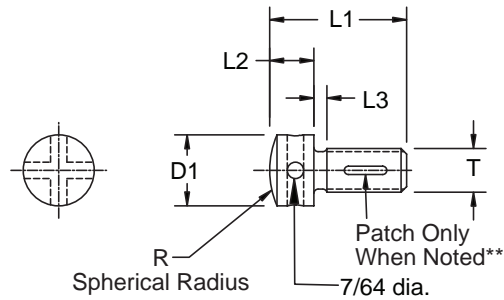
Screw No.	Dimensions					EDP#
	D	L	INC A°	Thread T	Hex Socket S	
PT-232	0.260	0.310	82°	6-32	5/64	52986
M-PT-232	0.260	8 mm	82°	M3,5	2 mm	52944
PT-236	0.170	0.380	82°	4-40	1/16	52988
PT-237	0.210	0.320	82°	5-40	5/64	52989
PT-240	4,3 mm	10 mm	82°	M3	2 mm	52990
PT-329	0.320	0.380	82°	10-32	1/8	53000
PT-159	0.310	0.750	.200 X 30° TOP CHAM. 82° INCL	10-32	1/8	50644
Shim Seat Screws						
SSS-1	0.200	0.250	82°	4-40	1/16	53039
SSS-2	0.275	0.375	82°	6-32	5/64	52358
SSS-3	0.411	0.625	82°	10-32	1/8	52359
SSS-4	0.359	0.375	82°	8-32	3/32	52360
SSS-5	0.200	0.500	82°	4-40	1/16	53040
SSS-6**	0.275	0.500	82°	6-32	5/64	00180
M-SSS-0	5,1	8,000 mm	90°	M3	2 mm	59228
M-SSS-1	6,0	8,000 mm	82°	M3	2 mm	RFQ*
M-SSS-2	6,9	10,000 mm	82°	M3,5	2 mm	52951
X-SSS-1	0.170	0.310	82°	4-40	3/32	RFQ*
X-SSS-2	0.190	0.440	82°	6-32	7/64	RFQ*
X-SSS-3	0.300	0.680	82°	10-32	5/32	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

**SSS-6 = 6-32 x 1/2 FHCS (EDP # 52089)

Adjusting and Cone Point Screws

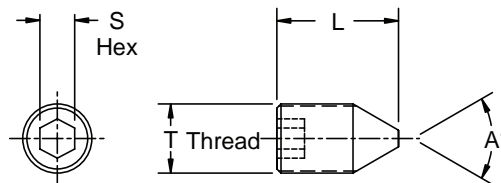
Adjusting Cartridge Preset Screws



Screw No.	Thread Size T	Dimensions					EDP#
		D1	L1	L2	L3	R Ref.	
Inch Screw							
AS-1	10-32	0.370	0.750	0.250	0.090	1.610	52803
AS-1A	10-32	0.310	0.680	0.250	0.090	1.180	52804
AS-1B**	10-32	0.310	0.590	0.250	0.090	1.180	52805
AS-2	1/4-28	0.430	0.880	0.250	0.090	2.240	52806
AS-2B**	1/4-28	0.430	0.880	0.250	0.090	2.240	52807
AS-3	10-32	0.375	0.560	0.220	0.060	1.610	52808
AS-5	5/16-24	0.620	1.000	0.380	0.090	4.700	52809
Metric Screw							
M-AS-1B**	M5-0,8	0.310	0.590	0.250	0.090	1.180	52911
M-AS-2B**	M6-1,0	0.440	0.870	0.250	0.090	2.240	52913
M-AS-5	M8-1,25	0.620	1.000	0.370	0.090	4.700	RFQ*
M-AS-4B**	M3-0,5	0.216	0.470	0.157	0.040	0.310	52915
EASM-0510F**	M5-0,8	0.310	0.590	0.190	0.090	1.180	52835
EASM-0610F**	M6-1,0	0.375	0.630	0.230	0.090	1.960	52836
EASM-0816F**	M8-1,0	0.510	0.940	0.270	0.090	3.300	52837

*Contact your local Valenite Distributor or Valenite Customer Service.

Cone Point Screws for De-Vi Bar

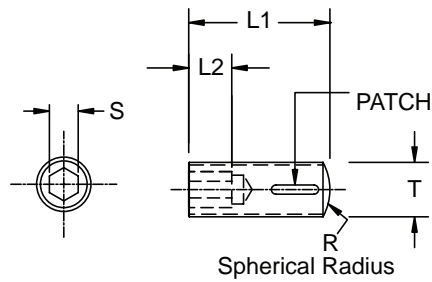


Screw No.	Thread T	Hex Socket S	L	A°
PT-269	5/16-24	5/32	0.560	60°
PT-271	1/2-20	1/4	0.880	60°
M-PT-271	1/2	6 mm	0.880	60°

SPARE PARTS

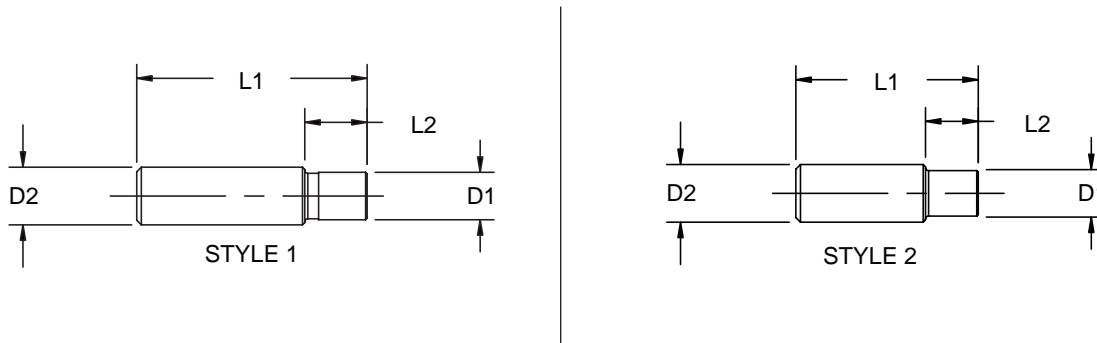
Adjusting Screws

Radial Adjustment



Screw No.	Thread Size T	Dimensions				EDP#
		L1	L2	R	Socket S	
KES-1	#10-32	0.560	0.160	0.640	3/32	52889
DJS-1	#10-32	0.440	0.080	0.140	3/32	RFQ*
DJS-2	#10-32	0.620	0.080	0.140	3/32	53227
DJS-3	1/4-28	0.750	0.100	0.190	1/8	RFQ*
DJS-4	1/4-28	0.880	0.100	0.190	1/8	RFQ*
DJS-6	1/4-28	0.500	0.100	0.190	1/8	00087
DJS-10	M4-0,7	0.390	0.100	0.310	2,0 mm	52824
DJS-11	M5-0,8	0.390	0.140	0.490	2,5 mm	52825
DJS-12	M5-0,8	0.630	0.140	0.490	2,5 mm	RFQ*
DJS-13	M6-1,0	0.790	0.180	0.700	3,0 mm	RFQ*
DJS-14	M3-0,5	0.390	0.080	0.180	1,5 mm	52826
DJS-20	M4-0,7	0.390	0.100	0.310	5/64	52827
DJS-21	M5-0,8	0.390	0.140	0.490	3/32	52828
DJS-22	M5-0,8	0.630	0.140	0.490	3/32	RFQ*
DJS-23	M6-1,0	0.790	0.180	0.700	1/8	RFQ*
DJS-24	M3-0,5	0.390	0.080	0.180	1/16	52829
SASC-0406	M4-0,7	0.236	0.100	0.310	5/64	53025
SASC-0412	M4-0,7	0.470	0.100	0.310	5/64	53026
SASC-0516	M5-0,8	0.630	0.140	0.490	3/32	53027
SASC-0620	M6-1,0	0.780	0.180	0.700	1/8	53028
SASC-0820	M8-1,0	0.780	0.180	1.240	5/32	53029
SASM-0406	M4-0,7	0.236	0.100	0.310	2 mm	53030
SASM-0412	M4-0,7	0.470	0.100	0.310	2 mm	53031
SASM-0516	M5-0,8	0.630	0.140	0.490	2,5 mm	53032
SASM-0620	M6-1,0	0.780	0.180	0.700	3 mm	53033
SASM-0820	M8-1,0	0.780	0.180	1.240	4 mm	53034

*Contact your local Valenite Distributor or Valenite Customer Service.



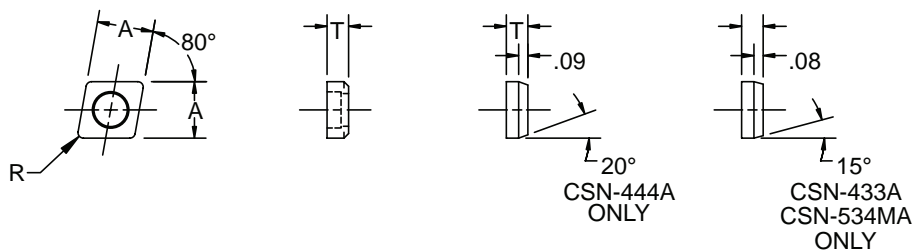
Style No.	Part No.	Dimensions				Tru-Arc Shim Retaining Ring	EDP#
		D1	D2	L1	L2		
2	LP-10	0.087	0.093	0.500	0.140	-	59199
2	LP-11	0.078	0.079	0.250	0.110	-	59200
2	LP-12	0.087	0.089	0.310	0.150	-	59201
1	LP-20	0.147	0.187	0.620	0.160	5103-15	59202
1	LP-21	0.147	0.187	0.500	0.160	5103-15	59203
1	LP-22	0.147	0.187	1.000	0.280	5103-15	RFQ*
1	LP-23	0.147	0.187	0.620	0.220	5103-15	59204
1	LP-30	0.198	0.250	1.000	0.220	5103-21	59205
1	LP-31	0.198	0.250	0.750	0.220	5103-21	59206
1	LP-32	0.198	0.250	1.000	0.280	5103-21	59207
1	LP-40	0.247	0.312	1.000	0.280	5103-25	59208
1	LP-50	0.309	0.375	1.500	0.280	5103-31	59209
1	LP-51	0.309	0.375	1.250	0.280	5103-31	59210
1	LP-52	0.309	0.375	1.000	0.340	5103-31	59211
1	LP-60	0.309	0.375	1.500	0.400	5103-31	59212
1	LP-61	0.309	0.375	1.250	0.400	5103-31	59213
1	LP-70	0.356	0.375	1.500	0.400	5103-37	59214
1	LP-71	0.356	0.375	1.500	0.480	5103-37	RFQ*
1	LP-80	0.496	0.563	1.750	0.530	5103-50	00089

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

Common Hardware Shim Seats

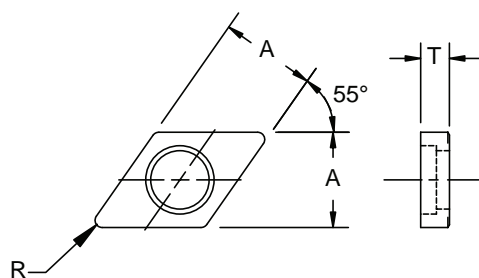
CSN 80° Diamond



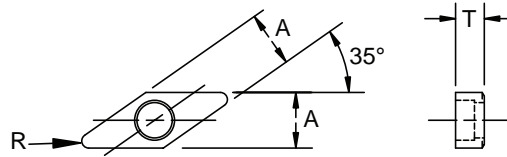
Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
CSN-432	0.500	0.490	0.031	0.187	09142
CSN-433	0.500	0.490	0.046	0.187	09143
CSN-433A	0.500	0.490	0.046	0.187	09144
CSN-442	0.500	0.490	0.031	0.250	09145
CSN-444A	0.500	0.490	0.062	0.250	09146
CSN-533	0.625	0.615	0.046	0.187	09147
CSN-534M**	0.625	0.615	0.062	0.187	09148
CSN-534MA**	0.625	0.615	0.062	0.187	09149
CSN-633	0.750	0.740	0.046	0.187	09150
CSN-642	0.750	0.740	0.031	0.250	09151

**Use only with NLM-54 or NLC-54 Lock Screw

DSN 55° Diamond

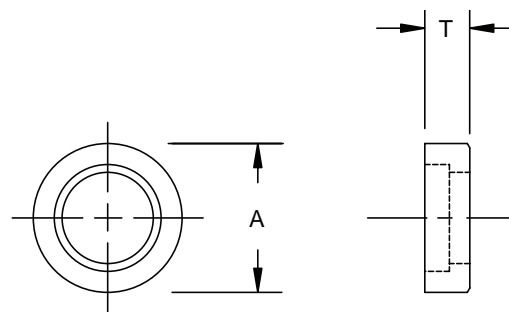


Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
DSN-433	0.500	0.495	0.046	0.187	09159
DSN-533	0.625	0.620	0.046	0.187	09161
DSN-543	0.625	0.620	0.046	0.250	09162



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
IVSN-324	0.375	0.370	.06 FLAT	0.125	09177
IVSN-433	0.500	0.495	0.046	0.187	09178
IVSN-443	0.500	0.495	0.046	0.250	09179

IRSN, RSN Round

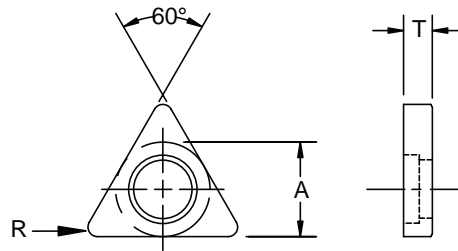


Shim Seat No.	Insert Dia.	A Dia. Shim	T	EDP#
IRSN-43	0.500	0.490	0.187	09163
IRSN-44	0.500	0.490	0.250	09164
RSN-53	0.625	0.615	0.187	09181
RSN-63	0.750	0.740	0.187	09182
RSN-84	1.000	0.990	0.250	09183

SPARE PARTS

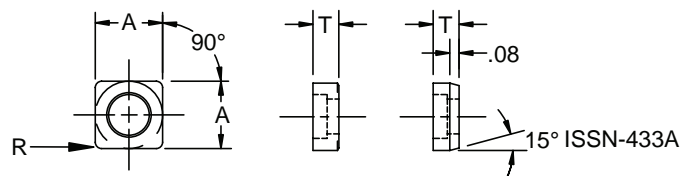
Common Hardware Shim Seats

ITSN, TS, TSN Triangle



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
ITSN-323	0.375	0.365	0.046	0.125	09171
ITSN-333	0.375	0.365	0.046	0.187	09172
ITSN-433	0.500	0.490	0.046	0.187	09173
ITSN-436	0.500	0.490	0.094	0.187	09174
ITSN-438	0.500	0.490	0.125	0.187	09175
ITSN-533	0.625	0.615	0.046	0.187	09176
TS-424	0.500	0.490	0.062	0.125	09373
TSN-534	0.625	0.615	0.062	0.187	09374
TSN-637	0.750	0.740	0.109	0.187	09375

ISSN, SSN Square



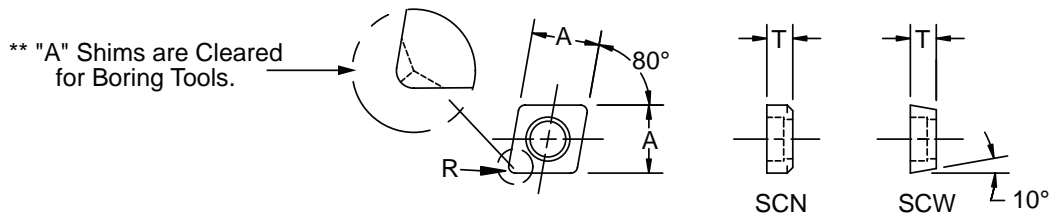
Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
ISSN-322	0.375	0.365	0.031	0.125	09165
ISSN-333	0.375	0.365	0.046	0.187	RFQ*
ISSN-433	0.500	0.490	0.046	0.187	09166
ISSN-433A	0.500	0.490	0.046	0.187	RFQ*
ISSN-443	0.500	0.490	0.046	0.250	09167
SSN-533	0.625	0.615	0.046	0.187	09263
SSN-533M**	0.625	0.615	0.046	0.187	09264
SSN-538M**	0.625	0.615	0.125	0.187	09265
ISSN-543	0.625	0.615	0.046	0.250	09168
ISSN-633	0.750	0.740	0.046	0.187	09169
ISSN-643	0.750	0.740	0.046	0.250	09170
SSN-844	1.000	0.990	0.062	0.250	09274
SSN-846	1.000	0.990	0.094	0.250	09275

*Contact your local Valenite Distributor or Valenite Customer Service.

**Use Only with NLM-54 or NLC-54 Lock Screw

Wedge Lock Shim Seats

SCN, SCW 80° Diamond



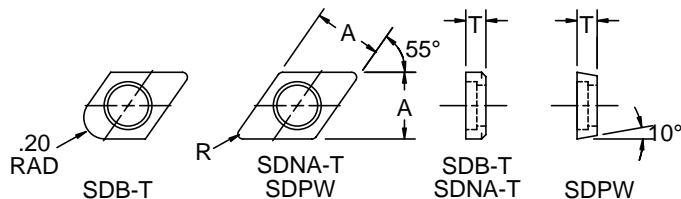
Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
SCN-43	0.500	0.490	0.031	0.125	09185
SCN-43A**	0.500	0.490	0.031	0.125	09186
SCN-53	0.625	0.615	0.046	0.250	RFQ*
SCN-53A**	0.625	0.615	0.046	0.250	09187
SCN-54	0.625	0.615	0.062	0.125	RFQ*
SCN-54C	0.625	0.615	0.046	0.188	09188
SCN-54CA**	0.625	0.615	0.046	0.188	09189
SCN-63A**	0.750	0.740	0.046	0.250	RFQ*
SCN-64	0.750	0.740	0.046	0.188	09190
SCN-64A**	0.750	0.740	0.046	0.188	09191
SCN-64M	0.750	0.740	0.062	0.188	09192
SCN-86	1.000	0.990	0.094	0.188	RFQ*
Side-Form Lock Insert Shim Seats					
SCW-43	1/2 x 3/16	0.424	0.015	0.125	09200
SCW-54C	5/8 x 1/4	0.527	0.015	0.188	09201
SCW-63C	3/4 x 3/16	0.674	0.031	0.188	09202
SCW-64	3/4 x 1/4	0.652	0.015	0.188	09203

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

Wedge Lock Shim Seats

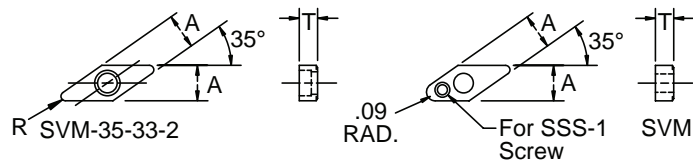
SDB, SDNA, SDPW 55° Diamond



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
SDB-55-3T	.635	0.615	0.046	0.250	RFQ*
SDB-55-4T	.635	0.615	0.046	0.188	09204
SDNA-43T	0.500	0.490	0.040	0.125	09208
SDNA-53T	0.625	0.615	0.036	0.125	09210
SDNA-54T	0.625	0.615	0.036	0.187	09212
SDNA-43M	0.500	0.490	0.040	0.187	09207
SDNA-44M	0.500	0.490	0.040	0.125	09209
SDNA-54M	0.625	0.615	0.046	0.125	09211
Side-Form Lock Insert Shim Seats					
SDPW-43	1/2 x 3/16	0.424	0.015	0.125	09213
SDPW-53	5/8 x 3/16	0.549	0.025	0.125	09214

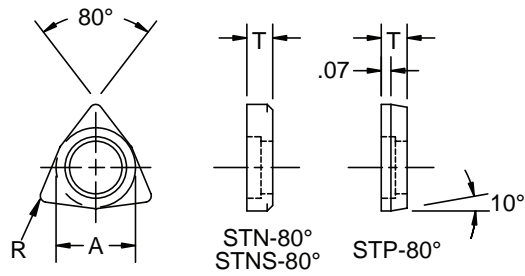
*Contact your local Valenite Distributor or Valenite Customer Service.

