STEADYLINE® FOR TURNING & MILLING

REDUCE VIBRATIONS & INCREASE PRODUCTIVITY

SECO


SECO

OVERCOME TOOL OVERHANG CHALLENGES

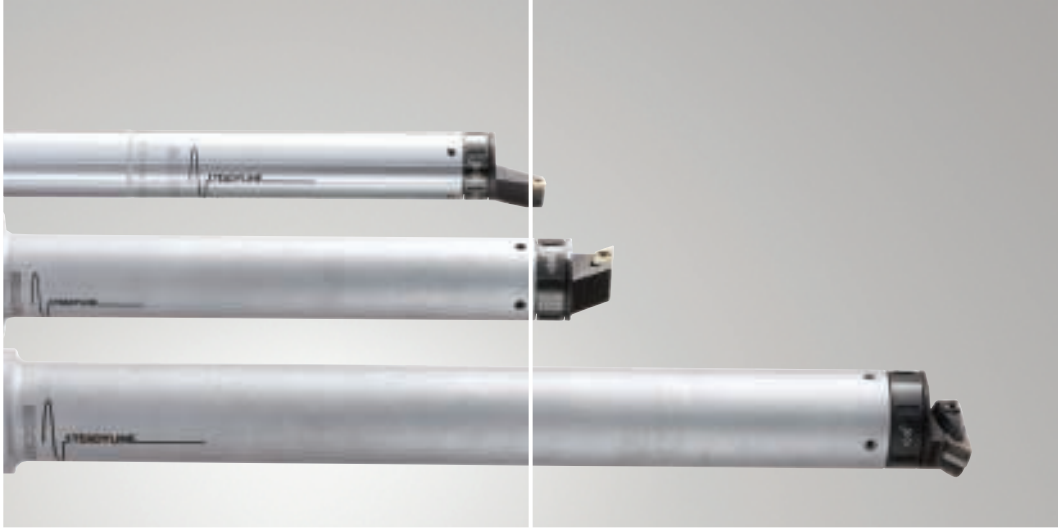
When using long overhang tools to machine difficult-to-access areas, such as deep cavities or sections of large, complex monolithic workpieces, vibration often becomes an issue. Unless, you use Seco's patented Steadyline® damped tooling.

Steadyline products, which include cost-effective milling holders as well as turning bars, perform typical long overhang operations twice as fast as traditional tools. Plus, these highly productive vibration-damping solutions offer high metal-removal rates, smooth part surface finishes and long tool life – all while reducing machine tool stress.

In addition to using our Steadyline products to optimise your processes, you can also rely on our applications expertise – which encompasses all metal-working industry segments – to further strengthen your competitive advantage. Overall, when you work with Seco, you experience a true partnership based on trust, respect and communication. With 5,000 team members in over 45 countries, we are a globally networked resource that is dedicated to solving your challenges and supporting your operations.

Visit secotools.com for all the latest information, machining data, manufacturing techniques and other developments on our Steadyline products.

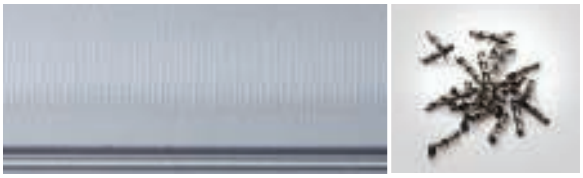
VIBRATION CHALLENGES



IMPACT OF MACHINING VIBRATIONS
UNDERSTANDING YOUR CHALLENGES

As large, complex workpieces with deep cavities have become more common, manufacturers must contend with machining difficult-to-access features that require tools with long overhangs. Traditional approaches are not economically acceptable in these scenarios, as high levels of vibration impact the cutting process.

Negative effects of vibrations include:
- Poor surface quality
- Unacceptable inaccuracy
- Excessive noise
- Disproportionate tool wear
- Machine tool damage (e.g. spindle, etc.)
- Reduced material removal rate
- Increased costs from longer production time
- Waste of both scrap material and energy



Machined with Steadyline

Machined with a conventional holder, equivalent dimension

ACHIEVING STABLE CONDITIONS
OUR SOLUTION: STEADYLINE

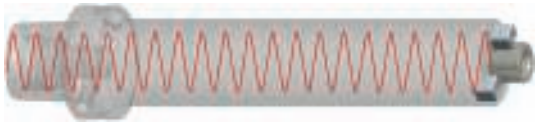
Steadyline vibration damping holders drastically improve the dynamic rigidity of milling and turning assemblies. This allows the use of much higher cutting data, with quieter operation and optimum stability.

Through a patented passive-dynamic damping system, Steadyline increases productivity, improves surface finish and boosts both tool and spindle life. Incorporating Steadyline into your operations will increase output and reduce operating cost.

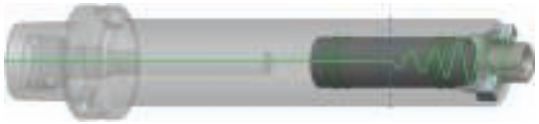
PRINCIPLE OF STEADYLINE

SIMPLE AND EFFICIENT
STEADYLINE OPERATING PRINCIPLE

In the Steadyline system the vibration absorber is positioned where deflection is highest, at the front of the bar. The absorber damps vibrations as soon as they are transmitted from the cutting tool to the body of the bar. This prevents them from spreading along the bar, thus limiting the deflection of the tool. The result is greater rigidity that ensures high stability even with extreme cutting conditions that dramatically increase the chip removal rate.

