HEINRICH KIPP WERK

CLAMPING TECHNOLOGY

CONTENTS

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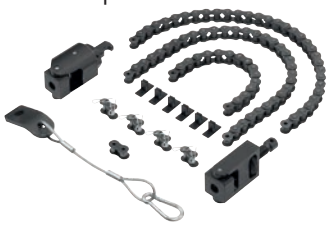

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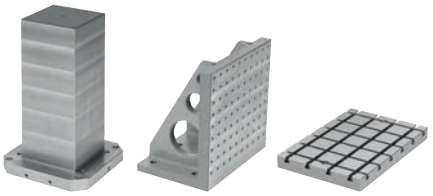

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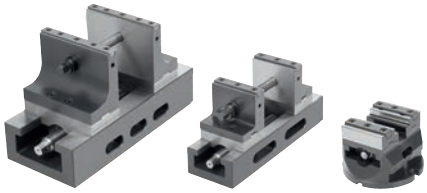

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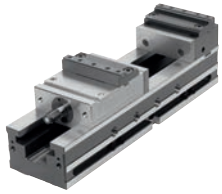

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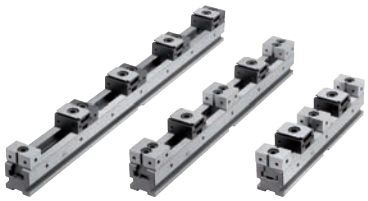

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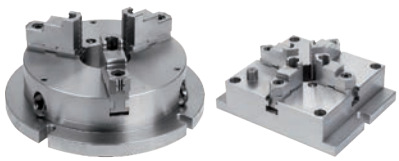

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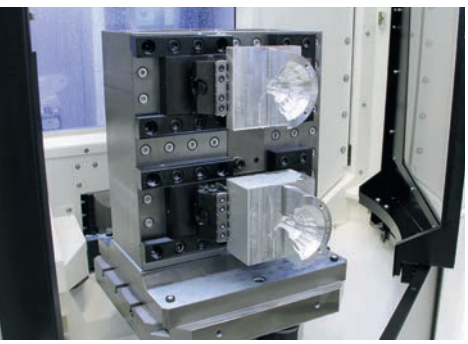


HEINRICH KIPP WERK has been a quality partner to industry for more than 100 years.
We offer a comprehensive product spectrum with in total more than 65,000 elements, 6,000 of these in the field of clamping technology.

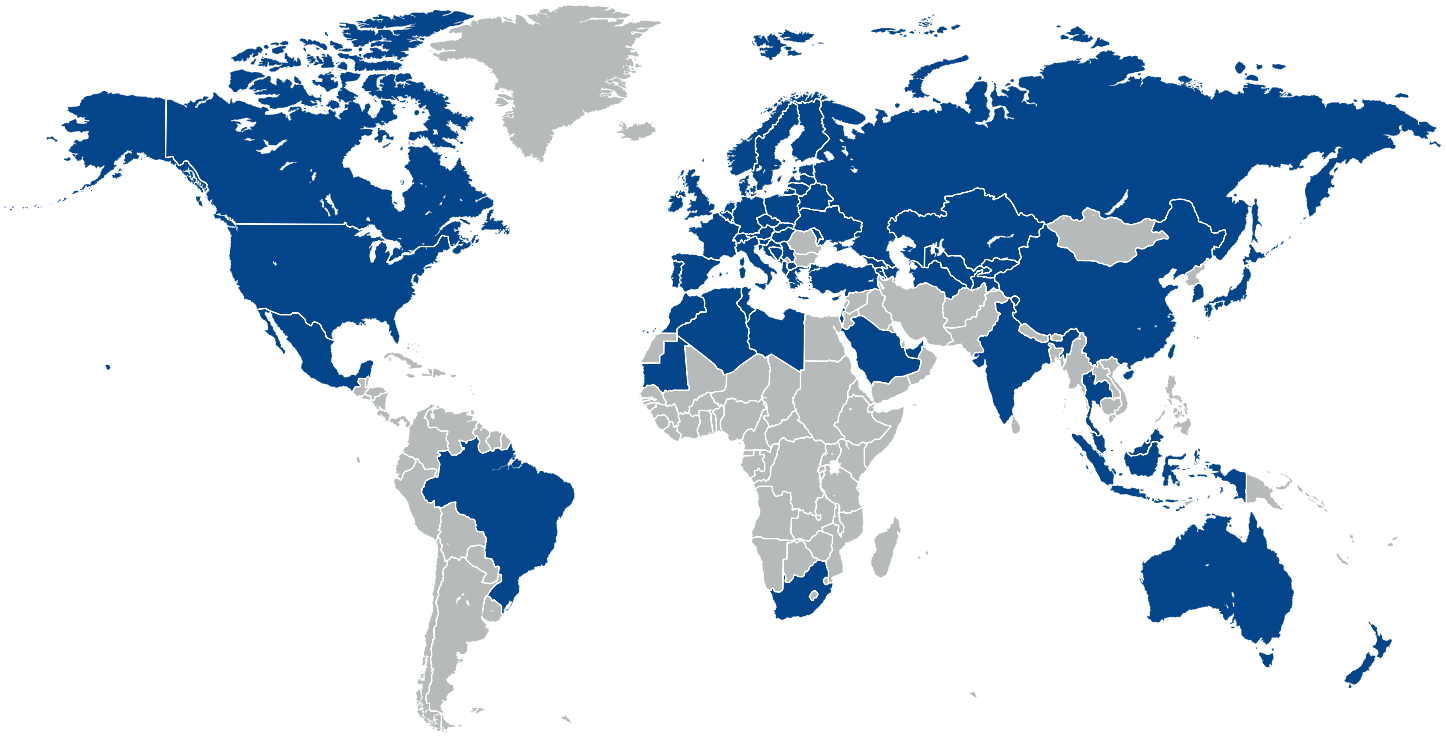
We produce in our own machine shop located in Germany. This guarantees rapid response times and short logistics routes. Customers appreciate our vertical integration and many years of development experience.

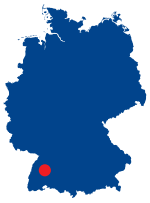
Reliability. Durability. Sustainability.
This is what our owner managed company has stood for from the very beginning.

Nicolas Kipp Heinrich Kipp

LOCATIONS

HEINRICH KIPP WERK is present worldwide with 12 company branches and more than 50 agencies, and so guarantees a high level of delivery capability internationally.
We have a well-developed service network and specialised consultants.





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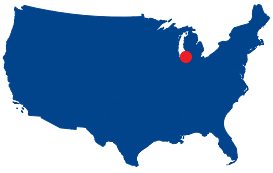

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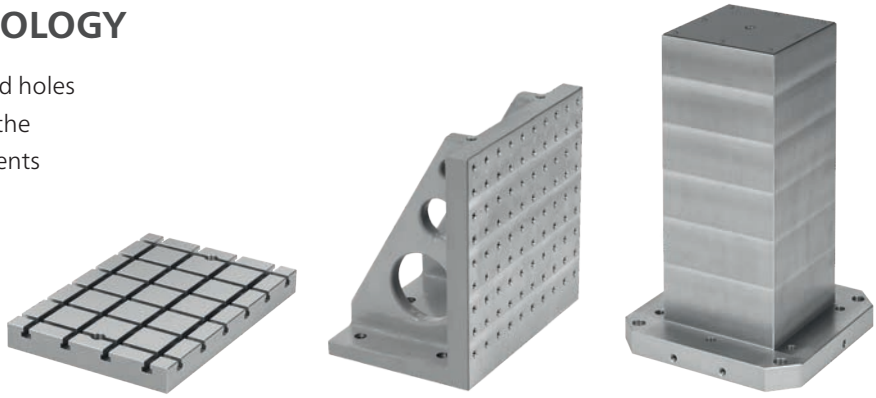
WORKHOLDING TECHNOLOGY

Diverse component program for the universal clamping of workpieces. Logically structured product groups such as clamping elements, positioning elements and clamping accessories for machine tools. Freely combinable and very flexible.

MODULAR CLAMPING TECHNOLOGY

Basic elements for modular workholding over grid holes Standardised plates, towers and angles improve the flexibility and reduce the number of fixture elements in machining to a minimum.

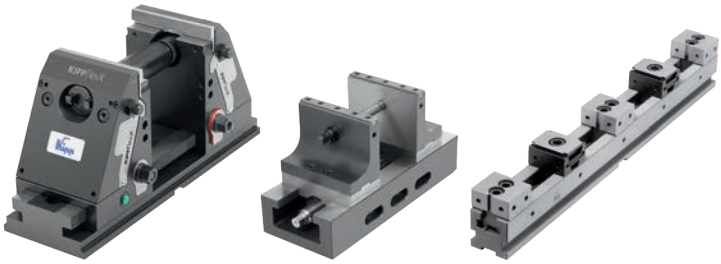


ZERO-POINT CLAMPING TECHNOLOGY

Systems for quick, precise clamping and referencing with the zero-point clamping technology. The 5-axis module clamping system is available for multi-side machining. Other quick-change systems are the mechanical and pneumatic positioning and clamping systems.

VICE CLAMPING TECHNOLOGY

Various vice types. 5-axis clamping systems for 5-sided machining. NC vices for 3-axis milling machines. Multi-clamping systems for large quantities. Centric vices with zero-point and automaton interface.

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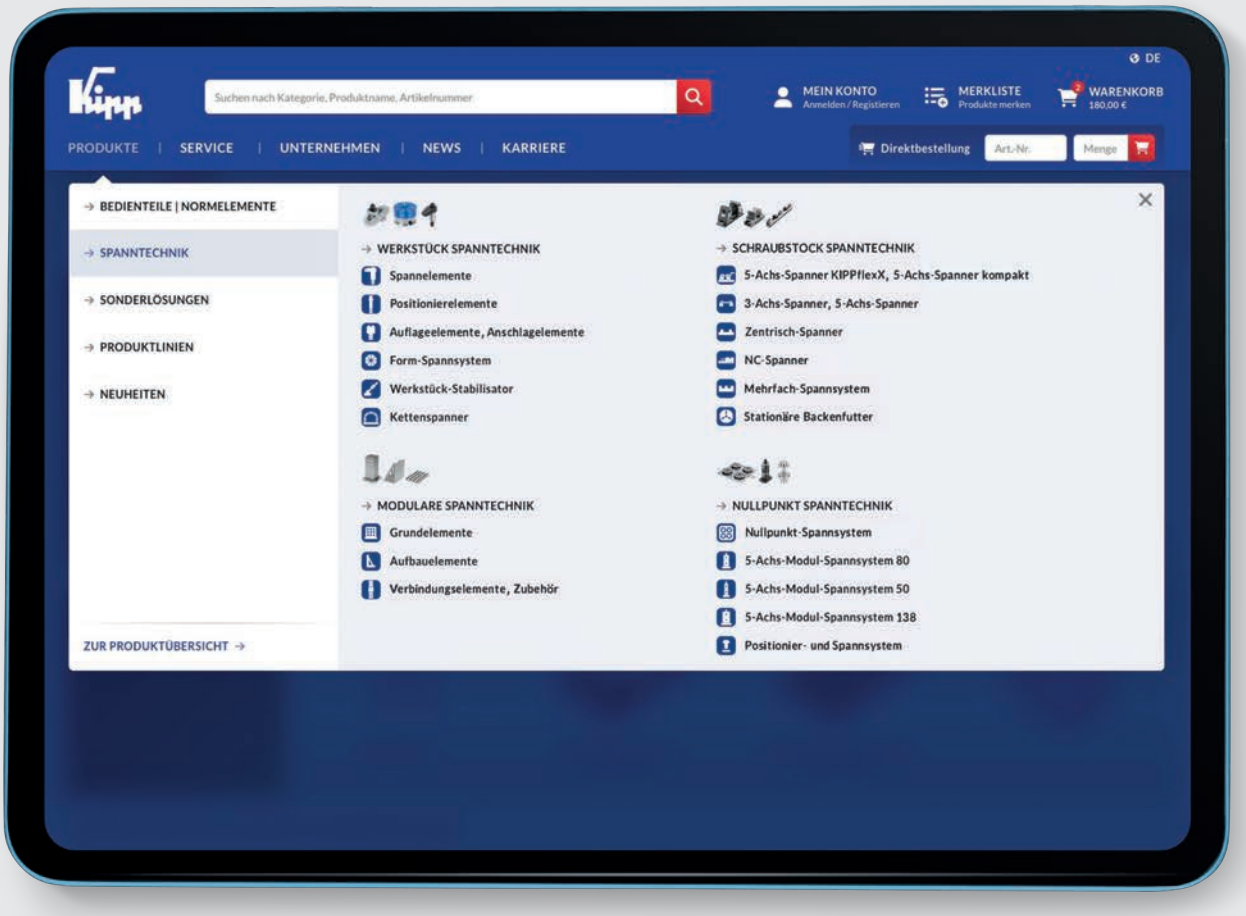

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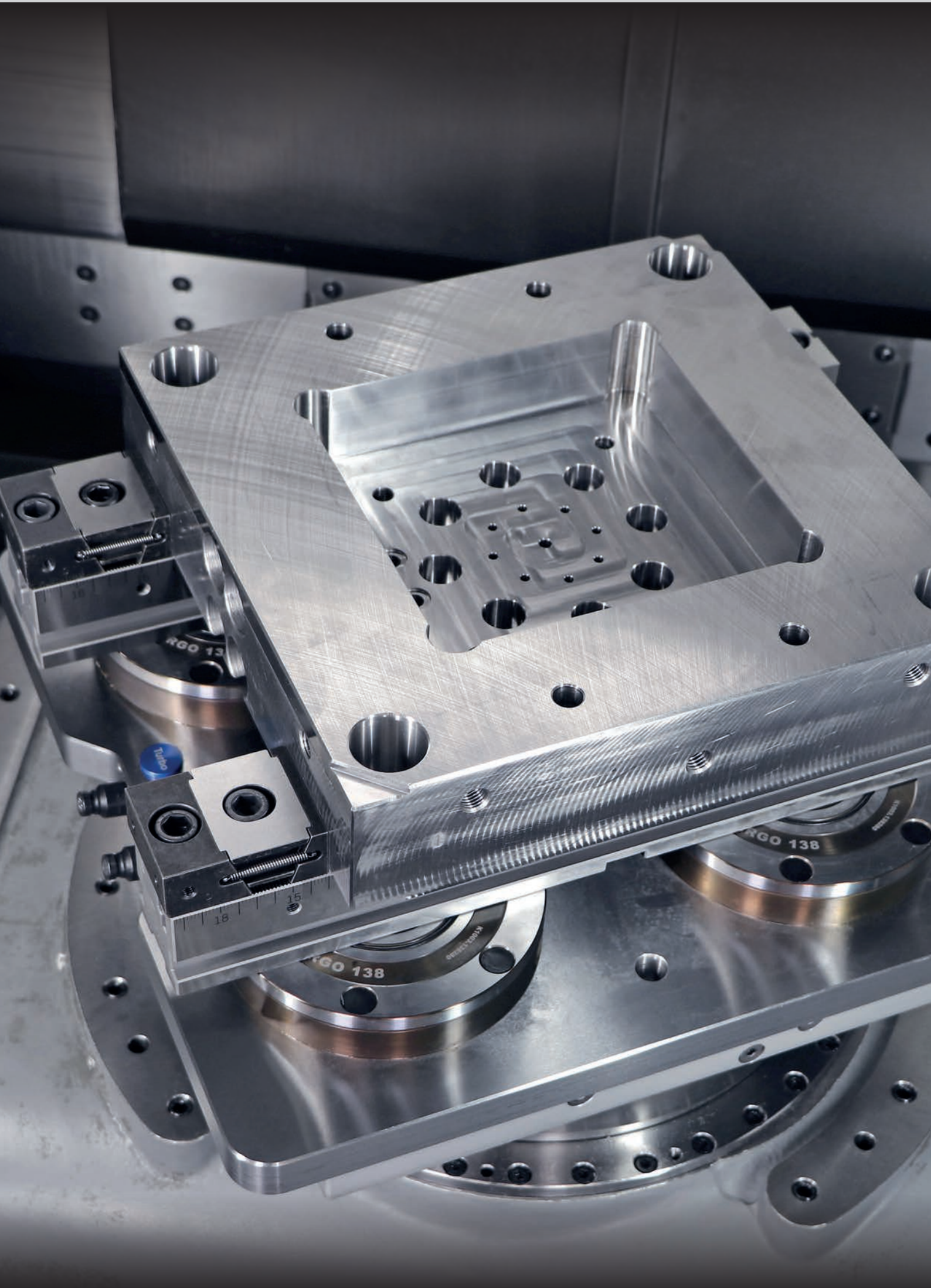
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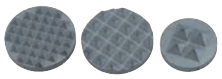

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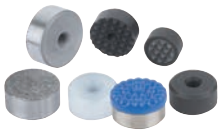

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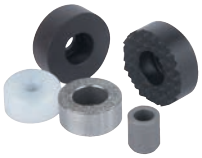

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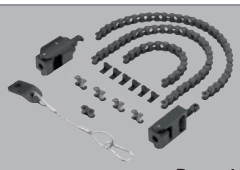

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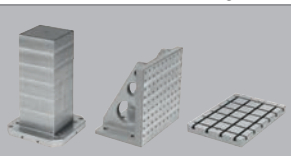

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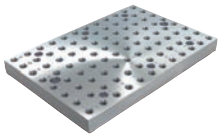

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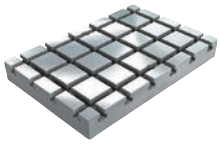

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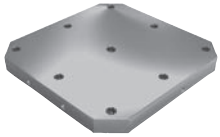

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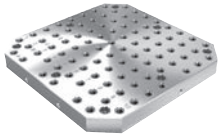

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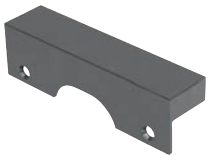

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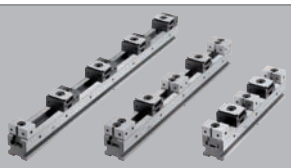
Multi-clamping system



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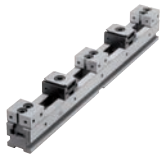

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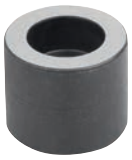

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Clamping units

Clamp straps

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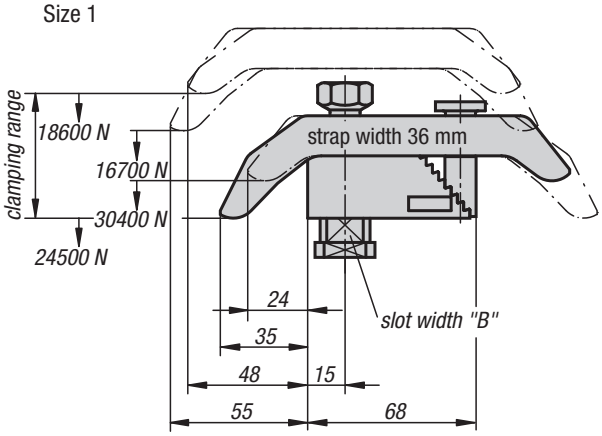
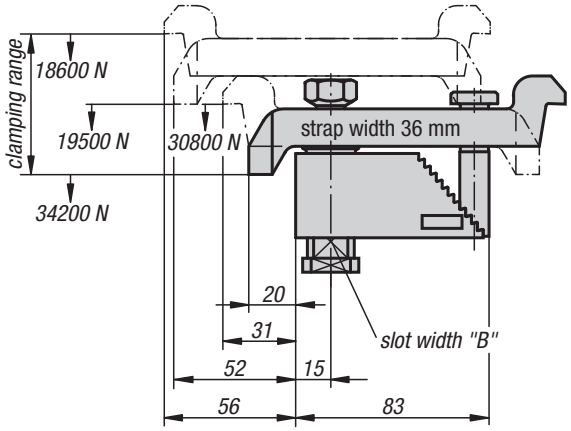
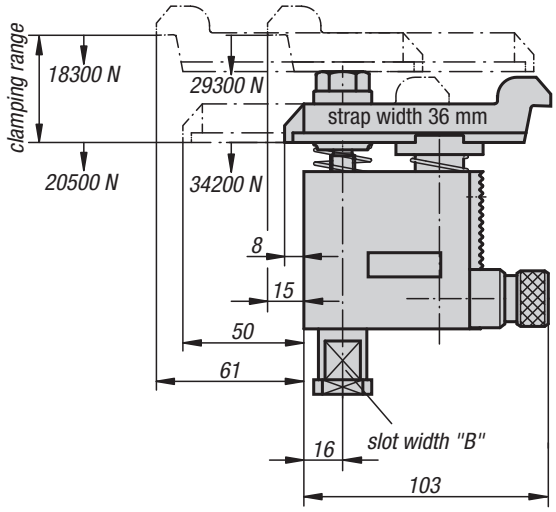


Size 2



Size 3-5

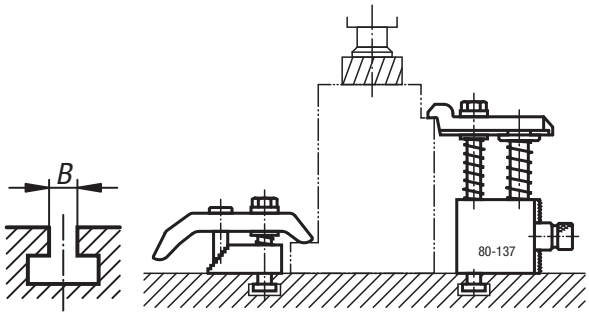


Material:
Base, ductile iron.
Clamp strap and clamping screw carbon steel.

Version:
Black oxidised.

Sample order:
K0004.40X16 (include slot width B)

Note:
These clamp strap modules are universal, flexible clamps constructed from individual components building a compact unit. There are no loose parts which first have to be altered for a clamping operation. The compact design allows these clamps to be placed close to the workpiece enabling the full area of the machine table to be used.

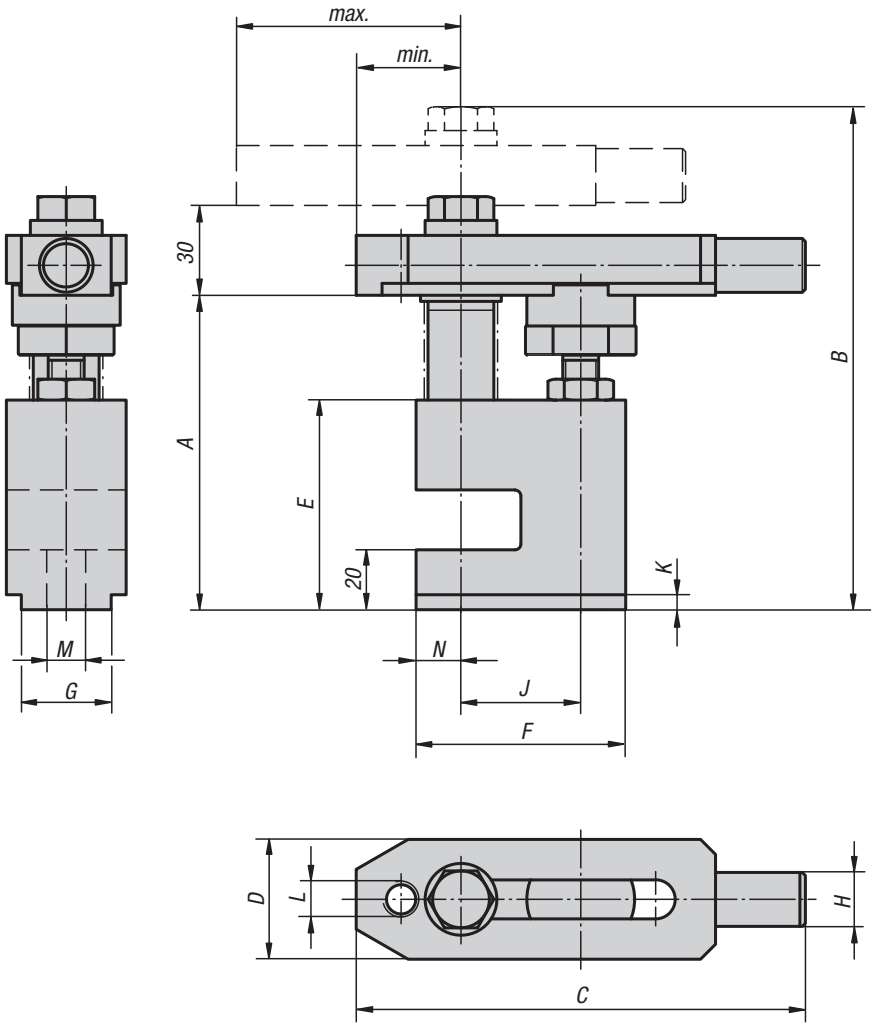


KIPP Clamp straps with adjustment unit

Order No.	Size	Clamp range	Slot width B DIN 650
K0004.10X	1	0-35	12/14/16/18
K0004.20X	2	25-85	12/14/16/18
K0004.30X	3	80-137	12/14/16/18
K0004.40X	4	125-224	12/14/16/18
K0004.50X	5	160-300	12/14/16/18

Clamping units

pin-end strap

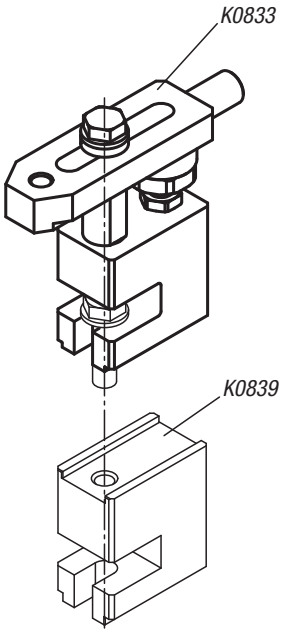


Material:
Carbon steel.

Version:
Body black oxidised.
Clamp strap and bolt tempered and black oxidised.

Sample order:
K0833.12105

Note:
Both ends of the strap can be used for clamping workpieces. The clamps can be combined with other fixture elements, such as K0839, K0821, K0307.

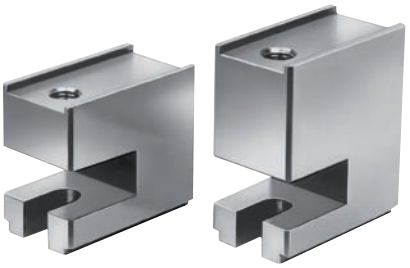


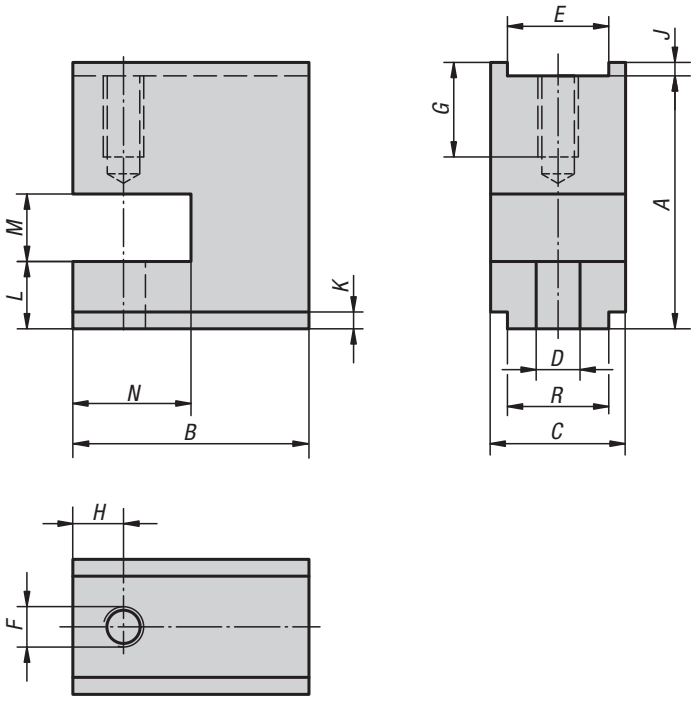
KIPP Clamping units, pin-end strap

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	min.	max.
K0833.12105	105	168	150	40	70	70	30	18	40	5	M12	13	15	35	75
K0833.16110	110	188	190	50	75	90	40	24	50	5	M16	17	20	45	95

Riser blocks

Form P



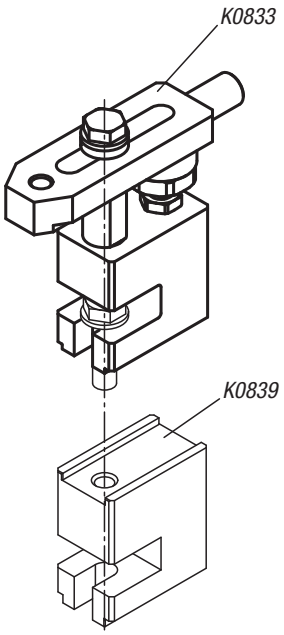


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0839.12075

Note:
These riser blocks Form P are used together with clamping straps to clamp high workpieces.

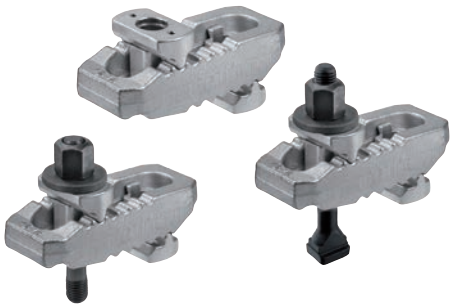


KIPP Riser blocks Form P

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	R
K0839.12075	75	70	40	13	30	M12	24	15	4	5	20	20	35	30
K0839.12100	100	70	40	13	30	M12	24	15	3	5	20	20	35	30
K0839.16075	75	90	50	17	40	M16	30	20	4	5	20	20	45	40
K0839.16100	100	90	50	17	40	M16	30	20	3	5	20	20	45	40

Notes

Clamp strap assemblies



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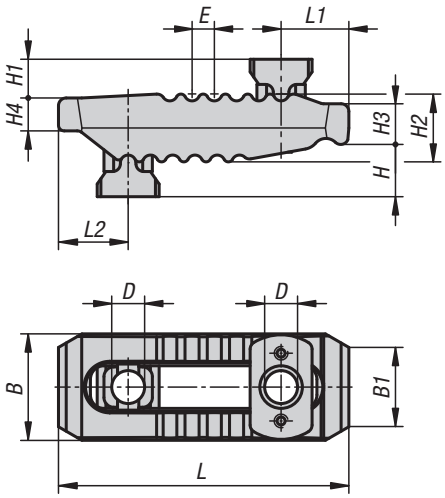

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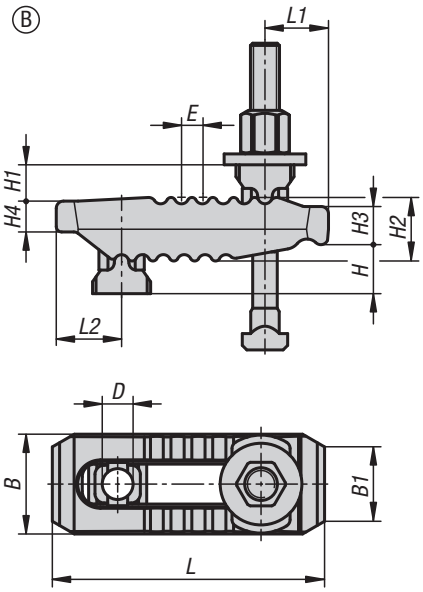

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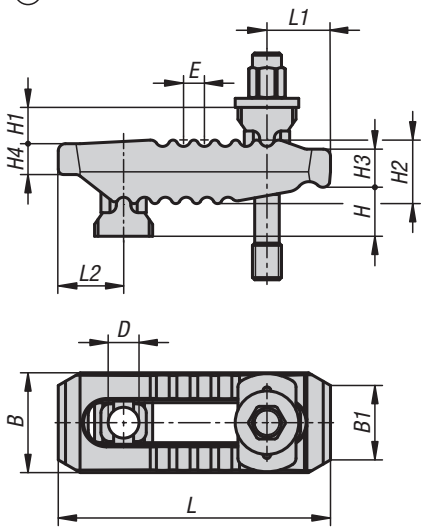


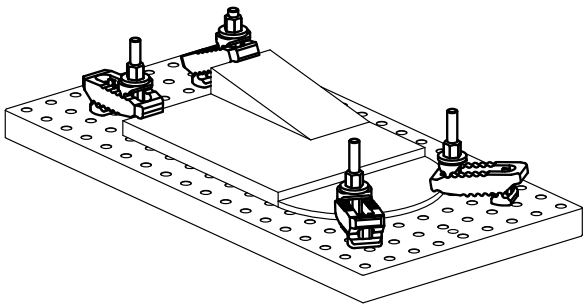
Material:
Steel.

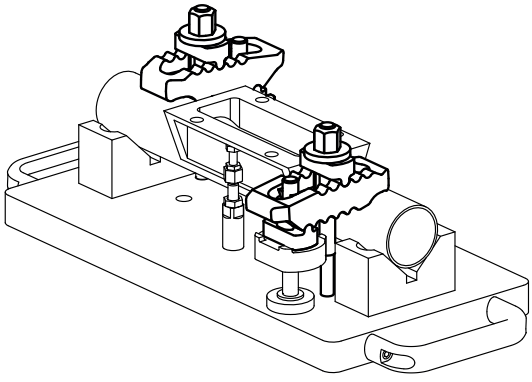
Version:
Form A: Tempered and electro zinc-plated.
Form B: Tempered and electro zinc-plated.
Complete with DIN 787 screw for T-slots, DIN 6340 washer and DIN 6330B nut.
Form C: Tempered and electro zinc-plated.
Complete with DIN 6379 stud, DIN 6340 washer and DIN 6330B nut.

Sample order:
K1165.113115

Note:
These clamp strap assemblies can be quickly and infinitely adapted to the clamping situation. The clamp straps have different heel types both sides enabling the best end to be selected depending on the specific application. These extremely versatile clamp straps are suitable for use by metal cutting or non-cutting machining and also for press and injection-moulding applications.

Accessories:
K1204 Adjustable heel supports





Clamp strap assemblies

KIPP Clamp strap assemblies

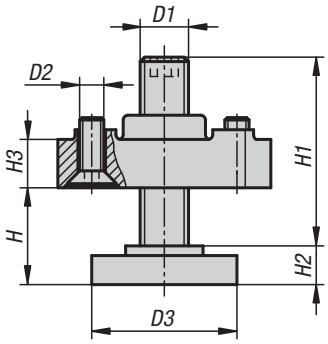
Order No.	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Slot width	Clamping force kN
K1165.113115	A	44	30	13	11	0-55	18	27	17	12	115	25	30	10-12-14	30
K1165.117150	A	55	41	17	12	0-70	20	36	21	17	150	35	36	12-14-16-18	40
K1165.121187	A	62	30	21	14	0-80	30	42	27	20	187	44	44	16-18-20-22	60
K1165.125235	A	70	30	25	17	0-100	31	51	34	24	235	60	47	20-22-24-28	75
K1165.125285	A	73	30	25	17	0-100	35	56	35	24	285	62	51	20-22-24-28	75

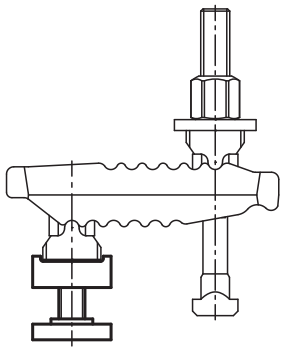
Order No. with t-slot nut	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Slot width	Fastening screw(s)	Clamping force kN
K1165.210115100	B	44	30	13	11	0-40	18	27	17	12	115	25	30	10	M10X100	25
K1165.212115125	B	44	30	13	11	0-55	18	27	17	12	115	25	30	12	M12X125	30
K1165.214115125	B	44	30	13	11	0-55	18	27	17	12	115	25	30	14	M12X125	30
K1165.212150160	B	55	41	17	12	0-70	20	36	21	17	150	35	36	12	M12X160	35
K1165.214150160	B	55	41	17	12	0-70	20	36	21	17	150	35	36	14	M12X160	35
K1165.216150160	B	55	41	17	12	0-70	20	36	21	17	150	35	36	16	M16X160	40
K1165.218150160	B	55	41	17	12	0-70	20	36	21	17	150	35	36	18	M16X160	40
K1165.216187200	B	62	30	21	14	0-80	30	42	27	20	187	44	44	16	M16X200	55
K1165.218187200	B	62	30	21	14	0-80	30	42	27	20	187	44	44	18	M16X200	55
K1165.220187200	B	62	30	21	14	0-80	30	42	27	20	187	44	44	20	M20X200	60
K1165.222187200	B	62	30	21	14	0-80	30	42	27	20	187	44	44	22	M20X200	60
K1165.220235250	B	70	30	25	17	0-100	31	51	34	24	235	60	47	20	M20X250	70
K1165.222235250	B	70	30	25	17	0-100	31	51	34	24	235	60	47	22	M20X250	70
K1165.224235250	B	70	30	25	17	0-100	31	51	34	24	235	60	47	24	M24X250	75
K1165.228235250	B	70	30	25	17	0-100	31	51	34	24	235	60	47	28	M24X250	75

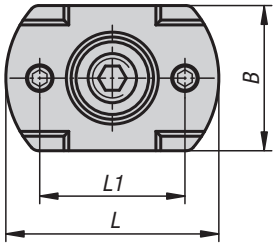
Order No. with stud	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Fastening screw(s)	Clamping force kN
K1165.312115100	C	44	30	13	11	0-30	18	27	17	12	115	25	30	M12X100	30
K1165.312115125	C	44	30	13	11	0-55	18	27	17	12	115	25	30	M12X125	30
K1165.312150125	C	55	41	17	12	0-50	20	36	21	17	150	35	36	M12X125	40
K1165.312150160	C	55	41	17	12	0-70	20	36	21	17	150	35	36	M12X160	40
K1165.316150125	C	55	41	17	12	0-40	20	36	21	17	150	35	36	M16X125	40
K1165.316150160	C	55	41	17	12	0-70	20	36	21	17	150	35	36	M16X160	40
K1165.320187160	C	62	30	21	14	0-40	30	42	27	20	187	44	44	M20X160	60
K1165.320187200	C	62	30	21	14	0-80	30	42	27	20	187	44	44	M20X200	60
K1165.320235200	C	70	30	25	17	0-70	31	51	34	24	235	60	47	M20X200	75
K1165.320235250	C	70	30	25	17	0-100	31	51	34	24	235	60	47	M20X250	75
K1165.324235200	C	70	30	25	17	0-50	31	51	34	24	235	60	47	M24X200	75
K1165.324235250	C	70	30	25	17	0-100	31	51	34	24	235	60	47	M24X250	75

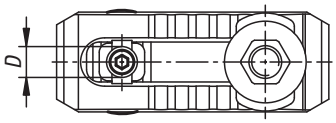
Adjustable heel supports

for clamp strap assembly







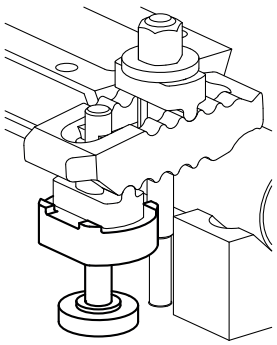


Material:
Carbon steel.

Version:
Body tempered and electro zinc-plated.
Support bolt tempered, grade 8.8.

Sample order:
K1204.1039

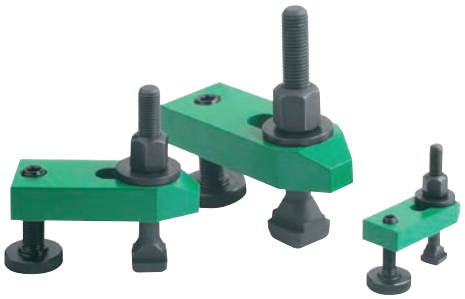
Note:
These adjustable heel supports consist of support plate, support bolt and fastening screws for the strap heel support.
Adjustable heel supports are used to increase the clamping height of the clamp strap assemblies.

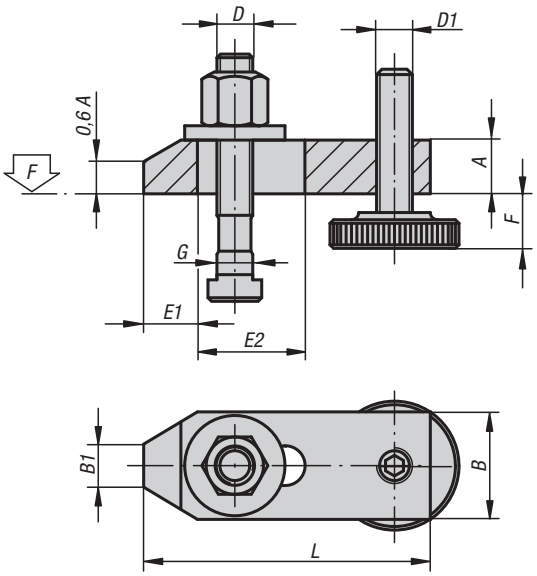


KIPP Adjustable heel supports for clamp strap assembly

Order No.	B	D	D1	D2	D3	H clamping range	H1	H2	H3	L	L1
K1204.1039	30	13	M10	M5	30	8-30	39	8	10	44	30
K1204.1249	42	17	M12	M5	36	10-37	49	10	16	54	35
K1204.1294	42	17	M12	M5	36	10-80	94	10	16	54	35
K1204.1655	50	21	M16	M5	42	13-41	55	13	20	60	40
K1204.1690	50	21	M16	M5	42	13-73	90	13	20	60	40
K1204.2069	50	25	M20	M6	50	16-52	69	16	25	70	50
K1204.20109	50	25	M20	M6	50	16-91	109	16	25	70	50

Clamp strap assemblies





Material:
Carbon steel.
Screws tempered to 8.8.

Version:
Clamp painted. Screws black oxidised.

Sample order:
K0003.1616

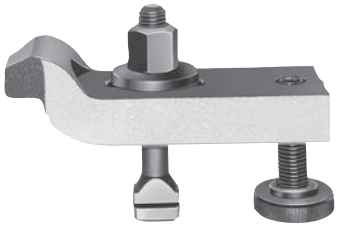
Note:
“F” is dependent on the depth of the DIN 650 slot.

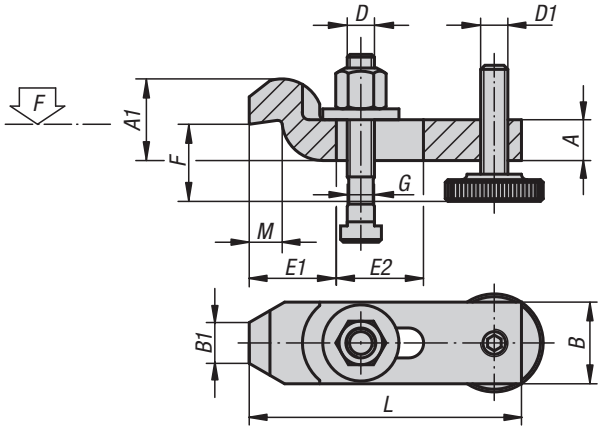
KIPP Clamp strap assemblies

Order No.	L	A	B	B1	E1	E2	F	G for T-slot	D	D1	F kN
K0003.1010	80	15	30	12	15	30	8-32	10	M10x80	M10	13,9
K0003.1212	100	20	40	14	21	40	10-40	12	M12x100	M12	20,2
K0003.1214	100	20	40	14	21	40	10-38	14	M12x100	M12	20,2
K0003.1616	125	25	50	18	26	45	13-49	16	M16x125	M16	37,8
K0003.1618	125	25	50	18	26	45	13-46	18	M16x125	M16	37,8
K0003.2020	160	30	60	22	30	60	16-65	20	M20x160	M20	58,8
K0003.2022	160	30	60	22	30	60	16-65	22	M20x160	M20	58,8

Clamp strap assemblies

goose-neck





Material:
Carbon steel.
Screws tempered to 8.8.

Version:
Straps painted.
Screws black oxidised.

Sample order:
K1450.1616

Note:
“F” is dependent on the depth of the DIN 650 slot.

KIPP Clamp strap assemblies, goose-neck

Order No.	L	A	A1	B	B1	E1	E2	F	G for T-slot	D	D1	M	F kN
K1450.1010	100	15	30	30	15	32	32	22-46	10	M10x80	M10	12	13,9
K1450.1212	125	20	40	40	20	40	40	28-58	12	M12x100	M12	16	20,2
K1450.1214	125	20	40	40	20	40	40	28-56	14	M12x100	M12	16	20,2
K1450.1616	160	25	50	50	25	49	50	36-72	16	M16x125	M16	20	37,8
K1450.1618	160	25	50	50	25	49	50	36-69	18	M16x125	M16	20	37,8
K1450.2020	200	30	60	60	30	55	70	43-92	20	M20x160	M20	24	58,8
K1450.2022	200	30	60	60	30	55	70	43-92	22	M20x160	M20	24	58,8

Clamp straps pivot

strap only or assembly

Material:
Steel.

Version:
Forged, tempered and painted.
Bolts, nuts, washers grade 8.8

Sample order:
K1954.010

Note:
The strap provides instant height adjustment without blocks or shims and requires little space on the machine table. Designed for rugged use and highly suitable for clamping blanking and punching dies.

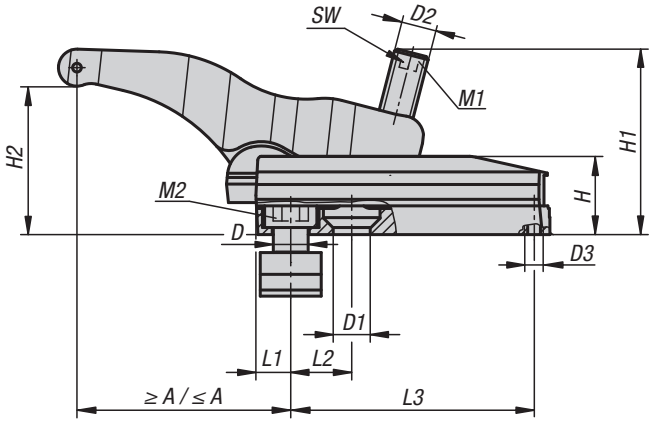
KIPP Form A strap only

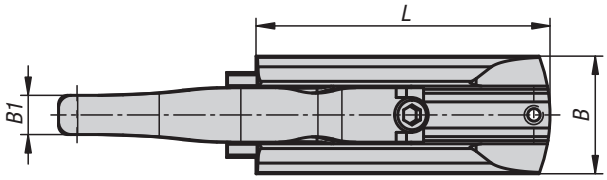
Order No.	Form	D	H	L	L1	L2	L3	L4	L5	Clamping force kN
K1954.010	A	17	75	140	55	60	30	110	50	20,2
K1954.020	A	21	85	175	70	80	40	135	60	37,8

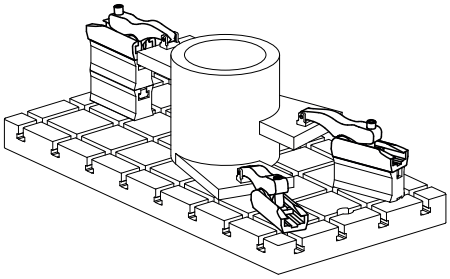
KIPP Form B with T-slot bolt, nut and washer

Order No.	Form	D	D1	E	H	H1	L	L1	L2	L3	L4	L5	Clamping force kN
K1954.030	B	17	M12	12	50	125	140	50	80	30	110	50	20,2
K1954.040	B	17	M12	14	50	125	140	50	80	30	110	50	20,2
K1954.050	B	17	M16	16	75	160	140	55	60	30	110	50	37,8
K1954.060	B	17	M16	18	75	160	140	55	60	30	110	50	37,8
K1954.080	B	21	M16	16	65	160	175	70	95	40	135	60	37,8
K1954.100	B	21	M16	18	65	160	175	70	95	40	135	60	37,8
K1954.120	B	21	M20	22	85	200	175	70	80	40	135	60	58,8

Power clamp







Material:
Carbon steel.

Version:
Forged, black electro zinc-plated.

Sample order:
K1205.112135

Note:
We recommend using a lubricating paste to reduce wear to the adjustment screw.
Risers are available to increase the height of the power clamp.

Supplied with clamping element, support element, DIN 508 slot key and grade 12.9 bolt.

Application:
The height of the clamping arm can be infinitely adjusted using the adjustment screw and the workpiece can then be clamped.

Advantages:
- Very high retaining forces of 22–49 kN.
- Low height.
- Simple element assembly.
- Enables very fast, simple clamping.
- Infinitely adjustable height and length.
- Use in 12-28 mm T-slots or M10, M12, M16, M20 grid systems.
- Thrust pad available in smooth and serrated versions.

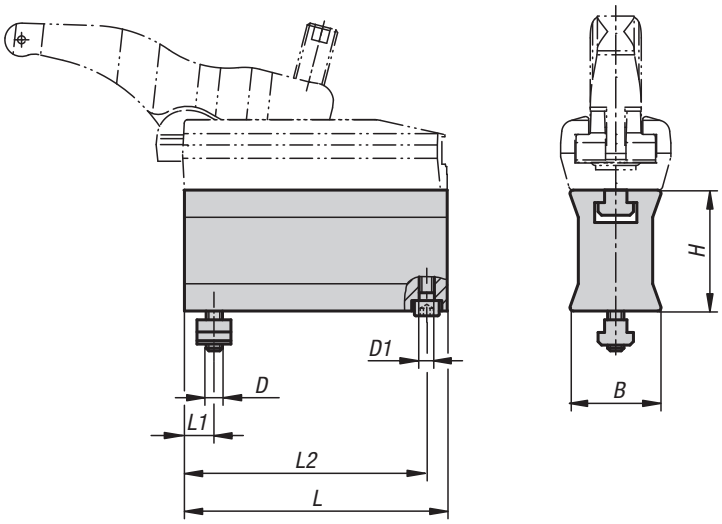
Accessories:
Raiser K1206
Thrust pads K1215

KIPP Power clamp

Order No.	Version 1	H2	A min.	A max.	B	B1	Slot width	D	D1	D2	D3	H	H1	L	L1	L2	L3	SW	Clamping force kN	Tightening torque M1 Nm	Tightening torque M2 Nm
K1205.112135	long	6-68	13	110	54	18	14	M12	13	M16	M8	36	85	135	13	25	115	8	30	100	70
K1205.116135	long	6-68	16	114	54	18	18	M16	17	M16	M8	36	85	135	16	28	115	8	30	100	150
K1205.116155	long	5-80	16	134	60	20	18	M16	17	M20	M8	42	105	155	16	32	131	10	43	220	150
K1205.120175	long	7-88	19	165	75	25	22	M20	21	M24	M10	52	125	175	19	36	146,5	12	49	220	200
K1205.210065	short	5-38	15	50	45	13	12	M10	-	M12	M6	30	58	65	11	-	47,5	6	22	50	35
K1205.212065	short	5-38	15	50	45	13	14	M12	-	M12	M6	30	58	65	11	-	47,5	6	22	50	40
K1205.212095	short	6-50	12	82	54	18	14	M12	13	M16	M8	36	78	95	12	20	76	8	32	120	70
K1205.216110	short	6-50	15	95	60	20	18	M16	17	M20	M8	42	92	110	15	26	87	10	40	150	150

Risers

for power clamp



Material:
Carbon steel.

Version:
Forged, black electro zinc-plated.

Sample order:
K1206.012060

Application:
The raiser is positioned and fastened to the machine table, the power clamp is then screwed onto the raiser. By turning the adjustment screw on the power clamp, the height of the clamping arm can be infinitely adjusted and the workpiece clamped.

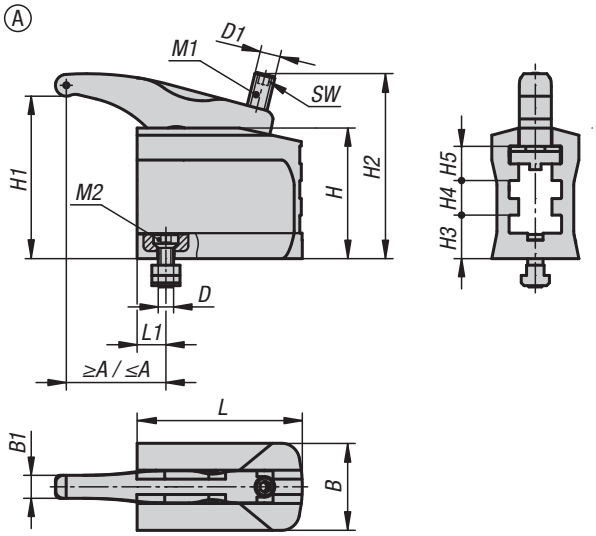
Advantages:
- Other clamping heights can be achieved by mounting multiple risers one on the other.
- Infinite transition between clamping heights.
- Simple element assembly.
- For use in 12-28 mm T-slots or M10, M12, M16, M20 grid systems.

KIPP Raiser for power clamp

Order No.	Version 2	Slot width	B	D	D1	H	L	L1	L2	Clamping force kN
K1206.012060	long	14	45	M12	M8	60	135	12	127	30
K1206.016070	long	18	48	M16	M8	70	155	16	145	43
K1206.020080	long	22	58	M20	M10	80	175	19	165	49
K1206.110035	short	12	36	M10	M6	35	65	12	58,5	22
K1206.112035	short	14	36	M12	M6	35	65	12	58,5	22
K1206.112060	short	14	44,5	M12	M8	60	95	12	88	32
K1206.116070	short	18	47,5	M16	M8	70	110	16	100	40

Power clamp 3 stage

Ⓐ



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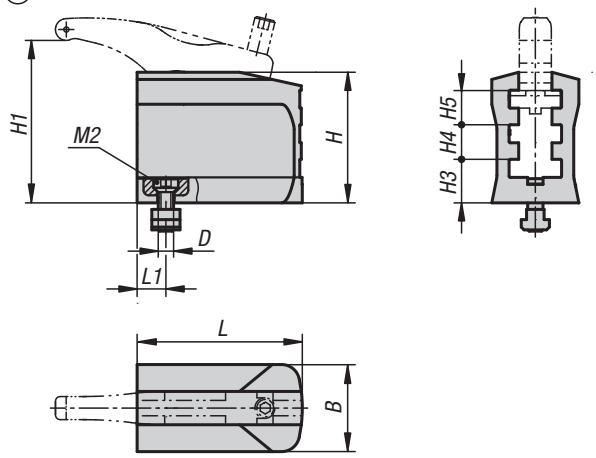


Material:
Carbon steel.

Version:
Forged, black electro zinc-plated.

Sample order:
K1664.1121301

Application:
The height of the clamping arm can be infinitely adjusted using the adjustment screw and the workpiece can then be clamped.

Assembly:
1. Position the support element on the machine table and fasten using the recommended torque.
2. Bring the clamping arm into the required position.
3. Clamp the workpiece by tightening the set screw.

Advantages:
- Very high retaining forces of 22–49 kN.
- Simple element assembly.
- Enables very fast, simple clamping.
- Infinitely adjustable height and length.
- Use in 14-28 mm T-slots or M12, M16, M20 grid systems.
- Thrust pad available in smooth and serrated versions.

