

Table of contents

TOOL CLAMPING SYSTEMS

ST-Power Draw Bar

Bolt-on Type ASPK	8002
Power Draw Bar ASP	8005
Integrated Type ESP	8008
Clamping sets	8009
Accessories	8010

HSK-Built-in Clamping System

HSK-C	8011
HSK-D	8016

HSK-Adaptors with Built-in Clamping System

HSK-C	8017
HSK-D	8018

HSK-Spindle contour with clamping set

HSK-C	8019
HSK-D	8019

HSK-Automatic Clamping Set

HSK-Clamping Set - Standard	8020
HSK-Clamping Set - High Speed - with Guided Collet	8024
HSK-Clamping Set with Retaining Collet	8025

HSK Adaptors with Clamping System

HSK-A/B	8026
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HSK-Automatic clamping units

HSK-Clamping unit	8027
HSK-Built-in Clamping Unit	8028

HSK-Clamping unit SUPER-LOCK

SUPER-LOCK	8029
------------------	------

Stationary release unit

Stationary release unit	8032
Stationary release unit with buffer stroke	8033

Turning Performance

Turning Performance	8034
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Tool mountings with HSK-C / HSK-A

HSK-Tool blankes	8035
HSK-clamping chucks	8037
HSK-Drill chuck	8038
HSK-Slip-on cutter arbor	8039
HSK-Quick change tapping chuck	8040
HSK-Test Bar	8041
HSK-Adapter sleeves	8042
HSK-Adapter	8046
ABS-mounting with HSK-A shaft	8047
HSK-Plug	8048
Accessories	8048

Hydraulic clamping head

Hydraulic clamping head	8049
Accessories	8050

Spring operated clamping head

Spring operated clamping head	8051
Accessories	8052

**Outstanding performance thanks to perfect adaption.
Perfect in form and function. For the best-possible
transfer of high retention forces - even overhead!**





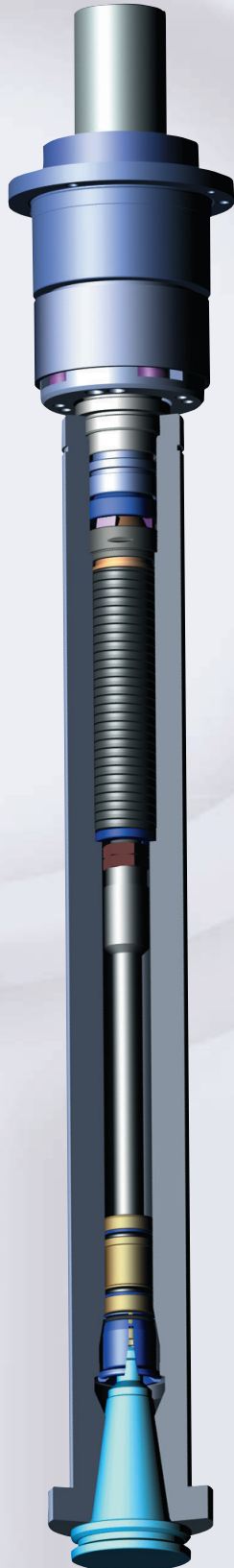
TOOL CLAMPING SYSTEMS

ST-Power Draw Bar	8002
Manual HSK-clamping sets	8011
Automatic HSK-clamping sets	8020
Automatic HSK-clamping units	8027
SUPER-LOCK-clamping unit	8029
Stationary release unit	8032
Turning Performance	8034
Tool mountings with HSK-C / HSK-A	8035
Hydraulic clamping head	8049
Spring operated clamping head	8051



Functional description

of tools with taper mount and draw-in bolts



The RÖHM Power Draw Bar for automatic tool-change of tools with steep taper mounting is a complete unit. Its components like: Rotating distributor with piston for unclamping, wedge-type system with cup springs and draw bar with collet, allow an optimum in tool changing technique. In terms of operational reliability, quiet running, speeds and clamping force, the RöhM Power Draw Bar complies with all requirements of the practice.

New developed wedge-type clamping system!

When clamped, the power draw bar is positively locked through the wedge surface with high power transmission and high stiffness.

Especially suitable for...

...**machine tools** with rotating spindle, high rotary frequency and high clamping force.

Technical features:

- Multiple clamping force transmission of cupspring force through guided wedge-element surfaces.
- High safety against pull-out forces because of the self-locking wedge system
- In case of power failure, tool remains firmly clamped
- Power transmission during clamping and unclamping without any influence to the spindle bearings
- Quick-acting clamping system, therefore short change-over time for tool change,
- Compact design resulting in low rotating masses.

The RöhM-tool clamp is made in 3 basic types:

Add-on clamped (the complete clamp is screwed down at the end of the spindle).

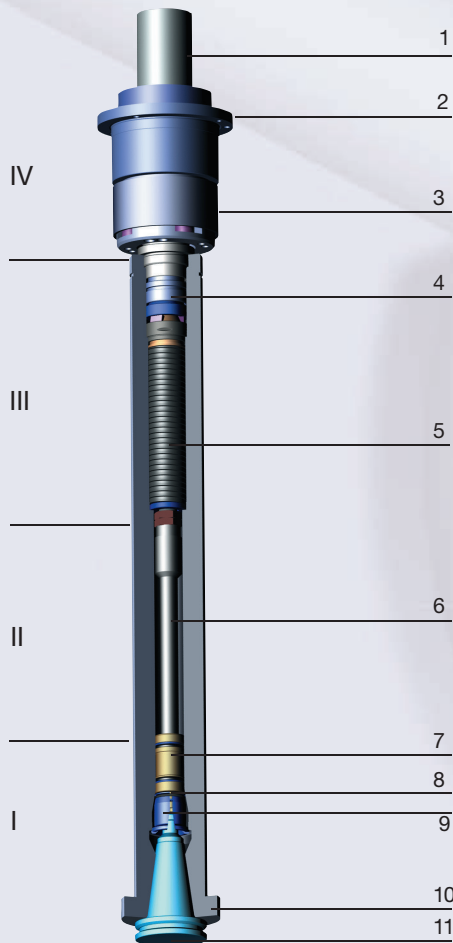
Tool clamp (the wedge gearing is screwed down at the end of the spindle and the spring set enters into the spindle).

Built-in clamp (the complete clamp is built into the spindle).

Further designs on request!

Design principle/Technical features

Components and construction groups



Stationary opening unit - Construction group IV

1. Non-rotating distributor
2. Non-rotating housing
3. Housing, axial movable

Power draw bar - integrated type - Construction group III

4. Wedge gearing for clamping force transmission
5. Spring package

Draw bar extension - Construction group II

6. Draw bar extension

Clamping set - Construction group I

7. Clamping piece
8. Spring
9. Collet
10. Spindle
11. Tool

The collet pulls the steep taper tool into the spindle.

Function clamping:

Due to the spring force of the cup spring package the pressure sleeve pushes the wedge elements outwards between mounting sleeve and piston. The increase in power is the result of a combination of the adequate angles. The draw bar which is screwed into the piston moves the collet actuator and the collet. The steep taper tool is pulled into the spindle and positively locked.

Function unclamping:

The hydraulic actuated piston moves the actuating pins, get the wedge elements unlocked and force-retracted. At the same time the cup spring package is depressed by the pressure sleeve, the draw bar and the collet actuator open the collet. The face of the collet actuator ejects the tool by a defined amount.

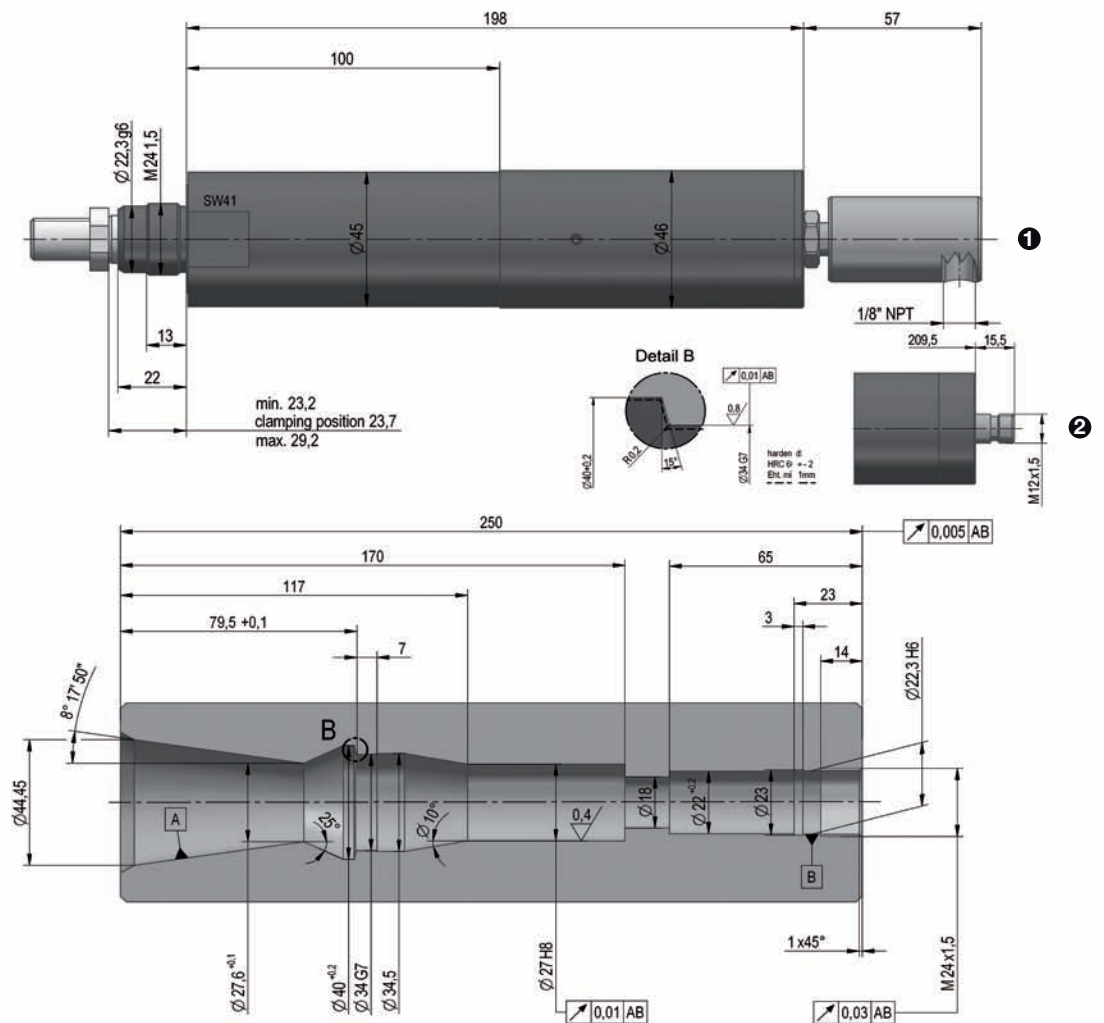
Clamped position



Unclamped



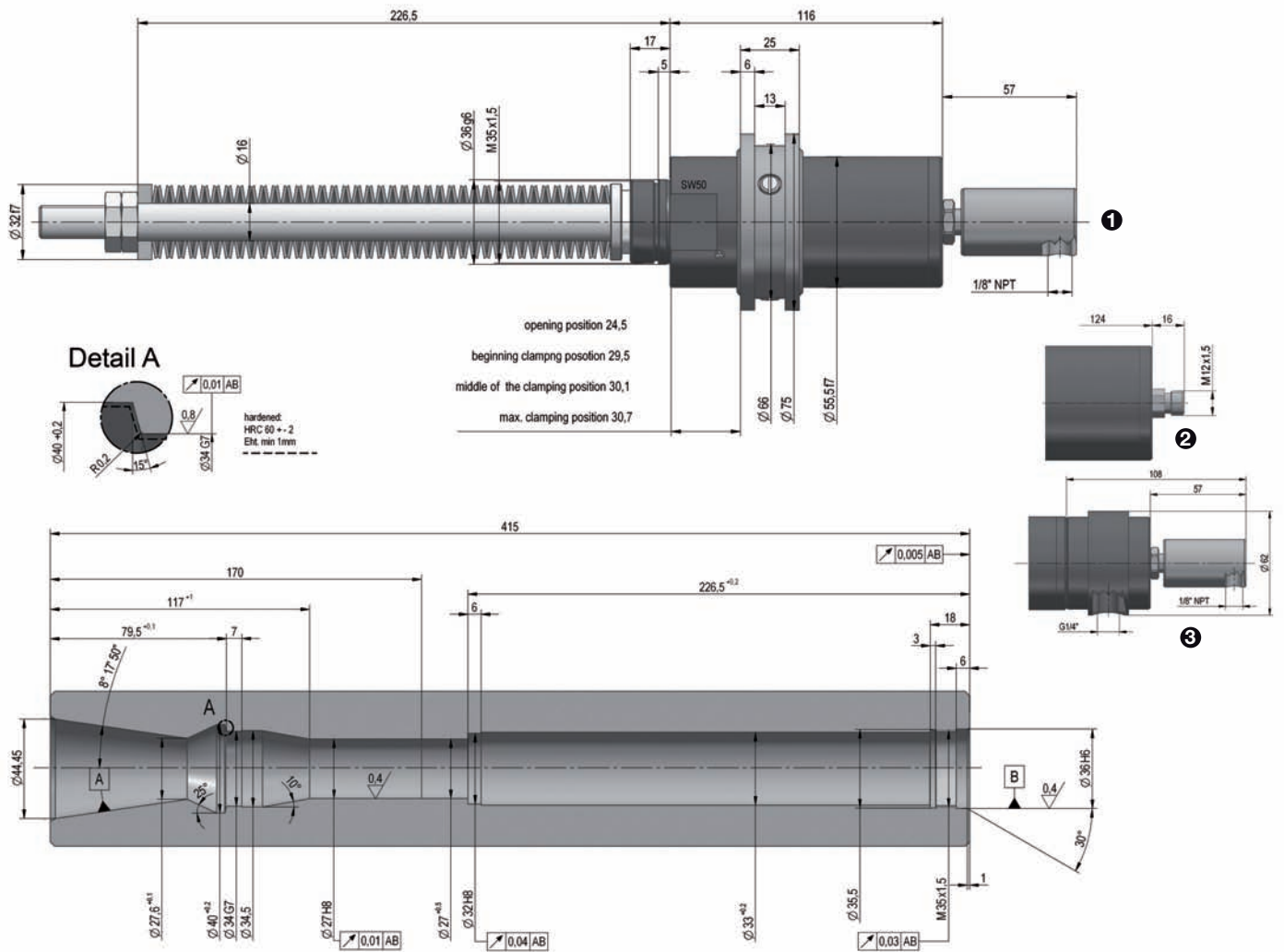
Bolt-on Type ASPK



Tool group C 15
Type 285-00/01
Power Draw Bar - Bolt-on Type ASPK 40/1200
with or without stroke control,
for clamping of tools with steep
taper size no. 40 to DIN 69871,
DIN 69872 (draw-in bolts) and
DIN 2080 with ring groove

Item no.	749469 ①	812771 ①	766349 ②	812772 ②
Design	without stroke control	with stroke control	without stroke control	with stroke control
Spring pressure in clamping position N	4050	4050	4050	4050
Spring arrangement	single	single	single	single
Pull force in clamping position N	ca. 12000	ca. 12000	ca. 12000	ca. 12000
Speed min ⁻¹	6000	6000	6000	6000
Opening force bar	80	80	80	80
Opening force max. bar	120	120	120	120
Piston-Ø 38 - piston area cm ²	11,34	11,34	11,34	11,34
Wedge stroke mm	14,2	14,2	14,2	14,2
Total clamping stroke mm	6,0	6,0	6,0	6,0

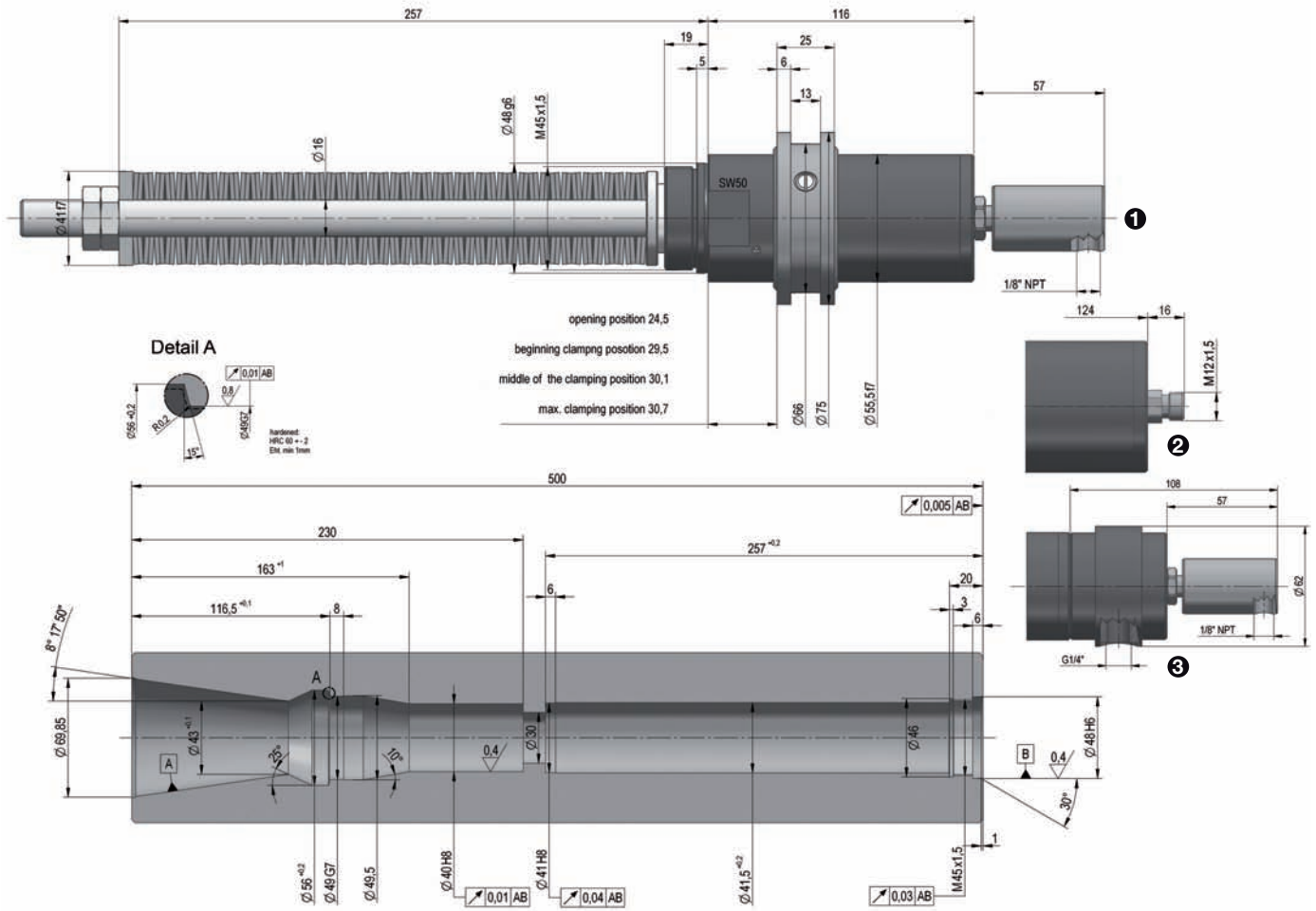
Power Draw Bar ASP



Tool group C 15
Type 285-21/23
Power Draw Bar ASP 40/1200
with stroke control,
with or without internal coolant
lubrication,
for clamping of tools with steep
taper size no. 40 to DIN 69871,
DIN 69872 (draw-in bolts) and
DIN 2080 with ring groove

Item no.	749179 ①	812773 ②	752958 ③
Design	without internal coolant lubrication	without internal coolant lubrication	with internal coolant lubrication
Spring pressure in clamping position N	4000	4000	4000
Spring arrangement	single	single	single
Pull force in clamping position N	ca. 12000	ca. 12000	ca. 12000
Speed min ⁻¹	10000	10000	10000
Opening force bar	80	80	80
Opening force max. bar	120	120	120
Piston-Ø 48 - piston area cm ²	17,35	17,35	16,85
Coolant lubrication bar	-	-	max. 80
Air bar	-	-	max. 10
Wedge stroke mm	16,1	16,1	16,1
Total clamping stroke mm	6,2	6,2	6,2

