TOOL CLAMPING SYSTEMS

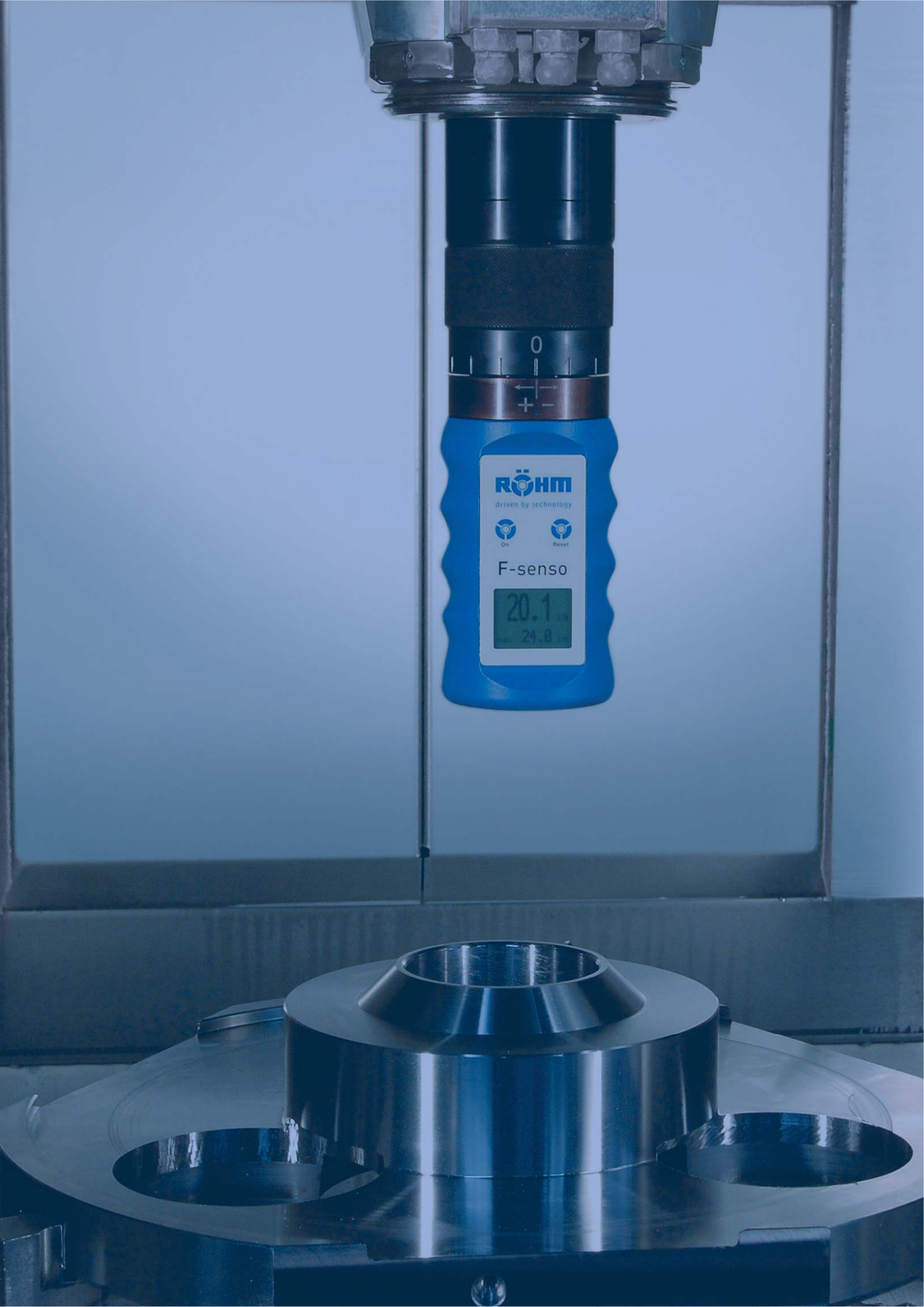
2015/2016

RÖHM
driven by technology

We work for customers who have a weakness for our strengths.

Companies intent on making a difference are obliged to develop constantly as well as deploy their strengths to the benefit of customers. At RÖHM, we have set ourselves high targets and are doing our very best to achieve them. This is why we support our customers all over the world by means of the six performance indicators so typical of RÖHM:

Dynamism
Variety
Security
Partnership
Globality
Innovation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Reset
F-senso
20.1
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TOOL CLAMPING SYSTEMS

Operation guide




TYP	HSK - Automatic clamping set	HSK - SUPER-LOCK	HSK - Manual clamping set	SK - Automatic tool clamping set
	Tool clamping system			
Interface	HSK	HSK	HSK	SK
Actuation				
Energy store				
Page	8007	8016	8020	8024



TYP	F-senso spindle	Clamping heads SPK	Built-in clamping head RESK
	Clamping force measuring device	Pallet clamping	For machine components
Interface	suitable for HSK, SK and SPK	SPK taper	universal interface
Actuation	-		
Energy store	-		
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hydraulic

pneumatic

manual

hydraulic pressure

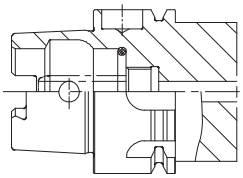
spring

self-locking interlock

Designs

Positive taper lock for automatic tool change

Form A / T

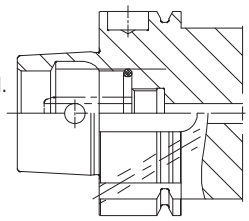


Positive taper lock (version A)
automatically-changeable tool adapter, torque transmission on positive taper lock, small square face with gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and milling machines), high speed range, conventional material machining, torque transmission via milled driver within the spindle adapter.

Design T analog to desgin A, but limited backlash of the driver.

Form B

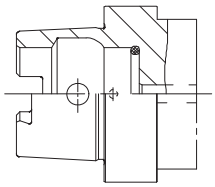


Positive taper lock (version B)
automatically-changeable tool adapter, torque transmission on collar via grooves, large square face with gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and milling machines), medium speed range, heavy-duty material machining, torque transmission via driver keys, suitable for heavy-duty material machining (cutter heads).

Positive taper lock for manual tool change

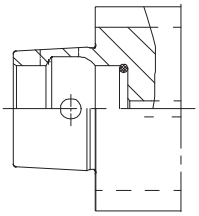
Form C



Positive taper lock (version C)
manually-changeable tool adapter, torque transmission on positive taper lock, small square face without gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and milling machines), high speed range, conventional material machining, torque transmission via milled driver within the spindle adapter.

Form D

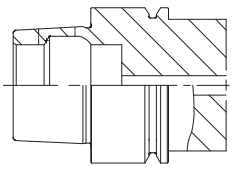


Positive taper lock (version D)
manually-changeable tool adapter, torque transmission on collar via grooves, large square face without gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and milling machines), medium speed range, heavy-duty material machining, torque transmission via driver keys, suitable for heavy-duty material machining (cutter heads).

Positive taper lock for automatic tool change and for high speeds (HSC)

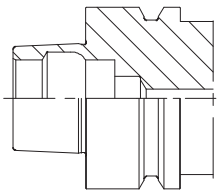
Form E



Positive taper lock (version E)
automatically-changeable tool adapter, torque transmission via collar and spherical surface, small square face with gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and grinding machines), extremely high speed range (depending on diameter size), grinding work, wood machining, suitable for HSC, utilised for minimal material removal.

Form F



Positive taper lock (version F)
automatically-changeable tool adapter, torque transmission via collar and spherical surface, large square face with gripping channel.

Applications:
Machine tools (e.g. lathes, drilling and grinding machines), extremely high speed range (depending on diameter size), grinding work, wood machining, suitable for HSC, utilised for minimal material removal.

CONVINCING ACROSS THE BOARD

- - 27 % shorter installation length of clamping set for lower space requirement
- - 27 % shorter distance of plane face to clamping shoulder for compact force flow
- - 33 % lower spring force required for clamping
- + 39 % higher clamping force for safe and reliable clamping of the tools

- Standard DLC coating for longer service life
- Simple and fast installation of clamping sets due to connected segments
- Safe release and ejection due to forced guidance of clamping segments without additional spring elements

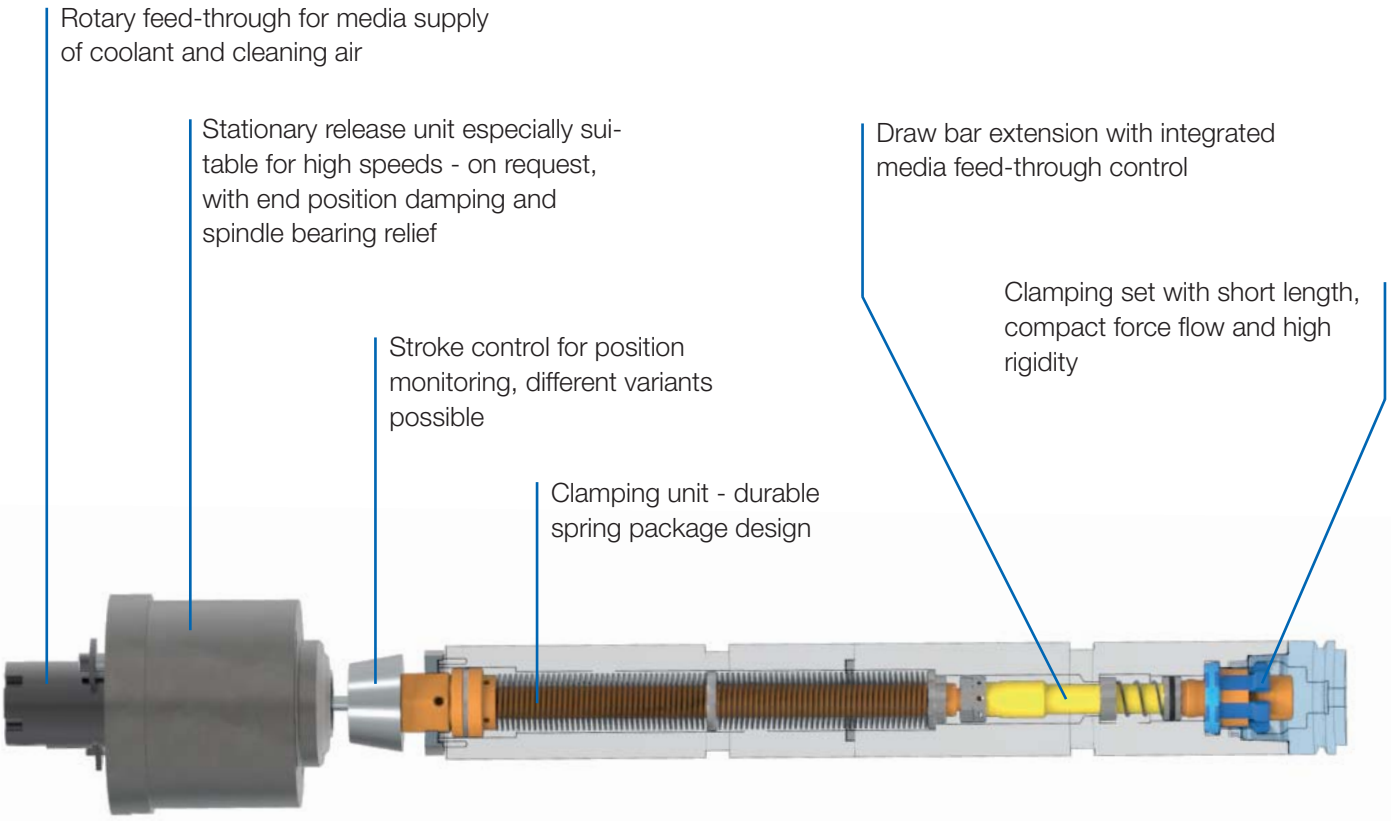
(Compared to the usual clamping systems of size HSK-A 63)

HSK - AUTOMATIC CLAMPING SET

Reliability, safety and long service life are the main requirements for a tool clamping system. It is also important for clamping systems to be able to be individually adapted to the customer requirements. Many years of experience as well as technical dominance in all areas allow RÖHM to meet these requirements exactly.