Supplied with:
Form A:
- Clamping unit
- 3 stage support element
- Fastening set

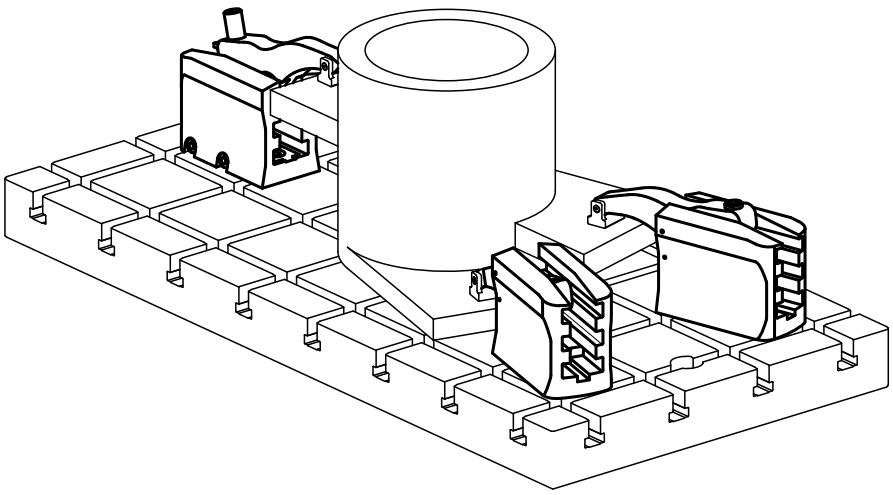
Form B:
- 3 stage support element
- Fastening set

Accessories:
Raiser K1206
Thrust pads K1215

KIPP Power clamp 3 stage

Order No.	Version 1	Form	Form-Type	H1	A min.	A max.	B	B1	Slot width	D	D1
K1664.2120651	short	A	with clamping arm	9-74	30	58	52	13	14	M12	M12
K1664.1121301	long	A	with clamping arm	13-129	37	106	68	18	14	M12	M16
K1664.1161501	long	A	with clamping arm	16-147	48	144	75	20	18	M16	M20
K1664.1201701	long	A	with clamping arm	16-169	68	172	85	25	22	M20	M24
K1664.2120650	short	B	without clamping arm	9-74	-	-	52	-	14	M12	-
K1664.1121300	long	B	without clamping arm	13-129	-	-	68	-	14	M12	-
K1664.1161500	long	B	without clamping arm	16-147	-	-	75	-	18	M16	-
K1664.1201700	long	B	without clamping arm	16-169	-	-	85	-	22	M20	-

Power clamp 3 stage

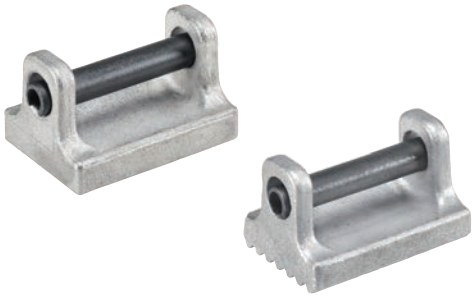


KIPP Power clamp 3 stage

Order No.	Version 1	Form	H	H2	H3	H4	H5	L	L1	SW	Clamping force kN	Tightening torque M1 Nm	Tightening torque M2 Nm
K1664.2120651	short	A	67	98	25	16	16	65	14,5	6	22	55	40
K1664.1121301	long	A	101	146	34	27	27	130	22,5	8	30	100	70
K1664.1161501	long	A	116	175	43	29	29	150	25	10	43	200	150
K1664.1201701	long	A	140	207	52	34	34	170	29	12	49	220	200
K1664.2120650	short	B	67	-	25	16	16	65	14,5	-	22	-	40
K1664.1121300	long	B	101	-	34	27	27	130	22,5	-	30	-	70
K1664.1161500	long	B	116	-	43	29	29	150	25	-	43	-	150
K1664.1201700	long	B	140	-	52	34	34	170	29	-	49	-	200

Thrust pads

for power clamp



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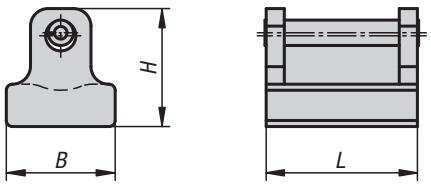

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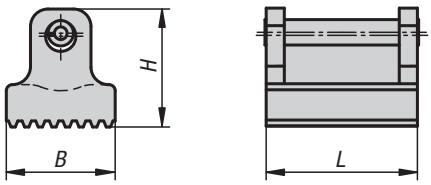
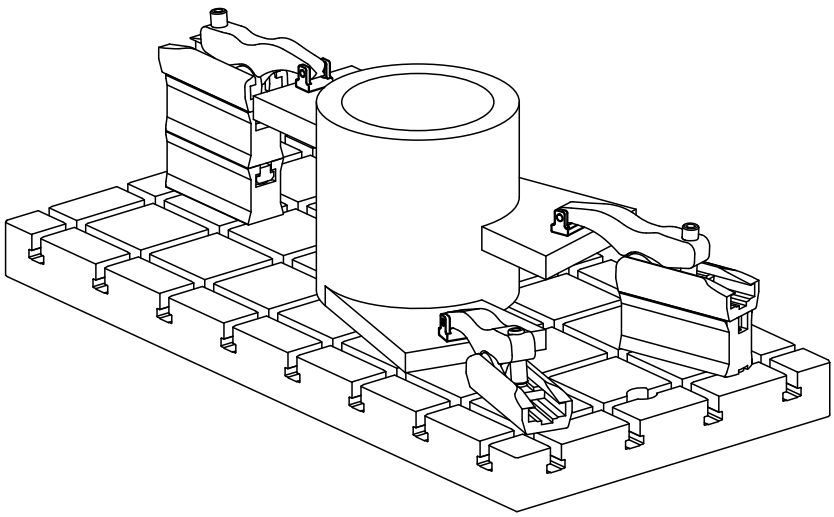


Material:
Stainless steel

Sample order:
K1215.025

Note:
Power clamps can be fitted with serrated or smooth thrust pads.

Accessories:
Power clamp K1205
3-stage power clamp K1664



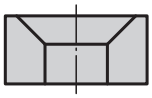
KIPP Thrust pads for power clamp

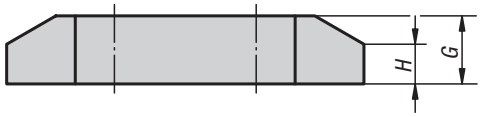
Order No. Form A smooth	Order No. Form B serrated	B	H	L
K1215.019	K1215.119	12	14	19
K1215.025	K1215.125	18	19,5	25
K1215.030	K1215.130	20	24	30
K1215.036	K1215.136	25	28	36

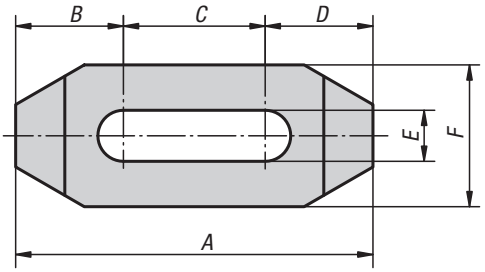
Notes

Clamp straps

Clamp straps



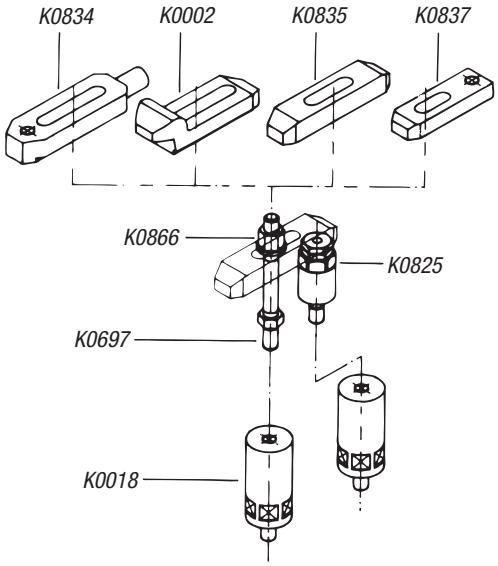




Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0835.08063

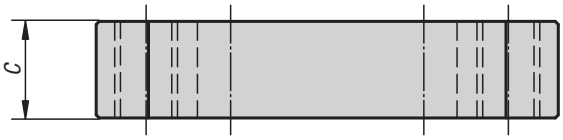


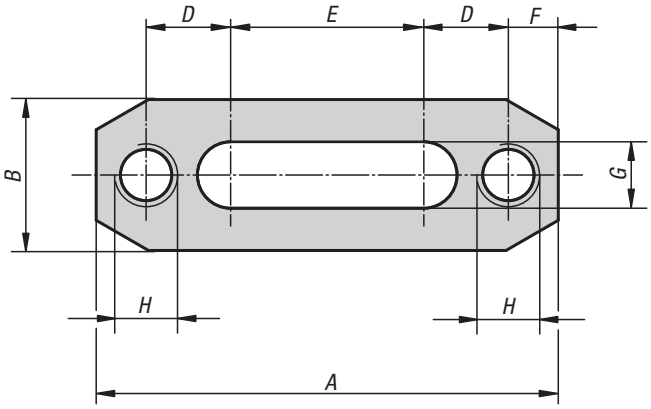
KIPP Clamp straps

Order No.	A	B	C	D	E	F	G	H
K0835.08063	63	19	25	19	9	25	12	7
K0835.08080	80	24	32	24	9	25	12	7
K0835.08100	100	30	40	30	9	25	16	10
K0835.10063	63	19	25	19	11	25	12	7
K0835.10080	80	24	32	24	11	25	16	10
K0835.10100	100	30	40	30	11	25	16	10
K0835.10125	125	40	45	40	11	32	19	13
K0835.10160	160	55	50	55	11	32	19	13
K0835.12063	63	19	25	19	13	32	16	10
K0835.12080	80	24	32	24	13	32	16	10
K0835.12100	100	30	40	30	13	32	19	13
K0835.12125	125	40	45	40	13	32	19	13
K0835.12160	160	55	50	55	13	32	25	15
K0835.16080	80	27,5	25	27,5	17	32	16	10
K0835.16100	100	34	32	34	17	38	19	13
K0835.16125	125	42,5	40	42,5	17	38	19	13
K0835.16160	160	55	50	55	17	38	25	15
K0835.20100	100	34	32	34	21	38	19	13
K0835.20125	125	42,5	40	42,5	21	38	25	15
K0835.20160	160	55	50	55	21	38	25	15
K0835.20200	200	68,5	63	68,5	21	50	25	15

Clamp straps

tapped both ends





Material:
Carbon steel 1.0503.

Version:
Tempered and black oxidised.

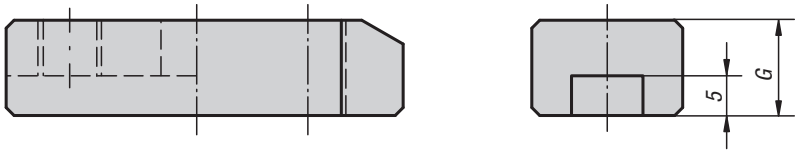
Sample order:
K0836.08063

KIPP Clamp straps, tapped both ends

Order No.	A	B	C	D	E	F	G	H	Clamping force N	Tightening torque max. Nm
K0836.08063	63	25	12	12	25	7	9	M8	6900	22
K0836.08080	80	25	12	17	32	7	9	M8	6900	22
K0836.10080	80	25	16	14	32	10	11	M10	11300	45
K0836.10100	100	25	16	20	40	10	11	M10	11300	45
K0836.10125	125	25	16	30	45	10	11	M10	11300	45
K0836.12100	100	32	19	20	40	10	13	M12	16700	80
K0836.12125	125	32	19	30	45	10	13	M12	16700	80
K0836.12160	160	32	22	45	50	10	13	M12	16700	80
K0836.16125	125	38	19	30,5	40	12	17	M16	18000	115
K0836.16160	160	38	22	43	50	12	17	M16	18000	115
K0836.16200	200	38	25	58	60	12	17	M16	20200	129
K0836.20125	125	38	22	27,5	40	15	21	M20	19700	157
K0836.20160	160	38	22	40	50	15	21	M20	19700	157
K0836.20200	200	50	25	55	60	15	21	M20	22900	183

Clamp straps

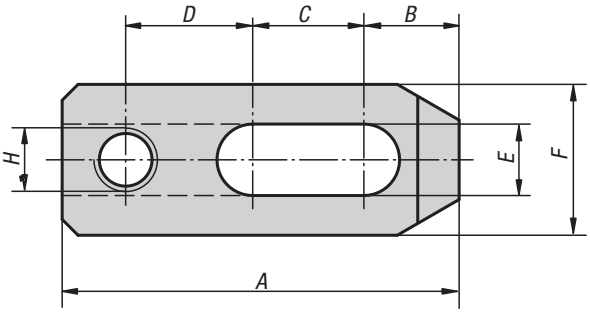
tapped heel



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0837.08040

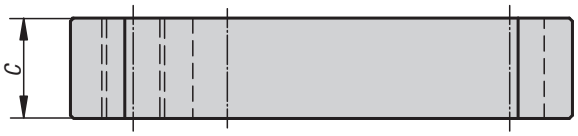


KIPP Clamp straps, tapped heel

Order No.	A	B	C	D	E	F	G	H
K0837.08040	40	10	6	16	9	19	12	M8
K0837.08050	50	12	14	16	9	19	12	M8
K0837.08063	63	12	27	16	9	19	12	M8
K0837.10050	50	12	8	20	11	25	12	M10
K0837.10063	63	15	18	20	11	25	12	M10
K0837.10080	80	15	32	23	11	25	16	M10
K0837.10100	100	15	40	35	11	25	16	M10
K0837.10125	125	15	50	50	11	25	16	M10
K0837.12063	63	14	14	24	13	32	16	M12
K0837.12080	80	20	25	24	13	32	16	M12
K0837.12100	100	20	40	29	13	32	19	M12
K0837.12125	125	20	50	44	13	32	19	M12
K0837.12160	160	20	60	69	13	32	19	M12
K0837.16080	80	18	17	30	17	38	19	M16
K0837.16100	100	25	30	30	17	38	25	M16
K0837.16125	125	25	45	40	17	38	25	M16
K0837.16160	160	25	65	55	17	38	25	M16
K0837.20160	160	32	60	52	21	50	25	M20
K0837.20200	200	32	80	72	21	50	25	M20

Clamp straps

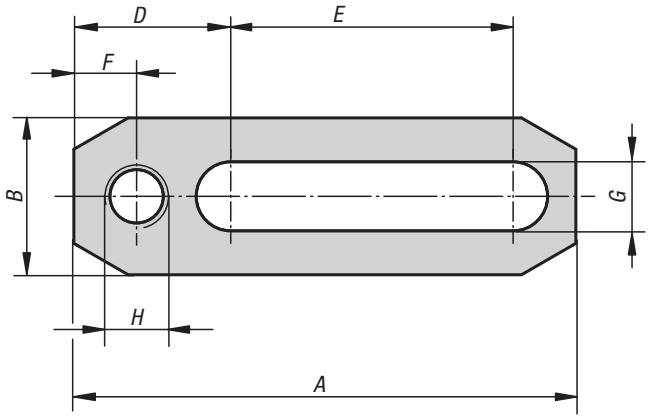
tapped heel

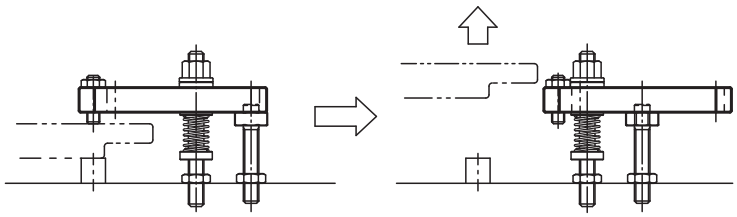


Material:
Carbon steel 1.0503.

Version:
Tempered and black oxidised.

Sample order:
K0838.08063



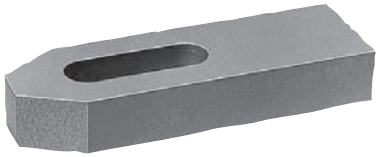


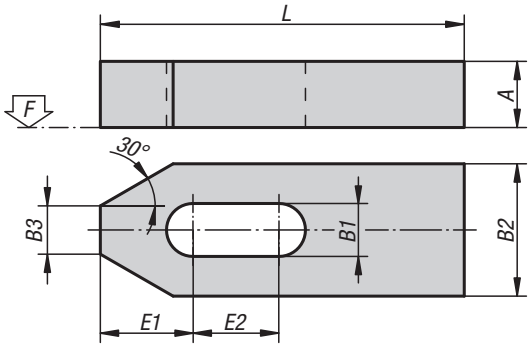
KIPP Clamp straps, tapped heel

Order No.	A	B	C	D	E	F	G	H	Clamping force N	Tightening torque max. Nm
K0838.08063	63	19	12	19	36	7	9	M8	3200-8000	17
K0838.08080	80	19	12	19	53	7	9	M8	3500-8600	17
K0838.10080	80	25	16	25	45	10	11	M10	6800-16900	45
K0838.10100	100	25	16	25	65	10	11	M10	7300-18300	45
K0838.10125	125	25	16	25	90	10	11	M10	7700-19300	45
K0838.12100	100	32	19	28	60	10	13	M12	10200-25600	80
K0838.12125	125	32	19	28	85	10	13	M12	11000-27500	80
K0838.12160	160	32	19	28	120	10	13	M12	11600-29000	80
K0838.16125	125	38	25	36	73	12	17	M16	12100-30300	129
K0838.16160	160	38	25	36	108	12	17	M16	13200-33000	129
K0838.16200	200	38	25	36	148	12	17	M16	13900-34700	129
K0838.20160	160	50	25	45	90	15	21	M20	15000-36000	183
K0838.20200	200	50	32	45	130	15	21	M20	16000-37000	183
K0838.20250	250	50	32	45	180	15	21	M20	17000-38000	183

Clamp straps

similar to DIN 6314 straight, steel or aluminium



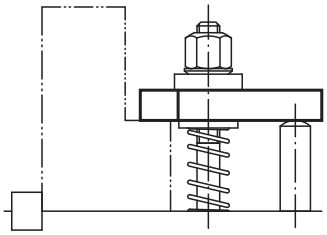


Material:
Carbon steel or EN AW-7022.

Version:
Steel painted.
Aluminium bright.

Sample order:
K1516.16

Note:
When using spherical washers use the wide series K0729 Form G.

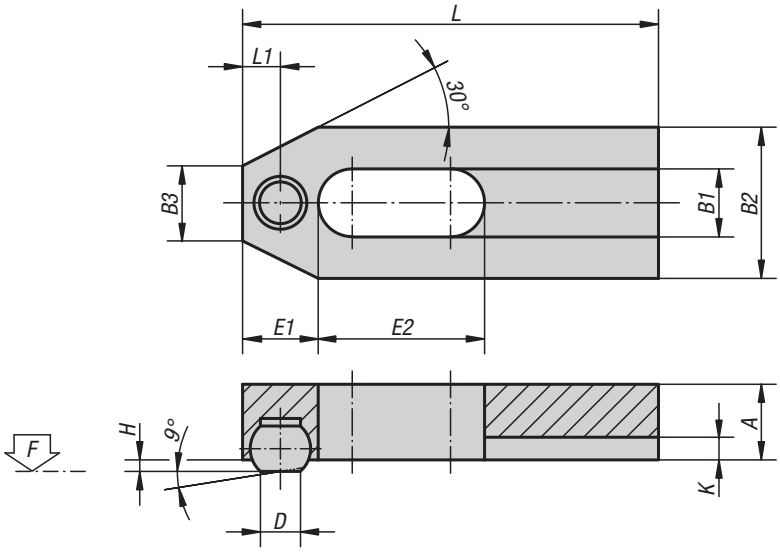


KIPP Clamp straps, similar to DIN 6314 straight, steel or aluminium

Order No. high carbon steel	Order No. aluminium	L	A	B1	B2	B3	E1	E2	F kN	for screw
K1516.06	**K1516.206**	50	10	7	20	8	13,5	13	4,82	M6
K1516.08	**K1516.208**	60	12	9	25	10	14,5	13	8,77	M8
K1516.10	**K1516.210**	80	15	11	30	12	20,5	19	13,9	M10
K1516.12	**K1516.212**	100	20	14	40	14	28	26	20,2	M12/M14
K1516.14	**K1516.214**	125	20	14	40	14	28	36	20,2	M12/M14
K1516.16	**K1516.216**	125	25	18	50	18	35	27	37,8	M16/M18
K1516.18	**K1516.218**	160	25	18	50	18	35	47	37,8	M16/M18
K1516.20	**K1516.220**	160	30	22	60	22	41	38	58,8	M20/M22
K1516.201	**K1516.2201**	200	30	22	60	22	41	58	58,8	M20/M22
K1516.24	**K1516.224**	200	30	26	70	26	48	54	84,7	M24
K1516.241	**K1516.2241**	250	35	26	70	26	48	79	84,7	M24
K1516.30	**K1516.230**	250	40	34	80	34	62	66	135	M30/M32
K1516.301	**K1516.2301**	315	50	34	80	34	62	96	135	M30/M32

Clamp straps

with flattened ball

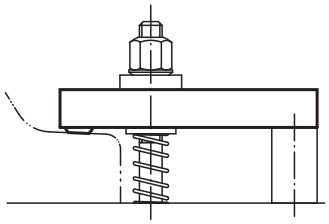


Material:
Straps carbon steel.
Balls roller bearing steel.

Version:
Strap black oxidised.
Ball hardened, bright.

Sample order:
K1949.10

Note:
When using spherical washers K0729 use Form G.
Ball secured against rotation.

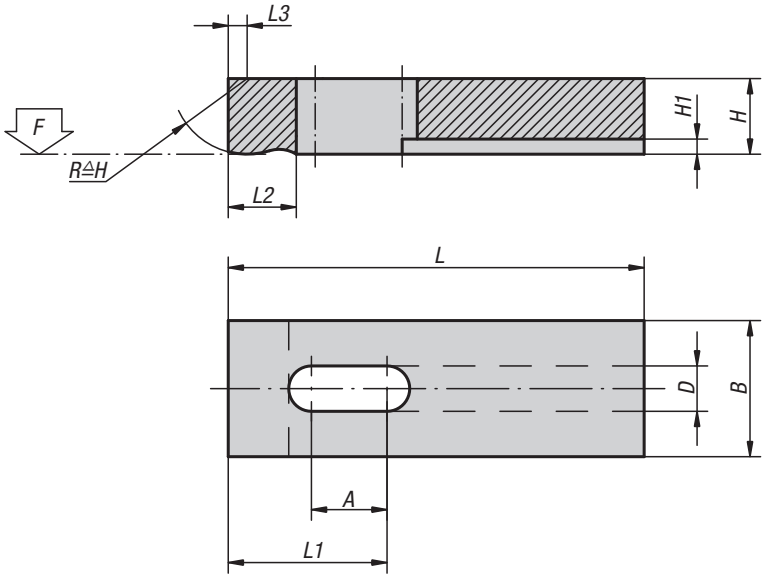


KIPP Clamp straps with flattened ball

Order No.	L	L1	A	B1	B2	B3	D	H	K	Ball Ø	E1	E2	F kN	for screw
K1949.06	50	5	10	7	20	8	5,5	1,6	2,5	8,5	10	20	4,82	M6
K1949.08	60	6,5	12	9	25	10	7,2	2	3	10	13	22	8,77	M8
K1949.10	80	7,5	15	11	30	12	8,6	2,7	3,5	12	15	30	13,9	M10
K1949.12	125	10,5	20	13	40	14	10,5	3,5	4	16	21	50	20,2	M12

Clamp straps

slotted heel

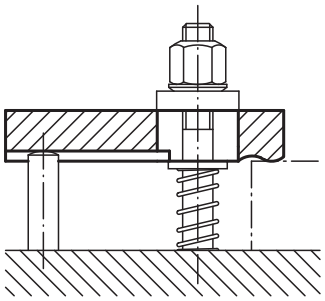


Material:
Carbon steel 1.1191

Version:
Black oxidised.

Sample order:
K0001.101

Note:
For suitable supports and adjustable rest pads, see K0305 and K0306.

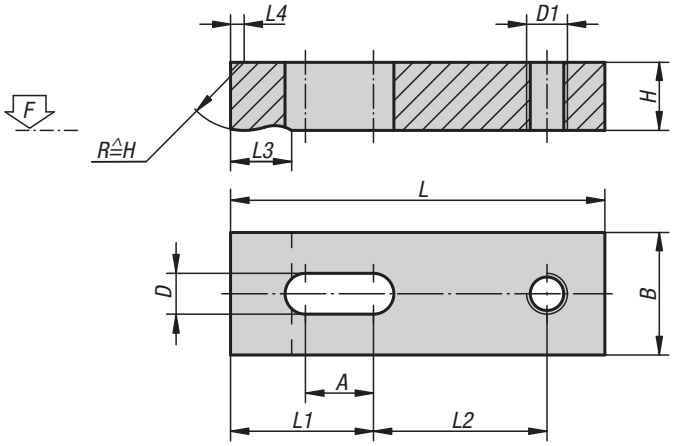


KIPP Clamp straps, slotted heel

Order No.	A	B	D	H	H1	L	L1	L2	L3	F kN
K0001.05	8	12	5,5	8	3	32	14	8	1,2	3,42
K0001.06	10	16	7	10	3	40	17	10	1,6	4,82
K0001.08	12	20	9	12	4	50	22	12	2	8,77
K0001.10	16	25	11	16	4,5	63	28	16	2,5	13,9
K0001.12	20	32	14	20	5	80	35	20	3	20,2
K0001.14	25	40	16	25	6	100	44	25	4	27,6
K0001.16	42	50	18	30	6	160	73	32	5	37,8
K0001.20	52	60	22	30	8	200	92	40	6	58,8
K0001.051	13	12	5,5	8	3	50	23	8	1,2	3,42
K0001.061	17	16	7	10	3	63	29	10	1,6	4,82
K0001.081	21	20	9	12	4	80	37	12	2	8,77
K0001.101	26	25	11	16	4,5	100	46	16	2,5	13,9
K0001.121	33	32	14	20	5	125	58	20	3	20,2
K0001.141	42	40	16	30	6	160	74	25	4	27,6

Clamp straps

tapped-heel

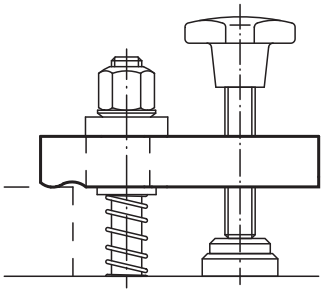


Material:
Carbon steel 1.1191

Version:
Black oxidised.

Sample order:
K1948.10

Note:
When using spherical washers use the wide series K0729 Form G.



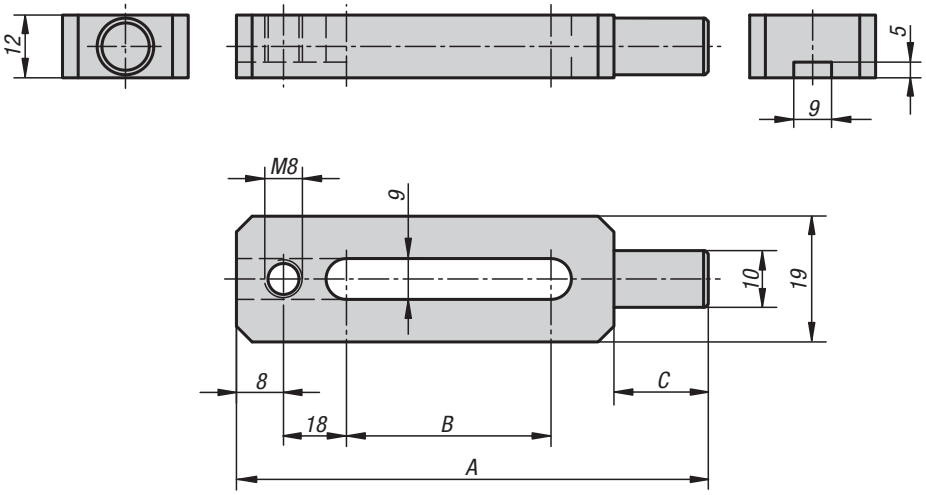
KIPP Clamp strap assemblies

Order No.	L	L1	L2	L3	L4	B	H	D	D1	A	F kN
K1948.05	40	18	18	8	1,2	12	8	5,5	M6	10	3,42
K1948.06	50	22	23	10	1,6	16	10	7	M6	12	4,82
K1948.08	63	28	29	12	2	20	12	9	M8	16	8,77
K1948.10	80	36	36	16	2,5	25	16	11	M10	20	13,9
K1948.12	100	45	45	20	3	32	20	14	M12	25	20,2
K1948.14	125	57	56	25	4	40	25	16	M14	32	27,6
K1948.16	160	72	72	32	5	50	30	18	M16	40	37,8
K1948.20	200	90	90	40	6	60	30	22	M20	50	58,8

Clamp straps

pin-end

Ⓐ



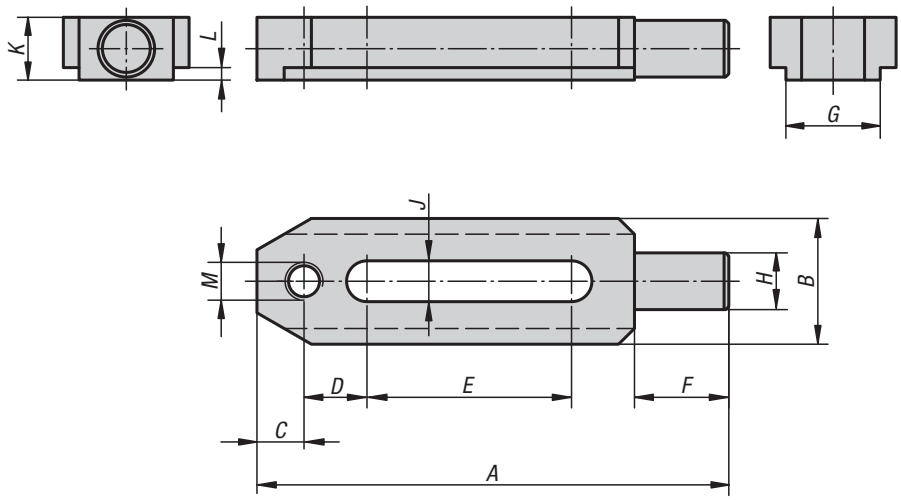
Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0834.08063

Note:
Pin-end straps can be used in conjunction with other fixture elements, such as K0839, K0821, K0307.

Ⓑ



KIPP Pin-end straps Form A

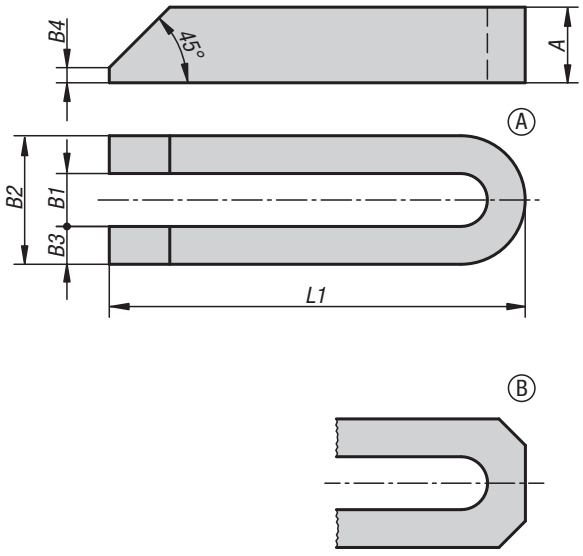
Order No.	A	B	C
K0834.08063	63	15	14
K0834.08075	75	20	20

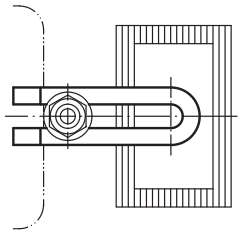
KIPP Pin-end straps Form B

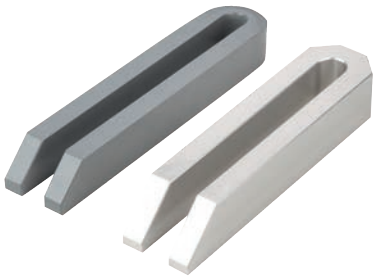
Order No.	A	B	C	D	E	F	G	H	J	K	L	M
K0834.12150	150	40	15	20	65	30	30	18	13	20	4	M12
K0834.16190	190	50	20	25	80	36	40	24	18	28	5	M16

Clamp straps open U

DIN 6315, steel or aluminium







Material:
Carbon steel or EN AW-7022.

Version:
Steel painted.
Aluminium bright.

Sample order:
K1952.06

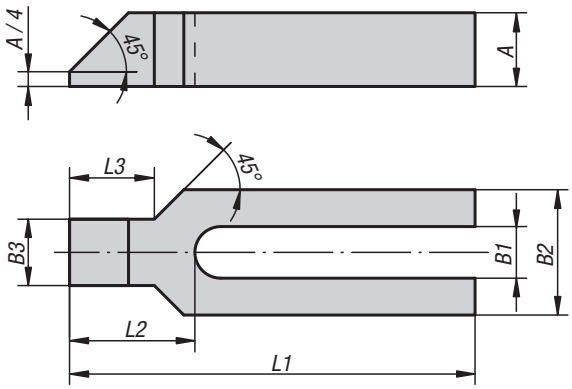
Note:
When using spherical washers use the wide series K0729 Form G.

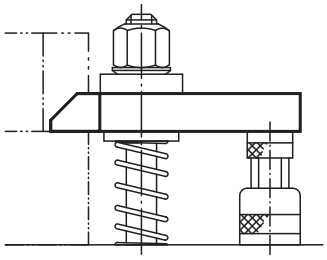
KIPP Clamp straps open-U DIN 6315, steel or aluminium

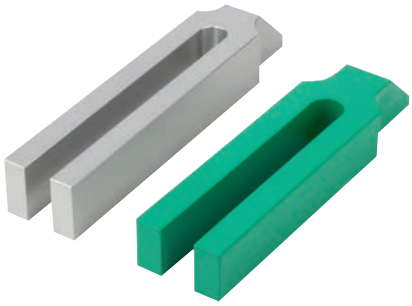
Order No.	Main material	Form	L1	A	B1	B2	B3	B4	for screw
K1952.06	high carbon steel	A	60	12	6,6	18	6	3	M6
K1952.08	high carbon steel	A	80	15	9	25	8	4	M8
K1952.10	high carbon steel	A	100	20	11	31	10	5	M10
K1952.12	high carbon steel	A	125	25	14	38	12	6	M12/M14
K1952.121	high carbon steel	A	160	25	14	38	12	6	M12/M14
K1952.122	high carbon steel	A	200	25	14	38	12	6	M12/M14
K1952.16	high carbon steel	A	160	30	18	48	15	8	M16/M18
K1952.161	high carbon steel	A	200	30	18	48	15	8	M16/M18
K1952.162	high carbon steel	A	250	40	18	48	15	10	M16/M18
K1952.20	high carbon steel	A	200	40	22	52	15	10	M20/M22
K1952.201	high carbon steel	A	250	40	22	62	20	10	M20/M22
K1952.202	high carbon steel	A	315	40	22	62	20	10	M20/M22
K1952.24	high carbon steel	A	200	40	26	66	20	10	M24
K1952.241	high carbon steel	A	250	40	26	66	20	10	M24
K1952.242	high carbon steel	A	315	40	26	66	20	10	M24
K1952.301	high carbon steel	A	250	50	33	73	20	12	M30/M32
K1952.30	high carbon steel	A	315	50	33	73	20	12	M30/M32
K1952.302	high carbon steel	A	400	50	33	73	20	12	M30/M32
K1952.40	high carbon steel	A	400	60	40	100	30	12	M36
K1952.401	high carbon steel	A	600	60	40	100	30	12	M36
K1952.206	aluminium	B	60	12	7	19	6	3	M6
K1952.208	aluminium	B	80	15	9	25	8	4	M8
K1952.210	aluminium	B	100	20	11	31	10	5	M10
K1952.212	aluminium	B	125	25	14	38	12	6	M12/M14
K1952.2121	aluminium	B	160	28	14	38	12	6	M12/M14
K1952.216	aluminium	B	160	30	18	48	15	8	M16/M18
K1952.2161	aluminium	B	200	36	18	48	15	8	M16/M18
K1952.220	aluminium	B	200	40	22	52	15	10	M20/M22
K1952.2201	aluminium	B	250	40	22	62	20	10	M20/M22
K1952.224	aluminium	B	200	40	26	66	20	10	M24
K1952.2241	aluminium	B	250	40	26	66	20	10	M24
K1952.230	aluminium	B	315	50	34	74	20	12	M30/M32

Clamp straps open U

flat pin, steel or aluminium







Material:
Carbon steel or EN AW-7022.

Version:
Steel painted.
Aluminium bright.

Sample order:
K1953.16

Note:
When using spherical washers use the wide series K0729 Form G.

KIPP Clamp straps open-U with flat pin, steel or aluminium

Order No.	Main material	L1	A	B1	B2	B3	L2	L3	for screw
K1953.08	high carbon steel	100	15	9	30	16	32	18	M8
K1953.10	high carbon steel	125	20	11	30	20	38	24	M10
K1953.12	high carbon steel	160	25	14	40	24	47	30	M12/M14
K1953.121	high carbon steel	200	25	14	40	24	47	30	M12/M14
K1953.16	high carbon steel	200	30	18	50	28	57	36	M16/M18
K1953.161	high carbon steel	250	30	18	50	28	57	36	M16/M18
K1953.20	high carbon steel	250	40	22	60	35	68	45	M20/M22
K1953.201	high carbon steel	315	40	22	60	35	68	45	M20/M22
K1953.24	high carbon steel	250	40	26	70	43	83	56	M24
K1953.241	high carbon steel	315	40	26	70	43	83	56	M24
K1953.30	high carbon steel	315	50	34	80	50	88	56	M30/M32
K1953.301	high carbon steel	400	50	34	80	50	88	56	M30/M32
K1953.208	aluminium	100	15	9	30	16	32	18	M8
K1953.210	aluminium	125	20	11	30	20	38	24	M10
K1953.212	aluminium	160	28	14	40	24	47	30	M12/M14
K1953.2121	aluminium	200	36	14	40	24	47	30	M12/M14
K1953.216	aluminium	200	36	18	50	28	57	36	M16/M18
K1953.2161	aluminium	250	40	18	50	28	57	36	M16/M18
K1953.220	aluminium	250	40	22	60	35	68	45	M20/M22
K1953.2201	aluminium	315	48	22	60	35	68	45	M20/M22
K1953.224	aluminium	250	40	26	70	43	83	56	M24
K1953.2241	aluminium	315	48	26	70	43	83	56	M24
K1953.230	aluminium	315	50	34	80	50	88	56	M30/M32
K1953.2301	aluminium	400	50	34	80	50	88	56	M30/M32

Clamp straps

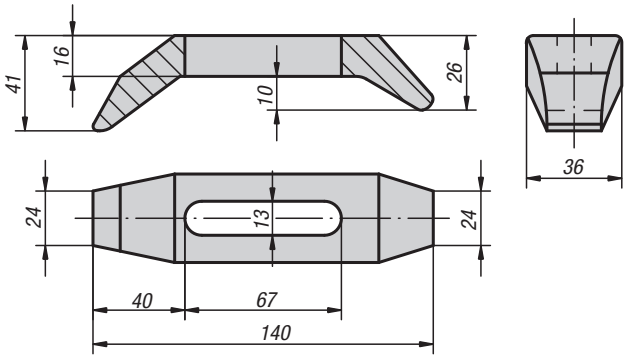
goose-neck

Material:
Carbon steel 1.7225

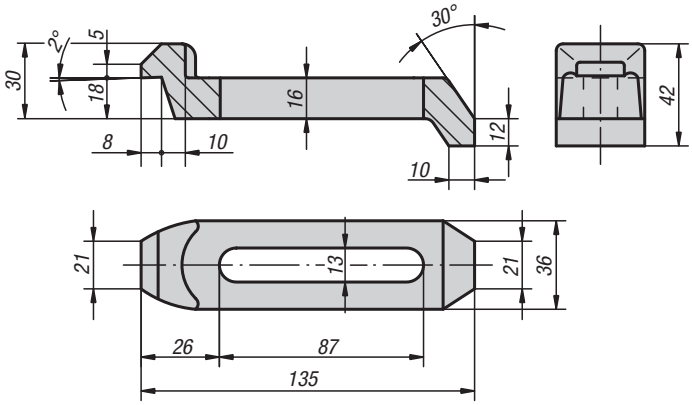
Version:
Tempered to 1000 N/mm², black oxidised.

Sample order:
K0002.10

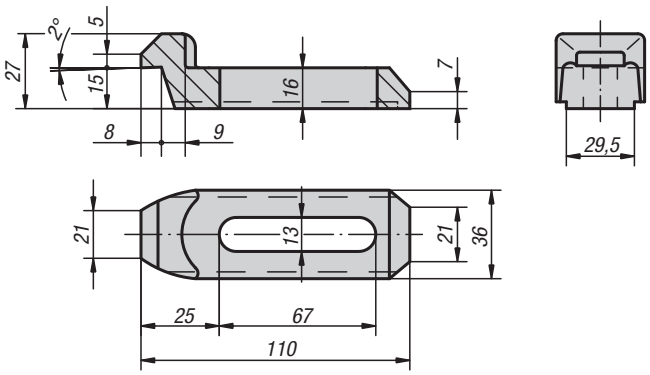
K0002.01 (0,5 kg)



K0002.05 (0,48 kg)



K0002.10 (0,35 kg)

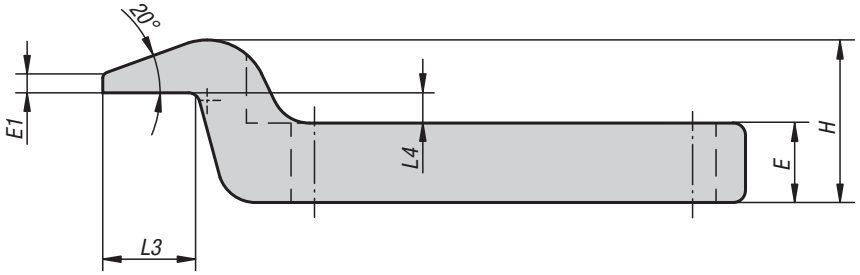


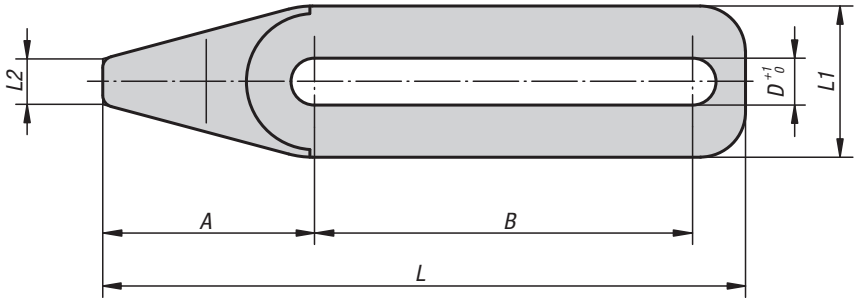
KIPP Clamp straps goose-neck

Order No.	Item
K0002.01	Clamp Strap
K0002.05	Clamp Strap
K0002.10	Clamp Strap

Clamp straps gooseneck

narrow, steel





Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K1950.10010

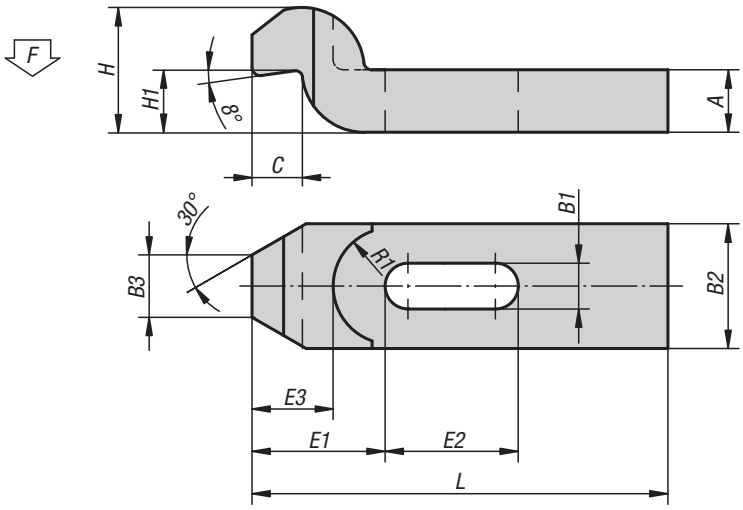
Note:
The flat gooseneck allows lower steps on the workpiece to be machined or clamped. When using spherical washers K0729 use Form G.

KIPP Goose-neck clamp straps, steel

Order No.	A	B	D	E	E1	H	L	L1	L2	L3	L4	Clamping force kN
K1950.06005	28	32	6,2	7,5	2,5	18,5	67	20	6	12,5	4	4,82
K1950.08005	28	32	8,2	7,5	2,5	18,5	67	20	6	12,5	4	8,77
K1950.10005	45	50	10,2	12	4	30	105	30	10	20	6	13,9
K1950.10010	45	80	10,2	17	4	35	135	30	10	20	6	13,9
K1950.12005	45	50	12,2	12	4	30	105	30	10	20	6	20,2
K1950.12010	45	80	12,2	17	4	35	135	30	10	20	6	20,2
K1950.16005	72	80	16,2	19	7	48	168	48	16	32	9,5	37,8
K1950.20005	72	80	20,2	19	7	48	168	48	16	32	9,5	58,8
K1950.20010	72	128	20,2	27	7	56	216	48	16	32	9,5	58,8

Clamp straps gooseneck

DIN 6316 wide, steel or aluminium

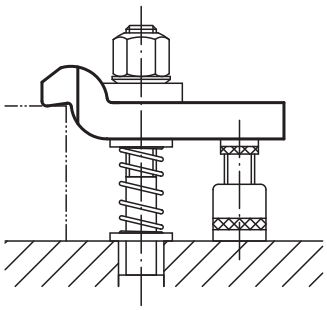


Material:
Carbon steel or EN AW-7022.

Version:
Steel painted.
Aluminium bright.

Sample order:
K1951.10

Note:
When using spherical washers use the wide series K0729 Form G.

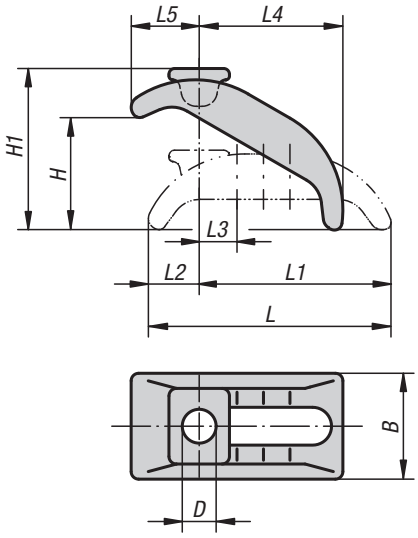


KIPP Goose-neck clamp straps DIN 6316, steel or aluminium

Order No. high carbon steel	Order No. aluminium	L	B1	B2	B3	H max.	H1	A	C	E1	E2	E3	R1	F kN	for screw
K1951.06	**K1951.206**	60	7	20	10	20	9	10	8	20	20	14	11	4,82	M6
K1951.08	**K1951.208**	80	9	25	12	24	11	12	9	25	25	17	14	8,77	M8
K1951.10	**K1951.210**	100	11	30	15	30	14	15	12	32	32	22	18	13,9	M10
K1951.12	**K1951.212**	125	14	40	20	40	18	20	16	40	40	28	20	20,2	M12/M14
K1951.16	**K1951.216**	125	18	50	25	46	23	25	20	49	40	38	25	37,8	M16/M18
K1951.161	**K1951.2161**	160	18	50	25	46	23	25	20	49	50	38	25	37,8	M16/M18
K1951.20	**K1951.220**	160	22	60	30	60	28	30	24	55	55	40	28	58,8	M20/M22
K1951.201	**K1951.2201**	200	22	60	30	60	28	30	24	55	70	40	28	58,8	M20/M22
K1951.24	**K1951.224**	200	26	70	35	70	32	35	28	72	60	54	34	84,7	M24
K1951.241	**K1951.2241**	250	26	70	35	70	32	35	28	72	80	54	34	84,7	M24
K1951.30	**K1951.230**	250	34	80	40	80	37	40	40	91	80	72	40	135	M30/M32
K1951.301	**K1951.2301**	315	34	80	40	100	56	50	40	91	100	72	40	135	M30/M32

Clamp straps pivot

steel



Material:
Carbon steel.

Version:
Blue electro zinc-plated.

Sample order:
K1956.16

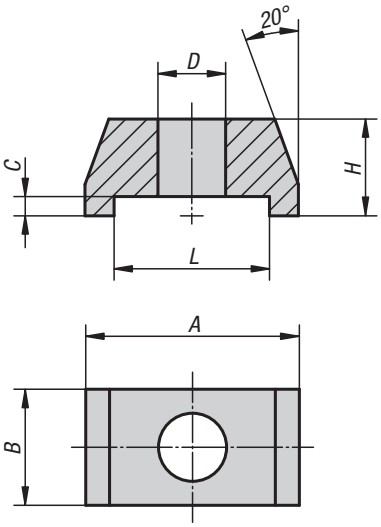
Note:
The strap provides instant height adjustment without blocks or shims and requires little space on the machine table. Designed for rugged use and highly suitable for clamping blanking and punching dies. Suitable mounting bolts for these clamps see K0698/ K0699.

KIPP Clamp straps, infinitely adjustable

Order No.	suitable for slot width	suitable fastening screw	D	L	L1	L2	L3	L4	L5	B	H	H1
K1956.12	12, 14	M12	13	88	68	23	14	48	28	38	0-40	57
K1956.16	16, 18	M16	18	130	101	29	18	74	38	56	0-65	90
K1956.20	20, 22	M20	22	144	112	32	20	80	46	66	0-70	103
K1956.24	24, 28	M24	25	174	135	39	24	100	52	76	0-85	120

Clamp straps mini

double sided

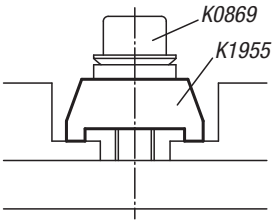


Material:
Steel.

Version:
Black oxidised.

Sample order:
K1955.016

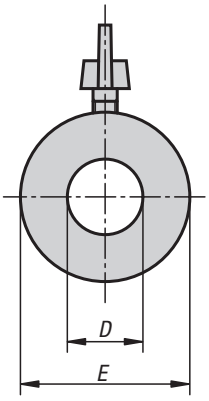
Note:
Two workpieces can be clamped simultaneously from one clamping point using the mini clamp strap.

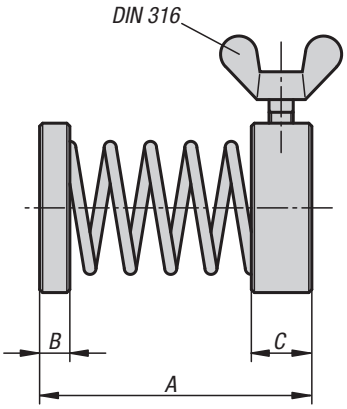


KIPP Clamp straps mini, double sided

Order No.	A	B	C	D	H	L	Clamping force kN
K1955.006	22	12	2	7	10	16	4,82
K1955.008	22	12	2	9	10	16	8,77
K1955.010	35	19	3	11	15	24	13,9
K1955.012	35	19	3	13	15	24	20,2
K1955.016	50	29	5	17	25	36	37,8

Clamp springs

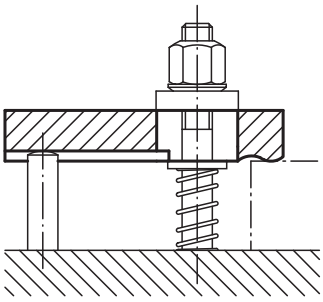


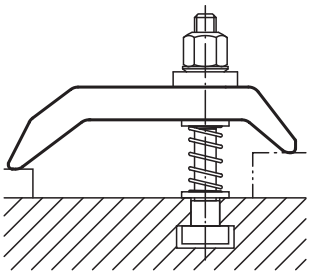


Material:
Thrust and retaining ring carbon steel.
Spring, spring steel.

Version:
Thrust and retaining ring black oxidised.
Spring bright.

Sample order:
K0859.12046





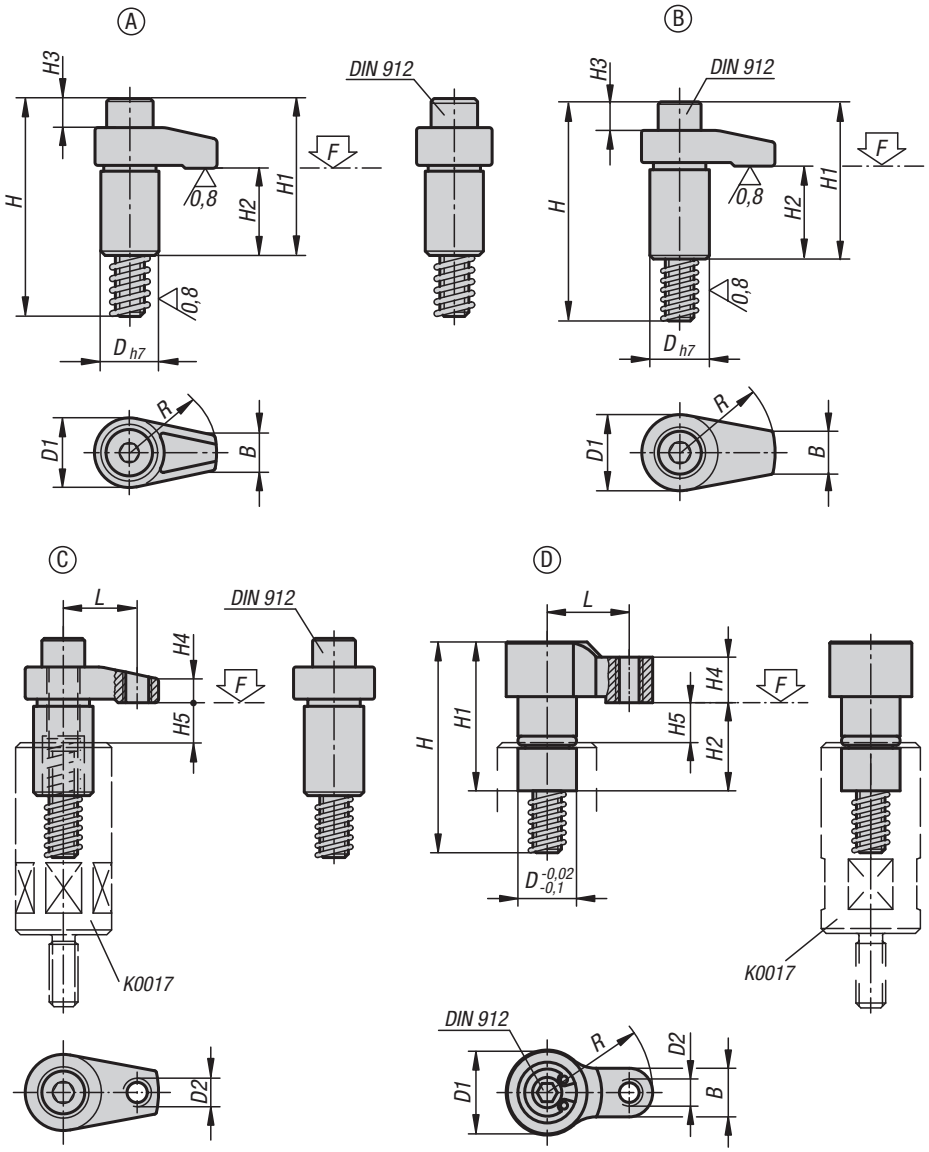
KIPP Clamp springs

Order No.	A	B	C	D	E	Wing nuts to DIN 316
K0859.08029	29	2	6	8,5	16	M4x6
K0859.12046	46	3	8	13	25	M4x10
K0859.16050	50	4	8	16,5	28	M5x10

Notes

Hook clamps

Hook clamps



Material:
Carbon steel, tempered.