SVM, SDB 35° Diamond



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
SVM-35-33-2	3/8	0.365	0.031	0.125	09367
SVM-35-33-2M	3/8	0.365	0.031	0.125	09368
SVM-35-43-2	1/2	0.480	0.031	0.187	RFQ*
SVM-35-44-2	1/2	0.480	0.031	0.125	09369
SDB-35-44-2	1/2	0.480	0.031	0.125	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

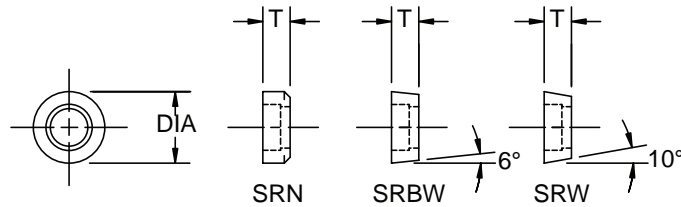


Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
STN-80-43T	0.500	0.470	0.015	0.125	09353
STN-80-54T	0.625	0.605	0.046	0.125	09354
STN-80-64T	0.750	0.730	0.062	0.125	09355
STNS-80-43	0.500	0.490	0.046	0.125	09357
STNS-80-54	0.625	0.615	0.046	0.188	09358
STNS-80-64	0.750	0.740	0.046	0.188	09359
STP-80-43T	1/2 x 3/16	0.434	0.015	0.125	09360
STP-80-54T	5/8 x 1/4	0.537	0.015	0.125	09361
STP-80-64T	3/4 x 1/4	0.662	0.015	0.125	09362

SPARE PARTS

Wedge Lock Shim Seats

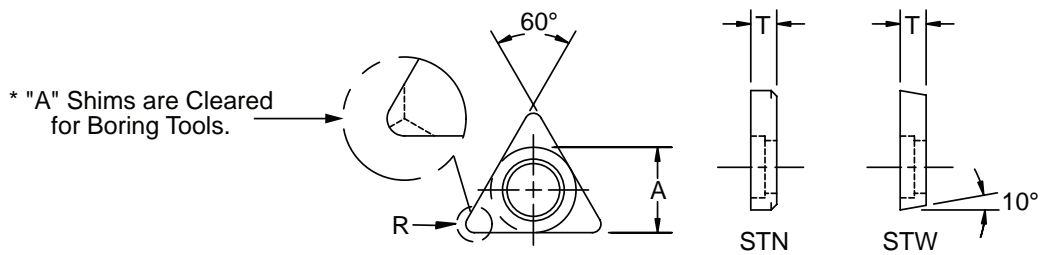
SRN, SRBW, SRW Round



Shim Seat No.	Insert Dia.	Dia. Shim	T	EDP#
SRN-33	0.375	0.365	0.125	09240
SRN-33C	0.375	0.365	0.187	09241
SRN-33CH	0.375	0.365	0.187	09242
SRN-44	0.500	0.490	0.125	09243
SRN-44C	0.500	0.490	0.187	09244
SRN-44CH	0.500	0.490	0.187	09245
SRN-54	0.625	0.615	0.187	09246
SRN-65	0.750	0.740	0.125	09247
SRN-65C	0.750	0.740	0.187	09248
SRN-86H	1.000	0.990	0.187	09249
SRN-108	1.250	1.240	0.250	09238
SRN-108C	1.250	1.240	0.375	09239
6° Side-Form Lock Insert Shim Seats				
SRBW-43	1/2 x 3/16	0.460	0.125	RFQ*
SRBW-54	5/8 x 1/4	0.563	0.187	RFQ*
SRBW-64C	3/4 x 1/4	0.687	0.187	RFQ*
SRBW-86	1 x 3/8	0.912	0.187	RFQ*
SRBW-106	1 1/4 x 3/8	1.161	0.250	RFQ*
10° Side-Form Lock Insert Shim Seats				
SRW-43	1/2 x 3/16	0.424	0.125	RFQ*
SRW-64C	3/4 x 1/4	0.652	0.187	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

STN, STW Triangle

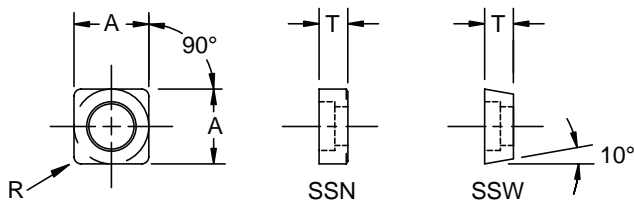


Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
STN-32	0.375	0.365	0.046	0.125	09336
STN-32C	0.375	0.365	0.046	0.188	09337
STN-32M	0.375	0.365	0.046	0.125	09338
STN-32MA*	0.375	0.365	0.046	0.125	09339
STN-32S	0.375	0.365	0.046	0.062	09340
STN-43	0.500	0.490	0.062	0.125	09341
STN-43-1/32	0.500	0.490	0.031	0.125	09342
STN-43-1/8	0.500	0.490	0.125	0.125	09343
STN-43A*	0.500	0.490	0.062	0.125	09344
STN-43C	0.500	0.490	0.062	0.188	09345
STN-43C-1/8	0.500	0.490	0.125	0.188	09346
STN-43S	0.500	0.490	0.062	0.062	09347
STN-54	0.625	0.615	0.062	0.125	09348
STN-54C	0.625	0.615	0.062	0.188	09349
STN-54CA*	0.625	0.615	0.062	0.188	09350
STN-66	0.750	0.740	0.094	0.188	09351
STN-66C	0.750	0.740	0.094	0.250	09352
STN-87	1.000	0.990	0.125	0.250	09356
Side-Form Lock Insert Shim Seats					
STW-32	3/8 x 1/8	0.321	0.031	0.125	09363
STW-43	1/2 x 3/16	0.424	0.015	0.125	09364
STW-54C	5/8 x 1/4	0.527	0.015	0.188	09365

SPARE PARTS

Wedge Lock Shim Seats

SSN, SSW Square



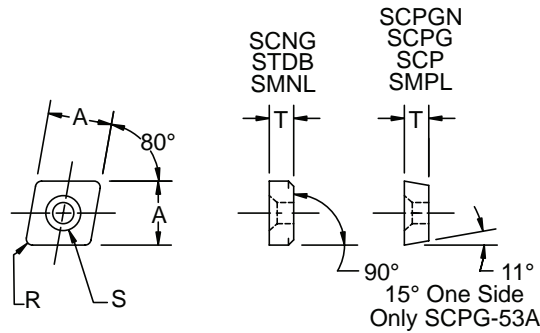
Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	EDP#
SSN-32	0.375	0.365	0.031	0.125	09259
SSN-32S	0.375	0.365	0.031	0.062	09260
SSN-43	0.500	0.490	0.046	0.125	09261
SSN-54	0.625	0.615	0.046	0.125	09266
SSN-54A**	0.625	0.615	0.046	0.125	09267
SSN-54C	0.625	0.615	0.046	0.188	09268
SSN-54CA**	0.625	0.615	0.046	0.188	09270
SSN-54C-1/16	0.625	0.615	0.062	0.188	09269
SSN-64	0.750	0.740	0.062	0.125	09271
SSN-64C	0.750	0.740	0.062	0.188	09272
SSN-64CA**	0.750	0.740	0.062	0.188	09273
SSN-85	1.000	0.990	0.094	0.250	09276
SSN-86	1.000	0.990	0.094	0.188	09277
SSN-108	1.250	1.240	0.125	0.250	RFQ*
SSN-108C	1.250	1.240	0.125	0.375	RFQ*
Side-Form Lock Insert Shim Seats					
SSW-32	3/8 x 1/8	0.321	0.015	0.125	09313
SSW-43	1/2 x 3/16	0.424	0.015	0.125	09314
SSW-54C	5/8 x 1/4	0.527	0.015	0.188	09315
SSW-64C	3/4 x 1/4	0.652	0.016	0.188	09316

*Contact your local Valenite Distributor or Valenite Customer Service.

** "A" Shims are cleared for Boring Tools.

Screw Down Shim Seats

SCNG, STDB, SMNL, SCPG, SCPGN, SMPL, SCP 80° Diamond



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	Screw S	EDP#
SCNG-42	.464	0.464	0.031	0.188	SSS-1	09193
SCNG-42A	.464	0.464	0.031	0.125	SSS-1	09194
SCNG-63	0.750	0.750	0.046	0.218	SSS-2	09195
SCP-24-3	3/4 x 3/16	0.677	0.031	0.156	SSS-2	09196
SCPG-42	.464 x 1/8	0.420	0.015	0.125	SSS-1	09197
SCPG-53	5/8 x 3/16	0.559	0.000	0.156	SSS-2	RFQ*
SCPG-53A	5/8 x 3/16	0.559	0.000	0.156	SSS-2	09198
SCPGN-42	1/2 x 1/8	0.445	0.015	0.125	SSS-1	09199
SMNL-55-3**	0.625	0.625	0.062	0.125	SSS-1	09221
SMPL-55-3**	5/8 x 3/16	0.559	0.031	0.125	SSS-1	RFQ*
STDB-20-3-2	0.625	0.625	0.031	0.125	SSS-2	09332
STDB-20-3-4	0.625	0.625	0.062	0.125	SSS-2	09333

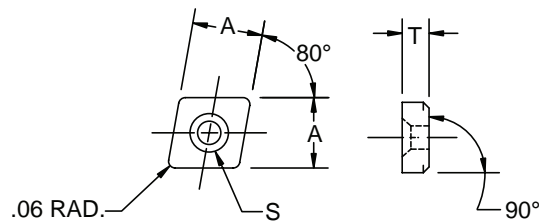
** 87° Diamond

SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SSS-2 = #6-32 x 3/8 FHCS

*Contact your local Valenite Distributor or Valenite Customer Service.

SSCN 80° Diamond



Shim Seat No.	A (I.C.)	T	Screw S	EDP#
SSCN-464	.490	0.188	SSS-5	09251
SSCN-484	.490	0.250	SSS-5	09252
SSCN-544	.615	0.125	SSS-6	09253
SSCN-564	.615	0.188	SSS-6	09254

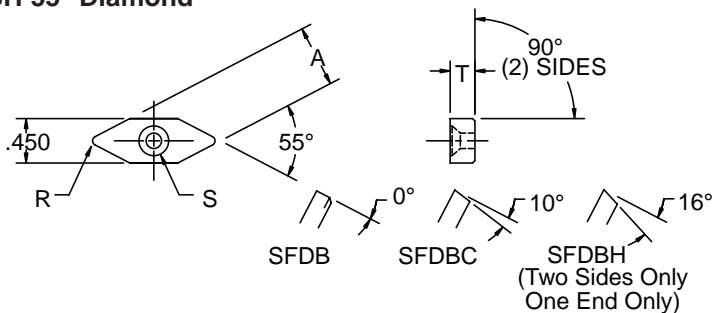
SSS-5 = #4-40 x 1/2 FHCS (Alt.)

SSS-6 = #6-32 x 1/2 FHCS

SPARE PARTS

Screw Down Shim Seats

SFDB, SFDBC, SFDBH 55° Diamond

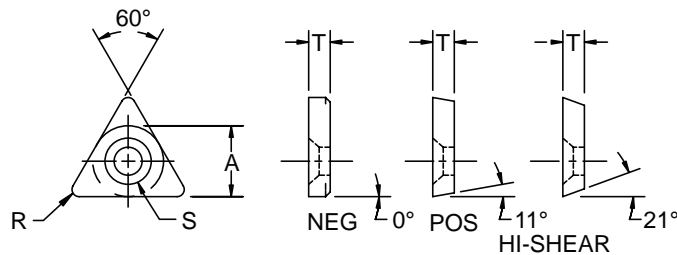


Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	Screw S	EDP#
SFDB-55-3	0.625	0.625	0.046	0.250	SSS-2	09215
SFDB-55-4	0.625	0.625	0.046	0.187	SSS-2	09216
SFDBC-55-3	5/8 x 3/16	0.559	0.015	0.125	SSS-2	09217
SFDBH-55-3	5/8 x 3/16	0.517	0.000	0.125	SSS-1	09218

SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SSS-2 = #6-32 x 3/8 FHCS

STB, STM, STBC, C-STBC Triangle



Shim Seat No.	Insert I.C.	Style	A (I.C.) Shim	R	T	Screw S	EDP#
STB-8-2	0.250	NEG.	0.250	0.031	0.125	SSS-1	09323
STB-12-2	0.375	NEG.	0.375	0.046	0.186	SSS-1	09317
STB-12-3	0.375	NEG.	0.375	0.046	0.125	SSS-1	09318
STB-16-3	0.500	NEG.	0.500	0.046	0.218	SSS-2	09319
STB-16-3A	0.500	NEG.	0.500	0.046	0.218	SSS-2	09320
STB-16-4	0.500	NEG.	0.500	0.046	0.156	SSS-2	09321
STB-24-5-1	0.750	NEG.	0.750	0.062	0.312	SSS-3	09322
STM-10	5/16 x 1/8	POS.	0.268	0.018 Flat	0.094	SSS-1	09334
STM-12	3/8 x 1/8	POS.	0.331	0.018 Flat	0.094	SSS-1	09335
STBC-12-2	3/8 x 1/8	POS.	0.329	0.015	0.125	SSS-1	09324
STBC-12-2A	3/8 x 1/8	POS.	0.329	0.015	0.125	SSS-1	09325
STBC-16-3	1/2 x 3/16	POS.	0.432	0.015	0.156	SSS-2	09326
STBC-16-3A	1/2 x 3/16	POS.	0.432	0.015	0.156	SSS-2	09328
STBC-16-3-1/32	1/2 x 3/16	POS.	0.432	0.031	0.156	SSS-2	09327
STBC-20-3	5/8 x 3/16	POS.	0.559	0.031	0.218	SSS-2	09329
STBC-20-4	5/8 x 1/4	POS.	0.537	0.031	0.156	SSS-2	RFQ*
STBC-24-4	3/4 x 1/4	POS.	0.660	0.000 / 0.005	0.187	SSS-3	09330
STBC-24-4-2	3/4 x 1/4	POS.	0.660	0.031	0.188	SSS-3	09331
C-STBC-12-2	3/8 x 1/8	HI-SHEAR	0.284	0.000	0.125	SSS-1	09156
C-STBC-16-2	1/2 x 1/8	HI-SHEAR	0.409	0.000	0.125	SSS-1	09157

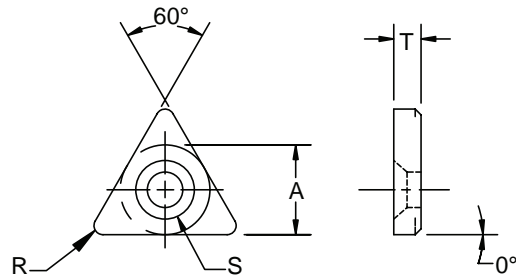
SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SSS-2 = #6-32 x 3/8 FHCS

SSS-3 = #10-32 x 5/8 FHCS

*Contact your local Valenite Distributor or Valenite Customer Service.

SSTN Triangle



Shim Seat No.	A (I.C.) Shim	R	T	Screw S	EDP#
SSTN-343	.365	0.046	0.125	SSS-5	09301
SSTN-344	.365	0.062	0.125	SSS-5	09302
SSTN-363	.365	0.046	0.188	SSS-5	09303
SSTN-364	.365	0.062	0.188	SSS-5	09304
SSTN-383	.365	0.046	0.250	SSS-5	09305
SSTN-384	.365	0.062	0.250	SSS-5	09306
SSTN-443	.490	0.046	0.125	SSS-6	09307
SSTN-444	.490	0.062	0.125	SSS-6	09308
SSTN-463	.490	0.046	0.188	SSS-6	09309
SSTN-464	.490	0.062	0.188	SSS-6	09310
SSTN-483	.490	0.046	0.250	SSS-6	09311
SSTN-484	.490	0.062	0.250	SSS-6	09312

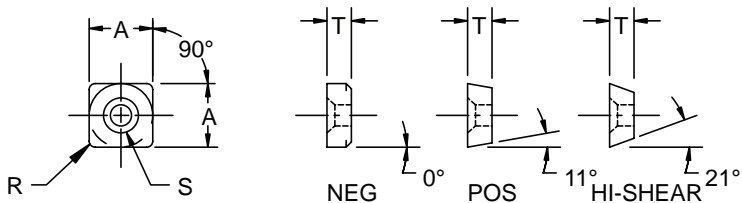
SSS-5 = #4-40 x 1/2 FHCS (Alt.)

SSS-6 = #6-32 x 1/2 FHCS

SPARE PARTS

Screw Down Shim Seats

SSQ, B-SSQ, SSM, SSQC, B-SSQC, C-SSQC Square



Shim Seat No.	Insert I.C.	Style	A (I.C.) Shim	R	T	Screw S	EDP#
B-SSQ-16-3	0.500	NEG.	0.500	0.062	0.125	SSS-1	09120
B-SSQ-20-3	0.625	NEG.	0.625	0.062	0.125	SSS-1	09124
B-SSQC-16-2	1/2 x 1/8	POS.	0.450	0.031	0.125	SSS-1	09128
B-SSQC-16-2-15°	1/2 x 1/8	POS.	0.455	0.062	0.125	SSS-1	09129
B-SSQC-20-3	5/8 x 3/16	POS.	0.559	0.062	0.125	SSS-1	09132
B-SSQC-24-3	3/4 x 3/16	POS.	0.677	0.031	0.156	SSS-2	09138
C-SSQC-16-2	1/2 x 1/8	HI-SHEAR	0.409	0.000	0.125	SSS-1	09152
C-SSQC-16-A2**	1/2 x 1/8	HI-SHEAR	0.409	0.015	0.125	SSS-1	09153
C-SSQC-20-3	5/8 x 1/8	HI-SHEAR	0.488	0.000	0.125	SSS-1	09154
CSSQC-24-2	3/4 x 1/8	HI-SHEAR	0.659	0.000	0.125	SSS-1	09155
SSM-12	3/8 x 1/8	POS.	0.331	0.000	0.094	SSS-1	09257
SSM-16	1/2 x 1/8	POS.	0.456	0.000	0.094	SSS-1	09258
SSQ-12-2	0.375	NEG.	0.375	0.031	0.125	SSS-1	09278
SSQ-16-2	0.500	NEG.	0.500	0.046	0.188	SSS-1	09279
SSQ-16-3	0.500	NEG.	0.500	0.046	0.125	SSS-1	09280
SSQ-24-3	0.750	NEG.	0.750	0.046	0.218	SSS-2	09281
SSQ-24-3-4	0.750	NEG.	0.750	0.062	0.218	SSS-2	09282
SSQ-24-4	0.750	NEG.	0.750	0.046	0.156	SSS-2	09283
SSQ-24-4-093	0.750	NEG.	0.750	0.093	0.156	SSS-2	09284
SSQ-32-4-12	1.000	NEG.	0.987	0.187	0.500	SSS-3	09285
SSQ-32-5-1	1.000	NEG.	1.000	0.062	0.312	SSS-3	09286
SSQ-32-6-12	1.000	NEG.	0.987	0.187	0.375	SSS-3	09287
SSQC-12-2	3/8 x 1/8	POS.	0.331	0.015	0.125	SSS-1	09288
SSQC-16-2	1/2 x 1/8	POS.	0.450	0.015	0.125	SSS-1	09289
SSQC-24-3	3/4 x 3/16	POS.	0.677	0.015	0.156	SSS-2	09290
SSQC-24-3A	3/4 x 3/16	15° POS.	0.677	0.015	0.156	SSS-2	RFQ*
SSQC-32-4	1 x 1/4	POS.	0.912	0.000	0.187	SSS-3	09291

*Contact your local Valenite Distributor or Valenite Customer Service.

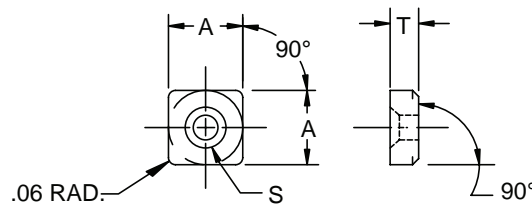
** = 2 negative sides (only)

SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SSS-2 = #6-32 x 3/8 FHCS

SSS-3 = #10-32 x 5/8 FHCS

SSSN Square

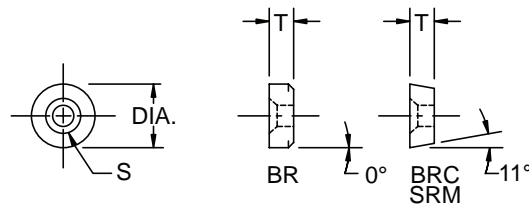


Shim Seat No.	A (I.C.)	T	Screw S	EDP#
SSSN-444	.490	0.125	SSS-5	09294
SSSN-464	.490	0.188	SSS-5	09295
SSSN-484	.490	0.250	SSS-5	09296
SSSN-644	.740	0.125	SSS-6	09298
SSSN-664	.740	0.188	SSS-6	09299
SSSN-684	.740	0.250	SSS-6	09300

SSS-5 = #4-40 x 1/2 FHCS (Alt.)

