

GÜHRING

GM 300

TOOLHOLDERS AND CLAMPING DEVICES



EDITION GM01

GM 300

A close-up photograph of a metal drill bit. The bit has a double-flute design and is shown with a fine mist of coolant being sprayed from its tip. The background is a plain, light-colored surface.

HIGH CLAMPING FORCE

PERFECT CONCENTRICITY

MAXIMUM OPERATIONAL SAFETY

OPTIMAL COOLANT DELIVERY

FROM THE SPINDLE TO THE CUTTING EDGE

INNOVATIONS FOR THE METAL-CUTTING INDUSTRY



*MODULAR TOOL HOLDERS FROM
THE TOOL MANUFACTURER'S
PERSPECTIVE!*



*DECADES OF OUR
KNOWLEDGE & EXPERIENCE
OFFERED TO YOU!*



*HOLDERS PERFECTLY ADAPTED
TO SUIT THE DEMANDS
OF MODERN TOOLS!*

ORDERING

When ordering, please always state

Order no., i.e.:

„HMC 3000 hydraulic chucks

for small clamping diameters HSK-A50,

for shank Ø 3mm“ = **4618 3.050**

Order no.

HSK-A hydraulic chucks HMC 3000 for clamping small diameters

								Article no.	4618
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	SW		Order no.
32	3	28	40.0	84.0	34	33	4		4618 3.032
32	4	28	40.0	84.0	34	33	4		4618 4.032
32	5	28	40.0	84.0	34	33	4		4618 5.032
40	3	28	33.5	74	34	40	4		4618 3.040
40	4	28	33.5	74	34	40	4		4618 4.040
40	5	28	33.5	74	34	40	4		4618 5.040
50	3	28	40	74	34	32	4		4618 3.050
50	4	28	40	74	34	32	4		4618 4.050
50	5	28	40	74	34	32	4		4618 5.050
63	3	28	50	74	34	29.5	5		4618 3.063
63	4	28	50	74	34	29.5	5		4618 4.063
63	5	28	50	74	34	29.5	5		4618 5.063
100	3	28	50	79	34	30	5		4618 3.100
100	4	28	50	79	34	30	5		4618 4.100
100	5	28	50	79	34	30	5		4618 5.100

GÜHRING

GM 300

TOOLHOLDERS AND CLAMPING DEVICES

EDITION GM01

The publishers cannot be held responsible for any errors, omissions or changes of any kind. All products marked with "DIN", deviating from the dimensions listed in the catalogue, can be delivered, as long as they are in conformity with the DIN standard form.

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GÜHRING

GM 300



GÜHRING



WE SET
THE STANDARDS
FOR THE FUTURE

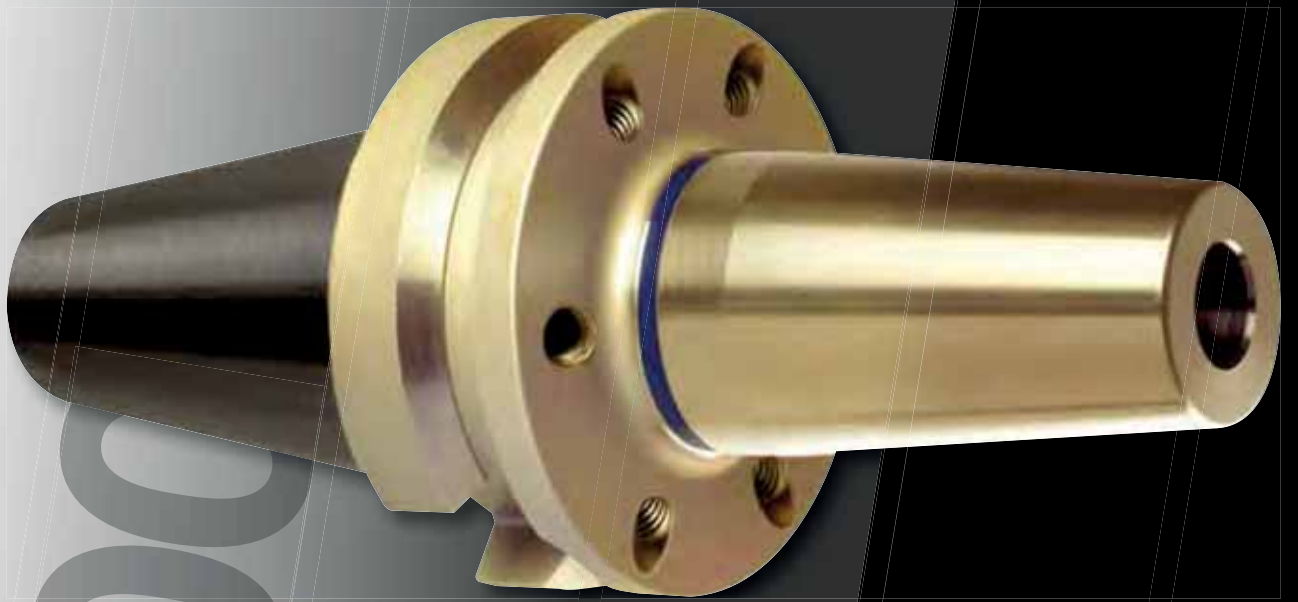


*DEVELOPMENT OF THE
HSK INTERFACE, PIONEER
OF FINE MACHINING*



*MQL TECHNOLOGY
"FROM THE SPINDLE
TO THE CUTTING EDGE"*

HSK



*HIGH OPERATING SAFETY
THANKS TO TEMPERATURE
INDICATOR*



*PVD-COATING FOR LONG
TOOL LIFE*

**DEVELOPMENTS
NEVER BEEN
SEEN BEFORE.**



TOOLS FROM Ø 3MM
DIRECT HYDRAULIC
CLAMPING



THE ADVANTAGES OF
HYDRAULIC CHUCK &
SYNCHRO CHUCK IN
ONE TOOL HOLDER



GUHRO SYNC
GÜHRING

MQL

GÜHRING MQL SYSTEMS

DELIVERING
ONLY THE
REQUIRED AMOUNT



As one of the pioneers of MQL technology we have an extensive knowledge of minimal quantity lubrication. Gühring standard MQL chucks have been supplied a thousand fold throughout the world and are recognised by the automotive industry as ideal MQL solutions as either the one or two channel systems.

Higher cutting speeds and longer tool life are possible thanks to adapted cooling as well as highest surface qualities thanks to the pure lubricant. Workpieces and chips remain dry! Save the cost of de-greasing your workpieces as well as disposal of swarf and soluble oil.

1 MQL BY GÜHRING

Our products for the MQL 1-channel technology are identified by this symbol.

Visual feature of the 1-channel system is the gold coloured MQL length setting screw.



2 MQL BY GÜHRING

Our products for the MQL 2-channel technology are identified by this symbol.

Visual feature of the 2-channel system is the black coloured MQL length setting screw.



HYDRAULIC CHUCKS

SHRINK FIT TECHNOLOGY

TAPPING CHUCKS

MQL-TECHNOLOGY

HPC CLAMPING CHUCKS



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TOOL HOLDERS

HOLDERS FOR FINE MACHINING

HSK CLAMPING TECHNOLOGY








MEASURING TOOLS AND GENERAL ACCESSORIES

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HMC 3000 MICRO-PRECISION DRILLS HR 500

PERFECT CLAMPING

HMC 3000 HYDRAULIC CHUCKS
TOGETHER WITH SOLID CARBIDE
MICRO-PRECISION DRILLS OR HR
500 HIGH-PERFORMANCE REAMERS



- ⇒ direct hydraulic clamping of shanks from $\text{Ø } 3 \text{ mm}$
- ⇒ quick, simple and accurate length setting
- ⇒ perfect concentricity $R < 3 \text{ }\mu\text{m}$ with $10 \times d1$

Please request our "HMC 3000", "HR 500" and "solid carbide micro-precision drills" brochures.

HMC 30000



HYDRAULIC CHUCKS

HMC 3000

EXTREMELY FAST
EXTREMELY ACCURATE
EXTREMELY SMALL



**DIRECT HYDRAULIC
CLAMPING OF TOOLS
FROM Ø 3 MM**



**HIGH-SPEED
MACHINING**



**PERFECT
CONCENTRICITY
 $R < 3 \mu\text{M}$
WITH $10 \times D1$**



HSK-A hydraulic chucks HMC 3000 for clamping small diameters

Product information

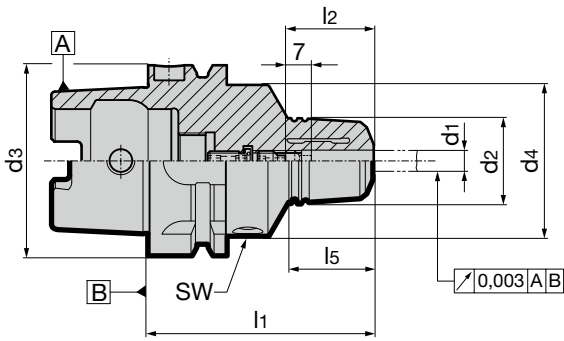
- perfect concentricity: < 3 µm at 10xd1
- balancing quality: G2.5 / 25.000 rev./min or U < 1 gmm
- HSK-A to ISO 12164-1/DIN 69893-1
- high clamping force
- quick, simple handling and accurate length setting (only from the front)
- IC and GÜHROJET peripheral cooling ensure optimal chip evacuation and tool lubrication

Scope of delivery

- incl. length adjustment screw
- incl. hexagon chuck key, article no. 4912
- order coolant supply set, article no. 4949, separately
- sealed version available as special option



GÜHROJET



Article no. **4618**

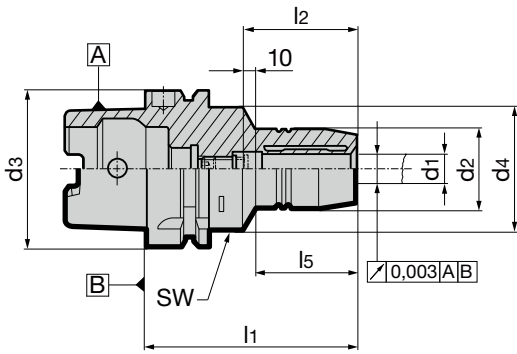
HSK-A d3	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	SW	Order no.
32	3	28	40,0	84,0	34	33	4	4618 3.032
32	4	28	40,0	84,0	34	33	4	4618 4.032
32	5	28	40,0	84,0	34	33	4	4618 5.032
40	3	28	33,5	74	34	40	4	4618 3.040
40	4	28	33,5	74	34	40	4	4618 4.040
40	5	28	33,5	74	34	40	4	4618 5.040
50	3	28	40	74	34	32	4	4618 3.050
50	4	28	40	74	34	32	4	4618 4.050
50	5	28	40	74	34	32	4	4618 5.050
63	3	28	50	74	34	29,5	5	4618 3.063
63	4	28	50	74	34	29,5	5	4618 4.063
63	5	28	50	74	34	29,5	5	4618 5.063
100	3	28	50	79	34	30	5	4618 3.100
100	4	28	50	79	34	30	5	4618 4.100
100	5	28	50	79	34	30	5	4618 5.100

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- axial length setting
- max. deviation f. concentricity 3 µm
- for tool shank tolerance h6
- to DIN 69882-7
- also available in extra-long lengths
l1 = 150 / 160 mm (concentricity 5 µm) and 200 mm (concentricity 7 µm)
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. adjustment screw, article no. 4900
- incl. hexagon chuck key, article no. 4912
- order coolant supply set, article no. 4949, separately



										Article no.	4299	
HSK-A d3	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	incl. setting screw 4900 ...	SW	kg	Order no.		
32	6	26	40,0	80	37	29	6,014	4	0.44	4299 6.032		
32	8	28	40,0	80	37	29	8,014	4	0.40	4299 8.032		
32	10	30	40,0	85	41	35	8,014	4	0.40	4299 10.032		
32	12	32	40,0	90	46	40	8,014	4	0.40	4299 12.032		
40	6	26	33,5	70	37	36	6,014	4	0.60	4299 6.040		
40	8	28	33,5	70	37	36	8,014	4	0.60	4299 8.040		
40	10	30	33,5	75	41	42	8,014	4	0.60	4299 10.040		
40	12	32	33,5	80	46	48	8,014	4	0.60	4299 12.040		
50	6	26	40,0	70	37	28	6,014	4	0.80	4299 6.050		
50	8	28	40,0	70	37	28	8,014	4	0.80	4299 8.050		
50	10	30	40,0	75	41	34	10,014	4	0.80	4299 10.050		
50	12	32	40,0	85	46	44	12,014	4	0.80	4299 12.050		
50	14	34	40,0	85	46	44	12,014	4	0.80	4299 14.050		
50	16	38	53,0	90	49	30	16,014	5	1.10	4299 16.050		
50	18	40	57,0	90	49	30	16,014	5	1.10	4299 18.050		
50	20	42	60,0	90	51	29	20,114	5	1.10	4299 20.050		
63	6	26	50,0	70	37	24,5	6,014	5	1.00	4299 6.063		
63	8	28	50,0	70	37	24,5	8,014	5	1.00	4299 8.063		
63	10	30	50,0	80	41	35,5	10,014	5	1.00	4299 10.063		
63	12	32	50,0	85	46	41,5	12,014	5	1.10	4299 12.063		
63	14	34	50,0	85	46	41,5	12,014	5	1.10	4299 14.063		
63	16	38	50,0	90	49	45,5	16,014	5	1.20	4299 16.063		
63	18	40	50,0	90	49	48,5	16,014	5	1.20	4299 18.063		
63	20	42	50,0	90	51	47,5	20,114	5	1.20	4299 20.063		
63	25	57	63,0	120	57	55,3	20,114	6	2.10	4299 25.063		
63	32	64	75,0	125	61	63	20,114	6	2.40	4299 32.063		
63	6	26	50,0	150	37	103	6,014	5	1.50	4299 6.163		
63	8	28	50,0	150	37	104	8,014	5	1.50	4299 8.163		
63	10	30	50,0	150	41	104	10,014	5	1.50	4299 10.163		
63	12	32	50,0	150	46	105	12,014	5	1.50	4299 12.163		
63	14	34	50,0	150	46	105	12,014	5	1.70	4299 14.163		
63	16	38	50,0	150	49	106	16,014	5	1.80	4299 16.163		
63	18	40	50,0	150	49	107	16,014	5	1.90	4299 18.163		
63	20	42	50,0	150	51	108	20,114	5	1.90	4299 20.163		
63	6	26	50,0	200	37	153	6,014	5	1.70	4299 6.263		
63	8	28	50,0	200	37	154	8,014	5	1.70	4299 8.263		
63	10	30	50,0	200	41	154	10,014	5	1.80	4299 10.263		
63	12	32	50,0	200	46	155	12,014	5	1.80	4299 12.263		
63	14	34	50,0	200	46	155	12,014	5	2.00	4299 14.263		
63	16	38	50,0	200	49	156	16,014	5	2.20	4299 16.263		

HSK-A hydraulic chucks with increased clamping force

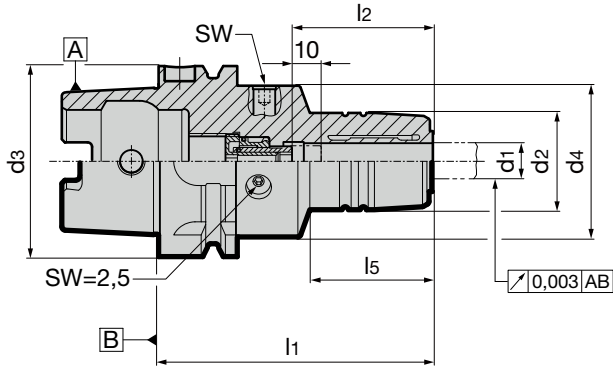
										Article no.	4299
HSK-A d ₃	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw 4900	SW	kg		Order no.
63	18	40	50.0	200	49	157	16,014	5	2.30		4299 18.263
63	20	42	50.0	200	51	158	20,114	5	2.50		4299 20.263
80	6	26	50.0	70	37	24	6,014	5	1.50		4299 6.080
80	8	28	50.0	70	37	24	8,014	5	1.50		4299 8.080
80	10	30	50.0	80	41	35	10,014	5	1.50		4299 10.080
80	12	32	50.0	85	46	40	12,014	5	1.60		4299 12.080
80	14	34	50.0	85	46	40	12,014	5	1.60		4299 14.080
80	16	38	50.0	95	49	51	16,014	5	1.70		4299 16.080
80	18	40	50.0	95	49	51	16,014	5	1.80		4299 18.080
80	20	42	50.0	95	51	52	20,114	5	1.80		4299 20.080
80	25	57	63.0	110	57	65	20,114	6	2.60		4299 25.080
80	32	64	75.0	125	61	63	20,114	6	3.20		4299 32.080
100	6	26	50.0	75	37	26	6,014	5	2.40		4299 6.100
100	8	28	50.0	75	37	26	8,014	5	2.40		4299 8.100
100	10	30	50.0	90	41	42	10,014	5	2.50		4299 10.100
100	12	32	50.0	95	46	47	12,014	5	2.50		4299 12.100
100	14	34	50.0	95	46	47	12,014	5	2.50		4299 14.100
100	16	38	50.0	100	49	53	16,014	5	2.70		4299 16.100
100	18	40	50.0	100	49	53	16,014	5	2.70		4299 18.100
100	20	42	50.0	105	51	59	20,114	5	3.20		4299 20.100
100	25	57	63.0	110	57	62	20,114	6	3.30		4299 25.100
100	32	64	75.0	110	61	62	20,114	6	3.80		4299 32.100
100	6	26	50.0	160	37	104	6,014	5	2.80		4299 106.100
100	8	28	50.0	160	37	104	8,014	5	2.80		4299 108.100
100	10	30	50.0	160	41	105	10,014	5	2.90		4299 110.100
100	12	32	50.0	160	46	105	12,014	5	2.90		4299 112.100
100	14	34	50.0	160	46	107	12,014	5	2.90		4299 114.100
100	16	38	50.0	160	49	107	16,014	5	3.20		4299 116.100
100	18	40	50.0	160	49	108	16,014	5	3.20		4299 118.100
100	20	42	50.0	160	51	108	20,114	5	3.60		4299 120.100
100	25	57	63.0	160	57	110	20,114	6	3.70		4299 125.100
100	32	64	75.0	160	61	110	20,114	6	4.20		4299 132.100
100	6	26	50.0	200	37	144	6,014	5	3.00		4299 206.100
100	8	28	50.0	200	37	144	8,014	5	3.00		4299 208.100
100	10	30	50.0	200	41	145	10,014	5	3.10		4299 210.100
100	12	32	50.0	200	46	145	12,014	5	3.10		4299 212.100
100	14	34	50.0	200	46	147	12,014	5	3.10		4299 214.100
100	16	38	50.0	200	49	147	16,014	5	3.40		4299 216.100
100	18	40	50.0	200	49	148	16,014	5	3.40		4299 218.100
100	20	42	50.0	200	51	148	20,114	5	3.80		4299 220.100
100	25	57	63.0	200	57	150	20,114	6	3.90		4299 225.100
100	32	64	75.0	200	61	150	20,114	6	4.40		4299 232.100

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- robust, radially operated length setting
- max. deviation f. concentricity 3 µm
- for tool shank tolerance h6
- to DIN 69882-7
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. hexagon chuck key, article no. 4912
- incl. hexagon key inserts for radial length setting
- order coolant supply set, article no. 4949, separately
- MQL design available as an option



Article no. **4296**

HSK-A d ₃	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	SW	kg	Order no.
50	6	26	40	80	37	35	4	0.80	4296 6.050
50	8	28	40	80	37	36	4	0.80	4296 8.050
50	10	30	40	85	41	38	4	0.90	4296 10.050
50	12	32	40	90	46	43	4	0.90	4296 12.050
50	14	34	40	90	46	46	4	1.00	4296 14.050
50	16	38	53	95	49	36.5	5	1.20	4296 16.050
50	18	40	57	95	49	36.5	5	1.20	4296 18.050
50	20	42	60	100	51	39	5	1.30	4296 20.050
63	6	26	50	80	37	33	5	1.00	4296 6.063
63	8	28	50	80	37	33	5	1.10	4296 8.063
63	10	30	50	85	41	38	5	1.10	4296 10.063
63	12	32	50	90	46	40	5	1.20	4296 12.063
63	14	34	50	90	46	46	5	1.20	4296 14.063
63	16	38	50	95	49	51	5	1.30	4296 16.063
63	18	40	50	95	49	52	5	1.30	4296 18.063
63	20	42	50	100	51	58	5	1.40	4296 20.063
63	25	57	63	120	57	59.5	6	2.30	4296 25.063
63	32	64	75	125	61	62.5	6	2.30	4296 32.063
80	6	26	50	85	37	35	5	1.50	4296 6.080
80	8	28	50	85	37	36	5	1.50	4296 8.080
80	10	30	50	90	41	38	5	1.50	4296 10.080
80	12	32	50	95	46	46	5	1.60	4296 12.080
80	14	34	50	95	46	47	5	1.60	4296 14.080
80	16	38	50	100	49	53	5	1.60	4296 16.080
80	18	40	50	100	49	54	5	1.80	4296 18.080
80	20	42	50	105	51	58	5	1.80	4296 20.080
80	25	57	63	115	57	66	6	2.60	4296 25.080
80	32	64	75	125	61	63	6	2.60	4296 32.080
100	6	26	50	85	37	33	5	2.50	4296 6.100
100	8	28	50	85	37	33	5	2.70	4296 8.100
100	10	30	50	90	41	36	5	2.80	4296 10.100
100	12	32	50	95	46	40	5	2.80	4296 12.100
100	14	34	50	95	46	46	5	2.70	4296 14.100
100	16	38	50	100	49	51	5	2.90	4296 16.100
100	18	40	50	100	49	52	5	2.80	4296 18.100
100	20	42	50	105	51	58	5	3.20	4296 20.100
100	25	57	63	115	57	60	6	3.40	4296 25.100
100	32	64	75	120	61	68	6	3.40	4296 32.100

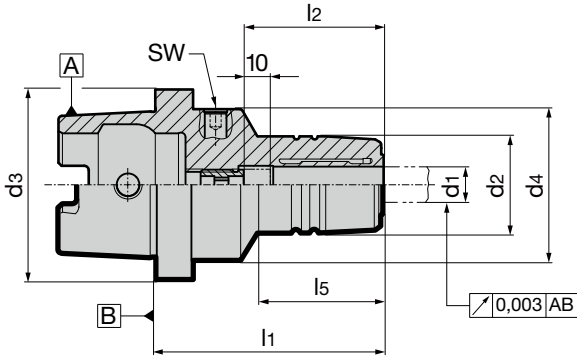
HSK-C hydraulic chucks with increased clamping force

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- axial length setting
- for tool shank tolerance h6
- HSK-C to ISO 12164-1/DIN 69893-1
- HSK-C32: with gripper groove, tapped hole for coolant supply set and bore for data chip

Scope of delivery

- incl. adjustment screw, article no. 4900
- incl. hexagon chuck key, article no. 4912



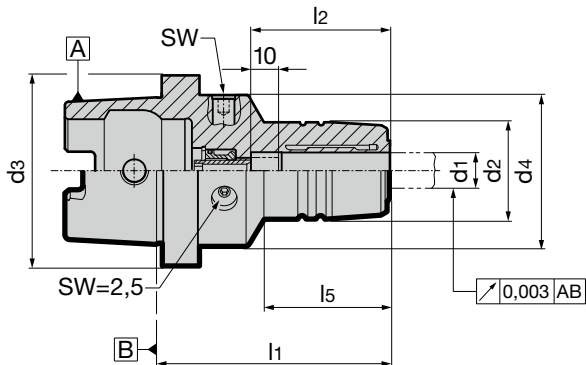
										Article no.	4267
HSK-C d ₃	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw 4900 ...	SW	kg	Order no.	
32	6	26	32	65	37.5	33	6.014	4	0.4	4267 6.032	
32	8	28	32	67	37.5	34	8.014	4	0.4	4267 8.032	
32	10	30	32	72.7	42.5	39	8.014	4	0.4	4267 10.032	
32	12	31.5	32	76	46	45	8.014	4	0.4	4267 12.032	
40	6	26	40	60	37	35	6.014	4	0.4	4267 6.040	
40	8	28	40	60	37	36	8.014	4	0.4	4267 8.040	
40	10	30	40	65	41	41	8.014	4	0.5	4267 10.040	
40	12	32	40	70	46	47	8.014	4	0.6	4267 12.040	
50	6	26	50	60	37	30	6.014	5	0.7	4267 6.050	
50	8	28	50	60	37	30	8.014	5	0.7	4267 8.050	
50	10	30	50	65	41	35	10.014	5	0.7	4267 10.050	
50	12	32	50	75	46	44	12.014	5	0.8	4267 12.050	
50	14	34	50	75	46	46	12.014	5	0.7	4267 14.050	
50	16	38	50	80	49	51	16.014	5	0.8	4267 16.050	
50	18	40	50	80	49	51	16.014	5	1.5	4267 18.050	
50	20	42	50	80	51	52	20.114	5	1.2	4267 20.050	
63	6	26	50	60	37	25	6.014	5	1.0	4267 6.063	
63	8	28	50	60	37	26	8.014	5	1.0	4267 8.063	
63	10	30	50	65	41	31	10.014	5	1.0	4267 10.063	
63	12	32	50	75	46	41	12.014	5	1.1	4267 12.063	
63	14	34	50	75	46	42	12.014	5	1.0	4267 14.063	
63	16	38	50	80	49	48	16.014	5	1.1	4267 16.063	
63	18	40	50	80	49	48	16.014	5	1.2	4267 18.063	
63	20	42	50	80	51	49	20.114	5	1.2	4267 20.063	
63	25	57	63	95	57	63	20.114	6	2.0	4267 25.063	
63	32	62.5	75	100	61	60.3	20.114	6	2.0	4267 32.063	

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- robust, radially operated length setting
- max. deviation f. concentricity 3 µm
- for tool shank tolerance h6
- to DIN 69882-7
- HSK-C to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. hexagon chuck key, article no. 4912
- incl. hexagon key inserts for radial length setting



Article no. **4295**

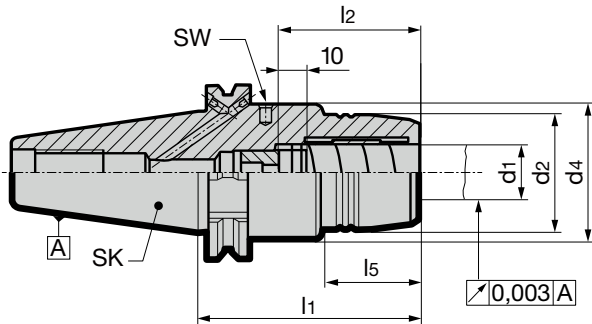
HSK-C d ₃	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	SW	kg	Order no.
40	6	26	40	60	37	30	4	0.5	4295 6.040
40	8	28	40	60	37	30	4	0.5	4295 8.040
40	10	30	40	65	41	35	4	0.5	4295 10.040
40	12	32	40	70	46	40	4	0.6	4295 12.040
50	6	26	50	60	37	30	4	0.6	4295 6.050
50	8	28	50	60	37	30	5	0.6	4295 8.050
50	10	30	50	65	41	35.5	5	0.6	4295 10.050
50	12	32	50	75	46	45	5	0.8	4295 12.050
50	14	34	50	75	46	45	5	0.9	4295 14.050
50	16	38	50	80	49	50	5	0.9	4295 16.050
50	18	40	50	80	49	50	5	1.0	4295 18.050
50	20	42	50	80	51	50	5	1.0	4295 20.050
63	6	26	50	60	37	26.0	5	1.0	4295 6.063
63	8	28	50	60	37	26.0	5	1.1	4295 8.063
63	10	30	50	65	41	32.0	5	1.1	4295 10.063
63	12	32	50	75	46	42.5	5	1.1	4295 12.063
63	14	34	50	75	46	43.0	5	1.1	4295 14.063
63	16	38	50	80	49	49.0	5	1.2	4295 16.063
63	18	40	50	80	49	50.0	5	1.2	4295 18.063
63	20	42	50	80	51	50.5	5	1.2	4295 20.063
63	25	50	63	95	57	59.5	6	1.8	4295 25.063
63	32	60	63	100	61	60.0	6	2.3	4295 32.063

Product information

- ISO taper to DIN ISO 7388-1 form AD/AF
- form AF supplied with threaded pins in bores
- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- axial length setting
- for tool shank tolerance h6

Scope of delivery

- incl. adjustment screw, article no. 4900
- incl. hexagon chuck key, article no. 4912
- order pull studs, article no. 4925 or 4926, separately



										Article no.	4213
ISO taper	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw 4900 ...	SW	kg	Order no.	
40	6	26.0	49.5	80.5	37	29.5	6.014	5	1.5	4213 6.040	
40	8	28.0	49.5	80.5	37	30.0	8.014	5	1.5	4213 8.040	
40	10	30.0	49.5	80.5	41	31.0	10.014	5	1.5	4213 10.040	
40	12	32.0	49.5	80.5	46	31.5	12.014	5	1.5	4213 12.040	
40	14	34.0	49.5	80.5	46	31.5	12.014	5	1.5	4213 14.040	
40	16	38.0	49.5	80.5	49	33.0	16.014	5	1.5	4213 16.040	
40	18	40.0	49.5	80.5	49	33.0	16.014	5	1.5	4213 18.040	
40	20	49.5	49.5	64.5	51	34.0	20.114	5	1.5	4213 20.040	
40	20	42.0	49.5	80.5	51	34.0	20.114	5	1.5	4213 20.140	
40	20	42.0	49.5	110.0	51	34.0	20.114	5	2.0	4213 20.240	
40	25	49.5	49.5	80.5	57	-	20.114	6	2.0	4213 25.040	
40	32	63.0	80.0	80.5	61	25.5	20.114	6	2.0	4213 32.040	
50	12	32.0	49.5	80.5	46	31.5	12.014	5	3.5	4213 12.050	
50	20	42.0	49.5	80.5	51	34.0	20.114	5	4.0	4213 20.050	
50	20	42.0	49.5	110.0	51	34.0	20.114	5	4.0	4213 20.150	
50	32	72.0	72.0	81.0	61	-	20.114	6	4.0	4213 32.050	

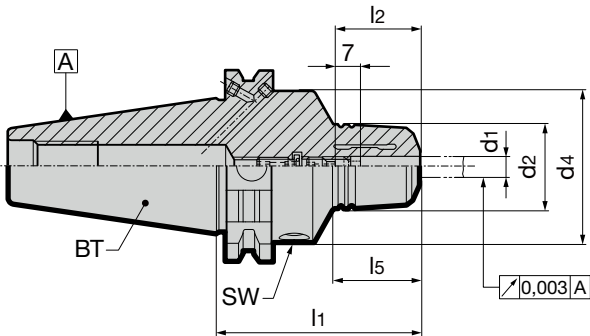
MAS/BT hydraulic chucks HMC 3000 for clamping small diameters

Product information

- perfect concentricity: <math>< 3 \mu\text{m}</math> at 10xd1
- balancing quality: G2.5 / 25,000 rev./min or U <math>< 1 \text{ gmm}</math>
- MAS/BT to DIN ISO 7388-2 form JD/JF (form AD/B)
- BT30 design JD without coolant supply via collar
- high clamping force
- quick, simple handling and accurate length setting
- IC and GÜHROJET peripheral cooling ensure optimal chip evacuation and tool lubrication

Scope of delivery

- incl. length adjustment screw
- incl. hexagon chuck key, article no. 4912
- order pull studs, article no. 4927 or 4928, separately
- sealed version available as special option



GÜHROJET

Article no. **4620**

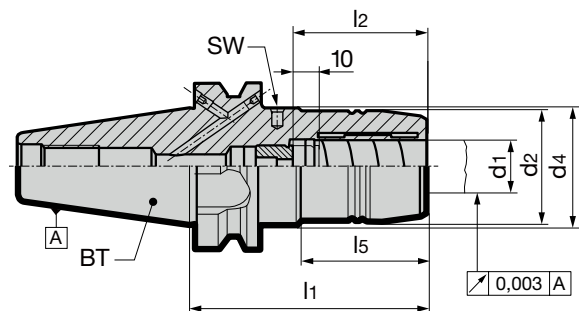
BT	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	SW	Order no.
30	3	28.0	28.0	55.0	34	-	4	4620 3.030
30	4	28.0	28.0	55.0	34	-	4	4620 4.030
30	5	28.0	28.0	55.0	34	-	4	4620 5.030
40	3	28.0	44.5	94.0	34	48.5	5	4620 3.040
40	4	28.0	44.5	94.0	34	48.5	5	4620 4.040
40	5	28.0	44.5	94.0	34	48.5	5	4620 5.040

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- axial length setting
- max. deviation f. concentricity 3 μm
- for tool shank tolerance h6
- MAS/BT to JIS B 6339-2 form JD/JF (*: version JD without coolant supply over collar)

Scope of delivery

- incl. adjustment screw, article no. 4900
- incl. hexagon chuck key, article no. 4912
- order pull studs, article no. 4927 or 4928, separately



										Article no.	4221
BT	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	incl. setting screw 4900 ...	SW	kg	Order no.	
30	6	26.0	26.0	51.0	37	-	6.014	4	0.6	4221 6.030	
30	8	28.0	28.0	51.0	37	-	8.014	4	0.6	4221 8.030	
30	10	30.0	30.0	51.0	41	-	10.014	4	0.6	4221 10.030	
30	12	32.0	32.0	51.0	46	19.5	12.014	4	0.6	4221 12.030	
30	16	38.0	38.0	90.0	49	50	16.014	4	1.0	4221 16.030	
30	20	42.0	42.0	90.0	51	50	8.014	5	1.0	4221 20.030	
40	6	26.0	44.5	90.0	37	43.0	6.014	5	1.5	4221 6.040	
40	8	28.0	44.5	90.0	37	44.5	8.014	5	1.5	4221 8.040	
40	10	30.0	44.5	90.0	41	44.5	10.014	5	1.5	4221 10.040	
40	12	32.0	44.5	90.0	46	44.5	12.014	5	1.5	4221 12.040	
40	14	34.0	44.5	90.0	46	44.5	12.014	5	1.5	4221 14.040	
40	16	38.0	44.5	90.0	49	47.5	16.014	5	1.5	4221 16.040	
40	18	40.0	44.5	90.0	49	47.5	16.014	5	1.5	4221 18.040	
40	20	49.5	49.5	72.5	51	-	20.114	5	1.5	4221 20.040	
40	20	42.0	44.5	90.0	51	47.5	20.114	5	1.5	4221 20.140	
40	25	49.5	49.5	83.0	57	-	20.114	6	1.8	4221 25.040	
40	32	63.0	80.0	83.0	61	25.5	20.114	6	2.0	4221 32.040	
50	12	32.0	44.5	90.0	46	34.0	12.014	5	4.0	4221 12.050	
50	20	42.0	44.5	90.0	51	34.0	20.114	5	4.0	4221 20.050	
50	32	72.0	72.0	90.0	61	-	20.114	6	4.0	4221 32.050	

Extraction key for reduction bushes

Product information

- for article no. 4368 and 4369
- for the simple removal of reduction bushes



	Article no.	4099
for reduction bushes d ₁		Order no.
12 bis 32		4099 1.000

Senso 3000

Product information

- accurate, quick and simple measuring of the clamping force of hydraulic chucks
- mobility allows measuring within machines and fixtures
- determines clamping force via a pressure sensitive plug gauge
- display of absolute measuring value or percentage clamping force in relation to reference value

Scope of delivery

- incl. carbide proofing bar for determining the torque
- incl. type CR 2430 battery
- incl. sturdy case



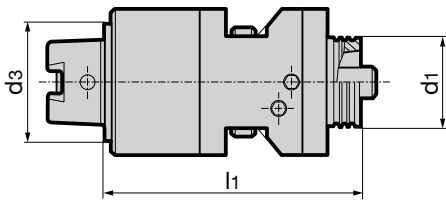
	Article no.	4038
clamping diameter mm	kg	Order no.
6.0	1.1	4038 6.000
8.0	1.1	4038 8.000
10.0	1.3	4038 10.000
12.0	1.3	4038 12.000
14.0	1.3	4038 14.000
16.0	1.3	4038 16.000
18.0	1.5	4038 18.000
20.0	1.5	4038 20.000
25.0	2.0	4038 25.000
32.0	2.5	4038 32.000

Product information

- for application with pre-setting facilities for the accurate length pre-setting of axially adjustable chucks.
- thanks to precise clamping also suitable for measuring and setting the diameter.
- HSK to ISO 12164-1/DIN 69893-1

Scope of delivery

- order plug insert, article no. 4993, separately



Article no. **4316**

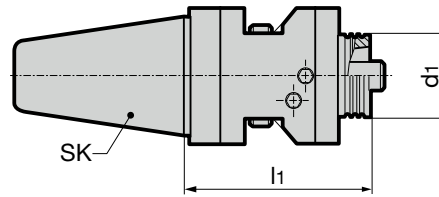
HSK-C d ₃	for HSK-A/C/E d ₁	d ₂ mm	l ₁ mm	Order no.
63	50	38	104.6	4316 63.050
63	63	48	111.6	4316 63.063

Product information

- for application with pre-setting facilities for the accurate length pre-setting of axially adjustable chucks.
- thanks to precise clamping also suitable for measuring and setting the diameter.

Scope of delivery

- order plug insert, article no. 4993, separately



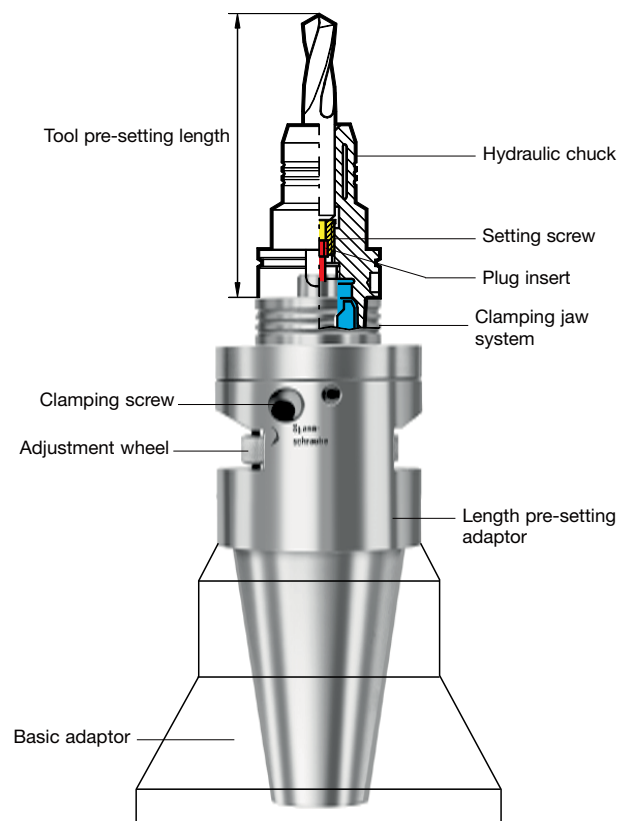
Article no. **4319**

SK	for HSK-A/C/E d ₁	d ₂ mm	l ₁ mm	Order no.
40	50	38	99.3	4319 40.050
40	63	48	106.3	4319 40.063
50	32	24	90.5	4319 50.032
50	40	30	93.8	4319 50.040
50	50	38	99.3	4319 50.050
50	63	48	106.3	4319 50.063
50	100	75	128.3	4319 50.100

Design features

of the universal length pre-setting adaptor

- tool length pre-setting via an external adjustment wheel
- tool length optimally pre-set in the universal length pre-setting adaptor via HSK clamping system similar to a tool spindle.
- controlling concentricity of cutting edges and simultaneous axial length pre-setting possible on pre-setting adaptor.
- applicable are tool holders such as hydraulic chucks, collet holders, side lock holders DIN 1835 E
- access hole in taper not required, all HSK forms from HSK-A to HSK-F can be applied.
- axial length pre-setting via plug insert set, article no. 4993.
- if a radial rotation of your pre-setting equipment is not possible, a rotatable version of the universal length pre-setting adaptor is available (on request).
- cannot be applied for cutting operations.
- not necessary to remove coolant supply.



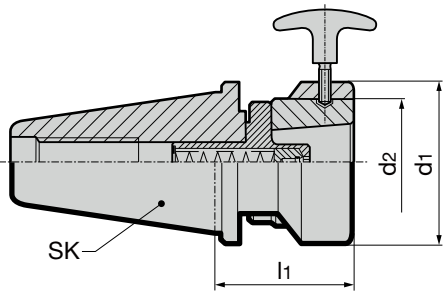
ISO taper length pre-setting adaptor

Product information

- application without removal of coolant supply
- simple design with radial clamping for measuring tool length
- for the application on pre-setting equipment for precise length pre-setting of axially adjustable chucks

Scope of delivery

- incl. taper insert, article no. 4992
- order separately:
plug inserts, article no. 4993

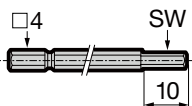


					Article no.	4315
ISO taper	for HSK-A/C/E	d ₁ mm	d ₂ mm	l ₁ mm	Order no.	
40	32	80	63	68.2	4315 40.032	
40	40	80	63	68.2	4315 40.040	
40	50	80	63	68.2	4315 40.050	
40	63	80	63	68.2	4315 40.063	
50	25	80	63	68.2	4315 50.025	
50	32	80	63	68.2	4315 50.032	
50	40	80	63	68.2	4315 50.040	
50	50	80	63	68.2	4315 50.050	
50	63	80	63	68.2	4315 50.063	
50	80	120	100	88.2	4315 50.080	
50	100	120	100	88.2	4315 50.100	

Plug inserts

Product information

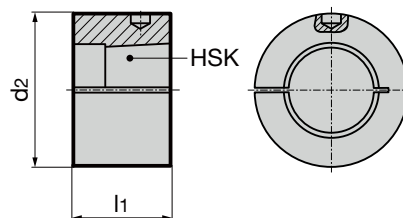
- for length pre-setting adaptors, art. no. 4316, 4319 and 4315



Taper inserts

Product information

- for length pre-setting adaptor, article no. 4315



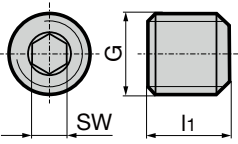
		Article no.	4993
for HSK	Set with key sizes	Order no.	
C	2.5/3/4/5/6	4993 100.000	
A/E	2.5/3/4/5/6	4993 200.000	
A (für MQL)	3/4/5	4993 300.000	

			Article no.	4992
for HSK-A/C/E	d ₂ mm	l ₁ mm	Order no.	
25	63	40	4992 25.000	
32	63	40	4992 32.000	
40	63	40	4992 40.000	
50	63	40	4992 50.000	
63	63	40	4992 63.000	
80	100	55	4992 80.000	
100	100	55	4992 100.000	

Clamping screws for hydraulic chucks and hydraulic synchro tapping chucks

Product information

- replacement clamping screws for hydraulic chucks and hydraulic synchro tapping chucks
- activation screw spec. for hydraulic chucks to suit hex. key size
- torque max. 10 Nm

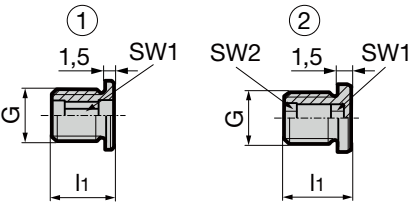

Article no. 4241

G	l ₁ mm	SW	Order no.
M8	8.5	4.0	4241 8.001
M8	10.0	4.0	4241 8.000
M10	9.0	5.0	4241 10.003
M10	10.5	5.0	4241 10.001
M10	12.0	5.0	4241 10.002
M12	12.0	6.0	4241 12.000

Adjustment screws

Product information

- for hydraulic chucks
- for conventional internal cooling
- with facing stop for standard shank ends
- for HSK 32/40 with clamping-Ø 10.0 and 12.0 mm use order no. 8.014

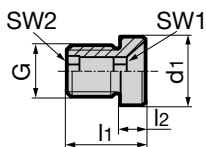

Article no. 4900

for clamping-Ø	l ₁ mm	G	SW1	SW2	figure	Order no.
6	14	M5	2.5	-	1	4900 6.014
8	14	M6	3.0	-	1	4900 8.014
10	14	M8x1	4.0	-	1	4900 10.014
12/14	14	M10x1	5.0	-	1	4900 12.014
16/18	14	M12x1	6.0	-	1	4900 16.014
20/25/32	14	M16x1	6.0	-	1	4900 20.014
20/25/32	14	M16x1	8.0	6.0	2	4900 20.114

MQL length pre-setting screws for the conversion

Product information

- for hydraulic chucks and shrink fit chucks
- optimised for MQL with special geometry
- with tapered stop for MQL conical shank ends


Article no. 4919

d ₁ mm	l ₁ mm	l ₂ mm	G	SW1	SW2	Order no.
6	14.8	2.3	M5	2.5	2.5	4919 6.000
8	15.6	3.0	M6	3.0	3.0	4919 8.000
10	16.1	3.5	M8x1	4.0	4.0	4919 10.000
10	16.6	4.1	M8x1	3.0	3.0	4919 10.040
10	16.6	4.1	M6	3.0	3.0	4919 10.032
12	16.6	4.1	M10x1	5.0	5.0	4919 12.000
12	17.6	5.1	M6	3.0	3.0	4919 12.032
14	17.6	5.1	M10x1	5.0	5.0	4919 14.000
14	18.6	6.1	M6	3.0	3.0	4919 14.040
16	18.6	6.1	M12x1	5.0	5.0	4919 16.000
16	19.6	7.1	M6	3.0	3.0	4919 16.040
18	19.6	7.1	M12x1	5.0	5.0	4919 18.000
20	20.6	8.1	M16x1	5.0	5.0	4919 20.000
25	22.6	10.1	M16x1	8.0	6.0	4919 25.000
32	26.1	13.6	M16x1	8.0	6.0	4919 32.000

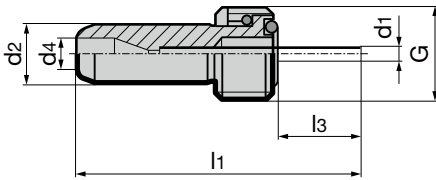
MQL coolant supply units HSK-A for the conversion

Product information

- replace conventional coolant supply sets, art. no. 4949, when applying MQL
- for hydraulic chucks to DIN 69882-7
- Attention: not suitable for application on machines with supply collar to DIN 69090-2

Scope of delivery

- complete MQL coolant supply set consisting of :
coolant pipe, cap nut
MQL tube and O-rings



								Article no.	4924
for HSK-A	clamping-Ø mm	d ₁ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₃ mm	G	Order no.	
32	6	2.5	6	3.5	54.2	28.0	M10x1	4924	32.010
32	8	3.0	6	3.5	54.3	28.1	M10x1	4924	32.030
32	10	3.0	6	3.5	55.8	29.6	M10x1	4924	32.050
32	12	3.0	6	3.5	56.6	30.4	M10x1	4924	32.070
40	6	2.5	8	4.0	45.1	16.0	M12x1	4924	40.010
40	8	3.0	8	4.0	56.2	15.8	M12x1	4924	40.030
40	10	3.0	8	4.0	46.3	17.1	M12x1	4924	40.050
40	12	3.0	8	4.0	46.7	17.5	M12x1	4924	40.070
50	6	2.5	10	4.0	44.6	11.9	M16x1	4924	50.010
50	8	3.0	10	4.0	46.1	13.4	M16x1	4924	50.030
50	10	4.0	10	4.0	45.7	13.0	M16x1	4924	50.050
50	12	5.0	10	4.0	46.1	13.4	M16x1	4924	50.070
50	14	5.0	10	4.0	51.5	18.8	M16x1	4924	50.090
50	16	5.0	10	4.0	52.8	20.1	M16x1	4924	50.110
50	18	5.0	10	4.0	53.2	20.5	M16x1	4924	50.130
50	20	5.0	10	4.0	51.5	18.8	M16x1	4924	50.150
63	6	2.5	12	4.0	45.7	9.5	M18x1	4924	63.010
63	6	2.5	12	4.0	126.9	90.6	M18x1	4924	63.011
63	6	2.5	12	4.0	176.9	140.6	M18x1	4924	63.012
63	8	3.0	12	4.0	46.0	9.8	M18x1	4924	63.030
63	8	3.0	12	4.0	126.1	89.9	M18x1	4924	63.031
63	8	3.0	12	4.0	176.2	139.9	M18x1	4924	63.032
63	10	4.0	12	4.0	51.7	15.5	M18x1	4924	63.050
63	10	4.0	12	4.0	122.2	86.0	M18x1	4924	63.051
63	10	4.0	12	4.0	172.2	135.9	M18x1	4924	63.052
63	12/14/20	5.0	12	4.0	52.1	15.9	M18x1	4924	63.070
63	16/18	5.0	12	4.0	53.8	17.6	M18x1	4924	63.090
63	12/14	5.0	12	4.0	117.6	81.4	M18x1	4924	63.091
63	12/14	5.0	12	4.0	167.6	131.3	M18x1	4924	63.092
63	16	5.0	12	4.0	114.3	78.0	M18x1	4924	63.111
63	25/32	6.0	12	4.0	77.0	40.8	M18x1	4924	63.120
63	18	5.0	12	4.0	114.6	78.3	M18x1	4924	63.131
63	16/18	5.0	12	4.0	164.6	128.3	M18x1	4924	63.132
63	20	5.0	12	4.0	112.9	76.6	M18x1	4924	63.151
63	20	5.0	12	4.0	162.9	126.6	M18x1	4924	63.152
80	6	2.5	14	4.0	44.8	5.5	M20x1.5	4924	80.010
80	8	3.0	14	4.0	44.9	5.6	M20x1.5	4924	80.030
80	10	4.0	14	4.0	50.9	11.6	M20x1.5	4924	80.050
80	12	5.0	14	4.0	51.3	12.0	M20x1.5	4924	80.070
80	14	5.0	14	4.0	51.6	12.3	M20x1.5	4924	80.090
80	16	5.0	14	4.0	57.9	18.6	M20x1.5	4924	80.110
80	18	5.0	14	4.0	58.3	19.0	M20x1.5	4924	80.130
80	20	5.0	14	4.0	56.6	17.3	M20x1.5	4924	80.150
80	25	6.0	14	4.0	53.1	13.8	M20x1.5	4924	80.170
80	32	6.0	14	4.0	77.2	37.9	M20x1.5	4924	80.190
100	6	2.5	16	4.0	53.0	9.2	M24x1.5	4924	100.010
100	8	3.0	16	4.0	53.7	9.9	M24x1.5	4924	100.030
100	10	4.0	16	4.0	63.3	19.5	M24x1.5	4924	100.050
100	12	5.0	16	4.0	63.8	20.0	M24x1.5	4924	100.070
100	14	5.0	16	4.0	64.2	20.4	M24x1.5	4924	100.090
100	16	5.0	16	4.0	65.4	21.6	M24x1.5	4924	100.110
100	18	5.0	16	4.0	65.8	22.0	M24x1.5	4924	100.130
100	20	5.0	16	4.0	69.2	25.4	M24x1.5	4924	100.150
100	25	6.0	16	4.0	68.6	24.8	M24x1.5	4924	100.170
100	32	6.0	16	4.0	64.6	20.8	M24x1.5	4924	100.190

TSG 3000



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TSG 3000

THE SAFEST
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**HIGHEST OPERATIONAL
SAFETY THANKS
TO TEMPERATURE
INDICATOR**



**PVD-COATING FOR
LONG TOOL LIFE**



**LENGTH SETTING
SCREW WITH AXIAL
DAMPING**

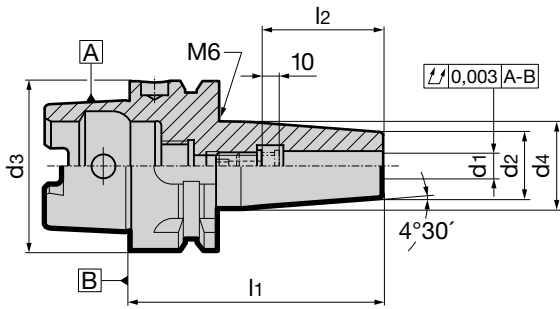


Product information

- coating for protection against oxidation, cleanliness and longevity
- safety colour ring for maximum operator safety
- with axial damping screw for optimal concentricity
- max. deviation f. concentricity 3 µm
- for tool shank tolerance h6
- to DIN 69882-8
- balancing quality: G2.5 / 25,000 rev./min or U< 1 gmm
- designed with 6xM6 balancing screws for the highest accuracy
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. length setting screw with axial force damping article no. 4941 for conventional cooling
- for conventional cooling order coolant supply set, article no. 4949, separately
- for MQL application order as special tool holder
- special dimensions and extra lengths on request



Article no. **4726**

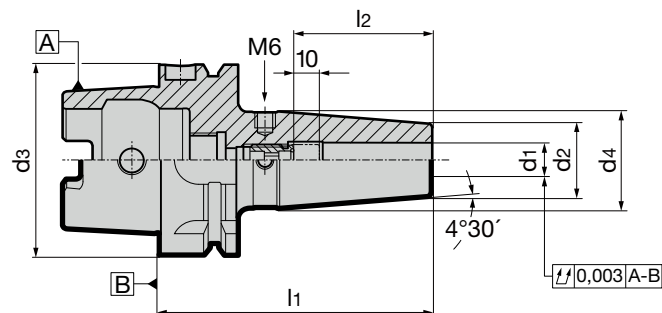
HSK-A d3	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw art. no. 4941 ...	kg	Order no.
63	6	21	27	80	36	6,100	1,00	4726 6.063
63	8	21	27	80	36	8,100	1,00	4726 8.063
63	10	24	32	85	41	10,100	1,00	4726 10.063
63	12	24	32	90	46	12,100	1,00	4726 12.063
63	14	27	34	90	46	14,100	1,00	4726 14.063
63	16	27	34	95	49	16,100	1,00	4726 16.063
63	18	33	42	95	49	18,100	1,00	4726 18.063
63	20	33	42	100	51	20,100	1,00	4726 20.063
63	25	44	53	115	57	25,100	2,00	4726 25.063
63	32	44	53	120	61	32,100	2,00	4726 32.063
100	6	21	27	85	36	6,100	2,00	4726 6.100
100	8	21	27	85	36	8,100	2,00	4726 8.100
100	10	24	32	90	41	10,100	2,00	4726 10.100
100	12	24	32	95	46	12,100	2,00	4726 12.100
100	14	27	34	95	46	14,100	2,00	4726 14.100
100	16	27	34	100	49	16,100	2,00	4726 16.100
100	18	33	42	100	49	18,100	2,50	4726 18.100
100	20	33	42	105	51	20,100	2,50	4726 20.100
100	25	44	53	115	57	25,100	3,00	4726 25.100
100	32	44	53	120	61	32,100	3,00	4726 32.100

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- incl. balancing thread 4xM6/6xM6
- to DIN 69882-8
- for tool shank tolerance h6
- also available in the lengths
l1 = 120 mm (concentricity 4 µm),
160 mm (concentricity 5 µm)
and 200 mm (concentricity 7 µm)
- HSK-A to ISO12164-1 / DIN 69893-1

Scope of delivery

- incl. setting screw, article no. 4977 or 4904
- for conventional cooling order coolant supply set, article no. 4949, separately
- special dimensions on request



									Article no.	4736
HSK-A d3	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw art. no. order no.		kg	Order no.	
32	6	21	26	70	36	4977	6.014	0.30	4736	6.032
32	8	21	26	70	36	4977	8.014	0.30	4736	8.032
32	10	24	30	75	41	4977	10.014	0.30	4736	10.032
32	12	24	30	80	46	4977	12.014	0.30	4736	12.032
40	6	21	27	80	36	4977	6.014	0.40	4736	6.040
40	8	21	27	80	36	4977	8.014	0.40	4736	8.040
40	10	24	32	80	41	4977	10.014	0.50	4736	10.040
40	12	24	32	90	46	4977	12.014	0.50	4736	12.040
40	14	27	34	90	46	4977	12.014	0.60	4736	14.040
40	16	27	34	90	49	4977	16.014	0.50	4736	16.040
40	18	33	42	95	49	4977	16.014	0.90	4736	18.040
40	20	33	42	100	51	4977	20.114	0.90	4736	20.040
50	6	21	27	80	36	4977	6.014	0.60	4736	6.050
50	8	21	27	80	36	4977	8.014	0.60	4736	8.050
50	10	24	32	85	41	4977	10.014	0.70	4736	10.050
50	12	24	32	90	46	4977	12.014	0.70	4736	12.050
50	14	27	34	90	46	4977	12.014	0.70	4736	14.050
50	16	27	34	95	49	4977	16.014	1.00	4736	16.050
50	18	33	42	95	49	4977	16.014	0.90	4736	18.050
50	20	33	42	100	51	4977	20.114	0.90	4736	20.050
63	3	10	18	80	30	4904	5.016	0.70	4736	3.063
63	4	10	18	80	35	4904	6.016	0.70	4736	4.063
63	5	10	18	80	40	4904	8.018	0.70	4736	5.063
63	6	21	27	80	36	4977	6.014	0.80	4736	6.063
63	8	21	27	80	36	4977	8.014	0.80	4736	8.063
63	10	24	32	85	41	4977	10.014	0.90	4736	10.063
63	12	24	32	90	46	4977	12.014	0.90	4736	12.063
63	14	27	34	90	46	4977	12.014	1.00	4736	14.063
63	16	27	34	95	49	4977	16.014	1.00	4736	16.063
63	18	33	42	95	49	4977	16.014	1.20	4736	18.063
63	20	33	42	100	51	4977	20.114	1.20	4736	20.063
63	25	44	53	115	57	4977	20.114	1.80	4736	25.063
63	32	44	53	120	61	4977	20.114	1.70	4736	32.063
63	3	10	25	120	30	4904	5.016	0.80	4736	203.063
63	4	10	25	120	35	4904	6.016	0.80	4736	204.063
63	5	10	25	120	40	4904	8.018	0.80	4736	205.063
63	6	21	27	120	36	4977	6.014	0.90	4736	206.063
63	8	21	27	120	36	4977	8.014	1.00	4736	208.063
63	10	24	32	120	41	4977	10.014	1.10	4736	210.063
63	12	24	32	120	46	4977	12.014	1.20	4736	212.063
63	14	27	34	120	46	4977	12.014	1.20	4736	214.063
63	16	27	34	120	49	4977	16.014	1.20	4736	216.063
63	18	33	42	120	49	4977	16.014	1.40	4736	218.063
63	20	33	42	120	51	4977	20.114	1.40	4736	220.063

									Article no.	4736
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw art. no. order no.		kg	Order no.	
63	3	10	31	160	30	4904	5.016	0.90	4736 103.063	
63	4	10	31	160	35	4904	6.016	0.90	4736 104.063	
63	5	10	31	160	40	4904	8.018	0.90	4736 105.063	
63	6	21	27	160	36	4977	6.014	1.10	4736 106.063	
63	8	21	27	160	36	4977	8.014	1.10	4736 108.063	
63	10	24	32	160	41	4977	10.014	1.30	4736 110.063	
63	12	24	32	160	46	4977	12.014	1.30	4736 112.063	
63	14	27	34	160	46	4977	12.014	1.40	4736 114.063	
63	16	27	34	160	49	4977	16.014	1.40	4736 116.063	
63	18	33	42	160	49	4977	16.014	1.60	4736 118.063	
63	20	33	42	160	51	4977	20.114	1.60	4736 120.063	
63	25	44	53	160	57	4977	20.114	1.80	4736 125.063	
63	32	44	53	160	61	4977	20.114	1.70	4736 132.063	
63	6	21	27	200	36	4977	6.014	1.30	4736 306.063	
63	8	21	27	200	36	4977	8.014	1.30	4736 308.063	
63	10	24	32	200	41	4977	10.014	1.50	4736 310.063	
63	12	24	32	200	46	4977	12.014	1.50	4736 312.063	
63	14	27	34	200	46	4977	12.014	1.70	4736 314.063	
63	16	27	34	200	49	4977	16.014	1.70	4736 316.063	
63	18	33	42	200	49	4977	16.014	1.80	4736 318.063	
63	20	33	42	200	51	4977	20.114	1.80	4736 320.063	
63	25	44	53	200	57	4977	20.114	2.00	4736 325.063	
63	32	44	53	200	61	4977	20.114	1.90	4736 332.063	
80	6	21	27	85	36	4977	6.014	1.30	4736 6.080	
80	8	21	27	85	36	4977	8.014	1.30	4736 8.080	
80	10	24	32	90	41	4977	10.014	1.40	4736 10.080	
80	12	24	32	95	46	4977	12.014	1.40	4736 12.080	
80	14	27	34	95	46	4977	12.014	1.50	4736 14.080	
80	16	27	34	100	49	4977	16.014	1.50	4736 16.080	
80	18	33	42	100	49	4977	16.014	1.70	4736 18.080	
80	20	33	42	105	51	4977	20.114	1.70	4736 20.080	
80	25	44	53	115	57	4977	20.114	2.20	4736 25.080	
80	32	44	53	120	61	4977	20.114	2.10	4736 32.080	
80	6	21	27	160	36	4977	6.014	1.60	4736 106.080	
80	8	21	27	160	36	4977	8.014	1.60	4736 108.080	
80	10	24	32	160	41	4977	10.014	1.80	4736 110.080	
80	12	24	32	160	46	4977	12.014	1.80	4736 112.080	
80	14	27	34	160	46	4977	12.014	1.90	4736 114.080	
80	16	27	34	160	49	4977	16.014	1.90	4736 116.080	
80	18	33	42	160	49	4977	16.014	2.30	4736 118.080	
80	20	33	42	160	51	4977	20.114	2.30	4736 120.080	
80	25	44	53	160	57	4977	20.114	3.00	4736 125.080	
80	32	44	53	160	61	4977	20.114	2.80	4736 132.080	
100	6	21	27	85	36	4977	6.014	2.20	4736 6.100	
100	8	21	27	85	36	4977	8.014	2.20	4736 8.100	
100	10	24	32	90	41	4977	10.014	2.30	4736 10.100	
100	12	24	32	95	46	4977	12.014	2.30	4736 12.100	
100	14	27	34	95	46	4977	12.014	2.30	4736 14.100	
100	16	27	34	100	49	4977	16.014	2.30	4736 16.100	
100	18	33	42	100	49	4977	16.014	2.50	4736 18.100	
100	20	33	42	105	51	4977	20.114	2.50	4736 20.100	
100	25	44	53	115	57	4977	20.114	3.00	4736 25.100	
100	32	44	53	120	61	4977	20.114	3.00	4736 32.100	
100	6	21	27	160	36	4977	6.014	2.60	4736 106.100	
100	8	21	27	160	36	4977	8.014	2.50	4736 108.100	
100	10	24	32	160	41	4977	10.014	2.70	4736 110.100	
100	12	24	32	160	46	4977	12.014	2.70	4736 112.100	
100	14	27	34	160	46	4977	12.014	2.80	4736 114.100	
100	16	27	34	160	49	4977	16.014	2.80	4736 116.100	
100	18	33	42	160	49	4977	16.014	3.20	4736 118.100	
100	20	33	42	160	51	4977	20.114	3.10	4736 120.100	
100	25	44	53	160	57	4977	20.114	3.90	4736 125.100	
100	32	44	53	160	61	4977	20.114	3.70	4736 132.100	
100	6	21	27	200	36	4977	6.014	2.80	4736 306.100	
100	8	21	27	200	36	4977	8.014	2.80	4736 308.100	

							Article no.		4736	
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw art. no. order no.		kg	Order no.	
100	10	24	32	200	41	4977	10.014	2.90	4736 310.100	
100	12	24	32	200	46	4977	12.014	2.90	4736 312.100	
100	14	27	34	200	46	4977	12.014	3.00	4736 314.100	
100	16	27	34	200	49	4977	16.014	3.00	4736 316.100	
100	18	33	42	200	49	4977	16.014	3.40	4736 318.100	
100	20	33	42	200	51	4977	20.114	3.30	4736 320.100	
100	25	44	53	200	57	4977	20.114	4.00	4736 325.100	
100	32	44	53	200	61	4977	20.114	3.90	4736 332.100	



GUHRING

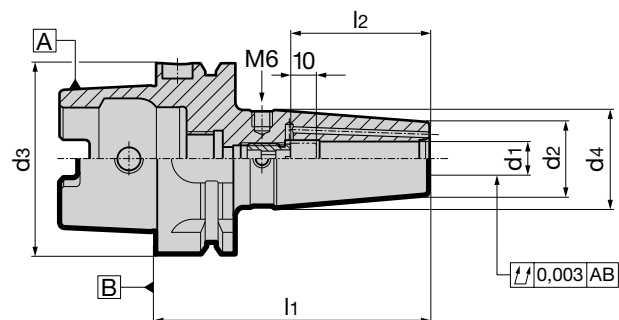
The perfect combination from one reliable supplier: High performance milling cutters and GÜHROJET shrink fit chucks made by Gühring

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- to DIN 69882-8
- optimised cooling for tools without internal coolant ducts
- good chip evacuation and increased process reliability
- Coolant ducts:
d₁ = 6 - 10 mm with two coolant ducts
d₁ = 12 - 32 mm with four coolant ducts
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. setting screw, article no. 4938
- for conventional cooling order coolant supply set, article no. 4949, separately
- special dimensions on request



GÜHROJET

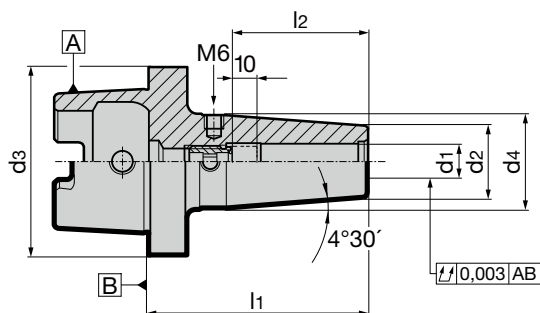
Article no. 4755								Order no.	
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw art. no. 4938 ...	kg		
40	6	21	27	80	36	6.000	0.50	4755	6.040
40	8	21	27	80	36	8.000	0.50	4755	8.040
40	10	24	32	80	41	10.000	0.50	4755	10.040
40	12	24	32	90	46	12.000	0.50	4755	12.040
40	14	27	33.5	90	46	12.000	0.50	4755	14.040
40	16	27	33.5	90	49	16.000	0.50	4755	16.040
50	6	21	27	80	36	6.000	0.60	4755	6.050
50	8	21	27	80	36	8.000	0.60	4755	8.050
50	10	24	32	85	41	10.000	0.60	4755	10.050
50	12	24	32	90	46	12.000	0.70	4755	12.050
50	14	27	34	90	46	12.000	0.70	4755	14.050
50	16	27	34	95	49	16.000	0.70	4755	16.050
50	18	33	41.5	95	49	16.000	0.90	4755	18.050
50	20	33	41.5	100	51	20.000	0.90	4755	20.050
63	6	21	27	80	36	6.000	0.80	4755	6.063
63	8	21	27	80	36	8.000	0.80	4755	8.063
63	10	24	32	85	41	10.000	0.90	4755	10.063
63	12	24	32	90	46	12.000	0.90	4755	12.063
63	14	27	34	90	46	12.000	1.00	4755	14.063
63	16	27	34	95	49	16.000	1.00	4755	16.063
63	18	33	42	95	49	16.000	1.20	4755	18.063
63	20	33	42	100	51	20.000	1.20	4755	20.063
63	6	21	27	120	36	6.000	0.90	4755	206.063
63	8	21	27	120	36	8.000	0.90	4755	208.063
63	10	24	32	120	41	10.000	1.10	4755	210.063
63	12	24	32	120	46	12.000	1.20	4755	212.063
63	14	27	34	120	46	12.000	1.20	4755	214.063
63	16	27	34	120	49	16.000	1.20	4755	216.063
63	18	33	42	120	49	16.000	1.20	4755	218.063
63	20	33	42	120	51	20.000	1.40	4755	220.063
100	6	21	27	85	36	6.000	2.20	4755	6.100
100	8	21	27	85	36	8.000	2.20	4755	8.100
100	10	24	32	90	41	10.000	2.30	4755	10.100
100	12	24	32	95	46	12.000	2.30	4755	12.100
100	14	27	34	95	46	12.000	2.30	4755	14.100
100	16	27	34	100	49	16.000	2.30	4755	16.100
100	18	33	42	100	49	16.000	2.50	4755	18.100
100	20	33	42	105	51	20.000	2.50	4755	20.100
100	25	44	53	115	57	20.000	3.00	4755	25.100
100	32	44	53	120	61	20.000	3.00	4755	32.100

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- to DIN 69882-8
- HSK-C to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. setting screw, article no. 4977
- special dimensions on request



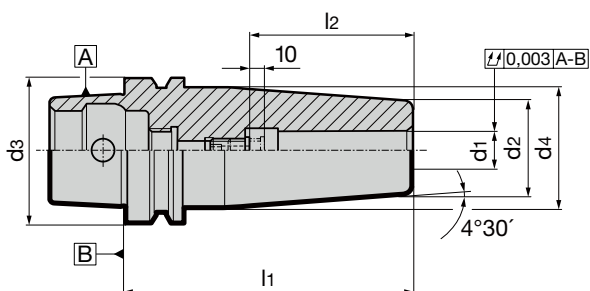
								Article no.	4758
HSK-C d ₃	for clamping-Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw article no. 4977 ...	kg	Order no.	
32	6	21	26.0	65	36	6.014	0.30	4758 6.032	
32	8	21	26.0	65	36	8.014	0.30	4758 8.032	
32	10	24	30.0	65	41	10.014	0.30	4758 10.032	
32	12	24	32.0	75	46	12.014	0.40	4758 12.032	
40	6	21	30.0	70	36	6.014	0.50	4758 6.040	
40	8	21	30.0	70	36	8.014	0.30	4758 8.040	
40	10	24	33.5	70	41	10.014	0.40	4758 10.040	
40	12	24	35.0	80	46	12.014	0.40	4758 12.040	
40	14	27	38.0	80	46	12.014	0.50	4758 14.040	
40	16	27	38.0	80	49	16.014	0.50	4758 16.040	
50	6	21	30.0	70	36	6.014	0.50	4758 6.050	
50	8	21	30.0	70	36	8.014	0.40	4758 8.050	
50	10	24	33.0	75	41	10.014	0.50	4758 10.050	
50	12	24	34.0	80	46	12.014	0.50	4758 12.050	
50	14	27	37.0	80	46	12.014	0.60	4758 14.050	
50	16	27	38.5	85	49	16.014	0.60	4758 16.050	
50	18	33	44.5	85	49	16.014	0.80	4758 18.050	
50	20	33	45.0	90	51	20.114	0.80	4758 20.050	
63	6	21	30.0	70	36	6.014	0.60	4758 6.063	
63	8	21	30.0	70	36	8.014	0.60	4758 8.063	
63	10	24	34.0	75	41	10.014	0.70	4758 10.063	
63	12	24	34.0	80	46	12.014	0.70	4758 12.063	
63	14	27	36.0	80	46	12.014	0.80	4758 14.063	
63	16	27	36.0	85	49	16.014	0.80	4758 16.063	
63	18	33	44.0	85	49	16.014	1.00	4758 18.063	
63	20	33	45.0	90	51	20.114	1.00	4758 20.063	
63	25	44	53.0	100	57	20.114	1.50	4758 25.063	
63	32	44	53.0	110	61	20.114	1.50	4758 32.063	

Product information

- balancing quality G2.5 / 25,000 rev./min or U < 1 gmm
- for tool shank tolerance h6
- HSK-E to ISO 12164-1 / DIN 69893-5 with access hole

Scope of delivery

- incl. setting screw, article no. 4977 or 4904
- for conventional cooling order coolant supply set, article no. 4949, separately
- special dimensions on request



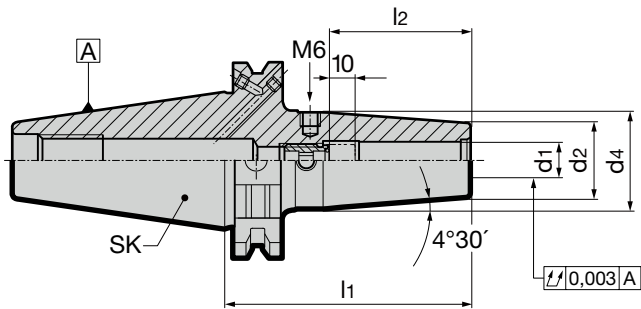
								Article no.	4737
HSK-E d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw art. no. order no.		kg	Order no.
32	3	10	16	60	–	–	–	0.16	4737 3.032
32	4	10	16	60	–	–	–	0.16	4737 4.032
32	5	10	16	60	–	–	–	0.16	4737 5.032
32	6	21	26	70	36	4977	6.014	0.18	4737 6.032
32	8	21	26	70	36	4977	8.014	0.20	4737 8.032
32	10	24	29	75	41	4977	10.014	0.25	4737 10.032
32	12	24	29	80	46	4977	12.014	0.25	4737 12.032
40	3	10	19	80	–	–	–	0.28	4737 3.040
40	4	10	19	80	–	–	–	0.28	4737 4.040
40	5	10	19	80	–	–	–	0.27	4737 5.040
40	6	21	27	80	36	4977	6.014	0.41	4737 6.040
40	8	21	27	80	36	4977	8.014	0.41	4737 8.040
40	10	24	32	80	41	4977	10.014	0.48	4737 10.040
40	12	24	32	90	46	4977	12.014	0.52	4737 12.040
40	14	27	34	90	46	4977	12.014	0.57	4737 14.040
40	16	27	34	90	49	4977	16.014	0.55	4737 16.040
50	3	10	18	80	30	4904	5.016	0.49	4737 3.050
50	4	10	18	80	35	4904	6.016	0.49	4737 4.050
50	5	10	18	80	–	–	–	0.49	4737 5.050
50	6	21	27	80	36	4977	6.014	0.59	4737 6.050
50	8	21	27	80	36	4977	8.014	0.58	4737 8.050
50	10	24	32	85	41	4977	10.014	0.57	4737 10.050
50	12	24	32	90	46	4977	12.014	0.69	4737 12.050
50	14	27	34	90	46	4977	12.014	0.74	4737 14.050
50	16	27	34	95	49	4977	16.014	0.75	4737 16.050
50	18	33	42	95	49	4977	16.014	0.92	4737 18.050
50	20	33	42	100	51	4977	20.114	0.94	4737 20.050
63	6	21	27	80	36	4977	6.014	0.86	4737 6.063
63	8	21	27	80	36	4977	8.014	0.85	4737 8.063
63	10	24	32	85	41	4977	10.014	0.94	4737 10.063
63	12	24	32	90	46	4977	12.014	0.96	4737 12.063
63	14	27	34	90	46	4977	12.014	1.01	4737 14.063
63	16	27	34	95	49	4977	16.014	1.02	4737 16.063
63	18	33	42	95	49	4977	16.014	1.19	4737 18.063
63	20	33	42	100	51	4977	20.114	1.21	4737 20.063
63	25	44	53	115	57	4977	20.114	1.80	4737 25.063
63	32	44	53	120	61	4977	20.114	1.73	4737 32.063

Product information

- balancing quality G2.5 / 25,000 rev./min or U < 1 gmm
- incl. balancing thread 4xM6/6xM6
- ISO taper to DIN ISO 7388-1 form AD/AF
- for tool shank tolerance h6
- also available in the lengths
l1 = 120 mm (concentricity 4 µm),
160 mm (concentricity 5 µm) and
200 mm (concentricity 7 µm)

Scope of delivery

- incl. setting screw, article no. 4977 or 4904
- order pull studs, article no. 4925 or 4926, separately
- special dimensions on request



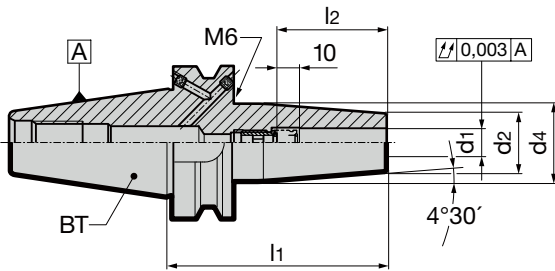
Article no.									4738	
ISO taper	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw art. no. order no.		kg	Order no.	
40	3	10	18	80	30	4904	5.016	0.90	4738	3.040
40	4	10	18	80	35	4904	6.016	0.90	4738	4.040
40	5	10	18	80	40	4904	8.018	0.90	4738	5.040
40	6	21	27	80	36	4977	6.014	1.00	4738	6.040
40	8	21	27	80	36	4977	8.014	1.00	4738	8.040
40	10	24	32	80	41	4977	10.014	1.10	4738	10.040
40	12	24	32	80	46	4977	12.014	1.00	4738	12.040
40	14	27	34	80	46	4977	12.014	1.10	4738	14.040
40	16	27	34	80	49	4977	16.014	1.10	4738	16.040
40	18	33	42	80	49	4977	16.014	1.20	4738	18.040
40	20	33	42	80	51	4977	20.114	1.50	4738	20.040
40	25	44	53	100	57	4977	20.114	1.50	4738	25.040
40	32	44	53	100	61	4977	20.114	1.50	4738	32.040
40	3	10	24	120	30	4904	5.016	1.00	4738	203.040
40	4	10	24	120	35	4904	6.016	1.00	4738	204.040
40	5	10	24	120	40	4904	8.018	1.00	4738	205.040
40	6	21	27	120	36	4977	6.014	1.10	4738	206.040
40	8	21	27	120	36	4977	8.014	1.10	4738	208.040
40	10	24	32	120	41	4977	10.014	1.20	4738	210.040
40	12	24	32	120	46	4977	12.014	1.20	4738	212.040
40	14	27	34	120	46	4977	12.014	1.40	4738	214.040
40	16	27	34	120	49	4977	16.014	1.40	4738	216.040
40	18	33	42	120	49	4977	16.014	1.50	4738	218.040
40	20	33	42	120	51	4977	20.114	1.50	4738	220.040
40	3	10	31	160	30	4904	5.016	1.10	4738	103.040
40	4	10	31	160	35	4904	6.016	1.10	4738	104.040
40	5	10	31	160	40	4904	8.018	1.10	4738	105.040
40	6	21	27	160	36	4977	6.014	1.30	4738	106.040
40	8	21	27	160	36	4977	8.014	1.30	4738	108.040
40	10	24	32	160	41	4977	10.014	1.50	4738	110.040
40	12	24	32	160	46	4977	12.014	1.50	4738	112.040
40	14	27	34	160	46	4977	12.014	1.70	4738	114.040
40	16	27	34	160	49	4977	16.014	1.70	4738	116.040
40	18	33	42	160	49	4977	16.014	1.90	4738	118.040
40	20	33	42	160	51	4977	20.114	1.90	4738	120.040
40	25	44	53	160	57	4977	20.114	2.20	4738	125.040
40	6	21	27	200	36	4977	6.014	1.60	4738	306.040
40	8	21	27	200	36	4977	8.014	1.60	4738	308.040
40	10	24	32	200	41	4977	10.014	1.80	4738	310.040
40	12	24	32	200	46	4977	12.014	1.80	4738	312.040
40	14	27	34	200	46	4977	12.014	2.10	4738	314.040
40	16	27	34	200	49	4977	16.014	2.10	4738	316.040

Product information

- balancing quality: G2.5 / 25,000 rev./min or U < 1 gmm
- Design for 6xM6 balancing screws for maximum accuracy
- Coating for oxidation protection, cleanliness and longevity
- Safety colour ring for maximum operator safety
- with axial dampening screw for optimal concentricity
- max. 3 µm deviation from concentricity
- for tool shank tolerance h6
- MAS/BT to DIN ISO 7388-2 form JD/JF (AD/B)