Version:
Form A-C: black oxidised. Shaft diameter ground.
Form D: black oxidised.

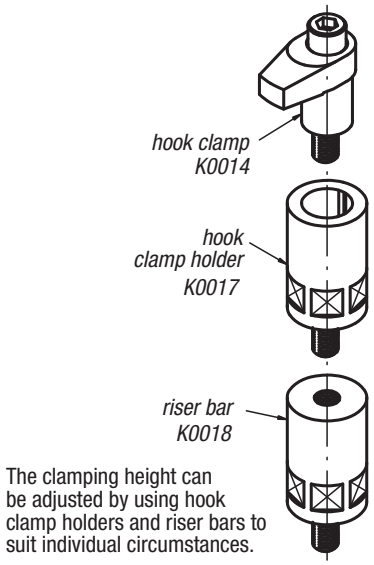
Sample order:
K0014.216040

Note:
The stated clamping forces (F max.) and tightening torques are valid within the stated clamping ranges (H5).

Advantages:
Compact design for use in the tightest of spaces
Diverse versions and sizes

Accessories:
Hook clamp holders K0017.
Hook clamp holders K0851.
Extensions for jack screws K0018.

Hook clamps

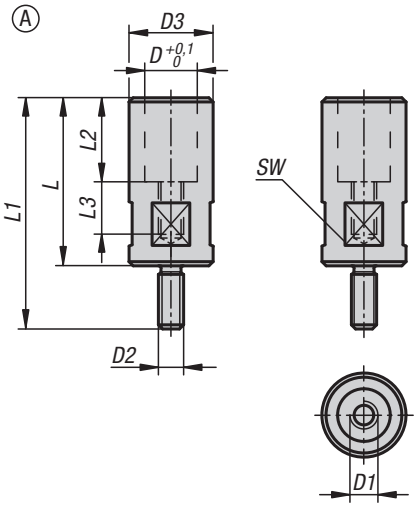


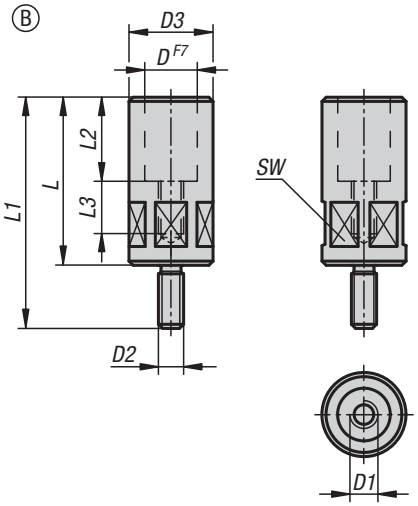
The clamping height can be adjusted by using hook clamp holders and riser bars to suit individual circumstances.

KIPP Hook clamps

Order No.	Form	D	D1	D2	H	H1	H2	H3	H4	H5 max. clamping range	B	L	R	Socket head screw DIN 912	Tightening torque max. Nm	F max. kN
K0014.110030	A	20	25	-	75	54	30	9	10	12	12	-	30	M10x65	37,2	13
K0014.110040	A	20	25	-	75	54	30	9	10	12	12	-	40	M10x65	31,4	9,8
K0014.208020	B	18	22	-	58	37	23	2	7	10	10	-	20	M8x50	37,2	13,6
K0014.208025	B	18	22	-	58	37	23	2	7	10	10	-	25	M8x50	32,3	10,9
K0014.208030	B	18	22	-	58	37	23	2	7	10	10	-	30	M8x50	29,4	9
K0014.212040	B	25	32	-	92	66	39	11	12	15	18	-	40	M12x80	58,8	17,5
K0014.212050	B	25	32	-	92	68	39	11	12	15	18	-	50	M12x80	49	14
K0014.212060	B	25	32	-	92	68	39	11	12	15	18	-	60	M12x80	45,1	11,6
K0014.216040	B	32	36	-	101	75	39	15	15	15	22	-	40	M16x85	166,6	37,9
K0014.216050	B	32	36	-	101	75	39	15	15	15	22	-	50	M16x85	147	30,4
K0014.216060	B	32	36	-	101	75	39	15	15	15	22	-	60	M16x85	127,4	25,2
K0014.312140	C	25	32	M12	92	66	39	11	10	15	18	31	40	M12x80	58,8	22,6
K0014.312150	C	25	32	M12	92	68	39	11	13	15	18	38	50	M12x80	49	18,5
K0014.312160	C	25	32	M12	92	68	39	11	13	15	18	46	60	M12x80	45,1	15,2
K0014.316150	C	32	36	M12	101	75	39	15	16	15	22	38	50	M16x85	147	38
K0014.316160	C	32	36	M12	101	75	39	15	16	15	22	46	60	M16x85	127,4	33
K0014.404118	D	10	14	M4	37	24,5	14,5	-	7,5	3	8	14	18	M4x30	2,7	2
K0014.406122	D	12	16	M5	44	30,5	17,5	-	9,5	4	10	17	22	M6x35	7	3,5

Hook clamp holders





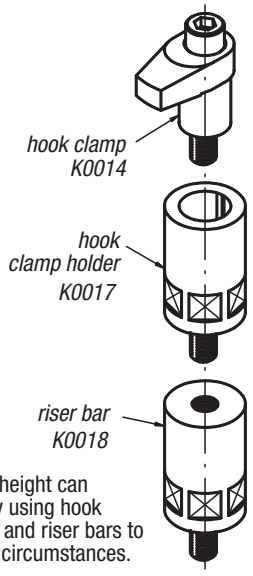
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0017.12080

Note:
Hook clamp holders are for holding and raising hook clamps.

Accessories:
Hook clamps K0014.
Extensions for jack screws K0018.

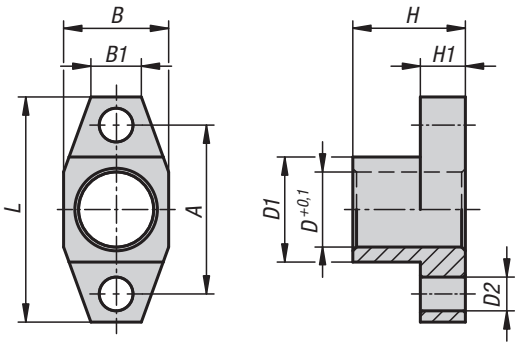


The clamping height can be adjusted by using hook clamp holders and riser bars to suit individual circumstances.

KIPP Hook clamp holders

Order No.	Form	Form-Type	D	D1	D2	D3	L	L1	L2	L3	SW	Tightening torque max. Nm
K0017.04035	A	with square	10	M4	M6	14	35	46	16	13	12	2,7
K0017.06040	A	with square	12	M6	M8	16	40	54	19	14	13	7
K0017.08055	B	with hexagon	18	M8	M8	24	55	74	25	20	22	29,4
K0017.10063	B	with hexagon	20	M10	M12	32	63	93	30	21	30	39,2
K0017.10080	B	with hexagon	20	M10	M12	32	80	110	30	23	30	39,2
K0017.12080	B	with hexagon	25	M12	M12	40	80	110	40	25	36	49
K0017.12100	B	with hexagon	25	M12	M12	40	100	130	40	28	36	49
K0017.16080	B	with hexagon	32	M16	M16	50	80	110	40	25	46	78,4
K0017.16100	B	with hexagon	32	M16	M16	50	100	130	40	28	46	78,4

Hook clamp holders

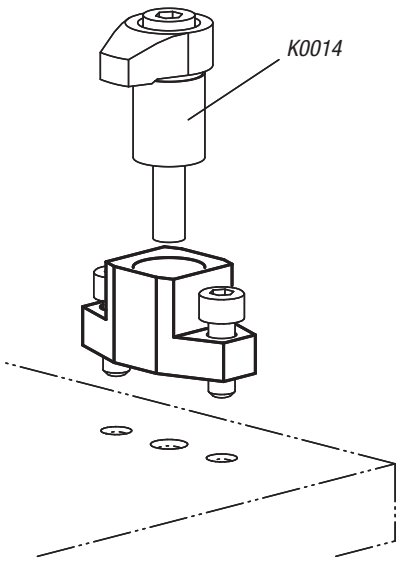


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0851.08025

Accessories:
Hook clamps K0014.

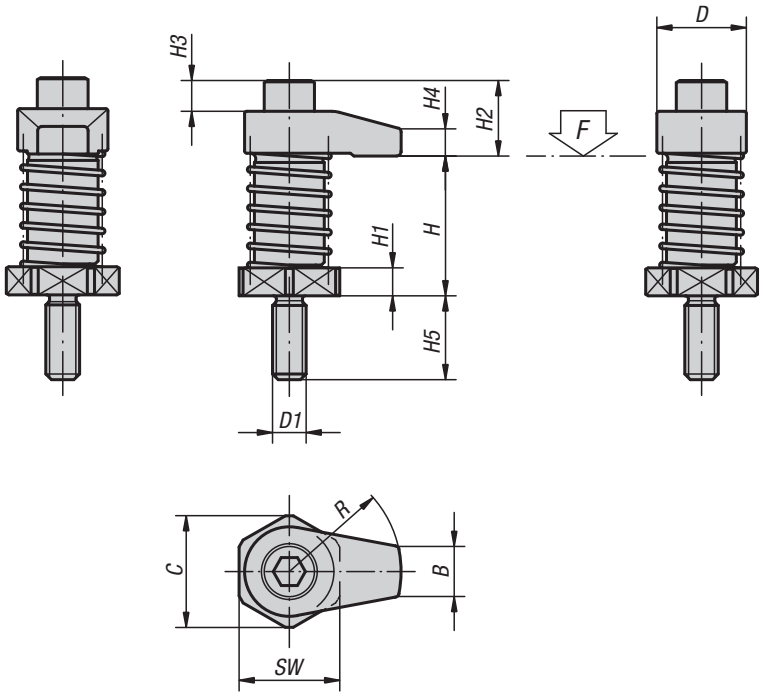


KIPP Hook clamp holders

Order No.	A	B	B1	D	D1	D2	H	H1	L
K0851.040161	24	14	7,6	10	14	4,3	16	6	34
K0851.060191	28	16	8,5	12	16	5,3	19	8	40
K0851.08025	38	24	11,3	18	24	6,6	25	10	50
K0851.10030	45	28	13,4	20	28	9	30	12	60
K0851.12040	55	35	15	25	35	11	40	14	75
K0851.16040	65	42	20,2	32	42	13,5	40	16	85

Hook clamps

with collar



Material:
Hook clamps and hook clamp holders carbon steel, tempered.

Version:
Black oxidised.

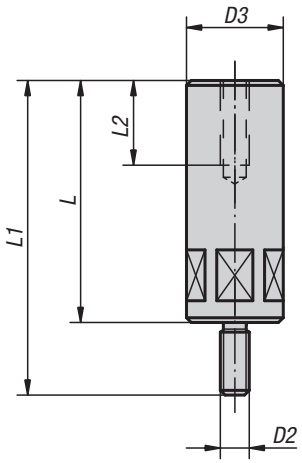
Sample order:
K0015.12060

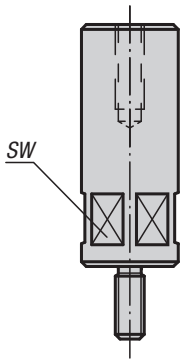
Note:
Hook clamps with collar can be screwed directly into grid holes etc. without counterbore.
For suitable riser elements, see riser bars K0018.

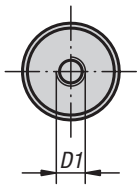
KIPP Hook clamps with collar

Order No.	D	D1	H clamping range	H1	H2	H3	H4	H5	B	C	R	SW	Tightening torque max. Nm	F max. kN
K0015.08020	22	M8	35-45	6	14	2	7	19	10	25	20	22	20	7,9
K0015.08025	22	M8	35-45	6	14	2	7	19	10	25	25	22	20	7,3
K0015.08030	22	M8	35-45	6	14	2	7	19	10	25	30	22	20	6,7
K0015.08120	22	M8	45-55	16	14	2	7	19	10	25	20	22	20	7,9
K0015.08125	22	M8	45-55	16	14	2	7	19	10	25	25	22	20	7,3
K0015.08130	22	M8	45-55	16	14	2	7	19	10	25	30	22	20	6,7
K0015.12040	32	M12	50-65	10	27	11	10	30	18	40	40	36	45	13,5
K0015.12050	32	M12	50-65	10	29	11	12	30	18	40	50	36	45	12,6
K0015.12060	32	M12	50-65	10	29	11	12	30	18	40	60	36	45	11,7
K0015.12140	32	M12	65-80	25	27	11	10	30	18	40	40	36	45	13,5
K0015.12150	32	M12	65-80	25	29	11	12	30	18	40	50	36	45	12,6
K0015.12160	32	M12	65-80	25	29	11	12	30	18	40	60	36	45	11,7
K0015.16040	36	M16	50-65	10	36	15	15	30	22	40	40	36	60	13,4
K0015.16050	36	M16	50-65	10	36	15	15	30	22	40	50	36	60	12,4
K0015.16060	36	M16	50-65	10	36	15	15	30	22	40	60	36	60	12
K0015.16140	36	M16	65-80	25	36	15	15	30	22	40	40	36	60	13,4
K0015.16150	36	M16	65-80	25	36	15	15	30	22	40	50	36	60	12,4
K0015.16160	36	M16	65-80	25	36	15	15	30	22	40	60	36	60	12

Riser bars





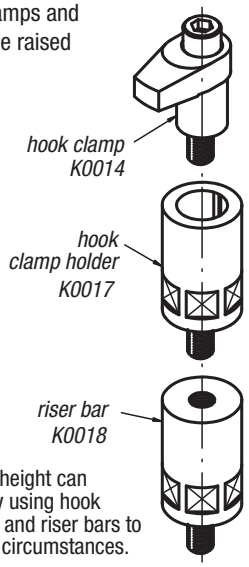


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0018.16050

Note:
The height of the hook clamps and hook clamp holders can be raised using these riser bars.



The clamping height can be adjusted by using hook clamp holders and riser bars to suit individual circumstances.

KIPP Riser bars

Order No.	D1	D2	D3	L	L1	L2	SW	Tightening torque max. Nm
K0018.08032	M8	M8	24	32	51	20	22	29,4
K0018.08040	M8	M8	24	40	59	20	22	29,4
K0018.08050	M8	M8	24	50	69	20	22	29,4
K0018.08065	M8	M8	24	65	84	20	22	29,4
K0018.12050	M12	M12	40	50	80	35	36	49
K0018.12065	M12	M12	40	65	95	35	36	49
K0018.12080	M12	M12	40	80	110	35	36	49
K0018.12100	M12	M12	40	100	130	35	36	49
K0018.12125	M12	M12	40	125	155	35	36	49
K0018.12160	M12	M12	40	160	190	35	36	49
K0018.12200	M12	M12	40	200	230	35	36	49
K0018.16050	M16	M16	50	50	80	35	46	78,4
K0018.16065	M16	M16	50	65	95	35	46	78,4
K0018.16080	M16	M16	50	80	110	35	46	78,4
K0018.16100	M16	M16	50	100	130	35	46	78,4
K0018.16125	M16	M16	50	125	155	35	46	78,4
K0018.16160	M16	M16	60	160	190	35	55	78,4
K0018.16200	M16	M16	60	200	230	35	55	78,4

Hook clamps

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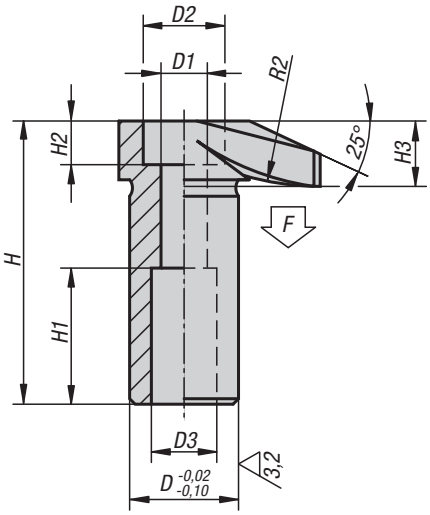

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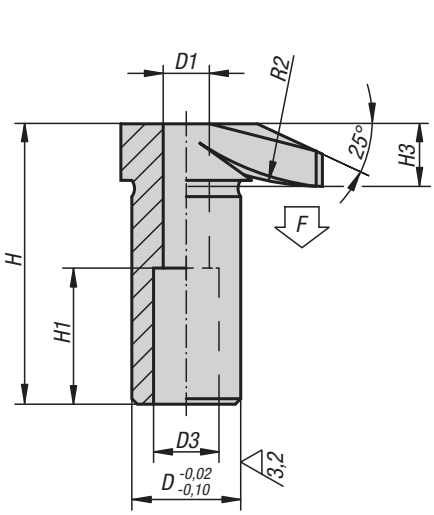
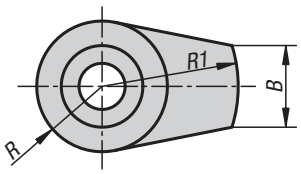
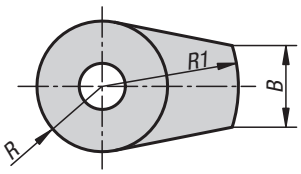




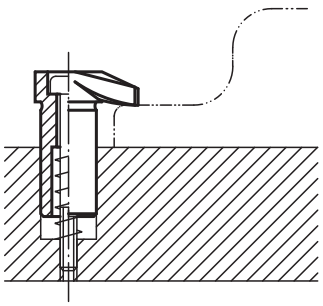


Material:
Carbon steel, tempered.

Version:
Black oxidised.

Sample order:
K0012.10

Accessories:
Springs K1554 and socket head screws K0869.



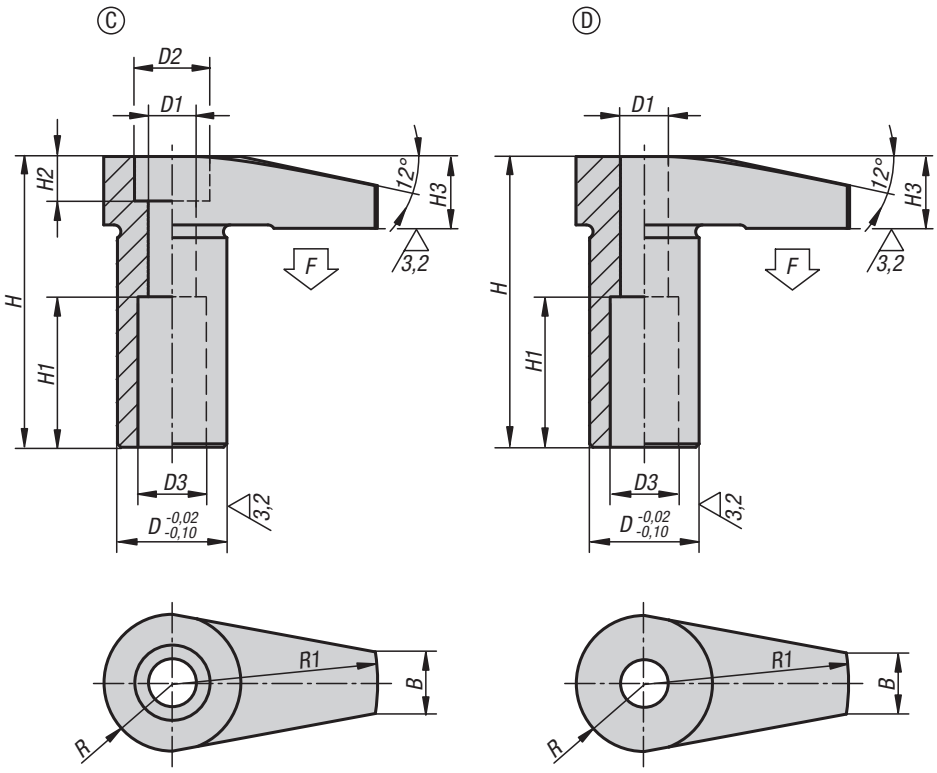
KIPP Hook clamps

Order No.	Form	D	D1	D2	D3	H	H1	H2	H3	B	R	R1	R2	F max. kN
K0012.06	A	16	6,5	11	10	42	20	6	10	11	9	20	30	4,8
K0012.08	A	20	8,5	15	12	52	25	8	12	15	12	25	50	8,8
K0012.10	A	25	10,5	18	14	66	32	10	16	17	14	32	60	13,9
K0012.12	A	32	12,5	20	17	83	40	12	20	20	18	40	80	20,2

Order No.	Form	D	D1	D3	H	H1	H3	B	R	R1	R2	F max. kN
K0012.106	B	16	6,5	10	41,5	20	9,5	11	9	20	30	4,8
K0012.108	B	20	8,5	12	51,5	25	11,5	15	12	25	50	8,8
K0012.110	B	25	10,5	14	65,5	32	15,5	17	14	32	60	13,9
K0012.112	B	32	12,5	17	82,5	40	19,5	20	18	40	80	20,2

Hook clamps

with long hook



Material:
Carbon steel, tempered.

Version:
Black oxidised.

Sample order:
K0012.406

KIPP Hook clamps with long hook

Order No.	Form	B	D	D1	D2	D3	H	H1	H2	H3	R	R1	F max. kN
K0012.406	C	9	16	7	11	10	42,5	22	6	10,5	10	30	4,5
K0012.408	C	12	20	8,6	15	12	52,5	25	8	12,5	12,5	40	6,5
K0012.410	C	18	25	10,6	18	14	66,5	32	10	16,5	16	50	11,8

Order No.	Form	B	D	D1	D3	H	H1	H3	R	R1	F max. kN
K0012.506	D	9	16	7	10	42,5	22	10,5	10	30	4,5
K0012.508	D	12	20	8,6	12	52,5	25	12,5	12,5	40	6,5
K0012.510	D	18	25	10,6	14	66,5	32	16,5	16	50	11,8

Hook clamps

with soft pad

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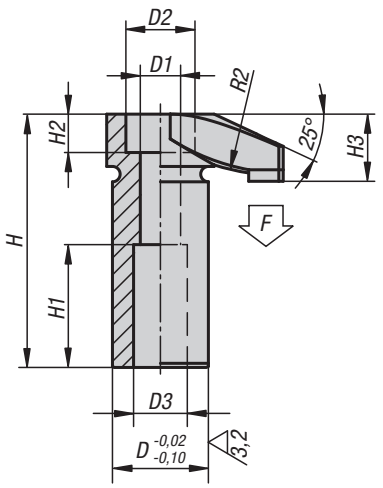

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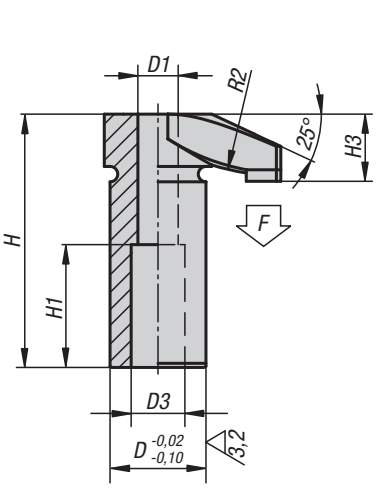


Material:
Carbon steel.
Soft pad POM or polyurethane 99 Shore A.

Version:
Tempered and black oxidised.

Sample order:
K0012.206

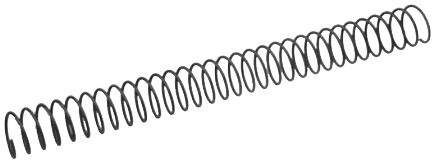
Note:
The pressed in plastic inserts offer optimal damage protection for sensitive workpiece faces.

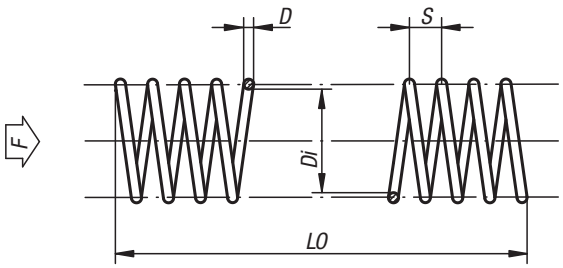
KIPP Hook clamps with soft pad

Order No.	Form	Component material	D	D1	D2	D3	H	H1	H2	H3	B	R	R1	R2	F max. kN
K0012.206	A	polyacetal	16	6,5	11	10	42	20	6	10,5	11	9	20	30	4,8
K0012.208	A	polyacetal	20	8,5	15	12	52	25	8	13,5	15	12	25	50	8,8
K0012.210	A	polyacetal	25	10,5	18	14	66	32	10	17,5	17	14	32	60	11,6
K0012.212	A	polyacetal	32	12,5	20	17	83	40	12	21	20	18	40	80	18,8
K0012.2106	B	polyacetal	16	6,5	-	10	41,5	20	-	10	11	9	20	30	4,8
K0012.2108	B	polyacetal	20	8,5	-	12	51,5	25	-	13	15	12	25	50	8,8
K0012.2110	B	polyacetal	25	10,5	-	14	65,5	32	-	17	17	14	32	60	11,6
K0012.2112	B	polyacetal	32	12,5	-	17	82,5	40	-	21	20	18	40	80	18,8
K0012.306	A	polyurethane	16	6,5	11	10	42	20	6	10,5	11	9	20	30	4,8
K0012.308	A	polyurethane	20	8,5	15	12	52	25	8	13,5	15	12	25	50	8,8
K0012.310	A	polyurethane	25	10,5	18	14	66	32	10	17,5	17	14	32	60	11,6
K0012.312	A	polyurethane	32	12,5	20	17	83	40	12	21	20	18	40	80	18,8
K0012.3106	B	polyurethane	16	6,5	-	10	41,5	20	-	10	11	9	20	30	4,8
K0012.3108	B	polyurethane	20	8,5	-	12	51,5	25	-	13	15	12	25	50	8,8
K0012.3110	B	polyurethane	25	10,5	-	14	65,5	32	-	17	17	14	32	60	11,6
K0012.3112	B	polyurethane	32	12,5	-	17	82,5	40	-	21	20	18	40	80	18,8

Springs

for clamp straps

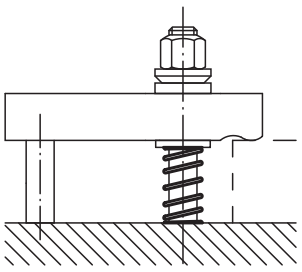




Material:
Spring steel wire EN 10270-1-DH.

Sample order:
K1554.12

Note:
Springs are only available in 400 mm lengths.

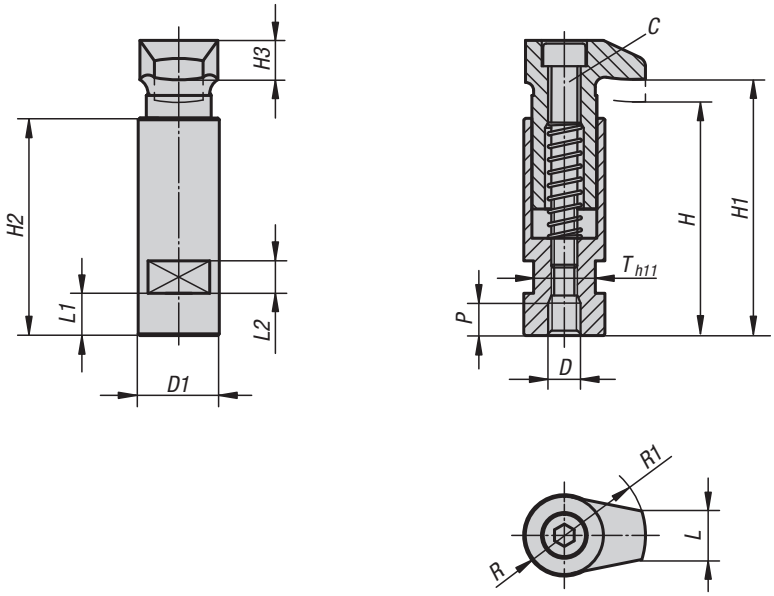


KIPP Springs for clamp straps

Order No.	D	Di	LO	S	Spring force F approx. N	Compression factor under f
K1554.06	1	6,5	400	3	32	1,3
K1554.08	1	8,5	400	4	25	2,1
K1554.10	1,2	10,5	400	4	35	2,7
K1554.12	1,4	12,5	400	5	47	3,3
K1554.14	1,5	14,5	400	6	50	4
K1554.16	1,6	16,5	400	7	53	4,8
K1554.18	1,8	18,5	400	7	68	5,4
K1554.20	1,8	20,5	400	8	62	6,5
K1554.24	2	25	400	9	70	8,6

Hook clamps

with collar



Material:
Carbon steel.

Version:
Tempered and black oxidised.

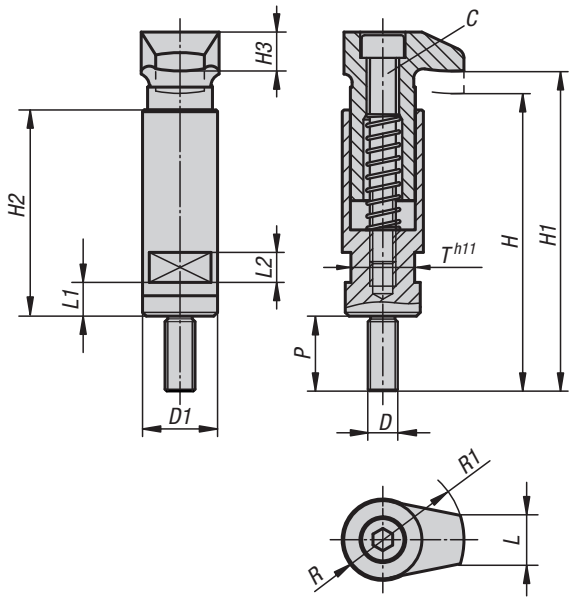
Sample order:
K0013.06

KIPP Hook clamps with collar

Order No.	C	D	D1	H	H1	H2	H3	L	L1	L2	P	R	R1	T	Clamping force kN
K0013.06	M6	M6	20	56	60	53	10	11	9	8	8	9	20	17	4,82
K0013.08	M6	M8	20	56	60	53	10	11	9	8	8	9	20	17	8,77
K0013.10	M8	M10	25	72	79	67	12	15	13	10	10	12	25	19	13,9
K0013.12	M10	M12	32	88	96	82	16	17	18	12	12	14	32	27	20,2
K0013.16	M12	M16	40	109	118	102	20	20	22	12	16	18	40	32	37,8

Hook clamps

with collar



Material:
Carbon steel.

Version:
Tempered and black oxidised.

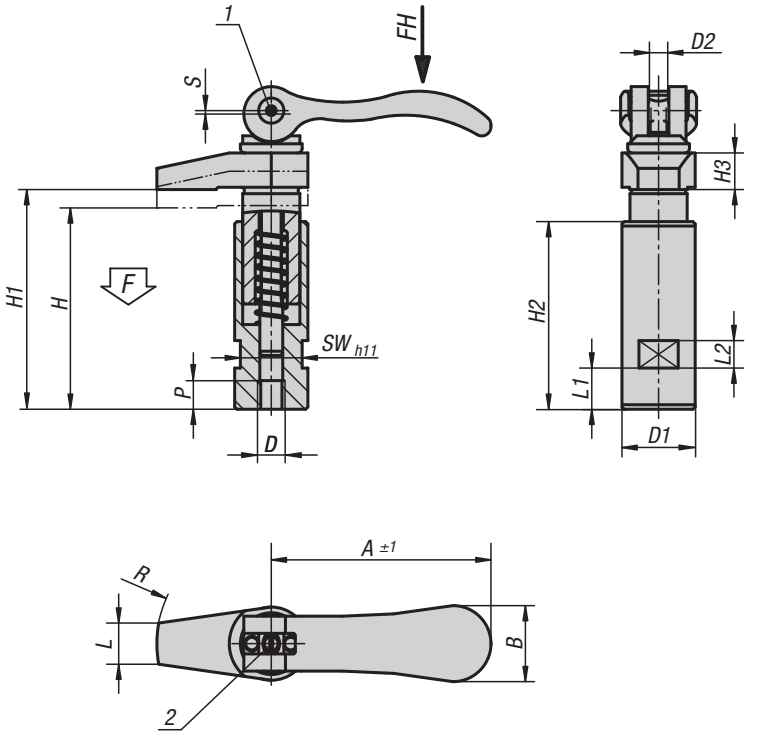
Sample order:
K0013.708

KIPP Hook clamps with collar

Order No.	C	D	D1	H	H1	H2	H3	L	L1	L2	P	R	R1	T	Clamping force kN
K0013.706	M6	M6	20	56	60	53	10	11	9	8	20	9	20	17	4,82
K0013.708	M6	M8	20	56	60	53	10	11	9	8	20	9	20	17	8,77
K0013.710	M8	M10	25	72	79	67	12	15	13	10	25	12	25	19	13,9
K0013.712	M10	M12	32	88	96	82	16	17	18	12	30	14	32	27	20,2
K0013.716	M12	M16	40	109	118	102	20	20	22	12	30	18	40	32	37,8

Hook clamps

with collar and cam lever



Material:
Body and hook, high-carbon steel.
Handles, cast aluminium EN AC-46200.
Thrust washer, fibreglass reinforced plastic PA 66 GF 35-X.
Hinge pin, stud and washer stainless steel 1.4305.

Version:
Body and hook tempered and black oxidised.
Handles, black powder-coated.
Thrust washer black.
Hinge pin, stud and washer bright.

Sample order:
K0013.106

Note:
Ideal for clamping where the parts are to be inserted from above as the hook can be swivelled out of the way.

The exact clamping height is set by the fine thread on the stud using a screwdriver. This setting can be secured with the locking screw. The length S corresponds to the cam travel.

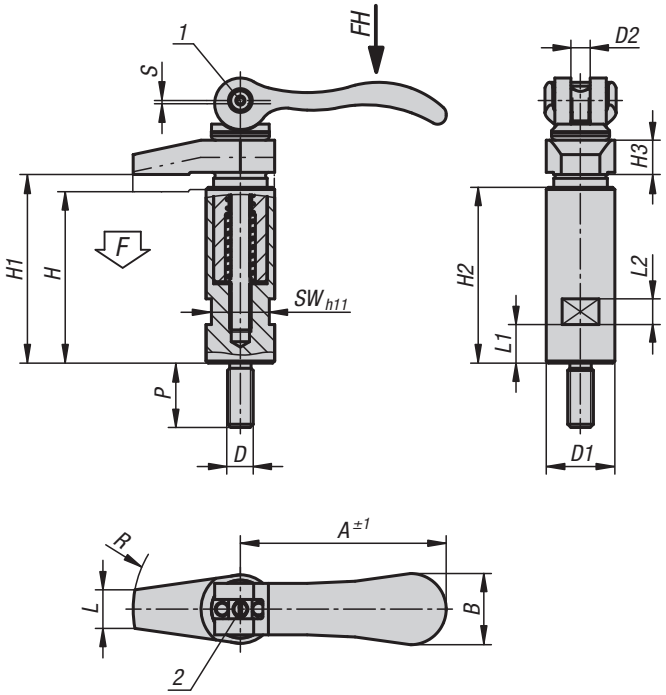
Drawing reference:
1) Locking screw for pin
2) Screw for fine adjustment of lever

KIPP Hook clamps with collar and cam lever

Order No.	D	D1	D2	H	H1	H2	H3	L	L1	L2	A	B	P	R	SW	Travel S	F kN	Hand force FH N
K0013.106	M6	20	M6x0,5	56	60	53	10	9	9	8	70,4	21,5	8	30	17	1,2	4	120
K0013.108	M8	20	M6x0,5	56	60	53	10	9	9	8	70,4	21,5	8	30	17	1,2	4	120
K0013.110	M10	25	M8x0,75	72	79	67	12	12	13	10	96	33,3	10	40	19	1,5	8	350
K0013.112	M12	32	M8x0,75	88	96	82	15	18	18	12	96	33,3	12	50	27	1,5	8	350

Hook clamps

with collar and cam lever



Material:
Body and hook, high-carbon steel.
Handles, cast aluminium EN AC-46200.
Thrust washer, fibreglass reinforced plastic PA 66 GF 35-X.
Hinge pin, stud and washer stainless steel 1.4305.

Version:
Body and hook tempered and black oxidised.
Handles, black powder-coated.
Thrust washer black.
Hinge pin, stud and washer bright.

Sample order:
K0013.208

Note:
Ideal for clamping where the parts are to be inserted from above as the hook can be swivelled out of the way.

The exact clamping height is set by the fine thread on the stud using a screwdriver. This setting can be secured with the locking screw. The length S corresponds to the cam travel.

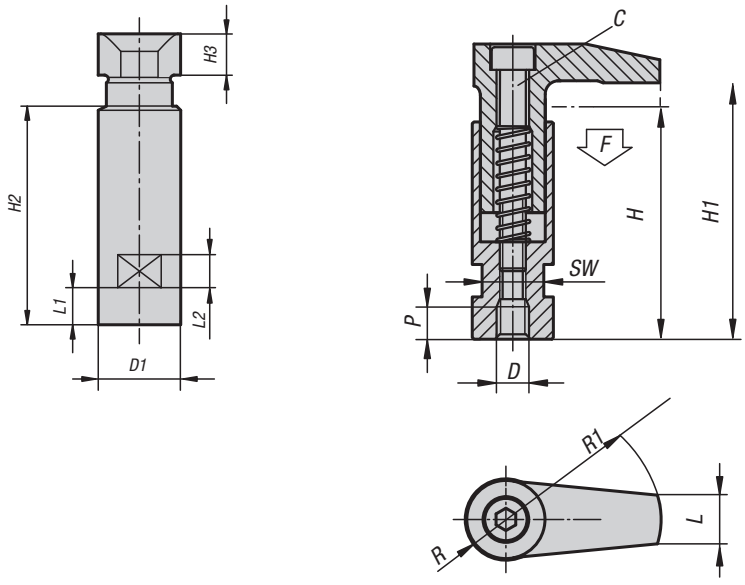
Drawing reference:
1) Locking screw for pin
2) Screw for fine adjustment of lever

KIPP Hook clamps with collar and cam lever

Order No.	D	D1	D2	H	H1	H2	H3	L	L1	L2	A	B	P	R	SW	Travel S	F kN	Hand force FH N
K0013.206	M6	20	M6x0,5	56	60	53	10	9	9	8	70,4	21,5	20	30	17	1,2	4	120
K0013.208	M8	20	M6x0,5	56	60	53	10	9	9	8	70,4	21,5	20	30	17	1,2	4	120
K0013.210	M10	25	M8x0,75	72	79	67	12	12	13	10	96	33,3	25	40	19	1,5	8	350
K0013.212	M12	32	M8x0,75	88	96	82	18	18	18	12	96	33,3	30	50	27	1,5	8	350

Hook clamp with collar

with long clamping claw



Material:
Carbon steel.

Version:
Tempered and black oxidised.

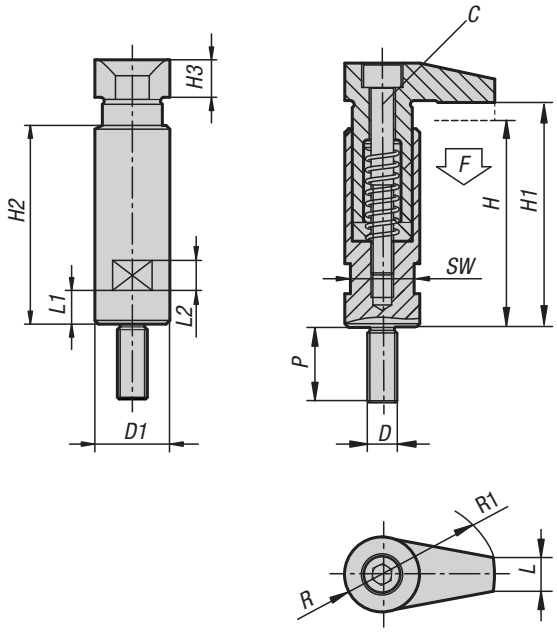
Sample order:
K0013.510

KIPP Hook clamp with collar with long clamping claw

Order No.	C	D	D1	H	H1	H2	H3	L	L1	L2	P	R	R1	SW	Clamping force kN
K0013.506	M6	M6	20	56	60	53	10,5	9	11	8	8	10	30	17	4,5
K0013.508	M6	M8	20	56	60	53	10,5	9	11	8	8	10	30	17	4,5
K0013.510	M8	M10	25	72	79	67	12,5	12	15	10	10	12,5	40	19	6,5
K0013.512	M10	M12	32	88	96	82	16,5	18	17	12	12	16,5	50	27	11,8

Hook clamp with collar

with long clamping claw



Material:
Carbon steel.

Version:
Tempered and black oxidised.

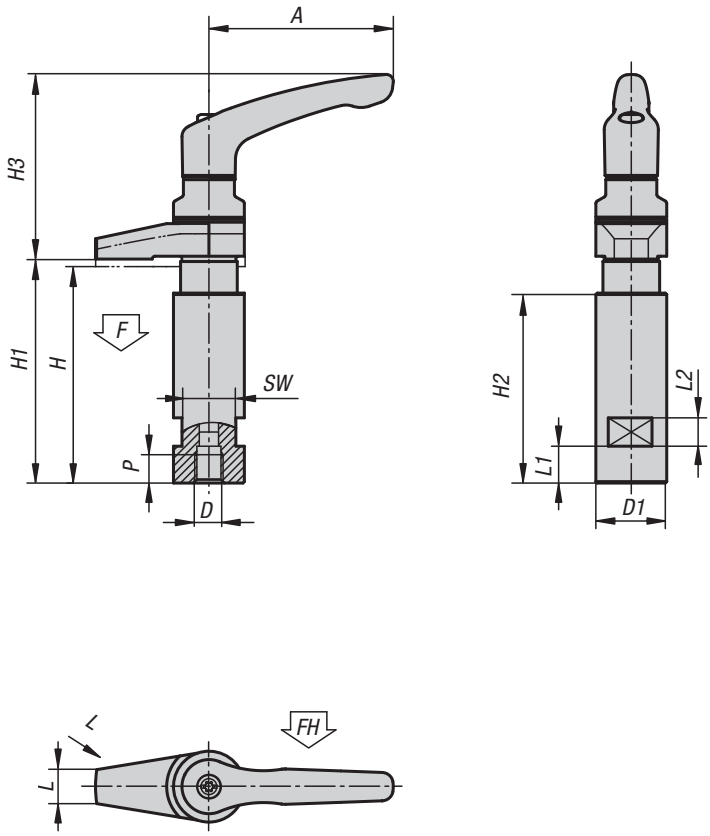
Sample order:
K0013.608

KIPP Hook clamp with collar with long clamping claw

Order No.	C	D	D1	H	H1	H2	H3	L	L1	L2	P	R	R1	SW	Clamping force kN
K0013.606	M6	M6	20	56	60	53	10,5	9	11	8	20	10	30	17	4,5
K0013.608	M6	M8	20	56	60	53	10,5	9	11	8	20	10	30	17	4,5
K0013.610	M8	M10	25	72	79	67	12,5	12	15	10	25	12,5	40	19	6,5
K0013.612	M10	M12	32	88	96	82	16,5	18	17	12	30	16,5	50	27	11,8

Hook clamp

with collar and clamping lever with clamping force intensifier



Components are clamped using the hook clamps with collar and clamping force intensifier by manually operating the clamping lever.

With clamping levers with integrated clamp force intensifier, the retaining force can be increased by up to 75% compared with standard clamping levers. In addition, less effort is required when clamping and releasing.

When clamping, the retaining force is increased by the integrated axial needle bearing which creates very low surface friction on the fixed contact surface. The hardened stopper discs are designed for high retaining forces and the load rating of the bearing ensures long service life.

Material:
Body and hook clamp, carbon steel.
Grip die-cast zinc acc. to DIN EN 12844.
Clamping force intensifier steel parts grade 5.8

Version:
Body and hook clamp tempered and black oxidised.
Grip plastic coated.
Clamping force intensifier steel parts black oxidised.
Axial needle bearing with hardened and ground stopper discs.

Sample order:
K0013.310

Method of operation:
In the default position, the handle is engaged with the threaded insert through a toothed ring. By lifting the handle, it can be repositioned and re-engaged in the toothed ring by spring force.

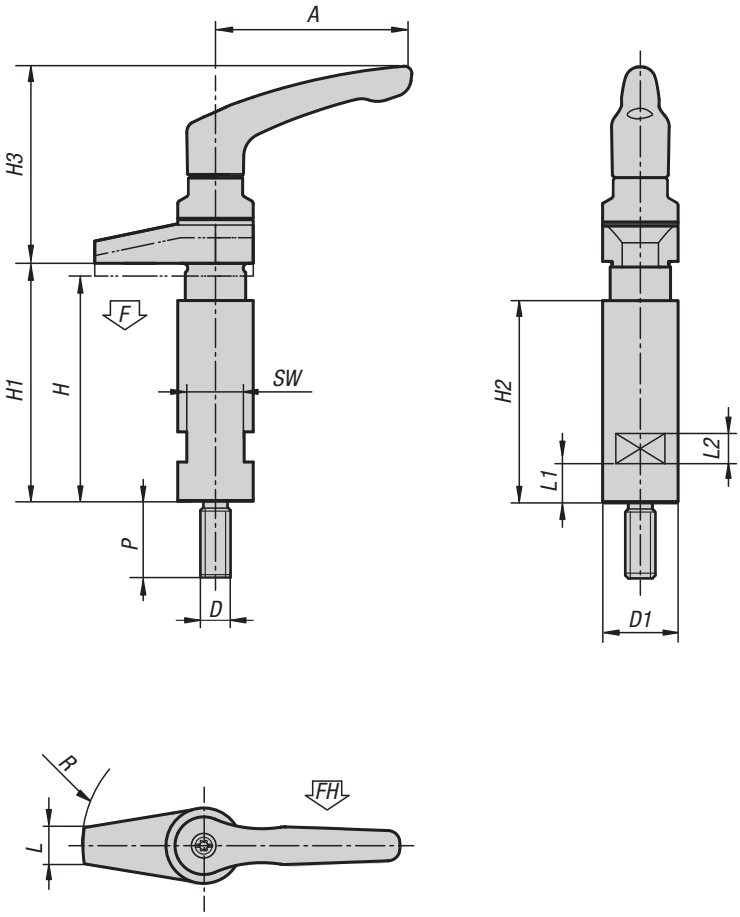
On request:
Other grip colours.

KIPP Hook clamp with collar and clamping lever with clamping force intensifier

Order No.	D	P	D1	H	H1	H3	L2	L1	A	H2	SW	R	L	F kN	Hand force FH N
K0013.310	M10	10	25	72	79	65,1	10	13	65	67	19	40	12	6,1	130
K0013.312	M12	12	32	88	96	80,9	12	18	80	82	27	50	18	8,7	170

Hook clamp

with collar and clamping lever with clamping force intensifier



Components are clamped using the hook clamps with collar and clamping force intensifier by manually operating the clamping lever.

With clamping levers with integrated clamp force intensifier, the retaining force can be increased by up to 75% compared with standard clamping levers. In addition, less effort is required when clamping and releasing.

When clamping, the retaining force is increased by the integrated axial needle bearing which creates very low surface friction on the fixed contact surface. The hardened stopper discs are designed for high retaining forces and the load rating of the bearing ensures long service life.

Material:
Body and hook clamp, carbon steel.
Grip die-cast zinc acc. to DIN EN 12844.
Clamping force intensifier steel parts grade 5.8

Version:
Body and hook clamp tempered and black oxidised.
Grip plastic coated.
Clamping force intensifier steel parts black oxidised.
Axial needle bearing with hardened and ground stopper discs.

Sample order:
K0013.410

Method of operation:
In the default position, the handle is engaged with the threaded insert through a toothed ring. By lifting the handle, it can be repositioned and re-engaged in the toothed ring by spring force.

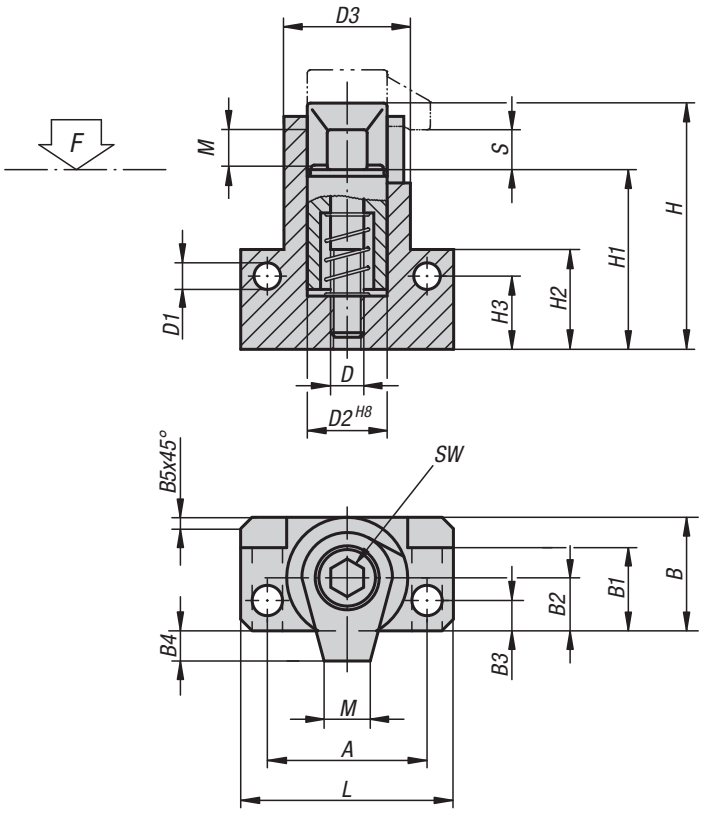
On request:
Other grip colours.

KIPP Hook clamp with collar and clamping lever with clamping force intensifier

Order No.	D	P	D1	H	H1	H3	L2	L1	A	H2	SW	R	L	F kN	Hand force FH N
K0013.410	M10	25	25	72	79	65,1	10	13	65	67	19	40	12	6,1	130
K0013.412	M12	30	32	88	96	80,9	12	18	80	82	27	50	18	8,7	170

Hook clamps

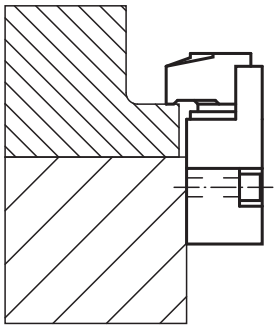
with mounting bracket



Material:
Hook clamps and clamping screw carbon steel, tempered.

Version:
Black oxidised.

Sample order:
K0016.12

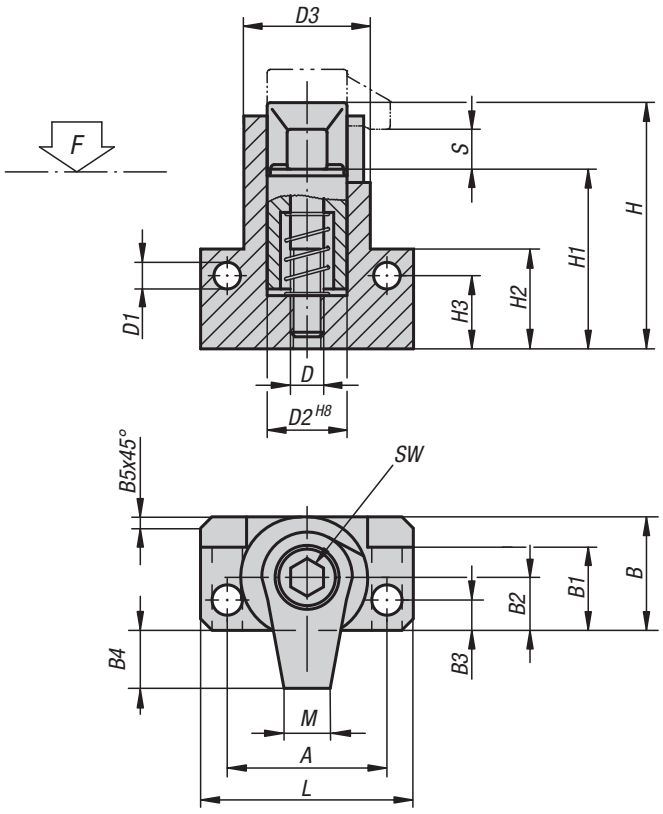


KIPP Hook clamps with mounting bracket

Order No.	D	D1	D2	D3	A	B	B1	B2	B3	B4	B5	H	H1	H2	H3	L	M	S	SW	Tightening torque max. Nm	F max. kN
K0016.08	M8	6,4	20	28	38	26	19,5	12	6	6	2,5	62	47,5	25	18	50	10	4	6	30	17
K0016.10	M10	8,4	24	34	48	31	22,5	14	7,5	9	3	74	57,5	30	21	64	12	5	8	50	18
K0016.12	M12	10,5	28	40	55	36,5	26	16,5	9	10,5	3,5	87	67	35	24	75	15	5	10	60	20
K0016.16	M16	12,8	34	48	65	43,5	31	19,5	10	16,5	4	112	87	45	32	88	20	5	14	120	24

Hook clamp with mounting bracket

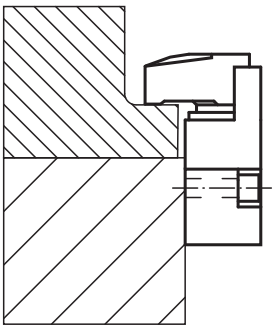
with extended clamping claw



Material:
Hook clamps and clamping screw carbon steel, tempered.

Version:
Black oxidised.