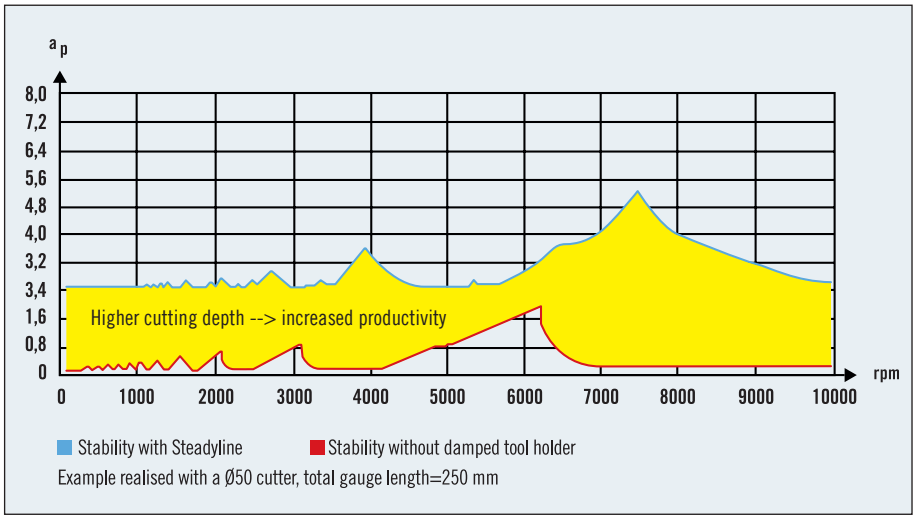


Conventional holder

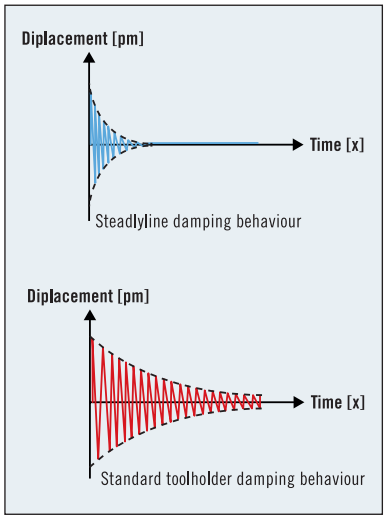


Holder with anti-vibration system

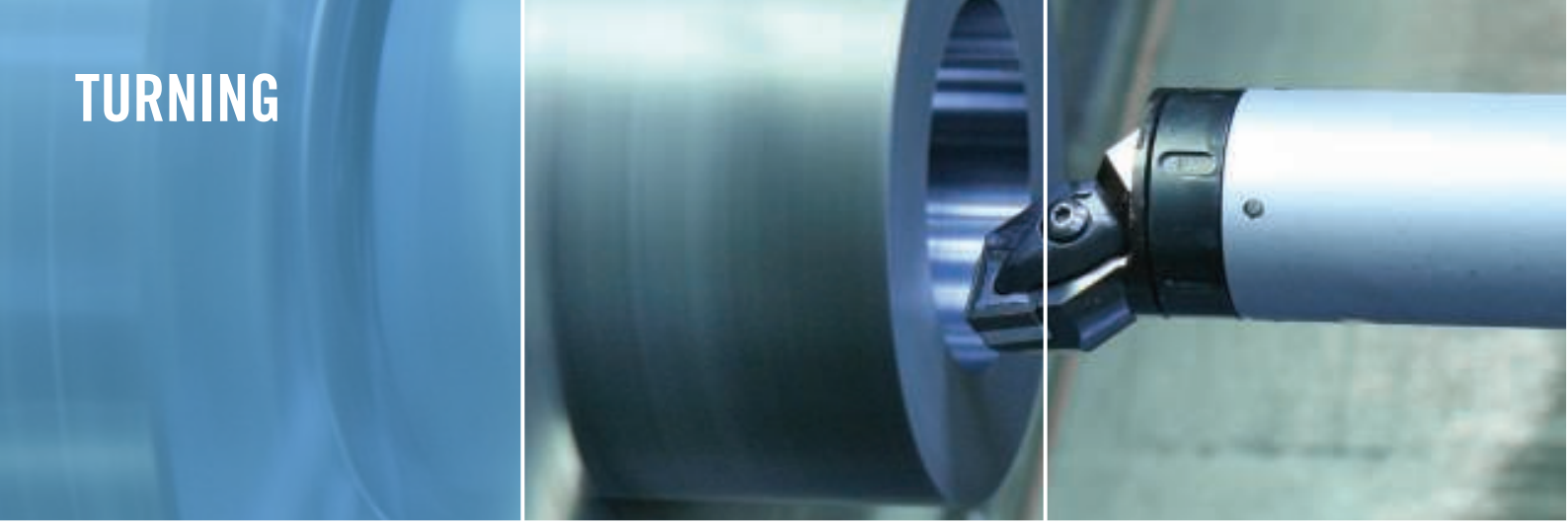
COMPARISON BETWEEN A CLASSIC MODULAR SYSTEM AND A STEADYLINE HOLDER



DAMPING BEHAVIOUR



This data represents measurements of the maximum depth at which the holder is stable, at different speeds. At a given speed, the Steadyline holder's optimal depth of cut (a_p) can be 2 to 4 times higher than what would be used with a modular system, and the surface finish is improved dramatically.

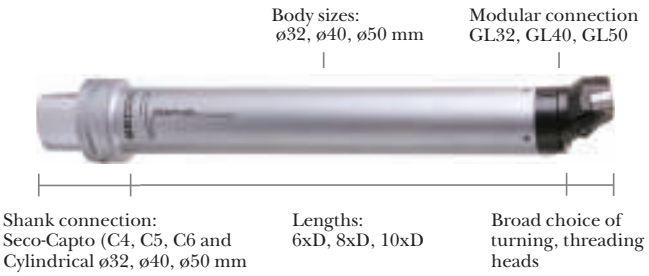


FLEXIBLE & EFFICIENT TOOL CHANGE SYSTEM

TURNING RANGE WITH A MODULAR CONNECTION (GL)

STEADYLINE BAR

- Available in 3 sizes: ø32 mm, ø40 mm, ø50 mm
- Available in 3 lengths: 6xD, 8xD, 10xD



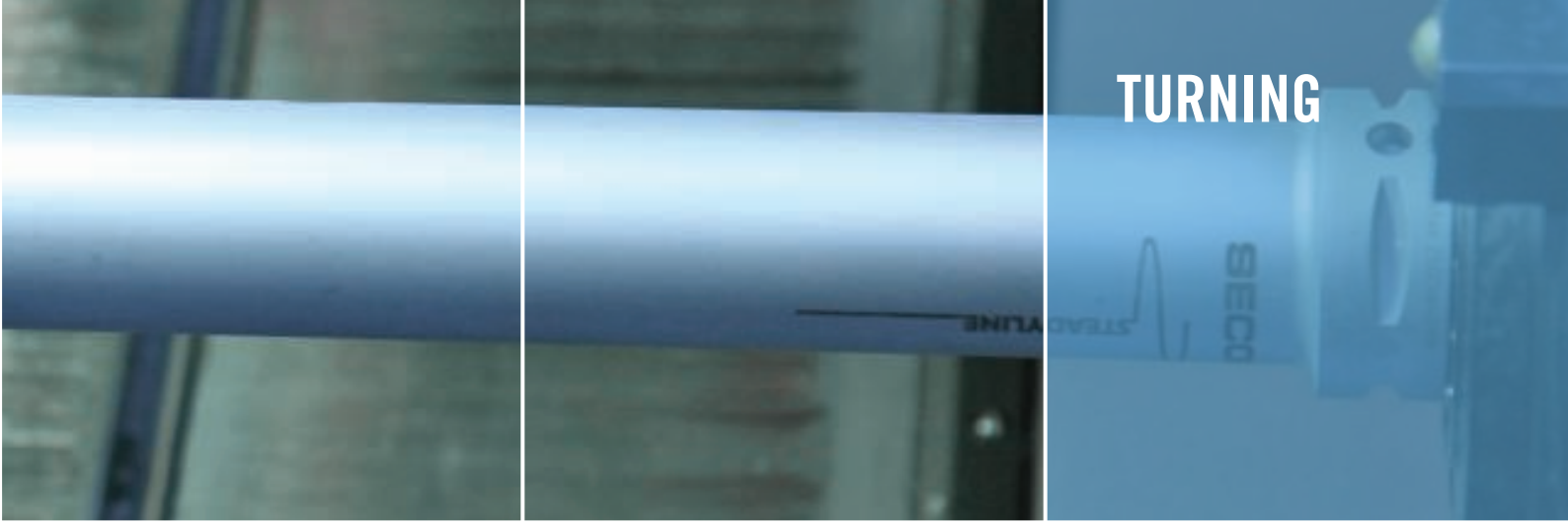
GL TURNING HEADS

- Available in 3 connection sizes: GL32, GL40, GL50
- Cutting directions: left and right
- Negative inserts for roughing: CN, DN, WN
- Positive inserts for finishing: CC, DC, TC
- CBN inserts: RN, TN
- Heads for threading inserts
- Heads for MDT grooving and parting-off

INCREASE YOUR PRODUCTIVITY

Every aspect of Steadyline toolholders has been designed with a consideration for increasing productivity, capacity and profitability.

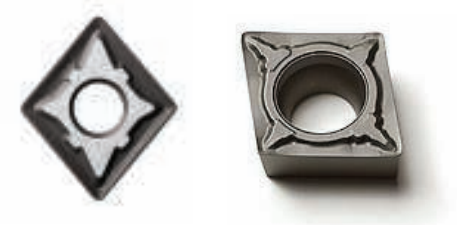
- Cost and time savings due to the efficient tool change system with clamping nut using a fine pitch thread
- Optimum damping effect through short and compact GL heads
- Polylobe-based connection for centering accuracy and 100% repeatability
- Increased flexibility by using same bars for turning and boring
- Large selection of turning heads to maximise versatility
- Through-body coolant to improve tool life and chip evacuation



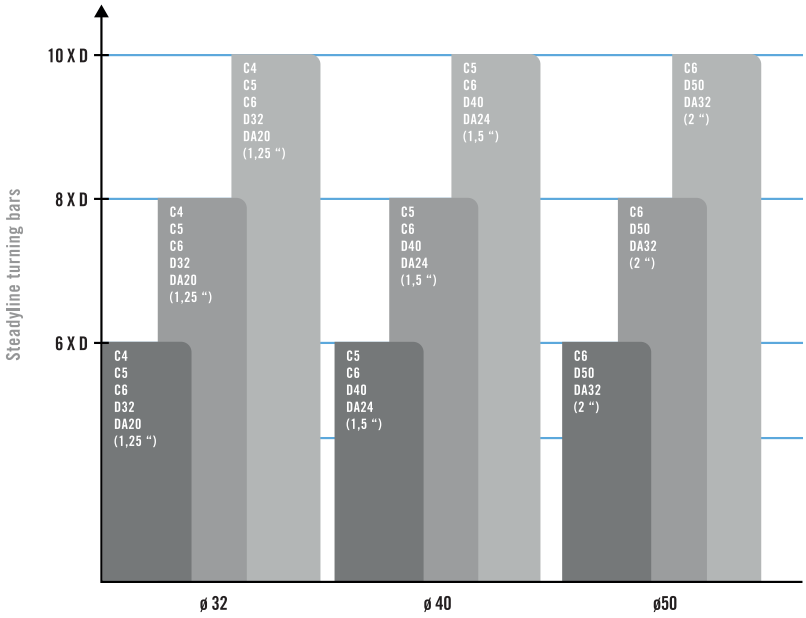
OPTIMISING YOUR RETURN ON INVESTMENT

TURNING RANGE SELECTION

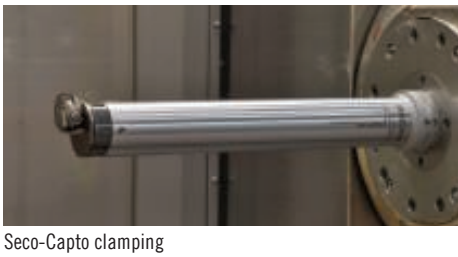
To achieve a perfect application process with our Steadyline damped holders, Seco offers a wide range of inserts for turning, threading and grooving. Our large variety of inserts features adapted chipbreaker geometries and a selection of solid carbide grades and PCBN, allowing a perfect match to every application. This versatility boosts productivity and allows manufacturers to adopt greater degrees of flexibility in their processes when machining materials ranging from aluminium to hardened steel.



