

9. Clamping systems

Clamping systems

Clamping system produced in the form of collet chucks, clamping arbors, hydro sleeves and special sleeves. Clamping elements are designed for precise locating of tools with cylindrical and axial bore.

Clampings elements are made from the highest quality steel in special heat treatment technology, properly selected for the type of tools working with a sleeve or shank as well as parameters and conditions prevailing during the machining, in order to guarantee stiffness of the system and proper work of tools, both in standard and extreme conditions.

All types of clamping elements are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for.

The *Clamping systems* chapter includes only example types of collet chucks, arbors and hydro sleeves with basic dimensions. On special request, we can suggest, design and produce also tools with ISO, HSK and hydro clamping as monolith, where clamping is an integral part of the cutter. The whole system can't be dismantled which allows for precise sharpening and balancing of the tool. Time of production of a chosen clamping system marked with "+" as well as systems on client's special request usually doesn't exceed 10-15 working days.



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Pictograms



hydro clamping



HSK 85 WS clamping



CNC centre

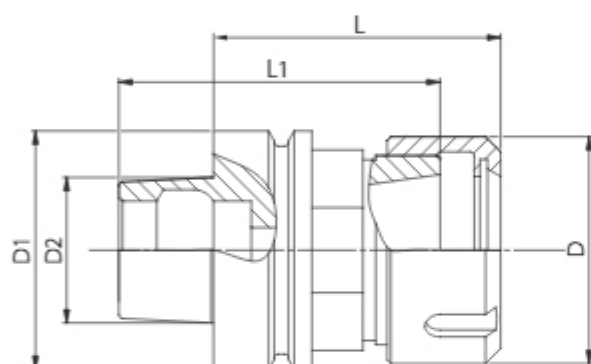
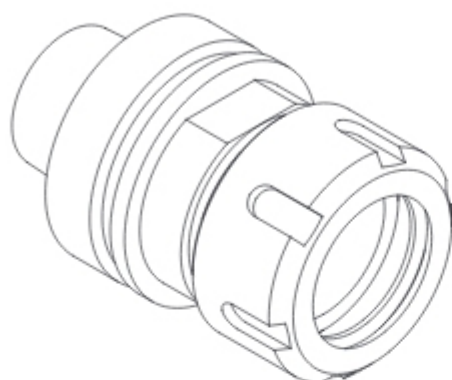


pressure generated with a pump



pressure generated with a key

HSK 50F HSK 63F



Collet chuck type **HSK 50F** and **HSK 63F** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69893. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut.

Type of work: CNC machines equipped with automatic tool magazine with feeder.



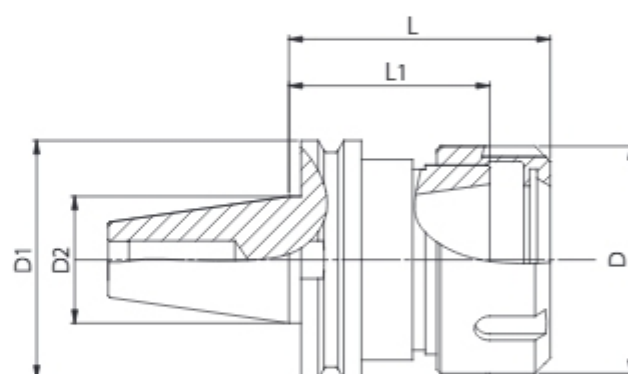
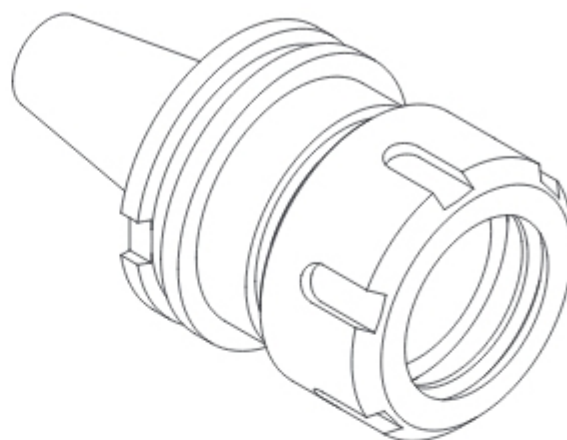
Catalogue number	Type	Collet type	D	D1	L	L1	D2	
TCNC.1001P	HSK 50	ER 32	50	50	72,5	50	30	+
TCNC.1001L	HSK 50	ER 32	50	50	72,5	50	30	+
TCNC.1002P	HSK 50	ER 40	63	50	76,5	62	30	+
TCNC.1002L	HSK 50	ER 40	63	50	76,5	62	30	+
TCNC.1003P	HSK 63	ER 32	50	63	72,5	50	38	+
TCNC.1003L	HSK 63	ER 32	50	63	72,5	50	38	+
TCNC.1004P	HSK 63	ER 40	63	63	76,5	62	38	+
TCNC.1004L	HSK 63	ER 40	63	63	76,5	62	38	+

List of precision collets on page 9.11.

ISO 30

Collet chuck type **ISO 30** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69871. without necks and cuts. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut. Reduced vibration level during work.

Type of work: CNC machines.



CNC

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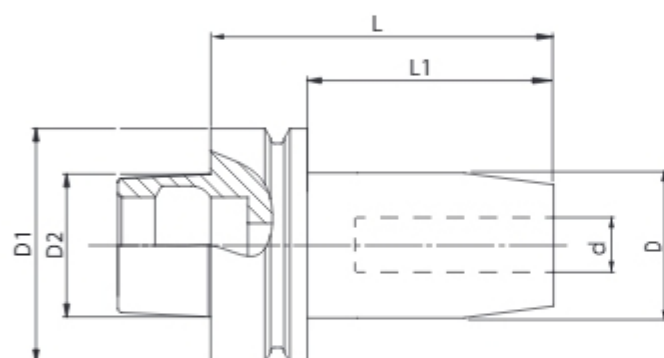
Catalogue number	Type	Collet type	D	D1	L	L1	D2	
TCNC.1005P	ISO 30	ER 32	50	50	48,5	36	31,75	•
TCNC.1005L	ISO 30	ER 32	50	50	48,5	36	31,75	+
TCNC.1006P	ISO 30	ER 40	63	50	58,5	42	31,75	•
TCNC.1006L	ISO 30	ER 40	63	50	58,5	42	31,75	+

Collet chucks are offered without mounting bolts.

List of mounting bolts on page 9.12.

List of precision collets on page 9.11.

HSK 63F HYDRO



Collet chuck type **HSK 50F** and **HSK 63F** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69893. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut.

Type of work: CNC machines equipped with automatic tool magazine with feeder.

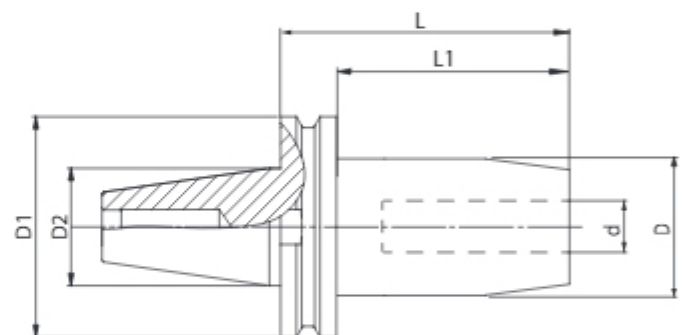


Catalogue number	Type	d	D	L	L1	D1	D2	
TCNH.1001	HSK 63F Hydro	10	30	90	65	63	38	+
TCNH.1002	HSK 63F Hydro	12	32	85	65	63	38	+
TCNH.1003	HSK 63F Hydro	16	38	95	69	63	38	+
TCNH.1004	HSK 63F Hydro	20	42	95	69	63	38	+
TCNH.1005	HSK 63F Hydro	25	52	120	94	63	38	+

Collet chuck type **ISO 30** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69871. without necks and cuts. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut. Reduced vibration level during work.

