

**STEADYLINE®
FOR TURNING &
MILLING**



**REDUCE VIBRATIONS &
INCREASE PRODUCTIVITY**

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.

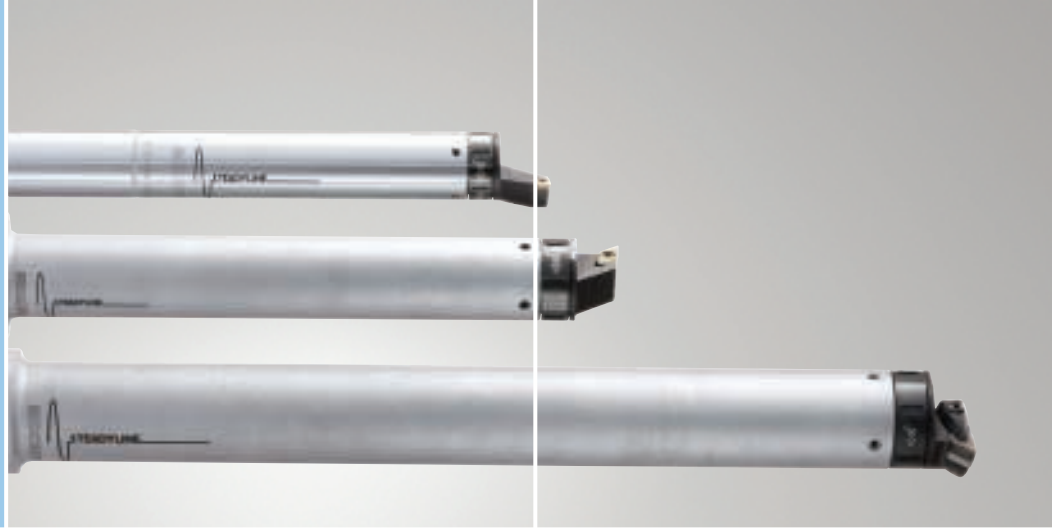
Steadyline products, which include cost-effective milling holders as well as turning bars, perform typical long overhang operations twice as fast as traditional tools. Plus, these highly productive vibration-damping solutions offer high metal-removal rates, smooth part surface finishes and long tool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

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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

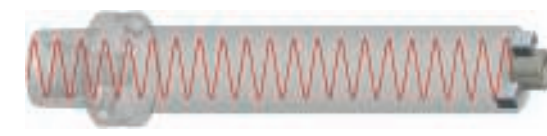
ACHIEVING STABLE CONDITIONS OUR SOLUTION: STEADYLINE

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.

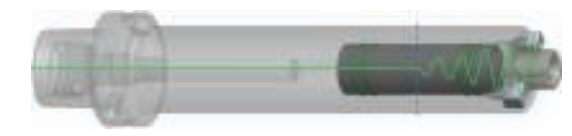
Through a patented passive-dynamic damping system, Steadyline increases productivity, improves surface finish and boosts both tool and spindle life. Incorporating Steadyline into your operations will increase output and reduce operating cost.

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.

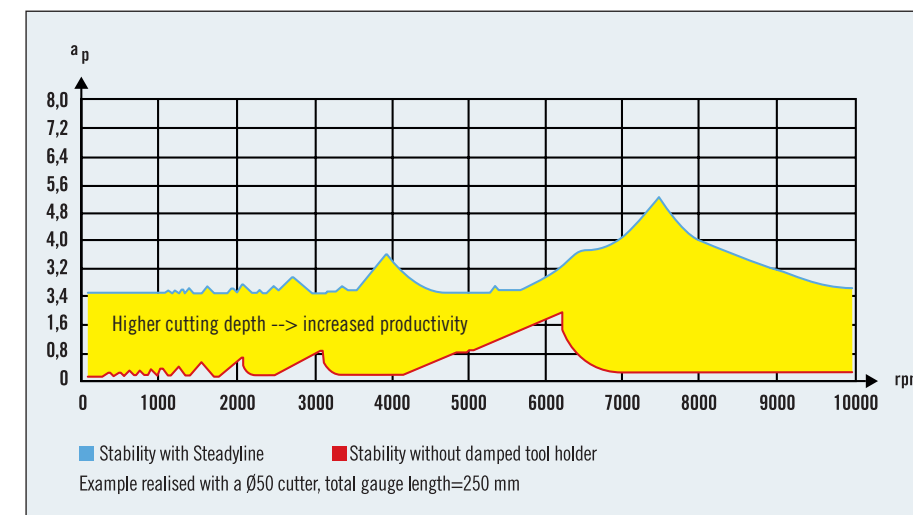


Conventional holder

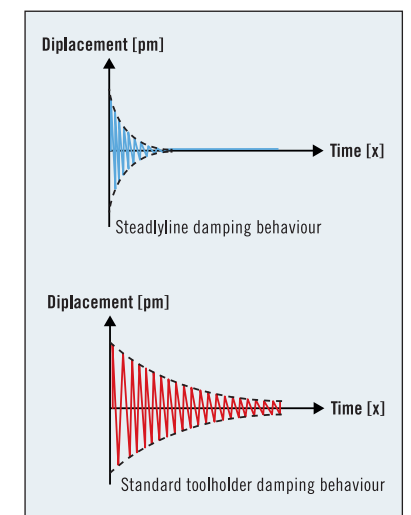


Holder with anti-vibration system

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

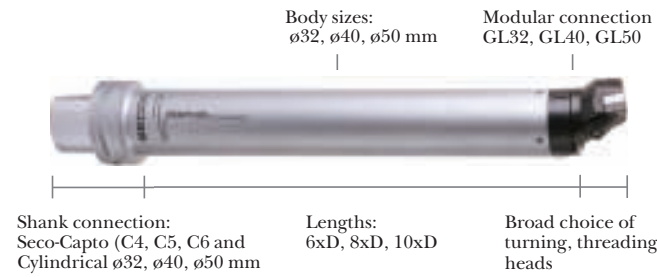
- Available in 3 sizes: $\phi 32$ mm, $\phi 40$ mm, $\phi 50$ mm
- Available in 3 lengths: 6xD, 8xD, 10xD