SSS-6 = #6-32 x 1/2 FHCS

BR, BRC, SRM Round



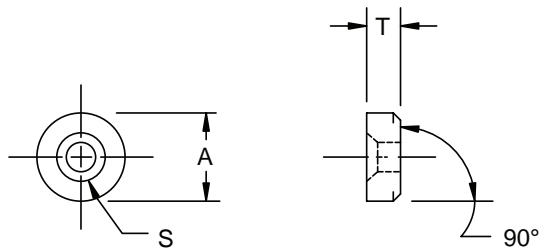
Shim Seat No.	Insert Dia.	Dia. Shim	T	Screw S	EDP#
BR-12-2	0.375	0.375	0.125	SSS-1	09110
BR-16-2	0.500	0.500	0.125	SSS-1	09111
BR-20-3	0.625	0.625	0.125	SSS-1	09112
BRC-16-2	1/2 x 1/8	0.452	0.125	SSS-1	09113
BRC-20-2	5/8 x 1/8	0.577	0.125	SSS-1	09114
SRM-12	3/8 x 1/8	0.327	0.094	SSS-1	09236
SRM-16	1/2 x 1/8	0.452	0.094	SSS-1	09237

SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SPARE PARTS

Screw Down Shim Seats

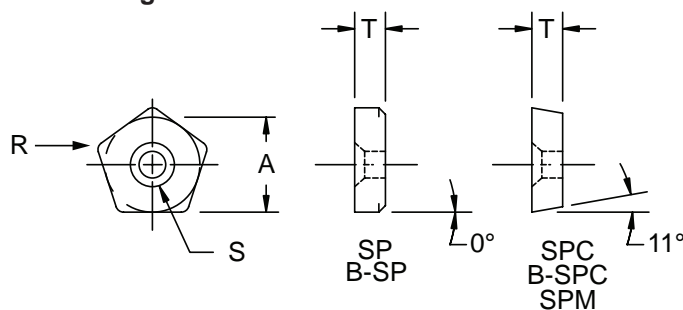
SSRN Round



Shim Seat No.	A (I.C.)	T	Screw S	EDP#
SSRN-46	.490	0.188	SSS-5	09292
SSRN-48	.490	0.250	SSS-5	09293

SSS-5 = #4-40 x 1/2 FHCS (Alt.)

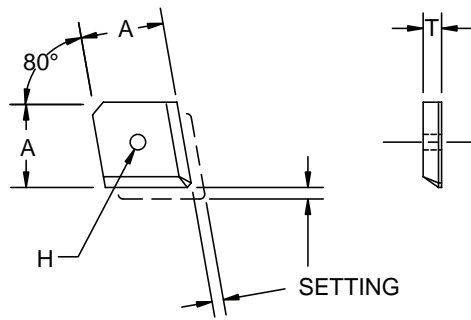
SP, B-SP, SPC, B-SPC, SPM Pentagon



Shim Seat No.	Insert I.C.	A (I.C.) Shim	R	T	Screw S	EDP#
B-SP-16-3	0.500	0.500	0.031	0.125	SSS-1	09115
B-SP-20-3	0.625	0.625	0.062	0.125	SSS-1	09116
B-SPC-16-2	1/2 x 1/8	0.452	0.000	0.125	SSS-1	09117
B-SPC-20-2	5/8 x 1/8	0.577	0.046	0.125	SSS-1	09118
B-SPC-20-3	5/8 x 3/16	0.555	0.031	0.125	SSS-1	09119
SP-12-2	0.375	0.375	0.046	0.187	SSS-1	09223
SP-12-3	0.375	0.375	0.046	0.125	SSS-1	09224
SP-16-2	0.500	0.500	0.046	0.187	SSS-1	09225
SP-16-3	0.500	0.500	0.046	0.125	SSS-1	09226
SP-24-3	0.750	0.750	0.046	0.218	SSS-2	09227
SP-24-4	0.750	0.750	0.046	0.156	SSS-2	09228
SPC-12-2	3/8 x 1/8	0.327	0.000	0.125	SSS-1	09229
SPC-16-2	1/2 x 1/8	0.452	0.031	0.125	SSS-1	09230
SPC-24-3	3/4 x 3/16	0.680	0.015	0.218	SSS-2	09231
SPM-12	3/8 x 1/8	0.327	0.000	0.940	SSS-1	09232
SPM--16	1/2 x 1/8	0.452	0.000	0.940	SSS-1	09233

SSS-1 = #4-40 x 1/4 FHCS (Alt.)

SSS-2 = #6-32 x 3/8 FHCS

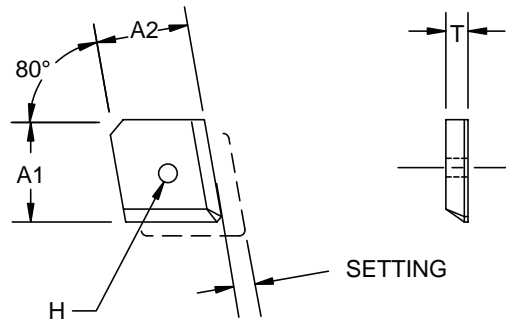


Chipbreaker No.	Used with Insert I.C.	Setting	A	H	T	EDP#
NCGD-1-050	0.464	0.050	0.444	0.060	0.067	09076
NCGD-1-100	0.464	0.100	0.394	0.060	0.067	09077
NCGD-1-150	0.464	0.150	0.344	0.060	0.067	09078
NCGD-2-050	0.750	0.050	0.730	0.060	0.067	09079
NCGD-2-100	0.750	0.100	0.680	0.060	0.067	09080
NCGD-2-150	0.750	0.150	0.630	0.060	0.067	09081
NCGD-3-050	0.750	0.050	0.730	0.090	0.099	09082
NCGD-3-100	0.750	0.100	0.680	0.090	0.099	09083
NCGD-3-150	0.750	0.150	0.630	0.090	0.099	09084
NCGD-4-050	0.500	0.050	0.480	0.060	0.067	09085
NCGD-4-100	0.500	0.100	0.430	0.060	0.067	09086
NCGD-4-150	0.500	0.150	0.380	0.060	0.067	09087
NCGD-5-050	0.625	0.050	0.605	0.060	0.067	09088
NCGD-5-100	0.625	0.100	0.555	0.060	0.067	09089
NCGD-5-150	0.625	0.150	0.505	0.060	0.067	09090
NCGD-6-050	0.625	0.050	0.605	0.090	0.099	09091
NCGD-6-100	0.625	0.100	0.555	0.090	0.099	09092
NCGD-6-150	0.625	0.150	0.505	0.090	0.099	09090

SPARE PARTS

Chipbreakers

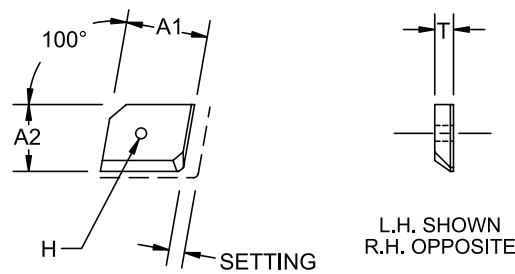
NCBC 80° Diamond



Chipbreaker No.	Insert I.C.	Setting	A1	A2	H	T	EDP#		
							Right Hand	Left Hand	Neutral
NCBC-1-050	0.464	0.050	0.405	0.355	0.067	0.062	-	-	RFQ*
NCBC-1-050LH	0.464	0.050	0.405	0.355	0.067	0.062	RFQ*	-	-
NCBC-1-100	0.464	0.100	0.405	0.305	0.067	0.062	-	-	08961
NCBC-1-100LH	0.464	0.100	0.405	0.305	0.067	0.062	08962	-	-
NCBCR/L-2-050	0.500	0.050	0.530	0.480	0.067	0.120	08972	RFQ*	-
NCBCR/L-2-100	0.500	0.100	0.530	0.430	0.067	0.120	08973	RFQ*	-
NCBCR/L-2-150	0.500	0.150	0.530	0.380	0.067	0.120	08974	08965	-
NCBCR/L-3-050	0.625	0.050	0.655	0.605	0.099	0.120	08975	RFQ*	-
NCBCR/L-3-100	0.625	0.100	0.655	0.555	0.099	0.120	08976	RFQ*	-
NCBCR/L-3-150	0.625	0.150	0.655	0.505	0.099	0.120	08977	08968	-
NCBCR/L-4-050	0.750	0.050	0.780	0.730	0.099	0.120	RFQ*	RFQ*	-
NCBCR/L-4-100	0.750	0.100	0.780	0.680	0.099	0.120	08978	08969	-
NCBCR/L-4-150	0.750	0.150	0.780	0.630	0.099	0.120	08979	08970	-
NCBCR/L-4-200	0.750	0.200	0.780	0.580	0.099	0.120	08980	08980	-

*Contact your local Valenite Distributor or Valenite Customer Service.

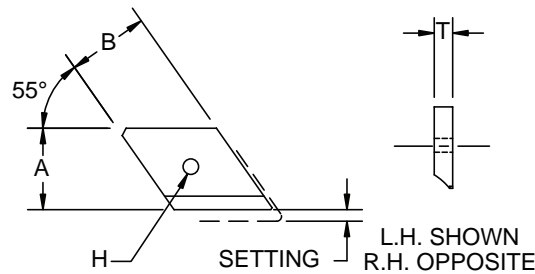
NCBD, NCCBR/L Obtuse Angle (100°) 80° Diamond



Chipbreaker No.	Insert I.C.	Setting	A1	A2	H	T	EDP#		
							Right Hand	Left Hand	Neutral
NCBD-1-050	0.464	0.050	0.444	0.444	0.067	0.120	-	-	08981
NCBD-1-100	0.464	0.100	0.394	0.394	0.067	0.120	-	-	08982
NCBD-1-150	0.464	0.150	0.344	0.344	0.067	0.120	-	-	08983
NCCBR/L-4-100	0.500	0.100	0.520	0.430	0.067	0.120	09068	09061	-
NCCBR/L-4-150	0.500	0.150	0.520	0.380	0.067	0.120	09069	09062	-
NCCBR/L-5-050	0.625	0.050	0.655	0.605	0.099	0.120	09070	09063	-
NCCBR/L-5-100	0.625	0.100	0.655	0.555	0.099	0.120	09071	09064	-
NCCBR/L-5-150	0.625	0.150	0.655	0.505	0.099	0.120	09072	09065	-
NCCBR/L-6-100	0.750	0.100	0.770	0.680	0.099	0.120	09073	RFQ*	-
NCCBR/L-6-150	0.750	0.150	0.770	0.630	0.099	0.120	09074	09066	-
NCCBR/L-6-200	0.750	0.200	0.770	0.580	0.099	0.120	09075	09067	-

*Contact your local Valenite Distributor or Valenite Customer Service.

CBR/L 55° Diamond



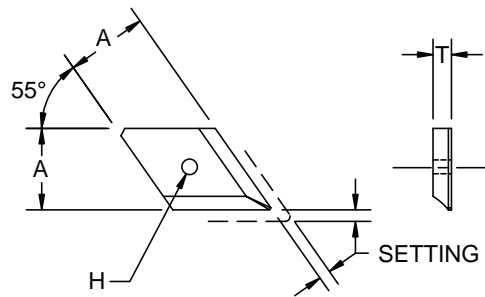
Chipbreaker No.	Insert I.C.	Setting	A	B	H	T	EDP#	
							Right Hand	Left Hand
CBR/L-19-050	0.625	0.050	0.573	0.623	0.099	0.120	08899	RFQ*
CBR/L-19-100	0.625	0.100	0.523	0.623	0.099	0.120	08900	08883
CBR/L-19-150	0.625	0.150	0.473	0.623	0.099	0.120	08901	RFQ*
CBR/L-21-050	0.500	0.050	0.448	0.498	0.067	0.120	08906	08885
CBR/L-21-100	0.500	0.100	0.398	0.498	0.067	0.120	08907	08886

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

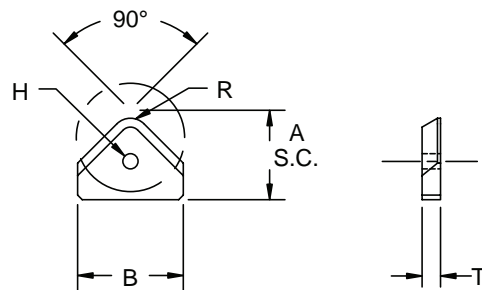
Chipbreakers

CBR 55° Diamond

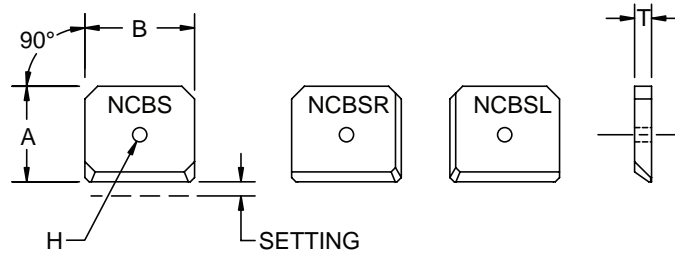


Chipbreaker No.	Insert I.C.	Setting	A	H	T	EDP#
CBR-20-050	0.625	0.050	0.583	0.099	0.120	08903
CBR-20-100	0.625	0.100	0.533	0.099	0.120	08904
CBR-20-150	0.625	0.150	0.483	0.099	0.120	08905
CBR-22-050	0.500	0.050	0.448	0.067	0.120	08908
CBR-22-100	0.500	0.100	0.398	0.067	0.120	08909

NCP Clamp Pad Round



Chipbreaker No.	Insert I.C.	A	B	H	R	T	EDP#
NCP-1	0.375	0.341	0.440	0.067	0.080	0.090	09094
NCP-2	0.500	0.421	0.560	0.067	0.090	0.120	09095
NCP-3	0.750	0.725	0.810	0.099	0.180	0.120	09096
NCP-4	1.000	0.944	1.060	0.099	0.180	0.120	09097
NCP-6	0.625	0.530	0.680	0.099	0.120	0.120	09098

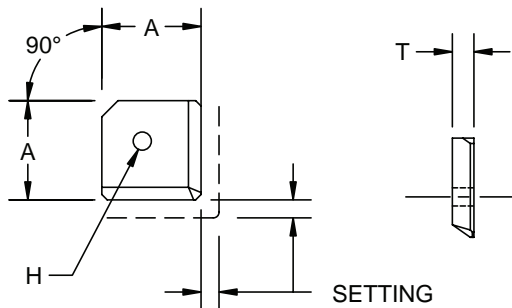


Chipbreaker No.	Insert I.C.	Setting	A	B	H	T	EDP#		
							Right Hand	Left Hand	Neutral
NCBS-1-050	0.375	0.050	0.355	0.405	0.067	0.090	-	-	08994
NCBS-1-100	0.375	0.100	0.305	0.405	0.067	0.090	-	-	08995
NCBS-2-050	0.500	0.050	0.480	0.530	0.067	0.120	-	-	08996
NCBS-2-100	0.500	0.100	0.430	0.530	0.067	0.120	-	-	08997
NCBS-2-150	0.500	0.150	0.380	0.530	0.067	0.120	-	-	08998
NCBS-3-050	0.750	0.050	0.730	0.780	0.099	0.120	-	-	08999
NCBS-3-100	0.750	0.100	0.680	0.780	0.099	0.120	-	-	09000
NCBS-3-150	0.750	0.150	0.630	0.780	0.099	0.120	-	-	09001
NCBSR/L-4-050	0.375	0.050	0.355	0.405	0.067	0.090	09018	09002	-
NCBSR/L-4-100	0.375	0.100	0.305	0.405	0.067	0.090	09019	09003	-
NCBSR-4A-050	0.375	0.050	0.355	0.405	0.067	0.062	09020	-	-
NCBSR-4A-100	0.375	0.100	0.305	0.405	0.067	0.062	09021	-	-
NCBSR/L-5-050	0.500	0.050	0.480	0.530	0.067	0.120	09022	09004	-
NCBSR/L-5-100	0.500	0.100	0.430	0.530	0.067	0.120	09023	09005	-
NCBSR/L-5-150	0.500	0.150	0.380	0.530	0.067	0.120	09024	09006	-
NCBSR/L-6-050	0.750	0.050	0.730	0.780	0.099	0.120	09025	09007	-
NCBSR/L-6-100	0.750	0.100	0.680	0.780	0.099	0.120	09026	09008	-
NCBSR/L-6-150	0.750	0.150	0.630	0.780	0.099	0.120	09027	09009	-
NCBSR/L-6-200	0.750	0.200	0.580	0.780	0.099	0.120	09028	09010	-
NCBSR/L-7-050	0.625	0.050	0.605	0.655	0.099	0.120	09029	09011	-
NCBSR/L-7-100	0.625	0.100	0.555	0.655	0.099	0.120	09030	09012	-
NCBSR/L-7-150	0.625	0.150	0.505	0.655	0.099	0.120	09031	09013	-
NCBSR/L-8-050	1.000	0.050	0.980	1.030	0.099	0.156	09032	09014	-
NCBSR/L-8-100	1.000	0.100	0.930	1.030	0.099	0.156	09033	09015	-
NCBSR/L-8-150	1.000	0.150	0.880	1.030	0.099	0.156	09034	09016	-
NCBSR/L-8-200	1.000	0.200	0.830	1.030	0.099	0.156	09035	09017	-

SPARE PARTS

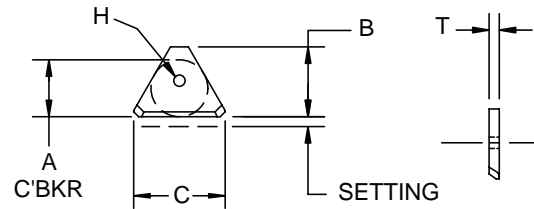
Chipbreakers

NCBDN Square



Chipbreaker No.	Insert I.C.	Setting	A	H	T	EDP#
NCBDN-1-050	0.375	0.050	0.355	0.067	0.090	08984
NCBDN-1-100	0.375	0.100	0.305	0.067	0.090	08985
NCBDN-2-050	0.500	0.050	0.480	0.067	0.120	08986
NCBDN-2-100	0.500	0.100	0.430	0.067	0.120	08987
NCBDN-2-150	0.500	0.150	0.380	0.067	0.120	08988
NCBDN-3-050	0.750	0.050	0.730	0.099	0.180	08989
NCBDN-3-100	0.750	0.100	0.680	0.099	0.180	08990
NCBDN-3-150	0.750	0.150	0.630	0.099	0.180	08991
NCBDN-4-050	0.625	0.050	0.605	0.099	0.120	RFQ*
NCBDN-4-100	0.625	0.100	0.555	0.099	0.120	08992
NCBDN-4-150	0.625	0.150	0.505	0.099	0.120	08993

*Contact your local Valenite Distributor or Valenite Customer Service.