ADVANTAGES AT A GLANCE

- Proven functional principle for safe clamping and release of the tools
- 39 % higher clamping force than required in the standard
- Individual adaptation to customer-specific requirements



Technical data

For automatic tool clamping system of positive taper lock tools HSK to DIN 69893

ADVANTAGES:

- Steady clamping force due to the symmetric clamping surfaces of the clamping segments
- Compact power flow resulting in high static and dynamic rigidity of the tool joint
- High power amplification by transmission of the clamping set
- Self-locking effect via the clamping bolt in the clamping set
- Force controlled release of the collet
- Automatic ejection of the tool by the clamping bolt during release
- Sealed central coolant supply system
- Perfect suitable to be built into the spindles of machine tools and machining centers

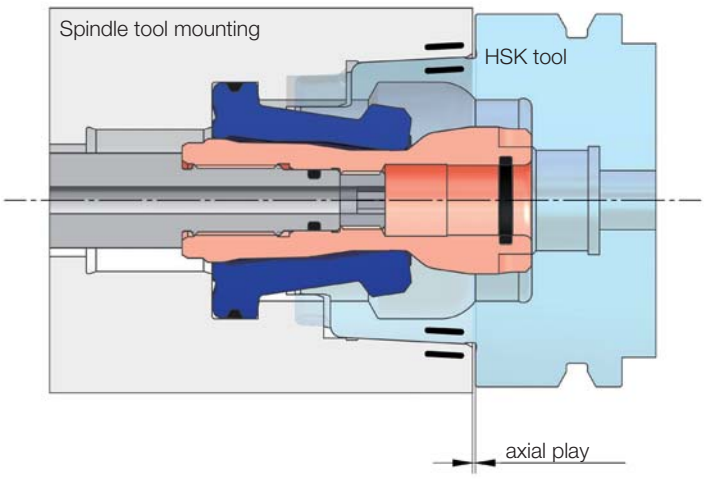
TECHNICAL FEATURES

The advantages of the positive taper lock system originates in the combination of defined radial pretensioned taper and tool face stop. A safe transmission of the torque is archieved by the elastic deformation of the taper resulting in a gap-free connection with the tool. High interchanging and repeating accuracy is leading to increased production quality during the machining compared with the traditional machining.

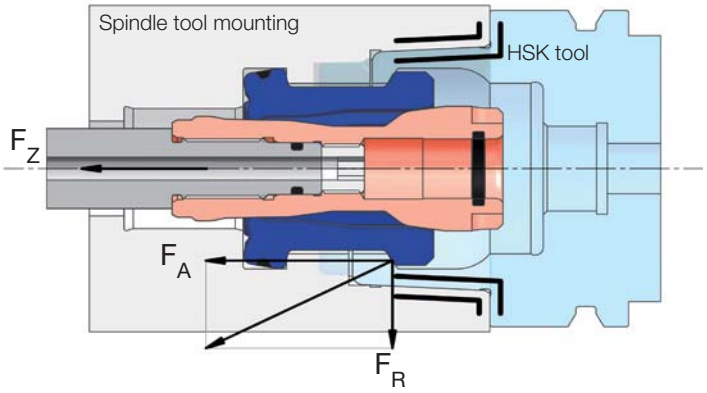
The clamping process is started by the springs and the movement is transmitted to the clamping set by the draw bar, in direction FZ. The clamping segments of the collet are pushed to the outside by the clamping bolt. The clamping forces are multiple amplified by the angled arrangement of the contact areas. The produced axial forces FA and radial forces FR result in a pretension of the positive taper on the entire taper area and, the axial contact area. The proportion of the axial contact force is over 80 % of the total clamping force. This explains the importance of the size of the axial contact area concerning the critical load and rigidity of the taper and hollow shank joint.
See also DIN 69893 - Hollow taper shanks types B, D and F. Hollow taper shanks types A and C have two additional positive drive grooves at the end of the taper which interlock with the tool mounting and produce a form-locking, orientated radial positioning.

During the release the tool will be positively unlocked and ejected from the tool spindle by the multifunctional clamping bolt and taper sleeve.

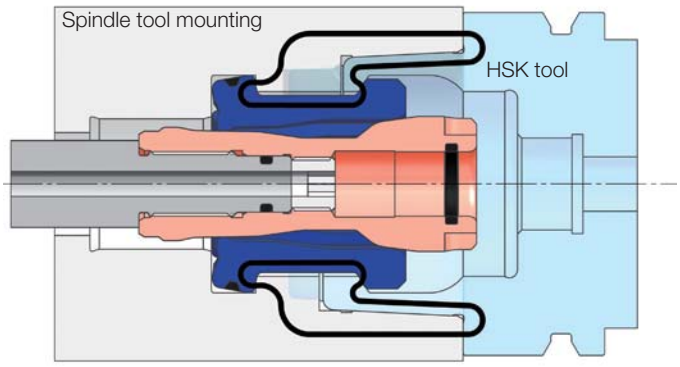
Joining position with locating surface



Clamping situation with locating surface



Clamping situation with compact power flow



Clamping set - High-Speed

APPLICATION

Clamping set for HSK-clamping systems is specially suited for high speeds.

TYPE

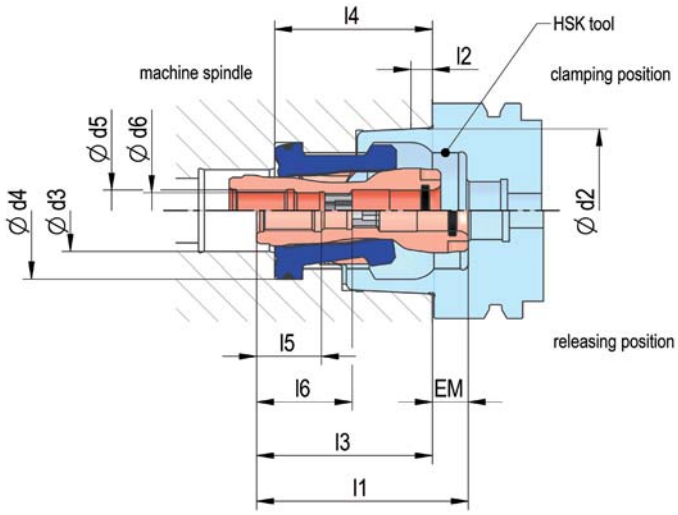
High-Speed version for higher speeds due to exact guidance of the clamping segments.

CUSTOMER BENEFITS

- DLC coating guarantees a longer service life of the clamping set
- Short length for compact force flow and high rigidity
- High force amplification due to transmission in the clamping set
- Safe clamping and release of the tools
- High balancing quality maintained due to exact distribution and guidance of the collet chuck

TECHNICAL FEATURES

- Connected collet segments simplify installation



C 15

Automatic HSK-clamping set with guided collet

Due to the exact guidance of the collet chuck segments, this clamping set is especially suitable for **higher speeds**

Item no.	594332	1035347	1011063	1037501	1015151	474917	462324
Size HSK-A/C/E/T	25	32	40	50	63	80	100
Size HSK-B/D/F	32	40	50	63	80	100	125
Total stroke	7	9	13	15	14	17	18
Pull-out stroke AM	0,2	0,3	0,5	0,5	0,5	0,5	0,8
Taper Ø d2	19	24	30	38	48	60	75
d3	10	12	15	18	24	32	40
d4	17	21	25,5	32	40	50	63
d5	M4	M6x0,75	M8x1	M10x1	M12x1	M16x1,5	M20x1,5
d6	4,2	6,5	6,4	8	10,5	14,3	17,5
l1	28,8	35,1	42,5	50	62	80	98,5
l2	2,5	3,2	4	5	6,3	8	10
l3	22,6	26,7	34	39,5	51,5	67	85,2
l4	20,3	24,5	31,9	37,2	46,2	59,7	73
l5	9,5	12,5	13	17	19	30	34,5
l6	2,5	3	20	26	28	42	51
Adjusting size EM	6,2	8,3	8,5	10,5	10,5	13	13,3
Draw bar pull kN	0,7	1	2	3	4	7,5	10
Clamping force kN	3,5	5	10	15	25	37,5	50
Max. application speed min^{-1}	120000	80000	60000	50000	40000	30000	24000

Clamping set - Standard

APPLICATION

Standard clamping set for HSK clamping systems.

TYPE

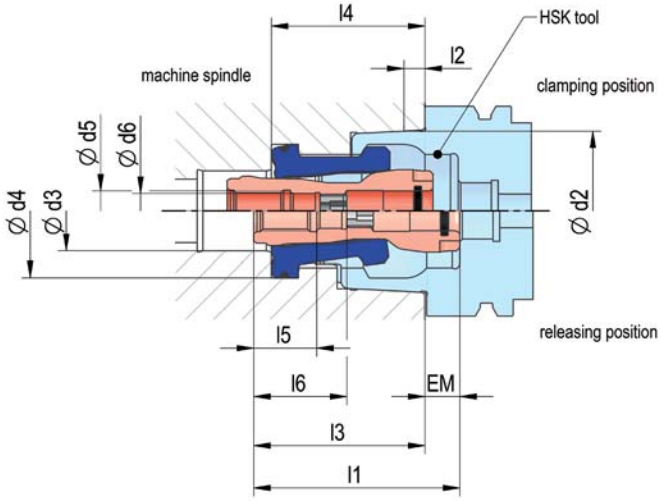
Standard version in compact design.

CUSTOMER BENEFITS

- DLC coating guarantees a longer service life of the clamping set
- Short length for compact force flow and high rigidity
- High force amplification due to transmission in the clamping set
- Safe clamping and release of the tools

TECHNICAL FEATURES

- Connected collet segments simplify installation



C 15

Automatic HSK-clamping set - Standard in compact design

Item no.	1037445	1037446	1037447	1037448	1037449	1037450	1037451	1037452
Size HSK-A/C/E/T	25	32	40	50	63	80	100	125
Size HSK-B/D/F	32	40	50	63	80	100	125	160
Total stroke	7	9	13	15	14	17	18	20
Pull-out stroke AM	0,2	0,3	0,5	0,5	0,5	0,5	0,8	0,8
Taper Ø d2	19	24	30	38	48	60	75	94,996
d3	10	12	15	18	24	32	40	46
d4	17	21	25,5	32	40	50	63	80
d5	M4	M6x0,75	M8x1	M10x1	M12x1	M16x1,5	M20x1,5	M24x1,5
d6	4,2	6,5	6,4	8	10,5	14,3	17,5	20
l1	28,8	35,1	42,5	50	62	80	98,5	121,2
l2	2,5	3,2	4	5	6,3	8	10	12,5
l3	22,6	26,7	34	39,5	51,5	67	85,2	104,4
l4	20,3	24,5	31,9	37,2	46,2	59,7	73	96,9
l5	9,5	12,5	13	17	19	30	34,5	40
l6	2,5	3	20	26	28	42	51	60
Adjusting size EM	6,2	8,3	8,5	10,5	10,5	13	13,3	16,8
Draw bar pull kN	0,7	1	2	3	4	7,5	10	15
Clamping force kN	3,5	5	10	15	25	37,5	50	70
Max. application speed min^{-1}	70000	48000	36000	30000	24000	18000	14000	10000

▲ on request

Clamping set - With retaining collet

APPLICATION

Clamping set for HSK clamping systems with holding function for shorter tool changing times.