Sample order:
K0016.0826

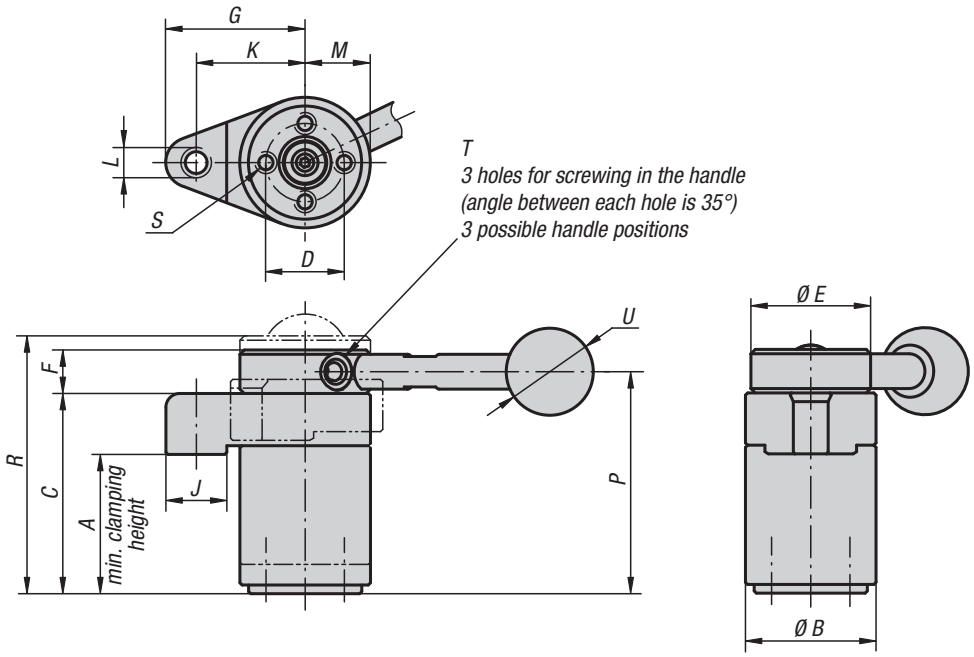


KIPP Hook clamp with extended clamping claw, with mounting bracket

Order No.	D	D1	D2	D3	A	B	B1	B2	B3	B4	B5	H	H1	H2	H3	L	M	S	SW	Tightening torque max. Nm	F max. kN
K0016.0618	M6	6,4	16	28	38	26	19,5	12	6	18	2,5	54,5	44	25	18	50	9	4	5	7,5	4,5
K0016.0826	M8	8,4	20	34	48	31	22,5	14	7,5	26	3	65	53	30	21	64	12	5	6	15	6,5
K0016.1033	M10	10,5	24	40	55	36,5	26	16,5	9	33,5	3,5	77,5	61	35	24	75	18	5	8	30	11,8

Swing clamps

Swing clamps



Right hand

Left hand

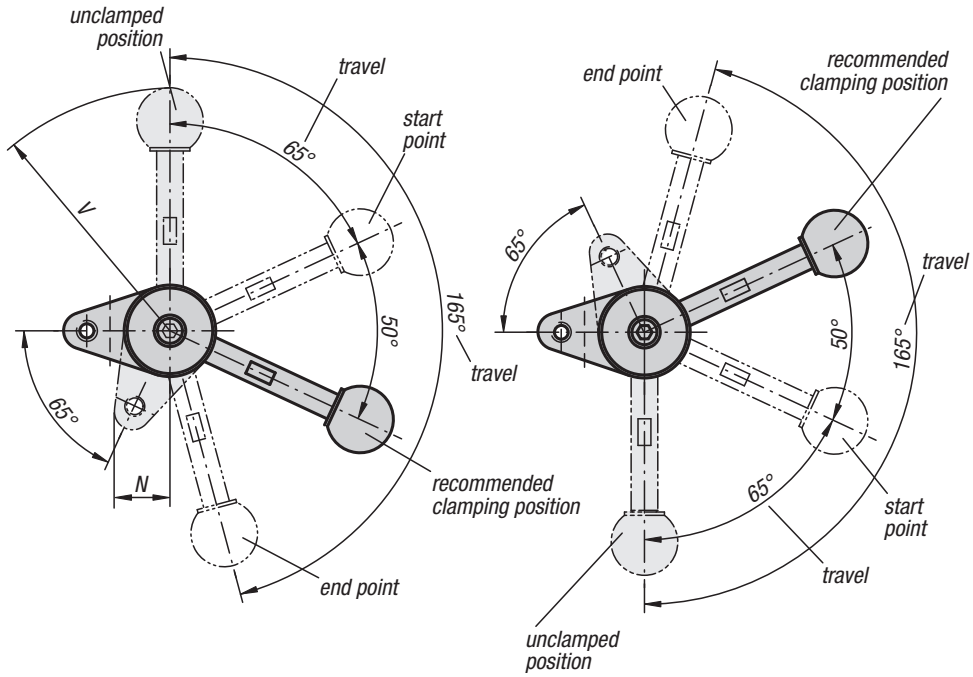
Material:
Carbon steel.
Ball knob plastic.

Version:
Tempered and black oxidised.
Ball knob thermoset PF 31, black.

Sample order:
K0912.013232

Note:
* Admissible hand force to operate the handle.

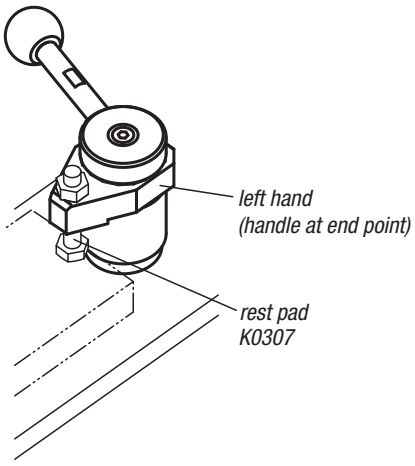
Accessories:
Standard handles K0915.
Screw-in handles with adjustable torque K0916.
Clamping arm for swing clamp K0912.03006010 and K0912.04007516.

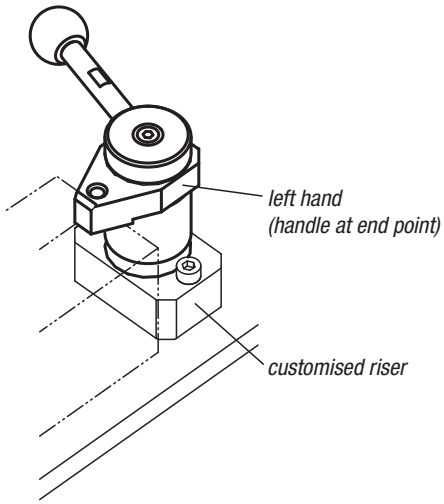


KIPP Swing clamps

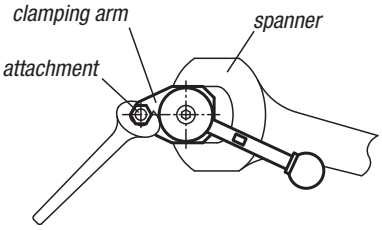
Order No. left	Order No. right	Grip	A min.	A max.	B	C	D	E	F	G	J	K	L	M	N	P	R	S	T	U	V	F=Retaining force N	Hand force FH N
K0912.003232	**K0912.103232**	without	31,4	32,6	30	46	18	30	10	32	14	25	M6	15	17	51	57,5	M4x8	M5	-	-	800	150*
K0912.004540	**K0912.104540**	without	44,1	45,9	40	63	25	38	13	40	16	32	M8	20	22,5	69,5	78,1	M6x12	M6	-	-	1200	200*
K0912.013232	**K0912.113232**	with handle	31,4	32,6	30	46	18	30	10	32	14	25	M6	15	17	51	57,5	M4x8	M5	20	73	800	150*
K0912.014540	**K0912.114540**	with handle	44,1	45,9	40	63	25	38	13	40	16	32	M8	20	22,5	69,5	78,1	M6x12	M6	25	107	1200	200*

Technical Information for swing clamps





Mounting an attachment

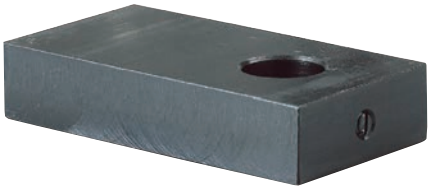


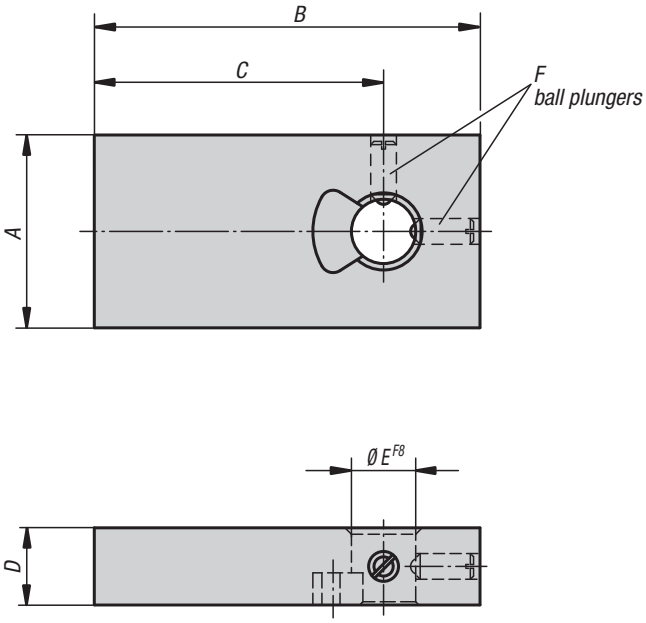
When mounting an attachment on the clamping arm, use a spanner to lock the arm and prevent it from turning.

Notes

Clamping arms

for swing clamp



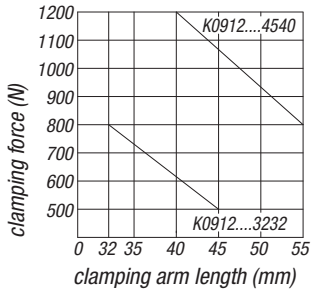


Material:
Carbon steel.

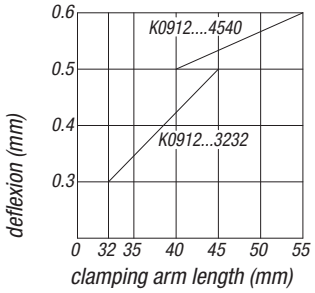
Version:
Black oxidised.

Sample order:
K0912.03006010

clamping arm length C vs. clamping force



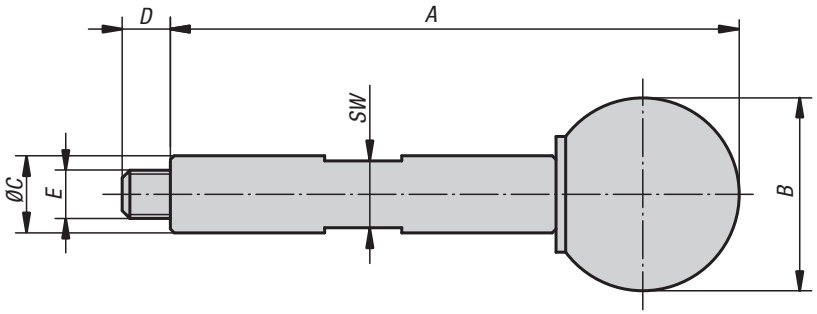
clamping arm length C vs. deflexion during clamping



KIPP Clamping arms for swing clamp

Order No.	A	B	C	D	E	F
K0912.03006010	30	60	45	12	10	M4
K0912.04007516	40	75	55	16	16	M5

Handles screw-in



Material:
Grip carbon steel.
Ball knob thermoset PF 31.

Version:
Grip, black oxidised.
Ball knob, black.

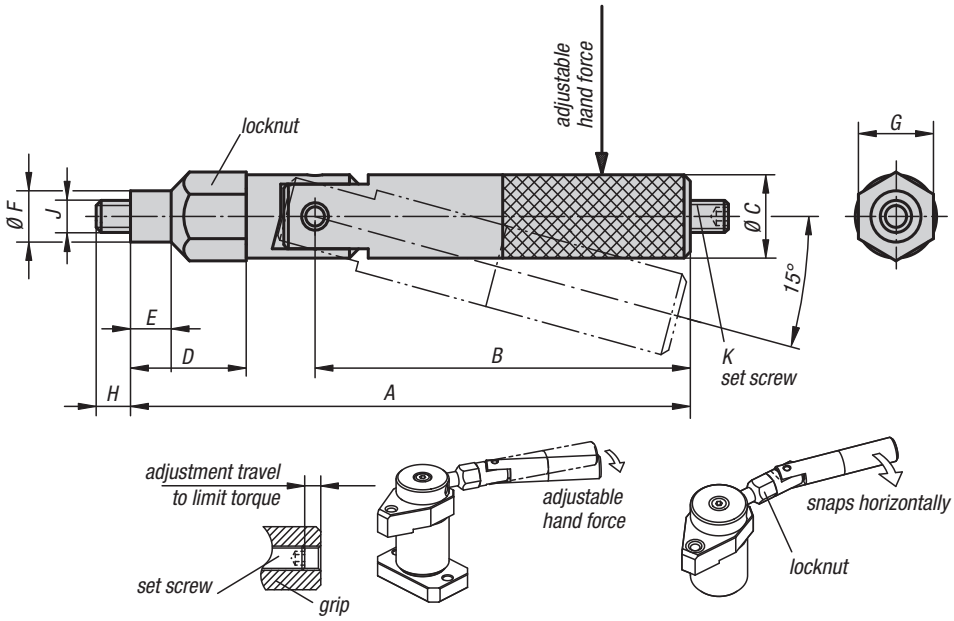
Sample order:
K0915.5059

KIPP Handles screw-in

Order No.	A	B	C	D	E	SW
K0915.05059	59	20	8	5	M5	7
K0915.06089	89	25	10	6	M6	8

Handles screw-in

with torque limit



Material:
Carbon steel.

Version:
Hardened, black oxidised.

Sample order:
K0916.05090

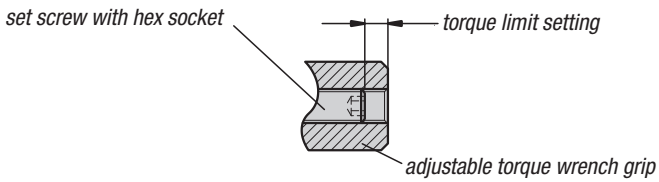
Note:
The desired clamping force can be set by using the set screw to alter the torque. The handle snaps 15° when the set torque is achieved.

Note:
Ensure that the handle is set to snap horizontally.

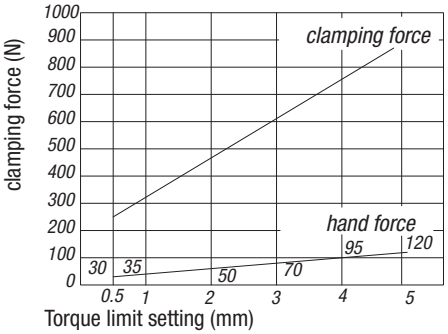
KIPP Handles, screw-in, with torque limit

Order No.	A	B	C	D	E	F	G	H	J	K	Hand force FH N
K0916.05090	89,5	60	13	18,5	6,5	8	12	5,5	M5	M5x16	0-150
K0916.06119	119	84	15	23	8	10	14	6,5	M6	M6x20	0-200

Performance curves



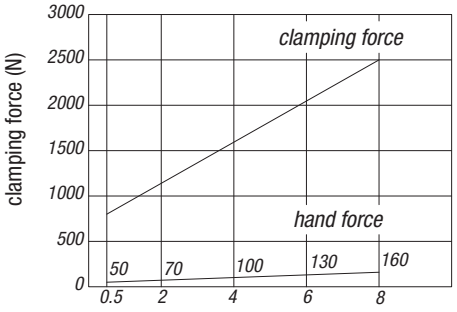
Pull Clamps K0910.3240...



Torque limit setting (mm)

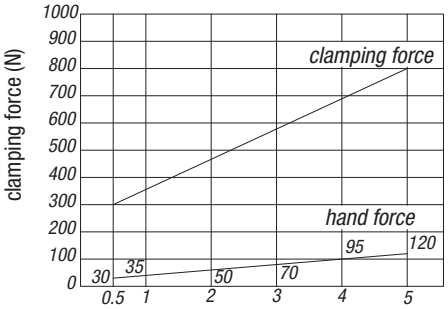
If clamping force is 900 N, Load-Setting Distance will be 5 mm. Hand force will be 120 N.

Pull Clamps K0910.4050...



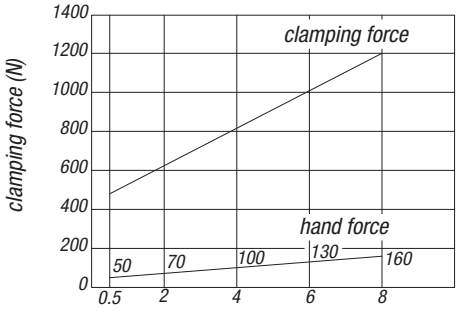
Torque limit setting (mm)

Swing Clamps K0912....3232



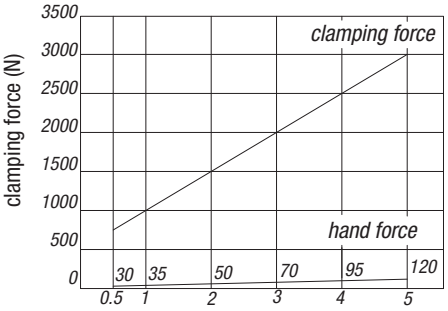
Torque limit setting (mm)

Swing Clamps K0912....4540



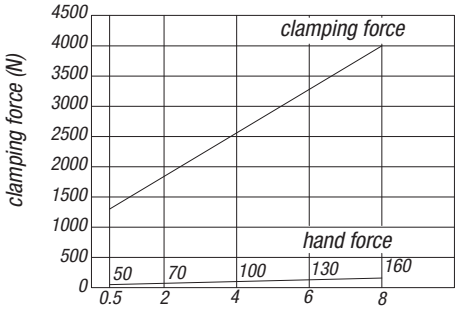
Torque limit setting (mm)

Side Clamps K0928.0500
K0928.0501



Torque limit setting (mm)

Side Clamps K0928.0800
K0928.0801

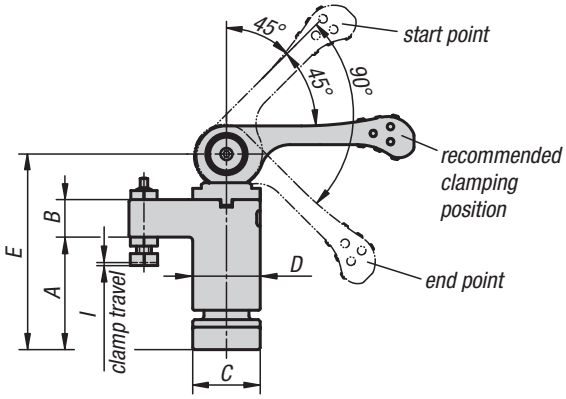


Torque limit setting (mm)

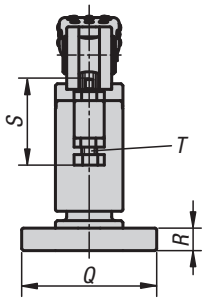
Note:
The above performance curves apply to degreased clamps

Swing clamps

mini, with cam lever



Right hand



Left hand

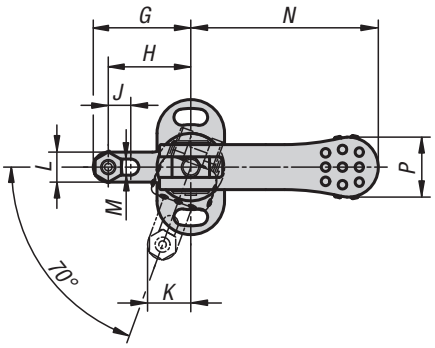
Material:
Carbon steel.

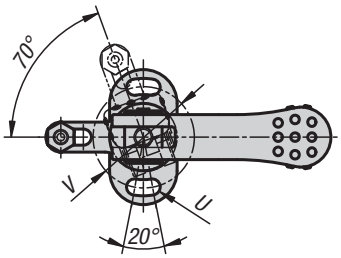
Version:
Tempered and black oxidised.

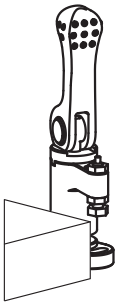
Sample order:
K0925.0100

Note:
Swing clamps are used where the clamping points must be free when the workpiece is loaded or removed.

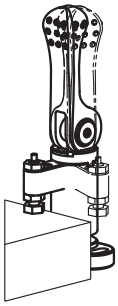
* Admissible hand force for the handle.



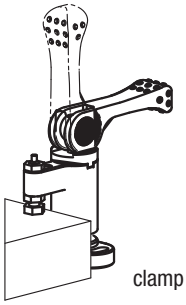




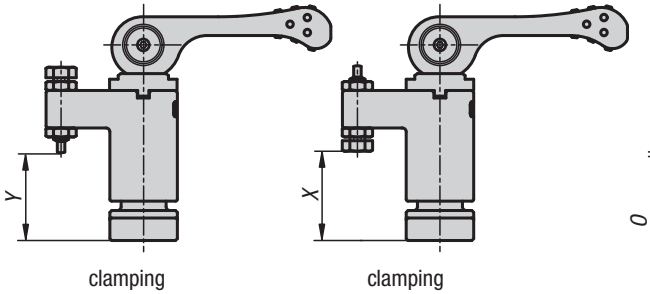
unclamped



swivel

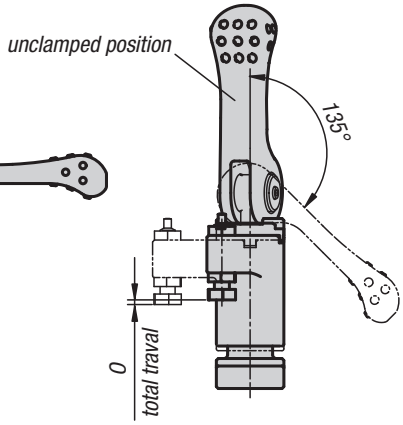


clamp



clamping
rough surfaces

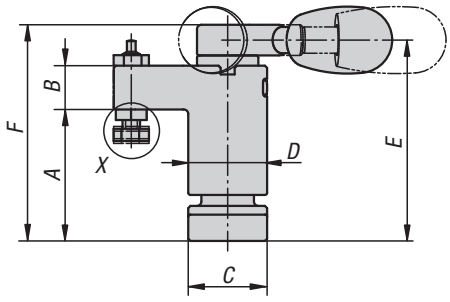
clamping
machined surfaces



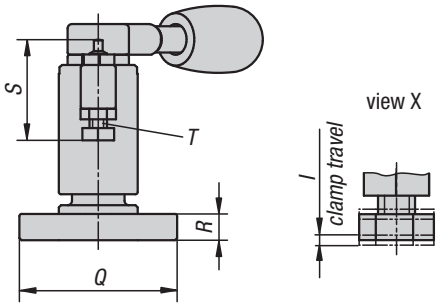
KIPP Swing clamps, mini, with cam lever

Order No. left	Order No. right	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	X min.	X max.	Y min.	Y max.	F=Retaining force N	Hand force FH N
K0925.0100	**K0925.1100**	30	10	18	18	52	26	22	0,8	6	11,5	8	4,3	50	1,2	16	36	6	22,8	M4	4,3	27	22,4	25,2	22	24,8	800	100*
K0925.0150	**K0925.1150**	40	14	23	23	68	35	30	1	8	15,3	10	5,3	63	1,5	19	45	8	28,5	M5	5,3	34	30,8	33,8	31,7	34,7	1500	150*
K0925.0200	**K0925.1200**	50	18	30	30	87	45	37	1,2	8	20,7	16	8,4	80	1,8	24	65	12	45,5	M8	8,4	48	31,9	39,6	32,9	40,6	2100	200*
K0925.0300	**K0925.1300**	60	22	40	40	107	55	45	1,5	8	25,4	20	10,4	100	2,3	30	85	15	57	M10	10,5	64	35,7	46,7	38,2	49,2	2800	300*

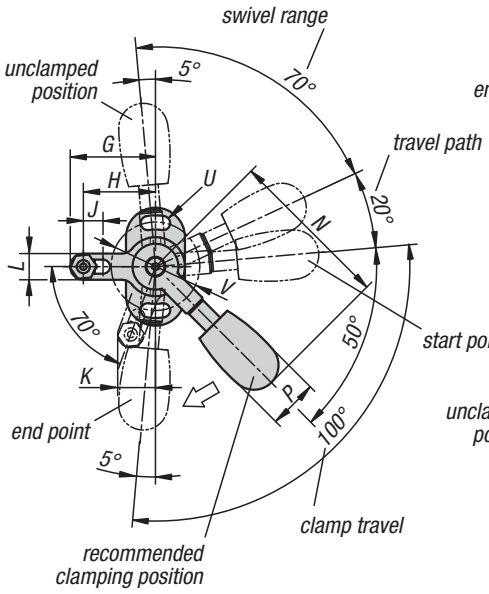
Swing clamps mini

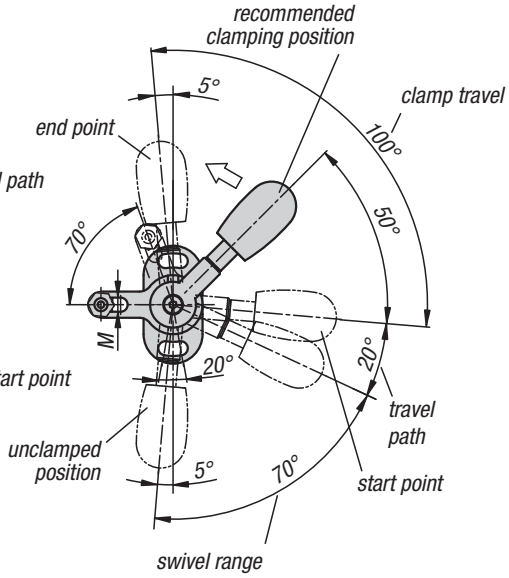


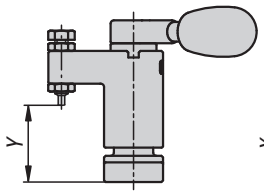
Right hand



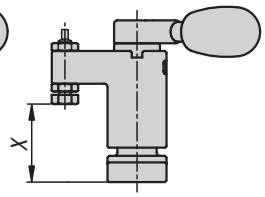
Left hand



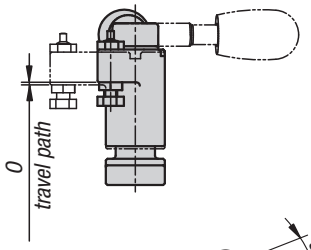


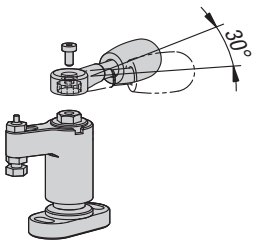


clamping
rough faces



clamping
machined faces





The position of the grip can
be adjusted in 30° increments

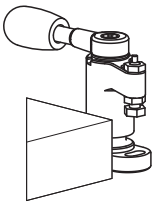
Material:
Carbon steel.
Grip plastic.

Version:
Tempered, black oxidised.
Grip black.

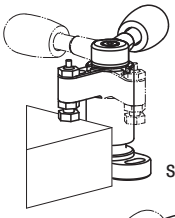
Sample order:
K0926.0100

Note:
Swing clamps are used where the clamping points must be free when the workpiece is loaded or removed.

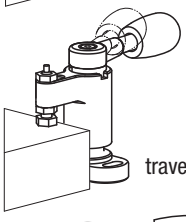
* Admissible hand force for the handle.



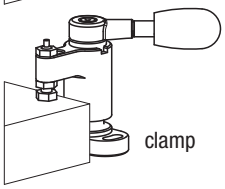
unclamped



swivel



travel path



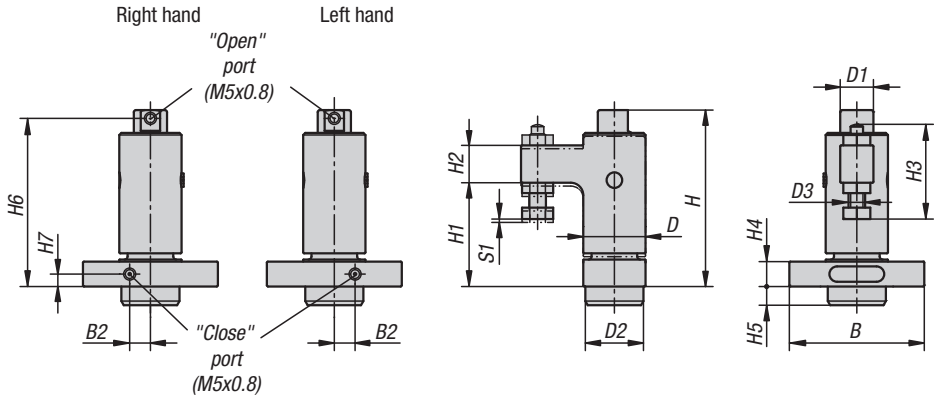
clamp

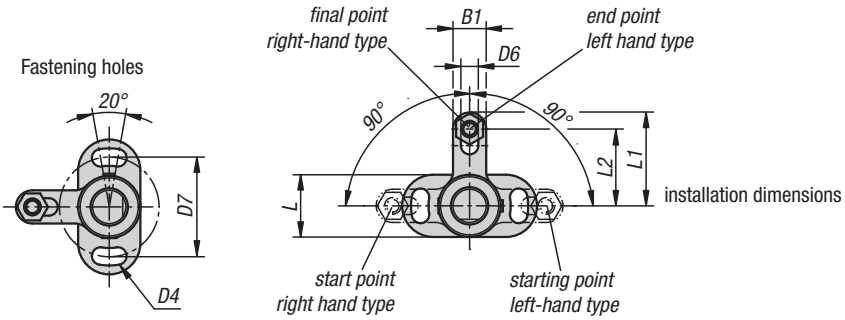
KIPP Swing clamps mini

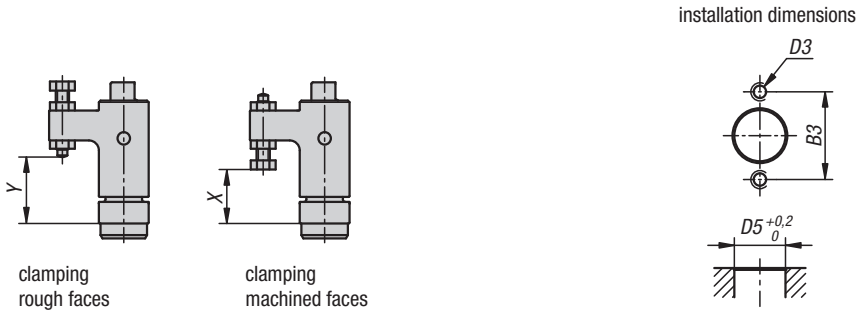
Order No. left	Order No. right	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	X min.	X max.	Y min.	Y max.	F=Retaining force N	Hand force FH N
K0926.0100	K0926.1100	30	10	18	18	45,8	49	26	22	1	6	11,5	8	4,3	50	0,8	15	36	6	22,8	M4	4,3	27	22,3	25,3	21,9	24,9	1100	100*
K0926.0150	K0926.1150	40	14	23	23	61,3	66	35	30	1,4	8	15,3	10	5,3	63	1,1	20	45	8	28,5	M5	5,3	34	30,6	34	31,5	34,9	1800	150*
K0926.0200	K0926.1200	50	18	30	30	76,5	82	45	37	1,5	8	20,7	16	8,4	80	1,4	26	65	12	45,5	M8	8,4	48	31,7	39,7	32,7	40,7	2200	200*
K0926.0300	K0926.1300	60	22	40	40	93	100	55	45	1,9	8	25,4	20	10,4	100	1,7	33	85	15	57	M10	10,5	64	35,5	46,9	38	49,4	3500	300*

Swing clamps

pneumatic







Material:
Carbon steel.

Version:
Clamping element nickel-plated.
Clamping bolt tempered and nickel-plated.

Sample order:
K1388.13945

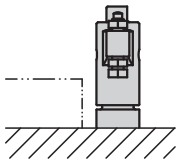
Note:
The pneumatic swing clamp is suitable for clamping workpieces from above. The swivel and clamping function occurs pneumatically. The swivel function enables unobstructed insertion and removal of the workpiece. Optimum accessibility to the workpiece is guaranteed. The foot of the housing offers universal fastening possibilities, enabling the swing clamp to be optimally aligned with the workpiece being clamped. The swing clamps are available in left or right swivelling versions.
Pneumatic swing clamps can also be placed in multiple positions on the workpiece and operated in a particular order. They can be controlled manually or automatically.

The clamping force and retaining force indicated are based on 0.5 MPa.

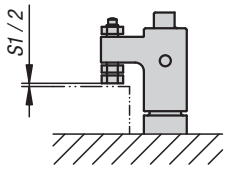
Swing clamps

pneumatic

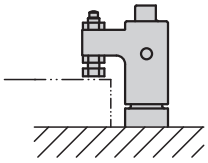
Setting the distance between the workpiece and thrust screw:
The distance between thrust screw and workpiece should be ca. half of the clamping travel (S1).
The clamping arm swivels in horizontally.
Carry out the following steps to set the thrust screw correctly.



1. Open the clamp by applying compressed air to the "open" port.

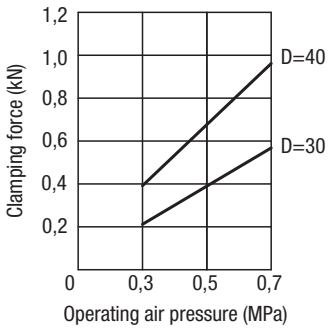


2. Manually swivel the arm to the clamping position. Set the distance between the thrust screw and the workpiece top face to half the clamping travel (S1).



3. Secure the thrust screw in place using locknuts.

Performance curve



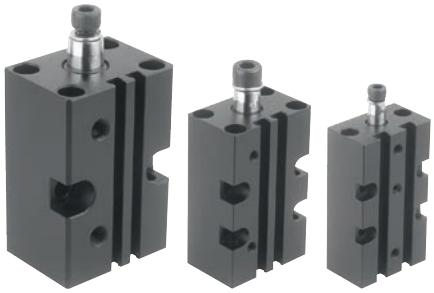
KIPP Pneumatic swing clamps

Order No.	Version 1	B	B1	B2	B3	D	D1	D2	D3	D4	D5	D6	D7	H	H1	H2
K1388.13945	right	65	16	10	48	30	16	28	M8	8,4	28	8,4	48	85	50	18
K1388.03945	left	65	16	10	48	30	16	28	M8	8,4	28	8,4	48	85	50	18
K1388.15155	right	85	20	13	64	40	22	35	M10	10,5	35	10,4	64	106	65	22
K1388.05155	left	85	20	13	64	40	22	35	M10	10,5	35	10,4	64	106	65	22

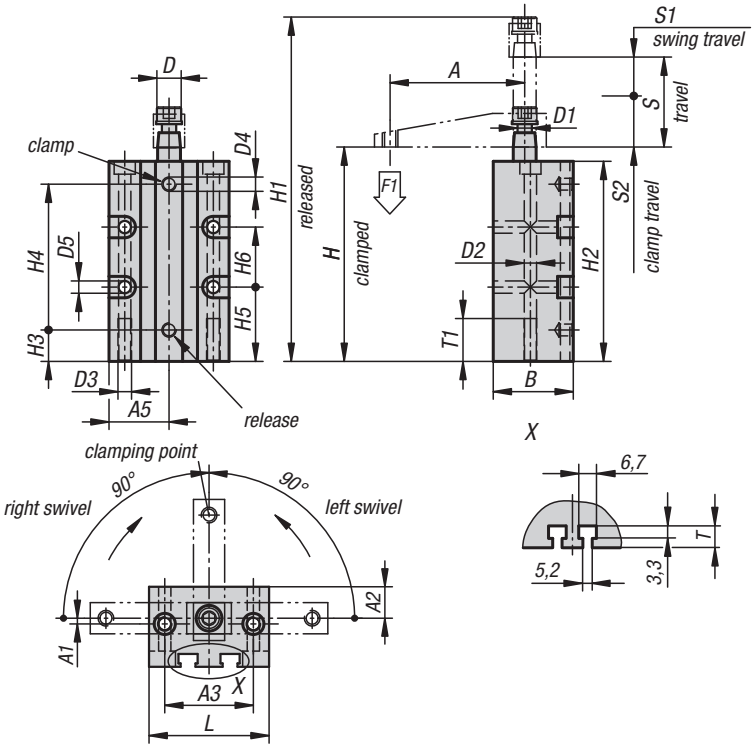
Order No.	H3	H4	H5	H6	H7	L	L1	L2	S1 (travel)	F=Retaining force N	Holding force F kN	Operating pressure MPa	X min.	X max.	Y min.	Y max.
K1388.13945	45,5	12	9	81	6	30	45	37	1,2	400	0,8	0,3 - 0,7	32,5	39	33,5	40
K1388.03945	45,5	12	9	81	6	30	45	37	1,2	400	0,8	0,3 - 0,7	32,5	39	33,5	40
K1388.15155	57	15	11	101	8	40	55	45	1,6	650	1,3	0,3 - 0,7	41,5	51	44	53,5
K1388.05155	57	15	11	101	8	40	55	45	1,6	650	1,3	0,3 - 0,7	41,5	51	44	53,5

Swing clamps

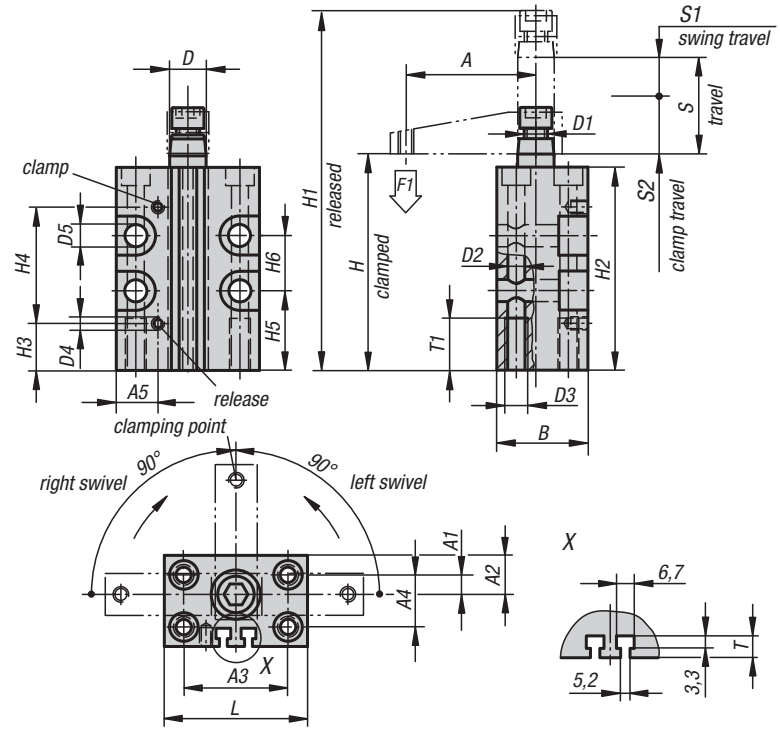
pneumatic



Ⓐ



Ⓑ



Material:
Body aluminium.
Double-acting piston rod stainless steel.

Version:
Body black anodised.

Sample order:
K1815.1161

Note:
Swing clamps are used where low clamping forces suffice or where the clamping point must be free when mounting and removing the workpiece. The block form of the housing offers universal fastening possibilities. The magnetic piston is primed for electrical end position feedback.
Including screw and lock washer for fastening the clamping arms (accessories).
The swing action of the clamp should not be blocked.
F1 = at 6 bar (max. operating pressure).

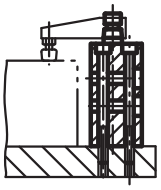
On request:
Proximitiy switch.

Accessories:
- Clamping arm K1816
- Adapter K1817

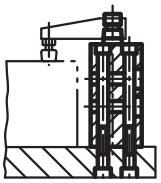
Swing clamps

pneumatic

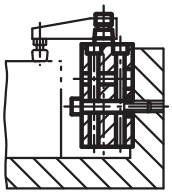
Examples:



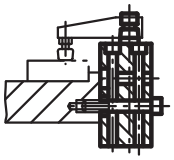
with screws from above



with screws from below



lateral to the rear



lateral to the front

KIPP Pneumatic swing clamps

Order No.	Version 2	Form	Size	A	A1	A2	A3	A5	B	D	D1	D2	D3	D4	D5
K1815.1121	swivel to the right	A	12	35	0	10	31	20	24	8	M5	4,3	M5	M5	4,3
K1815.1161	swivel to the right	A	16	41	-2	11	31	21	28	8	M5	4,3	M5	M5	4,3
K1815.2121	swivel to the left	A	12	35	0	10	31	20	24	8	M5	4,3	M5	M5	4,3
K1815.2161	swivel to the left	A	16	41	-2	11	31	21	28	8	M5	4,3	M5	M5	4,3

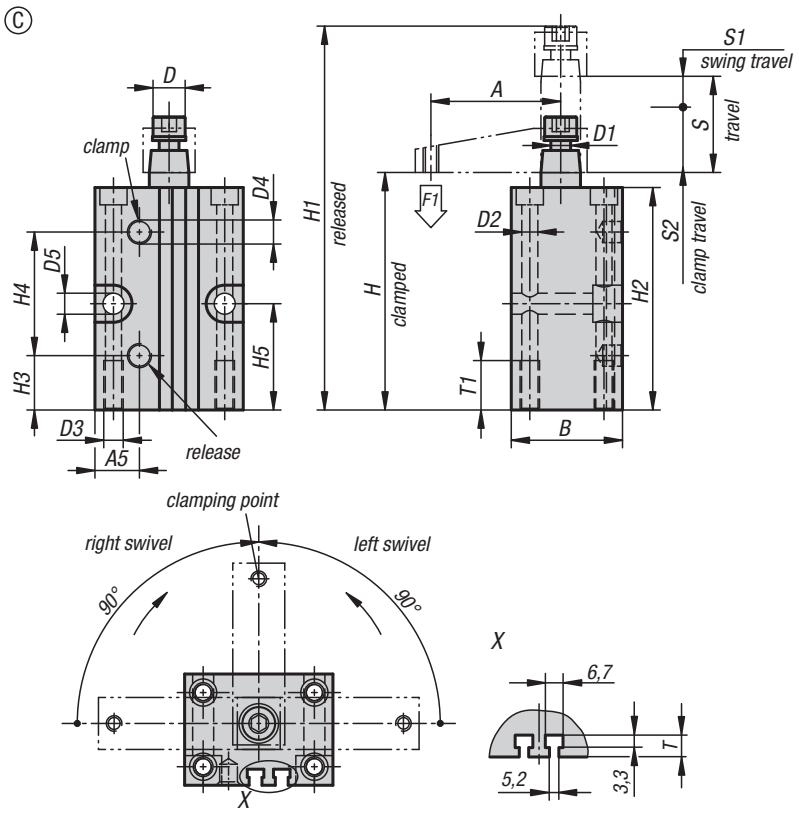
Order No.	H	H1	H2	H3	H4	H5	H6	Travel S	L	S1	S2	T	T1	F1 N
K1815.1121	76	105	70	11	51	26	21	16	40	7	9	5	15	30
K1815.1161	76	105	70	11	51	26	21	16	42	7	9	4,5	15	60
K1815.2121	76	105	70	11	51	26	21	16	40	7	9	5	15	30
K1815.2161	76	105	70	11	51	26	21	16	42	7	9	4,5	15	60

Order No.	Version 2	Form	Size	A	A1	A2	A3	A5	B	D	D1	D2	D3	D4	D5
K1815.1201	swivel to the right	B	20	48	8	13	36	11,5	30	12	M8	5,5	M6	M5	5,5
K1815.2201	swivel to the left	B	20	48	8	13	36	11,5	30	12	M8	5,5	M6	M5	5,5

Order No.	H	H1	H2	H3	H4	H5	H6	Travel S	L	S1	S2	T	T1	F1 N
K1815.1201	80	125	74	17	44,5	24	22	27	46	12	15	4,5	20	80
K1815.2201	80	125	74	17	44,5	24	22	27	46	12	15	4,5	20	80

Swing clamps

pneumatic



KIPP Pneumatic swing clamps

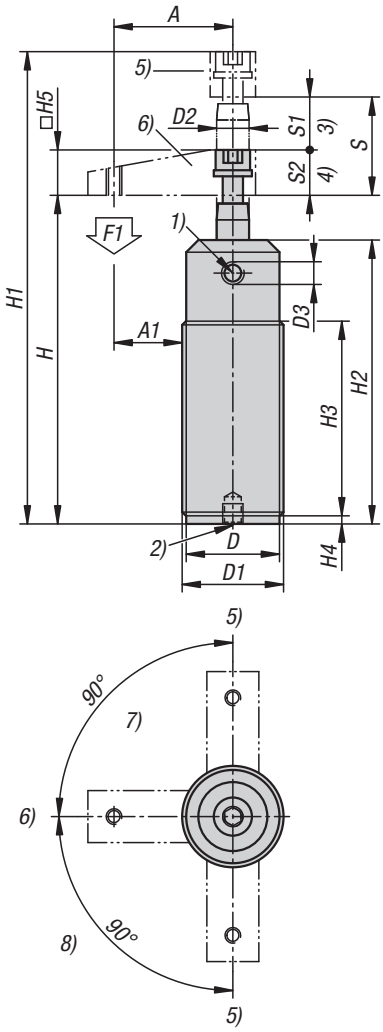
Order No.	Version 2	Form	Size	A	A1	A2	A3	A5	B	D	D1	D2	D3	D4	D5
K1815.1251	swivel to the right	C	25	50	7,5	15	40	17	35	14	M8	6,5	M8	M5	8,5
K1815.1321	swivel to the right	C	32	60	12,5	20	45	18	45	16	M8	6,5	M8	G1/8	8,5
K1815.1401	swivel to the right	C	40	70	15,5	24,5	52	22	55	16	M8	8,5	M10	G1/8	8,5
K1815.1501	swivel to the right	C	50	80	21,5	31	66	25	65	20	M10	8,5	M10	G1/8	10,5
K1815.1631	swivel to the right	C	63	90	27,5	37,5	80	30	80	20	M10	10,5	M12	G1/8	10,5
K1815.2251	swivel to the left	C	25	50	7,5	15	40	17	35	14	M8	6,5	M8	M5	8,5
K1815.2321	swivel to the left	C	32	60	12,5	20	45	18	45	16	M8	6,5	M8	G1/8	8,5
K1815.2401	swivel to the left	C	40	70	15,5	24,5	52	22	55	16	M8	8,5	M10	G1/8	8,5
K1815.2501	swivel to the left	C	50	80	21,5	31	66	25	65	15	M10	8,5	M10	G1/8	10,5
K1815.2631	swivel to the left	C	63	90	27,5	37,5	80	30	80	15	M10	10,5	M12	G1/8	10,5

Order No.	H	H1	H2	H3	H4	H5	Travel S	L	S1	S2	T	T1	F1 N
K1815.1251	83	125	78	17	44,5	32	27	55	15	12	5	20	170
K1815.1321	96	145	90	22	50	43	30	60	16	14	6,5	20	270
K1815.1401	96	145	90	20	52	40	31	70	16	15	8	25	450
K1815.1501	106	162	100	25	53,5	45	30	85	15	15	6,5	30	700
K1815.1631	106	162	100	28	53,5	36	30	100	15	15	8,5	30	1100
K1815.2251	83	125	78	17	44,5	32	27	55	15	12	5	20	170
K1815.2321	96	145	90	22	50	43	30	60	16	14	6,5	20	270
K1815.2401	96	145	90	20	52	40	31	70	16	15	8	25	450
K1815.2501	106	162	100	25	53,5	45	30	85	15	15	6,5	30	700
K1815.2631	106	162	100	28	53,5	36	30	100	15	15	8,5	30	1100

Notes

Swing clamp

pneumatic screw-on



Drawing reference:
1) Clamping
2) Releasing
3) Swing travel
4) Clamping travel
5) Relaxed
6) Tensioned
7) Left swinging
8) Right swinging

Material:
Body aluminium.
Piston steel.

Version:
Body black anodised.
Piston hard chrome-plated

Sample order:
K1814.116

Note:
Screw-in pneumatic swing clamps find use where low clamping forces suffice and where the clamping point has to be cleared to enable placing or removing the workpiece.
The design enables space saving installation. The screw-in bolt can be used to adjust the height of the swing clamp. The clamp is suitable for a sunken mounting in a fixture.

Due to the double-acting function of the clamp, pressure is used to move the piston downwards and upwards.

KIPP Swing clamp pneumatic screw-on

Order No.	Size	Version 2	Form-Type	A	A1	D	D1	D2	D3	D4
K1814.112	12	screw-on	swivel to the right	35	22,5	22,5	M25X1,5	8	M5	M5
K1814.116	16	screw-on	swivel to the right	41	26	27,5	M30x1,5	8	M5	M5
K1814.120	20	screw-on	swivel to the right	48	30,5	32,5	M35x1,5	12	M5	M8
K1814.125	25	screw-on	swivel to the right	50	30	38	M40x1,5	14	M5	M8
K1814.132	32	screw-on	swivel to the right	60	35	48	M50x1,5	16	G1/8	M8
K1814.140	40	screw-on	swivel to the right	70	42,5	53	M55X1,5	16	G1/8	M8
K1814.150	50	screw-on	swivel to the right	80	47,5	62	M65X1,5	20	G1/8	M10
K1814.163	63	screw-on	swivel to the right	90	50	77	M80X1,5	20	G1/8	M10
K1814.212	12	screw-on	swivel to the left	35	22,5	22,5	M25X1,5	8	M5	M5
K1814.216	16	screw-on	swivel to the left	41	26	27,5	M30x1,5	8	M5	M5
K1814.220	20	screw-on	swivel to the left	48	30,5	32,5	M35x1,5	12	M5	M8
K1814.225	25	screw-on	swivel to the left	50	30	38	M40x1,5	14	M5	M8
K1814.232	32	screw-on	swivel to the left	60	35	48	M50x1,5	16	G1/8	M8
K1814.240	40	screw-on	swivel to the left	70	42,5	53	M55X1,5	16	G1/8	M8
K1814.250	50	screw-on	swivel to the left	80	47,5	62	M65X1,5	20	G1/8	M10
K1814.263	63	screw-on	swivel to the left	90	50	77	M80X1,5	20	G1/8	M10

Swing clamp

pneumatic screw-on

The total travel of the swing clamp consists of the swing travel and the clamping travel. At the start of the clamping process, the clamping arm performs a 90° swing movement. When this movement is completed, the linear down clamping travel is carried out. The workpiece must only be clamped using the clamping travel.

The swing clamp must not be constrained in its swinging action. F1 = at 6 bar max. permitted operating pressure.

The screw-in swing clamp can be fastened using a DIN 70852 slotted round nut or a threaded flange (K1820).

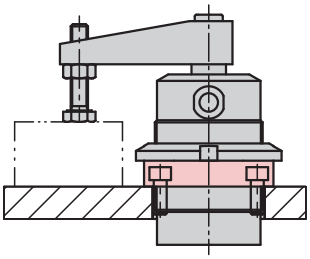
The swing clamp must only be operated using lubricated air.

Including screw and lock washer for fastening the clamping arms which are available as accessories.

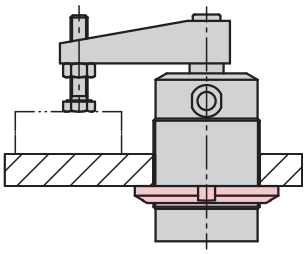
Clamping arm, slotted round nut and threaded flange are not supplied.

Accessories:
K1816 Clamping arm for swing clamp.
DIN 70852 slotted round nut.
Threaded flange K1820.

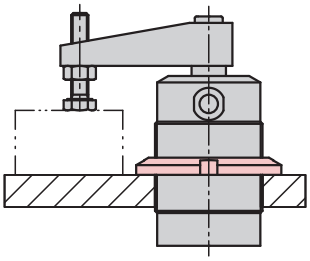
Installation examples:



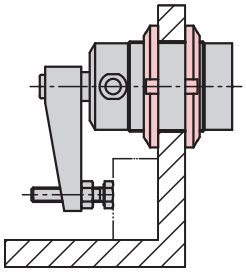
With threaded flange and slotted round nut.



With a slotted round nut from below.



With a slotted round nut from above.

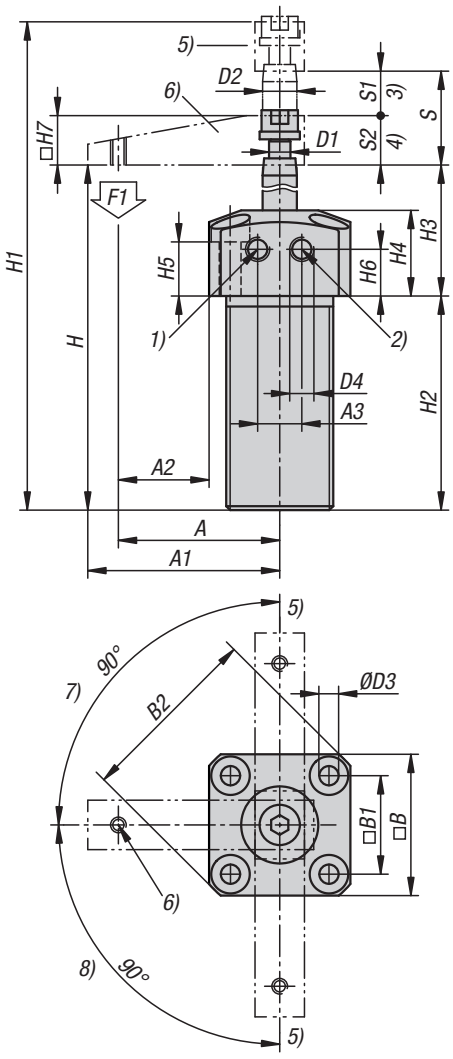


With two slotted round nuts.

Order No.	H	H1	H2	H3	H4	H5	S1	S2	Travel S	F1 N
K1814.112	74,9	104,5	70	48	2	12	9	8,6	17,6	40
K1814.116	75	108,5	70	48	2	16	9	8,5	17,5	90
K1814.120	90,5	136,5	85,1	63,1	2	19	12	15	27	120
K1814.125	73	118	70	35	12	16	13	13	26	210
K1814.132	83	132	79	40	15	19	14	14	28	370
K1814.140	87	136	83	45	15	19	14	16	30	650
K1814.150	92	148	87	50	15	25,4	16	16	32	1020
K1814.163	98	153	92	56	15	25,4	16	14	30	1720
K1814.212	74,9	104,5	70	48	2	12	9	8,6	17,6	40
K1814.216	75	108,5	70	48	2	16	9	8,5	17,5	90
K1814.220	90,5	136,5	85,1	63,1	2	19	12	15	27	120
K1814.225	73	118	70	35	12	16	13	13	26	210
K1814.232	83	132	79	40	15	19	14	14	28	370
K1814.240	87	136	83	45	15	19	14	16	30	650
K1814.250	92	148	87	50	15	25,4	16	16	32	1020
K1814.263	98	153	92	56	15	25,4	16	14	30	1720

Swing clamp

pneumatic screw-on with flange



Drawing reference:
1) Clamping
2) Releasing
3) Swing travel
4) Clamping travel
5) Relaxed
6) Tensioned
7) Left swinging
8) Right swinging

Material:
Body aluminium.
Piston steel.

Version:
Body silver anodised.
Piston hard chrome-plated

Sample order:
K1818.116

Note:
Screw-in pneumatic swing clamps with flange find use where low clamping forces suffice and where the clamping point has to be cleared to enable placing or removing the workpiece.
The design enables space saving installation. The screw-in bolt can be used to adjust the height of the swing clamp. The clamp is suitable for a sunken mounting in a fixture. The compressed air port for the swing clamp is in the flange.

Due to the double-acting function of the clamp, pressure is used to move the piston downwards and upwards.