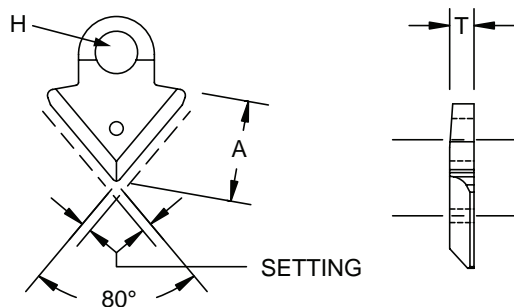


Chipbreaker No.	Insert I.C.	Setting	Chipbreaker A (I.C.)	B	C	H	T	EDP#
NCBT-1-050	0.250	0.050	0.257	0.300	0.368	0.067	0.090	09036
NCBT-1-100	0.250	0.100	0.223	0.250	0.368	0.067	0.090	09037
NCBT-2-050	0.375	0.050	0.382	0.470	0.560	0.067	0.120	09038
NCBT-2A-050	0.375	0.050	0.382	0.470	0.560	0.067	0.062	09041
NCBT-2-100	0.375	0.100	0.348	0.420	0.540	0.067	0.120	09039
NCBT-2A-100	0.375	0.100	0.348	0.420	0.540	0.067	0.062	09042
NCBT-2-150	0.375	0.150	0.315	0.370	0.516	0.067	0.120	09040
NCBT-2A-150	0.375	0.150	0.315	0.370	0.516	0.067	0.062	09043
NCBT-3-050	0.500	0.050	0.507	0.620	0.754	0.067	0.120	09044
NCBT-3-100	0.500	0.100	0.473	0.575	0.740	0.067	0.120	09045
NCBT-3-150	0.500	0.150	0.440	0.525	0.754	0.067	0.120	09049
NCBT-3-200	0.500	0.200	0.406	0.475	0.674	0.067	0.120	09050
NCBT-4-050	0.625	0.050	0.632	0.825	0.970	0.099	0.120	09051
NCBT-4-100	0.625	0.100	0.598	0.775	0.970	0.099	0.120	09052
NCBT-4-150	0.625	0.150	0.565	0.725	0.950	0.099	0.120	09053
NCBT-4-200	0.625	0.200	0.530	0.675	0.890	0.099	0.120	09054
NCBT-5-050	0.750	0.050	0.756	0.990	1.142	0.099	0.156	09055
NCBT-5-100	0.750	0.100	0.723	0.940	1.142	0.099	0.156	09056
NCBT-5-150	0.750	0.150	0.689	0.890	1.142	0.099	0.156	09057
NCBT-5-200	0.750	0.200	0.656	0.840	1.108	0.099	0.156	09058
NCBT-8-150	1.000	0.150	0.940	1.150	1.496	0.099	0.156	09059
NCBT-8-200	1.000	0.200	0.907	1.100	1.542	0.099	0.156	09060
NCBT-31-050	0.500	0.050	0.507	0.625	0.754	0.099	0.120	09046
NCBT-31-100	0.500	0.100	0.473	0.575	0.740	0.099	0.120	09047
NCBT-31-150	0.500	0.150	0.440	0.525	0.754	0.099	0.120	09048

SPARE PARTS

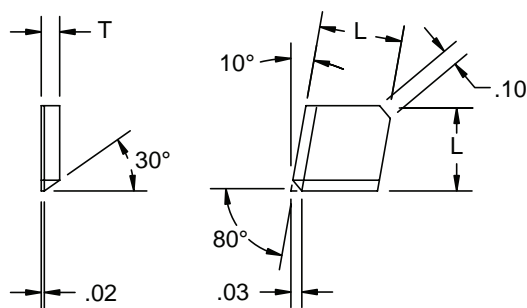
Chipbreakers

CT-80° Trigon



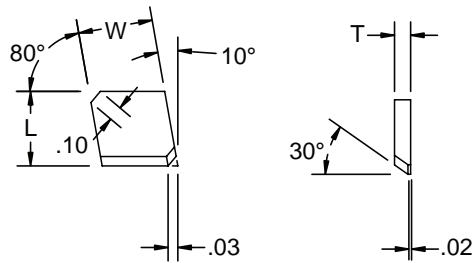
Chipbreaker No.	Insert I.C.	Setting	A	H	T	EDP#
CT-80° -4-050	0.500	0.050	0.590	0.209	0.120	08951
CT-80° -4-100	0.500	0.100	0.510	0.209	0.120	08952
CT-80° -4-150	0.500	0.150	0.434	0.209	0.120	08953
CT-80° -5-050	0.625	0.050	0.744	0.265	0.120	08954
CT-80° -5-100	0.625	0.100	0.667	0.265	0.120	08955
CT-80° -5-150	0.625	0.150	0.592	0.265	0.120	08956
CT-80° -6-050	0.750	0.050	0.902	0.265	0.120	08957
CT-80° -6-100	0.750	0.100	0.825	0.265	0.120	08958
CT-80° -6-150	0.750	0.150	0.750	0.265	0.120	08959

CBR 80° Diamond



Chipbreaker No.	Insert I.C.	L	T	EDP#
CBR-40-08	0.500	0.440	0.062	08930
CBR-40-12	0.500	0.395	0.062	08931
CBR-41-08	0.750	0.690	0.094	08932
CBR-41-15	0.750	0.620	0.094	08933

CBR/L 80° Diamond

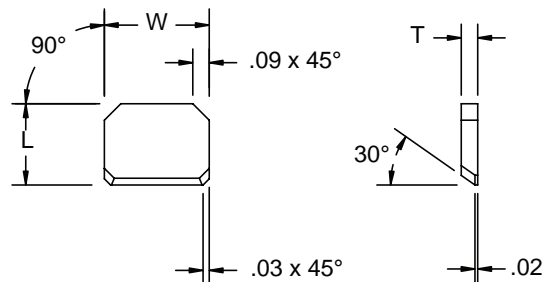


Right-hand shown, Left-hand opposite.

Chipbreaker No.	Insert I.C.	W	L	T	EDP#	
					Right Hand	Left Hand
CBR/L-45-08	0.500	0.510	0.440	0.062	08936	08888
CBR/L-45-12	0.500	0.510	0.395	0.062	08937	RFQ*
CBR/L-46-08	0.750	0.760	0.690	0.094	08938	RFQ*
CBR/L-46-15	0.750	0.760	0.620	0.094	RFQ*	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

CBR Square

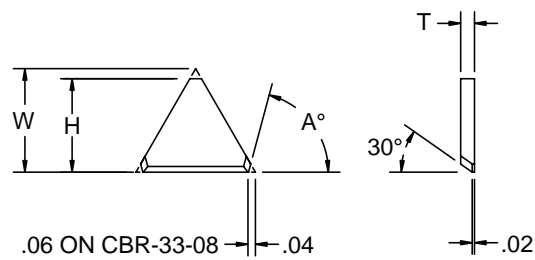


Chipbreaker No.	Insert I.C.	W	L	T	EDP#
CBR-35-05	0.375	0.385	0.345	0.062	08922
CBR-35-10	0.375	0.385	0.295	0.062	08923
CBR-36-08	0.500	0.510	0.440	0.062	08924
CBR-36-12	0.500	0.510	0.395	0.062	08925
CBR-37-08	0.625	0.635	0.565	0.094	08926
CBR-37-15	0.625	0.635	0.495	0.094	08927
CBR-38-08	0.750	0.760	0.690	0.094	08928
CBR-38-15	0.750	0.760	0.620	0.094	08929

SPARE PARTS

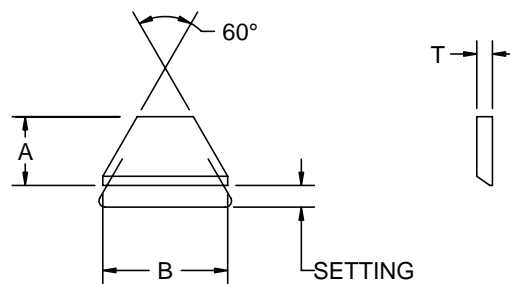
Chipbreakers

CBR Triangle



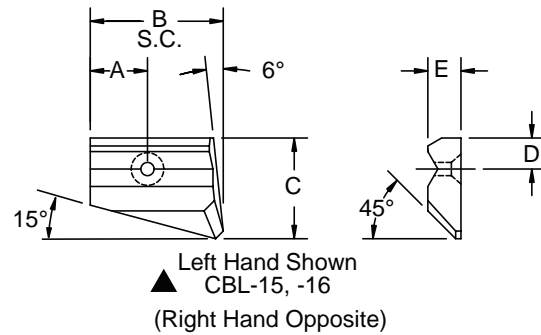
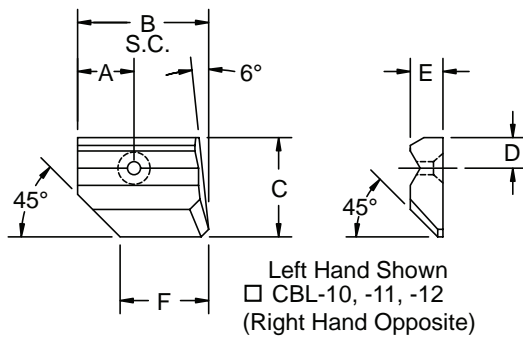
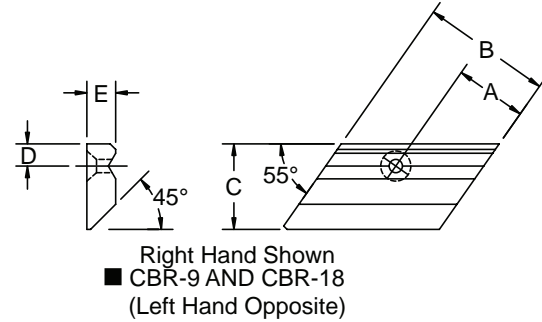
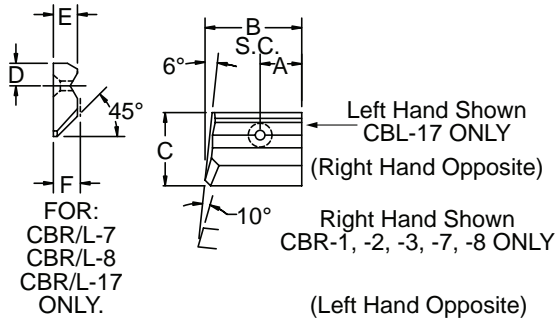
Chipbreaker No.	Insert I.C.	W	A	H	T	EDP#
CBR-30-05	0.312	0.460	75°	0.372	0.062	08911
CBR-30-10	0.312	0.410	45°	0.322	0.062	08912
CBR-31-08	0.375	0.520	75°	0.436	0.062	08913
CBR-31-12	0.375	0.480	45°	0.390	0.062	08914
CBR-32-08	0.500	0.710	75°	0.623	0.094	08915
CBR-32-15	0.625	0.640	45°	0.553	0.094	08916
CBR-33-08	0.625	0.900	75°	0.810	0.094	08917
CBR-33-15	0.625	0.830	45°	0.740	0.094	08918
CBR-34-05	0.250	0.360	75°	0.280	0.062	08919
CBR-34-075	0.250	0.340	75°	0.255	0.062	08920
CBR-34-10	0.250	0.315	75°	0.230	0.062	08921

CD E-Z Set Chip Deflectors



Chipbreaker No.	Insert I.C.	Setting	A	B	T	EDP#
CD-25	0.250	0.015	0.260	0.390	0.062	08943
CD-26	0.250	0.078	0.200	0.356	0.062	08944
CD-27	0.375	0.046	0.390	0.564	0.062	08945
CD-28	0.375	0.078	0.360	0.544	0.062	08946
CD-29	0.500	0.078	0.480	0.738	0.062	08947
CD-30	0.500	0.109	0.450	0.706	0.062	08948

CBR/L for Serrated Adjustable Clamp Tooling



Chipbreaker No.	A	B	C	D	E	F	EDP#	
							Right Hand	Left Hand
CBR/L-1**	.218	0.500	0.375	0.117	0.125	-	08891	08877
CBR/L-2**	.250	0.625	0.406	0.117	0.125	-	08902	08884
CBR/L-3**	.338	0.720	0.406	0.117	0.125	-	08910	08887
CBR/L-7***	.437	0.968	0.531	0.128	0.187	0.250	08939	08889
CBR/L-8***	.437	1.062	0.531	0.128	0.187	0.250	08940	08890
■ CBR/L-9***	.312	0.625	0.460	0.120	0.156	-	08941	RFQ*
□ CBR/L-10**	.153	0.365	0.312	0.090	0.125	0.265	08892	RFQ*
□ CBR/L-11**	.218	0.500	0.375	0.117	0.125	0.375	08893	08878
□ CBR/L-12**	.338	0.720	0.406	0.117	0.125	0.540	08894	RFQ*
▲ CBR/L-15**	.218	0.484	0.453	0.117	0.125	-	08895	08879
▲ CBR/L-16**	.250	0.580	0.495	0.117	0.125	-	08896	08880
CBR/L-17**	.343	0.718	0.438	0.147	0.125	0.187	08897	08881
■ CBR/L-18***	.392	0.705	0.460	0.120	0.156	-	08898	08882

* Contact your local Valenite Distributor or Valenite Customer Service.

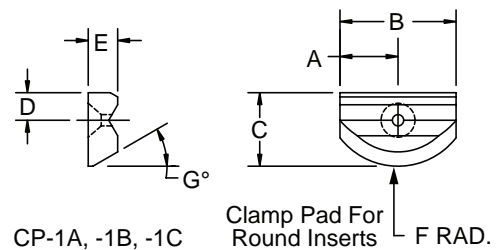
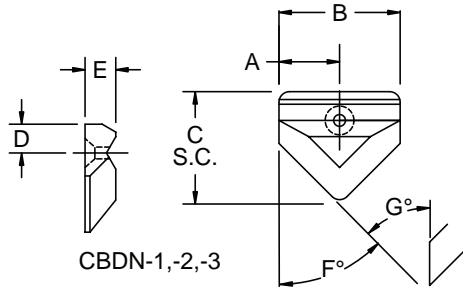
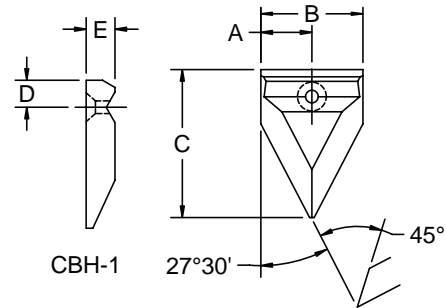
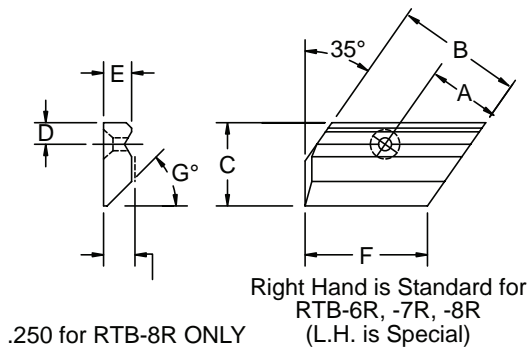
** Complete with "Wire Nail # 20 x 1/2"

*** Complete with "Wire Nail # 18 x 5/8"

SPARE PARTS

Chipbreakers

CBH, CBDN, CP RTB For Serrated Adjustable Clamp Tooling



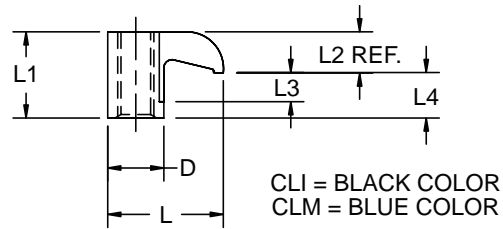
Chipbreaker No.	A	B	C	D	E	F	G	EDP#
CBH-1	.222	0.445	0.642	0.117	0.125	-	-	RFQ*
CBDN-1**	.248	0.496	0.457	0.117	0.125	45°	45°	08874
CBDN-2***	.436	0.873	0.705	0.162	0.187	45°	40°	08875
CBDN-3***	.374	0.748	0.705	0.162	0.187	40°	40°	RFQ*
CP-1A**	.155	0.310	0.250	0.090	0.125	.250 RAD.	30°	08949
CP-1B**	.248	0.496	0.312	0.117	0.125	.312 RAD.	30°	08950
CP-1C**	.375	0.746	0.468	0.117	0.125	.437 RAD.	30°	RFQ*
RTB-6R**	.218	0.437	0.375	0.117	0.125	.402	35°	09102
RTB-7R***	.312	0.625	0.460	0.120	0.156	.602	35°	09103
RTB-8R***	.500	1.000	0.531	0.128	0.187	1.052	35°	09104

* Contact your local Valenite Distributor or Valenite Customer Service.

** Complete with "Wire Nail # 20 x 1/2"

*** Complete with "Wire Nail # 18 x 5/8"

Common Hardware Clamps

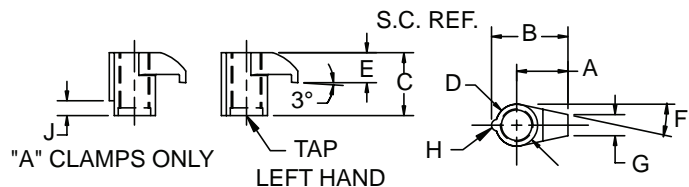


Clamp No.	D	L	L1	L2 Ref.	L3	L4	Left Hand Thread	EDP#
CLI-6	0.310	0.580	0.440	0.253	0.094	0.187	10-32	59053
CLI-7	0.305	0.640	0.310	0.250	0.060	0.060	10-32	59054
CLI-9	0.430	0.750	0.660	0.316	0.125	0.344	5/16-24	59055
CLI-12	0.430	0.880	0.660	0.316	0.125	0.344	5/16-24	59046
CLI-19	0.310	0.550	0.310	0.248	0.062	0.062	10-32	59047
CLI-20	0.370	0.730	0.380	0.255	0.125	0.125	1/4-28	59048
CLI-22	0.370	0.850	0.530	0.255	0.125	0.275	1/4-28	59049
CLI-24	0.495	1.000	0.785	0.332	0.136	0.453	3/8-24	59050
CLI-30	0.430	1.000	0.660	0.316	0.125	0.344	5/16-24	59051
CLM-5	0.280	0.520	0.350	0.248	0.102	0.102	M5-0,8	59062
CLM-6	0.310	0.580	0.440	0.253	0.094	0.187	M5-0,8	59063
CLM-7	0.310	0.640	0.310	0.250	0.060	0.060	M5-0,8	59064
CLM-9	0.430	0.750	0.660	0.316	0.125	0.344	M8-1,0	59065
CLM-12	0.430	0.880	0.660	0.316	0.125	0.344	M8-1,0	59056
CLM-17	0.310	0.640	0.440	0.253	0.094	0.187	M5-0,8	59057
CLM-20	0.370	0.730	0.380	0.255	0.125	0.125	M6-1,0	59058
CLM-27	0.310	0.738	0.440	0.253	0.094	0.187	M5-0,8	59060
CLM-30	0.430	1.000	0.660	0.316	0.125	0.344	M8-1,0	59061

SPARE PARTS

Clamps

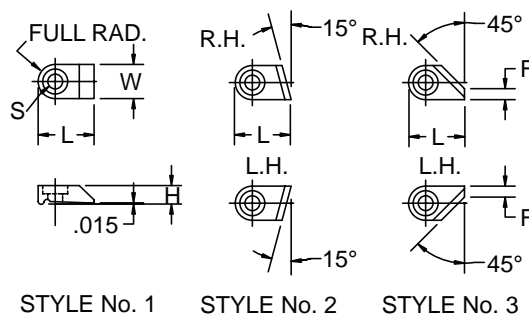
NC Style



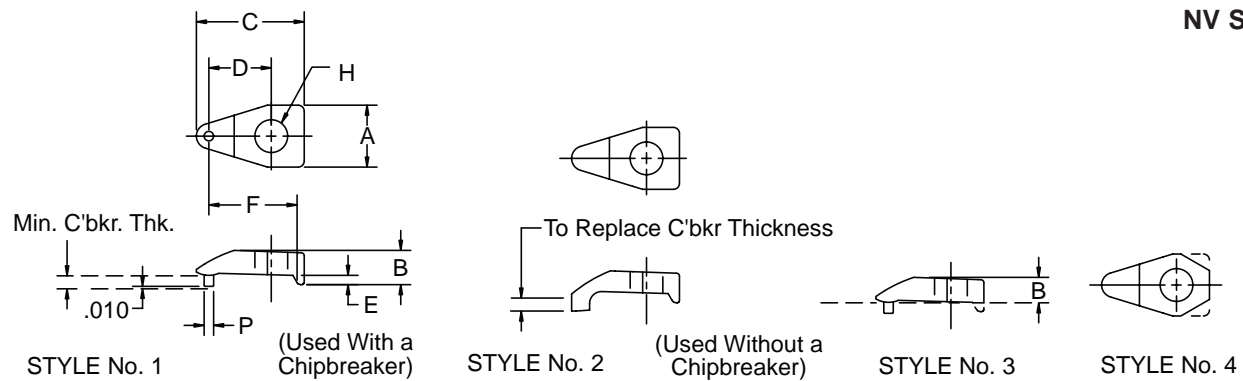
Clamp No.	A	B	C	D	E	F	G	H	J	Metric Tap L.H.	EDP#
NC-14	0.340	0.500	0.360	0.249	0.180	12°	0.104	0.040	-	M4-0,7	59071
NC-15	0.390	0.570	0.406	0.275	0.233	8°	0.176	0.040	-	M5-0,8	59072
NC-16	0.530	0.760	0.650	0.374	0.310	10°	0.190	0.060	-	M6-0,75	52781
NC-17	0.530	0.790	0.650	0.436	0.310	12°	0.210	0.060	-	M8-1,0	52782
NC-14A	0.340	0.500	0.360	0.249	0.180	12°	0.104	0.040	0.060	M4-0,7	RFQ*
NC-15A	0.390	0.570	0.406	0.275	0.233	8°	0.176	0.040	0.040	M5-0,8	52780
NC-16A	0.530	0.760	0.650	0.374	0.310	10°	0.190	0.060	0.220	M6-0,75	59073
NC-17A	0.530	0.790	0.650	0.436	0.310	12°	0.210	0.060	0.220	M8-1,0	59074

*Contact your local Valenite Distributor or Valenite Customer Service.