TYPE

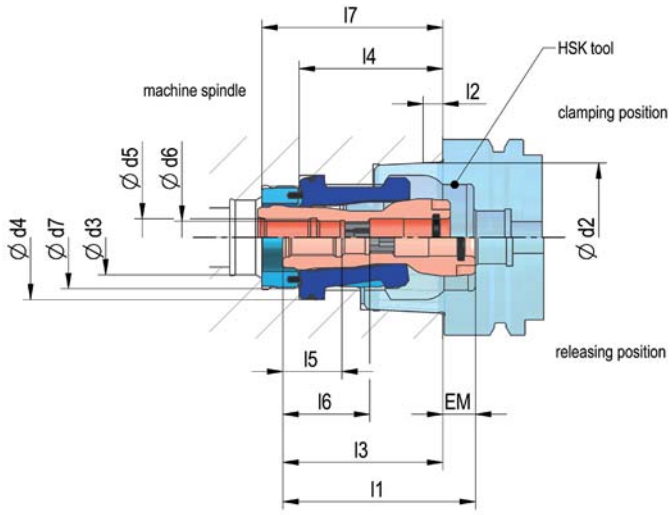
With the clamping set with retaining collet, time is saved during the tool change because several sequence steps take place in the same time window.

CUSTOMER BENEFITS

- DLC coating guarantees a longer service life of the clamping set
- Short length for compact force flow and high rigidity
- High force amplification due to transmission in the clamping set
- Safe clamping and release of the tools

TECHNICAL FEATURES

- DLC coating guarantees a longer service life of the clamping set



C 15

Automatic HSK-clamping set with retaining collet With the clamping set with retaining collet, time is saved during the tool change because several sequence steps take place in the same time window

Item no.	1024067	1019609	1024145	1015265	1004827
Size HSK-A/C/E/T	40	50	63	80	100
Size HSK-B/D/F	50	63	80	100	125
Total stroke	13	15	16	17	18
Pull-out stroke AM	0,5	0,5	0,5	0,5	0,8
Taper Ø d2	30	38	48	60	75
d3	15	18	24	27	40
d4	25,5	32	40	50	63
d5	M8x1	M10x1	M12x1	M16x1,5	M20x1,5
d6	6,4	8	10,5	14,3	17,5
d7	M20x1	M25x1	M33x1	M40x1	M53x1,5
l1	42,5	50	62	80	98,5
l2	4	5	6,3	8	10
l3	34	39,5	51,5	67	85,2
l4	31,85	37,15	46,2	59,7	73
l5	13	17	19	30	34,5
l6	20	26	28	42	51
l7	38	41,5	58,2	75	106
Adjusting size EM	8,5	10,5	10,5	13	13,3
Draw bar pull kN	2	3	4	7,5	10
Clamping force kN	10	15	25	37,5	50
Max. application speed min^{-1}	48000	40000	32000	24000	20000

Clamping set - For spindle revision

APPLICATION

Clamping set for HSK clamping systems after taper repair measures.

TYPE

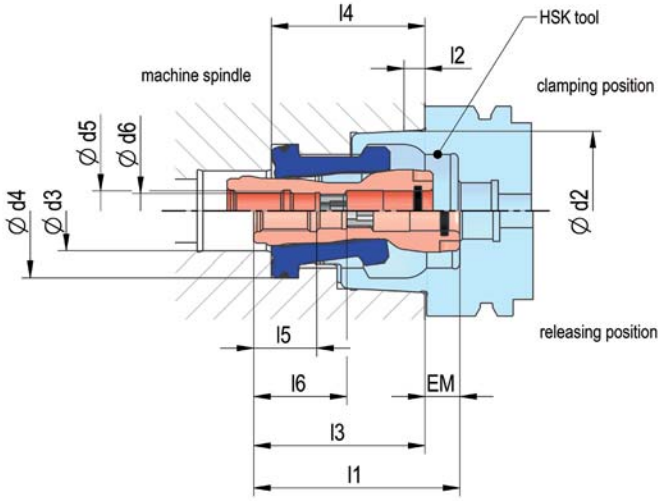
Clamping set for spindle overhauls to compensate the removed material from rework on the spindle of the HSK taper.

CUSTOMER BENEFITS

- DLC coating guarantees a longer service life of the clamping set
- Short length for compact force flow and high rigidity
- High force amplification due to transmission in the clamping set
- Safe clamping and release of the tools

TECHNICAL FEATURES

- Connected collet segments simplify installation



C 15

Automatic HSK-clamping set for spindle revision

Item no.	891068	891070	891072
Size HSK-A/C/E/T	63	63	63
Size HSK-B/D/F	80	80	80
Underdimension (material removal from plane face) mm	-0,3	-0,5	-0,8
Necessary material removal from driver grooves, min. mm	-	-0,2	-0,5
Total stroke	14	14	14
Pull-out stroke AM	0,5	0,5	0,5
Taper Ø d2	48	48	48
d3	24	24	24
d4	40	40	40
d5	M12x1	M12x1	M12x1
d6	10,5	10,5	10,5
l1	62	62	62
l2	6,3	6,3	6,3
l3	51,5	51,5	51,5
l4	45,9	45,7	45,4
l5	19	19	19
l6	28	28	28
Adjusting size EM	10,5	10,5	10,5
Draw bar pull kN	4	4	4
Clamping force kN	25	25	25
Max. application speed min^{-1}	24000	24000	24000

Further sizes on request

▲ on request

Automatic clamping units and draw bar extension

APPLICATION

Actuation unit for HSK clamping systems.

TYPE

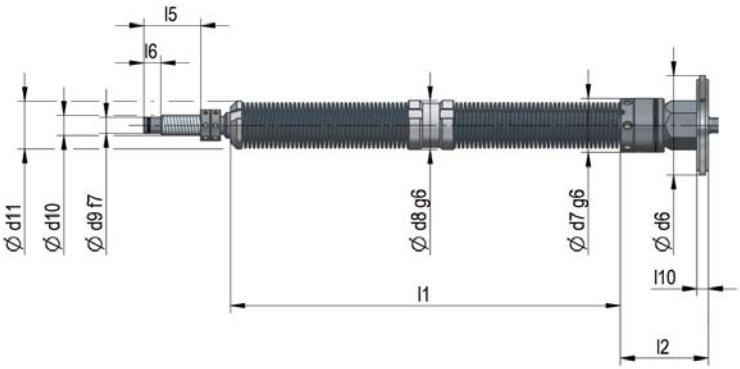
Spring-actuated clamping unit.
Individually adapted draw bar extension.

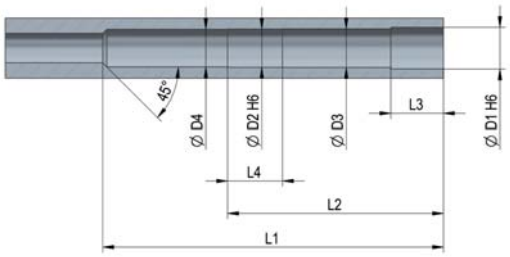
CUSTOMER BENEFITS

- Energy stored in the spring package
- Slender design
- Reliable function due to sturdy design

TECHNICAL FEATURES

- Clamping system is designed individually for the spindle





C 15

HSK-clamping system with stationary release unit

Clamping unit HSK	32	40	50	63	80	100
d7	20	25	35	38	42	50
d8	18,5	22,5	30	35	38	42,5
d9	6,5	8,5	10	11	13	14,5
d10	M8x1	M10x1	M12x1,5	M14x1,5	M16x1,5	M18x1,5
d11	18	21,5	29	34	37	41,5
D1	20	25	35	38	42	50
D2	18,5	22,5	30	35	38	42,5
D3	19	23	30,5	35,4	38,5	43
D4	18,5	22	29,5	34,5	37,5	42,5
l1	150	190	225	274	282	350
l2	52	50	60	61,8	74	90
l5	22	26	32	40	40	45
l6	8	9	10	12	13	15
l10	8	8	8	8	8	8
L1	190	240	270	311	325	396
L2	115	150	180	197	210	250
L3	34	40	48	48	56	70
L4	38	42	50	50	58	65
Pull-in-force kN	5	10	15	25	35	50
Total stroke	9	13	15	16	18	20

Individual clamping systems available on request

Stationary release unit

APPLICATION

Stationary release unit for tool clamping systems.

TYPE

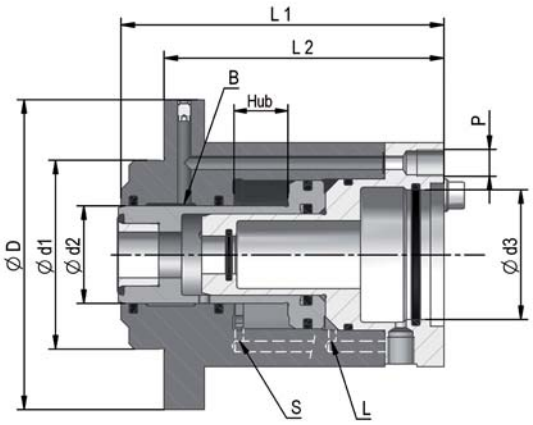
Hydraulic or pneumatic design, stationary attachment.

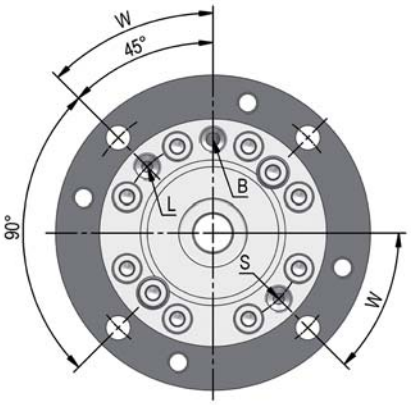
CUSTOMER BENEFITS

- Clamping system and release piston are separated from one another during the spindle rotation
- No oil supply required in the rotating spindle part
- Low-wear operation

TECHNICAL FEATURES

- Release system designed individually for the spindle





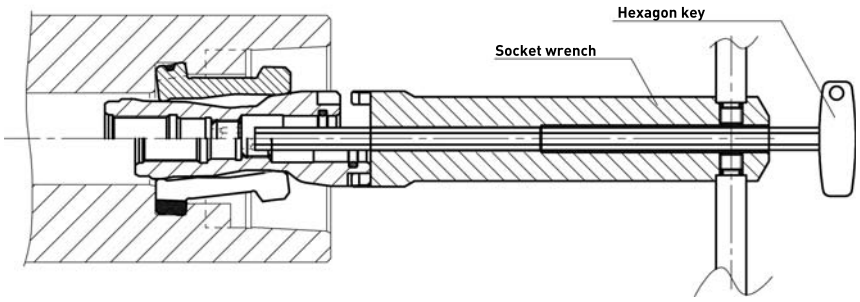
C 15
Stationary release unit

This stationary release unit allows a fast stroke movement
- Speed-independent
- Through-hole for cleaning air in release position
- Mount for rotary feed-through

Piston surface (release) cm²	49,7	16,7	62,6
Max. release pressure L bar	80	150	80
Max. clamping pressure S bar	80	150	80
Max. cleaning air B bar	10	10	10
Stroke	20	20	22
D	122	115	165
L1	120	117	121
L2	104	104	109
P	G 1/4	M10x1	M10x1
W	20°	-45°	45°
d1	70	70	100
d2	40	36	56
d3	48	48	48