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

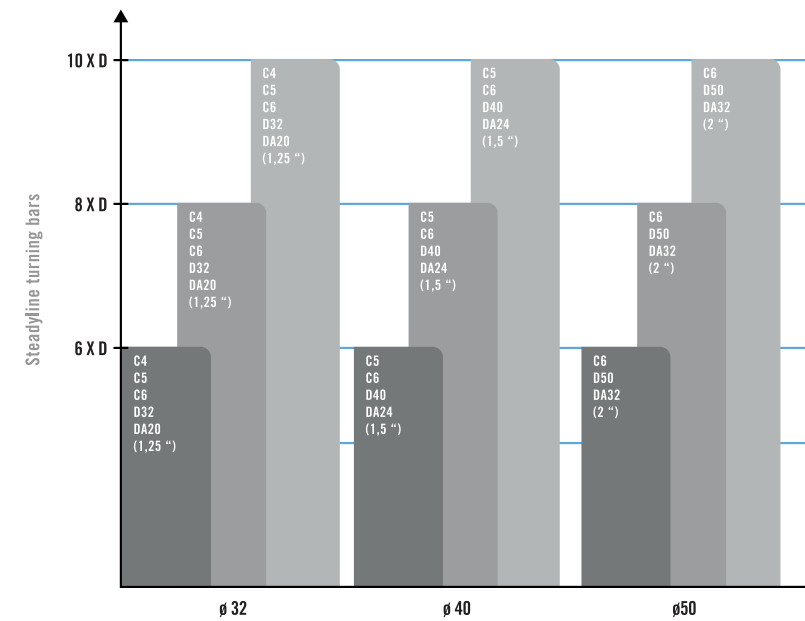


OPTIMISING YOUR RETURN ON INVESTMENT TURNING RANGE SELECTION

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



Cylindrical clamping

CLAMPING RECOMMENDATIONS

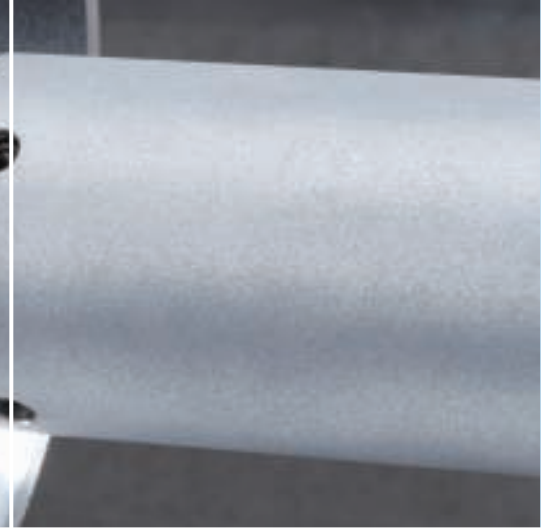
Seco's top recommendation for clamping is the use of Seco-Capto due to several aspects:

- 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.

CASE STUDIES TURNING



6xD - CASE 1

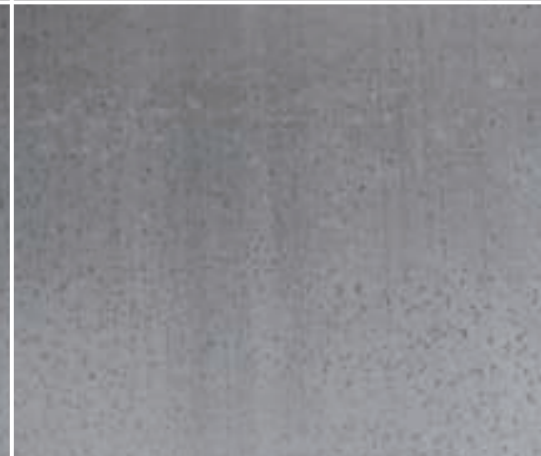
Operation: Threading
 Tooling bar: C6-D40-208GL40
 Insert: 27NR5.5ISO CP500
 Coolant: Yes
 Material: SS1672 - DIN: CK45

Cutting data		v_c	Number of passes
Metric		130 m/min	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

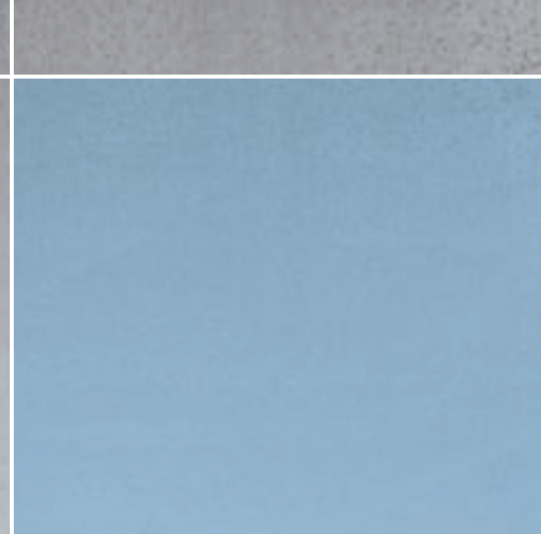
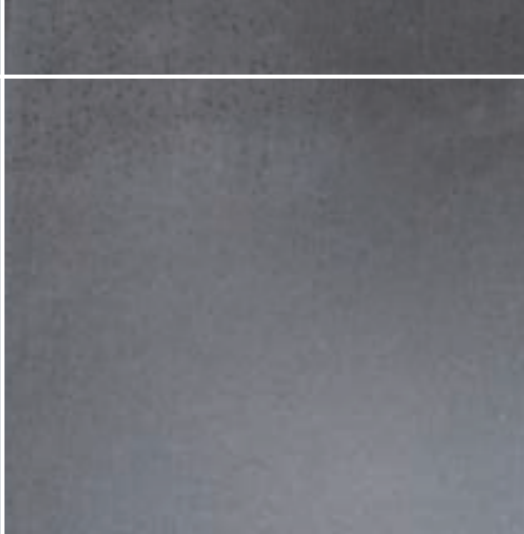
Cutting data		v_c		
Metric		180 m/min		
1: grooving		a_p	f	
Metric		4 mm	0.25 mm/rev	
		10 mm of depth		
2: turning internal		a_p	f	
Metric		1.5 mm	0.15 mm	



8xD - CASE 1

Operation: Roughing
 Tooling bar: C6-D50-368-GL450
 Insert: CNMG-120408R4, TP2500
 Coolant: Yes
 Material: SS1672 - DIN: CK45

Cutting data		v_c	f
Metric		250 m/min	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		v_c	f
Metric		250 m/min	0.25 mm/rev
Metric		a_p	
		4.0 mm	