Type of work: CNC machines.

ISO 30 HYDRO



Catalogue number	Type	d	D	L	L1	D1	D2	
TCNH.1006	ISO 30 Hydro	10	30	95	75,9	50	31,75	+
TCNH.1007	ISO 30 Hydro	12	32	95	75,9	50	31,75	+
TCNH.1008	ISO 30 Hydro	16	42	100	80,9	50	31,75	+
TCNH.1009	ISO 30 Hydro	20	42	100	80,9	50	31,75	+
TCNH.1010	ISO 30 Hydro	25	52	110	90,9	50	31,75	+

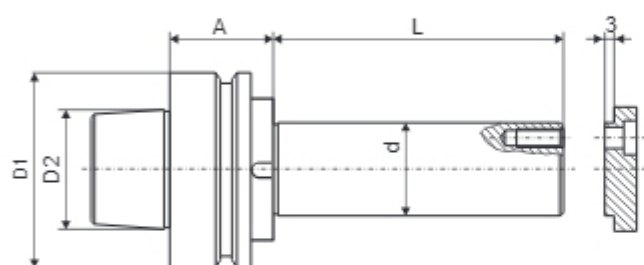
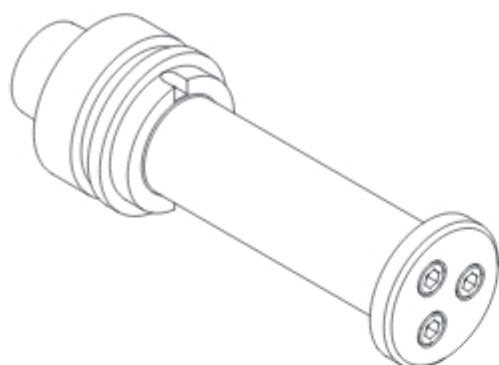
Collet chucks are offered without mounting bolts.

List of mounting bolts on page 9.12.

HSK 63F

Clamping arbor, type **HSK 63F** designed for mounting tools and sets of tools with axial hole. The arbor is equipped with precise conical hollow grip according to DIN 69893 and protection against rotation of the tools on the pilot part. Reduced vibration level thanks to precise balancing.

Type of work: CNC machines equipped with automatic tool magazine with feeder.



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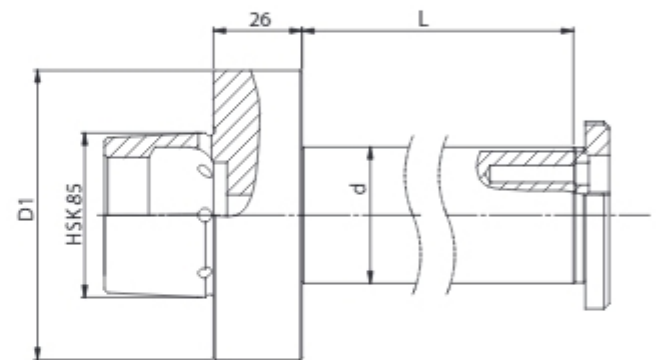
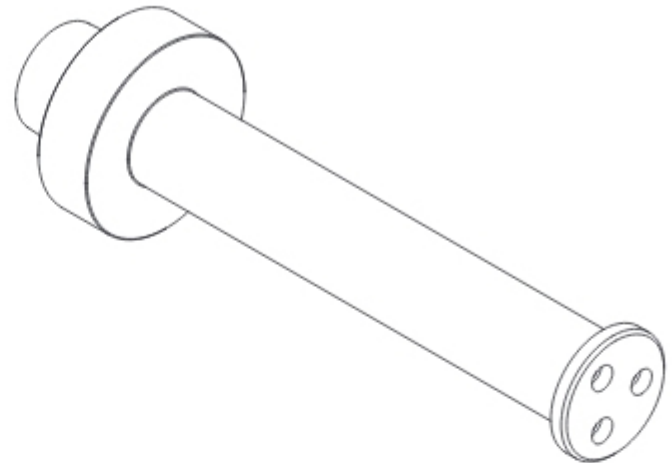
Catalogue number	Type	d mm	D1 mm	L	A	D2	
TCNC.1011	HSK 63	30	63	70	33	38	•
TCNC.1012	HSK 63	30	63	93	33	38	•
TCNC.1013	HSK 63	30	63	93	42	38	+
TCNC.1014	HSK 63	30	63	103	33	38	•
TCNC.1015	HSK 63	30	63	103	42	38	•
TCNC.1016	HSK 63	40	63	93	33	38	•
TCNC.1017	HSK 63	40	63	93	42	38	+
TCNC.1018	HSK 63	40	63	103	33	38	+
TCNC.1019	HSK 63	40	63	103	42	38	+
TCNC.1020	HSK 63	40	63	123	33	38	+
TCNC.1021	HSK 63	40	63	123	42	38	+

Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

Clamping arbor, type **HSK 85** designed for mounting tools and sets of tools with axial hole. The arbor is equipped with precise conical grip HSK 85. Reduced vibration level thanks to precise balancing. Equipped with protection against rotation of the tools on the pilot part. Works together with saw blades, cutter heads cutters and sets of cutter heads and cutters.

Type of work: CNC machines with HSK 85 clamping.

HSK 85



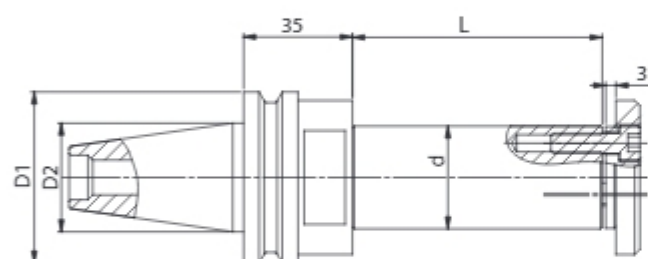
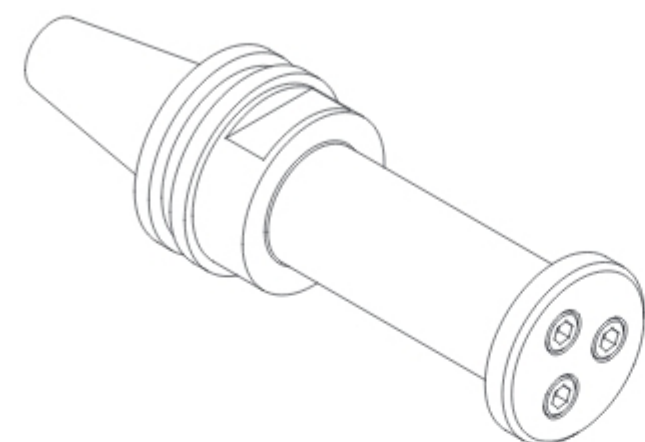
Catalogue number	Type	d mm	D1 mm	L	
TCNC.1109	HSK 85	30	85	60	+
TCNC.1110	HSK 85	30	85	90	+
TCNC.1112	HSK 85	30	85	130	+
TCNC.1079	HSK 85	40	85	60	•
TCNC.1078	HSK 85	40	85	90	•
TCNC.1107	HSK 85	40	85	100	+
TCNC.1050	HSK 85	40	85	130	•
TCNC.1108	HSK 85	40	85	150	+
TCNC.1086	HSK 85	40	85	180	+
TCNC.1120	HSK 85	50	85	60	+
TCNC.1119	HSK 85	50	85	90	+
TCNC.1121	HSK 85	50	85	100	+
TCNC.1122	HSK 85	50	85	130	+
TCNC.1123	HSK 85	50	85	150	+
TCNC.1124	HSK 85	50	85	180	+

Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

ISO 30

Clamping arbor, type **ISO 30** designed for mounting tools and sets of tools with axial hole. The arbor is equipped with precise conical grip according to DIN 69871 without necks and cuts. Works together with saw blades, cutter heads cutters and sets of cutter heads and cutters.