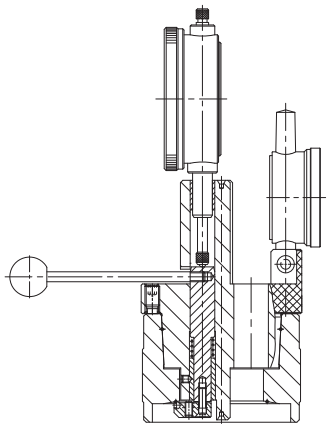
Other technical data on request

Accessories



C 15
Wrench for pressure piece screw-in assembly

Item no. Socket wrench	Size HSK-A/C/E/T	Size HSK-B/D/F	Item no. Hexagon wrench	L	Key-width SW
830252	32	40	**830253**	Drehstift	-
831296	40	50	**863494**	200	3
831291	50	63	**817262**	200	4
831274	63	80	**844250**	200	5
831289	80	100	**756660**	200	6
831434	100	125	**381601**	200	8
812550	125	160	**698938**	200	10



C 15
Measuring device - For measuring the installation contour (clamping shoulder) for automatic HSK-clamping sets

Item no.	Size HSK-A/C/E/T	Size HSK-B/D/F
1181005	25	32
1156601	32	40
1179168	40	50
1201360	50	63
1149877	63	80
1233614	80	100
1233553	100	125
1233615	125	160

50 % SHORTER LENGTH THAN CLAMPING SYSTEMS WITH SPRINGS

HSK clamping system with SUPER-LOCK

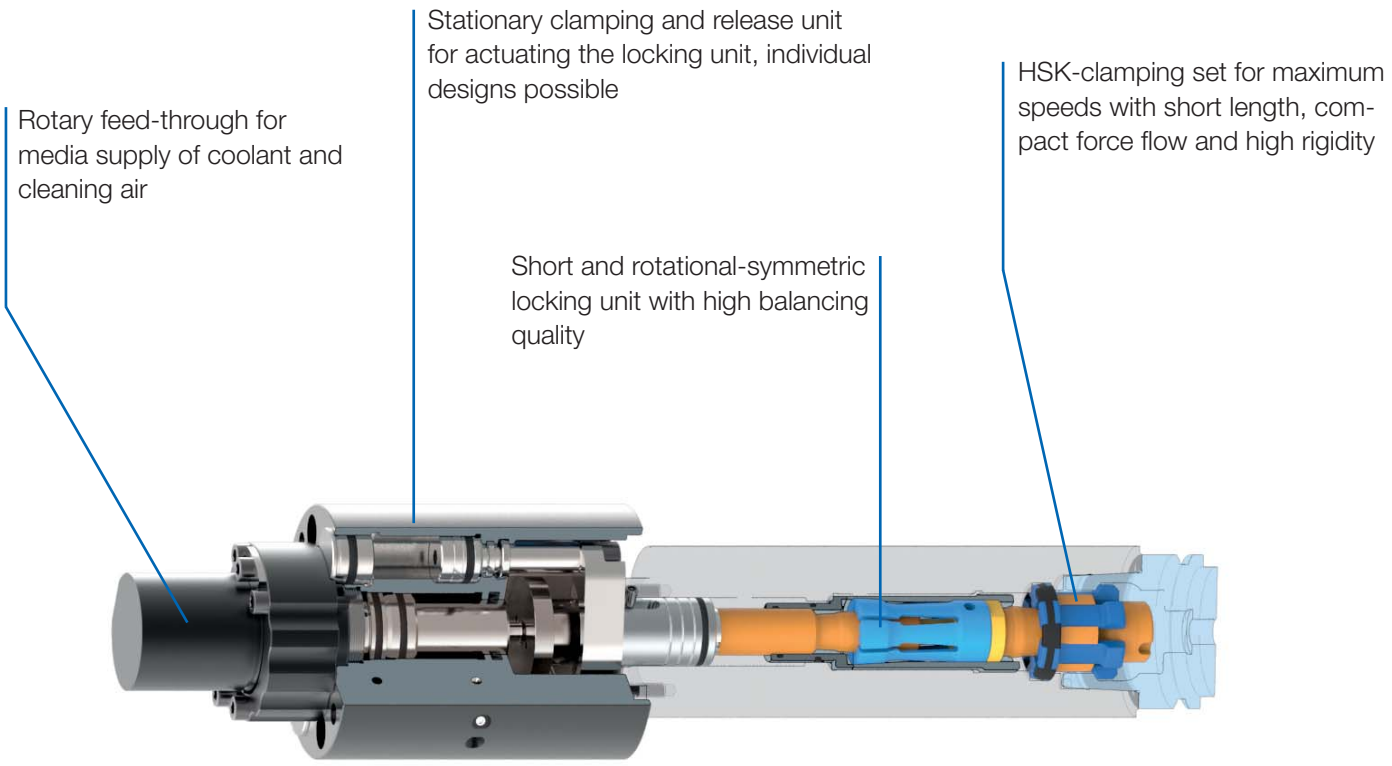
HSK clamping system with spring package

HSK - SUPER-LOCK

The trend toward modern milling machines involves two requirements with regard to the automatic clamping systems. In the area of High Speed Cutting (HSC), increasingly higher speeds and therefore higher balancing qualities are required. Due to higher machining forces during High Performance Cutting (HPC), interfaces must additionally be more rigid. SUPER-LOCK meets these requirements, and with an approx. 50 % shorter length as compared with conventional clamping systems with springs.

ADVANTAGES AT A GLANCE

- Compact and extremely short design
- Optimally suited for maximum speeds and machining forces
- Lower force introduced into the spindle as compared to spring clamping systems



Clamping unit

APPLICATION

For HSK clamping systems.
Can be used universally, preferably for maximum speeds.

TYPE

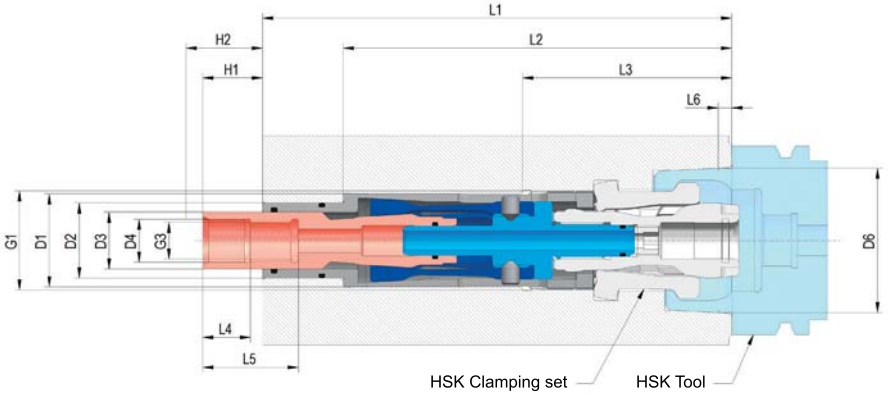
Locking unit for HSK-clamping set. HSK-clamping set separatly available.

CUSTOMER BENEFITS

- Without springs - clamping force is maintained with self-locking
- Short and compact design
- Low force transmission during releasing

TECHNICAL FEATURES

- For actuation, a clamping and release unit are required



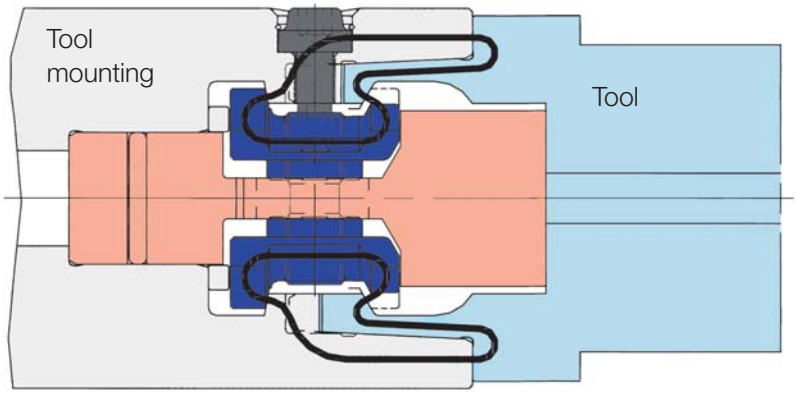
C 15
Clamping unit SUPER-LOCK Self-locking mechanism **without springs** for automatic tool clamping

Item no.	1122572	1122574	1122718	1122725	1122569	1122731	1122581
Size HSK-A/C/E/T	25	32	40	50	63	80	100
Size HSK-B/D/F	32	40	50	63	80	100	125
D1	13,2	15,1	18,6	23,6	31	39	49
D2	11	12,5	16,4	20,4	25	31,2	40
D3	8	10	13	16	19	24	31
D4	6,2	8,2	10,3	12,5	14,4	17	21
D6 mm	19	24	30	38	48	60	75
G1 mm	M14x0,5	M16x0,75	M20x1	M25x1	M33x1	M42x1,5	M52x2
G3	M6x0,75	M8x0,75	M10x1	M12x1,25	M14x1,5	M16x1,5	M20x2
H1 mm	10,8	13,6	17,8	19,9	20	27,3	30,8
H2	15,6	18,9	22,8	26,3	28	38,3	42,4
L1	71,4	83,5	106,4	127,7	157	201,3	262
L2	56	69	86	104	130	167	207
L3	32,25	36,7	45,9	57	70	88	110
L4	6,3	8	10	12,5	16	20	25
L5 mm	12,5	16	20	25	32	40	50
L6	2,5	3,2	4	5	6,3	8	10
Clamping set	**594332**	**1035347**	**1011063**	**1037501**	**1015151**	**474917**	**462324**
Draw bar pull N	700	1000	2000	3000	5000	7500	10000
Clamping force N	3500	5000	10000	15000	25000	37500	50000
Max. application speed min^{-1}	120000	80000	60000	50000	40000	30000	24000

▲ on request

Notes

COMPACT FORCE FLOW WITHOUT INFLUENCING THE HSK TAPER



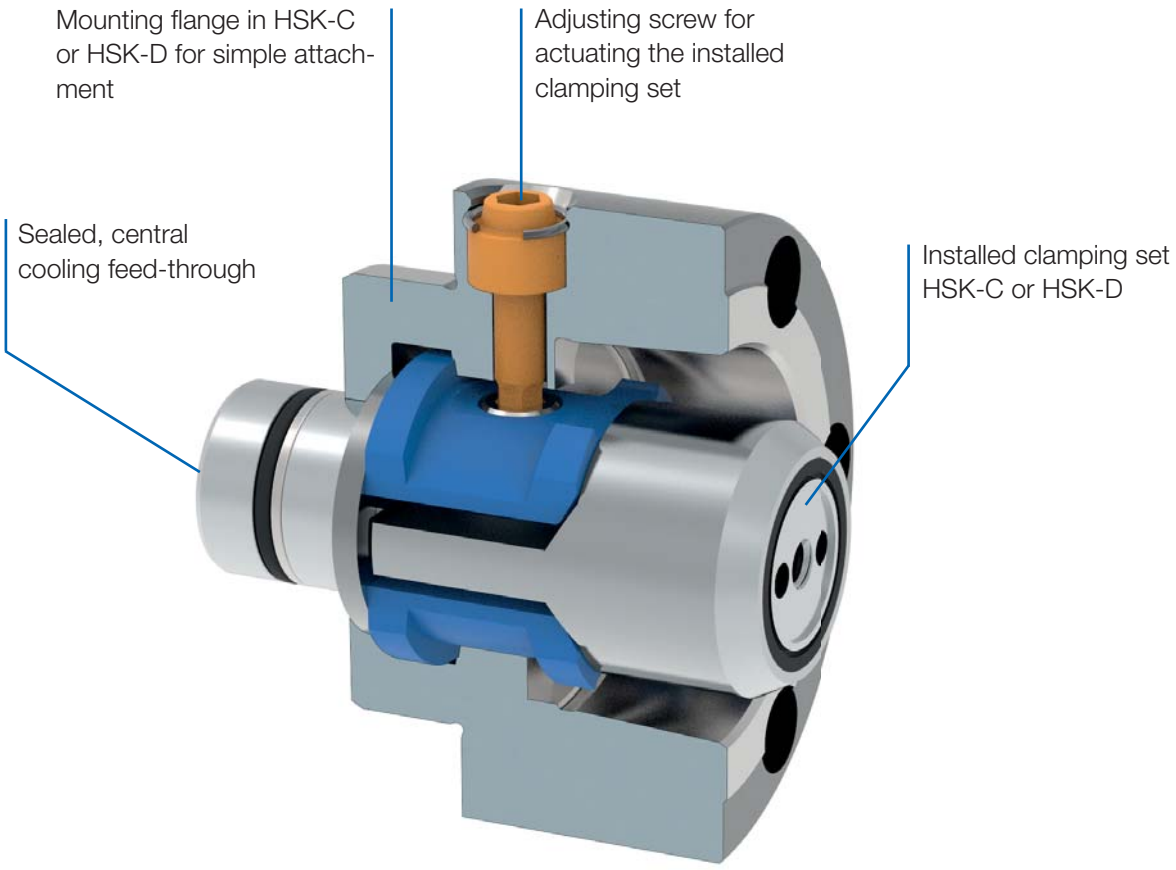
RÖHM HSK system for manual force clamping with compact force flow.