10xD - CASE 2

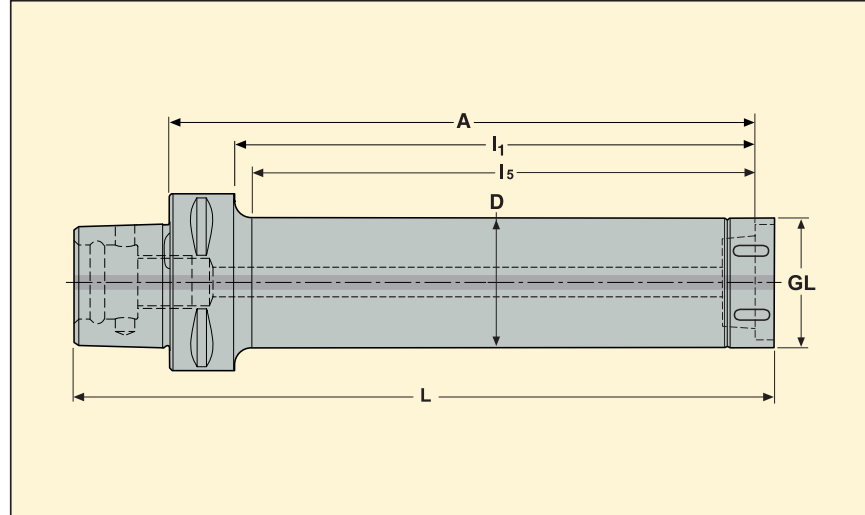
Operation: Finishing
 Tooling bar: C6-D50-468-GL50
 Insert: DCMT11T308F1, TP2500
 Coolant: Yes
 Material: SS1672 - DIN: CK45

Cutting data		v_c	f
Metric		450 m/min	0.2 mm/rev
Metric		a_p	
		0.5 mm	



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					Max. RPM*	Balancing	KG
			A	D	L	I ₁	I ₅			
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
C6	GL40	C5-D40-368-GL40	368	40	404,5	348	344	3 500	2	4,21
	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*

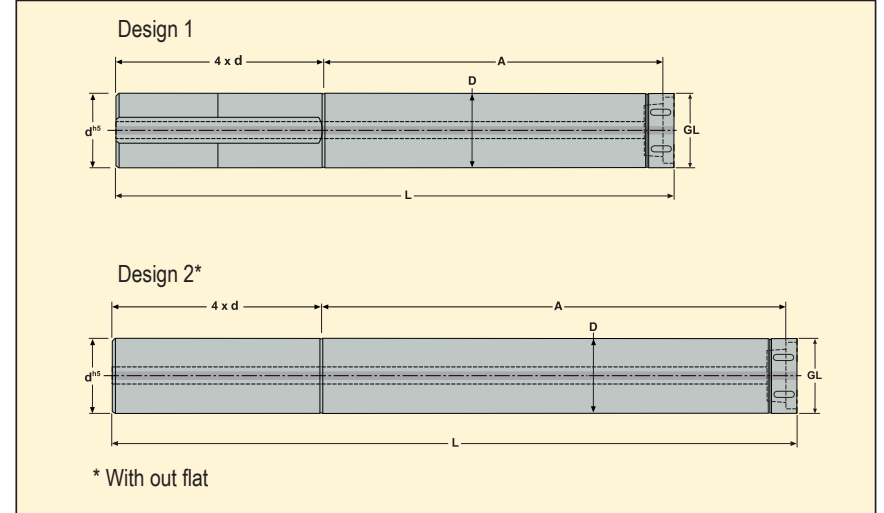
Spare Parts, Parts included in delivery

For connecting size	Torque key	Tip for torque key	Locking key
GL32	SL00-32.250	SL00-32	SL32
GL40	SL00-40.350	SL00-40	SL40
GL50	SL00-50.550	SL00-50	SL50

*To be ordered separately

GL Steadyline - Damping holders for turning

Cylindrical shank - METRIC



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

Shank d ^{h5} mm	Connecting GL size	Part No.	Dimensions in mm			Design	KG
			A	D	L		
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*

Spare Parts, Parts included in delivery

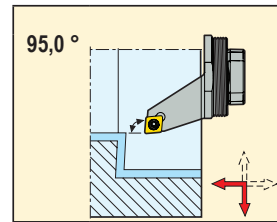
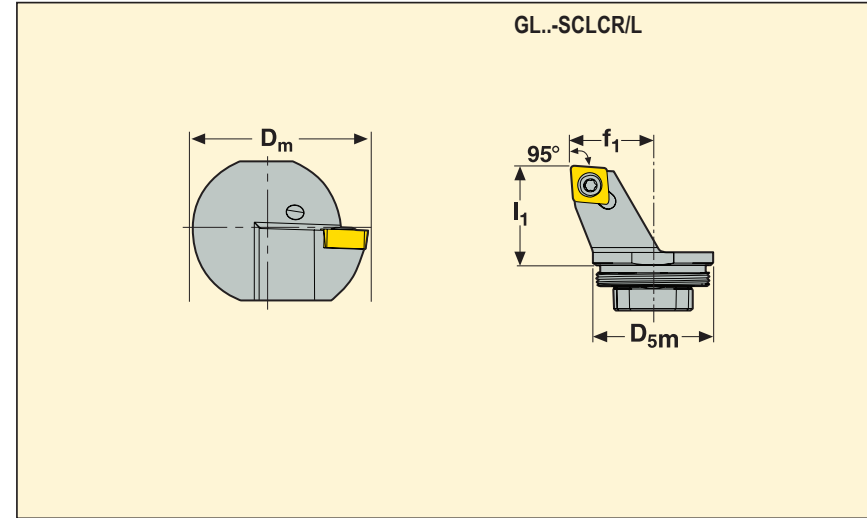
For connecting size	Torque key	Tip for torque key	Locking key
GL32	SL00-32.250	SL00-32	SL32
GL40	SL00-40.350	SL00-40	SL40
GL50	SL00-50.550	SL00-50	SL50

*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"



Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	CC	
		D_m	f_i	l_i					
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*