Type of work: CNC machines.



Catalogue number	Type	d mm	D1 mm	L	D2 mm	
TCNC.1022	ISO 30	30	50	73	30	+
TCNC.1023	ISO 30	30	50	93	30	+
TCNC.1024	ISO 30	30	50	103	30	+
TCNC.1025	ISO 30	30	50	123	30	+
TCNC.1026	ISO 30	40	50	73	38	+
TCNC.1027	ISO 30	40	50	93	38	+
TCNC.1028	ISO 30	40	50	103	38	+

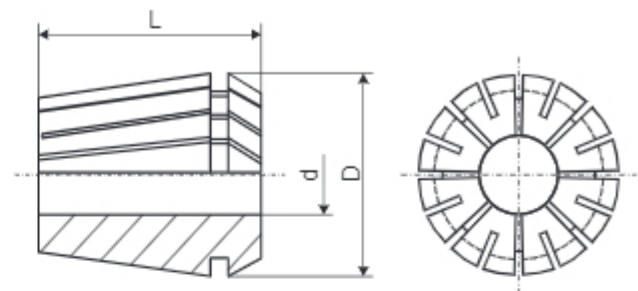
Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

Collet chucks are offered without mounting bolts.
List of mounting bolts on page 9.12.

Precision collet with increased manufacturing accuracy (0,008 mm), type ER designed for clamping systems. Produced according to DIN ISO 15488-B (DIN 6499-B). Equipped with double-slot clamping system increasing mounting concentricity. Automatically tightened and loosened.

Type of work: collet chucks type HSK 50F, HSK 63F and ISO 30 with a nut.

Precision collet

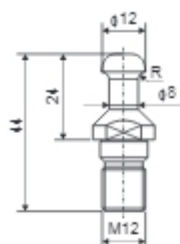


Catalogue number	Type	D	L	d	
U0010001	ER 32	33	40	4	+
U0010002				5	+
U0010003				6	+
U0010004				8	+
U0010005				10	+
U0010006				12	+
U0010007				14	+
U0010008				16	+
U0010009				18	+
U0010010				20	+
U0010012	ER 40	41	46	4	+
U0010013				5	+
U0010014				6	+
U0010015				8	+
U0010016				10	+
U0010017				12	+
U0010018				14	+
U0010019				16	+
U0010020				18	+
U0010021				20	+
U0010022				25	+

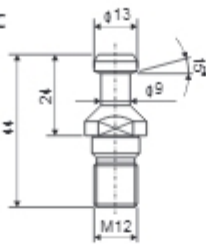
Precision collet pressure range = $d - 1\text{mm}$.

Bolts for collet chucks and grips ISO

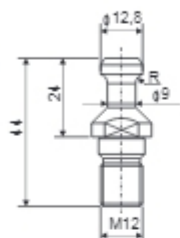
Type A



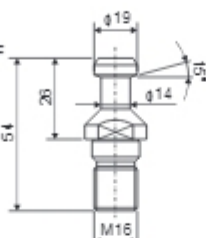
Type C



Type D



Type F



Type A - TCNC.1043 - Machine:

Biesse ab Bj. 09/1992, Masterwood (HSD)

Type C - TCNC.1045 - Machine:

IMA, Maka, Reichenbacher, Weeke, Busellato

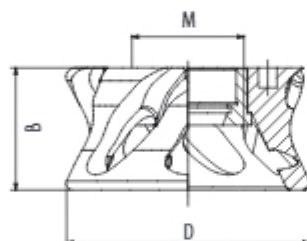
Type D - TCNC.1046 - Machine:

CMS

Type F - TCNC.1051 - Machine:

IMA, Maka, Reichenbacher, Stegherr

Tornado



Tornado is a spiral chip flow system. It works with HSK 50F, HSK 63F and ISO 30 collet chucks and guarantees effective chip flow, excellent working precision and noise reduction of the whole system.

The body is made from light and strong materials.

Replaces a standard nut.

Recommended for milling and nesting.

Catalogue number	Type	Sleeve type	D mm	B mm	M		
U0020001	Tornado	ER 32	98	44	40x1,5	P	•
U0020002	Tornado	ER 40	98	47	50x1,5	P	•
U0020004	Tornado	ER 32	98	44	40x1,5	L	+
U0020005	Tornado	ER 40	98	47	50x1,5	L	+

Accessories



Stand for assembling and disassembling tools in holders - guarantees safe, easy and stable nut loosening and tightening.

Hook knife - for nut tightening.

Torque wrench - allows for fixing proper torque during tool installation in order to avoid destroying elements and prevent loose assembly.

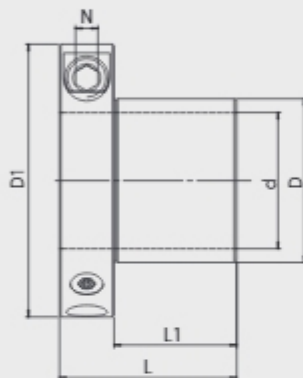
Catalogue number	Type	Socket type	Sleeve type	D mm (sleeve nuts)	
WHA102728	Stand for assembling and disassembling tools in holders	ISO 30, HSK 50	-	-	+
WHA102729	Stand for assembling and disassembling tools in holders	ISO 40, HSK 63	-	-	+
WHA102730	Stand for assembling and disassembling tools in holders	HSK 85	-	-	+
WHA12986	Fixing wrench		ER 32	50	•
WHA12721	Fixing wrench		ER 40	63	•
WHA102733	Torque wrench head, 1/2 inch groove		ER 32	50	+
WHA102734	Torque wrench head, 1/2 inch groove		ER 40	63	+
WHA102802	Torque wrench (60 Nm - 300 Nm)		-	-	+

Hydro sleeve, type **TK** (key regulated) is designed for multiple mounting of tools with a bore. Clamping the sleeve on the spindle takes place instantly, by turning the hexagonal key a few times.

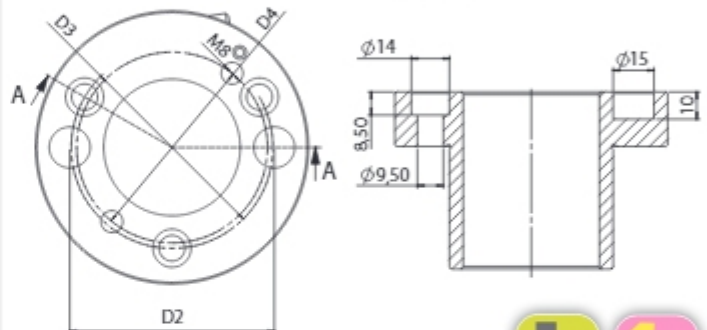
TK hydro sleeve guarantees easy change of a tool mounted on the sleeve, fixed to the sleeve's flange with 3 bolts. Serial positioning of tools. Hydro sleeves, type TK is a closed hydro system, permanently tightened, filled and ready to use. Pressure generated with regulation screw and key.