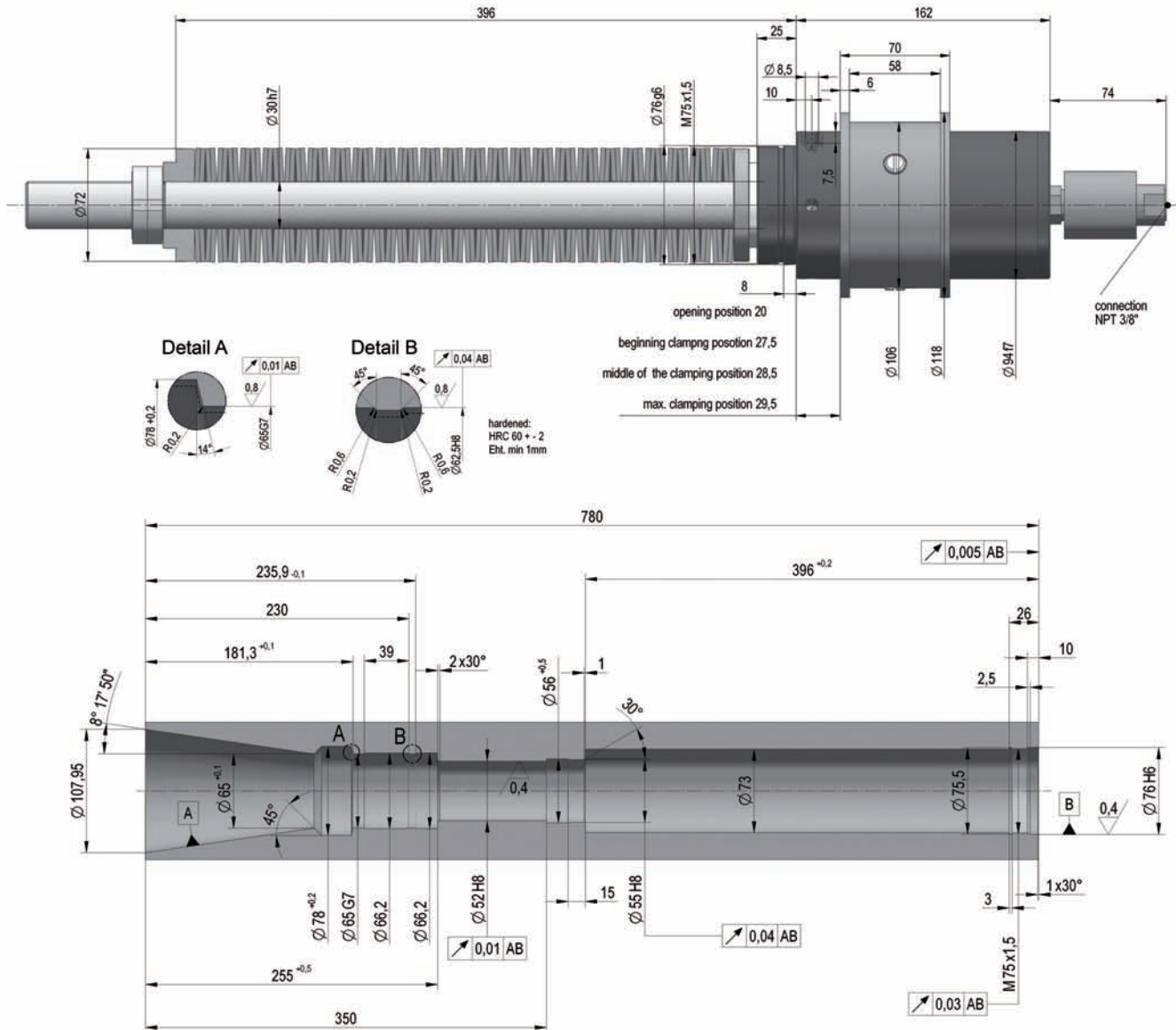
Power Draw Bar ASP



Tool group C 15
Type 285-21/23
Power Draw Bar ASP 50/2500
with stroke control,
with or without internal coolant
lubrication,
for clamping of tools with steep
taper size no. 50 to DIN 69871,
DIN 69872 (draw-in bolts) and
DIN 2080 with ring groove

Item no.	734793	812774	752968
	①	②	③
Design	without internal coolant lubrication	without internal coolant lubrication	with internal coolant lubrication
Spring pressure in clamping position N	7500	7500	7500
Spring arrangement	double	double	double
Pull force in clamping position N	ca. 25000	ca. 25000	ca. 25000
Speed min ⁻¹	6300	6300	6300
Opening force bar	100	100	80
Opening force max. bar	120	120	120
Piston-Ø 48 - piston area cm ²	17,35	17,35	16,85
Coolant lubrication bar	-	-	max. 80
Air bar	-	-	max. 10
Wedge stroke mm	16,1	16,1	16,1
Total clamping stroke mm	6,2	6,2	6,2

Power Draw Bar ASP

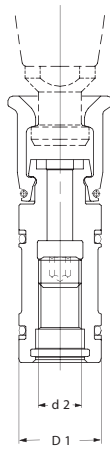


Tool group C 15
Type 285-21
Power Draw Bar ASP 60/6500
with stroke control,
for clamping of tools with steep
taper size no. 60 to DIN 69871,
DIN 69872 (draw-in bolts) and
DIN 2080 with ring groove

Item no.	734463
Spring pressure in clamping position N	19760
Spring arrangement	double
Pull force in clamping position N	ca. 65000
Speed min ⁻¹	4500
Opening force bar	110
Opening force max. bar	150
Piston-Ø 80 - piston area cm ²	50,26
Wedge stroke mm	22,8
Total clamping stroke mm	9,5

Clamping sets

Tool group C 15
Type 285-70 **Clamping sets**



Item no.	Design	D1	d 2	Draw-in force max. N
772091	SK 30 DIN 69871/72	19	M10x1,5	7500
707858	SK 40 DIN 69871/72	27	M 14x1,5	15000
756168	SK 40 DIN 2080 with ring groove	27	M 14x1,5	15000
756360	SK 50 DIN 69871/72	40	M 16x1,5	26000
760389	SK 50 DIN 2080 with ring groove	40	M 16x1,5	26000
760390	SK 60 DIN 69871/72	52	M 30x1,5	80000

Tool group C 15
Type 285-71 **Clamping sets IKZ**
with axial cooling lubricant feed

Item no.	Design	D1	d 2	Draw-in force max. N
756340	SK 40 DIN 69871/72	27	M 14x1,5	15000
760391	SK 50 DIN 69871/72	40	M 16 x1,5	26000

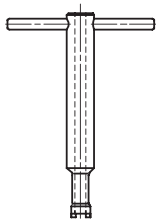
Tool group C 15
Type 285-72 **Clamping sets IKR**
with radial coolant lubrication transfer

Item no.	Design	D1	d 2	Draw-in force max. N
760392	SK 40 DIN 69871/72	27	M 14x1,5	15000
760393	SK 50 DIN 69871/72	40	M 16 x1,5	26000

Accessories

Tool group C 15

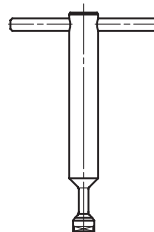
Type 285-91 **Socket wrench with through-hole**



Item no.	Size
772214	SK 30
756393	SK 40
760229	SK 50
747337	SK 60

Tool group C 15

Type 285-91 **Socket wrench without through-hole**



Item no.	Size
756396	SK 40-60

Tool group C15

Type 7023 **Hexagon key**



Item no.	Size	Length l1	Key-width SW
367665	SK 30	183	4
802094	SK 40	350	6
769078	SK 50/60	400	8

Tool group A 34

Type 234-00 **Draw-in Bolts DIN 69872 A**



Item no.	Size	Thread
698582	SK 30	M 12
347325	SK 40	M 16
367315	SK 45	M 20
367316	SK 50	M 24

Tool group A 34

Type 234-05 **Draw-in Bolts DIN 69872 B**



Item no.	Size	Thread
698583	SK 30	M 12
698584	SK 40	M 16
698585	SK 45	M 20
698586	SK 50	M 24

Tool group A 34

Type 234-10 **Draw-in Bolts ISO 7388/II-B**



Item no.	Size	Thread
367569	SK 40	M 12
698587	SK 45	M 16
698588	SK 50	M 20

Tool group A 34

Type 234-41 **Draw-in Bolts MAS BT 1 (30°)**



Item no.	Size	Thread
698592	SK 30	M 12
367320	SK 40	M 16
698593	SK 45	M 20
698594	SK 50	M 24

Tool group A 34

Type 234-40 **Draw-in Bolts MAS BT 2 (45°)**



Item no.	Size	Thread
698589	SK 30	M 12
367319	SK 40	M 16
698590	SK 45	M 20
698591	SK 50	M 24

Tool group A 34

Type 234-50 **Draw-in Bolts ANSI B5.50**



Item no.	Size	Thread
620770	SK 40	M 16
698595	SK 45	M 20
620771	SK 50	M 24

Functional description

For manual and automatic tool clamping



The task:

Increase of efficiency, reduction of cost and change to "lean production", however, optimizing quality at the same time. These are the present demands to modern manufacturing.

In order to account for this development, the positive taper lock system was developed and tested as a common project of the industry and the TH Aachen.

The positive taper lock system is the connection between the machine spindle and the tool.

The specific demands, an advanced tool change system must fulfil, are:

Technical features:

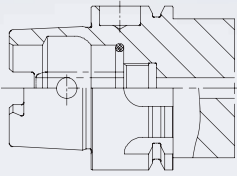
- Particularly high changing accuracy and repeatability
- Safe transmission of high torques with a defined, radial location
- High static and dynamic flexural strength
- Particular suitability for high-speed operations in milling, drilling and turning machines
- Reduction of weight and total length
- Easy handling

Designs

For manual and automatic tool clamping

● Positive taper lock for automatic tool change

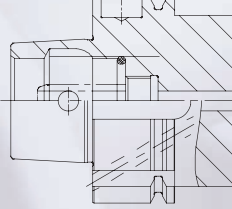
Form A



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.

Form B

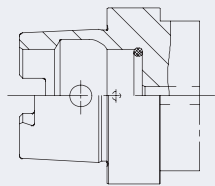


Positive taper lock (version B)
automatically-changeable tool adapter, torque transmission on collar via grooves, large square face with gripping channel.

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

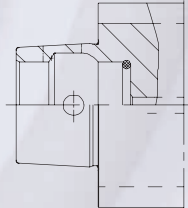
Form C



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

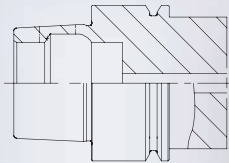


Positive taper lock (version D)
manually-changeable tool adapter, torque transmission on collar via grooves, large square face without gripping channel.

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)

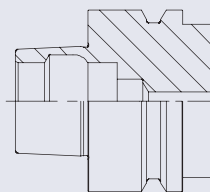
Form E



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.

Technical features

The RÖHM-clamping system was specially designed for the positive taper lock clamping taking particularly into account the necessity of manual clamping.



Technical features:

- Convincing strong design
- Compact power flow
- No clamping bore required in the taper, no dirt penetration possible during operation
- Sealed central coolant supply
- Steady clamping force due to four symmetric clamping surfaces
- Automatic ejection of the tool during release
- Perfectly suitable to be built into the spindle

The advantage of the positive taper lock clamping system originates in the combination of the plane surfaces, together with the expansion of the taper during the clamping operation.

The precise adjustment of the nominal diameter of the taper creates an initial tension important for the quality of the HSK-system and can be measured by means of the axial play.

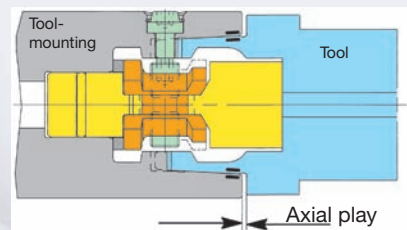
For the clamping operation the clamping jaws are expanded by turning the adjusting screw. The axial forces F_A and radial forces F_R generated by the symmetric gripping slope built-up the necessary clamping force for the initial tension of the taper lock system over the entire taper surface and locating surface. Two T-nuts, gripping the tool at the end of the shank of the tool mounting, guarantee a positive radial location.

When the jaws are released, the tool is ejected automatically.

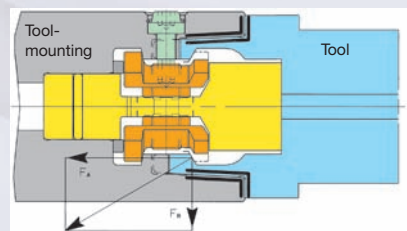
A compact power flow is important for the rigidity of the clamping system and improves the changing accuracy.

Positive Taper Lock System for manual tool clamping

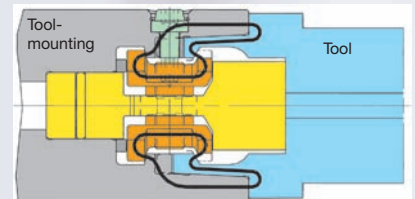
Joining position with locating surface



Clamping situation

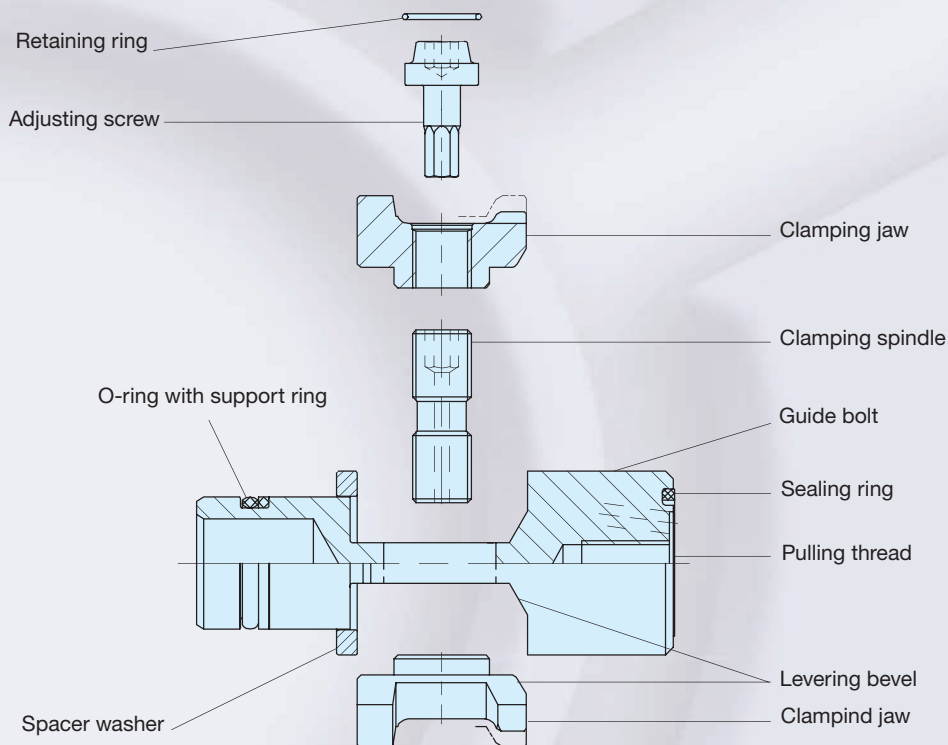


Clamping situation with compact power flow



Assembling guide

For built-in clamping system HSK-C and HSK-D for manual tool clamping of hollow shaft tools to DIN 69893



Assembling the clamping sets:

- Lightly grease the clamping jaw seat on the guide pin, clamping bevels of the clamping jaws and the clamping spindle.
- Screw the clamping spindle into one clamping jaw by approximately one turn.
- Insert the clamping jaw with the clamping spindle into the guide pin.
- Screw the second clamping jaw onto the clamping spindle also by approximately one turn. Hold the spindle to prevent it turning.
- Move both clamping jaws inwards by turning the clamping spindle with an hexagonal key.
- Check the seat of the clamping spindle - must be centred exactly between the clamping jaws.
- Fit the front face sealing ring and press in.
- Fit the spacer washer, then fit the support ring and the rear O-ring.

Installing the clamping sets:

Direct installation of the built-in clamping set into spindles, clamping chuck or mounting adapters

- Fit or press in the clamping set into the spindle or adapter so that the clamping spindle access hexagon aligns with the adjusting screw bore. Insert the adjusting screw into the clamping spindle hexagon or insert into the spindle bore and secure with the snap ring.

Notes on the use of the clamping set:

- Always use a closing plug when using a spindle or adapter fitted with a clamping set without tools.
- With tool inserts subjected to low radial loads, e.g. drilling and friction operation, it is permissible to lower the maximum torques by approximately 25%.
- When changing tools always clean the tool and the spindle taper with a taper wiper.
- The clamping set should be regreased after prolonged use. These intervals depend on the tool changing frequency, the machining method and the coolant lubricant. Regreasing should, however, be performed at least every six months.

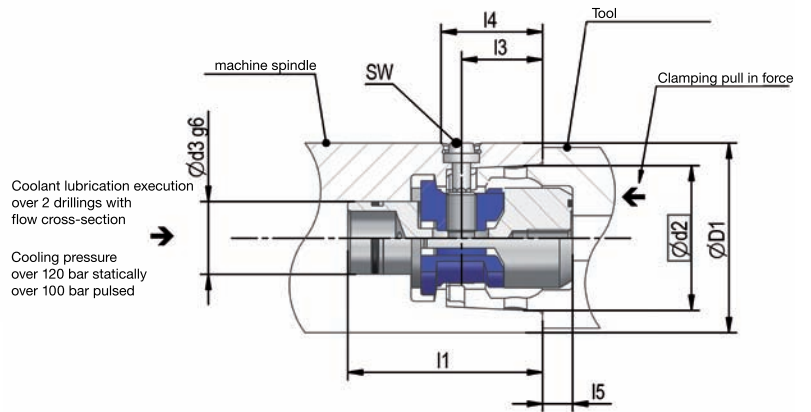
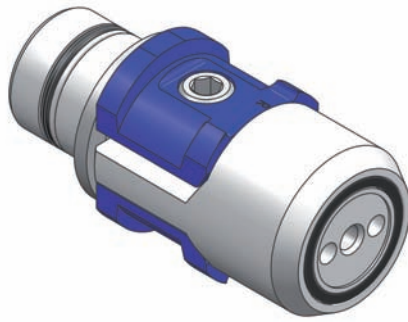
Dismantling:

- Remove the snap ring with a screwdriver on the dismantling bevel in the spindle or mounting adapter
- Remove the adjusting screw.
- When the jaws are released pull out the clamping set by the guide pin or, on newer versions, with the central pulling thread.

Note:

Because of the face sealing at the tool (positive taper) the O-Ring mentioned in the German Standards DIN is idle and may be removed.

HSK-C

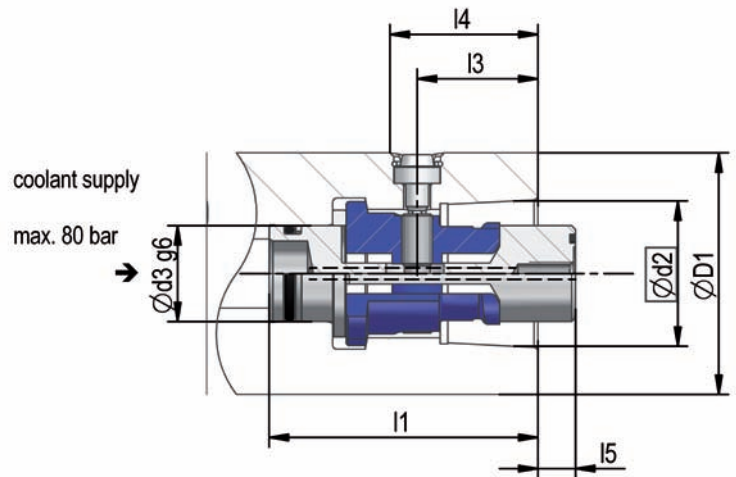
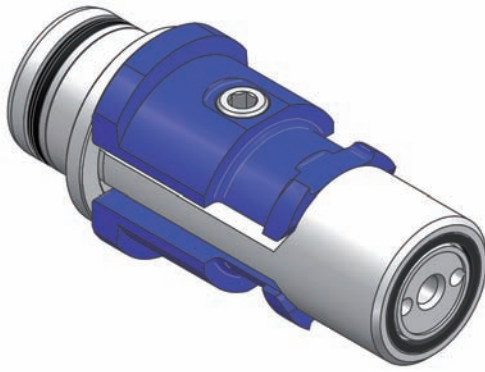


Tool group C 15
Type 288-60

Built-in Clamping System HSK-C
for hollow taper shanks
DIN 69893 HSK-A and -C
Inner spindle taper contour with
intergrated driving notches

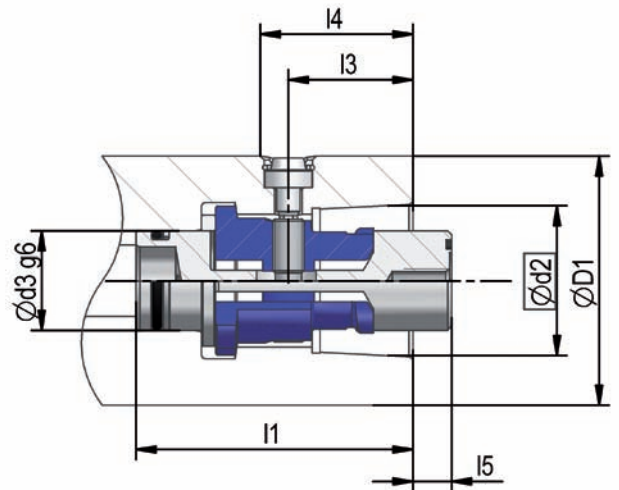
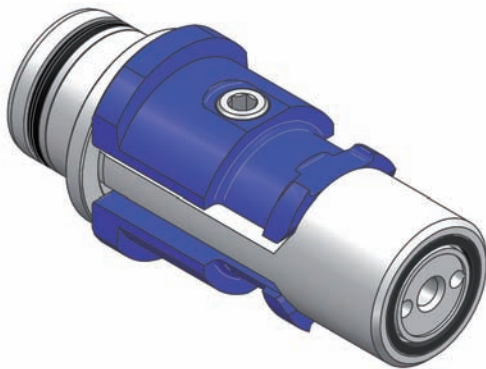
Item no.	760530	784603	812617	831435	586214	475170	475172	483213	831306
Initial size D_1	25	32	40	50	63	80	100	125	160
Taper $\varnothing d_2$	19	24	30	38	48	60	75	95	120
$d_3 \text{ H7 g6}$	10	12	15	18	24	32	40	48	60
l_1	28	34	45	55	65	80	97,5	124	160
l_3	11,4	14	17,5	21,5	27	34	42	53	68
l_4	15	18,5	22	27	34	42	53	67	85
l_5	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	8	14	25	42	80	100
Pull-in-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

HSK-D



Tool group C 15
Type 288-61
Built-in Clamping System HSK-D with central coolant supply,
for hollow taper shanks
DIN 69893 HSK-B, D, E, F
without driving slots at the hollow tapered shank end

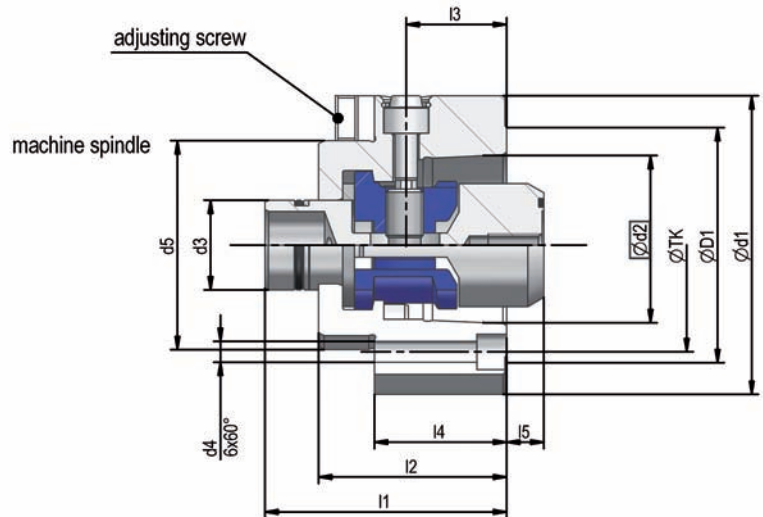
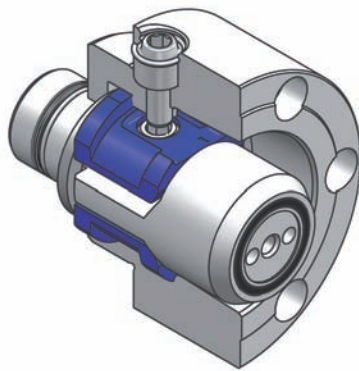
Item no.	466327	1011116	845214	1011117	1011118	1011119	1011098
Initial size D_1	40	50	63	80	100	125	160
Taper $\varnothing d_2$	24	30	38	48	60	75	95
$d_3^{H7/g6}$	16,5	20	25	32	36	50	60
l_1	45	57,5	70	90	104	134	162
l_3	20	25	31,5	40	48	61	76,2
l_4	30	32	40	48	56	72	90
l_5	8	8	10	10	12,5	12,5	16
Key SW	2,5	3	4	5	6	8	10
Tightening torque Nm	2,5	3	8	14	25	42	80
Pull-in-force kN	5	6,8	11	18	30	45	70
Adjusting screw complete Item no.	870032	760464	870034	870035	870036	870037	870029