AE Styles No. 1, No. 2, and No. 3



Style No.	Clamp No.	For Screw	F	H	L	W	EDP#
1	CL-1	#6-32 x 3/8 SHCS	-	0.188	0.560	0.340	52725
1	CL-2	#10-32 x 3/8 SHCS	-	0.250	0.696	0.436	52731
2	CL-3	#6-32 x 3/8 SHCS	-	0.188	0.568	0.342	52732
2	CL-3L	#6-32 x 3/8 SHCS	-	0.188	0.560	0.340	52733
2	CL-4	#10-32 x 3/8 SHCS	-	0.250	0.690	0.436	52734
2	CL-4L	#10-32 x 3/8 SHCS	-	0.250	0.688	0.436	52735
3	CL-5	#6-32 x 3/8 SHCS	0.115	0.188	0.560	0.342	52736
3	CL-5L	#6-32 x 3/8 SHCS	0.115	0.188	0.560	0.342	52737
2	CL-10	#10-32 x 3/8 SHCS	-	0.250	0.765	0.436	52726
2	CL-10L	#10-32 x 3/8 SHCS	-	0.250	0.765	0.436	52727



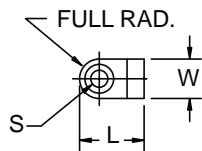
Style No.	Clamp No.	A	B	C	D	E	F	H	P	Min. C'bkr Thk.	EDP#
1	NC-1	0.360	0.280	0.605	0.312	0.086	.452	0.203	0.062	0.900	59069
1	NC-1A	0.360	0.280	0.668	0.375	0.093	.515	0.203	0.062	0.090	52783
2	NC-1AC	0.360	0.280	0.570	-	-	-	0.203	0.075	0.120	59075
2	NC-1AS	0.360	0.280	0.680	-	-	-	0.218	0.180	0.120	59076
3	NC-1B	0.360	0.187	0.668	0.375	-	-	0.203	0.062	0.090	RFQ*
1	NC-1D	0.360	0.265	0.605	0.312	0.093	.452	0.203	0.062	0.060	52784
2	NC-1S	0.360	0.280	0.620	-	-	-	0.218	0.180	0.090	59077
1	NC-2	0.500	0.300	0.840	0.470	0.093	.680	0.265	0.062	0.120	59078
3	NC-2A	0.500	0.207	0.840	0.470	-	-	0.265	0.062	0.120	RFQ*
1	NC-2B	0.500	0.300	0.840	0.470	0.093	.680	0.265	0.062	0.090	59079
2	NC-2C	0.500	0.275	0.687	-	-	-	0.265	0.075	0.120	59080
2	NC-2CL	0.500	0.293	0.740	-	-	-	0.265	0.075	0.120	59081
2	NC-2CS	0.500	0.295	0.687	-	-	-	0.265	0.075	0.090	59082
2	NC-2S	0.500	0.285	0.868	-	-	-	0.265	0.120	0.120	59083
1	NC-3	0.620	0.343	1.080	0.625	0.093	.895	0.328	0.094	0.120	52785
4	NC-3A	0.620	0.343	1.080	0.625	0.093	.895	0.328	0.094	0.120	59084
2&4	NC-3AC	0.620	0.335	0.820	-	-	-	0.328	0.100	0.120	59085
2&4	NC-3ACL	0.620	0.340	0.900	-	-	-	0.328	0.100	0.120	59086
2&4	NC-3ACS	0.620	0.343	0.820	-	-	-	0.328	0.100	0.156	59087
2	NC-3SS	0.620	0.343	1.080	-	-	-	0.328	0.180	0.180	59088
2	NC-3ST	0.620	0.343	1.080	-	-	-	0.328	0.180	0.120	59089
1	NC-4	0.620	0.405	1.500	0.875	0.093	1.284	0.328	0.094	0.120	59090
2	NC-4CS	0.620	0.390	1.200	-	-	-	0.328	0.100	0.156	59091

*Contact your local Valenite Distributor or Valenite Customer Service.

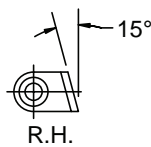
SPARE PARTS

Clamps

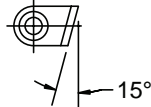
AE Styles No. 4 and No. 5



STYLE No. 4



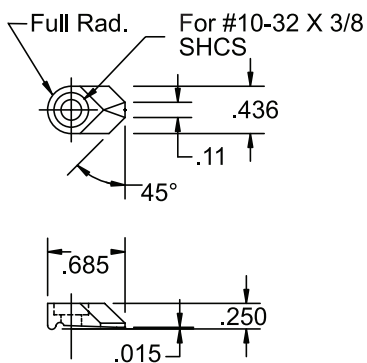
R.H.



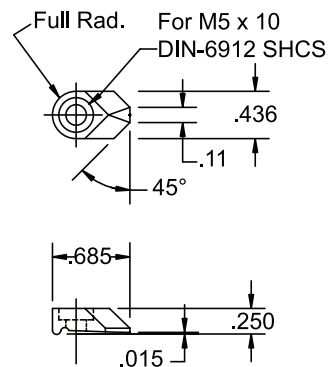
STYLE No. 5

Style No.	Clamp No.	For Screw	A°	G	Alter Clamp No.	EDP#
4	CL-6	#10-32 x 3/8 SHCS	9°	0.079	CL-2	52738
5	CL-7	#6-32 x 3/8 SHCS	7°	0.048	CL-3	52739
5	CL-7L	#6-32 x 3/8 SHCS	7°	0.048	CL-3L	52740
5	CL-9	#10-32 x 3/8 SHCS	6°	0.054	CL-4	52741
5	CL-9L	#10-32 x 3/8 SHCS	6°	0.054	CL-4L	00058
5	CL-11	#10-32 x 3/8 SHCS	9°	0.072	H=.250 W=.436 L=.765	52728
5	CL-11L	#10-32 x 3/8 SHCS	9°	0.072	H=.250 W=.436 L=.765	00056

AE Style



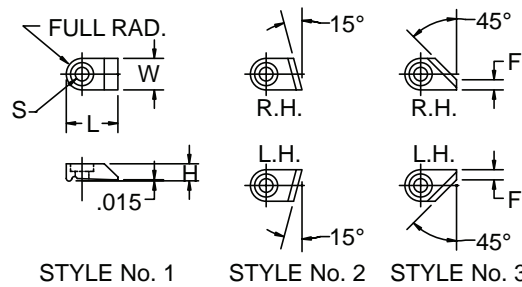
M-AE Styles



Clamp No.	AE	EDP#
CL-12	See drawings for dimensions	52730

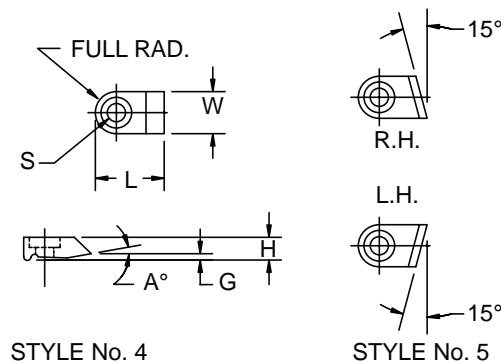
Clamp No.	M-AE	EDP#
M-CL-12	See drawings for dimensions	62207

M-AE Styles No. 1, No. 2, and No. 3



Style No.	Clamp No.	S - For Screw DIN 6912	F	H	L	W	EDP#
1	M-CL-1	M4 x 10	-	0.188	0.560	0.342	62205
1	M-CL-2	M5 x 10	-	0.250	0.696	0.436	52768
2	M-CL-3	M4 x 10	-	0.188	0.560	0.342	62208
2	M-CL-3L	M4 x 10	-	0.188	0.560	0.342	62209
2	M-CL-4	M5 x 10	-	0.250	0.688	0.436	62210
2	M-CL-4L	M5 x 10	-	0.250	0.688	0.436	62211
3	M-CL-5	M4 x 10	0.115	0.188	0.560	0.342	62212
3	M-CL-5L	M4 x 10	0.115	0.188	0.560	0.342	52774
2	M-CL-10	M5 x 10	-	0.250	0.765	0.436	52764
2	M-CL-10L	M5 x 10	-	0.250	0.765	0.436	62206

M-AE Styles No. 4 and No. 5



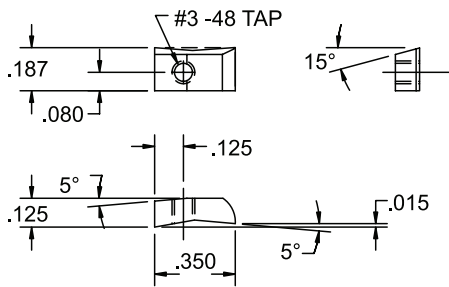
Style No.	Clamp No.	S - For Screw DIN 6912	A°	G	Alter Clamp No.	EDP#
4	M-CL-6	M5 x 10	9°	0.074	M-CL-2	RFQ*
5	M-CL-7	M4 x 10	7°	0.048	M-CL-3	52775
5	M-CL-7L	M4 x 10	7°	0.048	M-CL-3L	RFQ*
5	M-CL-9	M5 x 10	6°	0.054	M-CL-4	RFQ*
5	M-CL-9L	M5 x 10	6°	0.054	M-CL-4L	RFQ*
5	M-CL-11	M5 x 10	9°	0.075	H=.250 W=.436 L=.765	52766
5	M-CL-11L	M5 x 10	9°	0.075	H=.250 W=.436 L=.765	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

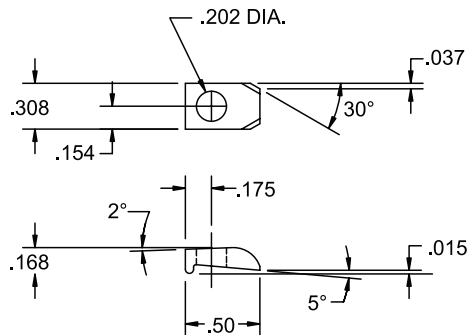
Clamps

Flex-A-Dex

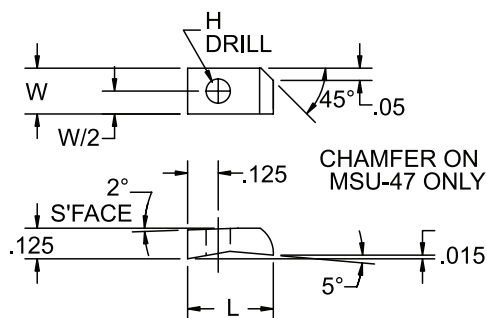


R.H. SHOWN (FDC-37)
L.H. OPPOSITE (FDC-37-LH)

Clamp No.	FDC-37	EDP#
FDC-37	See drawing for dimensions	62200
FDC-37-LH		52754

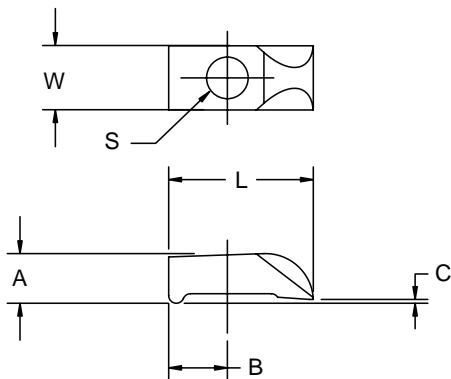


Clamp No.	FDC-62	EDP#
FDC-62	See drawing for dimensions	52756



Clamp No.	W	H	L	FDC-50	EDP#
FDC-50	W=.190	H=.106	L=.378	See drawing for dimensions	62201
MSU-285-2.2	W=.250	H=.136	L=.375		52778
MSU-47	W=.250	H=.136	L=.472		52779

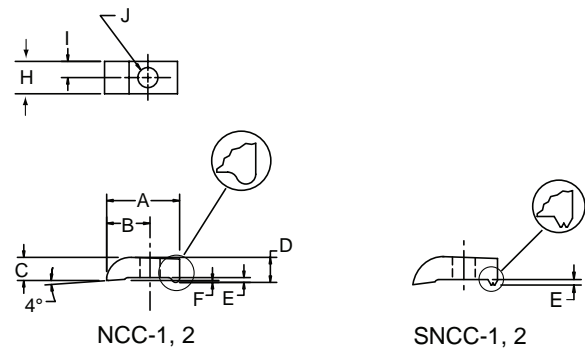
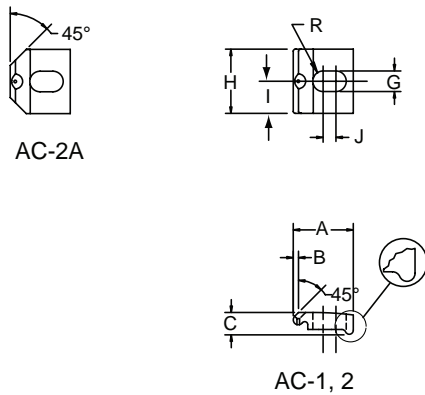
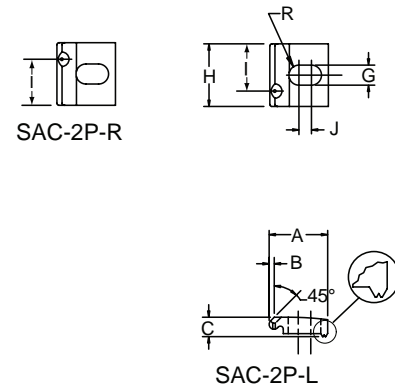
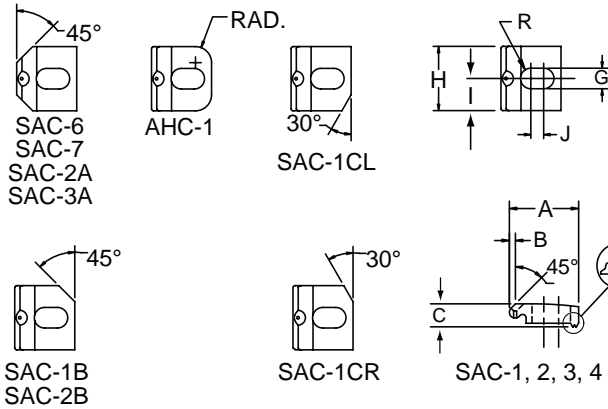
V.B.U.



Clamp No.	A	B	C	L	W	Screw Size "S"	EDP#
A-VBU-C2	0.300	0.375	0.030	0.905	0.440	1/4	RFQ*
VBU-C1-1	0.222	0.329	0.015	0.750	0.375	#10	52792
VBU-C1	0.218	0.329	0.015	0.687	0.375	#10	59109
VBU-C2	0.300	0.375	0.030	0.905	0.440	1/4	52793
VBU-C3	0.390	0.461	0.030	1.136	0.504	5/16	59110

*Contact your local Valenite Distributor or Valenite Customer Service.

Serrated Clamps



Clamp No.	Dimensions										EDP#		
	A	B	C	D	E	F	G	H	I	J	Right Hand	Left Hand	Neutral
NCC-1	0.913	0.538	0.321	0.350	0.075	0.029	-	0.440	0.220	0.265	-	-	59092
NCC-2	1.136	0.675	0.360	0.390	0.075	0.030	-	0.504	0.252	0.327	-	-	59094
SNCC-1	0.905	0.530	0.320	0.287	0.062	0.030	-	0.440	0.220	0.265	-	-	RFQ*
SNCC-2	1.136	0.675	0.360	0.327	0.062	0.030	-	0.504	0.252	0.327	-	-	RFQ*
SAC-1	0.778	0.078	0.310	-	-	-	0.261	0.436	0.218	0.122	-	-	59099
SAC-2	0.935	0.078	0.310	-	-	-	0.320	0.500	0.250	0.200	-	-	59102
SAC-3**	1.649	0.093	0.500	-	-	-	0.515	0.875	0.4375	0.354	-	-	00174
SAC-4R/L	0.618	0.060	0.270	-	-	-	0.195	0.312	0.156	0.086	RFQ*	RFQ*	-
SAC-6	1.187	0.078	0.375	-	-	-	0.320	0.748	0.374	0.125	-	-	RFQ*
SAC-7**	1.649	0.093	0.500	-	-	-	0.515	0.875	0.4375	0.354	-	-	RFQ*
SAC-1B	0.778	0.078	0.310	-	-	-	0.261	0.4375	0.2187	0.122	-	-	59100
SAC-2A	0.935	0.078	0.310	-	-	-	0.320	0.500	0.250	0.200	-	-	59103
SAC-2B	0.935	0.078	0.310	-	-	-	0.320	0.500	0.250	0.200	-	-	59104
SAC-3A**	1.649	0.093	0.500	-	-	-	0.515	0.875	0.4375	0.354	-	-	59106
SAC-1CR/L	0.778	0.078	0.310	-	-	-	0.261	0.4375	0.2187	0.122	00173	RFQ*	-
SAC-2P-R/L	1.032	0.078	0.310	-	-	-	0.320	0.625	0.338	0.200	RFQ*	RFQ*	-
AC-1	0.778	0.078	0.322	-	-	-	0.261	0.4375	0.2187	0.122	-	-	RFQ*
AC-2	0.935	0.078	0.322	-	-	-	0.320	0.500	0.250	0.200	-	-	59032
AC-2A	0.935	0.078	0.322	-	-	-	0.320	0.500	0.250	0.200	-	-	59033

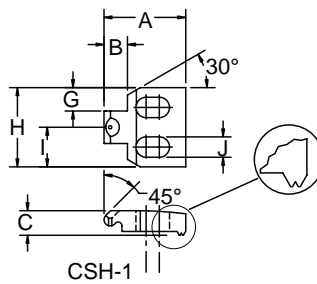
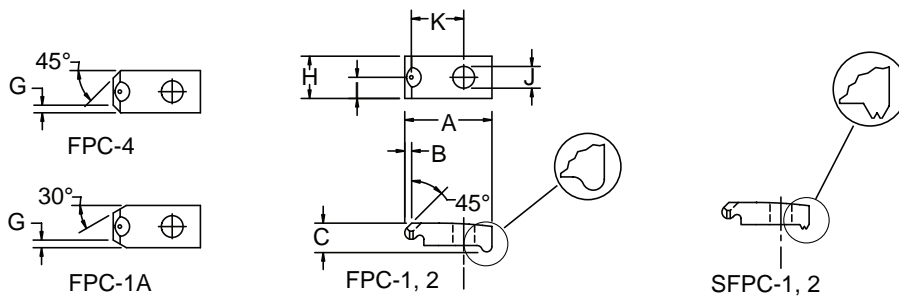
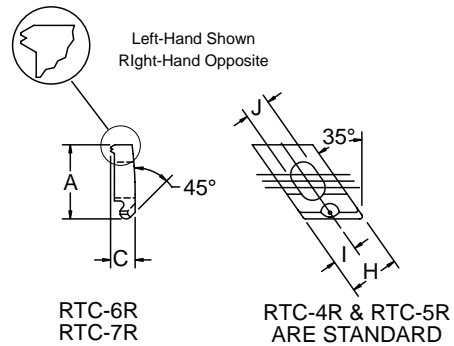
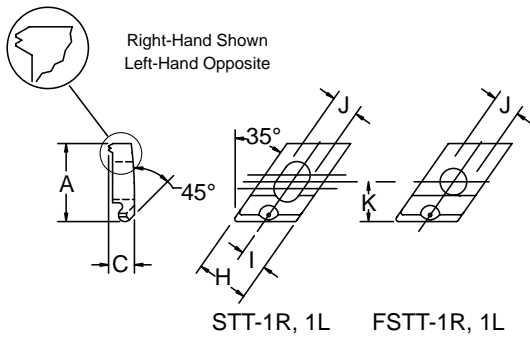
*Contact your local Valenite Distributor or Valenite Customer Service.

**NOTE: All clamp serrations are 24p x 60° unless otherwise noted, then serrations are 1/16 x 90°

SPARE PARTS

Clamps

Miscellaneous



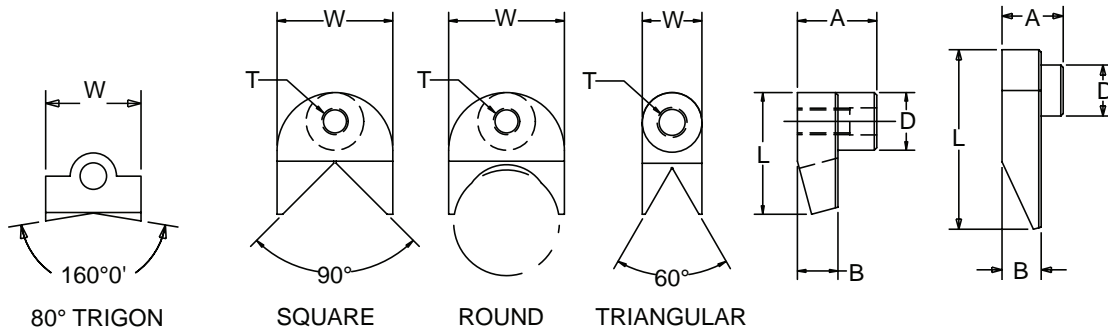
Clamp Settings

Clamp No.	K	Clamp No.	K
FPC-1-050	0.410	FSST-1R-075	0.553
FPC-1-075	0.385	FSST-1R-116	0.512
FPC-1-100	0.360	FSST-1R-157	0.471
FPC-1-125	0.335	SFPC-1-.012	0.448
FPC-2-050	0.585	SFPC-1-.053	0.407
FPC-2-075	0.560	SFPC-1-.094	0.366
FPC-2-100	0.535	SFPC-2-045	0.591
FPC-2-125	0.510	SFPC-2-086	0.549
FPC-2-150	0.485	SFPC-2-128	0.508
FPC-2-175	0.460	SFPC-2-170	0.466
FPC-2-200	0.435	SFPC-2-211	0.424
FPC-2-225	0.410	SFPC-2-253	0.383
FPC-2-250	0.385		

Clamps

Clamp No.	Dimensions						
	A	B	C	G	H	I	J
FPC-1 . . . *	0.778	0.078	0.322	-	0.4375	0.2187	0.261
FPC-1A	0.778	0.078	0.322	0.0625	0.4375	0.2187	0.261
FPC-2 . . . *	0.935	0.078	0.322	-	0.500	0.250	0.320
FPC-4	0.618	0.060	0.282	0.0468	0.312	0.156	0.195
SFPC-1 . . . *	0.778	0.078	0.310	-	0.4375	0.2187	0.261
SFPC-2 . . . *	0.935	0.078	0.310	-	0.500	0.250	0.320
CSH-1	1.032	0.296	0.310	0.295	1.000	0.500	0.257
STT-1R/L	1.000	-	0.4375	-	0.625	0.312	0.320
FSST-1R/L . . . *	1.000	-	0.4375	-	0.625	0.312	0.320
RTC-6R . . . *	0.875	-	0.375	-	0.4375	0.218	0.261
RTC-7R	1.000	-	0.4375	-	0.625	0.312	0.320
RTC-8R/L	1.649	-	0.500	-	1.000	0.500	0.510

* Refer to the chart above. (Must be specified by the customer.)