HSK - MANUAL CLAMPING SET

A critical factor for the HSK interface with manual tool change in lathes or turrets as well as milling machines is the rigidity and change precision. Manual clamping systems from RÖHM achieve this via the compact force flow within a minimum amount of space.

ADVANTAGES AT A GLANCE

- Convincingly simple construction for high reliability and simple installation
- Safe ejection of tools during release by means of the guide bolt
- No negative influence of the HSK taper, since the actuation screw lies in the driver area



HSK-C clamping set

APPLICATION

Manual clamping of HSK tools.

TYPE

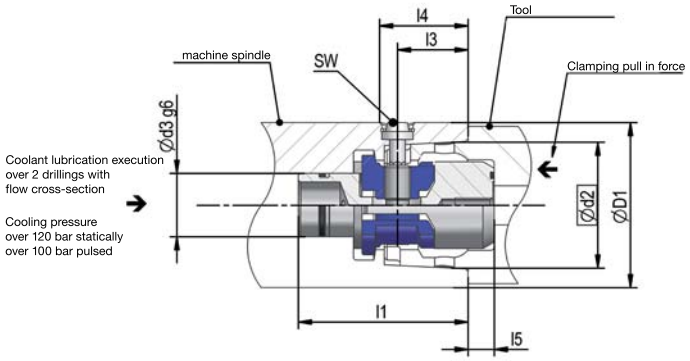
HSK-C for tool shafts A/C/T.

CUSTOMER BENEFITS

- Convincingly simple construction for high reliability and simple installation
- Safe ejection of tools during release by means of the guide bolt
- No negative influence of the HSK taper, since the actuation screw lies in the driver area

TECHNICAL FEATURES

- Central coolant supply (exept size 25)



C 15

Clamping set HSK-C with coolant supply through the centre (except size 25) for tool holders with internal drivers HSK-A/C

Item no.	760530 ▲	784603	812617	831435	586214	475170	475172	483213 ▲	831306 ▲
Size HSK-A/C/E/T	25	32	40	50	63	80	100	125	160
D1	25	32	40	50	63	80	100	125	160
Taper Ø d2	19	24	30	38	48	60	75	95	120
d3H7g6	10	12	15	18	24	32	40	48	60
l1	28	34	45	55	65	80	97,5	124	160
l3	11,4	14	17,5	21,5	27	34	42	53	68
l4	15	18,5	22	27	34	42	53	67	85
l5	6	8	8	10	10	12,5	12,5	16	16
Key SW	2,5	2,5	3	4	5	6	8	10	12
Tightening torque Nm	1,8	2,5	3,5	8	14	25	42	80	100
Clamping force kN	3,5	5	6,8	11	18	30	45	70	115
Flow cross section mm^2	-	6,3	10,6	14,1	27,7	56,5	100,5	100,5	157
Adjusting screw complete Item no.	**760628**	**1176471**	**760463**	**760464**	**760465**	**760466**	**760467**	**812815**	**831311**

Built-in clamping set HSK-D on request

HSK-C clamping set with adaptor

APPLICATION

For attachment to spindles, turrets, etc.

TYPE

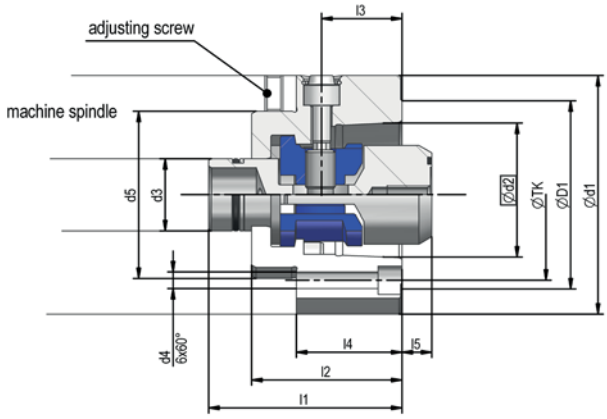
HSK-C for tool shafts A/C/T.

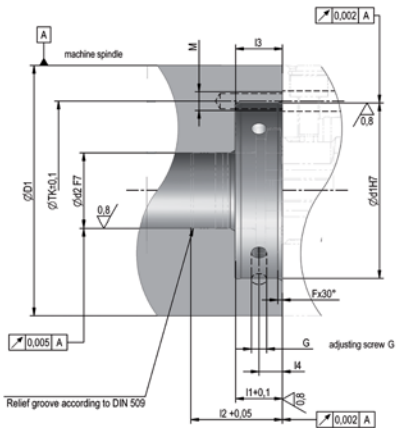
CUSTOMER BENEFITS

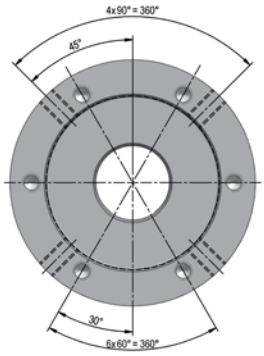
- Convincingly simple construction for high reliability and simple installation
- Safe ejection of tools during release by means of the guide bolt
- No negative influence of the HSK taper, since the actuation screw lies in the driver area

TECHNICAL FEATURES

- Balancing quality G 2.5
- Central coolant supply







C 15

Adaptors with clamping set HSK-C balanced and with coolant supply through the centre (except size 25)

Item no.	850322 ▲	820802	820803	820804	820805	820806	820807
Initial size D1	25	32	40	50	63	80	100
d1	37	40	50	63	80	100	123
Taper Ø d2	19	24	30	38	48	60	75
d3F7g6	10	12	15	18	24	32	40
d4	3,4	3,4	4,5	5,5	6,5	9	11
d5g6	24	27	33,5	42	56	68	84
Ø-TK	29	32	40,5	52	66	82	102
l1	26	34	45	55	65	80	97,5
l2	22	26	34	41	50	64	76
l3	11,4	14	17,5	21,5	27	34	42
l4	15,5	19	23	28	35	44	54
l5	6	8	8	10	10	12,5	12,5
Adjusting screw complete Item no.	**870022**	**870023**	**870024**	**870025**	**870026**	**870027**	**870028**

dyn. balanced: G 2,5 DIN ISO 1940

Accessories

C 15

Measuring device for measuring the installation contour (clamping shoulder) for manual clamping sets

Item no.	Size HSK-A/C/E/T	Size HSK-B/D/F
1233617	25	32
1195813	32	40
1233618	40	50
1195814	50	63
1233619	63	80
1233554	80	100
1233620	100	125
1233621	125	160
1233616	160	

▲ on request

THE RIGHT FUNCTIONAL PRINCIPLE FOR EVERY APPLICATION

Stationary tool clamping
Stationary release unit is disconnected from the rotating system during spindle rotation and is therefore especially suited for higher speeds.

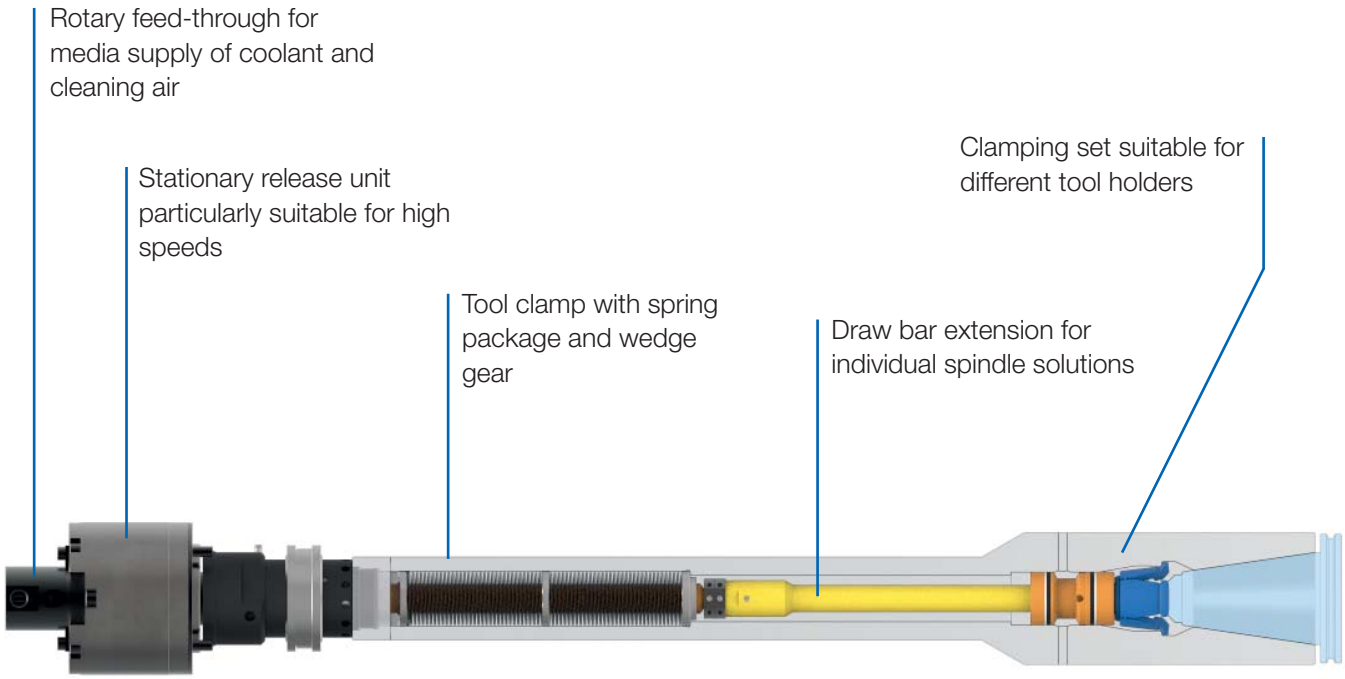
Integrated tool clamping
Hydraulic release mechanics are attached/installed on the spindle shaft. No force acts on the spindle bearing during the tool change.

SK - AUTOMATIC TOOL CLAMPING SET

For the automatic clamping of steep-taper tools, reliability, safety and long service life are essential basic requirements. Particularly for machine tools with a rotating working spindle, high rotational frequencies and high clamping forces. Due to many years of experience in this area, RÖHM can specifically see to customized requirements, thereby meeting this requirement.