Scope of delivery

- incl. length setting screw with axial force damping, article no. 4941, for conventional cooling
- order pull studs, article no. 4927 or 4928, separately
- special dimensions on request
- MAS/BT 50 on request
- for MQL application order as special tool holder



Shrink fit technology

Article no. **4728**

MAS/BT	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw art. no. 4941 ...	kg	Order no.
40	6	21	27	90	36	6.041	1.00	4728 6.040
40	8	21	27	90	36	8.040	1.00	4728 8.040
40	10	24	32	90	41	10.050	1.00	4728 10.040
40	12	24	32	90	46	12.100	1.00	4728 12.040
40	14	27	34	90	46	14.100	1.50	4728 14.040
40	16	27	34	90	49	16.100	1.50	4728 16.040
40	18	33	42	90	49	18.100	2.00	4728 18.040
40	20	33	42	90	51	20.100	2.00	4728 20.040
40	25	44	53	100	57	25.100	2.00	4728 25.040
40	32	44	53	100	57	32.100	2.00	4728 32.040



GUHRING

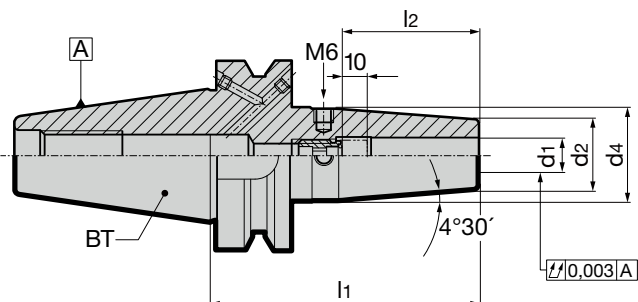
The perfect combination from one reliable supplier: high performance milling cutters and GÜHROJET shrink fit chucks made by Gühring

Product information

- balancing quality G2.5 / 25,000 rev./min or U < 1 gmm
- incl. balancing thread 4xM6/6xM6
- MAS/BT to DIN ISO 7388-2 form JD/JF (AD/B)
- BT30 design JD without coolant supply via collar
- for tool shank tolerance h6

Scope of delivery

- incl. setting screw, article no. 4977 or 4904
- order pull studs, article no. 4927 or 4928, separately
- special dimensions on request



									Article no.	4739
MAS/BT	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw art. no. order no.		kg	Order no.	
30	3	10	18	80	30	4904	5,016	0.60	4739 3.030	
30	4	10	18	80	35	4904	6,016	0.60	4739 4.030	
30	5	10	18	80	40	4904	8,018	0.60	4739 5.030	
30	6	21	27	80	36	4977	6,014	0.70	4739 6.030	
30	8	21	27	80	36	4977	8,014	0.70	4739 8.030	
30	10	24	32	80	41	4977	10,014	0.80	4739 10.030	
30	12	24	32	80	46	4977	12,014	0.80	4739 12.030	
30	14	27	34	80	46	4977	12,014	0.80	4739 14.030	
30	16	27	34	80	49	4977	16,014	0.80	4739 16.030	
30	18	33	42	90	49	4977	16,014	0.90	4739 18.030	
30	20	33	42	90	51	4977	20,114	0.90	4739 20.030	
40	3	10	18	85	30	4904	5,016	1.00	4739 3.040	
40	4	10	18	85	35	4904	6,016	1.00	4739 4.040	
40	5	10	18	85	40	4904	8,018	1.00	4739 5.040	
40	6	21	27	90	36	4977	6,014	1.20	4739 6.040	
40	8	21	27	90	36	4977	8,014	1.20	4739 8.040	
40	10	24	32	90	41	4977	10,014	1.30	4739 10.040	
40	12	24	32	90	46	4977	12,014	1.30	4739 12.040	
40	14	27	34	90	46	4977	12,014	1.40	4739 14.040	
40	16	27	34	90	49	4977	16,014	1.40	4739 16.040	
40	18	33	42	90	49	4977	16,014	1.40	4739 18.040	
40	20	33	42	90	51	4977	20,114	1.70	4739 20.040	
40	25	44	53	100	57	4977	20,114	1.80	4739 25.040	
40	32	44	53	100	61	4977	20,114	1.70	4739 32.040	
40	6	21	27	130	36	4977	6,014	1.30	4739 6.140	
40	8	21	27	130	36	4977	8,014	1.30	4739 8.140	
40	10	24	32	130	41	4977	10,014	1.40	4739 10.140	
40	12	24	32	130	46	4977	12,014	1.40	4739 12.140	
40	14	27	34	130	46	4977	12,014	1.40	4739 14.140	
40	16	27	34	130	49	4977	16,014	1.50	4739 16.140	
40	18	33	42	130	49	4977	16,014	1.50	4739 18.140	
40	20	33	42	130	51	4977	20,114	1.80	4739 20.140	
40	25	44	53	130	57	4977	20,114	2.00	4739 25.140	
40	32	44	53	130	61	4977	20,114	1.90	4739 32.140	
50	6	21	27	100	36	4977	6,014	2.90	4739 6.050	
50	8	21	27	100	36	4977	8,014	2.90	4739 8.050	
50	10	24	32	100	41	4977	10,014	2.90	4739 10.050	
50	12	24	32	100	46	4977	12,014	2.90	4739 12.050	
50	14	27	34	100	46	4977	12,014	3.00	4739 14.050	
50	16	27	34	100	49	4977	16,014	3.00	4739 16.050	
50	18	33	42	100	49	4977	16,014	1.90	4739 18.050	
50	20	33	42	100	51	4977	20,114	1.90	4739 20.050	
50	25	44	53	110	57	4977	20,114	2.20	4739 25.050	
50	32	44	53	110	61	4977	20,114	2.20	4739 32.050	

Product information

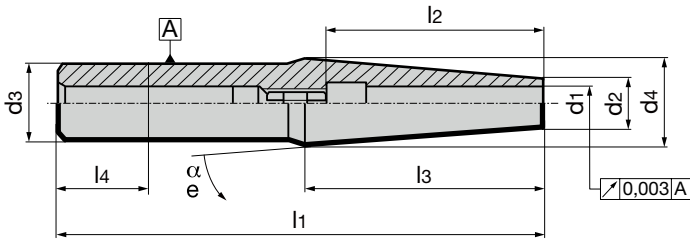
- for clamping in hydraulic chucks or shrink fit chucks
- suitable for internal cooling
- we recommend the use of special cooling adaptors article no. 4419
- for carbide tool shanks in tolerance h6 (from d1 14 mm also HSS possible)
- concentricity
up to l1 125 mm < 0,003 mm
up to l1 200 mm < 0,005 mm
up to l1 250 mm < 0,007 mm

Scope of delivery

- incl. setting screw, article no. 4977 or 4904
- special dimensions on request



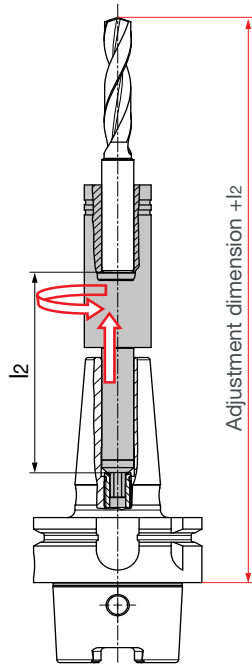
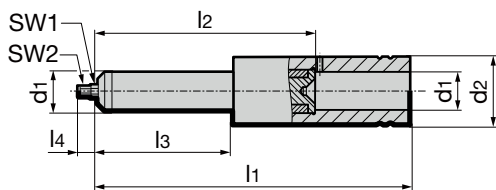
Shrink fit technology



Article no. 4719												
for shank Ø d1 h6 mm	d2 mm	d3 h6 mm	d4 mm	l1 mm	l2 mm	l3 mm	l4 mm	incl. setting screw art. no. order no.		α e	type	Order no.
3	7	16	16	115	30	64.4	–	4904	5.016	4	–	4719 3.016
4	7	16	16	115	35	64.4	–	4904	6.016	4	–	4719 4.016
5	8	16	16	115	40	57.2	–	4904	8.018	4	–	4719 5.016
6	10	16	16	115	36	42.9	–	4977	6.014	4	–	4719 6.016
8	12	16	16	115	36	28.6	–	4977	8.014	4	–	4719 8.016
10	14	16	16	115	41	14.3	–	4977	10.014	4	–	4719 10.016
12	16	16	23.2	115	46	51.5	–	4977	12.014	4	–	4719 12.016
3	7	20	16.1	115	30	65	–	4904	5.016	4	–	4719 3.020
4	8	20	17.1	115	35	65	–	4904	6.016	4	–	4719 4.020
5	9	20	18.1	115	40	65	–	4904	8.018	4	–	4719 5.020
6	10	20	19.1	115	36	65	–	4977	6.014	4	–	4719 6.020
8	12	20	20	115	36	57.2	–	4977	8.014	4	–	4719 8.020
10	14	20	20	115	41	42.9	–	4977	10.014	4	–	4719 10.020
12	16	20	20	115	46	28.6	–	4977	12.014	4	–	4719 12.020
14	20	20	28.8	150	46	62.9	–	4977	12.014	4	–	4719 14.020
3	10	20	20	160	30	71.5	–	4904	5.016	4	–	4719 3.120
4	10	20	20	160	35	71.5	–	4904	6.016	4	–	4719 4.120
5	10	20	20	160	40	71.5	–	4904	8.018	4	–	4719 5.120
6	14	20	20	160	36	42.9	–	4977	6.014	4	–	4719 6.120
8	14	20	20	160	36	42.9	–	4977	8.014	4	–	4719 8.120
10	20	25	25	160	41	35.8	–	4977	10.014	4	–	4719 10.125
12	20	25	25	160	46	35.8	–	4977	12.014	4	–	4719 12.125
14	20	25	28.8	150	46	62.9	–	4977	12.014	4	–	4719 14.025
14	20	25	29	160	46	62.9	–	4977	12.014	4	–	4719 14.125
16	24	25	33	160	49	64.4	–	4977	16.014	4	–	4719 16.025
16	22	25	33	150	49	78.7	–	4977	16.014	4	–	4719 16.125
18	27	32	32	160	49	35.8	–	4977	16.014	4	–	4719 18.132
20	27	32	32	160	51	35.8	–	4977	20.114	4	–	4719 20.132
3	10	20	20	200	30	71.5	–	4904	5.016	4	–	4719 3.220
4	10	20	20	200	35	71.5	–	4904	6.016	4	–	4719 4.220
5	10	20	20	200	40	71.5	–	4904	8.018	4	–	4719 5.220
6	14	20	20	200	36	42.9	–	4977	6.014	4	–	4719 6.220
8	14	20	20	200	36	42.9	–	4977	8.014	4	–	4719 8.220
10	20	25	25	200	41	35.8	–	4977	10.014	4	–	4719 10.225
12	20	25	25	200	46	35.8	–	4977	12.014	4	–	4719 12.225
14	20	32	32	200	46	85.8	–	4977	12.014	4	–	4719 14.232
16	24	32	32	200	49	57.2	–	4977	16.014	4	–	4719 16.232
18	27	32	32	200	49	35.8	–	4977	16.014	4	–	4719 18.232
20	27	32	32	200	51	35.8	–	4977	20.114	4	–	4719 20.232
6	10	12	12	125	38	19.1	–	–	–	3	HR	4719 6.012
8	12	14	14	125	38	19.1	–	–	–	3	HR	4719 8.014
10	14	16	16	160	42	19.1	–	–	–	3	HR	4719 10.116
12	16	20	20	160	47	38.2	–	–	–	3	HR	4719 12.120
16	22	25	25	160	50	28.6	–	–	–	3	HR	4719 16.225
20	27	32	32	160	52	47.7	–	–	–	3	HR	4719 20.332
6	10	12	12.2	200	38	21.0	47	–	–	3	HR	4719 6.312
8	12	14	14.2	200	38	21.0	47	–	–	3	HR	4719 8.314
10	14	16	16.2	250	42	21.0	50	–	–	3	HR	4719 10.316
12	16	20	20.2	250	47	40.0	52	–	–	3	HR	4719 12.320
16	22	25	25.2	250	50	30.5	58	–	–	3	HR	4719 16.325
20	27	32	32.2	250	52	49.6	62	–	–	3	HR	4719 20.342

Product information

- for shrink fit and hydraulic chucks
- for length pre-setting of the setting screw with the cutting tool (less difference dimension l₂, see sketch)
- flexibly mounted hexagonal key SW1/SW2
- with standard screws suitable for wet application article no. 4900, 4941, 4977
- suitable with MQL setting screws article no. 4621, 4919, 4937



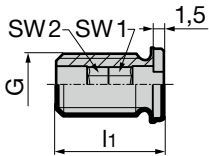
Article no. **4718**

d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	l ₃ mm	l ₄ mm	SW design	SW1	SW2	Order no.
6	25	115	80	50	10	flexibel	2.0	1.5	4718 6.001
6	25	115	80	50	10	flexibel	3.0	2.5	4718 6.000
6	25	115	80	50	8	starr	4.0	-	4718 6.002
8	25	115	80	50	10	flexibel	2.0	1.5	4718 8.001
8	25	115	80	50	10	flexibel	3.0	-	4718 8.000
8	25	115	80	50	8	starr	4.0	-	4718 8.002
10	25	115	80	50	10	flexibel	2.0	1.5	4718 10.001
10	25	115	80	50	10	flexibel	4.0	3.0	4718 10.000
12	25	115	80	50	10	flexibel	2.0	1.5	4718 12.001
12	25	115	80	50	10	flexibel	5.0	-	4718 12.000
12	25	115	80	50	10	flexibel	4.0	3.0	4718 12.002
14	25	115	80	50	10	flexibel	2.0	1.5	4718 14.001
14	25	115	80	50	10	flexibel	5.0	-	4718 14.000
14	25	115	80	50	10	flexibel	4.0	3.0	4718 14.002
16	25	120	85	55	10	flexibel	2.0	1.5	4718 16.001
16	25	120	85	55	10	flexibel	6.0	5.0	4718 16.000
16	25	120	85	55	10	flexibel	4.0	3.0	4718 16.002
18	30	120	85	55	10	flexibel	2.0	1.5	4718 18.001
18	30	120	85	55	10	flexibel	6.0	5.0	4718 18.000
18	30	120	85	55	10	flexibel	4.0	3.0	4718 18.002
20	30	135	90	65	10	flexibel	3.0	2.0	4718 20.001
20	30	135	90	65	10	flexibel	8.0	5.0	4718 20.000
20	30	135	90	65	10	flexibel	4.0	-	4718 20.002
25	35	140	100	70	10	flexibel	3.0	2.0	4718 25.001
25	35	140	100	70	10	flexibel	8.0	5.0	4718 25.000
25	35	140	100	70	10	flexibel	4.0	-	4718 25.002
32	45	150	100	70	10	flexibel	3.0	2.0	4718 32.001
32	45	150	100	70	10	flexibel	8.0	5.0	4718 32.000
32	45	150	100	70	10	flexibel	4.0	-	4718 32.002

Setting screws for GÜHROJET shrink fit chucks

Product information

- setting screws for GÜHROJET-shrink fit chucks
article no. 4755
- slotted for reliable coolant supply for
conventional internal cooling

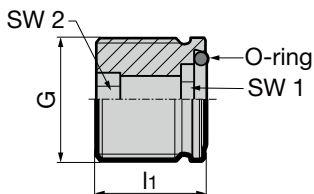


					Article no.	4938
for clamping-Ø	l ₁ mm	G	SW1	SW2	Order no.	
6	14	M5	2.5	2.5	4938 6.000	
8	14	M6	3.0	3.0	4938 8.000	
10	14	M8x1	4.0	4.0	4938 10.000	
12/14	14	M10x1	5.0	5.0	4938 12.000	
16/18	14	M12x1	6.0	6.0	4938 16.000	
20/25/32	14	M16x1	8.0	6.0	4938 20.000	

Shrink fit chuck length setting screw with axial force damping

Product information

- for shrink fit chucks
- for conventional internal cooling
- with facing stop for standard shank ends
- with patented axial force damping.
O-ring reduces the concentricity error when
shrink fitting on the setting screw

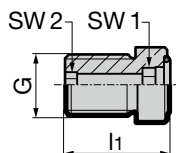


					Article no.	4977
for clamping-Ø	l ₁ mm	G	SW1	SW2	O-ring	Order no.
6	14	M5	2.5	2.5	3x1	4977 6.014
8	14	M6	3.0	3.0	3.5x1	4977 8.014
10	14	M8x1	4.0	4.0	6x1	4977 10.014
12/14	14	M10x1	5.0	5.0	6x1	4977 12.014
16/18	14	M12x1	6.0	6.0	7.5x1.5	4977 16.014
20/25/32	14	M16x1	8.0	6.0	10x1.5	4977 20.114
20/25	14	M16x1	6.0	6.0	12x1.5	4977 20.014

Product information

- To adapt MQL tool holders to meet the requirements of conventional wet machining. For plain end shanks. The height of screw head compensates the height of MQL taper.

- for MQL HSK-A shrink fit chucks hydraulic chucks
- for use with shank according to DIN 6535 with plain shank end for conventional cooling
- The patented face orientated o-ring provides axial force clamping which eliminates concentricity errors



						Article no.	4941
for HSK-A	per clamping- Ø	G	l ₁ mm	SW1	SW2	Order no.	
32/40	6	M5	14.9	2.5	2.5	4941	6.041
40	6	M7x1	15.0	2.5	2.5	4941	6.040
32/40	8	M7x1	16.2	3	3	4941	8.040
50	6	M8x1	14.0	2.5	2.5	4941	6.050
50	8	M8x1	18.0	3	3	4941	8.050
32/40/50	10	M8x1	16.2	4	4	4941	10.050
63/80/100	6	M10x1	17.0	2.5	2.5	4941	6.100
63/80/100	8	M10x1	17.0	3	3	4941	8.100
63/80/100	10	M10x1	16.2	4	4	4941	10.100
32/40/50/63/80/100	12	M10x1	16.0	5	5	4941	12.100
40/50/63/80/100	14	M10x1	17.2	5	5	4941	14.100
50/63/80/100	16	M12x1	18.2	6	6	4941	16.100
50/63/80/100	18	M12x1	19.2	6	6	4941	18.100
50/63/80/100	20	M16x1	19.2	6	8	4941	20.100
63/80/100	25	M16x1	22.7	6	8	4941	25.100
63/80/100	32	M16x1	26.7	6	8	4941	32.100

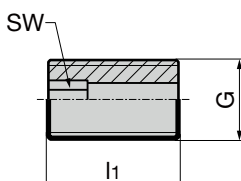
Setting screws

Product information

- for HSK-A side lock holders with bore to DIN 1835-2, form E, shrink fit chuck and shrink fit extensions

Scope of delivery

- minimum order quantity 5



			Article no.	4904
G	l ₁ mm	SW	Order no.	
M5	16	2.5	4904	5.016
M5	20	2.5	4904	5.020
M6	16	3.0	4904	6.016
M6	20	3.0	4904	6.020
M8	12	3.0	4904	8.012
M8	18	4.0	4904	8.018
M10	17	3.0	4904	10.017
M10	20	5.0	4904	10.020
M12	14	3.0	4904	12.014
M12	20	5.0	4904	12.020
M16	25	5.0	4904	16.025
M20	25	6.0	4904	20.025

SHRINK FIT TECHNOLOGY
RF 100

MILLING AT THE HIGHEST LEVEL

TSG 3000 shrink fit chucks and
Ratio end mills RF 100

Shrink fit technology

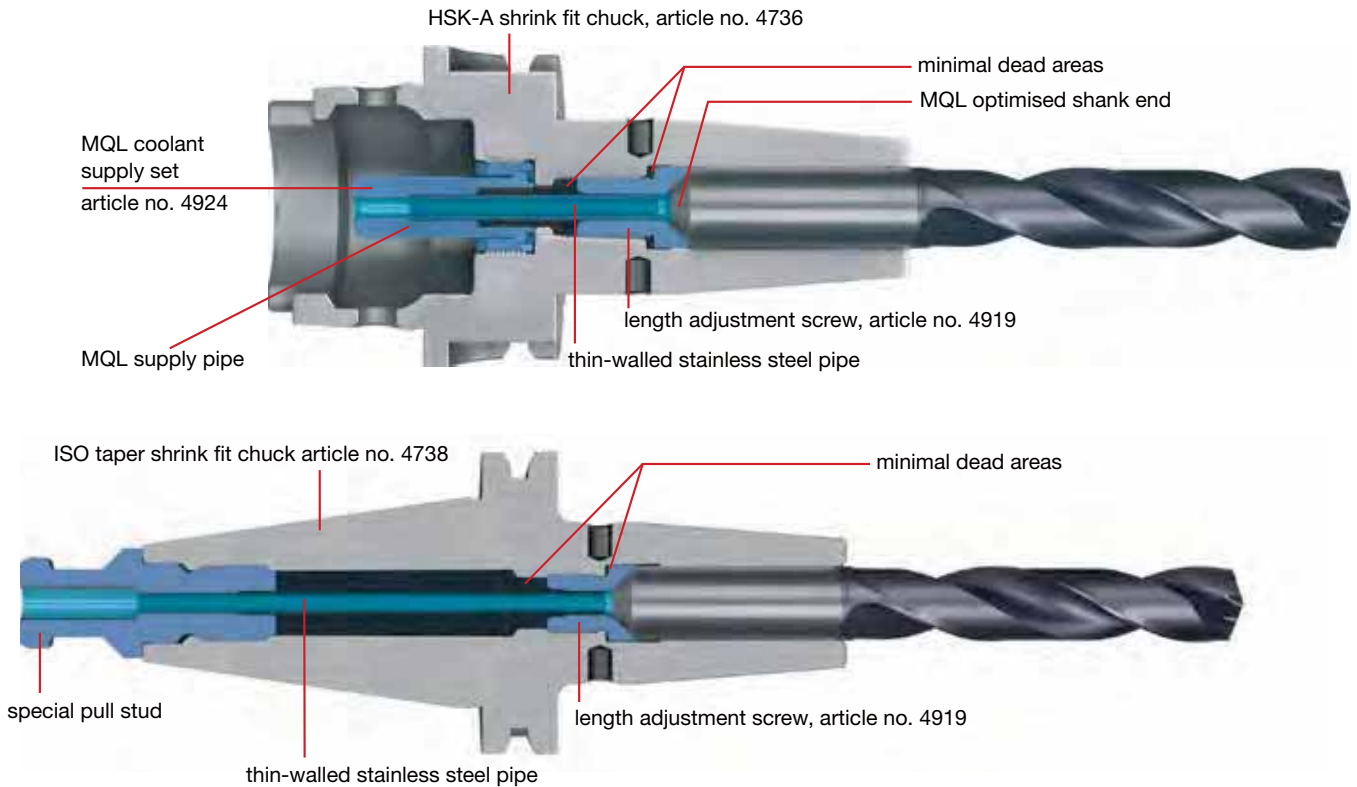


- ⇒ secure tool clamping
- ⇒ perfect concentricity
- ⇒ vibration-free operation
- ⇒ optimal surface finish
- ⇒ long tool life

Please request our "TSG
3000" and "RF 100"
brochures.

MQL conversion of tool holders for conventional cooling

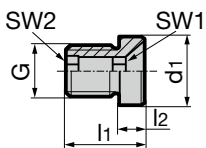
With the assistance of Gühring's MQL length adjustment screw, article no. 4919, and MQL coolant supply set, article no. 4924, tool holders such as shrink fit chucks, article no. 4736, from Gühring's GM 300 program can be converted for application under MQL conditions and automatic tool clamping. This combination is suitable for 2-channel MQL systems (not suitable for application on machines with supply collar to DIN 69090-2). The insertion depth is reduced by the length of the cone on the MQL shank and does not correspond with our Gühring standard. Special solutions for SK/BT are available on request.



MQL length setting screws to convert

Product information

- for hydraulic chucks and shrink fit chucks
- with special geometry optimised for MQL
- with conical end for tapered MQL shank ends



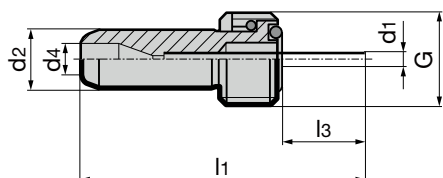
Article no.						4919
d ₁ mm	l ₁ mm	G	SW1	SW2	Order no.	
6	14.8	M5	2.5	2.5	4919 6.000	
8	15.6	M6	3.0	3.0	4919 8.000	
10	16.1	M8x1	4.0	4.0	4919 10.000	
10	16.6	M8x1	3.0	3.0	4919 10.040	
10	16.6	M6	3.0	3.0	4919 10.032	
12	16.6	M10x1	5.0	5.0	4919 12.000	
12	17.6	M6	3.0	3.0	4919 12.032	
14	17.6	M10x1	5.0	5.0	4919 14.000	
14	18.6	M6	3.0	3.0	4919 14.040	
16	18.6	M12x1	5.0	5.0	4919 16.000	
16	19.6	M6	3.0	3.0	4919 16.040	
18	19.6	M12x1	5.0	5.0	4919 18.000	
20	20.6	M16x1	5.0	5.0	4919 20.000	
25	22.6	M16x1	8.0	6.0	4919 25.000	
32	26.1	M16x1	8.0	6.0	4919 32.000	

Product information

- replace conventional coolant supply sets, article no. 4949, when applying MQL
- for shrink fit chucks to DIN 69882-8
- Attention:
Not suitable for application on machines with supply collar to DIN 69090-2

Scope of delivery

- complete MQL coolant supply sets



Shrink fit technology

								Article no.	4924
for HSK-A	clamping-Ø mm	d ₁ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₃ mm	G	Order no.	
32	6	2.5	6	3.5	45.1	18.9	M10x1	4924	32.020
32	10	3.0	6	3.5	45.7	19.5	M10x1	4924	32.060
32	8/12	3.0	6	3.5	45.2	19.0	M10x1	4924	32.080
40	6	2.5	8	4.0	56.0	26.9	M12x1	4924	40.020
40	8	3.0	8	4.0	56.2	27.0	M12x1	4924	40.040
40	10	3.0	8	4.0	51.7	22.5	M12x1	4924	40.060
40	12/14	3.0	8	4.0	57.2	28.0	M12x1	4924	40.100
40	16	3.0	8	4.0	54.2	25.0	M12x1	4924	40.120
50	6	2.5	10	4.0	55.4	22.7	M16x1	4924	50.020
50	8	3.0	10	4.0	46.5	13.8	M16x1	4924	50.040
50	10	4.0	10	4.0	46.1	13.4	M16x1	4924	50.060
50	12	5.0	10	4.0	55.7	23.0	M16x1	4924	50.080
50	14	5.0	10	4.0	55.7	22.9	M16x1	4924	50.100
50	16/18	5.0	10	4.0	57.7	25.0	M16x1	4924	50.140
50	20	5.0	10	4.0	60.7	28.0	M16x1	4924	50.160
63	6	2.5	12	4.0	56.7	20.5	M18x1	4924	63.020
63	6	2.5	12	4.0	137.7	101.4	M18x1	4924	63.021
63	8	3.0	12	4.0	57.0	20.8	M18x1	4924	63.040
63	8	3.0	12	4.0	137.0	100.7	M18x1	4924	63.041
63	10	4.0	12	4.0	55.7	19.5	M18x1	4924	63.060
63	10	4.0	12	4.0	132.2	95.9	M18x1	4924	63.061
63	12/14	5.0	12	4.0	55.7	19.5	M18x1	4924	63.080
63	12/14	5.0	12	4.0	127.1	90.8	M18x1	4924	63.081
63	16/18	5.0	12	4.0	57.5	21.3	M18x1	4924	63.100
63	16/18	5.0	12	4.0	124.3	88.0	M18x1	4924	63.141
63	20	5.0	12	4.0	60.7	24.5	M18x1	4924	63.110
63	20	5.0	12	4.0	122.1	85.8	M18x1	4924	63.161
63	25	6.0	12	4.0	69.0	32.8	M18x1	4924	63.130
63	25	6.0	12	4.0	116.2	79.9	M18x1	4924	63.181
63	32	6.0	12	4.0	70.7	34.5	M18x1	4924	63.140
63	32	6.0	12	4.0	112.2	75.9	M18x1	4924	63.201
80	6	2.5	14	4.0	61.2	21.9	M20x1.5	4924	80.020
80	8	3.0	14	4.0	61.3	22.0	M20x1.5	4924	80.040
80	10	4.0	14	4.0	61.3	22.0	M20x1.5	4924	80.060
80	12/14	5.0	14	4.0	61.3	22.0	M20x1.5	4924	80.100
80	16/18	5.0	14	4.0	63.3	24.0	M20x1.5	4924	80.140
80	20	5.0	14	4.0	66.3	27.0	M20x1.5	4924	80.160
80	25	6.0	14	4.0	70.3	31.0	M20x1.5	4924	80.180
80	32	6.0	14	4.0	71.3	32.0	M20x1.5	4924	80.200
100	6	2.5	16	4.0	63.9	20.1	M24x1.5	4924	100.020
100	8	3.0	16	4.0	64.6	20.8	M24x1.5	4924	100.040
100	10	4.0	16	4.0	63.3	19.5	M24x1.5	4924	100.060
100	12/14	5.0	16	4.0	63.3	19.5	M24x1.5	4924	100.100
100	16/18	5.0	16	4.0	65.3	21.5	M24x1.5	4924	100.140
100	20	5.0	16	4.0	68.3	24.5	M24x1.5	4924	100.160
100	25	6.0	16	4.0	72.3	28.5	M24x1.5	4924	100.180
100	32	6.0	16	4.0	73.3	29.5	M24x1.5	4924	100.200

GSS 2000

Simple operation

The movement of the spindle and its heating is a single handed operation.

Tool clamping cannot be simpler and quicker!

Quick cooling

The water-cooled cooling elements cool down the shrink fit chuck quickly and safely. The shrink fit chuck remains clean and dry, **so that it can be applied again without drying and without rusting.** Hot spots remain safely screened during the cooling process in order to prevent burns.

Safe shrink fitting

The minimal heating of the shrink fit chuck ensures **maximum operating safety** on the one hand, on the other the controlled heating ensures the **long life** of the shrink fit chuck.



The control panel

The clear control panel with display makes the operation of the GSS 2000 **very user-friendly.**

Benefit from the advantages of GSS 2000

GSS
2000

Efficient operation

The turntable allows simultaneous preparation, heating and cooling of the shrink fit chucks.

Subsequently, there is no waiting time, tool clamping is seamless and with maximum efficiency.



All under control

Practical locations and compartments provide room for accessories such as stop discs or gloves in close proximity to the equipment.

Thus all the necessary components are always at hand.

- > **high-performance spindle**, hence quick change time
- > **overheating protection** for holder
- > **automatic mode** possible (equipment automatically selects the correct heating program)
- > **error detection** choosing wrong chuck/program
- > **heating programs** for standard/reinforced and very small holder/shrink fit extensions
- > **maximum rigidity**
- > **highest cutting rates**

Product information

- 3-station system with turntable

Scope of delivery

- incl. base system with turntable
- incl. induction coil article no. 4743 / version 2008
- incl. 1 limit stop collar set article no. 4769 / version 2008
- incl. SpeedCooler article no. 4747
- incl. 1 pair of gloves article no. 4750
- with integrated SpeedCooler-Manager

- order HSK-/ISO-holders article nos. 4745, 4744 separately!



Article no.	4742
Order no.	
European version 50/60 Hz / 400-480 V, SpeedCooler 230 V	4742 10.000
US version 50/60 Hz / 400-480 V, SpeedCooler 115 V	4742 20.000

GSS 2000 HSK holders

Product information

- for GSS 2000 Comfort Plus article no. 4742
- holder (spider) for turn-table to hold max. 3 shrink fit chucks



GSS 2000 ISO taper holders

Product information

- for GSS 2000 Comfort Plus article no. 4742
- also suitable for MAS-BT
- holder (spider) for turn-table to hold max. 3 shrink fit chucks



Article no.	4745
for HSK-A/C/E	Order no.
32	4745 32.000
40	4745 40.000
50	4745 50.000
63	4745 63.000
80	4745 80.000
100	4745 100.000

Article no.	4744
for ISO taper and BT	Order no.
30	4744 30.000
40	4744 40.000
50	4744 50.000

Product information

- for GSS 2000
- for mobile and stationary application
- systematic storage of cooler and accessories



Shrink fit technology

	Article no.	4748
	Order no.	
System cart		4748 1.000

Swivel compartments for GSS 2000

Product information

- for the clean storage of GSS shrink fit system accessories, i.e. limit stop washers, gloves, measuring instruments etc.
- suitable for GSS 2000 Comfort Plus and ECO Plus article no. 4742 and 4752

Scope of delivery

- swivel compartment does not include accessories shown



	Article no.	4763
	Order no.	
Swivel compartments for GSS 2000 accessories		4763 1.000

Tongs

Product information

- for the safe handling of hot tools



	Article no.	4749
	Order no.	
Tongs		4749 1.000

Cooling adaptor set, complete

Product information

- cooling adaptor set for shrink fit system GSS 2000 Comfort Plus and ECO Plus article no. 4742 and 4752
- for inserting in the cooling adaptor Ø 14-16, in order to effectively and safely cool the small shrink fit holders with clamping diameter Ø 3-5



Article no. **4419**

for cooling adaptor	for shank Ø	Order no.
Ø14-16	Ø 3-5	4419 5.000

Protective gloves

Product information

- Kevlar gloves providing protection against sharp cutting edges and high temperatures
- as specified for all shrink fit applications



Article no. **4750**

	Order no.
Protective gloves	4750 1.000

Gühring shrink fit and pre-setting equipment - high quality and accuracy



Product information

- 1-place system

Scope of delivery

- incl. base system
- incl. induction coil article no. 4743 / version 2008
- incl. 1 limit stop collar set article no. 4769 / version 2008
- incl. SpeedCooler article no. 4747
- incl. 1 pair of gloves article no. 4750
- with integrated SpeedCooler-Manager

- order HSK-/ISO-holders article nos. 4761, 4762 separately!



Shrink fit technology

Article no.	4752
Order no.	
European version 50/60 Hz / 400-480 V, SpeedCooler 230 V	4752 10.000
US version 50/60 Hz / 400-480 V, SpeedCooler 115 V	4752 20.000

HSK holder carriers GSS 2000

Product information

- for GSS 2000 Basic and ECO Plus article no. 4730 and 4752
- holder carriers for HSK shrink fit chucks



ISO taper holder carriers GSS 2000

Product information

- for GSS 2000 Basic and ECO Plus article no. 4730 and 4752
- also suitable for MAS-BT
- holder carriers for SK or MAS/BT shrink fit chucks



Article no.	4761
Order no.	
for HSK- A/C/E	
32	4761 32.000
40	4761 40.000
50	4761 50.000
63	4761 63.000
80	4761 80.000
100	4761 100.000

Article no.	4762
Order no.	
for ISO taper and BT	
30	4762 30.000
40	4762 40.000
50	4762 50.000

Product information

- 1-place system

Scope of delivery

- incl. base system
- incl. 1 limit stop collar set article no. 4769 / version 2008
- incl. 1 pair of gloves article no. 4750
- order HSK-/ISO-holders article nos. 4761, 4762 separately!



	Article no.	4730
		Order no.
Version 50/60 Hz / 400-480 V		4730 10.000

HSK holder carriers GSS 2000

Product information

- for GSS 2000 Basic and ECO Plus article no. 4730 and 4752
- holder carriers for HSK shrink fit chucks



ISO taper holder carriers GSS 2000

Product information

- for GSS 2000 Basic and ECO Plus article no. 4730 and 4752
- also suitable for MAS-BT
- holder carriers for SK or MAS/BT shrink fit chucks



	Article no.	4761
		Order no.
for HSK- A/C/E		
32	4761	32.000
40	4761	40.000
50	4761	50.000
63	4761	63.000
80	4761	80.000
100	4761	100.000

	Article no.	4762
		Order no.
for ISO taper and BT		
30	4762	30.000
40	4762	40.000
50	4762	50.000

SpeedCooler Cooling system

Product information

- for GSS 2000 Comfort Version and Eco-Plus



Article no. **4747**

Order no.

European version 50/60 Hz, 230 V
US version 50/60 Hz, 115 V

4747 1.000
4747 2.000

SpeedCooler Manager

Product information

- for automatic switch on and off of the SpeedCooler
- preserves the cooling system and reduce the service intervals



Article no. **4759**

Order no.

European version 50/60 Hz, 230 V
US version 50/60 Hz, 115 V

4759 1.000
4759 2.000

Induction coil

Product information

- for GSS 2000 / version 2008
- HSS for Ø 6...32 mm, carbide for Ø 3...32 mm



Article no. **4743**

Order no.

Ø range
mm

3...32

4743 32.000

Limit stop collars

Product information

- for induction coil
- suitable for all GSS systems
- for extra short standard shrink fit chucks with order no.,100



Article no. **4769**

Order no.

for
tool shank diameter

3 - 5 mm

6 - 12 mm

14 - 16 mm

18 - 20 mm

25 - 32 mm

6 - 12 mm

14 - 20 mm

25 - 32 mm

4769 5.000

4769 12.000

4769 16.000

4769 20.000

4769 32.000

4769 12.100

4769 20.100

4769 32.100

GSS

3001

Work easily, quickly and efficiently ...

The advantages of shrink fit technology:

- **Perfect 360° tool clamping provides extreme clamping force and rigidity**
- **High repeatability**
- **Minimal imbalance thanks to rotational symmetry**
- **Excellent concentricity for symmetrical cutting edge loading – therefore longer tool life**
- **Reduced components, therefore lower costs for purchasing, storage and administration**

You benefit from:

- **High economic efficiency thanks to effective mode of operation**
- **Full transparency due to process analysis**
- **Absolutely user-friendly**

User-friendly software

Intuitive menu navigation similar to the well-established Gühring TM-Software GTMS via touch-screen monitor (for details see page 67).

... with each application!



Safe shrink fitting

The minimal heating of the shrink fit chuck ensures **maximum operating safety** on the one hand, on the other the controlled heating ensures the **long life** of the shrink fit chuck.

Fume extraction

Vapours produced during the shrink fit process are **removed and filtered under controlled conditions** by the fume extraction system.

Length setting

During the shrink fit process the tool is pre-set to the **required length** with the assistance of an adjustment rod.

Quick cooling

The water-cooled cooling elements cool down the shrink fit chuck quickly and safely. The shrink fit chuck remains clean and dry, **so that it can be applied again without drying and without rusting**. Hot spots remain safely screened during the cooling process in order to prevent burns.

Tool identification Codier-Chip

The read and write function of the Codier-Chip art. no. 4955 simplifies **tool identification**. Tool life can be managed.

Label printer

Print data such as article no., current setting dimension, date, operator etc. on an **adhesive label** for your pre-set tool.



GSS
3001

Important features:

- > Setting, shrink fitting and measuring with one system
- > Operating system WIN 7
- > Stable Beckhoff control system with touch-screen and foil keyboard
- > Compact, workshop suited and robust design
- > Ergonomic arrangement of all operating elements for comfortable handling
- > Label printer for providing pre-set tools with information such as article no., setting dimension, barcode, and much more..
- > Setting and measuring accuracy 0.02 mm

“Everything has its place”

Stop plates for every diameter are accessibly stored directly on the guide column.

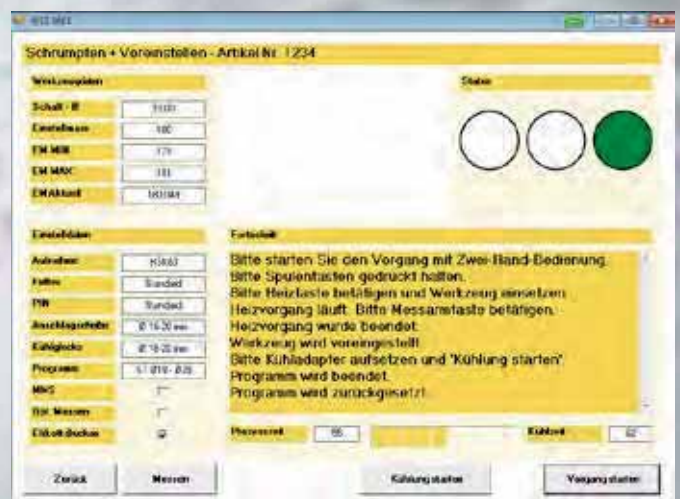
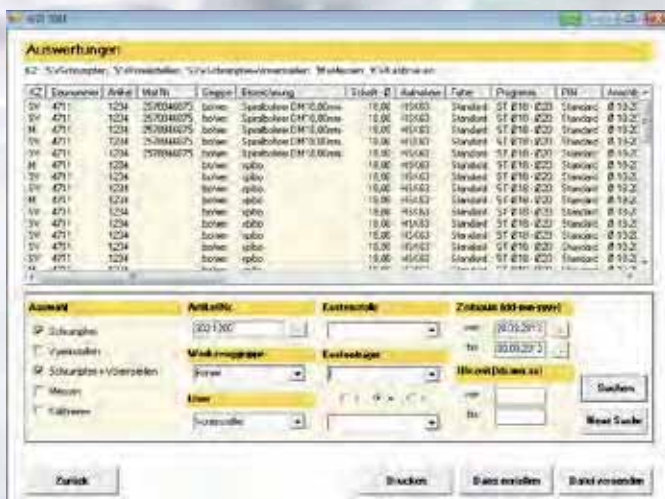
“Good accessibility”

Good accessibility to all machine components provides excellent conditions for cleaning and maintenance purposes, i.e. re-filling coolant by simple opening of drawer. Economic: the Speedcooler switches off automatically when not in use for a longer period of time.



GSS Software performance features:

- > Intuitive and user-friendly operation thanks to 12" touch-screen and Barcode scanner
- > Comprehensive management possibilities for your tool, holder and shrink fit data as well as the associated parameters
- > Analysis of all processes carried out by system (component, cost centre or user related; setting up to 5 cost centres possible) to optimise your production and for maximum transparency possible
- > Software available in different languages



GSS
5000

GSS 5000

You can't get more into a system!

In addition to the functions pre-setting, shrink fitting and measuring GSS 5000 also offers the possibility of a fully automatic cutting edge form recognition and length pre-setting. Depending on the configuration a measuring range up to 800 mm and a measuring diameter up to 600 mm can be covered.

- GSS 5000 can be adapted to customer requirements.



GUHRING
GSS 5000





GÜHRO Sync



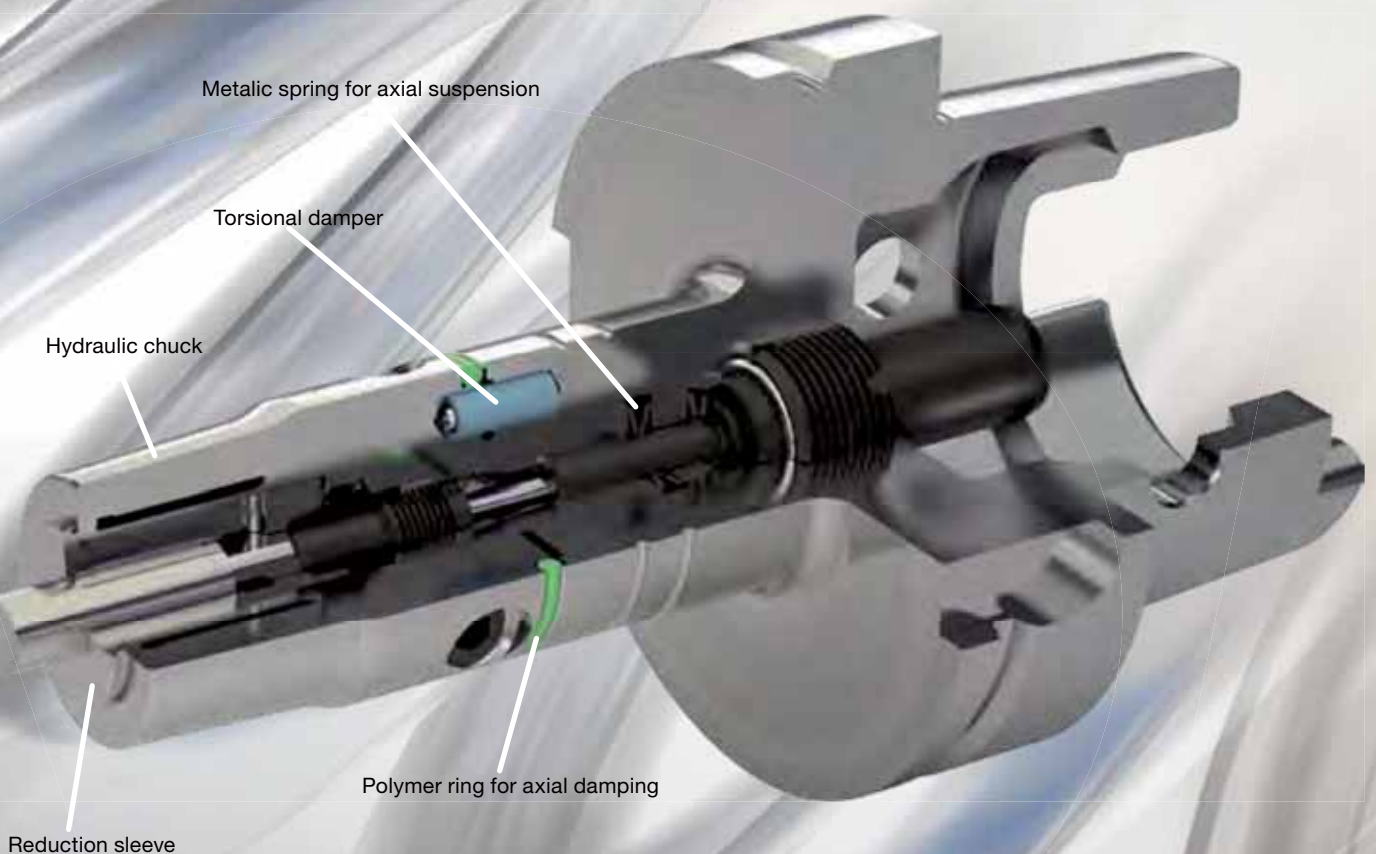
TAPPING CHUCKS

Tapping chucks

GÜHROS[®]SYNC

THE EASY WAY
TO THE PERFECT THREAD

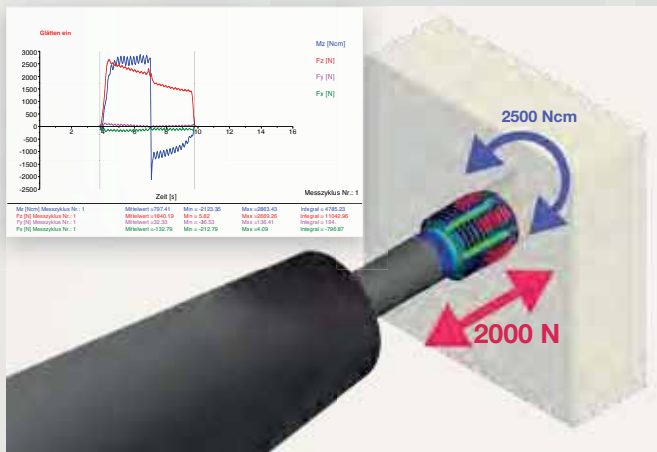
Tapping chucks



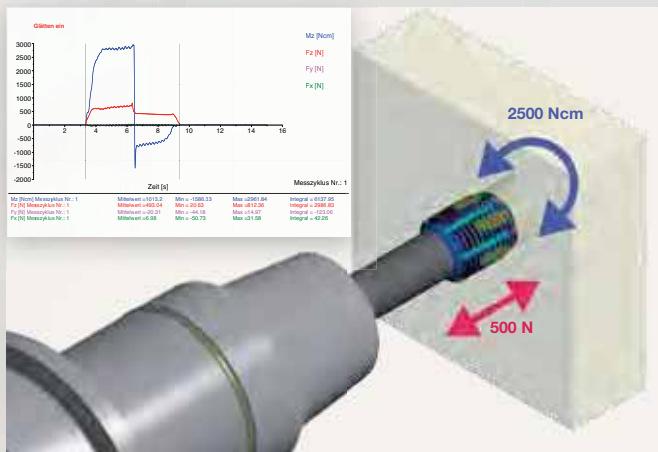
Intelligent design:

as well as the suspension and damping elements in the slender GÜHROS[®]Sync chucks (for the reduction of axial and radial forces during the tapping process) there is also room for the supply set for MQL or conventional cooling lubrication and the length setting screw.

The optimal combination of long-life metal spring and polymer damping elements considerably reduces axial and radial forces



Rigid chuck

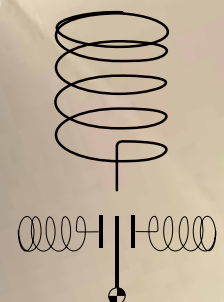


GÜHROSsync

➔ **IMPROVED
TOOL LIFE**

➔ **IMPROVED THREAD
QUALITY**

➔ **GREATER PROCESS
RELIABILITY**



GÜHRING

Made visible:
The spring symbol on the GÜHROSsync displays the effect of axial and radial force.

GÜHROSync

Hydraulic synchro tapping chucks with increased clamping force

Shrink fit chucks

4736 HSK-A

4726 TSG 3000 HSK-A

4758 HSK-C

4738 ISO taper

4221 MAS-BT

4299 HSK-A

4267 HSK-C

4213 ISO taper

4949 Coolant supply set HSK-A for conventional cooling



Hydraulic synchro tapping chucks

4601 HSK-A



4925 Pull studs for SK

4926



Hydraulic synchro tapping chucks

4576 ISO taper



4927 Pull studs for MAS/BT

4928



Hydraulic synchro tapping chucks

4577 MAS-BT



4525

Hydro-Ø 12/Ø 20 Cylindrical hydraulic synchro tapping chucks Ø 20 with internal cooling



4364

Setting screws "face" synchro tapping chucks, with conventional int. cooling



4605 Reduction bush sealed

4606 GÜHROJET reduction bush



Threading tool: shank diameter x square



Configuration of synchro tapping chucks for conventional cooling



Tapping chucks

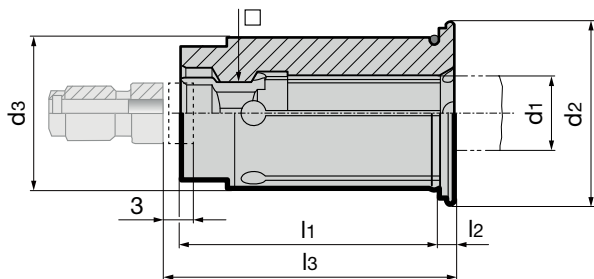
Product information

- for clamping taps with square shank in GÜHROSync synchro tapping chucks
- clamping-Ø for tool shank tolerance h6-h9
- face side closed, therefore coolant leak-proof for threading tools with IC
- positive drive
- position setting screw on tap shank
- length-setting screw allows 3 mm readjustment

Scope of delivery

- order setting screw "face" article no. 4364 separately
- order MQL setting screws article no. 4305 separately

Tapping chucks



Article no. **4605**

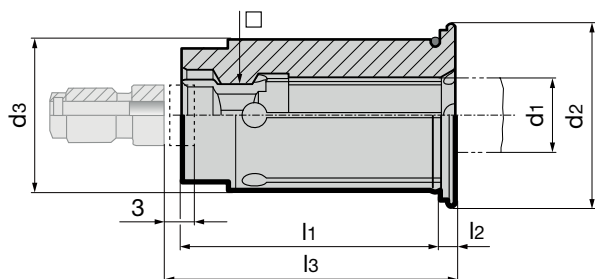
d3 mm	d1 mm	□ mm	Standard	d1 inch	□ inch	d2 mm	l1 mm	l2 mm	l3 mm	for adjustment screw	for thread	Order no.
12.00	2.800	2.100	DIN	-	-	16.50	29.00	2.00	-	-	M2/M2.2/M2.5 / M4	4605 2.812
12.00	3.500	2.700	DIN	-	-	16.50	29.00	2.00	-	-	M3 / M4.5 / M5	4605 3.512
12.00	4.000	3.200	JIS	-	-	16.50	29.00	2.00	-	-	M3 / M3.5	4605 4.012
12.00	4.500	3.400	DIN	-	-	16.50	29.00	2.00	26.00	4364 5.020	M4 / M6	4605 4.512
12.00	4.928	3.861	ANSI	0.194	0.152	16.50	29.00	2.00	26.00	4364 5.020	10-24 & 10-32	4605 4.912
12.00	5.000	4.000	JIS	-	-	16.50	29.00	2.00	26.00	4364 5.020	M4 / M4.5 / M5	4605 5.012
12.00	5.500	4.500	JIS	-	-	16.50	29.00	2.00	26.00	4364 5.020	M5	4605 5.512
12.00	5.588	4.191	ANSI	0.220	0.165	16.50	29.00	2.00	26.00	4364 5.020	12-24 & 12-28	4605 15.512
12.00	6.000	4.500	JIS	-	-	16.50	29.00	2.00	26.00	4364 6.020	M6	4605 16.012
12.00	6.000	4.900	DIN	-	-	16.50	29.00	2.00	26.00	4364 6.020	M4.5/M5/M6/M7/M8	4605 6.012
12.00	6.200	5.000	JIS	-	-	16.50	29.00	2.00	26.00	4364 6.020	M7 / M8	4605 6.212
12.00	6.477	4.851	ANSI	0.255	0.191	16.50	29.00	2.00	26.00	4364 6.020	1/4-20 & 1/4-28	4605 6.412
12.00	7.000	5.500	DIN / JIS	-	-	16.50	29.00	2.00	26.00	4364 7.020	M7 / M9 / M10	4605 7.012
12.00	7.938	5.944	ANSI	0.3125	0.234	16.50	29.00	2.00	31.00	4364 8.020	1/16-27 / 1/8-27	4605 7.912
12.00	8.000	6.200	DIN	-	-	16.50	29.00	2.00	31.00	4364 8.020	M8 / M11	4605 8.012
12.00	8.000	6.500	JIS	-	-	16.50	29.00	2.00	31.00	4364 8.020	M11	4605 18.012
12.00	8.077	6.045	ANSI	0.318	0.238	16.50	29.00	2.00	31.00	4364 8.020	5/16-18 & 5/16-24	4605 28.012
12.00	8.204	6.147	ANSI	0.323	0.242	16.50	29.00	2.00	31.00	4364 8.020	7/16-14 & 7/16-20	4605 8.212
12.00	8.500	6.500	JIS	-	-	16.50	29.00	2.00	31.00	4364 8.020	M12	4605 8.512
12.00	9.000	7.000	DIN	-	-	16.50	29.00	2.00	32.00	4364 9.020	M9 / M12	4605 9.012
12.00	9.322	6.985	ANSI	0.367	0.275	16.50	29.00	2.00	32.00	4364 9.020	1/2-13 & 1/2-20	4605 9.312
12.00	9.677	7.264	ANSI	0.381	0.286	16.50	29.00	2.00	33.00	4364 9.020	3/8-16 & 3/8-24	4605 9.612
12.00	10.000	8.000	DIN	-	-	16.50	29.00	2.00	36.00	4364 10.020	M10	4605 10.012

Product information

- for clamping taps with square shank in GÜHROSync synchro tapping chucks
- clamping-Ø for tool shank tolerance h6-h9
- face side closed, therefore coolant leak-proof for threading tools with IC
- positive drive
- position setting screw on tap shank
- length-setting screw allows 3 mm readjustment

Scope of delivery

- order setting screw "face" article no. 4364 separately
- order MQL setting screws article no. 4305 separately



Tapping chucks

Article no. **4605**

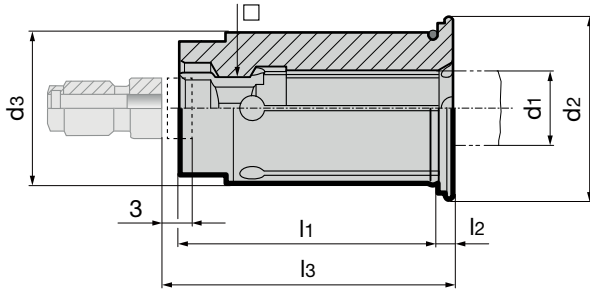
d3 mm	d1 mm	□ mm	Standard	d1 inch	□ inch	d2 mm	l1 mm	l2 mm	l3 mm	for adjustment screw	for thread	Order no.
20.00	6.000	4.500	JIS	-	-	24.10	34.00	2.00	26.00	4364 6.032	M6	4605 26.020
20.00	6.000	4.900	DIN	-	-	24.10	34.00	2.00	26.00	4364 6.032	M4.5/M5/M6/M7/M8	4605 6.020
20.00	6.200	5.000	JIS	-	-	24.10	34.00	2.00	26.00	4364 6.032	M7 / M8	4605 6.220
20.00	6.477	4.851	ANSI	0.255	0.191	24.10	34.00	2.00	26.00	4364 6.032	1/4-20 & 1/4-28	4605 6.420
20.00	7.000	5.500	DIN / JIS	-	-	24.10	34.00	2.00	26.00	4364 7.032	M7 / M9 / M10	4605 7.020
20.00	7.938	5.944	ANSI	0.3125	0.234	24.10	34.00	2.00	31.00	4364 8.032	1/16-27 / 1/8-27	4605 7.920
20.00	8.000	6.200	DIN	-	-	24.10	34.00	2.00	31.00	4364 8.032	M8 / M11	4605 8.020
20.00	8.000	6.500	JIS	-	-	24.10	34.00	2.00	31.00	4364 8.032	M11	4605 18.020
20.00	8.077	6.045	ANSI	0.318	0.238	24.10	34.00	2.00	31.00	4364 8.032	5/16-18 & 5/16-24	4605 28.020
20.00	8.204	6.147	ANSI	0.323	0.242	24.10	34.00	2.00	31.00	4364 8.032	7/16-14 & 7/16-20	4605 8.220
20.00	8.500	6.500	JIS	-	-	24.10	34.00	2.00	31.00	4364 8.032	M12	4605 8.520
20.00	9.000	7.000	DIN	-	-	24.10	34.00	2.00	32.00	4364 9.032	M9 / M12	4605 9.020
20.00	9.322	6.985	ANSI	0.367	0.275	24.10	34.00	2.00	32.00	4364 9.032	1/2-13 & 1/2-20	4605 9.320
20.00	9.677	7.264	ANSI	0.381	0.286	24.10	34.00	2.00	33.00	4364 9.032	3/8-16 & 3/8-24	4605 9.620
20.00	10.000	8.000	DIN	-	-	24.10	34.00	2.00	36.00	4364 10.032	M10	4605 10.020
20.00	10.500	8.000	JIS	-	-	24.10	34.00	2.00	36.00	4364 10.032	M14	4605 10.520
20.00	10.897	8.179	ANSI	0.429	0.322	24.10	34.00	2.00	35.00	4364 10.032	9/16-12 & 9/16-18	4605 10.820
20.00	11.000	9.000	DIN	-	-	24.10	34.00	2.00	37.00	4364 11.032	M14	4605 11.020
20.00	12.000	9.000	DIN	-	-	24.10	34.00	2.00	37.00	4364 11.032	M16	4605 12.020
20.00	12.192	9.144	ANSI	0.480	0.360	24.10	34.00	2.00	36.00	4364 11.032	5/8-11 & 5/8-18	4605 12.120
20.00	12.500	10.000	JIS	-	-	24.10	34.00	2.00	38.00	4364 11.032	M16	4605 12.520
20.00	13.000	10.000	JIS	-	-	24.10	34.00	2.00	38.00	4364 11.032	M17	4605 13.020
20.00	14.000	11.000	DIN / JIS	-	-	24.10	34.00	2.00	39.00	4364 14.032	M18	4605 14.020
20.00	14.288	10.693	ANSI	0.5625	0.421	24.10	34.00	2.00	38.00	4364 14.032	1/4-18	4605 14.220
20.00	14.986	11.227	ANSI	0.590	0.442	24.10	34.00	2.00	39.00	4364 14.032	3/4-10 & 3/4-16	4605 14.920
20.00	15.000	12.000	JIS	-	-	24.10	34.00	2.00	40.00	4364 16.032	M20	4605 15.020
20.00	16.000	12.000	DIN	-	-	24.10	34.00	2.00	41.00	4364 16.032	M20	4605 16.020

Product information

- for clamping taps with square shank in GÜHROSynch synchro tapping chucks
- clamping-Ø for tool shank tolerance h6-h9
- positive drive of reduction bush in Gührosynch synchro chuck
- with coolant slots for peripheral cooling, therefore process and tool life improvement
- coiled swarf is consistently washed away
- position setting screw on tap shank
- length-setting screw allows 3 mm readjustment

Scope of delivery

- order MQL setting screws article no. 4305 separately
- order setting screw "face" article no. 4364 separately



GÜHROJET

Article no. **4606**

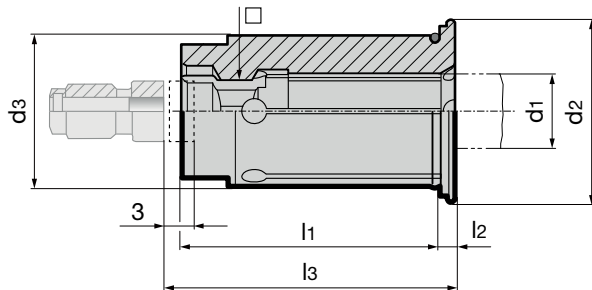
d3 mm	d1 mm	□ mm	Standard	d1 inch	□ inch	d2 mm	l1 mm	l2 mm	l3 mm	for adjustment screw	for thread	Order no.
12.00	2.800	2.100	DIN	-	-	16.50	29.00	2.00	-	-	M2/M2.2/M2.5/M4	4606 2.812
12.00	3.500	2.700	DIN	-	-	16.50	29.00	2.00	-	-	M3 / M4.5 / M5	4606 3.512
12.00	3.581	2.794	ANSI	0.141	0.110	16.50	29.00	2.00	-	-	6-32 & 6-40	4606 3.612
12.00	4.000	3.200	JIS	-	-	16.50	29.00	2.00	-	-	M3 / M3.5	4606 4.012
12.00	4.267	3.327	ANSI	0.168	0.131	16.50	29.00	2.00	-	-	8-32 & 8-36	4606 4.312
12.00	4.500	3.400	DIN	-	-	16.50	29.00	2.00	26.00	4364 5.020	M4 / M6	4606 4.512
12.00	4.928	3.861	ANSI	0.194	0.152	16.50	29.00	2.00	26.00	4364 5.020	10-24 & 10-32	4606 4.912
12.00	5.000	4.000	JIS	-	-	16.50	29.00	2.00	26.00	4364 5.020	M4 / M4.5 / M5	4606 5.012
12.00	5.500	4.500	JIS	-	-	16.50	29.00	2.00	26.00	4364 5.020	M5	4606 5.512
12.00	5.588	4.191	ANSI	0.220	0.165	16.50	29.00	2.00	26.00	4364 5.020	12-24 & 12-28	4606 15.512
12.00	6.000	4.500	JIS	-	-	16.50	29.00	2.00	26.00	4364 6.020	M6	4606 16.012
12.00	6.000	4.900	DIN	-	-	16.50	29.00	2.00	26.00	4364 6.020	M4.5/M5/M6/M7/M8	4606 6.012
12.00	6.200	5.000	JIS	-	-	16.50	29.00	2.00	26.00	4364 6.020	M7 / M8	4606 6.212
12.00	6.477	4.851	ANSI	0.255	0.191	16.50	29.00	2.00	26.00	4364 6.020	1/4-20 & 1/4-28	4606 6.412
12.00	7.000	5.500	DIN / JIS	-	-	16.50	29.00	2.00	26.00	4364 7.020	M7 / M9 / M10	4606 7.012
12.00	7.938	5.944	ANSI	0.3125	0.234	16.50	29.00	2.00	31.00	4364 8.020	1/16-27 / 1/8-27	4606 7.912
12.00	8.000	6.200	DIN	-	-	16.50	29.00	2.00	31.00	4364 8.020	M8 / M11	4606 8.012
12.00	8.000	6.500	JIS	-	-	16.50	29.00	2.00	31.00	4364 8.020	M11	4606 18.012
12.00	8.077	6.045	ANSI	0.318	0.238	16.50	29.00	2.00	31.00	4364 8.020	5/16-18 & 5/16-24	4606 28.012
12.00	8.204	6.147	ANSI	0.323	0.242	16.50	29.00	2.00	31.00	4364 8.020	7/16-14 & 7/16-20	4606 8.212
12.00	8.500	6.500	JIS	-	-	16.50	29.00	2.00	31.00	4364 8.020	M12	4606 8.512
12.00	9.000	7.000	DIN	-	-	16.50	29.00	2.00	32.00	4364 9.020	M9 / M12	4606 9.012
12.00	9.322	6.985	ANSI	0.367	0.275	16.50	29.00	2.00	32.00	4364 9.020	1/2-13 & 1/2-20	4606 9.312
12.00	9.677	7.264	ANSI	0.381	0.286	16.50	29.00	2.00	33.00	4364 9.020	3/8-16 & 3/8-24	4606 9.612
12.00	10.000	8.000	DIN	-	-	16.50	29.00	2.00	36.00	4364 10.020	M10	4606 10.012

Product information

- for clamping taps with square shank in GÜHROSynch synchro tapping chucks
- clamping-Ø for tool shank tolerance h6-h9
- positive drive of reduction bush in Gührosynch synchro chuck
- with coolant slots for peripheral cooling, therefore process and tool life improvement
- coiled swarf is consistently washed away
- position setting screw on tap shank
- length-setting screw allows 3 mm readjustment

Scope of delivery

- order MQL setting screws article no. 4305 separately
- order setting screw "face" article no. 4364 separately



GÜHROJET

Article no. **4606**

d3 mm	d1 mm	□ mm	Standard	d1 inch	□ inch	d2 mm	l1 mm	l2 mm	l3 mm	for adjustment screw	for thread	Order no.
20.00	6.000	4.500	JIS	-	-	24.10	34.00	2.00	26.00	4364 6.032	M6	4606 26.020
20.00	6.000	4.900	DIN	-	-	24.10	34.00	2.00	26.00	4364 6.032	M4.5/M5/M6/M7/M8	4606 6.020
20.00	6.200	5.000	JIS	-	-	24.10	34.00	2.00	26.00	4364 6.032	M7 / M8	4606 6.220
20.00	6.477	4.851	ANSI	0.255	0.191	24.10	34.00	2.00	26.00	4364 6.032	1/4-20 & 1/4-28	4606 6.420
20.00	7.000	5.500	DIN / JIS	-	-	24.10	34.00	2.00	26.00	4364 7.032	M7 / M9 / M10	4606 7.020
20.00	7.938	5.944	ANSI	0.3125	0.234	24.10	34.00	2.00	31.00	4364 8.032	1/16-27/ 1/8-27	4606 7.920
20.00	8.000	6.200	DIN	-	-	24.10	34.00	2.00	31.00	4364 8.032	M8 / M11	4606 8.020
20.00	8.000	6.500	JIS	-	-	24.10	34.00	2.00	31.00	4364 8.032	M11	4606 18.020
20.00	8.077	6.045	ANSI	0.318	0.238	24.10	34.00	2.00	31.00	4364 8.032	5/16-18 & 5/16-24	4606 28.020
20.00	8.204	6.147	ANSI	0.323	0.242	24.10	34.00	2.00	31.00	4364 8.032	7/16-14 & 7/16-20	4606 8.220
20.00	8.500	6.500	JIS	-	-	24.10	34.00	2.00	31.00	4364 8.032	M12	4606 8.520
20.00	9.000	7.000	DIN	-	-	24.10	34.00	2.00	32.00	4364 9.032	M9 / M12	4606 9.020
20.00	9.322	6.985	ANSI	0.367	0.275	24.10	34.00	2.00	32.00	4364 9.032	1/2-13 & 1/2-20	4606 9.320
20.00	9.677	7.264	ANSI	0.381	0.286	24.10	34.00	2.00	33.00	4364 9.032	3/8-16 & 3/8-24	4606 9.620
20.00	10.000	8.000	DIN	-	-	24.10	34.00	2.00	36.00	4364 10.032	M10	4606 10.020
20.00	10.500	8.000	JIS	-	-	24.10	34.00	2.00	36.00	4364 10.032	M14	4606 10.520
20.00	10.897	8.179	ANSI	0.429	0.322	24.10	34.00	2.00	35.00	4364 10.032	9/16-12 & 9/16-18	4606 10.820
20.00	11.000	9.000	DIN	-	-	24.10	34.00	2.00	37.00	4364 11.032	M14	4606 11.020
20.00	12.000	9.000	DIN	-	-	24.10	34.00	2.00	37.00	4364 11.032	M16	4606 12.020
20.00	12.192	9.144	ANSI	0.480	0.360	24.10	34.00	2.00	36.00	4364 11.032	5/8-11 & 5/8-18	4606 12.120
20.00	12.500	10.000	JIS	-	-	24.10	34.00	2.00	38.00	4364 11.032	M16	4606 12.520
20.00	13.000	10.000	JIS	-	-	24.10	34.00	2.00	38.00	4364 11.032	M17	4606 13.020
20.00	14.000	11.000	DIN / JIS	-	-	24.10	34.00	2.00	39.00	4364 14.032	M18	4606 14.020
20.00	14.288	10.693	ANSI	0.5625	0.421	24.10	34.00	2.00	38.00	4364 14.032	1/4-18	4606 14.220
20.00	14.986	11.227	ANSI	0.590	0.442	24.10	34.00	2.00	39.00	4364 14.032	3/4-10 & 3/4-16	4606 14.920
20.00	15.000	12.000	JIS	-	-	24.10	34.00	2.00	40.00	4364 16.032	M20	4606 15.020
20.00	16.000	12.000	DIN	-	-	24.10	34.00	2.00	41.00	4364 16.032	M20	4606 16.020

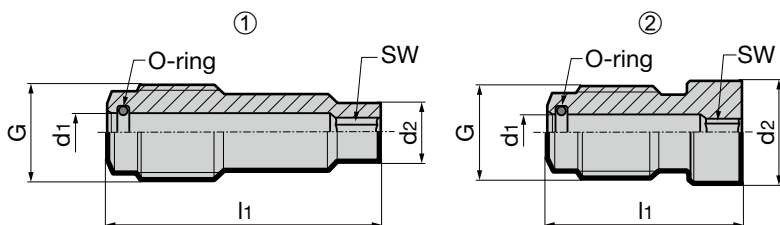
Product information

- for hydro-synchro tapping chucks
article no. 4601, 4576, 4577 and 4525
- for synchro tapping chucks
article no. 4326 and 4327
- for conventional internal cooling
- with facing stop for standard shank ends
- position setting screw on tap shank
- length-setting screw allows 3 mm readjustment
with hexagonal spanner article no. 4912, type „B“

Scope of delivery

- with O-ring for secure seal

Tapping chucks



Article no. **4364**

for nominal size	for tap shank-Ø x □	G	d1 mm	d2 mm	l1 mm	SW	O-ring	type	Order no.
ER20 / Hydro12	< Ø6	M8x1	3.6	3.3	23.7	2.0	3.5x1	1	4364 5.020
ER20 / Hydro12	6x4,9	M8x1	3.6	4.8	23.7	2.5	3.5x1	1	4364 6.020
ER20 / Hydro12	7x5,5	M8x1	3.6	5.4	23.7	2.5	3.5x1	1	4364 7.020
ER20 / Hydro12	8x6,2	M8x1	3.6	5.8	18.7	2.5	3.5x1	1	4364 8.020
ER20 / Hydro12	9x7	M8x1	3.6	6.9	17.7	2.5	3.5x1	1	4364 9.020
ER20 / Hydro12	10x8	M8x1	3.6	7.8	13.7	2.5	3.5x1	2	4364 10.020
ER20 / Hydro12	11x9	M8x1	3.6	8.8	14.8	2.5	3.5x1	2	4364 11.020
ER32 / Hydro20	< Ø6	M10x1	4.1	3.3	33.0	2.0	4x1	1	4364 5.032
ER32 / Hydro20	6x4,9	M10x1	4.1	4.8	34.0	3.0	4x1	1	4364 6.032
ER32 / Hydro20	7x5,5	M10x1	4.1	5.4	33.8	3.0	4x1	1	4364 7.032
ER32 / Hydro20	8x6,2	M10x1	4.1	6.1	28.8	3.0	4x1	1	4364 8.032
ER32 / Hydro20	9x7	M10x1	4.1	6.9	28.3	3.0	4x1	1	4364 9.032
ER32 / Hydro20	10x8	M10x1	4.1	7.8	23.8	3.0	4x1	1	4364 10.032
ER32 / Hydro20	11x9 & 12x9	M10x1	4.1	8.8	22.9	3.0	4x1	1	4364 11.032
ER32 / Hydro20	14x11	M10x1	4.1	10.8	20.7	3.0	4x1	2	4364 14.032
ER32 / Hydro20	16x12	M10x1	4.1	11.8	19.7	3.0	4x1	2	4364 16.032
ER32 / Hydro20	18x14.5 & 20x16	M10x1	4.1	14.3	18.0	3.0	4x1	2	4364 18.032

Synchro tapping chucks with straight shank

Product information

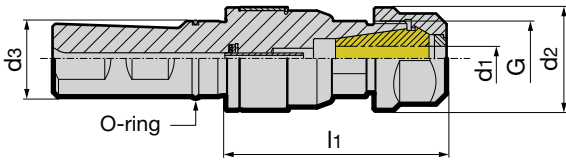
- compensate synchronisation errors
- minimal length compensation $\pm 0,15$ mm in tension and compression direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks
- length-setting screw allows 2 to 3 mm readjustment
- suitable for internal cooling
- max. coolant pressure up to 50 bar
- combination shank similar to DIN 1835 for side lock holders

Scope of delivery

- incl. sealed IC/ER clamping nut article no. 4306 (*see torque)
- incl. adjustment key for adjustment screws
- order adjustment screws „plan“ article no. 4364, tapping collet, article no. 4308, sealing washer, article no. 4335 and clamping key, article no. 4913 separately



Tapping chucks



									Article no.	4326
d_3 ~DIN 1835 mm	nom. size	for thread	d_1 mm	d_2 mm	l_1 mm	torque* Nm	G	kg	Order no.	
25	ER20	M4-M14	4-11.0	34	73	35	M25x1.5	0.50	4326 20.025	
25	ER32	M4-M30	4-20.0	50	87.5	136	M40x1.5	1.30	4326 32.025	

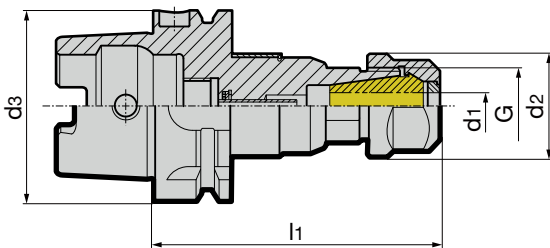
HSK-A synchro tapping chucks

Product information

- compensate synchronisation errors
- guarantee high thread quality and optimal tool life with conventional taps
- minimal length compensation $\pm 0,15$ mm in tension and compression direction between synchronous spindle and tap reduces excessive thread flank friction
- reduces a possible increase in axial forces during the cutting cycle to a minimum
- length-setting screw allows 2 to 3 mm readjustment
- suitable for internal cooling
- max. coolant pressure up to 50 bar
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. sealed IC/ER clamping nut article no. 4306 (*see torque)
- incl. adjustment key for adjustment screws
- order adjustment screws „plan“ article no. 4364, tapping collet, article no. 4308, sealing washer, article no. 4325 and clamping key, article no. 4913 separately
- for conventional cooling order coolant supply set article no. 4949 separately

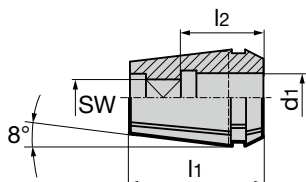


									Article no.	4327
HSK-A d_3 mm	nom. size	for thread	d_1 mm	d_2 mm	l_1 mm	torque* Nm	G	kg	Order no.	
63	ER20	M4-M14	4.5-11.2	34	95.5	35	M25x1.5	1.00	4327 20.063	
63	ER20	M4-M14	4.5-11.2	34	160.0	35	M25x1.5	1.50	4327 20.163	
63	ER32	M4-M30	4.5-18.0	50	109.0	136	M40x1.5	1.70	4327 32.063	
100	ER20	M4-M14	4.5-11.2	34	102.0	35	M25x1.5	2.50	4327 20.100	
100	ER32	M4-M30	4.5-18.0	50	115.5	136	M40x1.5	2.70	4327 32.100	

Product information

- for clamping taps with square shank in synchro tapping chucks or collet holders
- smaller Ø4mm are clamped with collet, article no. 4307 without sq. drive
- tightening torque see clamping nuts article no. 4306

Clamping range:
 ER16: Ø 4.5 - Ø 8.0
 ER20: Ø 4.0 - Ø 11.0
 ER25: Ø 4.5 - Ø 12.0
 ER32: Ø 4.0 - Ø 20.0
 ER40: Ø 7.0 - Ø 22.0



Tapping chucks

					Article no.	4308
nom. size	for shank Ø d ₁ mm	square SW	l ₁ mm	l ₂ mm	Order no.	
ER16	4.5	3.4	27.5	15	4308	4.516
ER16	5.5	4.3	27.5	18	4308	5.516
ER16	6.0	4.9	27.5	18	4308	6.016
ER16	7.0	5.5	27.5	18	4308	7.016
ER16	8.0	6.2/6.3	27.5	22	4308	8.016
ER20	4.0	3.2	31.5	15	4308	4.020
ER20	4.5	3.4	31.5	15	4308	4.520
ER20	5.5	4.3	31.5	18	4308	5.520
ER20	6.0	4.9	31.5	18	4308	6.020
ER20	7.0	5.5	31.5	18	4308	7.020
ER20	8.0	6.2/6.3	31.5	22	4308	8.020
ER20	9.0	7.0/7.1	31.5	22	4308	9.020
ER20	10.0	8.0	31.5	25	4308	10.020
ER20	11.0	9.0	31.5	25	4308	11.020
ER25	4.5	3.4	34.0	15	4308	4.525
ER25	5.5	4.3	34.0	18	4308	5.525
ER25	6.0	4.9	34.0	18	4308	6.025
ER25	7.0	5.5	34.0	18	4308	7.025
ER25	8.0	6.2/6.3	34.0	22	4308	8.025
ER25	9.0	7.0/7.1	34.0	22	4308	9.025
ER25	10.0	8.0	34.0	25	4308	10.025
ER25	11.0	9.0	34.0	25	4308	11.025
ER25	12.0	9.0	34.0	25	4308	12.025
ER32	4.0	3.15/3.2	40.0	15	4308	4.032
ER32	4.5	3.4	40.0	15	4308	4.532
ER32	5.5	4.3	40.0	18	4308	5.532
ER32	6.0	4.9	40.0	18	4308	6.032
ER32	7.0	5.5	40.0	18	4308	7.032
ER32	8.0	6.2/6.3	40.0	22	4308	8.032
ER32	9.0	7.0/7.1	40.0	22	4308	9.032
ER32	10.0	8.0	40.0	25	4308	10.032
ER32	11.0	9.0	40.0	25	4308	11.032
ER32	12.0	9.0	40.0	25	4308	12.032
ER32	14.0	11.0/11.2	40.0	25	4308	14.032
ER32	16.0	12.0/12.5	40.0	25	4308	16.032
ER32	18.0	14.5	40.0	25	4308	18.032
ER32	20.0	16.0	40.0	28	4308	20.032
ER40	7.0	5.5	46.0	18	4308	7.040
ER40	8.0	6.2/6.3	46.0	22	4308	8.040
ER40	9.0	7.0/7.1	46.0	22	4308	9.040
ER40	10.0	8.0	46.0	25	4308	10.040
ER40	11.0	9.0	46.0	25	4308	11.040
ER40	12.0	9.0	46.0	25	4308	12.040
ER40	14.0	11.0/11.2	46.0	25	4308	14.040
ER40	16.0	12.0/12.5	46.0	25	4308	16.040
ER40	18.0	14.5	46.0	25	4308	18.040
ER40	20.0	16.0	46.0	28	4308	20.040
ER40	22.0	18.0	46.0	28	4308	22.040

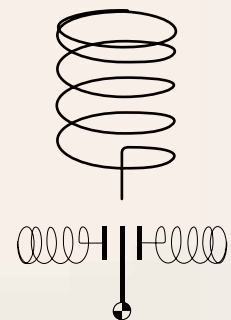
GÜHROSync tapping chucks + VA taps

The easy way to the perfect thread

GÜHROSync tapping chucks provide excellent chip evacuation and longer tool life thanks to optimal tool clamping in combination with VA taps.