$L_{\max} = 160 \text{ mm}$

$L1_{\max} = 135 \text{ mm}$



Hydro sleeve type TK



Catalogue number	Type	D mm	d mm	L mm	L1 mm	D1 mm	D2 mm	D3 mm	D4 mm	N mm	
TK-50/40-75	TK	50	40	75	55	100	65	64	70	8	+
TK-60/40-55	TK	60	40	55	35	100	75	74	70	8	•
TK-60/40-75	TK	60	40	75	55	100	75	74	70	8	•
TK-60/40-95	TK	60	40	95	75	106	75	74	70	8	•
TK-60/40-115	TK	60	40	115	95	106	75	74	70	8	•
TK-60/40-140	TK	60	40	140	115	112	75	74	70	10	+
TK-60/50-55	TK	60	50	55	35	100	75	74	70	8	•
TK-60/50-75	TK	60	50	75	55	100	75	74	70	8	•
TK-60/50-95	TK	60	50	95	75	106	75	74	70	8	•
TK-60/50-115	TK	60	50	115	95	106	75	74	70	8	•
TK-60/50-140	TK	60	50	140	115	112	75	74	70	10	+

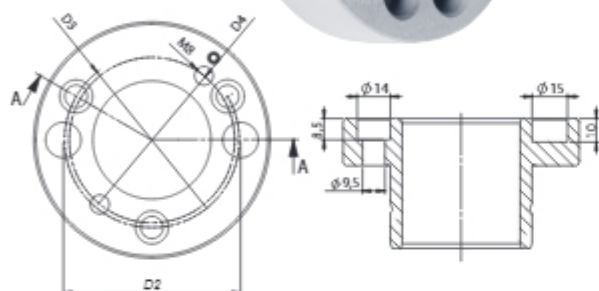
Catalogue number	Type	D mm	d	L mm	L1 mm	D1 mm	D2 mm	D3 mm	D4 mm	N mm	
TK-50/1-1/2-95	TK	50	1 1/2"	95	75	106	65	64	70	8	+
TK-60/1-13/16-75	TK	60	1 13/16"	75	55	100	75	74	70	8	+
TK-65/2-1/8-95	TK	65	2 1/8"	95	75	106	80	80	75	8	+

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

Spare and extra parts, including locking collar and fixing bolts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TKG



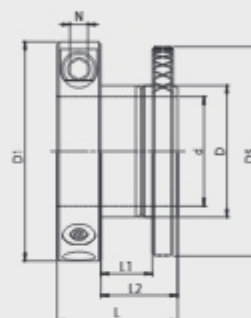
Hydro sleeve, type **TKG** (key regulated, with a thread) is designed for multiple mounting of tools with a bore. Clamping the sleeve on the spindle takes place instantly, by turning the hexagonal key a few times.

TKG hydro sleeve guarantees easy change of a tool mounted on the sleeve and protected with a ring nut with 3 protection screws.

Serial positioning of tools. Hydro sleeves, type TK is a closed hydro system, permanently tightened, filled and ready to use. Pressure generated with regulation screw and key.

$L_{max} = 160 \text{ mm}$

$L1_{max} = 135 \text{ mm}$



Catalogue number	Type	D mm	d mm	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	N mm	
TKG-50/40-75	TKG	50	40	75	40	55	100	65	64	70	85	8	+
TKG-60/40-75	TKG	60	40	75	40	55	100	75	74	70	95	8	+
TKG-60/40-95	TKG	60	40	95	60	75	106	75	74	70	95	8	+
TKG-60/40-115	TKG	60	40	115	80	95	106	75	74	70	95	8	+
TKG-60/40-140	TKG	60	40	140	100	115	112	75	74	70	95	10	+
TKG-60/50-75	TKG	60	50	75	40	55	100	75	74	70	95	8	+
TKG-60/50-95	TKG	60	50	95	60	75	106	75	74	70	95	8	+
TKG-60/50-115	TKG	60	50	115	80	95	106	75	74	70	95	8	+
TKG-60/50-140	TKG	60	50	140	100	115	112	75	74	70	95	10	+

Catalogue number	Type	D mm	d	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	N mm	
TKG-50/1-1/2-95	TKG	50	1 1/2"	95	60	75	106	65	64	70	85	8	+
TKG-50/1-1/2-140	TKG	50	1 1/2"	140	105	120	106	65	64	70	85	8	+
TKG-60/1-13/16-75	TKG	60	1 13/16"	75	40	55	100	75	74	70	95	8	+
TKG-60/1-13/16-115	TKG	60	1 13/16"	115	80	95	106	75	74	70	95	8	+
TKG-60/1-13/16-140	TKG	60	1 13/16"	140	105	115	112	75	74	70	95	10	+
TKG-65/1-13/16-95	TKG	65	1 13/16"	95	60	75	106	80	80	75	100	8	+
TKG-65/2-1/8-95	TKG	65	2 1/8"	95	60	75	106	80	80	75	100	8	+

Hydro sleeve includes ring nut and 3 protection screws M6x10.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

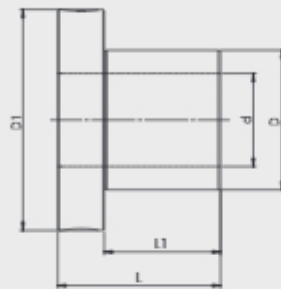
Hydro sleeve, type **TH** (pump regulated) is designed for multiple mounting of tools with a bore.

TH hydro sleeve guarantees easy change of a tool mounted on the sleeve, fixed to the sleeve's flange with 3 bolts.

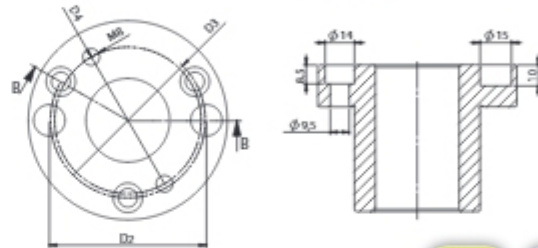
Serial positioning of tools. Pressure generated with high-pressure grease pump. Works also with longer pilot parts.

$L_{\max} = 260 \text{ mm}$

$L1_{\max} = 240 \text{ mm}$



Hydro sleeve type TH



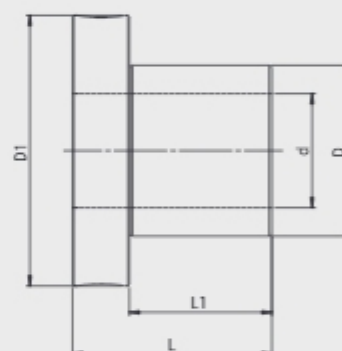
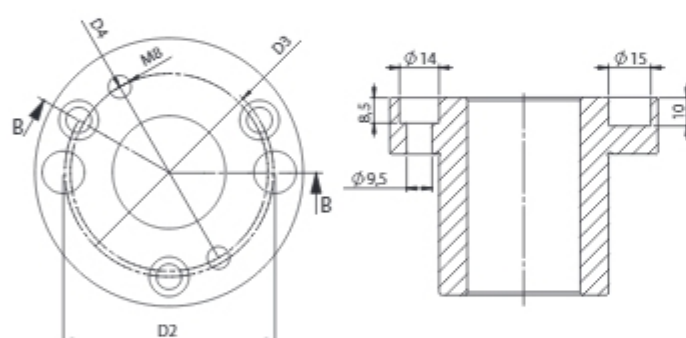
Catalogue number	Type	D mm	d mm	L mm	L1 mm	D1 mm	D2 mm	D3 mm	D4 mm	
TH-59,96/45-55	TH	59,96	45	55	35	95	75	74	70	+
TH-59,96/45-75	TH	59,96	45	75	55	95	75	74	70	+
TH-59,96/45-95	TH	59,96	45	95	75	95	75	74	70	+
TH-59,96/50-55	TH	59,96	50	55	35	95	75	74	70	+
TH-59,96/50-75	TH	59,96	50	75	55	95	75	74	70	+
TH-59,96/50-95	TH	59,96	50	95	75	95	75	74	70	+
TH-60/40-55	TH	60	40	55	35	95	75	74	70	•
TH-60/40-75	TH	60	40	75	55	95	75	74	70	•
TH-60/40-95	TH	60	40	95	75	95	75	74	70	•
TH-60/40-115	TH	60	40	115	95	95	75	74	70	+
TH-60/40-165	TH	60	40	165	145	95	75	74	70	+
TH-60/45-55	TH	60	45	55	35	95	75	74	70	•
TH-60/45-75	TH	60	45	75	55	95	75	74	70	•
TH-60/45-95	TH	60	45	95	75	95	75	74	70	+
TH-60/50-55	TH	60	50	55	35	95	75	74	70	•
TH-60/50-75	TH	60	50	75	55	95	75	74	70	•
TH-60/50-95	TH	60	50	95	75	95	75	74	70	•
TH-60/50-115	TH	60	50	115	95	95	75	74	70	•
TH-60/50-140	TH	60	50	140	120	95	75	74	70	•
TH-60/50-190	TH	60	50	190	170	95	75	74	70	•
TH-60/50-230	TH	60	50	230	210	95	75	74	70	+
TH-70/60-55	TH	70	60	55	35	105	85	86	85	+
TH-70/60-75	TH	70	60	75	55	105	85	86	85	•
TH-70/60-230	TH	70	60	230	210	105	85	86	85	+

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

Spare and extra parts, including safety collar and fixing bolts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TH



Catalogue number	Type	D mm	d	L mm	L1 mm	D1 mm	D2 mm	D3 mm	D4 mm	
TH-50/1-1/2-95*	TH	50	1 1/2"	95	60	85	65	64	-	+
TH-60/1-13/16-75	TH	60	1 13/16"	75	55	95	75	74	70	+
TH-65/1-13/16-95	TH	65	1 13/16"	95	75	100	80	80	75	+
TH-65/1-13/16-140	TH	65	1 13/16"	140	120	100	80	80	75	+

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

* No safety pins possible.