Tool group C 15
Type 288-61
Built-in Clamping System HSK-D without central coolant supply,
for hollow taper shanks
DIN 69893 HSK-B, D, E, F
without driving slots at the hollow tapered shank end

Item no.	784624	784932	881798	895272	895304	466323	870583
Initial size D_1	32	40	50	63	80	100	125
Taper $\varnothing d_2$	19	24	30	38	48	60	75
$d_3^{H7/g6}$	13	16,5	20	25	32	36	50
l_1	36	45	57,5	70	90	104	134
l_3	16	20	25	31,5	40	48	61
l_4	20	25	32	40	48	56	72
l_5	6	8	8	10	10	12,5	12,5
Key SW	2,5	2,5	3	4	5	6	8
Tightening torque Nm	1,8	2,5	3	8	14	25	42
Pull-in-force kN	3,5	5	6,8	11	18	30	45
Adjusting screw complete Item no.	870031	870032	760464	870034	870035	870036	870037

HSK-C



Tool group C 15
Type 288-70
Adaptors with Built-in Clamping System HSK-C, with adjusting screw with central coolant supply, complete with built-in clamping system for taper DIN 69893 HSK-C and -A for manual tool change

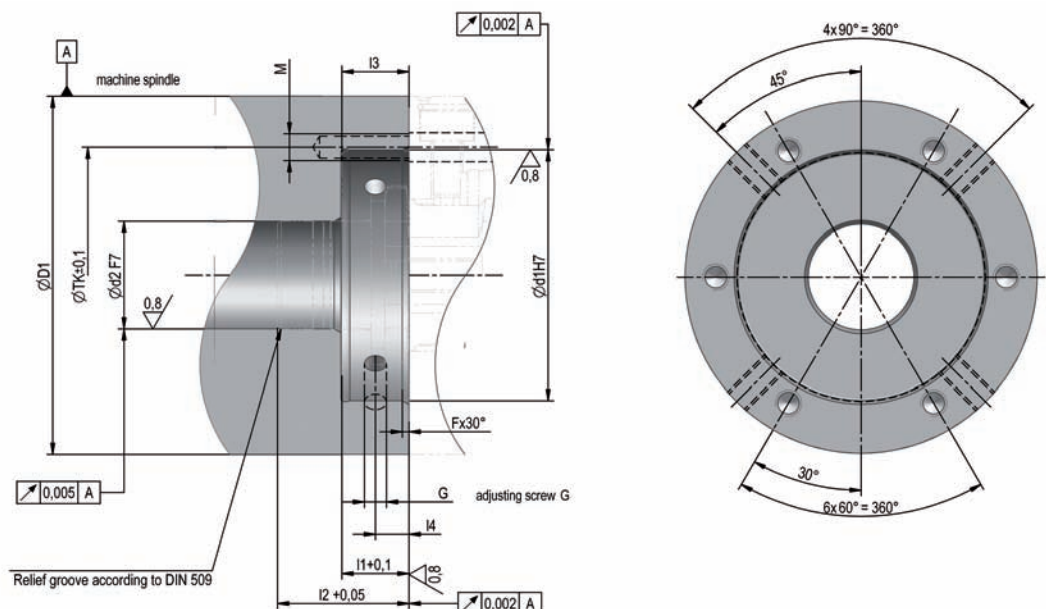
Item no.	850333	795296	795297	795298	795299	795300	795301	850335	850337
Initial size D ₁	25	32	40	50	63	80	100	125	160
d ₁	37	40	50	63	80	100	123	148	190
Taper Ø d ₂	19	24	30	38	48	60	75	95	120
d ₃ ^{F7 g6}	10	12	15	18	24	32	40	48	60
d ₄	3,4	3,4	4,5	5,5	6,5	9	11	13	17
d ₅ ^{g6}	24	27	33,5	42	56	68	84	100	125
Ø-TK	29	32	40,5	52	66	82	102	125	160
l ₁	26	34	45	55	65	80	97,5	124	160
l ₂	22	26	34	41	50	64	76	97	126
l ₃	11,4	14	17,5	21,5	27	34	42	53	68
l ₄	15,5	19	23	28	35	44	54	68	86
l ₅	6	8	8	10	10	12,5	12,5	16	16
Adjusting screw complete Item no.	870022	870023	870024	870025	870026	870027	870028	870029	870030

Special customised versions are available on request

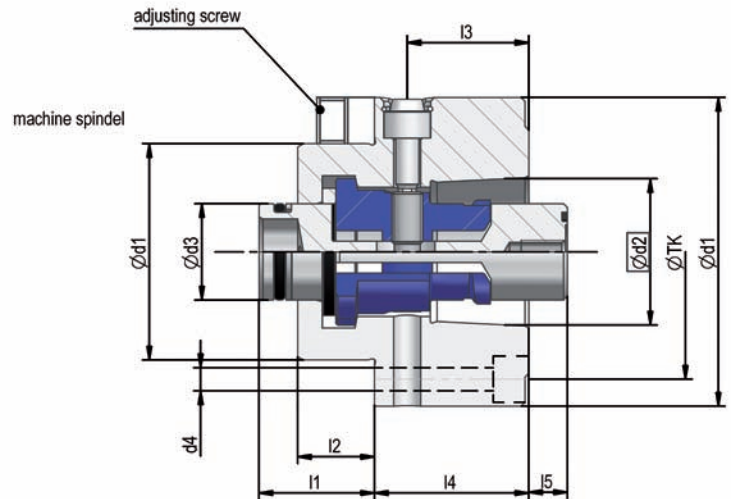
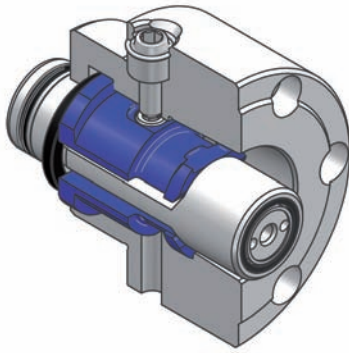
Tool group C 15
Type 288-70
Adaptors with Built-in Clamping System HSK-C "high precision design" with central coolant supply, complete with built-in clamping system for taper DIN 69893 HSK-C and -A for manual tool change

Item no.	850322	820802	820803	820804	820805	820806	820807
Initial size D ₁	25	32	40	50	63	80	100
Adjusting screw complete Item no.	870022	870023	870024	870025	870026	870027	870028

dyn. balanced: G 2,5 DIN ISO 1940



HSK-D



Tool group C 15
Type 288-71

Adaptors with Built-in Clamping System HSK-D,
with adjusting screw
without central coolant supply,
for hollow taper shanks
DIN 69893 HSK-B, D, E, F
without driving slots at the hollow tapered shank end

Item no.	895270	885912	895292	820518	895307	466325	466326
Initial size	32	40	50	63	80	100	125
D_1	40	50	63	80	100	110	138
d_1	27	33,5	42	56	68	72	100
Taper $\varnothing d_2$	24	30	38	48	60	75	95
d_3	13	16,5	20	25	32	36	50
d_4	6 x M3	6 x M4	6 x M5	6 x M6	6 x M8	6 x M10	6 x M10
d_6	19	24	30	38	48	60	75
\varnothing -TK	32	40,5	52	66	82	90	116
l_1	16	20	24,5	30	34	44	59
l_2	10	12	13	19,5	20	28	34
l_3	16	20	25	31,5	40	48	61
l_4	20	25	33	40	56	60	75
l_5	6	8	8	10	10	12,5	12,5

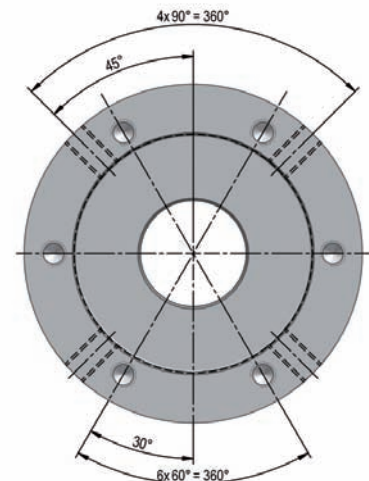
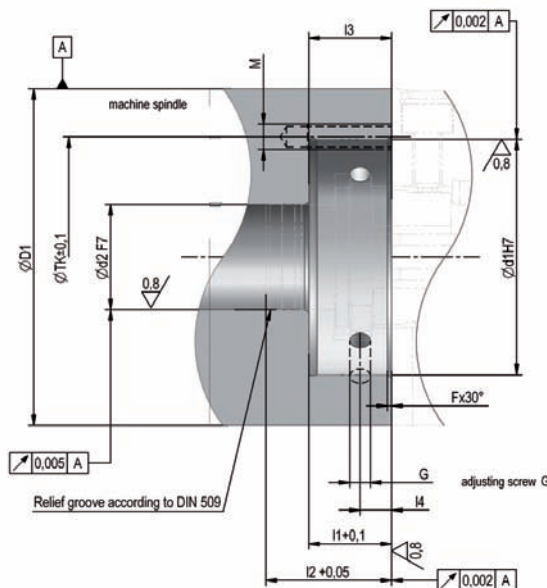
high precision design on request

Tool group C 15
Type 288-72

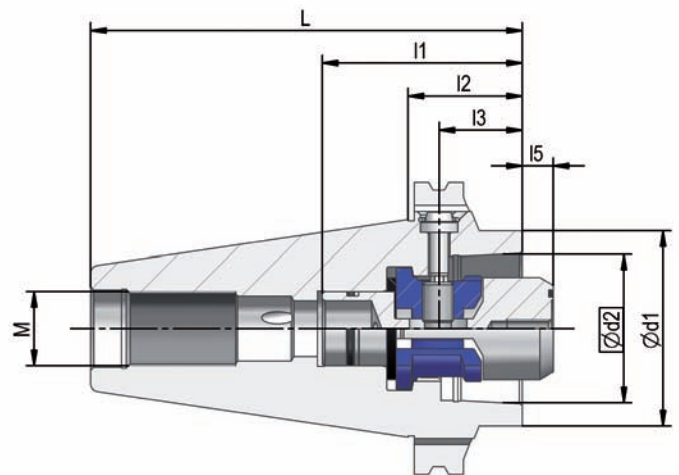
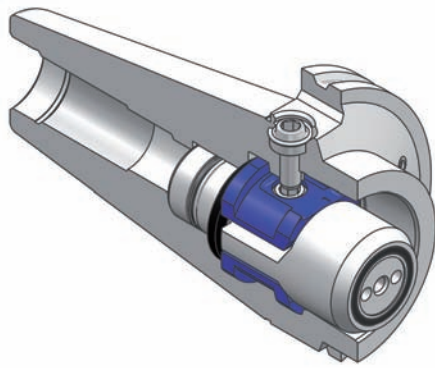
Adaptors with Built-in Clamping System HSK-D,
with adjusting screw
with central coolant supply,
for hollow taper shanks
DIN 69893 HSK-B, D, E, F
without driving slots at the hollow tapered shank end

Item no.	466329	466330	820471	806428	466331	820796
Initial size	40	50	63	80	100	125

high precision design on request



HSK-C



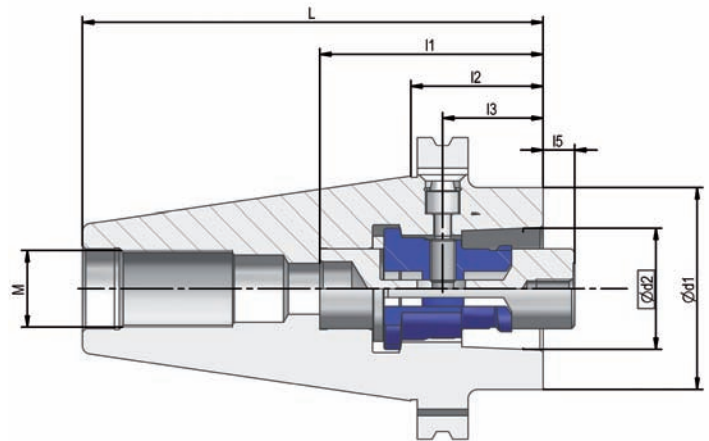
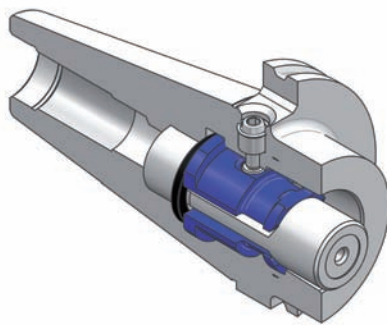
Tool group C 15
Type 288-50

Spindle contour with built-in clamping set HSK-C
for hollow taper shanks
DIN 69893 HSK-B, D, E and F

Item no.	752850	752911	772350	756056	771981	756057	756058	861240	850386	850387
Initial size and SK	32x SK-No. 40	40x SK-No. 40	40x SK-No. 50	50x SK-No. 40	50x SK-No. 45	50x SK-No. 50	63x SK-No. 50	63x SK-No. 50	63x SK-No. 40	80x SK-No. 50
d_1	34	42	42	50	50	50	65	63	65	82
Taper $\varnothing d_2$	24	30	30	38	38	38	48	48	48	60
L	93,5	97	130,4	115,4	115,4	134,4	140	139,9	140	180
l_1	34	45	45	55	55	55	65	65	65	80
l_2	25	28,5	28,7	32,7	32,7	32,7	38,2	38,2	71,6	78,2
l_3	14	17,5	17,5	21,5	21,5	21,5	27	27	27	34
l_5	8	8	8	10	10	10	10	10	10	10
M	M 16	M 16	M 24	M 20	M 20	M 24	M 24	M 24	M 16	M 24

Adapter DIN 2080 on request

HSK-D



Tool group C 15
Type 288-50

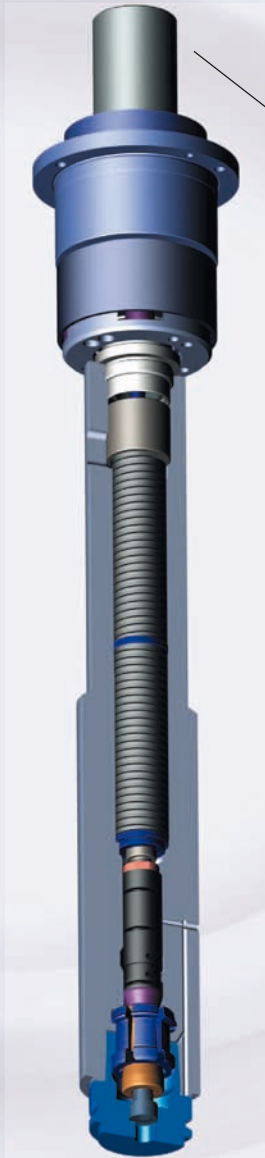
Spindle contour with built-in clamping set HSK-D
for hollow taper shanks
DIN 69893 HSK-B, D, E and F

Item no.	895002	895375	806387 ¹⁾	790469	790470	806385 ¹⁾	790480	831570	857458
Initial size and SK	50x SK-No. 40	50x SK-No. 50	50x SK-No. 40	50x SK-No. 40	63x SK-No. 45	63x SK-No. 40	63x SK-No. 50	63x SK-No. 40	80x SK-No. 50
d_1	52	52	52	52	63	63	63	63	65
Taper $\varnothing d_2$	30	30	30	30	38	38	38	38	48
L	120	154	120	120	131,5	131,5	144,4	131,5	152,9
l_1	57,5	57,5	57,5	57,5	70	70	70	70	90
l_2	51,6	52,25	51,6	51,6	63	63	42,65	63	51,2
l_3	25	25	25	25	31,5	31,5	31,5	31,5	40
l_5	8	8	8	8	10	10	10	10	10
M	M 16	M 24	M 16	M 16	M 16	M 16	M 24	M 16	M 24

¹⁾ dyn. balanced: G 2,5 DIN ISO 1940
Adapter DIN 2080 on request

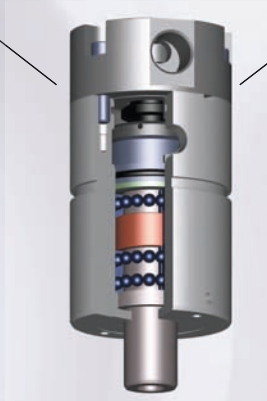
Type overview

Clamping system with springs

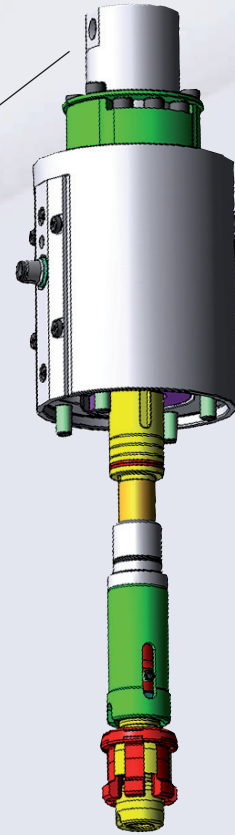


with positive taper lock mounting

with standardised RÖHM turning performance for speeds up to 36000 rpm



Clamping system with SUPER-LOCK

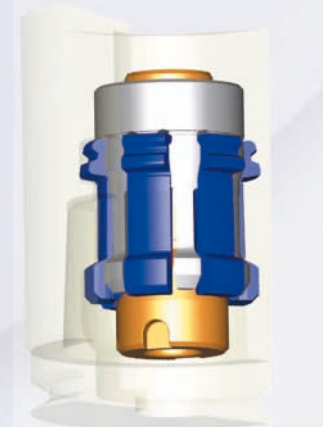


with positive taper lock mounting

clamping set with guided segment collet, compact guide through segments, which means less imbalance of the clamping set

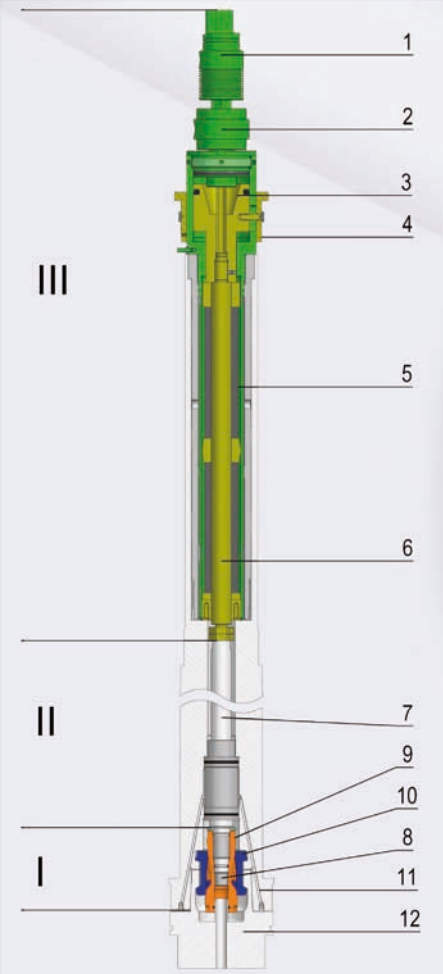


with retaining collet, for quick and easy tool change



Design principle

Components and construction groups



For speeds up to 10000 rpm

Clamping unit - Construction group III

- 1. Non-rotating distributor for coolant lubricant or air
- 2. Non-rotating distributor for hydraulic unclamping
- 3. Unclamping piston
- 4. Strike control ring
- 5. Spring package
- 6. Draw bar

Draw bar extension - Construction group II

- 7. Draw bar extension

Clamping set - Construction group I

- 8. Counter nut
- 9. Collet actuator
- 10. Collet
- 11. Spindle
- 12. Positive Taper Lock - tool HSK

For high speeds

Stationary opening unit - Construction group VI

- 1. Non-rotating distributor for coolant lubricant
- 2. Connections for actuation, air blast
- 3. Non-rotating housing
- 4. Unclamping piston

Clamping unit SEH - Construction group III

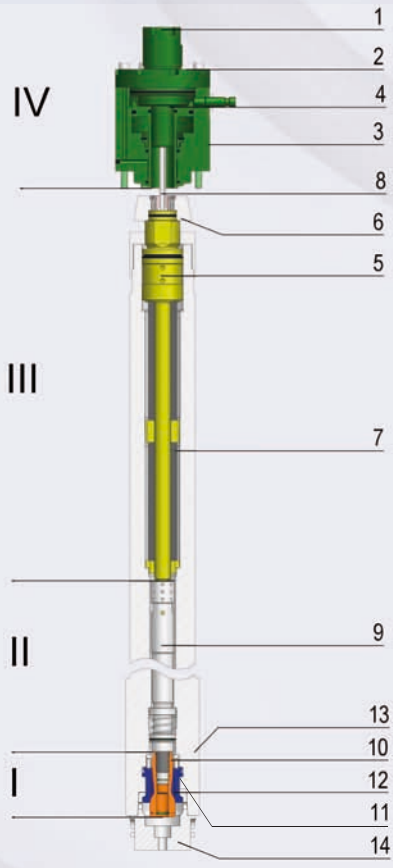
- 5. Draw bar
- 6. Ring for stroke control
- 7. Spring package
- 8. Connecting pipe

Draw bar extension - Construction group II

- 9. Draw bar extension

Clamping set - Construction group I

- 10. Collet actuator
- 11. Collet
- 12. Counter nut
- 13. Spindle
- 14. Tool



Technical features

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

The automatic RÖHM positiv taper lock system was specially designed as complement for the manual positiv taper lock clamping. Following items were taken particularly into account:

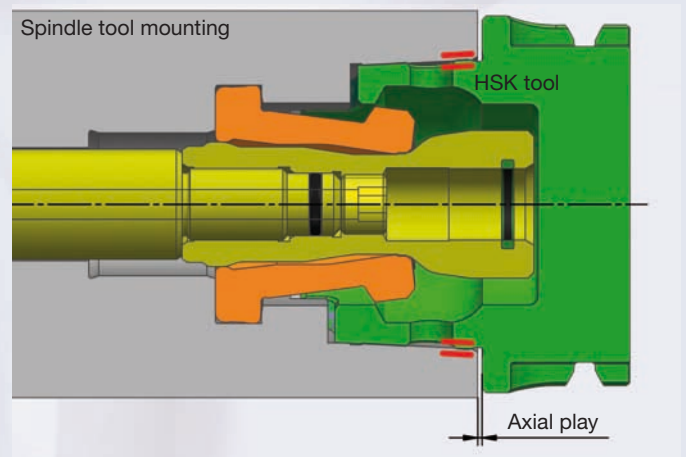
- Steady clamping force due the symmetric clamping surfaces of the clamping segments
- Compact power flow resulting in high static and dynamic rigidity of the tool joint
- High power amplification by transmission of the clamping set
- Automatic lock by collet actuator in the clamping set
- Forced controlled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

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 achieved 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.