Tapping chucks



Made visible:
The spring symbol on the GÜHROSync displays the effect of axial and radial force.

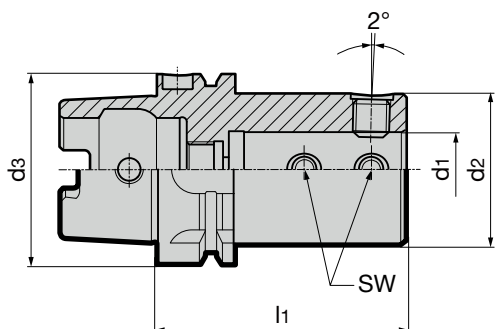
GÜHROSync

Product information

- for quick change chucks and synchro tapping chucks with straight shank
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. clamping screws article no. 4903, order no. 16,001
- order coolant supply set article no. 4949 separately

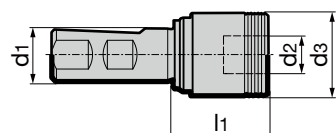


						Article no.	4343
HSK-A d3	d1 mm	d2 mm	l1 mm	SW	kg	Order no.	
50	25	50	80	6	0.89	4343 25.050	
63	25	50	82	6	1.26	4343 25.063	
80	25	50	87	6	3.10	4343 25.080	
100	25	50	89	6	4.08	4343 25.100	

Quick change tapping chucks without internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread
- combination shank similar to DIN 1835 for side lock holders



							Article no.	4340
for thread	d1 mm	d2 mm	d3 mm	l1 mm	tension/compression mm	kg	Order no.	
M3-M12	25	19	39	45	7.5	0.45	4340 19.025	
M8-M20	25	31	60	68	10.0	1.10	4340 31.025	

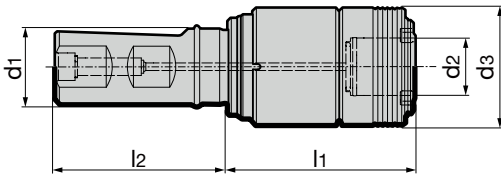
Quick change tapping chucks with internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread
- provided with internal coolant supply feeding the coolant through the chuck and adaptor into the shank of the tap.
All functional elements are sealed
- max. coolant pressure up to 50 bar
- combination shank similar to DIN 1835 for side lock holders



Tapping chucks

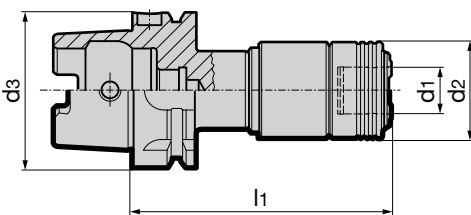


								Article no.	4342
for thread	d1 mm	d2 mm	d3 mm	l1 mm	l2 mm	tension/ compression mm	kg	Order no.	
M3-M12	25	19	39	62	57	7.5	0.6	4342 19.025	
M8-M20	25	31	60	98	57	10.0	1.6	4342 31.025	

HSK-A quick change tapping chucks with internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread
- guarantee high thread quality and optimal tool life with conventional taps
- max. coolant pressure up to 50 bar.
- HSK-A to ISO 12164-1/DIN 69893-1



								Article no.	4328
HSK-A d3 mm	for thread	d1 mm	d2 mm	l1 mm	tension/ compression ± mm	kg	Order no.		
63	M3-M12	19	39	105	7.5	1.13	4328 19.063		
63	M8-M20	31	60	140	10.0	2.28	4328 31.063		

MQL



MQL-TECHNOLOGY

MQL

BY GÜHRING

MQL-Technology



1 MQL

BY GÜHRING

Our products for the MQL 1-channel technology are identified by this symbol.

Visual feature of the 1-channel system is the gold coloured MQL length setting screw.



2 MQL

BY GÜHRING

Our products for the MQL 2-channel technology are identified by this symbol.

Visual feature of the 2-channel system is the black coloured MQL length setting screw.

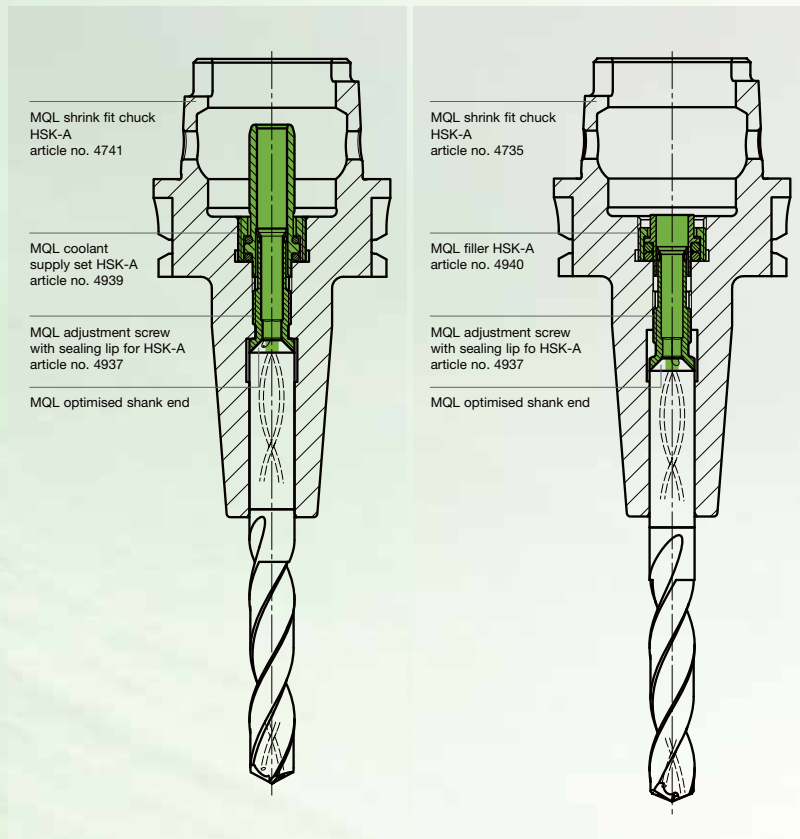


MQL SYSTEM FINDER

		HSK-A for automatic tool change	HSK-A for manual tool change
	Hydraulic chucks	 4210, p. 99	4209, p. 98
	Shrink fit chucks	 4741, p. 102	4735, p. 100
	Synchro-chucks	 4330, p. 112	4298, p. 112
	Hydraulic chucks	 4612, p. 117	4611, p. 115
	Shrink fit chucks	 4614, p. 123	4613, p. 119
	Synchro-chucks	 4341, p. 137	4298, p. 136

automatic tool change

manual tool change



MQL shrink fit chucks
HSK-A
auto. tool change



man. tool change



MQL hydraulic tapping chucks
HSK-A
auto. tool change



man. tool change



4508

MQL coolant supply set
for single channel
HSK-A



4511

MQL coolant supply set
for 2 channel systems
HSK-A



4513

MQL coolant supply set
HSK-A (filler)



MQL HSK-A hydraulic
synchro tapping chucks for
single channel
auto. tool change



MQL HSK-A hydraulic
synchro tapping chucks for
2 channel systems
auto. tool change



MQL HSK-A hydraulic
synchro tapping chucks
man. tool change



MQL Hydro-Ø 12/Ø 20
synchro tapping chucks with internal cooling Ø 20

4305

MQL setting screws with internal cone
for MQL synchro tapping chucks



4605

Reduction bushes, sealed



4606

GÜHROJET reduction bushes



Threading tool with MQL shank:
shank diameter x square



4508 

Coolant supply set
for automatic tool change

4511 

MQL coolant supply set
for automatic tool change

4513




MQL coolant supply set
for manual tool change



4330

HSK-A synchro
tapping chucks
for MQL single
channel systems
for automatic tool
change



4341

HSK-A synchro
tapping chucks
for MQL double
channel systems
for automatic tool
change



4298

HSK-A synchro
tapping chucks
for manual tool
change for MQL
single and
double channel
systems



4305

MQL setting screw with internal taper
for MQL synchro tapping chucks



4308

tap collet



4335

sealing washer
for retaining nuts



tap



MQL

TECHNOLOGY AND
ADVANTAGES

- ⇒ Cost reduction due to reduced cleaning
- ⇒ Environment & health protection
- ⇒ Less cooling lubrication requirement – high coolant effect
- ⇒ Low process temperatures
- ⇒ Lower working temperature at tool point
- ⇒ Uninterrupted cooling lubricant supply
- ⇒ Direct response without losses
- ⇒ High compatibility

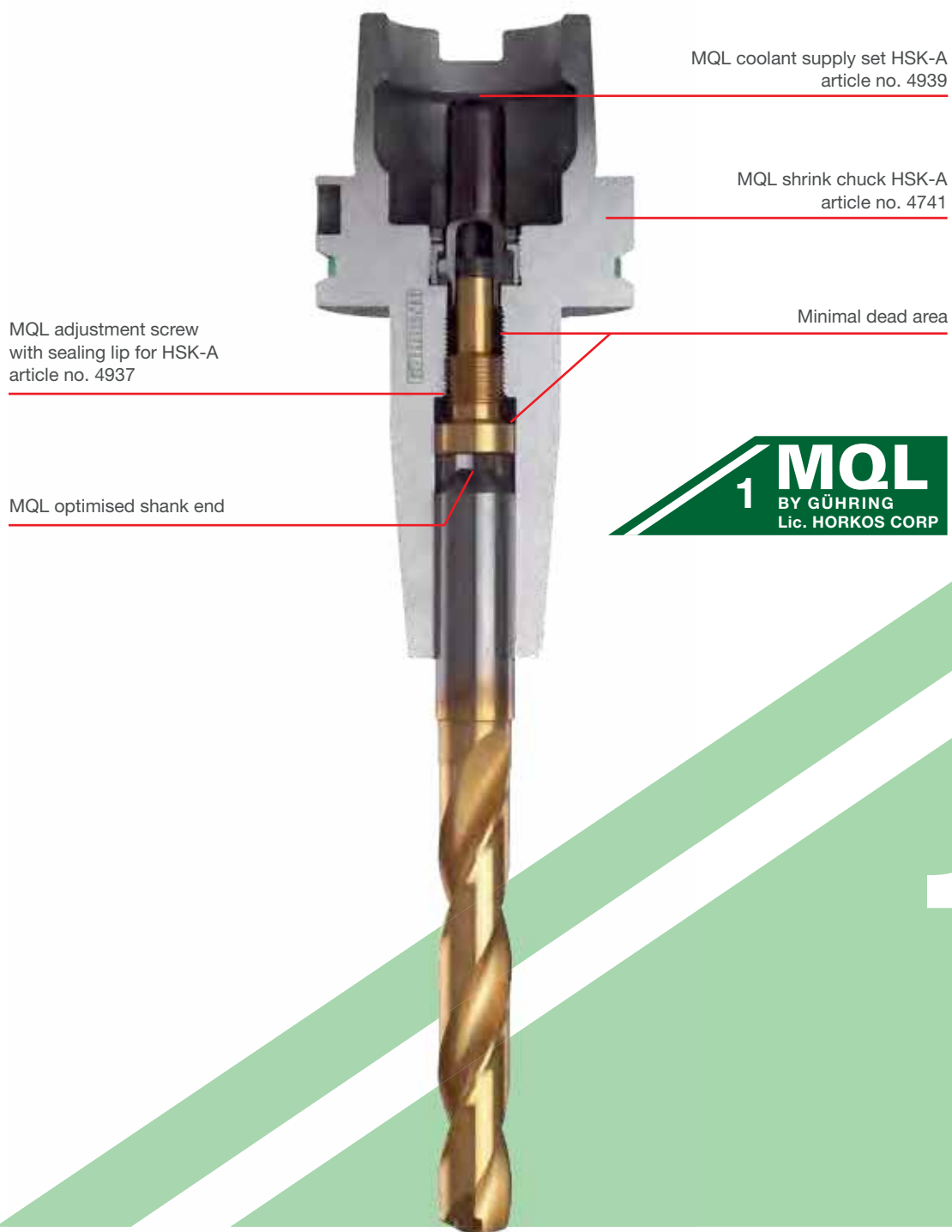
MQL

BY GÜHRING



Our products for the MQL 1-channel technology are identified by this symbol.

Visual feature of the 1-channel system is the gold coloured MQL length setting screw.



MQL coolant supply set HSK-A
article no. 4939

MQL shrink chuck HSK-A
article no. 4741

MQL adjustment screw
with sealing lip for HSK-A
article no. 4937

Minimal dead area

MQL optimised shank end



MQL 1-channel

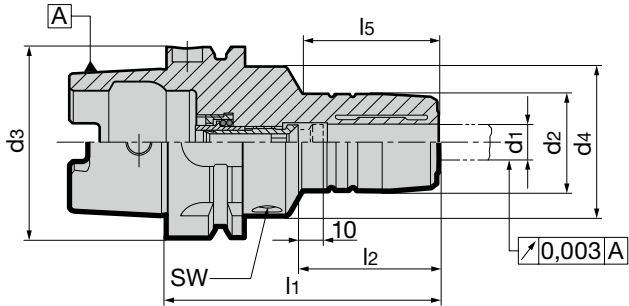
1

Product information

- to Gühring MQL standard
- for 1-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- axial length setting

Scope of delivery

- incl. MQL adjustment screw with sealing lip
article no. 4937 and MQL coolant supply set
article no. 4940 (filler)
- incl. hexagon chuck key article no. 4912
- special dimensions on request



Article no. **4209**

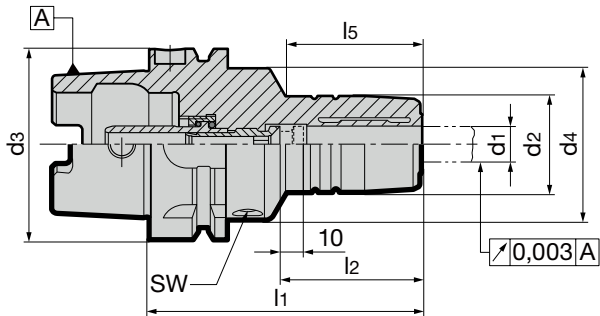
HSK-A	for shank Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	incl. setting screw no. 4937 ...	SW	kg	Order no.
32	6	26	40	80	36	29	6.032	4	0.40	4209 6.032
32	8	28	40	80	36	29	8.032	4	0.42	4209 8.032
32	10	30	40	85	40	35	10.032	4	0.45	4209 10.032
32	12	32	40	90	45	40	12.032	4	0.49	4209 12.032
40	6	26	33.5	80	36	46	6.040	4	0.44	4209 6.040
40	8	28	33.5	80	36	46	8.040	4	0.47	4209 8.040
40	10	30	33.5	80	40	46	10.040	4	0.49	4209 10.040
40	12	32	33.5	90	45	56	12.040	4	0.46	4209 12.040
50	6	26	40	80	36	38.0	6.050	4	0.95	4209 6.050
50	8	28	40	80	36	38.0	8.050	4	0.95	4209 8.050
50	10	30	40	85	40	44.0	10.050	4	0.95	4209 10.050
50	12	32	40	90	45	49.0	12.050	4	0.95	4209 12.050
50	14	34	40	90	45	49.0	14.050	4	0.95	4209 14.050
50	16	38	53	95	48	36.0	16.050	5	1.25	4209 16.050
50	18	40	57	95	48	36.0	18.050	5	1.25	4209 18.050
50	20	42	60	100	50	39.0	20.050	5	1.25	4209 20.050
63	6	26	50	80	36	34.5	6.100	5	1.25	4209 6.063
63	8	28	50	80	36	35.5	8.100	5	1.25	4209 8.063
63	10	30	50	85	40	39.0	10.100	5	1.25	4209 10.063
63	12	32	50	90	45	45.0	12.100	5	1.35	4209 12.063
63	14	34	50	90	45	46.0	14.100	5	1.35	4209 14.063
63	16	38	50	95	48	51.0	16.100	5	1.45	4209 16.063
63	18	40	50	95	48	52.0	18.100	5	1.45	4209 18.063
63	20	42	50	100	50	58.0	20.100	5	1.45	4209 20.063
63	25	57	63	115	56	50.0	25.100	6	2.45	4209 25.063
63	32	64	75	120	60	58.0	32.100	6	3.10	4209 32.063
80	6	26	50	85	36	39	6.100	5	1.50	4209 6.080
80	8	28	50	85	36	39	8.100	5	1.52	4209 8.080
80	10	30	50	90	40	45	10.100	5	1.56	4209 10.080
80	12	32	50	95	45	50	12.100	5	1.61	4209 12.080
80	14	34	50	95	45	50	14.100	5	1.64	4209 14.080
80	16	38	50	100	48	56	16.100	5	1.72	4209 16.080
80	18	40	50	100	48	56	18.100	5	1.76	4209 18.080
80	20	42	50	105	50	62	20.100	5	1.82	4209 20.080
80	25	57	63	115	56	70	25.100	6	2.60	4209 25.080
80	32	64	75	120	60	58	32.100	6	3.11	4209 32.080
100	6	26	50	85	36	36.0	6.100	5	2.60	4209 6.100
100	8	28	50	85	36	36.0	8.100	5	2.60	4209 8.100
100	10	30	50	90	40	42.0	10.100	5	2.60	4209 10.100
100	12	32	50	95	45	47.0	12.100	5	2.65	4209 12.100
100	14	34	50	95	45	47.0	14.100	5	2.65	4209 14.100
100	16	38	50	100	48	53.0	16.100	5	2.85	4209 16.100
100	18	40	50	100	48	53.0	18.100	5	2.85	4209 18.100
100	20	42	50	105	50	59.0	20.100	5	3.35	4209 20.100
100	25	57	63	115	56	67.0	25.100	6	3.50	4209 25.100
100	32	64	75	120	60	72.0	32.100	6	3.95	4209 32.100

Product information

- to Gühring MQL standard
- for 1-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- axial length setting

Scope of delivery

- incl. MQL adjustment screw with sealing lip
article no. 4937 and MQL coolant supply set
article no. 4939
- incl. hexagon chuck key article no. 4912
- special dimensions on request



Article no. **4210**

HSK-A d ₃	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw no. 4937 ...	SW	kg	Order no.
32	6	26	40	80	36	29	6.032	4	0.40	4210 6.032
32	8	28	40	80	36	29	8.032	4	0.42	4210 8.032
32	10	30	40	85	40	35	10.032	4	0.45	4210 10.032
32	12	32	40	90	45	40	12.032	4	0.49	4210 12.032
40	6	26	33.5	80	36	46	6.040	4	0.44	4210 6.040
40	8	28	33.5	80	36	46	8.040	4	0.47	4210 8.040
40	10	30	33.5	80	40	46	10.040	4	0.49	4210 10.040
40	12	32	33.5	90	45	56	12.040	4	0.56	4210 12.040
50	6	26	40	80	36	38.0	6.050	4	0.95	4210 6.050
50	8	28	40	80	36	38.0	8.050	4	0.95	4210 8.050
50	10	30	40	85	40	44.0	10.050	4	0.95	4210 10.050
50	12	32	40	90	45	49.0	12.050	4	0.95	4210 12.050
50	14	34	40	90	45	49.0	14.050	4	0.95	4210 14.050
50	16	38	53	95	48	36.0	16.050	5	1.25	4210 16.050
50	18	40	57	95	48	36.0	18.050	5	1.25	4210 18.050
50	20	42	60	100	50	39.0	20.050	5	1.25	4210 20.050
63	6	26	50	80	36	34.5	6.100	5	1.25	4210 6.063
63	8	28	50	80	36	35.5	8.100	5	1.25	4210 8.063
63	10	30	50	85	40	39.0	10.100	5	1.25	4210 10.063
63	12	32	50	90	45	45.0	12.100	5	1.35	4210 12.063
63	14	34	50	90	45	46.0	14.100	5	1.35	4210 14.063
63	16	38	50	95	48	51.0	16.100	5	1.45	4210 16.063
63	18	40	50	95	48	52.0	18.100	5	1.45	4210 18.063
63	20	42	50	100	50	58.0	20.100	5	1.45	4210 20.063
63	25	57	63	115	56	50.0	25.100	6	2.45	4210 25.063
63	32	64	75	120	60	58.0	32.100	6	3.10	4210 32.063
80	6	26	50	85	36	39	6.100	5	1.50	4210 6.080
80	8	28	50	85	36	39	8.100	5	1.52	4210 8.080
80	10	30	50	90	40	45	10.100	5	1.56	4210 10.080
80	12	32	50	95	45	50	12.100	5	1.61	4210 12.080
80	14	34	50	95	45	50	14.100	5	1.64	4210 14.080
80	16	38	50	100	48	56	16.100	5	1.72	4210 16.080
80	18	40	50	100	48	56	18.100	5	1.76	4210 18.080
80	20	42	50	105	50	62	20.100	5	1.82	4210 20.080
80	25	57	63	115	56	70	25.100	6	2.60	4210 25.080
80	32	64	75	120	60	58	32.100	6	3.11	4210 32.080
100	6	26	50	85	36	36.0	6.100	5	2.60	4210 6.100
100	8	28	50	85	36	36.0	8.100	5	2.60	4210 8.100
100	10	30	50	90	40	42.0	10.100	5	2.60	4210 10.100
100	12	32	50	95	45	47.0	12.100	5	2.65	4210 12.100
100	14	34	50	95	45	47.0	14.100	5	2.65	4210 14.100
100	16	38	50	100	48	53.0	16.100	5	2.85	4210 16.100
100	18	40	50	100	48	53.0	18.100	5	2.85	4210 18.100
100	20	42	50	105	50	59.0	20.100	5	3.35	4210 20.100
100	25	57	63	115	56	67.0	25.100	6	3.50	4210 25.100
100	32	64	75	120	60	72.0	32.100	6	3.95	4210 32.100

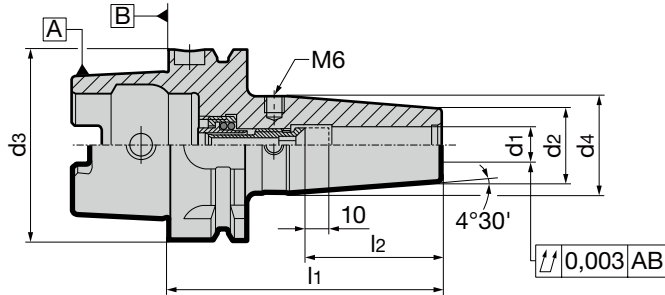
MQL 1-channel shrink fit chucks HSK-A for manual tool change

Product information

- to Gühring MQL standard
- for 1-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- also available in the lengths
l1 = 120 mm (concentricity 4 µm)
and 160 mm (concentricity 5 µm)

Scope of delivery

- incl. MQL adjustment screw with sealing lip
article no. 4937 and MQL coolant supply set
article no. 4940
- special dimensions on request



Article no.

4735

HSK-A d_3	for shank \varnothing d_1 h6 mm	d_2 mm	d_4 mm	l_1 mm	l_2 mm	incl. setting screw no. 4937 ...	kg	Order no.
32	6	21	25.5	80	36	6.032	0.30	4735 6.032
32	8	21	25.5	80	36	8.032	0.30	4735 8.032
32	10	24	31.7	85	40	10.032	0.30	4735 10.032
32	12	24	32.3	90	45	12.032	0.30	4735 12.032
40	6	21	27	80	36	6.040	0.40	4735 6.040
40	8	21	27	80	36	8.040	0.40	4735 8.040
40	10	24	32	80	40	10.040	0.50	4735 10.040
40	12	24	32	90	45	12.040	0.50	4735 12.040
40	14	27	33.5	90	45	14.040	0.60	4735 14.040
40	16	27	33.5	90	48	16.040	0.50	4735 16.040
50	6	21	27	80	36	6.050	0.60	4735 6.050
50	8	21	27	80	36	8.050	0.60	4735 8.050
50	10	24	32	85	40	10.050	0.70	4735 10.050
50	12	24	32	90	45	12.050	0.70	4735 12.050
50	14	27	34	90	45	14.050	0.70	4735 14.050
50	16	27	34	95	48	16.050	0.70	4735 16.050
50	18	33	41.5	95	48	18.050	0.90	4735 18.050
50	20	33	41.5	100	50	20.050	0.90	4735 20.050
63	6	21	27	80	36	6.100	0.70	4735 6.063
63	8	21	27	80	36	8.100	0.70	4735 8.063
63	10	24	32	85	40	10.100	0.70	4735 10.063
63	12	24	32	90	45	12.100	0.80	4735 12.063
63	14	27	34	90	45	14.100	0.80	4735 14.063
63	16	27	34	95	48	16.100	0.90	4735 16.063
63	18	33	42	95	48	18.100	0.90	4735 18.063
63	20	33	42	100	50	20.100	1.00	4735 20.063
63	25	44	52.5	115	56	25.100	1.00	4735 25.063
63	32	44	52.5	120	60	32.100	1.10	4735 32.063
63	6	21	27	120	36	6.032	0.90	4735 806.063
63	8	21	27	120	36	8.040	1.00	4735 808.063
63	10	24	32	120	40	10.050	1.10	4735 810.063
63	12	24	32	120	45	12.100	1.20	4735 212.063
63	14	27	34	120	45	14.100	1.40	4735 214.063
63	16	27	34	120	48	16.100	1.40	4735 216.063
63	18	33	42	120	48	18.100	1.60	4735 218.063
63	20	33	42	120	50	20.100	1.60	4735 220.063
63	6	21	27	160	36	6.032	0.80	4735 906.063
63	8	21	27	160	36	8.040	0.80	4735 908.063
63	10	24	32	160	40	10.050	0.90	4735 910.063
63	12	24	32	160	45	12.100	0.90	4735 112.063
63	14	27	34	160	45	14.100	1.00	4735 114.063

MLQ 1-channel shrink fit chucks HSK-A for manual tool change

								Article no.	4735
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw no. 4937 ...	kg	Order no.	
63	16	27	34	160	48	16.100	1.00	4735 116.063	
63	18	33	42	160	48	18.100	1.20	4735 118.063	
63	20	33	42	160	50	20.100	1.20	4735 120.063	
63	25	44	52.5	160	56	25.100	1.80	4735 125.063	
63	32	44	52.5	160	60	32.100	1.70	4735 132.063	
80	6	21	27	85	36	6.100	1.30	4735 6.080	
80	8	21	27	85	36	8.100	1.30	4735 8.080	
80	10	24	32	90	40	10.100	1.40	4735 10.080	
80	12	24	32	95	45	12.100	1.40	4735 12.080	
80	14	27	34	95	45	14.100	1.50	4735 14.080	
80	16	27	34	100	48	16.100	1.50	4735 16.080	
80	18	33	42	100	48	18.100	1.70	4735 18.080	
80	20	33	42	105	50	20.100	1.70	4735 20.080	
80	25	44	53	115	56	25.100	2.20	4735 25.080	
80	32	44	53	120	60	32.100	2.10	4735 32.080	
100	6	21	27	85	36	6.100	2.10	4735 6.100	
100	8	21	27	85	36	8.100	2.20	4735 8.100	
100	10	24	32	90	40	10.100	2.30	4735 10.100	
100	12	24	32	95	45	12.100	2.30	4735 12.100	
100	14	27	34	95	45	14.100	2.30	4735 14.100	
100	16	27	34	100	48	16.100	2.30	4735 16.100	
100	18	33	42	100	48	18.100	2.50	4735 18.100	
100	20	33	42	105	50	20.100	2.50	4735 20.100	
100	25	44	53	115	56	25.100	3.00	4735 25.100	
100	32	44	53	120	60	32.100	3.00	4735 32.100	
100	6	21	27	160	36	6.032	2.60	4735 106.100	
100	8	21	27	160	36	8.040	2.50	4735 108.100	
100	10	24	32	160	40	10.050	2.70	4735 110.100	
100	12	24	32	160	45	12.100	2.70	4735 112.100	
100	14	27	34	160	45	14.100	2.80	4735 114.100	
100	16	27	34	160	48	16.100	2.80	4735 116.100	
100	18	33	42	160	48	18.100	3.20	4735 118.100	
100	20	33	42	160	50	20.100	3.10	4735 120.100	
100	25	44	53	160	56	25.100	3.90	4735 125.100	
100	32	44	53	160	60	32.100	3.70	4735 132.100	

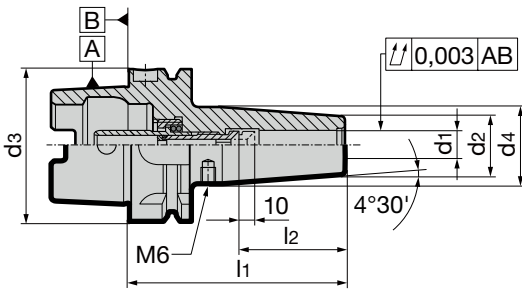
MLQ 1-channel

Product information

- to Gühring MQL standard
- for 1-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- max. deviation f. concentricity 3 µm
- also available in the lengths
l1 = 120 mm (concentricity 4 µm)
and 160 mm (concentricity 5 µm)

Scope of delivery

- incl. MQL adjustment screw with sealing lip
article no. 4937 and MQL coolant supply set
article no. 4939
- special dimensions on request



Article no. **4741**

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw no. 4937 ...	kg	Order no.
32	6	21	25.5	80	36	6.032	0.30	4741 6.032
32	8	21	25.5	80	36	8.032	0.30	4741 8.032
32	10	24	31.7	85	40	10.032	0.30	4741 10.032
32	12	24	32.3	90	45	12.032	0.30	4741 12.032
40	6	21	27	80	36	6.040	0.40	4741 6.040
40	8	21	27	80	36	8.040	0.40	4741 8.040
40	10	24	32	80	40	10.040	0.50	4741 10.040
40	12	24	32	90	45	12.040	0.50	4741 12.040
40	14	27	33.5	90	45	14.040	0.60	4741 14.040
40	16	27	33.5	90	48	16.040	0.50	4741 16.040
50	6	21	27	80	36	6.050	0.60	4741 6.050
50	8	21	27	80	36	8.050	0.60	4741 8.050
50	10	24	32	85	40	10.050	0.70	4741 10.050
50	12	24	32	90	45	12.050	0.70	4741 12.050
50	14	27	34	90	45	14.050	0.70	4741 14.050
50	16	27	34	95	48	16.050	0.70	4741 16.050
50	18	33	41.5	95	48	18.050	0.90	4741 18.050
50	20	33	41.5	100	50	20.050	0.90	4741 20.050
63	6	21	27	80	36	6.100	0.70	4741 6.063
63	8	21	27	80	36	8.100	0.70	4741 8.063
63	10	24	32	85	40	10.100	0.70	4741 10.063
63	12	24	32	90	45	12.100	0.80	4741 12.063
63	14	27	34	90	45	14.100	0.80	4741 14.063
63	16	27	34	95	48	16.100	0.90	4741 16.063
63	18	33	42	95	48	18.100	0.90	4741 18.063
63	20	33	42	100	50	20.100	1.00	4741 20.063
63	25	44	52.5	115	56	25.100	1.00	4741 25.063
63	32	44	52.5	120	60	32.100	1.10	4741 32.063
63	6	21	27	120	36	6.032	0.90	4741 806.063
63	8	21	27	120	36	8.040	1.00	4741 808.063
63	10	24	32	120	40	10.050	1.10	4741 810.063
63	12	24	32	120	45	12.100	1.20	4741 212.063
63	14	27	34	120	45	14.100	1.40	4741 214.063
63	16	27	34	120	48	16.100	1.40	4741 216.063
63	18	33	42	120	48	18.100	1.60	4741 218.063
63	20	33	42	120	50	20.100	1.60	4741 220.063
63	6	21	27	160	36	6.032	0.80	4741 906.063
63	8	21	27	160	36	8.040	0.80	4741 908.063
63	10	24	32	160	40	10.050	0.90	4741 910.063
63	12	24	32	160	45	12.100	0.90	4741 112.063

								Article no.	4741
HSK-A d ₃	for shank Ø d ₁ h ₆ mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw no. 4937 ...	kg	Order no.	
63	14	27	34	160	45	14.100	1.00	4741 114.063	
63	16	27	34	160	48	16.100	1.00	4741 116.063	
63	18	33	42	160	48	18.100	1.20	4741 118.063	
63	20	33	42	160	50	20.100	1.20	4741 120.063	
63	25	44	52.5	160	56	25.100	1.80	4741 125.063	
63	32	44	52.5	160	60	32.100	1.70	4741 132.063	
80	6	21	27	85	36	6.100	1.30	4741 6.080	
80	8	21	27	85	36	8.100	1.30	4741 8.080	
80	10	24	32	90	40	10.100	1.40	4741 10.080	
80	12	24	32	95	45	12.100	1.40	4741 12.080	
80	14	27	34	95	45	14.100	1.50	4741 14.080	
80	16	27	34	100	48	16.100	1.50	4741 16.080	
80	18	33	42	100	48	18.100	1.70	4741 18.080	
80	20	33	42	105	50	20.100	1.70	4741 20.080	
80	25	44	53	115	56	25.100	2.20	4741 25.080	
80	32	44	53	120	60	32.100	2.10	4741 32.080	
100	6	21	27	85	36	6.100	2.10	4741 6.100	
100	8	21	27	85	36	8.100	2.20	4741 8.100	
100	10	24	32	90	40	10.100	2.30	4741 10.100	
100	12	24	32	95	45	12.100	2.30	4741 12.100	
100	14	27	34	95	45	14.100	2.30	4741 14.100	
100	16	27	34	100	48	16.100	2.30	4741 16.100	
100	18	33	42	100	48	18.100	2.50	4741 18.100	
100	20	33	42	105	50	20.100	2.50	4741 20.100	
100	25	44	53	115	56	25.100	3.00	4741 25.100	
100	32	44	53	120	60	32.100	3.00	4741 32.100	
100	6	21	27	160	36	6.032	2.60	4741 106.100	
100	8	21	27	160	36	8.040	2.50	4741 108.100	
100	10	24	32	160	40	10.050	2.70	4741 110.100	
100	12	24	32	160	45	12.100	2.70	4741 112.100	
100	14	27	34	160	45	14.100	2.80	4741 114.100	
100	16	27	34	160	48	16.100	2.80	4741 116.100	
100	18	33	42	160	48	18.100	3.20	4741 118.100	
100	20	33	42	160	50	20.100	3.10	4741 120.100	
100	25	44	53	160	56	25.100	3.90	4741 125.100	
100	32	44	53	160	60	32.100	3.70	4741 132.100	

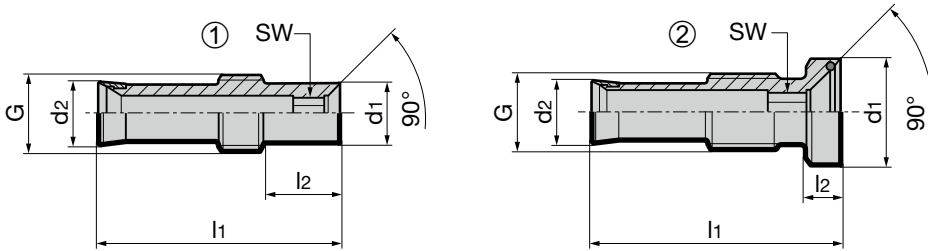
MLQ 1-channel

Product information

- to Gühring MQL standard
- for 1-channel-systems
- for the use of tool shanks to Gühring MQL standard
- gold colour, corrosion protective coating to visually identify the 1-channel system
- the patented face orientated o-ring provides axial force clamping which eliminates concentricity errors
- axial damping from Ø 14 to Ø 32

Scope of delivery

- incl. sealing lip
- MQL key tool for the assembly article no. 4050 to be ordered separately



Article no. **4937**

HSK-A	for shank Ø d1 h6 mm	for d2 mm	l1 mm	l2 mm	G	SW	type	Order no.
32	6	4.0	34.5	2.5	M5x0.8	2	2	4937 6.032
32	8	4.0	34.5	3.0	M7x1	2	2	4937 8.032
32	10	4.0	35.5	3.5	M8x1	2	2	4937 10.032
32	12	4.0	35.5	3.5	M10x1	2	2	4937 12.032
40	6	5.4	34.1	11.0	M7x1	3	1	4937 6.040
40	8	5.4	34.1	3.0	M7x1	3	2	4937 8.040
40	10	5.4	30.1	3.5	M8x1	3	2	4937 10.040
40	12	5.4	35.1	3.5	M10x1	3	2	4937 12.040
40	14	5.4	35.1	4.5	M10x1	3	2	4937 14.040
40	16	5.4	32.1	5.5	M12x1	3	2	4937 16.040
50	6	6.5	31.8	10.0	M8x1	4	1	4937 6.050
50	8	6.5	31.8	3.0	M8x1	4	2	4937 8.050
50	10	6.5	32.8	3.5	M8x1	4	2	4937 10.050
50	12	6.5	32.8	3.5	M10x1	4	2	4937 12.050
50	14	6.5	32.8	4.5	M10x1	4	2	4937 14.050
50	16	6.5	34.8	5.5	M12x1	4	2	4937 16.050
50	18	6.5	34.8	6.5	M12x1	4	2	4937 18.050
50	20	6.5	37.8	6.5	M16x1	4	2	4937 20.050
63/80/100	6	8.0	31.0	10.0	M10x1	4	1	4937 6.100
63/80/100	8	8.0	31.8	10.0	M10x1	4	1	4937 8.100
63/80/100	10	8.0	32.8	3.5	M10x1	4	2	4937 10.100
63/80/100	12	8.0	32.8	3.5	M10x1	5	2	4937 12.100
63/80/100	14	8.0	32.8	4.5	M10x1	5	2	4937 14.100
63/80/100	16	8.0	34.8	5.5	M12x1	5	2	4937 16.100
63/80/100	18	8.0	34.8	6.5	M12x1	5	2	4937 18.100
63/80/100	20	8.0	37.8	6.5	M16x1	5	2	4937 20.100
63/80/100	25	8.0	43.8	10.0	M16x1	5	2	4937 25.100
63/80/100	32	8.0	44.8	14.0	M16x1	5	2	4937 32.100

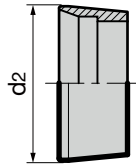
Sealing lips for MQL 1-channel length setting screws

Product information

- sealing lips for MQL 1-channel length setting screws article no. 4937
- article no. 4917 1,140 for module adaptor article no. 4716

Scope of delivery

- packaging unit: 5 pieces



			Article no.	4617
HSK-A	Modul	for d2 mm	Order no.	
32	-	4,0	4617 1.032	
40	-	5,4	4617 1.040	
50	-	6,5	4617 1.050	
63 / 80 / 100	-	8,0	4617 1.100	
-	60 / 70 / 80 / 80 / 100 / 117 / 140	10,5	4617 1.140	

MQL 1-channel

MQL-Key 3000

Product information

- special tool set for the secure assembly of MQL tapered screws for 1- and 2-channel systems
- simplifies the handling when assembling the MQL length setting screws
- prevents damage to the MQL sealing elements
- i.e. to be applied for: MQL 1-channel length setting screws article no. 4937 or MQL 2-channel length setting screws article no. 4621

Scope of delivery

- complete set in case or additional set

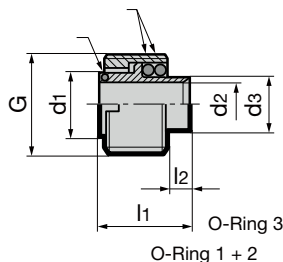


		Article no.	4050
		Order no.	
Case, complete 1-channel basic set		4050 1.000	
2-channel retrofitting set		4050 2.000	

MQL 1-channel coolant supply set HSK-A (filler)

Product information

- for MQL tool holders
(hydraulic chucks and shrink fit chucks)
to company standard
- for 1-channel-systems
- for tool holders with manual tool change
- optimal seal for MQL clamping set



Article no. **4940**

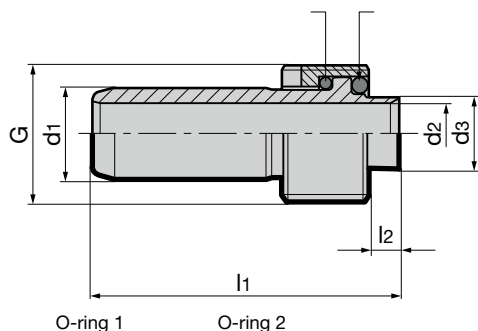
for HSK-A	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	O-ring 1 & 2 Viton 75	O-ring 3 Viton 80	Order no.
32	5.8	4.0	4.8	18.7	12.5	M10x1.0	5.0x1.2	–	4940 10.032
40	7.6	5.4	6.8	13.8	5.5	M12x1.0	7.5x1.5	6.0x0.5	4940 12.040
50	9.6	6.5	7.8	15.8	5.5	M16x1.0	9.0x2.0	7.0x1.0	4940 16.050
63	11.6	8.0	9.7	16.3	4.0	M18x1.0	10.0x2.5	9.0x1.0	4940 18.063
80	13.6	8.0	9.7	18.4	4.0	M20x1.5	13.0x2.0	10.0x1.0	4940 20.080
100	15.6	8.0	11.7	18.4	2.0	M24x1.5	14.0x3.0	12.0x1.0	4940 24.100

MQL 1-channel

MQL 1-channel coolant supply set HSK-A

Product information

- for MQL tool holders
(hydraulic chucks and shrink fit chucks)
to company standard
- for 1-channel-systems
- for tool holders with automatic tool change



Article no. **4939**

for HSK-A	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	O-ring 1 Viton 75	O-ring 2 Viton 75	Order no.
32	6	4.0	4.8	38.5	12.5	M10x1.0	5.0x1.2	5.0x1.2	4939 10.032
40	8	5.4	6.5	35.0	5.5	M12x1.0	7.5x1.5	7.5x1.5	4939 12.040
50	10	6.5	7.5	38.5	5.5	M16x1.0	9.0x2.0	9.0x2.0	4939 16.050
63	12	8.0	9.5	40.5	4.0	M18x1.0	10.0x2.5	10.0x2.0	4939 18.063
80	14	8.0	9.7	44.0	4.0	M20x1.5	13.0x2.0	13.0x2.0	4939 20.080
100	16	8.0	11.5	46.0	2.0	M24x1.5	14.0x3.0	14.0x3.0	4939 24.100

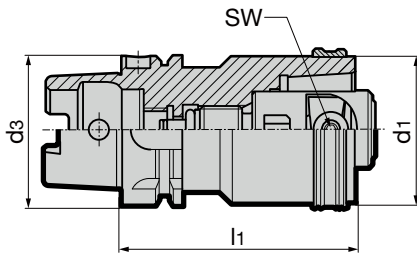
HSK-A/HSK-C extensions with MQL 4 point clamping set

Product information

- MQL suitable
- for 1-channel-systems

Scope of delivery

- incl. MQL 4 point clamping set article no. 4930 and adaptor for extensions
- incl. brass locking ring article no. 4953
- order coolant supply set separately:
 - for automatic tool change article no. 4939
 - for manual tool change article no. 4940



Article no. 4350

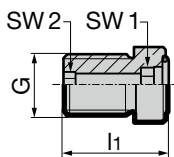
HSK-A/HSK-C d1 / d3	l1 mm	SW	kg	Order no.
32	60	2.5	0.30	4350 60.032
40	80	3.0	0.70	4350 80.040
50	80	4.0	0.90	4350 80.050
50	100	4.0	1.10	4350 100.050
63	100	5.0	1.80	4350 100.063
63	140	5.0	2.30	4350 140.063
80	120	6.0	4.20	4350 120.080
80	160	6.0	5.80	4350 160.080
100	140	8.0	8.00	4350 140.100

MQL 1-channel

Length setting screws for conventional cooling

Product information

- To adapt MQL tool holders to meet the requirements of conventional wet machining. For plain end shanks. The height of screw head compensates the height of MQL taper.
- for MQL HSK-A shrink fit chucks and hydraulic chucks
- for use with shank according to DIN 6535 with plain shank end for conventional cooling
- the patented face orientated o-ring provides axial force clamping which eliminates concentricity errors



Article no. 4941

for HSK-A	clamping- Ø	G	d1 mm	l1 mm	SW	Order no.
40	6	M5	6	15.0	2.5	4941 6.041
40	6	M7x1	6	15.0	2.5	4941 6.040
40	8	M7x1	6	18.0	3.0	4941 8.040
50	6	M8x1	8	14.0	2.5	4941 6.050
50	8	M8x1	7	18.0	3.0	4941 8.050
40 / 50	10	M8x1	10	17.7	4.0	4941 10.050
63/ 80/ 100	6	M10x1	9	22.0	2.5	4941 6.100
63/ 80/ 100	8	M10x1	9	22.0	3.0	4941 8.100
63/ 80/ 100	10	M10x1	10	16.2	4.0	4941 10.100
40/ 50/ 63/ 80/ 100	12	M10x1	10	16.2	5.0	4941 12.100
40/ 50/ 63/ 80/ 100	14	M10x1	10	17.2	5.0	4941 14.100
50/ 63/ 80/ 100	16	M12x1	16	18.2	6.0	4941 16.100
50/ 63/ 80/ 100	18	M12x1	16	19.2	6.0	4941 18.100
50/ 63/ 80/ 100	20	M16x1	16	19.2	8.0	4941 20.100
63/ 80/ 100	25	M16x1	16	22.7	8.0	4941 25.100
63/ 80/ 100	32	M16x1	16	26.7	8.0	4941 32.100

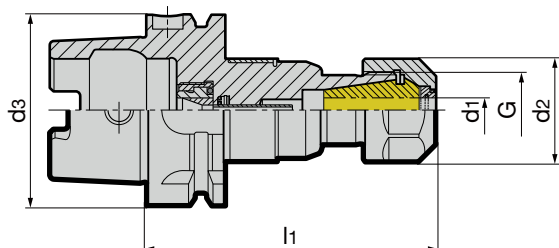
MQL HSK-A synchro tapping chucks for manual tool change

Product information

- for MQL single and double channel systems
- compensate synchronisation errors
- minimal length compensation $\pm 0,15$ mm in tension and compression direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks and increase thread quality and tool life
- length-setting screw allows 2 to 3 mm readjustment
- MQL pressure up to max. 10 bar
- mounted MQL coolant supply pipe
- Gühring MQL identifiable by green coloured ring
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. MQL coolant supply set article no. 4513 (filler) for manual tool change
- Incl. IC/ER clamping nut article no. 4306 (*see torque)
- incl. adjustment key for MQL adjustment screw
- order MQL adjustment screw article no. 4305 separately
- order sealing washer article no. 4335 separately
- order collet article no. 4308 separately
- order chuck spanner article no. 4913 for ER retaining nut separately



Article no. **4298**

HSK-A d ₃	nom. size	for thread	G	d ₁ mm	d ₂ mm	l ₁ mm	torque*	kg	Order no.
63	ER20	M4-M14	M25x1.5	4.0-11	34	95.5	35 Nm	1.00	4298 20.063
63	ER32	M4-M30	M40x1.5	4.0-20	50	109.0	136 Nm	1.50	4298 32.063

MQL 1-channel

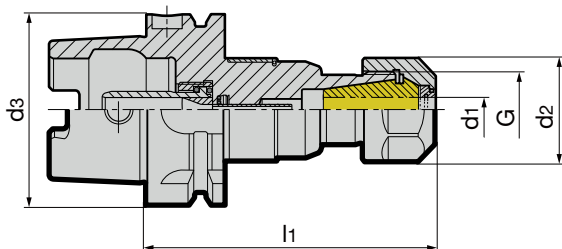
MQL HSK-A synchro tapping chucks for single channel systems for automatic tool change

Product information

- for MQL single channel systems
- compensate synchronisation errors
- minimal length compensation $\pm 0,15$ mm in tension and compression direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks and increase thread quality and tool life
- length-setting screw allows 2 to 3 mm readjustment
- MQL pressure up to max. 10 bar
- mounted MQL coolant supply pipe
- Gühring MQL identifiable by green coloured ring
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. MQL coolant supply set article no. 4508 for automatic tool change
- incl. sealed IC/ER clamping nut article no. 4306 (*see torque)
- incl. adjustment key for MQL adjustment screw
- order MQL adjustment screw article no. 4305 separately
- order sealing washer article no. 4335 separately
- order collet article no. 4308 separately
- order chuck spanner article no. 4913 for ER retaining nut separately



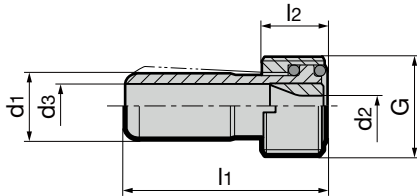
Article no. **4330**

HSK-A d ₃	nom. size	for thread	G	d ₁ mm	d ₂ mm	l ₁ mm	torque*	kg	Order no.
63	ER20	M4-M14	M25x1.5	4.0-11	34	95.5	35 Nm	1.00	4330 20.063
63	ER32	M4-M30	M40x1.5	4.0-20	50	109.0	136 Nm	1.50	4330 32.063
100	ER20	M4-M14	M25x1.5	4.0-11	34	102.0	35 Nm	2.40	4330 20.100
100	ER32	M4-M30	M40x1.5	4.0-20	50	115.5	136 Nm	3.00	4330 32.100

MQL coolant supply set for single channel HSK-A

Product information

- for MQL 1-channel tapping chucks and monolithic holders in accordance with the MQL works standard
- version sim. to DIN 69895
- for MQL 1-channel systems
- for tool holders with automatic tool clamping
- dimensions d_2 and l_1 based on installed condition



Article no. 4508

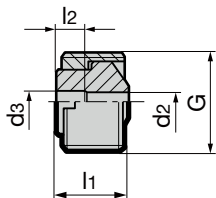
for HSK-A	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	G	Order no.
32	6.00	3.00	4.00	26.00	5.50	M10x1	4508 10.032
40	8.00	3.80	5.40	29.50	7.50	M12x1	4508 12.040
50	10.00	3.80	6.40	33.00	9.50	M16x1	4508 16.050
63	12.00	3.80	8.00	36.50	11.50	M18x1	4508 18.063
80	14.00	3.80	10.00	40.00	13.50	M20x1.5	4508 20.080
100	16.00	3.80	12.00	44.00	15.50	M24x1.5	4508 24.100

MQL 1-channel

MQL coolant supply set HSK-A (filler)

Product information

- for MQL 1-channel tapping chucks and lithic holders in accordance with the MQL works standard
- for internal cooling MQL 1 and 2 channel systems
- for tool holders with manual tool clamping
- optimally sealed for MQL clamping set
- dimensions d_2 and l_1 based on installed condition



Article no. 4513

for HSK-A	d_2 mm	d_3 mm	l_1 mm	l_2 mm	G	Order no.
32	3,00	3,00	6,30	-	M10x1	4513 10.032
40	3,60	4,00	8,30	5,00	M12x1	4513 12.040
50	3,60	4,00	10,30	5,00	M16x1	4513 16.050
50	5,00	5,00	10,30	-	M16x1	4513 16.150
63	3,60	4,00	12,30	5,00	M18x1	4513 18.063
63	6,00	6,00	12,30	-	M18x1	4513 18.163
80	3,60	4,00	14,40	5,00	M20x1,5	4513 20.080
80	8,00	8,00	14,40	-	M20x1,5	4513 20.180
100	3,60	4,00	16,40	5,00	M24x1,5	4513 24.100
100	8,00	8,00	16,40	-	M24x1,5	4513 24.101



Our products for the MQL 2-channel technology are identified by this symbol.

Visual feature of the 2-channel system is the black coloured MQL length setting screw.

MQL 2-channel



MQL coolant supply set
article no. 4623

MQL adjustment screw
article no. 4621



When selecting the tool holders please note: the ratio of cross-section A (mm²) of the supply pipe in the MQL 2-channel supply set to the sum of the cross-sections of the tool coolant duct exits should be maximum 4:1. This achieves quick reaction times when switching on the 2-channel MQL.



MQL 2-channel shrink fit chuck
HSK-A article no. 4614

Minimal dead area

MQL optimised shank end



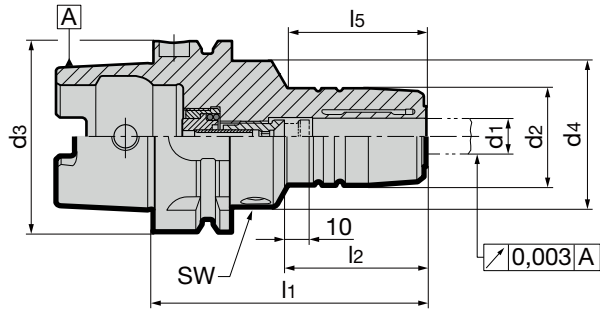
MQL 2-channel hydraulic chucks HSK-A for manual tool change

Product information

- to Gühring MQL standard
- for 2-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- axial length setting

Scope of delivery

- incl. MQL adjustment screw article no.4621 and MQL coolant supply set article no. 4622
- incl. hexagon chuck key article no. 4912
- special dimensions on request



MQL 2-channel

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw no. 4621 ...	incl. filler no. 4622 ...	SW	kg	Article no.	
												4611	Order no.
32	6	2.01	26	40	80	36	29	6.032	12.032	4	0.40	4611	6.032
32	6	4.15	26	40	80	36	29	6.132	12.132	4	0.40	4611	6.132
32	8	2.01	28	40	80	36	29	8.032	12.032	4	0.42	4611	8.032
32	8	4.15	28	40	80	36	29	8.132	12.132	4	0.42	4611	8.132
32	10	2.01	30	40	85	40	35	10.032	12.032	4	0.45	4611	10.032
32	10	4.15	30	40	85	40	35	10.132	12.132	4	0.45	4611	10.132
32	12	2.01	32	40	90	45	40	12.032	12.032	4	0.49	4611	12.032
32	12	4.15	32	40	90	45	40	12.132	12.132	4	0.49	4611	12.132
40	6	2.01	26	33.5	80	36	46	6.040	16.040	4	0.44	4611	6.040
40	6	4.15	26	33.5	80	36	46	6.140	16.140	4	0.44	4611	6.140
40	8	2.01	28	33.5	80	36	46	8.040	16.040	4	0.47	4611	8.040
40	8	4.15	28	33.5	80	36	46	8.140	16.140	4	0.47	4611	8.140
40	10	2.01	30	33.5	80	40	46	10.040	16.040	4	0.49	4611	10.040
40	10	4.15	30	33.5	80	40	46	10.140	16.140	4	0.49	4611	10.140
40	12	2.01	32	33.5	90	45	56	12.040	16.040	4	0.56	4611	12.040
40	12	4.15	32	33.5	90	45	56	12.140	16.140	4	0.56	4611	12.140
40	12	9.08	32	33.5	90	45	56	12.240	16.240	4	0.56	4611	12.240
50	6	2.01	26	40	80	36	38	6.050	10.050	4	0.95	4611	6.050
50	6	4.15	26	40	80	36	38	6.150	10.150	4	0.95	4611	6.150
50	8	2.01	28	40	80	36	38	8.050	10.050	4	0.95	4611	8.050
50	8	4.15	28	40	80	36	38	8.150	10.150	4	0.95	4611	8.150
50	10	2.01	30	40	85	40	44	10.050	10.050	4	0.95	4611	10.050
50	10	4.15	30	40	85	40	44	10.150	10.150	4	0.95	4611	10.150
50	12	2.01	32	40	90	45	49	12.050	18.050	4	0.95	4611	12.050
50	12	4.15	32	40	90	45	49	12.150	20.050	4	0.95	4611	12.150
50	12	9.08	32	40	90	45	49	12.250	20.150	4	0.95	4611	12.250
50	14	2.01	34	40	90	45	49	14.050	18.050	4	0.95	4611	14.050
50	14	4.15	34	40	90	45	49	14.150	20.050	4	0.95	4611	14.150
50	14	9.08	34	40	90	45	49	14.250	20.150	4	0.95	4611	14.250
50	16	2.01	38	53	95	48	36	16.050	18.050	5	1.25	4611	16.050
50	16	4.15	38	53	95	48	36	16.150	20.050	5	1.25	4611	16.150
50	16	9.08	38	53	95	48	36	16.250	20.150	5	1.25	4611	16.250
50	18	2.01	40	57	95	48	36	18.050	18.050	5	1.25	4611	18.050
50	18	4.15	40	57	95	48	36	18.150	20.050	5	1.25	4611	18.150
50	18	9.08	40	57	95	48	36	18.250	20.150	5	1.25	4611	18.250
50	20	4.15	42	60	100	50	39	20.050	20.050	5	1.25	4611	20.050
50	20	9.08	42	60	100	50	39	20.150	20.150	5	1.25	4611	20.150
50	20	16.62	42	60	100	50	39	20.250	20.250	5	1.25	4611	20.250
63	6	2.01	26	50	80	36	34.5	6.100	10.063	5	1.25	4611	6.063
63	6	4.15	26	50	80	36	34.5	6.101	10.163	5	1.25	4611	6.163
63	8	2.01	28	50	80	36	35.5	8.100	10.063	5	1.25	4611	8.063
63	8	4.15	28	50	80	36	35.5	8.101	10.163	5	1.25	4611	8.163
63	10	2.01	30	50	85	40	39	10.100	10.063	5	1.25	4611	10.063
63	10	4.15	30	50	85	40	39	10.101	10.163	5	1.25	4611	10.163
63	12	2.01	32	50	90	45	45	12.100	18.063	5	1.35	4611	12.063
63	12	4.15	32	50	90	45	45	12.101	20.063	5	1.35	4611	12.163



MQL 2-channel

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw no. 4621 ...	incl. filler no. 4622 ...	Article no.		4611	
										SW	kg	Order no.	
63	12	9.08	32	50	90	45	45	12.102	20.163	5	1.35	4611	12.263
63	14	2.01	34	50	90	45	46	14.100	18.063	5	1.35	4611	14.063
63	14	4.15	34	50	90	45	46	14.101	20.063	5	1.35	4611	14.163
63	14	9.08	34	50	90	45	46	14.102	20.163	5	1.35	4611	14.263
63	16	2.01	38	50	95	48	51	16.100	18.063	5	1.45	4611	16.063
63	16	4.15	38	50	95	48	51	16.101	20.063	5	1.45	4611	16.163
63	16	9.08	38	50	95	48	51	16.102	20.163	5	1.45	4611	16.263
63	18	2.01	40	50	95	48	52	18.100	18.063	5	1.45	4611	18.063
63	18	4.15	40	50	95	48	52	18.101	20.063	5	1.45	4611	18.163
63	18	9.08	40	50	95	48	52	18.102	20.163	5	1.45	4611	18.263
63	20	4.15	42	50	100	50	58	20.100	20.063	5	1.45	4611	20.063
63	20	9.08	42	50	100	50	58	20.101	20.163	5	1.45	4611	20.163
63	20	16.62	42	50	100	50	58	20.102	20.263	5	1.45	4611	20.263
63	25	4.15	57	63	115	56	50	25.100	32.063	6	2.45	4611	25.063
63	25	9.08	57	63	115	56	50	25.101	32.163	6	2.45	4611	25.163
63	25	16.62	57	63	115	56	50	25.102	32.263	6	2.45	4611	25.263
63	32	4.15	64	75	120	60	58	32.100	32.063	6	3.10	4611	32.063
63	32	9.08	64	75	120	60	58	32.101	32.163	6	3.10	4611	32.163
63	32	16.62	64	75	120	60	58	32.102	32.263	6	3.10	4611	32.263
80	6	2.01	26	50	85	36	39	6.100	10.080	5	1.5	4611	6.080
80	6	4.15	26	50	85	36	39	6.101	10.180	5	1.49	4611	6.180
80	8	2.01	28	50	85	36	39	8.100	10.080	5	1.52	4611	8.080
80	8	4.15	28	50	85	36	39	8.101	10.180	5	1.52	4611	8.180
80	10	2.01	30	50	90	40	45	10.100	10.080	5	1.56	4611	10.080
80	10	4.15	30	50	90	40	45	10.101	10.180	5	1.56	4611	10.180
80	12	2.01	32	50	95	45	50	12.100	18.080	5	1.61	4611	12.080
80	12	4.15	32	50	95	45	50	12.101	32.080	5	1.61	4611	12.180
80	12	9.08	32	50	95	45	50	12.102	32.180	5	1.6	4611	12.280
80	14	2.01	34	50	95	45	50	14.100	18.080	5	1.64	4611	14.080
80	14	4.15	34	50	95	45	50	14.101	32.080	5	1.63	4611	14.180
80	14	9.08	34	50	95	45	50	14.102	32.180	5	1.63	4611	14.280
80	16	2.01	38	50	100	48	56	16.100	18.080	5	1.72	4611	16.080
80	16	4.15	38	50	100	48	56	16.101	32.080	5	1.72	4611	16.180
80	16	9.08	38	50	100	48	56	16.102	32.180	5	1.72	4611	16.280
80	18	2.01	40	50	100	48	56	18.100	18.080	5	1.76	4611	18.080
80	18	4.15	40	50	100	48	56	18.101	32.080	5	1.76	4611	18.180
80	18	9.08	40	50	100	48	56	18.102	32.180	5	1.75	4611	18.280
80	20	4.15	42	50	105	50	62	20.100	32.080	5	1.82	4611	20.080
80	20	9.08	42	50	105	50	62	20.101	32.180	5	1.82	4611	20.180
80	20	16.62	42	50	105	50	62	20.102	32.280	5	1.83	4611	20.280
80	25	4.15	57	63	115	56	70	25.100	32.080	6	2.6	4611	25.080
80	25	9.08	57	63	115	56	70	25.101	32.180	6	2.6	4611	25.180
80	25	16.62	57	63	115	56	70	25.102	32.280	6	2.6	4611	25.280
80	32	4.15	64	75	120	60	58	32.100	32.080	6	3.11	4611	32.080
80	32	9.08	64	75	120	60	58	32.101	32.180	6	3.11	4611	32.180
80	32	16.62	64	75	120	60	58	32.102	32.280	6	3.11	4611	32.280
100	6	2.01	26	50	85	36	36	6.100	10.100	5	2.60	4611	6.100
100	6	4.15	26	50	85	36	36	6.101	10.101	5	2.60	4611	6.101
100	8	2.01	28	50	85	36	36	8.100	10.100	5	2.60	4611	8.100
100	8	4.15	28	50	85	36	36	8.101	10.101	5	2.60	4611	8.101
100	10	2.01	30	50	90	40	42	10.100	10.100	5	2.60	4611	10.100
100	10	4.15	30	50	90	40	42	10.101	10.101	5	2.60	4611	10.101
100	12	2.01	32	50	95	45	47	12.100	18.100	5	2.65	4611	12.100
100	12	4.15	32	50	95	45	47	12.101	32.100	5	2.65	4611	12.101
100	12	9.08	32	50	95	45	47	12.102	32.101	5	2.65	4611	12.102
100	14	2.01	34	50	95	45	47	14.100	18.100	5	2.65	4611	14.100
100	14	4.15	34	50	95	45	47	14.101	32.100	5	2.65	4611	14.101
100	14	9.08	34	50	95	45	47	14.102	32.101	5	2.65	4611	14.102
100	16	2.01	38	50	100	48	53	16.100	18.100	5	2.85	4611	16.100
100	16	4.15	38	50	100	48	53	16.101	32.100	5	2.85	4611	16.101
100	16	9.08	38	50	100	48	53	16.102	32.101	5	2.85	4611	16.102
100	18	2.01	40	50	100	48	53	18.100	18.100	5	2.85	4611	18.100
100	18	4.15	40	50	100	48	53	18.101	32.100	5	2.85	4611	18.101
100	18	9.08	40	50	100	48	53	18.102	32.101	5	2.85	4611	18.102
100	20	4.15	42	50	105	50	59	20.100	32.100	5	3.35	4611	20.100
100	20	9.08	42	50	105	50	59	20.101	32.101	5	3.35	4611	20.101
100	20	16.62	42	50	105	50	59	20.102	32.102	5	3.35	4611	20.102
100	25	4.15	57	63	115	56	67	25.100	32.100	6	3.50	4611	25.100
100	25	9.08	57	63	115	56	67	25.101	32.101	6	3.50	4611	25.101
100	25	16.62	57	63	115	56	67	25.102	32.102	6	3.50	4611	25.102
100	32	4.15	64	75	120	60	72	32.100	32.100	6	3.95	4611	32.100
100	32	9.08	64	75	120	60	72	32.101	32.101	6	3.95	4611	32.101
100	32	16.62	64	75	120	60	72	32.102	32.102	6	3.95	4611	32.102

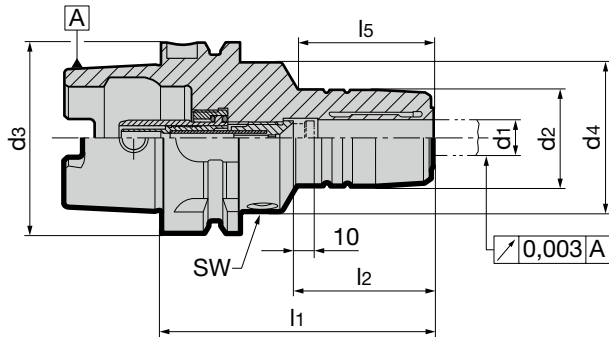
MQL 2-channel hydraulic chucks HSK-A for automatic tool change

Product information

- to Gühring MQL standard
- for 2-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- axial length setting

Scope of delivery

- incl. MQL adjustment screw with sealing lip
article no. 4621 and MQL coolant supply set
article no. 4623
- incl. hexagon chuck key article no. 4912
- special dimensions on request



HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw no. 4621 ...	incl. filler no. 4623 ...	SW	kg	Article no.	4612
												Order no.	
32	6	2.01	26	40	80	36	29	6.032	12.032	4	0.41		4612 6.032
32	6	4.15	26	40	80	36	29	6.132	12.132	4	0.41		4612 6.132
32	8	2.01	28	40	80	36	29	8.032	12.032	4	0.42		4612 8.032
32	8	4.15	28	40	80	36	29	8.132	12.132	4	0.42		4612 8.132
32	10	2.01	30	40	85	40	35	10.032	12.032	4	0.45		4612 10.032
32	10	4.15	30	40	85	40	35	10.132	12.132	4	0.45		4612 10.132
32	12	2.01	32	40	90	45	40	12.032	12.032	4	0.49		4612 12.032
32	12	4.15	32	40	90	45	40	12.132	12.132	4	0.49		4612 12.132
40	6	2.01	26	33.5	80	36	46	6.040	16.040	4	0.45		4612 6.040
40	6	4.15	26	33.5	80	36	46	6.140	16.140	4	0.45		4612 6.140
40	8	2.01	28	33.5	80	36	46	8.040	16.040	4	0.47		4612 8.040
40	8	4.15	28	33.5	80	36	46	8.140	16.140	4	0.47		4612 8.140
40	10	2.01	30	33.5	80	40	46	10.040	16.040	4	0.49		4612 10.040
40	10	4.15	30	33.5	80	40	46	10.140	16.140	4	0.49		4612 10.140
40	12	2.01	32	33.5	90	45	56	12.040	16.040	4	0.57		4612 12.040
40	12	4.15	32	33.5	90	45	56	12.140	16.140	4	0.57		4612 12.140
40	12	9.08	32	33.5	90	45	56	12.240	16.240	4	0.57		4612 12.240
50	6	2.01	26	40	80	36	38	6.050	10.050	4	0.95		4612 6.050
50	6	4.15	26	40	80	36	38	6.150	10.150	4	0.95		4612 6.150
50	8	2.01	28	40	80	36	38	8.050	10.050	4	0.95		4612 8.050
50	8	4.15	28	40	80	36	38	8.150	10.150	4	0.95		4612 8.150
50	10	2.01	30	40	85	40	44	10.050	10.050	4	0.95		4612 10.050
50	10	4.15	30	40	85	40	44	10.150	10.150	4	0.95		4612 10.150
50	12	2.01	32	40	90	45	49	12.050	18.050	4	0.95		4612 12.050
50	12	4.15	32	40	90	45	49	12.150	20.050	4	0.95		4612 12.150
50	12	9.08	32	40	90	45	49	12.250	20.150	4	0.95		4612 12.250
50	14	2.01	34	40	90	45	49	14.050	18.050	4	0.95		4612 14.050
50	14	4.15	34	40	90	45	49	14.150	20.050	4	0.95		4612 14.150
50	14	9.08	34	40	90	45	49	14.250	20.150	4	0.95		4612 14.250
50	16	2.01	38	53	95	48	36	16.050	18.050	5	1.25		4612 16.050
50	16	4.15	38	53	95	48	36	16.150	20.050	5	1.25		4612 16.150
50	16	9.08	38	53	95	48	36	16.250	20.150	5	1.25		4612 16.250
50	18	2.01	40	57	95	48	36	18.050	18.050	5	1.25		4612 18.050
50	18	4.15	40	57	95	48	36	18.150	20.050	5	1.25		4612 18.150
50	18	9.08	40	57	95	48	36	18.250	20.150	5	1.25		4612 18.250
50	20	4.15	42	60	100	50	39	20.050	20.050	5	1.25		4612 20.050
50	20	9.08	42	60	100	50	39	20.150	20.150	5	1.25		4612 20.150
50	20	16.62	42	60	100	50	39	20.250	20.250	5	1.25		4612 20.250
63	6	2.01	26	50	80	36	34.5	6.100	10.063	5	1.25		4612 6.063
63	6	4.15	26	50	80	36	34.5	6.101	10.163	5	1.25		4612 6.163
63	8	2.01	28	50	80	36	35.5	8.100	10.063	5	1.25		4612 8.063
63	8	4.15	28	50	80	36	35.5	8.101	10.163	5	1.25		4612 8.163
63	10	2.01	30	50	85	40	39	10.100	10.063	5	1.25		4612 10.063
63	10	4.15	30	50	85	40	39	10.101	10.163	5	1.25		4612 10.163
63	12	2.01	32	50	90	45	45	12.100	18.063	5	1.35		4612 12.063
63	12	4.15	32	50	90	45	45	12.101	20.063	5	1.35		4612 12.163
63	12	9.08	32	50	90	45	45	12.102	20.163	5	1.35		4612 12.263
63	14	2.01	34	50	90	45	46	14.100	18.063	5	1.35		4612 14.063

MQL 2-channel hydraulic chucks HSK-A for automatic tool change



MQL 2-channel

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw no. 4621 ...	incl. filler no. 4623 ...	Article no.		4612
										SW	kg	Order no.
63	14	4.15	34	50	90	45	46	14.101	20.063	5	1.35	4612 14.163
63	14	9.08	34	50	90	45	46	14.102	20.163	5	1.35	4612 14.263
63	16	2.01	38	50	95	48	51	16.100	18.063	5	1.45	4612 16.063
63	16	4.15	38	50	95	48	51	16.101	20.063	5	1.45	4612 16.163
63	16	9.08	38	50	95	48	51	16.102	20.163	5	1.45	4612 16.263
63	18	2.01	40	50	95	48	52	18.100	18.063	5	1.45	4612 18.063
63	18	4.15	40	50	95	48	52	18.101	20.063	5	1.45	4612 18.163
63	18	9.08	40	50	95	48	52	18.102	20.163	5	1.45	4612 18.263
63	20	4.15	42	50	100	50	58	20.100	20.063	5	1.45	4612 20.063
63	20	9.08	42	50	100	50	58	20.101	20.163	5	1.45	4612 20.163
63	20	16.62	42	50	100	50	58	20.102	20.263	5	1.45	4612 20.263
63	25	4.15	57	63	115	56	50	25.100	32.063	6	2.45	4612 25.063
63	25	9.08	57	63	115	56	50	25.101	32.163	6	2.45	4612 25.163
63	25	16.62	57	63	115	56	50	25.102	32.263	6	2.45	4612 25.263
63	32	4.15	64	75	120	60	58	32.100	32.063	6	3.10	4612 32.063
63	32	9.08	64	75	120	60	58	32.101	32.163	6	3.10	4612 32.163
63	32	16.62	64	75	120	60	58	32.102	32.263	6	3.10	4612 32.263
80	6	2.01	26	50	85	36	39	6.100	10.080	5	1.52	4612 6.080
80	6	4.15	26	50	85	36	39	6.101	10.180	5	1.52	4612 6.180
80	8	2.01	28	50	85	36	39	8.100	10.080	5	1.54	4612 8.080
80	8	4.15	28	50	85	36	39	8.101	10.180	5	1.54	4612 8.180
80	10	2.01	30	50	90	40	45	10.100	10.080	5	1.58	4612 10.080
80	10	4.15	30	50	90	40	45	10.101	10.180	5	1.58	4612 10.180
80	12	2.01	32	50	95	45	50	12.100	18.080	5	1.63	4612 12.080
80	12	4.15	32	50	95	45	50	12.101	32.080	5	1.63	4612 12.180
80	12	9.08	32	50	95	45	50	12.102	32.180	5	1.63	4612 12.280
80	14	2.01	34	50	95	45	50	14.100	18.080	5	1.66	4612 14.080
80	14	4.15	34	50	95	45	50	14.101	32.080	5	1.66	4612 14.180
80	14	9.08	34	50	95	45	50	14.102	32.180	5	1.65	4612 14.280
80	16	2.01	38	50	100	48	56	16.100	18.080	5	1.75	4612 16.080
80	16	4.15	38	50	100	48	56	16.101	32.080	5	1.74	4612 16.180
80	16	9.08	38	50	100	48	56	16.102	32.180	5	1.74	4612 16.280
80	18	2.01	40	50	100	48	56	18.100	18.080	5	1.78	4612 18.080
80	18	4.15	40	50	100	48	56	18.101	32.080	5	1.78	4612 18.180
80	18	9.08	40	50	100	48	56	18.102	32.180	5	1.77	4612 18.280
80	20	4.15	42	50	105	50	62	20.100	32.080	5	1.85	4612 20.080
80	20	9.08	42	50	105	50	62	20.101	32.180	5	1.84	4612 20.180
80	20	16.62	42	50	105	50	62	20.102	32.280	5	1.84	4612 20.280
80	25	4.15	57	63	115	56	70	25.100	32.080	6	2.62	4612 25.080
80	25	9.08	57	63	115	56	70	25.101	32.180	6	2.62	4612 25.180
80	25	16.62	57	63	115	56	70	25.102	32.280	6	2.62	4612 25.280
80	32	4.15	64	75	120	60	58	32.100	32.080	6	3.13	4612 32.080
80	32	9.08	64	75	120	60	58	32.101	32.180	6	3.13	4612 32.180
80	32	16.62	64	75	120	60	58	32.102	32.280	6	3.13	4612 32.280
100	6	2.01	26	50	85	36	36	6.100	10.100	5	2.60	4612 6.100
100	6	4.15	26	50	85	36	36	6.101	10.101	5	2.60	4612 6.101
100	8	2.01	28	50	85	36	36	8.100	10.100	5	2.60	4612 8.100
100	8	4.15	28	50	85	36	36	8.101	10.101	5	2.60	4612 8.101
100	10	2.01	30	50	90	40	42	10.100	10.100	5	2.60	4612 10.100
100	10	4.15	30	50	90	40	42	10.101	10.101	5	2.60	4612 10.101
100	12	2.01	32	50	95	45	47	12.100	18.100	5	2.65	4612 12.100
100	12	4.15	32	50	95	45	47	12.101	32.100	5	2.65	4612 12.101
100	12	9.08	32	50	95	45	47	12.102	32.101	5	2.65	4612 12.102
100	14	2.01	34	50	95	45	47	14.100	18.100	5	2.65	4612 14.100
100	14	4.15	34	50	95	45	47	14.101	32.100	5	2.65	4612 14.101
100	14	9.08	34	50	95	45	47	14.102	32.101	5	2.65	4612 14.102
100	16	2.01	38	50	100	48	53	16.100	18.100	5	2.85	4612 16.100
100	16	4.15	38	50	100	48	53	16.101	32.100	5	2.85	4612 16.101
100	16	9.08	38	50	100	48	53	16.102	32.101	5	2.85	4612 16.102
100	18	2.01	40	50	100	48	53	18.100	18.100	5	2.85	4612 18.100
100	18	4.15	40	50	100	48	53	18.101	32.100	5	2.85	4612 18.101
100	18	9.08	40	50	100	48	53	18.102	32.101	5	2.85	4612 18.102
100	20	4.15	42	50	105	50	59	20.100	32.100	5	3.35	4612 20.100
100	20	9.08	42	50	105	50	59	20.101	32.101	5	3.35	4612 20.101
100	20	16.62	42	50	105	50	59	20.102	32.102	5	3.35	4612 20.102
100	25	4.15	57	63	115	56	67	25.100	32.100	6	3.50	4612 25.100
100	25	9.08	57	63	115	56	67	25.101	32.101	6	3.50	4612 25.101
100	25	16.62	57	63	115	56	67	25.102	32.102	6	3.50	4612 25.102
100	32	4.15	64	75	120	60	72	32.100	32.100	6	3.95	4612 32.100
100	32	9.08	64	75	120	60	72	32.101	32.101	6	3.95	4612 32.101
100	32	16.62	64	75	120	60	72	32.102	32.102	6	3.95	4612 32.102

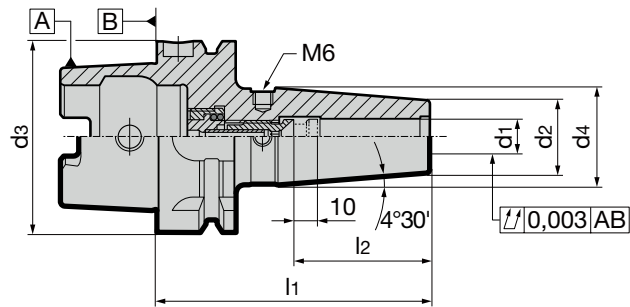
MQL 2-channel shrink fit chucks HSK-A for manual tool change

Product information

- to Gühring MQL standard
- for 2-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- also available in the lengths
l1 = 120 mm (concentricity 4 µm)
and 160 mm (concentricity 5 µm)

Scope of delivery

- incl. MQL adjustment screw article no. 4621
and MQL coolant supply set article no. 4622
- special dimensions on request