Spare and extra parts, including safety collar and fixing bolts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

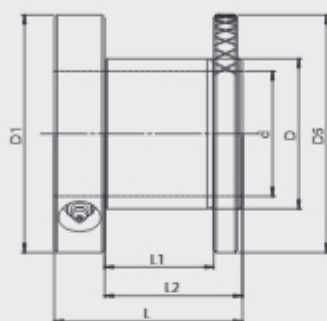
Hydro sleeve, type **THG** (pump regulated, with a thread) is designed for multiple mounting of tools with a bore.

THG hydro sleeve guarantees easy change of a tool mounted on the sleeve and protected with a ring nut with 3 protection screws.

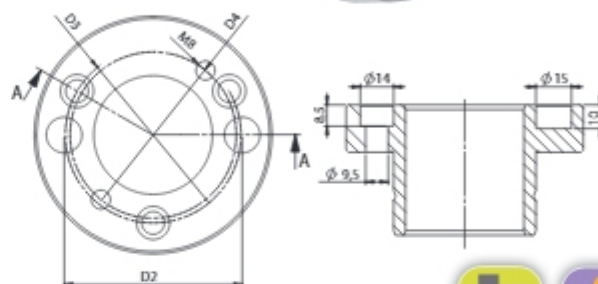
Serial positioning of tools. Pressure generated with high-pressure grease pump. Works also with longer pilot parts.

$L_{\max} = 260 \text{ mm}$

$L1_{\max} = 225 \text{ mm}$



Hydro sleeve typ THG



Catalogue number	Type	D mm	d mm	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	
THG-50/40-75*	THG	50	40	75	40	55	85	65	64	-	85	+
THG-50/40-115*	THG	50	40	115	80	95	85	65	64	-	85	+
THG-59,96/45-75	THG	59,96	45	75	40	55	95	75	74	70	95	+
THG-59,96/45-95	THG	59,96	45	95	60	75	95	75	74	70	95	+
THG-59,96/45-115	THG	59,96	45	115	80	95	95	75	74	70	95	+
THG-59,96/45-140	THG	59,96	45	140	105	120	95	75	74	70	95	+
THG-59,96/45-190	THG	59,96	45	190	155	170	95	75	74	70	95	+
THG-59,96/50-75	THG	59,96	50	75	40	55	95	75	74	70	95	+
THG-59,96/50-95	THG	59,96	50	95	60	75	95	75	74	70	95	+
THG-59,96/50-115	THG	59,96	50	115	80	95	95	75	74	70	95	+
THG-59,96/50-140	THG	59,96	50	140	105	120	95	75	74	70	95	+
THG-59,96/50-190	THG	59,96	50	190	155	170	95	75	74	70	95	+
THG-60/40-75	THG	60	40	75	40	55	95	75	74	70	95	•
THG-60/40-95	THG	60	40	95	60	75	95	75	74	70	95	•
THG-60/40-115	THG	60	40	115	80	95	95	75	74	70	95	•
THG-60/40-140	THG	60	40	140	105	120	95	75	74	70	95	+
THG-60/40-190	THG	60	40	190	155	170	95	75	74	70	95	+
THG-60/40-220	THG	60	40	220	185	200	95	75	74	70	95	+
THG-60/45-75	THG	60	45	75	40	55	95	75	74	70	95	•
THG-60/45-95	THG	60	45	95	60	75	95	75	74	70	95	•
THG-60/45-115	THG	60	45	115	80	95	95	75	74	70	95	•
THG-60/45-140	THG	60	45	140	105	120	95	75	74	70	95	+
THG-60/45-190	THG	60	45	190	155	170	95	75	74	70	95	+

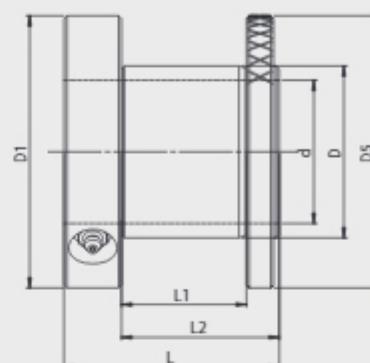
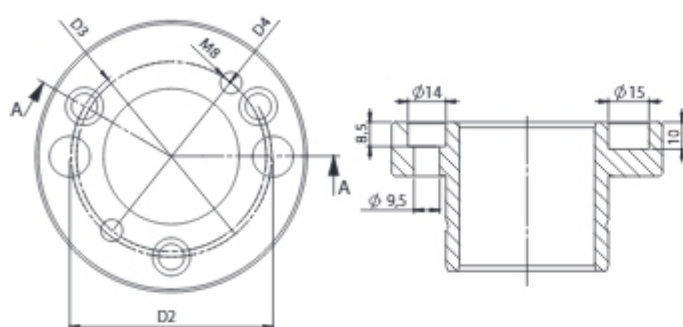
Hydro sleeve includes ring nut and 3 protection screws M6x10.

* No safety pins possible.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type THG



Catalogue number	Type	D mm	d mm	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	
THG-60/50-75	THG	60	50	75	40	55	95	75	74	70	95	•
THG-60/50-95	THG	60	50	95	60	75	95	75	74	70	95	•
THG-60/50-115	THG	60	50	115	80	95	95	75	74	70	95	•
THG-60/50-140	THG	60	50	140	105	120	95	75	74	70	95	+
THG-60/50-190	THG	60	50	190	155	170	95	75	74	70	95	+
THG-60/50-240	THG	60	50	240	205	220	95	75	74	70	95	+
THG-70/60-75	THG	70	60	75	40	55	105	85	86	85	105	+
THG-70/60-140	THG	70	60	140	105	120	105	85	86	85	105	+
THG-70/60-190	THG	70	60	190	155	170	105	85	86	85	105	+

Catalogue number	Type	D mm	d	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	
THG-50/1-1/2-95*	THG	50	1 1/2"	95	60	75	85	65	64	-	85	+
THG-50/1-1/2-140*	THG	50	1 1/2"	140	105	120	85	65	64	-	85	+
THG-50/1-1/2-190*	THG	50	1 1/2"	190	155	170	85	65	64	-	85	+
THG-60/1-13/16-75	THG	60	1 13/16"	75	40	55	95	75	74	70	95	+
THG-60/1-13/16-115	THG	60	1 13/16"	115	80	95	95	75	74	70	95	+
THG-60/1-13/16-190	THG	60	1 13/16"	190	155	170	95	75	74	70	95	+
THG-65/1-13/16-95	THG	65	1 13/16"	95	60	75	100	80	80	75	100	+
THG-65/1-13/16-140	THG	65	1 13/16"	140	105	120	100	80	80	75	100	+
THG-65/1-13/16-190	THG	65	1 13/16"	190	155	170	100	80	80	75	100	+
THG-65/2-1/8-95	THG	65	2 1/8"	95	60	75	100	80	80	75	100	+
THG-65/2-1/8-140	THG	65	2 1/8"	140	105	120	100	80	80	75	100	+
THG-65/2-1/8-190	THG	65	2 1/8"	190	155	170	100	80	80	75	100	+

Hydro sleeve includes ring nut and 3 protection screws M6x10.