KIPP Swing clamp pneumatic screw-on with flange

Order No.	Size	Version 2	Form-Type	A	A1	A2	A3	B	B1	B2	D	D1	D2	D3	D4
K1818.112	12	screw-on with flange	swivel to the right	35	39	18,75	10	32,5	23	42,5	M25x1,5	M5	8	4,5	M5
K1818.116	16	screw-on with flange	swivel to the right	41	45	23	12	36	26,5	47	M30x1,5	M5	8	4,5	M5
K1818.120	20	screw-on with flange	swivel to the right	48	54	27,5	14	41	30,5	54	M35x1,5	M8	12	5,5	M5
K1818.125	25	screw-on with flange	swivel to the right	50	56	25	23	50	37	66	M40X1,5	M8	14	5,5	M5
K1818.132	32	screw-on with flange	swivel to the right	60	69	30	23	60	45	80	M50X1,5	M8	16	6,5	G1/8
K1818.140	40	screw-on with flange	swivel to the right	70	79	37,5	26	65	50	87	M55X1,5	M8	16	6,5	G1/8
K1818.150	50	screw-on with flange	swivel to the right	80	90	42,5	32	75	58	100	M65X1,5	M10	20	8,5	G1/8
K1818.163	63	screw-on with flange	swivel to the right	90	100	45,5	35	90	70	118	M80X1,5	M10	20	8,5	G1/8
K1818.212	12	screw-on with flange	swivel to the left	35	39	18,75	10	32,5	23	42,5	M25x1,5	M5	8	4,5	M5
K1818.216	16	screw-on with flange	swivel to the left	41	45	23	12	36	26,5	47	M30x1,5	M5	8	4,5	M5
K1818.220	20	screw-on with flange	swivel to the left	48	54	27,5	14	41	30,5	54	M35x1,5	M8	12	5,5	M5
K1818.225	25	screw-on with flange	swivel to the left	50	56	25	23	50	37	66	M40X1,5	M8	14	5,5	M5
K1818.232	32	screw-on with flange	swivel to the left	60	69	30	23	60	45	80	M50X1,5	M8	16	6,5	G1/8
K1818.240	40	screw-on with flange	swivel to the left	70	79	37,5	26	65	50	87	M55X1,5	M8	16	6,5	G1/8
K1818.250	50	screw-on with flange	swivel to the left	80	90	42,5	32	75	58	100	M65X1,5	M10	20	8,5	G1/8
K1818.263	63	screw-on with flange	swivel to the left	90	100	45,5	35	90	70	118	M80X1,5	M10	20	8,5	G1/8

Swing clamp

pneumatic screw-on with flange

The total travel of the swing clamp consists of the swing travel and the clamping travel. At the start of the clamping process, the clamping arm performs a 90° swing movement. When this movement is completed, the linear down clamping travel is carried out. The workpiece must only be clamped using the clamping travel.

The swing clamp must not be constrained in its swinging action. F1 = at 6 bar max. permitted operating pressure.

The screw-in swing clamp with flange can be fastened from above or below using a DIN 70852 slotted round nut. Another option is to fasten the swing clamp to the fixture from above using four cap screws.

The swing clamp must only be operated using lubricated air.

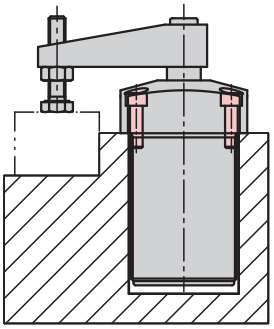
The fastening holes in the flange have the same dimensions as those in the threaded flange K1820.

The screw and the lock washer for fastening the clamping, which is available as an accessory, are supplied.

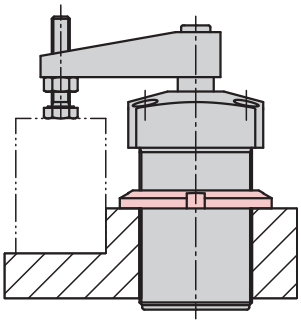
Clamping arm and slotted round nut are not supplied.

Accessories:
K1816 Clamping arm for swing clamp.
DIN 70852 slotted round nut.

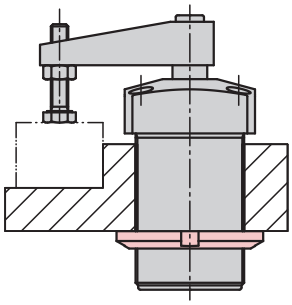
Installation examples:



With cap screws from above.



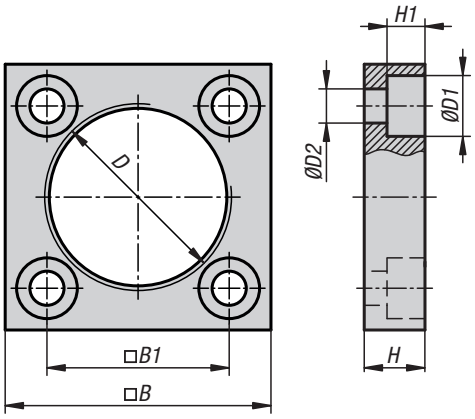
With a slotted round nut from above.



With a slotted round nut from below.

Order No.	H	H1	H2	H3	H4	H5	H6	H7	Travel S	S1	S2	F1 N
K1818.112	75	104,6	52	25	18	11	7	12	17,6	9	8,6	40
K1818.116	75	104,5	52	25	18	11	7	12	17,5	9	8,5	90
K1818.120	90,5	133,5	65,1	25,4	20	10	10	16	27	12	15	120
K1818.125	92	134	62	30	25	15	11,5	16	26	13	13	210
K1818.132	103	150	73	30	25	13	10,5	19	28	14	14	370
K1818.140	103	152	73	30	25	13	10,5	19	30	14	16	650
K1818.150	110	167	80	30	25	11	10,5	25	32	16	16	1020
K1818.163	110	165	80	30	25	11	10,5	25	30	16	14	1720
K1818.212	75	104,6	52	25	18	11	7	12	17,6	9	8,6	40
K1818.216	75	104,5	52	25	18	11	7	12	17,5	9	8,5	90
K1818.220	90,5	133,5	65,1	25,4	20	10	10	16	27	12	15	120
K1818.225	92	134	62	30	25	15	11,5	16	26	13	13	210
K1818.232	103	150	73	30	25	13	10,5	19	28	14	14	370
K1818.240	103	152	73	30	25	13	10,5	19	30	14	16	650
K1818.250	110	167	80	30	25	11	10,5	25	32	16	16	1020
K1818.263	110	165	80	30	25	11	10,5	25	30	16	14	1720

Threaded flange aluminium



Material:
Aluminium.

Sample order:
K1820.16

Note:
The aluminium threaded flange can be used as a mounting base for swing clamps.

The fastening holes of the threaded flange have the same dimensions as those of the pneumatic screw-in swing clamps with flange (K1818) and the pneumatic screw-in link clamps with flange (K1819).

Can be used to secure to the fixture with a slotted round nut.

Advantages:
Additional thread must be cut into the fixtures mounting plate.

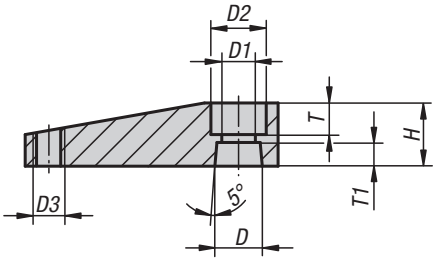
Accessories:
K1819 Pneumatic link clamp, screw-on with flange.
K1814 Pneumatic swing clamp, screw-on.
K1818 Pneumatic swing clamp, screw-on with flange.

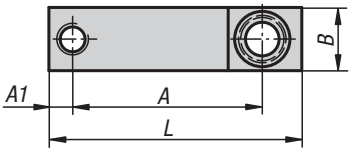
KIPP Threaded flange aluminium

Order No.	Size	B	B1	D	D1	D2	H	H1
K1820.12	12	35	24	M25x1,5	8	4,5	8	5
K1820.16	16	40	29	M30x1,5	8	4,5	8	5
K1820.20	20	45	32	M35x1,5	9	5,5	9	6
K1820.25	25	50	37	M40x1,5	9	5,5	9	6
K1820.32	32	60	45	M50x1,5	11	6,5	12	7
K1820.40	40	65	50	M55x1,5	11	6,5	12	7
K1820.50	50	75	58	M65x1,5	13	8,5	15	9
K1820.63	63	88	70	M80x1,5	13	8,5	15	9

Clamping arm

for swing clamp





Material:
High-strength aluminium alloy

Version:
Coated with hart-coat®

Sample order:
K1816.12

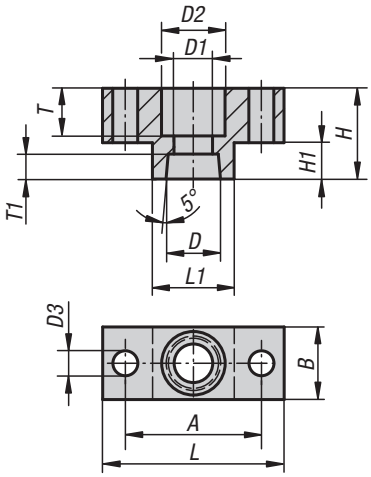
Note:
Hard wearing surface, repels welding particles. Suitable for pneumatic swing clamp K1815, in respective sizes.

KIPP Clamping arm for swing clamp

Order No.	Size	A	A1	B	D	D1	D2	D3	H	L	T	T1
K1816.12	12	35	4	12	8	5,5	9	M4	12	45	5	5
K1816.16	16	41	4	12	8	5,5	9	M4	12	51	4	5
K1816.20	20	48	6	16	12	8,5	14	M6	16	64	8	6
K1816.25	25	50	6	16	14	9	14	M6	16	66	6	6
K1816.32	32	60	9	20	16	9	14	M8	19	81	7	9
K1816.40	40	70	9	20	16	9	14	M8	19	90	7	9
K1816.50	50	80	10	25	20	11	17	M12	25	105	9	10
K1816.63	63	90	10	25	20	11	17	M12	25	115	9	10

Adapters

for swing clamp

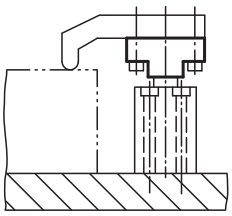


Material:
High-strength aluminium alloy

Version:
Coated with hart-coat®

Sample order:
K1817.1216

Note:
Hard wearing surface, repels welding particles.
Holds matching clamping arms. Suitable for pneumatic swing clamp K1815 in respective sizes.



KIPP Adapters for swing clamps

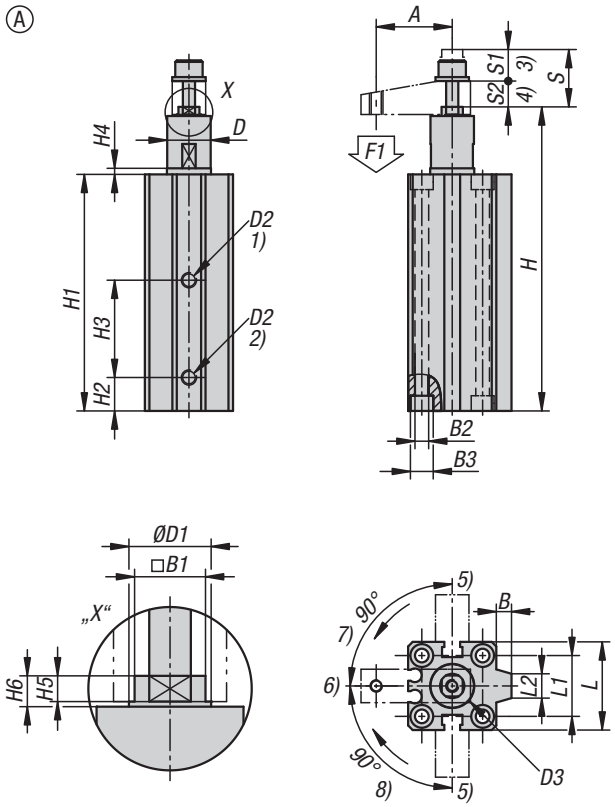
Order No.	Size	A	B	D	D1	D2	D3	H	H1	L	L1	T	T1
K1817.1216	12/16	22	12	8	5,5	10	4,5	14	6	30	13	7	5
K1817.2000	20	30	16	12	8,5	14	5,5	20	8	40	18	10,5	5,5
K1817.2500	25	38	16	14	8,5	14	5,5	20	8	50	25	8	6,5
K1817.3240	32/40	45	19	16	8,5	14	7	25	10	60	30	11	9
K1817.5063	50/63	48	25	20	10,5	17	9	30	12	65	30	14	10

Notes

Swing clamp pneumatic

block body

Ⓐ



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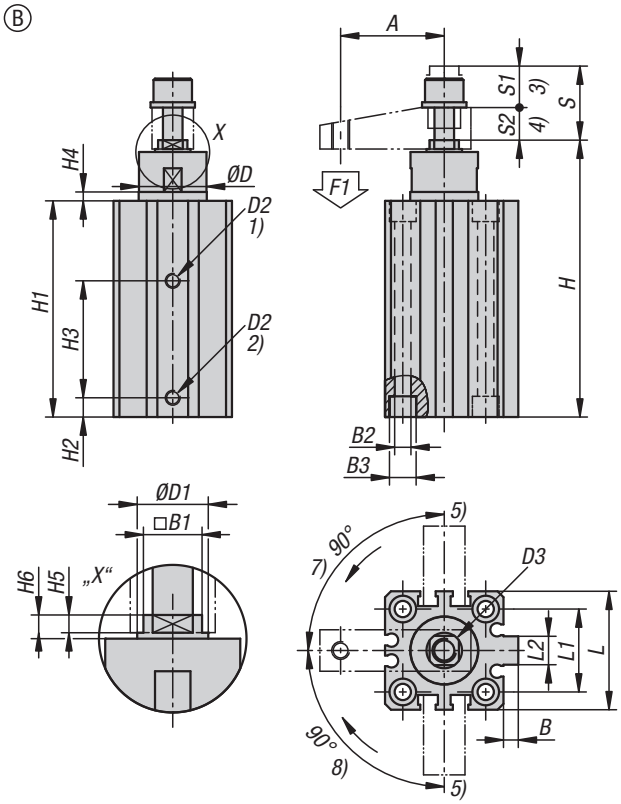


Material:
Body aluminium.
Piston steel.

Version:
Body silver anodised.
Piston hard chrome-plated

Sample order:
K1812.11220

Note:
Pneumatic swing clamps find use where low clamping forces suffice and where the clamping point has to be cleared to enable placing or removing the workpiece.

Due to the double-acting function of the clamp, pressure is used to move the piston downwards and upwards.

The total travel of the swing clamp consists of the swing travel and the clamping travel. At the start of the clamping process, the clamping arm performs a 90° swing movement. When this movement is completed, the linear down clamping travel is carried out. The workpiece must only be clamped using the clamping travel.

The magnetic piston is prepared for electronic end-position feedback. The swing clamp must not be constrained in its swinging action. F1 = at 6 bar max. permitted operating pressure.

The swing clamp must only be operated using lubricated air.

The clamping arm is not supplied.

On request:
Proximitiy switch.

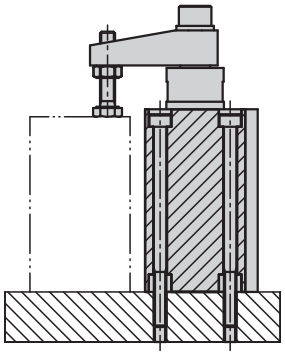
Accessories:
K1813 Clamping arm for swing clamp.

Drawing reference:
1) Clamping
2) Releasing
3) Swing travel
4) Clamping travel
5) Relaxed
6) Tensioned
7) Left swinging
8) Right swinging

Swing clamp pneumatic

block body

Installation example:



KIPP Swing clamp pneumatic block body

Order No.	Size	Form	Version 2	A	B	B1 max.	B1 min.	B2	B3	D max.	D min.	D1	D2	D3
K1812.11210	12	A	swivel to the right	20	5	4,9	4,8	4,5	7,5	11,5	11,42	6	M5	M03x0,5
K1812.11220	12	A	swivel to the right	20	5	4,9	4,8	4,5	7,5	11,5	11,42	6	M5	M03x0,5
K1812.11610	16	A	swivel to the right	25	5	6,9	6,8	4,5	7,5	14,5	14,42	8	M5	M05x0,8
K1812.11620	16	A	swivel to the right	25	5	6,9	6,8	4,5	7,5	14,5	14,42	8	M5	M05x0,8
K1812.21210	12	A	swivel to the left	20	5	4,9	4,8	4,5	7,5	11,5	11,42	6	M5	M03x0,5
K1812.21220	12	A	swivel to the left	20	5	4,9	4,8	4,5	7,5	11,5	11,42	6	M5	M03x0,5
K1812.21610	16	A	swivel to the left	25	5	6,9	6,8	4,5	7,5	14,5	14,42	8	M5	M05x0,8
K1812.21620	16	A	swivel to the left	25	5	6,9	6,8	4,5	7,5	14,5	14,42	8	M5	M05x0,8

Order No.	H	H1	H2	H3	H4	H5	H6	L	L1	L2	S1	S2	Travel S	F1 N
K1812.11210	100	77,8	12	51	2	2,5	3	25	15,5	8	7,5	10	17,5	59
K1812.11220	130	97,8	12	70	2	2,5	3	25	15,5	8	7,5	20	27,5	59
K1812.11610	100	77,8	12	51	2	2,5	3	29	20	8	7,5	10	17,5	106
K1812.11620	130	97,8	12	70	2	2,5	3	29	20	8	7,5	20	27,5	106
K1812.21210	100	77,8	12	51	2	2,5	3	25	15,5	8	7,5	10	17,5	59
K1812.21220	130	97,8	12	70	2	2,5	3	25	15,5	8	7,5	20	27,5	59
K1812.21610	100	77,8	11	32	2	2,5	3	29	20	8	7,5	10	17,5	106
K1812.21620	130	97,8	11	42	2	2,5	3	29	20	8	7,5	20	27,5	106

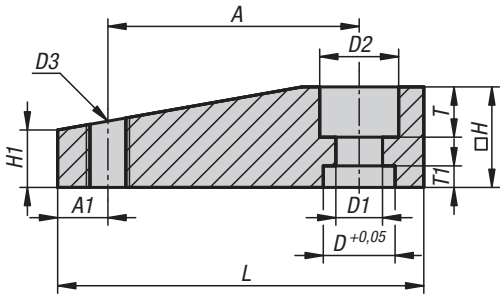
Swing clamp pneumatic

block body

Order No.	Size	Form	Version 2	A	B	B1 max.	B1 min.	B2	B3	D max.	D min.	D1	D2	D3
K1812.12010	20	B	swivel to the right	35	4	9,9	9,8	5,5	8,3	18,4	18,32	12	M5	M08x1,25
K1812.12020	20	B	swivel to the right	35	4	9,9	9,8	5,5	8,3	18,4	18,32	12	M5	M08x1,25
K1812.12510	25	B	swivel to the right	35	5	9,9	9,8	5,5	9	23	22,92	12	M5	M08x1,25
K1812.12520	25	B	swivel to the right	35	5	9,9	9,8	5,5	9	23	22,92	12	M5	M08x1,25
K1812.13210	32	B	swivel to the right	45	4,5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.13220	32	B	swivel to the right	45	4,5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.14010	40	B	swivel to the right	45	5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.14020	40	B	swivel to the right	45	5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.15020	50	B	swivel to the right	65	7	16,9	16,8	6,6	11	37	36,92	20	G1/4	M12x1,75
K1812.15050	50	B	swivel to the right	65	7	16,9	16,8	6,6	11	37	36,92	20	G1/4	M12x1,75
K1812.22010	20	B	swivel to the left	35	4	9,9	9,8	5,5	8,3	18,4	18,32	12	M5	M08x1,25
K1812.22020	20	B	swivel to the left	35	4	9,9	9,8	5,5	8,3	18,4	18,32	12	M5	M08x1,25
K1812.22510	25	B	swivel to the left	35	5	9,9	9,8	5,5	9	23	22,92	12	M5	M08x1,25
K1812.22520	25	B	swivel to the left	35	5	9,9	9,8	5,5	9	23	22,92	12	M5	M08x1,25
K1812.23210	32	B	swivel to the left	45	4,5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.23220	32	B	swivel to the left	45	4,5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.24010	40	B	swivel to the left	45	5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.24020	40	B	swivel to the left	45	5	13,9	13,8	5,5	9	30	29,92	16	G1/8	M10x1,5
K1812.25020	50	B	swivel to the left	65	7	16,9	16,8	6,6	11	37	36,92	20	G1/4	M12x1,75
K1812.25050	50	B	swivel to the left	65	7	16,9	16,8	6,6	11	37	36,92	20	G1/4	M12x1,75

Order No.	H	H1	H2	H3	H4	H5	H6	L	L1	L2	S1	S2	Travel S	F1 N
K1812.12010	93,5	73	18	39,5	3	3	4	36	25,5	8	9,5	10	19,5	141
K1812.12020	113,5	83	18	49,5	3	3	4	36	25,5	8	9,5	20	29,5	141
K1812.12510	93,5	73	18	27	3	3	4	40	28	9,6	9,5	10	19,5	264
K1812.12520	113,5	83	18	37	3	3	4	40	28	9,6	9,5	20	29,5	264
K1812.13210	113,5	80	20	25	3	5,5	6,5	45	34	16,5	15	10	25	422
K1812.13220	133,5	90	20	35	3	5,5	6,5	45	34	16,5	15	20	35	422
K1812.14010	114,5	80	20	25	3	5,5	6,5	52	40	18	15	10	25	739
K1812.14020	134,5	90	20	35	3	5,5	6,5	52	40	18	15	20	35	739
K1812.15020	152	101,5	25	37	3,5	5,5	7,5	64	50	20	19	20	39	1155
K1812.15050	212	131,5	25	67	3,5	5,5	7,5	64	50	20	19	50	69	1155
K1812.22010	93,5	73	18	39,5	3	3	4	36	25,5	8	9,5	10	19,5	141
K1812.22020	113,5	83	18	49,5	3	3	4	36	25,5	8	9,5	20	29,5	141
K1812.22510	93,5	73	18	27	3	3	4	40	28	9,6	9,5	10	19,5	264
K1812.22520	113,5	83	18	37	3	3	4	40	28	9,6	9,5	20	29,5	264
K1812.23210	113,5	80	20	25	3	5,5	6,5	45	34	16,5	15	10	25	422
K1812.23220	133,5	90	20	35	3	5,5	6,5	45	34	16,5	15	20	35	422
K1812.24010	114,5	80	20	25	3	5,5	6,5	52	40	18	15	10	25	739
K1812.24020	134,5	90	20	35	3	5,5	6,5	52	40	18	15	20	35	739
K1812.25020	152	101,5	25	37	3,5	5,5	7,5	64	50	20	19	20	39	1155
K1812.25050	212	131,5	25	67	3,5	5,5	7,5	64	50	20	19	50	69	1155

Clamping arm for swing clamp



Material:
Carbon steel.

Version:
Black anodised.

Sample order:
K1813.16

Note:
Suitable for pneumatic swing clamp K1812, in the respective sizes.

KIPP Clamping arm for swing clamp

Order No.	Size	A	A1	D	D1	D2	D3	H	H1	L	T	T1
K1813.12	12	20	4	5	3,5	6	M3x0,5	8	6,5	29	4	2,5
K1813.16	16	25	5	7	5,5	9	M04x0,7	13	6,5	36	5	2,5
K1813.2025	20/25	35	7	10	8.5	14	M06x1	16	8	51	7	3
K1813.3240	32/40	45	10	14	10,5	17	M08x1,25	22	9	67	9	4,5
K1813.50	50	65	10	17	12,5	21	M10x1,5	25	13	88	13	4,5

Technical information for hydraulic clamping elements

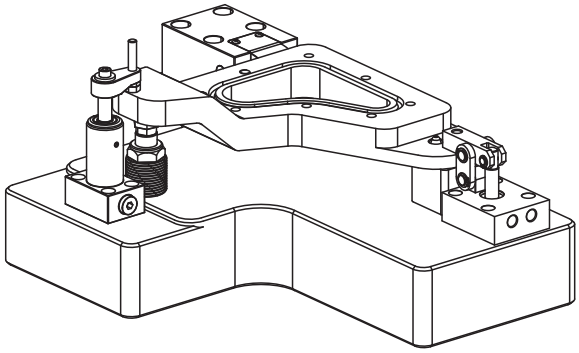
Hydraulic clamping elements are used on clamping fixtures where the generation and transmission of high forces through the use of small clamping elements is required. Furthermore, hydraulic clamping elements can be used to give good control and adjustability together with a long service life for a clamping fixture. The hydraulic clamping element product portfolio covers all support and clamping functions.

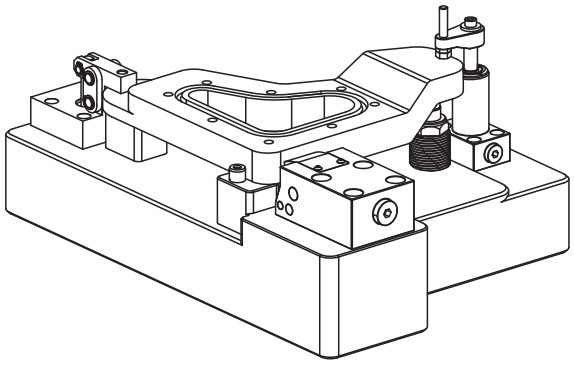
Thanks to the large hydraulic clamping element product range, any workpiece with any dimension in any batch size can be easily clamped with optimised set-up times.

Through having the choice between single-acting and double-acting clamping elements, the hydraulic clamping elements can be used in both automated and non-automated clamping fixtures.

Advantages:

- Clamping sequences in automated procedures can be precisely defined.
- Calculable clamping forces for the clamping elements.
- High safety standards.
- Reduction of clamp and release times.
- Information transfer between machine and clamping element.





General safety information for hydraulic clamping elements

Oil recommendation:

Oil temperature in °C	Oil designations acc. to DIN 51524
• +10-40 °C	HLP 22
• +15-50 °C	HLP 32
• +20-60 °C	HLP 46

Sealing materials:

NBR (acrylonitrile butadiene rubber).

PU (polyurethane).

Special materials to suit functional requirements.

Mounting position:

If no specifications are made in the data sheets, the mounting position of the hydraulic clamping elements is arbitrary.

Operating pressure:

Must be taken from the technical specifications of the product family and/or the individual articles.

Ambient temperature:

-10 °C to +80 °C by standard versions. Versions for higher ambient temperatures available on request.

Piston lateral forces:

Max. 5 % of the nominal piston force may act on the clamping element as lateral forces.

Permitted stroke speed:

Max. 0.25 m/s.

Permitted flow rate:

The permissible flow rates for the individual hydraulic clamping elements must be observed. The values given in the technical data refer to the shortest clamping time of one second. Throttle check valves should be employed where there is a higher quotient (pump flow / number of cylinders) in the clamping device than the permissible flow rate. To prevent pressure intensification, the throttle check valve should be connected to the inlet port of the hydraulic clamping element so that the outflow of hydraulic oil from the clamping element is not obstructed.

Technical information for hydraulic clamping elements

Operating principle of hydraulic clamping elements:

Single-acting hydraulic clamping elements with spring return pistons (return time cannot be defined).

Double-acting hydraulic clamping elements (return time can be defined).

Influence of temperature:

An increase or decrease in temperature changes the volume of the enclosed oil. Here, a pressure change of ca. 10 bar per 1 °C can be assumed if there is no elastic oil volume. Hydraulic accumulators should be employed to prevent these physical influences in a clamping device.

Likewise, a pressure relief valve should be used if it is assumed that the permissible operating pressure could be exceeded.

Service life:

For a long product life, with single-acting clamping elements with spring return care must be taken that no liquids can penetrate the spring chamber of the clamping element.

Commissioning / Maintenance:

Installation information must be observed during the commissioning of hydraulic clamping elements.

When installing the clamping elements, pay attention to the cleanliness of the individual interfaces.

Only the specified, clean pressure media may be used for operation.

Every hydraulic system and hydraulic clamping element must be vented before commissioning is completed.

- Air pockets in the hydraulic oil significantly delay the clamping process. Therefore, venting must be carried out during commissioning:
  Venting with screw connection:
  1. Feed low oil pressure into the cylinder.
  2. Lightly loosen the pipe fitting.
  3. Maintain oil pressure until the oil comes out of the cylinder without bubbles.
  4. Tighten the pipe fitting.
  Venting with O-ring flange connection/drilled channels:
  1. Feed low oil pressure into the cylinder.
  2. Lightly loosen the screw plug.
  3. Maintain oil pressure until the oil comes out of the cylinder without bubbles.
  4. Tighten the screw plug.
- With single-acting clamping elements, the spring chamber must be vented to avoid malfunctions. The filter integrated into the vent port protects the spring chamber from contamination. To prevent liquids from penetrating, an additional vent line can be connected. The vent line should be routed to a protected location.

Maintenance intervals must be observed.

Accident prevention regulations:

Extreme forces can be generated with hydraulic clamping elements. This increases the risk of injury during operation through pinching or crushing.

Use protective devices with locks or latches and observe the general accident prevention regulations.

With single-acting clamping elements, the housing cover must under no circumstances be removed. There is a high risk of injury from the the heavily tensioned springs shooting out. Loose fastening screws must be retightened immediately.

Observance of DIN 31001, part 1.

Key figures and SI units:

Area	A	m^2	cm^2	mm^2
Force	F	N	1000 N=kN	
Mass	m	kg		
Volume	V	m^3	cm^3	mm^3
Volume flow	Q	cm^3/sec	l/min	
Distance	s	m	cm	mm
Time	t	s	min	
Speed	v	m/s		
Revolution	n	s^{-1}	l/min	

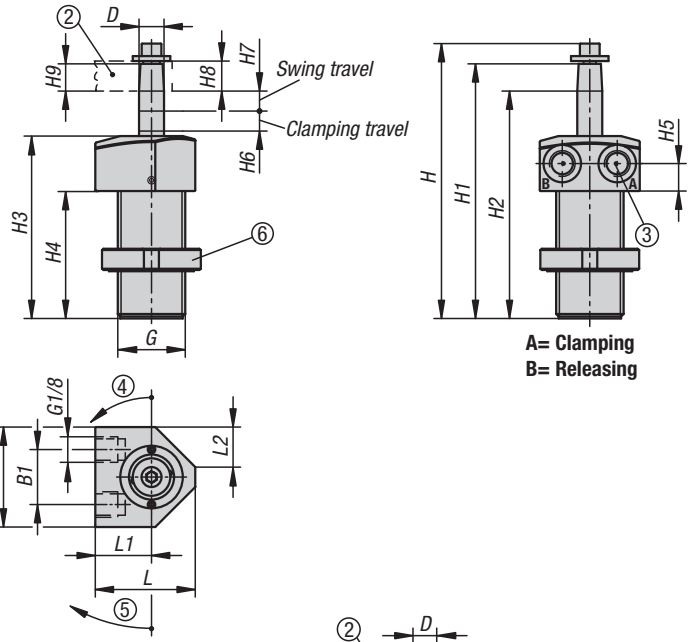
Basic formula of hydrostatics

Pressure	=	Force / Area
p	=	F / A

Swing clamps, hydraulic, compact

double / single-acting with spring return

AGW



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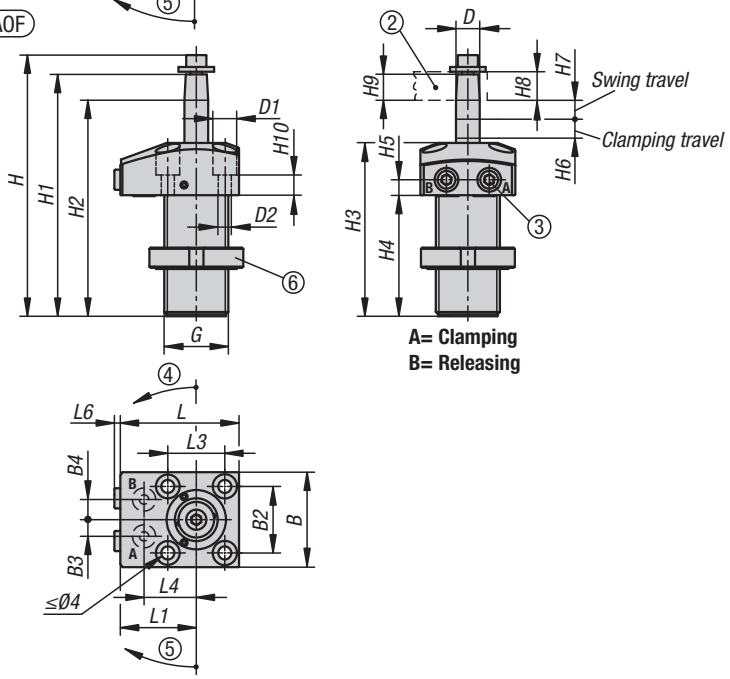


Compact swing clamps are designed for clamping fixtures where the clamping points must be clear during workpiece removal or placement. They are also suitable for confined installation conditions. These compact swing clamps operate as single-acting or double-acting traction cylinders. There is a choice of three housing types for the compact swing clamps as well as various actuation methods. The clamping movement is initiated by a combined swivel and stroke motion. The actual clamping travel occurs with a linear movement. A wide range of variants with a left or right swivel angle of 90° are available.

Material:
Housing and piston steel.
Seal NBR

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1862.14081204190100

Note:
If the permissible volume flow on the swing clamp could be exceeded, an intermediate throttle check valve must be installed.
The permissible operating pressure of the swing clamps depends on the clamping arm length.
The clamping arms must be restrained when being mounted so that the ball guide of the swing clamps is not damaged.
Depending on the vent connection, the sinter filter of the single-acting swing clamps must be replaced by a screw plug.

The clamping arm of the compact swing clamp is not supplied.

Follow safety instructions.

Method of operation:
- Thread connection.
- O-ring flange connection.
- Drilled channels.

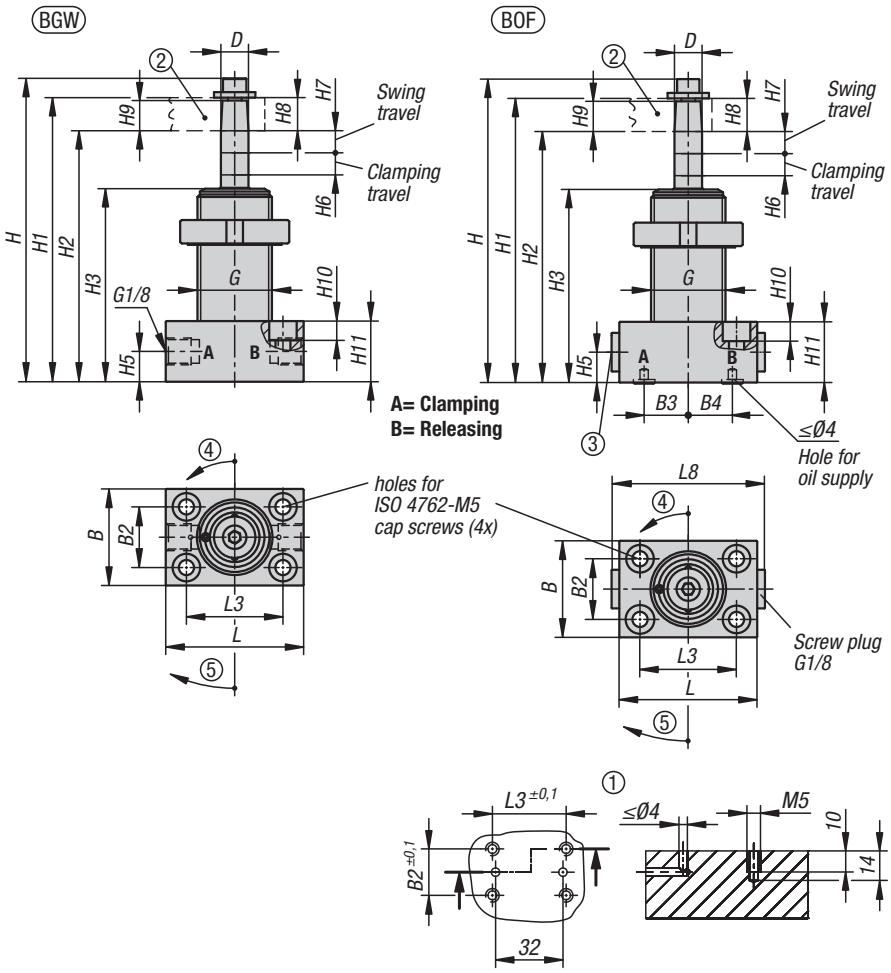
KIPP Swing clamp, hydraulic, compact

Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	B	B1	B2	B3	B4	D	D1	D2	G	H	H1	H2	H3	H4	H5
K1862.14081104190100	K1862.14062104190100	A	screw connection	ght	14	6/8	40	22	-	-	-	10	-	-	M27x1,5	110	103	91	73	51	11
K1862.14081204190100	K1862.14062204190100	A	o-ring flange connection	ght	14	6/8	40	-	28	7	8,5	10	10	5,5	M27x1,5	110	103	91	73	51	6,5
K1862.14081104190200	K1862.14062104190200	A	screw connection	left	14	6/8	40	22	-	-	-	10	-	-	M27x1,5	110	103	91	73	51	11
K1862.14081204190200	K1862.14062204190200	A	o-ring flange connection	left	14	6/8	40	-	28	7	8,5	10	10	5,5	M27x1,5	110	103	91	73	51	6,5

Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	H6	H7	H8	H9	H10	L	L1	L2	L3	L4	L6	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)
K1862.14081104190100	K1862.14062104190100	A	screw connection	ght	6/8	8/10	12	11,5	-	40	22,5	16x45°	-	-	-	2,5	1,2
K1862.14081204190100	K1862.14062204190100	A	o-ring flange connection	ght	6/8	8/10	12	11,5	8,5	50	32	-	24	22	2,5	2,5	1,2
K1862.14081104190200	K1862.14062104190200	A	screw connection	left	6/8	8/10	12	11,5	-	40	22,5	16x45°	-	-	-	2,5	1,2
K1862.14081204190200	K1862.14062204190200	A	o-ring flange connection	left	6/8	8/10	12	11,5	8,5	50	32	-	24	22	2,5	2,5	1,2

Swing clamps, hydraulic, compact

double / single-acting with spring return



Assembly:
See mounting contour.

Advantages:
- Compact design
- Many types.
- Collision-free accessibility to the workpiece.

On request:
Larger piston diameters and longer strokes, other swivel angles, various clamping arm mounts, with position control.

Supplied with:
- 1x slotted round nut M27x1.5
  (only with compact swivel clamps
  K1862.14081104190100,
  K1862.14081104190200,
  K1862.14062104190100,
  K1862.14062104190200).
- 1x screw or nut for clamping arm mount.

Accessories:
Clamping arm for compact swing clamp K1863.

Technical data:
Max. operating pressure: 350 bar.

Drawing reference:
Form AGW: Flange top, Screw connection
Form AOF: Flange top, O-ring flange connection
Form BGW: Flange under, Screw connection
Form BOF: Flange under, O-ring flange connection
Form C: Screw-on thread

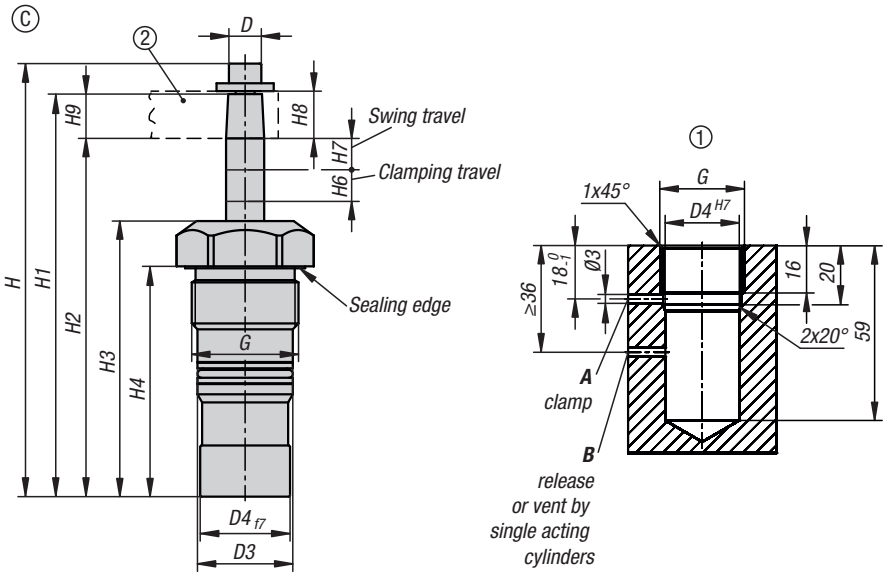
1) Mounting contour
2) See accessories
3) By the single-acting cylinders, the port is equipped with a built-in sinter filter.
4) Left swivel
5) Right swivel
6) Included in delivery

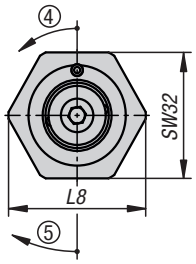
Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	B	B2	B3	B4	D	G	H	H2	H3	H5
K1862.14081105190100	K1862.14062105190100	B	screw connection	ght	14	8/6	35	22	-	-	10	M27x1,5	110	91	70	11
K1862.14081205190100	K1862.14062205190100	B	o-ring flange connection	ght	14	8/6	35	22	16	16	10	M27x1,5	110	91	70	11
K1862.14081105190200	K1862.14062105190200	B	screw connection	left	14	8/6	35	22	-	-	10	M27x1,5	110	91	70	11
K1862.14081205190200	K1862.14062205190200	B	o-ring flange connection	left	14	8/6	35	22	16	16	10	M27x1,5	110	91	70	11

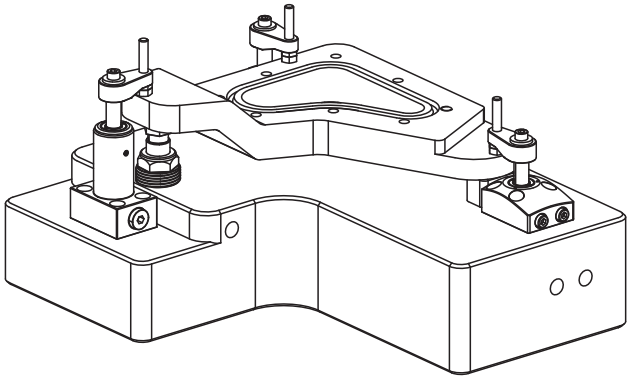
Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	H6	H7	H8	H9	H10	H11	L	L3	L8	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)
K1862.14081105190100	K1862.14062105190100	B	screw connection	ght	8/6	8/10	12	11,5	7	22	50	35	-/58	2,5	1,2
K1862.14081205190100	K1862.14062205190100	B	o-ring flange connection	ght	8/6	8/10	12	11,5	7	22	50	35	-/58	2,5	1,2
K1862.14081105190200	K1862.14062105190200	B	screw connection	left	8/6	8/10	12	11,5	7	22	50	35	-/58	2,5	1,2
K1862.14081205190200	K1862.14062205190200	B	o-ring flange connection	left	8/6	8/10	12	11,5	7	22	50	35	-/58	2,5	1,2

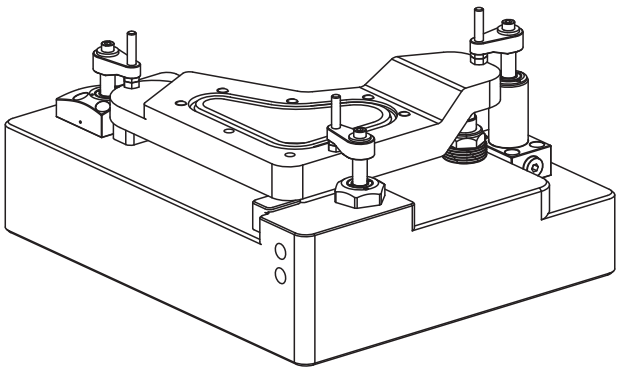
Swing clamps, hydraulic, compact

double / single-acting with spring return









KIPP Swing clamp, hydraulic, compact

Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	D	D3	D4	G	H	H2	H3
K1862.14081306190100	K1862.14062306190100	C	drilled channels	ght	14	6/8	10	24,5	25	M28x1,5	110	91	70
K1862.14081306190200	K1862.14062306190200	C	drilled channels	left	14	6/8	10	24,5	25	M28x1,5	110	91	70

Order No. double-acting	Order No. single-acting	Form	Swivel direction	H6	H7	H8	H9	L8	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)
K1862.14081306190100	K1862.14062306190100	C	ght	6/8	8/10	12	11,5	36	2,5	1,2
K1862.14081306190200	K1862.14062306190200	C	left	6/8	8/10	12	11,5	36	2,5	1,2

Selection guide for hydraulic, compact swing clamps:

1. Piston diameter:

Example:

..... 14081204190100

2. Travel:

Example:

..... 1408 1204190100

3. Mode of operation selection:

Example:

..... 14081204190100

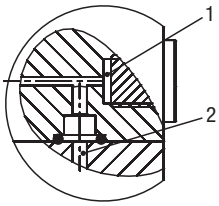
1 = double-acting

2 = single-acting with spring return

4. Selection of oil supply connection type:

Example:

..... 140812 04190100



1 = screw connection (G1/8 or G1/4)

2 = O-ring flange connection

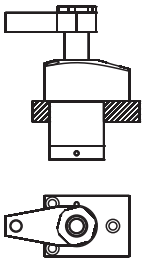
3 = Pressurised oil supply through drilled ducts

Please note:
The mounting contour of the respective swing clamps.

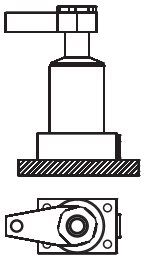
5. Selection of the housing design:

Example:

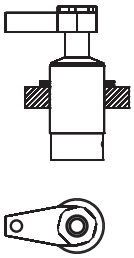
..... 14081204190100



04 = Flange on top



05 = Flange under



06 = Screw-on thread with drilled channels

6: Selection of seal type:

Example:

..... 14081204190100

1 = NBR seal

7. Selection of swivel angle:

Example:

..... 14081204190100

90 = 90°

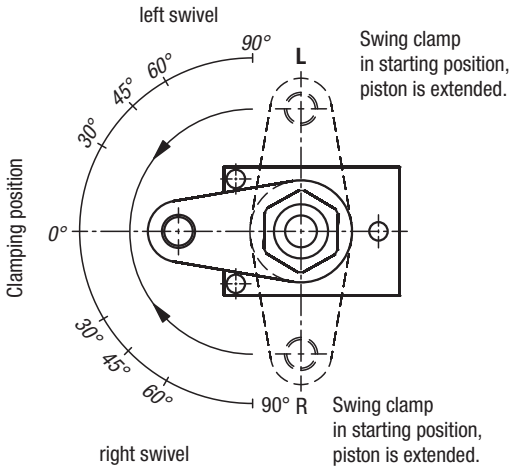
8. Selection of swivel direction:

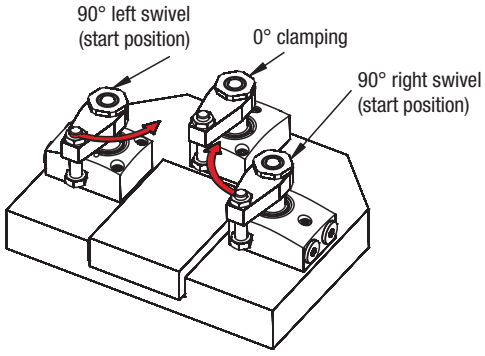
Example:

..... 14081204190100

1 = Right swivel

2 = Left swivel





Selection guide for hydraulic, compact swing clamps:

9. Selection of overload protection:

Example:

..... 1408120419010<u>0</u>

0 = Overload protection

10. Selection of metal wiper:

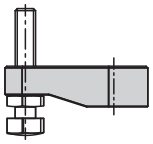
Example:

..... 1408120419010<u>0</u>

0 = Metal wiper

11. Selection of clamping arm for swing clamp:

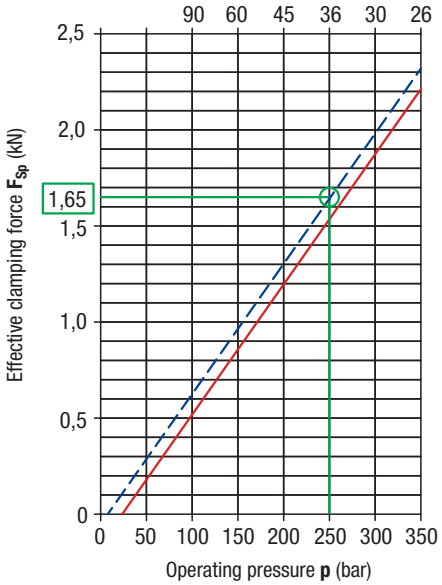
- Swing clamps are supplied with a taper mount with fastening nut.
- Clamping arms for swing clamps must be ordered separately.

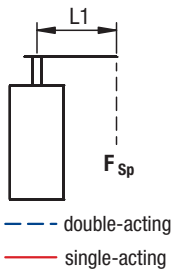


Form A

clamping force diagram

Max. clamping arm length L1 must be must be observed.





Example:
- double-acting cylinder
- available operating pressure p = 250 bar
- clamping arm length L1 = 36 mm

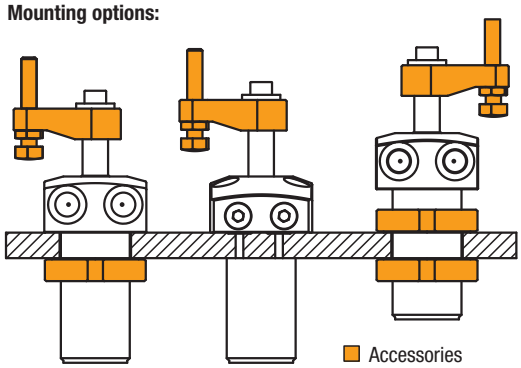
resulting clamping force F_{Sp} ~ 1.65 kN

The counteracting spring return force by the single-acting swivel clamps reduces the clamping force slightly. To achieve the same clamping force as with the double-acting swing clamps, the operating pressure must be increased slightly.

Mounting and application examples:

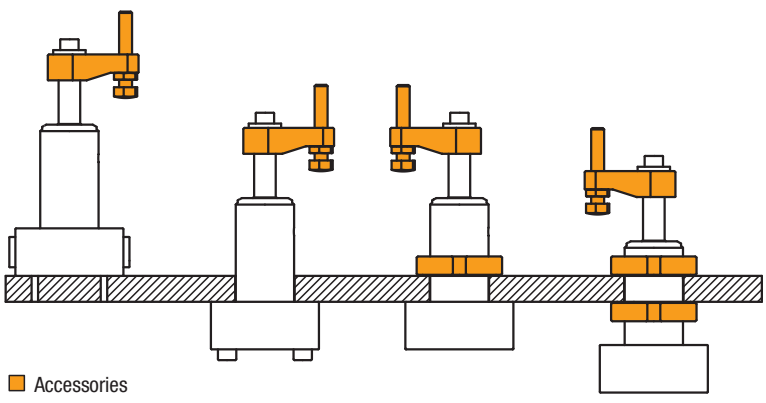
Form A:

Mounting options:



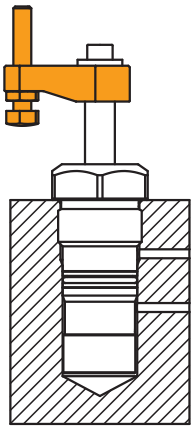
Form B:

Mounting options:

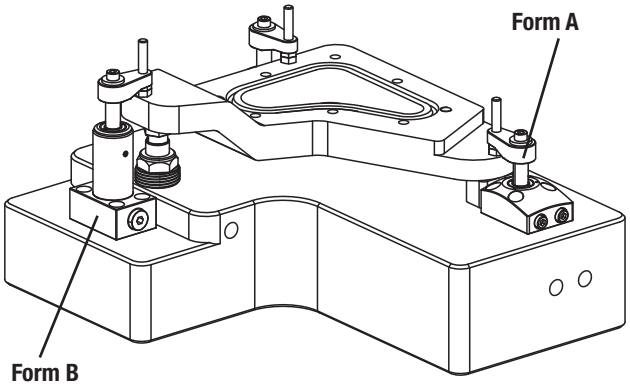


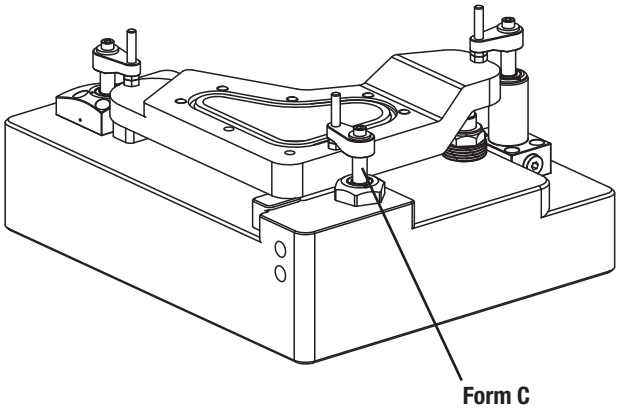
Mounting and application examples:

Form C:



Accessories





Mounting/Removing the clamping arm;

When mounting or removing the clamping arms, make sure that no torques are transmitted to the piston rod of the swing clamp. This can be prevented by holding the arm in place when tightening or loosening the fastening screw.

1. If the swing clamp is equipped with an overload protection, the first step is to check it by turning the piston until the overload protection can be felt to engage. A swing clamp has three engagement points at 120° intervals.

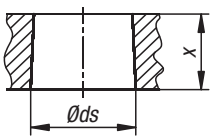
2. The installation of the clamping arms is normally carried out when the clamp is not under pressure. After the clamping arm is positioned on the piston rod, the screw or nut can be tightened. However, if an exact clamping position of the clamping arm is required, the piston of the swing clamp must be retracted under pressure. The clamping arm can then be mounted in the desired position.

3. After attaching the clamping arm, the clamping process of the swing clamp should be checked several times for correct clamping point and clamping travel.

4. After changing the clamping arm, the torque of the fastening screw should be checked again after a few clamping cycles and, if necessary, retightened.

Connection dimensions for in-house production of clamping arms:

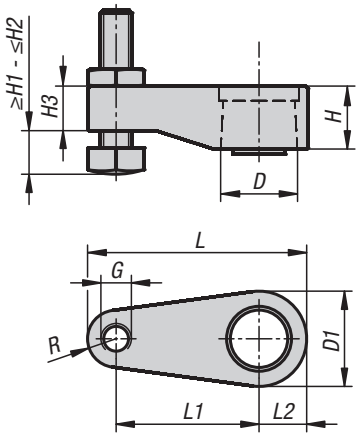
Tapered mount



Piston Ø	(mm)	14
Øds	(mm)	10
x	(mm)	12
Taper ratio		1:10

Clamping arm

for compact hydraulic swing clamps



Single clamping arm for compact swing clamps K1862. The fastening material is supplied with the compact swing clamps.

Material:
Steel.

Version:
Black oxidised.

Sample order:
K1863.14262

Note:
Information on the clamping arm mountings as well as the effective clamping force depending on the operating pressure must be considered individually for each swing clamp.