RANGE SELECTION



D = Cylindrical, DA = Cylindrical inch



Seco-Capto clamping

CLAMPING RECOMMENDATIONS

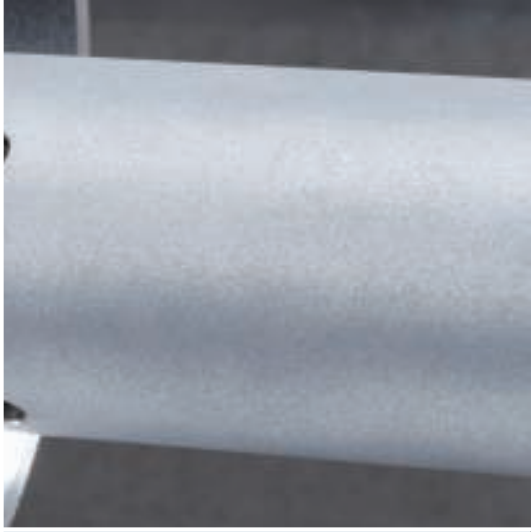
Seco’s top recommendation for clamping is the use of Seco-Capto due to several aspects:

- Maximum stability because of taper-face system & higher bending resistance
- High positioning accuracy of cutting edge

When Seco-Capto is not an option, Seco recommends cylindrical bars fit in a split boring bar holder, inserted at least to 4xD, or until groove 2.
While preparing your machine, ensure that your tool is correctly and safely clamped. Also note that it is important to never clamp directly onto the bar.

Cylindrical clamping

CASE STUDIES TURNING



6xD - CASE 1

Operation:	Threading		
Tooling bar:	C6-D40-208GL40		
Insert:	27NR5.5ISO CP500		
Coolant:	Yes		
Material:	SS1672 - DIN: CK45		
Cutting data	Metric	v_c 130 m/min	Number of passes 16, 3.25 infeed

6xD - CASE 2

Operation:	Grooving		
Tooling bar:	C6-D32-160-GL32		
Insert:	LCMF1604M0-0400-MP, CP500		
Coolant:	Yes		
Material:	SS1672 - DIN: CK45		
Cutting data	Metric	v_c 180 m/min	
1: grooving	Metric	a_p 4 mm 10 mm of depth	f 0.25 mm/rev
2: turning internal	Metric	a_p 1.5 mm	f 0.15 mm

8xD - CASE 1

Operation:	Roughing		
Tooling bar:	C6-D50-368-GL450		
Insert:	CNMG-120408R4, TP2500		
Coolant:	Yes		
Material:	SS1672 - DIN: CK45		
Cutting data	Metric	v_c 250 m/min	f 0.2 mm/rev
	Metric	a_p 3.0 mm	

10xD - CASE 1

Operation:	Roughing		
Tooling bar:	C6-D50-468-GL50		
Insert:	DNMG150608M5, TP2500		
Coolant:	Yes		
Material:	SS1672 - DIN: CK45		
Cutting data	Metric	v_c 250 m/min	f 0.25 mm/rev
	Metric	a_p 4.0 mm	

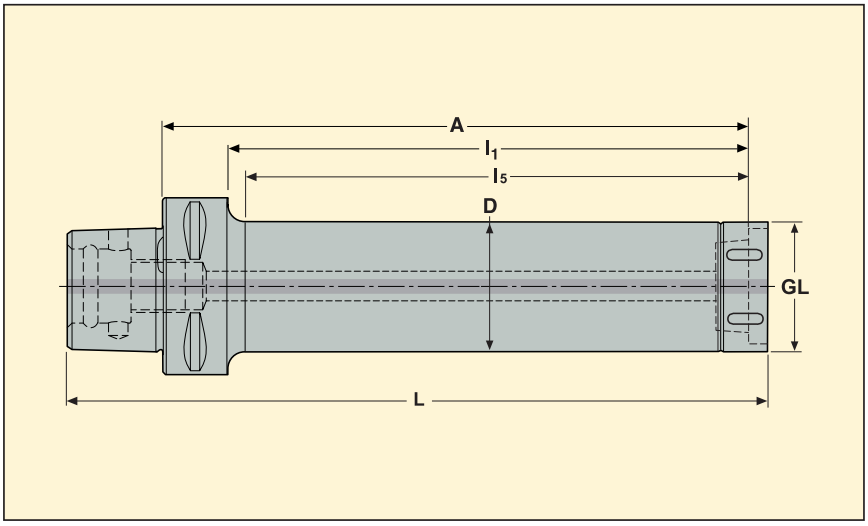
10xD - CASE 2

Operation:	Finishing		
Tooling bar:	C6-D50-468-GL50		
Insert:	DCMT11T308F1,TP2500		
Coolant:	Yes		
Material:	SS1672 - DIN: CK45		
Cutting data	Metric	v_c 450 m/min	f 0.2 mm/rev
	Metric	a_p 0.5 mm	


STEADYLINE

GL Steadyline - Damping holders for turning

Seco-Capto™/ ISO 26623-1

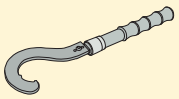


- With dynamic damping, ready to use.
- With through coolant.

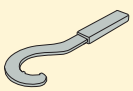
Machine side Seco-Capto shank	Workpiece side Connecting GL size	Part No.	Dimensions in mm A	D	L	l_1	l_5	Max. RPM*	Balancing	KG
C4										
	GL32	**C4-D32-160-GL32**	160	32	189,3	140	137	4 000	2	1,20
	GL32	**C4-D32-224-GL32**	224	32	253,3	204	201	4 000	2	1,62
	GL32	**C4-D32-288-GL32**	288	32	317,5	268	265	4 000	2	2,03
C5										
	GL32	**C5-D32-160-GL32**	160	32	195,5	140	136	4 000	2	1,37
	GL32	**C5-D32-224-GL32**	224	32	259,5	204	200	4 000	2	1,80
	GL32	**C5-D32-288-GL32**	288	32	323,5	268	264	4 000	2	2,21
	GL40	**C5-D40-208-GL40**	208	40	244,5	188	184	3 500	2	2,50
	GL40	**C5-D40-288-GL40**	288	40	324,3	268	264	3 500	2	3,30
	GL40	**C5-D40-368-GL40**	368	40	404,5	348	344	3 500	2	4,21
C6										
	GL32	**C6-D32-160-GL32**	160	32	203,3	135	129	4 000	2	1,74
	GL32	**C6-D32-224-GL32**	224	32	267,3	199	193	4 000	2	2,16
	GL32	**C6-D32-288-GL32**	288	32	331,5	263	257	4 000	2	2,57
	GL40	**C6-D40-208-GL40**	208	40	252,5	183	177	3 500	2	2,83
	GL40	**C6-D40-288-GL40**	288	40	332,3	263	257	3 500	2	3,65
	GL40	**C6-D40-368-GL40**	368	40	412,5	343	337	3 500	2	4,56
	GL50	**C6-D50-268-GL50**	268	50	313,3	243	238	2 500	2	4,98
	GL50	**C6-D50-368-GL50**	368	50	413,5	343	338	2 500	2	6,57
	GL50	**C6-D50-468-GL50**	468	50	513,5	443	438	2 500	2	8,43

* Max. RPM only when used in rotating boring.

Accessories*

For connecting size	Torque key	Tip for torque key
		
GL32	SL00-32.250	SL00-32
GL40	SL00-40.350	SL00-40
GL50	SL00-50.550	SL00-50

Spare Parts, Parts included in delivery

Locking key

SL32
SL40
SL50

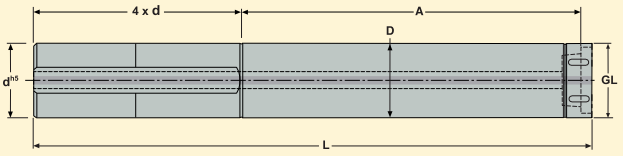
*To be ordered separately

GL Steadyline - Damping holders for turning

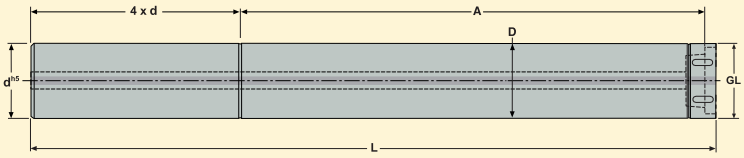
Cylindrical shank - METRIC

- With dynamic damping, ready to use.
- With through coolant.