MQL 2-channel

										Article no.	4613	
												Order no.
HSK-A d3	for shank Ø d1 h6 mm	A mm ²	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw no. 4621 ...	incl. filler no. 4622 ...	kg			
32	6	2.01	21	25.5	80	36	6.032	12.032	0.30		4613 6.032	
32	6	4.15	21	25.5	80	36	6.132	12.132	0.30		4613 6.132	
32	8	2.01	21	25.5	80	36	8.032	12.032	0.30		4613 8.032	
32	8	4.15	21	25.5	80	36	8.132	12.132	0.30		4613 8.132	
32	10	2.01	24	31.7	85	40	10.032	12.032	0.30		4613 10.032	
32	10	4.15	24	31.7	85	40	10.132	12.132	0.30		4613 10.132	
32	12	2.01	24	32.3	90	45	12.032	12.032	0.30		4613 12.032	
32	12	4.15	24	32.3	90	45	12.132	12.132	0.30		4613 12.132	
40	6	2.01	21	27	80	36	6.040	16.040	0.40		4613 6.040	
40	6	4.15	21	27	80	36	6.140	16.140	0.40		4613 6.140	
40	8	2.01	21	27	80	36	8.040	16.040	0.40		4613 8.040	
40	8	4.15	21	27	80	36	8.140	16.140	0.40		4613 8.140	
40	10	2.01	24	32	80	40	10.040	16.040	0.50		4613 10.040	
40	10	4.15	24	32	80	40	10.140	16.140	0.50		4613 10.140	
40	12	2.01	24	32	90	45	12.040	16.040	0.50		4613 12.040	
40	12	4.15	24	32	90	45	12.140	16.140	0.50		4613 12.140	
40	12	9.08	24	32	90	45	12.240	16.240	0.50		4613 12.240	
40	14	2.01	27	33.5	90	45	14.040	16.040	0.60		4613 14.040	
40	14	4.15	27	33.5	90	45	14.140	16.140	0.60		4613 14.140	
40	14	9.08	27	33.5	90	45	14.240	16.240	0.60		4613 14.240	
40	16	2.01	27	33.5	90	48	16.040	16.040	0.50		4613 16.040	
40	16	4.15	27	33.5	90	48	16.140	16.140	0.50		4613 16.140	
40	16	9.08	27	33.5	90	48	16.240	16.240	0.50		4613 16.240	
50	6	2.01	21	27	80	36	6.050	10.050	0.60		4613 6.050	
50	6	4.15	21	27	80	36	6.150	10.150	0.60		4613 6.150	
50	8	2.01	21	27	80	36	8.050	10.050	0.60		4613 8.050	
50	8	4.15	21	27	80	36	8.150	10.150	0.60		4613 8.150	
50	10	2.01	24	32	85	40	10.050	10.050	0.70		4613 10.050	
50	10	4.15	24	32	85	40	10.150	10.150	0.70		4613 10.150	
50	12	2.01	24	32	90	45	12.050	18.050	0.70		4613 12.050	
50	12	4.15	24	32	90	45	12.150	20.050	0.70		4613 12.150	
50	12	9.08	24	32	90	45	12.250	20.150	0.70		4613 12.250	
50	14	2.01	27	34	90	45	14.050	18.050	0.70		4613 14.050	
50	14	4.15	27	34	90	45	14.150	20.050	0.70		4613 14.150	
50	14	9.08	27	34	90	45	14.250	20.150	0.70		4613 14.250	
50	16	2.01	27	34	95	48	16.050	18.050	0.70		4613 16.050	
50	16	4.15	27	34	95	48	16.150	20.050	0.70		4613 16.150	
50	16	9.08	27	34	95	48	16.250	20.150	0.70		4613 16.250	
50	18	2.01	33	41.5	95	48	18.050	18.050	0.90		4613 18.050	
50	18	4.15	33	41.5	95	48	18.150	20.050	0.90		4613 18.150	
50	18	9.08	33	41.5	95	48	18.250	20.150	0.90		4613 18.250	
50	20	4.15	33	41.5	100	50	20.050	20.050	0.90		4613 20.050	
50	20	9.08	33	41.5	100	50	20.150	20.150	0.90		4613 20.150	
50	20	16.62	33	41.5	100	50	20.250	20.250	0.90		4613 20.250	
63	6	2.01	21	27	80	36	6.100	10.063	0.70		4613 6.063	
63	6	4.15	21	27	80	36	6.101	10.163	0.70		4613 6.163	

MQL 2-channel shrink fit chucks HSK-A for manual tool change

MQL 2-channel

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw no. 4621 ...	incl. filler no. 4622 ...	kg	Article no.	4613
											Order no.
63	8	2.01	21	27	80	36	8.100	10.063	0.70		4613 8.063
63	8	4.15	21	27	80	36	8.101	10.163	0.70		4613 8.163
63	10	2.01	24	32	85	40	10.100	10.063	0.70		4613 10.063
63	10	4.15	24	32	85	40	10.101	10.163	0.70		4613 10.163
63	12	2.01	24	32	90	45	12.100	18.063	0.80		4613 12.063
63	12	4.15	24	32	90	45	12.101	20.063	0.80		4613 12.163
63	12	9.08	24	32	90	45	12.102	20.163	0.80		4613 12.263
63	14	2.01	27	34	90	45	14.100	18.063	0.80		4613 14.063
63	14	4.15	27	34	90	45	14.101	20.063	0.80		4613 14.163
63	14	9.08	27	34	90	45	14.102	20.163	0.80		4613 14.263
63	16	2.01	27	34	95	48	16.100	18.063	0.90		4613 16.063
63	16	4.15	27	34	95	48	16.101	20.063	0.90		4613 16.163
63	16	9.08	27	34	95	48	16.102	20.163	0.90		4613 16.263
63	18	2.01	33	42	95	48	18.100	18.063	0.90		4613 18.063
63	18	4.15	33	42	95	48	18.101	20.063	0.90		4613 18.163
63	18	9.08	33	42	95	48	18.102	20.163	0.90		4613 18.263
63	20	4.15	33	42	100	50	20.100	20.063	1.00		4613 20.063
63	20	9.08	33	42	100	50	20.101	20.163	1.00		4613 20.163
63	20	16.62	33	42	100	50	20.102	20.263	1.00		4613 20.263
63	25	4.15	44	52.5	115	56	25.100	32.063	1.00		4613 25.063
63	25	9.08	44	52.5	115	56	25.101	32.163	1.00		4613 25.163
63	25	16.62	44	52.5	115	56	25.102	32.263	1.00		4613 25.263
63	32	4.15	44	52.5	120	60	32.100	32.063	1.10		4613 32.063
63	32	9.08	44	52.5	120	60	32.101	32.163	1.10		4613 32.163
63	32	16.62	44	52.5	120	60	32.102	32.263	1.10		4613 32.263
63	6	2.01	21	27	120	36	6.032	208.063	0.90		4613 206.063
63	6	4.15	21	27	120	36	6.132	208.163	0.90		4613 206.163
63	8	2.01	21	27	120	36	8.040	208.063	1.00		4613 208.063
63	8	4.15	21	27	120	36	8.140	208.163	1.00		4613 208.163
63	10	2.01	24	32	120	40	10.050	210.063	1.10		4613 210.063
63	10	4.15	24	32	120	40	10.150	210.063	1.10		4613 210.163
63	12	2.01	24	32	120	45	12.100	214.063	1.20		4613 212.063
63	12	4.15	24	32	120	45	12.101	214.163	1.20		4613 212.163
63	12	9.08	24	32	120	45	12.102	214.263	1.20		4613 212.263
63	14	2.01	27	34	120	45	14.100	214.063	1.20		4613 214.063
63	14	4.15	27	34	120	45	14.101	214.163	1.20		4613 214.163
63	14	9.08	27	34	120	45	14.102	214.263	1.20		4613 214.263
63	16	2.01	27	34	120	48	16.100	218.063	1.20		4613 216.063
63	16	4.15	27	34	120	48	16.101	218.163	1.20		4613 216.163
63	16	9.08	27	34	120	48	16.102	218.263	1.20		4613 216.263
63	18	2.01	33	42	120	48	18.100	218.063	1.40		4613 218.063
63	18	4.15	33	42	120	48	18.101	218.163	1.40		4613 218.163
63	18	9.08	33	42	120	48	18.102	218.263	1.40		4613 218.263
63	20	4.15	33	42	120	50	20.100	220.063	1.40		4613 220.063
63	20	9.08	33	42	120	50	20.101	220.163	1.40		4613 220.163
63	20	16.62	33	42	120	50	20.102	220.263	1.40		4613 220.263
63	6	2.01	21	27	160	36	6.032	108.063	0.80		4613 106.063
63	6	4.15	21	27	160	36	6.132	108.163	0.80		4613 106.163
63	8	2.01	21	27	160	36	8.040	108.063	0.80		4613 108.063
63	8	4.15	21	27	160	36	8.140	108.163	0.80		4613 108.163
63	10	2.01	24	32	160	40	10.050	110.063	0.90		4613 110.063
63	10	4.15	24	32	160	40	10.150	110.163	0.90		4613 110.163
63	12	2.01	24	32	160	45	12.100	114.063	0.90		4613 112.063
63	12	4.15	24	32	160	45	12.101	114.163	0.90		4613 112.163
63	12	9.08	24	32	160	45	12.102	114.263	0.90		4613 112.263
63	14	2.01	27	34	160	45	14.100	114.063	1.00		4613 114.063
63	14	4.15	27	34	160	45	14.101	114.163	1.00		4613 114.163
63	14	9.08	27	34	160	45	14.102	114.263	1.00		4613 114.263
63	16	2.01	27	34	160	48	16.100	118.063	1.00		4613 116.063
63	16	4.15	27	34	160	48	16.101	118.163	1.00		4613 116.163
63	16	9.08	27	34	160	48	16.102	118.263	1.00		4613 116.263
63	18	2.01	33	42	160	48	18.100	118.063	1.20		4613 118.063
63	18	4.15	33	42	160	48	18.101	118.163	1.20		4613 118.163
63	18	9.08	33	42	160	48	18.102	118.263	1.20		4613 118.263
63	20	4.15	33	42	160	50	20.100	120.063	1.20		4613 120.063
63	20	9.08	33	42	160	50	20.101	120.163	1.20		4613 120.163
63	20	16.62	33	42	160	50	20.102	120.263	1.20		4613 120.263
63	25	4.15	44	52.5	160	56	25.100	125.063	1.80		4613 125.063
63	25	9.08	44	52.5	160	56	25.101	125.163	1.80		4613 125.163

MQL 2-channel shrink fit chucks HSK-A for manual tool change

HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	incl. setting screw no. 4621 ...	incl. filler no. 4622 ...	kg	Article no.	4613
											Order no.
63	25	16.62	44	52.5	160	56	25.102	125.263	1.80		4613 125.263
63	32	4.15	44	52.5	160	60	32.100	132.063	1.70		4613 132.063
63	32	9.08	44	52.5	160	60	32.101	132.163	1.70		4613 132.163
63	32	16.62	44	52.5	160	60	32.102	132.263	1.70		4613 132.263
80	6	2.01	21	27	85	36	6.100	10.080	1.30		4613 6.080
80	6	4.15	21	27	85	36	6.101	10.180	1.30		4613 6.180
80	8	2.01	21	27	85	36	8.100	10.080	1.30		4613 8.080
80	8	4.15	21	27	85	36	8.101	10.180	1.30		4613 8.180
80	10	2.01	24	32	90	40	10.100	10.080	1.40		4613 10.080
80	10	4.15	24	32	90	40	10.101	10.180	1.40		4613 10.180
80	12	2.01	24	32	95	45	12.100	18.080	1.40		4613 12.080
80	12	4.15	24	32	95	45	12.101	32.080	1.40		4613 12.180
80	12	9.08	24	32	95	45	12.102	32.180	1.40		4613 12.280
80	14	2.01	27	34	95	45	14.100	18.080	1.50		4613 14.080
80	14	4.15	27	34	95	45	14.101	32.080	1.50		4613 14.180
80	14	9.08	27	34	95	45	14.102	32.180	1.50		4613 14.280
80	16	2.01	27	34	100	48	16.100	18.080	1.50		4613 16.080
80	16	4.15	27	34	100	48	16.101	32.080	1.50		4613 16.180
80	16	9.08	27	34	100	48	16.102	32.180	1.50		4613 16.280
80	18	2.01	33	42	100	48	18.100	18.080	1.70		4613 18.080
80	18	4.15	33	42	100	48	18.101	32.080	1.70		4613 18.180
80	18	9.08	33	42	100	48	18.102	32.180	1.70		4613 18.280
80	20	4.15	33	42	105	50	20.100	32.080	1.70		4613 20.080
80	20	9.08	33	42	105	50	20.101	32.180	1.70		4613 20.180
80	20	16.62	33	42	105	50	20.102	32.280	1.70		4613 20.280
80	25	4.15	44	53	115	56	25.100	32.080	2.20		4613 25.080
80	25	9.08	44	53	115	56	25.101	32.180	2.20		4613 25.180
80	25	16.62	44	53	115	56	25.102	32.280	2.20		4613 25.280
80	32	4.15	44	53	120	60	32.100	32.080	2.10		4613 32.080
80	32	9.08	44	53	120	60	32.101	32.180	2.10		4613 32.180
80	32	16.62	44	53	120	60	32.102	32.280	2.10		4613 32.280
100	6	2.01	21	27	85	36	6.100	10.100	2.10		4613 6.100
100	6	4.15	21	27	85	36	6.101	10.101	2.10		4613 6.101
100	8	2.01	21	27	85	36	8.100	10.100	2.20		4613 8.100
100	8	4.15	21	27	85	36	8.101	10.101	2.20		4613 8.101
100	10	2.01	24	32	90	40	10.100	10.100	2.30		4613 10.100
100	10	4.15	24	32	90	40	10.101	10.101	2.30		4613 10.101
100	12	2.01	24	32	95	45	12.100	18.100	2.30		4613 12.100
100	12	4.15	24	32	95	45	12.101	32.100	2.30		4613 12.101
100	12	9.08	24	32	95	45	12.102	32.101	2.30		4613 12.102
100	14	2.01	27	34	95	45	14.100	18.100	2.30		4613 14.100
100	14	4.15	27	34	95	45	14.101	32.100	2.30		4613 14.101
100	14	9.08	27	34	95	45	14.102	32.101	2.30		4613 14.102
100	16	2.01	27	34	100	48	16.100	18.100	2.30		4613 16.100
100	16	4.15	27	34	100	48	16.101	32.100	2.30		4613 16.101
100	16	9.08	27	34	100	48	16.102	32.101	2.30		4613 16.102
100	18	2.01	33	42	100	48	18.100	18.100	2.50		4613 18.100
100	18	4.15	33	42	100	48	18.101	32.100	2.50		4613 18.101
100	18	9.08	33	42	100	48	18.102	32.101	2.50		4613 18.102
100	20	4.15	33	42	105	50	20.100	32.100	2.50		4613 20.100
100	20	9.08	33	42	105	50	20.101	32.101	2.50		4613 20.101
100	20	16.62	33	42	105	50	20.102	32.102	2.50		4613 20.102
100	25	4.15	44	53	115	56	25.100	32.100	3.00		4613 25.100
100	25	9.08	44	53	115	56	25.101	32.101	3.00		4613 25.101
100	25	16.62	44	53	115	56	25.102	32.102	3.00		4613 25.102
100	32	4.15	44	53	120	60	32.100	32.100	3.00		4613 32.100
100	32	9.08	44	53	120	60	32.101	32.101	3.00		4613 32.101
100	32	16.62	44	53	120	60	32.102	32.102	3.00		4613 32.102
100	6	2.01	21	27	160	36	6.032	108.100	2.60		4613 106.100
100	6	4.15	21	27	160	36	6.132	108.101	2.60		4613 106.101
100	8	2.01	21	27	160	36	8.040	108.100	2.50		4613 108.100
100	8	4.15	21	27	160	36	8.140	108.101	2.50		4613 108.101
100	10	2.01	24	32	160	40	10.050	110.100	2.70		4613 110.100
100	10	4.15	24	32	160	40	10.150	110.101	2.70		4613 110.101
100	12	2.01	24	32	160	45	12.100	114.100	2.70		4613 112.100
100	12	4.15	24	32	160	45	12.101	114.101	2.70		4613 112.101
100	12	9.08	24	32	160	45	12.102	114.102	2.70		4613 112.102
100	14	2.01	27	34	160	45	14.100	114.100	2.80		4613 114.100

MQL 2-channel

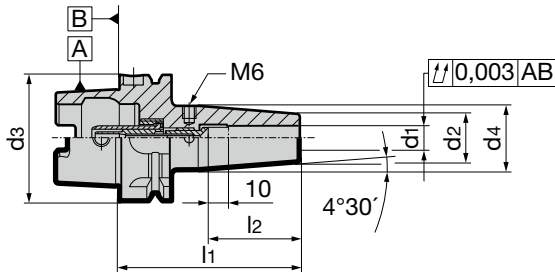
MQL 2-channel shrink fit chucks HSK-A for automatic tool change

Product information

- to Gühring MQL standard
- for 2-channel-systems
- balancing quality: G6.3 / 15,000 rev./min
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- also available in the lengths
l1 = 120 mm (concentricity 4 µm)
and 160 mm (concentricity 5 µm)

Scope of delivery

- incl. MQL adjustment screw article no. 4621
and MQL coolant supply set article no. 4623
- special dimensions on request



HSK-A d3	for shank Ø d1 h6 mm	A mm ²	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw no. 4621 ...	incl. cool. deliv. set 4623 ...	kg	Article no.	4614
										Order no.	
32	6	2.01	21	25.5	80	36	6.032	12.032	0.30		4614 6.032
32	6	4.15	21	25.5	80	36	6.132	12.132	0.30		4614 6.132
32	8	2.01	21	25.5	80	36	8.032	12.032	0.30		4614 8.032
32	8	4.15	21	25.5	80	36	8.132	12.132	0.30		4614 8.132
32	10	2.01	24	31.7	85	40	10.032	12.032	0.30		4614 10.032
32	10	4.15	24	31.7	85	40	10.132	12.132	0.30		4614 10.132
32	12	2.01	24	32.3	90	45	12.032	12.032	0.30		4614 12.032
32	12	4.15	24	32.3	90	45	12.132	12.132	0.30		4614 12.132
40	6	2.01	21	27	80	36	6.040	16.040	0.40		4614 6.040
40	6	4.15	21	27	80	36	6.140	16.140	0.40		4614 6.140
40	8	2.01	21	27	80	36	8.040	16.040	0.40		4614 8.040
40	8	4.15	21	27	80	36	8.140	16.140	0.40		4614 8.140
40	10	2.01	24	32	80	40	10.040	16.040	0.50		4614 10.040
40	10	4.15	24	32	80	40	10.140	16.140	0.50		4614 10.140
40	12	2.01	24	32	90	45	12.040	16.040	0.50		4614 12.040
40	12	4.15	24	32	90	45	12.140	16.140	0.50		4614 12.140
40	12	9.08	24	32	90	45	12.240	16.240	0.50		4614 12.240
40	14	2.01	27	33.5	90	45	14.040	16.040	0.60		4614 14.040
40	14	4.15	27	33.5	90	45	14.140	16.140	0.60		4614 14.140
40	14	9.08	27	33.5	90	45	14.240	16.240	0.60		4614 14.240
40	16	2.01	27	33.5	90	48	16.040	16.040	0.50		4614 16.040
40	16	4.15	27	33.5	90	48	16.140	16.140	0.50		4614 16.140
40	16	9.08	27	33.5	90	48	16.240	16.240	0.50		4614 16.240
50	6	2.01	21	27	80	36	6.050	10.050	0.60		4614 6.050
50	6	4.15	21	27	80	36	6.150	10.150	0.60		4614 6.150
50	8	2.01	21	27	80	36	8.050	10.050	0.60		4614 8.050
50	8	4.15	21	27	80	36	8.150	10.150	0.60		4614 8.150
50	10	2.01	24	32	85	40	10.050	10.050	0.70		4614 10.050
50	10	4.15	24	32	85	40	10.150	10.150	0.70		4614 10.150
50	12	2.01	24	32	90	45	12.050	18.050	0.70		4614 12.050
50	12	4.15	24	32	90	45	12.150	20.050	0.70		4614 12.150
50	12	9.08	24	32	90	45	12.250	20.150	0.70		4614 12.250
50	14	2.01	27	34	90	45	14.050	18.050	0.70		4614 14.050
50	14	4.15	27	34	90	45	14.150	20.050	0.70		4614 14.150
50	14	9.08	27	34	90	45	14.250	20.150	0.70		4614 14.250
50	16	2.01	27	34	95	48	16.050	18.050	0.70		4614 16.050
50	16	4.15	27	34	95	48	16.150	20.050	0.70		4614 16.150
50	16	9.08	27	34	95	48	16.250	20.150	0.70		4614 16.250
50	18	2.01	33	41.5	95	48	18.050	18.050	0.90		4614 18.050
50	18	4.15	33	41.5	95	48	18.150	20.050	0.90		4614 18.150
50	18	9.08	33	41.5	95	48	18.250	20.150	0.90		4614 18.250
50	20	4.15	33	41.5	100	50	20.050	20.050	0.90		4614 20.050
50	20	9.08	33	41.5	100	50	20.150	20.150	0.90		4614 20.150
50	20	16.62	33	41.5	100	50	20.250	20.250	0.90		4614 20.250
63	6	2.01	21	27	80	36	6.100	10.063	0.70		4614 6.063
63	6	4.15	21	27	80	36	6.101	10.163	0.70		4614 6.163

MQL 2-channel shrink fit chucks HSK-A for automatic tool change



HSK-A d ₃	for shank Ø d ₁ h ₆ mm	A mm ²	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	inch. setting screw no. 4621 ...	incl. cool. deliv. set 4623 ...	kg	Article no.	4614
										Order no.	
63	8	2.01	21	27	80	36	8.100	10.063	0.70	4614	8.063
63	8	4.15	21	27	80	36	8.101	10.163	0.70	4614	8.163
63	10	2.01	24	32	85	40	10.100	10.063	0.70	4614	10.063
63	10	4.15	24	32	85	40	10.101	10.163	0.70	4614	10.163
63	12	2.01	24	32	90	45	12.100	18.063	0.80	4614	12.063
63	12	4.15	24	32	90	45	12.101	20.063	0.80	4614	12.163
63	12	9.08	24	32	90	45	12.102	20.163	0.80	4614	12.263
63	14	2.01	27	34	90	45	14.100	18.063	0.80	4614	14.063
63	14	4.15	27	34	90	45	14.101	20.063	0.80	4614	14.163
63	14	9.08	27	34	90	45	14.102	20.163	0.80	4614	14.263
63	16	2.01	27	34	95	48	16.100	18.063	0.90	4614	16.063
63	16	4.15	27	34	95	48	16.101	20.063	0.90	4614	16.163
63	16	9.08	27	34	95	48	16.102	20.163	0.90	4614	16.263
63	18	2.01	33	42	95	48	18.100	18.063	0.90	4614	18.063
63	18	4.15	33	42	95	48	18.101	20.063	0.90	4614	18.163
63	18	9.08	33	42	95	48	18.102	20.163	0.90	4614	18.263
63	20	4.15	33	42	100	50	20.100	20.063	1.00	4614	20.063
63	20	9.08	33	42	100	50	20.101	20.163	1.00	4614	20.163
63	20	16.62	33	42	100	50	20.102	20.263	1.00	4614	20.263
63	25	4.15	44	52.5	115	56	25.100	32.063	1.00	4614	25.063
63	25	9.08	44	52.5	115	56	25.101	32.163	1.00	4614	25.163
63	25	16.62	44	52.5	115	56	25.102	32.263	1.00	4614	25.263
63	32	4.15	44	52.5	120	60	32.100	32.063	1.10	4614	32.063
63	32	9.08	44	52.5	120	60	32.101	32.163	1.10	4614	32.163
63	32	16.62	44	52.5	120	60	32.102	32.263	1.10	4614	32.263
63	6	2.01	21	27	120	36	6.032	208.063	0.90	4614	206.063
63	6	4.15	21	27	120	36	6.132	208.163	0.90	4614	206.163
63	8	2.01	21	27	120	36	8.040	208.063	1.00	4614	208.063
63	8	4.15	21	27	120	36	8.140	208.163	1.00	4614	208.163
63	10	2.01	24	32	120	40	10.050	210.063	1.10	4614	210.063
63	10	4.15	24	32	120	40	10.150	210.063	1.10	4614	210.163
63	12	2.01	24	32	120	45	12.100	214.063	1.20	4614	212.063
63	12	4.15	24	32	120	45	12.101	214.163	1.20	4614	212.163
63	12	9.08	24	32	120	45	12.102	214.263	1.20	4614	212.263
63	14	2.01	27	34	120	45	14.100	214.063	1.20	4614	214.063
63	14	4.15	27	34	120	45	14.101	214.163	1.20	4614	214.163
63	14	9.08	27	34	120	45	14.102	214.263	1.20	4614	214.263
63	16	2.01	27	34	120	48	16.100	218.063	1.20	4614	216.063
63	16	4.15	27	34	120	48	16.101	218.163	1.20	4614	216.163
63	16	9.08	27	34	120	48	16.102	218.263	1.20	4614	216.263
63	18	2.01	33	42	120	48	18.100	218.063	1.40	4614	218.063
63	18	4.15	33	42	120	48	18.101	218.163	1.40	4614	218.163
63	18	9.08	33	42	120	48	18.102	218.263	1.40	4614	218.263
63	20	4.15	33	42	120	50	20.100	220.063	1.40	4614	220.063
63	20	9.08	33	42	120	50	20.101	220.163	1.40	4614	220.163
63	20	16.62	33	42	120	50	20.102	220.263	1.40	4614	220.263
63	6	2.01	21	27	160	36	6.032	108.063	0.80	4614	106.063
63	6	4.15	21	27	160	36	6.132	108.163	0.80	4614	106.163
63	8	2.01	21	27	160	36	8.040	108.063	0.80	4614	108.063
63	8	4.15	21	27	160	36	8.140	108.163	0.80	4614	108.163
63	10	2.01	24	32	160	40	10.050	110.063	0.90	4614	110.063
63	10	4.15	24	32	160	40	10.150	110.163	0.90	4614	110.163
63	12	2.01	24	32	160	45	12.100	114.063	0.90	4614	112.063
63	12	4.15	24	32	160	45	12.101	114.163	0.90	4614	112.163
63	12	9.08	24	32	160	45	12.102	114.263	0.90	4614	112.263
63	14	2.01	27	34	160	45	14.100	114.063	1.00	4614	114.063
63	14	4.15	27	34	160	45	14.101	114.163	1.00	4614	114.163
63	14	9.08	27	34	160	45	14.102	114.263	1.00	4614	114.263
63	16	2.01	27	34	160	48	16.100	118.063	1.00	4614	116.063
63	16	4.15	27	34	160	48	16.101	118.163	1.00	4614	116.163
63	16	9.08	27	34	160	48	16.102	118.263	1.00	4614	116.263
63	18	2.01	33	42	160	48	18.100	118.063	1.20	4614	118.063
63	18	4.15	33	42	160	48	18.101	118.163	1.20	4614	118.163
63	18	9.08	33	42	160	48	18.102	118.263	1.20	4614	118.263
63	20	4.15	33	42	160	50	20.100	120.063	1.20	4614	120.063
63	20	9.08	33	42	160	50	20.101	120.163	1.20	4614	120.163
63	20	16.62	33	42	160	50	20.102	120.263	1.20	4614	120.263
63	25	4.15	44	52.5	160	56	25.100	125.063	1.80	4614	125.063
63	25	9.08	44	52.5	160	56	25.101	125.163	1.80	4614	125.163

MQL 2-channel

MQL 2-channel shrink fit chucks HSK-A for automatic tool change

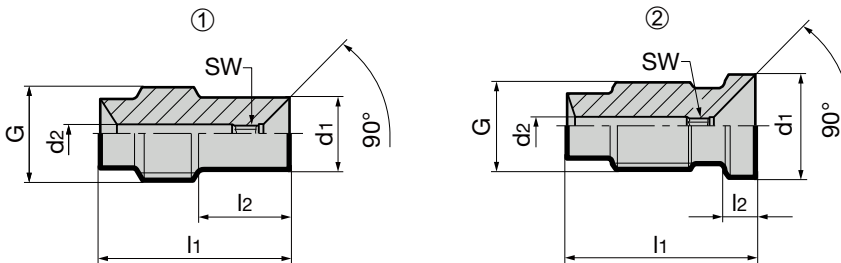


HSK-A d3	for shank Ø d1 h6 mm	A mm²	d2 mm	d4 mm	l1 mm	l2 mm	incl. setting screw no. 4621 ...	incl. cool. deliv. set 4623 ...	kg	Article no.	4614
											Order no.
63	25	16.62	44	52.5	160	56	25.102	125.263	1.80		4614 125.263
63	32	4.15	44	52.5	160	60	32.100	132.063	1.70		4614 132.063
63	32	9.08	44	52.5	160	60	32.101	132.163	1.70		4614 132.163
63	32	16.62	44	52.5	160	60	32.102	132.263	1.70		4614 132.263
80	6	2.01	21	27	85	36	6.100	10.080	1.30		4614 6.080
80	6	4.15	21	27	85	36	6.101	10.180	1.30		4614 6.180
80	8	2.01	21	27	85	36	8.100	10.080	1.30		4614 8.080
80	8	4.15	21	27	85	36	8.101	10.180	1.30		4614 8.180
80	10	2.01	24	32	90	40	10.100	10.080	1.40		4614 10.080
80	10	4.15	24	32	90	40	10.101	10.180	1.40		4614 10.180
80	12	2.01	24	32	95	45	12.100	18.080	1.40		4614 12.080
80	12	4.15	24	32	95	45	12.101	32.080	1.40		4614 12.180
80	12	9.08	24	32	95	45	12.102	32.180	1.40		4614 12.280
80	14	2.01	27	34	95	45	14.100	18.080	1.50		4614 14.080
80	14	4.15	27	34	95	45	14.101	32.080	1.50		4614 14.180
80	14	9.08	27	34	95	45	14.102	32.180	1.50		4614 14.280
80	16	2.01	27	34	100	48	16.100	18.080	1.50		4614 16.080
80	16	4.15	27	34	100	48	16.101	32.080	1.50		4614 16.180
80	16	9.08	27	34	100	48	16.102	32.180	1.50		4614 16.280
80	18	2.01	33	42	100	48	18.100	18.080	1.70		4614 18.080
80	18	4.15	33	42	100	48	18.101	32.080	1.70		4614 18.180
80	18	9.08	33	42	100	48	18.102	32.180	1.70		4614 18.280
80	20	4.15	33	42	105	50	20.100	32.080	1.70		4614 20.080
80	20	9.08	33	42	105	50	20.101	32.180	1.70		4614 20.180
80	20	16.62	33	42	105	50	20.102	32.280	1.70		4614 20.280
80	25	4.15	44	53	115	56	25.100	32.080	2.20		4614 25.080
80	25	9.08	44	53	115	56	25.101	32.180	2.20		4614 25.180
80	25	16.62	44	53	115	56	25.102	32.280	2.20		4614 25.280
80	32	4.15	44	53	120	60	32.100	32.080	2.10		4614 32.080
80	32	9.08	44	53	120	60	32.101	32.180	2.10		4614 32.180
80	32	16.62	44	53	120	60	32.102	32.280	2.10		4614 32.280
100	6	2.01	21	27	85	36	6.100	10.100	2.10		4614 6.100
100	6	4.15	21	27	85	36	6.101	10.101	2.10		4614 6.101
100	8	2.01	21	27	85	36	8.100	10.100	2.20		4614 8.100
100	8	4.15	21	27	85	36	8.101	10.101	2.20		4614 8.101
100	10	2.01	24	32	90	40	10.100	10.100	2.30		4614 10.100
100	10	4.15	24	32	90	40	10.101	10.101	2.30		4614 10.101
100	12	2.01	24	32	95	45	12.100	18.100	2.30		4614 12.100
100	12	4.15	24	32	95	45	12.101	32.100	2.30		4614 12.101
100	12	9.08	24	32	95	45	12.102	32.101	2.30		4614 12.102
100	14	2.01	27	34	95	45	14.100	18.100	2.30		4614 14.100
100	14	4.15	27	34	95	45	14.101	32.100	2.30		4614 14.101
100	14	9.08	27	34	95	45	14.102	32.101	2.30		4614 14.102
100	16	2.01	27	34	100	48	16.100	18.100	2.30		4614 16.100
100	16	4.15	27	34	100	48	16.101	32.100	2.30		4614 16.101
100	16	9.08	27	34	100	48	16.102	32.101	2.30		4614 16.102
100	18	2.01	33	42	100	48	18.100	18.100	2.50		4614 18.100
100	18	4.15	33	42	100	48	18.101	32.100	2.50		4614 18.101
100	18	9.08	33	42	100	48	18.102	32.101	2.50		4614 18.102
100	20	4.15	33	42	105	50	20.100	32.100	2.50		4614 20.100
100	20	9.08	33	42	105	50	20.101	32.101	2.50		4614 20.101
100	20	16.62	33	42	105	50	20.102	32.102	2.50		4614 20.102
100	25	4.15	44	53	115	56	25.100	32.100	3.00		4614 25.100
100	25	9.08	44	53	115	56	25.101	32.101	3.00		4614 25.101
100	25	16.62	44	53	115	56	25.102	32.102	3.00		4614 25.102
100	32	4.15	44	53	120	60	32.100	32.100	3.00		4614 32.100
100	32	9.08	44	53	120	60	32.101	32.101	3.00		4614 32.101
100	32	16.62	44	53	120	60	32.102	32.102	3.00		4614 32.102
100	6	2.01	21	27	160	36	6.032	108.100	2.60		4614 106.100
100	6	4.15	21	27	160	36	6.132	108.101	2.60		4614 106.101
100	8	2.01	21	27	160	36	8.040	108.100	2.50		4614 108.100
100	8	4.15	21	27	160	36	8.140	108.101	2.50		4614 108.101
100	10	2.01	24	32	160	40	10.050	110.100	2.70		4614 110.100
100	10	4.15	24	32	160	40	10.150	110.101	2.70		4614 110.101
100	12	2.01	24	32	160	45	12.100	114.100	2.70		4614 112.100
100	12	4.15	24	32	160	45	12.101	114.101	2.70		4614 112.101
100	12	9.08	24	32	160	45	12.102	114.102	2.70		4614 112.102
100	14	2.01	27	34	160	45	14.100	114.100	2.80		4614 114.100


MQL 2-channel

Product information

- to Gühring MQL standard
- for 2-channel-systems
- for the use of tool shanks to Gühring MQL standard
- black colour, corrosion protective coating to visually identify the 2-channel system



MQL 2-channel

									Article no.	4621	
HSK-A	holder Ø d ₁ mm	 for A mm ²	d ₂ mm	l ₁ mm	l ₂ mm	G	SW	type	Order no.		
32	6	2.01	2	25.8	2.5	M5x0.8	1.5	2	4621	6.032	
32	6	4.15	2.9	25.8	2.5	M5x0.8	2	2	4621	6.132	
32	8	2.01	2	21	3	M7x1	1.5	2	4621	8.032	
32	8	4.15	2.9	21	3	M7x1	2	2	4621	8.132	
32	10	2.01	2	22	3.5	M8x1	1.5	2	4621	10.032	
32	10	4.15	2.9	22	3.5	M8x1	2	2	4621	10.132	
32	12	2.01	2	22	3.5	M10x1	1.5	2	4621	12.032	
32	12	4.15	2.9	22	3.5	M10x1	2	2	4621	12.132	
40	6	2.01	2	26.5	11	M7x1	1.5	1	4621	6.040	
40	6	4.15	2.9	26.5	11	M7x1	2	1	4621	6.140	
40	8	2.01	2	26.5	3	M7x1	1.5	2	4621	8.040	
40	8	4.15	2.9	26.5	3	M7x1	2	2	4621	8.140	
40	10	2.01	2	22.2	3.5	M8x1	1.5	2	4621	10.040	
40	10	4.15	2.9	22.2	3.5	M8x1	2	2	4621	10.140	
40	12	2.01	2	26.5	3.5	M10x1	1.5	2	4621	12.040	
40	12	4.15	2.9	26.5	3.5	M10x1	2	2	4621	12.140	
40	12	9.08	4.1	26.5	3.5	M10x1	3	2	4621	12.240	
40	14	2.01	2	26.5	4.5	M10x1	1.5	2	4621	14.040	
40	14	4.15	2.9	26.5	4.5	M10x1	2	2	4621	14.140	
40	14	9.08	4.1	26.5	4.5	M10x1	3	2	4621	14.240	
40	16	2.01	2	23.5	5.5	M12x1	1.5	2	4621	16.040	
40	16	4.15	2.9	23.5	5.5	M12x1	2	2	4621	16.140	
40	16	9.08	4.1	23.5	5.5	M12x1	3	2	4621	16.240	
50	6	2.01	2	22	10	M8x1	1.5	1	4621	6.050	
50	6	4.15	2.9	22	10	M8x1	2	1	4621	6.150	
50	8	2.01	2	22	3	M8x1	1.5	2	4621	8.050	
50	8	4.15	2.9	22	3	M8x1	2	2	4621	8.150	
50	10	2.01	2	23	3.5	M8x1	1.5	2	4621	10.050	
50	10	4.15	2.9	23	3.5	M8x1	2	2	4621	10.150	
50	12	2.01	2	23.7	3.5	M10x1	1.5	2	4621	12.050	
50	12	4.15	2.9	23.7	3.5	M10x1	2	2	4621	12.150	
50	12	9.08	4.1	23.7	3.5	M10x1	3	2	4621	12.250	
50	14	2.01	2	23.7	4.5	M10x1	1.5	2	4621	14.050	
50	14	4.15	2.9	23.7	4.5	M10x1	2	2	4621	14.150	
50	14	9.08	4.1	23.7	4.5	M10x1	3	2	4621	14.250	
50	16	2.01	2	25.7	5.5	M12x1	1.5	2	4621	16.050	
50	16	4.15	2.9	25.7	5.5	M12x1	2	2	4621	16.150	
50	16	9.08	4.1	25.7	5.5	M12x1	3	2	4621	16.250	
50	18	2.01	2	25.7	6.5	M12x1	1.5	2	4621	18.050	
50	18	4.15	2.9	25.7	6.5	M12x1	2	2	4621	18.150	
50	18	9.08	4.1	25.7	6.5	M12x1	3	2	4621	18.250	
50	20	4.15	2.9	27.5	6.5	M16x1	2	2	4621	20.050	
50	20	9.08	4.1	27.5	6.5	M16x1	3	2	4621	20.150	
50	20	16.62	5.4	27.5	6.5	M16x1	4	2	4621	20.250	
63/80/100	6	2.01	2	20.5	10	M10x1	1.5	1	4621	6.100	
63/80/100	6	4.15	2.9	20.5	10	M10x1	2	1	4621	6.101	



Article no.

4621

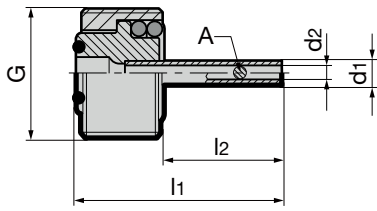
HSK-A	holder Ø d ₁ mm	for A mm ²	d ₂ mm	l ₁ mm	l ₂ mm	G	SW	type	Order no.	
63/80/100	8	2.01	2	21.3	10	M10x1	1.5	1	4621	8.100
63/80/100	8	4.15	2.9	21.3	10	M10x1	2	1	4621	8.101
63/80/100	10	2.01	2	21.2	3.5	M10x1	1.5	2	4621	10.100
63/80/100	10	4.15	2.9	21.2	3.5	M10x1	2	2	4621	10.101
63/80/100	12	2.01	2	21.7	3.5	M10x1	1.5	2	4621	12.100
63/80/100	12	4.15	2.9	21.7	3.5	M10x1	2	2	4621	12.101
63/80/100	12	9.08	4.1	21.7	3.5	M10x1	3	2	4621	12.102
63/80/100	14	2.01	2	21.8	4.5	M10x1	1.5	2	4621	14.100
63/80/100	14	4.15	2.9	21.8	4.5	M10x1	2	2	4621	14.101
63/80/100	14	9.08	4.1	21.8	4.5	M10x1	3	2	4621	14.102
63/80/100	16	2.01	2	23.7	5.5	M12x1	1.5	2	4621	16.100
63/80/100	16	4.15	2.9	23.7	5.5	M12x1	2	2	4621	16.101
63/80/100	16	9.08	4.1	23.7	5.5	M12x1	3	2	4621	16.102
63/80/100	18	2.01	2	23.8	6.5	M12x1	1.5	2	4621	18.100
63/80/100	18	4.15	2.9	23.8	6.5	M12x1	2	2	4621	18.101
63/80/100	18	9.08	4.1	23.8	6.5	M12x1	3	2	4621	18.102
63/80/100	20	4.15	2.9	26.7	6.5	M16x1	2	2	4621	20.100
63/80/100	20	9.08	4.1	26.7	6.5	M16x1	3	2	4621	20.101
63/80/100	20	16.62	5.4	26.7	6.5	M16x1	4	2	4621	20.102
63/80/100	25	4.15	2.9	30.6	10	M16x1	2	2	4621	25.100
63/80/100	25	9.08	4.1	30.6	10	M16x1	3	2	4621	25.101
63/80/100	25	16.62	5.4	30.6	10	M16x1	4	2	4621	25.102
63/80/100	32	4.15	2.9	31.6	14	M16x1	2	2	4621	32.100
63/80/100	32	9.08	4.1	31.6	14	M16x1	3	2	4621	32.101
63/80/100	32	16.62	5.4	31.6	14	M16x1	4	2	4621	32.102

MQL 2-channel

MQL 2-channel coolant supply set HSK-A (filler)

Product information

- for MQL tool holders (hydraulic chucks and shrink fit chucks) to company standard
- for 2-channel-systems
- for tool holders with manual tool change
- sealed thanks to bypass system



									Article no.	4622	
for HSK-A	for clamp. Ø mm	A mm ²	d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	G	for chuck length	Order no.		
32	6- 12	2.01	1.9	1.6	26,5	20	M10x1	Standard	4622 12.032		
32	6- 12	4.15	2.8	2.3	26,5	20	M10x1	Standard	4622 12.132		
40	6-16	2.01	1.9	1.6	22.8	14.5	M12x1	Standard	4622 16.040		
40	6-16	4.15	2.8	2.3	22.8	14.5	M12x1	Standard	4622 16.140		
40	12-16	9.08	4	3.4	22.6	14.3	M12x1	Standard	4622 16.240		
50	6-10	2.01	1.9	1.6	26.3	16	M16x1.0	Standard	4622 10.050		
50	6-10	4.15	2.8	2.3	26.3	16	M16x1.0	Standard	4622 10.150		
50	12-18	2.01	1.9	1.6	24.2	13.9	M16x1.0	Standard	4622 18.050		
50	12-20	4.15	2.8	2.3	24.2	13.9	M16x1.0	Standard	4622 20.050		
50	12-20	9.08	4	3.4	24.2	13.9	M16x1.0	Standard	4622 20.150		
50	20	16.62	5.3	4.6	24.2	13.9	M16x1.0	Standard	4622 20.250		
63	6-10	2.01	1.9	1.6	26.4	14.1	M18x1.0	Standard	4622 10.063		
63	6-10	4.15	2.8	2.3	26.4	14.1	M18x1.0	Standard	4622 10.163		
63	12-18	2.01	1.9	1.6	25.3	13.0	M18x1.0	Standard	4622 18.063		
63	12-20	4.15	2.8	2.3	25.3	13.0	M18x1.0	Standard	4622 20.063		
63	12-20	9.08	4.0	3.4	25.3	13.0	M18x1.0	Standard	4622 20.163		
63	20	16.62	5.3	4.6	26.5	14.2	M18x1.0	Standard	4622 20.263		
63	25-32	4.15	2.8	2.3	30.6	18.3	M18x1.0	Standard	4622 32.063		
63	25-32	9.08	4.0	3.4	30.6	18.3	M18x1.0	Standard	4622 32.163		
63	25-32	16.62	5.3	4.6	30.6	18.3	M18x1.0	Standard	4622 32.263		
63	6-8	2.01	1.9	1.6	66.4	54.1	M18x1.0	120	4622 208.063		
63	6-8	4.15	2.8	2.3	66.4	54.1	M18x1.0	120	4622 208.163		
63	10	2.01	1.9	1.6	61.4	49.1	M18x1.0	120	4622 210.063		
63	10	4.15	2.8	2.3	61.4	49.1	M18x1.0	120	4622 210.163		
63	12-14	2.01	1.9	1.6	55.3	43.0	M18x1.0	120	4622 214.063		
63	12-14	4.15	2.8	2.3	55.3	43.0	M18x1.0	120	4622 214.163		
63	12-14	9.08	4.0	3.4	55.3	43.0	M18x1.0	120	4622 214.263		
63	16-18	2.01	1.9	1.6	50.3	38.0	M18x1.0	120	4622 218.063		
63	16-18	4.15	2.8	2.3	50.3	38.0	M18x1.0	120	4622 218.163		
63	16-18	9.08	4.0	3.4	50.3	38.0	M18x1.0	120	4622 218.263		
63	20	4.15	2.8	2.3	46.5	34.2	M18x1.0	120	4622 220.063		
63	20	9.08	4.0	3.4	46.5	34.2	M18x1.0	120	4622 220.163		
63	20	16.62	5.3	4.6	46.5	34.2	M18x1.0	120	4622 220.263		
63	6-8	2.01	1.9	1.6	106.4	94.1	M18x1.0	160	4622 108.063		
63	6-8	4.15	2.8	2.3	106.4	94.1	M18x1.0	160	4622 108.163		
63	10	2.01	1.9	1.6	101.4	89.1	M18x1.0	160	4622 110.063		
63	10	4.15	2.8	2.3	101.4	89.1	M18x1.0	160	4622 110.163		
63	12-14	2.01	1.9	1.6	95.3	83.0	M18x1.0	160	4622 114.063		
63	12-14	4.15	2.8	2.3	95.3	83.0	M18x1.0	160	4622 114.163		
63	12-14	9.08	4.0	3.4	95.3	83.0	M18x1.0	160	4622 114.263		
63	16-18	2.01	1.9	1.6	90.3	78.0	M18x1.0	160	4622 118.063		
63	16-18	4.15	2.8	2.3	90.3	78.0	M18x1.0	160	4622 118.163		
63	16-18	9.08	4.0	3.4	90.3	78.0	M18x1.0	160	4622 118.263		
63	20	4.15	2.8	2.3	86.5	74.2	M18x1.0	160	4622 120.063		
63	20	9.08	4.0	3.4	86.5	74.2	M18x1.0	160	4622 120.163		
63	20	16.62	5.3	4.6	86.5	74.2	M18x1.0	160	4622 120.263		
63	25	4.15	2.8	2.3	75.6	63.3	M18x1.0	160	4622 125.063		
63	25	9.08	4.0	3.4	75.6	63.3	M18x1.0	160	4622 125.163		
63	25	16.62	5.3	4.6	75.6	63.3	M18x1.0	160	4622 125.263		
63	32	4.15	2.8	2.3	70.6	58.3	M18x1.0	160	4622 132.063		
63	32	9.08	4.0	3.4	70.6	58.3	M18x1.0	160	4622 132.163		
63	32	16.62	5.3	4.6	70.6	58.3	M18x1.0	160	4622 132.263		
80	6-10	2.01	1.9	1.6	29.0	14.6	M20x1.5	Standard	4622 10.080		
80	6-10	4.15	2.8	2.3	29.0	14.6	M20x1.5	Standard	4622 10.180		
80	12 -18	2.01	1.9	1.6	27.9	13.5	M20x1.5	Standard	4622 18.080		
80	12 -32	4.15	2.8	2.3	27.9	13.5	M20x1.5	Standard	4622 32.080		
80	12 -32	9.08	4.0	3.4	27.9	13.5	M20x1.5	Standard	4622 32.180		
80	20-32	16.62	5.3	4.6	28.4	14.0	M20x1.5	Standard	4622 32.280		

MQL 2-channel

for HSK-A	for clamp. Ø mm	A mm ²	d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	G	for chuck length	Article no.	4622
									Order no.	
100	6-10	2.01	1.9	1.6	29.0	12.6	M24x1.5	Standard	4622	10.100
100	6-10	4.15	2.8	2.3	29.0	12.6	M24x1.5	Standard	4622	10.101
100	12-18	2.01	1.9	1.6	27.9	11.5	M24x1.5	Standard	4622	18.100
100	12-32	4.15	2.8	2.3	27.9	11.5	M24x1.5	Standard	4622	32.100
100	12-32	9.08	4.0	3.4	27.9	11.5	M24x1.5	Standard	4622	32.101
100	20-32	16.62	5.3	4.6	28.4	12.0	M24x1.5	Standard	4622	32.102
100	6-8	2.01	1.9	1.6	104.0	87.6	M24x1.5	160	4622	108.100
100	6-8	4.15	2.8	2.3	104.0	87.6	M24x1.5	160	4622	108.101
100	10	2.01	1.9	1.6	99.0	82.6	M24x1.5	160	4622	110.100
100	10	4.15	2.8	2.3	99.0	82.6	M24x1.5	160	4622	110.101
100	12-14	2.01	1.9	1.6	92.9	76.5	M24x1.5	160	4622	114.100
100	12-14	4.15	2.8	2.3	92.9	76.5	M24x1.5	160	4622	114.101
100	12-14	9.08	4.0	3.4	92.9	76.5	M24x1.5	160	4622	114.102
100	16-18	2.01	1.9	1.6	87.9	71.5	M24x1.5	160	4622	118.100
100	16-18	4.15	2.8	2.3	87.9	71.5	M24x1.5	160	4622	118.101
100	16-18	9.08	4.0	3.4	87.9	71.5	M24x1.5	160	4622	118.102
100	20	4.15	2.8	2.3	83.4	67.0	M24x1.5	160	4622	120.100
100	20	9.08	4.0	3.4	83.4	67.0	M24x1.5	160	4622	120.101
100	20	16.62	5.3	4.6	83.4	67.0	M24x1.5	160	4622	120.102
100	25	4.15	2.8	2.3	73.4	57.0	M24x1.5	160	4622	125.100
100	25	9.08	4.0	3.4	73.4	57.0	M24x1.5	160	4622	125.101
100	25	16.62	5.3	4.6	73.4	57.0	M24x1.5	160	4622	125.102
100	32	4.15	2.8	2.3	68.4	52.0	M24x1.5	160	4622	132.100
100	32	9.08	4.0	3.4	68.4	52.0	M24x1.5	160	4622	132.101
100	32	16.62	5.3	4.6	68.4	52.0	M24x1.5	160	4622	132.102

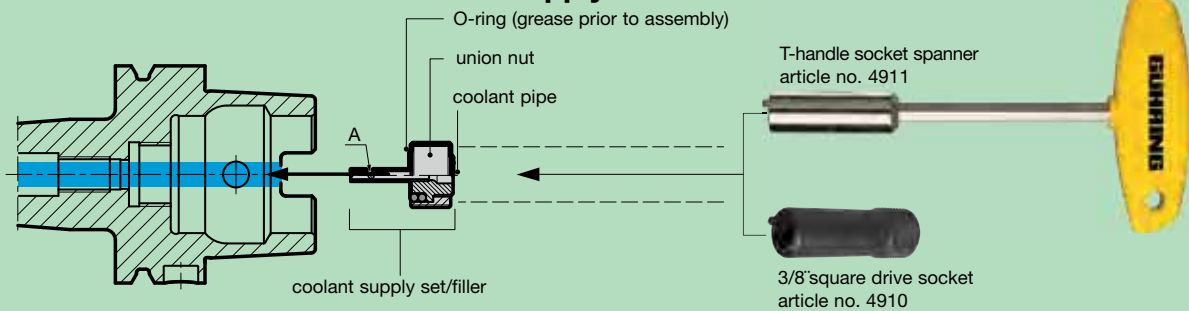
Installation of coolant supply set/MQL coolant supply unit

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant supply set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner.
When inserting the MQL coolant supply unit, it is paramount to ensure that the MQL pipe is inserted centrally and undamaged into the MQL length setting screw (do not kink).
4. Screw in the coolant supply set/coolant supply unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

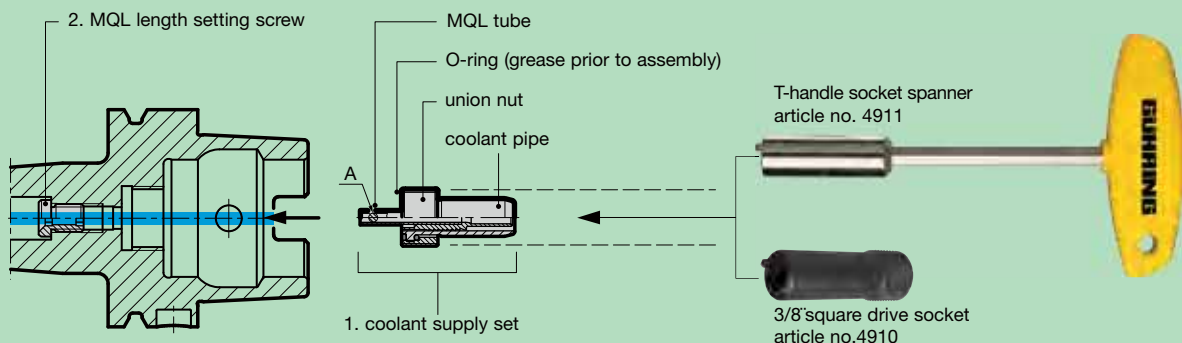
Torque figures

for HSK	MA Nm
32	7
40	11
50	15
63	20
80	25
100	30

Installation of MQL 2 channel coolant supply set filler article no. 4622

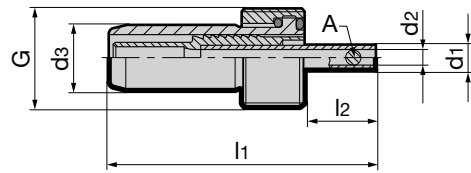


Installation of MQL 2 channel coolant supply set article no. 4623



Product information

- for MQL tool holders (hydraulic chucks and shrink fit chucks) to company standard
- for 2-channel-systems
- for tool holders with automatic tool change
- sealed thanks to bypass system
- “Crashsafe” design similar to DIN 69090-2 supply collar
- all dimensions to DIN 69895 unless stated



										Article no.	4623	
for HSK-A	for clamp. Ø mm	A mm ²	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	for chuck length	Order no.		
32	6- 12	2.01	1.9	1.6	6	47	20.6	M10x1	Standard	4623	12.032	
32	6- 12	4.15	2.8	2.3	6	47	20.6	M10x1	Standard	4623	12.132	
40	6-16	2.01	1.9	1.6	8	43.3	14.5	M12x1	Standard	4623	16.040	
40	6-16	4.15	2.8	2.3	8	43.3	14.5	M12x1	Standard	4623	16.140	
40	12-16	9.08	4.0	3.4	8	43.1	14.3	M12x1	Standard	4623	16.240	
50	6-10	2.01	1.9	1.6	10	48.6	16.0	M16x1.0	Standard	4623	10.050	
50	6-10	4.15	2.8	2.3	10	48.6	16.0	M16x1.0	Standard	4623	10.150	
50	12-18	2.01	1.9	1.6	10	46.5	13.9	M16x1.0	Standard	4623	18.050	
50	12-20	4.15	2.8	2.3	10	46.5	13.9	M16x1.0	Standard	4623	20.050	
50	12-20	9.08	4.0	3.4	10	46.5	13.9	M16x1.0	Standard	4623	20.150	
50	20	16.62	5.3	4.6	10	46.5	13.9	M16x1.0	Standard	4623	20.250	
63	6-10	2.01	1.9	1.6	12	50.0	14.1	M18x1.0	Standard	4623	10.063	
63	6-10	4.15	2.8	2.3	12	50.0	14.1	M18x1.0	Standard	4623	10.163	
63	12-18	2.01	1.9	1.6	12	48.8	13.0	M18x1.0	Standard	4623	18.063	
63	12-20	4.15	2.8	2.3	12	48.8	13.0	M18x1.0	Standard	4623	20.063	
63	12-20	9.08	4.0	3.4	12	48.8	13.0	M18x1.0	Standard	4623	20.163	
63	20	16.62	5.3	4.6	12	50.0	14.2	M18x1.0	Standard	4623	20.263	
63	25-32	4.15	2.8	2.3	12	54.1	18.3	M18x1.0	Standard	4623	32.063	
63	25-32	9.08	4.0	3.4	12	54.1	18.3	M18x1.0	Standard	4623	32.163	
63	25-32	16.62	5.3	4.6	12	54.1	18.3	M18x1.0	Standard	4623	32.263	
63	6-8	2.01	1.9	1.6	12	90.0	54.1	M18x1.0	120	4623	208.063	
63	6-8	4.15	2.8	2.3	12	90.0	54.1	M18x1.0	120	4623	208.163	
63	10	2.01	1.9	1.6	12	85.0	49.1	M18x1.0	120	4623	210.063	
63	10	4.15	2.8	2.3	12	85.0	49.1	M18x1.0	120	4623	210.163	
63	12-14	2.01	1.9	1.6	12	78.8	43.0	M18x1.0	120	4623	214.063	
63	12-14	4.15	2.8	2.3	12	78.8	43.0	M18x1.0	120	4623	214.163	
63	12-14	9.08	4.0	3.4	12	78.8	43.0	M18x1.0	120	4623	214.263	
63	16-18	2.01	1.9	1.6	12	73.8	38.0	M18x1.0	120	4623	218.063	
63	16-18	4.15	2.8	2.3	12	73.8	38.0	M18x1.0	120	4623	218.163	
63	16-18	9.08	4.0	3.4	12	73.8	38.0	M18x1.0	120	4623	218.263	
63	20	4.15	2.8	2.3	12	70.0	34.2	M18x1.0	120	4623	220.063	
63	20	9.08	4.0	3.4	12	70.0	34.2	M18x1.0	120	4623	220.163	
63	20	16.62	5.3	4.6	12	70.0	34.2	M18x1.0	120	4623	220.263	
63	6-8	2.01	1.9	1.6	12	130.0	94.1	M18x1.0	160	4623	108.063	
63	6-8	4.15	2.8	2.3	12	130.0	94.1	M18x1.0	160	4623	108.163	
63	10	2.01	1.9	1.6	12	125.0	89.1	M18x1.0	160	4623	110.063	
63	10	4.15	2.8	2.3	12	125.0	89.1	M18x1.0	160	4623	110.163	
63	12-14	2.01	1.9	1.6	12	118.8	83.0	M18x1.0	160	4623	114.063	
63	12-14	4.15	2.8	2.3	12	118.8	83.0	M18x1.0	160	4623	114.163	
63	12-14	9.08	4.0	3.4	12	118.8	83.0	M18x1.0	160	4623	114.263	
63	16-18	2.01	1.9	1.6	12	113.8	78.0	M18x1.0	160	4623	118.063	
63	16-18	4.15	2.8	2.3	12	113.8	78.0	M18x1.0	160	4623	118.163	
63	16-18	9.08	4.0	3.4	12	113.8	78.0	M18x1.0	160	4623	118.263	
63	20	4.15	2.8	2.3	12	110.0	74.2	M18x1.0	160	4623	120.063	
63	20	9.08	4.0	3.4	12	110.0	74.2	M18x1.0	160	4623	120.163	
63	20	16.62	5.3	4.6	12	110.0	74.2	M18x1.0	160	4623	120.263	
63	25	4.15	2.8	2.3	12	99.1	63.3	M18x1.0	160	4623	125.063	
63	25	9.08	4	3.4	12	99.1	63.3	M18x1.0	160	4623	125.163	
63	25	16.62	5.3	4.6	12	99.1	63.3	M18x1.0	160	4623	125.263	
63	32	4.15	2.8	2.3	12	94.1	58.3	M18x1.0	160	4623	132.063	



										Article no.	4623
for HSK-A	for clamp. Ø mm	A mm ²	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	for chuck length		Order no.
63	32	9.08	4.0	3.4	12	94.1	58.3	M18x1.0	160		4623 132.163
63	32	16.62	5.3	4.6	12	94.1	58.3	M18x1.0	160		4623 132.263
80	6-10	2.01	1.9	1.6	14	54.2	14.6	M20x1.5	Standard		4623 10.080
80	6-10	4.15	2.8	2.3	14	54.2	14.6	M20x1.5	Standard		4623 10.180
80	12-18	2.01	1.9	1.6	14	53.1	13.5	M20x1.5	Standard		4623 18.080
80	12-32	4.15	2.8	2.3	14	53.1	13.5	M20x1.5	Standard		4623 32.080
80	12-32	9.08	4.0	3.4	14	53.1	13.5	M20x1.5	Standard		4623 32.180
80	20-32	16.62	5.3	4.6	14	53.6	14.0	M20x1.5	Standard		4623 32.280
100	6-10	2.01	1.9	1.6	14	56.2	12.6	M24x1.5	Standard		4623 10.100
100	6-10	4.15	2.8	2.3	14	56.2	12.6	M24x1.5	Standard		4623 10.101
100	12-18	2.01	1.9	1.6	14	55.1	11.5	M24x1.5	Standard		4623 18.100
100	12-32	4.15	2.8	2.3	14	55.1	11.5	M24x1.5	Standard		4623 32.100
100	12-32	9.08	4.0	3.4	14	55.1	11.5	M24x1.5	Standard		4623 32.101
100	20-32	16.62	5.3	4.6	14	55.6	12.0	M24x1.5	Standard		4623 32.102
100	6-8	2.01	1.9	1.6	12	131.2	87.6	M24x1.5	160		4623 108.100
100	6-8	4.15	2.8	2.3	12	131.2	87.6	M24x1.5	160		4623 108.101
100	10	2.01	1.9	1.6	12	126.2	82.6	M24x1.5	160		4623 110.100
100	10	4.15	2.8	2.3	12	126.2	82.6	M24x1.5	160		4623 110.101
100	12-14	2.01	1.9	1.6	12	120.1	76.5	M24x1.5	160		4623 114.100
100	12-14	4.15	2.8	2.3	12	120.1	76.5	M24x1.5	160		4623 114.101
100	12-14	9.08	4.0	3.4	12	120.1	76.5	M24x1.5	160		4623 114.102
100	16-18	2.01	1.9	1.6	12	115.1	71.5	M24x1.5	160		4623 118.100
100	16-18	4.15	2.8	2.3	12	115.1	71.5	M24x1.5	160		4623 118.101
100	16-18	9.08	4.0	3.4	12	115.1	71.5	M24x1.5	160		4623 118.102
100	20	4.15	2.8	2.3	12	110.6	67.0	M24x1.5	160		4623 120.100
100	20	9.08	4.0	3.4	12	110.6	67.0	M24x1.5	160		4623 120.101
100	20	16.62	5.3	4.6	12	110.6	67.0	M24x1.5	160		4623 120.102
100	25	4.15	2.8	2.3	12	100.6	57.0	M24x1.5	160		4623 125.100
100	25	9.08	4.0	3.4	12	100.6	57.0	M24x1.5	160		4623 125.101
100	25	16.62	5.3	4.6	12	100.6	57.0	M24x1.5	160		4623 125.102
100	32	4.15	2.8	2.3	12	95.6	52.0	M24x1.5	160		4623 132.100
100	32	9.08	4.0	3.4	12	95.6	52.0	M24x1.5	160		4623 132.101
100	32	16.62	5.3	4.6	12	95.6	52.0	M24x1.5	160		4623 132.102

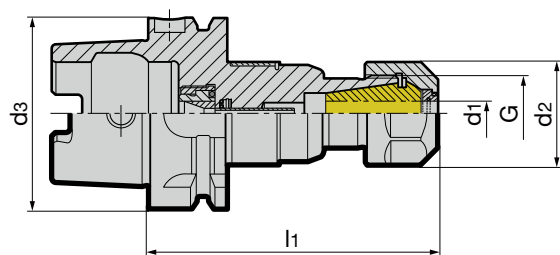
MQL 2-channel

Product information

- for MQL single and double channel systems
- compensate synchronisation errors
- minimal length compensation $\pm 0,15$ mm in tension and compression direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks and increase thread quality and tool life
- length-setting screw allows 2 to 3 mm readjustment
- MQL pressure up to max. 10 bar
- mounted MQL coolant supply pipe
- Gühring MQL identifiable by green coloured ring
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. MQL coolant supply set article no. 4513 for manual tool change (filler)
- incl. sealed IC/ER clamping nut article no. 4306 (*see torque)
- incl. adjustment key for MQL adjustment screw
- order MQL adjustment screw article no. 4305 separately
- order sealing washer article no. 4335 separately
- order collet article no. 4308 separately
- order incl. clamping key article no. 4913 for ER retaining nut separately



MQL 2-channel



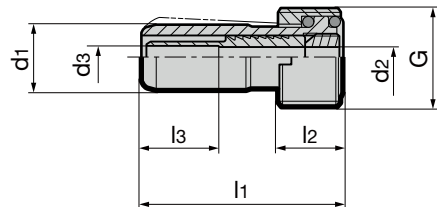
Article no. **4298**

HSK-A d ₃	nom. size	for thread	G	d ₁ mm	d ₂ mm	l ₁ mm	torque*	kg	Order no.
63	ER20	M4-M14	M25x1.5	4.0-11,0	34	95.5	35 Nm	1.00	4298 20.063
63	ER32	M4-M30	M40x1.5	4.0-20,0	50	109.0	136 Nm	1.50	4298 32.063

MQL coolant supply set for 2 channel systems HSK-A

Product information

- to MQL standard
- version sim. to DIN 69895
- for MQL 2-channel systems
- for tool holders with automatic tool clamping
- „Crashsafe“ version similar to DIN 69090-2 neck design
- dimensions d_2 and l_1 based on installed condition



Article no. 4511

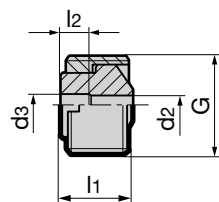
for HSK-A	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	G	Order no.
32	6.00	3.00	4.00	26.00	5.50	-	M10x1	4511 10.032
40	8.00	3.80	5.40	29.50	7.50	-	M12x1	4511 12.040
50	10.00	3.60	4.00	33.00	9.50	21.00	M16x1	4511 16.050
63	12.00	3.60	4.00	36.50	11.50	13.80	M18x1	4511 18.063
80	14.00	3.60	4.00	40.00	13.50	14.00	M20x1.5	4511 20.080
100	16.00	3.60	4.00	44.00	15.50	14.00	M24x1.5	4511 24.100

MQL 2-channel

MQL coolant supply set HSK-A (filler)

Product information

- to MQL standard
- for internal cooling MQL 1 and 2 channel systems
- for tool holders with manual tool clamping
- optimally sealed for MQL clamping set
- dimensions d_2 and l_1 based on installed condition



Article no. 4513

for HSK-A	d_2 mm	d_3 mm	l_1 mm	l_2 mm	G	for MQL or IC	Order no.
32	3.00	3.00	6.30	-	M10x1	MQL-1C/2-C	4513 10.032
40	3.60	4.00	8.30	5.00	M12x1	MQL-1C/2-C	4513 12.040
50	3.60	4.00	10.30	5.00	M16x1	MQL-1C/2-C	4513 16.050
50	5.00	5.00	10.30	-	M16x1	IC	4513 16.150
63	3.60	4.00	12.30	5.00	M18x1	MQL-1C/2-C	4513 18.063
63	6.00	6.00	12.30	-	M18x1	IC	4513 18.163
80	3.60	4.00	14.40	5.00	M20x1.5	MQL-1C/2-C	4513 20.080
80	8.00	8.00	14.40	-	M20x1.5	IC	4513 20.180
100	3.60	4.00	16.40	5.00	M24x1.5	MQL-1C/2-C	4513 24.100
100	8.00	8.00	16.40	-	M24x1.5	IC	4513 24.101

4-POINT CLAMPING TECHNOLOGY FOR MQL TECHNICAL INFORMATION AND ADVANTAGES

GÜHROCLAMP



Our 4-point clamping system is suitable for radial manual clamping. Primarily designed for installation in spindles (short drilling spindles, multiple-spindle drilling heads).

MQL
HSK clamping
technology



Advantages:

- simple and hence more economic spindle manufacture
- short, small diameter spindles with constricted spindle bearing spacing
- suitable for a pressure up to 160 bar (for conventional internal cooling)
- fast response time thanks to uninterrupted MQL supply
- compatible installation contour and application of our 4-point clamping set for conventional cooling
- fixed installation through screwed joint, prebalanced, good rotation symmetry, therefore high-speed capability

GÜHROCLAMP MQL 4-point clamping sets for MQL and IC

Product information

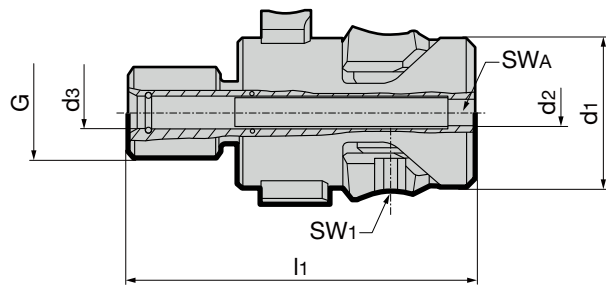
- for radial manual HSK tool clamping
- universal application for MQL and high-pressure IC
- the central and coaxial MQL supply with constant internal diameter prevents coolant from consolidating to DIN 69090-2
- for a coolant pressure up to 160 bar
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- complete as shown in illustration
- installation and operating instructions



GÜHROCLAMP



Article no. **4930**

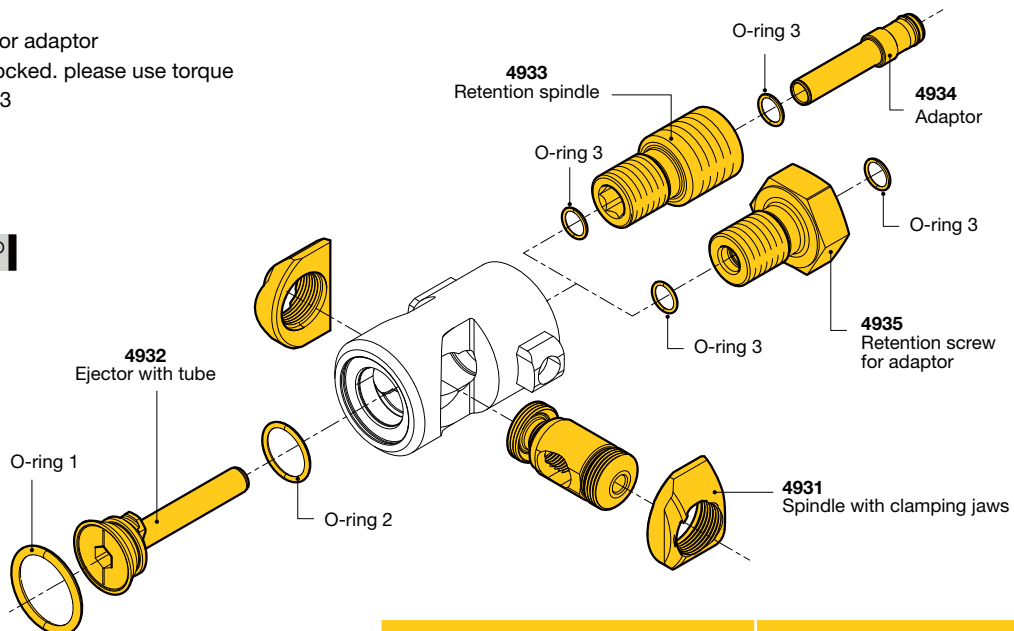
HSK-C	d1 mm	d2 mm	d3 mm	l1 mm	G	SW1	SWA	kg	Order no.
32	16.7	3	4.1	41.75	M10	2.5	3	0.05	4930 24.100
40	20.6	4	5.1	43.90	M12	3	4	0.09	4930 30.100
50	25.5	5	7.1	54.20	M16	4	5	0.18	4930 38.100
50	25.5	5	6.1	54.20	M16	4	5	0.18	4930 38.200
63	33.0	6	7.1	72.20	M20	5	6	0.37	4930 48.100
80	41.0	8	10.1	90.20	M24	6	8	0.70	4930 60.100
100	52.0	10	12.1	107.10	M24	8	10	1.30	4930 75.100

MQL clamping technology

GÜHROCLAMP component parts for MQL 4-point clamping sets article no. 4930

- retention screw only for adaptor
- if spindle cannot be locked, please use torque socket article no. 4963

GÜHROCLAMP



Article no. **4931** **4932**

HSK-C	O-ring 1 mm	O-ring 2 mm	O-ring 3 mm	Spindle with clamping jaws	Ejector with tube
	mm	mm	mm	Order no.	Order no.
32	10.5x2.0	6.0x1.5	3.5x1/4x1	4931 24.000	4932 24.100
40	13.0x2.0	7.0x1.5	4.5x1.0/5.0x1.0	4931 30.000	4932 30.100
50	16.0x2.0	10.0x1.5	5.5x1.0/7x1.0	4931 38.000	4932 38.100
63	20.3x2.4	14.0x1.5	7.0x1.0	4931 48.000	4932 48.100
80	23.4x3.53	16.0x2.0	10.0x1.5	4931 60.000	4932 60.100
100	28.17x3.53	22.0x2.0	12.0x1.70	4931 75.000	4932 75.100

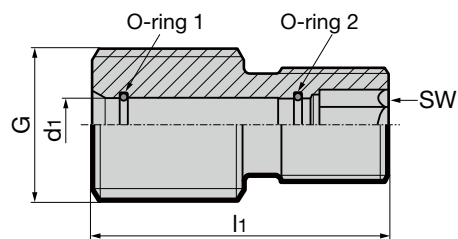
Retention spindles for GÜHROCLAMP MQL 4-point clamping sets

Product information

- retention spindle for direct installation in spindle

Scope of delivery

- complete as shown in illustration



Article no. **4933**

for HSK-C	d ₁ mm	l ₁ mm	G	SW	O-ring 1	O-ring 2	Order no.
32	4.1	22.5	M10	4	3.5x1.0	4.0x1.0	4933 24.100
40	5.1	23.2	M 12	5	4.5x1.0	5.0x1.0	4933 30.100
50	7.1	27.0	M 16	6	5.5x1.0	7.0x1.0	4933 38.100
50	6.1	27.0	M 16	6	5.5x1.0	5.5x1.0	4933 38.200
63	7.1	39.0	M 20	8	7.0x1.0	7.0x1.0	4933 48.100
80	10.1	50.0	M 24	10	10.0x1.5	10.0x1.5	4933 60.100
100	12.1	60.0	M 24	12	12.0x1.70	12.0x1.70	4933 75.100

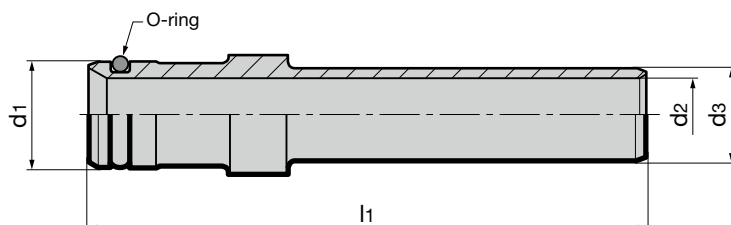
Adaptor for GÜHROCLAMP MQL 4-point clamping sets

Product information

- adaptor for direct installation in spindle and spindle adaptor (integrated) for coolant supply and sealing

Scope of delivery

- complete as shown in illustration



Article no. **4934**

for HSK-C	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	O-ring	Order no.
32	4.0	2.0	4.0	14	2.0 x 1.0	4934 24.100
40	5.0	3.0	5.0	28	3.0 x 1.0	4934 30.100
50	6.0	4.0	6.0	28	4.0 x 1.0	4934 38.200
50	6.0	4.0	7.0	28	4.0 x 1.0	4934 38.100
63	8.0	5.5	7.0	42	6.0 x 1.0	4934 48.100
80	10.2	7.5	10.0	56	8.0 x 1.0	4934 60.100
100	12.0	9.5	12.0	60	10.0 x 1.0	4934 75.100

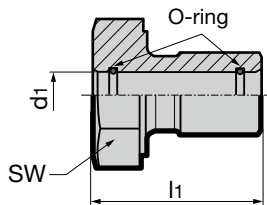
Retention screw for GÜHROCLAMP MQL 4-point clamping sets

Product information

- necessary for installation of MQL 4-point clamping set in spindle adaptors and module adaptor flange article no. 4363, 4386, 4387 and 4713
- change against standard retention bolt

Scope of delivery

- complete as shown in illustration



							Article no.	4935
for HSK-C	d1 mm	l1 mm	SW	O-ring 1	O-ring 2	torque Nm	Order no.	
32	4.1	23.5	13	4x1.0	4x1.0	14	4935 24.100	
40	5.1	21	16	4.5x1.0	5x1.0	30	4935 30.100	
50	6.1	25	18	5.5x1.0	6x1.0	60	4935 38.200	
50	7.1	25	18	5.5x1.0	7x1.0	60	4935 38.100	
63	7.1	29	24	7x1.0	7x1.0	110	4935 48.100	
80	10.1	36	24	10x1.5	10x1.5	180	4935 60.100	
100	12.1	46.5	32	12x1.7	12x1.7	200	4935 75.100	

MQL
HSK clamping
technology

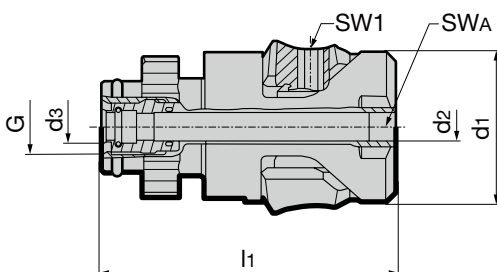
M contour clamping sets for MQL and IC

Product information

- HSK clamping sets compatible with M contour spindles and adaptors
- universal application for MQL and high-pressure IC
- the central coaxial MQL supply with constant internal diameter ensures a uninterrupted coolant supply to DIN 69090-2
- for a coolant pressure up to 160 bar
- for radial manual HSK tool clamping
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- incl. adaptor with through hole for uninterrupted coolant supply
- including installation and operating instructions
- order adaptor with spigot connection article no. 4616 separately
- spindle connection dimensions on request

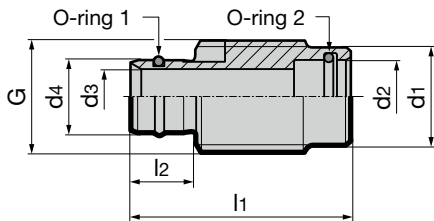


								Article no.	4615
HSK-C	d1 mm	d2 mm	d3 mm	l1 mm	G	SW1	SWA	Order no.	
32	16.7	3.0	4.1	43.4	M8x1	2.5	3	4615 24.000	
40	20.6	4.0	5.1	48.3	M10x1	3	4	4615 30.000	
50	25.5	5.0	6.1	55.3	M12x1	4	5	4615 38.100	
50	25.5	5.0	7.1	55.3	M12x1	4	5	4615 38.000	
63	33.0	6.0	7.1	64.7	M12x1	5	6	4615 48.000	
80	41.0	8.0	10.1	75.3	M16x1	6	8	4615 60.000	
100	52.0	10.0	12.1	94.5	M18x1	8	10	4615 75.000	

Adaptor with spigot transition for M contour clamping set

Product information

- application on M contour clamping sets
article no. 4615 instead of adaptor with coolant transfer hole
- universal application for MQL and high-pressure IC
- for a coolant pressure up to 160 bar
- adaptor for spindles without coolant tube for uninterrupted coolant supply
- spindle connection dimensions on request



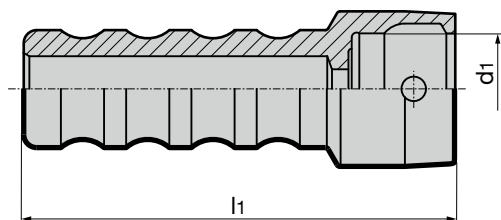
Article no. **4616**

for HSK-C	d ₁ mm	d ₂ mm	d ₃ mm	d ₄ mm	l ₁ mm	l ₂ mm	O-ring 1	O-ring 2	G	Order no.
32	-	3.5	3	5.00	14.4	5.4	3.5x1	3x1	M8x1	4616 24.000
40	7.7	4.5	4	6.00	22.0	6.5	4.0x1	4x1	M10x1	4616 30.000
50	8.5	5.5	5	8.00	23.0	7.5	5.5x1	6x1	M12x1	4616 38.000
63	10.6	7.0	6	8.00	24.0	7.0	7.0x1	6x1	M12x1	4616 48.000
80	-	10.0	8	11.30	23.3	8.3	10x1.5	8x1.5	M12x1	4616 60.000
100	-	12.0	10	13.80	30.6	9.6	12x1.5	12x1.5	M18x1	4616 75.000

Tool for the assembly / disassembly of M contour clamping sets

Product information

- for the assembly and disassembly of M contour clamping sets
article no. 4615

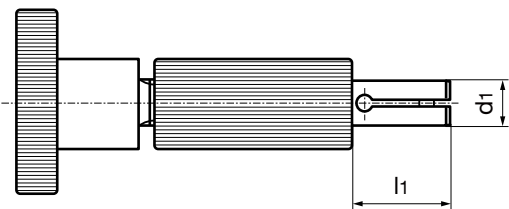


Article no. **4624**

for HSK	d ₁ mm	l ₁ mm	Order no.
32	17	118.7	4624 32.000
40	21	121.6	4624 40.000
50	26	127.5	4624 50.000
63	34	132	4624 63.000
80	42	143	4624 80.000
100	53	152	4624 100.000

Product information

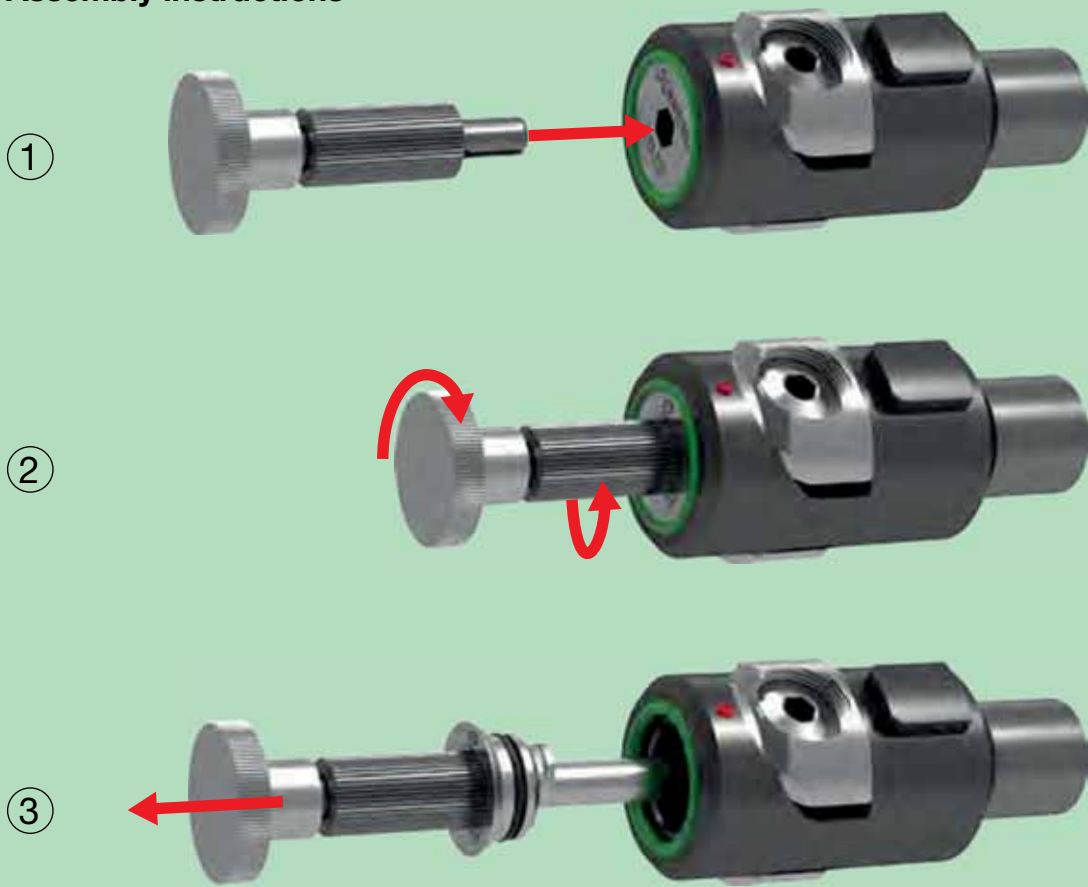
- for assembly and disassembly of ejectors of MQL clamping sets, article no. 4930, and M contour clamping sets, article no. 4615



			Article no.	4986
for HSK	d ₁ mm	l ₁ mm	Order no.	
32	3	9	4986 3.032	
40	4	9	4986 4.040	
50	5	11	4986 5.050	
63	6	12	4986 6.063	
80	8	15	4986 8.080	
100	10	15	4986 10.100	

MQL
HSK clamping
technology

Assembly instructions



MQL-CHECK 3001

NEW GENERATION

Measurement directly at tool tip

In particular with minimum quantity lubrication it is very essential that very little quantities of lubrication are perfectly applied on the tool's cutting edge.