ADVANTAGES AT A GLANCE

- Safe clamping and release of the steep-taper tools by using proven components
- High variant variety for a wide range of installation situations
- Individual adaptation to customer-specific requirements



SK-clamping sets

APPLICATION

For the automatic clamping of steep-taper tools.

TYPE

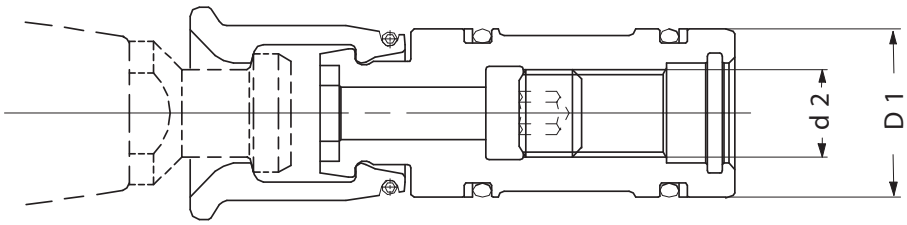
Available in different versions to match the respective tool.

CUSTOMER BENEFITS

- Proven construction and high-quality processing
- Safe clamping and release of the tools

TECHNICAL FEATURES

- Optional with internal coolant supply



C 15

Clamping sets type DIN 69871/72

Item no.	Design	D1	d 2	Pull-in force max. N
490968 ▲	SK 30 - IKZ	19	M10x1,5	7500
756340	SK 40 - IKZ	27	M 14x1,5	15000
760391	SK 50 - IKZ	40	M 16 x1,5	26000
760390 ▲	SK 60	52	M 30x1,5	80000

IKZ = with internal coolant supply
further designs available on request

C 15

Clamping sets type MAS BT 45°

Item no.	Design	D1	d 2	Pull-in force max. N
1070315 ▲	SK 30	19	M10x1,5	6000
861930 ▲	SK 40 - IKZ	27	M14x1,5	15000
795390 ▲	SK 50 - IKZ	40	M16x1,5	26000

IKZ = with internal coolant supply
further designs available on request

C 15

Clamping sets type ANSI 5.50-78

Item no.	Design	D1	d 2	Pull-in force max. N
890828 ▲	SK 30 - IKZ	19	M10x1,5	6000
766334 ▲	SK 40 - IKZ	27	M14x1,5	15000
831393 ▲		40	M16x1,5	26000

IKZ = with internal coolant supply
further designs available on request

Clamping set with stationary release unit

APPLICATION

Suitable for SK spindles in higher speed range.

TYPE

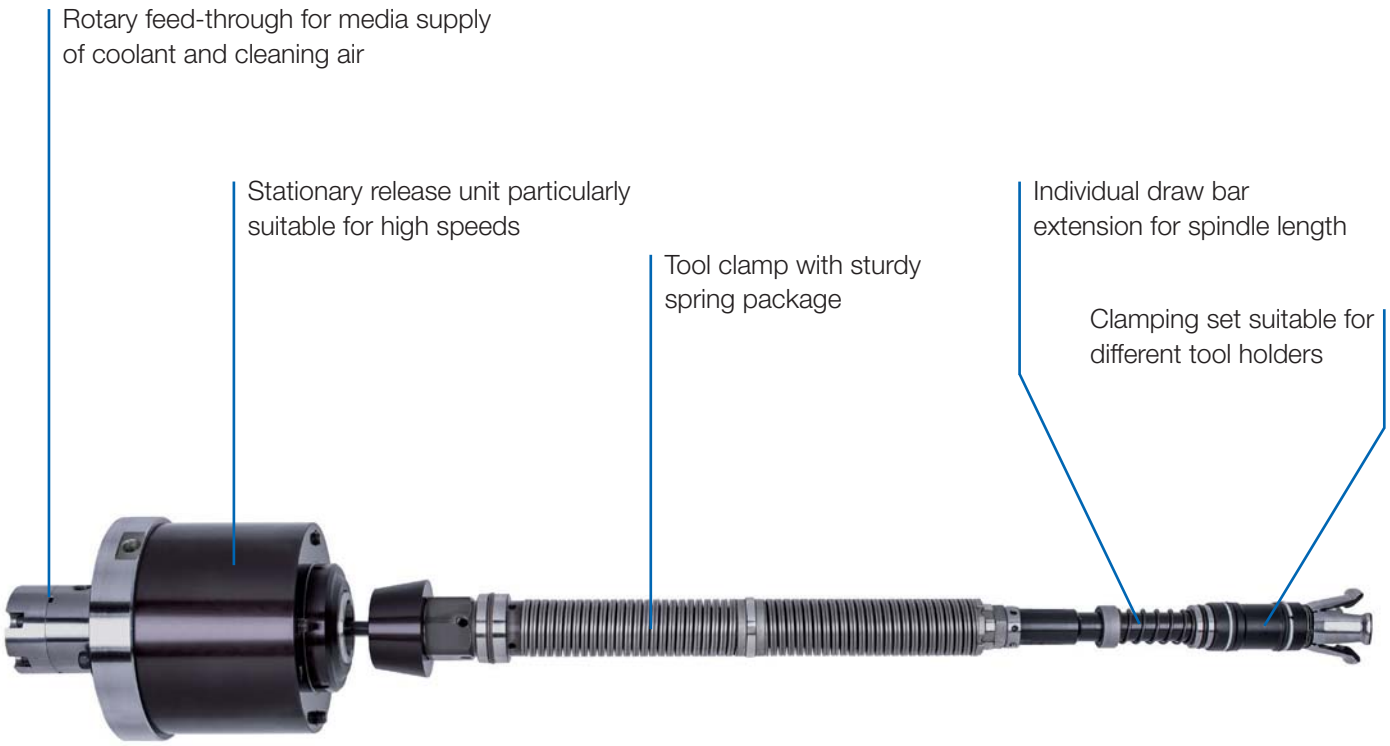
Spring package with or without transmission gears and stationary release unit.

CUSTOMER BENEFITS

- Slender design
- No oil supply required in the rotating spindle part
- Stationary release unit decoupled from spindle rotation, therefore low-wear

TECHNICAL FEATURES

- Release system designed individually for the spindle



Clamping set with integrated release unit

APPLICATION

For SK spindles with compact design.

TYPE

Spring package with transmission gear and installed release hydraulics.

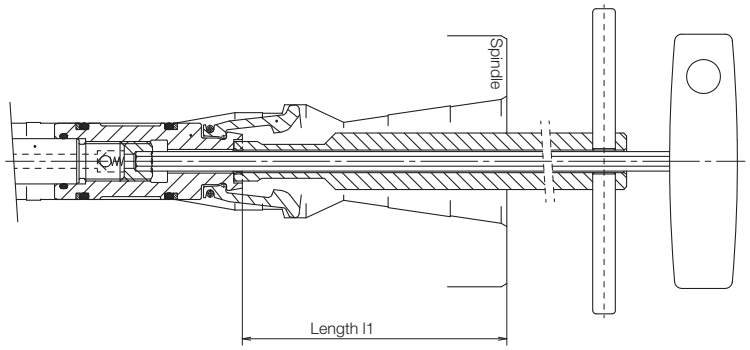
CUSTOMER BENEFITS

- No force acts on spindle bearing during the tool change
- Compact design and high pull-in forces due to integrated wedge gear

TECHNICAL FEATURES

- Release system designed individually for the spindle

Accessories



C 15
Socket wrench with through-hole

Item no. Socket wrench	Size	Item no. Hexagon wrench	Length l1 mm	Key-width SW
772214	SK 30	**367665**	183	4
756393	SK 40	**802094**	350	6
756396	SK 40	-	-	-
760229	SK 50	**769078**	400	8
747337	SK 60	**769078**	400	8

EXCHANGEABLE MEASURING ADAPTER FOR HSK, SK AND SPK

F-SENSO SPINDLE PULL-IN FORCE MEASURING DEVICE

Ensuring consistently high machining quality has top priority. Due to the regular check of the tool clamping system with the pull-in force measuring device, F-senso spindle, changes in the clamping force are detected even before it has an effect on the machining quality.

ADVANTAGES AT A GLANCE

- Maximum flexibility due to exchangeable measuring adapter for all HSK and SK sizes
- Best user-friendliness due to intuitive operation and delivery in a practical case
- Simulation of the tool and spindle tolerances possible by a scaled ring

F-senso spindle 0-15 kN

APPLICATION

Measuring device for SK and HSK spindles of size SK 30; HSK (A) 20, 25, 32, 40.

TYPE

Measuring range 0-15 kN.

CUSTOMER BENEFITS

- Maximum flexibility due to exchangeable adapters for all HSK and steep-taper sizes
- High user-friendliness due to intuitive operation and delivery in a practical case
- Simulation of the tool and spindle tolerances possible by a scaled ring

Delivery includes:
- F-senso spindle force measurement device
- Case with space for adapter
- Mounting bar
- Battery

C 15
Pull-in force measurement device F-senso spindle 0-15 kN

Item no.	1266341
Measuring range / Clamping force kN	0-15 kN
Accuracy	0,25% (f.s.)
Dimensions (base unit)	ca. Ø66mm; L=172 mm

C 15
Adaptor for HSK taper

Item no.	Size HSK-A/C/E/T	Size HSK-B/D/F
1269725 ▲	20	-
1255735	25	32
1255736	32	40
1255737	40	50

C 15
Adaptor for steep taper shank

Item no.	Matching adapter
1255743	SK 30

A 34
Draw-in bolts

Item no. SK 30	Design
698582	Draw-in bolt DIN 69872 A
698583	Draw-in bolt DIN 69872 B
1297449 ▲	Draw-in bolt ISO 7388/II-B
1297435 ▲	Draw-in bolt MAS BT 1 (45°)
1297436 ▲	Draw-in bolt MAS BT 2 (30°)
1297450 ▲	Draw-in bolt ANSI B5.50

C 15
Calibration services F-senso spindle (including test certificate)

Item no.	Design
1295776	Calibration including test certificate (Recommendation: Annually)

F-senso spindle 10-100 kN

APPLICATION

Measuring device for SK and HSK clamping systems of sizes SK 40, 50, 60; HSK (A) 50, 63, 80, 100, 125 and clamping head SPK.

TYPE

Measuring range 10-100 kN.