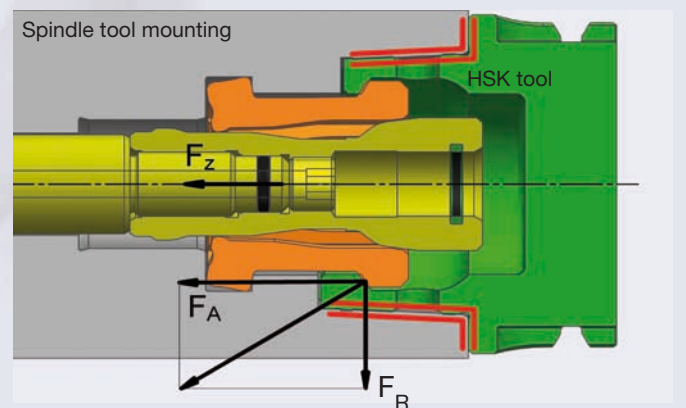
The clamping process is started by the spings and the movement is transmitted by the draw bar to the clamping set in direction F_Z . The clamping segments of the collet are pushed to the outside by the collet actuator. The clamping forces are multiple amplified by the angled arrangement of the contact areas. The produced axial forces F_A and radial forces F_R result in a pretensioned status 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 type B, D and F. Hollow taper shanks type 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 positive unlocked and ejected from the tool spindle by the collet actuator and taper sleeve.

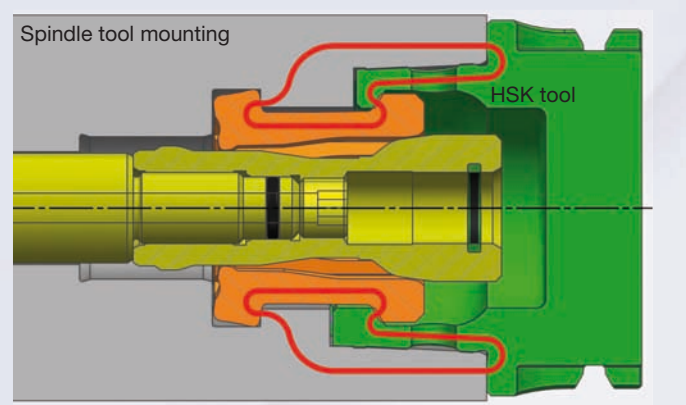
Joining position with locating surface



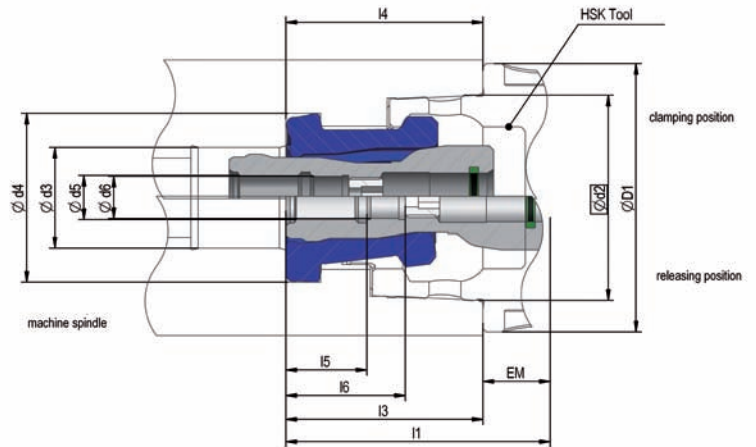
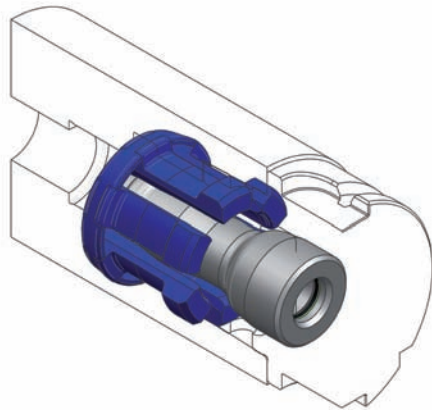
Clamping situation with locating surface



Clamping situation with compact power flow



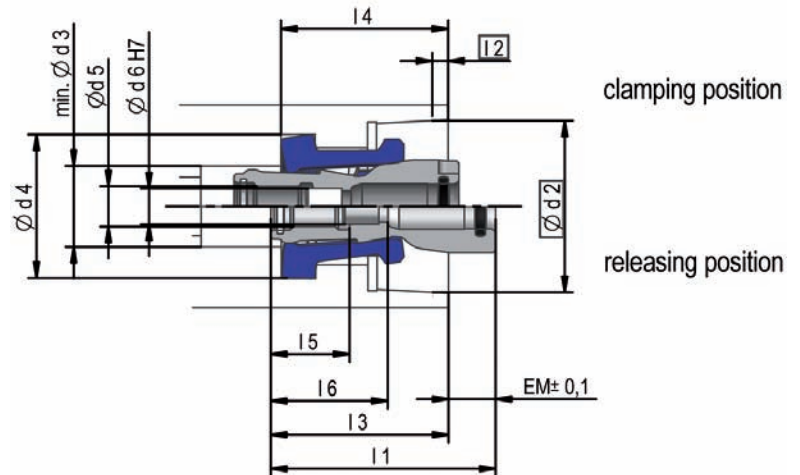
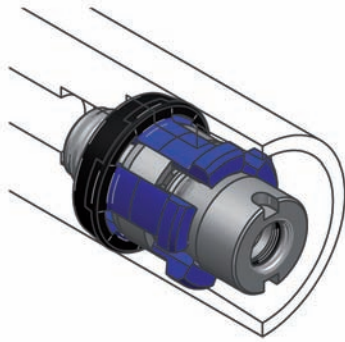
HSK-Clamping Set - standard



Tool group C 15
Type 288-64
Automatic HSK-Clamping Set
- standard

Item no.	1037445	1037446	1037447	1037448	1037449	1037450	1037451	1037452
Clamping unit HSK	E25 / B32	A32 / B40	A40 / B50	A50 / B63	A63 / B80	A80 / B100	A100 / B125	A125 / B160
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 $\varnothing d_2$	19	24	30	38	48	60	75	95
d_3	8,6	11,3	14	16,3	21	26,7	35	40
d_4	17	21	25,5	32	40	50	63	80
d_5	M4	M6x0,75	M8x1	M10x1	M12x1	M16x1,5	M20x1,5	M24x1,5
d_6	4,2	6,5	6,4	8	10,5	14,3	17,5	20
l_1	28,8	35,1	42,5	50	62	80	98,5	121,2
l_2	2,5	3,2	4	5	6,3	8	10	12,5
l_3	22,6	26,7	34	39,5	51,5	67	85,2	104,4
l_4	20,3	24,5	31,9	37,2	46,2	59,7	73	96,9
l_5	9,5	12,5	13	17	19	30	34,5	40
l_6	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
Pull-in-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

HSK-Clamping Set - High Speed - with Guided Collet



Tool group C 15

Type 288-64

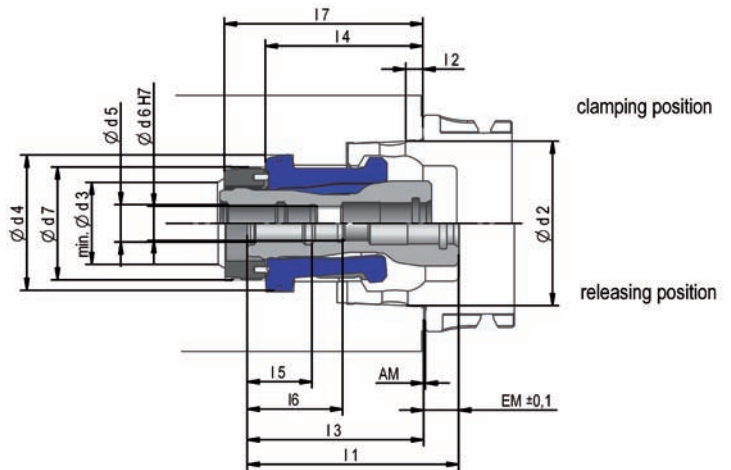
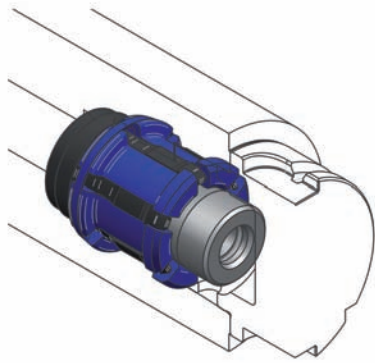
Automatic HSK-Clamping Set

with Guided Collet

Precise guiding of the clamping segments makes this clamping set especially suitable for higher speeds.

Item no.	594332	1035347	1011063	1037501	1015151	474917	462324
Clamping unit HSK	E25/B32	A32/B40	A40/B50	A50/B63	A63/B80	A80/B100	A100/B125
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 $\varnothing d_2$	19	24	30	38	48	60	75
d_3	8,6	11,3	14	16,3	21	26,7	35
d_4	17	21	25,5	32	40	50	63
d_5	M4	M6x0,75	M8x1	M10x1	M12x1	M16x1,5	M20x1,5
d_6	4,2	6,5	6,4	8	10,5	14,3	17,5
l_1	28,8	35,1	42,5	50	62	80	98,5
l_2	2,5	3,2	4	5	6,3	8	10
l_3	22,6	26,7	34	39,5	51,5	67	85,2
l_4	20,3	24,5	31,9	37,2	46,2	59,7	73
l_5	9,5	12,5	13	17	19	30	34,5
l_6	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	5	7,5	10
Pull-in-force kN	3,5	5	10	15	25	37,5	50
Max. application speed min^{-1}	120000	80000	60000	50000	40000	30000	24000

HSK-Clamping Set with Retaining Collet



Tool group C 15
Type 288-64

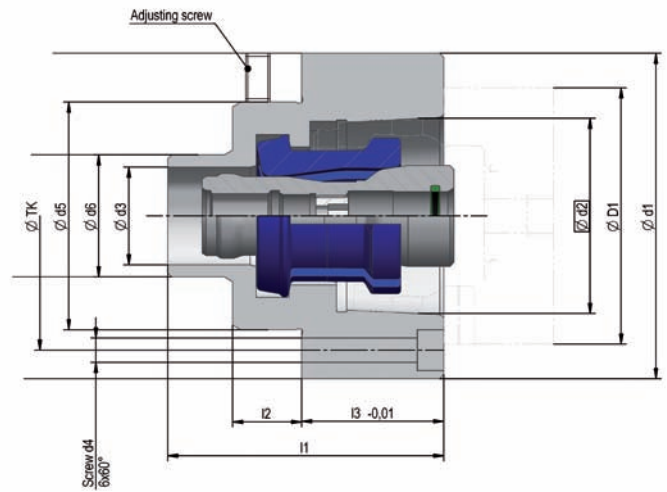
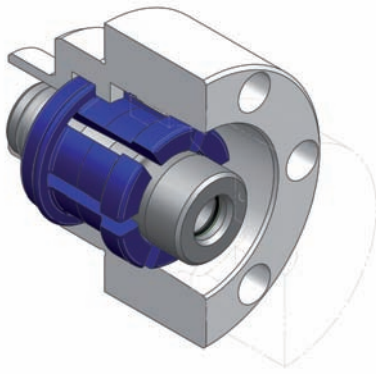
Automatic HSK-Clamping Set with Retaining Collet

Saving time while changing tools, this clamping set with retaining collet will enable you to make multiple steps at the same time window.

Item no.	1024067	1019609	1024145	1015265	1004827
Clamping unit HSK	A40/B50	A50/B63	A63/B80	A80/B100	A100/B125
Total stroke	13	15	16	17	18
Pull-out stroke AM	0,5	0,5	0,5	0,5	0,8
Taper $\varnothing d_2$	30	38	48	60	75
d_3	15	18	21	27	36
d_4	25,5	32	40	50	63
d_5	M8x1	M10x1	M12x1	M16x1,5	M20x1,5
d_6	6,4	8	10,5	14,3	17,5
d_7	M20x1	M25x1	M33x1	M40x1	M53x1,5
l_1	42,5	50	62	80	98,5
l_2	4	5	6,3	8	10
l_3	34	39,5	51,5	67	85,2
l_4	31,85	37,15	46,2	59,7	73
l_5	13	17	19	30	34,5
l_6	20	26	28	42	51
l_7	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	6	10
Pull-in-force kN	10	15	25	37,5	50
Max. application speed min^{-1}	48000	40000	32000	24000	20000

clamping set with clip retaining collet available on request

HSK-A/B

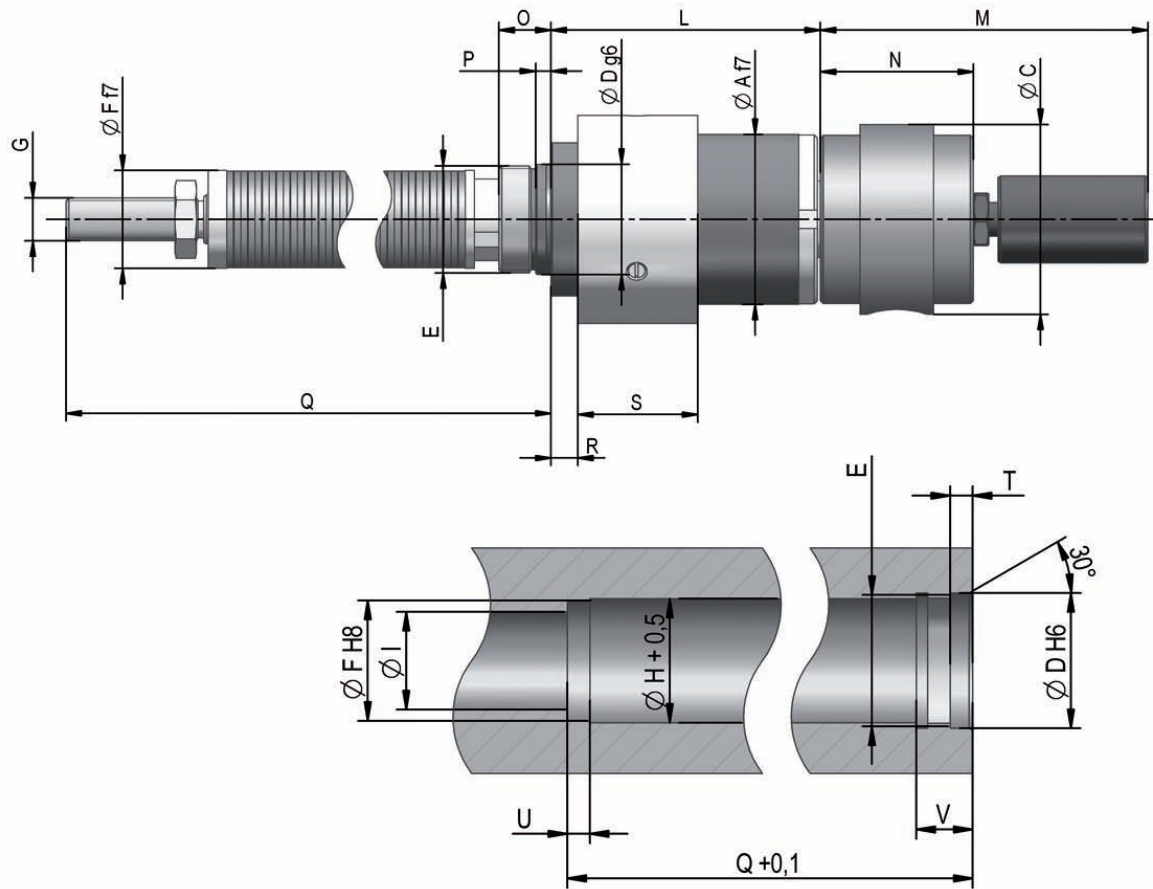


Tool group C 15
Type 288-74
Adaptors with clamping set HSK-A/B
for hollow taper shanks according
DIN 69893, form A and C
(clamping set with increased
clamping force elements)

Item no.	850282	850283	850284	850285	850286	850287	850288	850289
Initial size HSK-A/C	25	32	40	50	63	80	100	125
d ₁	37	40	50	63	80	100	125	148
Taper Ø d ₂	19	24	30	38	48	60	75	95
d ₃ ^{H7}	10	12	15	18	24	32	40	48
d4	6xM3	6xM3	6xM4	6xM5	6xM6	6xM8	6xM10	6xM12
d _{5g6}	24	27	33,5	42	56	68	84	100
d6	14	18	20	25	30	40	50	60
Ø-TK _{±0,1}	29	32	40,5	52	66	82	102	125
l ₁	31	36	48	55	68	86	106	120
l ₂	8	9	13	15	17	22	26	27
l ₃	15,5	19	23	28	35	44	54	70
Draw bar pull kN	0,7	1	2	3	4	7,5	10	16
Pull-in-force kN	3,5	5	10	15	25	37,5	50	70
Total stroke mm	7	9	13	15	14	17	20	21
Clamping set HSK-A/B	1037445	1037446	1037447	1037448	1037449	1037450	1037451	1037452

high precision design: I3
dyn. balanced: G 2,5 DIN ISO 1940

HSK-Clamping unit

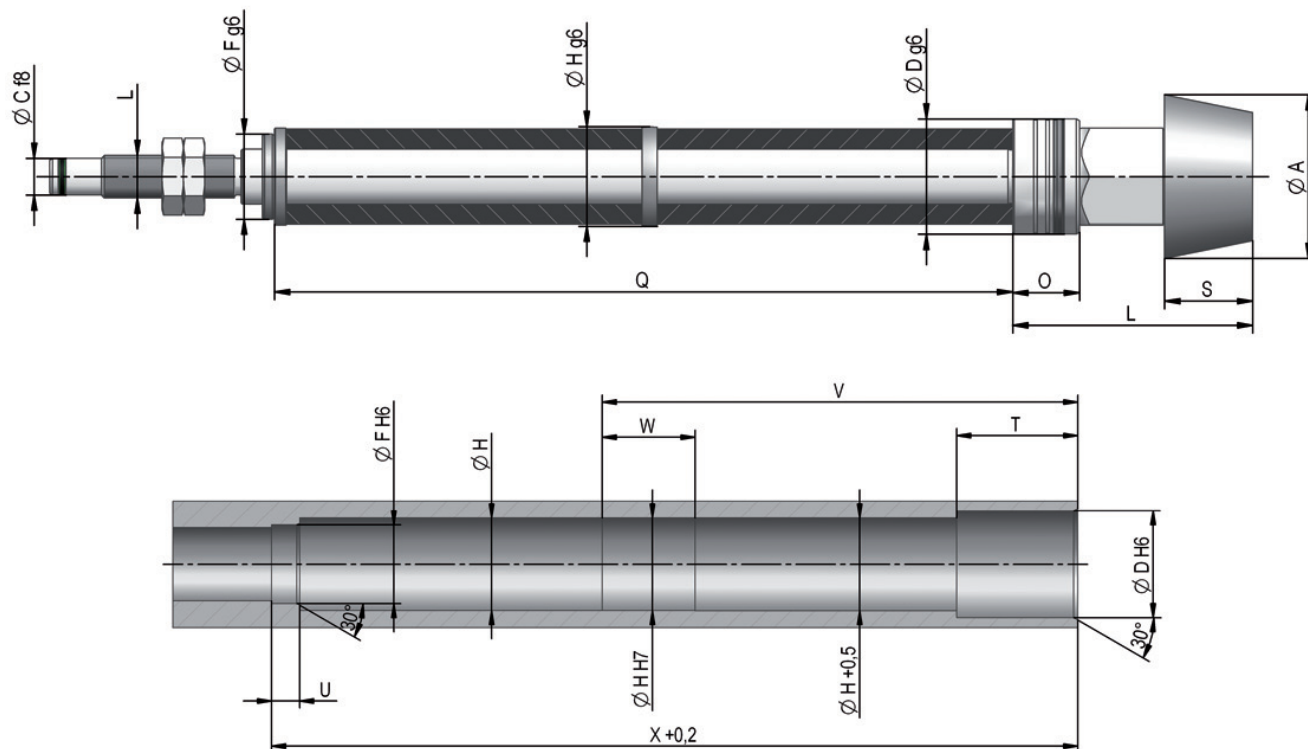


Tool group C 15
Type 286-03

Automatic HSK-Clamping Unit
for hollow taper shanks
HSK according **DIN 69893**
- for speeds up to 10000 rpm

Item no.	760437	760438	760439	760440	760441	760442
Clamping unit SEH	32/100	40/200	50/300	63/500	80/750	100/1000
A	36	40	48	55,5	65	84
B	44	48	60	68	77	97
C	48	48	62	62	67	67
D	25	32	36	36	48	70
E	M 24 x 1,5	M 30 x 1,5	M 35 x 1,5	M 35 x 1,5	M 45 x 1,5	M 68 x 1,5
F ₁₇	21	26	32	32	41	39
G	M 6	M 10	M 12 x 1,5	M 14 x 1,5	M 16 x 1,5	M 20 x 1,5
H	22	26	33	33	41,5	63
I	13	20	22	26	30	39
L	68	75	83,5	87	96	125
M	103	104	108	108	142	165
N	46	47	51	51	51	51
O	14	14	17	17	19	25
P	4	4	5	5	5	8
Q	104	167	193,4	261	264	279
Opening position	1,5	2	0,5	0,5	1,5	3
Clamping position R	6,5	10	8,5	8,5	12,5	15
S	30	34	38,5	39	45	60
T	5	5	6	6	6	9
U	3	4	6	6	6	5
V	15	15	18	18	20	26
Pull force kN	1	2	3	5	75	10
Max. opening force bar	80	80	80	80	80	120
Total stroke	9	13	16	16	18	20