Deficient supply or long response times may have fatal consequences, which are premature wear, lower processing quality or even tool breakages. If the quantity of lubrication is too high, this may lead to a cost-intensive and needless lubricant consumption and extra cleaning effort on components or/and machines. The MQL Check 3001 is a measuring device provided by Gühring which is easy in operation and which allows fast and reliable checking of the lubrication quantity directly at the tool's tip.

The MQL Check 3001 is fastened inside the machine via magnet points before the zero point of the plunging depth is determined via the tool's tip. After the tool has been positioned in the measuring device and the start command has been transmitted via the software, MQL supply can be started. The measuring device sends the collected data to the respective software on PC/laptop via bluetooth.

Advantages of MQL-Check 3001

- simple, quick measurements of the coolant volume directly at the tool point
- reproduceable and at any time comparable measuring data
- it also comes with a master tool for cross-checking the MQL test stand → in order to check the function of the MQL device, machine, spindle, tool holder and tool
- a workshop suitable system, wireless operation - in terms of power supply as well as data transfer

Technical Data

Measuring range	10 to 160 ml/h
Tool diameter range	3 to 21.5 mm
Measuring position	0 to 90° (vertical and horizontal machining)
Radio range	approx. 50 m (at optimal conditions)



Note:

Only tools with axial coolant duct exits can be checked by means of the MQL Check 3001

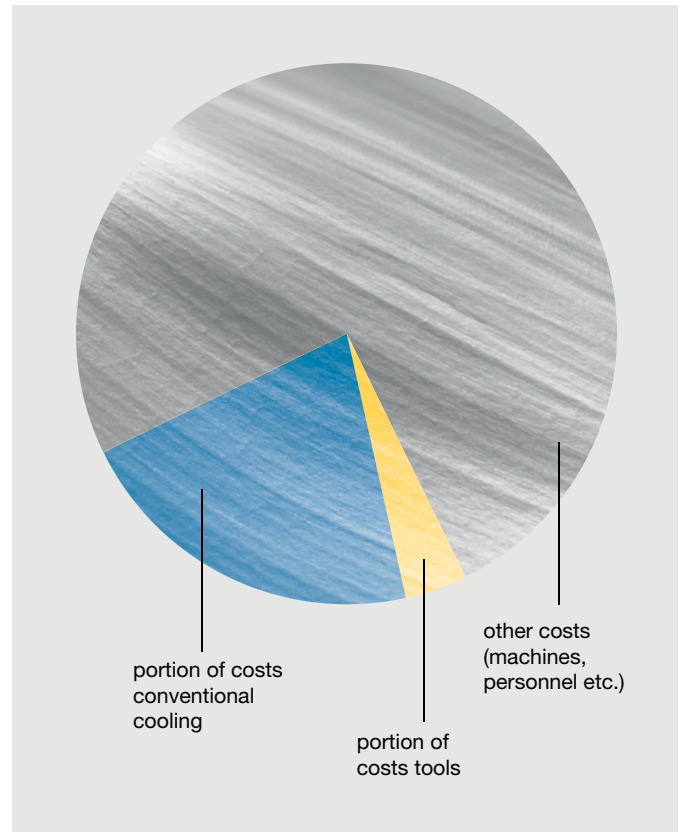
MQL-Check 3001 consists of:

- Measuring device incl. bluetooth sender and magnet foot for fastening during horizontal processing
- Software for measured data logging
- 10 measuring filter
- Battery + power pack

Introduction

Alongside the machine and tooling the costs for coolant are a considerable portion of the overall cost of the machining process. Therefore, a reduction in the cooling lubrication requirements offers a potential for cost savings.

The reduction of cooling lubricants is not only cost saving but is also of benefit to the environment and health protection. GÜHRING is one of the pioneers in the research and development of ML that began in the mid 1990's.

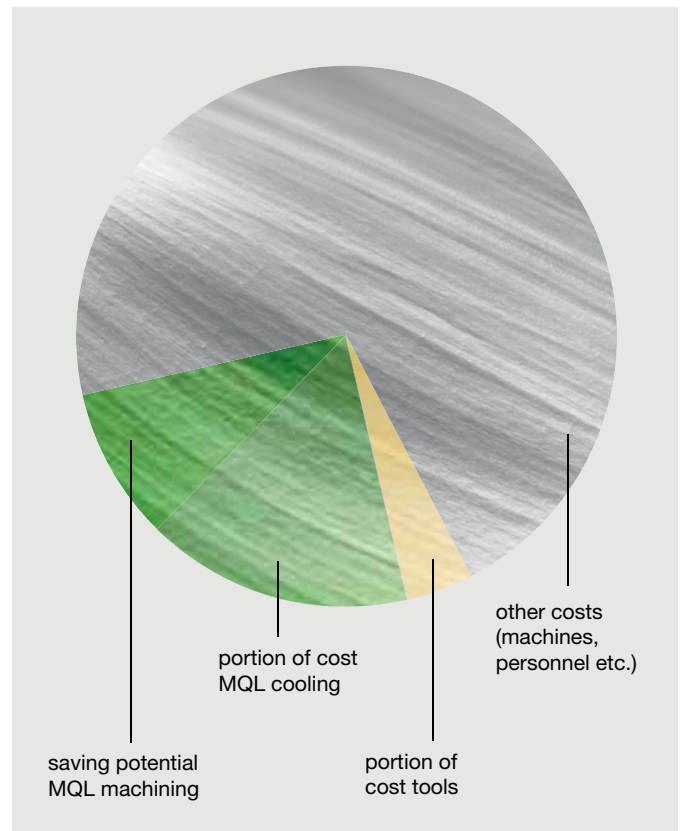


ML technology

The aim of ML machining

The acquisition of a new ML cooling lubricant system is significantly less expensive than conventional cooling!

- reduction of thermal stresses at the tool point
- less tool wear
- effective chip evacuation from deep holes
- reduction of cooling lubricant requirement
- high cooling and lubrication effect especially in deep holes
- lowering the resulting costs such as:
 - component cleaning costs
 - cooling lubricant disposal costs
 - swarf disposal costs
- environment and health protection



The development of present-day MQL systems

Thanks to the research in MQL machining Gühring created the pre-condition for a practical MQL technology. From the clamping set to the tool's cutting edge all the components were integrated in the development – the result was the first MQL supply system.

Features:

- modular constructed and standardised system
- MQL and conventional clamping set are freely interchangeable thanks to an identical spindle contour
- hydraulic, shrink fit and synchro chucks are all designed for the MQL clamping set



Gühring's current MQL system

By incorporating the MQL length adjustment screw to Gühring's first MQL supply system in 2007, the original drawback was eliminated. There is, therefore, currently a MQL supply system available to the customer that optimally meets the requirements of the present-day production process.

Features of the first Gühring MQL supply system:

- no lubricant delays
- special MQL coolant supply unit
- MQL suitable tool shank end
- tapered length setting screw

The user, therefore, benefits from a standardised system and a clearly reduced stock keeping thanks to compatible components.



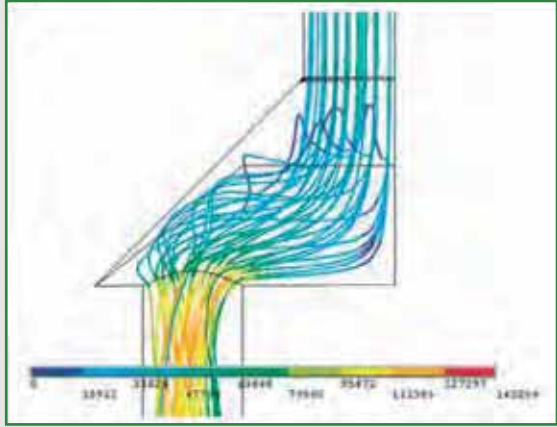
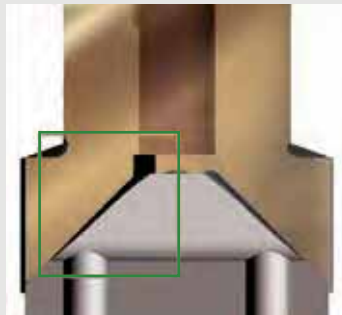
**Optimally formed shank end!
For a secure MQL supply**

The supply of these extremely low coolant quantities directly to the effective area is of utmost importance. Hereby, the geometric design of the shank end plays a significant role! The Gühring developed conical shank end optimally satisfies the relevant MQL conditions.

Advantages of the tapered shank end:

- no lubricant delays
- minimal dead area
- simple operation
- cost-efficient production

Flow pattern with low vortex formation

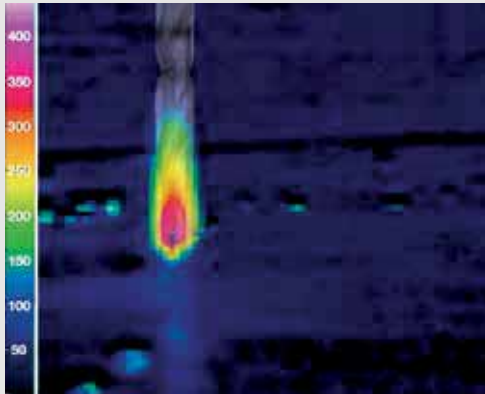
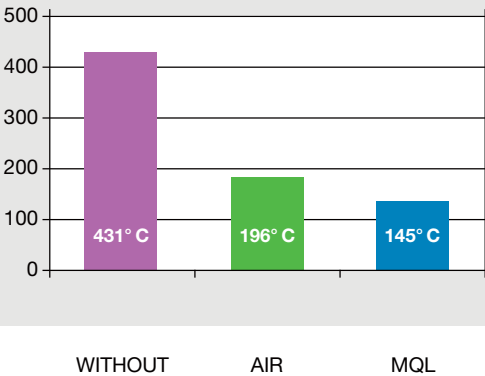
Flow conditions in the coolant duct connection slot at the point of the tapered transition

MQL technology

Keeping a cool point

With MQL the process temperature can be considerably reduced in comparison to dry machining resulting in longer tool life and an increased process reliability.

**Thermographic examination at Gühring:
Comparison of tool temperatures**

Condition	Tool Temperature (°C)
WITHOUT	431
AIR	196
MQL	145

The best form for MQL!

Optimal MQL machining results thanks to the optimised tool geometry of RT 100 T!



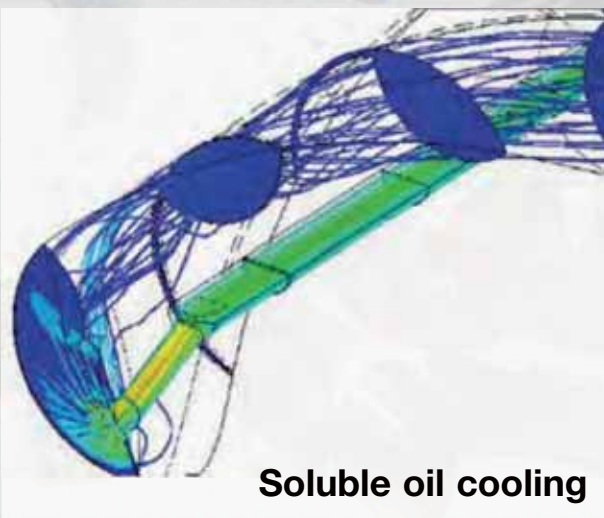
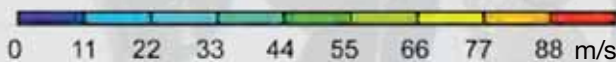
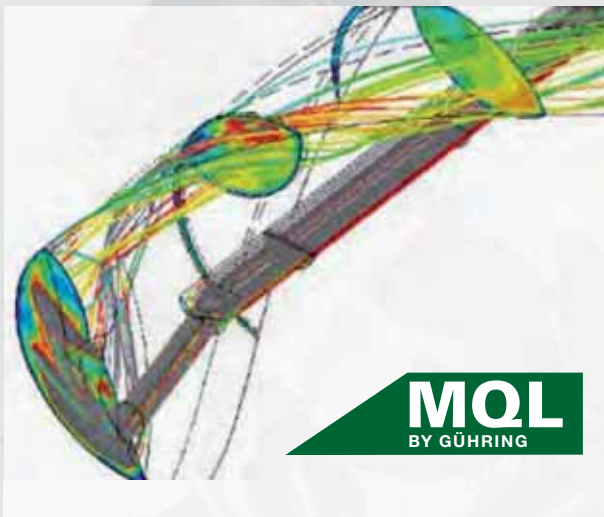
1. Flute cross section:

The flute geometry of Gühring MQL tools ensures short chips that are optimally evacuated from deep holes.

2. Maximum coolant duct cross-section:

The cooling lubricant supply as well as the chip evacuation have been optimised through the tool's maximum coolant duct cross-section.

Flow speed comparison



The flow speed

in the flute with MQL is 30.4 m/s.

The volume with MQL

is 6.960 l/h (std.litres air/h).

Tool Ø = 11.7 mm

Pressure at pump = 6 bar

Pressure at tool = 4 bar

The flow speed

In the flute with soluble oil is 3.5 m/s.

The volume with soluble oil

is 600 l/h (std.litres air/h).

Tool Ø = 11.7 mm

Pressure at pump = 60 bar

Pressure at tool = 31 bar

MQL system types

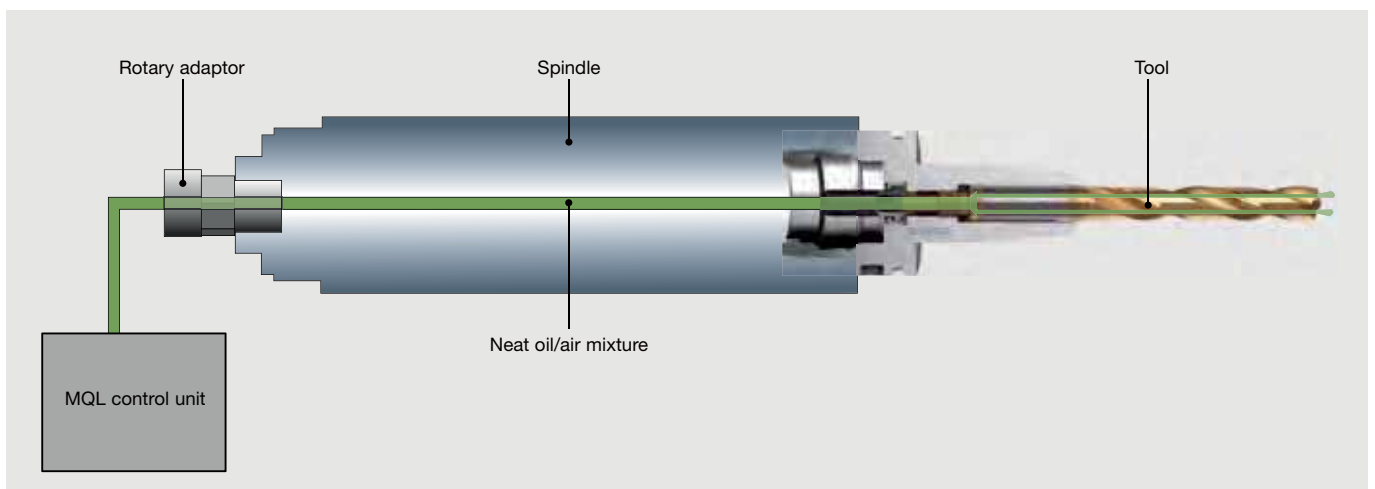
The provision of the MQL medium to the tool can be achieved in two ways: the aerosol mixture can be prepared outside the machine and conveyed to the machining location (1-channel system) or compressed air and MQL medium are conveyed separately to the mixing chamber where they are then mixed together (2-channel system).

The aerosol feed to the machining location is achieved via a suitable minimal quantity lubrication rotary adaptor (preferably with axial flowthrough), the spindle, the clamping system and finally the cutting tool. Unavoidable cross-section modifications should be as streamlined as possible.

1-channel MQL system

With a 1-channel MQL system, a lubricating aerosol is created in a separate MQL unit attached to the machine tool. Special nozzle systems inside a pressurised container create a lubri-

cating aerosol via a regulated compressed air feed, its neat oil content adjustable and then maintained within the physical limits by the MQL control.

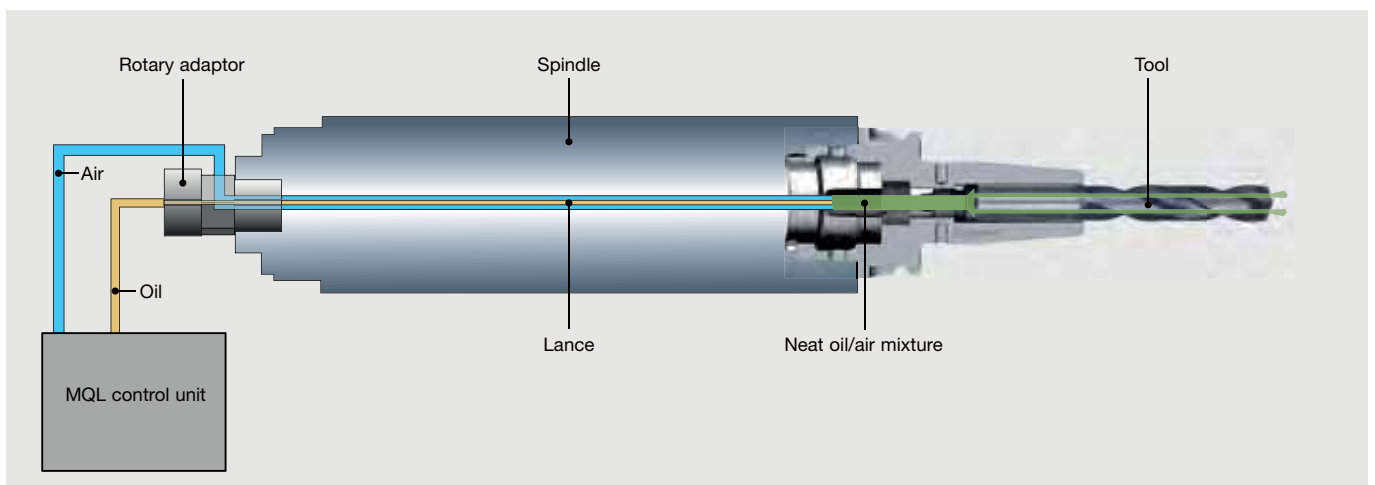


MQL technology

The 2-channel MQL system

With a 2-channel system the neat oil reaches the rotary adaptor from the unit via a ring line and a as short as possible stub line. In it is incorporated a quick valve that regulates minute quantities of neat oil. The neat oil is transported into the tool holder via a lance attached in the spindle. The second channel of the rotary adaptor is used for the air supply to the tool holder. Only at this point the air is mixed with the neat oil.

To achieve this, the tool holder possesses a pressed-in pipe nozzle in which the mixing chamber is located. Neat oil and air can be mixed with this system in more or less any quantities. The route from the mixing chamber to the point of destination is only minimal resulting in a rapid response time and allowing a very quick alteration of the volume of neat oil.



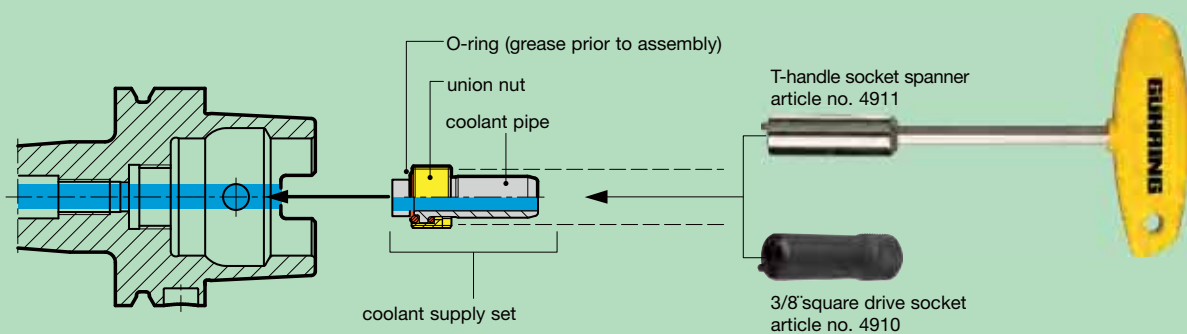
INSTALLATION INSTRUCTIONS

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant supply set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner. When inserting the MQL coolant supply unit, it is paramount to ensure that the MQL pipe is inserted centrally and undamaged into the MQL length setting screw (do not kink).
4. Screw in the coolant supply set/coolant supply unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

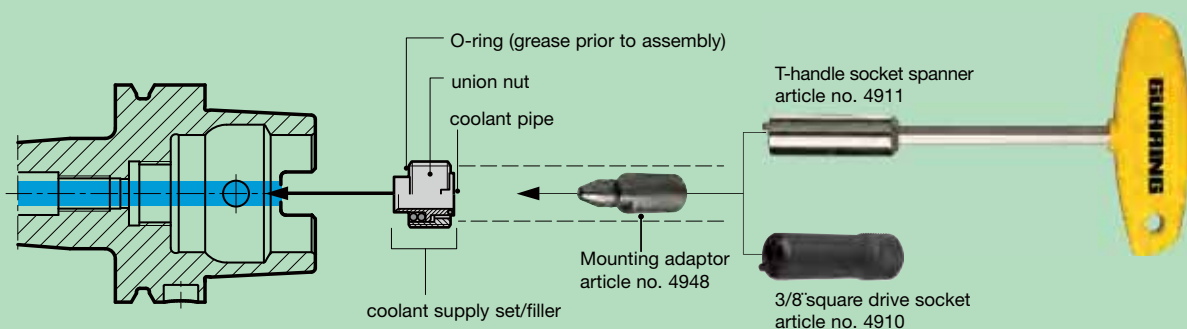
Torque figures

for HSK	MA Nm
32	7
40	11
50	15
63	20
80	25
100	30

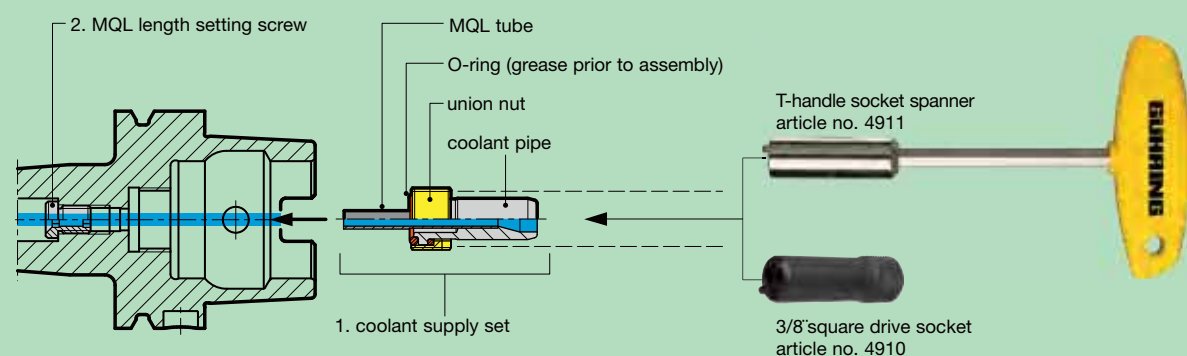
Installation of MQL coolant supply set article no. 4939



Installation of MQL coolant supply set filler article no. 4940



Installation of MQL coolant supply unit article no. 4623/4924



HPC

HPC CLAMPING CHUCKS

HPC clamping chucks



HPC clamping chucks

AT FULL SPEED
A FIRM GRASP
ON EVERYTHING!

HPC clamping chucks





⇒ *HIGH CLAMPING FORCE*

⇒ *IDEAL CLAMPING
FORCE TRANSFER
TO THE TOOL*

⇒ *IMMENSE SPEEDS*

⇒ *MAXIMUM RIGIDITY*

⇒ *OPTIMAL FOR **i**machining[®]*

PRECISION CLAMPING CHUCKS

TECHNOLOGY AND ADVANTAGES

Gühring's precision clamping chucks offer highest clamping force particularly for milling operations but also for drilling and reaming as well as under HSC and HPC conditions. The special clamping sleeve is clamped via a worm gear and optimally transfers the enormous clamping force onto the clamped tool. This enables clamping forces of, for example, > 200 Nm for 12 mm shank diameters or > 300 Nm for 16 mm shank diameters.

New: Now available with PinLock drawout protection!



- **This system offers the following advantages:**
- increased cutting depths in comparison to conventional tool holders
- increased radial engagement and subsequently higher material removal rate
- maintenance-free technology
- suitable for straight shanks to DIN 1835 A and B as well as to 6535 HA, HB and HE
- concentricity $3 \mu\text{m}$ with $2.5 \times D$
- balancing quality: G2.5 / 20,000 rev./min or $U < 1.2 \text{ gmm}$

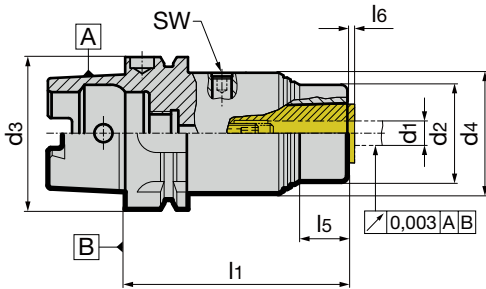
HSK-A precision clamping chucks

Product information

- for heavy-duty cutting as well as HSC and HPC
- HSK-A to ISO 12164-1/DIN 69893-1
- balancing quality: G2.5 / 20,000 rev./min or U < 1.2 gmm
- for tool shank tolerance h6
- highest clamping force and stability thanks to mech. tension gearing
- actuation torque for clamping initiation 10 Nm
- suitable for internal cooling up to 80 bar

Scope of delivery

- hexagon clamping key article no. 4912 4.600
-
- order clamping sleeves article no. 4302, 4235, 4236, 4237 separately
- order coolant supply set article no. 4949 separately
- order torque wrench 10 Nm article no. 4987 10.000 and hexagon socket/attachments article no. 4916 4.000 separately



Article no. 4300									
HSK-A d3	nom. size	for clamping-Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l5 mm	l6 mm	SW	Order no.
63	20	3-20	40	53	92	20	3.0	4	4300 20.063
100	20	3-20	40	70	100	18	3.0	4	4300 20.100
100	25	16-32	52.5	70	139	-	3.5	4	4300 25.100

HPC clamping chucks

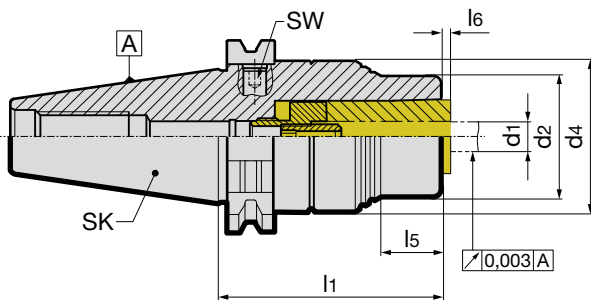
ISO taper precision clamping chucks

Product information

- for heavy-duty cutting as well as HSC and HPC
- ISO taper to DIN ISO 7388-1 form AD
- balancing quality: G2.5 / 20,000 rev./min or U < 1.2 gmm
- for tool shank tolerance h6
- highest clamping force and stability thanks to mech. tension gearing
- actuation torque for clamping initiation 10 Nm
- suitable for internal cooling up to 80 bar central coolant supply form AD

Scope of delivery

- hexagon clamping key article no. 4912 4.600
-
- order clamping sleeves article no. 4302, 4235, 4236, 4237 separately
- order pull studs article no. 4925 or 4926 separately
- order torque wrench 10 Nm, article no. 4987 10.000, and hexagon socket/attachments, article no. 4916 4.000, separately
- form AD/B on request



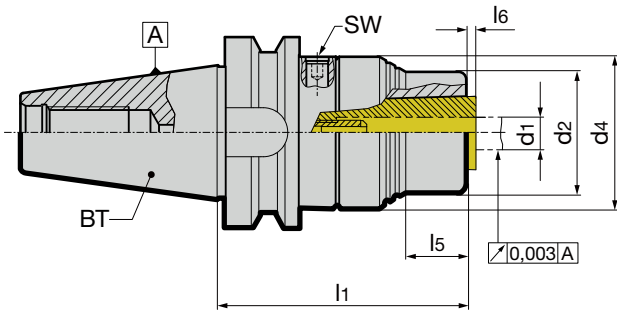
Article no. 4301									
SK	nom. size	for clamping-Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l5 mm	l6 mm	SW	Order no.
40	20	3-20	40	50	62.5	20	3.0	4	4301 20.040
50	20	3-20	40	63	62	18	3.0	4	4301 20.050
50	25	16-32	52.5	70	101.5	-	3.5	4	4301 25.050

Product information

- for heavy-duty cutting as well as HSC and HPC
- MAS/BT to DIN ISO7388-2 form JD
- balancing quality: G2.5 / 20,000 rev./min or U < 1.2 gmm
- for tool shank tolerance h6
- highest clamping force and stability thanks to mech. tension gearing
- actuation torque for clamping initiation 10 Nm
- suitable for internal cooling up to 80 bar

Scope of delivery

- hexagon clamping key article no. 4912 4.600
- order clamping sleeves article no. 4302, 4235, 4236, 4237 separately
- order pull studs article no. 4927 or 4928 separately
- order torque wrench 10 Nm article no. 4987 10.000 and hexagon socket/attachments article no. 4916 4.000 separately
- form AD/B on request



Article no. **4244**

MAS/BT	nom. size	for clamping-Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l5 mm	l6 mm	SW	Order no.
30	20	3-20	40	53	82.0	20	3.0	4	4244 20.030
40	20	3-20	40	63	70.5	18	3.0	4	4244 20.040
40	20	3-20	40	63	120.0	48	3.0	4	4244 120.040
50	20	3-20	40	63	81.5	18	3.0	4	4244 20.050
50	20	3-20	40	63	167.5	84	3.0	4	4244 120.050
40	25	16-32	53	63	109.5	-	3.5	4	4244 25.040
50	25	16-32	52.5	70	120.5	-	3.5	4	4244 25.050

clamping chucks HPC

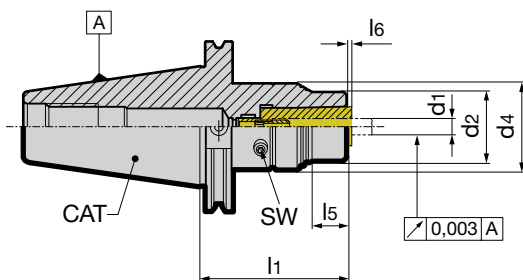
CAT precision clamping chucks

Product information

- for heavy-duty cutting as well as HSC and HPC
- CAT to ASME B5.50
- balancing quality: G2.5 / 20,000 rev./min or U < 1.2 gmm
- for tool shank tolerance h6
- highest clamping force and stability thanks to mech. tension gearing
- actuation torque for clamping initiation 10 Nm
- suitable for internal cooling up to 80 bar
- central coolant supply form DU
- CAT40 d4: does not correspond to ASME B5.50

Scope of delivery

- hexagon clamping key article no. 4912 4.600
- order clamping sleeves article no. 4302, 4235, 4236, 4237 separately
- order torque wrench 10 Nm article no. 4987 10.000 and hexagon socket/attachments article no. 4916 4.000 separately
- CAT pull studs available on request



Article no. **4243**

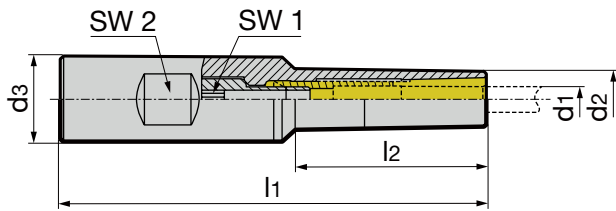
CAT	nom. size	for clamping-Ø d1 h6 mm	d2 mm	d4 mm	l1 mm	l5 mm	l6 mm	SW	Order no.
40	20	3-20	40	50	62,5	20	3,0	4	4243 20.040
50	20	3-20	40	63	62	18	3,0	4	4243 20.050
50	25	16-32	52,5	70	101,5	-	3,5	4	4243 25.050

Product information

- slender extension for mounting in HPC chucks or hydraulic shrink fit chucks
- for tool shank tolerances h6
- high clamping force
- actuation from back by using supplied hexagon key (SW 1)
- actuating torque for clamping initiation max. 3 Nm

Scope of delivery

- hexagon clamping key article no. 4912 4.000
- order clamping sleeves article no. 4302, 4235 separately
- for optimal operation order torque wrench article no. 4915 3,000 separately



								Article no.	4208
d ₃ mm	nom. size	for clamping-Ø d ₁ mm	d ₂ mm	l ₁ mm	SW 1	SW 2	kg	Order no.	
14	6	1-6	14,0	100	4	13	0,26	4208 6.014	
14	6	1-6	14,0	150	4	13	0,32	4208 6.114	
14	6	1-6	14,0	190	4	13	0,45	4208 6.214	
20	6	1-6	20,0	100	4	16	0,34	4208 6.020	
20	6	1-6	20,0	150	4	16	0,46	4208 6.120	

HPC clamping chucks

Power milling with PinLock

Drawout secure volume machining – with Gührojet cooling
Perfect combination - HPC clamping chuck with PinLock drawout safety

- process reliable (no tool drawout, no component damage)
- long tool life and optimal surface finish
- simple handling
- standard milling tools therefore no licenses required

Thanks to the application of a PinLock clamping sleeve with securing pin any drawout of the applied standard milling tools with HB shank to DIN 6535 is safely prevented. The combination of HPC clamping technology with perfect concentricity and the efficient Gührojet peripheral cooling achieves, until now, unachieved metal removal rates, tool life and surface quality. All this with standard tools and absolute protection against unwanted drawout effects.

HPC
clamping chucks



|PINLOCK|

|GÜHROJET|



Product information

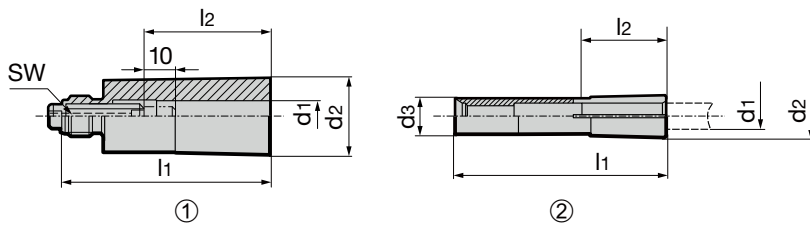
- for clamping tools with straight shank
- for maximum holding torque
- design with peripheral cooling thanks to long slots
- for tool shank tolerance h6
- Type 1: for HPC power clamping chucks
- Type 2: for HPC extensions
- Type P: PinLock drawout protection incl. 3 locking pins and assembly tool (supplied without adjustment)

Scope of delivery

- incl. length setting screw



GÜHROJET
PINLOCK



							Article no.	4302
nom. size	for shank Ø d1 h6 mm	d2 mm	l1 mm	l2 mm	Type	SW	Order no.	
6	1	10	50	28	2	–	4302	1.006
6	2	10	50	28	2	–	4302	2.006
6	3	10	50	28	2	–	4302	3.006
6	4	10	50	28	2	–	4302	4.006
6	5	10	50	28	2	–	4302	5.006
6	6	10	50	28	2	–	4302	6.006
20	3	24.6	66	28	1	4	4302	3.020
20	4	24.6	66	28	1	4	4302	4.020
20	5	24.6	66	28	1	4	4302	5.020
20	6	24.6	66	36	1	4	4302	6.020
20	8	24.6	66	36	1	4	4302	8.020
20	10	24.6	66	40	1	4	4302	10.020
20	12	24.6	66	45	1	4	4302	12.020
20	14	24.6	66	45	1	4	4302	14.020
20	16	24.6	66	48	1	4	4302	16.020
20	18	24.6	66	48	1	4	4302	18.020
20	20	24.6	66	50	1	4	4302	20.020
32	20	45.5	90	50	1	4	4302	20.032
32	22	45.5	90	50	1	4	4302	22.032
32	25	45.5	90	56	1	4	4302	25.032
32	32	45.5	90	59	1	4	4302	32.032
25	16	39	87.5	48	1	5	4302	16.025
25	20	39	87.5	50	1	5	4302	20.025
25	22	39	87.5	50	1	5	4302	22.025
25	25	39	87.5	56	1	5	4302	25.025
25	32	39	87.5	59	1	5	4302	32.025
20	6	24.6	66	36	1/P	4	4302	6.120
20	8	24.6	66	36	1/P	4	4302	8.120
20	10	24.6	66	40	1/P	4	4302	10.120
20	12	24.6	66	45	1/P	4	4302	12.120
20	14	24.6	66	45	1/P	4	4302	14.120
20	16	24.6	66	48	1/P	4	4302	16.120
20	18	24.6	66	48	1/P	4	4302	18.120
20	20	24.6	66	50	1/P	4	4302	20.120
25	16	39	87.5	48	1/P	5	4302	16.125
25	20	39	87.5	50	1/P	5	4302	20.125
25	22	39	87.5	50	1/P	5	4302	22.125
25	25	39	87.5	56	1/P	5	4302	25.125

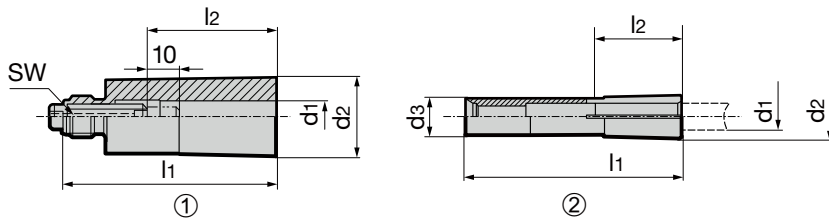
HPC clamping chucks

Product information

- for clamping tools with straight shank
- high holding torque
- sealed design with short slots
- for tool shank tolerance h6
- Type 1: for HPC power clamping chucks
- Type 2: for HPC extensions

Scope of delivery

- incl. length setting screw



HPC clamping chucks

							Article no.	4235
nom. size	for shank Ø d1 h6 mm	d2 mm	l1 mm	l2 mm	type	SW	Code-Nr.	
6	1	24.6	50	28	2	-	4235	1.006
6	2	24.6	50	28	2	-	4235	2.006
6	3	24.6	50	28	2	-	4235	3.006
6	4	24.6	50	28	2	-	4235	4.006
6	5	24.6	50	28	2	-	4235	5.006
6	6	24.6	50	36	2	-	4235	6.006
20	3	24.6	66	28	1	4	4235	3.020
20	4	24.6	66	28	1	4	4235	4.020
20	5	24.6	66	28	1	4	4235	5.020
20	6	24.6	66	36	1	4	4235	6.020
20	8	24.6	66	36	1	4	4235	8.020
20	10	24.6	66	40	1	4	4235	10.020
20	12	24.6	66	45	1	4	4235	12.020
20	14	24.6	66	45	1	4	4235	14.020
20	16	24.6	66	48	1	4	4235	16.020
20	18	24.6	66	48	1	4	4235	18.020
20	20	24.6	66	50	1	4	4235	20.020
32	20	45.5	90	50	1	4	4235	20.032
32	22	45.5	90	50	1	4	4235	22.032
32	25	45.5	90	56	1	4	4235	25.032
32	32	45.5	90	59	1	4	4235	32.032
25	16	39	87.5	48	1	5	4235	16.025
25	20	39	87.5	50	1	5	4235	20.025
25	22	39	87.5	50	1	5	4235	22.025
25	25	39	87.5	56	1	5	4235	25.025
25	32	39	87.5	59	1	5	4235	32.025

GULFROJET



TOOL HOLDERS

Tool holders

TOOL HOLDERS WITH PERIPHERAL COOLING

|GÜHROJET|



***OPTIMAL CHIP
EVACUATION***



***HIGH PROCESS
RELIABILITY***



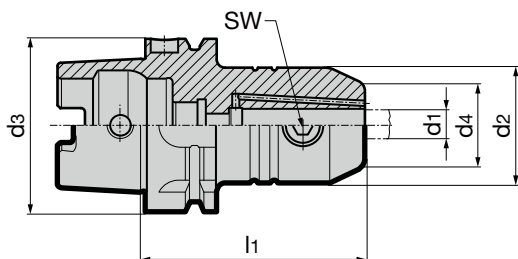
***IMPROVED COOLING
LUBRICATION***

Product information

- balancing quality: G6.3 / 15,000 rev./min
- with bore to DIN 1835-2 form B "Weldon"
- dimensions to DIN 69882-4
- from bore d1 = 25 with two clamping screws
- with coolant ducts in the bore for peripheral cooling, improving process and tool life
- coolant ducts:
 - d = 6 - 14 with two coolant ducts
 - d = 16 - 40 with four coolant ducts
- HSK-A to ISO 12164-1 / DIN 69893-1

Scope of delivery

- incl. clamping screw article no. 4903
- order coolant supply set, article no. 4949 separately
- HSK-A32, 40 & 80 on request



Article no. **4232**

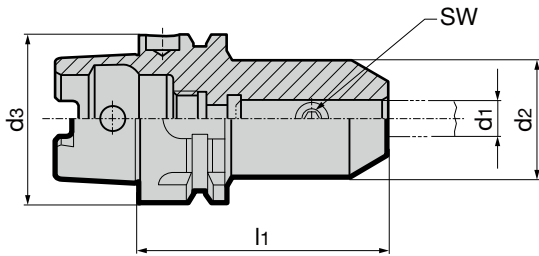
HSK-A d ₃	clamping-Ø d ₁ H5 mm	d ₂ mm	d ₄ mm	l ₁ mm	SW	kg	Order no.
32	6	25	15	60	3	0.24	4232 6.032
32	8	28	20	60	4	0.27	4232 8.032
32	10	35	25	65	5	0.31	4232 10.032
32	12	42	30	65	6	0.41	4232 12.032
40	6	25	15	60	3	0.33	4232 6.040
40	8	28	20	60	4	0.35	4232 8.040
40	10	35	25	60	5	0.47	4232 10.040
40	12	42	30	70	5	0.58	4232 12.040
40	14	44	32	75	6	0.59	4232 14.040
40	16	48	36	75	6	0.64	4232 16.040
50	6	25	15	65	3	0.50	4232 6.050
50	8	28	20	65	4	0.60	4232 8.050
50	10	35	25	65	5	0.60	4232 10.050
50	12	42	30	80	6	0.90	4232 12.050
50	14	44	32	80	6	0.90	4232 14.050
50	16	48	36	80	6	1.00	4232 16.050
50	18	50	38	80	6	1.00	4232 18.500
50	20	52	40	80	8	1.00	4232 20.050
63	6	25	15	65	3	0.80	4232 6.063
63	8	28	20	65	4	0.80	4232 8.063
63	10	35	25	65	5	0.90	4232 10.063
63	12	42	30	80	6	1.20	4232 12.063
63	14	44	32	80	6	1.20	4232 14.063
63	16	48	36	80	6	1.30	4232 16.063
63	18	50	38	80	6	1.40	4232 18.063
63	20	52	40	80	8	1.40	4232 20.063
63	25	65	45	110	10	2.40	4232 25.063
63	32	72	56	110	10	2.70	4232 32.063
80	6	25	15	80	3	1.75	4232 6.080
80	8	28	20	80	4	1.90	4232 8.080
80	10	35	25	80	5	2.10	4232 10.080
80	12	42	30	80	6	2.10	4232 12.080
80	14	44	32	80	6	2.30	4232 14.080
80	16	48	36	100	6	2.50	4232 16.080
80	18	50	38	100	6	2.50	4232 18.080
80	20	52	40	100	8	2.70	4232 20.080
80	25	65	45	100	10	2.80	4232 25.080
80	32	72	56	110	10	2.85	4232 32.080
80	40	80	60	120	10	2.98	4232 40.080
100	6	25	15	80	3	3.00	4232 6.100
100	8	28	20	80	4	3.20	4232 8.100
100	10	35	25	80	5	3.40	4232 10.100
100	12	42	30	80	6	3.40	4232 12.100
100	14	44	32	80	6	3.50	4232 14.100
100	16	48	36	100	6	3.80	4232 16.100
100	18	50	38	100	6	3.80	4232 18.100
100	20	52	40	100	8	3.90	4232 20.100
100	25	65	45	100	10	3.90	4232 25.100
100	32	72	56	100	10	4.20	4232 32.100
100	40	80	60	110	10	4.60	4232 40.100

Product information

- balancing quality: G6.3 / 15,000 rev./min
- dimensions to DIN 69882-4
- with bore to DIN 1835-2 form B "Weldon"
- from bore d1 = 25 with two clamping screws
- HSK-A to ISO 12164-1 / DIN 69893-1

Scope of delivery

- incl. clamping screw article no. 4903
- order coolant supply set, article no. 4949 separately



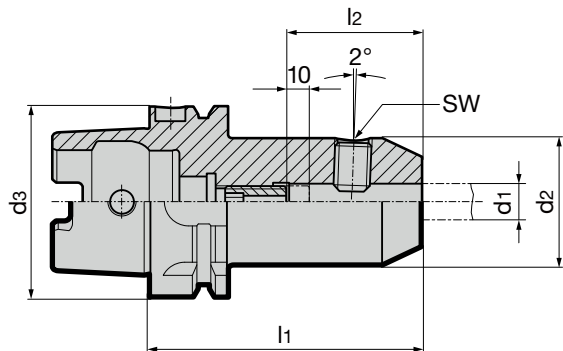
							Article no.	4329
HSK-A d3	clamping-Ø d1 H5 mm	d2 mm	d4 mm	l1 mm	SW	kg	Order no.	
32	6	25	15	60	3	0.24	4329	6.032
32	8	28	20	60	4	0.27	4329	8.032
32	10	35	25	65	5	0.31	4329	10.032
32	12	42	30	65	6	0.41	4329	12.032
40	6	25	15	60	3	0.33	4329	6.040
40	8	28	20	60	4	0.35	4329	8.040
40	10	35	25	60	5	0.47	4329	10.040
40	12	42	30	70	6	0.58	4329	12.040
40	14	44	32	75	6	0.59	4329	14.040
40	16	48	36	75	6	0.64	4329	16.040
50	6	25	15	65	3	0.52	4329	6.050
50	8	28	20	65	4	0.55	4329	8.050
50	10	35	25	65	5	0.62	4329	10.050
50	12	42	30	80	6	0.87	4329	12.050
50	14	44	32	80	6	0.90	4329	14.050
50	16	48	36	80	6	0.94	4329	16.050
50	18	50	38	80	6	0.96	4329	18.050
50	20	52	40	80	8	0.97	4329	20.050
63	6	25	15	65	3	0.81	4329	6.063
63	8	28	20	65	4	0.83	4329	8.063
63	10	35	25	65	5	0.89	4329	10.063
63	12	42	30	80	6	1.20	4329	12.063
63	14	44	32	80	6	1.20	4329	14.063
63	16	48	36	80	6	1.30	4329	16.063
63	18	50	38	80	6	1.35	4329	18.063
63	20	52	40	80	8	1.40	4329	20.063
63	25	65	45	110	10	2.40	4329	25.063
63	32	72	56	110	10	2.70	4329	32.063
80	6	25	15	80	3	1.75	4329	6.080
80	8	28	20	80	4	1.90	4329	8.080
80	10	35	25	80	5	2.10	4329	10.080
80	12	42	30	80	6	2.10	4329	12.080
80	14	44	32	80	6	2.30	4329	14.080
80	16	48	36	100	6	2.50	4329	16.080
80	18	50	38	100	6	2.50	4329	18.080
80	20	52	40	100	8	2.70	4329	20.080
80	25	65	45	100	10	2.80	4329	25.080
80	32	72	56	110	10	2.85	4329	32.080
80	40	80	60	120	10	2.98	4329	40.080
100	6	25	15	80	3	3.00	4329	6.100
100	8	28	20	80	4	3.20	4329	8.100
100	10	35	25	80	5	3.40	4329	10.100
100	12	42	30	80	6	3.40	4329	12.100
100	14	44	32	80	6	3.50	4329	14.100
100	16	48	36	100	6	3.80	4329	16.100
100	18	50	38	100	6	3.80	4329	18.100
100	20	52	40	100	8	3.90	4329	20.100
100	25	65	45	100	10	3.90	4329	25.100
100	32	72	56	100	10	4.20	4329	32.100
100	40	80	60	110	10	4.60	4329	40.100

Product information

- balancing quality: G6.3 / 15,000 rev./min
- dimensions to DIN 69882-5
- with bore to DIN 1835-2 form E "Whistle Notch" with groove on face side for identification
- from bore d1 = 25 with two clamping screws
- HSK-A to ISO 12164-1 / DIN 69893-1

Scope of delivery

- incl. clamping screw article no. 4903 and adjustment screw article no. 4904
- order coolant supply set, article no. 4949 separately



Article no. **4334**

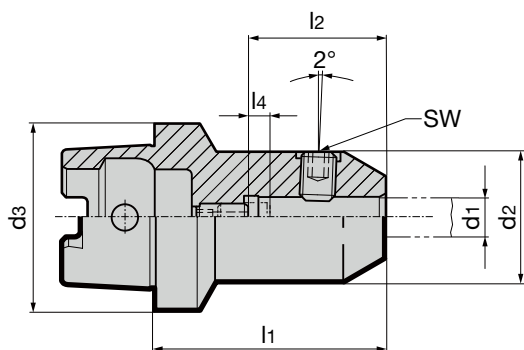
HSK-A d3	clamping-Ø d1 H5 mm	d2 mm	d4 mm	l1 mm	l2 mm	incl. adjustment screw 4904 ...	SW	kg	Order no.
32	6	25	15	80	36	6,014	3	0,32	4334 6.032
32	8	28	20	80	36	8,014	4	0,36	4334 8.032
32	10	35	25	80	40	10,014	5	0,46	4334 10.032
32	12	42	30	80	45	12,014	6	0,57	4334 12.032
40	6	25	15	80	36	6,014	3	0,36	4334 6.040
40	8	28	20	80	36	8,014	4	0,40	4334 8.040
40	10	35	25	80	40	10,014	5	0,50	4334 10.040
40	12	42	30	90	45	12,014	6	0,68	4334 12.040
40	14	44	32	90	45	12,014	6	0,72	4334 14.040
40	16	48	36	90	48	16,014	6	0,77	4334 16.040
50	6	25	15	80	36	6,014	3	0,58	4334 6.050
50	8	28	20	80	36	8,014	4	0,62	4334 8.050
50	10	35	25	80	40	10,014	5	0,73	4334 10.050
50	12	42	30	90	45	12,014	6	0,97	4334 12.050
50	14	44	32	90	45	12,014	6	1,00	4334 14.050
50	16	48	36	90	48	16,014	6	1,09	4334 16.050
50	18	50	38	90	48	16,014	6	1,12	4334 18.050
50	20	52	40	100	50	20,114	8	1,30	4334 20.050
63	6	25	15	80	36	6,014	3	0,86	4334 6.063
63	8	28	20	80	36	8,014	4	0,90	4334 8.063
63	10	35	25	80	40	10,014	5	1,00	4334 10.063
63	12	42	30	90	45	12,014	6	1,24	4334 12.063
63	14	44	32	90	45	12,014	6	1,28	4334 14.063
63	16	48	36	100	48	16,014	6	1,53	4334 16.063
63	18	50	38	100	48	16,014	6	1,60	4334 18.063
63	20	52	40	100	50	20,114	8	1,65	4334 20.063
63	25	65	45	110	56	20,114	10	2,34	4334 25.063
63	32	72	56	110	60	20,114	10	2,54	4334 32.063
80	6	25	15	90	36	6,014	3	2,20	4334 6.080
80	8	28	20	90	36	8,014	4	2,25	4334 8.080
80	10	35	25	90	40	10,014	5	2,56	4334 10.080
80	12	42	30	100	45	12,014	6	2,60	4334 12.080
80	14	44	32	100	45	12,014	6	2,85	4334 14.080
80	16	48	36	100	48	16,014	6	2,88	4334 16.080
80	18	50	38	100	48	16,014	6	2,90	4334 18.080
80	20	52	40	110	50	20,114	8	3,05	4334 20.080
80	25	65	45	110	56	20,114	10	3,10	4334 25.080
80	32	72	56	120	60	20,114	10	3,20	4334 32.080
100	6	25	15	90	36	6,014	3	2,60	4334 6.100
100	8	28	20	90	36	8,014	4	2,60	4334 8.100
100	10	35	25	90	40	10,014	5	2,60	4334 10.100
100	12	42	30	100	45	12,014	6	2,80	4334 12.100
100	14	44	32	100	45	12,014	6	2,85	4334 14.100
100	16	48	36	100	48	16,014	6	2,97	4334 16.100
100	18	50	38	100	48	16,014	6	3,10	4334 18.100
100	20	52	40	110	50	20,114	8	3,23	4334 20.100
100	25	65	45	120	56	20,114	10	4,06	4334 25.100
100	32	72	56	120	60	20,114	10	4,40	4334 32.100

Product information

- balancing quality: G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- dimensions to DIN 69882-5
- with bore to DIN 1835-2 form E "Whistle Notch" with groove on face side for identification
- from bore d1 = 25 with two clamping screws article no. 4903
- HSK-C to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. clamping screw article no. 4903 and adjustment screw article no. 4905



										Article no.	4333
HSK-C d ₃	clamping-Ø d ₁ H5 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	l ₄ mm	incl. adjustment screw 4905 ...	SW	kg	Order no.	
32	6	25	15	60	36	10	6,014	3	0.23	4333 6.032	
32	8	28	20	60	36	10	8,014	4	0.28	4333 8.032	
32	10	35	25	65	40	10	10,014	5	0.43	4333 10.032	
40	6	25	15	60	36	10	6,014	3	0.29	4333 6.040	
40	8	28	20	60	36	10	8,014	4	0.33	4333 8.040	
40	10	35	25	65	40	10	10,014	5	0.47	4333 10.040	
40	12	42	30	70	45	8	12,014	6	0.67	4333 12.040	
40	14	44	32	70	45	8	12,014	6	0.73	4333 14.040	
40	16	48	36	75	48	8	16,014	6	0.92	4333 16.040	
40	20	52	40	80	50	8	20,114	8	1.11	4333 20.040	
50	6	25	15	60	36	8	6,014	3	0.42	4333 6.050	
50	8	28	20	60	36	8	8,014	4	0.46	4333 8.050	
50	10	35	25	65	40	8	10,014	5	0.57	4333 10.050	
50	12	42	30	75	45	10	12,014	6	0.80	4333 12.050	
50	14	44	32	75	45	10	12,014	6	0.87	4333 14.050	
50	16	48	36	80	48	10	16,014	6	1.02	4333 16.050	
50	18	49	38	80	48	10	16,014	6	1.09	4333 18.050	
50	20	52	40	80	50	8	20,114	8	1.15	4333 20.050	
50	25	65	45	95	56	8	20,114	10	2.14	4333 25.050	
63	6	25	15	60	36	8	6,014	3	0.64	4333 6.063	
63	8	28	20	60	36	8	8,014	4	0.66	4333 8.063	
63	10	35	25	65	40	8	10,014	5	0.78	4333 10.063	
63	12	42	30	75	45	10	12,014	6	0.99	4333 12.063	
63	14	44	32	75	45	10	12,014	6	1.03	4333 14.063	
63	16	48	36	80	48	10	16,014	6	1.21	4333 16.063	
63	18	50	38	80	48	10	16,014	6	1.26	4333 18.063	
63	20	52	40	80	50	8	20,114	8	1.31	4333 20.063	
63	25	65	45	95	56	8	20,114	10	2.23	4333 25.063	
63	32	72	56	100	60	8	20,114	10	2.75	4333 32.063	

Product information

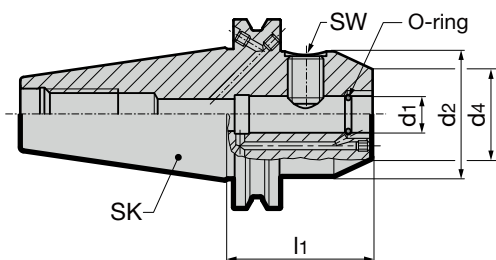
- balancing quality: G6.3 / 15,000 rev./min
- with bore to DIN 1835-2 form B "Weldon"
- ISO taper to DIN ISO 7388-1 form AD/AF
- form AF supplied with threaded pins in bores
- with coolant ducts in the bore for peripheral cooling, improving process and tool life
- from bore $d_1 = 25$ mm with two clamping screws article no. 4903
- coolant supply form AD/AF
- coolant ducts:
 $d_1 = 6 - 18$ mm with two coolant ducts
 $d_1 = 20 - 32$ mm with four coolant ducts

Scope of delivery

- incl. clamping screw article no. 4903
- incl. O-ring for sealing
- order pull studs, article no. 4925 or 4926 separately



GÜHROJET



Article no. **4317**

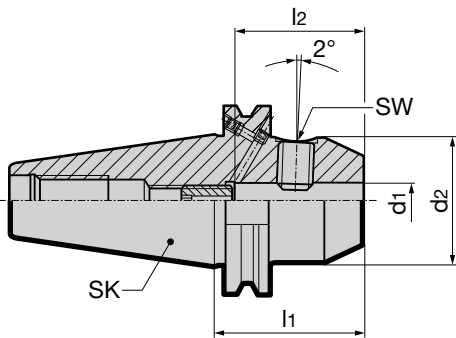
ISO taper/form	clamping-Ø d_1 H5 mm	d_2 mm	d_4 mm	l_1 mm	SW	Order no.
40 AD	16	45	36	35	6	4317 916.040
40 AD	20	45	40	35	8	4317 920.040
40 AD	25	50	45	35	10	4317 925.040
40 AD/AF	6	25	15	50	3	4317 6.040
40 AD/AF	8	28	20	50	4	4317 8.040
40 AD/AF	10	35	25	50	5	4317 10.040
40 AD/AF	12	42	30	50	6	4317 12.040
40 AD/AF	14	44	32	50	6	4317 14.040
40 AD/AF	16	48	36	63	6	4317 16.040
40 AD/AF	18	50	38	63	6	4317 18.040
40 AD/AF	20	52	40	63	8	4317 20.040
40 AD/AF	6	25	15	100	3	4317 106.040
40 AD/AF	8	28	20	100	4	4317 108.040
40 AD/AF	10	35	25	100	5	4317 110.040
40 AD/AF	12	42	30	100	6	4317 112.040
40 AD/AF	14	44	32	100	6	4317 114.040
40 AD/AF	16	48	36	100	6	4317 116.040
40 AD/AF	18	50	38	100	6	4317 118.040
40 AD/AF	20	52	40	100	8	4317 120.040
40 AD/AF	25	63	45	100	10	4317 25.040
40 AD/AF	32	72	56	100	10	4317 32.040
50 AD/AF	6	25	15	63	3	4317 6.050
50 AD/AF	8	28	20	63	4	4317 8.050
50 AD/AF	10	35	25	63	5	4317 10.050
50 AD/AF	12	42	30	63	6	4317 12.050
50 AD/AF	14	44	32	63	6	4317 14.050
50 AD/AF	16	48	36	63	6	4317 16.050
50 AD/AF	18	50	38	63	6	4317 18.050
50 AD/AF	20	52	40	63	8	4317 20.050
50 AD/AF	25	65	45	80	10	4317 25.050
50 AD/AF	32	72	56	100	10	4317 32.050

Product information

- balancing quality: G6.3 / 15,000 rev./min
- with bore to DIN 1835-2 form E "Whistle Notch"
- ISO taper to DIN ISO 7388-1 form AD/AF
- from bore $d_1 = 25$ mm with two clamping screws article no. 4903

Scope of delivery

- incl. clamping screw article no. 4903 and adjustment screw
- order pull studs, article no. 4925 or 4926 separately



Article no. **4322**

ISO taper	clamping-Ø d_1 H5 mm	d_2 mm	d_4 mm	l_1 mm	l_2 mm	SW	kg	Order no.
40	6	25	15	50	36	3	0.9	4322 6.040
40	8	28	20	50	36	4	0.9	4322 8.040
40	10	35	25	50	40	5	1.0	4322 10.040
40	12	42	30	50	45	6	1.2	4322 12.040
40	14	44	32	50	45	6	1.2	4322 14.040
40	16	48	36	63	48	6	1.2	4322 16.040
40	18	50	38	63	48	6	1.4	4322 18.040
40	20	52	40	63	50	8	1.5	4322 20.040
40	25	65	45	100	56	10	2.3	4322 25.040
40	32	72	56	100	60	10	2.5	4322 32.040
50	6	25	15	63	36	3	2.7	4322 6.050
50	8	28	20	63	36	4	2.7	4322 8.050
50	10	35	25	63	40	5	2.9	4322 10.050
50	12	42	30	63	45	6	3.0	4322 12.050
50	14	44	32	63	45	6	3.0	4322 14.050
50	16	48	36	63	48	6	3.0	4322 16.050
50	18	50	38	63	48	6	3.0	4322 18.050
50	20	52	40	63	50	8	3.1	4322 20.050
50	25	65	45	80	56	10	3.7	4322 25.050
50	32	72	56	100	60	10	4.5	4322 32.050

Product information

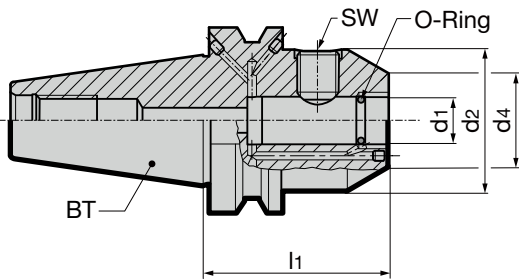
- balancing quality: G6.3 / 15,000 rev./min
- with bore to DIN 1835-2 form B "Weldon"
- MAS/BT to DIN ISO 7388-2 form JD/JF
- from bore d1 = 25 with two clamping screws
- with coolant ducts in the bore for peripheral cooling, improving process and tool life
- coolant supply form JD/JF
(* version JD without coolant supply over collar and without GÜHROJET)
- coolant ducts:
d1 = 6 - 18 mm with two coolant ducts
d1 = 20 - 32 mm with four coolant ducts

Scope of delivery

- incl. clamping screw article no. 4903
- incl. O-ring for sealing
- order pull studs, article no. 4927 or 4928 separately
- BT-50 on request



GÜHROJET



Article no. **4234**

BT	clamping-Ø d1 H5 mm	d2 mm	d4 mm	l1 mm	SW	Order no.
30*	6	25	15	50	3	4234 6.030
30*	8	28	20	50	4	4234 8.030
30*	10	35	25	50	5	4234 10.030
30*	12	42	30	50	6	4234 12.030
30*	14	44	32	50	6	4234 14.030
30*	16	48	36	63	6	4234 16.030
30*	18	50	38	63	6	4234 18.030
30*	20	52	40	63	8	4234 20.030
40*	16	45	36	35	6	4234 916.040
40*	20	45	40	35	8	4234 920.040
40*	25	45	45	35	10	4234 925.040
40	6	25	15	50	3	4234 6.040
40	8	28	20	50	4	4234 8.040
40	10	35	25	63	5	4234 10.040
40	12	42	30	63	6	4234 12.040
40	14	44	32	63	6	4234 14.040
40	16	48	36	63	6	4234 16.040
40	18	50	38	63	6	4234 18.040
40	20	52	40	63	8	4234 20.040
40	25	63	45	90	10	4234 25.040
40	32	72	56	100	10	4234 32.040
40	6	25	15	100	3	4234 106.040
40	8	28	20	100	4	4234 108.040
40	10	35	25	100	5	4234 110.040
40	12	42	30	100	6	4234 112.040
40	14	44	32	100	6	4234 114.040
40	16	48	36	100	6	4234 116.040
40	18	50	38	100	6	4234 118.040
40	20	52	40	100	8	4234 120.040

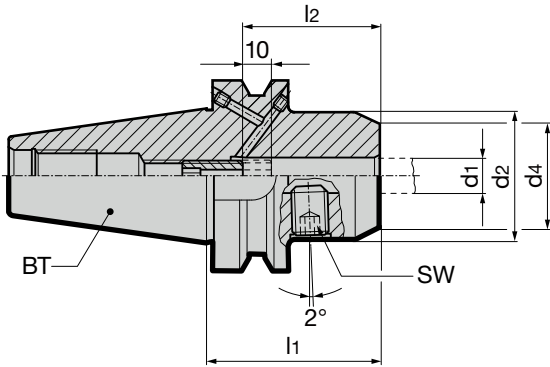
Tool holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- MAS/BT to DIN ISO 7388-2 form JD/JF
- with bore to DIN 1835-2 form E „WhistleNotch“
- from bore d1 = 25 with two clamping screws
- coolant supply form JD/JF

Scope of delivery

- incl. clamping screw article no. 4903 and adjustment screw
- order pull studs, article no. 4927 or 4928 separately



Article no. 4233							Order no.
BT	clamping-Ø d ₁ H5 mm	d ₂ mm	d ₄ mm	l ₁ mm	l ₂ mm	SW	Order no.
40	6	25	15	50	36	3	4233 6.040
40	8	28	20	50	36	4	4233 8.040
40	10	35	25	63	40	5	4233 10.040
40	12	42	30	63	45	6	4233 12.040
40	14	44	32	63	45	6	4233 14.040
40	16	48	36	63	48	6	4233 16.040
40	18	50	38	63	48	6	4233 18.040
40	20	52	40	63	50	8	4233 20.040
40	25	63	45	90	56	10	4233 25.040
40	32	72	56	100	60	10	4233 32.040
50	6	25	15	63	36	3	4233 6.050
50	8	28	20	63	36	4	4233 8.050
50	10	35	25	63	40	5	4233 10.050
50	12	42	30	80	45	6	4233 12.050
50	14	44	32	80	45	6	4233 14.050
50	16	48	36	80	48	6	4233 16.050
50	18	50	38	80	48	6	4233 18.050
50	20	52	40	80	50	8	4233 20.050
50	25	65	45	100	56	10	4233 25.050
50	32	72	56	105	60	10	4233 32.050

Tool holders

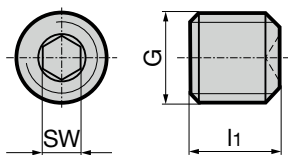
Clamping screws

Product information

- for side lock holders with bore to DIN 1835-2, B and E, and HSK-A adaptors for tapping chucks, article nos. 4317/4322/4329/4333/4334/4343
- article no. 4903 12,001 (M12) only for article no. 4343

Scope of delivery

- minimum order quantity 5



Article no. **4903**

for holder- Ø	G	l ₁ mm	torque Nm	SW	Order no.
6	M6	10	5	3	4903 6.000
8	M8	10	10	4	4903 8.000
10	M10	12	15	5	4903 10.000
12/14	M12	14	28	6	4903 12.000
25	M12	12	28	6	4903 12.001
16/18	M14	16	42	6	4903 14.000
20	M16	16	50	8	4903 16.000
25	M18x2	20	60	10	4903 18.000
32/40	M20x2	20	72	10	4903 20.000
40	M20x2	25	72	10	4903 20.001
25	M14	11,5	42	6	4903 14.001
25	M16	12	50	8	4903 16.001

Adjustment screws

Adjustment screws

Product information

- for HSK-A Weldon side lock holders with bore to DIN 1835-2, form E, shrink fit chuck and shrink fit extensions

Product information

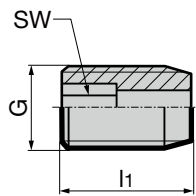
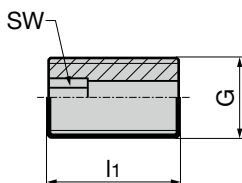
- for HSK-C side lock with bore to DIN 1835-2, form E, article nos. 4333 / 4322

Scope of delivery

- minimum order quantity 5

Scope of delivery

- minimum order quantity 5



Article no. **4904**

Article no. **4905**

G	l ₁ mm	SW	Order no.
M5	16	2.5	4904 5.016
M5	20	2.5	4904 5.020
M6	16	3.0	4904 6.016
M6	20	3.0	4904 6.020
M8	12	3.0	4904 8.012
M8	18	4.0	4904 8.018
M10	17	3.0	4904 10.017
M10	20	5.0	4904 10.020
M12	14	3.0	4904 12.014
M12	20	5.0	4904 12.020
M16	25	5.0	4904 16.025
M20	25	6.0	4904 20.025

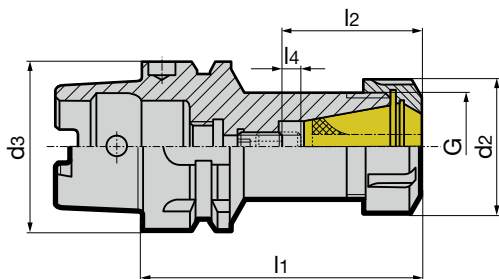
G	l ₁ mm	SW	Order no.
M5	14	2.5	4905 5.014
M5	16	2.5	4905 5.016
M6	14	3.0	4905 6.014
M6	16	3.0	4905 6.016
M8	15	4.0	4905 8.015
M8	17	4.0	4905 8.017
M10	17	5.0	4905 10.017
M10	20	5.0	4905 10.020
M12	19	6.0	4905 12.019
M12	22	6.0	4905 12.022
M16	20	6.0	4905 16.020
M20	26	6.0	4905 20.026

Product information

- balancing quality: G2.5 / 25.000 rev./min or U < 1 gmm
- HSK-A to ISO 12164-1/DIN 69893-1
- for collet chucks with adjustment angle 8° according to DIN ISO 15488

Scope of delivery

- incl. retaining nut article no. 4306 and adjustment screw article no. 4902
- order collet, article no. 4307, clamping key, article no. 4913 and coolant supply set, article no. 4949 separately



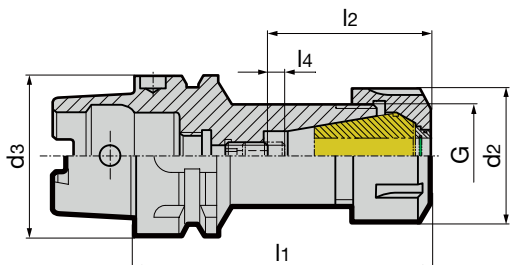
									Article no.	4304
HSK-A d ₃	clamping range	d ₂ mm	G	l ₁ mm	l ₂ mm	l ₄ mm	incl. adjustment screw art. no. 4902...	kg	Order no.	
32	ER 11 Ø 0.5-7.0	19	M14 x 0.75	55	25	6	11.012	0.20	4304 11.032	
32	ER 16 Ø 0.5-10.0	28	M22 x 1.5	80	34	6	16.012	0.30	4304 16.032	
32	ER 20 Ø 0.5-13.0	34	M25 x 1.5	70	40	8	16.012	0.30	4304 20.032	
40	ER 16 Ø 0.5-10.0	28	M22 x 1.5	80	34	6	16.012	0.40	4304 16.040	
40	ER 25 Ø 0.5-16.0	42	M32 x 1.5	80	44	8	25.014	0.50	4304 25.040	
40	ER 32 Ø 1.0-20.0	50	M40 x 1.5	100	50	10	32.020	0.80	4304 32.040	
50	ER 16 Ø 0.5-10.0	28	M22 x 1.5	100	34	6	16.012	0.70	4304 16.050	
50	ER 25 Ø 0.5-16.0	42	M32 x 1.5	100	44	8	25.014	1.00	4304 25.150	
50	ER 25 Ø 0.5-16.0	42	M32 x 1.5	80	44	8	25.014	0.80	4304 25.050	
50	ER 32 Ø 1.0-20.0	50	M40 x 1.5	100	50	10	32.020	1.00	4304 32.050	
63	ER 16 Ø 0.5-10.0	28	M22 x 1.5	100	34	6	16.012	0.90	4304 16.063	
63	ER 16 Ø 0.5-10.0	28	M22 x 1.5	160	34	6	16.012	1.20	4304 16.163	
63	ER 25 Ø 0.5-16.0	42	M32 x 1.5	80	42	6	25.014	1.00	4304 25.063	
63	ER 25 Ø 0.5-16.0	42	M32 x 1.5	100	42	6	25.014	1.20	4304 25.163	
63	ER 32 Ø 1.0-20.0	50	M40 x 1.5	100	50	10	32.020	1.40	4304 32.063	
63	ER 40 Ø 3.0-26.0	63	M50 x 1.5	120	56	10	32.020	1.90	4304 40.063	
80	ER 32 Ø 1.0-20.0	50	M40 x 1.5	100	50	10	32.020	1.90	4304 32.080	
80	ER 32 Ø 1.0-20.0	50	M40 x 1.5	160	50	10	32.020	2.80	4304 32.180	
80	ER 40 Ø 3.0-26.0	63	M50 x 1.5	120	56	10	32.020	2.80	4304 40.080	
100	ER 32 Ø 1.0-20.0	50	M40 x 1.5	100	50	10	32.020	2.80	4304 32.100	
100	ER 32 Ø 1.0-20.0	50	M40 x 1.5	160	50	10	32.020	3.60	4304 32.101	
100	ER 40 Ø 3.0-26.0	63	M50 x 1.5	120	56	10	32.020	3.60	4304 40.100	

Product information

- sealed, suitable for coolant pressure up to 100 bar thanks to the application of IC clamping nuts and suitable sealing washer
- balancing quality: G2.5 / 25.000 rev./min or U < 1 gmm
- HSK-A to ISO 12164-1/DIN 69893-1
- for collet chucks with adjustment angle 8° according to DIN ISO 15488

Scope of delivery

- incl. IC retaining nut article no. 4306 and adjustment screw article no. 4902
- order sealing washer, article no. 4335, collet, article no. 4307, clamping key, article no. 4913 and coolant supply set article no. 4949 separately