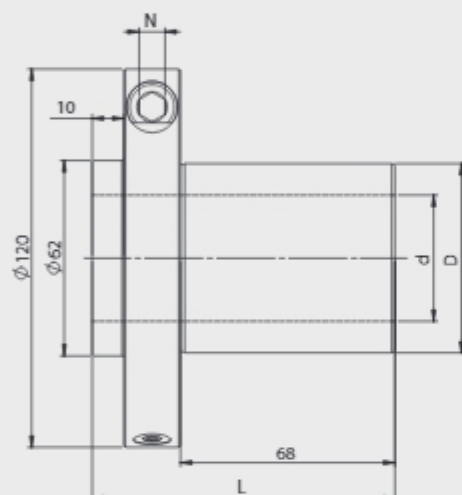
* No safety pins possible.

Spare and extra parts on page 9.23.

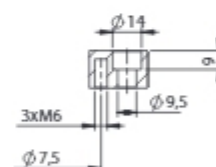
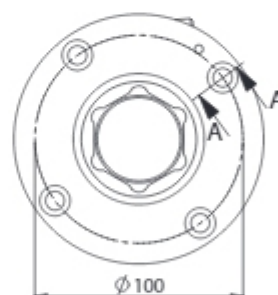
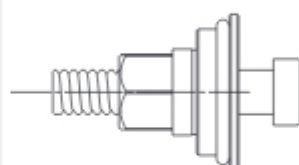
More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve, type **TI** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 96 \text{ mm}$



Hydro sleeve type TI



9

Catalogue number	Type	D	d	L	N
TI-60/40-96	TI	60	40	96	8

Spare parts for Hydro Sleeve type TI

Cat. nr	Name	Dimensions			
WHAI1111	Spindle protection	49,5 x 79		•	
WHAS00187	Screw	M14 x 70		•	
WHAP05689	Safety ring	120/60 x 9,5		+	
WHAS00186	Screw DIN 912	M8 x 75		+	
Cat. nr	Name	Dimensions			
WHAP02768	Spacer ring	120/60 x 1,0		+	
WHAP05686	Spacer ring	120/60 x 2,0		+	
WHAP05688	Spacer ring	120/60 x 5,0		+	
WHAP02889	Spacer ring	120/60 x 10,0		+	

Hydro sleeve includes 4 fixing bolts M8x30 DIN 912.

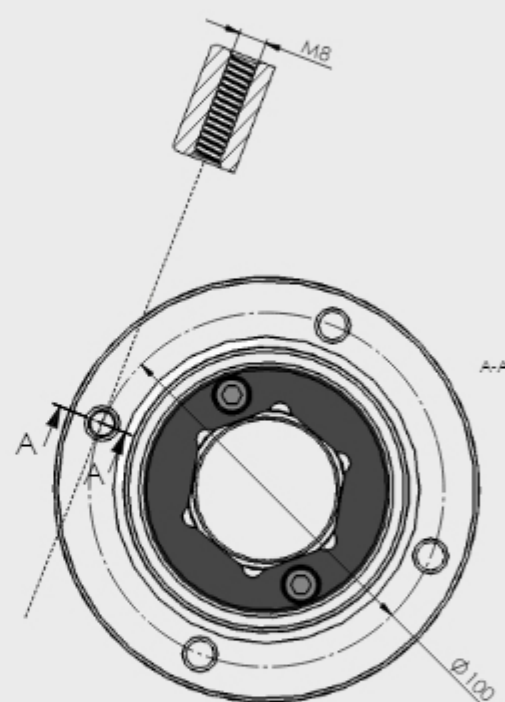
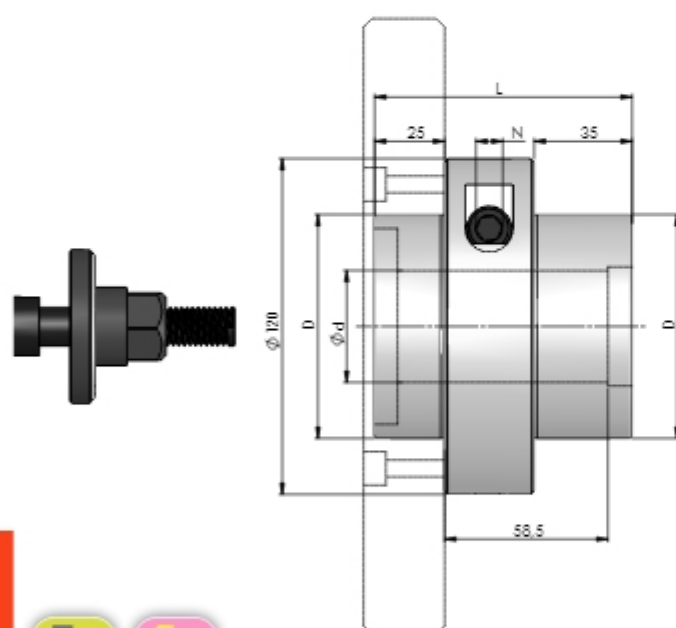
Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TI2

Hydro sleeve, type **TI2** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 92 \text{ mm}$



9



Catalogue number	Type	D	d	L	N	
TI2-80/40-92	TI2	80	40	92	8	•

Spare parts for Hydro Sleeve type TI2

Cat. nr	Name	Dimensions		
WHA12341	Spindle protection	54,9 x 84		•
WHA11458A	Spacer ring	70x8,5/42		+
WHAS00187	Screw	M14 x 70		•

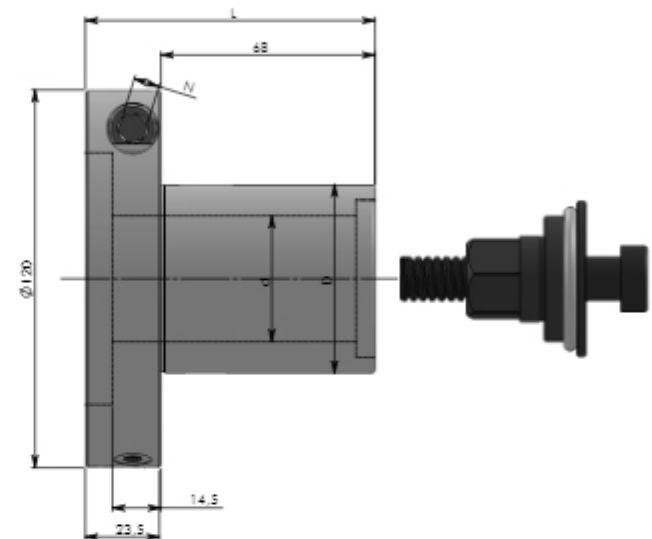
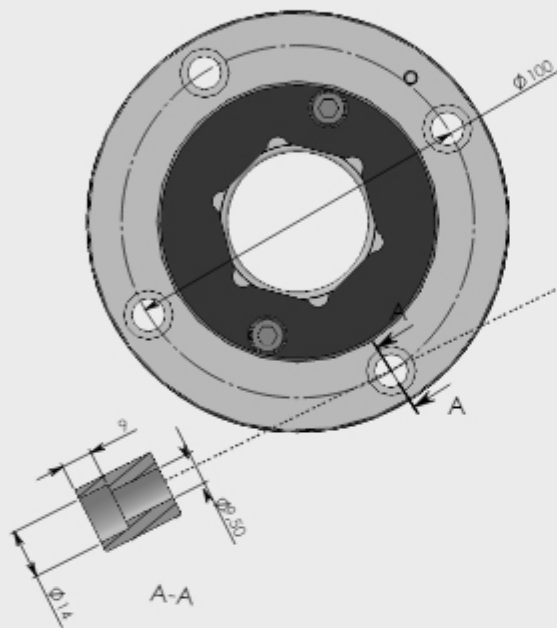
Hydro sleeve includes 4 fixing bolts M8x45 DIN 912.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve, type **T13** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 92 \text{ mm}$