Design 1



Design 2*



* With out flat

Shank d^{h5} mm	Connecting GL size	Part No.	Dimensions in mm A	D	L	Design	KG
32							
	GL32	**D32-160-GL32**	160	32	293,5	1	1,78
	GL32	**D32-224-GL32**	224	32	357,5	1	2,22
	GL32	**D32-288-GL32**	288	32	421,5	2	2,62
40							
	GL40	**D40-208-GL40**	208	40	374,5	1	3,72
	GL40	**D40-288-GL40**	288	40	454,5	1	4,53
	GL40	**D40-368-GL40**	368	40	534,5	2	5,44
50							
	GL50	**D50-268-GL50**	268	50	475,5	1	7,45
	GL50	**D50-368-GL50**	368	50	575,5	1	9,03
	GL50	**D50-468-GL50**	468	50	675,5	2	10,92

Accessories*

For connecting size	Torque key	Tip for torque key
GL32	SL00-32.250	SL00-32
GL40	SL00-40.350	SL00-40
GL50	SL00-50.550	SL00-50

Spare Parts, Parts included in delivery

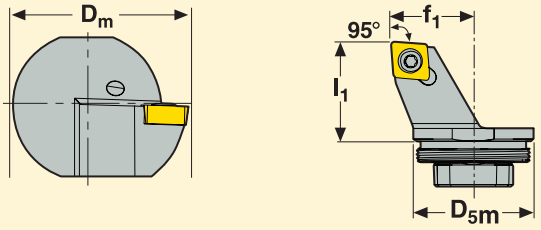
Locking key
SL32
SL40
SL50

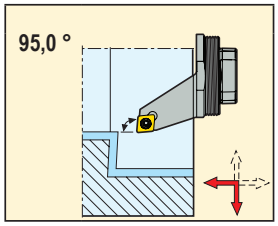
*To be ordered separately

Toolholders for inserts with GL connection

- g_o° = Rake angle, l_s° = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-SCLCR/L





Size		Part No.	Dimensions in mm			g_o°	l_s°	KG	
			D_m	f_1	l_1				
GL32									
	06	GL32-SCLCR-22032-06	40	22,0	32	0	-2	0,1	CC..0602
		GL32-SCLCL-22032-06	40	22,0	32	0	-2	0,1	CC..0602
	09	GL32-SCLCR-22032-09	40	22,0	32	0	-2	0,1	CC..09T3
		GL32-SCLCL-22032-09	40	22,0	32	0	-2	0,1	CC..09T3
	12	GL32-SCLCR-22032-12	40	22,0	32	0	-8	0,1	CC..1204..
		GL32-SCLCL-22032-12	40	22,0	32	0	-8	0,1	CC..1204..
GL40									
	06	GL40-SCLCR-27032-06	50	27,0	32	0	-2	–	CC..0602
		GL40-SCLCL-27032-06	50	27,0	32	0	-2	–	CC..0602
	09	GL40-SCLCR-27032-09	50	27,0	32	0	-2	0,2	CC..09T3
		GL40-SCLCL-27032-09	50	27,0	32	0	-2	0,2	CC..09T3
	12	GL40-SCLCR-27032-12	50	27,0	32	0	-8	0,2	CC..1204..
		GL40-SCLCL-27032-12	50	27,0	32	0	-8	0,2	CC..1204..
GL50									
	06	GL50-SCLCR-32032-06	63	32,0	32	0	-2	–	CC..0602
		GL50-SCLCL-32032-06	63	32,0	32	0	-2	–	CC..0602
	09	GL50-SCLCR-32032-09	63	32,0	32	0	-2	0,3	CC..09T3
		GL50-SCLCL-32032-09	63	32,0	32	0	-2	0,3	CC..09T3
	12	GL50-SCLCR-32032-12	63	32,0	32	0	-5	0,3	CC..1204..
		GL50-SCLCL-32032-12	63	32,0	32	0	-5	0,3	CC..1204..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-06	T07P-2	C02506-T07P	–	–
..-09	T15P-2	C04008-T15P	–	–
..-12	T15P-2	C05012-T15P	123.19-621	CA5008

Accessories*

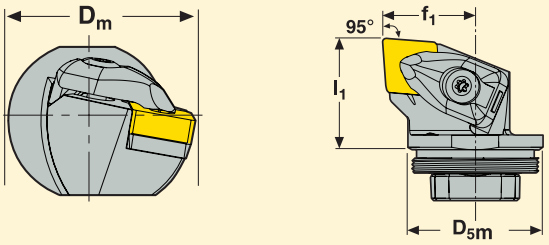
Shim key
–
–
5SMS795

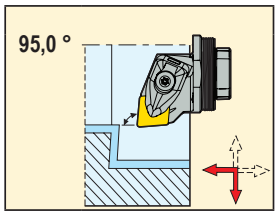
*To be ordered separately

Toolholders for inserts with GL connection

- $g_o°$ = Rake angle, $l_s°$ = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-DCLNR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	$g_o°$	$l_s°$	KG	
GL32									
	12	GL32-DCLNR-22032-12	40	22,0	32	-6	-10	0,2	CN..1204..
		GL32-DCLNL-22032-12	40	22,0	32	-6	-10	0,2	CN..1204..
GL40									
	12	GL40-DCLNR-27032-12	50	27,0	32	-6	-10	0,2	CN..1204..
		GL40-DCLNL-27032-12	50	27,0	32	-6	-10	0,2	CN..1204..
GL50									
	12	GL50-DCLNR-32032-12	63	32,0	32	-6	-8	0,3	CN..1204..
		GL50-DCLNL-32032-12	63	32,0	32	-6	-8	0,3	CN..1204..
	16	GL50-DCLNR-32037-16	63	32,0	37	-5	-14	–	CN..1606..
		GL50-DCLNL-32037-16	63	32,0	37	-5	-14	–	CN..1606..
	19	GL50-DCLNR-32040-19	63	32,0	40	-5	-14	–	CN..1906..
		GL50-DCLNL-32040-19	63	32,0	40	-5	-14	–	CN..1906..

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-12	FP2012	L85021-T15P	CD12-S	DCO120310	T15P-7	C04008-T15P	S6912
..-16	FP2012	L86026-T20P	CD16-S	DCN160616	T20P-7L	C05010-T20P	S7010
..-19	FP2012	L86026-T20P	CD19-S	DCN190416	T20P-7L	C05010-T20P	S7010

Accessories*

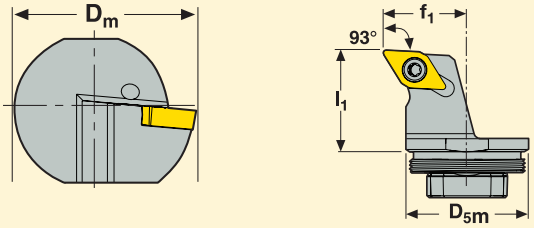
Clamp kit
CD12-S12
CD16-S16
CD19-S19

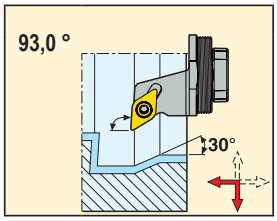
*To be ordered separately

Toolholders for inserts with GL connection

- g_o° = Rake angle, l_s° = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-SDUCR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	g_o°	l_s°	KG	
GL32									
	11	GL32-SDUCR-22032-11	40	22,0	32	0	-5	0,1	DC..11T3..
		GL32-SDUCL-22032-11	40	22,0	32	0	-5	0,1	DC..11T3..
GL40									
	11	GL40-SDUCR-27032-11	50	27,0	32	0	-5	0,2	DC..11T3..
		GL40-SDUCL-27032-11	50	27,0	32	0	-5	0,2	DC..11T3..
GL50									
	11	GL50-SDUCR-32032-11	63	32,0	32	0	-5	0,3	DC..11T3..
		GL50-SDUCL-32032-11	63	32,0	32	0	-5	0,3	DC..11T3..

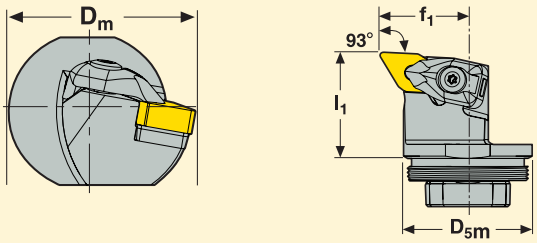
Spare Parts, Parts included in delivery

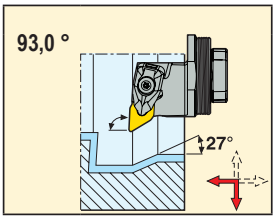
For size	Insert key	Insert screw
..-11	T15P-2	C04008-T15P

Toolholders for inserts with GL connection

- $g_o°$ = Rake angle, $l_s°$ = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-DDUNR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	$g_o°$	$l_s°$	KG	
GL32									
	11	GL32-DDUNR-22032-11	40	22,0	32	-6	-10	0,2	DN..1104..
		GL32-DDUNL-22032-11	40	22,0	32	-6	-10	0,2	DN..1104..
GL40									
	11	GL40-DDUNR-27032-11	50	27,0	32	-5	-10	–	DN..1104..
		GL40-DDUNL-27032-11	50	27,0	32	-5	-10	–	DN..1104..
	15	GL40-DDUNR-27032-15	50	27,0	32	-6	-12	0,2	DN..1504..
		GL40-DDUNL-27032-15	50	27,0	32	-6	-12	0,2	DN..1504..
GL50									
	15	GL50-DDUNR-32032-15	50	32,0	32	-6	-12	0,3	DN..1504..
		GL50-DDUNL-32032-15	50	32,0	32	-6	-12	0,3	DN..1504..