Article no. **4324**

HSK-A d3	clamping range	d2 mm	G	l1 mm	l2 mm	l4 mm	incl. adjustment screw art. no. 4902...	kg	Order no.
32	ER 16 Ø 0.5-10.0	28	M22 x 1.5	85	39	6	16.012	0.30	4324 16.032
32	ER 20 Ø 0.5-13.0	34	M25 x 1.5	75	45	8	16.012	0.30	4324 20.032
40	ER 16 Ø 0.5-10.0	28	M22 x 1.5	85	39	6	16.012	0.40	4324 16.040
40	ER 25 Ø 0.5-16.0	42	M32 x 1.5	85	49	8	25.014	0.50	4324 25.040
40	ER 32 Ø 1.0-20.0	50	M40 x 1.5	105	55	10	32.020	0.80	4324 32.040
50	ER 16 Ø 0.5-10.0	28	M22 x 1.5	105	39	6	16.012	0.70	4324 16.050
50	ER 25 Ø 0.5-16.0	42	M32 x 1.5	105	49	8	25.014	0.90	4324 25.150
50	ER 25 Ø 0.5-16.0	42	M32 x 1.5	85	49	6	25.014	1.00	4324 25.050
50	ER 32 Ø 1.0-20.0	50	M40 x 1.5	105	55	10	32.020	1.00	4324 32.050
63	ER 16 Ø 0.5-10.0	28	M22 x 1.5	105	39	6	16.012	0.90	4324 16.063
63	ER 16 Ø 0.5-10.0	28	M22 x 1.5	165	39	6	16.012	1.20	4324 16.163
63	ER 25 Ø 0.5-16.0	42	M32 x 1.5	85	47	6	25.014	1.00	4324 25.063
63	ER 25 Ø 0.5-16.0	42	M32 x 1.5	105	47	6	25.014	1.20	4324 25.163
63	ER 32 Ø 1.0-20.0	50	M40 x 1.5	105	55	10	32.020	1.40	4324 32.063
63	ER 40 Ø 3.0-26.0	63	M50 x 1.5	125	61	10	32.020	1.90	4324 40.063
80	ER 32 Ø 1.0-20.0	50	M40 x 1.5	105	55	10	32.020	1.90	4324 32.080
80	ER 32 Ø 1.0-20.0	50	M40 x 1.5	165	55	10	32.020	2.80	4324 32.180
80	ER 40 Ø 3.0-26.0	63	M50 x 1.5	125	61	10	32.020	2.80	4324 40.080
100	ER 32 Ø 1.0-20.0	50	M40 x 1.5	105	55	10	32.020	2.80	4324 32.100
100	ER 32 Ø 1.0-20.0	50	M40 x 1.5	165	55	10	32.020	3.70	4324 32.101
100	ER 40 Ø 3.0-26.0	63	M50 x 1.5	125	61	10	32.020	3.70	4324 40.100

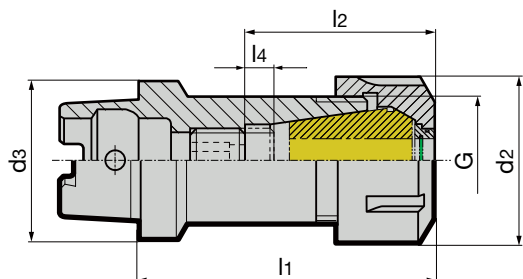
Tool holders

Product information

- sealed, suitable for coolant pressure up to 100 bar thanks to the application of IC clamping nuts and suitable sealing washer
- balancing quality: G2.5 / 25.000 rev./min or U < 1 gmm
- HSK-C to ISO 12164-1/DIN 69893-1
- for collet chucks with adjustment angle 8° according to DIN ISO 15488

Scope of delivery

- incl. IC retaining nut article no. 4306 and adjustment screw article no. 4901
- order sealing washer, article no. 4335, collet, article no. 4307, clamping key, article no. 4913 separately



Article no. **4323**

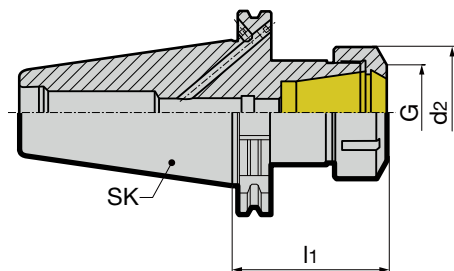
HSK-C d3	clamping range	d2 mm	G	l1 mm	l2 mm	l4 mm	incl. adjustment screw art. no. 4901...	kg	Order no.
25	ER16 mini Ø 1.0-10.0	22	M19 x 1.0	55	35	3	16.012	0.10	4323 16.025
32	ER 16 Ø 0.5-10.0	28	M22 x 1.5	60	37	4	16.012	0.20	4323 16.032
32	ER 20 Ø 0.5-13.0	34	M25 x 1.5	65	43	6	16.012	0.30	4323 20.032
32	ER 25 Ø 0.5-16.0	42	M32 x 1.5	75	49	8	25.014	0.40	4323 25.032
40	ER 20 Ø 0.5-13.0	34	M25 x 1.5	65	43	6	16.012	0.40	4323 20.040
40	ER 25 Ø 0.5-16.0	42	M32 x 1.5	75	49	8	25.014	0.60	4323 25.040
40	ER 32 Ø 1.0-20.0	50	M40 x 1.5	80	54	8	25.014	0.60	4323 32.040
50	ER 16 Ø 0.5-10.0	28	M22 x 1.5	65	39	6	16.012	0.40	4323 16.050
50	ER 25 Ø 0.5-16.0	42	M32 x 1.5	75	49	8	25.014	0.70	4323 25.050
50	ER 32 Ø 1.0-20.0	50	M40 x 1.5	80	54	8	25.014	0.90	4323 32.050
50	ER 40 Ø 3.0-26.0	63	M50 x 1.5	85	59	8	25.014	1.10	4323 40.050
63	ER 40 Ø 3.0-26.0	63	M50 x 1.5	85	59	8	25.014	1.50	4323 40.063

Tool holders

ISO taper collet holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- ISO taper to DIN ISO 7388-1 form AD/AF
- for collet chucks with adjustment angle 8° according to DIN ISO 15488



Scope of delivery

- incl. retaining nut
- order collet, article no. 4307, separately
- order clamping key, article no. 4913, separately
- order pull studs, article no. 4925 or 4926, separately

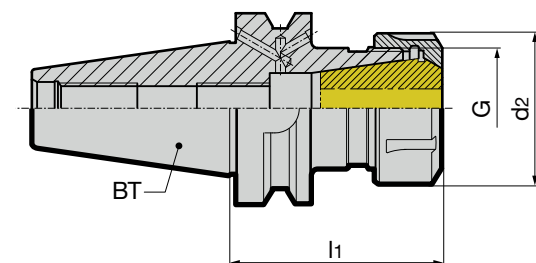


					Article no.	4318
ISO taper	clamping range	d ₂ mm	G	l ₁ mm	Order no.	
40	ER16 Ø 0.5-10.0	32	M22 x 1.5	63	4318 16.040	
40	ER25 Ø 0.5-16.0	42	M32 x 1.5	60	4318 25.040	
40	ER32 Ø 1.0-20.0	50	M40 x 1.5	70	4318 32.040	
40	ER16 Ø 0.5-10.0	32	M22 x 1.5	160	4318 16.140	
40	ER25 Ø 0.5-16.0	42	M32 x 1.5	160	4318 25.140	
40	ER32 Ø 1.0-20.0	50	M40 x 1.5	160	4318 32.140	
50	ER25 Ø 0.5-16.0	42	M32 x 1.5	60	4318 25.050	
50	ER32 Ø 1.0-20.0	50	M40 x 1.5	70	4318 32.050	
50	ER40 Ø 3.0-26.0	63	M50 x 1.5	80	4318 40.050	
50	ER25 Ø 0.5-16.0	42	M32 x 1.5	160	4318 25.150	
50	ER40 Ø 3.0-26.0	63	M50 x 1.5	160	4318 40.150	

MAS/BT collet holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- MAS/BT to DIN ISO 7388-2 form JD/JF
- coolant supply form JD/JF (* BT30 version JD without coolant supply over collar)
- for collet chucks with adjustment angle 8° according to DIN ISO 15488



Scope of delivery

- incl. retaining nut
- order collet, article no. 4307, separately
- order clamping key, article no. 4913, separately
- BT50 on request
- order pull studs, article no. 4927 or 4928, separately

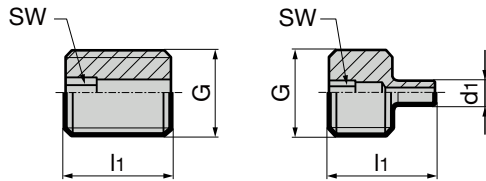


					Article no.	4245
BT	clamping range	d ₂ mm	G	l ₁ mm	Order no.	
30*	ER16 0.5-10.0	32	M22x1.5	70	4245 16.030	
30*	ER25 0.5-16.0	42	M32x1.5	70	4245 25.030	
40	ER16 0.5-10.0	32	M22x1.5	63	4245 16.040	
40	ER25 0.5-16.0	42	M32x1.5	60	4245 25.040	
40	ER32 1.0-20.0	50	M40x1.5	70	4245 32.040	
40	ER16 0.5-10.0	32	M22x1.5	160	4245 16.140	
40	ER25 0.5-16.0	42	M32x1.5	160	4245 25.140	
40	ER32 1.0-20.0	50	M40x1.5	160	4245 32.140	

Adjustment screws for HSK-A/HSK-E collet holders

Product information

- for dimensions without d1 the screw is designed without spigot

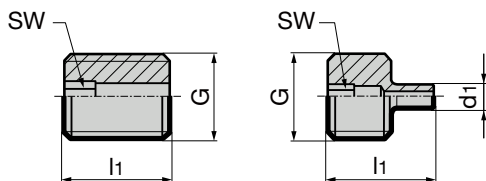


						Article no.	4902
for nom. size	for clamping range	G	d1 mm	l1 mm	SW	Order no.	
ER11	2- 7	M6	–	12	3	4902 11.012	
ER16	2- 6	M10	3.5	18	3	4902 16.018	
ER16	6-10	M10	–	12	3	4902 16.012	
ER16	6- 10	M10	–	10	3	4902 16.010	
ER20	2,5- 6	M10	4.5	24	3	4902 20.024	
ER20	6-10	M10	5.5	18	3	4902 20.018	
ER20	10-13	M10	–	12	3	4902 16.012	
ER25	2,5- 7	M16	4.5	26	4	4902 25.026	
ER25	7-10	M16	6.5	20	4	4902 25.020	
ER25	10-17	M16	–	14	4	4902 25.014	
ER32	3,5-10	M16	6.5	36	5	4902 32.036	
ER32	10-16	M16	9.5	28	5	4902 32.028	
ER32	16-22	M16	–	20	5	4902 32.020	
ER40	3- 8	M16	6.5	44	5	4902 40.044	
ER40	8-10	M16	6.5	36	5	4902 32.036	
ER40	10-16	M16	9.5	28	5	4902 32.028	
ER40	16-30	M16	–	20	5	4902 32.020	

Adjustment screws for HSK-C collet holders

Product information

- for dimensions without d1 the screw is designed without spigot



						Article no.	4901
for nom. size	for clamping range	G	d1 mm	l1 mm	SW	Order no.	
ER16	2- 6	M10	3.5	16	3	4901 16.016	
ER16	6-10	M10	–	12	3	4901 16.012	
ER20	2,5- 6	M10	4.5	20	3	4901 20.020	
ER20	6-10	M10	5.5	16	3	4901 20.016	
ER20	10-13	M10	–	12	3	4901 16.012	
ER25	2,5- 7	M16	4.5	26	4	4901 25.026	
ER25	7-10	M16	6.5	20	4	4901 25.020	
ER25	10-17	M16	–	14	4	4901 25.014	
ER32	3- 7	M16	6.5	32	5	4901 32.032	
ER32	7-10	M16	6.5	26	5	4901 32.026	
ER32	10-16	M16	9.5	20	5	4901 32.020	
ER32	16-22	M16	–	14	4	4901 25.014	
ER40	3- 6	M16	6.5	38	5	4901 40.038	
ER40	6- 8	M16	6.5	32	5	4901 32.032	
ER40	8-10	M16	6.5	26	5	4901 32.026	
ER40	10-16	M16	9.5	20	5	4901 32.020	
ER40	16-30	M16	–	14	4	4901 25.014	

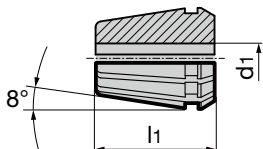
Product information

- the clamping range of collet, article no. 4307, is to be applied as indicated. For intermediate sizes as i.e. for $\varnothing 6.3$ mm (nom. size ER20) order collet $d_1 = 7.0$ mm - 6.0 mm (Order no. 7.020)
- concentricity error max. 10 μ m

clamping range:
 ER11: $\varnothing 0.5 - \varnothing 7.0$
 ER16: $\varnothing 0.5 - \varnothing 10.0$
 ER20: $\varnothing 0.5 - \varnothing 13.0$
 ER25: $\varnothing 0.5 - \varnothing 16.0$
 ER32: $\varnothing 0.5 - \varnothing 20.0$
 ER40: $\varnothing 0.5 - \varnothing 26.0$

Ordering example:

$\varnothing d_1$ = 2.5
 nom. size = ER 20
 article no./Order no. = 4307 02,520
 ($d_1 = 7.0$ mm - 6.0 mm)



			Article no.	4307
nom. size	for clamping range d_1 mm	l_1 mm	Order no.	
ER11 (4008E)	1.0-0.5	18.0	4307	1.011
ER11 (4008E)	1.5-1.0	18.0	4307	1.511
ER11 (4008E)	2.0-1.5	18.0	4307	2.011
ER11 (4008E)	2.5-2.0	18.0	4307	2.511
ER11 (4008E)	3.0-2.5	18.0	4307	3.011
ER11 (4008E)	4.0-3.5	18.0	4307	4.011
ER11 (4008E)	5.0-4.5	18.0	4307	5.011
ER11 (4008E)	6.0-5.5	18.0	4307	6.011
ER11 (4008E)	7.0-6.5	18.0	4307	7.011
ER16 (426E)	1.0-0.5	27.5	4307	1.016
ER16 (426E)	1.5-1.0	27.5	4307	1.516
ER16 (426E)	2.0-1.0	27.5	4307	2.016
ER16 (426E)	2.5-1.5	27.5	4307	2.516
ER16 (426E)	3.0-2.0	27.5	4307	3.016
ER16 (426E)	4.0-3.0	27.5	4307	4.016
ER16 (426E)	5.0-4.0	27.5	4307	5.016
ER16 (426E)	6.0-5.0	27.5	4307	6.016
ER16 (426E)	7.0-6.0	27.5	4307	7.016
ER16 (426E)	8.0-7.0	27.5	4307	8.016
ER16 (426E)	9.0-8.0	27.5	4307	9.016
ER16 (426E)	10.0-9.0	26.0	4307	10.016
ER20 (428E)	1.0-0.5	31.5	4307	1.020
ER20 (428E)	1.5-1.0	31.5	4307	1.520
ER20 (428E)	2.0-1.0	31.5	4307	2.020
ER20 (428E)	2.5-1.5	31.5	4307	2.520
ER20 (428E)	3.0-2.0	31.5	4307	3.020
ER20 (428E)	4.0-3.0	31.5	4307	4.020
ER20 (428E)	5.0-4.0	31.5	4307	5.020
ER20 (428E)	6.0-5.0	31.5	4307	6.020
ER20 (428E)	7.0-6.0	31.5	4307	7.020
ER20 (428E)	8.0-7.0	31.5	4307	8.020
ER20 (428E)	9.0-8.0	31.5	4307	9.020
ER20 (428E)	10.0-9.0	31.5	4307	10.020
ER20 (428E)	11.0-10.0	31.5	4307	11.020
ER20 (428E)	12.0-11.0	31.5	4307	12.020
ER20 (428E)	13.0-12.0	31.5	4307	13.020
ER25 (430E)	1.0-0.5	34.0	4307	1.025
ER25 (430E)	1.5-1.0	34.0	4307	1.525
ER25 (430E)	2.0-1.0	34.0	4307	2.025
ER25 (430E)	2.5-1.5	34.0	4307	2.525
ER25 (430E)	3.0-2.0	34.0	4307	3.025
ER25 (430E)	4.0-3.0	34.0	4307	4.025
ER25 (430E)	5.0-4.0	34.0	4307	5.025
ER25 (430E)	6.0-5.0	34.0	4307	6.025
ER25 (430E)	7.0-6.0	34.0	4307	7.025
ER25 (430E)	8.0-7.0	34.0	4307	8.025

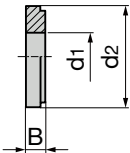
Sealing washers

Product information

- the application range of sealing washer, article no. 4325, is from nom.- \varnothing d1 to the next dimension below, i.e. for \varnothing 6.3 mm (nom. size ER20) order sealing washer d1 = 6.5 mm (Order no. 6.520).
- suitable for up to 150 bar coolant pressure

Ordering example

\varnothing d1 = 3.5
 nom. size = ER 20
 article no./Order no. = 4335 3.520



				Article no.	4335
nom. size	d1 mm	d2 mm	B mm	Order no.	
ER16	3.0...10 um 0.5 mm stg.	13	4	4335 3.016 - 10.016	
ER20	3.0...13 um 0.5 mm stg.	16	4	4335 3.020 - 13.020	
ER25	3.0...16 um 0.5 mm stg.	21	4	4335 3.025 - 16.025	
ER32	3.0...20 um 0.5 mm stg.	27	4	4335 3.032 - 20.032	
ER40	3.5...26 um 0.5 mm stg.	33.5	4	4335 3.540 - 26.040	

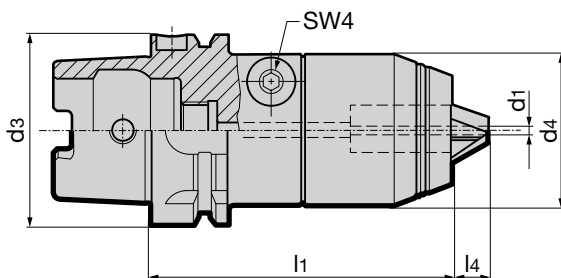
HSK-A drilling chucks with internal cooling

Product information

- for clamping all straight shank tools
- HSK-A to ISO 12164-1/DIN 69893-1
- continuous \varnothing -range
- high clamping force thanks to robust worm gear
- max. coolant pressure up to 50 bar
- limit speed 20,000 rpm
- balancing quality: G2,5 / 20.000 rev./min

Scope of delivery

- incl. clamping key
- order coolant supply set, article no. 4949 separately



GÜHROJET

						Article no.	4346
HSK-A d3	clamping range d1 mm	d4 mm	l1 mm	l4 mm	kg	Order no.	
50	1-16	50	107	12	1.60	4346 16.050	
63	1-16	50	98	12	1.90	4346 16.063	
80	1-16	50	101	12	2.70	4346 16.080	
100	1-16	50	104	12	3.30	4346 16.100	

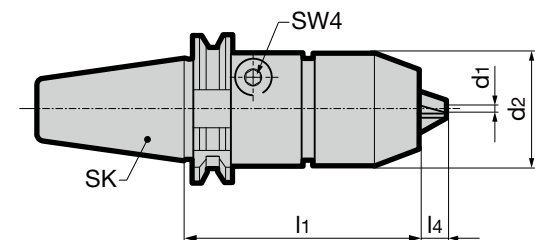
ISO taper drilling chucks with internal cooling

Product information

- for clamping all straight shank tools
- ISO taper to DIN ISO 7388-1 form AD
- continuous Ø-range
- high clamping force thanks to robust worm gear
- max. coolant pressure up to 50 bar
- limit speed 20,000 rpm
- balancing quality: G2,5 / 20.000 rev./min

Scope of delivery

- incl. clamping key
- order pull studs article no. 4925 or 4926 separately



GÜHROJET

Article no. **4242**

ISO taper	clamping range d ₁ mm	d ₂ mm	l ₁ mm	l ₄ mm	Order no.
40	1.00 - 16.00	50	80	12	4242 16.040
50	1.00 - 16.00	50	80	12	4242 16.050

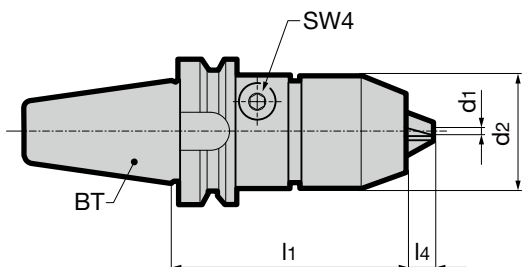
MAS/BT drilling chucks with internal cooling

Product information

- for clamping all straight shank tools
- MAS/BT to DIN ISO 7388-2 form JD
- continuous Ø-range
- high clamping force thanks to robust worm gear
- max. coolant pressure up to 50 bar
- limit speed 20,000 rpm
- balancing quality: G2,5 / 20.000 rev./min

Scope of delivery

- incl. clamping key
- order pull studs article no. 4927 or 4928 separately



GÜHROJET

Article no. **4240**

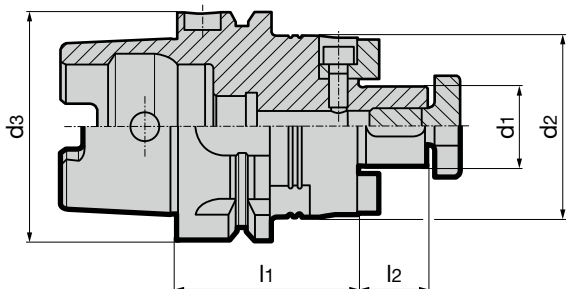
MAS/BT	clamping range d ₁ mm	d ₂ mm	l ₁ mm	l ₄ mm	Order no.
30	0.5 - 10	45	72	9	4240 10.030
40	1 - 16	50	88	12	4240 16.040
50	1 - 16	50	99	12	4240 16.050

Product information

- to hold shell mills DIN 841, arbor-type single angle cutters DIN 842 with keyway, shell mills DIN 1880 with keyway an milling cutters with inserts DIN 1830
- bore-Ø 40 and 50 mm has four additional holes with internal thread for milling heads with tool attachment DIN 2079
- HSK-A to ISO 12164-1/DIN 69893-1
- for central coolant supply

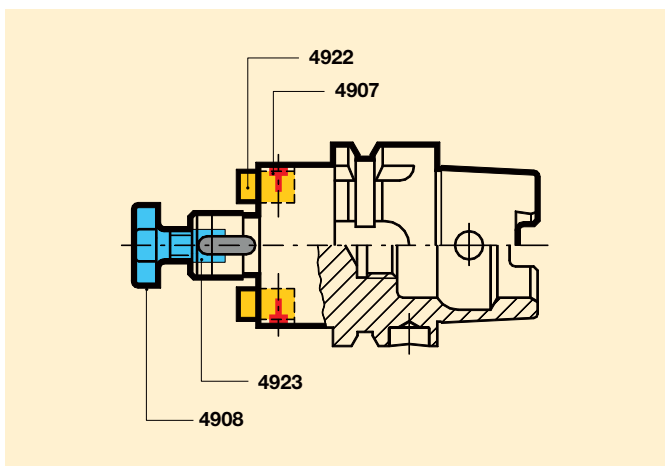
Scope of delivery

- completely assembled with milling cutter retaining screw, article no. 4908, drive dogs, article no. 4922 and feather key article no. 4923
- order coolant supply set article no. 4949 separately



						Article no.	4361
HSK-A d ₃	arbor-Ø d ₁ h6 mm	d ₂ mm	l ₁ mm	l ₂ mm	kg	Order no.	
32	16	40	45	17	0.27	4361 16.032	
32	22	50	50	19	0.40	4361 22.032	
40	16	40	45	17	0.40	4361 16.040	
40	22	50	50	19	0.50	4361 22.040	
50	16	40	45	17	0.60	4361 16.050	
50	22	50	50	19	0.80	4361 22.050	
50	27	60	55	21	1.00	4361 27.050	
63	16	40	45	17	0.90	4361 16.063	
63	22	50	50	19	1.00	4361 22.063	
63	27	60	55	21	1.30	4361 27.063	
63	32	78	55	24	1.60	4361 32.063	
63	40	89	60	27	2.10	4361 40.063	
80	16	40	45	17	2.10	4361 16.080	
80	22	50	50	19	2.30	4361 22.080	
80	27	60	55	21	2.50	4361 27.080	
80	32	78	55	24	2.60	4361 32.080	
80	40	89	60	27	3.40	4361 40.080	
100	22	50	50	19	2.50	4361 22.100	
100	27	60	55	21	2.80	4361 27.100	
100	32	78	55	24	3.10	4361 32.100	
100	40	89	60	27	3.70	4361 40.100	
100	50	120	70	30	5.60	4361 50.100	

Positioning of accessories



Feather keys DIN 6885 A

Scope of delivery

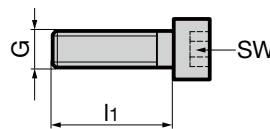
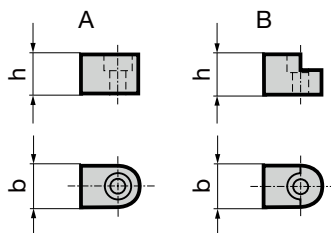
- minimum order quantity 10



			Article no.	4923
for arbor-Ø mm	l ₁ mm	b mm	Order no.	
16	14	4	4923 4.016	
22	16	6	4923 6.022	
27	19	7	4923 7.027	
32	22	8	4923 8.032	
40	25	10	4923 10.040	
50	28	12	4923 12.050	

Scope of delivery

- minimum order quantity 10



Article no. 4922			
for arbor-Ø mm	Form	h mm	b mm
16	B	9.25	8
22	B	11.00	10
27	A	12.75	12
32	A	16.50	14
40	A	20.00	16
50	A	27.50	18

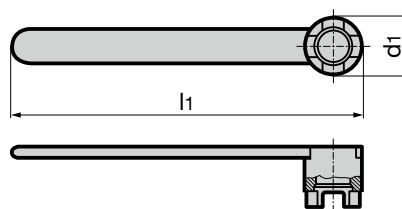
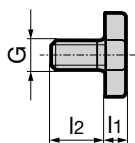
Article no. 4907			
G	l ₁ mm	SW	strength
M4	10	3	8.8
M5	12	4	8.8
M6	16	5	8.8
M6	20	5	8.8
M8	25	6	8.8
M12	65	10	10.9

Milling cutter retaining screws

Socket wrenches for retaining screws

Product information

- to DIN 6367
- on request with internal cooling

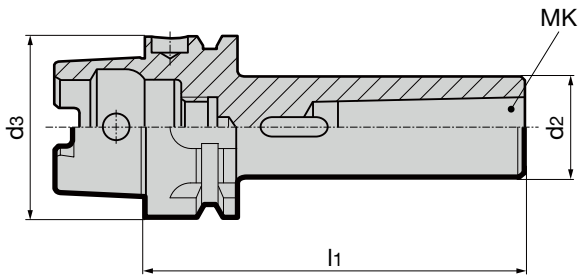


Article no. 4908				
for arbor-Ø mm	G	l ₁ mm	l ₂ mm	torque Nm
16	M8	6	16	40
22	M10	7	18	60
27	M12	8	22	80
32	M16	9	26	95
40	M20	10	30	100
50	M24	12	36	135
60	M30	14	45	160

Article no. 4909		
for arbor-Ø mm	d ₁ mm	l ₁ mm
16	22	180
22	28	200
27	35	225
32	42	250
40	52	280
50	63	315
60	76	355

Product information

- for holding Morse tapers with tang to DIN 228-1 form B,
- HSK-A to ISO 12164-1/DIN 69893-1



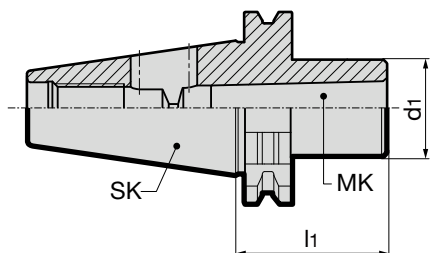
					Article no.	4320
HSK-A d ₃ mm	MK	d ₂ mm	l ₁ mm	kg	Order no.	
50	1	25	100	0.8	4320 1.050	
50	2	32	120	0.8	4320 2.050	
50	3	40	140	1.2	4320 3.050	
63	1	25	100	0.9	4320 1.063	
63	2	32	120	1.1	4320 2.063	
63	3	40	140	1.5	4320 3.063	
63	4	48	160	1.9	4320 4.063	
80	1	25	110	1.5	4320 1.080	
80	2	32	120	1.7	4320 2.080	
80	3	40	150	2.0	4320 3.080	
80	4	48	170	2.6	4320 4.080	
100	1	25	110	2.3	4320 1.100	
100	2	32	120	2.5	4320 2.100	
100	3	40	150	2.8	4320 3.100	
100	4	48	170	4.2	4320 4.100	
100	5	63	200	4.5	4320 5.100	

Tool holders

ISO taper morse taper holders

Product information

- for holding Morse tapers with tang to DIN 228-1 form B
- ISO taper to DIN ISO 7388-1 form AD
- order pull studs, article no. 4925 or 4926, separately

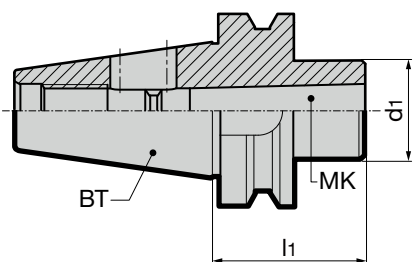


				Article no.	4238
ISO taper	MK	d_1 mm	l_1 mm	Order no.	
40	1	25	50	4238 1.040	
40	2	32	50	4238 2.040	
40	3	40	70	4238 3.040	
40	4	48	95	4238 4.040	
50	1	25	45	4238 1.050	
50	2	32	60	4238 2.050	
50	3	40	65	4238 3.050	
50	4	48	95	4238 4.050	
50	5	63	105	4238 5.050	

BT morse taper holders

Product information

- for holding Morse tapers with tang to DIN 228-1 form B
- MAS/BT to DIN ISO 7388-2 form JD
- order pull studs, article no. 4927 or 4928, separately

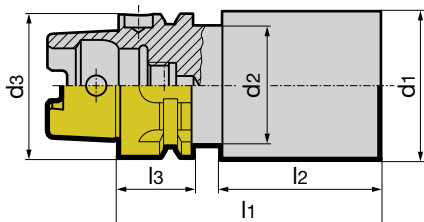


				Article no.	4239
BT	MK	d_1 mm	l_1 mm	Order no.	
30	1	25	45	4239 1.030	
30	2	32	60	4239 2.030	
30	3	40	75	4239 3.030	
40	1	25	50	4239 1.040	
40	2	32	50	4239 2.040	
40	3	40	70	4239 3.040	
40	4	48	95	4239 4.040	
50	1	25	45	4239 1.050	
50	2	32	60	4239 2.050	
50	3	40	65	4239 3.050	
50	4	48	95	4239 4.050	
50	5	63	105	4239 5.050	

HSK-A blanks

Product information

- material: nitrided steel, hardened and ground taper (yellow in scale drawing), blank unhardened for further machining
- HSK-A to ISO 12164-1/DIN 69893-1



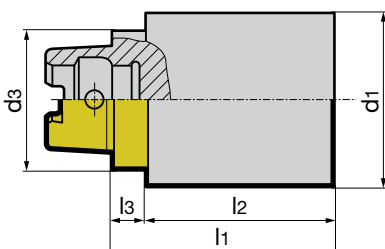
Article no. **4983**

HSK-A d ₃	d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	l ₃ mm	kg	Order no.
32	41	26	175	140	20	1.62	4983 175.032
40	51	34	205	170	20	3.02	4983 205.040
50	64	42	235	193	26	5.42	4983 235.050
63	63	53	150	108	26	3.55	4983 150.063
63	81	53	235	193	26	8.71	4983 235.063
80	101	67	235	193	26	13.63	4983 235.080
100	126	85	250	205	29	22.71	4983 250.100

HSK-C blanks

Product information

- material: nitrided steel, hardened and ground taper (yellow in scale drawing), blank unhardened for further machining
- machining not permitted in l₃ area
- HSK-C to ISO 12164-1/DIN 69893-1



Article no. **4982**

HSK-C d ₃	d ₁ mm	l ₁ mm	l ₂ mm	l ₃ mm	kg	Order no.
25	30	100	90	10	0.54	4982 87.025
32	41	150	139	11	1.50	4982 50.032
40	51	180	169	11	2.81	4982 63.040
50	64	200	186	14	4.92	4982 80.050
50	64	90	76	14	2.15	4982 100.050
63	81	200	186	14	7.90	4982 112.063
63	81	100	86	14	3.89	4982 125.063
80	101	210	193	17	12.90	4982 120.080
100	124	225	208	17	21.70	4982 145.100

MODULE 6x6
PCD

HIGHEST PRECISION

Module 6x6 and
PCD tools



- ⇒ perfect concentricity
- ⇒ axial and radial μ -accurate setting
- ⇒ targeted balancing
- ⇒ quick tool pre-setting

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"Module 6x6" and "PCD"
brochures.

HOLDERS FOR FINE MACHINING



Holders for
fine machining



**QUICK + SIMPLE
ADJUSTMENT**



**AXIAL + RADIAL
 μ -ACCURATE SETTING**



**CONCENTRICITY AND
ALIGNMENT ERROR
COMPENSATION**



MQL SUITABLE



4949

Coolant supply set HSK-A (conventional)



4939

MQL 1-channel coolant supply set HSK-A



4940

MQL 1-channel coolant supply set HSK-A (filler)



4926

4925

Pull studs for SK



4927

4928

Pull studs for BT



4723

Module HSK-A alignment adaptor



4725

Module ISO taper alignment adaptor



4712

Module taper alignment adaptor BT



machine spindle direct installation



Intermediate sleeve



4716

Intermediate sleeve



4363

Module HSK adaptor flange



4722

Module hydraulic chuck flange



4717

Module shrink fit chuck flange



4714

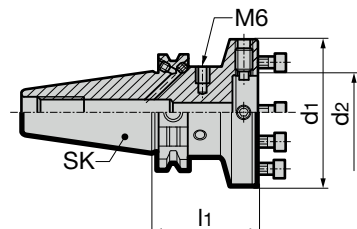
Module HPC clamping chuck flange



Module 6x6 ISO taper alignment adaptor

Product information

- ISO taper to DIN ISO 7388-1 form AD/AF
- for the highly accurate alignment of all modular flanges 6x6
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- suitable for MQL and conventional cooling
- balancing quality G6.3 / 15,000 rev./min
- 6 balancing threads M6



Scope of delivery

- incl. 6 screws for radial adjustment
- incl. 6 clamping screws
- order pull studs art. no. 4925 or 4926 separately



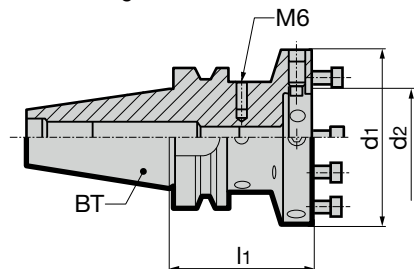
Article no. **4725**

SK	d1 mm	d2 mm	l1 mm	Order no.
40	60	30	50	4725 60.040
40	70	35	50	4725 70.040
40	80	40	55	4725 80.040
40	100	50	60	4725 100.040
50	60	30	50	4725 60.050
50	70	35	50	4725 70.050
50	80	40	50	4725 80.050
50	100	50	60	4725 100.050
50	117	60	60	4725 117.050
50	140	80	60	4725 140.050

Module 6x6 taper alignment adaptor BT

Product information

- MAS/BT to DIN ISO 7388-2 form JD
- for the highly accurate alignment of all modular flanges 6x6
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- suitable for MQL and conventional cooling
- balancing quality G6.3 / 15,000 rev./min
- 6 balancing threads M6



Scope of delivery

- incl. 6 screws for radial adjustment
- incl. 6 clamping screws
- order pull studs art. no. 4925 or 4926 separately



Article no. **4712**

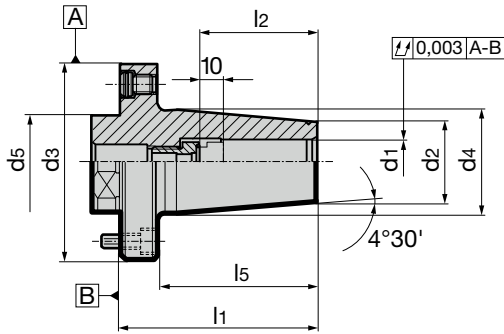
BT	d1 mm	d2 mm	l1 mm	Order no.
30	60	30	50	4712 60.030
30	70	35	50	4712 70.030
40	60	30	55	4712 60.040
40	70	35	55	4712 70.040
40	80	40	65	4712 80.040
40	100	50	70	4712 100.040
50	60	30	70	4712 60.050
50	70	35	70	4712 70.050
50	80	40	70	4712 80.050
50	100	50	70	4712 100.050
50	117	60	80	4712 117.050
50	140	80	80	4712 140.050

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- balancing quality G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- with axial damping screw for optimal concentricity

Scope of delivery

- incl. adjustment screw with axial force
- damping article no. 4941
- incl. 6 angular alignment sets article no. 4715
- incl. 6 clamping screws
- order intermediate tube article no. 4716 separately
- further dimensions on request



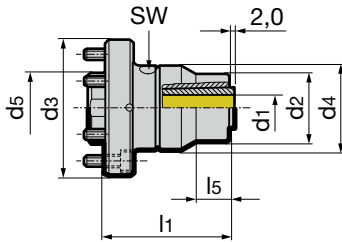
Modul-Ø d ₃ mm	für Schaft-Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	d ₅ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw art. no. 4941	intermediate sleeve tube art. no. 4716	Article no. 4717	Order no.
60	6	21	27	30	70	36	56	6.100	14.010		4717 6.060
60	8	21	27	30	70	36	56	8.100	14.010		4717 8.060
60	10	24	32	30	70	40	56	10.100	14.020		4717 10.060
60	12	24	32	30	70	45	56	12.100	14.030		4717 12.060
70	12	24	32	35	75	45	60	12.100	14.020		4717 12.070
70	14	27	34	35	75	45	60	14.100	14.020		4717 14.070
70	16	27	34	35	75	48	60	16.100	14.040		4717 16.070
80	18	33	42	40	80	48	65	18.100	14.050		4717 18.080
80	20	33	42	40	80	50	65	20.100	14.040		4717 20.080
100	25	44	52	50	80	56	61	25.100	20.010		4717 25.100
100	32	44	52	50	80	60	61	32.100	20.020		4717 32.100

Holders for fine machining

Module 6x6 HPC clamping chuck flange

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- highest concentricity, clamping force and rigidity thanks to mech. tension gearing
- suitable for internal cooling up to 80 bar
- positive damping characteristics
- for tool shank tolerance h6



Scope of delivery

- incl. hexagon chuck key article no. 4912
- incl. 6 angular alignment sets article no. 4715
- incl. 6 clamping screws
- order intermediate tube article no. 4716 separately
- order clamping sleeves article nos. 4302, 4235, 4236, 4237 separately



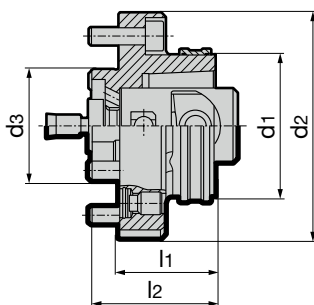
Article no. **4714**

Module-Ø d ₃ mm	nom. size	for shank Ø d ₁ h6 mm	d ₂ mm	d ₄ mm	d ₅ mm	l ₁ mm	l ₅ mm	intermediate sleeve tube article no. 4716	SW	Order no.
70	20	3 - 20	40	53	35	87	20	20.030	4	4714 20.070
80	20	3 - 20	40	53	40	73	20	20.030	4	4714 20.080
100	25	16-32	53	63	50	118	-	20.030	4	4714 25.100

Module 6x6 HSK adaptor flange

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- suitable for MQL and conventional cooling
- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893



Scope of delivery

- incl. MQL 4-point clamping set article no. 4930
- incl. clamping screw article no. 4935
- incl. brass lock ring article no. 4953
- incl. 6 angular alignment sets article no. 4715
- incl. 6 clamping screws
- incl. intermediate tube article no. 4716



HOLDERS for
fine machining

Article no. **4363**



HSK-C d ₁ mm	Module-Ø d ₂ mm	d ₃ mm	kg	l ₁ mm	l ₂ mm	intermediate sleeve tube article no. 4716	Order no.
32	60	30	0.4	26	36	24.060	4363 24.060
40	70	35	0.6	30	40	30.070	4363 30.070
50	80	40	1.0	35	45	238.080	4363 38.080
63	100	50	1.8	43	55	48.100	4363 48.100
80	117	60	2.9	50	62	60.117	4363 60.117
100	140	80	5.8	75	87	75,140	4363 75.140

4949

Coolant supply set HSK-A (conventional)



4939 

MQL 1-channel coolant supply set HSK-A



4940 

MQL 1-channel coolant supply set HSK-A (filler)



4926

4925

Pull studs for SK



4927

4928

Pull studs for BT



4797

Module HSK-A alignment adaptor



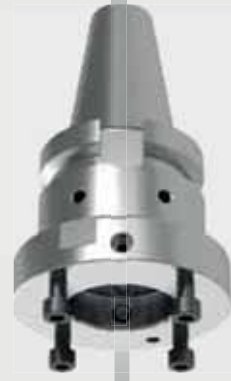
4724

Module ISO taper alignment adaptor



4709

Module taper alignment adaptor BT



machine spindle direct installation



Intermediate sleeve



4716

Intermediate sleeve



4713

Module HSK adaptor flange



4360

Module hydraulic chuck flange



4760

Module shrink fit chuck flange

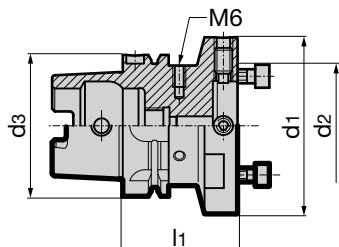


Product information

- for the highly accurate alignment of all modular flanges 4x4
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- suitable for MQL and conventional cooling
- balancing quality G6.3 / 15,000 rev./min
- 6 balancing threads M6
- HSK-A to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. 4 screws for radial adjustment
- incl. 4 clamping screws
- order coolant supply set article no. 4949, MQL coolant supply set article no. 4939 or 4940 separately
- order intermediate tube article no. 4716 separately
- further dimensions on request



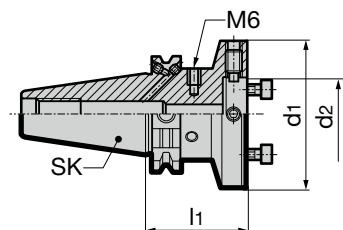
				Article no.	4297
HSK-A d3 mm	d1 mm	d2 mm	l1 mm	Order no.	
63	60	30	60	4297	60.063
63	70	35	60	4297	70.063
63	80	40	60	4297	80.063
63	100	50	65	4297	100.063
63	117	60	65	4297	117.063
80	70	35	60	4297	70.080
80	80	40	60	4297	80.080
80	100	50	65	4297	100.080
80	117	60	65	4297	117.080
80	140	80	75	4297	140.080
100	70	35	55	4297	70.100
100	80	40	55	4297	80.100
100	100	50	65	4297	100.100
100	117	60	65	4297	117.100
100	140	80	75	4297	140.100

Holders for fine machining

Module 4x4 ISO taper alignment adaptor

Product information

- ISO taper to DIN ISO 7388-1 form AD/AF
- for the highly accurate alignment of all modular flanges 4x4
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- suitable for MQL and conventional cooling
- balancing quality G6.3 / 15,000 rev./min
- 6 balancing threads M6



Scope of delivery

- incl. 4 screws for radial adjustment
- incl. 4 clamping screws
- order intermediate tube article no. 4716 separately
- order pull studs article no. 4925 or 4926 separately

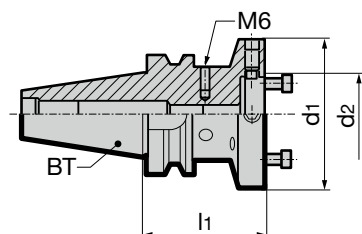


				Article no.	4724
SK	d ₁ mm	d ₂ mm	l ₁ mm	Order no.	
40	60	30	50	4724 60.040	
40	70	35	50	4724 70.040	
40	80	40	55	4724 80.040	
40	100	50	60	4724 100.040	
50	60	30	50	4724 60.050	
50	70	35	50	4724 70.050	
50	80	40	50	4724 80.050	
50	100	50	60	4724 100.050	
50	117	50	60	4724 117.050	
50	140	80	60	4724 140.050	

Module 4x4 taper alignment adaptor BT

Product information

- MAS/BT to DIN ISO 7388-2 form JD
- for the highly accurate alignment of all modular flanges 4x4
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- suitable for MQL and conventional cooling
- balancing quality G6.3 / 15,000 rev./min
- 6 balancing threads M6



Scope of delivery

- incl. 4 screws for radial adjustment
- incl. 4 clamping screws
- incl. threaded pins
- order pull studs article no. 4927 or 4928 separately

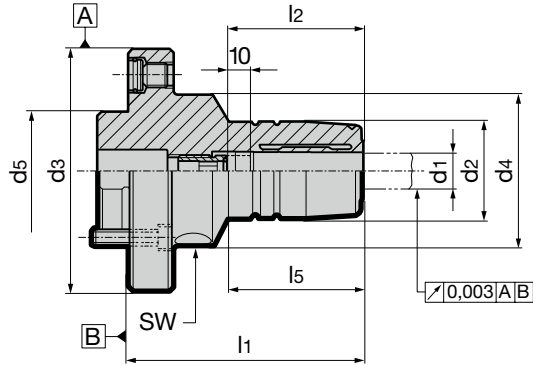


				Article no.	4709
BT	d ₁ mm	d ₂ mm	l ₁ mm	Order no.	
30	60	30	50	4709 60.030	
30	70	35	50	4709 70.030	
40	60	30	55	4709 60.040	
40	70	35	55	4709 70.040	
40	80	40	65	4709 80.040	
40	100	50	70	4709 100.040	
50	60	30	70	4709 60.050	
50	70	35	70	4709 70.050	
50	80	40	70	4709 80.050	
50	100	50	70	4709 100.050	
50	117	60	80	4709 117.050	
50	140	80	80	4709 140.050	

Module 4x4 hydraulic chuck flange

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- balancing quality G6.3 / 15,000 rev./min
- for tool shank tolerance h6



Scope of delivery

- incl. adjustment screw article no. 4941 for conventional cooling
- incl. angular alignment set article no. 4715
- incl. 4 clamping screws
- incl. hexagon chuck key article no. 4912
- order intermediate tube article no. 4716 separately
- for other clamping \varnothing apply reduction bushes article no. 4368 or 4369
- MQL version on request



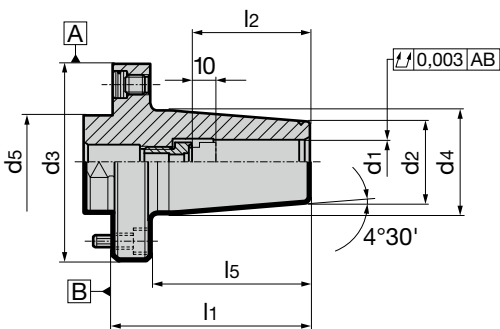
Article no. **4360**

Module- \varnothing d ₃ mm	for shank \varnothing d ₁ h6 mm	d ₂ mm	d ₄ mm	d ₅ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw art. no. 4941	intermediate sleeve tube art. no. 4716	SW	Order no.
70	12	32	40	35	75,0	45	45,0	12,100	14,020	4	4360 12.070
80	12	32	50	40	77,5	45	44,3	12,100	14,050	5	4360 12.080
80	20	42	50	40	82,5	50	51,5	20,100	14,040	5	4360 20.080
100	32	64	64	50	103,0	60	84,0	32,100	14,020	6	4360 32.100

Module 4x4 shrink fit chuck flange

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- cooling lubricant without loss and flow-disruption thanks to the use of an intermediate tube
- balancing quality G6.3 / 15,000 rev./min
- for tool shank tolerance h6
- with axial damping screw for optimal concentricity



Scope of delivery

- incl. adjustment screw with axial force
- damping article no. 4941
- incl. angular alignment seten article no. 4715
- incl. 4 clamping screws
- order intermediate tube article no. 4716 separately
- further dimensions on request



Article no. **4760**

Module- \varnothing d ₃ mm	for shank \varnothing d ₁ h6 mm	d ₂ mm	d ₄ mm	d ₅ mm	l ₁ mm	l ₂ mm	l ₅ mm	incl. setting screw art. no. 4941	intermediate sleeve tube art. no. 4716	Order no.
60	6	21	27	30	70	36	56	6.100	14.010	4760 6.060
60	8	21	27	30	70	36	56	8.100	14.010	4760 8.060
60	10	24	32	30	70	40	56	10.100	14.020	4760 10.060
60	12	24	32	30	70	45	56	12.100	14.030	4760 12.060
70	12	24	32	35	75	45	60	12.100	14.020	4760 12.070
70	14	27	34	35	75	45	60	14.100	14.020	4760 14.070
70	16	27	34	35	75	48	60	16.100	14.040	4760 16.070
80	18	33	42	40	80	48	65	18.100	14.050	4760 18.080
80	20	33	42	40	80	50	65	20.100	14.040	4760 20.080
100	25	44	52	50	80	56	61	25.100	20.010	4760 25.100
100	32	44	52	50	80	60	61	32.100	20.020	4760 32.100

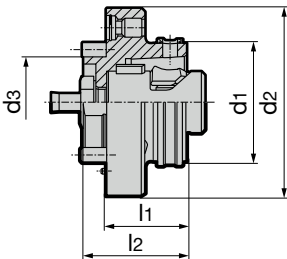
HOLDERS for
fine machining

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- suitable for MQL and conventional cooling
- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- incl. MQL 4-point clamping set article no. 4930
- incl. clamping screw article no. 4935
- incl. brass lock ring article no. 4953
- incl. 6 angular alignment sets article no. 4715
- incl. 6 clamping screws
- incl. intermediate tube article no. 4716



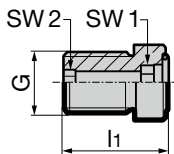
						Article no.	4713
HSK-C d1 mm	Module-Ø d2 mm	d3 mm	l1 mm	l2 mm	intermediate sleeve tube art. no. 4716	Order no.	
32	60	30	26	36	24.060	4713 24.060	
40	70	35	30	40	30.070	4713 30.070	
50	80	40	35	45	238.080	4713 38.080	
63	100	50	43	55	48.100	4713 48.100	
80	117	60	50	62	60.117	4713 60.117	
100	140	80	75	87	75.140	4713 75.140	

Length adjustment screw for conventional cooling

Product information

- to adapt MQL tool holders to meet the requirements of conventional wet machining. For plain end shanks. The height of screw head compensates the height of MQL taper

- for MQL HSK-A shrink fit and hydraulic chucks
- for use with shank according to DIN 6535 with plain shank end for conventional cooling
- with the patented face orientated O ring axial force damping is provided which prevents concentricity errors.



							Article no.	4941
for HSK-A	clamping- Ø	G	d1 mm	l1 mm	SW1	SW2	Order no.	
40	6	M5	6.0	14.9	2.5	-	4941 6.041	
40	6	M7x1	5.8	15.0	2.5	-	4941 6.040	
40	8	M7x1	5.8	18.0	3	-	4941 8.040	
50	6	M8x1	5.8	14.0	2.5	-	4941 6.050	
50	8	M8x1	6.8	18.0	3	-	4941 8.050	
40 / 50	10	M8x1	9.8	17.7	4	-	4941 10.050	
63/ 80/ 100	6	M10x1	5.8	17.0	2.5	-	4941 6.100	
63/ 80/ 100	8	M10x1	7.8	17.0	3	-	4941 8.100	
63/ 80/ 100	10	M10x1	9.8	16.2	4	-	4941 10.100	
40/ 50/ 63/ 80/ 100	12	M10x1	9.8	16.0	5	-	4941 12.100	
40/ 50/ 63/ 80/ 100	14	M10x1	9.8	17.2	5	-	4941 14.100	
50/ 63/ 80/ 100	16	M12x1	15.8	18.2	6	-	4941 16.100	
50/ 63/ 80/ 100	18	M12x1	15.8	19.2	6	-	4941 18.100	
50/ 63/ 80/ 100	20	M16x1	15.8	19.2	6	8	4941 20.100	
63/ 80/ 100	25	M16x1	15.8	22.7	6	8	4941 25.100	
63/ 80/ 100	32	M16x1	15.8	26.7	6	8	4941 32.100	

Holders for fine machining

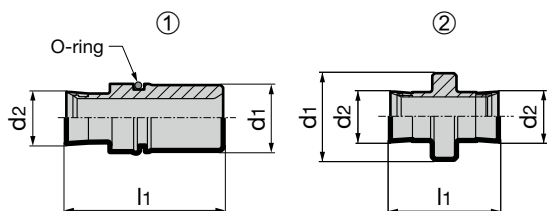
Intermediate sleeves for module flange and alignment adaptor 6x6 and 4x4

Product information

- for sealing when machining with either coolant or MQL
- Design without O-ring for HSK module adaptor flange art. no. 4363 and art. no. 4713

Scope of delivery

- with O-ring and sealing lip
article no. 4617 1.140



					Article no.	4716
d ₁ mm	for d ₂ mm	l ₁ mm	O-ring	type	Order no.	
14	10.5	47.5	10x1.5	1	4716	14.010
14	10.5	32.0	10x1.5	1	4716	14.020
14	10.5	37.5	10x1.5	1	4716	14.030
14	10.5	26.5	10x1.5	1	4716	14.040
14	10.5	31.5	10x1.5	1	4716	14.050
20	10.5	28.0	17x1.5	1	4716	20.010
20	10.5	25.5	17x1.5	1	4716	20.020
20	10.5	16.5	17x1.5	1	4716	20.030
4	10.5	26.1	–	1	4716	24.060
5	10.5	21.9	–	1	4716	30.070
6	10.5	21.9	–	1	4716	238.080
7	10.5	31.7	–	1	4716	48.100
10	10.5	28.6	–	1	4716	60.117
12	10.5	36.4	–	1	4716	75.140
17.8	10.5	22.3	–	2	4716	60.100
17.8	10.5	26.3	–	2	4716	117.140

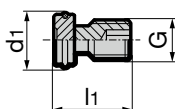
Angle alignment units for module flange and alignment adaptor 6x6 and 4x4

Product information

- for accurate angle alignment of module flanges

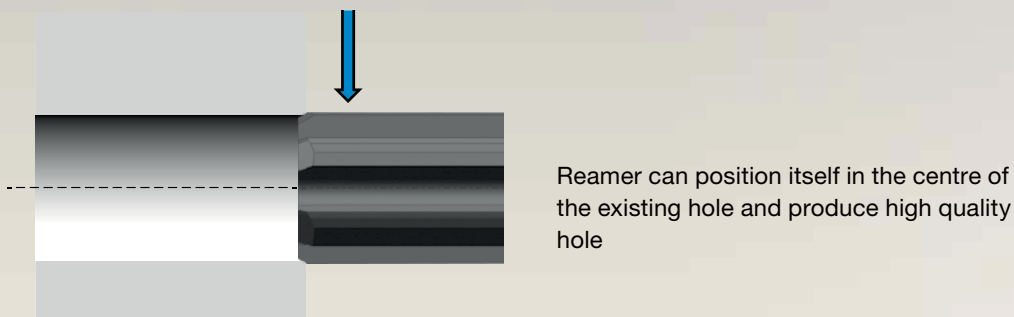
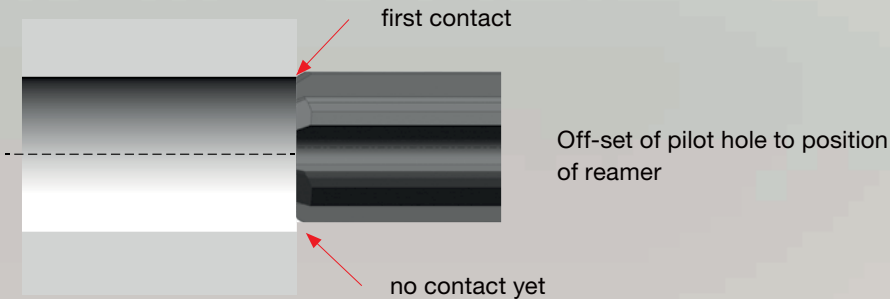
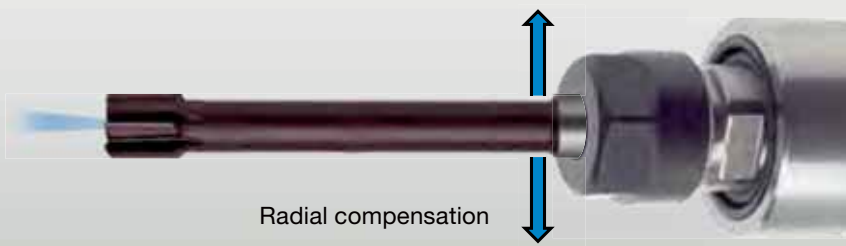
Scope of delivery

- pressure disc, threaded pin and snap ring



				Article no.	4715
for module	G	d ₁ mm	l ₁ mm	Order no.	
60 / 70 / 80	M8x1	11.5	13	4715	8.010
100 / 117 / 140	M10x1	13.6	19	4715	10.010

Holders for
 fine machining



Floating holder for perfect HPC reaming

For the fine machining of holes the matching of pilot hole with the tool axis is a pre-requisite for the perfect functioning of the reamer. Floating holders serve to compensate the lateral off-set between tool and pilot hole. This off-set is usually created by machining with multiple clamping operations, cycle and positioning errors during tool and workpiece changes as well as by alignment errors on turning machines. As our floating holders have been designed for high-speed reaming operations, we consciously dispense of angle compensation. This improves the clamping rigidity. When the radial play is excessive upon entry into the pilot hole the reamer is subjected to high stresses. Crumbling of the edges is the consequence. Limited radial play on our floating holders compensates for any possible vibration even at high speeds.

Coolant ducts integrated in the floating holder ensure the reamer is optimally supplied with cooling lubricant. Longer hole tolerance compliancy and tool life are the result. Higher economic efficiency thanks to cost and time saving is guaranteed.

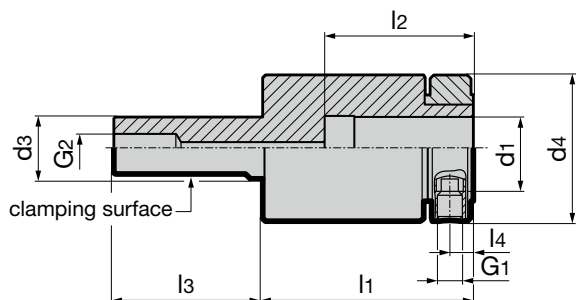
Floating holders with side lock holder

Product information

- straight shank d_3 with whistle notch flat
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- central coolant supply max. 80 bar
- drive flat on tool shank necessary
- for tool shank tolerance h6

Scope of delivery

- for other shank \varnothing order reduction sleeves article no. 4095 separately
- order hexagon chuck key article no. 4912 separately
- further sizes with differing radial play are available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Article no.

4167

d_3 g6 mm	for holder d_1 h6 mm	recommen- ded tool- \varnothing	d_4 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	G_1	G_2	radial play
20	20	up to \varnothing 28	49	75	50	50	9.5	M8	1/8	0.12
25	25	\varnothing 10 - \varnothing 36	59	85	60	60	9.5	M10	1/4	0.12
32	32	\varnothing 16 - \varnothing 60	80	92	63	80	12.5	M12	3/8	0.12

Order no.

4167 20.020

4167 25.025

4167 32.032

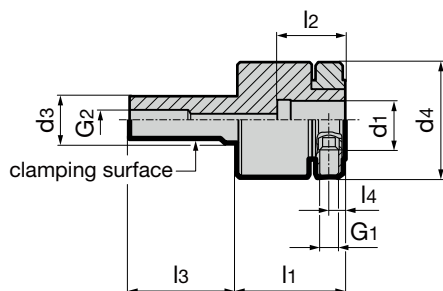
Short floating holders with side lock holder

Product information

- straight shank d_3 with whistle notch flat
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- central coolant supply max. 80 bar
- drive flat on tool shank necessary
- for tool shank tolerance h6

Scope of delivery

- for other shank \varnothing order reduction sleeves article no. 4095 separately
- order hexagon chuck key article no. 4912 separately
- further sizes with differing radial play are available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Article no.

4169

d_3 g6 mm	for holder d_1 h6 mm	recommen- ded tool- \varnothing	d_4 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	G_1	G_2	radial play
20	10	up to \varnothing 14	38.5	46	25	40	6	M6	1/8	0.08
20	16	up to \varnothing 22	49	46	29	46	7	M6	1/8	0.10
20	20	up to \varnothing 28	49	46	29	46	7	M6	1/8	0.12

Order no.

4169 10.020

4169 16.020

4169 20.020

Holders for
fine machining

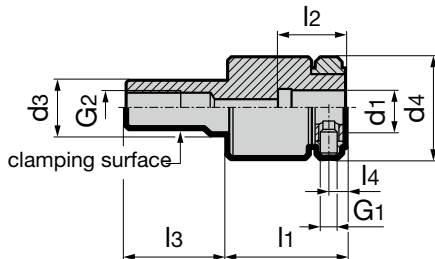
Mini floating holders with side lock holder

Product information

- holder shank with lateral clamping surface
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- very compact design for restricted space
- central coolant supply max. 80 bar
- drive flat on tool shank necessary
- for tool shank tolerance h6

Scope of delivery

- for other shank \varnothing order reduction sleeves article no. 4097 separately
- order hexagon chuck key article no. 4912 separately
- further sizes with differing radial play are available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Article no. **4174**

d ₃ g6 mm	for holder d ₁ h6 mm	recommen- ded tool- \varnothing	d ₄ mm	l ₁ mm	l ₂ mm	l ₃ mm	l ₄ mm	G ₁	G ₂	radial play	Order no.
16	10	bis \varnothing 14	30	35	20	30	5	M5	1/8	0.12	4174 10.016

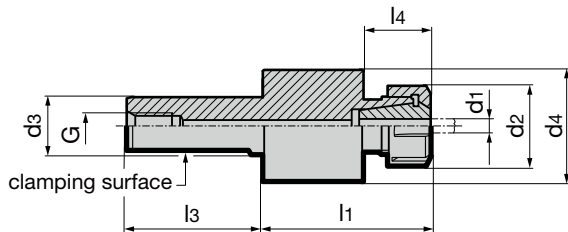
Floating holder with ER collet holder

Product information

- straight shank d₃ with whistle notch flat
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- for the application of internally cooled reamers use metallic sealed collets type DM article no. 4175
- central coolant supply max. 80 bar

Scope of delivery

- incl. retaining nut
- order collet article no. 4175 or 4307 as well as clamping key article no. 4913 separately
- further sizes with differing radial play are available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Article no. **4098**

d ₃ g6 mm	recommended tool- \varnothing d ₁ mm	clamping range	d ₂ mm	d ₄ mm	l ₁ mm	l ₃ mm	l ₄ mm	G	radial play	Order no.
16	up to \varnothing 16	ER20 \varnothing 1-13	34	49.5	74	40	29.5	1/8	0.06	4098 20.016
20	\varnothing 4- \varnothing 24	ER25 \varnothing 2-16	42	59	84	50	35	1/8	0.06	4098 25.020
25	up to \varnothing 16	ER20 \varnothing 1-13	34	49.5	74	60	29.5	1/4	0.08	4098 20.025
25	\varnothing 4- \varnothing 24	ER25 \varnothing 2-16	42	59	84	60	35	1/4	0.08	4098 25.025
32	\varnothing 6 - \varnothing 30	ER32 \varnothing 3-20	50	64	91	80	35.5	3/8	0.10	4098 32.032
40	\varnothing 6 - \varnothing 30	ER32 \varnothing 3-20	50	64	91	80	35.5	1/2	0.12	4098 32.040

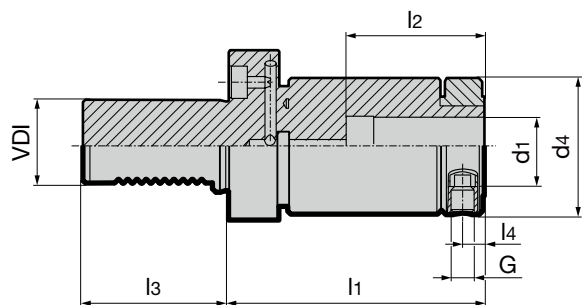
Floating side lock holder VDI DIN 69880-1

Product information

- VDI holder shank with teeth
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- central coolant supply max. 80 bar
- tool shank with special whistle notch flat necessary
- drive flat on tool shank necessary
- for tool shank tolerance h6

Scope of delivery

- for other shank \varnothing order reduction sleeves article no. 4095 separately
- order hexagon chuck key article no. 4912 separately
- further dimensions available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Article no.

4117

VDI	holder d ₁ h6 mm	clamping range	d ₄ mm	l ₁ mm	l ₂ mm	l ₃ mm	l ₄ mm	M	radial play	Order no.
30	25	Ø 16-25	59	111	59	55	9.5	M10	0.12	4117 25.030
40	25	Ø 16-25	59	111	59	63	9.5	M10	0.12	4117 25.040
40	32	Ø 20-32	80	117	63	63	12.5	M12	0.12	4117 32.040
50	25	Ø 16-25	59	111	59	78	9.5	M10	0.12	4117 25.050
50	32	Ø 20-32	80	117	63	78	12.5	M12	0.12	4117 32.050

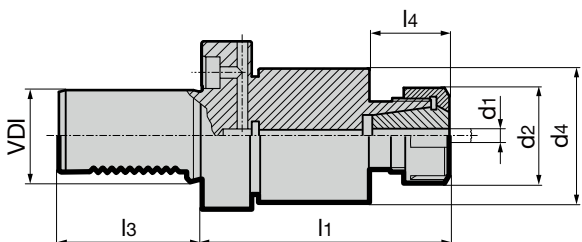
Floating ER Collet holder VDI DIN 69880-1

Product information

- VDI holder shank with teeth
- suitable for conventional and high performance multi-fluted reamers, because of no angle compensation
- for the application of internally cooled reamers use metallic sealed collets type DM article no. 4175
- with coolant supply max. 80 bar

Scope of delivery

- incl. retaining nut
- order collet article no. 4175 or 4307 as well as clamping key article no. 4913 separately
- further sizes with differing radial play are available on request
- compensates lateral deviation between tool and workpiece
- vibration-free compensation of concentricity and misalignment



Holders for fine machining

Article no.

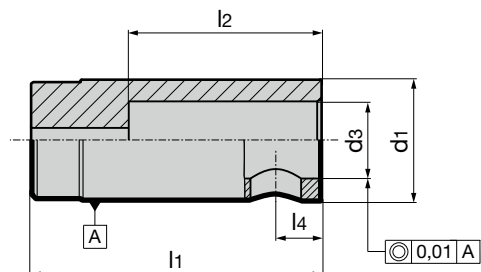
4116

VDI	recommended tool-Ø	clamping range	d ₂ mm	d ₄ mm	l ₁ mm	l ₃ mm	l ₄ mm	radial play	Order no.
30	up to Ø 20	ER25 Ø 2-16	42	59	109	55	35	0.08	4116 25.030
40	up to Ø 20	ER25 Ø 2-16	42	59	109	63	35	0.10	4116 25.040
40	Ø 6- Ø 32	ER32 Ø 3-20	50	64	116	63	35.5	0.10	4116 32.040
50	up to Ø 20	ER25 Ø 2-16	42	59	109	78	35	0.12	4116 25.050
50	Ø 6- Ø 32	ER32 Ø 3-20	50	64	116	78	35.5	0.12	4116 32.050

Reduction sleeves for floating holder

Product information

- for reducing the clamping diameter in floating holders
- central coolant supply
- drive flat on tool shank necessary
- applicable in floating holders
article no. 4167 and 4117



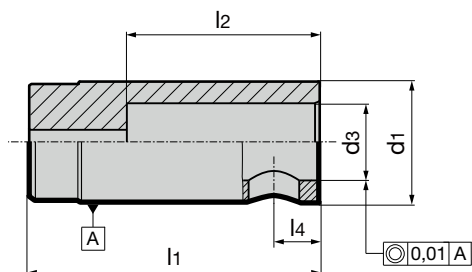
Article no. **4095**

d ₁ mm	for shank Ø d ₃ h6 mm	l ₁ mm	l ₂ mm	l ₄ mm	Order no.
20	14	50	40	9.5	4095 14.020
20	16	50	40	9.5	4095 16.020
25	16	60	40	9.5	4095 16.025
25	18	60	40	9.5	4095 18.025
25	20	60	50	9.5	4095 20.025
32	20	63	50	12.5	4095 20.032
32	25	63	60	12.5	4095 25.032

Reduction sleeves for short floating holder

Product information

- for reducing the clamping diameter in floating holders
- central coolant supply
- drive flat on tool shank necessary
- applicable in short floating holders
article no. 4169



Article no. **4095**

d ₁ mm	for shank Ø d ₃ h6 mm	l ₁ mm	l ₂ mm	l ₄ mm	Order no.
10	4	25	10	6.0	4095 4.010
10	6	25	-	6.0	4095 6.010
10	8	25	20	6.0	4095 8.010
16	10	29	25	7.0	4095 10.016
16	12	29	25	7.0	4095 12.016
20	12	29	25	7.0	4095 12.020
20	14	29	25	7.0	4095 14.020
20	16	29	25	7.0	4095 16.020

HSK



HSK CLAMPING TECHNOLOGY

ONE CLAMPING SET MANY NEW POSSIBILITIES!



**SUITABLE FOR DIFFERENT
SPINDLE CONTOURS**



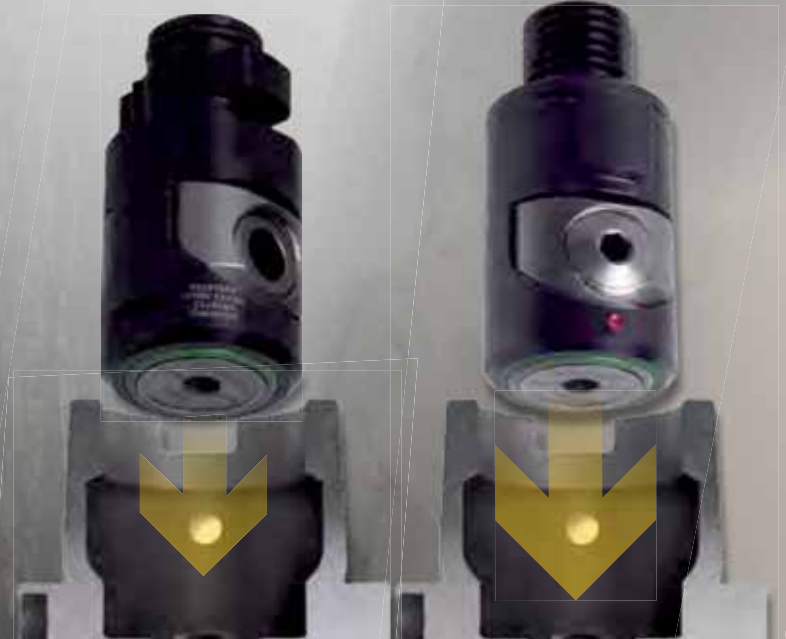
**MAXIMUM
CLAMPING FORCE**



**OPTIMAL COOLING
SUPPLY – MQL &
CONVENTIONAL**



**STRAIGHT-
LINE COOLANT
THROUGHFLOW**



4-POINT CLAMPING TECHNOLOGY FOR MQL

TECHNICAL INFORMATION AND ADVANTAGES

GÜHROCLAMP

MQL
BY GÜHRING

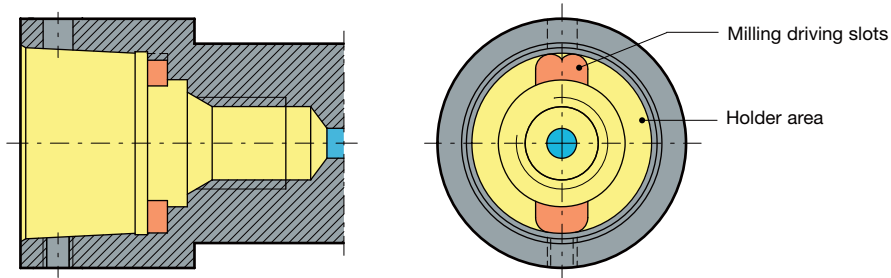
Our 4-point clamping system is suitable for radial manual clamping. Primarily designed for installation in spindles (short drilling spindles, multiple-spindle drilling heads).



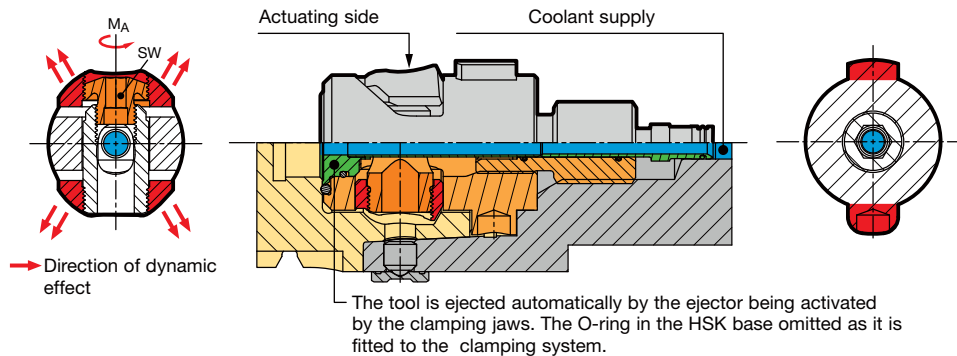
Advantages:

- simple and hence more economic spindle manufacture
- short, small diameter spindles with constricted spindle bearing spacing
- suitable for a pressure up to 160 bar (for conventional internal cooling)
- fast response time thanks to uninterrupted MQL supply
- compatible installation contour and application of our 4-point clamping set for conventional cooling
- fixed installation through screwed joint, prebalanced, and good rotation symmetry, suitable for high-speed processes

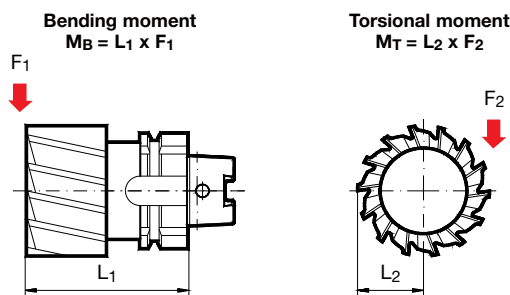
Internal contour of spindle



Installation and principle of operation



Bending, torsional and tightening moment for 4-point clamping sets for MQL



- ① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.
- ② Depending on temperature and lubricating conditions these values can be up to 15% lower.
- ③ Due to the screwed connection. M_T max. can be lower with adaptors.