HSK-Built-in Clamping Unit



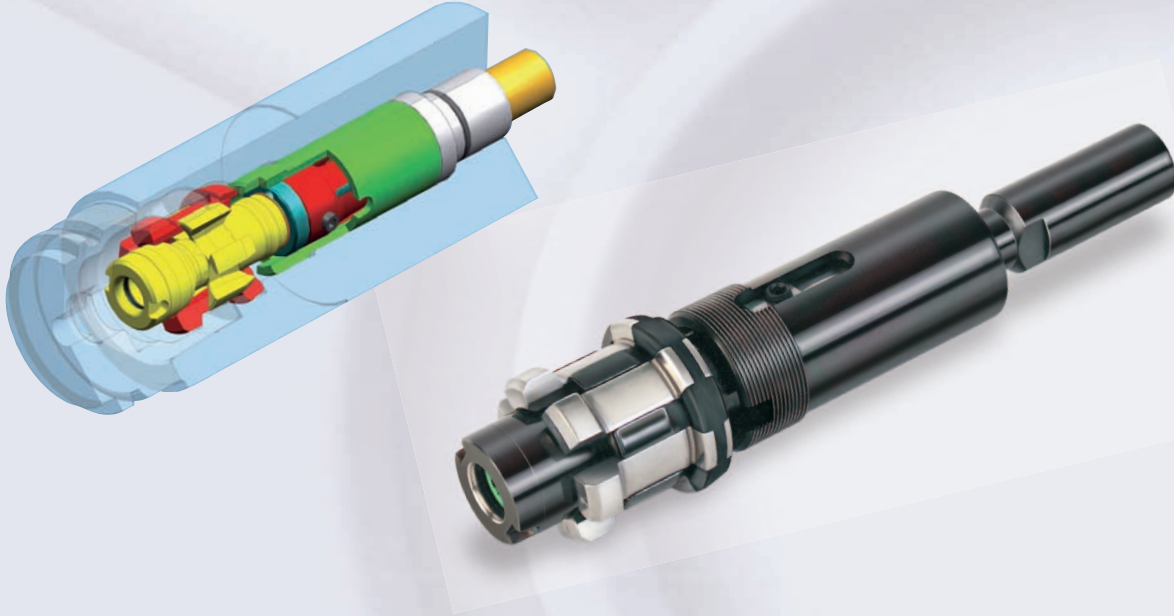
Tool group C 15
Type 286-00

Automatic HSK Built-in Clamping Unit
for hollow taper shanks HSK
according **DIN 69893**
- for speeds up to 40000 rpm

Item no.	870097	812953	857672	885929	881930	895037
Clamping unit SEH	32/100	40/200	50/300	63/500	80/750	100/1000
A	40	44	-	54	55	54
D	20	28	33	38	38	50
F	12	20	23	28	30	34
G	M 6 x 0,75	M 10 x 1	M 12 x 1,5	M 14 x 1,5	M 16 x 1,5	M 18 x 1,5
H	17,8	24	29,5	33	36,3	42,5
L	13,25	-	-	79	98	142
O	12	22	31,5	22	30	61,5
S	10,5	27	-	29	40	28,5
T	26,5	35	63,5	43	50	81,5
U	-	4	8	10	8	10
V	94,5	147	173,5	169	183	246
W	18	30	39	33	40	35
X	153	237	163,5	275	292	394
Pull force kN	1	2	3	3,5	7,5	7,5
Total stroke	9	13	15	16	18	20

SUPER-LOCK

**Space-saving and powerful:
Super-Lock holds HSK totally without springs
and compact design**



If high balancing quality combined with static and dynamic stiffness are demanded from the cutting tool in heavy metal cutting operations or with extremely high rotational speeds, then the locking between hollow shank taper and the machine tool must meet enormous demands. Therefore, consistent and secure clamping elements are of utmost importance in the most challenging machining conditions, in order to ensure operational reliability.

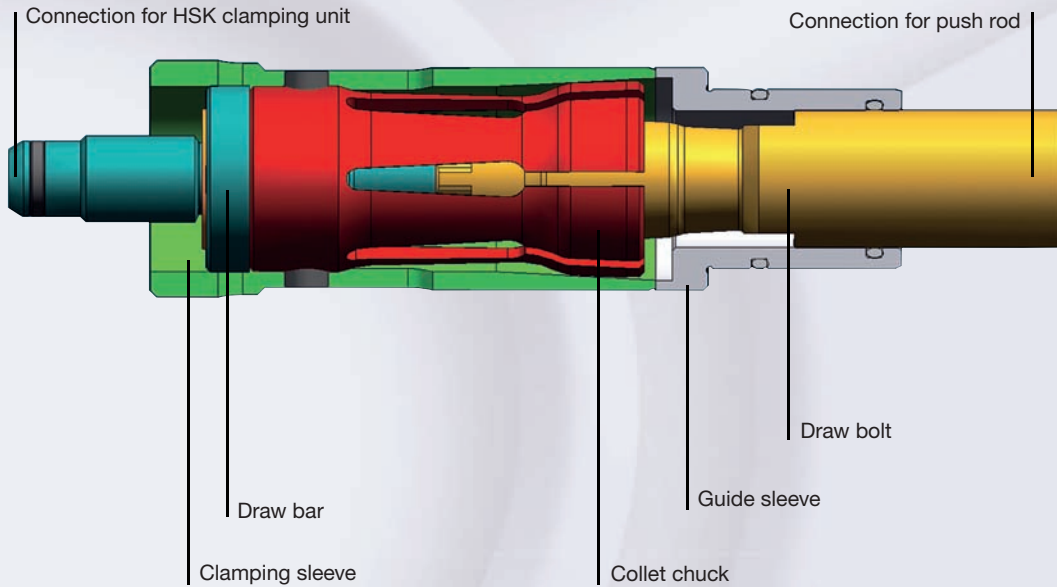
RÖHM presents a new and innovative clamping technique with a springless locking unit for hollow shank taper in machine tools: Self-locking without spring packet. This trend-setting principle not only improves the working procedure, but also distinctly facilitates space saving designs.

Technical features:

- Clamping without springs and additional retention force
- Highest balancing quality
- Space saving due to compact design
- Front mounting in short spindles
- Applicable to all HSK sizes
- Secure clamping even with large HSK tolerances
- Continuous, secure and self-locking
- Optimised for use with high speeds
- Ideal for HSC machining
- Highly suitable for heavy-duty metal cutting
- High stiffness combined with the RÖHM HSK clamping unit

SUPER-LOCK

Self-locking system suitable for HSC and heavy roughing



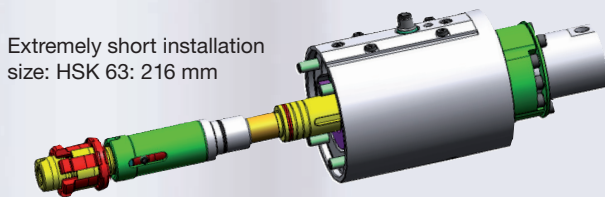
The Function of the Lock System Super Lock:

The locking system Super Lock serves as a revolutionary connecting link between the HSK clamping unit and the control rod. Even with large HSK tolerances, the unit safely transfers the actuating force and guarantees the connection through mechanical self-locking.

For the first time ever, the RÖHM Super Lock needs no springs and no additional retention force, due to a symmetrical collet chuck. The coupled HSK clamping unit is simply moved to the clamping position, and the system locks itself in approx. 0.2 seconds, self-latching on the conical surfaces of the draw bolt and clamping sleeve.

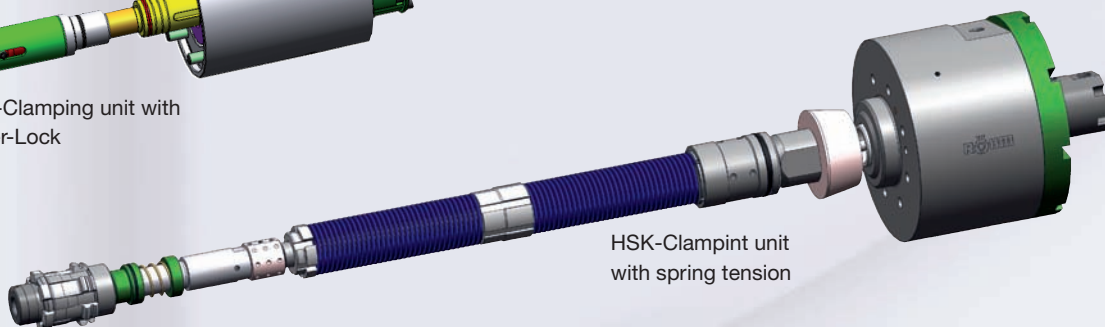
For releasing, the actuating force of less than 2000 N (example for HSK-A 63) unlocks the draw bolt, pushes the drawbar and therefore the pressure pad of the HSK clamping unit forward. The HSK tool is ejected with less force than with spring systems, since there is no need to overcome the spring force.

Comparison of installation size:



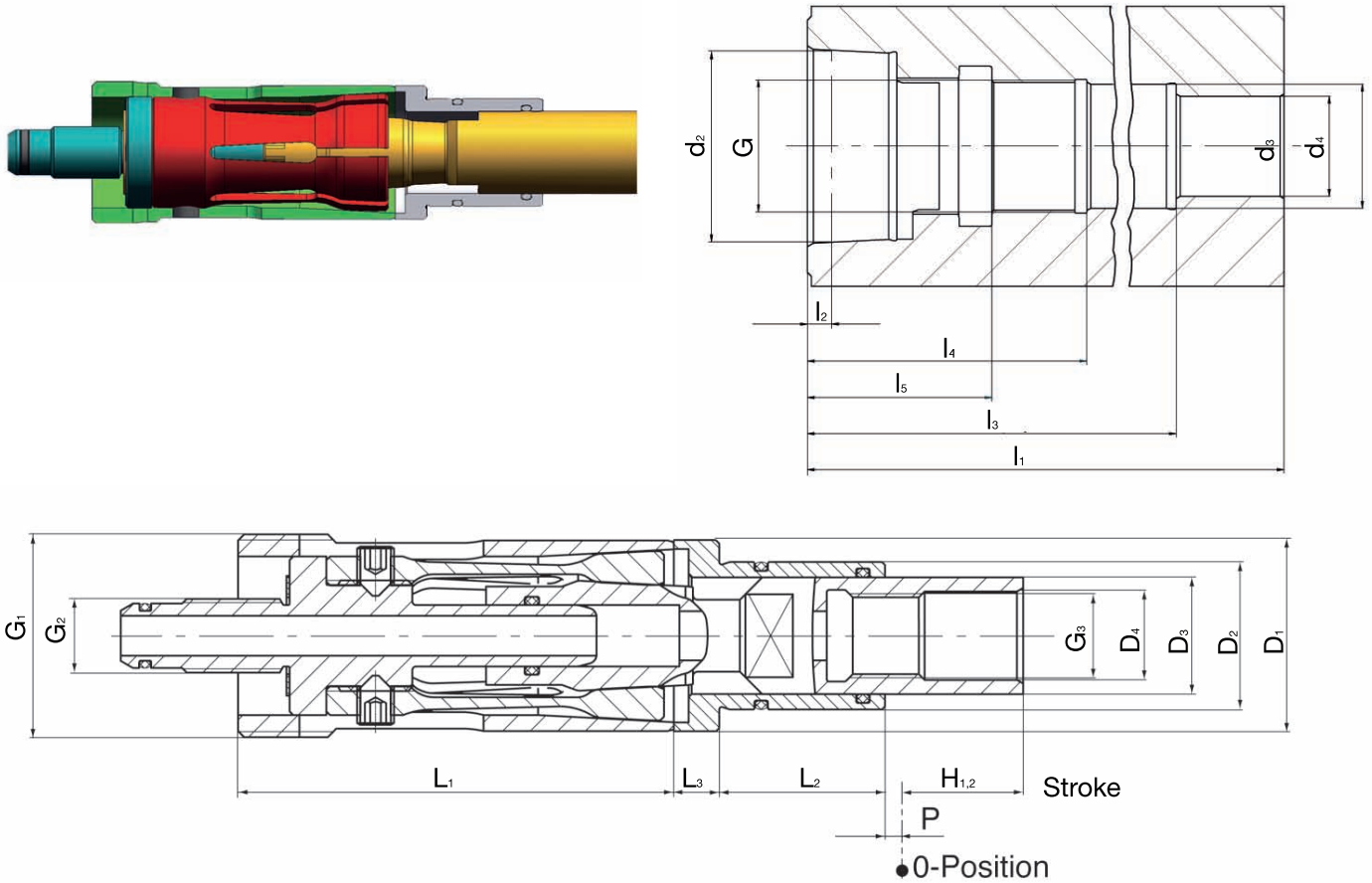
Extremely short installation size: HSK 63: 216 mm

HSK-Clamping unit with Super-Lock



HSK-Clampint unit with spring tension

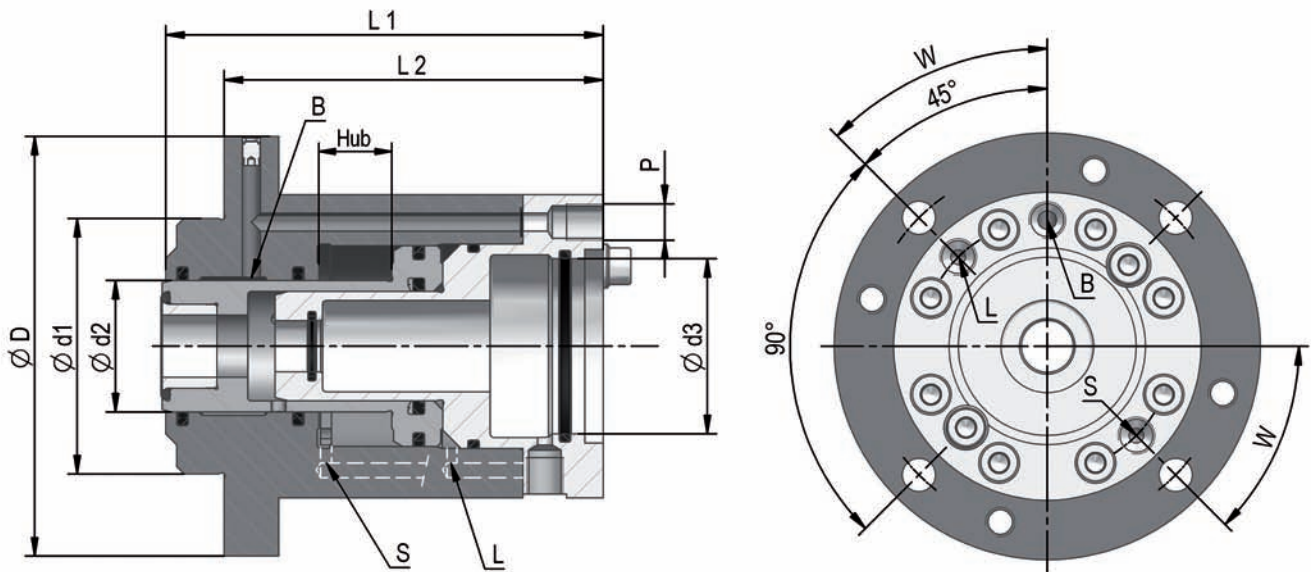
SUPER-LOCK



Tool group C 15
Type 288-69
Clamping unit "SUPER-LOCK"
Self-locking mechanism
without springs
for automatic tool clamping

Item no.	1122572	1122574	1122718	1122725	1122569	1122731	1122581
HSK-A/E	25	32	40	50	63	80	100
D ₁	13,2	15,1	18,6	23,6	31	39	49
D ₃	11	12,5	16,4	20,4	25	31,2	40
D ₄	8	10	13	16	19	24	31
D ₅	6,2	8,2	10,3	12,5	14,4	17	21
G ₁	M14x0,5	M16x0,75	M20x1	M25x1	M33x1	M42x1,5	M52x2
G ₂	M4	M6x0,75	M8x1	M10x1	M12x1	M16x1,5	M20x1,5
G ₃	M6x0,75	M8x0,75	M10x1	M12x1,25	M14x1,5	M16x1,5	M20x2
H ₁	11,5	13,8	17,8	19,9	20	27,3	30,8
H ₂	16,3	17,5	22,8	26,3	28	38,1	42,4
L ₁	30	37	45	56	70,4	90	112
L ₂	15,4	14,5	20,4	23,7	27	44,3	55
L ₃	2,8	3,75	4,6	5,8	7,4	9,2	11,5
P	1	1,25	1,6	2	2,5	3,2	4
G	M14x0,5	M16x0,75	M20x1	M25x1	M33x1	M42x1,5	M52x2
d ₂	19	24	30	38	48	60	75
d ₃	11	12,5	16,4	20,4	25	31,2	40
d ₄	13,2	15,1	18,6	23,6	31	39	49
l ₁	71	83,5	106,4	127,7	157	211	262
l ₂	2,5	3,2	4	5	6,3	8	10
l ₃	56	69	86	104	130	167	207
l ₄	32,25	36,7	45,9	57	70	88,1	10
l ₅	20,25	24,5	31,85	37,15	46,2	59,65	73
Clamping set	594332	1035347	1011063	1037501	1015151	474917	462324
F1 (N)	3500	5000	10000	15000	25000	37500	50000
F2 (N)	700	1000	2000	3000	5000	7500	10000
Max. application speed min ⁻¹	120000	80000	60000	50000	40000	30000	24000

Stationary release unit



Tool group C 15
Type 285-85

Stationary release unit

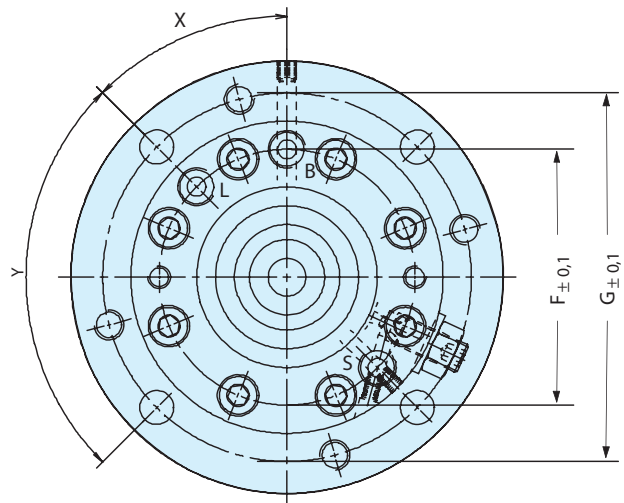
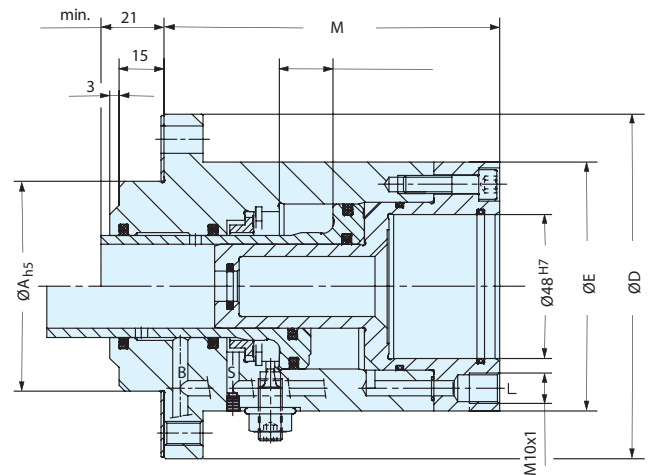
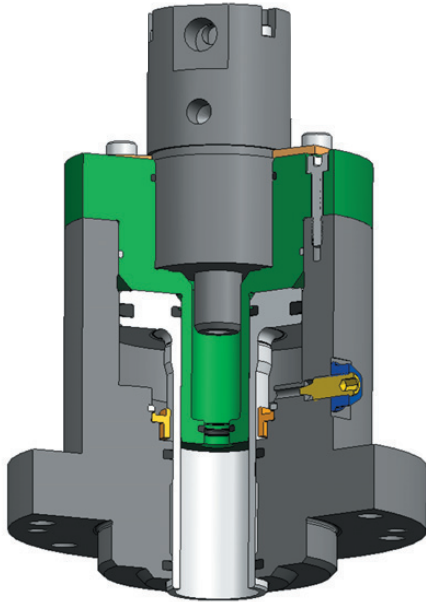
This stationary release unit allows a fast stroke movement.