Spare Parts, Parts included in delivery

Accessories*

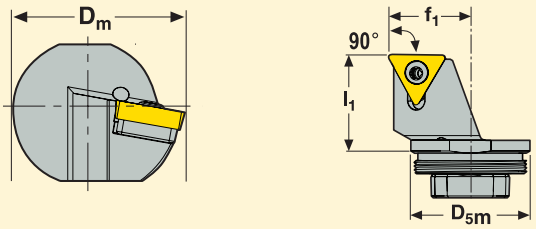
For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-11	FP1508	L84017-T09P	CD09-S	DDN110310	T09P-2	C03007-T09P	S5608	CD09-S09
..-15	FP2012	L85021-T15P	CD12-S	DDN150416	T15P-7	C04008-T15P	S6912	CD12-S12

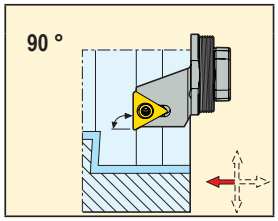
*To be ordered separately

Toolholders for inserts with GL connection

- $g_o°$ = Rake angle, $l_s°$ = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-STFCR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	$g_o°$	$l_s°$	KG	
GL32									
	16	GL32-STFCR-22032-16	40	22,0	32	0	-10	0,2	TC..16T3..
		GL32-STFCL-22032-16	40	22,0	32	0	-10	0,2	TC..16T3..
GL40									
	16	GL40-STFCR-27032-16	50	27,0	32	0	-8	0,2	TC..16T3..
		GL40-STFCL-27032-16	50	27,0	32	0	-8	0,2	TC..16T3..
GL50									
	16	GL50-STFCR-32032-16	63	32,0	32	0	-8	0,3	TC..16T3..
		GL50-STFCL-32032-16	63	32,0	32	0	-8	0,3	TC..16T3..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-16	T15P-2	C03509-T15P	STN160312	CA3510

Accessories*

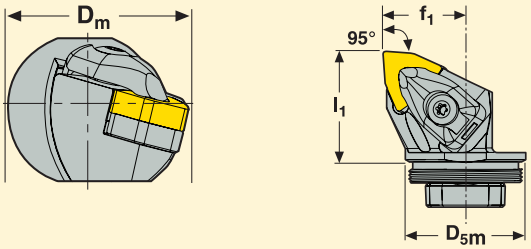
Shim key
9/64SMS875

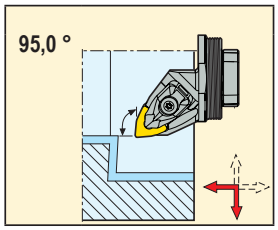
*To be ordered separately

Toolholders for inserts with GL connection

- g_o° = Rake angle, l_s° = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-DWLNR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	g_o°	l_s°	KG	
GL32									
	06	GL32-DWLNR-22032-06	40	22,0	32	-5	-12	0,2	WN..0604..
		GL32-DWLNL-22032-06	40	22,0	32	-5	-12	0,2	WN..0604..
	08	GL32-DWLNR-22035-08	40	22,0	35	-5	-14	0,2	WN..0804..
		GL32-DWLNL-22035-08	40	22,0	35	-5	-14	0,2	WN..0804..
GL40									
	06	GL40-DWLNR-27032-06	50	27,0	32	-5	-12	–	WN..0604..
		GL40-DWLNL-27032-06	50	27,0	32	-5	-12	–	WN..0604..
	08	GL40-DWLNR-27037-08	50	27,0	37	-5	-12	–	WN..0804..
		GL40-DWLNL-27037-08	50	27,0	37	-5	-12	–	WN..0804..
GL50									
	06	GL50-DWLNR-32032-06	63	32,0	32	-5	-12	–	WN..0604..
		GL50-DWLNL-32032-06	63	32,0	32	-5	-12	–	WN..0604..
	08	GL50-DWLNR-32038-08	63	32,0	38	-5	-12	–	WN..0804..
		GL50-DWLNL-32038-08	63	32,0	38	-5	-12	–	WN..0804..

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-06	FP1508	L84017-T09P	CD09-S	DWN060310	T09P-2	C03007-T09P	S5608
..-08	FP2012	L85021-T15P	CD12-S	DWN080416	T15P-7	C04008-T15P	S6912

Accessories*

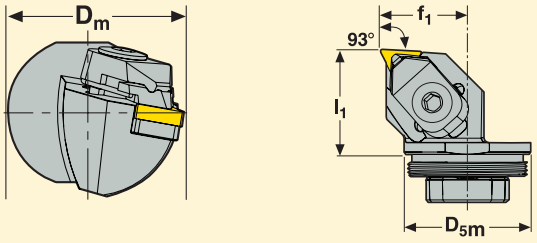
Clamp kit
CD09-S09
CD12-S12

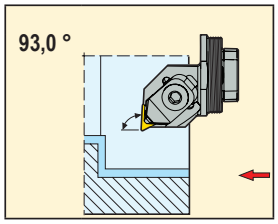
*To be ordered separately

Toolholders for PCBN inserts with GL connection

- g_o° = Rake angle, l_s° = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-CTUNR/L





Size		Part No.	Dimensions in mm D_m	f_1	l_1	g_o°	l_s°	KG	
GL32									
	11	GL32-CTUNR-22032-11	40	22,0	32	-6	-10	0,2	TN..1103..
		GL32-CTUNL-22032-11	40	22,0	32	-6	-10	0,2	TN..1103..

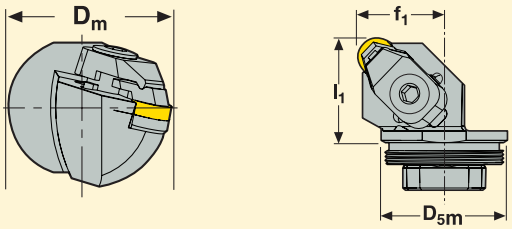
Spare Parts, Parts included in delivery

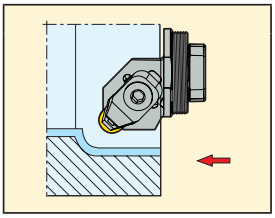
For size	Cantilever clamp	Insert shim	Pressure plate	Shim/clamp key	Shim screw
..-11	CC17P-06	CTN110308	P1311-06	T07P-2	CS2507-T07P

Toolholders for PCBN inserts with GL connection

- g_o° = Rake angle, l_s° = Inclination angle
- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-CRSNR/L





Size		Part No.	Dimensions in mm			g_o°	l_s°	KG	
			D_m	f_1	l_1				
GL32									
	09	GL32-CRSNR-22032-09	40	22,0	32	-6	-12	0,2	RN.N0903..
		GL32-CRSNL-22032-09	40	22,0	32	-6	-12	0,2	RN.N0903..

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
..-09	CC17P-09	4SMS795	117.10-620	P1311-09	174.10-652-T07P

Accessories*

Shim key
T07P-2

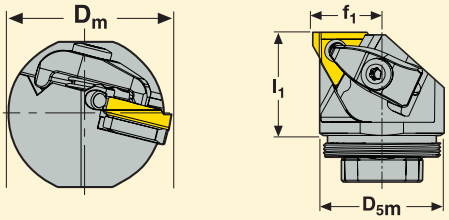
*To be ordered separately

Toolholders for inserts with GL connection

Snap-Tap®

- For complete insert programme, see Machining Navigator "Turning Catalogue"

GL..-CNR/L



Application	Part No.	Dimensions in mm D_{5m}	l_1	f_1	D_m	KG	
	GL32- CNR-20032-16AHD	32	32,0	19,8	36,0	0,2	16..
	CNL-20032-16AHD	32	32,0	19,8	36,0	0,2	16..
	GL40- CNR-24032-16AHD	40	32,0	24,0	50,0	0,3	16..
	CNL-24032-16AHD	40	32,0	24,0	50,0	0,3	16..
	GL50- CNR-29032-16AHD	50	32,0	29,0	63,0	0,4	16..
	CNL-29032-16AHD	50	32,0	29,0	63,0	0,4	16..
	GL32- CNR-22032-22AHD	32	32,0	21,3	38,0	0,2	22..
	CNL-22032-22AHD	32	32,0	21,3	38,0	0,2	22..
	GL40- CNR-26032-22AHD	40	32,0	26,0	50,0	0,3	22..
	CNL-26032-22AHD	40	32,0	26,0	50,0	0,3	22..
	GL50- CNR-31032-22AHD	50	32,0	31,0	63,0	0,4	22..
	CNL-31032-22AHD	50	32,0	31,0	63,0	0,4	22..
	GL40- CNR-27037-27AHD	40	37,0	27,0	50,0	0,3	27..
	GL50- CNR-32037-27AHD	50	37,0	32,0	63,0	0,4	27..