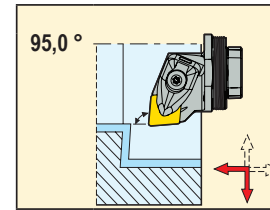
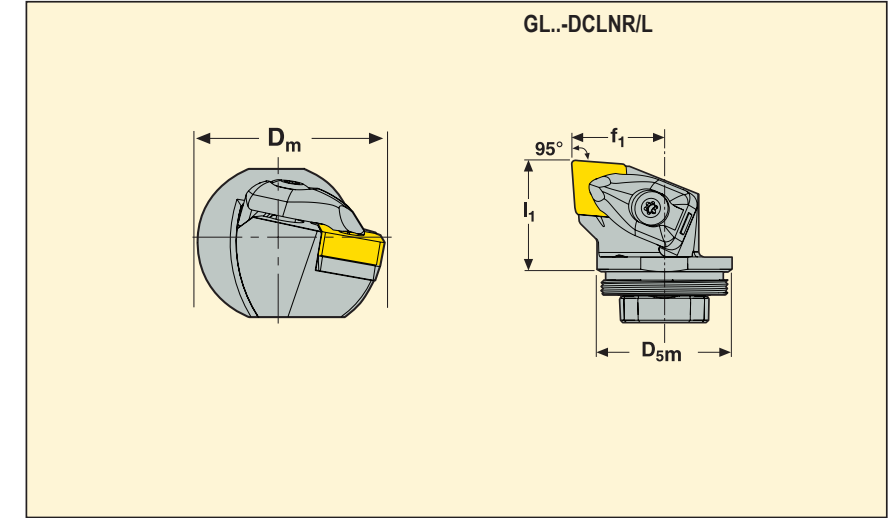
Shim key
5SMS795

*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"



Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	CC	
		D_m	f_i	l_i					
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 kit	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
...12	CD12-S12	FP2012	L85021-T15P	CD12-S	DCO120310	T15P-7	C04008-T15P	S6912
...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*

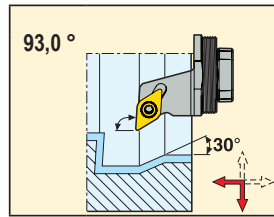
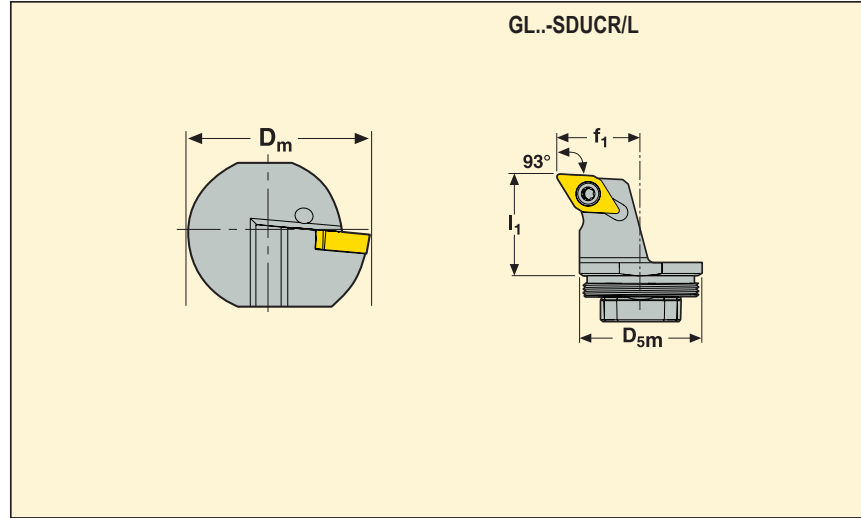
Clamp kit
CD12-S12
CD16-S16
CD19-S19

*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"



Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	Insert	
		D_m	f_i	l_i					
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..

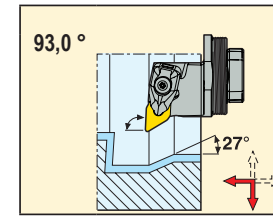
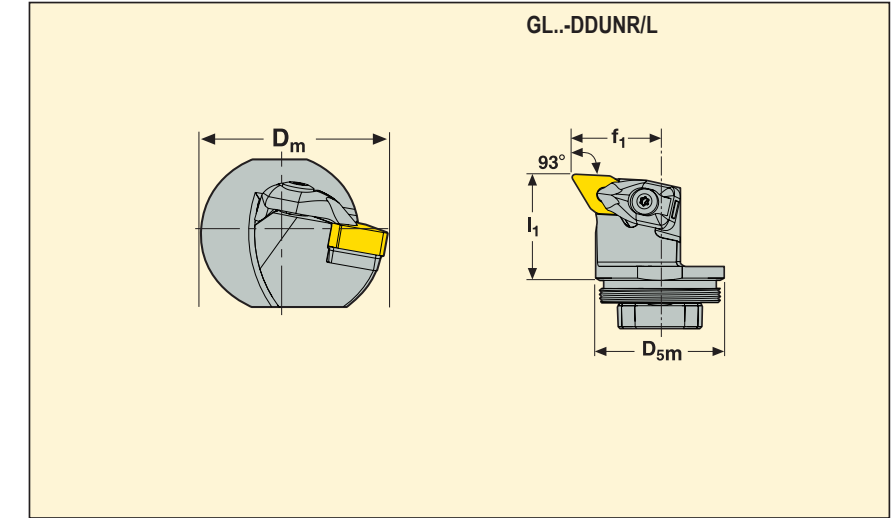
Spare Parts, Parts included in delivery

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"



Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	Insert	
		D_m	f_i	l_i					
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

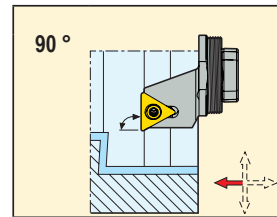
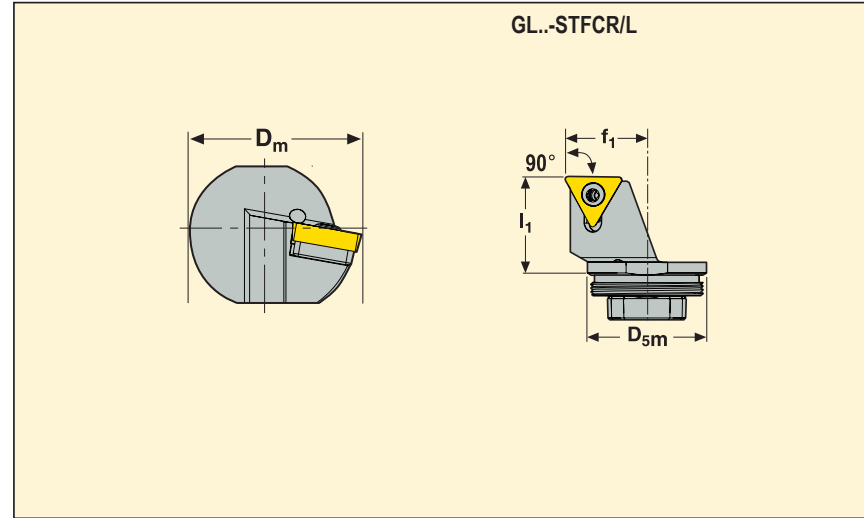
For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Accessories*
..-11	FP1508	L84017-T09P	CD09-S	DDN110310	T09P-2	C03007-T09P	S5608	CD09-S09
..-15	FP2012	L85021-T15P	CD12-S	DDN150416	T15P-7	C04008-T15P	S6912	CD12-S12