CUSTOMER BENEFITS

- Maximum flexibility due to exchangeable adapters for all HSK and steep-taper sizes
- High user-friendliness due to intuitive operation and delivery in a practical case
- Simulation of the tool and spindle tolerances possible by a scaled ring

Delivery includes:
- F-senso spindle force measurement device
- Case with space for adapter
- Mounting bar
- Battery

C 15
Pull-in force measurement device F-senso spindle 10-100 kN

Item no.	1255729
Measuring range / Clamping force kN	10-100 kN
Accuracy	0,25% (f.s.)
Dimensions (base unit)	ca. Ø66mm; L=189 mm

C 15
Adaptor for HSK taper

Item no.	Size HSK-A/C/E/T	Size HSK-B/D/F
1255738	50	63
1255739	63	80
1255740	80	100
1255741	100	125
1255742 ▲	125	160

C 15
Adaptor for steep taper shank

Item no.	Matching adapter
1255744	SK 40
1255745	SK 50
1255746 ▲	SK 60

A 34
Draw-in bolts

	SK 40	SK 50	SK 60
Draw-in bolt DIN 69872 A	347325	367316	1297443 ▲
Draw-in bolt DIN 69872 B	698584	698586	1234433 ▲
Draw-in bolt ISO 7388/II-B	367569	698588	1297444 ▲
Draw-in bolt MAS BT 1 (45°)	1297437 ▲	698594	1297445 ▲
Draw-in bolt MAS BT 2 (30°)	1297438 ▲	698591	1297446 ▲
Draw-in bolt ANSI B5.50	620770	620771	1297447 ▲

F-senso spindle 10-100 kN

A 34C 15
Adaptor for clamping heads

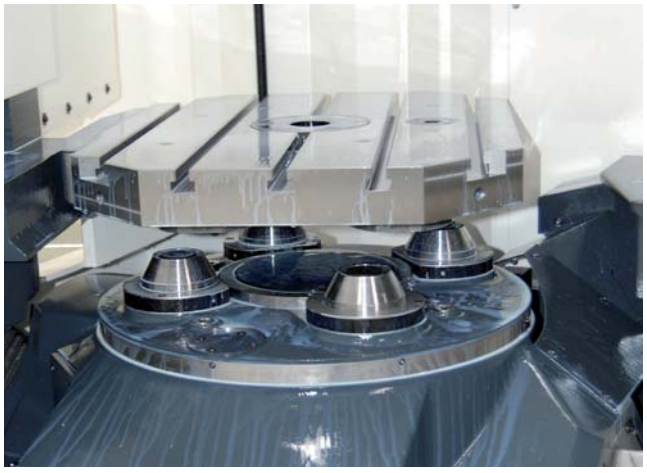
Item no.	Matching adapter
1296094	SPK 110 (1154382)
1288317	SPK 100 (1154381)
1288319	SPK 125 (1256149)
1288320	SPK 140 (1262302)

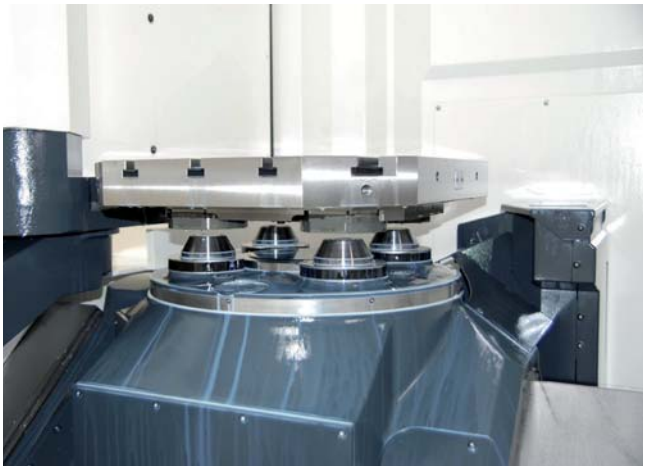
C 15
Calibration services F-senso spindle (including test certificate)

Item no.	Design
1295776	Calibration including test certificate (Recommendation: Annually)

Notes

CLAMPING HEADS IN USE





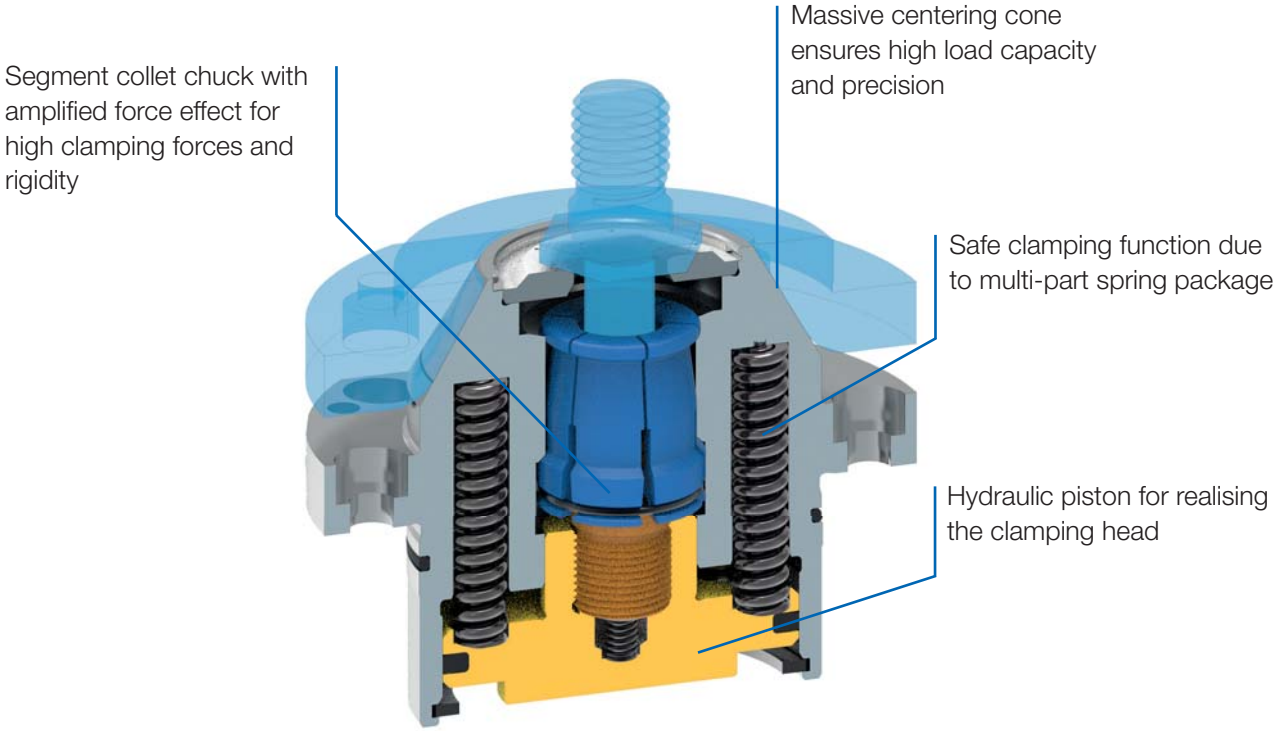
RÖHM clamping heads are especially suited for applications with pallet clamping, which require very high change precisions, such as machining centers and transfer lines.

CLAMPING HEADS SPK

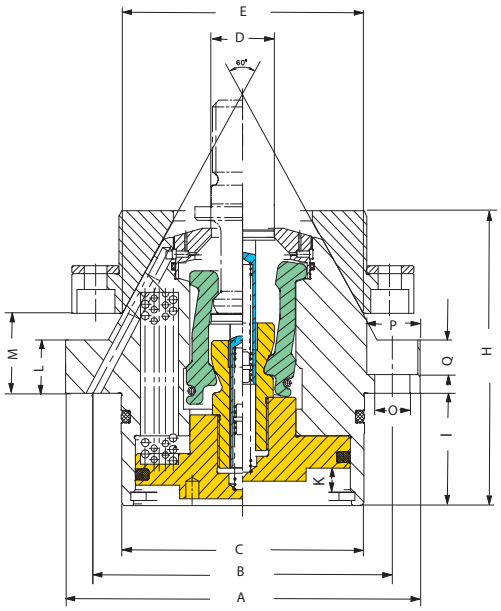
RÖHM clamping heads can be used for all existing pallet clamps. They are particularly suitable for applications which require very high change precisions, such as machining centers or transfer lines. Integrated in the machine table, the clamping heads clamp workpiece pallets in a minimum amount of space with high precision in the axial run-out and positioning for maximum efficiency.

ADVANTAGES AT A GLANCE

- High change precision due to exact positioning of the pallet on the clamping tapers
- Force amplification of the collet chucks results in high clamping forces and high system rigidity
- Clamping force applied over long time period due to integrated spring package



Spring operated clamping head



APPLICATION

On machine tables, when secure clamping of the pallet must be guaranteed, even without hydraulic pressure applied.

TYPE

Spring-actuated clamping - hydraulic release.

CUSTOMER BENEFITS

- High system rigidity due to stable design due to the connecting ribs between the individual spring packages
- Hydraulic pressure is only required for release
- Pull-out safety device without additional elements
- Spring-actuated locking cover

TECHNICAL FEATURES

- Compact design
- More powerful effect of the collet chuck
- Air sensing possible

C 15

Spring operated clamping head For clamping pallets

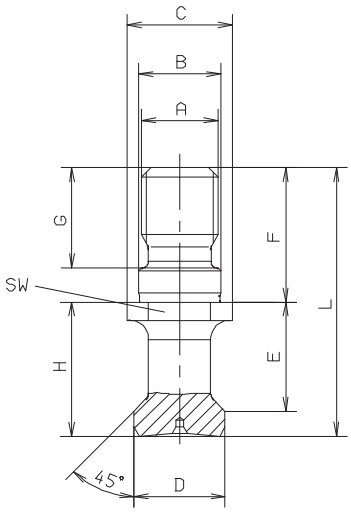
Item no.	1154381	1154382	1256149	1262302
Size A	100	110	125	140
Contents of delivery	set	set	set	set
B mm	86	92	105	118
C mm	70	76	85	96
D mm	19	19	20	25
E mm	70	75	85	95
H mm	90	96	93	104
I mm	43	49	43	42
K mm	-	9,5	9,5	9,5
L mm	11	15	15	20
M mm	22	23	25	30
O mm	6,6	9	9	14
P mm	14	15	15	20
Q mm	7	8,5	8,5	13
Piston area: releasing cm^2	28,3	33,18	44,1	56,7
Min. release pressure bar	-	50	40	40
Pull-in-force N	15000	20000	20000	40000
Blast-air pressure bar	10	10	10	10
Weight kg	2,5	3	4	6

Sets can be aligned in height on request

Accessories spring operated clamping head

A 34
Draw-in bolts for clamping heads

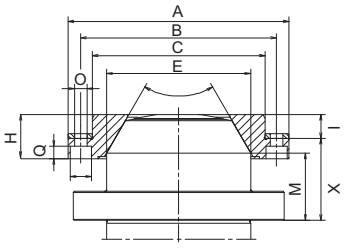
Item no.	For clamping head size	Size A	Contents of delivery	B mm	C mm	D mm	E mm	F mm	G mm	H mm	L mm	Key-width SW
1243664	100	M18x1,5	piece	19	25,4	15,5	23,7	21	19	28,2	49	22
1243665	110	M18x1,5	piece	19	25,4	19	25,1	23	20	30,3	53	22
850094	125	M20	piece	21	34	19	29	30	23	35	65	30
1116394	140	M24	piece	25	38	23	34,7	40	32	40	80	30



C 15
Mounting flange for clamping heads

Item no.	For clamping head size	Size A	Contents of delivery	B mm	C mm	C	E mm	H mm	I mm	M mm	O mm	P mm	Q mm	X mm
1176444	100	105	set	90	80	6x60°	64	20	9	27,2	6,6	11	6,8	33
1176382	110	110	set	96	85	6x60°	68	20	7,5	29,06	6,6	11	6,8	35,5
1296089	125	125	set	106	88	4x90°	85	32,5	18,5	25	9	15	9	39
1296090	140	135	set	116	98	-	95	38,5	23,5	30	9	15	9	45

Further details on request



Hydraulic clamping head

APPLICATION

The hydraulic operated clamping device may be suitable for all existing sorts of pallet clampings.

TYPE

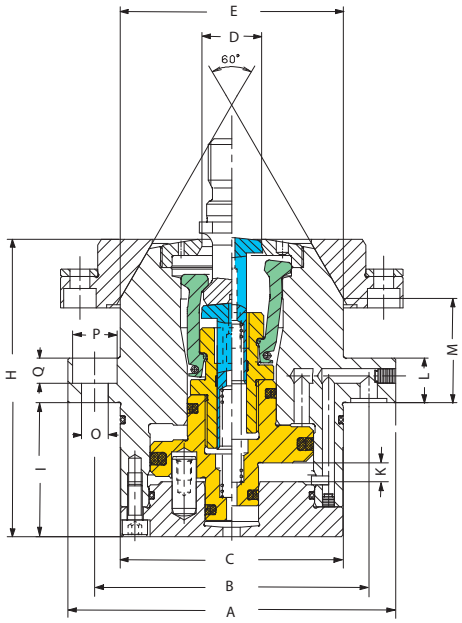
Clamping and release are hydraulic.