Catalogue number	Type	D	d	L	N	
T13 -60/40-92	T13	60	40	92	8	+

Spare parts for Hydro Sleeve type T1

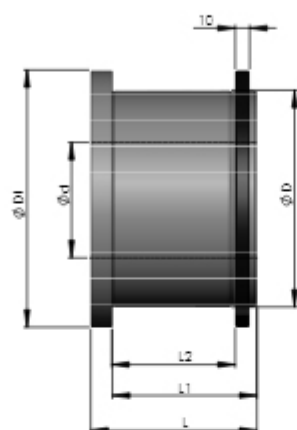
Cat. nr	Name	Dimensions			Cat. nr	Name	Dimensions		
WHAI1111	Spindle protection	49,5 x 79		•	WHAP02768	Spacer ring	120/60 x 1,0		•
WHAS00187	Screw	M14 x 70		•	WHAP05686	Spacer ring	120/60 x 2,0		•
WHAP05689	Safety ring	120/60 x 9,5		•	WHAP05688	Spacer ring	120/60 x 5,0		•
WHAS00186	Screw DIN 912	M8 x 75		+	WHAP02889	Spacer ring	120/60 x 10,0		•
					WHAI1458	Spindle lock	80/8,5		+

Hydro sleeve includes 4 fixing bolts M8x30 DIN 912.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeves type THL / THLG



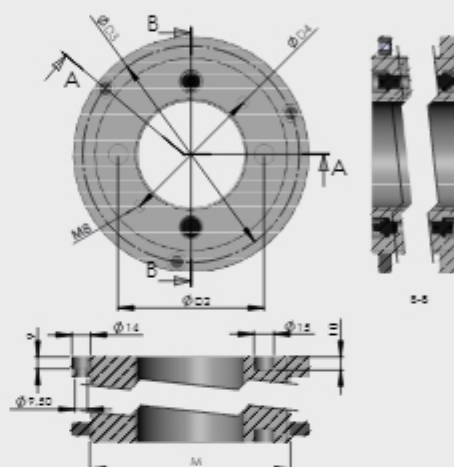
Hydro sleeves, type **THL** and **THLG** (pump operated) are designed for multiple mounting of tools with a bore.

THL hydro sleeve guarantees easy change of a tool mounted on the sleeve, which should be attached to the collar with 3 fixing screws.

THLG hydro sleeve guarantees easy change of a tool mounted on the sleeve, which is protected with a ring nut with 3 protection screws preventing it from spontaneous unlocking.

$L_{\max} = 260 \text{ mm}$ $L1_{\max} = 230 \text{ mm}$

- Serial positioning of tools
- Pressure generated with high-pressure grease pump.
- Works also with longer pilot parts

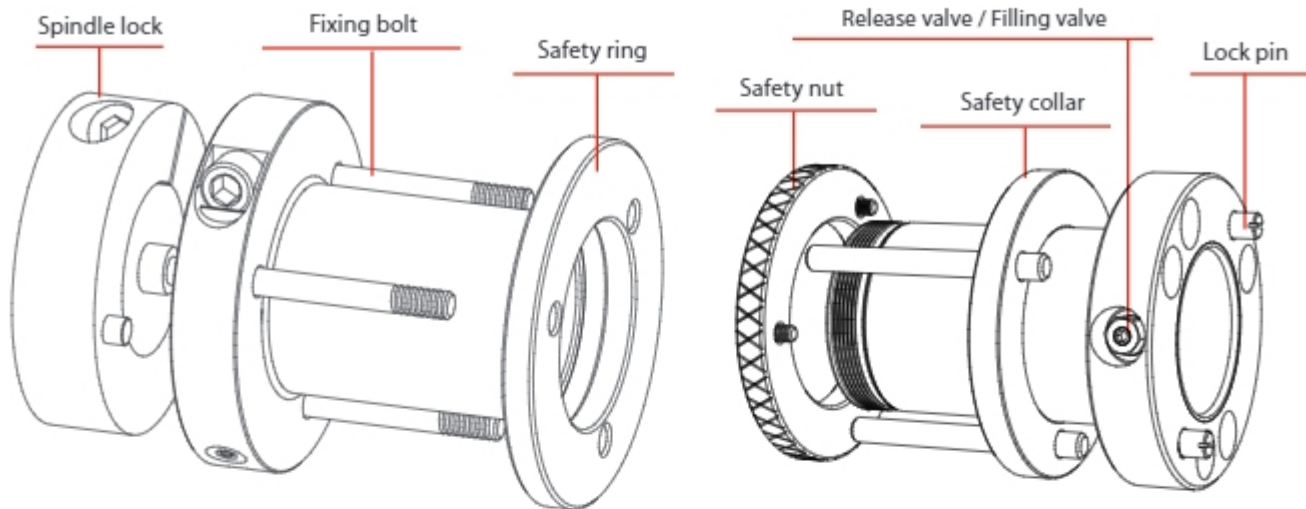


Catalogue number	Type	D mm	d mm	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	
THL-100/45-75	THL	100	45	75	60	-	128	-	113	70	+
THL-100/45-95	THL	100	45	95	80	-	128	-	113	70	+
THL-100/50-55	THL	100	50	55	40	-	128	75	113	70	+
THL-100/50-75	THL	100	50	75	60	-	128	75	113	70	+
THL-100/50-95	THL	100	50	95	80	-	128	75	113	70	+
THL-100/50-115	THL	100	50	115	100	-	128	75	113	70	+
THL-100/50-140	THL	100	50	140	125	-	128	75	113	70	+
THL-110/60-115	THL	110	60	115	100	-	138	85	123	80	+
THL-130/70-140	THL	130	70	140	125	-	158	95	143	90	+
THL-130/80-115	THL	130	80	115	100	-	158	105	143	100	+
THL-130/80-140	THL	130	80	140	125	-	158	105	143	100	+

Catalogue number	Type	D mm	d mm	L mm	L1 mm	L2 mm	D1 mm	D2 mm	D3 mm	D4 mm	
THLG-100/45-75	THLG	100	45	75	60	45	128	-	113	70	+
THLG-100/50-75	THLG	100	50	75	60	45	128	75	113	70	+
THLG-100/50-95	THLG	100	50	95	80	65	128	75	113	70	+
THLG-100/50-115	THLG	100	50	115	100	85	128	75	113	70	+
THLG-100/50-140	THLG	100	50	140	125	110	128	75	113	70	+
THLG-130/80-115	THLG	130	80	115	100	85	158	105	143	100	+
THLG-130/80-140	THLG	130	80	140	125	110	158	105	143	100	+

More information on hydro systems on pages 3.52 and 5.23.

TK, TKG, TH, THG, THL, THLG

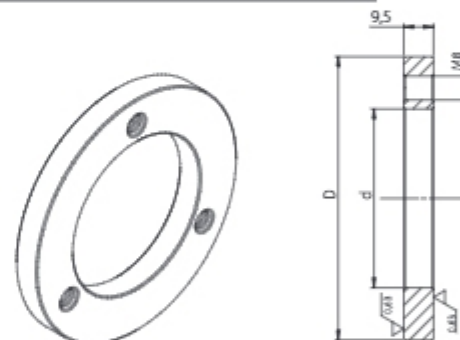


Safety ring used with fixing bolts, designer for hydro sleeves, type TK and TH.

Works with: TK, TH sleeves.

Catalogue number	d mm	D mm	M	
WHAP05685	50	85	8	•
WHAP05061	60	95	8	•
WHAP05683	65	100	8	•
WHAP05684	70	105	8	•

Safety ring



Fixing bolts designed for mounting tools on hydro sleeves type TK, TKG, TH, THG.

Works with: TK, TKG, TH, THG sleeves.