*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"

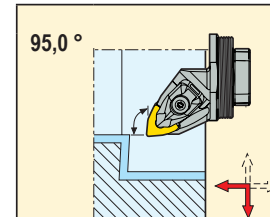
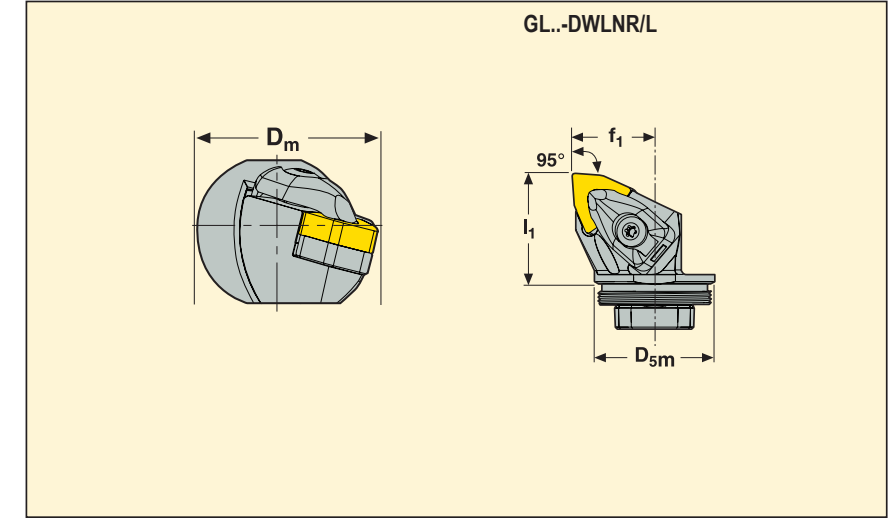


Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	Symbol	
		D_m	f_1	l_1					
GL32	16	GL32-STFCR-22032-16	40	22,0	32	0	-10	0,2	TC..16T3..
		GL32-STFCL-22032-16	40	22,0	32	0	-10	0,2	TC..16T3..
GL40	16	GL40-STFCR-27032-16	50	27,0	32	0	-8	0,2	TC..16T3..
		GL40-STFCL-27032-16	50	27,0	32	0	-8	0,2	TC..16T3..
GL50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

Toolholders for inserts with GL connection



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



Size	Part No.	Dimensions in mm			g_o°	l_s°	KG	Symbol	
		D_m	f_1	l_1					
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	Insert key	Insert screw	Insert shim	Shim screw	Shim key
..-16	T15P-2	C03509-T15P	STN160312	CA3510	9/64SMS875

Accessories*

*To be ordered separately

Spare Parts, Parts included in delivery

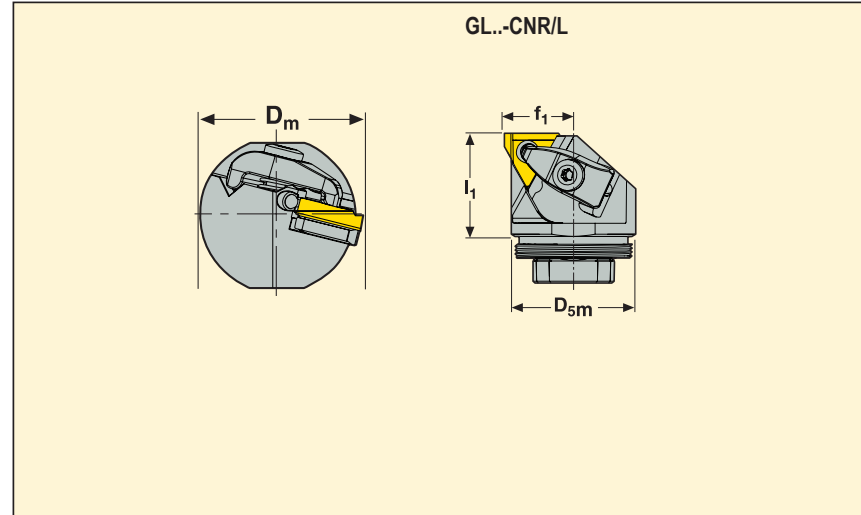
For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-06	FP1508	L84017-T09P	CD09-S	DWN060310	T09P-2	C03007-T09P	S5608	CD09-S09
..-08	FP2012	L85021-T15P	CD12-S	DWN080416	T15P-7	C04008-T15P	S6912	CD12-S12

Accessories*

*To be ordered separately

Toolholders for inserts with GL connection

Snap-Tap®



• For complete insert programme, see Machining Navigator “Turning Catalogue”

Application	Part No.	Dimensions in mm				KG	Image
		D _{5m}	l ₁	f ₁	D _m		
	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.



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 $\varnothing 20$ mm to over $\varnothing 160$ 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

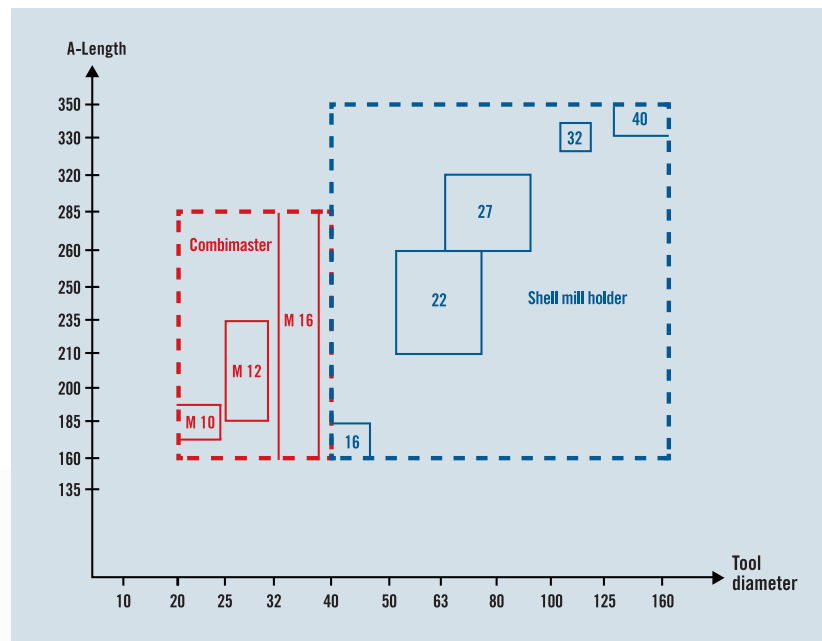
Providing an ideal solution across a range of applications, shell-mill holders excel for slot milling, square shoulder milling, contouring, face milling, helical interpolation ramping and copy milling.