HSK-C	max. torque M_A [Nm] ①	Key size	max. drawing force [kN] ②	max. linear bending moment M_B [Nm] ②	max. transferrable torsional moment M_T [Nm] ② ③
32	3.0	2.5	8.5	72	105
40	6.0	3.0	12.5	135	180
50	12.0	4.0	24.0	330	390
63	24.0	5.0	32.0	570	680
80	40.0	6.0	45.0	1000	1570
100	60.0	8.0	53.0	1620	4200

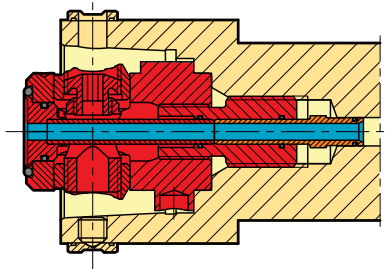
HSK clamping technology

General notes: Our manual clamping sets must not be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, article no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, article no. 4915 with hexagonal sockets, article no. 4916. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

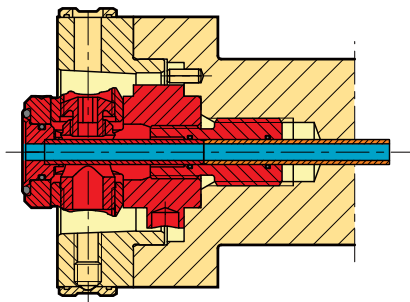


MQL 4-point clamping set connection dimensions for new designs

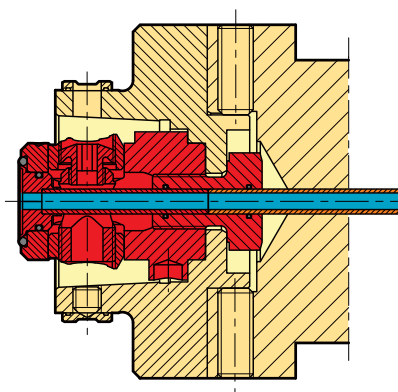
Direct installation in spindle with MQL adaptor



Short spindle adaptor with MQL supply pipe



Adaptor (in front) with MQL supply pipe



GÜHROCLAMP MQL 4-point clamping sets for MQL and IC

Product information

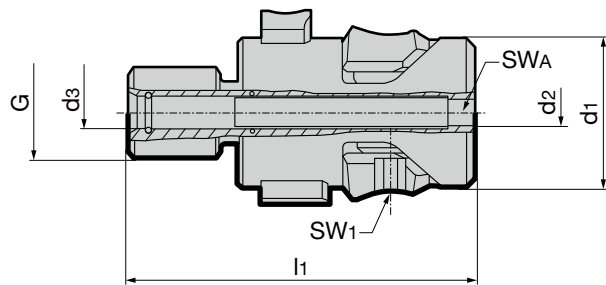
- for radial manual HSK tool clamping
- universal application for MQL and high-pressure IC
- the central and coaxial MQL supply with constant internal diameter prevents coolant from consolidating to DIN 69090-2
- for a coolant pressure up to 160 bar
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- complete as shown in illustration
- installation and operating instructions



GÜHROCLAMP



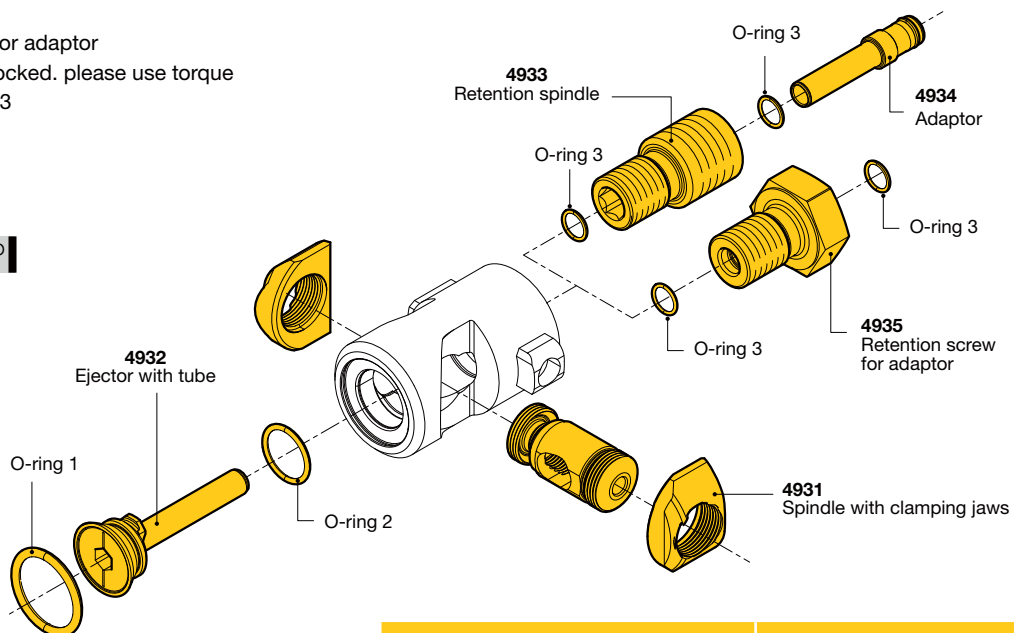
Article no. **4930**

HSK-C	d1 mm	d2 mm	d3 mm	l1 mm	G	SW1	SWA	kg	Order no.
32	16.7	3	4.1	41.75	M10	2.5	3	0.05	4930 24.100
40	20.6	4	5.1	43.90	M12	3	4	0.09	4930 30.100
50	25.5	5	7.1	54.20	M16	4	5	0.18	4930 38.100
50	25.5	5	6.1	54.20	M16	4	5	0.18	4930 38.200
63	33.0	6	7.1	72.20	M20	5	6	0.37	4930 48.100
80	41.0	8	10.1	90.20	M24	6	8	0.70	4930 60.100
100	52.0	10	12.1	107.10	M24	8	10	1.30	4930 75.100

GÜHROCLAMP component parts for MQL 4-point clamping sets article no. 4930

- retention screw only for adaptor
- if spindle cannot be locked, please use torque socket article no. 4963

GÜHROCLAMP



Article no. **4931** **4932**

HSK-C	O-ring 1 mm	O-ring 2 mm	O-ring 3 mm	Spindle with clamping jaws	Ejector with tube
	mm	mm	mm	Order no.	Order no.
32	10.5x2.0	6.0x1.5	3.5x1/4x1	4931 24.000	4932 24.100
40	13.0x2.0	7.0x1.5	4.5x1.0/5.0x1.0	4931 30.000	4932 30.100
50	16.0x2.0	10.0x1.5	5.5x1.0/7x1.0	4931 38.000	4932 38.100
63	20.3x2.4	14.0x1.5	7.0x1.0	4931 48.000	4932 48.100
80	23.4x3.53	16.0x2.0	10.0x1.5	4931 60.000	4932 60.100
100	28.17x3.53	22.0x2.0	12.0x1.70	4931 75.000	4932 75.100

HSK
clamping technology

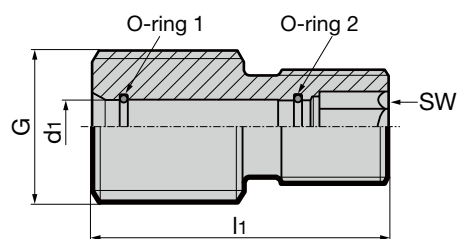
Retention spindles for GÜHROCLAMP MQL 4-point clamping sets

Product information

- retention spindle for direct installation in spindle

Scope of delivery

- complete as shown in illustration



Article no. **4933**

for HSK-C	d ₁ mm	l ₁ mm	G	SW	O-ring 1	O-ring 2	Order no.
32	4.1	22.5	M10	4	3.5x1.0	4.0x1.0	4933 24.100
40	5.1	23.2	M 12	5	4.5x1.0	5.0x1.0	4933 30.100
50	7.1	27.0	M 16	6	5.5x1.0	7.0x1.0	4933 38.100
50	6.1	27.0	M 16	6	5.5x1.0	5.5x1.0	4933 38.200
63	7.1	39.0	M 20	8	7.0x1.0	7.0x1.0	4933 48.100
80	10.1	50.0	M 24	10	10.0x1.5	10.0x1.5	4933 60.100
100	12.1	60.0	M 24	12	12.0x1.70	12.0x1.70	4933 75.100

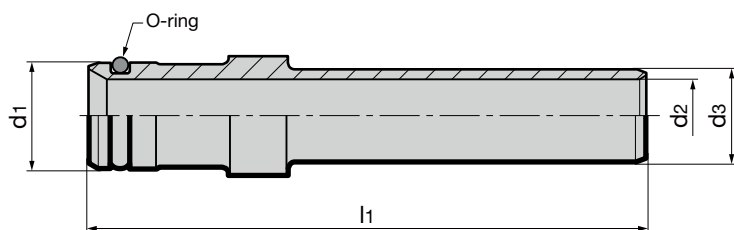
Adaptor for GÜHROCLAMP MQL 4-point clamping sets

Product information

- adaptor for direct installation in spindle and spindle adaptor (integrated) for coolant supply and sealing

Scope of delivery

- complete as shown in illustration



Article no. **4934**

for HSK-C	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	O-ring	Order no.
32	4.0	2.0	4.0	14	2.0 x 1.0	4934 24.100
40	5.0	3.0	5.0	28	3.0 x 1.0	4934 30.100
50	6.0	4.0	6.0	28	4.0 x 1.0	4934 38.200
50	6.0	4.0	7.0	28	4.0 x 1.0	4934 38.100
63	8.0	5.5	7.0	42	6.0 x 1.0	4934 48.100
80	10.2	7.5	10.0	56	8.0 x 1.0	4934 60.100
100	12.0	9.5	12.0	60	10.0 x 1.0	4934 75.100

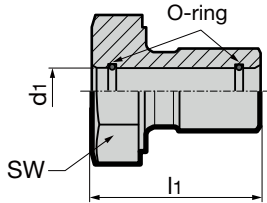
Retention screw for GÜHROCLAMP MQL 4-point clamping sets

Product information

- necessary for installation of MQL 4-point clamping set in spindle adaptors and module adaptor flange article no. 4363, 4386, 4387 and 4713
- change against standard retention bolt

Scope of delivery

- complete as shown in illustration



							Article no.	4935
for HSK-C	d_1 mm	l_1 mm	SW	O-ring 1	O-ring 2	torque Nm	Order no.	
32	4.1	23.5	13	4x1.0	4x1.0	14	4935 24.100	
40	5.1	21	16	4.5x1.0	5x1.0	30	4935 30.100	
50	6.1	25	18	5.5x1.0	6x1.0	60	4935 38.200	
50	7.1	25	18	5.5x1.0	7x1.0	60	4935 38.100	
63	7.1	29	24	7x1.0	7x1.0	110	4935 48.100	
80	10.1	36	24	10x1.5	10x1.5	180	4935 60.100	
100	12.1	46.5	32	12x1.7	12x1.7	200	4935 75.100	

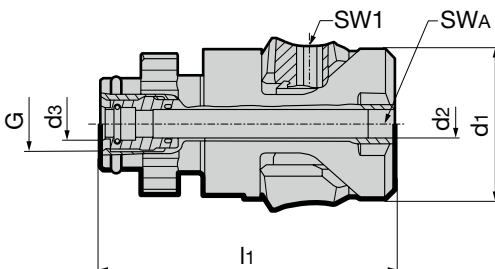
M contour clamping sets for MQL and IC

Product information

- HSK clamping sets compatible with M contour spindles and adaptors
- universal application for MQL and high-pressure IC
- the central coaxial MQL supply with constant internal diameter ensures a uninterrupted coolant supply to DIN 69090-2
- for a coolant pressure up to 160 bar
- for radial manual HSK tool clamping
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- incl. adaptor with through hole for uninterrupted coolant supply
- including installation and operating instructions
- order adaptor with spigot connection article no. 4616 separately
- spindle connection dimensions on request



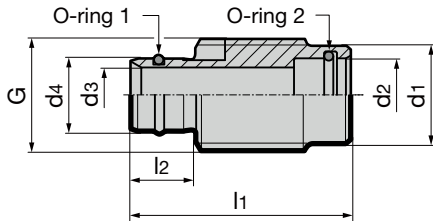
								Article no.	4615
HSK-C	d_1 mm	d_2 mm	d_3 mm	l_1 mm	G	SW1	SWA	Order no.	
32	16.7	3.0	4.1	43.4	M8x1	2.5	3	4615 24.000	
40	20.6	4.0	5.1	48.3	M10x1	3	4	4615 30.000	
50	25.5	5.0	6.1	55.3	M12x1	4	5	4615 38.100	
50	25.5	5.0	7.1	55.3	M12x1	4	5	4615 38.000	
63	33.0	6.0	7.1	64.7	M12x1	5	6	4615 48.000	
80	41.0	8.0	10.1	75.3	M16x1	6	8	4615 60.000	
100	52.0	10.0	12.1	94.5	M18x1	8	10	4615 75.000	

HSK clamping technology

Adaptor with spigot transition for M contour clamping set

Product information

- application on M contour clamping sets
article no. 4615 instead of adaptor with coolant transfer hole
- universal application for MQL and high-pressure IC
- for a coolant pressure up to 160 bar
- adaptor for spindles without coolant tube for uninterrupted coolant supply
- spindle connection dimensions on request



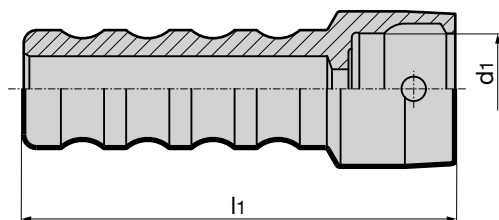
Article no. **4616**

for HSK-C	d ₁ mm	d ₂ mm	d ₃ mm	d ₄ mm	l ₁ mm	l ₂ mm	O-ring 1	O-ring 2	G	Order no.
32	-	3.5	3	5.00	14.4	5.4	3.5x1	3x1	M8x1	4616 24.000
40	7.7	4.5	4	6.00	22.0	6.5	4.0x1	4x1	M10x1	4616 30.000
50	8.5	5.5	5	8.00	23.0	7.5	5.5x1	6x1	M12x1	4616 38.000
63	10.6	7.0	6	8.00	24.0	7.0	7.0x1	6x1	M12x1	4616 48.000
80	-	10.0	8	11.30	23.3	8.3	10x1.5	8x1.5	M12x1	4616 60.000
100	-	12.0	10	13.80	30.6	9.6	12x1.5	12x1.5	M18x1	4616 75.000

Tool for the assembly / disassembly of M contour clamping sets

Product information

- for the assembly and disassembly of M contour clamping sets
article no. 4615

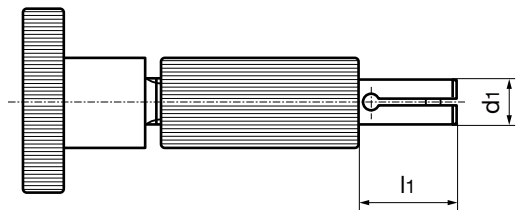


Article no. **4624**

for HSK	d ₁ mm	l ₁ mm	Order no.
32	17	118.7	4624 32.000
40	21	121.6	4624 40.000
50	26	127.5	4624 50.000
63	34	132	4624 63.000
80	42	143	4624 80.000
100	53	152	4624 100.000

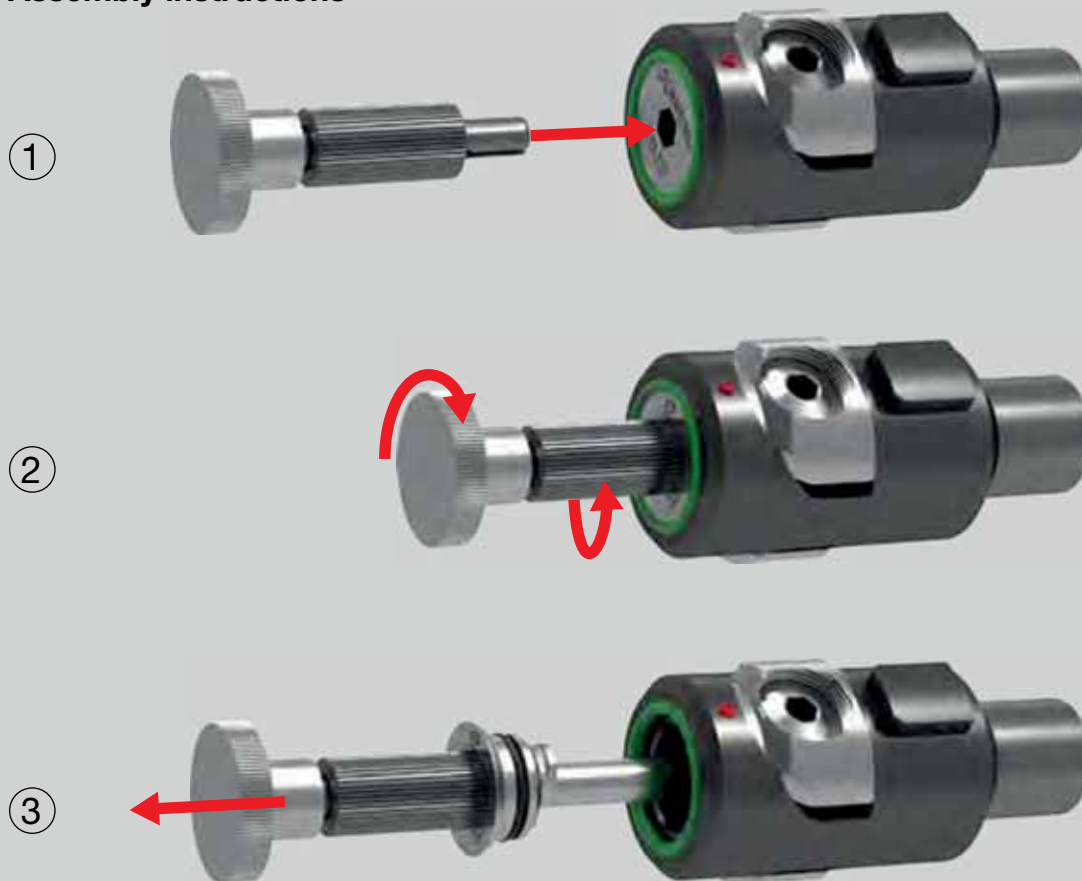
Product information

- for assembly and disassembly of ejectors of MQL clamping sets, article no. 4930, and M contour clamping sets, article no. 4615



			Article no.	4986
for HSK	d_1 mm	l_1 mm	Order no.	
32	3	9	4986 3,032	
40	4	9	4986 4,040	
50	5	11	4986 5,050	
63	6	12	4986 6,063	
80	8	15	4986 8,080	
100	10	15	4986 10,100	

Assembly instructions



THE 4-POINT CLAMPING TECHNOLOGY FOR CONVENTIONAL COOLING

TECHNICAL INFORMATION AND ADVANTAGES

Conventional 4-point clamping sets offer enormous clamping force and optimal cooling lubricant supply. They are suitable for radial manual HSK tool clamping.



Advantages:

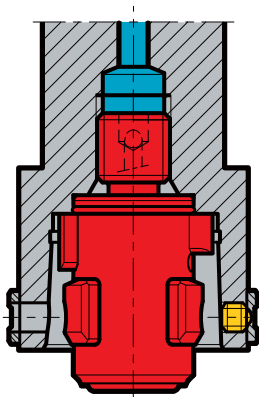
- simple and hence more economic spindle manufacture
- short, small diameter spindles with constricted spindle bearing spacing
- suitable for a pressure up to 80 bar

General notes: Our manual clamping sets must not be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, article no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, article no. 4915 with hexagonal sockets, article no. 4916. Removal of the locking ring is made by releasing the pressure ball screw. This is achieved with the use of an Allen key inserted through the opposite access hole and through the hollow threaded spindle and turned anticlockwise. Once released, the locking ring will slide axially off. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

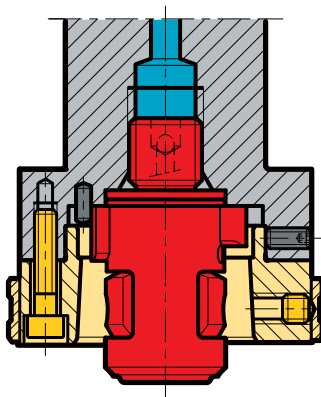
Application examples

Spindle interface

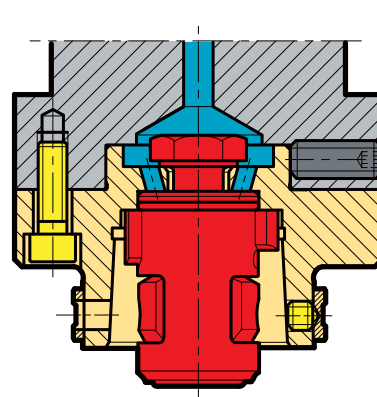
Direct installation in spindle



Spindle adaptor (integrated)

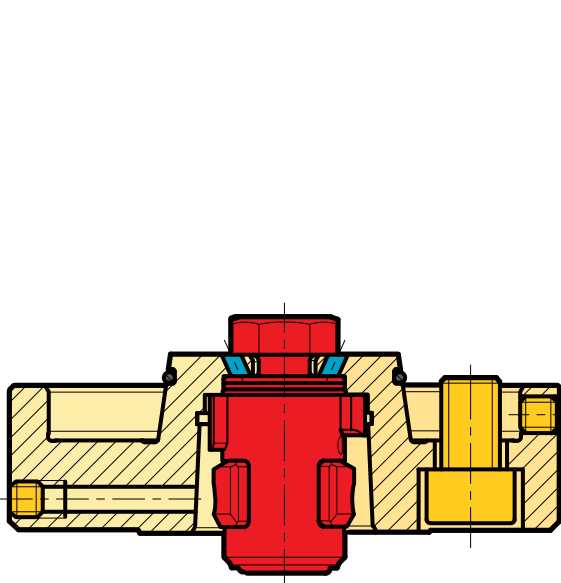


Spindle adaptor (in front)

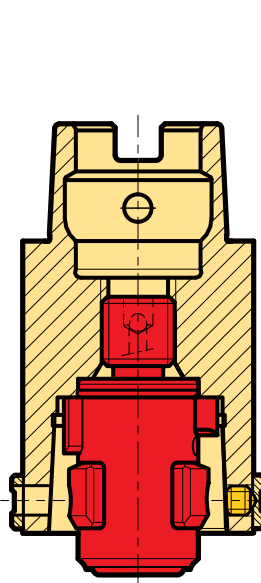


Adaptor

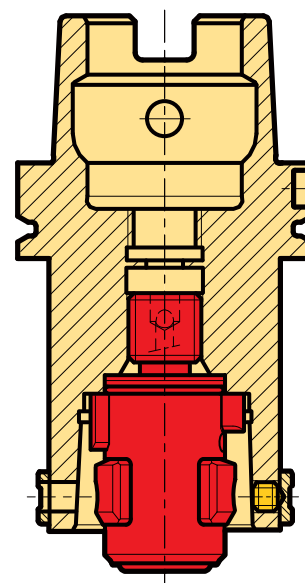
Basic adaptor for ISO taper spindles



HSK-C extension

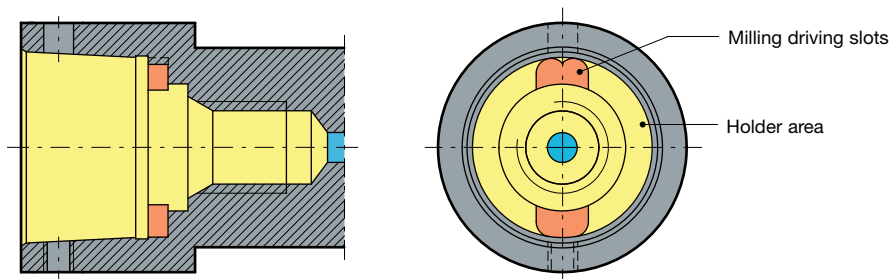


HSK-A reduction

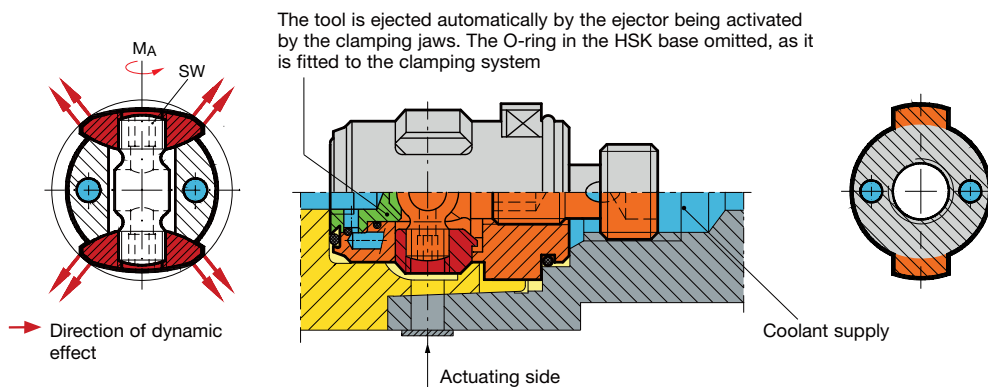


HSK
clamping technology

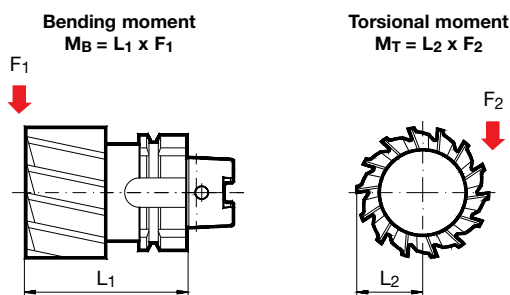
Internal contour of spindle



Installation and principle of operation



Bending torsional and tightening moment for 4-point clamping sets for conventional cooling



- ① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.
- ② Depending on temperature and lubricating conditions these values can be up to 15% lower.
- ③ Due to the screwed connection. M_T max. can be lower with adaptors.

HSK-C	max. torque M_A [Nm] ①	Key size	max. drawing force [kN] ②	max. linear bending moment M_B [Nm] ②	max. transferrable torsional moment M_T [Nm] ② ③
25	1.5	2.5	4.5	30	30
32	3.0	2.5	7.0	60	100
40	6.0	3.0	12.0	130	170
50	14.0	4.0	20.0	280	350
63	27.0	5.0	28.0	500	640
80	54.0	6.0	40.0	900	1330

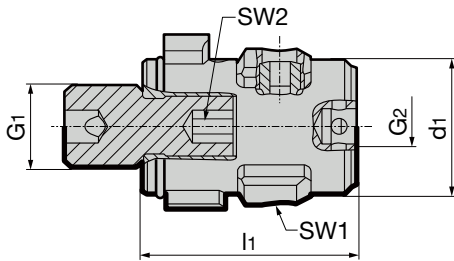
4-point clamping sets for conventional cooling

Product information

- for a coolant pressure up to 80 bar
- for radial manual HSK tool clamping
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

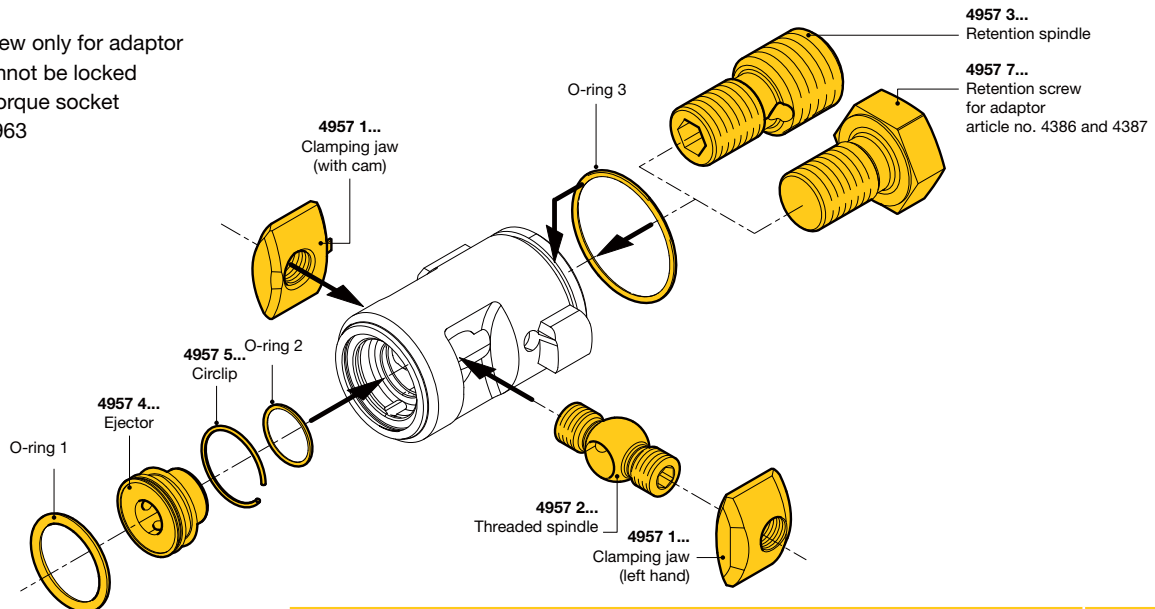
- including installation and operating instructions



								Article no.	4958
HSK-A/C	d ₁ mm	l ₁ mm	G1	G2	SW1	SW2	kg	Order no.	
25	13.8	30.30	M 8	M 4	2.5	3	0.025	4958 19.000	
32	16.7	35.75	M10	M 5	2.5	4	0.050	4958 24.000	
40	20.6	43.70	M12	M 6	3.0	5	0.080	4958 30.000	
50	25.5	53.70	M16	M 8	4.0	6	0.150	4958 38.000	
63	33.0	71.20	M20	M10	5.0	8	0.310	4958 48.000	
80	41.0	90.10	M24	M12	6.0	10	0.640	4958 60.000	

Component parts for 4-point clamping set article no. 4958. separate or set

- retention screw only for adaptor
- if spindle cannot be locked please use torque socket article no. 4963

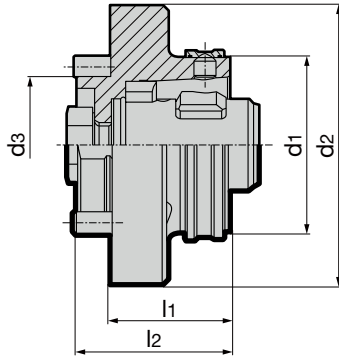


										Article no.	4957	4959
HSK-C	O-ring 1	O-ring 2	O-ring 3	Clamping jaw set	Threaded spindle	Retention spindle	Ejector	Circlip	Retention screw	Set		
	mm	mm	mm	Order no.	Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		
25	9.0 × 1.2	6.0 × 0.75	11.0 × 1.0	4957 1.019	4957 2.019	4957 3.019	4957 4.019	4957 5.019	4957 7.019	4959 19.000		
32	11.0 × 1.5	7.0 × 1.0	14.0 × 1.0	4957 1.024	4957 2.024	4957 3.024	4957 4.024	4957 5.024	4957 7.024	4959 24.000		
40	13.0 × 1.5	9.0 × 1.0	17.0 × 1.0	4957 1.030	4957 2.030	4957 3.030	4957 4.030	4957 5.030	4957 7.030	4959 30.000		
50	16.0 × 2.0	11.0 × 1.0	22.0 × 1.5	4957 1.038	4957 2.038	4957 3.038	4957 4.038	4957 5.038	4957 7.038	4959 38.000		
63	20.3 × 2.4	14.0 × 1.0	28.0 × 1.5	4957 1.048	4957 2.048	4957 3.048	4957 4.048	4957 5.048	4957 7.048	4959 48.000		
80	24.0 × 3.0	17.0 × 1.0	35.0 × 1.5	4957 1.060	4957 2.060	4957 3.060	4957 4.060	4957 5.060	4957 7.060	4959 60.000		

HSK spindle adaptors (in front)

Product information

- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration
- radially alignable
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893



Scope of delivery

- incl. clamping set article no. 4958 for conventional cooling
- incl. brass lock ring article no. 4953
- incl. indexing pin and retention screws
- for MQL application order article no. 4713



Article no. **4386**

HSK-C d ₁	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	SW	kg	Order no.
25	45	23	20	28	2.5	0.22	4386 19.000
32	60	30	26	36	2.5	0.38	4386 24.000
40	70	35	30	40	3.0	0.60	4386 30.000
50	80	40	35	45	4.0	0.92	4386 38.000
63	100	50	43	55	5.0	1.75	4386 48.000
80	117	60	50	62	6.0	2.79	4386 60.000

Modul 4x4 HSK adaptor flange

Product information

- for the highly accurate radial and axial alignment on alignment adaptors or machine spindles
- suitable for MQL and conventional cooling
- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893

Scope of delivery

- incl. MQL 4-point clamping set article no. 4930
- incl. clamping screw article no. 4935
- incl. brass lock ring article no. 4953
- incl. 6 angular alignment sets article no. 4715
- incl. 6 clamping screws
- incl. intermediate tube article no. 4716

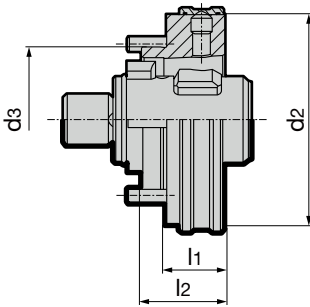


Article no. **4713**

HSK-C d ₁ mm	Module-Ø d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	intermediate sleeve tube art. no. 4716	Order no.
32	60	30	26	36	24.060	4713 24.060
40	70	35	30	40	30.070	4713 30.070
50	80	40	35	45	238.080	4713 38.080
63	100	50	43	55	48.100	4713 48.100
80	117	60	50	62	60.117	4713 60.117
100	140	80	75	87	75.140	4713 75.140

Product information

- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration
- radially alignable
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893



Scope of delivery

- incl. clamping set article no. 4958 for conventional cooling (nom. Size 100 article no. 4930)
- incl. brass lock ring article no. 4953
- incl. indexing pin and retention screws
- for MQL design order code no. xxx.100



Article no. **4385**

for HSK-C	d2 mm	d3 mm	l1 mm	l2 mm	SW	kg	Order no.
32	40	27.0	12.5	16	2.5	0.14	4385 24.000
40	50	33.5	15.0	20	3.0	0.26	4385 30.000
50	63	42.0	17.5	25	4.0	0.48	4385 38.000
63	80	55.0	22.5	32	5.0	0.99	4385 48.000
80	100	68.0	27.5	40	6.0	1.88	4385 60.000
100	125	88.0	30.0	50.5	8.0	3.50	4385 75.000



with MQL clamping set article no. 4930

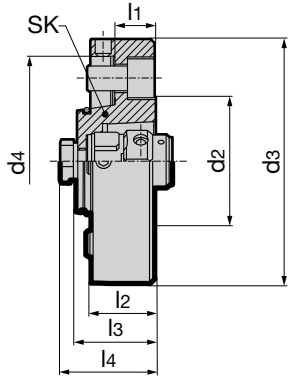
32	40	27.0	12.5	16	2.5	0.14	4385 24.100
40	50	33.5	15.0	20	3.0	0.26	4385 30.100
50	63	42.0	17.5	25	4.0	0.48	4385 38.100
63	80	55.0	22.5	32	5.0	0.99	4385 48.100
80	100	68.0	27.5	40	6.0	1.88	4385 60.100
100	125	88.0	30.0	50.5	8.0	3.50	4385 75.100

Product information

- for the conversion of SK to HSK-A/C interfaces to ISO 12163-1/DIN 69893-1

Scope of delivery

- incl. clamping set article no. 4958 for conventional cooling
- incl. retention screws



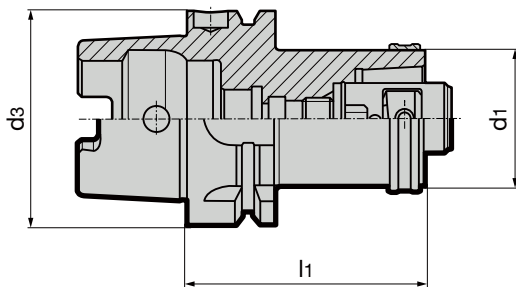
Article no. **4387**

for ISO taper	HSK-C	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm	l3 mm	l4 mm	SW	kg	Order no.
30	40	50	85	69.83	25	35	37.0	39.0	3	1.08	4387 30.030
40	50	63	100	88.88	20	30	39.5	46.5	4	1.40	4387 40.038
50	63	80	150	128.57	25	40	48.5	58.5	5	1.96	4387 50.048
50	80	100	150	128.57	40	55	61.1	71.1	6	2.20	4387 50.060

HSK-A/HSK-C reductions

Scope of delivery

- incl. clamping set article no. 4958 for conventional cooling
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1



Article no. **4355**

HSK-A d3	HSK-C d1	l1 mm	SW	kg	Order no.
40	32	60	2.5	0.42	4355 32.040
50	32	60	2.5	0.54	4355 32.050
50	40	70	3.0	0.69	4355 40.050
63	32	60	2.5	1.08	4355 32.063
63	40	70	3.0	1.15	4355 40.063
63	50	80	4.0	1.23	4355 50.063
80	50	90	4.0	2.00	4355 50.080
80	63	100	5.0	2.69	4355 63.080
100	50	90	4.0	2.80	4355 50.100
100	63	100	5.0	3.31	4355 63.100
100	80	120	6.0	5.20	4355 80.100

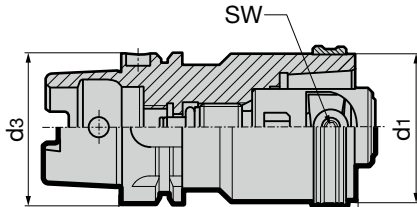
HSK-A/HSK-C extensions with MQL 4-point clamping sets

Product information

- suitable for MQL
- for single channel systems
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. MQL 4-point clamping set article no. 4930 and adaptor for extensions
- incl. brass lock ring article no. 4953
- order coolant supply set article no. 4949 separately:
- order MQL coolant supply set separately:
 - for automatic tool change article no. 4939 (HSK32 article no. 4508)
 - for manual tool change article no. 4940 (HSK32 article no. 4513)



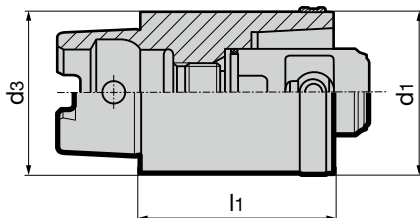
Article no. **4350**

HSK-A/HSK-C d ₁ / d ₃	l ₁ mm	SW	kg	Order no.
32	60	2.5	0.30	4350 60.032
40	80	3.0	0.70	4350 80.040
50	80	4.0	1.00	4350 80.050
50	100	4.0	1.30	4350 100.050
63	100	5.0	2.10	4350 100.063
63	140	5.0	3.10	4350 140.063
80	120	6.0	4.20	4350 120.080
80	160	6.0	5.70	4350 160.080
100	140	8.0	7.70	4350 140.100

HSK-C extensions

Product information

- incl. clamping set article no. 4958 for conventional cooling
- incl. brass lock ring article no. 4953
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1



Article no. **4351**

HSK-C d ₁ / d ₃	l ₁ mm	SW	kg	Order no.
25	40	2.5	0.14	4351 40.025
32	40	2.5	0.22	4351 40.032
40	50	3.0	0.44	4351 50.040
50	60	4.0	0.81	4351 60.050
63	80	5.0	1.74	4351 80.063

HSK
clamping technology

PROCESS RELIABILITY RATHER THAN NERVE TINGLING

Gühring inspection and measuring instruments



- ⇒ simple, quick and accurate measuring of the clamping force of your chucks
- ⇒ direct measuring of the coolant flow pressure and volume
- ⇒ wireless determination of the MQL response times

Please request our "GM 300 inspection and measuring instruments" brochure.

POWERCLAMP

TECHNICAL INFORMATION AND ADVANTAGES

Gühring's PowerClamp system is designed for universal applications in transfer lines, machining centres, turning centres and setting equipment.

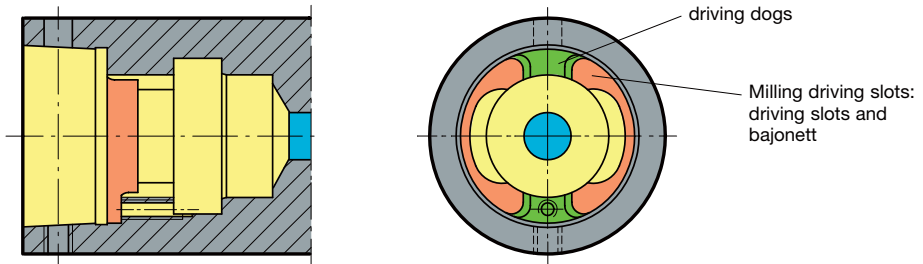
Due to high pull forces the PowerClamp is suitable for low-speed operations in heavy machining.



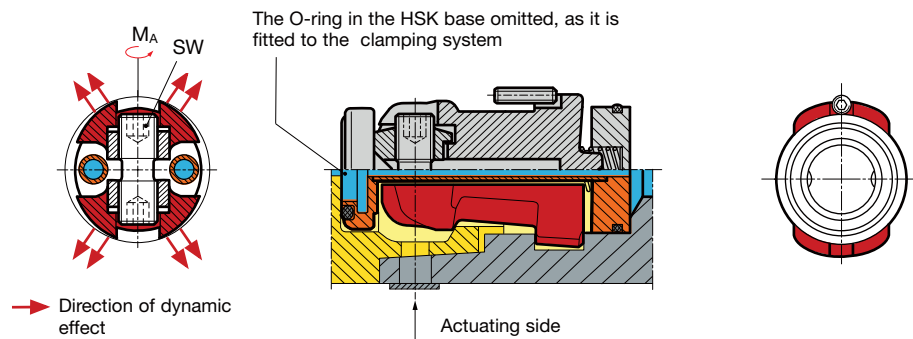
Advantages:

- simple assembly thanks to uncomplicated spindle contour
- few moving components, therefore optimal force transmission
- high clamping force, therefore excellent bending resistance
- secure ejector function
- internal coolant supply
- coolant sealing from $p > 6$ bar to max. 80 bar

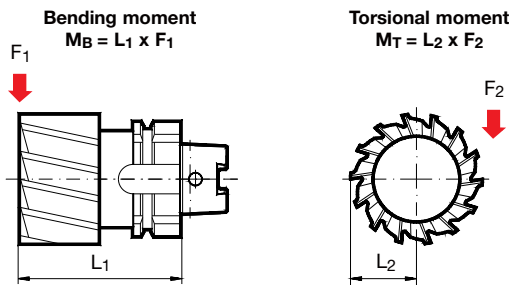
Internal contour of spindle



Installation and principle of operation



Bending torsional and tightening moment for PowerClamp



- ① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.
- ② Depending on temperature and lubricating conditions these values can be up to 15% lower.
- ③ Due to the screwed connection. M_T max. can be lower with adaptors.

HSK-C	max. torque M_A [Nm] ①	Key size	max. drawing force [kN] ②	max. linear bending moment M_B [Nm] ②	max. transferrable torsional moment M_T [Nm] ② ③
25	1.5	2.0	5	45	50
32	2.5	2.5	8	74	120
40	6.0	3.0	18	213	360
50	10.0	4.0	27	431	1000
63	15.0	5.0	35	703	1300
80	25.0	6.0	50	1100	2800
100	50.0	8.0	60	1620	4800

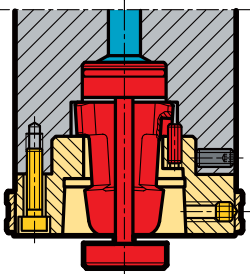
HSK clamping technology

General notes: Our manual clamping sets must not be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length. This largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, article no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, article no. 4915 with hexagonal sockets, article no. 4916. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

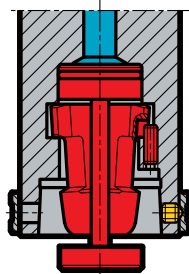
Application examples

Spindle interface

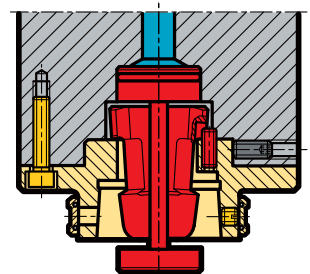
integrated spindle adaptor



Direct installation in spindle

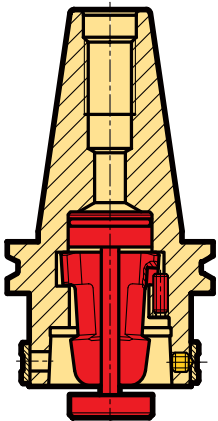


Spindle adaptor (in front)

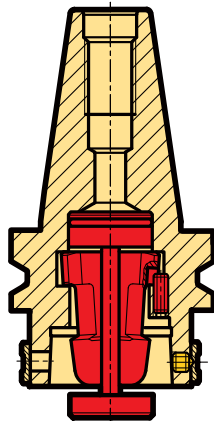


Adaptor

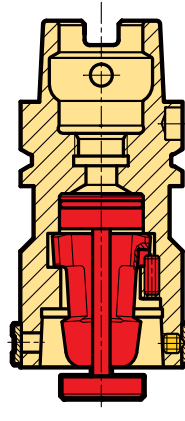
DIN ISO 7388-1 form AD



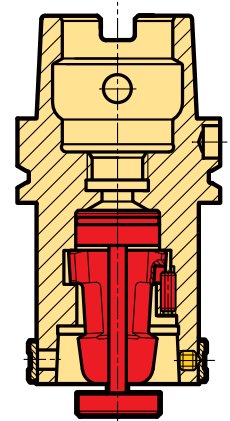
MAS/BT



HSK-A extension

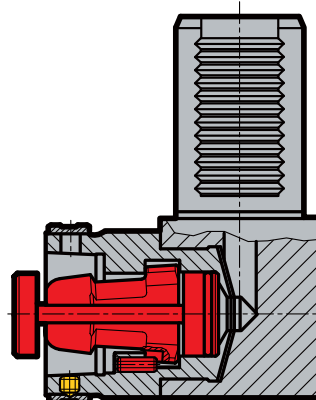


HSK-A reduction

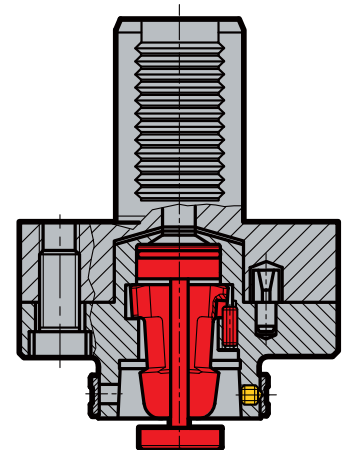


Tool holder for turning centers

adaptor (in front) on VDI angle holder



adaptor (in front) on VDI vertical holder

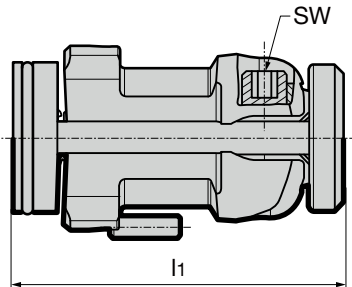


Product information

- the internal coolant supply is via the cage. It is floating mounted and ensures a coolant seal above 6 bar pressure.
- for a coolant pressure up to 80 bar
- the coolant sets are not suitable for MQL
- for clamping HSK-A/C shanks to ISO 12164-1/DIN 69893

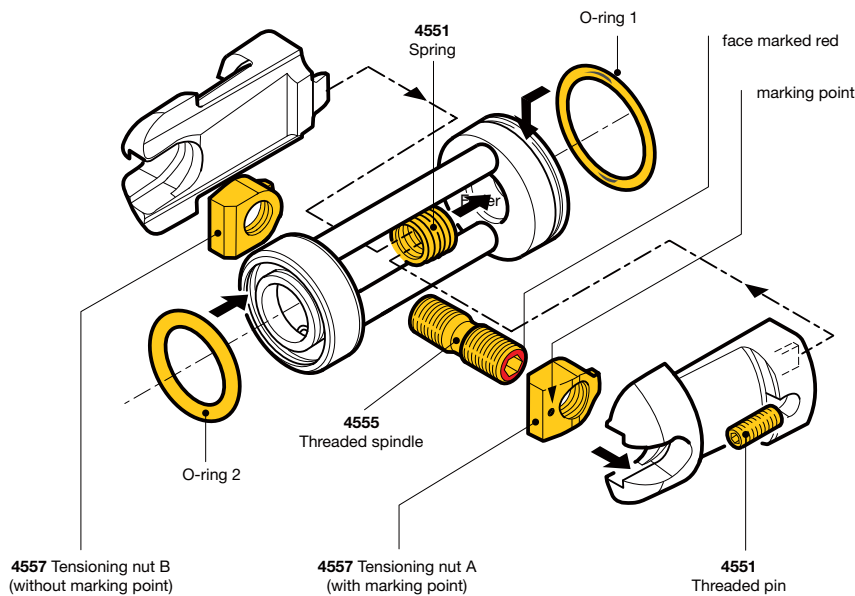
Scope of delivery

- including installation and operating instructions
- incl. threaded pin article no. 4551



				Article no.	4554
HSK-C	l ₁ mm	SW	kg	Order no.	
25	32.1	2.0	0.02	4554 19.000	
32	41.6	2.5	0.05	4554 24.000	
40	49.7	3.0	0.09	4554 30.000	
50	62.2	4.0	0.18	4554 38.000	
63	74.1	5.0	0.37	4554 48.000	
80	96.1	6.0	0.73	4554 60.000	
100	117.0	8.0	1.36	4554 75.000	

Component parts for PowerClamp sets article no. 4554



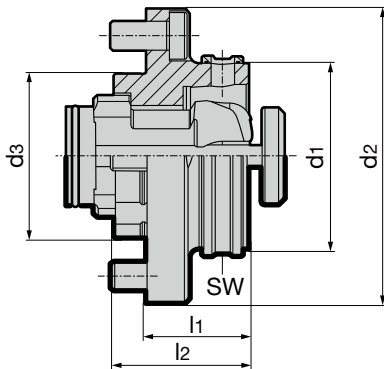
			Article no.	4557	4555	4551
HSK-C	O-ring 1	O-ring 2	Tensioning nut set	Threaded spindle	Spring and threaded pin	
	mm	mm	Order no.	Order no.	Order no.	
25	11.5 × 1.0	7.0 × 2.0	4557 1.019	4555 2.019	4551 3.019	
32	14.0 × 1.5	10.0 × 2.5	4557 1.024	4555 2.024	4551 3.024	
40	18.0 × 1.5	12.5 × 2.5	4557 1.030	4555 2.030	4551 3.030	
50	22.0 × 1.5	16.0 × 3.0	4557 1.038	4555 2.038	4551 3.038	
63	28.0 × 2.0	21.0 × 3.0	4557 1.048	4555 2.048	4551 3.048	
80	36.0 × 3.0	25.0 × 4.0	4557 1.060	4555 2.060	4551 3.060	
100	45.0 × 3.0	32.0 × 5.0	4557 1.075	4555 2.075	4551 3.075	

HSK
clamping technology

HSK adaptors (in front)

Product information

- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration.
- for conventional cooling from 6 to max. 80 bar
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893
- radially alignable



Scope of delivery

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- incl. indexing pin and retention screws



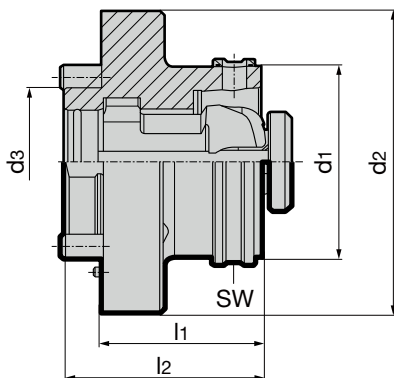
Article no. **4581**

HSK-C d1	d2 mm	d3 mm	l1 mm	l2 mm	SW	kg	Order no.
25	45	23	20.0	26.5	2.0	0.17	4581 19.000
32	55	28	17.5	23.0	2.5	0.22	4581 24.000
40	63	36	22.5	29.0	3.0	0.40	4581 30.000
50	80	46	27.5	36.0	4.0	0.74	4581 38.000
63	100	56	35.0	46.0	5.0	1.50	4581 48.000
80	125	66	45.0	58.0	6.0	2.94	4581 60.000
100	160	86	57.0	72.0	8.0	5.90	4581 75.000

HSK spindle adaptors (in front)

Product information

- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration.
- for conventional cooling from 6 to max. 80 bar
- radially alignable
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893



Scope of delivery

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- incl. indexing pin and retention screws

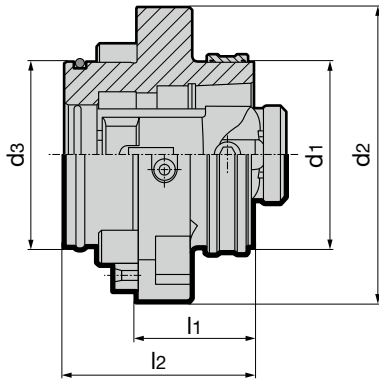


Article no. **4586**

HSK-C d1	d2 mm	d3 mm	l1 mm	l2 mm	SW	kg	Order no.
40	70	35	32.5	42.5	3	0.55	4586 30.000
50	80	40	43.0	53.0	4	1.00	4586 38.000
63	100	50	53.0	65.0	5	1.90	4586 48.000
80	117	60	73.0	85.0	6	3.60	4586 60.000
100	140	80	94.0	106.0	8	7.20	4586 75.000

Product information

- for fixed tools
- incl. setting element to eliminate drive play with vertical tools
- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration.
- for conventional cooling from 6 to max. 80 bar
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1



Scope of delivery

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- incl. indexing pin and retention screws



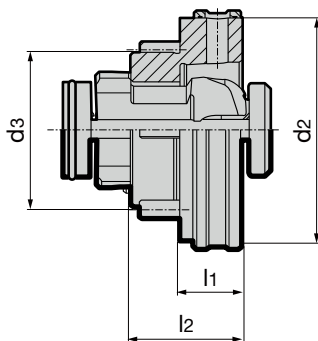
Article no. **4582**

HSK-C d ₁	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	l ₃ mm	SW	kg	Version	Order no.
50	84	50	35	55.0	55	4	0.98	links	4582 38.100
50	84	50	35	55.0	55	4	0.98	rechts	4582 38.200
63	100	63	40	64.5	70	5	1.74	links	4582 48.100
63	100	63	40	64.5	70	5	1.74	rechts	4582 48.200

Short HSK spindle adaptors (integrated)

Product information

- with larger axial plane
- for the transferable torsional moment the interface between spindle and flange has to be taken into consideration.
- for conventional cooling from 6 to max. 80 bar
- radially alignable
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1



Scope of delivery

- incl. clamping set. article no. 4554
- incl. brass lock ring article no. 4953
- incl. threaded pin article no. 4551 and tensioning screws



Article no. **4584**

for HSK-C	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	SW	kg	Order no.
32	40	27.0	12.5	21.10	2.5	0.16	4584 24.000
40	50	33.5	15.0	25.70	3.0	0.28	4584 30.000
50	63	42.0	17.5	32.10	4.0	0.55	4584 38.000
63	80	55.0	22.5	40.05	5.0	1.14	4584 48.000
80	100	68.0	27.5	51.40	6.0	2.20	4584 60.000
100	125	88.0	30.0	64.00	8.0	4.00	4584 75.000

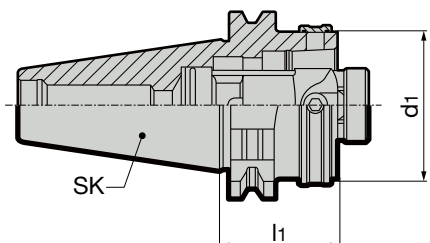
HSK
clamping technology

Product information

- ISO taper to DIN 69871 form AD
- Form AF on request
- Order no. 50.100 only applies to pre-setting unit
- for conventional cooling from 6 to max. 80 bar
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- order clamping key and pull studs article no. 4925 or 4926 separately



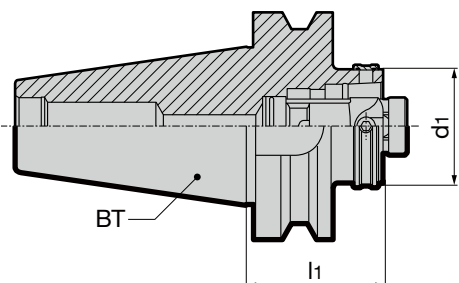
					Article no.	4512
ISO taper	HSK-C d ₁	l ₁ mm	SW	kg	Order no.	
40	32	40	2.5	0.89	4512 40.032	
40	40	40	3.0	0.90	4512 40.040	
40	50	40	4.0	0.91	4512 40.050	
40	63	70	5.0	1.38	4512 40.063	
50	32	40	2.5	2.65	4512 50.032	
50	40	40	3.0	2.67	4512 50.040	
50	50	40	4.0	2.71	4512 50.050	
50	63	40	5.0	2.73	4512 50.063	
50	80	70	6.0	3.70	4512 50.080	
50	100	100	8.0	4.87	4512 50.100	

Product information

- MAS/BT to DIN ISO 7388-2 form JD
- for conventional cooling from 6 to max. 80 bar
- for holding HSK-A/C shanks to ISO 12164-1/DIN 69893-1

Scope of delivery

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- order clamping key and pull studs article no. 4927 or 4928 separately



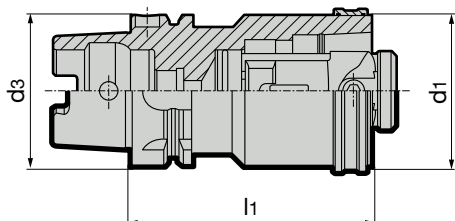
					Article no.	4514
BT	HSK-C d ₁	l ₁ mm	SW	kg	Order no.	
40	40	40	3	0.92	4514 40.040	
40	50	40	4	0.95	4514 40.050	
40	63	80	5	2.00	4514 40.063	
50	40	50	3	2.90	4514 50.040	
50	50	60	4	3.15	4514 50.050	
50	63	60	5	3.69	4514 50.063	

Product information

- incl. clamping set article no. 4554
- incl. brass lock ring article no. 4953
- for conventional cooling
from 6 to max. 80 bar
- HSK-A to ISO 12164-1/DIN 69893
- for holding HSK-A/C shanks
to ISO 12164-1/DIN 69893

Scope of delivery

- order coolant supply set
article no. 4949 separately



					Article no.	4549
HSK-A/ HSK-C d ₁ / d ₃	l ₁ mm	SW	kg	Code-Nr.		
32	60	2.5	0.26	4549 60.032		
40	80	3.0	0.65	4549 80.040		
50	80	4.0	0.90	4549 80.050		
50	100	4.0	1.13	4549 100.050		
63	100	5.0	1.84	4549 100.063		
63	140	5.0	2.30	4549 140.063		
80	120	6.0	3.90	4549 120.080		
80	160	6.0	5.40	4549 160.080		
100	140	8.0	7.80	4549 140.100		
100	200	8.0	10.54	4549 200.100		

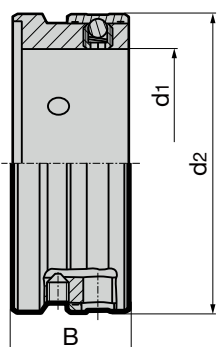
Skid rings for short spindles to DIN 69002-3

Product information

- for short spindles to DIN 69002-3

Scope of delivery

- incl. clamping screws
and brass locking ring



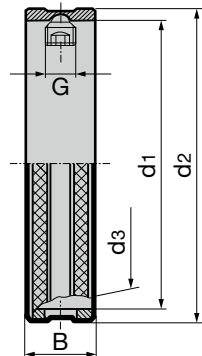
					Article no.	4976
nom. size	d ₁ mm	DIN 69002-1 revolution n min ⁻¹ max.	d ₂ mm	B	Order no.	
25x20	25	10.000	35.0	15.7	4976 20.015	
32x25	32	9.000	42.5	19.7	4976 25.019	
32x30	32	9.000	43.5	19.7	4976 30.019	
40x35	40	8.000	54.0	21.7	4976 35.021	
50x45	50	7.000	68.0	24.7	4976 45.024	
63x55	63	6.000	82.0	31.7	4976 55.031	

Product information

- the pressure ball screw must be secured with Loctite 222

Scope of delivery

- incl. pressure ball screw article no. 4961

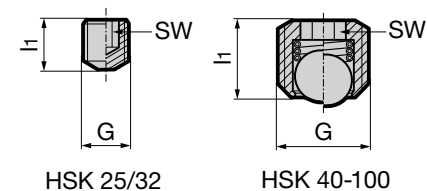


								Article no.	4953	
HSK-form	for HSK-size d ₁ mm	taper nom.-Ø d ₃ mm	d ₂ mm	B mm	incl. pressure ball screw art. no.4961	G	rev. limit	Order no.		
C	25	19	28.0	7	3,500	M3,5	38,000	4953 25.000		
C	32	24	35.0	7	4,000	M4	28,000	4953 32.000		
C	40	30	43.5	9	5,000	M5	22,500	4953 40.000		
C	50	38	54.0	11	6,000	M6	17,350	4953 50.000		
C	63	48	68.0	14	8,000	M8	13,750	4953 63.000		
C	80	60	85.0	17	10,000	M10	11,850	4953 80.000		
C	100	75	105.0	23	12,000	M12	9,250	4953 100.000		
D	32	19	35.0	7	3,500	M3,5	28,000	4953 32.019		
D	40	24	43.5	9	4,000	M4	22,500	4953 40.024		
D	50	30	54.0	11	5,000	M5	17,350	4953 50.030		
D	63	38	68.0	14	6,000	M6	13,750	4953 63.038		
D	80	48	85.0	17	8,000	M8	11,850	4953 80.048		
D	100	60	105.0	23	10,000	M10	9,250	4953 100.060		
D	125	75	130.0	23	12,000	M12	6,100	4953 125.075		

Pressure ball screws

Product information

- Minimum order quantity 5



				Article no.	4961	
for HSK	l ₁ mm	G	SW	Order no.		
25	3.4	M3.5	2.0	4961 3.500		
32	4.3	M4	2.0	4961 4.000		
32	4.0	M4	2.0	4961 4.001		
40	4.6	M5	2.5	4961 5.000		
50	5.4	M6	3.0	4961 6.000		
63	7.0	M8	4.0	4961 8.000		
80	9.2	M10	5.0	4961 10.000		
100	11.4	M12	6.0	4961 12.000		

GÜHRING REPAIR SERVICE

Save through maintenance!

Costings prove: inspection and repair is profitable!

Insufficient clamping force of hydraulic chucks can have disastrous consequences: poor cutting rates and tool life of the clamped tools, reduced surface quality of the machined workpiece and breakage of tool, holder and workpiece. Our test measurements show: one in 10 chucks displays a loss in clamping force!

Regular hydraulic chuck clamping force inspections can protect against such unwelcome and expensive consequences. Therefore, we provide a new service to ensure optimum performance of you hydraulic chucks - from any manufacturer:

1. Professional clamping force inspection

The measurement is taken quickly, without exertion of force and in the machine or equipment at your premises for your production with Gühring's SENSO 3000 clamping force measuring instrument.

2. Our repair service

If the existing clamping force is insufficient, we check the cause of the loss in clamping force, replace the necessary components, re-fill the hydraulic system and carry out a final inspection.

3. New hydraulic chucks

If the hydraulic chuck is irreparable, we will offer you a new hydraulic chuck from our current Gühring GM 300-program!





MEASURING INSTRUMENTS AND GENERAL ACCESSORIES

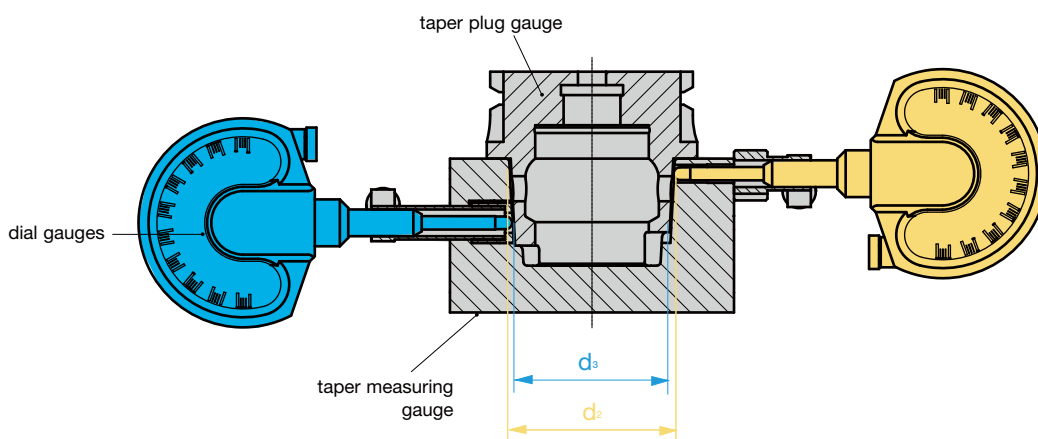


Measuring gauges for HSK tool shanks

To ensure sustained accuracy at HSK interfaces, we recommend comparison measuring of the geometry of HSK tool shanks and spindles at regular intervals. These checks should become more frequent with an increased change rate at the interface.



Measuring gauges for HSK tool shanks for nominal taper diameter d_2 and d_3



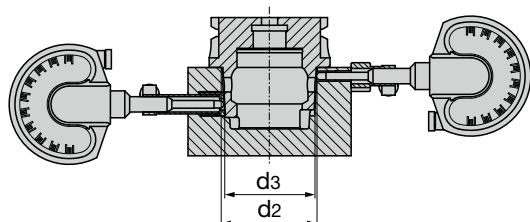
Taper measuring gauges for HSK tool shanks

Product information

- calibration on request

Scope of delivery

- incl. calibrated taper plug gauge and measuring instructions
- supplied in wooden case with inspection protocol



Article no.

4968

for HSK	d_2 mm	d_3 mm	Order no.
25	19	18.4	4968 19.100
32	24	23.2	4968 24.100
40	30	29.0	4968 30.100
50	38	36.9	4968 38.100
63	48	46.5	4968 48.100
80	60	58.1	4968 60.100
100	75	72.6	4968 75.100

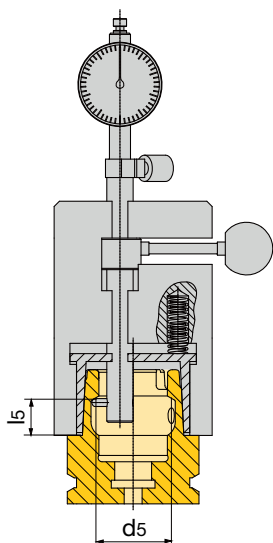
Measuring gauges for HSK clamping shoulders

Product information

- calibration on request

Scope of delivery

- incl. calibrated setting gauge and measuring instructions
- supplied in plastic case with inspection protocol



Article no. **4978**

for HSK A/C/E	l ₅ mm	d ₅ mm	Order no.
25	7.21	15	4978 19.000
32	8.92	19	4978 24.000
40	11.42	23	4978 30.000
50	14.13	29	4978 38.000
63	18.13	37	4978 48.000
80	22.85	46	4978 60.000
100	28.56	58	4978 75.000

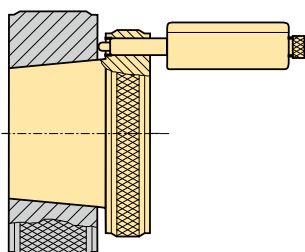
Measuring gauges for HSK spindles

Product information

- calibration on request

Scope of delivery

- incl. calibrated setting gauge and measuring instructions
- supplied in a sturdy case with inspection protocol



Article no. **4969**

for HSK	kg	Order no.
25	0.60	4969 19.000
32	0.91	4969 24.000
40	1.13	4969 30.000
50	1.60	4969 38.000
63	3.02	4969 48.000
80	4.94	4969 60.000
100	8.10	4969 75.000

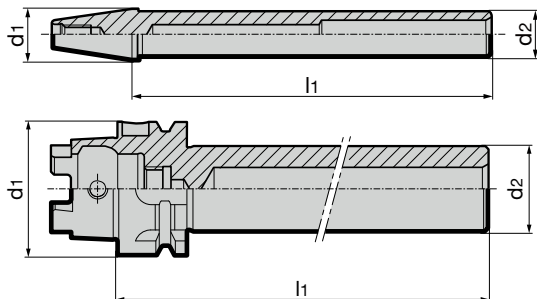
Taper proofing bars HSK/ISO

Product information

- for concentricity testing at machine spindles
- calibration on request
- article no. 4971 125,025 only in form E
- HSK-A shank similar to ISO 12164-1/DIN 69893
- SK shank similar to DIN ISO 7388-1

Scope of delivery

- supplied in wooden case for vertical storage with inspection protocol
- for SK order pull studs article no. 4925, 4926 separately
- for BT order shortened special pull studs separately article no. 4927, 4928



Article no.			4970	4971
d ₁	d ₂ mm	l ₁ mm	Order no.	Order no.
SK-40	40	320	4970 300.040	
SK-50	40	320	4970 300.050	
HSK-E25	20	140		4971 125.025
HSK-E32	24	180		4971 150.032
HSK-A40	24	180		4971 150.040
HSK-A50	32	236		4971 200.050
HSK-A63	40	346		4971 300.063
HSK-A80	40	346		4971 300.080
HSK-A100	40	349		4971 300.100

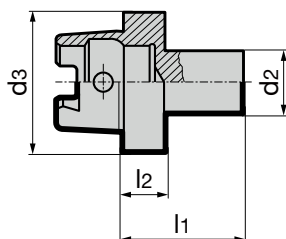
Balancing masters for HSK spindles

Product information

- for balancing HSK spindles clamping systems: holds the clamping elements in the clamped position
- balancing quality: G2.5 / 30,000 rev./min or U < 0.5 gmm
- HSK-C to ISO 12164-1/DIN 69893-1
- calibration on request

Scope of delivery

- supplied in wooden case with inspection protocol



Article no.				4975
HSK-C d ₃	d ₂ mm	l ₁ mm	l ₂ mm	Order no.
25	12	23	8	4975 25.000
32	12	25	10	4975 32.000
40	12	25	10	4975 40.000
50	20	37.50	12.5	4975 50.000
63	20	37.50	12.5	4975 63.000
80	20	46	16	4975 80.000
100	20	46	16	4975 100.000

Clamping force measuring instrument for HSK / SK clamping systems

The accuracy of the HSK connection does not only depend on the geometry but also on the drawing force of the HSK clamping system which plays an important part in ensuring a powerful and dimensionally accurate connection.

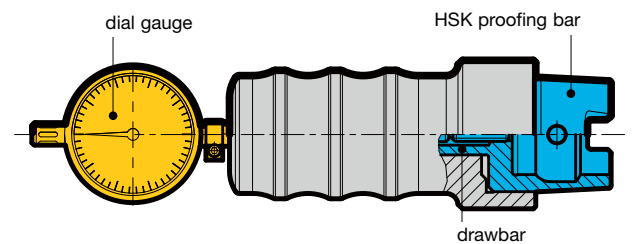
To ensure operational safety, a regular clamping force check of the HSK interface is recommended. An entirely mechanical clamping force measuring instrument is now available from Gühring. Its operation is based on components, which are linear adjustable in length and positioned proportional to the force. A force is associated with the alteration in length which is displayed via an analogue dial gauge.

Specifications:

- few components, therefore cost-efficient
- robust design
- battery or mains connection not required
- patented operating principle which is also adaptable to other spindle designs

Min. required pull forces for clamping systems

taper size HSK25	2.8 kN
taper size HSK32	5 kN
taper size HSK40	6.8 kN
taper size HSK50	11 kN
taper size HSK63	18 kN
taper size HSK80	28 kN
taper size HSK100	45 kN
taper size SK/BT/CAT30	6 kN
taper size SK/BT/CAT40	12 kN
taper size SK/BT/CAT50	25 kN



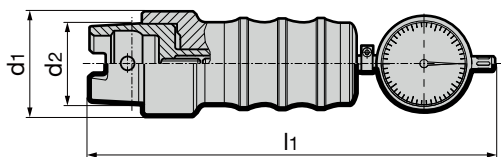
Clamping force measuring instrument

Product information

- mechanical clamping force inspection instrument for HSK/SK/BT/CAT clamping systems in machine tool spindles
- calibration on request

Scope of delivery

- supplied in wooden case with inspection protocol, calibrated, with measuring instructions
- for SK order pull studs article no. 4925, 4926 separately
- for BT order shortened special pull studs separately article no. 4927, 4928



					Article no. 4973	Article no. 4974
					Order no.	Order no.
HSK-A/C/E d1	HSK-B/D/F d1	ISO taper/ BT/CAT	d2 mm	l1 mm		
		30	32	216	4973 30.000	
		40	44	248	4973 40.000	
		50	69	285	4973 50.000	
25	-	-	19	187		4974 19.000
32	40	-	24	192		4974 24.000
40	50	-	30	196		4974 30.000
50	63	-	38	203		4974 38.000
63	80	-	48	235		4974 48.000
80	100	-	60	250		4974 60.000
100	125	-	75	260		4974 75.000

Clamping force proofing instrument Senso 3000

The hydraulic clamping technology is a well-known, proven and reliable method for the clamping of tools. Thanks to its completely closed design the system is sealed and impervious, requires extremely low maintenance and guarantees longevity. Following many years of general use, however, thermal and mechanical influences can lead to a reduction in clamping force. The result can be a poor tool life and a diminished surface quality including expensive tool breakages during machining operations.

Determining the loss of clamping force was until now extremely costly and inaccurate. It involved either determining the number of clamping screw rotations or the torque with the assistance of a proofing bar and a torque key or the expansion rate applying an accurate internal measuring instrument.

The new Gühring SENSO 3000 measuring instrument offers a precise, quick and simple as well as consistent method of measuring the clamping force. An added advantage is the mobility of the system, i.e. for measuring within machines and fixtures.

SENSO 3000 determines the clamping force of the hydraulic chuck via a pressure sensitive plug gauge. The entire length of the plug gauge is clamped in the hydraulic chuck so that when tightening the clamping screw the clamping pressure of the chuck is optimally applied. The clamping force measurement instrument displays the clamping force as a percentage value in relation to the Gühring Master recording.

The delivery scope includes the following components:

- clamping force measuring instrument with pressure sensitive plug gauge
- operation instructions
- CR 2430 type battery
- Master record for review on request



Senso 3000

Scope of delivery

- Clamping force measuring instrument with pressure sensitive plug gauge
- Operation instructions
- CR 2430 type battery
- Master recording on request



Article no. 4038

clamping diameter mm	Order no.
6.0	4038 6.000
8.0	4038 8.000
10.0	4038 10.000
12.0	4038 12.000
14.0	4038 14.000
16.0	4038 16.000
18.0	4038 18.000
20.0	4038 20.000
25.0	4038 25.000
32.0	4038 32.000

Flow rate measuring instrument PQ 3000

Gühring's PQ 3000 enables quick and simple measuring of pressure and volume of coolant flow directly in the machine using the actual tool applied.

Gühring has developed the PQ 3000 instrument for quick, simple and direct measuring of the existing coolant pressure and rate of flow for tools with internal cooling.

PQ 3000 enables the measuring of pressure and rate of flow of coolant when the actual tool is clamped directly in the stationary tool spindle. This way, it is possible to



establish the real conditions of the relevant machine and tool configuration and measure the resulting actual rate of flow.

PQ 3000 provides the following information:

- pressure and volume flow of the coolant pump, the so-called P/Q characteristic curve
- possible pump or seal wear as well as rotary transmission losses
- possible narrowed cross sections in the line through machine, spindle and tool holder
- possible blocked filters
- possible narrowed cross sections resulting from deposits on the surface of the coolant ducts in the tool
- the coolant duct layout in the tool.

to identify and rectify possible weak points in the overall system, this way, the tool life of the applied tool can be optimised preventing tool breakage as well as chip congestion and jamming!

PQ 3000 provides data of sensors and indicates the measuring results on the display fixture. A data interface enables an evaluation via software on your PC (interface and software are available on request).

PQ 3000

Product information

- pressure checking range: 1 to 120 bar
- rate of flow checking range: 2 to 40 l/min
- diameter holder shank: 16 mm
- diameter range tool holder: ER 32 / 6 to 20 mm
- display for existing pressure P in bar
also rate of flow volume Q in l/min

Scope of delivery

- clamping fixture and checking instrument
- display fixture with grip and connection socket
- checking data cable with connector plug, length 3 m
- ER 32 collet holder and sealing washer set for standard shanks with collets from 6 to 20 mm diameter
- clamping key for tensioning nut



Article no.	4068
	Order no.
case complete interface and PC-Software	4068 10,000

Coolant supply measuring instrument CC 3000

With Gühring's CC 3000 you can quickly and simply check the filtering efficiency of the coolant system.

Gühring has developed the inspection instrument CC 3000 for quick, simple and direct check of the coolant filtering efficiency.

Thanks to replaceable stainless steel filters, the user can adapt the instrument specifically to the filtering of the coolant system.

CC 3000 establishes the present condition of the individual system and displays the actual filter efficiency.

In order to analyse and rectify possible weak points of the filter system, the following information is provided:

- perfect operation of the coolant filtering system
- defective filters
- insufficient filtering for the applied tool

In addition, it is possible to determine the oil concentration of the applied soluble oil with the included refractometer.

Thus, it is possible to optimise the tool life of the applied tool, to prevent tool breakage and subsequent production downtime!



CC 3000

Product information

- Master recording range of application 50 - 500 min⁻¹
- suitable for coolant pressure up to 80 bar

Scope of delivery

- Measuring instrument with straight shank 16h6 and HB/HE clamping surfaces
- inspection instrument with HSK 63-A interface
- high-grade steel filter sizes 100, 200 and 300 µm
- refractometer including accessories
- magnifying glass, 8-fold magnification
- order high-grade steel filter size 60 µm separately
- in addition to the HSK holder we can also offer a tool holder with a 16 mm shank as a special

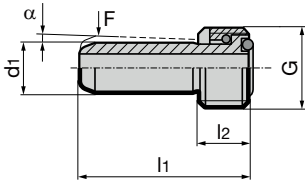


Article no.	4076	4077
	Order no.	Order no.
case complete	4076 10.063	
high-grade steel filter size 60, article no. 4077		4077 60.000
high-grade steel filter size 100, article no. 4077		4077 100.000
high-grade steel filter size 200, article no. 4077		4077 200.000
high-grade steel filter size 300, article no. 4077		4077 300.000

Coolant supply sets for conventional cooling

Product information

- leak-proof screwed connection tested to 80 bar
- to DIN 69895
- F = angle movability $\pm 1^\circ$
- for HSK-A and HSK-E shanks



Scope of delivery

- incl. union nut and O-rings



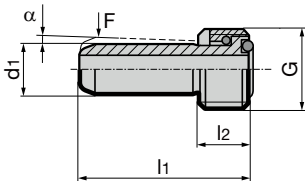
Article no. **4949**

for HSK-A	d ₁ mm	α°	F	G	l ₁ mm	l ₂ mm	Order no.
32	6	1.2	5N	M10x1.0	26.0	5.5	4949 10.032
40	8	1.4	5N	M12x1.0	29.5	7.5	4949 12.040
50	10	1.3	6N	M16x1.0	33.0	9.5	4949 16.050
63	12	1.3	6N	M18x1.0	36.5	11.5	4949 18.063
80	14	1.4	7N	M20x1.5	40.0	13.5	4949 20.080
100	16	1.4	7N	M24x1.5	44.0	15.5	4949 24.100

Coolant supply sets for conventional cooling with filter

Product information

- leak-proof screwed connection tested to 80 bar
- similar DIN 69895
- with filter for contamination-free cooling
- protects against tool breakage and eases error analysis
- F = angle movability $\pm 1^\circ$
- for HSK-A and HSK-E shanks



Scope of delivery

- incl. union nut and O-rings
- 100µ stainless steel fabric filter



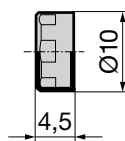
Article no. **4979**

for HSK-A	d ₁ mm	α°	F	G	l ₁ mm	l ₂ mm	Order no.
32	6	1.2	5N	M10x1	26.0	5.5	4979 10.032
40	8	1.4	5N	M12x1	29.5	7.5	4979 12.040
50	10	1.3	6N	M16x1	33.0	9.5	4979 16.050
63	12	1.3	6N	M18x1	36.5	11.5	4979 18.063
80	14	1.4	7N	M20x1.5	40.0	13.5	4979 20.080
100	16	1.4	7N	M24x1.5	44.0	15.5	4979 24.100

Data coding chip

Product information

- Identification systems BIS C
- for installation space to DIN 69 873
- data carrier read/write
- 511 bytes
- operating temperature 0...+70
- protection class to IEC
- product data exchange acc. to DIN 4000
- glued in bore Ø10 H11



Scope of delivery

- data coding chip
- installation in chuck and additional balancing can be ordered separately

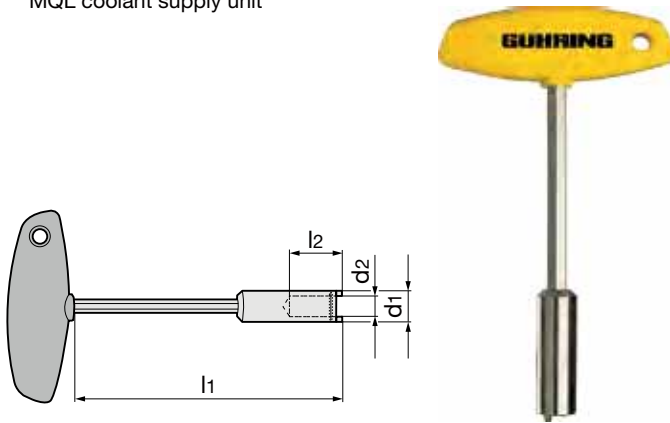


Article no. **4955**

coding chip BIS C-122-04/L	Order no.
10 x 4.5	4955 10.000

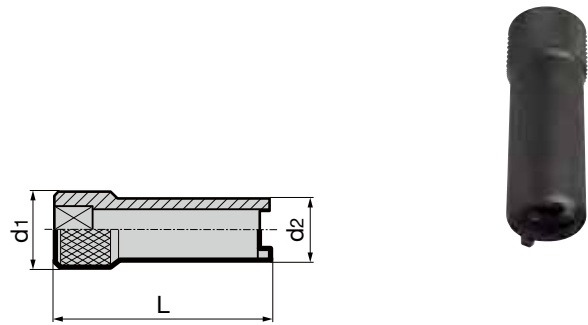
Product information

- with T-handle
- for coolant supply sets for conventional cooling and MQL coolant supply unit



Product information

- suitable for torque wrench article no. 4915, drive 3/8"
- for coolant supply sets



Article no. 4911					Order no.
for HSK	d1 mm	d2 mm	l1 mm	l2 mm	
32	11,0	6,1	128	23,0	4911 24.000
40	13,0	8,1	134	26,0	4911 30.000
50	15,0	10,1	134	28,0	4911 38.000
63	17,0	12,1	135	31,5	4911 48.000
80	20,0	14,1	138	32,0	4911 60.000
100	22,5	16,1	138	35,0	4911 75.000

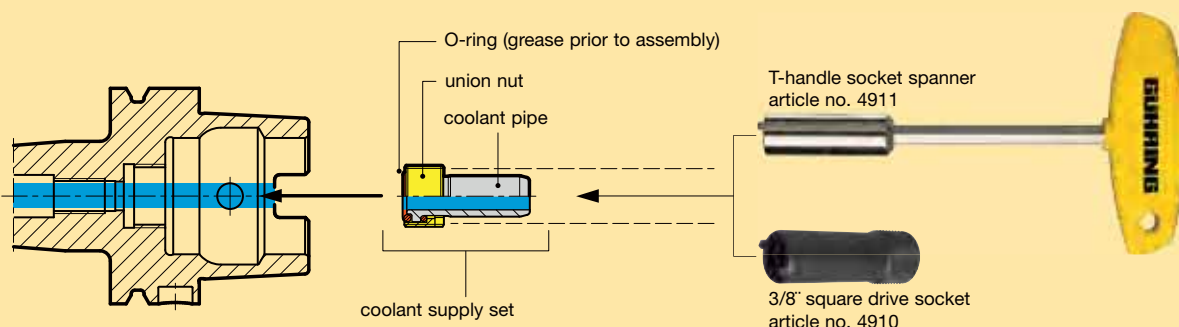
Article no. 4910					Order no.
for HSK	MA Nm	d1 mm	d2 mm	L mm	
32	7	20	14	60	4910 24.000
40	11	20	16	60	4910 30.000
50	15	20	18	60	4910 38.000
63	20	20	18	60	4910 48.000
80	25	20	20	75	4910 60.000
100	30	22	22	80	4910 75.000

Installation of coolant supply sets 4949/4979

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant supply set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner.
4. Screw in the coolant supply set/coolant supply unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

Torque figures

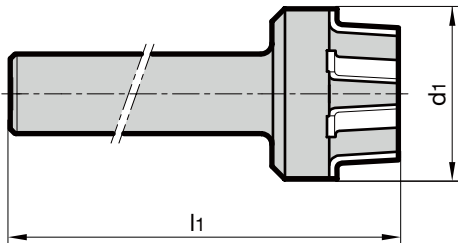
for HSK	MA Nm
32	7
40	11
50	15
63	20
80	25
100	30



HSK cleaning mandrels

Product information

- for cleaning internal tapers and the end faces on HSK
- by cleaning the contact surfaces accuracy, clamping torque and tool life of interfaces are improved
- the taper wipers are available in 3 designs, suitable for HSK and SK spindles and HPC precision chucks



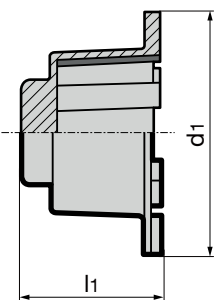
Article no. **4914**

taper type	d_1 mm	l_1 mm	Order no.
HSK-A/C-25	33	114	4914 19.000
HSK-A/C-32	35	138	4914 24.000
HSK-A/C-40	45	142	4914 30.000
HSK-A/C-50	53	152	4914 38.000
HSK-A/C-63	66	168	4914 48.000
HSK-A/C-80	93	178	4914 60.000
HSK-A/C-100	103	199	4914 75.000
HPC 14	24	160	4914 14.000
HPC 20	24	156	4914 20.000
HPC 25	40	195	4914 25.000
HPC 32	42	170	4914 32.000
SK/BT30	35	168	4914 30.030
SK/BT40	48	188	4914 40.000
SK/BT50	75	240	4914 50.000

HSK cleaning caps

Product information

- for cleaning the external taper and face



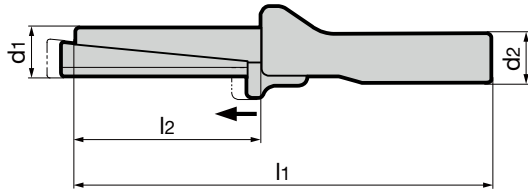
Article no. **4947**

for HSK-A/C/E	d_1 mm	l_1 mm	Order no.
40	53	36	4947 1.040
50	66	42	4947 1.050
63	83	53	4947 1.063
80	103	58	4947 1.080
100	125	77	4947 1.100

Cylindrical cleaning mandrels

Product information

- for cleaning the bore of the tool holder
- i.e. hydraulic, shrink fit and HPC clamping chucks

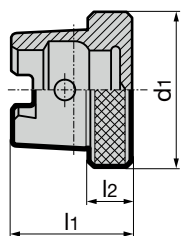


				Article no.	4918
d1 mm	d2 mm	l2 mm	l1 mm	Order no.	
6	24	37	158	4918 6.000	
8	24	37	158	4918 8.000	
10	24	47	168	4918 10.000	
12	24	47	168	4918 12.000	
14	24	47	168	4918 14.000	
16	24	70	176	4918 16.000	
18	24	70	176	4918 18.000	
20	24	70	176	4918 20.000	
25	24	80	186	4918 25.000	
32	30	100	221	4918 32.000	
40	30	105	226	4918 40.000	

HSK-C sealing plugs

Product information

- with high coolant pressure applications, it is imperative to seal the spindle with the sealing plug for safety reasons when the machine spindle is not fitted with a tool.
- The sealing plug protects the spindle from contamination.