- speed independent
- through-hole for cleaning air in release position
- connection for turning performance

Item no.	884136	850118	486841
Piston area(releasing) cm ²	49,7	16,7	62,6
Max. opening force 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°
d ₁	70	70	100
d ₂	40	36	56
d ₃	48	48	48

Further technical data on request

Stationary release unit with buffer stroke



Tool group C 15
Type 285-85

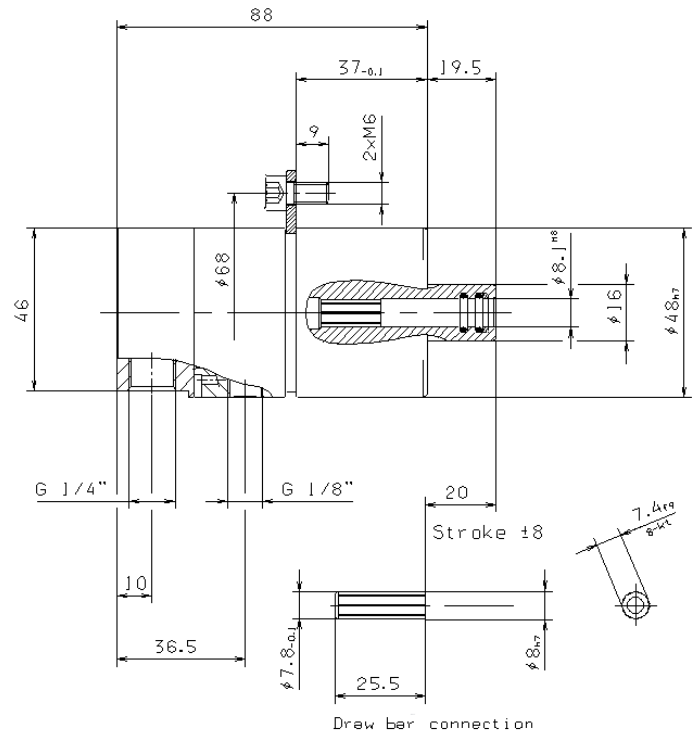
Stationary release unit with buffer stroke

To avoid unnecessary wasting of stroke time a quick release movement over most of the total stroke will be followed by a slow movement of the release piston shortly before end of stroke to eject the tool without loosing any ejection force

Item no.	493997	1019534
Piston area (releasing) cm ²	17,6	48,4
Max. opening force L bar	150	120
Max. clamping pressure S bar	150	120
Max. cleaning air B bar	10	10
Buffer stroke mm	2	2
Throttle diameter adjustable mm ²	0-7	0-7
Throttle diameter fix mm ²	2,8	2,8
Stroke	18	20
A	70	80
D	115	140
E	83	103
F	68	88
G	98	120
M	112	124
X	45	30
Y	4 x 90°	8 x 45°

Further technical data on request

Turning Performance



Tool group C 15
Type 289-50/60
Turning Performance
for speeds up to 36000 rpm⁻¹

Item no.	490967	460658
Speed min ⁻¹	18000	36000
Bearing	spindle ball bearing	hybrid bearing
Flow cross section mm ²	38,5	28,3
Coolant pressure max. bar	80	80
Aerosol for IMMS bar	10	10
Cleaning air (max. n=0 min ⁻¹) bar	10	10
Max. air pressure (n<10.000 min ⁻¹) bar	5	5
Filter mesh µm	<50	<50

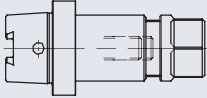
Further technical data on request

HSK-clamping chucks

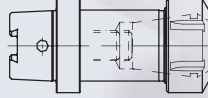
For machining centers and transfer lines

HSK-C for manual tool change

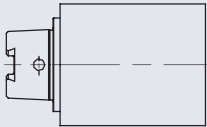
Type 288-21
Clamping chuck ESX/ER16



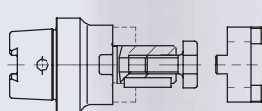
Type 288-21
Clamping chuck ESX/ER 32



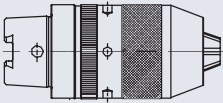
Type 288-20
Tool blank



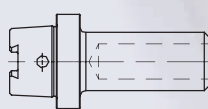
Type 288-22
Cutter arbor



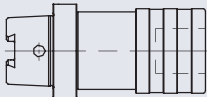
Type 135-48
Drill chuck



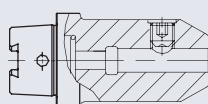
Type 288-30
Test bar



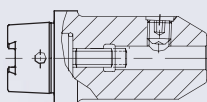
Type 344-90
Quick change tapping chuck



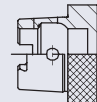
Type 288-23
Adaptor sleeves - DIN 1835-B



Type 288-24
Adaptor sleeves - DIN 1835-E

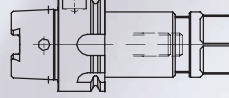


Type 288-92
Plug

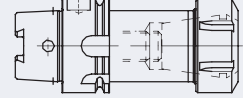


HSK-A for automatic tool change

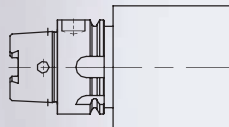
Type 288-01
Clamping chuck ESX/ER16



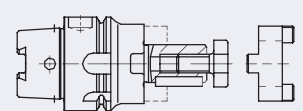
Type 288-01
Clamping chuck ESX/ER 32



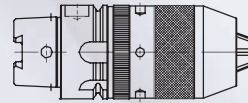
Type 288-00
Tool blank



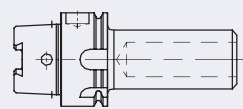
Type 288-02
Cutter arbor



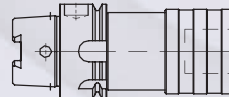
Type 135-47
Drill chuck



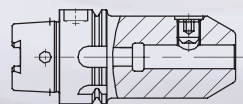
Type 288-10
Test bar



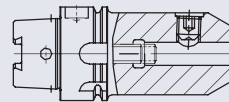
Type 344-91
Quick change tapping chuck



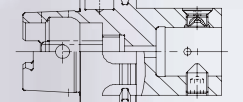
Type 288-03
Adaptor sleeves - DIN 1835-B



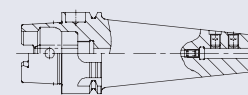
Type 288-04
Adaptor sleeves - DIN 1835-E



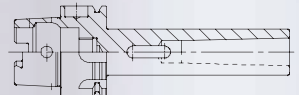
Type 288-32
ABS-Mounting



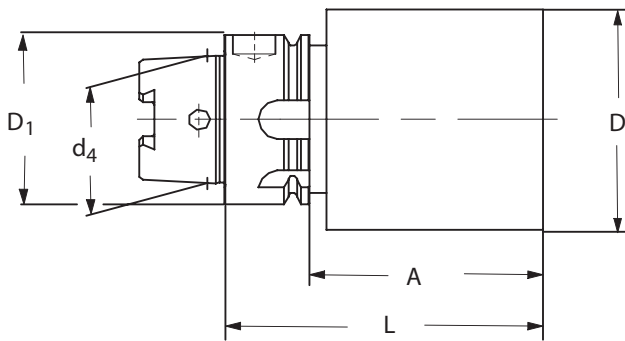
Type 288-03
Adaptor with HSK-A



Type 288-31
MK-Mounting



HSK-Tool blankes



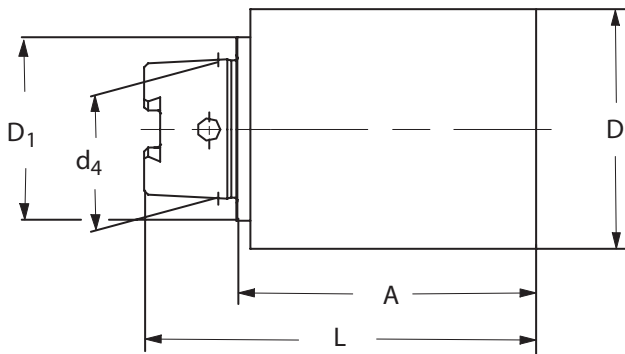
Positive Taper Lock including locating surface hardened with min. 670 +100HV30 Vickers (min. HRC58) Taper ground to DIN 69893. Shank part not hardened and ground for machining.

Technical features:

- D* = Dimension data correspond to finished dimension
- Delivered with overmeasure of 0,5 mm per diameter
- Material: Alloyed hardened steel

Tool group C 19
Type 288-00 **Tool blankes HSK-A**
for automatic tool change
for self-producing of special tools

Item no.	Initial size D1	A	L	D*	d4	Weight kg
756342	32	150	166	40	24	4,5
756343	40	200	220	52	30	5,8
756344	50	200	225	63	38	8,1
756345	63	250	282	80	48	11
756346	80	250	290	80	60	15
756347	100	250	300	75	75	18



Positive Taper Lock including locating surface hardened with min. 670 +100HV30 Vickers (min. HRC58) Taper ground to DIN 69893. Shank part not hardened and ground for machining.

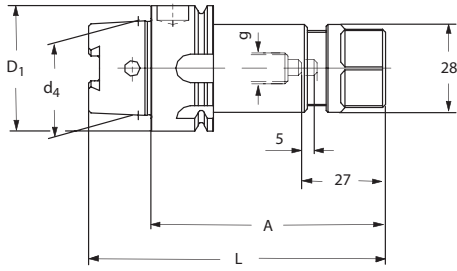
Technical features:

- D* = Dimension data correspond to finished dimension
- Delivered with overmeasure of 0,5 mm per diameter
- Material: Alloyed hardened steel

Tool group C 15
Type 288-20 **Tool blankes HSK-C**
for manual tool change
for self-producing of special tools

Item no.	Initial size D1	A	L	D*	d4	Weight kg
749356	32	150	166	40	24	4,5
749357	40	200	220	52	30	5,8
749358	50	200	225	63	38	8,1
749359	63	250	282	80	48	11
749360	80	250	290	80	60	15
749361	100	250	300	95	75	18

HSK-clamping chucks

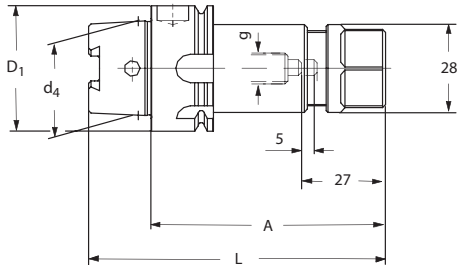


Permissible concentricity error of the positive taper lock HSK in relation to the collet mounting taper 0,003 mm.

Supply: Clamping chuck with clamping ring and spindle through-drilled

Collets must be ordered separately
Other sizes for HSK-clamping chuck on request

Tool group C 15 Type 288-01 Clamping Chuck HSK-A for automatic tool change for collets ER/ESX16 (DIN 6499) clamping capacity 0,5 to 10 mm	Item no.	Initial size D1	A	L	d1	d4	g	l1	v	Weight kg
	753210	50	100	125	28	38	M 10	27	5	0,5
	753211	63	100	132	28	48	M 10	27	5	1
	753212	63	160	192	28	48	M 10	27	5	1,7
	753213	100	100	150	28	75	M 12	27	5	2,9
	753214	100	160	210	28	75	M 12	27	5	3,4

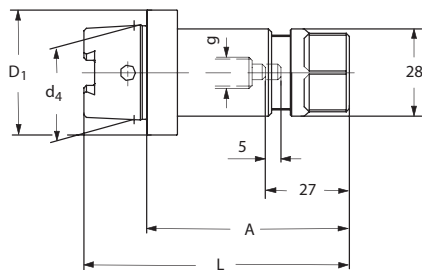


Permissible concentricity error of the positive taper lock HSK in relation to the collet mounting taper 0,003 mm.

Supply: Clamping chuck with clamping ring and spindle through-drilled

Collets must be ordered separately
Other sizes for HSK-clamping chuck on request

Tool group C 15 Type 288-01 Clamping Chuck HSK-A for automatic tool change for collets ER/ESX 32+40 (DIN 6499) clamping capacity 2 to 20 mm resp. 3 to 26 mm	Item no.	Initial size D1	A	L	Clamping range	d4	v	Weight kg
	749458	50	100	125	2-20	50	5	1
	753215	63	100	132	2-20	50	5	1,3
	753216	80	120	152	2-20	50	5	2,2
	753217	100	100	150	2-20	50	5	2,7
	753218	100	120	170	3-26	63	5	2,9



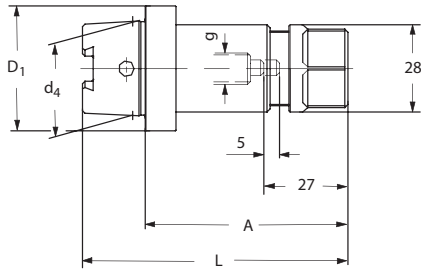
Permissible concentricity error of the positive taper lock HSK in relation to the collet mounting taper 0,003 mm.

Supply: Clamping chuck with clamping ring and spindle through-drilled

Collets must be ordered separately
Other sizes for HSK-clamping chuck on request

Tool group C 15 Type 288-21 Clamping Chuck HSK-C for manual tool change for collets ER/ESX16 (DIN 6499) clamping capacity 0,5 to 10 mm	Item no.	Initial size D1	A	L	d1	d4	g	l1	v	Weight kg
	749333	32	60	76	28	24	M 10	27	5	0,3
	749334	40	60	80	28	30	M 10	27	5	0,4
	749335	50	60	85	28	38	M 10	27	5	0,5
	749336	63	60	92	28	48	M 10	27	5	1
	749337	80	65	105	28	60	M 12	27	5	1
	749338	100	65	115	28	75	M 12	27	5	2,9

HSK-clamping chucks



Permissible concentricity error of the positive taper lock HSK in relation to the collet mounting taper 0,003 mm.

Supply: Clamping chuck with clamping ring and spindle through-drilled

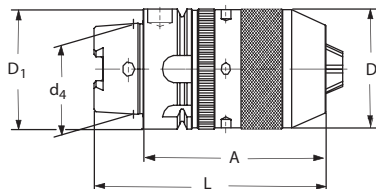
Collets must be ordered separately
Other sizes for HSK-clamping chuck on request

Tool group C 15
Type 288-21
Clamping Chuck HSK-C
for manual tool change
for collets **ER/ESX 32+40**
(DIN 6499)
clamping capacity **2 to 20 mm**
resp. **3 to 26 mm**

Item no.	Initial size D1	A	L	Clamping range	d4	v	Weight kg
749339	40	75	95	2-20	50	5	0,9
749340	50	75	100	2-20	50	5	1
749341	50	80	105	3-26	63	5	1,1
749342	63	75	107	2-20	50	5	1,3
749343	63	80	112	3-26	63	5	1,4
749344	80	80	120	2-20	50	5	2,2
749351	80	85	125	3-26	63	5	2,5
749352	100	80	130	2-20	50	5	2,7
749353	100	90	140	3-26	63	5	2,9

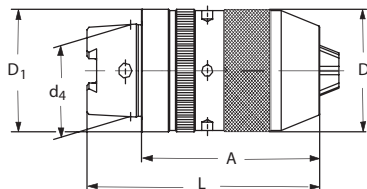
HSK-Drill chuck

Tool group A 34
Type 135-47 **Drill Chuck HSK-A** for automatic tool change



Item no.	Size	Initial size D1	A	L	D	d4	Clamping capacity
707611	13	50	114	139	50	38	1-13
707790	13	63	95	127	50	48	1-13
707791	13	100	100	150	50	75	1-13
753591	16	50	114,7	139,7	55	38	3-16
707792	16	63	95,7	127,7	55	48	3-16
707793	16	100	100,7	150,7	55	75	3-16

Tool group A 34
Type 135-48 **Drill-Chuck HSK-C** for manual tool change

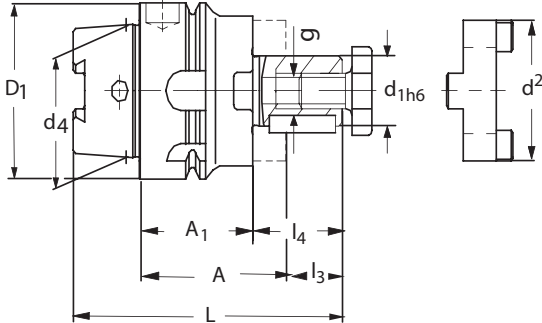


Item no.	Size	Initial size D1	A	L	D	d4	Clamping capacity
753592	13	50	81,5	106,5	50	38	1-13
753593	13	63	81,5	113,5	50	48	1-13
753594	13	100	85	135	50	75	1-13
753595	16	50	82,2	107,2	55	38	3-16
753596	16	63	82,2	114,2	55	48	3-16
753597	16	100	85,7	135,7	55	75	3-16

HSK-Slip-on cutter arbor

Tool group C 19
Type 288-02

Slip-on cutter arbor HSK-A
for automatic tool change
for cutter with longitudinal and transversal slots,
cutter drive to **DIN 138**

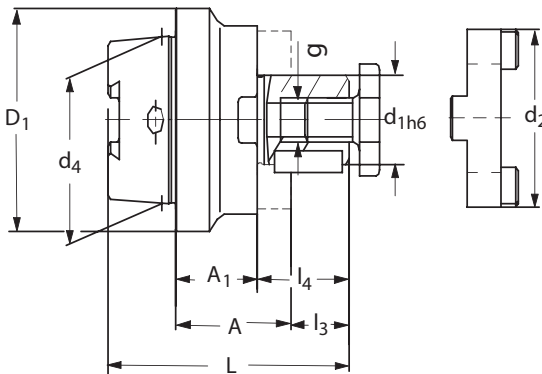


Item no.	Initial size D1	A1	A	L	d1	d2	d4	g	l3	l4
756323	40	30	40	77	16	32	30	M 8	17	27
756324	40	28	40	79	22	40	30	M 10	19	31
756325	50	40	50	92	16	32	38	M 8	17	27
756326	50	38	50	94	22	40	38	M 10	19	31
756327	50	53	65	111	27	48	38	M 12	21	33
756328	50	51	65	114	32	58	38	M 16	24	38
756329	63	50	60	109	16	32	48	M 8	17	27
756330	63	48	60	111	22	40	48	M 10	19	31
756331	63	48	60	113	27	48	48	M 12	21	33
756332	63	46	60	116	32	58	48	M 16	24	38
756333	63	56	70	129	40	70	48	M 20	27	41
756334	100	50	60	127	16	32	75	M 8	17	27
756335	100	48	60	129	22	40	75	M 10	19	31
756336	100	48	60	131	27	48	75	M 12	21	33
756337	100	46	60	134	32	58	75	M 16	24	38
756338	100	56	70	147	40	70	75	M 20	27	41
756339	100	64	80	160	50	90	75	M 24	30	46

Supply: With draw-in bolt for milling cutter, feather with draw-off thread and driver ring
Cutter arbor rings see DIN 2084

Tool group C 19
Type 288-22

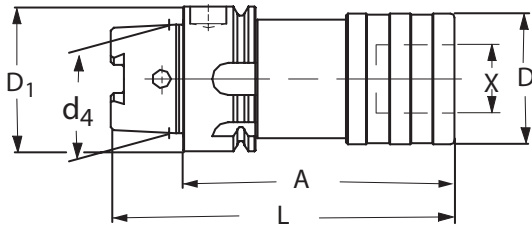
Slip-on cutter arbor HSK-C
for manual tool change
for cutter with longitudinal and transversal slots,
cutter drive to **DIN 138**



Item no.	Initial size D1	A1	A	L	d1	d2	d4	g	l3	l4
749408	40	20	30	67	16	32	30	M 8	17	27
749409	40	18	30	69	22	40	30	M 10	19	31
749410	50	26	36	78	16	32	38	M 8	17	27
749411	50	24	36	80	22	40	38	M 10	19	31
749412	50	34	52	98	27	48	38	M 12	21	33
749413	50	32	52	101	32	58	38	M 16	24	38
749414	63	36	46	95	16	32	48	M 8	17	27
749415	63	34	46	97	22	40	48	M 10	19	31
749416	63	34	46	99	27	48	48	M 12	21	33
749417	63	32	46	102	32	58	48	M 16	24	38
749418	63	42	56	115	40	70	48	M 20	27	41
749419	80	40	50	107	16	32	60	M 8	17	27
749420	80	38	50	109	22	40	60	M 10	19	31
749421	80	38	50	111	27	48	60	M 12	21	33
749422	80	36	50	114	32	58	60	M 16	24	38
749423	80	46	60	127	40	70	60	M 20	27	41
749424	80	54	70	140	50	90	60	M 24	30	46
749425	100	37	47	114	16	32	75	M 8	17	27
749426	100	35	47		22	40	75	M 10	19	31
749427	100	35	47	118	27	48	75	M 12	21	33
749428	100	33	47	121	32	58	75	M 16	24	38
749429	100	43	57	134	40	70	75	M 20	27	41
749430	100	41	67	137	50	90	75	M 24	30	46

Supply: With draw-in bolt for milling cutter, feather with draw-off thread and driver ring
Cutter arbor rings see DIN 2084

HSK-Quick change tapping chuck



Tapping of right-hand and left-hand threads in connection with RÖHM-quick-change adaptors. Used on mechanical and numerical controlled machines for manual tool change with manual clamping. with HSK-A shank, for automatic tool change, GSA/HSK with ball guide, for quick change adaptors.

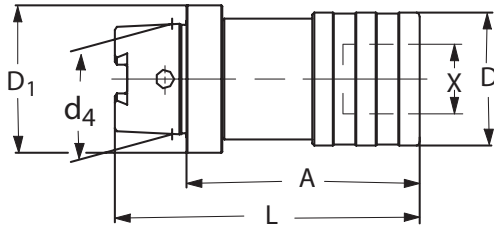
Technical features:

- Mounting taper as positive taper lock HSK with high change precision and stability due to a novel facing system
- Wild range of use for the different tools owing to interchangeable RÖHM-quick-change adaptors
- short design
- Length compensation acting on compression and expansion to compensate for differences between spindle feed and pitch of thread
- With initial pressure increases for immediate attack of tap in the core hole
- With ball guide for smooth compensation of the longitudinal guide
- Adapter for:
M3-M12 = SE1, SES1, SEN1, SEK1
M8-M20 = SE2, SES2, SEN2, SESN2, SEK2
M14-M33 = SE3, SES3, SEN3, SESN3, SEK3

Tool group C19
Type 344-91
Quick Change Tapping Chuck HSK-A
for automatic tool change
GSA/HSK with ball guide and expansion for quick change adaptors

Item no.	Size	Initial size D1	A	L	For taps	Length compensation compr.	Length compensation expan.	D	D4	X
734252	1	50	80	115	M3 - M12	75	75	36	38	19
734253	1	63	80	112	M3 - M12	75	75	36	48	19
734254	1	100	82	132	M3 - M12	75	75	36	75	19
734255	2	50	130	155	M8 - M20	12,5	12,5	53	38	31
734256	2	63	130	162	M8 - M20	12,5	12,5	53	48	31
734257	2	100	112	162	M8 - M20	12,5	12,5	53	75	31
760702	3	63	165	197	M14 - M33	20	20	78	48	48
760703	3	100	162	212	M14 - M33	20	20	78	75	48

Tapping of right-hand and left-hand threads in connection with RÖHM-quick-change adaptors. Used on mechanical and numerical controlled machines for manual tool change with manual clamping. with HSK-C shank for manual tool change, with length compensation on compression and expansion, for quick change adaptors.