- Arbor: $\varnothing 16$ mm to $\varnothing 40$ 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 1: SHELL MILL CONVENTIONAL MILLING TOOL

Operation: Pocket milling
Cutter: R220.97-0050-V22.2A
Tooling: C639155522210
Insert: VPGX220640ER-E10, H25
Material: AlZnMgCu1.5

Cutting data	Metric	v_c	f_z
		1180m/min	0.25 mm/tooth
	Metric	a_p	a_e
	3.5 mm	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	f_z
		1270m/min	0.25 mm/tooth
	Metric	a_p	a_e
	7.0 mm	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 ($\varnothing 20$ mm)
Tooling: E9304582010185
Material: 1.1206 CK50

Cutting data	Metric	v_c	f_z
		312m/min	0.3 mm/tooth
	Metric	a_p	a_e
	0.9 mm	4.0 mm	

CASE 2: COMBIMASTER AV SYSTEM

Operation: Side milling
Cutter: R217.69-1020 RE 10-3A ($\varnothing 20$ mm)
Tooling: E9304K82010185
Material: 1.1206 CK50

Cutting data	Metric	v_c	f_z
		312 m/min	0.3 mm/tooth
	Metric	a_p	a_e
	2.2 mm	4.0 mm	

- Results**
- Increased cutting depth: $a_p \times 2,3$

CASE 3: COMBIMASTER CONVENTIONAL MILLING TOOL

Operation: Slotting
Cutter: R217.69-1020 RE 10-3A ($\varnothing 20$ mm)
Tooling: E9304582010185
Material: 1.1206 CK50

Cutting data	Metric	v_c	f_z
		200 m/min	0.16 mm
	Metric	a_p	a_e
	0.25 mm	20 mm	

CASE 3: COMBIMASTER AV SYSTEM

Operation: Slotting
Cutter: R217.69-1020 RE 10-3A ($\varnothing 20$ mm)
Tooling: E9304K82010185
Material: 1.1206 CK50

Cutting data	Metric	v_c	f_z
		200 mm/min	0.16 mm
	Metric	a_p	a_e
	0.8 mm	20 mm	

- Results**
- 3 times higher cutting depth

MONOBLOC HOLDERS HSK-A

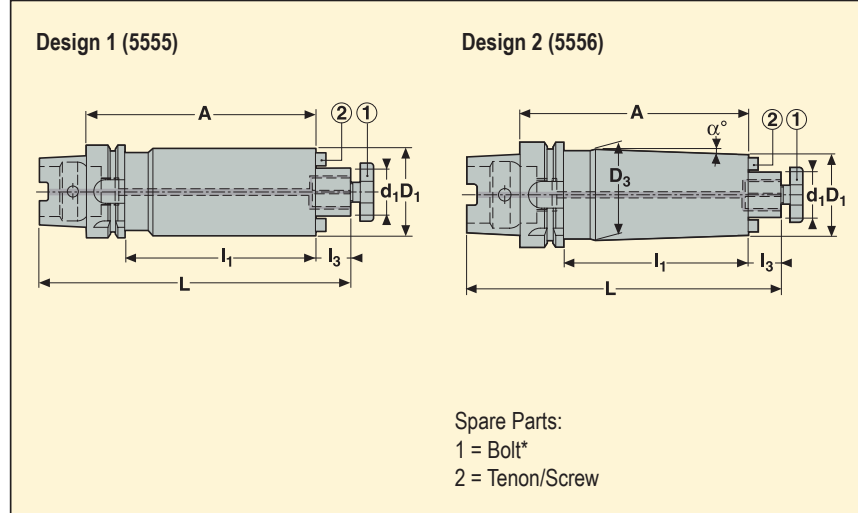


EPB 5555/5556 – Steadyline, vibration damping shell mill holders

HSK-A/ ISO12164-1-A



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



Taper	d ₁ mm	Part No.	Dimensions in mm						Design	a°	Balancing	KG
			A	D ₁	D ₃	L	I ₁	I ₃				
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	E930655532330	330	78	–	404	301	24	1	–	2	14,42
	40	E9306555540350	350	89	–	424	321	27	1	–	2	19,40

d₁ 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

Spare Parts*

For d ₁	Spanner	For d ₁	Bolt	Screw	Tenon
16	5811608	16	5801608	951D0312	16C2080810A
22	5812210	22	5802210	951D0416	16C2101111
27	5812712	27	5802712	951D0516	16C2121214A
32	5813216	32	5803216	951D0516	16C2141421A
40	5814020	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.

MONOBLOC HOLDERS DIN 69871

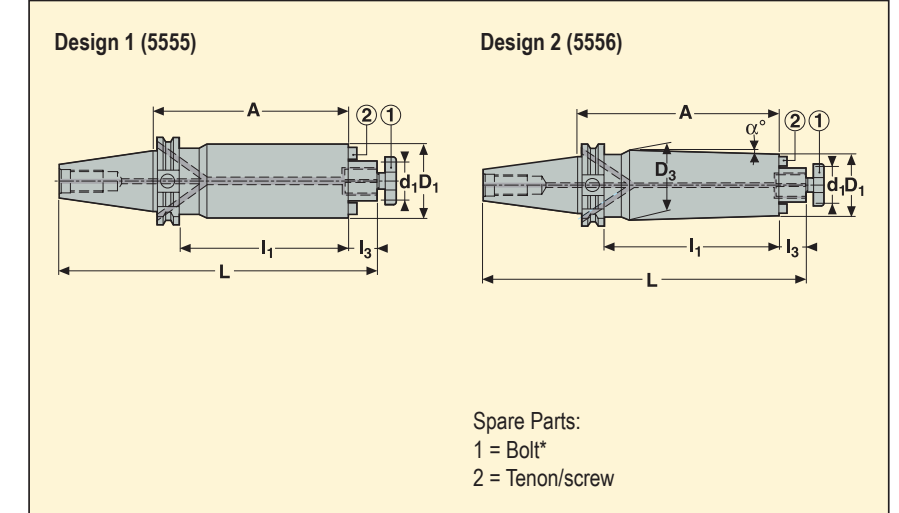


EPB 5555/5556 – Steadyline, vibration damping shell mill holders

DIN 69871-ADB



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



Taper	d ₁ mm	Part No.	Dimensions in mm						Design	a°	Balancing	KG
			A	D ₁	D ₃	L	I ₁	I ₃				
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