Catalogue number	Dimensions	
WHAS00188	M8 x 30	•
WHAS00189	M8 x 45	•
WHAS00190	M8 x 65	•
WHAS00186	M8 x 75	•
WHAS00191	M8 x 85	•
WHAS00192	M8 x 105	•
WHAS00193	M8 x 130	•
WHAS00194	M8 x 155	•
WHAS00016	M8 x 180	•
WHAS00077	M8 x 220	•

Fixing bolt



Safety nut



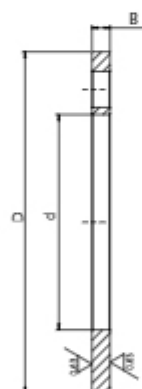
Safety nut in a set with 3 bolts M6x10 designed for hydro sleeves type TKG, THG. Designed for protecting the tools mounted on the sleeve from sliding apart.

Works with: TKG, THG sleeves.

Catalogue number	Dimensions	D mm	
WHA102175	M50 x 1,5	85	+
WHA102174	M60 x 1,5	95	•
WHA102176	M65 x 1,5	100	+
WHA102177	M70 x 1,5	105	+

Cat. number	Name	Dimensions	
WHAW00003	Safety screw	M6 x 10	•

Spacer ring



Spacer ring with improved manufacturing tolerance, designed for hydro sleeves type TK, TKG, TH, THG. Spacers set the tools on the sleeve and fill the empty space after mounting the tools.

Works with: TK, TKG, TH, THG sleeves.

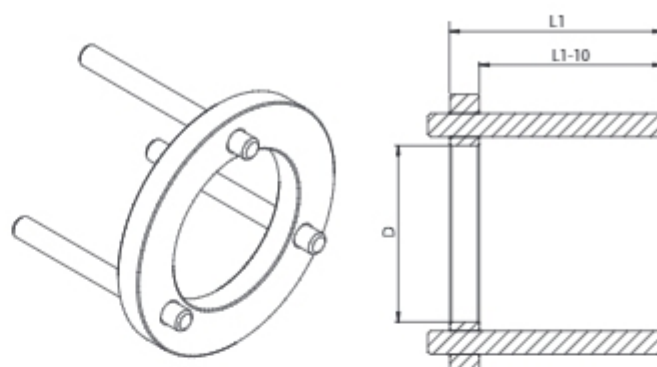
Cat. number	d mm	D mm	B mm	
WHAP05695	50	85	1	•
WHAP05678	50	85	2	•
WHAP05696	50	85	5	•
WHAP05697	50	85	10	•
WHAP01839	60	95	1	•
WHAP03779	60	95	2	•
WHAP03780	60	95	5	•
WHAP04023	60	95	10	•
WHAP05679	65	100	1	•
WHAP05680	65	100	2	•
WHAP05681	65	100	5	•
WHAP05682	65	100	10	•
WHAP01858	70	105	1	•
WHAP01857	70	105	2	•
WHAP01856	70	105	5	•
WHAP01855	70	105	10	•

Safety collar protecting the tools mounted on the sleeve from rotating, designed for hydro tools type TKG and THG, usually used with saw blades.

Safety collar produced on customer's request, for a specific outer sleeve diameter (D) and sleeve length (L1).

Works with: TKG, THG sleeves.

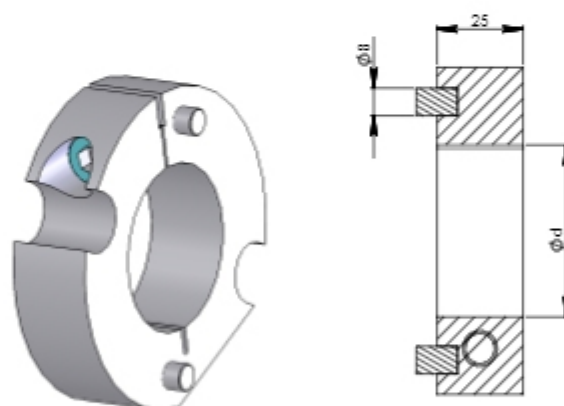
Safety collar



Spindle lock protecting the hydro sleeves from rotating on the machine spindle, designed for hydro sleeves type TK, TKG, TH, THG and hydro heads type 1100-04 H, 1100-05 H, GP-01 H. Produced for a specific machine spindle diameter (d).

Works with: hydro cutter heads and sleeves.

Spindle lock









Cat. number	d mm	
ZAB-107	40	•
ZAB-081*	40	+
ZAB-083	45	+
ZAB-082	50	•
ZAB-084	60	+

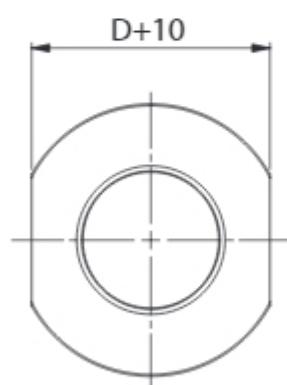
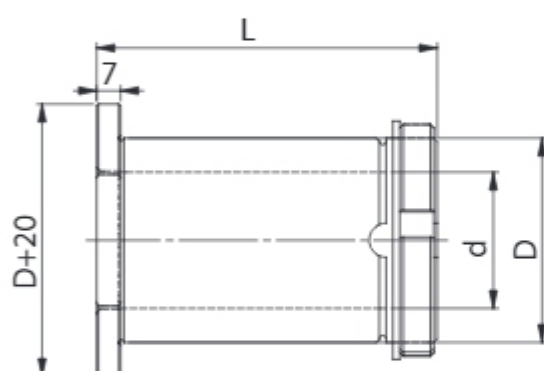
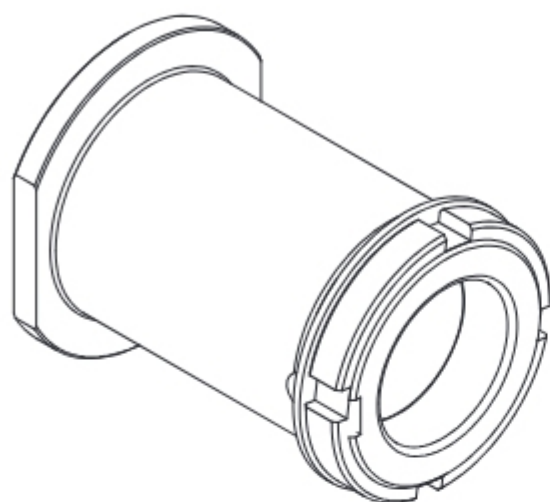
Cat. number	d	
ZAB-081A	1 1/2"	+
ZAB-083A	1 13/16"	+
ZAB-085	2 1/8"	+

* For sleeve 50/40 only

Accessories

Cat. number	Name		Cat. number	Name	
WHA11211	Lock pin	 •	WHA100029	High-pressure grease pump	 +
WHA100034	Release valve	 •	WHA101210	Grease pump connector	 •
WHA100033	Filling valve	 •	WHA100377	Grease	 •


Sleeve for GO windows



Sleeve for windows, type **GO**, designed for mounting cutter heads and cutters for window profiles or other sets of cutters and cutter heads. The sleeve is equipped with precise pilot part. Special construction prevents the nut from loosening during work. The set includes a sleeve, nut and special spacer ring.

Type of work: CNC machines.

CNC

Catalogue number	Type	D mm	d mm	L mm		
WHAT00006	GO	60	30	45	R	+
WHAT00007	GO	60	30	100	R	+
WHAT00008	GO	60	40	45	R	+
WHAT00009	GO	60	40	100	R	+
WHAT00010	GO	60	50	45	R	+
WHAT00011	GO	60	50	100	R	+

Special sleeves are designed for mounting cutter heads and brazed cutters. They are equipped with precise pilot part. The sleeves are offered on client's individual request.

Order should include:

- positioning diameter (D) or diameters range,
- bore diameters (d),
- type of tool working with the sleeve,
- type of machined material,
- other information relevant for designing and production process.

Type of work: CNC machines