Spare Parts, Parts included in delivery

For size	Insert shim (S)	Shim screw	Shim key	–	Cantilever clamp	Clamp screw	Spring	Clamp key	Shim/clamp key
..-16	GX16-1	CS3507-T09P	T09P-2	–	CHD16	L85020-T15P	S6912	T15P-2	–
..-22	NX22-1	CS4009-T15P	T15P-2	CSP22HD-T15P	–	–	–	T15P-2	–
..-27	VX27-1	C05012-T15P	T15P-2	–	CHD27	L86025-T20P	S7616	–	T20P-7L

Please check availability in current price and stock-list.


STEADYLINE
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VERSATILE SOLUTIONS FOR ALL YOUR MILLING APPLICATIONS

SECO'S WIDE MILLING RANGE

With configuration for Combimaster and shell-mill holders, Steadyline covers a broad range of milling applications from ø20 mm to over ø160 mm. Introduced in 2009, the shell-mill holders are already providing highly efficient performance in thousands of applications worldwide. All Steadyline products maximise rigidity through a conical-reinforced cylindrical shape that achieves high static and dynamic stability in heavy machining applications. Additionally, the holders feature a chrome-coated surface that increases resistance to wear and corrosion.

SHELL-MILL HOLDERS - TYPE 5555-5556

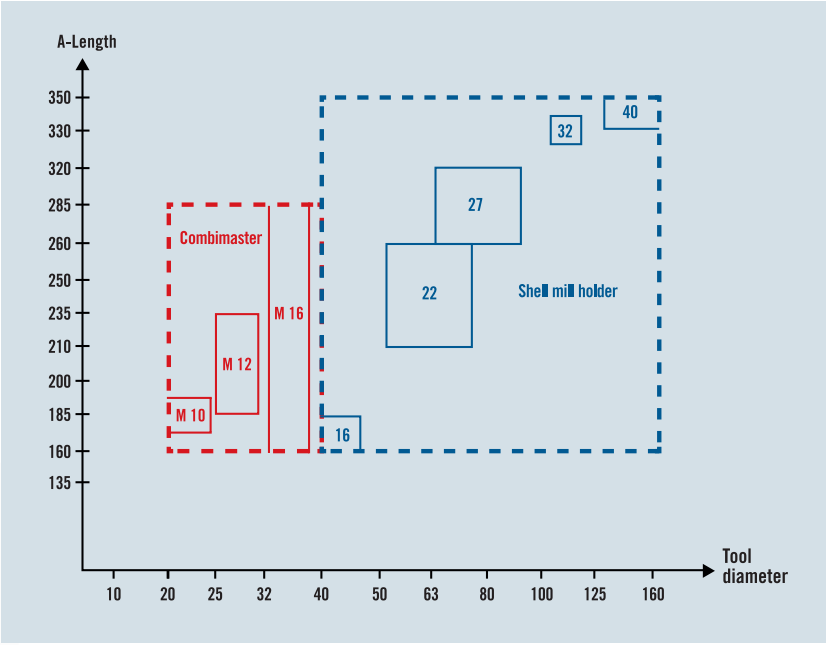
Providing an ideal solution across a range of applications, shell-mill holders excel for slot milling, square shoulder milling, contouring, face milling, helical interpolation ramping and copy milling.

- Arbor: ø16 mm to ø40 mm
- Enhanced bearing surface
- Coolant channels through pilot

FLEXIBLE SYSTEM: COMBIMASTER

A versatile option with high levels of interchangeability, the Combimaster system features replaceable head milling cutters for all kinds of applications (e.g. square shoulder milling, end milling, copy milling, face milling, plunge milling, disc milling, etc.) and many insert styles.

- Connection size: M10 to M16
- Different pitch versions
- Rigid clamping



CASE STUDIES MILLING

CASE 1: SHELL MILL CONVENTIONAL MILLING TOOL

Operation:	Pocket milling			
Cutter:	R220.97-0050-V22.2A			
Tooling:	C6391552522210			
Insert:	VPGX220640ER-E10, H25			
Material:	AlZnMgCu1.5			
Cutting data	Metric	v_c 1180m/min	f_z 0.25 mm/tooth	
	Metric	a_p 3.5 mm	a_e 25 mm	

CASE 1: SHELL MILL AV SYSTEM

Operation:	Pocket milling			
Cutter:	R220.97-0050-V22.2A			
Tooling:	C6391555522210			
Insert:	VPGX220640ER-E10, H25			
Material:	AlZnMgCu1.5			
Cutting data	Metric	v_c 1270m/min	f_z 0.25 mm/tooth	
	Metric	a_p 7.0 mm	a_e 25 mm	

Results
- **Increased feed rate**
- **Doubled cutting depth**

CASE 2: COMBIMASTER CONVENTIONAL MILLING TOOL

Operation:	Side milling			
Cutter:	R217.69-1020 RE 10-3A (ø20 mm)			
Tooling:	E9304582010185			
Material:	1.1206 CK50			
Cutting data	Metric	v_c 312m/min	f_z 0.3 mm/tooth	
	Metric	a_p 0.9 mm	a_e 4.0 mm	

CASE 2: COMBIMASTER AV SYSTEM

Operation:	Side milling			
Cutter:	R217.69-1020 RE 10-3A (ø20 mm)			
Tooling:	E9304K82010185			
Material:	1.1206 CK50			
Cutting data	Metric	v_c 312 m/min	f_z 0.3 mm/tooth	
	Metric	a_p 2.2 mm	a_e 4.0 mm	

Results
- **Increased cutting depth: a_p x 2,3**

CASE 3: COMBIMASTER CONVENTIONAL MILLING TOOL

Operation:	Slotting			
Cutter:	R217.69-1020 RE 10-3A (ø20 mm)			
Tooling:	E9304582010185			
Material:	1.1206 CK50			
Cutting data	Metric	v_c 200 m/min	f_z 0.16 mm	
	Metric	a_p 0.25 mm	a_e 20 mm	

CASE 3: COMBIMASTER AV SYSTEM

Operation:	Slotting			
Cutter:	R217.69-1020 RE 10-3A (ø20 mm)			
Tooling:	E9304K82010185			
Material:	1.1206 CK50			
Cutting data	Metric	v_c 200 mm/min	f_z 0.16 mm	
	Metric	a_p 0.8 mm	a_e 20 mm	

Results
- **3 times higher cutting depth**

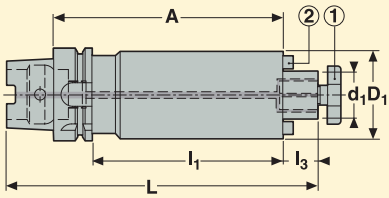
MONOBLOC HOLDERS HSK-A

EPB 5555/5556 – Steadyline, vibration damping shell mill holders

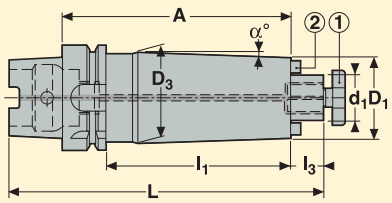
HSK-A/ ISO12164-1-A

- With dynamic damping, ready to use
- Direct run-out 5 µm maximum
- With coolant supply channels through the spigot

Design 1 (5555)



Design 2 (5556)



Spare Parts:
1 = Bolt*
2 = Tenon/Screw

Taper	d_1 mm	Part No.	Dimensions in mm A	D_1	D_3	L	l_1	l_3	Design	a°	Balancing	KG
HSK-A63												
	16	**E9304555516160**	160	38	–	209	134	17	1	–	2	2,40
	22	**E9304555522210**	210	48	–	261	184	19	1	–	2	3,54
	22	**E9304555622260**	260	48	63,3	311	234	19	2	1,9	2	5,38
	27	**E9304555527260**	260	60	–	313	234	21	1	–	2	6,56
HSK-A100												
	22	**E9306555522210**	210	48	–	279	181	19	1	–	2	4,80
	22	**E9306555622260**	260	48	65,0	329	231	19	2	1,9	2	6,78
	27	**E9306555527260**	260	60	–	331	231	21	1	–	2	7,92
	27	**E9306555627320**	320	60	82,0	391	291	21	2	2,0	2	11,86
	32	**E9306555532330**	330	78	–	404	301	24	1	–	2	14,42
	40	**E9306555540350**	350	89	–	424	321	27	1	–	2	19,40

d_1 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

For d_1	Spanner
16	5811608
22	5812210
27	5812712
32	5813216
40	5814020

Spare Parts*

For d_1	Bolt	Screw	Tenon
16	5801608	951D0312	16C2080810A
22	5802210	951D0416	16C2101111
27	5802712	951D0516	16C2121214A
32	5803216	951D0516	16C2141421A
40	5804020	951D0616	16C2161621A

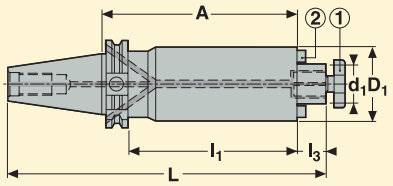
* These centre bolts are similar to the original delivered ones: check if lengths L are suitable for the milling cutters used, therefore see instructions in catalogue's Guide pages or in the Operating instructions sheet delivered with the holders.