d₁ 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

Spare Parts*

For d ₁	Spanner	For d ₁	Bolt	Screw	Tenon
16	5811608	16	5801608	950D0312	16C2080810A
22	5812210	22	5802210	950D0416	16C2101111
27	5812712	27	5802712	950D0516	16C2121214A
32	5813216	32	5803216	950D0516	16C2141421A
40	5814020	40	5804020	950D0616	16C2161621A

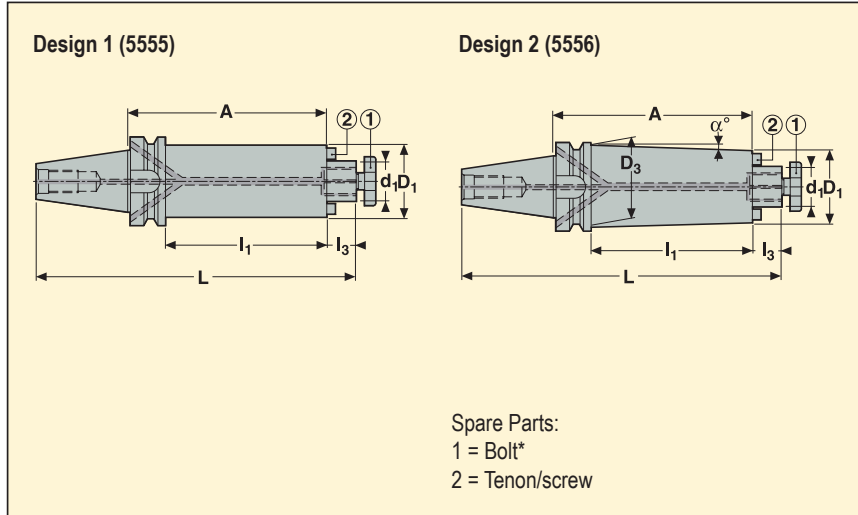
* These centre bolts are similar to the original delivered ones: check if lengths L are suitable for the milling cutters used, therefore see instructions in catalogue's Guide pages or in the Operating instructions sheet delivered with the holders.

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



Taper	d ₁ mm	Part No.	Dimensions in mm						Design	a°	Balancing	KG
			A	D ₁	D ₃	L	l ₁	l ₃				
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

d₁ 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

Spare Parts*

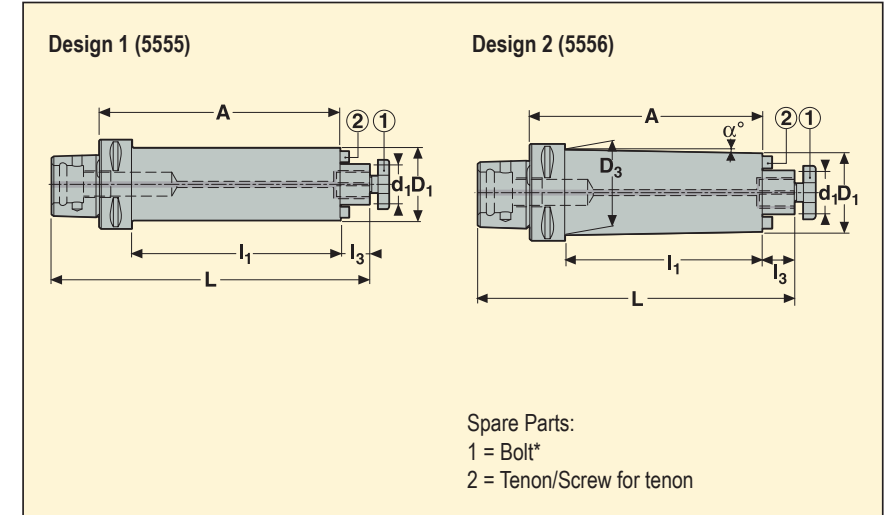
For d ₁	Spanner	For d ₁	Bolt	Screw	Tenon
16	5811608	16	5801608	950D0312	16C2080810A
22	5812210	22	5802210	950D0416	16C2101111
27	5812712	27	5802712	950D0516	16C2121214A
32	5813216	32	5803216	950D0516	16C2141421A
40	5814020	40	5804020	950D0616	16C2161621A

* 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



Seco-Capto™ shank	d ₁ mm	Part No.	Dimensions in mm						Design	a°	Balancing	KG
			A	D ₁	D ₃	L	l ₁	l ₃				
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

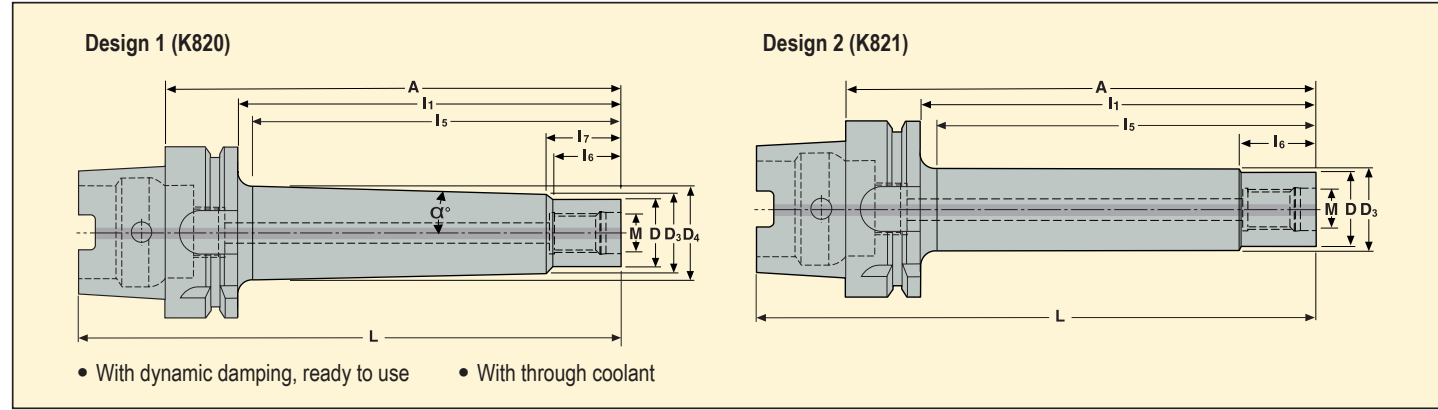
d₁ 40, includes 4 threaded holes on the bearing face according to DIN 6357