CUSTOMER BENEFITS

- High system rigidity due to stable design due to the connecting ribs between the individual spring packages
- Simple, reliable design
- Spring-actuated locking cover

TECHNICAL FEATURES

- Compact design
- More powerful effect of the collet chuck
- Air sensing possible



C 15

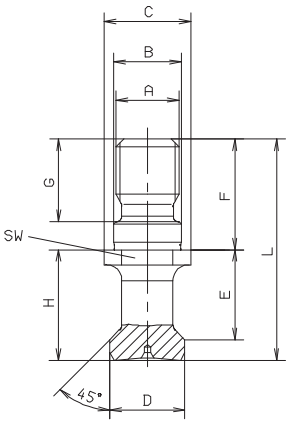
Hydraulic clamping head for clamping pallets

Item no.	486816	850092	869832	489556
Size A	110	125	140	148
Contents of delivery	piece	piece	piece	piece
B mm	92	105	118	125
C mm	75	85	96	106
D mm	20	20	29,5	29,5
E mm	75	85	98	100
H mm	100	106,5	121,5	131
I mm	45	55	58	63
K mm	6,3	6,3	6,8	6,5
L mm	15	15	20	22
M mm	35	25	30	39,9
O mm	9	9	11	11
P mm	15	15	18	18
Q mm	8,5	8,5	11	11
Piston area: clamping cm2	16,7	24	37	28,9
Piston area: releasing cm2	23,7	31,2	44,2	33,3
Max. operating pressure bar	130	85	80	130
Pull-in-force N	21700	20400	29600	37500
Blast-air pressure bar	10	10	10	10
Weight kg	4	6	8	9

Sets can be aligned in height on request

Accessories hydraulic clamping head

A 34
Draw-in bolts for clamping heads

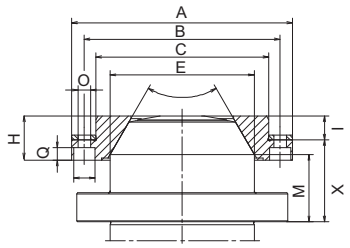


Item no.	For clamping head size	Size A	Contents of delivery	B mm	C mm	D mm	E mm	F mm	G mm	H mm	L mm	Key-width SW
586393	110	M16	piece	17	21,9	18,95	22,75	28	21	28	56	19
850094	125	M20	piece	21	34	19	29	30	23	35	65	30
869859	140	M24	piece	25	41,5	27,5	34	40	33,5	40	80	36
586394	148	M24	piece	25	41,5	27,5	34	40	33,5	40	80	36

C 15
Mounting flange for clamping heads

Item no.	For clamping head size	Size A	Contents of delivery	B mm	Partition	C mm	E mm	H mm	I mm	M mm	O mm	P mm	Q mm	X mm
1128288 ▲	110	115	piece	102	90	75	23	4x90°	12,5	35	6,6	11	6,3	42,5
497213 ▲	125	125	piece	106	4x90°	88	85	32,5	18,5	25	9	15	9	39
497214 ▲	140	135	piece	116	6x60°	98	98	38,5	23,5	30	9	15	9	45
489557 ▲	148	160	piece	140	6x60°	120	100	38	23,5	39,9	9	15	9	50,5

Further details on request



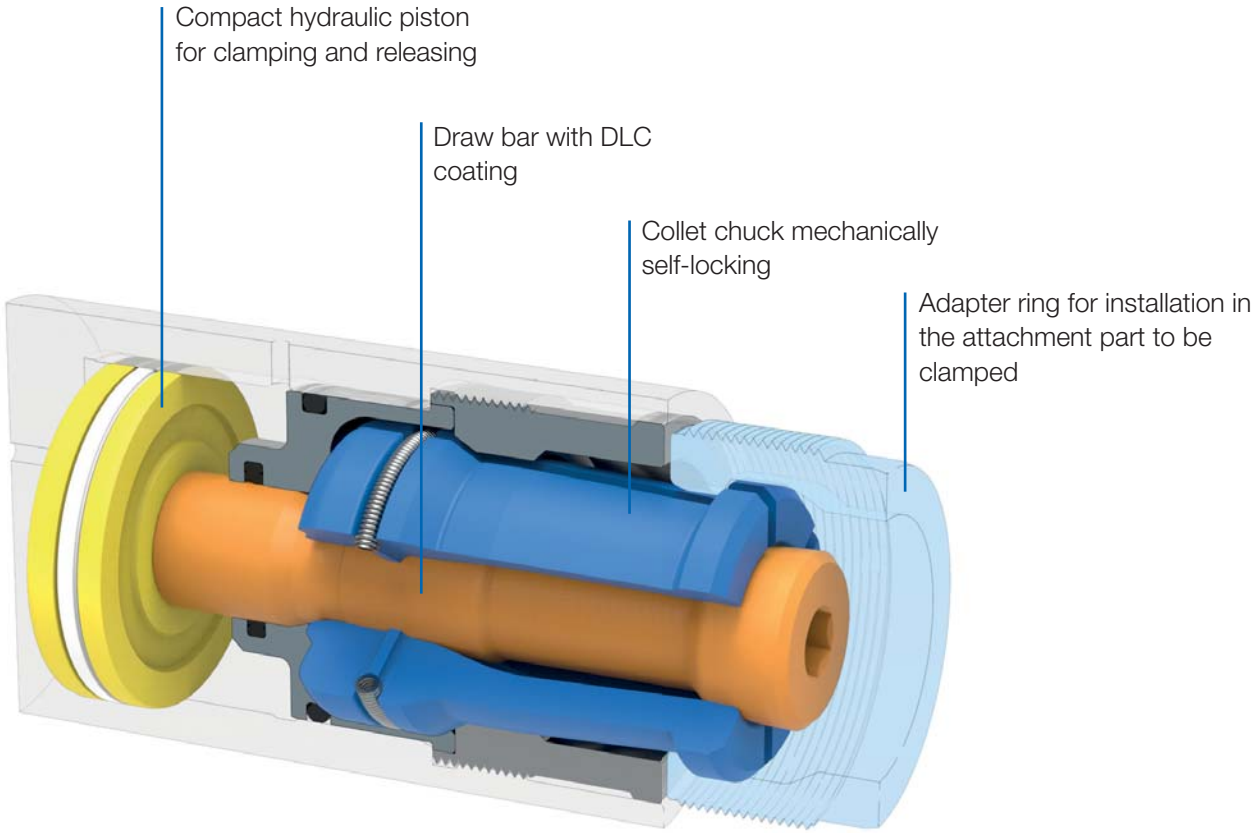

1191063
1516

BUILT-IN CLAMPING HEAD RESK

The built-in clamping head RESK is a universally usable interface for the easy and quick connection of machine components in a minimum amount of space, such as milling heads, machine tables and forming tools. It will convince you with its high pull-in forces and extremely compact design, as well as its process reliability.

ADVANTAGES AT A GLANCE

- Superior process reliability due to innovative design
- High pull-in forces with extremely compact design due to power transmission in the clamping set
- Integrated locking system maintains the clamping force without applied hydraulic pressure



Built-in clamping head RESK

APPLICATION

Change interface for machine components.

TYPE

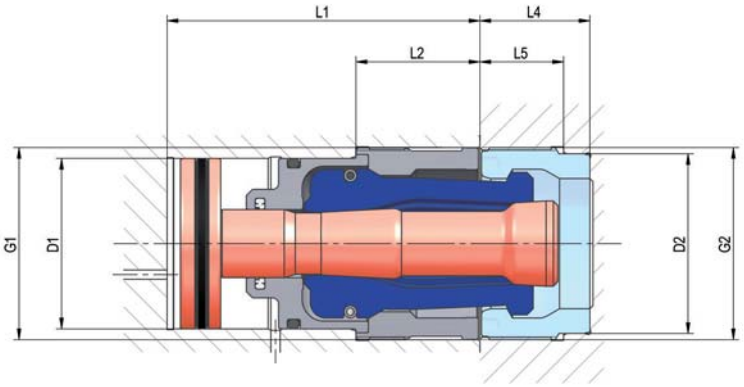
Clamping and release are hydraulic.
Mechanically locking.
After clamping, the system remains securely locked, even without hydraulic pressure.

CUSTOMER BENEFITS

- Maximum process reliability due to innovative design without wedge gear
- High pull-in forces with extremely compact design due to power transmission in the clamping set
- Integrated locking system maintains the clamping force, even without hydraulic pressure applied

TECHNICAL FEATURES

- Centering must be ensured with additional elements, if required



C 15
Built-in clamping head RESK, change interface for machine components

Item no.	1191061 ▲	1191063 ▲
Size	30	50
D1 mm	Ø 36	Ø 55,5
D2 mm	Ø 38	Ø 58
G1	M42x1,5	M62x1,5
G2	M42x1,5	M62x1,5
L1 mm	69,6	101
L2 mm	29	40
L4 mm	21	35,5
L5 mm	16	27
Clamping force kN	30	50
Operating pressure bar	100	80

Accessories built-in clamping head RESK

C 15
Adaptor ring

Item no.	Size	D2 mm	G2	L2 mm	L4 mm
1196524 ▲	30	Ø 38	M42x1,5	16	21
1195390 ▲	50	Ø 58	M62x1,5	27	35,5

C 15
Installation wrench

Item no.	Size
1296114 ▲	30
1296115 ▲	50

Power-Grip zero-point clamping system

Palletizing systems, such as the Power-Grip zero-point clamping system from RÖHM, achieve a drastic increase in production. This modular system meets the demands for customized solutions with the best possible utilization of the machine capacity. While the machine tool was stopped for the time of the set-up operation before, now the workpiece can be clamped and positioned on the pallet outside of the machine tool.
The set-up time is now only limited to the changing in and out of the pallet within a few seconds.If several production processes are necessary for machining, the pallet can be used along with the workpiece without a zero-point loss. Due to the sturdy and rust-resistant design, the Power-Grip zero-point clamping system is universally suitable for applications ranging from cutting machining to electrical discharge machining all the way to measuring machines.

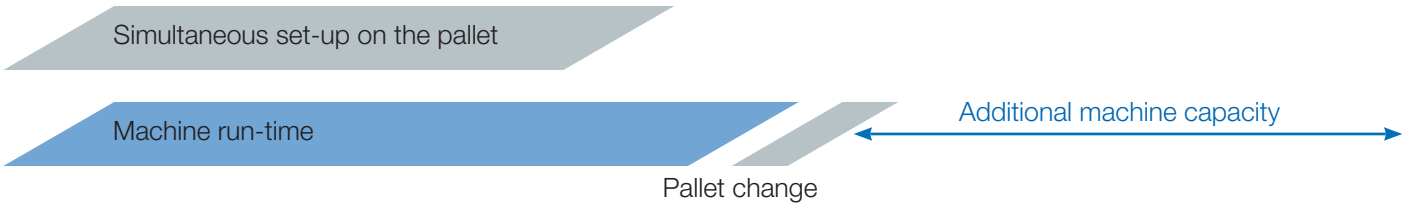
ADVANTAGES AT A GLANCE

- Increase in productivity thanks to set-up time reduction up to 90 %
- Maximum precision and repeatability of 0.002 mm
- Palletizing and clamping device from one source

SET-UP TIME REDUCTION BY UP TO 90 %

Without palletizing system

With Power-Grip zero-point clamping system



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