EPB 5555/5556 – Steadyline, vibration damping shell mill holders

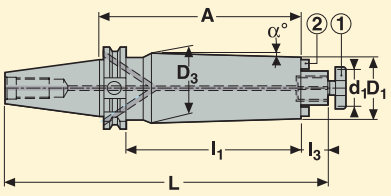
DIN 69871-ADB

- With dynamic damping, ready to use
- Direct run-out 5 µm maximum
- With coolant supply channels through the spigot

Design 1 (5555)



Design 2 (5556)

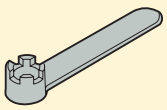


Spare Parts:
1 = Bolt*
2 = Tenon/screw

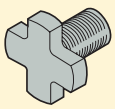
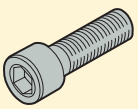
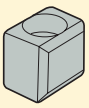
Taper	d_1 mm	Part No.	Dimensions in mm A	D_1	D_3	L	l_1	l_3	Design	a°	Balancing	KG
DIN40 ADB												
	16	**E3469555516160**	160	38	–	245,4	141	17	1	–	2	2,12
	22	**E3469555522210**	210	48	–	297,4	191	19	1	–	2	3,74
	22	**E3469555622260**	260	48	63,2	347,4	241	19	2	1,9	2	5,56
DIN50 ADB												
	22	**E3471555522210**	210	48	–	330,7	191	19	1	–	2	5,36
	22	**E3471555622260**	260	48	66,0	380,7	241	19	2	2,0	2	7,52
	27	**E3471555527260**	260	60	–	382,7	241	21	1	–	2	8,52
	27	**E3471555627320**	320	60	79,5	442,7	301	21	2	1,7	2	12,26
	32	**E3471555532330**	330	78	–	455,7	311	24	1	–	2	14,96
	40	**E3471555540350**	350	89	–	475,7	331	27	1	–	2	20,40

d_1 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

For d_1	Spanner 
16	5811608
22	5812210
27	5812712
32	5813216
40	5814020

Spare Parts*

For d_1	Bolt 	Screw 	Tenon 
16	5801608	950D0312	16C2080810A
22	5802210	950D0416	16C2101111
27	5802712	950D0516	16C2121214A
32	5803216	950D0516	16C2141421A
40	5804020	950D0616	16C2161621A

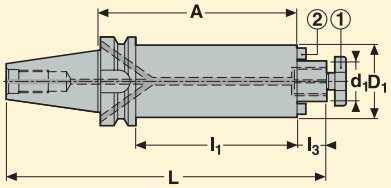
* These centre bolts are similar to the original delivered ones: check if lengths L are suitable for the milling cutters used, therefore see instructions in catalogue's Guide pages or in the Operating instructions sheet delivered with the holders

EPB 5555/5556 – Steadyline, vibration damping shell mill holders

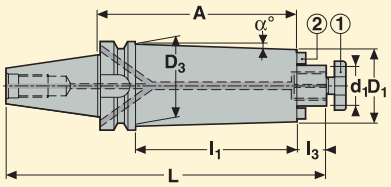
BT JIS B 6339-ADB

- With dynamic damping, ready to use
- Direct run-out 5 µm maximum
- With coolant supply channels through the spigot

Design 1 (5555)



Design 2 (5556)

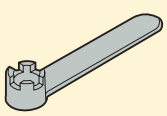


Spare Parts:
1 = Bolt*
2 = Tenon/screw

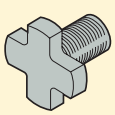
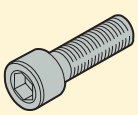
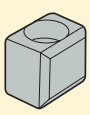
Taper	d_1 mm	Part No.	Dimensions in mm A	D_1	D_3	L	l_1	l_3	Design	a°	Balancing	KG
BT40 ADB												
	16	**E3414555516160**	160	38	–	242,4	133	17	1	–	2	2,23
	22	**E3414555522210**	210	48	–	294,4	183	19	1	–	2	3,78
	22	**E3414555622260**	260	48	60,0	344,4	233	19	2	1,3	2	5,40
	27	**E3414555527260**	260	60	–	346,4	233	21	1	–	2	6,86
BT50 ADB												
	22	**E3416555522210**	210	48	–	330,8	172	19	1	–	2	6,08
	22	**E3416555622260**	260	48	64,0	380,8	222	19	2	1,9	2	7,90
	27	**E3416555527260**	260	60	–	382,8	222	21	1	–	2	9,06
	27	**E3416555627320**	320	60	80,0	442,8	282	21	2	1,9	2	12,64
	32	**E3416555532330**	330	78	–	455,8	292	24	1	–	2	15,34
	40	**E3416555540350**	350	89	–	475,8	312	27	1	–	2	20,70

d_1 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

For d_1	Spanner
	
16	5811608
22	5812210
27	5812712
32	5813216
40	5814020

Spare Parts*

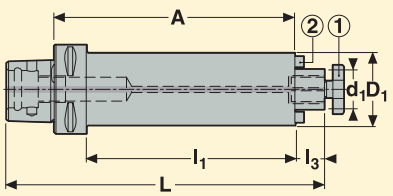
For d_1	Bolt	Screw	Tenon
			
16	5801608	950D0312	16C2080810A
22	5802210	950D0416	16C2101111
27	5802712	950D0516	16C2121214A
32	5803216	950D0516	16C2141421A
40	5804020	950D0616	16C2161621A

* These centre bolts are similar to the original delivered ones: check if lengths L are suitable for the milling cutters used, therefore see instructions in catalogue's Guide pages or in the Operating instructions sheet delivered with the holders

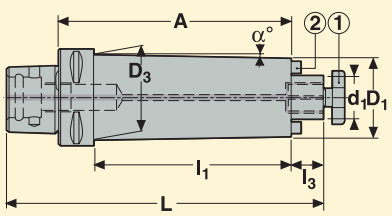
EPB 5555/5556 – Steadyline, vibration damping shell mill holders

- With dynamic damping, ready to use
- Direct run-out 5 µm maximum
- With coolant supply channels through the spigot

Design 1 (5555)



Design 2 (5556)

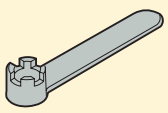


Spare Parts:
1 = Bolt*
2 = Tenon/Screw for tenon

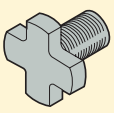
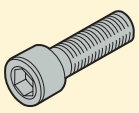
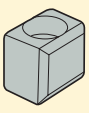
Seco-Capto™ shank	d_1 mm	Part No.	Dimensions in mm A	D_1	D_3	L	l_1	l_3	Design	a°	Balancing	KG
C6												
	16	C6-391.5555-16160	160	38	–	215	135	17	1	–	2	2,1
	22	C6-391.5555-22210	210	48	–	267	185	19	1	–	2	3,6
	22	C6-391.5556-22260	260	48	60	317	235	19	2	1,3	2	4,0
	27	C6-391.5555-27260	260	60	–	319	235	21	1	–	2	6,8
C8												
	22	C8-391.5555-22210	210	48	–	277	177	19	1	–	2	4,5
	22	C8-391.5556-22260	260	48	64	327	227	19	2	1,8	2	6,4
	27	C8-391.5555-27260	260	60	–	329	227	21	1	–	2	7,6
	27	C8-391.5556-27320	320	60	75	389	287	21	2	1,3	2	10,6
	32	C8-391.5555-32330	330	78	–	402	297	24	1	–	2	20,0
	40	C8-391.5555-40350	350	89	–	422	317	27	1	–	2	19,0

d_1 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

For d_1	Spanner
	
16	5811608
22	–
22	5812210
27	5812712
32	5813216
40	5814020

Spare Parts*

For d_1	Bolt	Screw	Tenon
			
16	5801608	951D0312	16C2080810A
22	5802210	951D0416	16C2101111
27	5802712	951D0516	16C2121214A
32	5803216	951D0516	16C2141421A
40	5804020	951D0616	16C2161621A

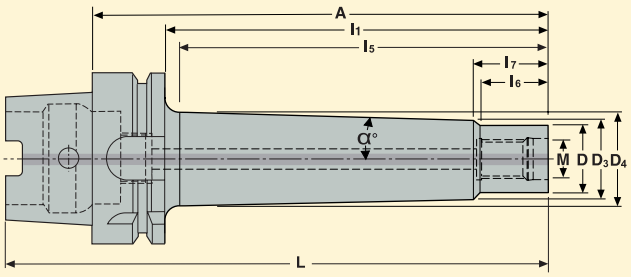
*These centre bolts are similar to the original delivered ones: check if lengths L are suitable for the milling cutters used, therefore see instructions in page(s) or in the Operating instructions sheet delivered with the holders

COMBIMASTER HSK-A

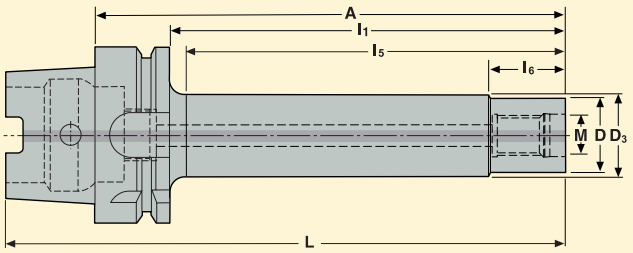
EPB K820-K821 – Steadyline vibration damping Combimaster holders