The clamping force diagrams for the swing clamps are decisive for the dimensioning of the clamping arms. The specified operating pressure must not be exceeded and must be adjusted if necessary.
The swivel movement of the clamping arms must not be hindered. The actual workpiece clamping process may only take place after the swing travel of the swing clamp is completed.
The thrust pieces should be so defined that contact with the workpiece only occurs after the swivel movement has been completed.
To prevent torques from being applied to the piston rod, the clamping arms must be held in place firmly during assembly.

Avoid encroachment in the swivel path. This could lead to pinching injury to the hands or other body parts.

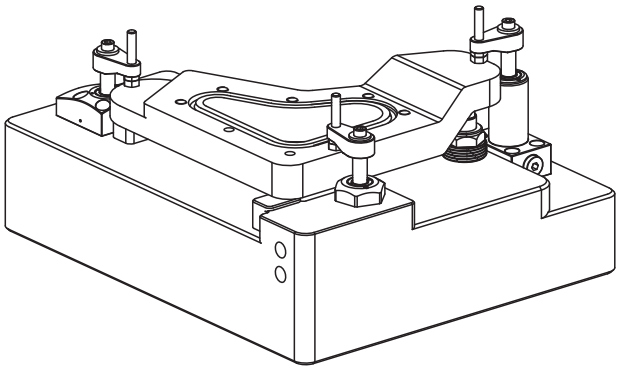
Follow safety instructions.

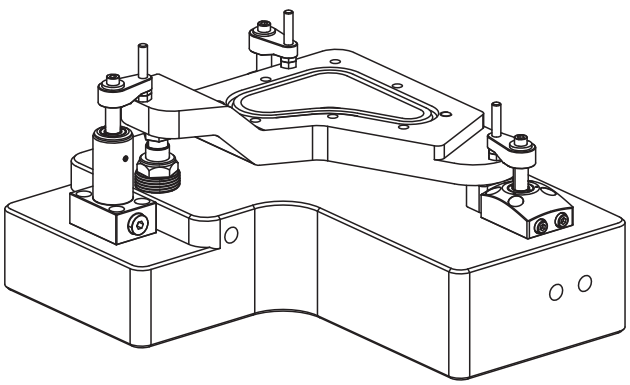
KIPP Clamping arm for compact hydraulic swing clamps

Order No.	For piston Ø	D	D1	G	H	H1	H2	H3	L	L1	L2	L4	R
K1863.14262	14	10	10	M6	12	3,5	40	8	42	26	10	6	6

Clamping arm

for compact hydraulic swing clamps





Assembly:
When mounting or removing the clamping arms, make sure that no torques are transmitted to the piston rod of the swing clamp. This can be prevented by holding the arm in place when tightening or loosening the fastening screw.

1. If the swing clamp is equipped with an overload protection, the first step is to check it by turning the piston until the overload protection can be felt to engage. A swing clamp has three engagement points at 120° intervals.

2. The installation of the clamping arms is normally carried out when the clamp is not under pressure. After the clamping arm is positioned on the piston rod, the screw or nut can be tightened. However, if an exact clamping position of the clamping arm is required, the piston of the swing clamp must be retracted under pressure. The clamping arm can then be mounted in the desired position.

3. After attaching the clamping arm, the clamping process of the swing clamp should be checked several times for correct clamping point and clamping travel.

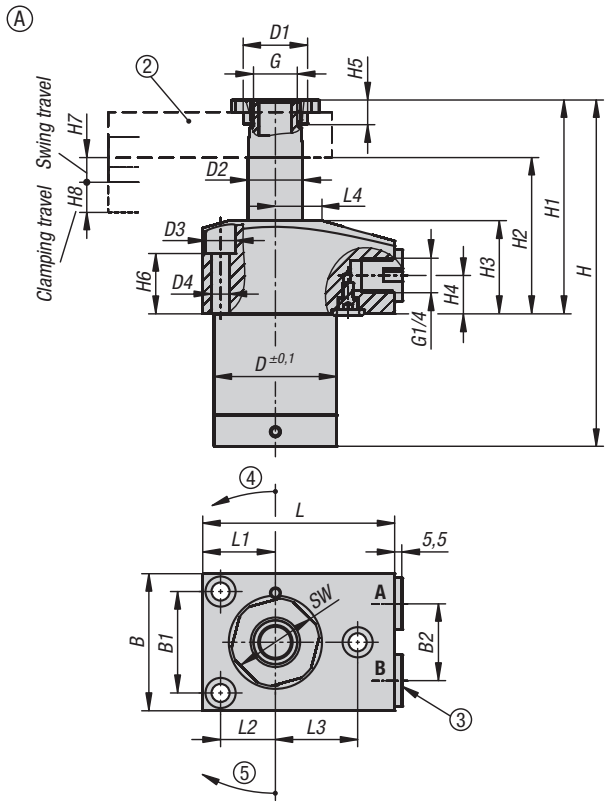
4. After changing the clamping arm, the torque of the fastening screw should be checked again after a few clamping cycles and, if necessary, retightened.

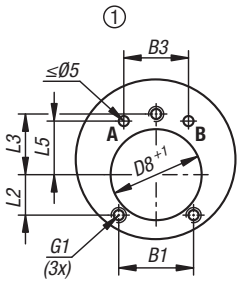
On request:
Other sizes and types.

Accessories:
- Rest pads K0307.
- Self-aligning pads K0282, K0302, K1164, K0287, K0288.
- Gripper screws, hexagonal K0386.

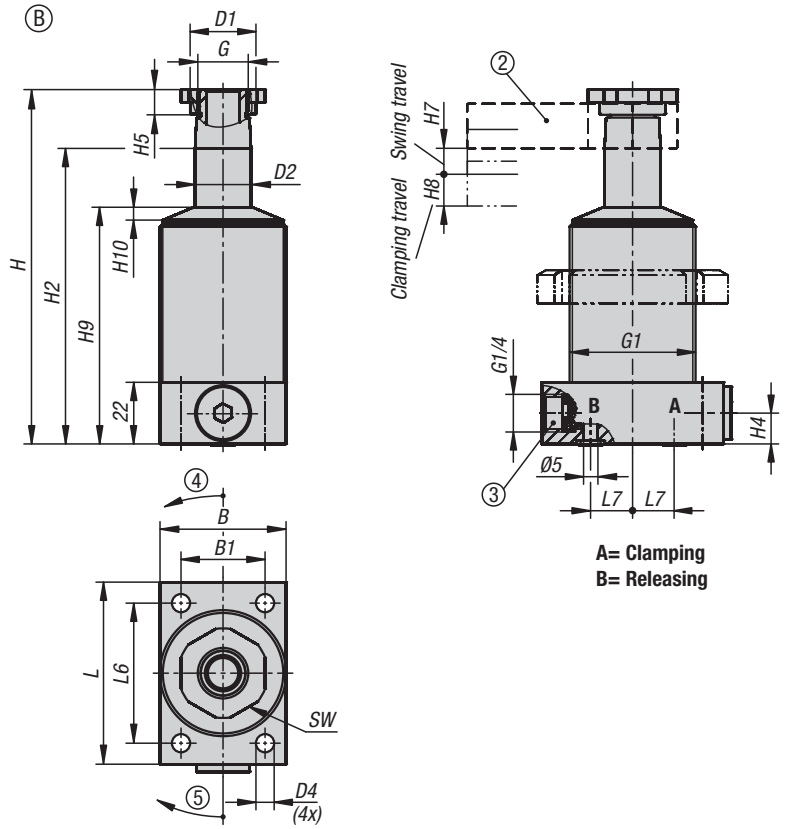
Swing clamps, hydraulic

double / single-acting with spring return





A= Clamping
B= Releasing



A= Clamping
B= Releasing

Swing clamps are designed for clamping fixtures where the clamping points must be clear during workpiece removal or placement. These swing clamps operate as single-acting or double-acting traction cylinders. There is a choice of three housing types for the swing clamps as well as various actuation methods. The clamping movement is initiated by a combined swivel and stroke motion. The actual clamping travel then occurs with a linear movement. A wide range of variants with a left or right swivel angle of 90° are available. The swing clamps are very durable because they have a metal wiper which protects against swarf. In addition, an overload protection protects the swing mechanism from damage if the swing process is blocked.

Material:
Housing and piston steel.
Seal NBR

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1864.25101404190111

Note:
If the permissible volume flow on the swing clamp could be exceeded, an intermediate throttle check valve must be installed.
The permissible operating pressure of the swing clamps depends on the clamping arm length.
The clamping arms must be restrained when being mounted so that the ball guide of the swing clamps is not damaged.
Depending on the vent connection, the sinter filter of the single-acting swing clamps must be replaced by a screw plug.

The clamping arm of the swing clamp is not supplied.

Follow safety instructions.

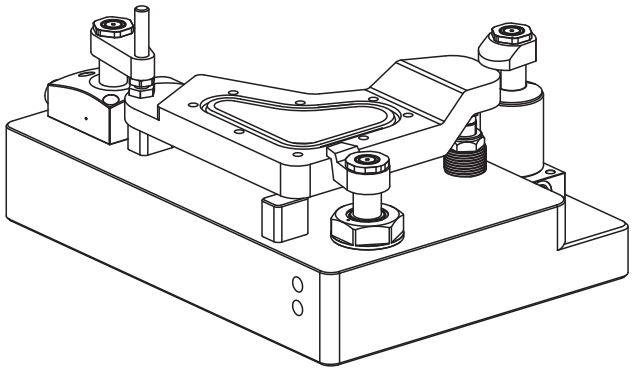
Method of operation:
- Thread connection.
- O-ring flange connection.
- Drilled channels.

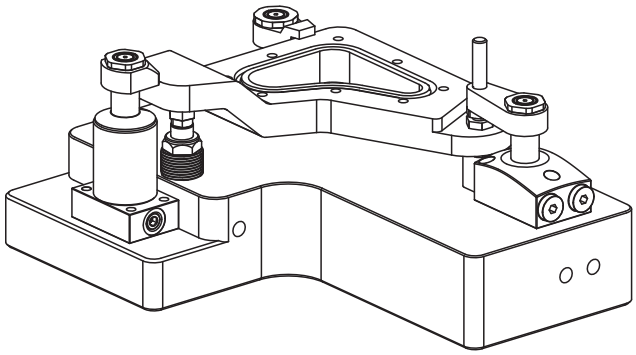
Assembly:
See mounting contour.

Advantages:
- Integrated metal wiper.
- Integrated overload protection.
- Collision-free accessibility to the workpiece.
- Many types.
- Pressure supplied over diverse connection possibilities.

Swing clamps, hydraulic

double / single-acting with spring return





On request:
Larger piston diameters and longer strokes, other swivel angles, various clamping arm mounts, with position control.

Supplied with:
Supplied with 1 screw or nut for mounting the clamping arm.

Accessories:
Clamping arm for swing clamp K1865.

Technical data:
Max. operating pressure: 500 bar.

Drawing reference:
Form A: Flange top
Form B: Flange under
Form C: Screw-on thread

1) Mounting contour
2) See accessories
3) By the single-acting cylinders, the port is equipped with a built-in sinter filter.
4) Left swivel
5) Right swivel
6) clamp
7) release or vent by single acting cylinders

KIPP Swing clamps, hydraulic

Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	B	B1	B2	B3	D	D1	D2	D3	D4	D8	G	G1
K1864.25101404190211	K1864.25102404190211	A	Thread and O-ring connection	left	25	10	50	37	28	32	44,8	23,5	20	11	6,6	45	M18x1,5	M6
K1864.25101404190111	K1864.25102404190111	A	Thread and O-ring connection	ght	25	10	50	37	28	32	44,8	23,5	20	11	6,6	45	M18x1,5	M6
K1864.25251404190211	-	A	Thread and O-ring connection	left	25	25	50	37	28	32	44,8	23,5	20	11	6,6	45	M18x1,5	M6
K1864.25251404190111	-	A	Thread and O-ring connection	ght	25	25	50	37	28	32	44,8	23,5	20	11	6,6	45	M18x1,5	M6
K1864.40131404190211	K1864.40132404190211	A	Thread and O-ring connection	left	40	13	63	48	41	46	59,8	33,5	32	15	9	60	M28x1,5	M8
K1864.40131404190111	K1864.40132404190111	A	Thread and O-ring connection	ght	40	13	63	48	41	46	59,8	33,5	32	15	9	60	M28x1,5	M8
K1864.40251404190111	-	A	Thread and O-ring connection	ght	40	25	63	48	41	46	59,8	33,5	32	15	9	60	M28x1,5	M8
K1864.40251404190211	-	A	Thread and O-ring connection	left	40	25	63	48	41	46	59,8	33,5	32	15	9	60	M28x1,5	M8

Order No. double-acting	Order No. single-acting	Form	H	H1	H2	H3	H4	H5	H6	H7	H8	L	L1	L2	L3	L4	L5	SW	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)	Oil requirement / return stroke (cm^3)
K1864.25101404190211	K1864.25102404190111	A	126,5	78	57	34	14	9	18	8	10	70	26,5	20	30	17	26,5	27	3,2	3,2	8,8/-
K1864.25101404190111	K1864.25102404190211	A	126,5	78	57	34	14	9	18	8	10	70	26,5	20	30	17	26,5	27	3,2	3,2	8,8/-
K1864.25251404190211	-	A	158,5	94	73	34	14	9	18	10	25	70	26,5	20	30	17	26,5	27	3,2	6	17
K1864.25251404190111	-	A	158,5	94	73	34	14	9	18	10	25	70	26,5	20	30	17	26,5	27	3,2	6	17
K1864.40131404190211	K1864.40132404190111	A	147,5	94	66	40	14	10	19	9	13	85	34,5	27	38	24	31	40	10	10	27,7/-
K1864.40131404190111	K1864.40132404190211	A	147,5	94	66	40	14	10	19	9	13	85	34,5	27	38	24	31	40	10	10	27,7/-
K1864.40251404190111	-	A	173,5	107	79	40	14	10	19	10	25	85	34,5	27	38	24	31	40	10	16	44
K1864.40251404190211	-	A	173,5	107	79	40	14	10	19	10	25	85	34,5	27	38	24	31	40	10	16	44

Swing clamps, hydraulic

double / single-acting with spring return

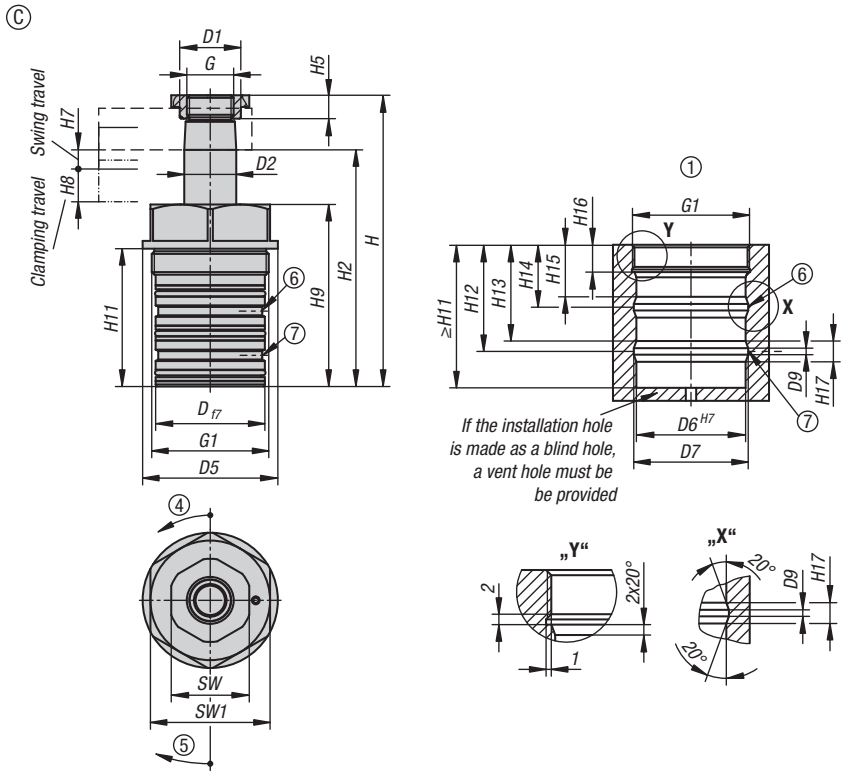
Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	B	B1	D1	D2	D4	G	G1
K1864.25101105190211	K1864.25102105190211	B	screw connection	left	25	10	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25101105190111	K1864.25102105190111	B	screw connection	ght	25	10	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25101205190211	K1864.25102205190211	B	o-ring flange connection	left	25	10	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25101205190111	K1864.25102205190111	B	o-ring flange connection	ght	25	10	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25251105190111	-	B	screw connection	ght	25	25	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25251105190211	-	B	screw connection	left	25	25	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25251205190111	-	B	o-ring flange connection	ght	25	25	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.25251205190211	-	B	o-ring flange connection	left	25	25	45	30	23,5	20	6,5	M18x1,5	M45x1,5
K1864.40131105190211	K1864.40132105190211	B	screw connection	left	40	13	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40131105190111	K1864.40132105190111	B	screw connection	ght	40	13	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40131205190111	K1864.40132205190111	B	o-ring flange connection	ght	40	13	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40131205190211	K1864.40132205190211	B	o-ring flange connection	left	40	13	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40251105190111	-	B	screw connection	ght	40	25	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40251105190211	-	B	screw connection	left	40	25	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40251205190111	-	B	o-ring flange connection	ght	40	25	63	44	33,5	32	8,5	M28x1,5	M60x1,5
K1864.40251205190211	-	B	o-ring flange connection	left	40	25	63	44	33,5	32	8,5	M28x1,5	M60x1,5

Order No. double-acting	Order No. single-acting	Form	H	H2	H4	H5	H7	H8	H9	H10	L	L6	L7	SW	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)	Oil requirement / return stroke (cm^3)
K1864.25101105190211	K1864.25102105190111	B	126,5	105,5	11	9	8	10	84,5	5	65	50	15	27	3,2	3,2	8,8/-
K1864.25101105190111	K1864.25102105190211	B	126,5	105,5	11	9	8	10	84,5	5	65	50	15	27	3,2	3,2	8,8/-
K1864.25101205190211	K1864.25102205190111	B	126,5	105,5	11	9	8	10	84,5	5	65	50	15	27	3,2	3,2	8,8/-
K1864.25101205190111	K1864.25102205190211	B	126,5	105,5	11	9	8	10	84,5	5	65	50	15	27	3,2	3,2	8,8/-
K1864.25251105190111	-	B	158,5	137,5	11	9	10	25	100,5	5	65	50	15	27	3,2	6	17
K1864.25251105190211	-	B	158,5	137,5	11	9	10	25	100,5	5	65	50	15	27	3,2	6	17
K1864.25251205190111	-	B	158,5	137,5	11	9	10	25	100,5	5	65	50	15	27	3,2	6	17
K1864.25251205190211	-	B	158,5	137,5	11	9	10	25	100,5	5	65	50	15	27	3,2	6	17
K1864.40131105190211	K1864.40132105190111	B	147,5	119,5	11	10	9	13	94,5	6	85	65	28	40	10	10	27,7/-
K1864.40131105190111	K1864.40132105190211	B	147,5	119,5	11	10	9	13	94,5	6	85	65	28	40	10	10	27,7/-
K1864.40131205190111	K1864.40132205190111	B	147,5	119,5	11	10	9	13	94,5	6	85	65	28	40	10	10	27,7/-
K1864.40131205190211	K1864.40132205190211	B	147,5	119,5	11	10	9	13	94,5	6	85	65	28	40	10	10	27,7/-
K1864.40251105190111	-	B	173,5	145,5	11	10	10	25	107,5	6	85	65	28	40	10	16	44
K1864.40251105190211	-	B	173,5	145,5	11	10	10	25	107,5	6	85	65	28	40	10	16	44
K1864.40251205190111	-	B	173,5	145,5	11	10	10	25	107,5	6	85	65	28	40	10	16	44
K1864.40251205190211	-	B	173,5	145,5	11	10	10	25	107,5	6	85	65	28	40	10	16	44

Order No. double-acting	Order No. single-acting	Form	Connection type	Swivel direction	Piston Ø	travel	D	D1	D2	D5	D6	D7	D9	G	G1
K1864.25101306190111	K1864.25102306190111	C	drilled channels	ght	25	10	42	23,5	20	52	42	44	5	M18x1,5	M45x1,5
K1864.25101306190211	K1864.25102306190211	C	drilled channels	left	25	10	42	23,5	20	52	42	44	5	M18x1,5	M45x1,5
K1864.40131306190111	K1864.40132306190111	C	drilled channels	ght	40	13	55	33,5	32	64	55	57	5	M28x1,5	M60x1,5
K1864.40131306190211	K1864.40132306190211	C	drilled channels	left	40	13	55	33,5	32	64	55	57	5	M28x1,5	M60x1,5

Swing clamps, hydraulic

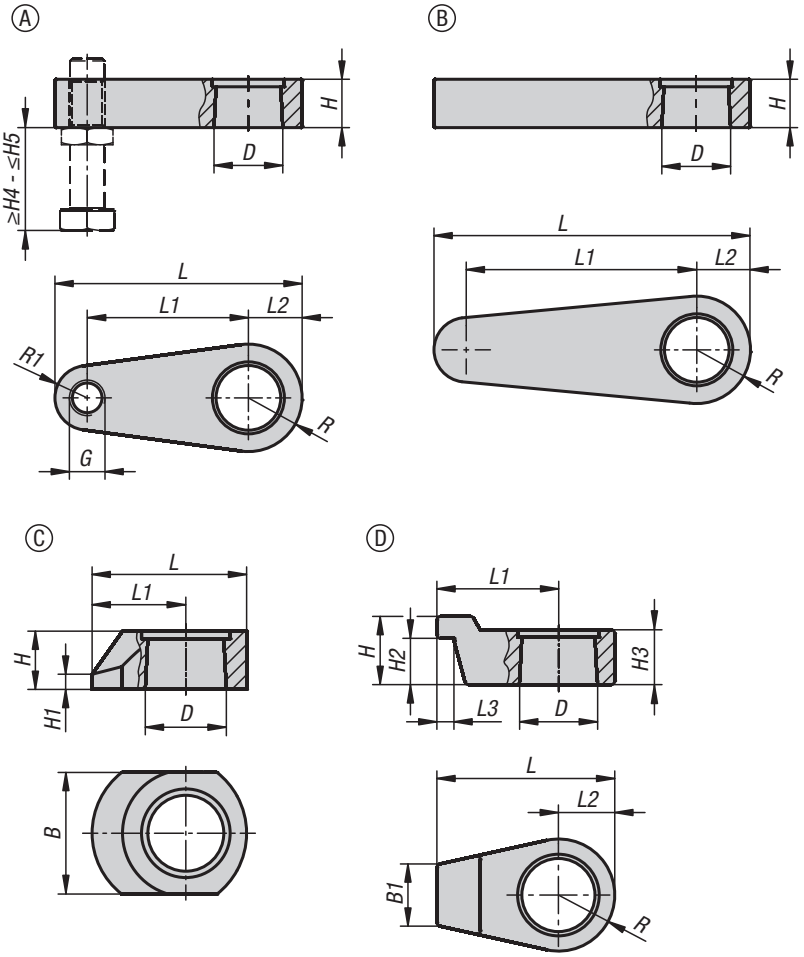
double / single-acting with spring return



Order No. double-acting	Order No. single-acting	Form	H	H2	H5	H7	H8	H9	H11	H12	H13	H14	H15	H16	H17	SW	SW1	Flow rate max. (cm^3/s)	Oil requirement / stroke (cm^3)	Oil requirement / return stroke (cm^3)
K1864.25101306190111	**K1864.25102306190111**	C	112	91	9	8	10	70	53	41	37	24	20	10,5	8	27	46	3,2	3,2	8,8/-
K1864.25101306190211	**K1864.25102306190211**	C	112	91	9	8	10	70	53	41	37	24	20	10,5	8	27	46	3,2	3,2	8,8/-
K1864.40131306190111	**K1864.40132306190111**	C	152	124	10	9	13	99	66	46,5	41,5	29	24	12,5	10	40	55	10	10	27,7/-
K1864.40131306190211	**K1864.40132306190211**	C	152	124	10	9	13	99	66	46,5	41,5	29	24	12,5	10	40	55	10	10	27,7/-

Clamping arm

for hydraulic swing clamps



Single clamping arms for the swing clamp K1864. Different clamping situations can be realised with the different clamping arm designs. Fastening materials are supplied with the clamping arms.

Material:
Steel.

Version:
Black oxidised.

Sample order:
K1865.25501

Note:
Information on the clamping arm mountings as well as the effective clamping force depending on the operating pressure must be considered individually for each swing clamp.

The clamping force diagrams for the swing clamps are decisive for the dimensioning of the clamping arms. The specified operating pressure must not be exceeded and must be adjusted if necessary.
The swivel movement of the clamping arms must not be hindered. The actual workpiece clamping process may only take place after the swing travel of the swing clamp is completed.
The thrust pieces should be so defined that contact with the workpiece only occurs after the swivel movement has been completed.
To prevent torques from being applied to the piston rod, the clamping arms must be held in place firmly during assembly.

Avoid encroachment in the swivel path. This could lead to pinching injury to the hands or other body parts.

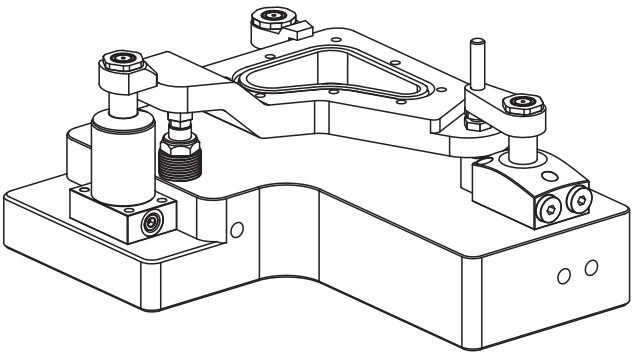
Follow safety instructions.

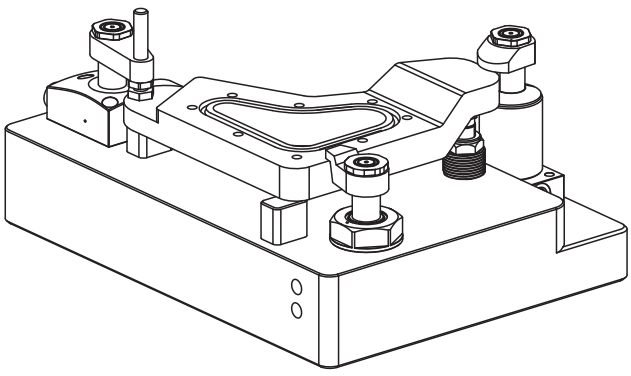
KIPP Clamping arm for hydraulic swing clamps

Order No.	Form	Form-Type	For piston Ø	B	B1	D	H	H1	H2	H3	H4	H5	L	L1	L2	L3	R	R1
K1865.25502	A	Thread with thrust screw	25	-	-	20	16	-	-	-	10	64	75	50	16	-	16	9
K1865.40752	A	Thread with thrust screw	40	-	-	32	23	-	-	-	15	79	115	75	25	-	25	15
K1865.25501	B	without thread	25	-	-	20	16	-	-	-	-	-	75	50	16	-	16	-
K1865.40751	B	without thread	40	-	-	32	23	-	-	-	-	-	115	75	25	-	25	-
K1865.25253	C	-	25	32	-	20	16	6	-	-	-	-	41	25	-	-	-	-
K1865.40373	C	-	40	48	-	32	23	6	-	-	-	-	61	37	-	-	-	-
K1865.25334	D	-	25	-	14	20	21	-	14,5	15,5	-	-	51,5	35,5	16	7	16	-
K1865.40504	D	-	40	-	25	32	28	-	19	22,5	-	-	76	53	23	7	23	-

Clamping arm

for hydraulic swing clamps





Assembly:
When mounting or removing the clamping arms, make sure that no torques are transmitted to the piston rod of the swing clamp. This can be prevented by holding the arm in place when tightening or loosening the fastening screw.

1. If the swing clamp is equipped with an overload protection, the first step is to check it by turning the piston until the overload protection can be felt to engage. A swing clamp has three engagement points at 120° intervals.

2. The installation of the clamping arms is normally carried out when the clamp is not under pressure. After the clamping arm is positioned on the piston rod, the screw or nut can be tightened. However, if an exact clamping position of the clamping arm is required, the piston of the swing clamp must be retracted under pressure. The clamping arm can then be mounted in the desired position.

3. After attaching the clamping arm, the clamping process of the swing clamp should be checked several times for correct clamping point and clamping travel.

4. After changing the clamping arm, the torque of the fastening screw should be checked again after a few clamping cycles and, if necessary, retightened.

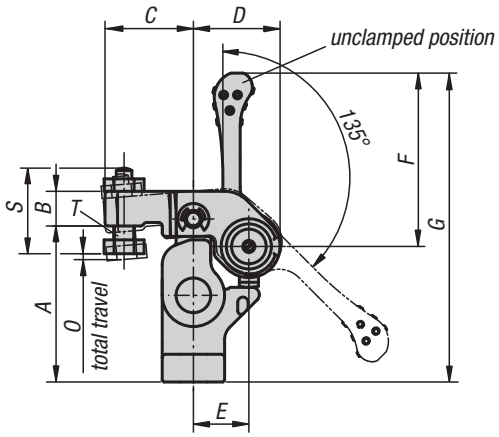
On request:
Other sizes and types.

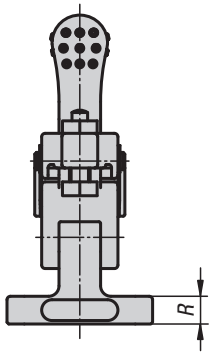
Accessories:
- Rest pads K0307.
- Self-aligning pads K0302, K1164, K0287, K0288.
- Gripper screws, hexagonal K0386.

Technical data:
- Max. operating pressure Form A and B: 200 bar.
- Max. operating pressure Form C: 500 bar.
- Max. operating pressure Form D: 300 bar.

Swivel hold-down clamp

mini, with cam lever



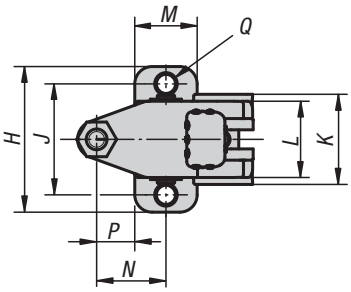


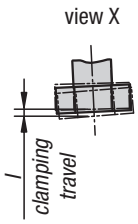
Material:
Carbon steel.

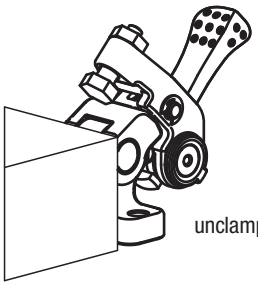
Sample order:
K0927.100

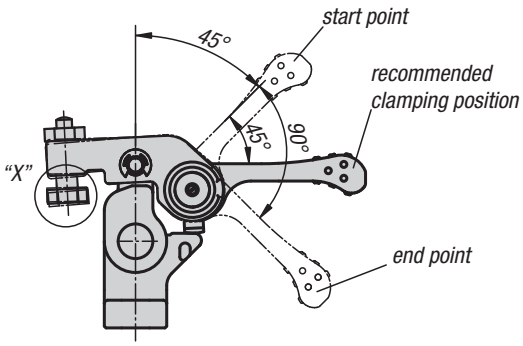
Note:
Swing clamps are used where the clamping points must be free when the workpiece is loaded or removed.

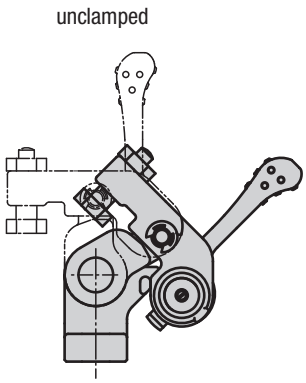
* Admissible hand force for the handle.

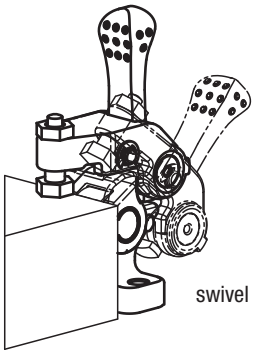


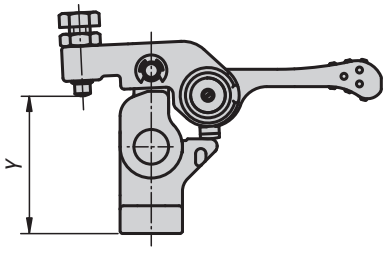


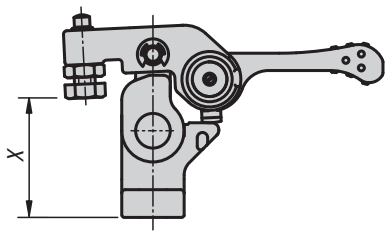


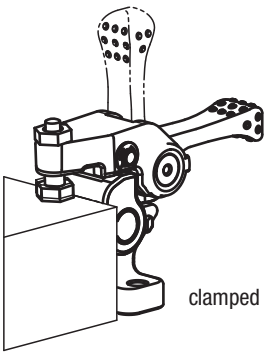












KIPP Swivel hold-down clamp, mini, with cam lever

Order No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	X min.	X max.	Y min.	Y max.	F=Retaining force N	Hand force FH N
K0927.100	45	10	25,5	25	16	50	89	42	1	32	26	22	18	20	1,5	11	5,5	8	24	M6	31,5	40,5	34,5	43,5	700	100*
K0927.150	55	12	32	31	20	63	109	52	1,2	40	32	28	22	25	1,8	14	6,6	10	30,5	M8	36,4	48,6	41,4	53,6	1100	150*

Technical information for pneumatic rotary lever clamps

General safety information

Sealing materials:
NBR (acrylonitrile butadiene rubber).
PU (polyurethane).
Special materials to suit functional requirements.

Mounting position:
If no specifications are made in the data sheets, the mounting position of the pneumatic clamping elements is arbitrary.

Operating pressure:
Must be taken from the technical specifications of the product family and/or the individual articles.

Ambient temperature:
-10 °C to +80 °C by standard versions. Versions for higher ambient temperatures available on request.

Piston lateral forces:
Max. 5 % of the nominal piston force may act on the clamping element as lateral forces.

Permitted stroke speed:
Max. 0.25 m/s.

Operating principle of pneumatic clamping elements:
Double-acting pneumatic clamping elements (return time can be defined).

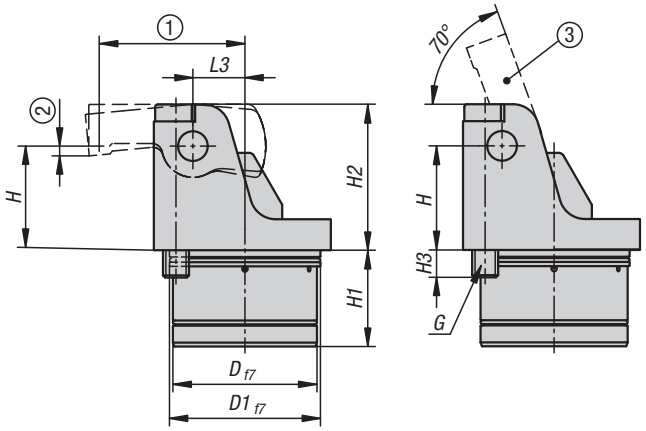
Service life:
For a long product life, with single-acting clamping elements with spring return care must be taken that no liquids can penetrate the spring chamber of the clamping element.

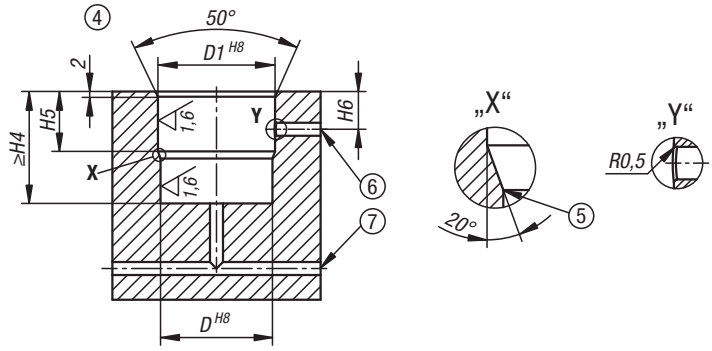
Commissioning / Maintenance:
Installation information must be observed during the commissioning of pneumatic clamping elements.
When installing the clamping elements, pay attention to the cleanliness of the individual interfaces.
Only the specified, clean pressure media may be used for operation.
Maintenance intervals must be observed.

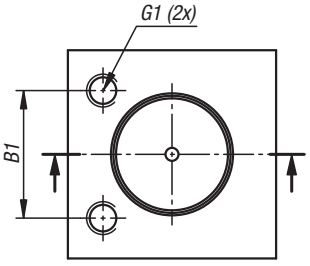
Accident prevention regulations:
Extreme forces can be generated with pneumatic clamping elements. This increases the risk of injury during operation through pinching or crushing.
Use protective devices with locks or latches and observe the general accident prevention regulations.
Observance of DIN 31001, part 1.

Rotary lever clamps, pneumatic

double-acting







Drawing reference:
1) Tension lever length (see K1857)
2) Travel (see K1857)
3) See accessories
4) Mounting contour
5) Rounded edges
6) Loosen
7) Clamping

Rotary lever clamps are highly suited for use in cramped conditions. Due to the compactness of the rotary lever clamps, they can be used in a variety of ways in clamping fixtures with little use of space and thus often enable flexible solutions.

Material:
Housing aluminium.
Piston steel.

Version:
Piston hardened.

Sample order:
K1870.161304

Note:
By the rotary lever clamps, the clamping lever is connected to the piston rod. The air supply for the rotary lever clamps is via drilled channels.
The clamping lever moves towards the workpiece with a linear stroke and clamps it. When releasing, the clamping lever retracts so far that the workpiece can be removed vertically. The single stroke of a rotary lever clamp depends on the clamping lever selection.

The clamping elements must be checked regularly for dirt and cleaned if necessary.
When selecting the installation position, it must be ensured that no swarf nests can form in the swivel area of the lever of the rotary lever clamp.

The flange surface of the rotary lever clamp should be adapted to the height of the workpiece during installation and a horizontal positioning of the clamping point should be available.
By positioning the rotary lever clamp correctly, workpiece tolerances can be optimally compensated for despite the short clamping lever.
High forces can be generated with the rotary lever clamps. It must be ensured that the workpieces and clamping fixtures are designed for these loads.
Rotary lever clamps can be fitted with individual tension levers. The clamping force of a rotary lever clamp is dependent on the lever length.

The tension lever for the rotary lever clamp is not supplied.

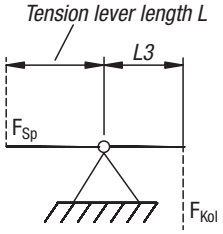
Follow safety instructions.

Method of operation:
Drilled channels.

Rotary lever clamps, pneumatic

double-acting

Calculating the effective clamping force with hydraulic rotary lever clamps:



Effective clamping force F_{Sp} is dependent on piston force F_{Kol} and tension lever length L

Calculation:

Clamping force $F_{Sp} = \frac{F_{Kol} \times L3}{L}$

Clamping force $F_{Sp} = \frac{1.99\ kN \times 25\ mm}{45\ mm} = 1.11\ kN$

Example:
Rotary lever clamp cylinder size 40
Operating pressure 6 bar
Piston force F_{Kol} at 6 bar = 1.99 kN
Dimension L3 acc. to table = 25 mm
Tension lever length L = 45 mm
Resulting effective clamping force F_{Sp} = 1.11 kN

Assembly:
See mounting contour.

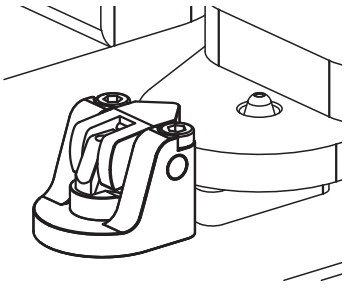
Advantages:
- No lateral forces during clamping.
- Low mounting dimensions.
- Wide selection of levers.
- Collision-free accessibility to the workpiece.
- Lineless pressure supply.

On request:
Larger piston diameters, longer strokes and with position control.

Supplied with:
Supplied with 4 DIN EN ISO 4762 cap screws, grade 8.8.

Accessories:
Tension levers for rotary lever clamps K1857.

Technical data:
Max. operating pressure: 6 bar.

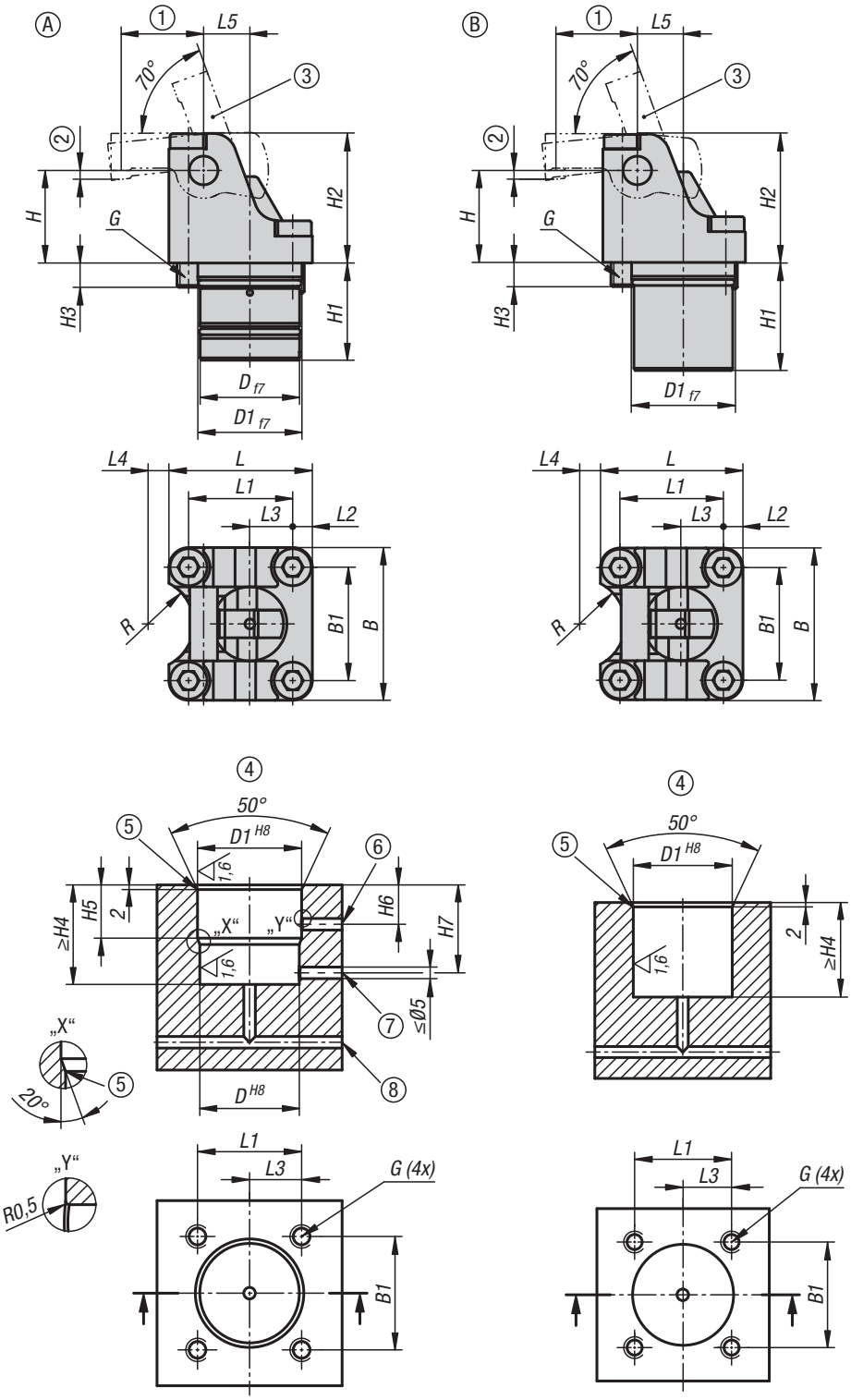


KIPP Rotary lever clamps, pneumatic, double-acting

Order No.	Piston Ø	B	B1	D	D1	G	G1	H	H1	H2	H3	H4	H5	H6	L	L1	L2	L3	R	Piston force at 6 bar (kN)	Effective piston area (cm^2)
K1870.121304	12	27	19,5	20	21	M4x25	M4x8	15	22	21	7	22,5	12	9,5	27	9,75	3,75	7,5	13,5	0,14	2,27
K1870.161304	16	34	25	27	28	M5x35	M5x11	20	24	28	10,5	24,5	13	10	35	13,5	4,5	10	17	0,27	4,52
K1870.201304	20	40	30	34	35	M6x40	M6x10	25	27,5	35	9	28	15	11	41,5	16,5	5	12,5	20	0,42	7,06
K1870.251304	25	52	38,5	43	44	M8x50	M8x12	31,25	32	43,75	11,5	33	19	13	53,5	20,75	6,75	15,63	26	0,68	11,34
K1870.321304	32	66	49	57	58	M10x65	M10x16	40	37	56	15,5	38	21	14,5	68	26,5	8,5	20	33	1,27	21,23
K1870.401304	40	78	59	71	72	M12x80	M12x18	50	46	70	17,5	47	28	18,5	82	33,5	9,5	25	39	1,99	33,18

Rotary lever clamps, hydraulic

double / single-acting with spring return



Rotary lever clamps are highly suited for use in cramped conditions. Due to the compactness of the rotary lever clamps, they can be used in a variety of ways in clamping fixtures with little use of space and thus often enable flexible solutions.

Material:
Housing and piston steel.

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1856.201304

Note:
In the rotary lever clamps, the clamping lever is connected to the piston rod. The clamping lever is released and opened by means of spring tension for single-acting rotary lever clamps and by means of a pressure medium for double-acting clamps. The oil supply for the rotary lever clamps is via drilled channels.
When clamping with the rotary lever clamp, the clamping lever moves towards the workpiece with a straight stroke and clamps it. To release the workpiece, the clamping lever retracts so far that the workpiece can be removed vertically. The single stroke of a rotary lever clamp depends on the clamping lever selection.

The clamping elements must be checked regularly for dirt and cleaned if necessary.
When selecting the installation position, it must be ensured that no swarf nests can form in the swivel area of the lever of the rotary lever clamp.

The flange surface of the rotary lever clamp should be adapted to the height of the workpiece during installation and a horizontal positioning of the clamping point should be available.

By positioning the rotary lever clamp correctly, workpiece tolerances can be optimally compensated for despite the short clamping lever.

Large forces can be generated with the rotary lever clamps. It must be ensured that the workpieces and clamping fixtures are designed for these loads.

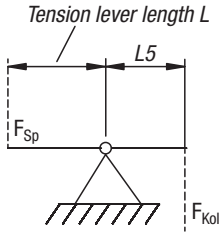
Rotary lever clamps can be fitted with individual tension levers. The clamping force of a rotary lever clamp is dependent on the lever length.

The tension lever for the rotary lever clamp is not supplied.

Rotary lever clamps, hydraulic

double / single-acting with spring return

Calculating the effective clamping force with hydraulic rotary lever clamps:



Effective clamping force F_{Sp} is dependent on piston force F_{Kol} and tension lever length L

Calculation:

Clamping force $F_{Sp} = \frac{F_{Kol} \times L5}{L}$

Clamping force $F_{Sp} = \frac{2.5\ kN \times 10\ mm}{18\ mm} = 1.39\ kN$

Example:
Rotary lever clamp cylinder size 16
Operating pressure 100 bar
Piston force F_{Kol} at 100 bar = 2.5 kN
Dimension L5 acc. to table = 10 mm
Tension lever length L = 18 mm
Resulting effective clamping force F_{Sp} = 1.39 kN

Follow safety instructions.

Method of operation:
Drilled channels.

Assembly:
See mounting contour.

Advantages:
- No lateral forces during clamping.
- Low mounting dimensions.
- Wide selection of levers.
- Collision-free accessibility to the workpiece.
- Lineless pressure supply.

On request:
Larger piston diameters, longer strokes and with position control.

Supplied with:
Supplied with 4 DIN EN ISO 4762 cap screws, grade 8.8.

Accessories:
Tension levers for rotary lever clamps K1857.

Technical data:
Max. operating pressure: 400 bar.

Drawing reference:
1) Tension lever length (see K1857)
2) Travel (see K1857)
3) See accessories
4) Mounting contour
5) Rounded edges
6) Loosen
7) Clamping alternative
8) Clamping

Rotary lever clamps, hydraulic

double / single-acting with spring return

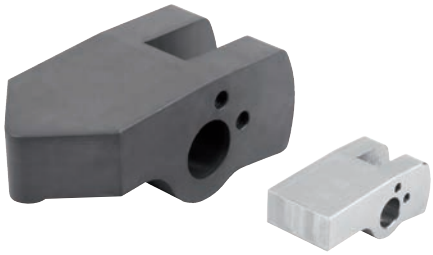
KIPP Rotary lever clamps, hydraulic

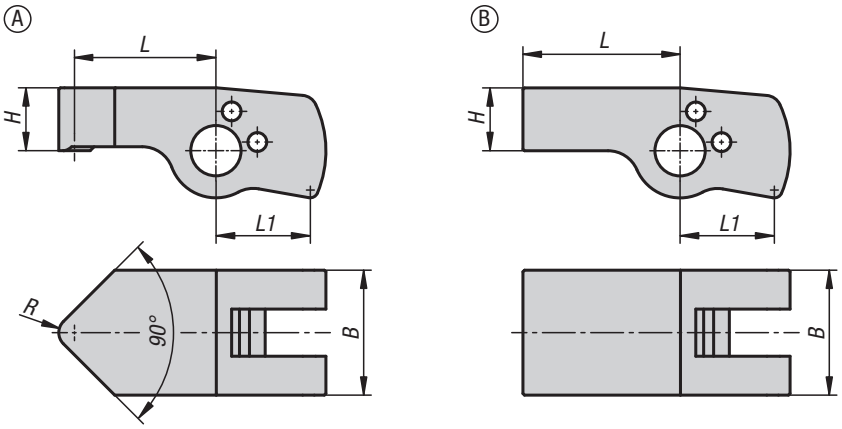
Order No.	Form	Form-Type	Piston Ø	B	B1	D	D1	G	G1	H	H1	H2	H3	H4
K1856.121304	A	double-acting	12	27	19,5	19,4	20	M4	M4x8	15	21	21	7,5	21,5
K1856.161304	A	double-acting	16	34	25	23	24	M5	M5x12	20	26	28	10,5	26,5
K1856.201304	A	double-acting	20	40	30	29	30	M6	M6x10	25	32,5	35	9	33
K1856.251304	A	double-acting	25	52	38,5	35	36	M8	M8x12	31,25	37	43,75	11,5	38
K1856.321304	A	double-acting	32	66	49	43	45	M10	M10x15	40	42	56	13	43
K1856.401304	A	double-acting	40	78	59	53	55	M12	M12x18	50	47	70	17,5	48
K1856.122304	B	single-acting	12	27	19,5	-	20	M4	M4x8	15	23	21	7,5	23,5
K1856.162304	B	single-acting	16	34	25	-	24	M5	M5x12	20	26	28	10,5	26,5
K1856.202304	B	single-acting	20	40	30	-	30	M6	M6x10	25	32,5	35	9	33
K1856.252304	B	single-acting	25	52	38,5	-	36	M8	M8x12	31,25	37	43,75	11,5	38
K1856.322304	B	single-acting	32	66	49	-	45	M10	M10x15	40	47	56	11,5	48
K1856.402304	B	single-acting	40	78	59	-	55	M12	M12x18	50	55	70	17,5	56

Order No.	Form	H5	H6	H7	L	L1	L2	L3	L4	L5	R	Piston force at 100 bar (kN)	Piston force at 400 bar (kN)	Volume (cm^3)	Effective piston area (cm^2)
K1856.121304	A	14	11	23	26	18,5	3,75	8,75	7,5	7,5	10,6	1,7	7	1,06	1,77
K1856.161304	A	17	13	26	32	23	4,5	9,5	10	10	14,2	2,8	11,3	2,03	2,83
K1856.201304	A	17	14	31	40	30	5	13,5	11	12,5	15,7	4,5	18	4,52	4,52
K1856.251304	A	20	15	33	49	35,5	6,75	14,75	11	15,63	18,7	6,15	24,6	8,82	6,15
K1856.321304	A	23	17	38	62	45	8,5	18,5	9	20	19,7	10,1	40,6	16,27	10,17
K1856.401304	A	25	19	40	74	55	9,5	21,5	12	25	24,7	15,9	63,6	31,8	15,9
K1856.122304	B	-	-	-	26	18,5	3,75	8,75	7,5	7,5	10,6	1,1	4,4	0,68	1,13
K1856.162304	B	-	-	-	32	23	4,5	9,5	10	10	14,2	1,9	8	1,61	2,01
K1856.202304	B	-	-	-	40	30	5	13,5	13,5	12,5	15,7	3	12,4	3,14	3,14
K1856.252304	B	-	-	-	49	35,5	6,75	14,75	11	15,63	18,7	4,7	19,4	6,14	4,91
K1856.322304	B	-	-	-	62	45	8,5	18,5	9	20	19,7	7,8	32	12,9	8,04
K1856.402304	B	-	-	-	74	55	9,5	21,5	12	25	24,7	12,3	50	25,2	12,57

Notes

Tension levers for rotary lever clamps





The tension lever can be used for the hydraulic rotary lever clamp K1856 or the pneumatic rotary lever clamp K1870. The "standard" tension lever or the „blank" tension lever can be selected. The „standard" tension lever is finish machined and can be mounted directly. The „blank" tension lever can be individually machined to suit. The blank lever is made from unhardened steel for easier machining. After the individual contour has been machined, the tension levers must be annealed and hardened before mounting to prevent deformation of the levers during use.

Material:
Standard and blank steel.

Version:
Standard hardened.
Blank not hardened.

Sample order:
K1857.12131

Note:
By positioning the rotary lever clamp correctly, workpiece tolerances can be optimally compensated for despite the short clamping lever.

The clamping elements must be checked regularly for dirt and cleaned if necessary.
The effective clamping force must be calculated for every tension lever.
The optimum tension lever position is 90°.
The following hardness grade must be achieved before a „blank" tension lever is used: Hardened depth 0.3 + 0.2 HRC 50 +/- 2.

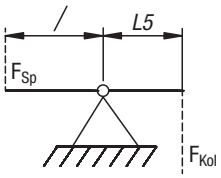
Follow safety instruction.

Assembly:
The tension lever is attached to the piston of the rotary lever clamp and secured with a dowel pin. The tension lever is thus axially secured and secured against rotation.

On request:
Other sizes and types.