					Article no.	4985
HSK-C	d1 mm	l1 mm	l2 mm	kg	Order no.	
32	34	26.0	10.0	0.07	4985 32.000	
40	42	30.0	10.0	0.11	4985 40.000	
50	52	37.5	12.5	0.23	4985 50.000	
63	65	44.5	12.5	0.39	4985 63.000	
80	82	56.0	16.0	0.81	4985 80.000	
100	102	66.0	16.0	1.36	4985 100.000	

Tool setting fixture

Product information

- for HSK shanks HSK 32, 40, 50 and 63, form A, C, E and F
- the HSK shanks are clamped vertically and horizontally at the collar. Therefore, all tapers with the same diameter of the collar can be clamped with one fixture.

Scope of delivery

- incl. holder adaptors



					Article no.	4946
for shanks	length mm	width mm	height mm	kg	Order no.	
HSK-32-A+C+E	260	130	160	9	4946 450.032	
HSK-40-A+C+E+F	260	130	160	9	4946 450.040	
HSK-50-A+C+E+F	260	130	160	9	4946 450.050	
HSK-63-A+C+E+F	260	130	160	9	4946 450.063	

Tool setting fixture

Product information

- the HSK shank remains in vertical position in the tool setting fixture by its own weight. The torque is transmitted through tang at the end of the taper.
- All taper types of equal size, as e.g. DIN 69871 /DIN 2080 /MASBT and D-BT can be clamped without changing the adaptors only through axial adjusting of the clamping spindle



Scope of delivery

- incl. interchangeable discs article no. 4991

Interchangeable discs

Product information

- for tool setting fixture, article no. 4990

Scope of

- 1 pair



					Article no.	4990
for shanks	length mm	width mm	height mm	kg	Order no.	
BT-/SK-40	260	130	160	9	4990 400.040	
BT-/SK-50	260	130	160	9	4990 400.050	
HSK-63-A+C	260	130	160	9	4990 450.063	
HSK-80-A+C	260	130	160	9	4990 450.080	
HSK-100-A+C	260	130	160	9	4990 450.100	

			Article no.	4991
for shanks	for article no.	kg	Order no.	
BT-/SK-40	4990	1,50	4991 400.100	
BT-/SK-50	4990	1,50	4991 400.200	
HSK-32-A+C+E+F	4946	0,82	4991 450.100	
HSK-32-A+C+E+F	4946	0,85	4991 450.200	
HSK-32-A+C+E+F	4946	0,09	4991 450.300	
HSK-63-A+C	4990	0,12	4991 450.400	
HSK-80-A+C	4990	0,27	4991 450.500	
HSK-100-A+C	4990	0,46	4991 450.600	

Torque wrenches

Product information

- with ratchet
- torque range 1...200 Nm; with automatic short distance release; can be heard, seen and felt when the set value is reached.
Release accuracy $\pm 4\%$ of the scale value.
- type "D" is pre-set to 12 Nm suitable for our HPC chucks article no. 4300, 4301, 4243, 4244

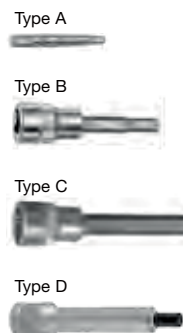
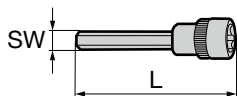


				Article no.	4915	4987	4988	4989
type	drive	L mm	torque Nm	Order no.	Order no.	Order no.	Order no.	Order no.
A	1/4"	-	0,4-1	4915 1.001				
A	1/4"	142	0,5-2	4915 2.000				
A	1/4"	-	1,5-3	4915 3.000				
A	1/4"	160	0,8-5	4915 5.001				
A	1/4"	-	2,0-7	4915 8.000				
D	1/4"	-	10		4987 10.000			
E	1/4"	-	0,4-14			4988 14.000		
B	3/8"	390	10-50				4989 50.000	
C	1/2"	514	40-200				4989 200.000	

Socket/attachments

Product information

- for hexagon socket screws
- Type D for HPC clamping chuck



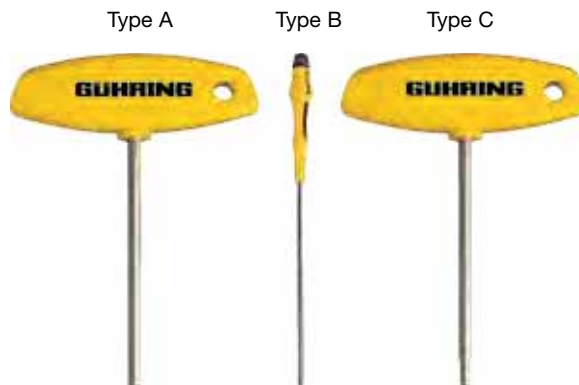
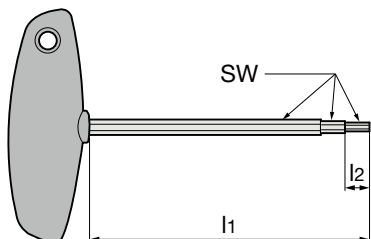
- Type A: 1/4"-hexagon drive
- Type B: 3/8"-square drive
- Type C: 1/2"-square drive
- Type D: 1/4"-square drive

				Article no.	4916
SW	drive	L mm	torque wrenches type	Order no.	Order no.
2	1/4"	50	A	4916 2.019	
2.5	1/4"	50	A	4916 2.524	
3	1/4"	50	A	4916 3.030	
3	3/8"	52	B	4916 3.038	
4	1/4"	55	D	4916 4.000	
4	3/8"	100	B	4916 4.038	
5	3/8"	100	B	4916 5.048	
6	3/8"	100	B	4916 6.060	
8	3/8"	100	B	4916 8.075	
6	1/2"	120	C	4916 6.038	
8	1/2"	120	C	4916 8.048	
10	1/2"	140	C	4916 10.060	
12	1/2"	140	C	4916 12.000	

Hexagon clamping keys

Product information

- for hexagon socket screws
- with ergonomic handle for the safe handling of our clamping devices
- special key order no. 4912 4.600 for HPC clamping chuck



Article no.				4912	
SW	l1 mm	l2 mm	Type	Order no.	
2.0	100	100	A	4912	2.000
2.5	100	100	A	4912	2.500
3.0	100	100	A	4912	3.000
3/4/5/6	100	100	C	4912	3.456
4.0	100	100	A	4912	4.000
4/6	100	100	C	4912	4.600
5.0	100	100	A	4912	5.000
6.0	100	100	A	4912	6.000
8.0	100	100	A	4912	8.000
10.0	100	100	A	4912	10.000
12.0	100	100	A	4912	12.000
2.5	200	200	A	4912	2.501
3.0	200	200	A	4912	3.001
4.0	200	200	A	4912	4.001
5.0	200	200	A	4912	5.001
6.0	200	200	A	4912	6.001
7.0	200	200	A	4912	7.001
8.0	200	200	A	4912	8.001
1.5	150	2.5	B	4912	1.500
2.0	150	2.5	B	4912	2.001
2.5	120	3.0	B	4912	2.502
3.0	150	3.8	B	4912	3.002
4.0	150	4.5	B	4912	4.002
2.5	57	57	C	4912	2.509

Hexagon clamping key

Product information

- for hexagon socket screws

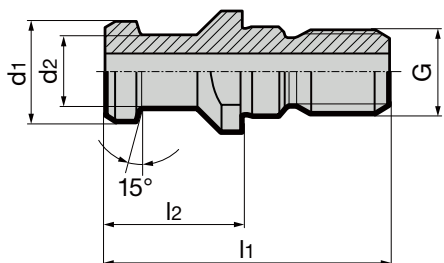


Article no.		4921	
for threaded pin article no. 4551	SW	Order no.	
HSK 25	0,9	4921	0.900
HSK 32	1,3	4921	1.300
HSK 40	1,5	4921	1.500

Pull studs ISO taper DIN ISO 7388-3 form AD

Product information

- for ISO taper tool holders to DIN ISO 7388-3 form AD
- through hole for central coolant supply

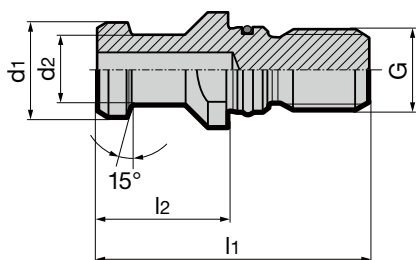


							Article no.	4925
for ISO taper	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	Order no.	
30	13.0	9.0	-	44.0	24	M12	4925 30.000	
40	19.0	14.0	7.0	54.0	26	M16	4925 40.000	
50	28.0	21.0	11.5	74.0	34	M24	4925 50.000	

Pull studs ISO taper DIN ISO 7388-3 form AF

Product information

- for ISO taper tool holders to DIN ISO 7388-3 form AF
- sealed for coolant supply above the collar

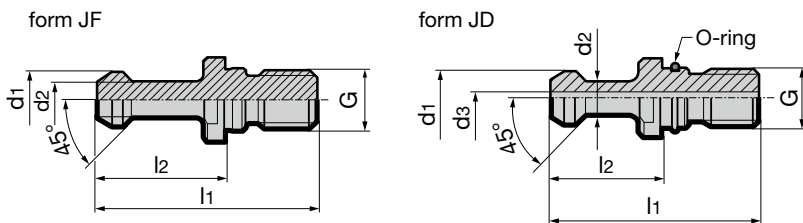


						Article no.	4926
for ISO taper	d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	G	Order no.	
30	13.0	9.0	44.0	24	M12	4926 30.000	
40	19.0	14.0	54.0	26	M16	4926 40.000	
50	28.0	21.0	74.0	34	M24	4926 50.000	

Pull studs BT DIN ISO 7388-3

Product information

- for tool holders to DIN ISO 7388-2 (MAS 403 BT)
- 45° clamping shoulder angle
- Design JD sealed with through hole
- Design JF without through hole
- 40.100 shortened and sealed, for draw-in clamping force test equipment article no. 4973

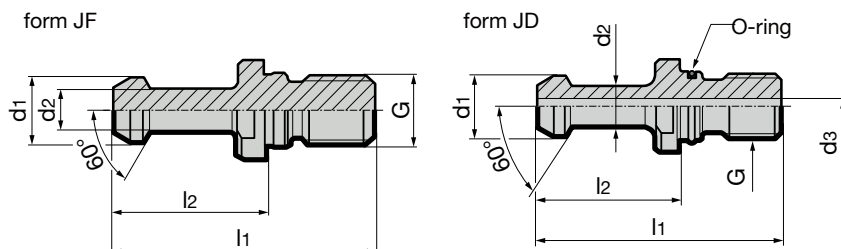


Article no.								4927
for BT	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	form	Order no.
30	11.0	7.0	-	43.0	23	M12	JF	4927 30.000
40	15.0	10.0	-	57.0	32	M16	JF	4927 40.100
40	15.0	10.0	-	60.0	35	M16	JF	4927 40.000
50	23.0	17.0	-	85.0	45	M24	JF	4927 50.000
30	11.0	7.0	2.5	43.0	23	M12	JD	4927 30.001
40	15.0	10.0	4.0	60.0	35	M16	JD	4927 40.001
50	23.0	17.0	8.5	85.0	45	M24	JD	4927 50.001

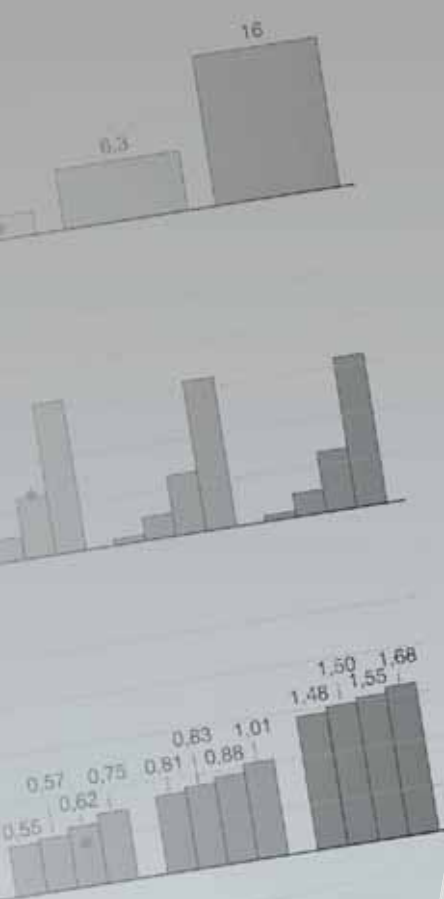
Pull studs BT DIN ISO 7388-3

Product information

- for tool holders to DIN ISO 7388-2 (MAS 403 BT)
- 60° clamping shoulder angle
- Design JD sealed with through hole
- Design JF without through hole
- 40.100 shortened and sealed, for draw-in clamping force test equipment article no. 4973



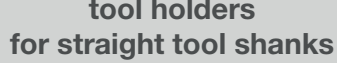
Article no.								4928
for BT	d ₁ mm	d ₂ mm	d ₃ mm	l ₁ mm	l ₂ mm	G	form	Order no.
30	11.0	7.0	-	43.0	23	M12	JF	4928 30.000
40	15.0	10.0	-	57.0	32	M16	JF	4928 40.100
40	15.0	10.0	-	60.0	35	M16	JF	4928 40.000
50	23.0	17.0	-	85.0	45	M24	JF	4928 50.000
30	11.0	7.0	2.5	43.0	23	M12	JD	4928 30.001
40	15.0	10.0	4.0	60.0	35	M16	JD	4928 40.001
50	23.0	17.0	8.5	85.0	45	M24	JD	4928 50.001
60	32.0	24.0	12.0	115.0	65	M30	JD	4928 60.001



TECHNICAL INFORMATION



Clamping chucks / tool holders for straight tool shanks	TSG 3000 / shrink fit chucks / shrink fit extensions	Hydraulic chucks / HMC 3000 / reduction bushes
<p>Characteristics</p>	<p>maximum concentricity; very slender non-interference; good rigidity; high clamping force; modular lengthening; patented dampening screw ensures concentricity</p>	<p>high dampening with maximum concentricity; simple handling; flexible application thanks to reduction bushes also with GÜHROJET</p>
<p>Main application</p>	<p>drilling, countersinking, milling, reaming, universal and HSC applicatio</p>	<p>reaming, drilling, countersinking, HSC application, light milling</p>
<p>Main feature</p>	<p>accurate and universal; slender; high clamping force</p>	<p>simple handling</p>
<p>Concentricity</p>	<p>< 3µm</p>	<p>< 3µm</p>
<p>with 5xD</p>	<p>< 5µm</p>	<p>< 5µm</p>
<p>Clamping force</p>	<p>very high</p>	<p>very high</p>
<p>Rigidity</p>	<p>very high</p>	<p>high</p>
<p>Dampening</p>	<p>low</p>	<p>very high</p>
<p>Interference contour</p>	<p>small / minimal</p>	<p>medium</p>
<p>Handling</p>	<p>good</p>	<p>very good / very flexible</p>
<p>Actuation</p>	<p>shrink fit device e.g. GSS 2000 article no. 4742</p>	<p>hexagon key e.g. article no. 4912</p>



HPC precision power chucks / clamping sleeves	Straight shank holders "Weldon" / "Whistle-Notch"	Collet chucks ER
		
maximum clamping force and rigidity thanks to mechanical clamping transmission; high accuracy and balancing quality; flexible application thanks to clamping sleeves also with GÜHROJET	robust, cost-efficient clamping chuck for heavy machining in the lower speed and accuracy range	very flexible clamping chuck for various shank dimensions and tolerances; for lower level machining tasks
heavy HPC and fast accurate HSC milling, drilling, universal application	roughing, milling, drilling	light machining, centering, chamfering, drilling, threading; intermediate shank dimensions
highest clamping force and rigidity	simple operation; secure clamping	highly flexible
< 3µm	< 10µm	< 10µm
< 8µm	< 25µm	< 20µm
extremely high	very safe	medium
extremely high	very high	low
high	low	high
medium	large	large (mini = small)
very good / flexible	good	good
hexagon key / torque wrench e.g. article no. 4915 + 4916 type D	hexagon key torque: information at clamping screw article no. 4903	hook spanner max. torque: information at clamping screw article no. 4903

The HSK interface

TECHNICAL INFORMATION AND ADVANTAGES

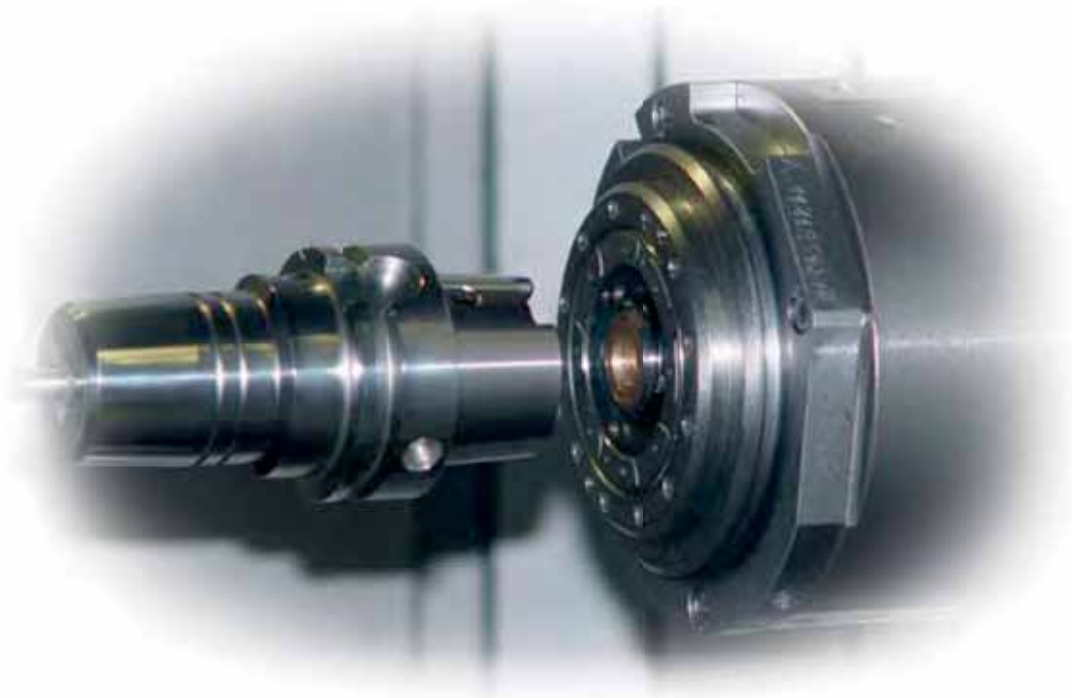


Fig. 1:
HSK-A 63 interface,
automatic tool change

Our modular tooling system GM 300 has been developed for the application of rotating and stationary tools. 1987 we developed the GM 300 coupling. Standardisation for this interface (DIN 69893) was obtained in 1991. Since 12/2001 the HSK interface is also standard to ISO 12164-1/-2. The unique design of the clamping method offers not only an ideal interface for manual clamping within the tooling system, but also an ideal interface for automatic clamping directly to the machine spindle (fig. 1) or tool holder.

Characteristic feature:

Tapered hollow shank (HSK) with axial plane clamping mechanism according to DIN 69893. The most important advantages are as follows:

• High static and dynamic rigidity

The radial and axial forces generated in the tool shank provide the clamping force necessary for extreme rigidity (fig. 2). Recommended values for the GM-300 module for manual clamping.

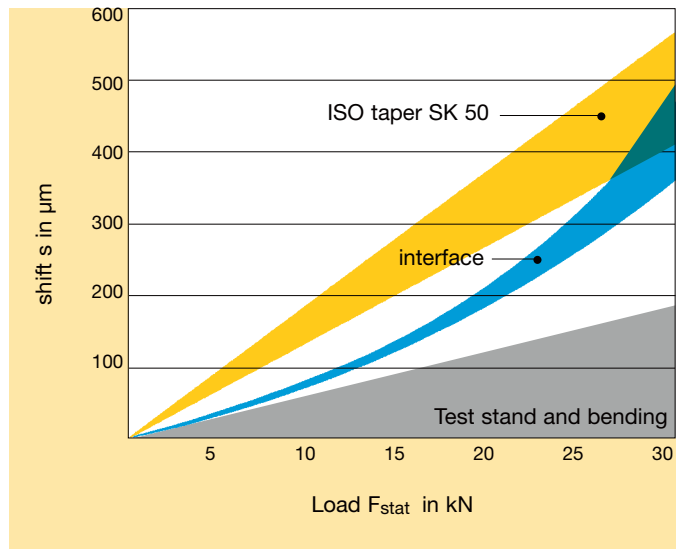
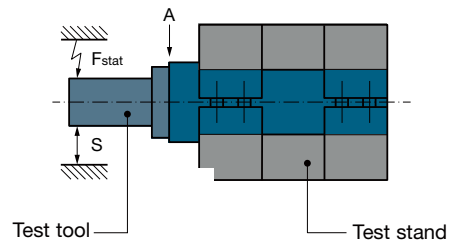


Fig. 2
Static deflection: Comparison between ISO taper 50 and automatic interface HSK-A 100 (A)

ISO taper DIN 2080 DIN ISO 7388-1	HSK form A/C/(E) DIN 69893 part 1	HSK form B/D/(F) DIN 69893 part 2
-	HSK 40	HSK 50
SK30	HSK 50	HSK 63
SK40	HSK 63	HSK 80
SK45	HSK 80	HSK 100
SK50	HSK 100	HSK 125

Association between ISO taper - hollow taper shank

- **High torque transmission and defined radial positioning**

The wedging effect between the hollow taper shank and the holder or spindle causes a friction contact over the full taper surface and the plane supporting face (fig. 3). Two keys engage with the shank end of the tool holder and provide form-closed, radial positioning, thereby excluding any possible setting errors.

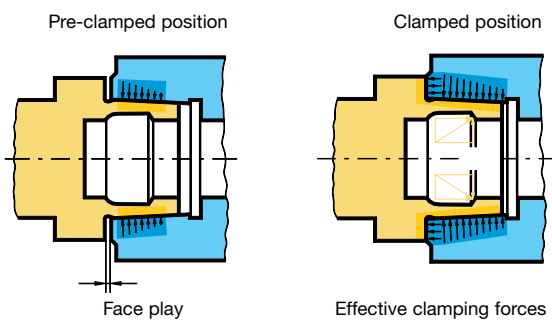
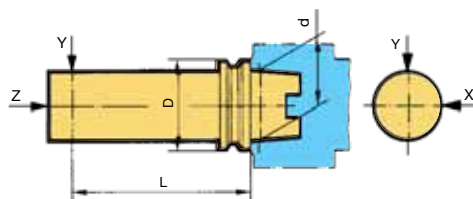


Fig. 3
Prestressing and frictional forces of hollow taper shank at the interface.

- **High tool change accuracy and repeatability**

The circular form engagement of the clamping claws within the hollow tool shank provides a totally tight connection between the shank and spindle or holder respectively (fig. 3 and 4).



HSK-size D	d mm	L mm	X mm	Y mm	Z mm
32	24	50	0.002	0.002	0.002
40	30	60	0.002	0.002	0.002
50	38	75	0.002	0.002	0.002
63	48	100	0.002	0.002	0.002
100	75	150	0.002	0.002	0.002

Fig. 4
Radial and axial repeatability of interface for manual and automatic clamping

- **High speed machining performance**

The higher the number of revolutions the better, as this increases both the power and effectiveness of the locking of the clamping mechanism. The direct initial stress between the hollow taper shank and the spindle holder compensates for the spindle expansion generated by the centrifugal force so that there is absolutely no radial play (fig. 3). The plane clamping position prevents any slipping in the axial direction.

- **Short tool changing time**

Efficient tool change due to a short shank length (approx. 1/3 of the conventional ISO taper) and light weight (approx. 50% of the ISO taper).

- **Simple, cost-efficient shank design**

No moving components at the tool shank means no wearing parts.

- **Insensitive to foreign matter**

The uninterrupted design of the ring-shaped axial plane clamping simplifies the cleaning of the coupling. During automatic tool change compressed air provides ideal cleaning in the interface.

- **Coding and identification**

To allow for the attachment of common identification systems, a hole of 10 mm dia. and 4.5 mm depth is provided for the data media (coding chips) in the vicinity of the collar.

- **Standardising of interface**

The hollow taper shanks by GÜHRING are conform with ISO 12164-1/DIN 698936. Version form „E“ with access hole in taper for manual clamping.

- **Coolant feed**

The tools for automatic clamping, HSK-A and E, are designed for a central coolant feed by means of a duct. Tools with manual change behind the GM 300 interface also operate with a central coolant feed. The clamping elements are entirely sealed against the entry of coolant so that fouling is prevented.

- **Installation of the coolant supply set**

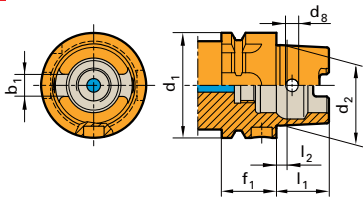
Coolant supply sets are to be ordered separately for all GM 300 modules. The installation of the coolant duct must be carried out by the user.

The HSK interface

GENERAL OVERVIEW OF HSK SHANKS ISO 12164-1/DIN 69893

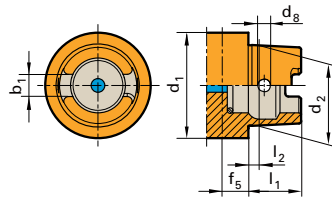
Form A ISO 12164-1/DIN 69893-1

HSK-sizes 25...160



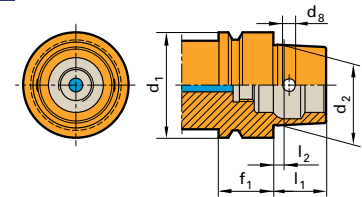
Form C ISO 12164-1/DIN 69893-1

HSK-sizes 25...160



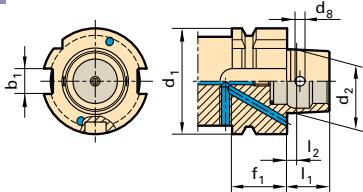
Form E DIN 69893-5

HSK-sizes 20...63



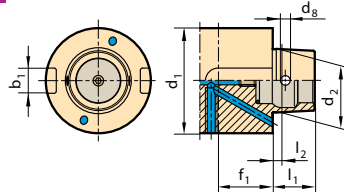
Form B DIN 69893-2

HSK-sizes 40...160



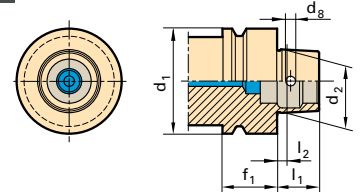
Form D DIN 69893-2

HSK-sizes 40...160



Form F DIN 69893-6

HSK-sizes 50...80



HSK for automatic tool change with gripper groove and index notch. Manual operation is via access hole in taper. Form B relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.

HSK for manual tool change. Operation is via access hole in taper. Form D relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.

HSK for automatic tool change. Torque is transmitted through highly accurate connection. Version with access hole acc. to DIN 69893-1 by arrangement. HSK-E/F by Gühring are supplied with access holes.

HSK form A C E							
Nominal Ø d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	f ₁ mm	f ₅ mm	d ₈ mm	b ₁ mm
20	15,203	10	2,0	8	-	-	-
25	19,006	13	2,5	10	-	-	-
32	24,007	16	3,2	20	10,0	4,0	7,05
40	30,007	20	4,0	20	10,0	4,6	8,05
50	38,009	25	5,0	26	12,5	6,0	10,54
63	48,010	32	6,3	26	12,5	7,5	12,54
80	60,012	40	8,0	26	16,0	8,5	16,04
100	75,013	50	10,0	29	16,0	12,0	20,02
125	95,016	63	12,5	29	-	-	25,02
160	120,016	90	16,0	31	-	-	30,02

HSK form B F						
Nominal Ø d ₁ mm	d ₂ mm	l ₁ mm	l ₂ mm	f ₁ mm	d ₈ mm	b ₁ mm
25	-	-	-	-	-	-
32	-	-	-	-	-	-
40	24,007	16	3,2	20	4,0	10
50	30,007	20	4,0	26	4,6	12
63	38,009	25	5,0	26	6,0	16
80	48,010	32	6,3	26	7,5	18
100	60,012	40	8,0	29	8,5	20
125	75,013	50	10,0	29	12,0	25
160	95,016	63	12,5	31	12,0	32

Because the rotational speed is the largest influencing factor together with the limits regarding the spindle or spindle bearing interface, the following r.p.m. limits for HSK interfaces have been recommended as guidelines within the HSK standards:

HSK-A/C 25	to 60.000 rev./min
HSK-A/C 32	to 50.000 rev./min
HSK-A/C 40	to 42.000 rev./min
HSK-A/C 50	to 30.000 rev./min
HSK-A/C 63	to 25.000 rev./min
HSK-A/C 80	to 20.000 rev./min
HSK-A/C 100	to 16.000 rev./min

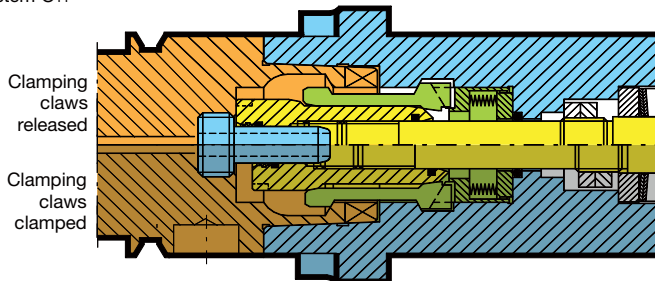
The HSK interface

THE AUTOMATIC TOOL CLAMPING

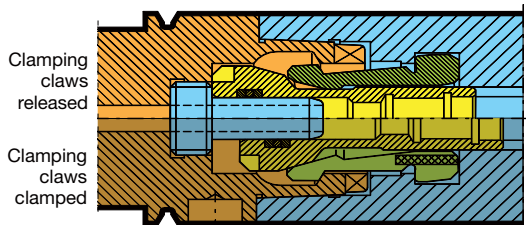
For the automatic interface the forces are introduced axially via a draw bar. A clamping taper simultaneously causes a radial movement of the clamping segments which, in turn, engage with the clamping shoulder of the tool shank and lock the coupling absolutely play-free. The clamping mechanism increases the draw-in force on the plane face by a factor of 3.5. General application in machining centers and turning centres using an automatic tool changing method. Such clamping systems are currently being offered by Messrs. Ott, Ortlieb, Berg and RöhM (fig. 6).

Fig. 6
Spindle interfaces with clamping devices

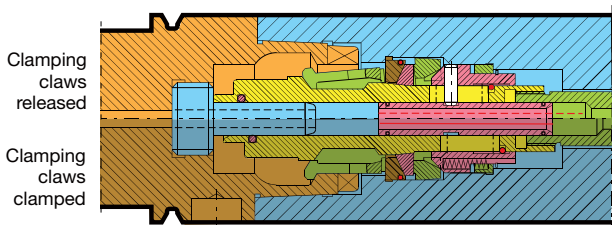
System OTT



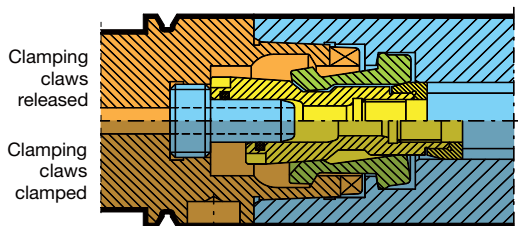
System ORTLIEB (licence Fa. Gühring)



System BERG (licence Fa. Gühring)

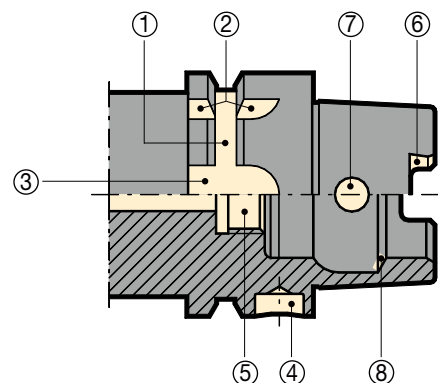
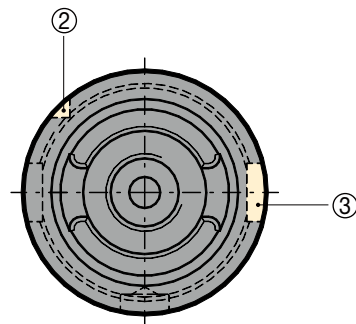


System RÖHM (licence Fa. Gühring)



Term definitions of HSK-A interface for automatic tooling systems

- ① Gripper groove: circular groove
- ② Index notch: sickle-shaped notch across gripper groove
- ③ Keyway on collar: index notch or for attachment in tool magazine or grippers. With HSK-B/D also provides form closed torque transmission to spindle
- ④ Coding/identification: bore in collar for attachment of identification system (coding chip)
- ⑤ Thread for coolant: for attachment of coolant supply set
- ⑥ Keyway on taper shank: form closed torque transmission to spindle
- ⑦ Radial bore in taper shank: necessary for manual clamping systems
- ⑧ Clamping shoulder: circular chamfer for drawing in the tool



Note:

We like to point out, that HSK-A can be used alternatively to HSK-C with manual clamping systems e.g. 4-point clamping set or PowerClamp. The only difference is the overall length, which is slightly longer. That is why we have decided to have certain tool holders only as form C as standard.

The HSK interface

THE MANUAL TOOL CLAMPING

Operating instructions for manual tool clamping

- Do not exceed the maximum torque figures for the clamping screw of the 4-point clamping set and the PowerClamp system.
- The thread of the clamping screw of the manual clamping set is supplied pre-greased. Following pro-longed operating periods it may be necessary grease otherwise the require clamping force cannot be obtained.
- At tool changing the plane surface and spindle has to be cleaned. Dirt will restrain the perfect function of the tool system. The inner taper of the spindle can be cleaned with cleaning unit, article no. 4914.
- The spindle should be sealed with a plug, article no. 4985, when running without tool to prevent impurities in the clamping sets and HSK tool systems.

Exemplary interface design



Spindle connection dimensions see page 276/277

Detailed drawings of the spindle connection contours are available on request for the following:

Article no. 4385 Short HSK adaptor		Article no. 4554 PowerClamp clamping set	
Article no. 4386 HSK adaptor (in front)		Article no. 4958 4-point clamping set	
Article no. 4582 HSK adaptor (in front) for turning centres		Article no. 4930 MQL 4-point clamping set	
Article no. 4584 HSK adaptors (integrated axial plane)		Article no. 4953 Brass collar	
Article no. 4586 HSK adaptor (in front)		Article no. 4953 Brass collar	

ISO taper DIN ISO 7388-1 and MAS/BT DIN ISO 7388-2

TECHNICAL INFORMATION AND ADVANTAGES

Gühring has considerably expanded its ISO taper and MAS-BT tool holder program. Naturally, the tool holders are of the usual high Gühring quality. This means: ISO taper and MAS-BT tool holders are produced in a special, alloyed case hardened steel with a minimum tensile strength at the core of 900 N/mm², hardened in a low distortion hardening process to HRC 58 at a case hardening depth of 0.8 to 1.0 mm. For reasons of longevity, the surface of the tool holder is subjected to an abrasive blasting process and protected against corrosion.

Quality through precision

Gühring's demand for highest precision also applies to tool holders. Therefore, ISO taper and MAS-BT chucks are precision ground: in the vicinity of the ISO taper to Ra ≤ 0.2, at the holder face to Ra ≤ 0.4. The taper tolerance is better than AT 3 with a measuring accuracy of ≤ 1 μm.

Detailed information regarding the form and positional tolerances can be found for the individual tool holders on the respective pages in the catalogue. The tolerances of the holder bore and the spigot are approximately 2/3 of the DIN tolerance.

Balancing

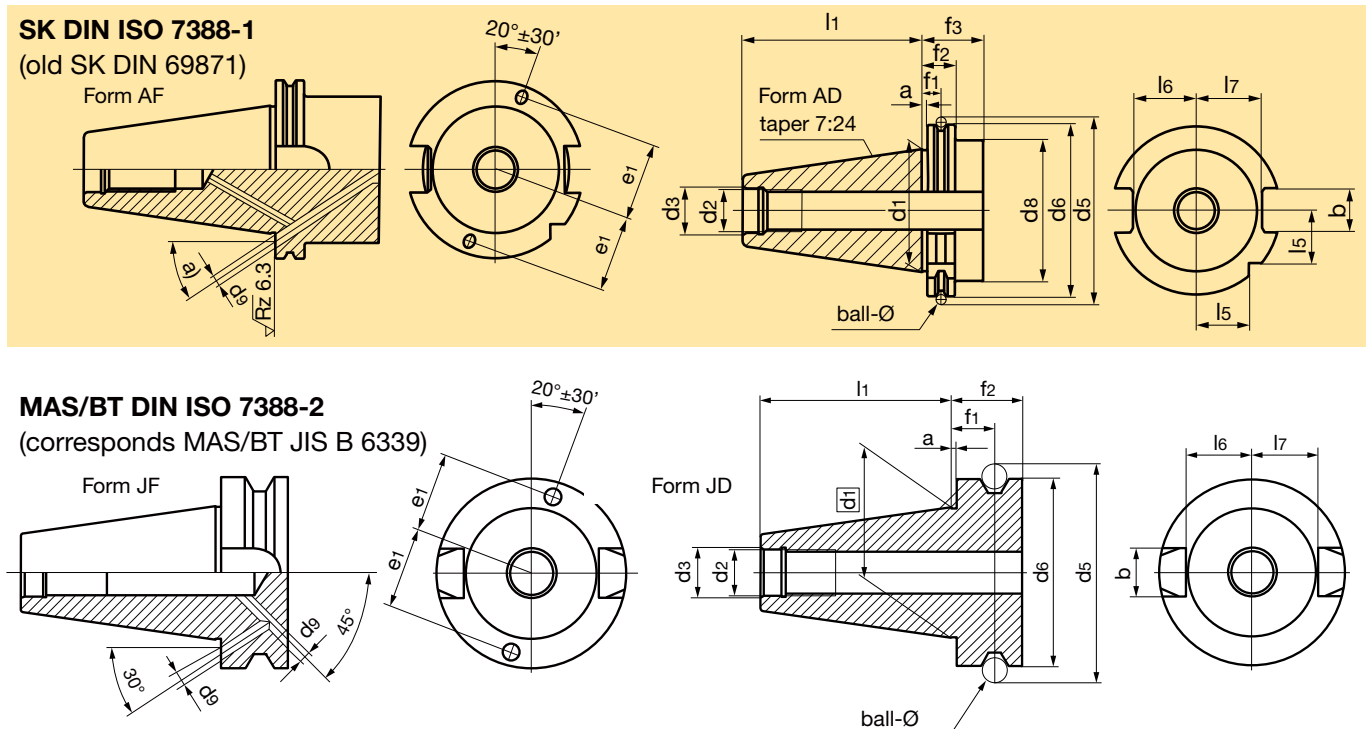
Tool holders suitable for increased speeds are generally pre-balanced. For this purpose, we have determined the imbalance and entered the balancing areas as well as balancing bores on the drawings. This levels out the imbalance to a large extent and up to approximately 8000 rev./min precision balancing is unnecessary. For higher revolutions, the pre-balanced tool holders must be precision balanced to G 6.3 or G 2.5 respectively.

Type AD/AF

ISO taper tool holders generally produced are type AD/AF. Supplied is type AD, the coolant bores at the collar are sealed with screws.

General dimensions and tolerances

The following dimensions apply to our ISO taper and MAS-BT tool holders:



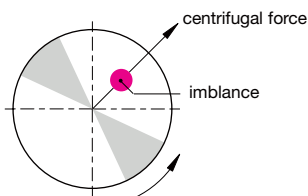
ISO taper	a mm	ball-Ø mm	b mm	d ₁ mm	d ₂ mm	d ₃ mm	d ₅ mm	d ₆ mm	d ₈ mm	d ₉ mm	e ₁ mm	f ₁ mm	f ₂ mm	f ₃ mm	l ₁ mm	l ₅ mm	l ₆ mm	l ₇ mm
SK30	3.2	7	16.1	31.75	M12	13	59.3	50.00	45	4	21	11.1	19.1	35	47.80	15.00	16.4	19.0
SK40	3.2	7	16.1	44.45	M16	17	72.3	63.55	50	4	27	11.1	19.1	35	68.40	18.5	22.8	25.0
SK50	3.2	7	25.7	69.85	M24	25	107.25	97.50	80	6	42	11.1	19.1	35	101.75	30.0	35.5	37.7
BT30	2.0	8	16.1	31.75	M12	12.5	56.03	46.00	-	-	-	13.6	22.0	-	48.40	-	16.3	16.3
BT40	2.0	10	16.1	44.45	M16	17	75.56	63.00	-	4	27	16.6	27.0	-	65.4	-	22.6	22.6
BT50	3.0	15	25.7	69.85	M24	25	118.89	100.00	-	5.4	42	23.2	38.0	-	101.8	-	35.4	35.4

Imbalance

An imbalance produces a centrifugal force during the rotation of the spindle impeding the smooth running of the tool. This imbalance influences the working process and the life span of the spindle bearings.

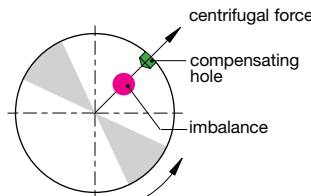
The centrifugal force F increases linear with the imbalance U and squared with the number of revolutions according to the formula below.

$$c = U \cdot \omega^2$$



Counter balancing

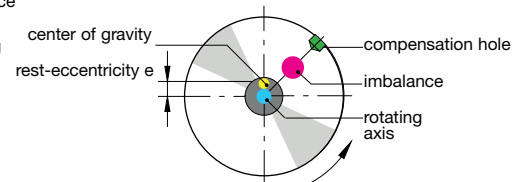
To compensate for unwanted centrifugal forces, the symmetrical distribution of mass must be restored with the aim of eliminating any centrifugal forces influencing the spindle bearing. Tool holders generally have compensation holes or areas which assist in directing the total amount of all centrifugal forces influencing the axis towards zero (see DIN ISO 21940-11).



Eccentricity of center of gravity

The imbalance of a spindle causes its center of gravity to deviate a certain distance from the rotating axis in direction of the imbalance. This distance is called rest-eccentricity e or eccentricity of center of gravity. The heavier the weight of the balance body mass m , the greater the rest-imbalance U permissible.

$$e = \frac{U}{m}$$



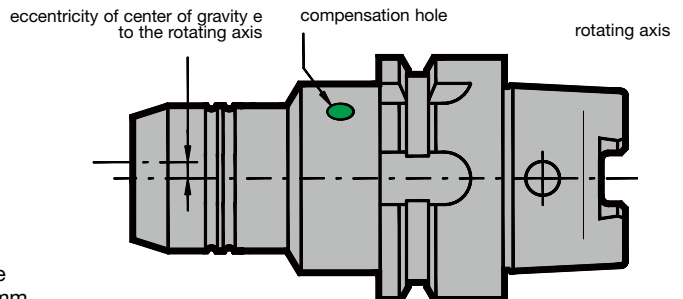
Calculation imbalance

Imbalance is a measure, specifying how much unsymmetrical distributed mass deviates radially from the rotating axis.

Imbalance is measured in gmm. The measure of distance e determines the distance of the center of gravity of an element to the rotating axis. Imbalance is calculated as follows:

$$U = m \cdot e$$

- c = centrifugal force
- U = imbalance in gmm
- e = eccentricity of center of gravity in μm
- m = mass in kg
- s = speed min^{-1}
- ω = angular velocity ($\omega = 2 \cdot \pi \cdot n$)



Balancing limits

In accordance with DIN ISO 21940-11 the balance grade is denoted with G as well as the units gmm/kg or μm respectively and is relative to the number of revolutions. At a speed of 15.000 rev./min and a weight of 1 kg, G6.3 corresponds with a permissible center deviation between rotational axis and center of gravity axis of the spindle of 4 μm .

At twice the speed of 30,000 rev./min it would be 2 μm . If the tool holder was only half the weight, i.e. 0.5 kg, the permissible counter balancing tolerance is also halved.

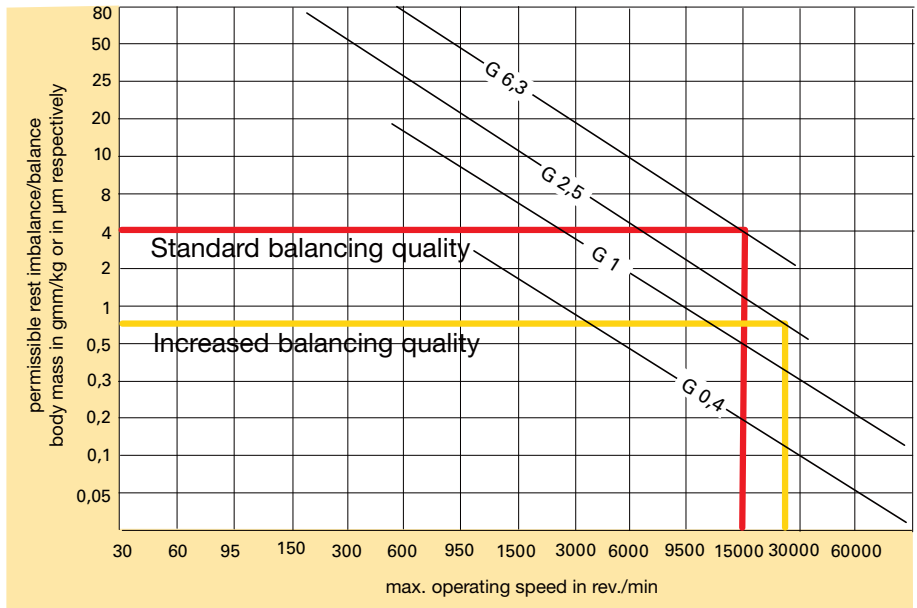
Aim of counter balancing is to find a compromise between the technically feasible and the economically efficient. Because the radial interchange accuracy for a brand-new HSK holder can be 2 to 3 μm and for an ISO taper shank holder

can be 5 to 10 μm , it means an initial quality limit of G2.5 or G6.3 respectively at 10,000 rev./min.

The following diagram shows the quality grades to DIN ISO 21940-11, i.e. the permissible rest imbalance in relation to the balance body mass for different counter balance qualities G relative to the maximum operating speed.



Balancing machine



Gühring tool holders are balanced to G6.3/15,000 rev./min. As an option, i.e. when specified by the machine tool manufacturer, it is possible to precision balance including balancing protocol to a rest imbalance of 0.3 gmm.

Calculation the balancing grade total of the assembled system:

Spindle - tool holder - tool

Illustration of balancing grade total

$$IB_{total} = IB_{Spindle} + IB_{tool\ holder} + IB_{tool}$$

Example:

$$IB_{total} = IB_{Spindle\ (G\ 0.4)} + IB_{tool\ holder\ (G2.5)} + IB_{tool\ (G6.3)}$$

Calculation of rest imbalance

$$U = \frac{G \cdot 60}{2 \cdot \pi \cdot n} \cdot m$$

m in g U in gmm

$$IB_{Spindle} = \frac{0.4 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot 15.000 = 1,910$$

$$IB_{tool\ holder} = \frac{2.5 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot 1125 = 0,895$$

$$IB_{tool} = \frac{6.3 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot 215 = 0,431$$

m total in g: 16.340

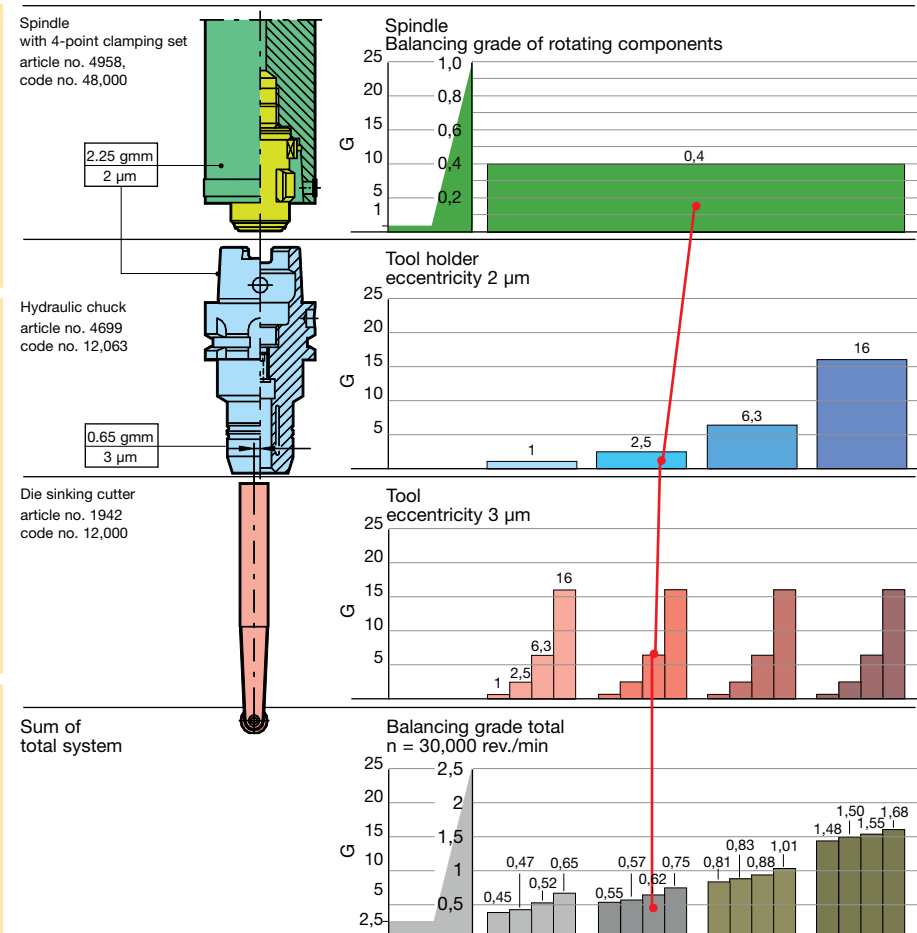
$$IB_{total\ in\ gmm}: 3.236$$

Balancing grade conversion of the total system

$$G = IB_{total} \cdot 2 \cdot \pi \cdot \frac{n}{60 \cdot m_{total}}$$

Example:

$$G = 3.236\ gmm \cdot 2 \cdot \pi \cdot \frac{30.000}{60\ s \cdot 16340\ g} = 0,62$$



Shrink fit chucks and shrink fit systems

TECHNICAL INFORMATION AND ADVANTAGES

Gühring's shrink fit chucks ensure an optimal connection between shrink fit chuck and shank tool.

While some manufacturers use conventional case hardened steel, Gühring applies a special, application orientated tool steel. The result is an increased expansion rate as well as improved temperature adaptability. There is no limit to the number of shrink fit insertion or withdrawal operations.

Advantages:

- short shrink fit times
- maximum clamping force
- shrink fit chucks available for tool shank diameters from 3 mm to 32 mm
- longevity

These advantages are of particular interest in the field of HSC milling, difficult and rough cutting operations, drilling, reaming and internal grinding operations as well as for woodworking.

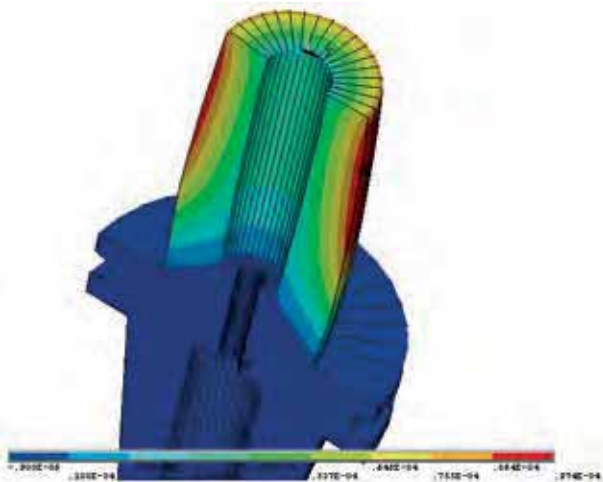
Convincing characteristics:

- excellent concentricity
- extreme clamping force and rigidity
- improved tool life
- insignificant imbalance through rotation symmetry
- economic efficiency

A gripping principle

When shrink fitting tools in shrink fit chucks, the decisive factors for ensuring the safe clamping of the tool in the tool holder are solely the heating and cooling of the tool holder. The heating process expands the shrink fit chuck enabling a tool to be inserted or withdrawn respectively. During the cooling process it contracts again and clamps the inserted tool with maximum clamping force.

Because the shrink fit chucks can become extremely hot in localised areas during the heating process and the tools shrink fitted for insertion or withdrawal respectively possess very sharp cutting edges, it is paramount that the operator wears Kevlar gloves during the shrink fit operation to prevent burns and cuts to the hands.



Shrink fit extensions: Increase performance

Shrink fit extensions increase the scope of a tool's performance and reduce tool surface imperfections. As with shrink fit chucks, the tool is clamped in the shrink fit extension and ideally in an hydraulic chuck. Naturally, shrink fit extensions can also be clamped in shrink fit chucks.

Perfect team: Gühring shrink fit chucks and shrink fit systems

For the shrink fitting for withdrawal and insertion of tools in our shrink fit chucks we offer various shrink fit systems to satisfy individual customer requirements: From high-tech solutions with integrated, highly accurate length pre-setting and special shrink fit systems for extra long tools to the multi-faceted GSS 2000 with various equipment options:

- GSS 5000
- GSS 3001
- HSV 2000
- GSS 2000

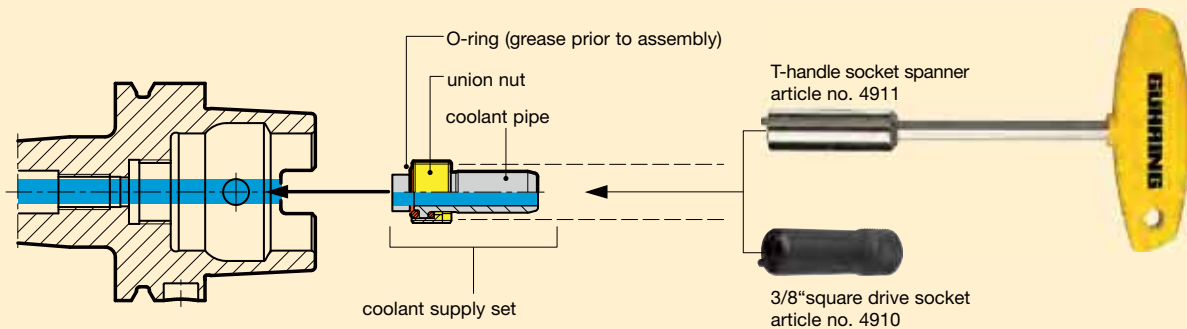


1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant supply set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner. When inserting the MQL coolant supply unit, it is paramount to ensure that the MQL pipe is inserted centrally and undamaged into the MQL length setting screw (do not kink).
4. Screw in the coolant supply set/coolant supply unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

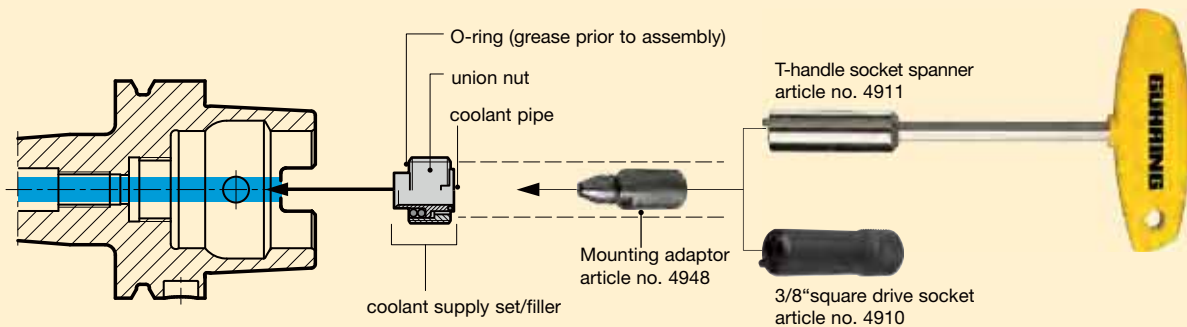
Torque figures

for HSK	MA Nm
32	7
40	11
50	15
63	20
80	25
100	30

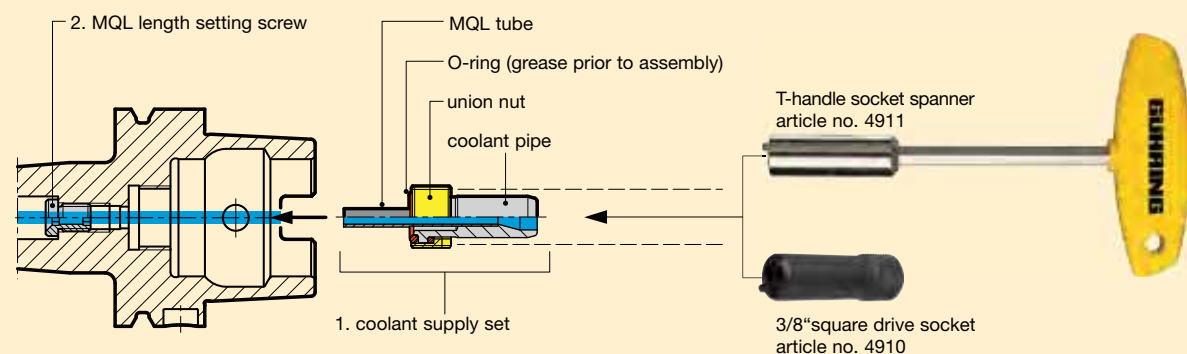
Installation of MQL coolant supply set article no. 4939



Installation of MQL coolant supply set filler article no. 4940



Installation of MQL coolant supply unit article no. 4623/4924



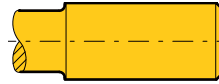
Clamping standard tool shanks to DIN 6535 in hydraulic chucks

Direct clamping
of tool preferred
run-out ≤ 0.003 mm

Form HA $\varnothing 6 \dots 20$ mm



Form HA $\varnothing 25 \dots 32$ mm



Form HB $\varnothing 6 \dots 20$ mm

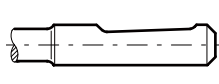


Clamping of tool shank
only with reduction bushes
run-out ≤ 0.005 mm

Form HB $\varnothing 25 \dots 32$ mm



Form HE $\varnothing 6 \dots 20$ mm



Form HE $\varnothing 25 \dots 32$ mm



General notes:

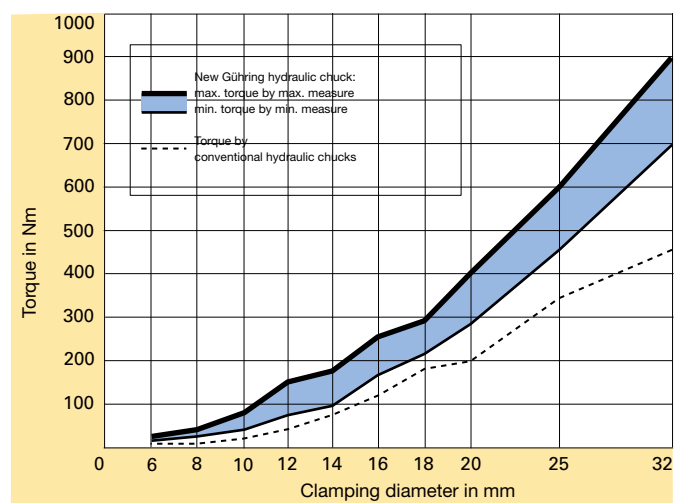
Our hydraulic chucks must not be operated with motor-driven tools (impulse screwdrivers or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the hexagon clamping key, article no. 4912. A tightening moment of 10 Nm must not be exceeded.

Gühring Hydraulic chucks with increased clamping force

Hydraulic chucks are suitable for clamping rotary symmetrical tools or workpieces. Straight shank tools without drive flats may be clamped up to $\varnothing 32$ mm, but also shanks according to DIN 6535 form HA and HB up to $\varnothing 20$ mm without reduction bushes. The given values in the table below are not to be exceeded. If the inserted length is less than the given minimum insertion depth or other tool shanks than specified above are applied, lower accuracy and breakage may occur!

Above all it is the high revolutions with High-Speed-Cutting operations that puts special demands on the tool holder. The clamping of the tool in a hydraulic chuck is, therefore, especially significant. Gühring has developed a hydraulic chuck that offers reliable and powerful clamping with higher torque figures, guaranteeing excellent tool clamping in the tool holder.

Combined with precise concentricity (max. 3 μ m deviation from concentricity), a very fast and simple tool change as well as the vibration cushioning effect of the pressure chamber, the new hydraulic chuck can tackle the most demanding of machining tasks. The result is optimal tool life and excellent surface qualities or dimensional accuracy of the workpiece respectively.

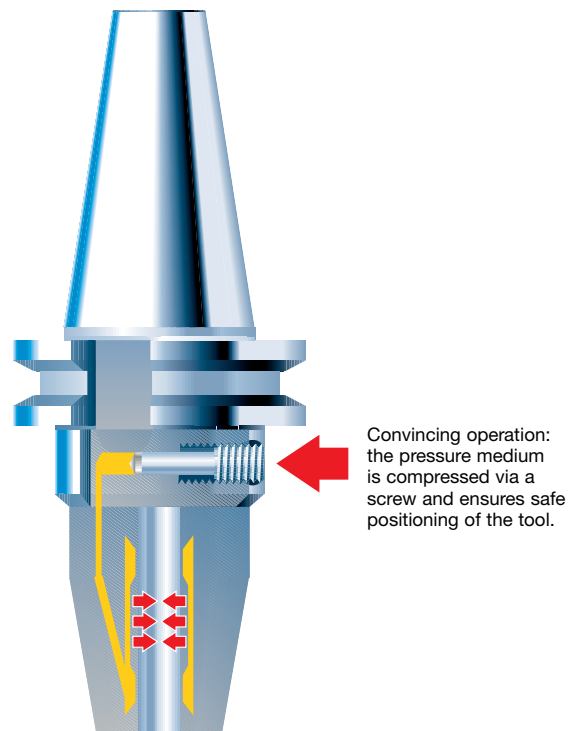
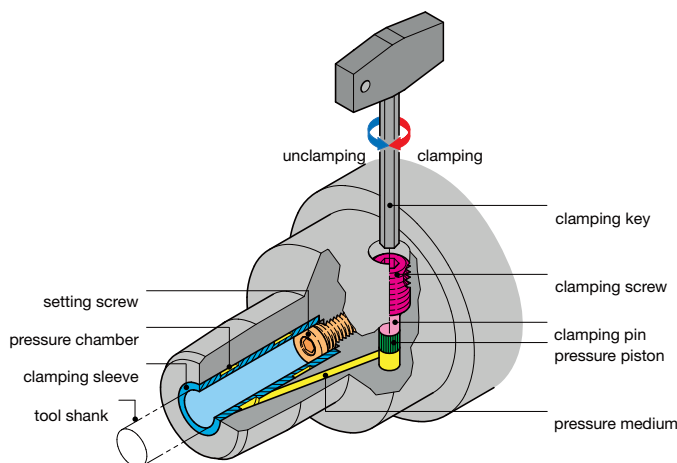


Considerably higher:
The clamping force of Gühring's new HSK-A hydraulic chuck in comparison to conventional chucks.

Modern machining processes place heavy demands on tool holding. Hydraulic chucks provide excellent clamping characteristics combined with precise concentricity. Furthermore, they enable a simple and fast tool change, with the assistance of a special extraction key. Turning the pressure screw generates sufficient pressure in the pressure chamber resulting in an elastic deformation of the clamping bush, providing powerful tool clamping and precise concentricity. A safe and powerful fit is guaranteed. If reduction bushes are applied that are able to hold varying tool diameters, the tool application may be extended without problem. If such bushes are not applied, it is essential to observe the minimum clamping length!

A summary of the advantages:

- precise tool clamping with a maximum 3 µm deviation from concentricity
- transmission of high torque through (excellent clamping) optimised bush clamping system
- high speed compatibility (no centrifugal forces from clamping segments)
- precise concentricity, therefore excellent surface qualities and dimensional accuracy of the workpiece
- rapid tool change thanks to simple operation of the clamping screw
- optimal tool life
- hydraulic cushioning has vibration absorbing effect

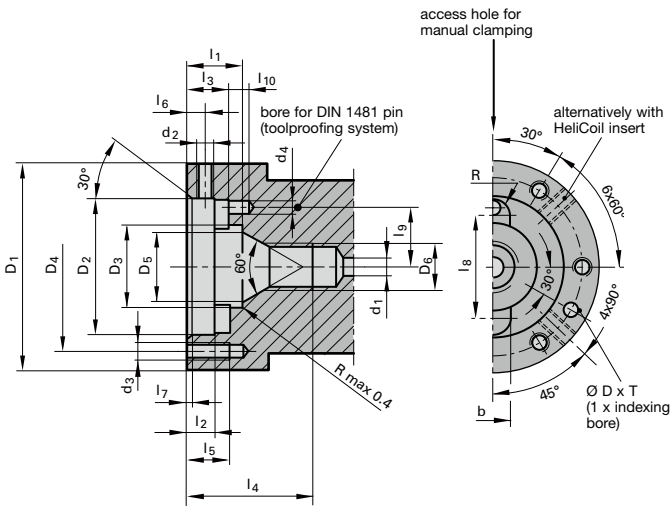


for shank-Ø in mm	max. r.p.m. in 1/min	max. transferable torque in Nm	min. insertion depth in mm	max. adjustment l ₃ mm	max. rad. force F on chuck with 50 mm from the nose in N	operating temperature in °C	max. coolant pressure in bar
3 h ₆	50 000	2.5	27	7	25	20 - 50	80
4 h ₆	50 000	6	27	7	40	20 - 50	80
5 h ₆	50 000	10	27	7	65	20 - 50	80
6 h ₆	50 000	16	27	10	225	20 - 50	80
8 h ₆	50 000	26	27	10	370	20 - 50	80
10 h ₆	50 000	50	31	10	540	20 - 50	80
12 h ₆	50 000	82	36	10	650	20 - 50	80
14 h ₆	50 000	125	36	10	900	20 - 50	80
16 h ₆	50 000	190	39	10	1410	20 - 50	80
18 h ₆	50 000	275	39	10	1580	20 - 50	80
20 h ₆	50 000	310	41	10	1860	20 - 50	80
25 h ₆	25 000	520	47	10	4400	20 - 50	80
32 h ₆	25 000	770	51	10	6500	20 - 50	80

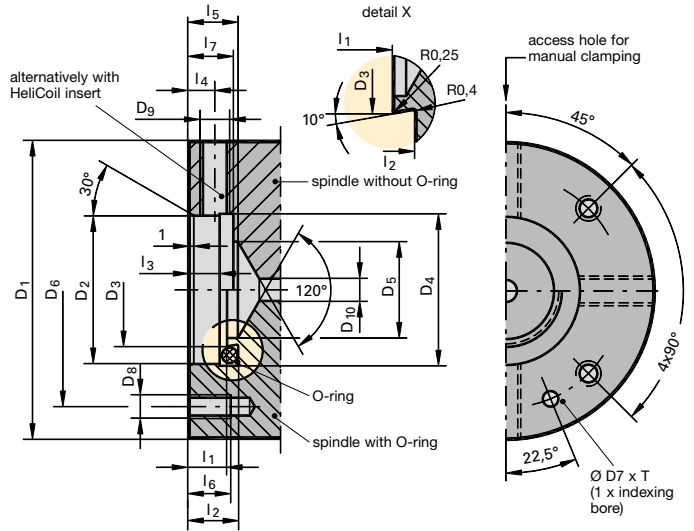
INSTALLATION DIMENSIONS FOR HSK ADAPTOR

Detailed production drawing on request

Short spindle adaptor (integr.) art. no. 4385



HSK adaptor (in front) art. no. 4386/4586



Short spindle adaptor (integr.) art. no. 4385

for HSK/Code no.	D1	D2	D3	D4	D5	D6	d1	d2	d3	d4
32 24,000	40	27.0	16.7	32.0	12.5	M 10	4.0	M 3	M 3	2
40 30,000	50	33.5	20.6	40.5	16.0	M 12	5.0	M 4	M 4	3
50 38,000	63	42.0	25.5	52.0	20.0	M 16	6.0	M 5	M 5	4
63 48,000	80	55.0	33.0	66.0	25.0	M 20	8.0	M 6	M 6	4
80 60,000	100	68.0	41.0	82.0	32.0	M 24	10.2	M 8	M 8	5

Short spindle adaptor (integr.) art. no. 4385 continuation

for HSK/Code no.	clamping depth l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀	b	R	D	T	locating pin DIN 1481
32 24,000	9.0	4.0	6.5	22	10	2.5	0.6	20.5	11.5	3.5	7.0	3.0	3.5	3.0	2 x 6
40 30,000	12.0	5.5	8.7	30	11	3.5	0.6	25.0	14.5	5.0	8.0	4.0	4.0	3.5	3 x 8
50 38,000	16.0	8.0	12.0	36	12	5.0	0.8	31.5	18.3	6.0	10.5	5.0	4.0	3.5	4 x 10
63 48,000	20.0	10.0	15.0	48	15	6.0	1.0	41.0	22.5	5.0	12.5	6.0	4.0	3.5	4 x 10
80 60,000	25.6	13.0	19.3	60	14	7.5	1.0	50.0	28.0	6.0	16.0	7.5	5.0	4.5	5 x 12

HSK adaptor (in front) art. no. 4386

for HSK/Code no.	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	T	O-ring
25 19,000	45	23	16.5	24	-	35	-	M5	M5	3.2	8.2	9.5	6.2	4.5	-	14	9	-	16x2
32 24,000	60	30	23.5	31	-	44	5	M5	M8x1	4.0	10.3	12.4	8.3	7.0	-	11	12	3.5	23x3
40 30,000	70	35	28.5	36	22	53	5	M6	M8x1	5.0	10.3	12.4	8.3	7.0	12	14	12	3.5	28x3
50 38,000	80	40	30.5	41	26	63	5	M6	M8x1	6.0	10.3	13.3	8.3	7.0	12	14	12	3.5	30x4
63 48,000	100	50	38.5	51	34	79	5	M8	M10x1	8.0	12.3	16.1	10.3	8.0	15	15	14	3.5	38x5
80 60,000	117	60	47.5	61	38	96	6	M8	M10x1	10.2	12.3	16.1	10.3	8.0	20	15	14	4.5	47x5

HSK adaptor (in front) art. no. 4586

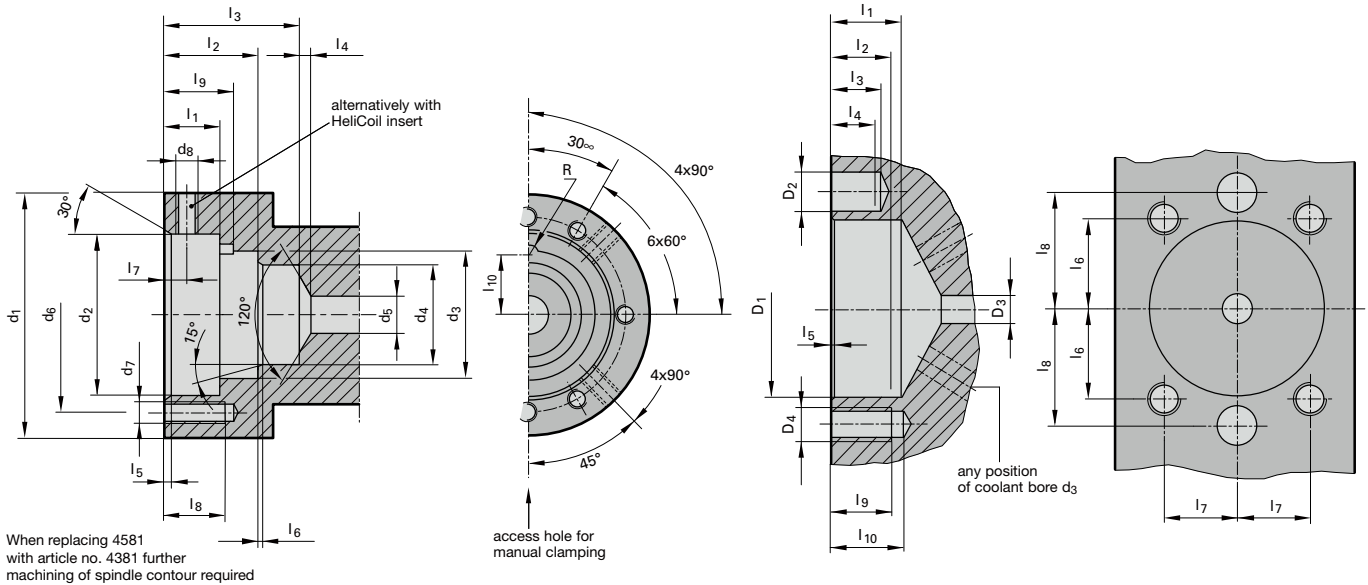
for HSK/Code no.	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	T	O-ring
40 30,000	70	35	28.5	36	22	53	5	M6	M8x1	5.0	10.3	12.4	8.3	7.0	12	14	12	3.5	28x3
50 38,000	80	40	30.5	41	26	63	5	M6	M8x1	6.0	10.3	13.3	8.3	7.0	12	14	12	3.5	30x4
63 48,000	100	50	38.5	51	34	79	5	M8	M10x1	8.0	12.3	16.1	10.3	8.0	15	15	14	3.5	38x5
80 60,000	117	60	47.5	61	38	96	6	M8	M10x1	10.2	12.3	16.1	10.3	8.0	20	15	14	4.5	47x5
100 75,000	140	80	65.0	81	53	119	6	M10	M10x1	12.0	12.3	16.1	10.3	8.0	20	18	14	4.5	45x5

INSTALLATION DIMENSIONS FOR HSK ADAPTOR

Detailed production drawing on request

HSK adaptor (in front) art. no. 4581/4584

HSK adaptor (in front) art. no. 4582



HSK adaptor (in front) art. no. 4581

for HSK/Code no.	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	d ₇	d ₈	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈
25 19,000	45	23	-	-	5	35	M5	M4	6.8	-	-	1.5	1	-	3.5	min.8
32 24,000	55	28	21.12	17	6.4	43.5	M6	M4	6	9.75	16.75	2	1	0.6	3.5	11
40 30,000	63	36	26.4	21	8	51.5	M6	M4	7	11.3	19.9	2.5	1	1	4	12
50 38,000	80	46	33	26	10	65	M8	M5	9	14.7	25.5	3	1.5	1	5	12
63 48,000	100	56	42.5	34	16	81.5	M10	M6	12	17.8	30	3.5	1.5	1	6	16
80 60,000	125	66	52.8	42	16	103	M12	M8	14	22.7	39.8	4	2	1.5	8	16
100 75,000	160	86	66	53	20	130	M16	M10	16	27.4	49	4.5	2	2	10	16

HSK adaptor (in front) art. no. 4584

for HSK/Code no.	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	d ₇	d ₈	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀	R
32 24,000	40	27.0	21.12	17	6.4	32.0	M 3	M 4	8.8	14.80	21.75	2.0	1.0	0.6	3.5	10.0	11.9	10.10	2.0
40 30,000	50	33.5	26.40	21	8.0	40.5	M 4	M 4	11.0	18.85	27.40	2.5	1.0	1.0	4.0	12.0	13.9	12.40	2.0
50 38,000	63	42.0	33.00	26	10.0	52.0	M 5	M 5	15.0	24.75	35.50	3.0	1.5	1.0	5.0	12.0	18.4	15.50	2.5
63 48,000	80	55.0	42.50	34	16.0	66.0	M 6	M 6	17.9	30.35	42.50	3.5	1.5	1.0	6.0	16.0	23.9	20.00	3.0
80 60,000	100	68.0	52.80	42	16.0	82.0	M 8	M 8	24.3	40.25	57.30	4.0	2.0	1.5	8.0	16.0	32.9	24.80	3.5
100 75,000	125	88.0	66.00	53	20.0	106.0	M10	M10	34.4	54.45	76.00	4.5	1.5	2.0	10.0	16.0	42.4	31.40	4.5

HSK adaptor (in front) art. no. 4582

for HSK/Code no.	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀
50 38,000	50	7.95	10	M10	20.55	20	15	11	1	27.44	19.22	33.5	20	25
63 48,000	63	14.00	10	M12	25.00	21	18	16	1	31.70	26.00	41.0	22	26

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