HSK-A/ ISO 12164-1-A

Design 1 (K820)



Design 2 (K821)



- With dynamic damping, ready to use
- With through coolant

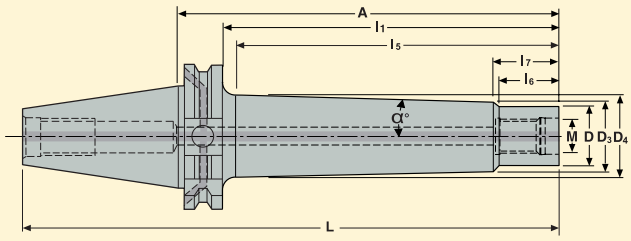
Taper	Connecting thread size	Part No.	Dimensions in mm A	L	l_1	l_5	l_6	l_7	D	D_3	D_4	a°	Design	Max rpm	Balancing	KG
HSK-A63																
	M10	**E9304K82010185**	185	217	159	154,2	20,0	22,8	18,5	24,0	36,6	2,8	1	12000	2	1,51
	M12	**E9304K82012185**	185	217	159	154,2	20,0	23,4	23,0	29,5	42,0	2,8	1	12000	2	1,90
	M16	**E9304K82016185**	185	217	159	154,2	20,0	23,7	30,0	37,0	59,5	2,8	1	10000	2	2,59
	M16	**E9304K82016235**	235	267	209	190,6	20,0	23,7	30,0	37,0	53,0	2,8	1	8000	2	3,50
	M16	**E9304K82116160**	160	192	134	129,0	22,0	–	30,0	30,5	–	–	2	10000	2	1,40
HSK-A100																
	M12	**E9306K82012235**	235	285	206	201,2	20,0	23,4	23,0	29,5	46,6	2,8	1	8000	2	4,00
	M16	**E9306K82016235**	235	285	206	201,2	20,0	23,7	30,0	37,0	54,0	2,8	1	8000	2	4,78
	M16	**E9306K82016285**	285	335	256	251,2	20,0	23,7	30,0	37,0	58,8	2,8	1	6000	2	5,86
	M16	**E9306K82116185**	185	235	156	151,0	22,0	–	30,0	30,5	–	–	2	8000	2	2,91

COMBIMASTER DIN 69871

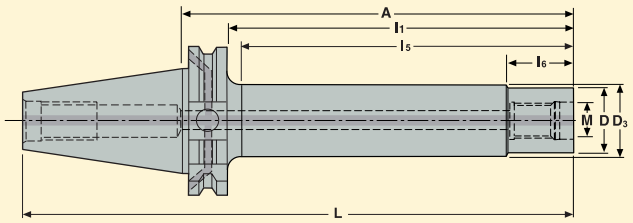
EPB K820-K821 – Steadyline™ vibration damping Combimaster holders

DIN 69871-ADB

Design 1 (K820)



Design 2 (K821)

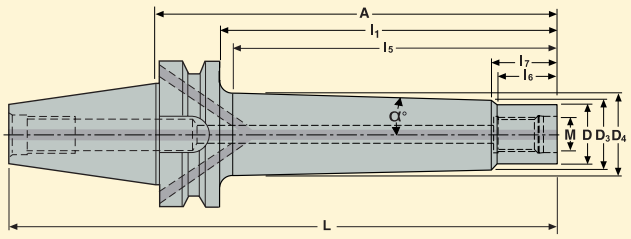


Taper	Connecting thread size	Part No.	Dimensions in mm A	L	l_1	l_5	l_6	l_7	D	D_3	D_4	a°	Design	Max rpm	Balancing	KG
DIN40 ADB																
	M12	**E3469K82012185**	185	253,4	165,9	161,1	20,0	23,4	23,0	29,5	42,7	2,8	1	12000	2	2,20
	M16	**E3469K82016185**	185	253,4	165,9	161,1	20,0	23,7	30,0	37,0	50,2	2,8	1	8000	2	2,87
	M16	**E3469K82016235**	235	303,4	215,9	159,3	20,0	23,7	30,0	37,0	50,0	2,8	1	6000	2	3,70
	M16	**E3469K82116160**	160	228,4	140,9	135,9	22,0	–	30,0	30,5	–	–	2	8000	2	1,70
DIN50 ADB																
	M16	**E3471K82016235**	235	336,7	215,9	211,1	20,0	23,7	30,0	37,0	55,0	2,8	1	8000	2	5,60
	M16	**E3471K82016285**	285	386,7	265,9	261,1	20,0	23,7	30,0	37,0	59,8	2,8	1	6000	2	6,75
	M16	**E3471K82116185**	185	286,75	165,9	160,9	22,0	–	30,0	30,5	–	–	2	8000	2	3,70

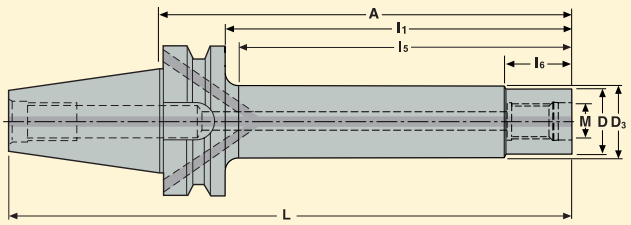
EPB K820-K821 – Steadyline vibration damping Combimaster holders

BT JIS B 6339-ADB

Design 1 (K820)



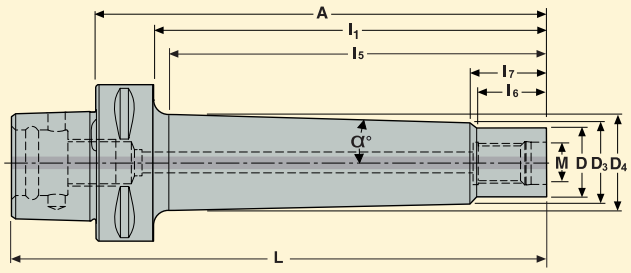
Design 2 (K821)



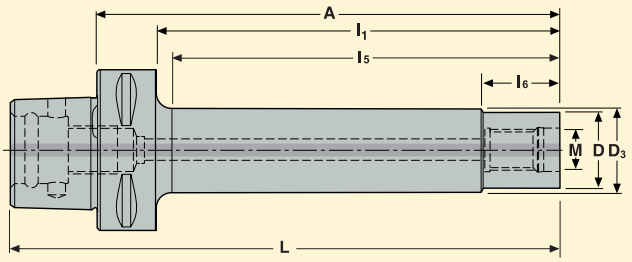
- With dynamic damping, ready to use
- With through coolant

Taper	Connecting thread size	Part No.	Dimensions in mm									a°	Design	Max rpm	Balan-cing	KG
			A	L	l_1	l_5	l_6	l_7	D	D_3	D_4					
BT40 ADB																
	M12	**E3414K82012185**	185	250,4	158	153,2	20,0	23,4	23,0	29,5	41,9	2,8	1	10000	2	2,30
	M16	**E3414K82016185**	185	250,4	158	153,2	20,0	23,7	30,0	37,0	49,4	2,8	1	8000	2	2,92
	M16	**E3414K82016235**	235	300,4	208	203,2	20,0	23,7	30,0	37,0	54,2	2,8	1	6000	2	3,80
	M16	**E3414K82116160**	160	225,4	133	128,0	22,0	–	30,0	30,5	–	–	2	8000	2	1,80
BT50 ADB																
	M16	**E3416K82016235**	235	336,8	197	192,2	20,0	23,7	30,0	37,0	53,2	2,8	1	8000	2	6,30
	M16	**E3416K82016285**	285	386,8	247	242,2	20,0	23,7	30,0	37,0	57,0	2,8	1	6000	2	7,35
	M16	**E3416K82116185**	185	286,8	147	142,0	22,0	–	30,0	30,5	–	–	2	8000	2	4,40

Design 1 (K820)



Design 2 (K821)



- With dynamic damping, ready to use
- With through coolant

Seco-Capto™ shank	Connecting thread size	Part No.	Dimensions in mm									a°	Design	Max rpm	Balancing	KG
			A	D	D_3	D_4	L	l_1	l_5	l_6	l_7					
C6																
	M12	**C6-391.K820-12185**	185	23,0	29,5	42,1	223	160	155,2	20,0	23,4	2,8	1	12000	2	2,12
	M16	**C6-391.K820-16185**	185	30,0	37,0	49,6	223	160	155,2	20,0	23,7	2,8	1	10000	2	2,79
	M16	**C6-391.K820-16235**	235	30,0	37,0	54,4	273	210	205,2	20,0	23,7	2,8	1	8000	2	3,69
	M16	**C6-391.K821-16160**	160	30,0	30,5	–	198	135	130,0	22,0	–	–	2	10000	2	1,63

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