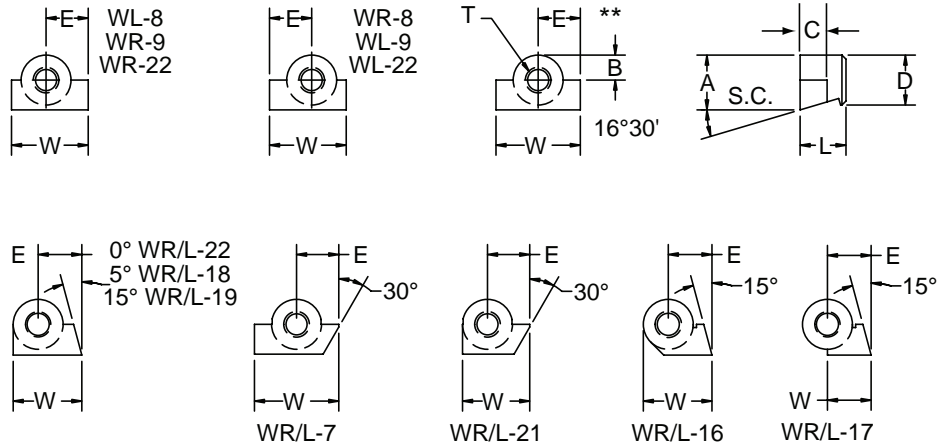
Wedge No.	Insert Shape	A	B	D	L	W	Thread L.H.	EDP#
W-10	SQ.	0.300	0.140	0.375	0.530	0.375	8-32	59124
W-11	SQ.	0.530	0.250	0.625	0.940	0.625	1/4-28	00862
W-12	SQ.	0.600	0.250	0.750	1.120	0.750	1/4-28	00863
W-13	SQ.	0.600	0.312	0.745	1.500	1.000	5/16-24	00869
W-14	SQ.	0.730	0.480	0.750	1.620	1.125	5/16-24	59128
W-15	SQ.	0.940	0.480	0.682	1.440	1.370	5/16-24	59129
W-23	RD.	0.350	0.195	0.374	0.557	0.374	10-32	59132
W-24	RD.	0.530	0.250	0.500	0.746	0.500	1/4-28	59134
W-25	RD.	0.560	0.312	0.495	0.910	0.750	1/4-28	59136
W-26	RD.	0.625	0.437	0.750	1.395	0.995	5/16-24	59138
W-27	RD.	0.750	0.437	0.750	1.500	1.250	5/16-24	59140
W-33	TRI.	0.312	0.187	0.375	0.748	0.375	10-32	59145
W-34	TRI.	0.375	0.250	0.495	1.020	0.495	1/4-28	59146
W-35	TRI.	0.200	0.120	0.249	0.537	0.249	8-32	00878
W-37	SQ.	0.875	0.625	0.750	1.670	1.500	3/8-24	RFQ*
W-39	80° TRIGON	0.340	0.235	0.375	0.571	0.625	#10-32	00883
W-40	80° TRIGON	0.375	0.240	0.375	0.608	0.840	1/4-28	59151
W-43	80° TRIGON	0.438	0.240	0.437	0.642	0.900	1/4-28	59152
W-15M	SQ.	0.940	0.480	0.682	1.440	1.370	M8-1,0	RFQ*
W-23M	RD.	0.350	0.195	0.374	0.557	0.374	M5-0,8	00871
W-24M	RD.	0.530	0.250	0.500	0.756	0.500	M6-0,75	59135
W-25M	RD.	0.560	0.312	0.495	0.910	0.750	M6-0,75	59137
W-26M	RD.	0.625	0.437	0.750	1.395	0.995	M8-1,0	00872
W-27M	RD.	0.750	0.437	0.750	1.500	1.250	M8-1,0	00873

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

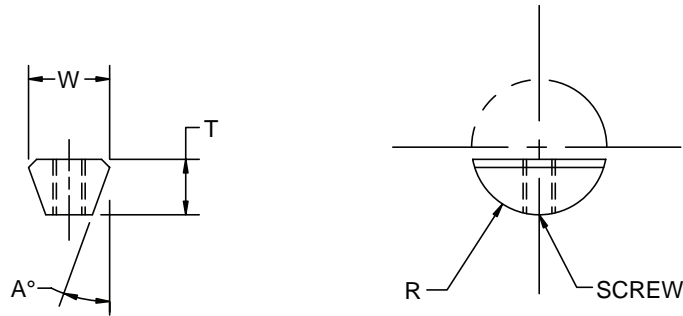
Wedges

Wedge Lock Wedges



Wedge No.	A	B	C	D	E	L	W	Thread L.H.	EDP#		
									Right Hand	Left Hand	Neutral
W-1**	0.314	0.154	0.090	0.307	0.217	0.280	0.433	8-32 L.H.	-	-	59123
W-2**	0.406	0.185	0.200	0.370	0.313	0.340	0.625	10-32 L.H.	-	-	59131
W-3**	0.561	0.248	0.250	0.495	0.433	0.500	0.866	1/4-28 L.H.	-	-	59143
W-4**	0.561	0.248	0.300	0.495	0.433	0.562	0.866	1/4-28 L.H.	-	-	59150
W-5**	0.704	0.278	0.427	0.555	0.650	0.740	1.300	5/16-24 L.H.	-	-	59154
W-6**	0.561	0.248	0.300	0.495	0.433	0.500	0.866	1/4-28 L.H.	-	-	00884
WR/L-7	0.406	0.185	0.200	0.370	0.312	0.340	0.625	10-32 L.H.	59171	59162	-
WR/L-8	0.406	0.185	0.200	0.370	0.312	0.340	0.595	10-32 L.H.	59172	59163	-
WR/L-9	0.561	0.248	0.300	0.495	0.433	0.562	0.773	1/4-28 L.H.	59173	59164	-
WR/L-16	0.314	0.155	0.160	0.310	0.250	0.280	0.406	8-32 L.H.	59165	00852	-
WR/L-17	0.561	0.248	0.250	0.495	0.433	0.437	0.433	1/4-28 L.H.	59166	00853	-
WR/L-18	0.561	0.248	0.300	0.495	0.375	0.562	0.623	1/4-28 L.H.	00857	59159	-
WR/L-19	0.561	0.248	0.300	0.495	0.433	0.562	0.681	1/4-28 L.H.	00860	00856	-
WR/L-21	0.561	0.248	0.250	0.495	0.329	0.500	0.579	1/4-28 L.H.	59169	59161	-
WR/L-22	0.704	0.278	0.427	0.555	0.650	0.740	0.928	5/16-24 L.H.	59170	RFQ*	-
W-28**	0.564	0.251	0.300	0.495	0.433	0.562	0.863	1/4-28 L.H.	-	-	RFQ*
W-29**	0.408	0.185	0.260	0.370	0.312	0.400	0.625	10-32 L.H.	-	-	59141
W-38**	0.720	0.281	0.480	0.562	0.650	0.740	1.300	5/16-24 L.H.	-	-	RFQ*
W-1M**	0.314	0.154	0.090	0.307	0.217	0.280	0.433	M4-0,7 L.H.	-	-	00861
W-2M**	0.406	0.185	0.200	0.370	0.313	0.340	0.625	M5-0,8 L.H.	-	-	00870
W-3M**	0.561	0.248	0.250	0.495	0.433	0.500	0.866	M6-0,75 L.H.	-	-	00876
W-4M**	0.561	0.248	0.300	0.495	0.433	0.562	0.866	M6-0,75 L.H.	-	-	59153
W-5M**	0.704	0.278	0.427	0.555	0.650	0.740	1.300	M8-1,0 L.H.	-	-	59155
W-29M**	0.408	0.185	0.260	0.370	0.312	0.400	0.625	M5-0,8 L.H.	-	-	59142

*Contact your local Valenite Distributor or Valenite Customer Service.



Inch Wedge No.	Screw	Steel Ball Ref.	A°	R	T	W	EDP#
FW-3215	8-32 x 1/8 PCSSS	0.063	14°	0.155	0.135	0.247	53090
FW-3715	8-32 x 1/8 PCSSS	0.063	14°	0.180	0.145	0.245	RFQ*
FW-4315	8-32 x 1/8 PCSSS	0.094	14°	0.210	0.165	0.246	53091
FW-5015	8-32 x 1/8 PCSSS	0.094	14°	0.245	0.200	0.283	53092
FW-5615	10-32 x 3/16 PCSSS	0.125	14°	0.275	0.200	0.305	RFQ*
FW-6220	1/4-28 x 3/16 PCSSS	0.125	19°	0.305	0.230	0.416	53093
FW-6820	1/4-28 x 1/4 PCSSS	0.125	19°	0.340	0.265	0.420	00907
FW-7520	1/4-28 x 1/4 PCSSS	0.125	19°	0.370	0.295	0.462	53094
FW-8720	5/16-24 x 3/8 PCSSS	0.125	19°	0.430	0.385	0.604	53095
FW-10020	5/16-24 x 3/8 PCSSS	0.125	19°	0.490	0.415	0.603	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

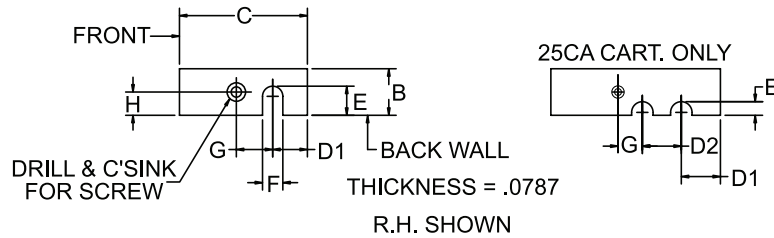
Metric Flex-A-Dex Wedges

Metric Wedge No.	Screw DIN 916	Steel Ball Ref.	A°	R	T	W	EDP#
M-FW-3215	M4 x 4	0.063	14°	0.155	0.135	0.247	53099
M-FW-3715	M4 x 4	0.063	14°	0.180	0.145	0.245	53100
M-FW-4315	M4 x 4	0.094	14°	0.210	0.165	0.246	53101
M-FW-5015	M4 x 5	0.094	14°	0.245	0.200	0.283	53102
M-FW-6220	M6 x 6	0.125	19°	0.305	0.230	0.416	53103
M-FW-7520	M6 x 8	0.125	19°	0.370	0.295	0.462	53104
M-FW-8720	M8 x10	0.125	19°	0.430	0.385	0.604	53105
M-FW-10020	M8 x10	0.125	19°	0.490	0.415	0.603	53108

SPARE PARTS

Boring Parts

Cartridge Sizing Plates

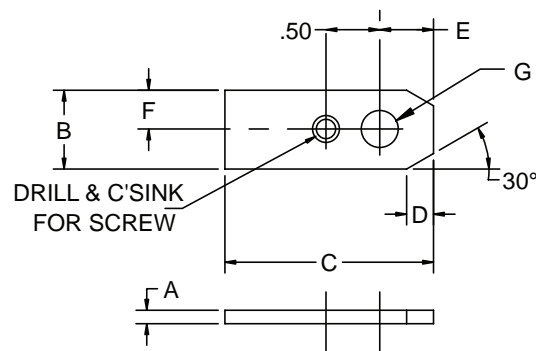


Cartridge Series	Part # EDP#	Min. Bore Dia.	Inch Ass'y No. R.H.	Inch Ass'y No. L.H.	Metric Ass'y No. R.H.	Metric Ass'y No. L.H.
08CA	Part#	25	-	-	PT-481	PT-482
	EDP#		-	-	53276	53277
10CA	Part#	40	PT-297	PT-298	PT-307	PT-308
	EDP#		53256	53257	53266	53267
12CA	Part#	50	PT-299	PT-300	PT-309	PT-310
	EDP#		53258	53259	53268	53269
16CA	Part#	60	PT-301	PT-302	PT-311	PT-312
	EDP#		53260	53261	53270	53271
20CA	Part#	70	PT-303	PT-304	PT-313	PT-314
	EDP#		53262	53263	53272	53273
25CA	Part#	100	PT-305	PT-306	PT-315	PT-316
	EDP#		53264	53265	53274	53275

R.H. Ass'y. No.	L.H. Ass'y. No.	B	C	D1	D2	E	F	G	H	Screw No.	EDP#	
											Right Hand	Left Hand
PT-297	PT-298	0.470	1.535	0.470	-	0.335	0.275	0.492	0.235	#4-40 x 1/4 FHCS	53256	53257
PT-299	PT-300	0.630	1.732	0.470	-	0.394	0.275	0.492	0.315	#4-40 x 1/4 FHCS	53258	53259
PT-301	PT-302	0.590	2.047	0.670	-	0.236	0.354	0.492	0.295	#4-40 x 1/4 FHCS	53260	53261
PT-303	PT-304	0.750	2.244	0.790	-	0.236	0.354	0.492	0.375	#4-40 x 1/4 FHCS	53262	53263
PT-305	PT-306	0.940	3.425	0.790	0.787	0.275	0.433	0.492	0.470	#4-40 x 1/4 FHCS	53264	53265
PT-307	PT-308	0.470	1.535	0.470	-	0.335	0.275	0.492	0.235	M3 x 8 DIN 7991	53266	53267
PT-309	PT-310	0.630	1.732	0.470	-	0.394	0.275	0.492	0.315	M3 x 8 DIN 7991	53268	53269
PT-311	PT-312	0.590	2.047	0.670	-	0.236	0.354	0.492	0.295	M3 x 8 DIN 7991	53270	53271
PT-313	PT-314	0.750	2.244	0.790	-	0.236	0.354	0.492	0.375	M3 x 8 DIN 7991	53272	53273
PT-315	PT-316	0.940	3.425	0.790	0.787	0.275	0.433	0.492	0.470	M3 x 8 DIN 7991	53274	53275
PT-481	PT-482	0.382	0.945	0.394	-	0.276	0.197	0.413	0.236	M3 x 6 DIN 7991	53276	53277

Assembly is with Plate and Screw

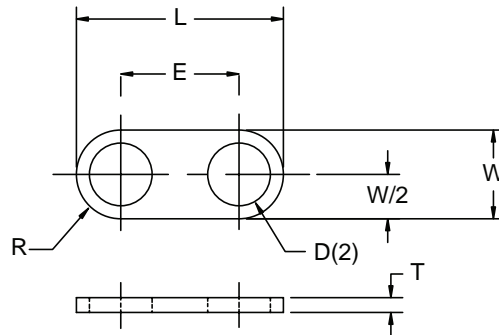
AE and HAE Cartridge Sizing Plates



Ass'y No..	A	B	C	D	E	F	G	Screw No.	EDP#
AE-1PS	0.061	0.550	1.620	0.250	0.470	0.280	0.281	#4-40 x 1/4 FHCS	53237
AE-2PS	0.061	0.735	1.940	0.500	0.500	0.360	0.343	#4-40 x 1/4 FHCS	53238
M-AE-1PS	0.061	0.550	1.620	0.250	0.470	0.280	0.281	M3 x 8 DIN 7991	00092
M-AE-2PS	0.061	0.735	1.940	0.500	0.500	0.360	0.343	M3 x 8 DIN 7991	00134

Assembly is with Plate and Screw

PL Cartridge Plates



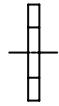
Part No.	L	W	T	D	E	EDP#
PL-1	1.156	0.468	0.094	0.281	0.719	RFQ*
PL-5	1.750	0.750	0.125	0.531	1.000	RFQ*
PL-6	1.875	0.750	0.125	0.531	1.125	RFQ*
PL-931	0.969	0.468	0.094	0.281	0.500	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

SPARE PARTS

Boring Parts

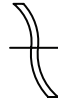
De-Vi-Bar Parts



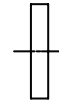
SNAP
LOCK
RING



NOSE
LOCK
STUD



WAVE
WASHER

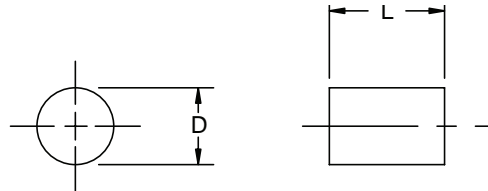


DISC



NOSE
KEY

Bar Retainer Ass'y Parts	Part # EDP#	Snap Lock Ring	Nose Lock Stud	Wave Washer	Disc.	Nose Key
875	Part#	N5000-87 TRU ARC	PT-255	W0855-010	PT-256	PT-268A
	EDP#	52234	52991	52367	52258	53205
1375	Part#	N5000-137 TRU ARC	PT-257	W1351-015	PT-258	PT-270A
	EDP#	52233	52992	52368	52259	53206



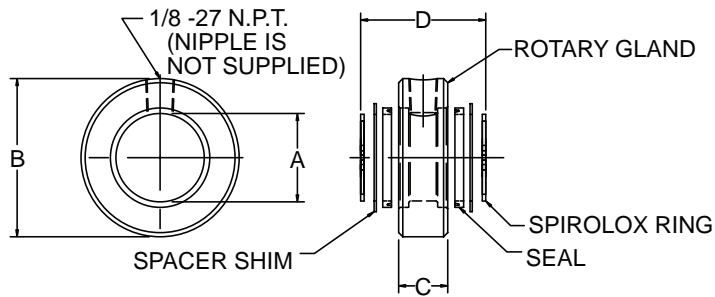
DAMPENING SLUGS & PRESS-FIT PLUGS

Tool No.	Material	D	L	EDP#
Dampening Slugs				
PT-259	CARBIDE	0.248	0.500	00153
PT-260	CARBIDE	0.245	0.500	00157
PT-262	CARBIDE	0.373	0.500	00162
PT-263	CARBIDE	0.370	0.500	00166
PT-265	CARBIDE	0.498	0.500	00917
PT-266	CARBIDE	0.495	0.500	00170

Tool No.	Material	D	L	EDP#
Press Fit Plugs				
PT-261	STEEL	0.252	0.250	00161
PT-264	STEEL	0.377	0.250	00167
PT-267	STEEL	0.502	0.250	52993

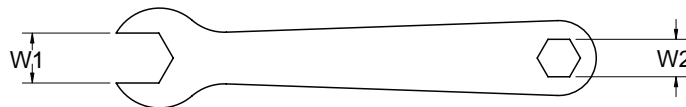
Drilling Parts and E-Z Set Wrench

Coolant Collars for Val-U-Dex Drills



Collar Ass'y No.	A Dia.	B Dia.	C	D	Spacer Shim	Spirolox Ring	Seal	EDP#
PT-507	1.000	2.030	0.710	0.900	PT-507-2	RS-100	S32240-120-77	56457
PT-508	1.250	2.280	0.710	0.910	PT-508-2	RS-125	S32240-124-77	56458
PT-509	1.500	2.530	0.710	0.910	PT-509-2	RS-150	S32240-128-77	56459
PT-510	1.750	2.780	0.710	0.920	PT-510-2	RS-175	S32240-132-77	56460
PT-511	2.250	3.280	0.710	0.920	PT-511-2	RS-225	S32240-140-77	56461

E-Z Set Dial Sleeve Wrench



Tool No.	W1	W2	EDP#
EZW-AB	0.468	-	53199
EZW-BC	0.562	-	53200
EZW-CE	0.750	-	53201
EZW-1C	0.375	0.312	53194
EZW-2C	0.625	0.500	53195
EZW-3C	0.875	0.750	53196
EZW-4C	1.187	1.000	53197
EZW-5C	0.500	0.406	53198

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ValTHREADTM

Supporting

We can increase your productivity by 20%. Make us prove it!

Reference Materials

Torque Drive Values I2

Material Hardness I3

Material Conversion Table I4 - I9

Index I10

REFERENCE MATERIALS

Torque Drive Values

Recommendations

- Inch and Metric screws have a 50% torque safety factor.
- Tighten screws to the lowest torque value shown, based on either thread or drive size.
- If Valenite "PT-746 LUBE" is used, reduce torque values by 1/3. Apply to threads and head (if applicable).
- For best results locate the closest (either lower or higher) torque value from the torque chart, then identify the wrench from the torque value.
- Values shown are recommendations only, and may be changed without notice.