Drawing reference:
Form A: Standard
Form B: Blank

Calculating the effective clamping force with hydraulic rotary lever clamps:



Effective clamping force F_{Sp} is dependent on piston force F_{Kol} and tension lever length L

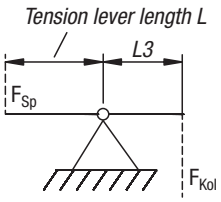
Calculation:

$$\text{Clamping force } F_{Sp} = \frac{F_{Kol} \times L5}{L}$$

$$\text{Clamping force } F_{Sp} = \frac{2.5 \text{ kN} \times 10 \text{ mm}}{18 \text{ mm}} = 1.39 \text{ kN}$$

Example:
Rotary lever clamp cylinder size 16
Operating pressure 100 bar
Piston force F_{Kol} at 100 bar = 2.5 kN
Dimension L5 acc. to table = 10 mm
Tension lever length L = 18 mm
Resulting effective clamping force F_{Sp} = 1.39 kN

Calculating the effective clamping force with pneumatic rotary lever clamps:



Effective clamping force F_{Sp} is dependent on piston force F_{Kol} and tension lever length L

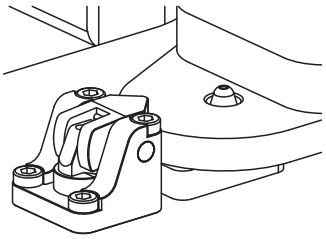
Calculation:

$$\text{Clamping force } F_{Sp} = \frac{F_{Kol} \times L3}{L}$$

$$\text{Clamping force } F_{Sp} = \frac{1.99 \text{ kN} \times 25 \text{ mm}}{45 \text{ mm}} = 1.11 \text{ kN}$$

Example:
Rotary lever clamp cylinder size 40
Operating pressure 6 bar
Piston force F_{Kol} at 6 bar = 1.99 kN
Dimension L3 acc. to table = 25 mm
Tension lever length L = 45 mm
Resulting effective clamping force F_{Sp} = 1.11 kN

Tension levers for rotary lever clamps

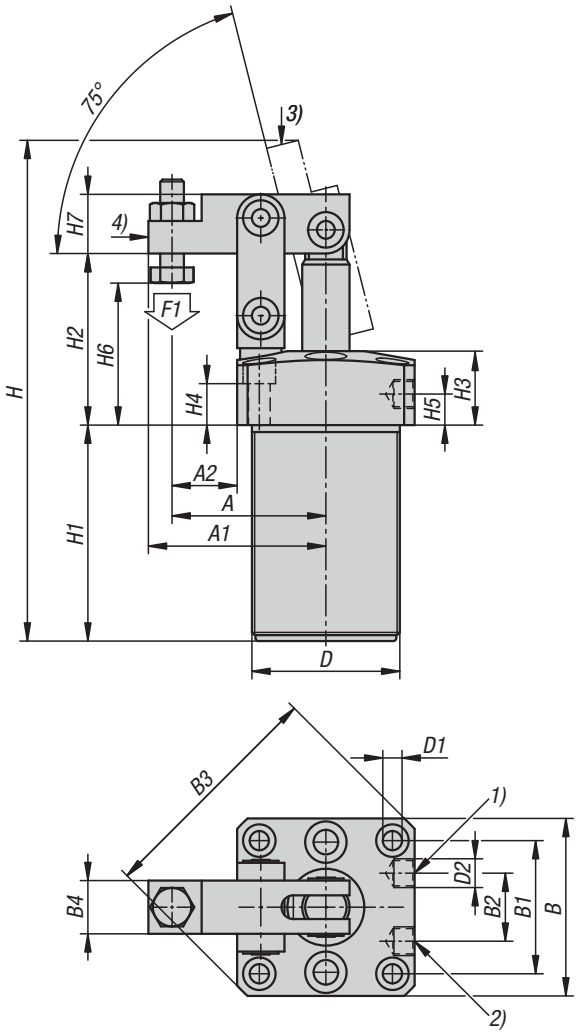


KIPP Tension levers for rotary lever clamps

Order No.	Form	Form-Type	For piston Ø	travel	B	H	L	L1	R
K1857.12091	A	standard	12	0,98	12	6	9	9	1,5
K1857.12131	A	standard	12	1,12	12	6	13,5	9	1,5
K1857.12181	A	standard	12	1,97	12	6	18	9	1,5
K1857.12221	A	standard	12	2,45	12	6	22,5	9	1,5
K1857.16121	A	standard	16	0,78	16	8	12	12	2
K1857.16181	A	standard	16	1,16	16	8	18	12	2
K1857.16241	A	standard	16	1,6	16	8	24	12	2
K1857.16301	A	standard	16	1,94	16	8	30	12	2
K1857.20151	A	standard	20	1,48	20	10	15	15	2,5
K1857.20221	A	standard	20	2,21	20	10	22,5	15	2,5
K1857.20301	A	standard	20	2,95	20	10	30	15	2,5
K1857.20371	A	standard	20	3,68	20	10	37,5	15	2,5
K1857.25191	A	standard	25	1,26	25	12,5	19	18,8	3
K1857.25281	A	standard	25	1,86	25	12,5	28	18,8	3
K1857.25381	A	standard	25	2,52	25	12,5	38	18,8	3
K1857.25471	A	standard	25	3,12	25	12,5	47	18,8	3
K1857.32241	A	standard	32	2,56	32	16	24	24	4
K1857.32361	A	standard	32	3,85	32	16	36	24	4
K1857.32481	A	standard	32	5,13	32	16	48	24	4
K1857.32601	A	standard	32	6,4	32	16	60	24	4
K1857.40301	A	standard	40	3,05	40	20	30	30	5
K1857.40451	A	standard	40	4,6	40	20	45	30	5
K1857.40601	A	standard	40	6,1	40	20	60	30	5
K1857.40751	A	standard	40	7,6	40	20	75	30	5
K1857.12152	B	blank	12	1,64	12	6	15	9	-
K1857.12242	B	blank	12	2,62	12	6	24	9	-
K1857.16202	B	blank	16	1,29	16	8	20	12	-
K1857.16322	B	blank	16	2,07	16	8	32	12	-
K1857.20252	B	blank	20	2,45	20	10	25	15	-
K1857.20402	B	blank	20	3,92	20	10	40	15	-
K1857.25312	B	blank	25	2,1	25	12,5	31	18,8	-
K1857.25502	B	blank	25	3,32	25	12,5	50	18,8	-
K1857.32402	B	blank	32	4,28	32	16	40	24	-
K1857.32642	B	blank	32	6,84	32	16	64	24	-
K1857.40502	B	blank	40	5,08	40	20	50	30	-
K1857.40802	B	blank	40	8,1	40	20	80	30	-

Link clamps pneumatic

screw-on with flange



Material:
Body aluminium.
Piston steel.

Version:
Body black anodised.
Piston hard chrome-plated

Sample order:
K1819.32

Note:
Screw-in pneumatic link clamps with flange find use where low clamping forces suffice and where the clamping point has to be cleared to enable placing or removing the workpiece.
The design enables space saving installation. The screw-in bolt can be used to adjust the height of the swing clamp. The clamp is suitable for a sunken mounting in a fixture.

Due to the double-acting function of the clamp, pressure is used to move the piston downwards and upwards.

Link clamps can be used to clamp workpieces with low profiles.

The link clamp must not be constrained in its link action. F1 = at 7 bar max. permitted operating pressure.

In comparison to swing clamps, link clamps of the same size can generate higher clamping forces because of the link mechanism.

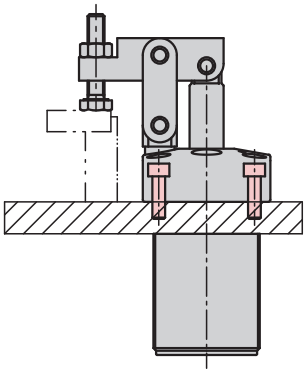
KIPP Link clamps pneumatic screw-on with flange

Order No.	Size	A	A1	A2	B	B1	B2	B3	B4	D	D1	D2	H	H1	H2	H3	H4	H5	H6	H7	F1 N
K1819.25	25	41	48	16	50	37	23	66	16	M40X1,5	5,5	M5	144	62	51	25	15	12	37-47	17	230
K1819.32	32	52	60	22	60	45	23	80	18	M50X1,5	6,5	G1/8	170	73	57	25	13	10,5	50-56	20	370
K1819.40	40	56	66	23,5	65	50	26	87	20	M55X1,5	6,8	G1/8	17	73	60	25	13	10,5	50-54,5	25	560
K1819.50	50	63,5	77,5	26	75	58	32	100	22	M65X1,5	8,5	G1/8	200	79	65	25	11	10,5	47-57	30	760
K1819.63	63	74	88	29,5	89	70	35	118	22	M80X1,5	8,5	G1/8	211	80	71,5	25	11	9	54-64	30	1350

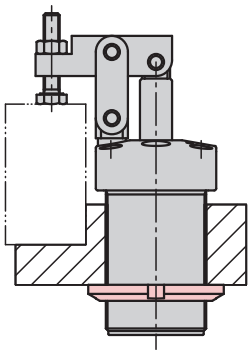
Link clamps pneumatic

screw-on with flange

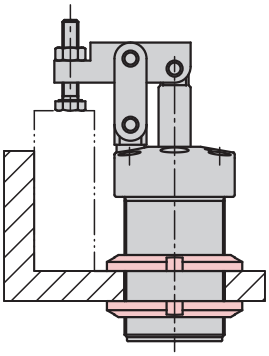
Installation examples:



With cap screws from above through the flange.



The housing is screwed into a tapped hole and secured with a slotted round nut.



With a slotted round nut from above and a slotted round nut from below.

The screw-in link clamp with flange can be fastened from above or below using a DIN 70852 slotted round nut. Another option is to fasten the link clamp to the fixture from above using four cap screws.

The position of the clamping arm can be individually adapted.

The swing clamp must only be operated using lubricated air.

The fastening holes in the flange have the same dimensions as those in the threaded flange K1820.

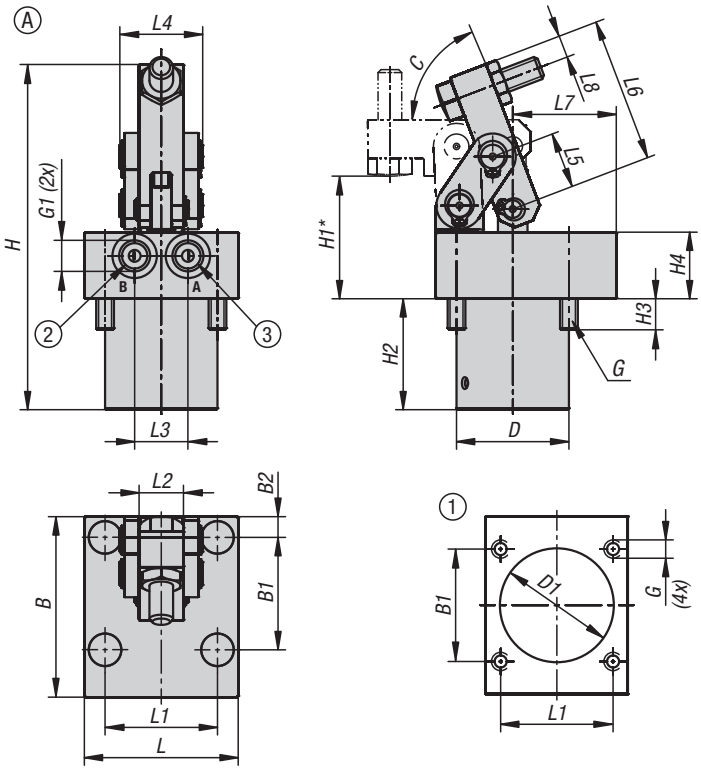
Slotted round nuts are not supplied.

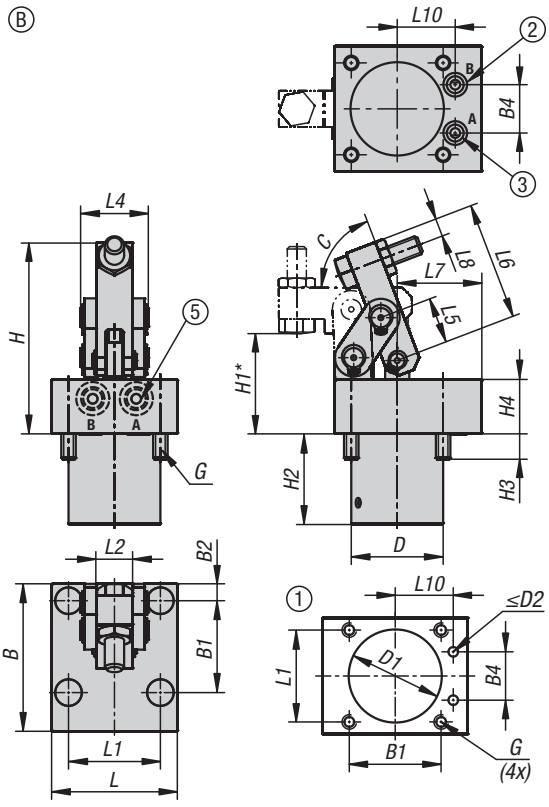
Accessories:
DIN 70852 slotted round nut.
Threaded flange K1820.

Drawing reference:
1) Clamp
2) Release
3) Relaxed
4) Tensioned

Link clamps, hydraulic

double-acting





Link clamps are the optimal choice when, due to the clamping situation, the workpiece needs to be freely removed from above when unclamped. Due to the linear movement of the clamping lever when opening or closing the link clamp, it is particularly suitable for clamping situations where a lateral movement of the clamping element is not possible, e.g. due to interfering contours. The force is transferred to the tensioning lever of the link clamp via the piston. The opening and closing times are clearly defined due to the link clamps double-acting mode of operation.

Material:
Housing and piston steel.

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1858.161104

Note:
The tensioning lever of the link clamp develops its optimum clamping force in the horizontal position.
Workpiece tolerances are compensated for up to a position deviation of +/- 8.5°.
The clamping force of a link clamp is dependent on the lever length.

Follow safety instructions.

Method of operation:
- Thread connection.
- O-ring flange connection.
- Drilled channels.

Assembly:
See mounting contour.

Advantages:
- Integrated metal wiper.
- Partially retractable housing.
- Collision-free accessibility to the workpiece.
- Lineless pressure supply.
- Versatile mounting possibilities.

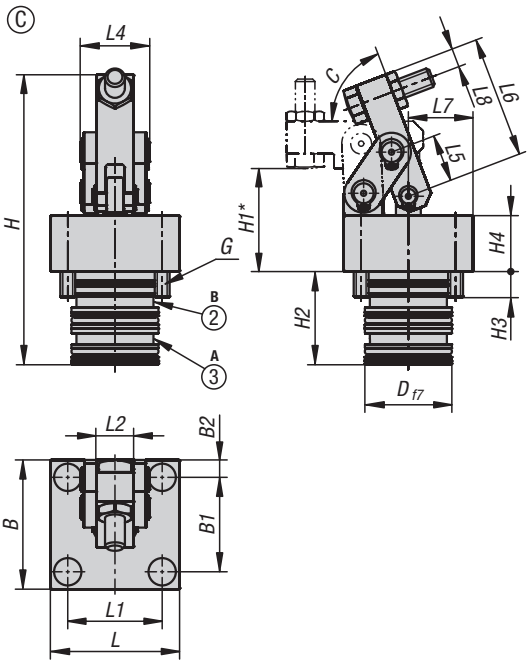
On request:
With position control.

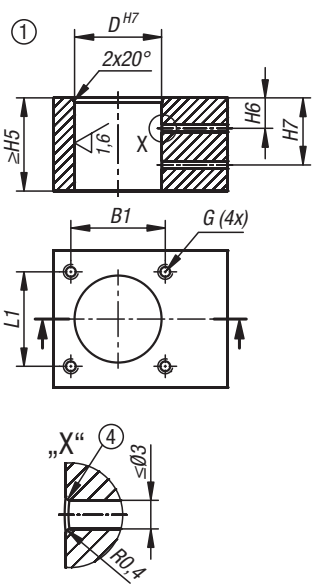
Supplied with:
- 1x tension lever for link clamp.
- 4x DIN EN ISO 4762 cap screws grade 8.8.
- 4x Plastic caps.
- 2x O-rings 7x1.5 (for flange connection operating mode).

Technical data:
- Max. operating pressure for piston diameters 16 and 25: 350 bar.
- Max. operating pressure for piston diameter 40: 200 bar.

Link clamps, hydraulic

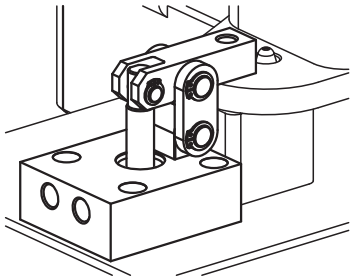
double-acting





Drawing reference:
H1*= optimum clamping point; from -1.5mm until tension lever contact

1) Mounting contour
2) Loosen
3) Clamp
4) Rounded edges
5) These holes are only closed with screw plugs by piston diameter 16

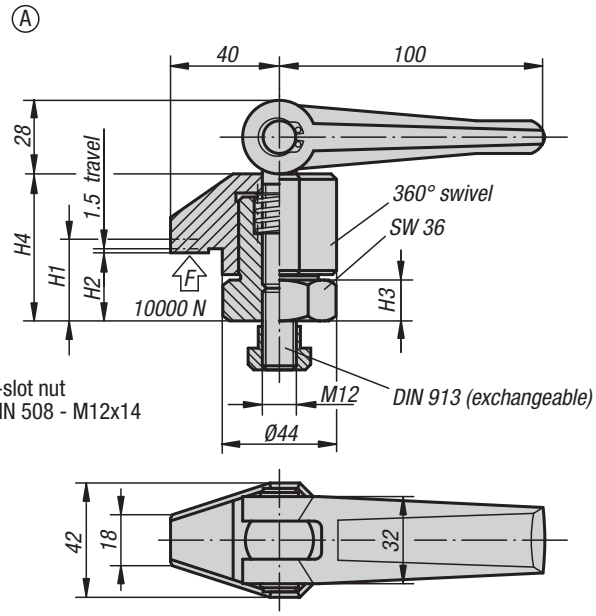


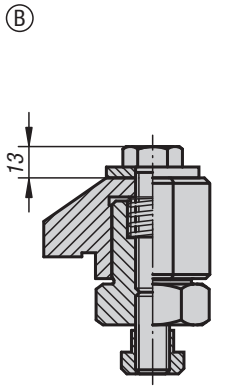
KIPP Link clamps, hydraulic, double-acting

Order No.	Form	Piston Ø	B	B1	B2	B4	C (degrees)	D	D1	D2	G	G1	H	H1	H2	H3	H4
K1858.161104	A	16	61	38	7	-	69	38	38,5	-	M6x12	G1/8	117	41,5	37,5	10,5	22,5
K1858.251104	A	25	80	56	8	-	65	50	50,5	-	M8x22	G1/4	156	50	54	19	22
K1858.401104	A	40	85	62	13,5	-	65	70	70,5	-	M10x22	G1/4	191	65	67,7	20	25
K1858.161204	B	16	61	38	7	20	69	38	38,5	4	M6x12	-	117	41,5	37,5	10,5	22,5
K1858.251204	B	25	72	56	8	27	65	50	50,5	4	M8x22	-	156	50	54	19	22
K1858.401204	B	40	95	62	13,5	29	65	70	70,5	5	M10x22	-	191	65	67,7	20	25
K1858.161304	C	16	52	38	7	-	69	35	-	-	M6x12	-	117	41,5	37,5	10,5	22,5
K1858.251304	C	25	72	56	8	-	65	50	-	-	M8x22	-	156	50	54	19	22
K1858.401304	C	40	85	62	13,5	-	65	70	-	-	M10x22	-	191	65	67,7	20	25

Order No.	Form	H5	H6	H7	L	L1	L2	L3	L4	L5	L6	L7	L8	L10	Clamping force at 100 bar (kN)	Clamping force at 200 bar (kN)	Clamping force at 350 bar (kN)
K1858.161104	A	-	-	-	52	38	15	18	28	19	49	35	7,5	-	1,5	-	5,2
K1858.251104	A	-	-	-	72	56	24	25	44	24	63,5	44	10	-	3,9	-	13,8
K1858.401104	A	-	-	-	100	78	36	32	66	31,5	82,5	40,5	10	-	9,5	19	-
K1858.161204	B	-	-	-	52	38	15	-	28	19	49	35	7,5	24	1,5	-	5,2
K1858.251204	B	-	-	-	72	56	24	-	44	24	63,5	36	10	28,1	3,9	-	13,8
K1858.401204	B	-	-	-	100	78	36	-	66	31,5	82,5	50,5	10	42	9,5	19	-
K1858.161304	C	37,5	12,25	27	52	38	15	-	28	19	49	26	7,5	-	1,5	-	5,2
K1858.251304	C	55	25,2	41,8	72	56	24	-	44	24	63,5	36	10	-	3,9	-	13,8
K1858.401304	C	68	22-25	44-53	100	78	36	-	66	31,5	82,5	40,5	10	-	9,5	19	-

Down-thrust clamps





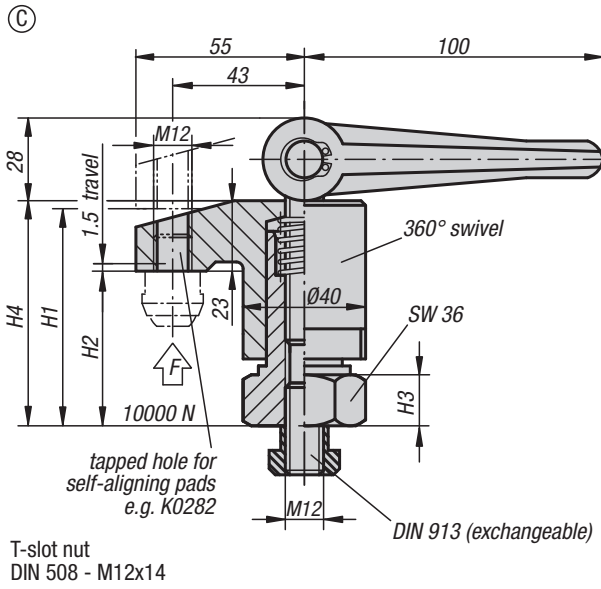
Material:
Steel.

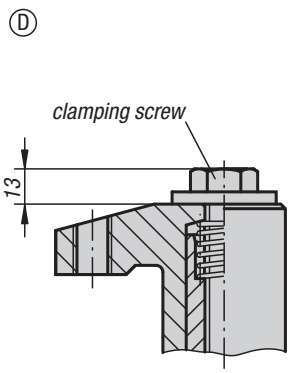
Version:
Case-hardened, black oxidised and ground.

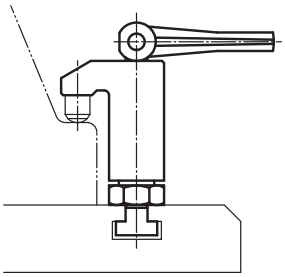
Sample order:
K1231.23

Note:
The clamping heights can be increased with riser bars K0018 and for K1231.12 to K1231.14 and K1231.22 to K1231.24 reduced by self-aligning pads K0282.
The clamps have the following advantages:
- rapid clamping by hand via threaded spindle and spiral cam.
- quick and easy workpiece exchange by pivoting the clamp arm.
- compact design, small clamping space required.
- simple adaptation to tall clamping heights using the riser cylinders.

The clamps can be mounted in two ways:
1) in a T-slot.
2) by the M12 screw directly in a fixture base.



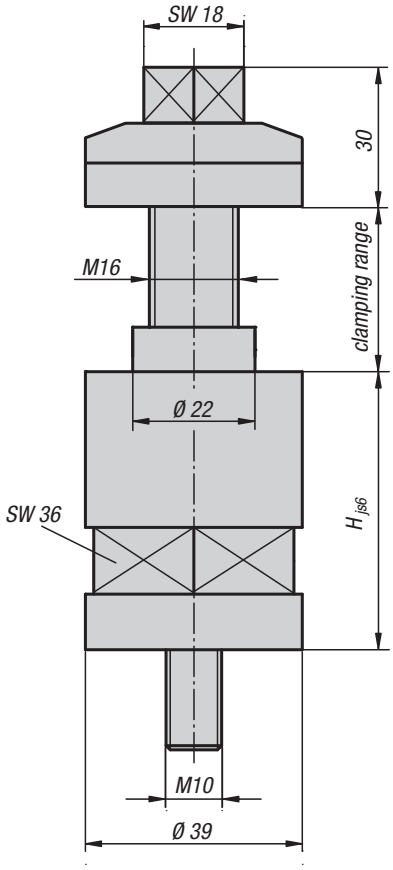




KIPP Down-thrust clamps

Order No.	Form	Form-Type	Clamping height max. H1	Clamping height min. H2	H3	H4
K1231.11	A	with cam lever	30	25	15	54-59
K1231.12	C	with cam lever and thread	70	50	15	73-93
K1231.13	C	with cam lever and thread	98	68	15	91-121
K1231.14	C	with cam lever and thread	135	95	22	118-158
K1231.21	B	with clamping screw	30	25	15	54-59
K1231.22	D	with clamping screw and thread	70	50	15	73-93
K1231.23	D	with clamping screw and thread	98	68	15	91-121
K1231.24	D	with clamping screw and thread	135	95	22	118-158

Clamping bolts



Material:
Clamping bolt, steel.
Clamping screw, carbon steel.
Clamping ring brass.

Version:
Clamping bolt hardened and black oxidised.
Clamping screw black oxidised.
Clamping ring bright.

Sample order:
K1232.100

Note:
The clamping bolts can be fixed to the machine table directly with T-slot nuts. Clamping parallel to the table is guaranteed by low tolerance classes (js6) for the height.
The clamping range is 8 – 40 mm. Clamping screws for the ranges 40 – 67 and 65 – 87 mm are also available.
The intermediate plate prevents damage to the machine table, as well as shifting during tightening.
The brass clamping ring prevents impressions on the workpiece.

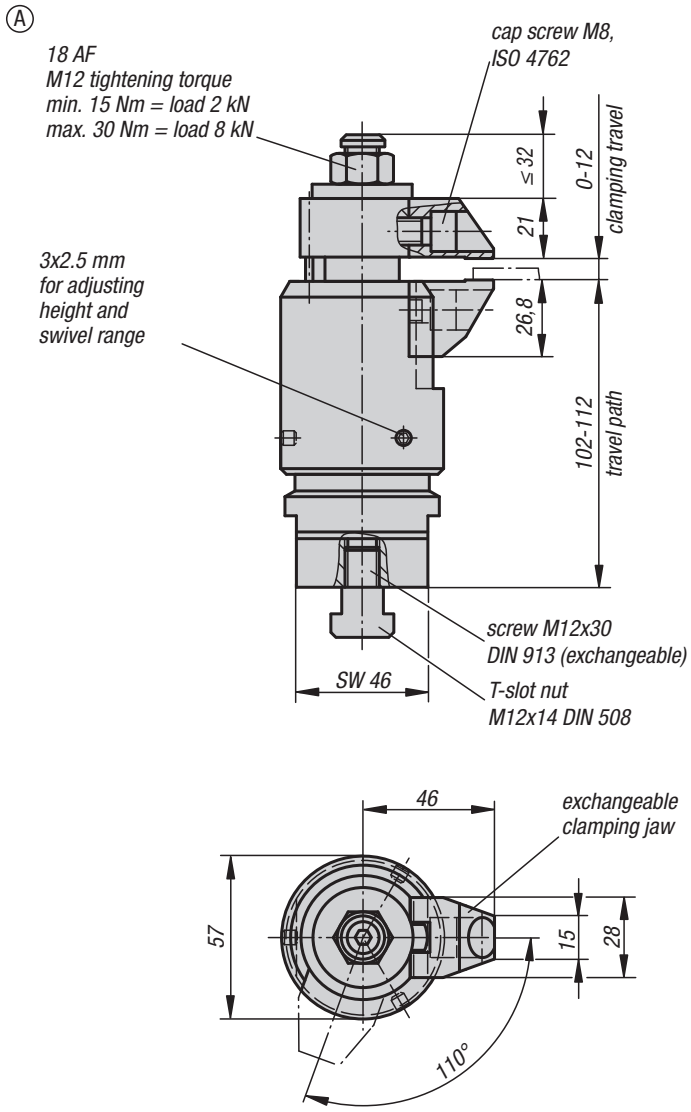
KIPP Clamping bolts

Order No.	H	Clamp range
K1232.050	50	8-40
K1232.100	100	8-40

KIPP Clamping screws

Order No.	Clamp range
K1232.4067	40-67
K1232.6587	65-87

Floating clamps



Material:
Base body and jaws steel.
Housing aluminium.

Version:
Body nitrided, black oxidised and ground.
Jaws nitrided and black oxidised.
Housing red anodised.

Sample order:
K1228.100812

Note:
The floating clamp is used to clamp and support overhanging clamping points on components. It prevents vibrations and deflection during machining.

Method of operation:
1. Push the floating clamp down.
2. Pivot the jaws to the stop. The floating clamp contacts the bottom of the workpiece with a light spring force.
3. Tighten the floating clamp with the SW 18 hexagon nut (note the min. and max. torque). During clamping the workpiece is clamped and simultaneously supported.
4. Reverse the process to release.

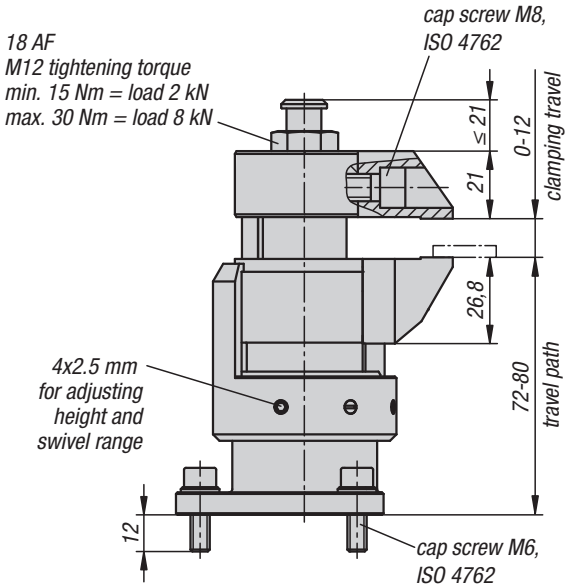
Assembly:
Form A:
Fasten the floating clamp to the fixture with the M12 screw.
Adjust the height stop and swivel range using the red sleeve and lock with the 3x2.5 mm grub screws. When setting the height leave generous clearance above.
For safe operation the M12 tapped hole must always be closed.
For specific clamping applications the standard jaws can be altered or replaced.

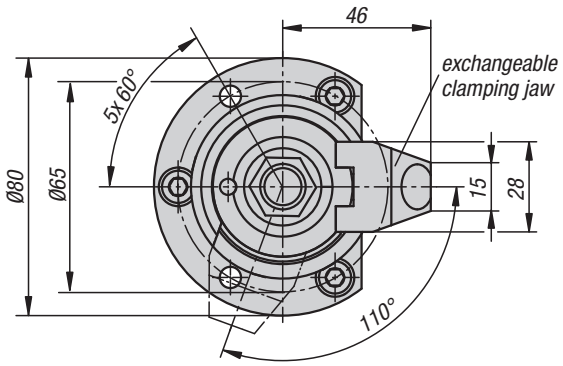
KIPP Floating clamp

Order No.	Form	Form	Travel path	max. clamping travel	Load capacity N	Clamping force N
K1228.100812	A	A	10 mm	12	8000	8000

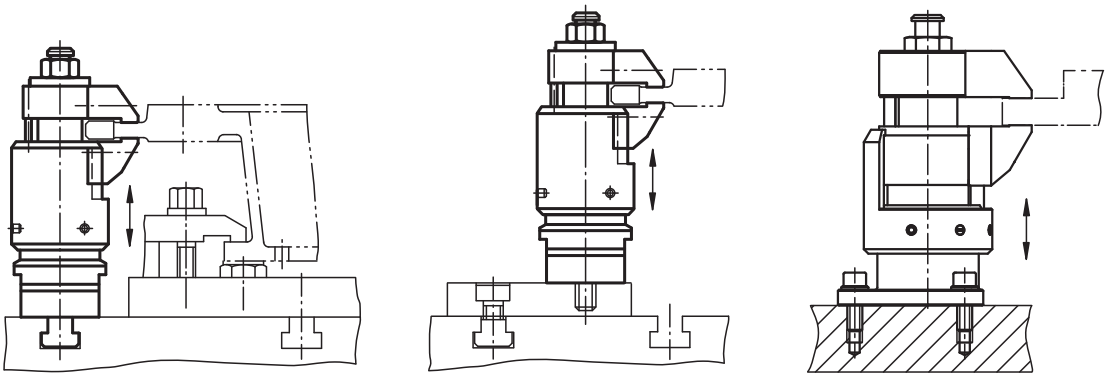
Floating clamps

Ⓑ





Form B:
Fasten floating clamp with M6 fastening hole to a fixture.
Adjust the height stop and pivot range with the red adjusting sleeve and clamp with grub screws (4x AF 2.5). When setting the height limit, allow ample play at the top.
For specific clamping situations, the standard jaw plates can be modified or replaced.



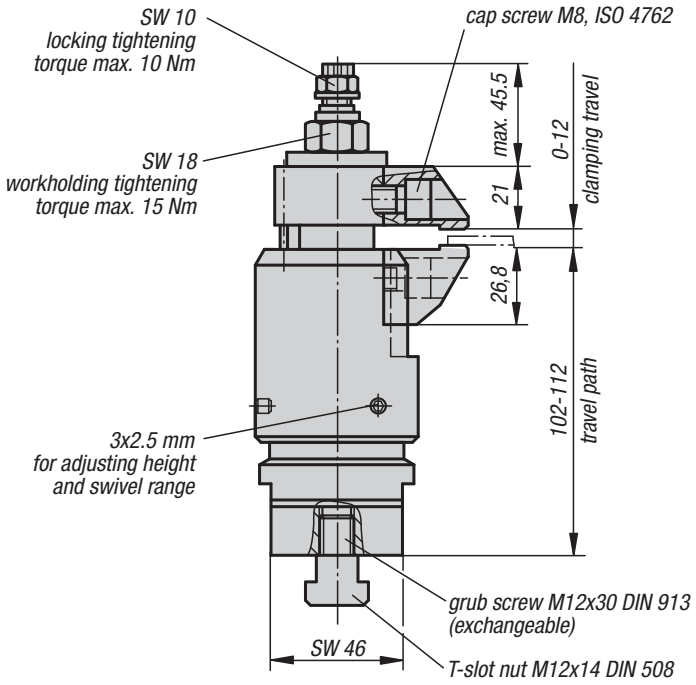
KIPP Floating clamp

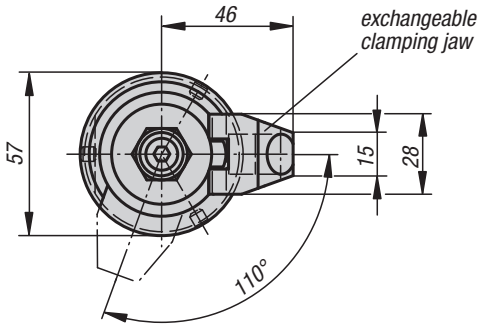
Order No.	Form	Form	Travel path	max. clamping travel	Load capacity N	Clamping force N
K1228.080812	B	B	8	12	8000	8000

Floating clamps

with separate workpiece clamp and interlock

Ⓐ





Material:
Base body and jaws steel.
Housing aluminium.

Version:
Body nitrided, black oxidised and ground.
Jaws nitrided and black oxidised.
Housing blue anodised.

Sample order:
K1227.100812

Note:
The floating clamp is used to clamp and support overhanging points on thin walled, sensitive and pliable components. It prevents vibrations and bending during machining.

Method of operation:
1. Push the floating clamp down.
2. Pivot the jaws in. The lower jaw contacts the workpiece with a light spring force.
3. Tighten the AF 18 hexagon nut with max. 15 Nm torque. The jaws clamp the workpiece, the clamp is still floating.
4. Tighten the AF 10 hexagon nut with max. 10 Nm torque. The clamping process is completed.
5. Reverse the process to release.

Assembly:
Form A:
Fasten the floating clamp to the fixture with the M12 screw.
Adjust the height stop and the swivel range using the blue sleeve and lock with the 3x2.5 mm grub screws. When setting the height leave generous clearance above.
For safe operation the M12 tapped hole must always be closed.
For specific clamping applications the standard jaws can be altered or replaced.

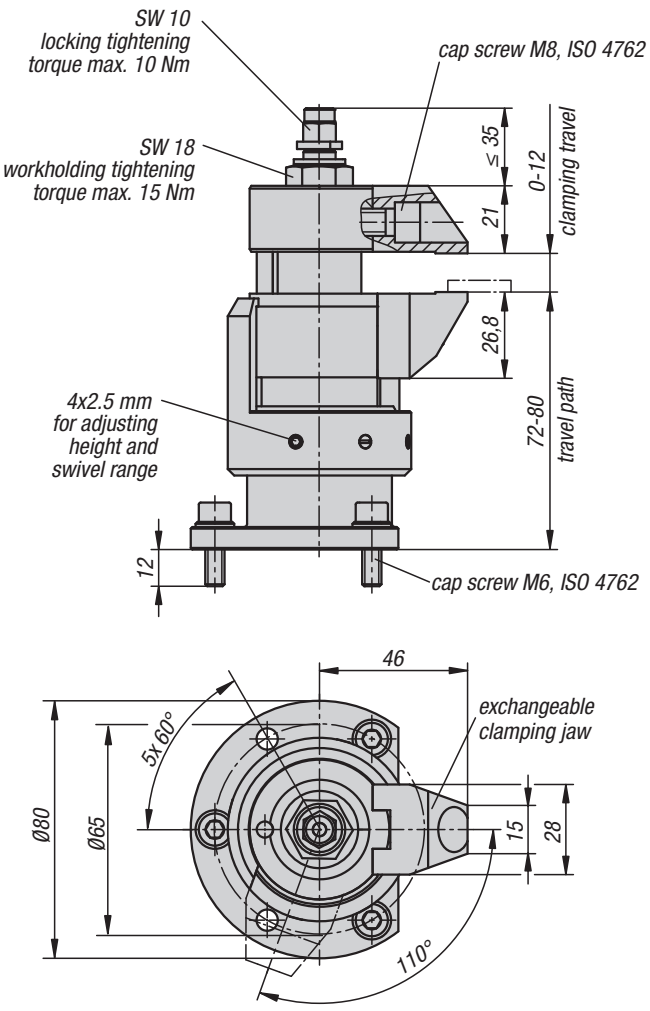
KIPP Floating clamp with separate workpiece clamp and interlock

Order No.	Form	Travel path	max. clamping travel	Load capacity N	Clamping force N
K1227.100812	A	10 mm	12	8000	8000

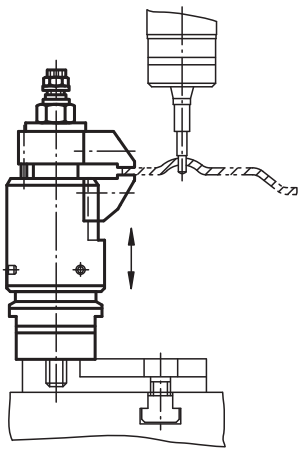
Floating clamps

with separate workpiece clamp and interlock

Ⓑ



Form B:
Fasten the floating clamp with M6 fastening holes to a fixture.
Adjust the height stop and pivot range using the blue adjusting sleeve and clamp with grub screws (4x AF 2.5). When setting the height limit, allow ample play at the top.
For specific clamping situations, the standard jaw plates can be modified or replaced.

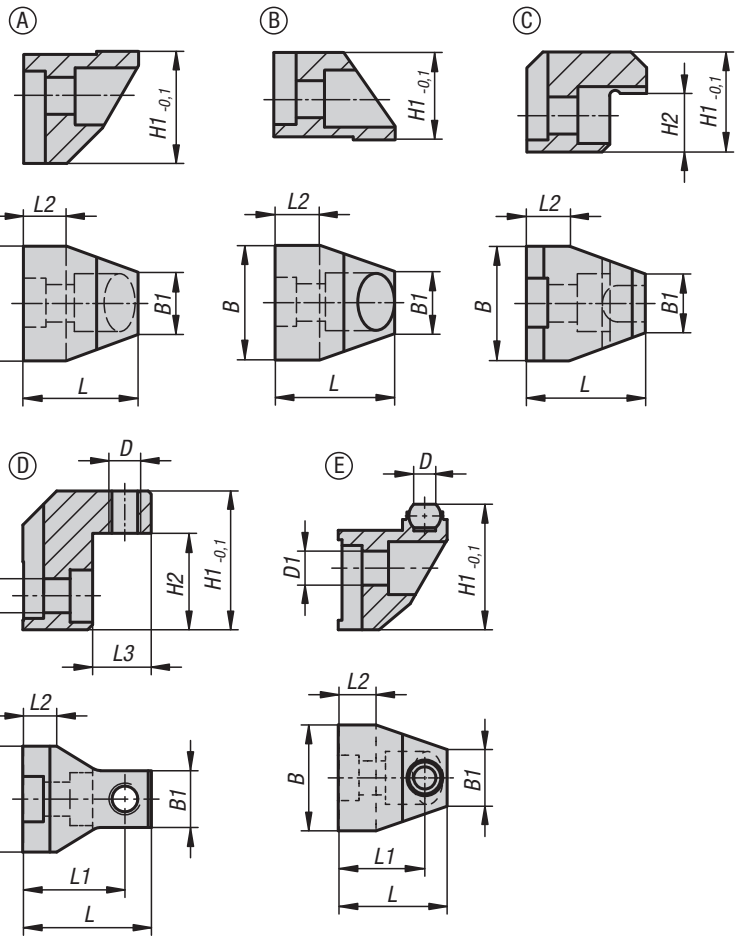


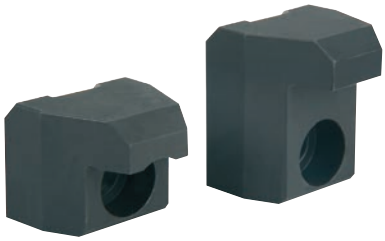
KIPP Floating clamp with separate workpiece clamp and interlock

Order No.	Form	Travel path	max. clamping travel	Load capacity N	Clamping force N
K1227.080812	B	8	12	8000	8000

Clamping jaws

for floating clamps





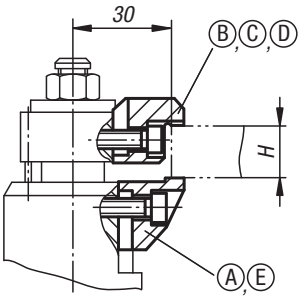
Material:
Steel.

Version:
Nitrided and black oxidised.

Sample order:
K1490.90000

Note:
The clamping jaws can be used for floating clamps to increase the clamping range.

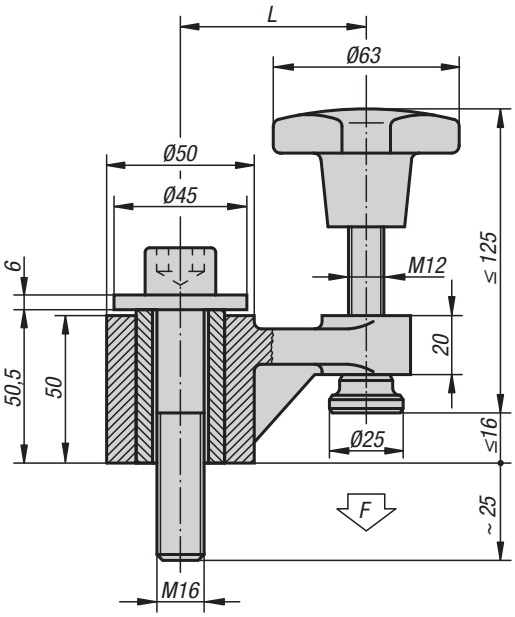
Order No.	H = clamping range max. in comination with K1490.90000 [mm]	H = clamping range max. in comination with K1490.910000 [mm]
K1490.90416	4-16	-
K1490.91527	15-27	-
K1490.92638	26-38	-
K1490.90029	29	23
K1490.90040	40	34



KIPP Clamping jaws for floating clamps

Order No.	Form	Version 1	B	B1	D	D1	H clamping range	H1	H2	L	L1	L2	L3
K1490.90000	A	standard lower jaw	28	15	-	-	-	26,8	-	28	-	10	-
K1490.90012	B	standard upper jaw	28	15	-	-	0-12	21	-	29,5	-	11,5	-
K1490.90416	C	exchange upper jaw	28	15	-	-	4-16	24,5	3,5	29,5	-	11,5	-
K1490.91527	C	exchange upper jaw	28	15	-	-	15-27	24,5	14,5	29,5	-	11,5	-
K1490.92638	C	exchange upper jaw	28	15	-	-	26-38	35,5	25,5	29,5	-	11,5	-
K1490.90029	D	upper jaw	28	15	M8	4,5	-	29,5	16,5	31,5	24,5	8	16
K1490.90040	D	upper jaw	28	15	M8	4,5	-	40,5	27,5	31,5	24,5	8	16
K1490.910000	E	lower jaw	28	15	5,8	4,5	-	32,8	-	30	23	10	-

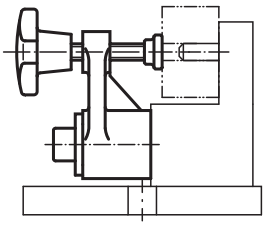
Swing clamps



Material:
Body malleable iron.
Sleeve carbon steel 1.1191.
Screw carbon steel 1.1181.
Thrust pad mild steel 1.0301.

Version:
Painted.
Thrust pads case-hardened.

Sample order:
K0019.01

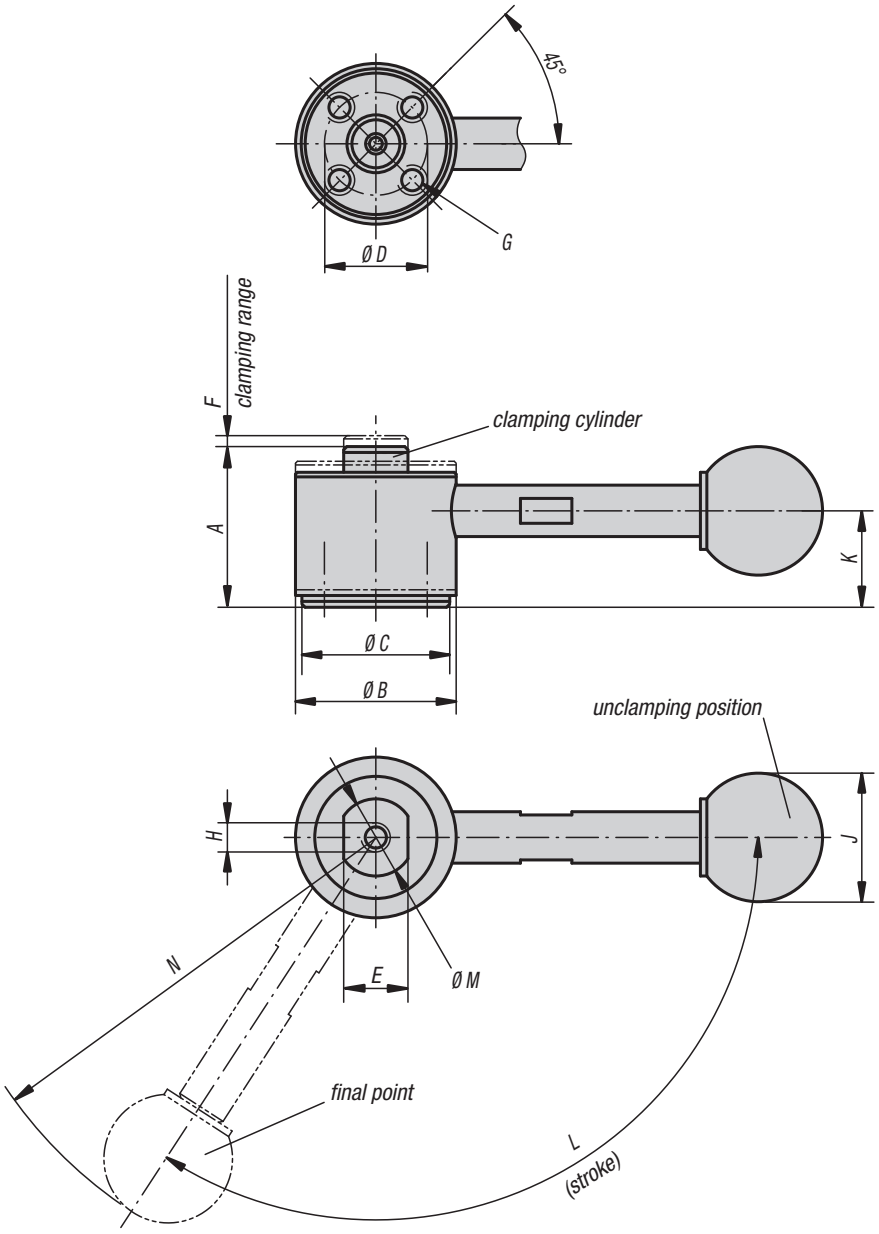


KIPP Swing clamps

Order No.	L	Clamping force N
K0019.01	63	5000
K0019.02	100	3000

Pull and thrust clamps

Thrust clamps



Material:
Cam tool steel.
Shaft and grip Q&T steel.
Ball knob thermoset PF 31.

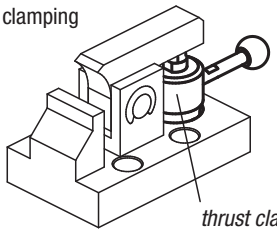
Version:
Cam and shaft hardened and black oxidised.
Grip black oxidised.
Ball knob, black.

Sample order:
K0914.252501

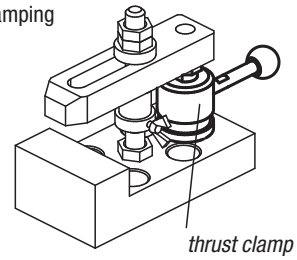
Note:
* Admissible hand force for the handle.

Accessories:
Standard handles K0915.
Screw-in handles with torque limit K0916.

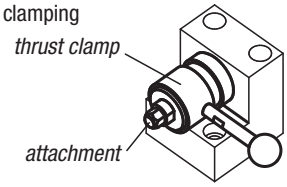
downthrust clamping



vertical clamping



horizontal clamping



When mounting an attachment on the clamping cylinder, hold the shaft using a spanner to prevent turning.

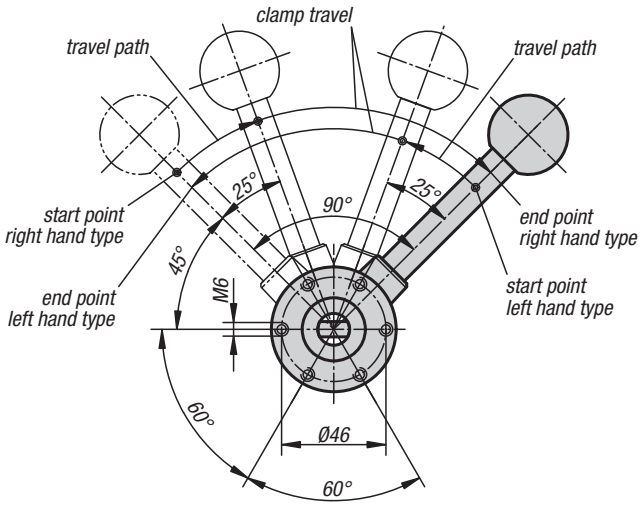
KIPP Thrust clamps

Order No.	Version 1	A min.	A max.	B	C	D	E	F	G	H	J	K	L	M	N	Clamping force N	Hand force FH N
K0914.252500	without grip	25	26,7	25	23	16	10	1,7	M4 x 6	M4x6	-	15	123°	12	-	3000	150*
K0914.252501	with grip	25	26,7	25	23	16	10	1,7	M4 x 6	M4x6	20	15	123°	12	69,5	3000	150*
K0914.323200	without grip	32	34,5	32	30	20	13	2,5	M6 x 9	M6 x 9	-	19,5	135°	15	-	4000	200*
K0914.323201	with grip	32	34,5	32	30	20	13	2,5	M6 x 9	M6 x 9	25	19,5	135°	15	103	4000	200*

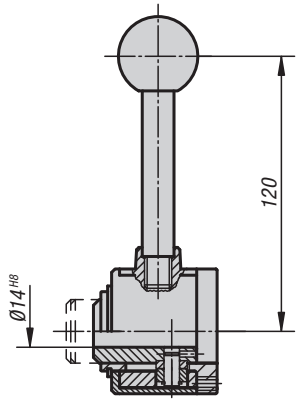
Notes

Clamping element “actima”

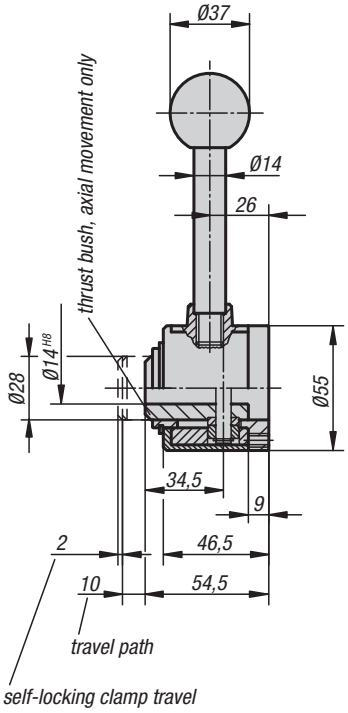
View from below



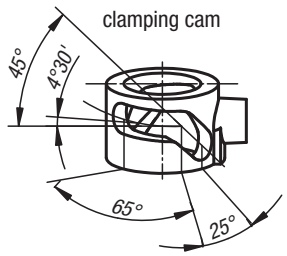
drilled through

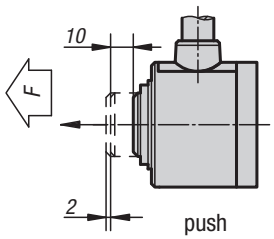


with transverse axis in bore

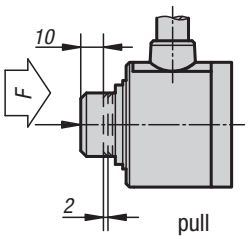


clamping cam





push



pull

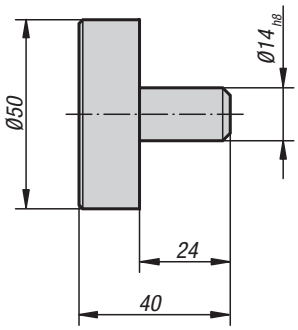
Material:
Steel.
Housing thermoplastic.
Ball knob thermoset PF 31.
Accessories steel.

Version:
Black oxidised.
Housing black.
Ball knob, red.
Accessories black oxidised.

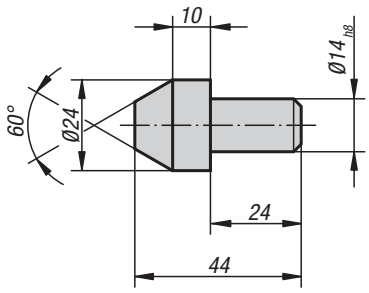
Sample order:
K0020.10

Note:
The travel path is 10 mm. Self-locking occurs in any position within only 2 mm of clamp travel, so workpieces with tolerances of up to 1.5 mm can be safely clamped. The Actima clamping device can be mounted in any horizontal or vertical position.
Standard parts enable further applications and are available as optional accessories.
All parts of the cam system subject to heavy loads are case-hardened (thrust sleeve and accessories only if specified).
The maximum permissible clamping force is approximately 4905 N.