Technical features:

- Mounting taper as positive taper lock HSK with high change precision and stability due to a novel facing system
- Wild range of use for the different tools owing to interchangeable RÖHM-quick-change adaptors
- short design
- Length compensation acting on compression and expansion to compensate for differences between spindle feed and pitch of thread
- With initial pressure increases for immediate attack of tap in the core hole
- With ball guide for smooth compensation of the longitudinal guide
- Adapter for:
M3-M12 = SE1, SES1, SEN1, SEK1
M8-M20 = SE2, SES2, SEN2, SESN2, SEK2
M14-M33 = SE3, SES3, SEN3, SESN3, SEK3

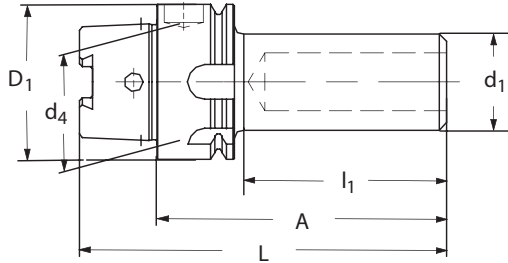
Tool group C 19
Type 344-90
Quick Change Tapping Chuck HSK-C
for manual tool change
With length compensation for quick change adaptors

Item no.	Size	Initial size D1	A	L	For taps	Length compensation compr.	Length compensation expan.	D	D4	X
756280	1	50	80	115	M3- M12	75	75	36	38	19
756281	1	63	80	112	M3 - M12	75	75	36	48	19
756282	1	100	82	132	M3 - M12	75	75	36	75	19
756288	2	50	130	155	M8 - M20	12,5	12,5	53	38	31
756289	2	63	110	142	M8 - M20	12,5	12,5	53	48	31
756290	2	100	112	162	M8 - M20	12,5	12,5	53	75	31
760700	3	63	160	192	M14 - M33	20	20	78	48	48
760701	3	100	162	212	M14 - M33	20	20	78	75	48

HSK-Test Bar

Tool group C 15
Type 288-10

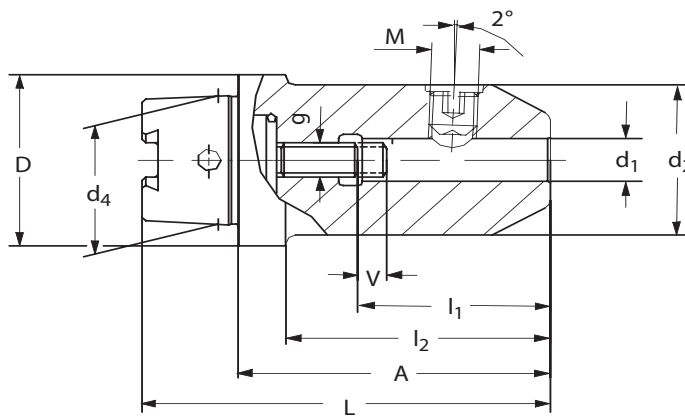
Test Bar
for automatic and manual tool change
for acceptance test of machine spindles (concentricity error)



Item no.	Initial size D1	A	L	d1	d4	l1	Max. error of d1	Weight kg
1147019	32	200	216	25	24	180	0,003	0,5
1147020	40	200	220	25	30	180	0,003	0,6
1147021	50	250	275	32	38	224	0,003	0,8
1147022	63	200	232	40	48	174	0,003	1,6
1147023	80	300	340	40	60	260	0,003	1,8
1147024	100	300	350	50	75	271	0,003	2

l1 = measuring length

HSK-Adapter sleeves

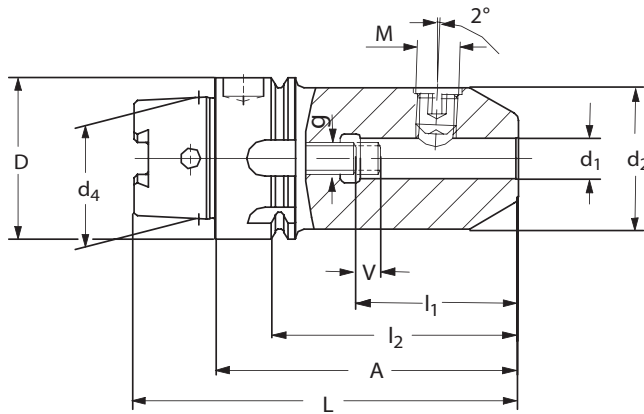


Tool group C 15
Type 288-24

Adapter Sleeves HSK-C
for manual tool change
to **DIN 6535 form HE**,
taper for cylindric tapers
with tilt clamping surface
(Whistle Notch)

Item no.	Initial size D x d1	A	L	d2	d4	g	l1	l2	v	M	Weight kg
749278	32 x 6	60	76	25	24	M 5	36	50	6	M 6	0,2
749279	32 x 8	60	76	28	24	M 6	36	50	6	M 8	0,3
749280	32 x 10	65	81	35	24	M 8	40	55	6	M 10	0,3
749281	40 x 6	60	80	25	30	M 5	36	50	6	M 6	0,3
749282	40 x 8	60	80	28	30	M 6	36	50	6	M 8	0,3
749185	40 x 10	65	85	35	30	M 8	40	55	6	M 10	0,5
749283	40 x 12	70	90	42	30	M 10	45	60	6	M 12	0,6
749284	40 x 14	70	90	44	30	M 10	45	60	6	M 14	0,7
749285	40 x 16	75	95	48	30	M 12	48	65	6	M 14	0,8
749286	50 x 6	60	85	25	38	M 5	36	47,5	6	M 6	0,5
749287	50 x 8	60	85	28	38	M 6	36	47,5	6	M 8	0,5
749288	50 x 10	65	90	35	38	M 8	40	52,5	6	M 10	0,6
749289	50 x 12	75	100	42	38	M 10	45	62,5	6	M 12	0,8
749290	50 x 14	75	100	44	38	M 10	45	62,5	6	M 14	0,9
749291	50 x 16	80	105	48	38	M 12	48	67,5	6	M 14	1
749292	50 x 18	80	105	50	38	M 12	48	67,5	6	M 16	1
749293	50 x 20	80	105	52	38	M 16	50	67,5	8	M 16	1,1
749294	63 x 6	60	92	25	48	M 5	36	47,5	6	M 6	0,7
749295	63 x 8	60	92	28	48	M 6	36	47,5	6	M 8	0,9
749296	63 x 10	65	97	35	48	M 8	40	52,5	6	M 10	1
749297	63 x 12	75	107	42	48	M 10	45	62,5	6	M 12	1,2
749298	63 x 14	75	107	44	48	M 10	45	62,5	6	M 14	1,2
749299	63 x 16	80	112	48	48	M 12	48	67,5	6	M 14	1,7
749300	63 x 18	80	112	50	48	M 12	48	67,5	6	M 16	1,8
749301	63 x 20	80	112	52	48	M 16	50	67,5	6	M 16	2
749302	63 x 25	95	127	65	48	M 20	56	82,5	8	M18x2	2,4
749303	80 x 6	65	105	25	60	M 5	36	49	8	M 6	1,2
749304	80 x 8	65	105	28	60	M 6	36	49	8	M 8	1,2
749305	80 x 10	70	110	35	60	M 8	40	54	8	M 10	1,4
749306	80 x 12	75	115	42	60	M 10	45	59	8	M 12	1,7
749307	80 x 14	75	115	44	60	M 10	45	59	8	M 14	1,7
749308	80 x 16	80	120	48	60	M 12	48	64	8	M 14	1,8
749309	80 x 18	80	120	50	60	M 12	48	64	8	M 16	1,8
749310	80 x 20	85	125	52	60	M 16	50	69	10	M 16	1,9
749311	80 x 25	95	135	65	60	M 20	56	79	10	M 18x2	3,6
749312	80 x 32	100	140	72	60	M 20	60	84	8	M 20x2	4
749313	100 x 6	65	115	25	75	M 5	36	49	8	M 6	1,3
749314	100 x 8	65	115	28	75	M 6	36	49	8	M 8	1,3
749315	100 x 10	70	120	35	75	M 8	40	54	8	M 10	1,5
749316	100 x 12	75	125	42	75	M 10	45	59	8	M 12	1,7
749317	100 x 14	75	125	44	75	M 10	45	59	8	M 14	1,7
749318	100 x 16	80	130	48	75	M 12	48	64	8	M 14	1,8
749319	100 x 18	80	130	50	75	M 12	48	64	8	M 16	1,9
749320	100 x 20	85	135	52	75	M 16	50	69	10	M 16	2
749321	100 x 25	95	145	65	75	M 20	56	79	10	M 18x2	3,8
749322	100 x 32	100	150	72	75	M 20	60	84	8	M 20x2	4,3

HSK-Adapter sleeves

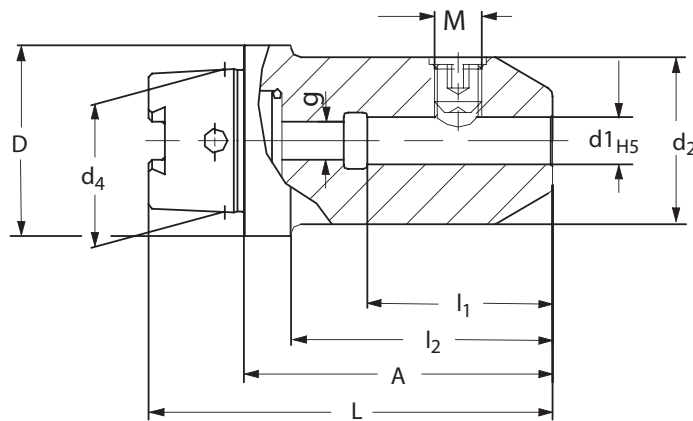


Tool group C 15
Type 288-04

Adapter Sleeves HSK-A
for automatic tool change
to DIN 1835 form E,
taper for cylindric tapers
with tilt clamping surface
(Whistle Notch)

Item no.	Initial size D x d1	A	L	d2	d4	g	l1	v	M	Weight kg
469277	32 x 6	80	100	25	24	M 5	20	6	M 6	0,2
469278	32 x 8	80	100	28	24	M 6	20	6	M 8	0,3
469279	32 x 10	80	100	35	24	M 8	20	6	M 10	0,3
599090	40 x 6	80	100	25	30	M 5	20	6	M 6	0,3
599091	40 x 8	80	100	28	30	M 6	20	6	M 8	0,3
599092	40 x 10	80	100	35	30	M 8	20	6	M 10	0,5
599093	40 x 12	90	110	42	30	M 10	20	6	M 12	0,6
599094	40 x 14	90	110	44	30	M 10	20	6	M 14	0,7
599095	40 x 16	90	110	48	30	M 12	20	6	M 14	0,8
753157	50 x 6	80	105	25	38	M 5	25	6	M 6	0,5
753158	50 x 8	80	105	28	38	M 6	25	6	M 8	0,5
753159	50 x 10	80	105	35	38	M 8	25	6	M 10	0,6
753160	50 x 12	90	115	42	38	M 10	25	6	M 12	0,8
753161	50 x 14	90	115	44	38	M 10	25	6	M 14	0,9
753162	50 x 16	90	115	48	38	M 12	25	6	M 14	1
753163	50 x 18	90	115	50	38	M 12	25	6	M 16	1
753164	50 x 20	100	125	52	38	M 16	25	8	M 16	1,1
753165	63 x 6	80	112	25	48	M 5	32	6	M 6	0,7
753166	63 x 8	80	112	28	48	M 6	32	6	M 8	0,9
753167	63 x 10	80	112	35	48	M 8	32	6	M 10	1
753168	63 x 12	90	122	42	48	M 10	32	6	M 12	1,2
753169	63 x 14	90	122	44	48	M 10	32	6	M 14	1,2
753170	63 x 16	100	132	48	48	M 12	32	6	M 14	1,7
753171	63 x 18	100	132	50	48	M 12	32	6	M 16	1,8
753172	63 x 20	100	132	52	48	M 16	32	6	M 16	2
753173	63 x 25	110	142	65	48	M 20	32	8	M18x2	2,4
753174	63 x 32	110	142			M 20	32		M 20x2	-
469280	80 x 6	90	122	25	60	M 5	32	8	M 6	1,2
469281	80 x 8	90	122	28	60	M 6	36	8	M 8	1,2
469282	80 x 10	90	122	35	60	M 8	32	8	M 10	1,4
469283	80 x 12	100	132	42	60	M 10	32	8	M 12	1,7
469284	80 x 14	100	132	44	60	M 10	32	8	M 14	1,7
469285	80 x 16	100	132	48	60	M 12	32	8	M 14	1,8
469286	80 x 18	100	132	50	60	M 12	32	8	M 16	1,8
469287	80 x 20	110	142	52	60	M 16	32	8	M 16	1,9
469288	80 x 25	110	143	65	60	M 20	32	10	M 18x2	3,6
469289	80 x 32	120	152	72	60	M 20	32	10	M 20x2	4
753175	100 x 6	90	140	25	75	M 5	50	8	M 6	1,3
753176	100 x 8	90	140	28	75	M 6	50	8	M 8	1,3
753177	100 x 10	90	140	35	75	M 8	50	8	M 10	1,5
753178	100 x 12	100	150	42	75	M 10	50	8	M 12	1,7
753179	100 x 14	100	150	44	75	M 10	50	8	M 14	1,7
753180	100 x 16	100	150	48	75	M 12	50	8	M 14	1,8
753181	100 x 18	100	150	50	75	M 12	50	8	M 16	1,9
753182	100 x 20	110	160	52	75	M 16	50	8	M 16	2
753183	100 x 25	120	170	65	75	M 20	50	10	M 18x2	3,8
753184	100 x 32	120	170	72	75	M 20	50	10	M 20x2	4,3
469290	100 x 40	120	170	90	75	-	50		M 20x2	-

HSK-Adapter sleeves

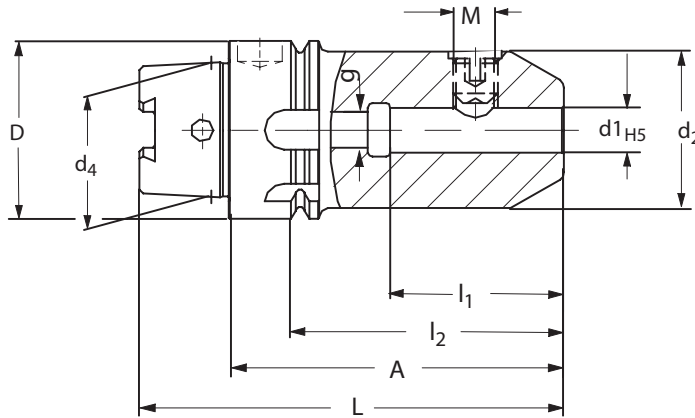


Tool group C 15
Type 288-23
Adapter Sleeves HSK-C
for manual tool change
for **cylindric tapers**
with lateral cam surface
to **DIN 1835 form B (Weldon)**

Item no.	Initial size D x d1	A	L	d2	d4	g	l1	l2	M	Weight kg
749362	32 x 6	60	76	25	24	5	36	50	M 6	0,2
749363	32 x 8	60	76	28	24	6	36	50	M 8	0,3
749364	32 x 10	65	81	35	24	8	40	55	M 10	0,3
749365	40 x 6	65	80	25	30	5	36	50	M 6	0,3
749366	40 x 8	60	80	28	30	6	36	50	M 8	0,3
749367	40 x 10	60	85	35	30	8	40	55	M 10	0,5
749368	40 x 12	65	90	42	30	10	45	60	M 12	0,6
749369	40 x 14	70	90	44	30	10	45	60	M 14	0,7
749370	40 x 16	70	95	48	30	12	48	65	M 14	0,8
749371	50 x 6	75	85	25	38	5	36	47,5	M 6	0,5
749372	50 x 8	60	85	28	38	6	36	47,5	M 8	0,5
749373	50 x 10	60	90	35	38	8	40	52,5	M 10	0,6
749374	50 x 12	65	100	42	38	10	45	62,5	M 12	0,8
749375	50 x 14	75	100	44	38	10	45	62,5	M 14	0,9
749376	50 x 16	75	105	48	38	12	48	67,5	M 14	1
749377	50 x 18	80	105	50	38	12	48	67,5	M 16	1
749378	50 x 20	80	105	52	38	16	50	67,5	M 16	1,1
749379	63 x 6	60	92	25	48	5	36	47,5	M 6	0,7
749380	63 x 8	60	92	28	48	6	36	47,5	M 8	0,9
749381	63 x 10	65	97	35	48	8	40	52,5	M 10	1
749382	63 x 12	75	107	42	48	10	45	62,5	M 12	1,2
749383	63 x 14	75	107	44	48	10	45	62,5	M 14	1,2
749384	63 x 16	80	112	48	48	12	48	67,5	M 14	1,7
749385	63 x 18	80	112	50	48	12	48	67,5	M 16	1,8
749386	63 x 20	80	112	52	48	16	50	67,5	M 16	2
749387	63 x 25	95	127	65	48	20	56	82,5	M 18x2	2,4
749388	80 x 6	65	105	25	60	5	36	49	M 6	1,2
749389	80 x 8	65	105	28	60	6	36	49	M 8	1,2
749390	80 x 10	70	110	35	60	8	40	54	M 10	1,4
749391	80 x 12	75	115	42	60	10	45	59	M 12	1,7
749392	80 x 16	75	115	48	60	12	45	59	M 14	1,8
749393	80 x 16	80	120	48	60	12	48	64	M 14	1,8
749394	80 x 18	80	120	50	60	12	48	64	M 16	1,8
749395	80 x 20	85	125	52	60	16	50	69	M 16	1,9
749396	80 x 25	95	135	65	60	20	56	79	M 18x2	3,6
749397	80 x 32	100	140	72	60	20	60	84	M 20x2	4
749398	100 x 6	65	115	25	75	5	36	49	M 6	1,3
749399	100 x 8	65	115	28	75	6	36	49	M 8	1,3
749400	100 x 10	70	120	35	75	8	40	54	M 10	1,5
749401	100 x 12	75	125	42	75	10	45	59	M 12	1,7
749402	100 x 14	75	125	44	75	10	45	59	M 14	1,7
749403	100 x 16	80	130	48	75	12	48	64	M 14	1,8
749404	100 x 18	80	130	50	75	12	48	64	M 16	1,9
749405	100 x 20	85	135	52	75	16	50	69	M 16	2
749406	100 x 25	95	145	65	75	20	56	79	M 18x2	3,8
749407	100 x 32	100	150	72	75	20	60	84	M 20x2	4,3

Starting from mounting bore d1 = 25mm there are 2 spindles
With mounted spindle
Coolant tube is to be ordered separately (fitting dimensions)

HSK-Adapter sleeves

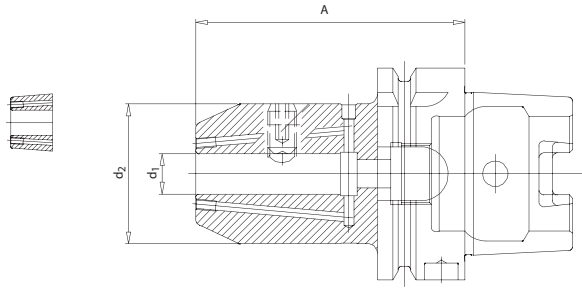


Tool group C 15
Type 288-03
Adapter Sleeves HSK-A
for automatic tool change
for **cylindric tapers** with lateral
cam surface to **DIN 1835**
form B (Weldon)

Item no.	Initial size D x d1	A	L	d2	d4	g	l1	l2	M	Weight kg
753124	50 x 6	65	90	25	38	5	35	39	M 6	0,5
753125	50 x 8	65	90	28	38	6	35	39	M 8	0,5
753126	50 x 10	65	90	35	38	8	39	39	M 10	0,6
753127	50 x 12	80	105	42	38	10	44	54	M 12	0,8
753128	50 x 14	80	105	44	38	10	44	54	M 14	0,9
753129	50 x 16	80	105	48	38	12	47	54	M 14	1
753130	50 x 18	80	105	50	38	12	47	54	M 16	1
753131	50 x 20	80	105	52	38	16	49	67,5	M 16	1,1
753132	63 x 6	65	97	25	48	5	35	39	M 6	0,7
753133	63 x 8	65	97	28	48	6	35	39	M 8	0,9
753134	63 x 10	65	97	35	48	8	39	39	M 10	1
753135	63 x 12	80	112	42	48	10	44	54	M 12	1,2
753136	63 x 14	80	112	44	48	10	44	54	M 14	1,2
753137	63 x 16	80	112	48	48	12	47	54	M 14	1,7
753138	63 x 18	80	112	50	48	12	47	54	M 16	1,8
753139	63 x 20	80	112	52	48	16	49	54	M 16	2
753140	63 x 25	110	142	65	48	20	54	84	M 18x2	2,4
753141	63 x 32	110	142	72	48	20	58	84	M 20x2	2,7
753142	100 x 6	80	130	25	75	5	35	51	M 6	1,3
753143	100 x 8	80	130	28	75	6	35	51	M 8	1,3
753144	100 x 10	80	130	35	75	8	39	51	M 10	1,5
753145	100 x 12	80	130	42	75	10	44	51	M 12	1,7
753146	100 x 14	80	130	44	75	10	44	51	M 14	1,7
753147	100 x 16	100	150	48	75	12	47	71	M 14	1,8
753148	100 x 18	100	150	50	75	12	47	71	M 16	1,9
753149	100 x 20	100	150	52	75	16	49	71	M 16	2
753150	100 x 25	100	150	65	75	20	54	71	M 18x2	3,8
753151	100 x 32	100	150	72	75	20	58	71	M 20x2	4,3

Starting from mounting bore d1 = 25mm there are 2 spindles
With mounted spindle
Coolant tube is to be ordered separately (fitting dimensions)

HSK-Adapter sleeves



Tool group C 15
Type 288-05

Adapter Sleeves Weldon / HSK-A, "COOL TOOL"
for cylindrical tapers with internal cam surface acc. to DIN 1835 form B (Weldon milling reception) with coolant bores "COOL TOOL"

Item no.	Taper	A	d2	d1 Clamp. diam.	Weight kg
1063653	HSK 63	65	25	6	0,9
1063654	HSK 63	65	28	8	1,3
1063655	HSK 63	65	35	10	0,9
1063656	HSK 63	80	42	12	1,3
1063657	HSK 63	80	42	14	0,9
1063658	HSK 63	80	48	16	0,9
1063659	HSK 63	80	48	18	1,6
1063660	HSK 63	80	52	20	1
1063661	HSK 63	110	65	25	1,5
1063662	HSK 63	110	72	32	1

Balanced 2,5 n = 18000 min-1

Supply: With built in location screw

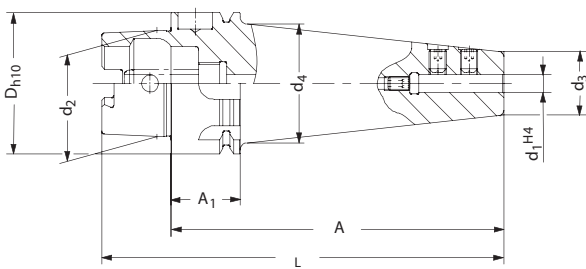
Tool group C 15
Type 0190-Y

**Clamping screw
DIN 1835 Type B**



Item no.	Thread	Clamping Ø
334568	M6	6
394398	M8	8
394399	M10	10
367146	M12	12+14
394013	M14	16+18
353374	M16	20
394014	M18x2	25
358839	M20x2x20	32
680503	M20x2x25	40