Accessories

Spare Parts*

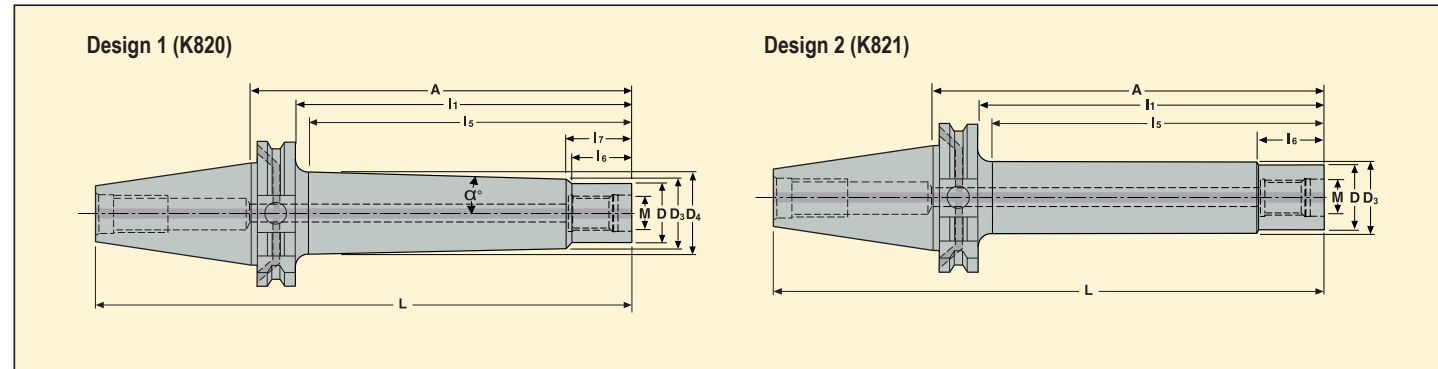
For d ₁	Spanner	For d ₁	Bolt	Screw	Tenon
16	5811608	16	5801608	951D0312	16C2080810A
22	–	22	5802210	951D0416	16C2101111
22	5812210	27	5802712	951D0516	16C2121214A
27	5812712	32	5803216	951D0516	16C2141421A
32	5813216	40	5804020	951D0616	16C2161621A
40	5814020				

* 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

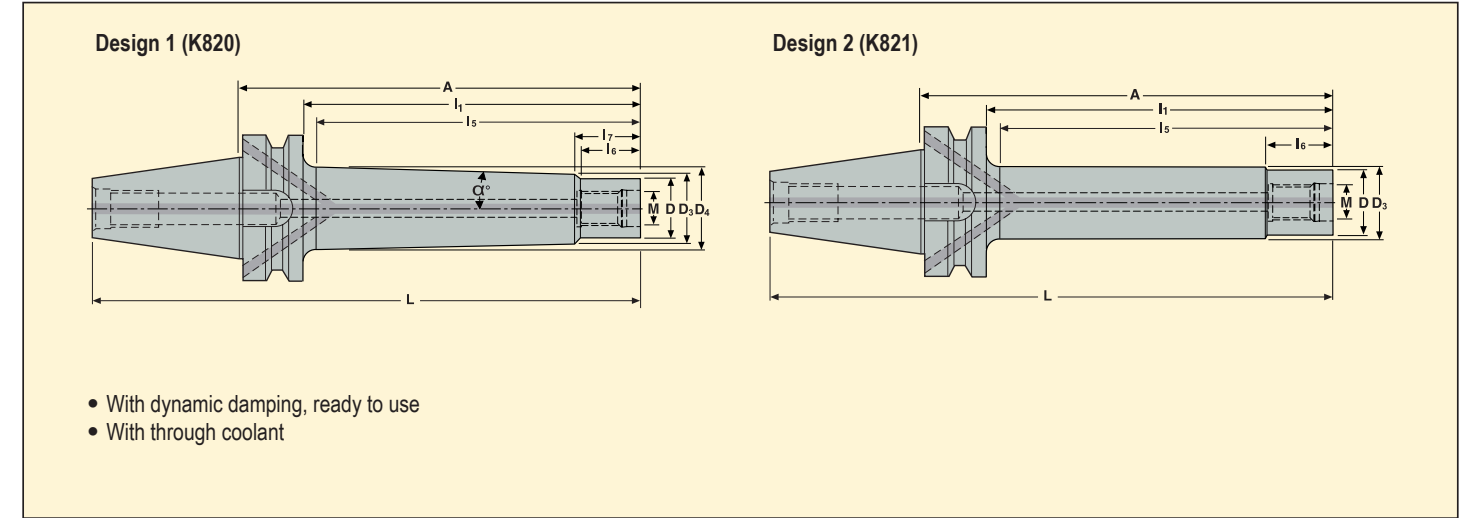


Taper	Connecting thread size	Part No.	Dimensions in mm										a°	Design	Max rpm	Balancing	KG
			A	L	I ₁	I ₅	I ₆	I ₇	D	D ₃	D ₄						
HSK-A63	M10	E9304K82010185	185	217	159	154,2	20,0	22,8	18,5	24,0	36,6	2,8	1	12000	2	1,51	
	M12	E9304K82012185	185	217	159	154,2	20,0	23,4	23,0	29,5	42,0	2,8	1	12000	2	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



Taper	Connecting thread size	Part No.	Dimensions in mm										a°	Design	Max rpm	Balancing	KG
			A	L	I ₁	I ₅	I ₆	I ₇	D	D ₃	D ₄						
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	



Taper	Connecting thread size	Part No.	Dimensions in mm										a°	Design	Max rpm	Balancing	KG
			A	L	I ₁	I ₅	I ₆	I 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	



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