PT745 Anti Seize
For insert and wedge screws.

EDP# 50050



PT746 Lube
Lubricant

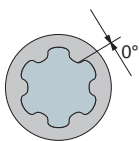
EDP# 50051

Thread Size	Failure (lb/in)	Torque (lb/in)
M2	8.1	4
M2.2	12	6
M2.5	16.8	8
M3	29.2	15
M3.5	42.0	21
M4	69.0	35
M4.5	96.0	48
M5	142	71
M6	239	119
M8	575	288
M10	1151	575
#4-40	24	12
#5-40	33	17
#6-32	45	23
#8-32	78	39
#10-24	105	53
#10-32	120	60
1/4-20	250	125
1/4-28	290	145
5/16-18	525	263
5/16-24	580	290
3/8-16	940	470
3/8-24	1060	530

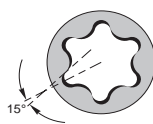
Torx Plus® Wrench		
Wrench Size	Failure (lb/in)	Torque (lb/in)
06IP	8.1	6.4
07IP	14.9	12
08IP	24.7	20
09IP	30.9	24
10IP	39.6	31
15IP	71.4	56
20IP	119	94
25IP	173	137
27IP	256	202
30IP	348	275
40IP	605	478
Hex Wrench		
0.050	6	5
1/16	11	9
5/64	23	18
3/32	40	32
7/64	63	50
1/8	94	74
9/64	134	106
5/32	183	145
3/16	317	250
7/32	502	397
1/4	750	593

The Torx Plus® System

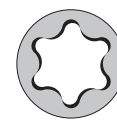
- Longer driver life
- Torx Plus® screws accept Torx® drivers
- Torx Plus® drivers cannot be used on Torx® screws



The Torx Plus® driver contact angle is 0°



The Torx® driver contact angle is 15°



The Torx® bit driver may be used on a Torx Plus® screw

HB (Brinell Hardness Number): Determined by applying a known load for a given length of time, indenting the test surface with a hardened steel or carbide ball of known diameter. The diameter of the indentation is microscopically measured and converted to the BHN by standard tables.

HV (Vickers Diamond Pyramid Number): Similar to the Brinell test, except the load is applied to the test surface for a specific time through a square base pyramid with 136° between opposing faces. The number, DPN, is in kilograms divided by the square millimeters of the indentation area.

Rockwell Hardness Test: The test measures the depth of residual penetration by a steel ball or a diamond cone under given conditions of load.

R_C ("C" scale): is utilized for hardened steels and some case-hardened parts.

R_B ("B" scale): is used for medium-hard and/or some annealed metals such as medium carbon steel or cast iron.

Shore C (Scleroscope Hardness Test): A diamond-tipped hammer falls from a specific height through a glass tube with a graduated scale of 140. The distance of rebound is observed visually or recorded by indicator. The Scleroscope is portable and easy to apply on large heavy parts.

Note. These values are only correct for non-austenitic steel more than 2mm thick.

HB (Brinell)	HV (Vickers)	Rockwell		Shore C	Equivalent Tensile Strength for Steel N/mm ²	HB (Brinell)	HV (Vickers)	Rockwell		Shore C	Equivalent Tensile Strength for Steel N/mm ²
		R _C	R _B					R _C	R _B		
		150kg Diamond Cone	100kg 1/16 in. Ball					150kg Diamond Cone	100kg 1/16 in. Ball		
111	117	-	65.7	15	390	293	309	30.9	-	43	990
116	122	-	67.6	18	410	302	319	32.1	-	45	1030
121	127	-	69.8	19	420	311	328	33.1	-	46	1050
126	132	-	72	20	440	321	339	34.3	-	47	1080
131	137	-	74	-	460	331	350	35.5	-	48	1120
137	143	-	76.4	21	470	341	360	36.6	-	50	1150
143	150	-	78.7	22	500	352	372	37.9	-	51	1200
149	156	-	80.8	23	510	363	383	39.1	-	52	1240
156	163	-	82.9	-	530	375	396	40.4	-	54	1290
163	171	-	85	25	560	388	410	41.8	-	56	1360
167	175	-	86	-	570	401	425	43.1	-	58	1420
170	178	-	86.8	26	580	415	440	44.5	-	59	1490
174	182	-	87.8	-	600	429	455	45.7	-	61	1540
179	188	-	89	27	610	444	472	47.1	-	63	1620
183	192	-	90	28	630	461	491	48.5	-	65	1700
187	196	-	90.7	-	640	477	508	49.6	-	66	1770
192	202	-	91.9	29	650	495	528	51	-	68	1860
197	207	-	92.8	30	670	514	547	52.1	-	70	1930
201	212	-	93.8	31	690	534	569	53.5	-	71	2020
207	218	-	94.6	32	700	555	591	54.7	-	73	2100
212	222	-	95.5	-	720	578	615	56	-	75	-
217	228	-	96.4	33	740	601	640	57.3	-	77	-
223	234	-	97.3	-	760	627	667	58.7	-	79	-
229	241	20.5	98.2	34	780	630	670	58.8	-	-	-
235	247	21.7	99	35	800	638	680	59.2	-	80	-
241	253	22.8	100	36	820	647	690	59.7	-	-	-
248	261	24.2	-	37	840	653	698	60	-	81	-
255	269	25.4	-	38	860	656	700	60.1	-	82	-
262	276	26.6	-	39	890	670	720	61	-	83	-
269	284	27.6	-	40	910	682	737	61.7	-	84	-
277	292	28.8	-	41	940	684	740	61.8	-	5	-
285	301	29.9	-	-	970						

REFERENCE MATERIALS

Material Conversion Table

ISO	Germany DIN	Germany W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AISI	Great Britain BS	EN	Spain UNE
Unalloyed Steel											
	10 SPb 20	1.0722	10PbF2	-	CF10 SPb 20	-	-	-	-	-	10SPb20
	20 Mn 5	1.1133	20M5	-	-	-	1410	1022	-	-	-
	GS-38	1.0416	230-400M	-	-	-	1306	-	-	-	-
	H 1	1.0345	A37CP	-	-	-	1330	A515 65	-	-	-
	H II	1.0425	A42CP	-	-	-	1432	-	-	-	-
	C 15	1.0401	CC12	-	C 15 C16	-	1350	1015	080M15	-	F.111
	C 22	1.0402	CC20	-	C20 C21	-	1450	1020	050A20	2C/2D	F.112
	GS-45	1.0443	E23-45M	-	-	-	1305	A 27 65-35	-	-	-
	RS137-2	1.0038	E24-2Ne	-	-	-	1311	A570 36	4360 40 C	-	-
	St 37-3	1.0116	E24-U	-	St 37-3	-	1312	A573-81 65	4360 40 B	-	-
	St 44-3	1.0144	E28-3	-	SM 400A,B,C	-	1412	A573-81	4360 43 C	-	-
	St 36-1	1.0201	Fd5	-	-	-	1160	1006	-	-	-
	St 44-2	1.0044	NFA35-501E28	-	-	-	1411	A36	-	-	-
	17 MnV 6	-	NFA35-501E36	-	Fe E390KG	-	2142	A572-60	4360 55 E	-	-
	Ck 10	1.1121	XC10	-	-	-	1265	1010	-	-	-
	Ck15	1.1141	XC12	-	C16	S15C	1370	1015	080M15	32C	C15K
Unalloyed Steel											
	28 Mn 6	1.1170	20M5	-	-	SCMn1	-	1330	150M28	14A	-
	40 Mn 4	1.1157	35M5	-	-	-	-	1039	150M36	15	-
	35 S 20	1.0726	35MF4	-	-	-	1957	1140	212M36	8M	F210G
	45 S 20	1.0727	45MF4	-	-	-	1973	1151	-	-	-
	9 SMn 28	1.0715	S250	-	CF9Mn28	SUM22	1912	1213	230M07	-	11SMn28
	9 MnPb 28	1.0718	S250Pb	-	CF9SMnPb28	SUM22L	1914	12L13	-	-	11SMnPb28
	9 SMn36	1.0736	S300	-	-	-	1926	12L14	240M07	1B	12SMn35
	9 SMnPb 36	1.0737	S300Pb	-	CF9 SMnPb 36	-	1674	1050	060A52	-	-
	Cf 53	1.1213	XC48TS	-	-	S50C	-	1055	070M55	-	C58K
	Ck 55	1.1203	XC55	-	C50	S55C	-	1060	080A62	43D	-
	Ck 60	1.1221	XC60	-	-	S58C	1678	-	-	-	-
Low-Alloy Steel											
	C 35	1.0501	AF34C10/XC10	-	-	-	-	1010	-	-	-
	C 45	1.0503	CC35	-	C35	-	1550	1035	060A35	-	F.113
	C 60	1.0601	CC45	-	-	-	1650	1045	080M46	-	F.114
	St 44-2	1.0144	E28-3	-	-	-	1655	1060	080A62	43D	-
	St 52-3	1.0570	E36-3	-	-	-	1412	A573-81	4360 45C	-	-
	Cf 35	1.1183	XC38TS	-	F 652BFNF652CFN	SM490A,B,C,YA,YB	2132	-	4360 50B	-	-
	Ck 45	1.1191	XC42	-	C36	S35C	1572	1035	065A35	-	-
	C 105 W1	1.1545	Y105	-	C45	S45C	1672	1045	080M46	-	C45K
	C 105 W1	1.1545	Y105V	-	C36KU	SK 3	1880	W 1	080M46	-	F-5118
	16Mo5	1.5423	-	-	C120KU	SPLU4	2900	W210	-	-	-
	40NiCrMo2	1.6546	-	-	16Mo5	-	-	4520	1503-245-420	-	16Mo5
	39CrMoV13 9	1.8523	-	-	40NiCrMo2(KB)	SNCM240	-	8740	311-type 7	40C	40NiCrMo2
	34MoCrS4 G	1.7039	-	-	36CrMoV12	-	2092	-	897M39	40C	-
	20MoCrS4	1.5419	-	-	10WCR 5	-	2108	-	524A14	-	-
	55NiMoV6G	1.7228	-	-	653M31	-	2512	-	605A32	33	F520 S
	16MnCr5	1.7139	-	-	-	-	2127	-	823M30	-	-
Low-Alloy Steel											
	100 Cr 6	1.3505	100C6	-	100Cr6	SUJ2	2258	52100	-	-	-
	105 WCr 6	1.2419	105WC13	-	10WCr 6	SKS31	2140	-	-	-	105WCr5
	15 Cr 3	1.7015	12C3	-	107WCr6KU	SKS2,SKS3	-	-	-	-	-
	10 CrMo 9,10	1.7380	12CD 9,10	-	10 CrMo 9 10	SCr415(H)	-	5015	523M15	-	-
	15 CrMo 5	1.7262	12CD4	-	-	-	2218	ASTM A182	1501-622	-	TU.H
	14 NiCr14	1.5752	12NC15	-	-	-	2216	«3415 ; 3310»	«655M13; A12»	36A	12CrMo4
	14 NiCr 10	1.5732	14NC11 (hardened+tempered)	-	16 Ni Cr 10	SNC815(H)	-	3415	-	-	15NiCr11
	15 Mo 3	1.5415	15D3	-	16Mo3KW	SNC415(H)	-	A204GrA	1501-240	-	16Mo3

ISO	Germany DIN	Germany W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AISI	Great Britain BS	EN	Spain UNE
Low-Alloy Steel											
-	13 CrMo 4.4	1.7335	15CD 3.5	-	14 CrMo 4.5	-	-	ASTM A182	1501-620G/27	-	14CrMo45
-	16 MnCr5	1.7131	16MnCr5	-	16 MnCr5	-	2511	5115	(527M20)	-	16MnCr5
-	14 Ni 6	1.5622	16N6	-	14 Ni 6	-	-	A350LF5	-	-	15Ni6
-	14NiCrMo134	1.6657	16NCD13	12NiCrMo134	15NiCrMo13	-	-	-	-	-	-
-	17 CrNiMo 6	1.6587	18NCD6	-	-	-	-	-	820A16	-	14NiCrMo13
-	Si52-3	1.0841	20MC5	-	Fe52	-	2172	5120	150 M 19	-	F-431
-	21 NiCrMo2	1.6523	20NCD2	-	20 NiCrMo2	SNMC220(H)	2506	8620	805M20	362	20NiCrMo2
-	25 CrMo 4	1.7218	25CD4	25 CrMo 4(KB) (SCM420; SCM430)	25 CrMo 4(KB)	2225	4130	1717CDS10	-	55Cr3	-
-	-	1.7218	25CD4S	GS25CrMo4	-	«SCM420; SCM430»	-	4130	-	-	-
-	32 CrMo 12	1.8515	30CD12	-	32 CrMo 12	-	2240	-	722 M 24	-	F-1712
-	32 CrMo 12	1.7361	30CD12	32CrMo12	32 CrMo 12	-	2240	-	722 M 24	40B	F-124 A
-	34 Cr 4	1.7033	32C4	-	34 Cr 4(KB)	SCR430(H)	-	5132	530A32	18B	35Cr4
-	34 NiCr 4	1.7220	35CD4	-	35 CrMo 4	SCM432 SCGRM3	2234	«41137 ; 4135»	708A37	19B	34CrMo4
-	36 NiCr 6	1.5710	35NCD6 (hardened-tempered)	-	-	SNC236	-	3135	640A35	111A	-
-	34 CrNiMo 6	1.6582	35NCD6	34NiCrMo6	34 CrNiMo 6(KB)	-	2541	300M4340M	817M40	24	-
-	41 CrAlMo 7	1.8509	40CAD612	-	41 CrAlMo 7	-	2940	-	905M39	41B	41CrAlMo7
-	36 Mn5	1.1167	40M5	-	-	SMn438(H)	-	1335	-	-	-
-	36 NiCrMo 4	1.6511	40NCD3	-	38 NiCrMo 4(KB)	-	2120	9840	816M40	110	35NiCrMo4
-	41 Cr 4	1.7035	42C4	41Cr4	41 Cr 4	-	-	5140	530A40	18	42Cr4
-	42 CrMo 4	1.7225	42CD4	GS42CrMo4	42 CrMo 4	SCM440(H)	2244	4140	708M40	19A	42CrMo4
-	41 CrMo 4	1.7223	42CD4TS	-	41 CrMo 4	SCM 440	2244	«4140 ; 4142»	708M40	19A	42CrMo4
-	50 Cr-V4	1.8159	50CV4	-	50CrV4	SUP10	2230	6150	735A50	47	51CrV4
-	55 Cr3	1.7176	55C3	-	-	SPU9(A)	-	5155	527A60	48	-
-	55 NiCrMoV 6	1.2713	55NCDV 7	-	-	SKT4	-	L6	-	-	F-520.S
-	50 NiCr 13	1.2721	55NCV6	-	-	-	2550	L6	-	-	F-528
-	55 Si 7	1.0904	55S7	-	55Si8	-	2090	9255	250A53	45	56Si7
-	60 SiCr7	1.0961	60SC7	-	60SiCr8	-	-	9262	-	-	60SiCr8
-	Ck 67	1.1231	XC 68	-	-	-	-	1070	-	-	-
-	Ck 101	1.1274	XC100	-	-	-	1870	1095	060 A 96	-	F-5117
-	Ck 60	1.1221	XC65	-	-	S58C	1678	1064	-	-	-
-	Ck 75	1.1248	XC75	-	-	-	1774	1080	-	-	-
-	100 Cr 6	1.2067	Y100C6	-	-	-	-	L3	BL3	-	100Cr6
High-Alloy Steel											
-	50 NiCr 13	1.6747	35NCD16	30NiCrMo16 6	-	-	-	-	-	-	-
-	S65/2/5	1.3243	55NCV6	-	-	-	2550	L6	-	-	-
-	X105 CrMo 17	1.4125	6-5-2.5	HS6-5-2.5	HS6-5-2.5	SKH65	2723	M 35	BM 35	-	F-5613
-	X210CrW12	1.2436	Z100CD17	-	-	-	-	440 C	-	-	-
-	X210CrW12	1.2436	-	-	-	-	2312	-	-	-	-
-	X100 CrMoV 5 1	1.2363	Z100CDV5	X215CrW12 1KU	X215CrW12 1KU	SKD2	2312	-	-	-	X210CrW12
-	X18CrN 28	1.4749	Z10C24	X100 CrMoV 5 1KU	X100 CrMoV 5 1KU	SKD12	2260	A2	BA2	-	X100CrMoV5
-	S2/9/2	1.3348	-	HS2-9-2	HS2-9-2	-	2322	446	-	-	-
-	X155 CrAlMo 12 1	1.2379	Z160CDV12	-	-	-	2310	D2	-	-	F-5607
-	X8N9	1.5662	-	X10Ni9	X10Ni9	-	-	ASTM A353	«1501-509;510»	-	XBNI09
-	12Ni 19	1.5680	Z18N 5	-	-	-	-	2515	-	-	-
-	X210 Cr 12	1.2080	Z200CD12	X210 Cr 13 KU / X250Cr12KU	X210 Cr 13 KU / X250Cr12KU	SKD1	-	D3	BD3	-	X210Cr12
-	X165CrMoV 12	1.2601	-	X165CrMoV 12 KU	X165CrMoV 12 KU	-	2310	-	-	-	-
-	X30WCv9 3KU	1.2581	Z30WCV 9	X28W09KU	X28W09KU	SKD5	-	H21	BH21	-	X30WCv9
-	X40CrMoV 5 1	1.2344	Z40CDV5	X35CrMoV051KU	X35CrMoV051KU	SKD61	2242	H 13	BH13	-	X40CrMoV5
-	S6-5-2	1.3343	Z40CSD10	X40CrMoV051KU	X40CrMoV051KU	-	-	-	-	-	-
-	X45CrS 93	1.4718	Z45CS9	15NiCrMo13	15NiCrMo13	SUH3	2715	D3	4959BA2	-	-
-	S6/5/2	1.3343	Z85WDCV	X45CrSi 93	X45CrSi 93	SUH1	-	HNW3	401S45	52	F322
-	G-X120Mn 12	1.3401	Z120M12 (cast steel)	Z 85 WDCV 06.05.04.02	HS9-5-2-2	SKH 51	2722	611	BM 2	-	F-5603
-	-	1.3401	2120M12	-	SCMnH1 or SEMnH1	SCMnH1 or SEMnH1	2183	-	Z120M12	-	X120Mn12
-	-	1.3401	2120M12	-	SEMn H1	SEMn H1	2183	-	-	-	F-8251