HSK-Adapter



Combinated design for clamping of tools with cylindrical shaft according to DIN 1835-B/DIN 6359-HB and DIN 1835-E/DIN 6359-HE

Technical features:

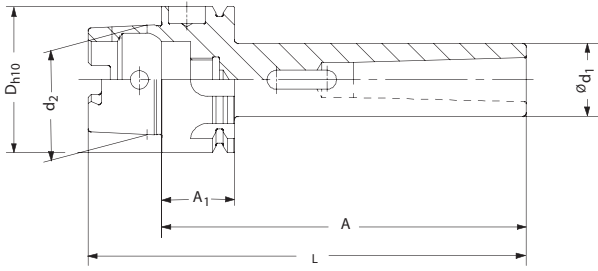
- **Delivery includes:** Adaptor sleeve with special clamping screw and drilled stop screw
- Coolant tube must be ordered separately

Tool group C 15
Type 288-03

Positive Taper Lock - Adapter with HSK-A shaft extend, slim design, for automatic tool change

Item no.	D x d1 x A	A	A1	L	d2	d3	d4	Weight kg
469206	63x6x100	100	26	132	28	22	48	28
469207	63x6x160	160	26	192	33	22	48	33
469208	63x8x100	100	26	132	30	24	48	30
469209	63x8x160	160	26	192	35	24	48	35
469210	63x10x100	100	26	132	32	25	48	32
469211	63x10x160	160	26	192	39	25	48	39
469212	63x12x120	120	26	152	35	26	48	35
469213	63x12x160	160	26	192	43	26	48	43
469214	63x14x120	120	26	152	39	28	48	39
469215	63x14x160	160	26	192	46	28	48	46
469216	63x16x120	120	26	152	37	30	48	37
469217	63x16x160	160	26	192	44	30	48	44
469218	63x18x120	120	26	152	39	32	48	39
469219	63x18x160	160	26	192	46	32	48	46
469220	63x20x120	120	26	152	43	34	48	43
469221	63x20x160	160	26	192	50	34	48	50

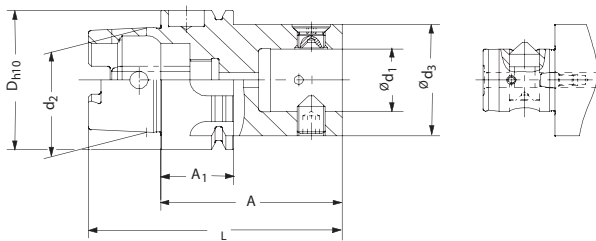
ABS-mounting with HSK-A shaft



For tools with morse taper with drift lug **DIN 228 part 2 form D**, for automatic tool clamping
 High runout accuracy of the internal taper MK to the positive taper lock HSK $\leq 0,008$ mm

Ejector for Morse Taper, see DIN 317

Tool group C 15 Type 288-31 Morse Taper Mounting with Positive Taper Lock HSK-A	Item no.	D x MK x A	Size MK	A	A1	L	d1	d4	Weight kg
	861534	50x1x100	1	100	26	125	25	38	1,5
	861535	50x2x120	2	120	26	145	32	38	1,8
	861536	50x3x140	3	140	26	165	40	38	1,9
	861537	63x1x100	1	100	26	132	25	48	1,6
	861538	63x2x120	2	120	26	152	32	48	2,0
	861539	63x3x140	3	140	26	172	40	48	2,2
	861540	63x4x160	4	160	26	192	48	48	2,5
	861541	80x1x100	1	110	26	150	25	60	3,3
	861542	80x2x120	2	120	26	160	32	60	3,6
	861543	80x3x140	3	150	26	190	40	60	3,8
	861544	80x4x160	4	170	26	210	48	60	4,4
	861545	80x5x180	5	200	26	240	63	60	5,0
	861546	100x1x110	1	110	29	160	25	75	3,4
	861547	100x2x120	2	120	29	170	32	75	3,8
	861548	100x3x150	3	150	29	200	40	75	4,0
	861549	100x4x170	4	170	29	220	48	75	4,6
	861550	100x5x200	5	200	29	250	63	75	5,2



For clamping of tools with cylindrical mounting, system ABS
 For automatic tool-change

Coolant tube must be ordered separately

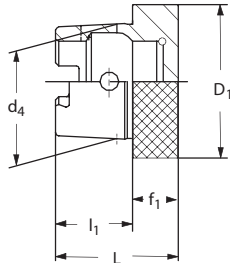
Tool group C 15 Type 288-31 ABS Mounting with HSK-A shaft	Item no.	D x ABS x A	A	A1	L	d1	d3	d4	Weight kg
	1028685	50x25x50	50	26	75	13	25	38	0,5
	1028686	50x32x50	50	26	75	16	32	38	0,4
	1028687	50x40x60	60	26	85	20	40	38	0,6
	1028688	50x50x70	70	26	95	28	50	38	0,9
	1028689	63x25x50	50	26	82	13	25	48	0,9
	1028690	63x32x50	50	26	82	16	32	48	0,9
	1028691	63x40x60	60	26	92	20	40	48	1
	1028692	63x50x70	70	26	102	28	50	48	1,2
	1028693	63x63x80	80	26	112	34	63	48	1,5
	1028694	63x80x100	80	26	112	46	80	48	1,5
	1028695	100x25x60	60	29	110	13	25	75	2
	1028696	100x32x60	60	29	110	16	32	75	2
	1028697	100x40x80	80	29	130	20	40	75	2,3
	1028698	100x50x80	80	29	130	28	50	75	2,5
	1028699	100x63x80	80	29	130	34	63	75	2,8
	1028700	100x80x90	90	29	140	46	80	75	3,8
	1028701	100x100x100	100	29	150	56	100	75	4

HSK-Plug

Tool group C 15
Type 288-92

Positive Taper Lock - Plug

with **HSK-C shaft** to close the spindles of tools without tool equipment, for manual tool change



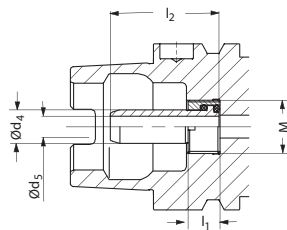
Item no.	Initial size HSK	D1	L	d4	f1	l1
756351	32	34	26	24	10	16
756352	40	42	30	30	10	20
756353	50	52	37,5	38	12,5	25
756354	63	65	44,5	48	12,5	32
756355	80	82	56	60	16	40
756356	100	102	66	75	16	50

Accessories

Tool group C 15
Type 288-66

Coolant duct complete

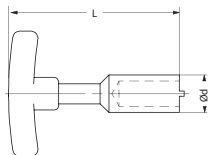
with duct, screw cap and round sealing



Item no.	Initial size	d4/f8	d5	l1	l2	M
802512	32	6	3,5	5,5	26	M 10x1
802513	40	8	5	7,5	29,1	M 12x1
802514	50	10	6,4	9,5	32,7	M 16x1
802515	63	12	8	11,5	36	M 18x1
802516	80	14	10	13,5	39,6	M 20x1,5
802517	100	16	12	15,5	43,6	M 24x1,5

Tool group C 15
Type 288-91

Box spanner for coolant duct

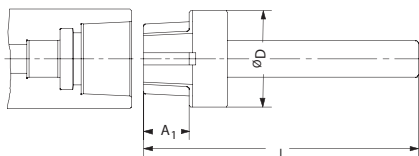


Item no.	Initial size	L	d
802518	32	107	9
802519	40	111	11
802520	50	120	15
802521	63	122	17
802522	80	126	18,5
802523	100	141	22

Tool group C 15
Type 7801-F

Taper wiper

for cleaning both taper and face of positive taper lock spindles and mounting flanges

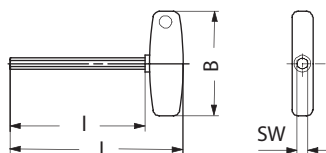


Item no.	HSK	A1	D	L
830688	HSK-32	11	45	135
830689	HSK-40	14	45	140
830690	HSK-50	17	53	145
830691	HSK-63	22	66	160
830692	HSK-80	28	83	180
830693	HSK-100	35	103	200

Tool group C 15
Type 7023-F

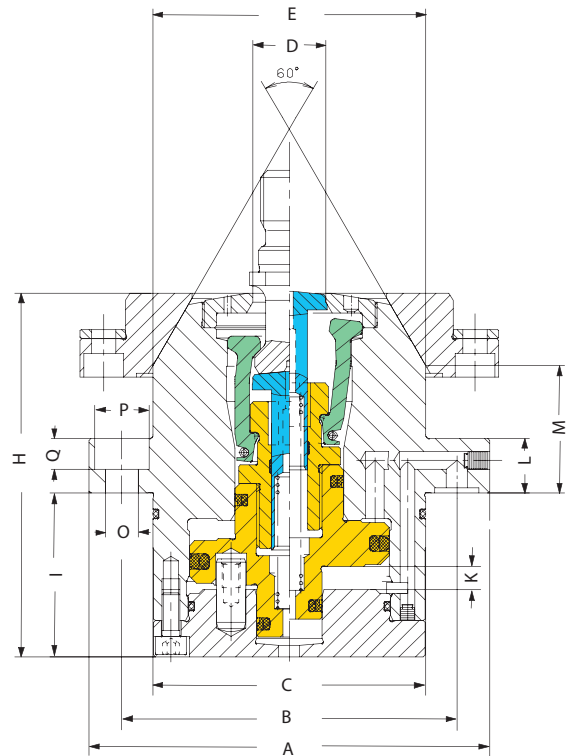
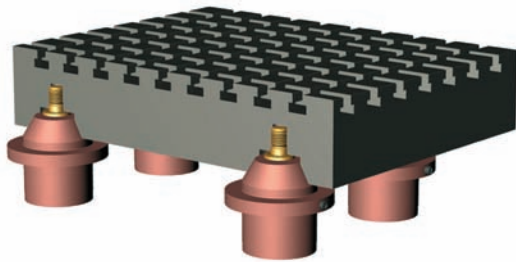
Tee handle

for the steel screw in manual HSK-Clamping Systems



Item no.	Initial size	B	L	I	Key-width SW
757437	25	70	127	100	2
757438	32	70	127	100	2,5
757439	40	70	133	100	3
338297	63	90	178	150	5
367666	80	90	185	150	6
381601	100	110	230	200	8

Hydraulic clamping head



Tool group C 15
Type 285-96
Hydraulic clamping head
for clamping pallets

Item no.	486816	850092	869832	489556
Size A	110	125	140	148
B	92	105	118	125
C	75	85	96	106
D	20	20	29,5	29,5
E	75	85	98	100
H	100	106,5	121,5	131
I	45	55	58	63
K	6,3	6,3	6,8	6,5
L	15	15	20	22
M	35	25	30	39,9
O	9	9	11	11
P	15	15	18	18
Q	8,5	8,5	11	11
Piston area: clamping cm ²	16,7	24	37	28,9
Piston area: releasing cm ²	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

Application range:

The hydraulic operated clamping device may be suitable for all existing sorts of pallet clampings. Preferable for very high repeatability i.e. at machining centres and transfer lines.

Function:

The bottom side of the pallet - equipped with flanges and draw-in bolts - is placed on the reception tapers of the clamping heads and centered while the draw-in bolts are pushing back the spring loaded covers of the clamping heads. The pallet can either be loaded with a workpiece or not.

When activating the hydraulic clamping terminal with an appropriate pressure the collet encloses the draw-in bolt by the stroke of the clamping piston and the pallet will be drawn against the reception taper and locked.

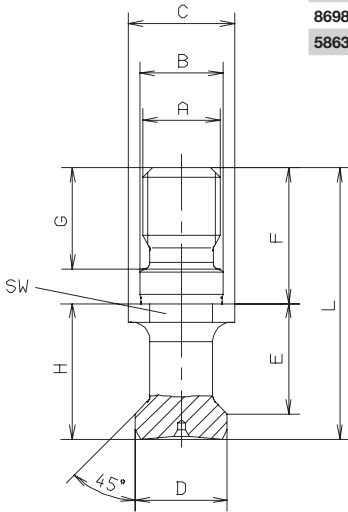
The clamping position may be monitored via air sensing and the values can be processed by the machine control unit.

During the clamping sequence pressurized air cleans the area of the collet and the reception taper.

Accessories

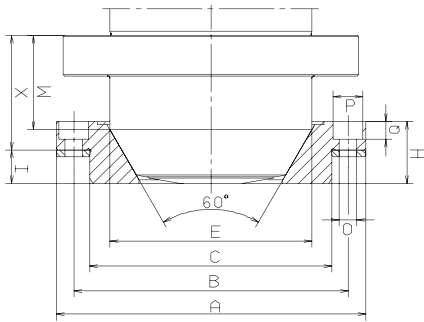
Tool group A 34
Type 285-95
Draw-in bolts for clamping heads

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

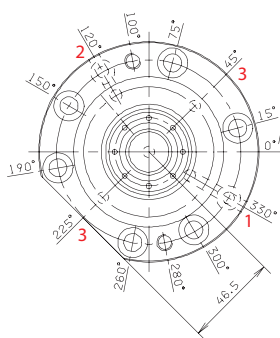


Tool group C 15
Type 285-95
Mounting flange for clamping heads

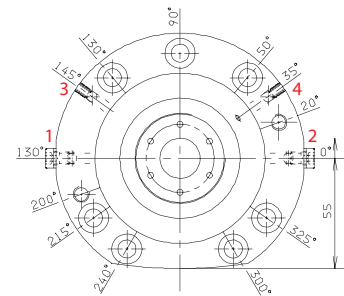
Item no.	For clamping head size	Size A	B	Partition	C	E	H	I	M	O	P	Q	X
488858	110	115	102	4x90°	90	75	23	12,5	35	6,6	11	6,3	42,5
497213	125	125	106	4x90°	88	85	32,5	18,5	25	9	15	9	39
497214	140	135	116	6x60°	98	98	38,5	23,5	30	9	15	9	45
489557	148	160	140	6x60°	120	100	38	23,5	39,9	9	15	9	50,5



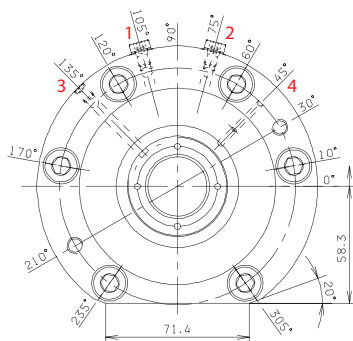
Position of mounting screws and medium terminals:



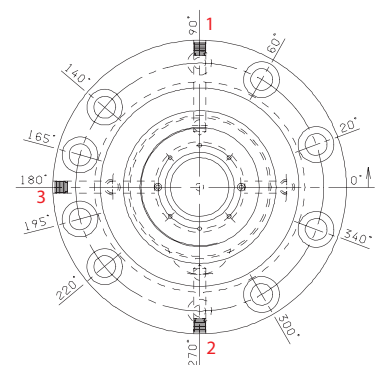
Clamping Head 110



Clamping Head 125



Clamping Head 140

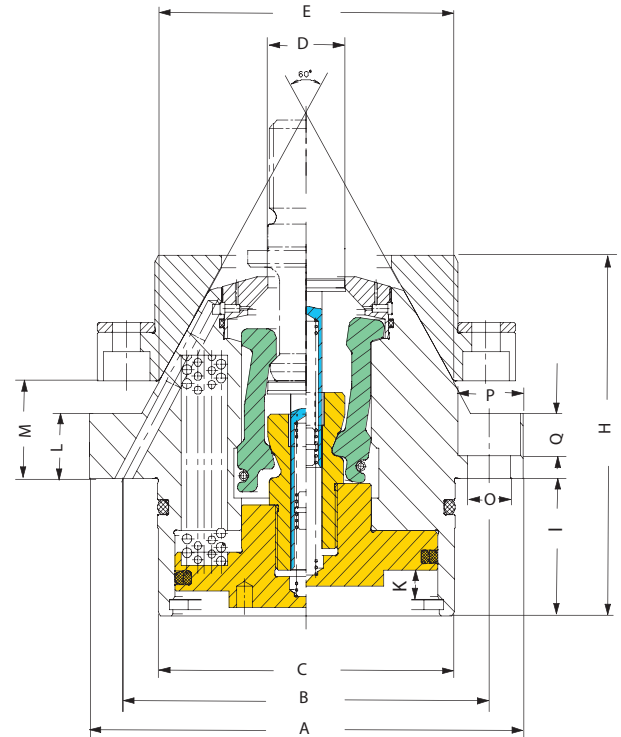


Clamping Head 148

Feeding:

- 1 Clamping pallet
- 2 Releasing pallet
- 3 Blast air
- 4 Sensing

Spring operated clamping head



Tool group C 15 Type 285-96 Spring operated clamping head for clamping pallets	Item no.	1108500	1099797
Size A		125	140
B		105	118
C		85	96
D		20	25
E		85	95
H		93	104
I		43	42
K		9,5	9,5
L		15	20
M		25	30
O		9	14
P		15	20
Q		8,5	13
Piston area: releasing cm ²		44,1	56,7
Min. release pressure bar		40	40
Pull-in-force N		20000	40000
Blast-air pressure bar		10	10
Weight kg		4	6

Sets can be aligned in height on request

Application range:

To supplement the fully hydraulic operated clamping heads a mechanically operated clamping head was developed by RÖHM. The advantages of the mechanically operated clamping head are the power amplification of the segment collet operated by coiled springs in a very rigid and fully ribbed housing. The mechanical lock of the segment collet provides a pull-out safety device without any additional elements. Only to release - and therefore during standstill - a hydraulic unit will be needed.

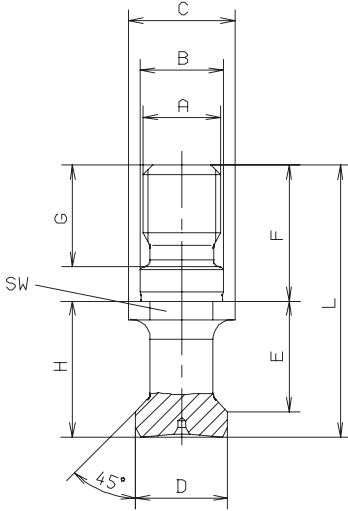
Function:

The hydraulic operated clamping device may be suitable for all existing sorts of pallet clampings. Preferable for very high repeatability i.e. at machining centres and transfer lines. Immediately after switching off the release pressure the springs are activating the clamping process. The springs are moving the draw-in bolt via the release piston. The segment collet encloses the draw-in bolt and clamping wedges will multiply the effect of the springforce at the end of the stroke. Via the draw-in bolt the pallet is pulled onto the reception cone and than mechanically locked. The clamping position may be monitored via air sensing and the values can be processed by the machine control unit. During the clamping sequence pressurized air cleans the area of the collet and the reception taper.

Accessories

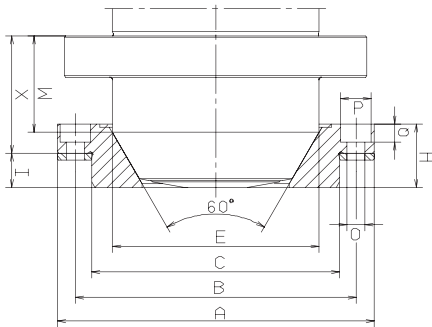
Tool group A 34
Type 285-95
Draw-in bolts for clamping heads

Item no.	For clamping head size	Size A	B	C	D	E	F	G	H	L	Key-width SW
850094	125	M20	21	34	19	29	30	23	35	65	30
1116394	140	M24	25	38	23	34,7	40	32	40	80	30

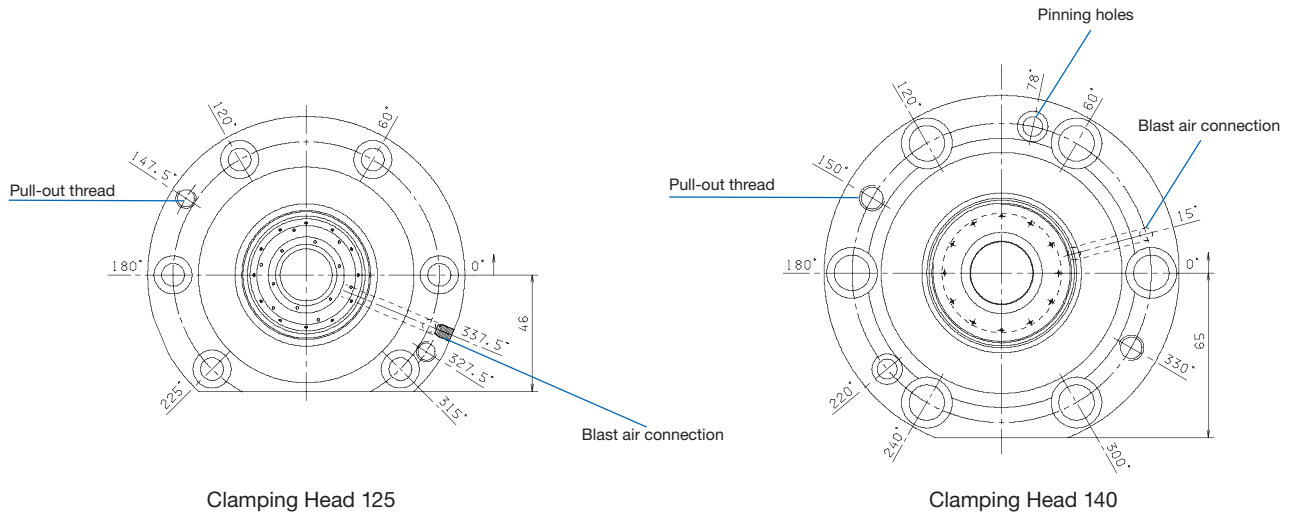


Tool group C 15
Type 285-95
Mounting flange for clamping heads

Item no.	For clamping head size	Size A	B	C	E	H	I	M	O	P	Q	X
497213	125	125	106	88	85	32,5	18,5	25	9	15	9	39
1116393	140	135	116	98	95	38,5	23,5	30	9	15	9	45



Position of mounting screws and medium terminals:



Clamping Head 125

Clamping Head 140