REFERENCE MATERIALS

Material Conversion Table

ISO	Germany DIN	Germany W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AWS	Great Britain BS	EN	Spain UNE
Stainless Steels, Ferritic-Martensitic Materials											
	45 WCrV 7	1.2542	55WC20	-	45WCrV8KU	-	2710	S1	-	-	-
	X2NiCoMoTi18.8.5	1.6359	E-2.2 NKD 18-8	Z 2 NKDT 18-08-05	-	-	-	-	-	-	-
	X 6Cr13	1.4000	Z 6Cr13	Uginox F 13 S	X 8Cr 17	SUS403	2301	403 / 410 S	403S17	-	F.3110
	GX 12Cr13	1.4016	Z 8Cr17	Uginox F 17 (Soleil B4)	X12Cr13	SUS430	2320	430	430S15	960	F.3113
	X 10CrAl13	1.4724	Z10Cr13	MA 1	X10CrAl12	SUS405	-	410 M	-	-	-
	X 10CrAl18	1.4006	Z10Cr14	Uginox MA 1 (Soleil A2)	X8Cr17	SUS430	2302	405	403S37	-	F.3111
	X 10CrAl24	1.4762	Z10CrAl24	-	X16Cr26	SUS430	2322	430	430S15	60	F.3401
	X5CrNiNb18-10	1.4546	Z10CrNi18-10	Soleil BA4	X10CrNi17	SUS430F	2383	446	-	-	F.3117
	X7Cr13	1.4000	Z6Cr13	X5CrNiNb1810	X6Cr13	SUS403	2301	348	-	-	F.3110
	X12CrS13	1.4005	Z12CrS13	15.5Cr (Soleil AZU)	X12CrS13	SUS416	2380	416	-	-	F.8401
	X17CrNi16.22	1.4057	Z15CrNi602	-	X16CrNi16	SUS431	2321	431	431S29	57	F.3427
	X20 Cr 13	1.4021	Z20Cr13	Uginox MA 2	X20 Cr 13	-	2303	420	420S37	-	-
	X30 Cr 13	1.4028	Z30Cr13	Soleil A5	X20 Cr 13	-	2303	420	-	-	-
	X 46Cr13	1.4034	Z38Cr13M / Z44Cr14	Uginox MA 3	-	-	2304	420	-	-	-
	X 5CrNi13.4	1.4313	Z40ND134M	Uginox MA 4	X40Cr14	SUS420J2	2304	420	-	-	-
	X 80CrNi20	1.4747	Z80CrNi2002	-	(GX)8CrNi304	-	2384	CA6-NM	425C11	-	-
	X6CrAl13	1.4002	Z8CrAl12	Soleil B3	X80CrNi20	SUH35.SUS36	-	EV8	349S54	-	-
	X 6CrMo 17 1	1.4113	Z8CrMo1701	Uginox F 17 M	X6CrAl13	SUH4	-	HNV.6	443S65	59	F.320B
					X8CrMo17	SUS434	2325	434	405S17	-	-
									343S17	-	-
Stainless Steels, Austenitic Materials											
	X12 CrNi 18 8	1.4300	Z10CrNi18-09	-	-	-	2332-02	302	-	-	-
	X18CrNiS 18 8	1.4305	Z10CrNiF18-09	18Cr9Ni2Mn (ICL 472 U)	X8CrNiS 18 9	SUS303	2346	303	303S21	58M	F.3508
	X10CrNi 18 8	1.4310	Z11CrNi7-08	Uginox 17-7 B	X12CrNi 17 07	SUS301	2331	301	-	-	-
	X12CrNi18 7	1.4310	Z12CrNi18-09	Uginox 17-7 C	-	SUS301	2331	301 / 302	-	-	-
	X 22CrNi 17	1.4057	Z15CrNi1703	15Cr7 1Ni2.5Mo	-	SUS431	2321	431	-	-	-
	X2CrNi19 11	1.4306	Z2CrNi18-10	Uginox 18-10 L (ICL 472 BC)	X2CrNi18 11	SCS19	2352	304 L	304S11	-	-
	X2CrNi18 10	1.4311	Z2CrNi18-10	-	-	SUS304LN	2371	304 LN	304S62	-	-
	-	1.4504	Z2CrNi1712	-	-	-	-	-	-	-	-
	-	1.4504	Z2CrNi1813	16.5Cr7Ni1.5Al	-	-	-	316 L 17-7PH	-	-	-
	X4CrNiMo17 12.2	1.4401	Z3CrNi17-11-02	Uginox T 17-10 M	X5CrNiMo 17 12	SUS316	2347	316	-	-	-
	-	1.4504	Z3CrNi1910	-	-	-	-	304 C12	-	-	-
	-	1.4948	Z5CrNi18-09	18Cr11Ni0.5Mo	-	-	-	304 H	-	-	-
	X20CrMoV12-1	1.4922	-	-	X20CrMoNi 12 01	-	2317	-	-	-	-
	-	1.4542	Z5CrNiCuNb 16 4	X5CrNiCuNb 16 4	-	-	-	630 17 4 (PH)	-	-	-
	GX5CrNi19-10	1.4308	Z6CrNi 8-10	Uginox 18-9 E (ICL 472)	-	-	2333	CF-8	-	-	-
	X5 CrNi18 10	1.4301	Z6CrNi18-09	-	X5CrNi18 10	SUS304	2332	304	304S31	58E	F.3551
	X5 CrNi18 9	1.4350	Z6CrNi18-09	-	X6CrNiNb 18 11	SUS304	2332/33	304	304S15	58E	F.3551
	X6CrNiNb 18 10	1.4550	Z6CrNiNb18-10	19Cr9.5Ni	X6CrNiNb 18 11	SUS347	2338	347	347S17	58 F	F.3552
	X6CrNiTi 18 10	1.4541	Z6CrNiTi18-10	Uginox 18-10 T (ICL 472 T)	X6CrNiTi 18 11	SUS321	2337	321	321S12	58B	F.3553
	-	1.4542	Z6CrNi1704	16.5Cr4Ni4Cu0.3Cb+Ta	-	SUS630	-	AMS 350	-	-	-
	-	1.4564	Z8CrNi1707	17Cr7.1Ni2.5Mo	-	-	-	-	-	-	-
Stainless Steels, Austenitic Materials											
	X2CrNiMo18 14 3	1.4435	E-Z2CrNi17-13	Uginox 18-13 MS	X2CrNiMo 17 12	SCS16 or SUS316L	2353	316 L	-	-	-
	X12CrNi 25 21	1.4845	Z12CrNi25 20	Uginox R 25-20	X6CrNi 25 20	SUH310	2361	310 S	-	-	F.331
	X2CrNiMo17 12 2	1.4404	Z2CrNi17-12	Uginox 18-11 ML (ICL 164 BC)	X2CrNiMo 17 12	-	2348	316 L	316S13	-	-
	X2CrNiMo18 15 4	1.4438	Z2CrNi19-15	-	X2CrNiMo 18 16	SUS317L	2367	317 L	317S12	-	-

ISO	Germany DIN	Germany W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AMS	Great Britain BS	EN	Spain UNE
Stainless Steels - Austenitic Materials											
	X2CrNiMoN 22 5 3	1.4462	Z3CND22-05AZ	Uranus 45 N (46)	-	-	2377	S31803	-	-	-
	X4CrNiMo16 5	1.4418	Z6CND16-04-01	-	-	-	2387	-	-	-	-
	X3CrNiMo17-13-3	1.4436	Z6CND18-12-03	-	X8CrNiMo 17 13	-	2343	316 Hmo	316S33	-	-
	X6CrNiMoTi 17 12	1.4571	Z6CND17-12	Uginox 17-11 MT (I.L. 164 T)	X6CrNiTi 17 12	-	2350	316Ti	320S17	58J	F.3535
	X5CrNiMo18 10	1.4401	Z7CND17-11-02	Uginox 17-10 M (I.L. 164)	-	SUS316	2347	316	-	-	-
	X5NiCrTi 26 15	1.4980	E-Z 6 NC.TDV 2515	Z8NCTV25-15BFF	-	-	2570	660	-	-	-
	X1CrNiMoAl 12 9	-	E-Z1CND12-09	Z1CND12-09	-	-	-	-	-	-	-
	X10NiCrAlTi8221	1.4876	Z10NC32-21	Incoloy 800 HT	-	-	-	B 163	-	-	-
	X12NiCrSi 36 16	1.4864	Z12NC35-16	-	F-3313	SUH330	-	330	-	-	-
	X15CrNiSi20 12	1.4828	Z15CNS20-12	Uginox R 20-12	-	SUH309	-	309	309S24	-	-
	X15CrNiSi 25 20	1.4841	Z15CNS25-20	X 18	-	-	-	310 / 314	-	-	-
	-	-	Z1CNDU20-18-06AZ	-	-	-	-	-	-	-	-
	X2CrNiMoN 17 11 2	1.4406	Z1NCDU25-20	-	-	-	2378	S31254	-	-	-
	-	1.4563	Z1NCDU17-27-03	-	-	SCS17	2370	316 LN	301S21	58C	F.8414
	X2CrNiNi23 4	-	Z2CN23-04AZ	-	-	-	2584	N08028	-	-	-
	X2CrNiMoN22 5 3	-	Z2CND22-05-03	-	-	-	2327	S32304	-	-	-
	X1NiCrMoCu25 20 5	1.4539	Z2NCU25-20	Uranus B6	-	-	2377	S31803	-	-	-
	X1NiCrMoCu25 20 5	1.4539	Z2NCU25-20	Uranus B6	-	-	2562	904L	-	-	-
	X53CrMnNiN21 9	1.4871	Z53CWN21 09	Uranus B6	-	-	2562	UNSV0890A	-	-	-
	X2CrMoTi 18 2	1.4521	Z3CDT18-02	Uginox F 18 MT	X53CrMnNiN21 9	-	-	EV8	349S54	-	-
	X5CrNiMoN17 13	1.4439	Z3CND18-14-06AZ	-	-	-	2326	444	-	-	-
	-	1.4313	Z6CN13-4	-	-	-	-	317 L4	-	-	-
	X10CrNiMoNb18 12	1.4583	Z6CNDNb1713 B	-	X6CrNiMoNb 17 13	-	2385	CA6-NM	-	-	-
	X12CrMnNi 18 8 5	1.4371	Z8CMMN18-08-05	-	-	-	-	318	-	-	-
	X7CrNiAl 17 7	1.4568	Z8CNA17-07	17-7PH	X2CrNiMo1712	SUS631	2357	202	-	-	-
	-	-	-	-	-	-	2388	631	316S11	-	-
Malleable Cast Iron											
	GTS-35	-	MN32-8	-	-	-	814	-	8 230/6	-	-
	GTS-45	0.8145	MN35-10	-	-	-	815	32510	B 340/12	-	-
	GTS-55-04	0.8155	Mn450	-	-	FCMW370	852	40010	P 440/7	-	-
	GTS-65-02	0.8165	Mn550-4	-	-	FCMP490	854	A220-50005	-	-	-
	GTS-70-02	0.8170	Mn650-3	-	-	FCMP590	856	A220-70003	P5703	-	-
	GTS-55	0.8155	Mn700-2	-	-	FCMP690	862	A220-80002	P690/2	-	-
	GTS-65	0.8155	MP50-5	-	-	FCMP690	864	A220-90001	-	-	-
	GTS-65	-	MP80-3	-	-	FCMP540	854	50005	P 510/4	-	-
	-	-	L-NC202	-	-	-	858	70003	P 570/3	-	-
Grey Cast Iron											
	GG 10	-	F110D	-	-	-	110	No 20 B	-	-	-
	GG 15	0.6015	F115D	-	-	FC150	115	No 25 B	Grade 150	-	FG 15
	GG 20	0.6020	F120D	-	-	FC200	120	No 30 B	Grade 220	-	-
	GG 25	0.6025	F125D	-	-	FC250	125	No 35 B	Grade 260	-	FG 25
	GG 30	0.6030	F130D	-	-	FC300	130	No 45 B	Grade 300	-	FG 30
	GG 35	0.6035	F135D	-	-	FC350	135	No 50 B	Grade 350	-	FG 35
	GG 40	0.6040	F140D	-	-	-	140	No 55 B	Grade 400	-	-
	GGG-NiCr202	0.6660	L-NC202	-	-	-	523	A436 Type 2	L-NiCuCr202	-	-
Nodular Cast Iron											
	GGG 40.3	-	FGS370-17	-	-	-	0717-12	-	SNG 370/17	-	FGE 38/17
	GGG 35.3	0.7033	FGS370-17	-	-	-	0717-15	-	-	-	-
	GGG 40	0.7040	FGS400-12	-	-	FCD400	0717-02	60-40-18	SNG 420/12	-	FGE 38-17
	GGG-50	0.7050	FGS500-7	-	-	FCD500	0727-02	80-55-06	SNG 500/7	-	FGE 50-7
	GGG 60	0.7060	FGS600-3	-	-	-	0732-03	-	SNG 600/3	-	-
	GGG 70	0.7070	FGS700-2	-	-	FCD700	0737-01	100-70-03	SNG 700/2	-	FGE 70-2
	GGG-NiMn137	0.7652	S-Mn137	-	-	-	772	-	-	-	-
	GGG-NiCr202	0.7660	S-NC202	-	-	-	776	A43D2	Grade S6	-	-

REFERENCE MATERIALS

Material Conversion Table

ISO	Germany DIN	W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AMS	Great Britain BS	EN	Spain UNE
Aluminum Alloys											
		3.0255	A5/9050C	Al	-	-	-	1000	-	-	-
	G-AIS19MGWA	3.2373	A-S7G	-	-	-	4251	SC64D	-	-	-
		3.1855	A59KG/3380	A4.5Cu	-	-	-	-	-	-	-
	G-ALMG5	-	A-SU12	-	-	-	4252	GD-AISI12	LM5	-	-
		3.1924/25	AU2GNT6/9051	A12.3Cu2.3MgSiMn6.2Zn	-	-	-	7050	-	-	-
		3.1255/55	AU4G1/9050C	AlCu1.5Mg0.6Mn	-	-	-	2024	-	-	-
		3.1734/35	AU4NT/3380	Al10Mg	-	-	-	-	-	-	-
		3.1255	AU4SG/9051A	AlCu1.5Mg0.6Mn	-	-	-	2024	-	-	-
		3.4344/45	AZ4GU/9051	A12.3Cu2.3MgSiMn6.2Zn	-	-	-	7050	-	-	-
		3.4364/65	AZ5GU/9050C	Al1.6Cu2.5Mg5.6ZnCr	-	-	-	7175	-	-	-
		3.4374/75	AZGU/AZ1/9050C	Al1.6Cu2.5Mg5.6ZnCr	-	-	-	7175	-	-	-
	GD-AISI12	-	-	-	-	-	4244	356.1	LM25	-	-
	GD-AISI8C/3	-	-	-	-	-	4247	A413.0	-	-	-
	G-AISI12(Cu)	-	-	-	-	-	4250	A380.1	LM24	-	-
	G-AISI12	-	-	-	-	-	4260	A413.1	LM20	-	-
	G-AISI10(MgCu)	-	-	-	-	-	4261	A413.2	LM6	-	-
		-	-	-	-	-	4253	A360.2	LM9	-	-
Heat Resistant Super Alloys, Nickel Base											
		-	NC14K8	René 95	-	-	-	-	-	-	-
	NIC20Co18Ti	2.4632	Nc20ATV	Nimonic 90	-	-	-	-	-	-	-
		2.4969	NCK 20 TA	Nimonic 90	-	-	-	-	-	-	-
		2.4650	-	IN - 100	-	-	-	AMS 5397	-	-	-
		-	-	Nimonic C-263	-	-	-	-	-	-	-
Heat Resistant Super Alloys, Cobalt Base											
		-	38C16NBT	Inconel 706	-	-	-	AMS 5702	-	-	-
	CoCo20W15Ni	1W2.4694	KC20WN	Haynes 25	-	-	-	AMS 5759	-	-	-
	CoCo22W14Ni	-	KC22WN	Haynes 188	-	-	-	AMS 5772	-	-	-
	S-NIC13Al6MoNb	1W2.4670	NC12AD	Inconel 713	-	-	-	AMS 5391	-	-	-
	S-NIC13Al6MoNb	1W2.4670	NC13AD	Nimocast 842	-	-	-	SAE 5391 A	-	-	-
	NICr15Fe	2.4816	NC15Fe	Inconel 600	-	-	-	AMS 5580	-	-	-
		-	NC15FeTiNbA	Inconel X-750	-	-	-	AMS 5667	-	-	-
	NICr16FeTi	-	NC16FeTi	Inconel 722	-	-	-	AMS5541	-	-	-
	NICr16FeTi	2.4669	NC16FeTiNb	Inconel X-750	-	-	-	AMS 5582	-	-	-
		-	NC18K15TDA	Udimet 720	-	-	-	-	-	-	-
	NICr19Fe19NbMo	1W2.4668	NC19FeN	Udimet 718	-	-	-	5383	-	-	-
	NICr19Fe19NbMo	1W2.4668	NC19FeNB	Inconel 718	-	-	-	AMS 5589	HR8	-	-
	NICr19Co11MoTi	2.4973	NC19KDT	René 41	-	-	-	AMS 5399	-	-	-
	NICr20Co16MoTi	-	NC19KDUV	Nimonic PK33	-	-	-	-	-	-	-
	NICr19Fe19NbMo	1W2.4668	NC20K14	Waspaloy	-	-	-	AMS 5544	HR5,203-4	-	-
	NICr20Ti	2.4630	NC20T	Nimonic 75	-	-	-	-	HR401.601	-	-
	NICr20TiAl	2.4631	NC20TA	Nimonic 80A	-	-	-	-	-	-	-
	NICr21Mo	2.4858	NC21FeDu	Incoloy 825	-	-	-	-	-	-	-
		2.4603	NC22FeD	Hastelloy X	-	-	-	5390A	-	-	-
	NICr22Fe18Mo	2.4665	NC22FeD	Nimonic PE 13	-	-	-	AMS 5754 E	-	-	-
	NICr22Mo9Nb	2.4856	NC22FeDNB	Inconel 625	-	-	-	5666	-	-	-
	NICo15Cr15MoAlTi	2.4636	NCK15ATD	Nimonic 115	-	-	-	-	-	-	-
		-	NCK18TDA	Udimet 710	-	-	-	-	-	-	-
	NICr18Co18MoTi	2.4983	NCK19DAT	Udimet 500	-	-	-	AMS 5751	-	-	-
	NICo15Cr14MoAlTi	2.4636	NCK20AT	Udimet 700	-	-	-	-	-	-	-
	NICr15Co19MoTi	2.4650	NCK20D	Nimonic 263/C263	-	-	-	-	-	-	-
	NICo20Cr15MoAlTi	2.4634	NCKD20ATV	Nimonic 105	-	-	-	-	-	-	-
	S-NiMo30	2.4800	ND37FeV	Hastelloy B	-	-	-	AMS 5396	-	-	-
		1W2.4674	NK15CAT	Nimocast PD 16	-	-	-	AMS 5397	-	-	-
	NICo29Cr15MoAlTi	-	NK27CADTi	Inconel 700	-	-	-	-	-	-	-
	NICr18CoMo	2.4666	NKOD20ATU	Nimonic PK 25	-	-	-	AMS 5753	-	-	-
	NiCu30Fe	2.4360	NU30	Monel 400	-	-	-	AMS 4574	-	-	-
	NiFe33Cr17Mo	-	NW11AC	Nimonic PE 16	-	-	-	-	-	-	-

ISO	Germany DIN	W-nr	France AFNOR	Trade Names	Italy UNI	Japan JIS	Sweden SS	USA AISI/AMS	Great Britain BS	EN	Spain UNE
Heat Resistant Super Alloys, Cobalt Base											
-	-	-	-	A-285	-	-	-	AMS 5731	-	-	-
-	-	-	-	A-286	-	-	-	AMS 5732	-	-	-
-	-	-	-	A-286	-	-	-	AMS 5734	-	-	-
-	-	-	-	Astrolloy	-	-	-	-	-	-	-
-	-	-	-	Incoloy 901 Mod	-	-	-	AMS 5661 A	-	-	-
-	-	-	-	Incoloy 903	-	-	-	-	-	-	-
-	-	-	-	Incoloy 925	-	-	-	-	-	-	-
-	-	-	-	Inconel X-750	-	-	-	AMS 5668	-	-	-
-	-	-	-	Inconel X-750	-	-	-	AMS 5660	-	-	-
-	-	-	-	Inconel X-750	-	-	-	AMS 5670	-	-	-
-	-	-	-	Inconel X-750	-	-	-	AMS 5671	-	-	-
-	-	-	-	Imp - 35-N	-	-	-	AMS 5758	-	-	-
-	-	-	-	Nitralloy 135 Mod	-	-	-	-	-	-	-
-	-	-	-	René 41	-	-	-	AMS 5712	-	-	-
-	-	-	-	René 88	-	-	-	-	-	-	-
-	-	-	-	-	-	-	AMS 5659	-	-	-	-
-	-	-	-	Stainless Steel 17-5 PH	-	-	-	AMS 5622	-	-	-
-	-	-	-	Stainless Steel 410	-	-	-	AMS 5382	-	-	-
-	-	-	-	Stainless Steel 410	-	-	-	AMS 5618	-	-	-
-	-	-	-	Stainless Steel 410	-	-	-	AMS 5619	-	-	-
-	-	-	-	Toolsteel D 2	-	-	-	-	-	-	-
-	-	-	-	Toolsteel H 13	-	-	-	-	-	-	-
-	-	-	-	Udimet 500	-	-	-	AMS 5753	-	-	-
-	-	-	-	Udimet 500	-	-	-	AMS 5384	-	-	-
-	-	-	-	Waspaloy	-	-	-	AMS 5704	-	-	-
-	-	-	-	Waspaloy	-	-	-	AMS 5706	-	-	-
-	-	-	-	Waspaloy	-	-	-	AMS 5707	-	-	-
-	-	-	-	Waspaloy	-	-	-	AMS 5708	-	-	-
-	-	-	-	Waspaloy	-	-	-	AMS 5709	-	-	-
Heat Resistant, Super Alloys											
-	-	-	-	Custom 455	-	-	-	AMS 5617	-	-	-
-	-	-	-	Hastelloy C & C 276	-	-	-	AMS 5750	-	-	-
-	-	-	-	Hastelloy N	-	-	-	AMS 5771	-	-	-
-	-	-	-	Hastelloy S	-	-	-	AMS 5711	-	-	-
-	-	-	-	Hastelloy W	-	-	-	AMS 5755	-	-	-
-	-	-	-	Hastelloy X	-	-	-	AMS 5754	-	-	-
-	-	-	-	Incoloy 901	-	-	-	AMS 5660	-	-	-
-	-	-	-	Inconel 600	-	-	-	AMS 5665	-	-	-
-	-	-	-	Inconel 601	-	-	-	AMS 5715	-	-	-
-	-	-	-	Inconel 901	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Titanium Alloys											
-	-	-	-	Ti-44	-	-	-	-	-	-	-
-	-	-	-	Ti-44Mo2Sn0.5Si	-	-	-	-	-	-	-
-	-	-	-	Ti-6Al-2Sn	-	-	-	AMS R54520	TA1417	-	-
-	-	-	-	Ti-6Al-4V	-	-	-	AMS R56400	TA10-13/TA28	-	-
-	-	-	-	-	-	-	-	AMS R56401	TA11	-	-
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