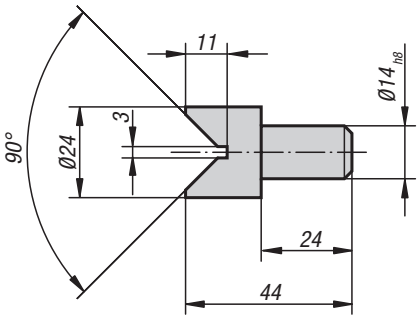
Clamping element “actima”



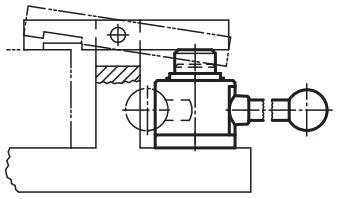
plate



conus



prism



KIPP “actima” clamping element with transverse axis in bore

Order No.	Version 2
K0020.10	right-hand / thrust
K0020.15	right-hand / pull
K0020.20	left-hand / thrust
K0020.25	left-hand / pull

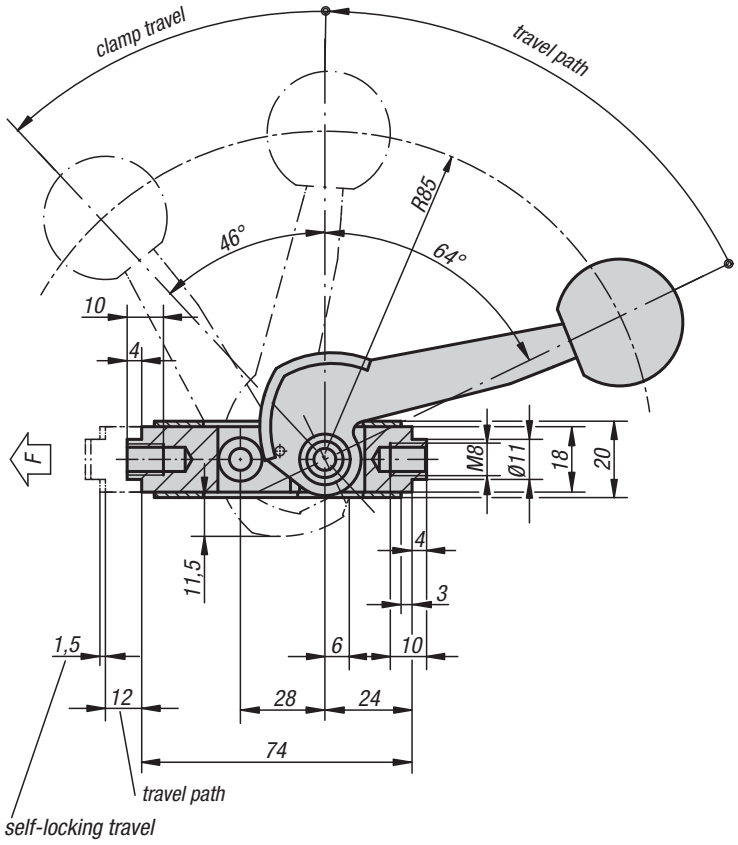
KIPP “actima” clamping element with drilled through bore

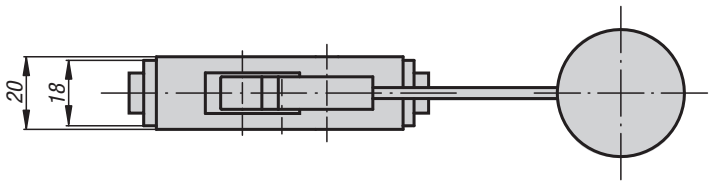
Order No.	Version 2
K0020.30	right-hand / thrust
K0020.35	right-hand / pull
K0020.40	left-hand / thrust
K0020.45	left-hand / pull

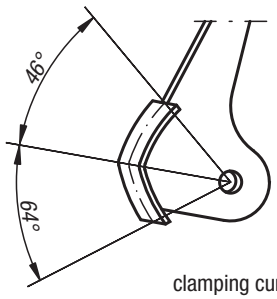
KIPP “actima” accessories

Order No.	Item
K0020.02	Plate
K0020.03	Conus
K0020.04	Prism

Clamping element “arness”







clamping curve

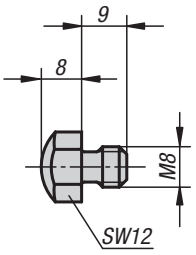
Material:
Steel.
Ball knob thermoset PF 31

Version:
Housing painted silver-grey hammertone.
All other parts and accessories black oxidised.
Ball knob red.

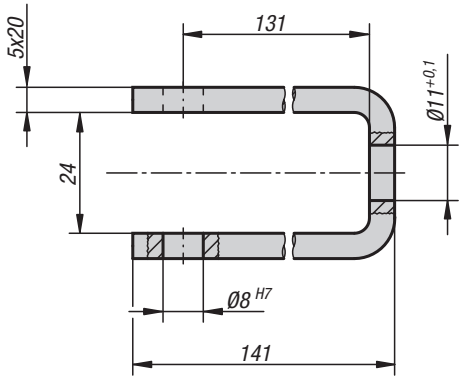
Sample order:
K0021.01

Note:
The travel path is 12 mm. Self-locking occurs in any position within only 1.5 mm of clamp travel, allowing workpieces with tolerances of up to 1 mm to be securely clamped. The arness clamping element can be fitted in any horizontal or vertical position.
Several standard parts have been developed to achieve individual adaptation for various circumstances and are available as optional accessories.
The thrust pad and all parts of the cam system subject to heavy loads are case-hardened.
The maximum permissible clamping force is approximately 4905 N.

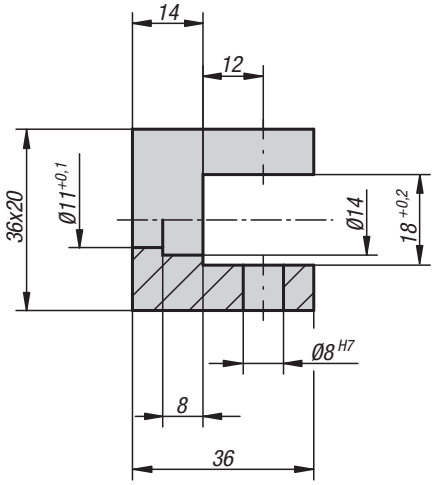
Clamping element “arness”



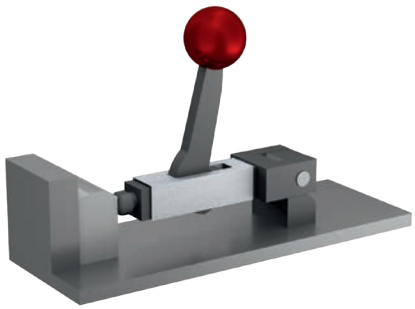
thrust pad



tension bracket



clevis



KIPP Clamping element “arness”

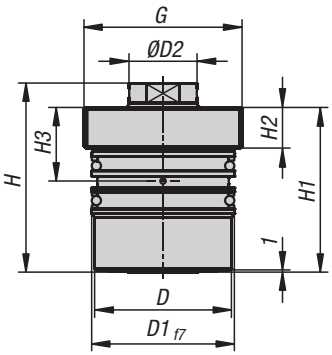
Order No.	Dimensions
K0021.01	see drawing

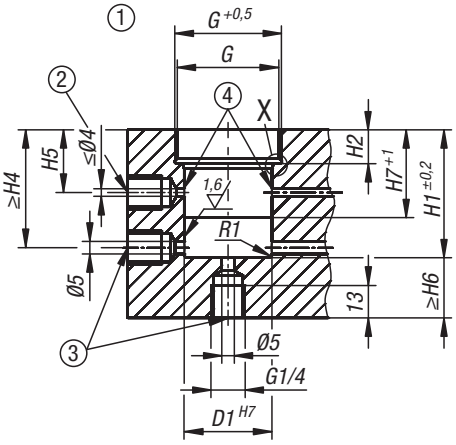
KIPP “arness” accessories

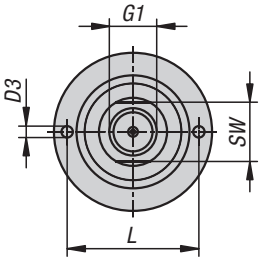
Order No.	Item
K0021.02	Clevis
K0021.03	Tension bracket
K0021.04	Thrust pad

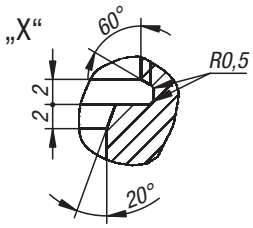
Screw-in hydraulic cylinders

double-acting









Cyclic-related, linear strokes are possible with the screw-in cylinders with double-acting function. Both travel directions are power actuated with the double-acting screw-in cylinders. Double-acting screw-in cylinders can be used as thrust or traction cylinders. These screw-in cylinders are often used on fixture plates and plates for plastic injection moulding tools. The integrated metal wiper prevents damage to the piston rod surface by preventing swarf getting into the screw-in cylinder. The protection given by the seal ensures the longevity of the products.

Material:
Housing and piston steel.
Seal NBR

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1860.163213061

Note:
Due to the compact design of these screw-in cylinders, no internal stop for the piston return stroke is installed. It must be ensured that the specified installation depth of the screw-in cylinders is adhered to, as these use the bottom of the mounting hole as a stop for the return stroke.

Care must be taken to ensure that no shavings remain in the drilled holes when producing the drilled channels for the screw-in cylinders. These can damage the seals of the screw-in cylinders, which can lead to leaks in the product. To avoid damage to the seals during installation, make sure that the lead-in chamfers as well as the transverse holes for the oil supply are well rounded.

Thrust pieces are not supplied.

Follow safety instructions.

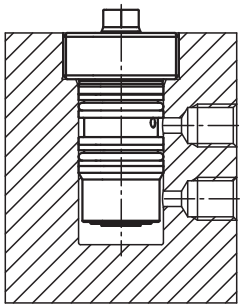
Method of operation:
Drilled channels.

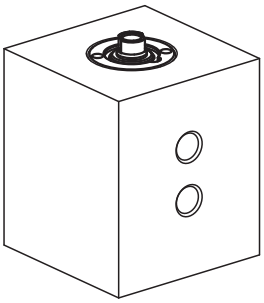
Assembly:
See mounting contour.

On request:
Larger piston diameters and longer strokes.

Screw-in hydraulic cylinders

double-acting





Accessories:
- Rest pads K0307.
- Self-aligning pads K0282, K0302, K1164, K0287, K0288.
- Gripper screws, hexagonal K0386.

Technical data:
Max. operating pressure: 500 bar.

Drawing reference:
1) Mounting contour
2) Retract zylinder
3) Alternative oil supply, extend cylinder
4) Rounded edges, max. R0.5

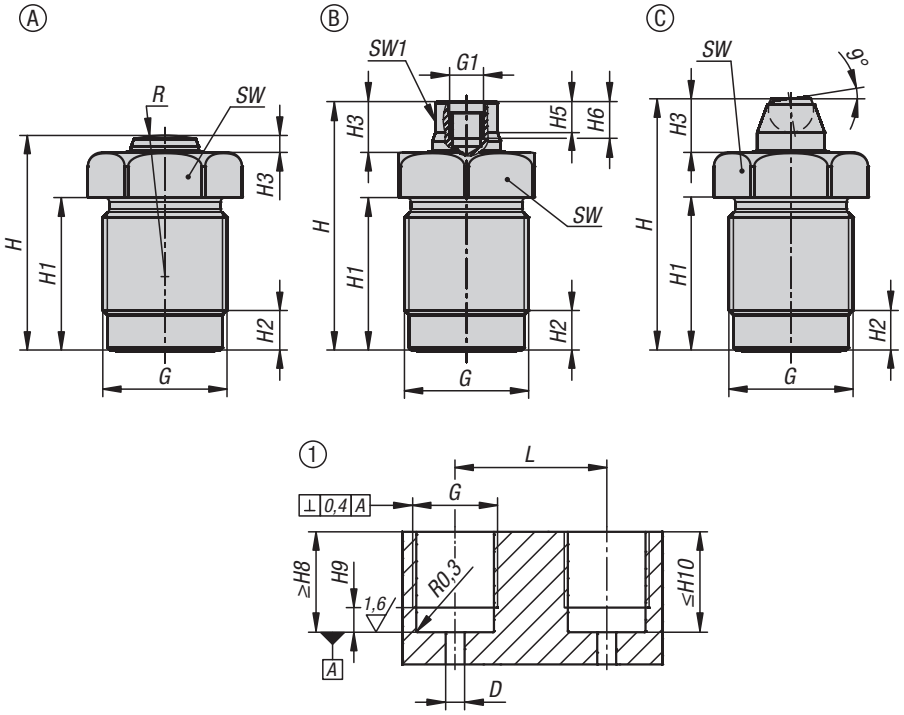
KIPP Screw-in hydraulic cylinders, double-acting

Order No.	Piston Ø	travel	D	D1	D2	D3	G	G1	H	H1	H2	H3	H4	H5	H6	H7	L	SW
K1860.161613061	16	16	20	22	10	3,5	M30x1,5	M6x15	56	50	12	24	41	24	8	38	23	8
K1860.163213061	16	32	20	22	10	3,5	M30x1,5	M6x15	72	66	12	24	41	24	8	38	23	8
K1860.165013061	16	50	20	22	10	3,5	M30x1,5	M6x15	90	84	12	24	41	24	8	38	23	8
K1860.201613061	20	16	26	28	12	4,2	M36x1,5	M8x16	57	51	12	25	43	25	10	40	28	10
K1860.203213061	20	32	26	28	12	4,2	M36x1,5	M8x16	73	67	12	25	43	25	10	40	28	10
K1860.205013061	20	50	26	28	12	4,2	M36x1,5	M8x16	91	85	12	25	43	25	10	40	28	10
K1860.252013061	25	20	33	35	16	5,2	M42x1,5	M10x17	63	56	12	25	43	25	11	40	30	13
K1860.255013061	25	50	33	35	16	5,2	M42x1,5	M10x17	93	86	12	25	43	25	11	40	30	13
K1860.322513061	32	25	43	45	20	5,2	M56x2	M12x18	74	64	14,5	28	44	28	13	41	40	17
K1860.325013061	32	50	43	45	20	5,2	M56x2	M12x18	99	89	14,5	28	44	28	13	41	40	17
K1860.402513061	40	25	53	55	25	5,2	M64x2	M16x27	78	68	16,5	30	49	30	16	46	50	22
K1860.405013061	40	50	53	55	25	5,2	M64x2	M16x27	103	93	16,5	30	49	30	16	46	50	22

Order No.	Piston Ø	travel	Compressive force at 100 bar (kN)	Tractive force at 100 bar (kN)	Compressive force at 500 bar (kN)	Tractive force at 500 bar (kN)	Oil requirement / 10mm travel (cm^3)	Oil requirement / 10mm return stroke (cm^3)
K1860.161613061	16	16	2	1,22	10	6,10	2	1,22
K1860.163213061	16	32	2	1,22	10	6,10	2	1,22
K1860.165013061	16	50	2	1,22	10	6,10	2	1,22
K1860.201613061	20	16	3,14	2,02	15,70	10	3,14	2,02
K1860.203213061	20	32	3,14	2,02	15,70	10	3,14	2,02
K1860.205013061	20	50	3,14	2,02	15,70	10	3,14	2,02
K1860.252013061	25	20	4,91	2,9	24,50	14,50	4,91	2,90
K1860.255013061	25	50	4,91	2,9	24,50	14,50	4,91	2,90
K1860.322513061	32	25	8,04	4,9	40,20	24,50	8,04	4,90
K1860.325013061	32	50	8,04	4,9	40,20	24,50	8,04	4,90
K1860.402513061	40	25	12,57	7,66	62,80	38,30	12,57	7,66
K1860.405013061	40	50	12,57	7,66	62,80	38,30	12,57	7,66

Screw-in hydraulic cylinders

single-acting with spring return



The single-acting screw-in cylinders with spring return are characterised by their compact design and are therefore often used as clamping cylinders. They can be positioned very close to each other. Due to the internal stroke limitation, these screw-in cylinders can be operated without an opposing clamping face. The double wipers installed as standard prevent dynamic leakage and thus increase the service life of the screw-in cylinders. The piston is reset to the initial position by means of an integrated spring.

Material:
Housing and piston steel.
Seal NBR

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1861.1210230711

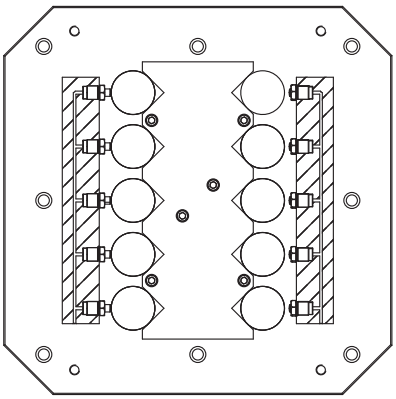
KIPP Screw-in hydraulic cylinders, single-acting with spring return

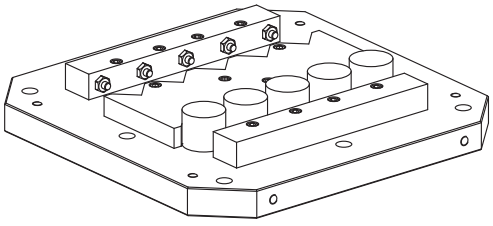
Order No. Form A	Order No. Form B	Order No. Form C	Piston Ø	travel	D	G	G1	H	H1	H2	H3	H5	H6	H8
K1861.1210230711	K1861.1210230811	K1861.1210230911	12	10	6	M22x1,5	-/M6/-	38/45/45,5	27	7	3/10/10,5	-/5,5/-	-/6,5/-	15
K1861.1612230711	K1861.1612230811	K1861.1612230911	16	12	6	M26x1,5	-/M6/-	45,5/51,5/53	34	8	3/9/11	-/5,5/-	-/6,5/-	19
K1861.2015230711	K1861.2015230811	K1861.2015230911	20	15	7	M30x1,5	-/M8/-	56/65,5/69,5	43	8	4/13,5/17,5	-/6/-	-/8/-	23
K1861.2516230711	K1861.2516230811	K1861.2516230911	25	16	7	M38x1,5	-/M8/-	59,5/68,5/72,5	45,5	11	5/14/18	-/7/-	-/8/-	26,5
K1861.3220230711	K1861.3220230811	K1861.3220230911	32	20	8	M48x1,5	-/M12/-	87/98/100	71,5	12	7/18/20	-/9/-	-/12/-	40

Order No. Form A	Order No. Form B	Order No. Form C	Piston Ø	H9	H10	L	R	SW	SW1	Clamping force at 100 bar (kN)	Clamping force at 400 bar (kN)	Spring return force min. (N)	Oil requirement / 10mm travel (cm^3)	Tightening torque max. Nm
K1861.1210230711	K1861.1210230811	K1861.1210230911	12	6	26,5	31	25/-/-	24/24/24	-/10/-	1,1	4,5	30	1,13	40
K1861.1612230711	K1861.1612230811	K1861.1612230911	16	7	33,5	34	35/-/-	27/27/27	-/13/-	2	8	50	2,01	50
K1861.2015230711	K1861.2015230811	K1861.2015230911	20	7	42,5	40	50/-/-	32/32/32	-/17/-	3,1	12,5	75	3,14	60
K1861.2516230711	K1861.2516230811	K1861.2516230911	25	10	45	52	70/-/-	41/41/41	-/19/-	4,9	19,6	125	4,91	80
K1861.3220230711	K1861.3220230811	K1861.3220230911	32	11	71	62	100/-/-	50/50/50	-/24/-	8	32	200	8,04	225

Screw-in hydraulic cylinders

single-acting with spring return





Note:
The screw-in cylinders can withstand maximum loads in both the tensioned and untensioned state.
To avoid damage to the seals during installation, make sure that the lead-in chamfers as well as the transverse holes for the oil supply are well rounded.
A sealing ring at the bottom of the screw-in hole seals the screw-in cylinder.
Due to the plunger design, no venting of the rod space is required.

The screw-in cylinders should be protected from aggressive cutting and cooling agents.

Thrust pieces for Form B are not supplied.

Follow safety instructions.

Method of operation:
Drilled channels.

Assembly:
See mounting contour.

Advantages:
- Integrated metal wiper.
- Low mounting dimensions.
- Can be used without opposing clamping face.
- Loads in retracted position possible.
- Lineless pressure supply.

Accessories:
Form B:
- Rest pads K0307.
- Self-aligning pads K0282, K0302, K1164, K0287, K0288.
- Gripper screws, hexagonal K0386.

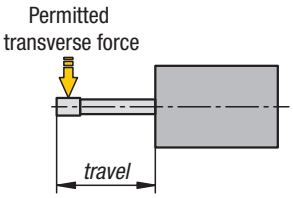
Technical data:
Max. operating pressure: 400 bar.

Drawing reference:
1) Mounting contour

Technical data:

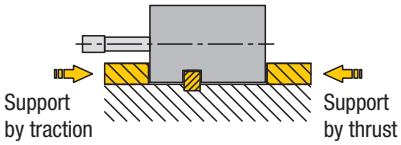
Permitted transverse force by extended piston rod.

To ensure sealing and guarantee long service life for the piston and rod guide, transverse forces on the block cylinders should be avoided where possible. Up to travel lengths of 50 mm, a transverse force of 3 % of the nominal cylinder force must not be exceeded. The transverse forces should be moving towards 0 % as the travel length increases.



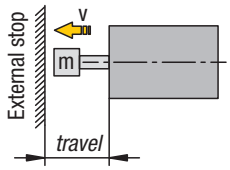
Supports for block cylinder:

If the cylinder is fastened at right angles to the cylinder axis, the block cylinders must be supported. When used as a thrust cylinder, the support should be on the under side, when used as a traction cylinder, it should be on the rod side (see illustration). As standard, the block cylinders also have transverse slots in the housing which can be used for support. In this case, a parallel key, which absorbs the compressive or tensile force is fitted to the screw-on face.



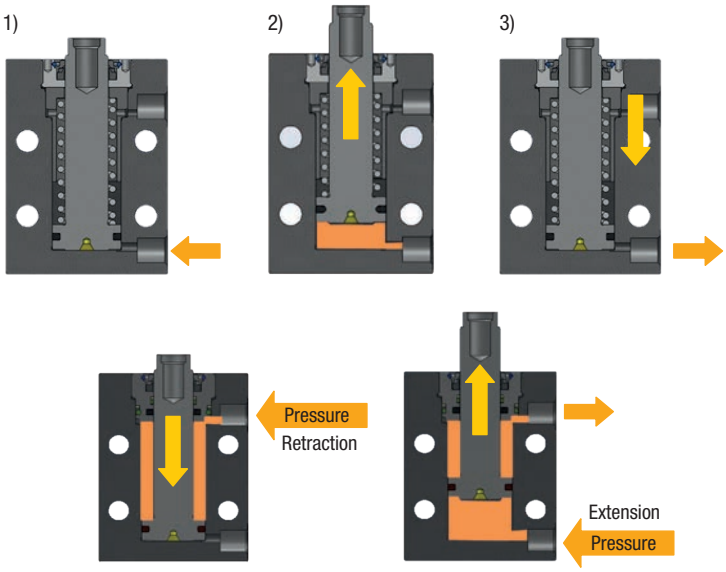
Permissible dynamic loads during the piston advance stroke:

As standard, the block cylinders have no end position damping. Due to the advance stroke, the piston thrusts the attached mass against the sealing bush of the block cylinder with unrestrained stroke speed. The sealing bush acts as a stop in the cylinder. The functional capability of the block cylinder is impaired if this is overloaded. This problem can be prevented by always having an external stop available for the block cylinder piston (see illustration).

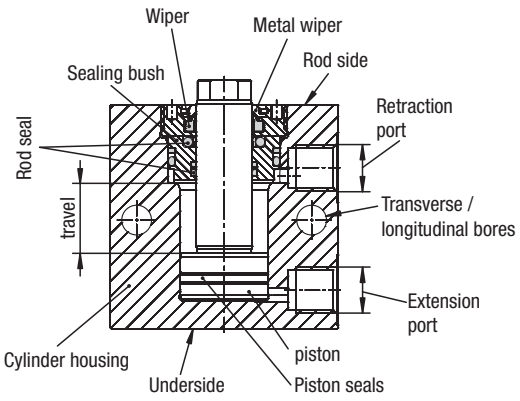


v = stroke speed
m = attached mass

Operating principle of a block cylinder:



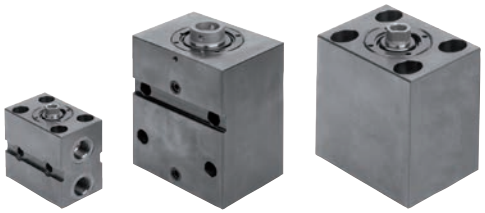
Construction of a block cylinder:

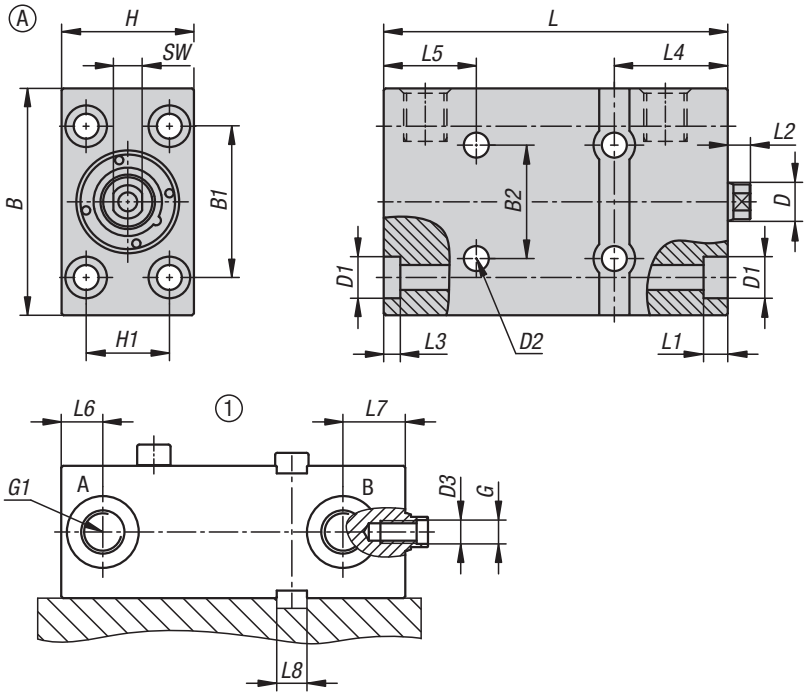


Notes

Block cylinders, hydraulic with metal wiper

double / single acting with spring return





Block cylinders with female piston rod thread are ideally suited for clamping situations where short travel with high forces is required. Block cylinders can be used as thrust or traction cylinders. Various thrust pieces can be screwed into the female threads of the piston rods The block cylinders ensure a high operating pressure and are easy to fasten using cap screws due to their compact, cubic housing design. A double hydraulic seal is installed in the block cylinders as standard. This creates technical advantages for the rod-side seal for low-leakage continuous operation. Metal wipers are also installed in the block cylinders as standard to prevent the ingress of swarf.

Material:
Housing and piston steel.
Seal NBR

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1859.200821011

Note:
Transverse forces on the block cylinders should be avoided.

If the block cylinder is mounted transversely to the cylinder axis, additional support for the block cylinder is recommended. If the block cylinder is used as a thrust cylinder, the support should be on the underside; if it is used as a traction cylinder, it should be on the rod side.
Permissible dynamic loads during the piston advance stroke must be observed.
A vent port is required for the single-acting block cylinders.

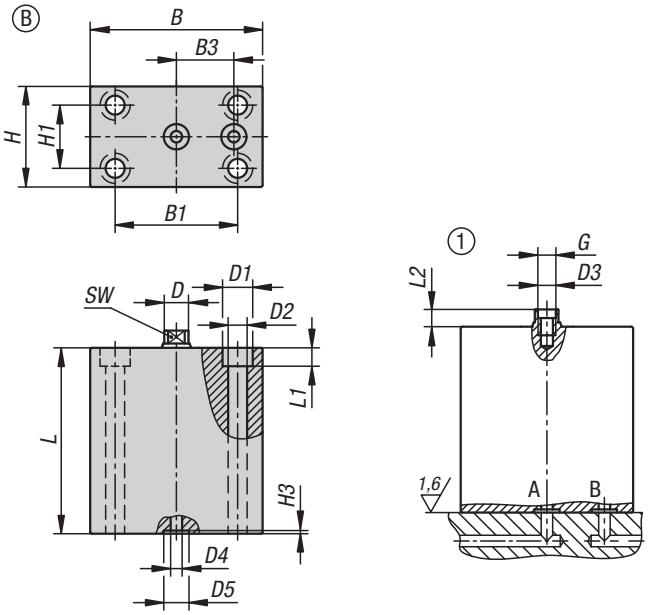
Penetration of cutting and cooling fluids into the cylinder must be prevented.

Thrust pieces are not supplied.

Follow safety instructions.

Block cylinders, hydraulic with metal wiper

double / single acting with spring return



Method of operation:
- Thread connection.
- O-ring flange connection.

Assembly:
See mounting contour.

Advantages:
- Integrated metal wiper.
- Versatile mounting possibilities.
- Wide travel range of 8 mm to 200 mm.
- Large force range of 2 kN to 392 kN.
- Low mounting dimensions.
- Double hydraulic seals installed.

Supplied with:
2x O-rings (for flange connection operating mode) supplied.

Accessories:
- Rest pads K0307.
- Self-aligning pads K0282, K0302, K1164, K0287, K0288.
- Gripper screws, hexagonal K0386.

Technical data:
Max. operating pressure: 500 bar.

Drawing reference:
Form A: Longitudinal and transverse holes, screwed connection
Form B: Underside, centre hole, O-ring flange connection
Form C: Wide side, O-ring- flange connection

1) Mounting contour

Block cylinder, hydraulic with metal wiper

double / single acting with spring return

Order No.	Form	Form-Type	Piston Ø	travel	B	B1	B2	D	D1	D2	D3	G	G1	H	H1	H2
K1859.160821011	A	single-acting	16	8	60	40	30	10	11	6,5	6,3x3	M6x15	G1/4	35	22	2
K1859.162021011	A	single-acting	16	20	60	40	30	10	11	6,5	6,3x3	M6x15	G1/4	35	22	2
K1859.200821011	A	single-acting	20	8	60	40	40	12	11	6,5	8,5x3	M8x16	G1/4	35	22	2
K1859.202021011	A	single-acting	20	20	60	40	40	12	11	6,5	8,5x3	M8x16	G1/4	35	22	2
K1859.250821011	A	single-acting	25	8	65	50	50	16	14	8,5	10,5x4	M10x17	G1/4	45	30	2
K1859.252021011	A	single-acting	25	20	65	50	50	16	14	8,5	10,5x4	M10x17	G1/4	45	30	2
K1859.321021011	A	single-acting	32	10	75	55	55	20	18	10,5	12,5x4	M12x18	G1/4	55	35	3
K1859.322021011	A	single-acting	32	20	75	55	55	20	18	10,5	12,5x4	M12x18	G1/4	55	35	3
K1859.401021011	A	single-acting	40	10	85	63	63	25	18	10,5	16,5x7	M16x27	G1/4	63	40	3
K1859.402021011	A	single-acting	40	20	85	63	63	25	18	10,5	16,5x7	M16x27	G1/4	63	40	3
K1859.161611011	A	double-acting	16	16	60	40	30	10	11	6,5	6,3x3	M6x15	G1/4	35	22	2
K1859.163211011	A	double-acting	16	32	60	40	30	10	11	6,5	6,3x3	M6x15	G1/4	35	22	2
K1859.165011011	A	double-acting	16	50	60	40	30	10	11	6,5	6,3x3	M6x15	G1/4	35	22	2
K1859.201611011	A	double-acting	20	16	60	40	40	12	11	6,5	8,5x3	M8x16	G1/4	35	22	2
K1859.203211011	A	double-acting	20	32	60	40	40	12	11	6,5	8,5x3	M8x16	G1/4	35	22	2
K1859.205011011	A	double-acting	20	50	60	40	40	12	11	6,5	8,5x3	M8x16	G1/4	35	22	2
K1859.252011011	A	double-acting	25	20	65	50	50	16	14	8,5	10,5x4	M10x17	G1/4	45	30	2
K1859.255011011	A	double-acting	25	50	65	50	50	16	14	8,5	10,5x4	M10x17	G1/4	45	30	2
K1859.322511011	A	double-acting	32	25	75	55	55	20	18	10,5	12,5x4	M12x18	G1/4	55	35	3
K1859.325011011	A	double-acting	32	50	75	55	55	20	18	10,5	12,5x4	M12x18	G1/4	55	35	3
K1859.402511011	A	double-acting	40	25	85	63	63	25	18	10,5	16,5x7	M16x27	G1/4	63	40	3
K1859.405011011	A	double-acting	40	50	85	63	63	25	18	10,5	16,5x7	M16x27	G1/4	63	40	3

Order No.	Form	Form-Type	travel	L	L1	L2	L3	L4	L5	L6	L7	L8	SW	Effective piston area (cm^2)	Compressive force at 100 bar (kN)	Tractive force at 100 bar (kN)
K1859.160821011	A	single-acting	8	56	6,4	6	4,4	30	-	11	16,5	8	8	2	2	-
K1859.162021011	A	single-acting	20	91	6,4	6	4,4	30	-	11	16,5	8	8	2	2	-
K1859.200821011	A	single-acting	8	61	6,4	7	4,4	30	-	11	16,5	8	10	3,1	3,1	-
K1859.202021011	A	single-acting	20	95	6,4	7	4,4	30	-	11	16,5	8	10	3,1	3,1	-
K1859.250821011	A	single-acting	8	64	8,6	7	6,4	33	-	11	18	10	13	4,9	4,9	-
K1859.252021011	A	single-acting	20	94	8,6	7	6,4	33	-	11	18	10	13	4,9	4,9	-
K1859.321021011	A	single-acting	10	75	10,6	10	7,6	38	-	11	22	12	17	8	8	-
K1859.322021011	A	single-acting	20	100	10,6	10	7,6	38	-	11	22	12	17	8	8	-
K1859.401021011	A	single-acting	10	79	10,6	10	10,6	40	-	11	24	12	22	12,5	12,6	-
K1859.402021011	A	single-acting	20	104	10,6	10	10,6	40	-	11	24	12	22	12,5	12,6	-
K1859.161611011	A	double-acting	16	56	6,4	6	4,4	30	-	11	16,5	8	8	2	2	1,2
K1859.163211011	A	double-acting	32	73	6,4	6	4,4	30	-	11	16,5	8	8	2	2	1,2
K1859.165011011	A	double-acting	50	91	6,4	6	4,4	30	24,5	11	16,5	8	8	2	2	1,2
K1859.201611011	A	double-acting	16	61	6,4	7	4,4	30	-	11	16,5	8	10	3,1	3,1	2
K1859.203211011	A	double-acting	32	77	6,4	7	4,4	30	-	11	16,5	8	10	3,1	3,1	2
K1859.205011011	A	double-acting	50	95	6,4	7	4,4	30	24,5	11	16,5	8	10	3,1	3,1	2
K1859.252011011	A	double-acting	20	64	8,6	7	6,4	33	-	11	18	10	13	4,9	4,9	2,9
K1859.255011011	A	double-acting	50	94	8,6	7	6,4	33	26	11	18	10	13	4,9	4,9	2,9
K1859.322511011	A	double-acting	25	75	10,6	10	7,6	38	-	11	22	12	17	8	8	4,9
K1859.325011011	A	double-acting	50	100	10,6	10	7,6	38	27	11	22	12	17	8	8	4,9
K1859.402511011	A	double-acting	25	79	10,6	10	10,6	40	-	11	24	12	22	12,5	12,6	7,7
K1859.405011011	A	double-acting	50	104	10,6	10	10,6	40	27	11	24	12	22	12,5	12,6	7,7

Block cylinder, hydraulic with metal wiper

double / single acting with spring return

Order No.	Form	Form-Type	Piston Ø	travel	B	B1	B3	D	D1	D2	D3	D4	D5	G
K1859.160822021	B	single-acting	16	8	60	40	20	10	11	6,5	6,3x3	4	8,8	M6x15
K1859.162022021	B	single-acting	16	20	60	40	20	10	11	6,5	6,3x3	4	8,8	M6x15
K1859.200822021	B	single-acting	20	8	60	40	22	12	11	6,5	8,5x3	4	8,8	M8x16
K1859.202022021	B	single-acting	20	20	60	40	22	12	11	6,5	8,5x3	4	8,8	M8x16
K1859.250822021	B	single-acting	25	8	65	50	25	16	14	8,5	10,5x4	4	9,8	M10x17
K1859.252022021	B	single-acting	25	20	65	50	25	16	14	8,5	10,5x4	4	9,8	M10x17
K1859.321022021	B	single-acting	32	10	75	55	27,5	20	18	10,5	12,5x4	5	9,8	M12x18
K1859.322022021	B	single-acting	32	20	75	55	27,5	20	18	10,5	12,5x4	5	9,8	M12x18
K1859.401022021	B	single-acting	40	10	85	63	31,5	25	18	10,5	16,5x7	5	9,8	M16x27
K1859.402022021	B	single-acting	40	20	85	63	31,5	25	18	10,5	16,5x7	5	9,8	M16x27
K1859.161612021	B	double-acting	16	16	60	40	20	10	11	6,5	6,3x3	4	8,8	M6x15
K1859.163212021	B	double-acting	16	32	60	40	20	10	11	6,5	6,3x3	4	8,8	M6x15
K1859.165012021	B	double-acting	16	50	60	40	20	10	11	6,5	6,3x3	4	8,8	M6x15
K1859.201612021	B	double-acting	20	16	60	40	22	12	11	6,5	8,5x3	4	8,8	M8x16
K1859.203212021	B	double-acting	20	32	60	40	22	12	11	6,5	8,5x3	4	8,8	M8x16
K1859.205012021	B	double-acting	20	50	60	40	22	12	11	6,5	8,5x3	4	8,8	M8x16
K1859.252012021	B	double-acting	25	20	65	50	25	16	14	8,5	10,5x4	4	9,8	M10x17
K1859.255012021	B	double-acting	25	50	65	50	25	16	14	8,5	10,5x4	4	9,8	M10x17
K1859.322512021	B	double-acting	32	25	75	55	27,5	20	18	10,5	12,5x4	5	9,8	M12x18
K1859.325012021	B	double-acting	32	50	75	55	27,5	20	18	10,5	12,5x4	5	9,8	M12x18
K1859.402512021	B	double-acting	40	25	85	63	31,5	25	18	10,5	16,5x7	5	9,8	M16x27
K1859.405012021	B	double-acting	40	50	85	63	31,5	25	18	10,5	16,5x7	5	9,8	M16x27

Order No.	Form	Form-Type	travel	H	H1	H3	L	L1	L2	SW	Effective piston area (cm^2)	Compressive force at 100 bar (kN)	Tractive force at 100 bar (kN)
K1859.160822021	B	single-acting	8	35	22	1,1	56	6,4	6	8	2	2	-
K1859.162022021	B	single-acting	20	35	22	1,1	91	6,4	6	8	2	2	-
K1859.200822021	B	single-acting	8	35	22	1,1	61	6,4	7	10	3,1	3,1	-
K1859.202022021	B	single-acting	20	35	22	1,1	95	6,4	7	10	3,1	3,1	-
K1859.250822021	B	single-acting	8	45	30	1,1	64	8,6	7	13	4,9	4,9	-
K1859.252022021	B	single-acting	20	45	30	1,1	94	8,6	7	13	4,9	4,9	-
K1859.321022021	B	single-acting	10	55	35	1,1	75	10,6	10	17	8	8	-
K1859.322022021	B	single-acting	20	55	35	1,1	100	10,6	10	17	8	8	-
K1859.401022021	B	single-acting	10	63	40	1,1	79	10,6	10	22	12,5	12,6	-
K1859.402022021	B	single-acting	20	63	40	1,1	104	10,6	10	22	12,5	12,6	-
K1859.161612021	B	double-acting	16	35	22	1,1	56	6,4	6	8	2	2	1,2
K1859.163212021	B	double-acting	32	35	22	1,1	73	6,4	6	8	2	2	1,2
K1859.165012021	B	double-acting	50	35	22	1,1	91	6,4	6	8	2	2	1,2
K1859.201612021	B	double-acting	16	35	22	1,1	61	6,4	7	10	3,1	3,1	2
K1859.203212021	B	double-acting	32	35	22	1,1	77	6,4	7	10	3,1	3,1	2
K1859.205012021	B	double-acting	50	35	22	1,1	95	6,4	7	10	3,1	3,1	2
K1859.252012021	B	double-acting	20	45	30	1,1	64	8,6	7	13	4,9	4,9	2,9
K1859.255012021	B	double-acting	50	45	30	1,1	94	8,6	7	13	4,9	4,9	2,9
K1859.322512021	B	double-acting	25	55	35	1,1	75	10,6	10	17	8	8	4,9
K1859.325012021	B	double-acting	50	55	35	1,1	100	10,6	10	17	8	8	4,9
K1859.402512021	B	double-acting	25	63	40	1,1	79	10,6	10	22	12,5	12,6	7,7
K1859.405012021	B	double-acting	50	63	40	1,1	104	10,6	10	22	12,5	12,6	7,7

Block cylinder, hydraulic with metal wiper

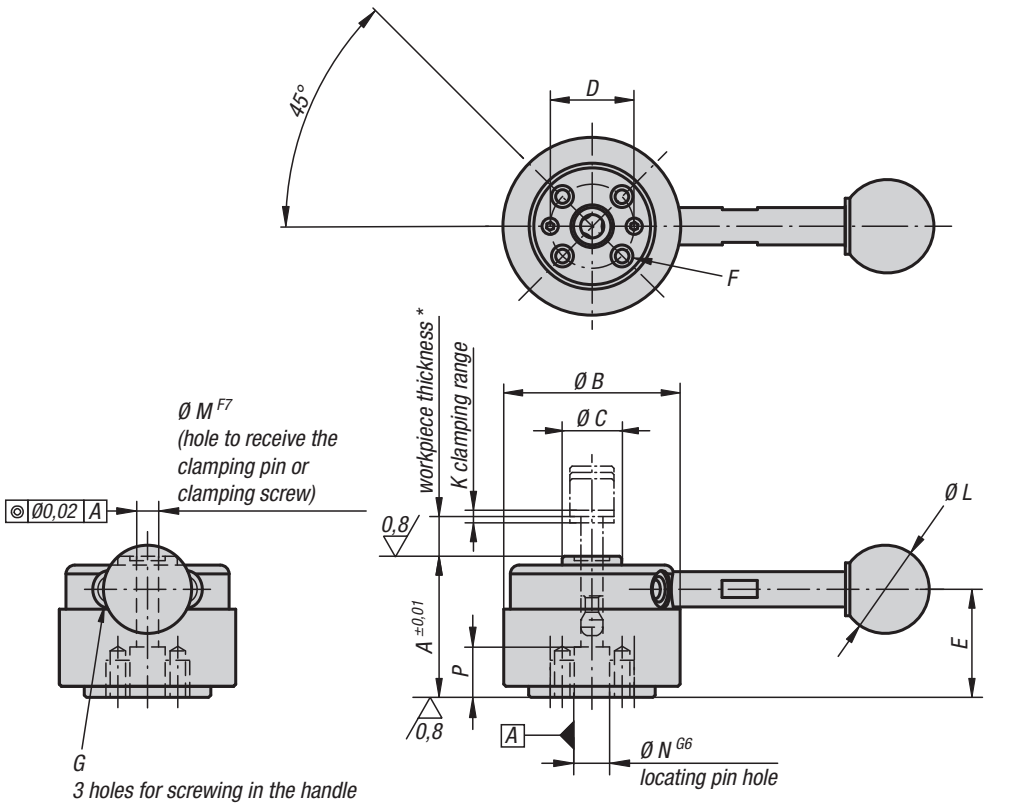
double / single acting with spring return

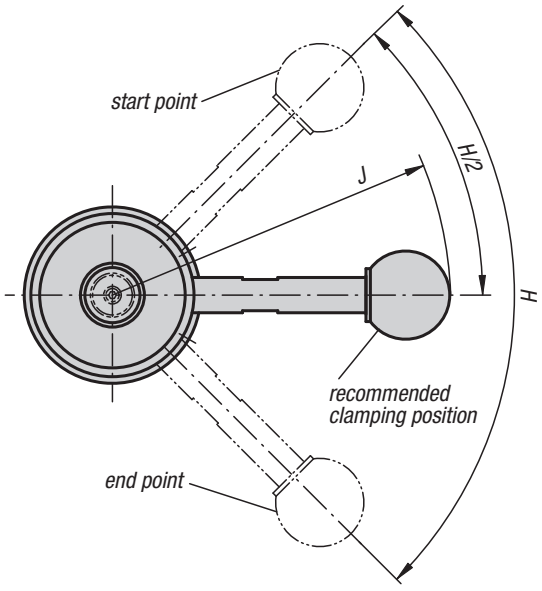
Order No.	Form	Form-Type	Piston Ø	travel	B	B2	D	D2	D3	D4	D5	G	H	H2	H3
K1859.160822031	C	single-acting	16	8	60	30	10	6,5	6,3x3	4	8,8	M6x15	35	2	1,1
K1859.162022031	C	single-acting	16	20	60	30	10	6,5	6,3x3	4	8,8	M6x15	35	2	1,1
K1859.200822031	C	single-acting	20	8	60	40	12	6,5	8,5x3	4	8,8	M8x16	35	2	1,1
K1859.202022031	C	single-acting	20	20	60	40	12	6,5	8,5x3	4	8,8	M8x16	35	2	1,1
K1859.250822031	C	single-acting	25	8	65	50	16	8,5	10,5x4	4	9,8	M10x17	45	2	1,1
K1859.252022031	C	single-acting	25	20	65	50	16	8,5	10,5x4	4	9,8	M10x17	45	2	1,1
K1859.321022031	C	single-acting	32	10	75	55	20	10,5	12,5x4	5	9,8	M12x18	55	3	1,1
K1859.322022031	C	single-acting	32	20	75	55	20	10,5	12,5x4	5	9,8	M12x18	55	3	1,1
K1859.401022031	C	single-acting	40	10	85	63	25	10,5	16,5x7	5	9,8	M16x27	63	3	1,1
K1859.402022031	C	single-acting	40	20	85	63	25	10,5	16,5x7	5	9,8	M16x27	63	3	1,1
K1859.161612031	C	double-acting	16	16	60	30	10	6,5	6,3x3	4	8,8	M6x15	35	2	1,1
K1859.163212031	C	double-acting	16	32	60	30	10	6,5	6,3x3	4	8,8	M6x15	35	2	1,1
K1859.165012031	C	double-acting	16	50	60	30	10	6,5	6,3x3	4	8,8	M6x15	35	2	1,1
K1859.201612031	C	double-acting	20	16	60	40	12	6,5	8,5x3	4	8,8	M8x16	35	2	1,1
K1859.203212031	C	double-acting	20	32	60	40	12	6,5	8,5x3	4	8,8	M8x16	35	2	1,1
K1859.205012031	C	double-acting	20	50	60	40	12	6,5	8,5x3	4	8,8	M8x16	35	2	1,1
K1859.252012031	C	double-acting	25	20	65	50	16	8,5	10,5x4	4	9,8	M10x17	45	2	1,1
K1859.255012031	C	double-acting	25	50	65	50	16	8,5	10,5x4	4	9,8	M10x17	45	2	1,1
K1859.322512031	C	double-acting	32	25	75	55	20	10,5	12,5x4	5	9,8	M12x18	55	3	1,1
K1859.325012031	C	double-acting	32	50	75	55	20	10,5	12,5x4	5	9,8	M12x18	55	3	1,1
K1859.402512031	C	double-acting	40	25	85	63	25	10,5	16,5x7	5	9,8	M16x27	63	3	1,1
K1859.405012031	C	double-acting	40	50	85	63	25	10,5	16,5x7	5	9,8	M16x27	63	3	1,1

Order No.	Form	Form-Type	travel	L	L4	L5	L8	L9	L10	SW	Effective piston area (cm^2)	Compressive force at 100 bar (kN)	Tractive force at 100 bar (kN)
K1859.160822031	C	single-acting	8	56	30	-	8	20,5	7	8	2	2	-
K1859.162022031	C	single-acting	20	91	30	-	8	20,5	7	8	2	2	-
K1859.200822031	C	single-acting	8	61	30	-	8	20	7,5	10	3,1	3,1	-
K1859.202022031	C	single-acting	20	95	30	-	8	20	7,5	10	3,1	3,1	-
K1859.250822031	C	single-acting	8	64	33	-	10	21	7,5	13	4,9	4,9	-
K1859.252022031	C	single-acting	20	94	33	-	10	21	7,5	13	4,9	4,9	-
K1859.321022031	C	single-acting	10	75	38	-	12	25	10	17	8	8	-
K1859.322022031	C	single-acting	20	100	38	-	12	25	10	17	8	8	-
K1859.401022031	C	single-acting	10	79	40	-	12	27	10	22	12,5	12,6	-
K1859.402022031	C	single-acting	20	104	40	-	12	27	10	22	12,5	12,6	-
K1859.161612031	C	double-acting	16	56	30	-	8	20,5	7	8	2	2	1,2
K1859.163212031	C	double-acting	32	73	30	-	8	20,5	7	8	2	2	1,2
K1859.165012031	C	double-acting	50	91	30	24,5	8	20,5	7	8	2	2	1,2
K1859.201612031	C	double-acting	16	61	30	-	8	20	7,5	10	3,1	3,1	2
K1859.203212031	C	double-acting	32	77	30	-	8	20	7,5	10	3,1	3,1	2
K1859.205012031	C	double-acting	50	95	30	24,5	8	20	7,5	10	3,1	3,1	2
K1859.252012031	C	double-acting	20	64	33	-	10	21	7,5	13	4,9	4,9	2,9
K1859.255012031	C	double-acting	50	94	33	26	10	21	7,5	13	4,9	4,9	2,9
K1859.322512031	C	double-acting	25	75	38	-	12	25	10	17	8	8	4,9
K1859.325012031	C	double-acting	50	100	38	27	12	25	10	17	8	8	4,9
K1859.402512031	C	double-acting	25	79	40	-	12	27	10	22	12,5	12,6	7,7
K1859.405012031	C	double-acting	50	104	40	27	12	27	10	22	12,5	12,6	7,7

Notes

Pull clamps





Material:
Housing and cam tool steel.
Grip carbon steel.
Ball knob thermoset PF 31.

Version:
Housing and cam hardened and black oxidised.
Grip black oxidised.
Ball knob black.

Sample order:
K0910.324001

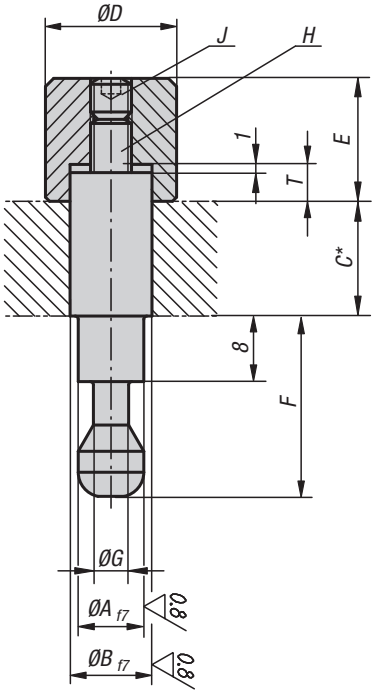
Note:
* Max. workpiece thickness see clamping pin K0910 (dimension C).
** Admissible hand force for the handle.

Accessories:
Standard handles K0915.
Screw-in handles with adjustable torque K0916.

KIPP Pull clamps

Order No.	Version 1	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Clamping force N	Recommended workpiece thickness tolerance	Hand force FH N	Holding force N
K0910.324000	without grip	32	40	13,5	18	24,5	M4x8	M5	90°	-	1,5	-	5	8	10	900	±0,3*	150**	2000
K0910.324001	with grip	32	40	13,5	18	24,5	M4x8	M5	90°	76,5	1,5	20	5	8	10	900	±0,3*	150**	2000
K0910.405000	without grip	40	50	18	25	30,7	M6x9	M6	110°	-	2	-	8	12	13	2500	±0,5*	200**	5500
K0910.405001	with grip	40	50	18	25	30,7	M6x9	M6	110°	111,5	2	25	8	12	13	2500	±0,5*	200**	5500

Clamping pins



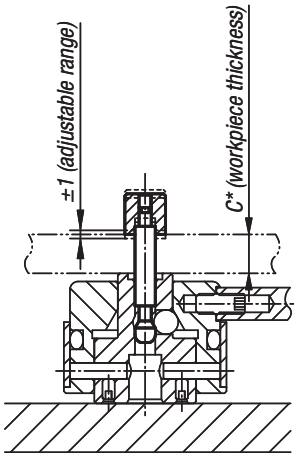
Material:
Carbon steel.

Version:
Pins tempered and ground.
Knurled knob tempered, black oxidised.

Sample order:
K0910.005050

Note:
* The clamping pin can be altered to suit the workpiece thickness.

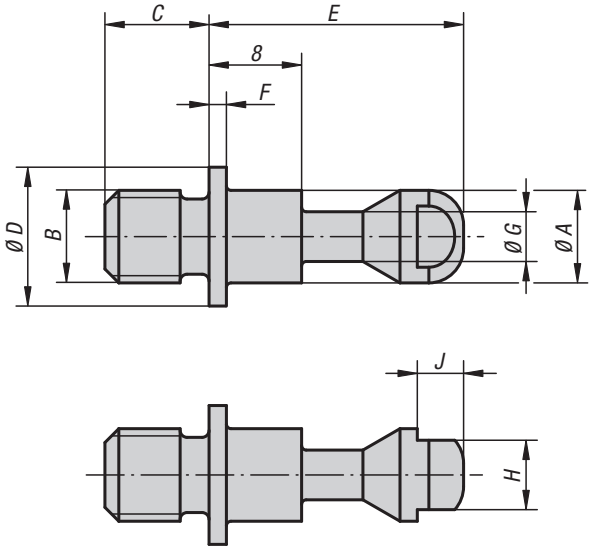
Accessories:
to:
K0910.3240... (K0910.005050 and K0910.006050),
K0910.4050... (K0910.008080 and K0910.010080)



KIPP Clamping pins

Order No.	A	B	C	D	E	F	G	H	J	T
K0910.005050	5	5	50	10	10	17	3	M3	M3x4	3
K0910.006050	5	6	50	10	10	17	3	M3	M3x4	3
K0910.008080	8	8	80	16	15	22	4,3	M5	M5x5	4,5
K0910.010080	8	10	80	16	15	22	4,3	M5	M5x5	4,5

Clamping screws

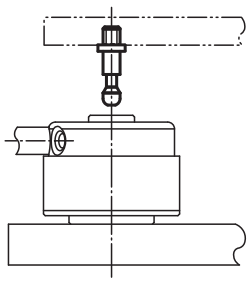


Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0910.105060

Accessories:
To:
K0910.3240 for K0910.105060 and K0910.106070,
K0910.4050 for K0910.108090 and K0910.110110

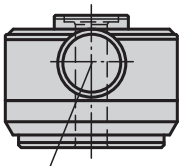


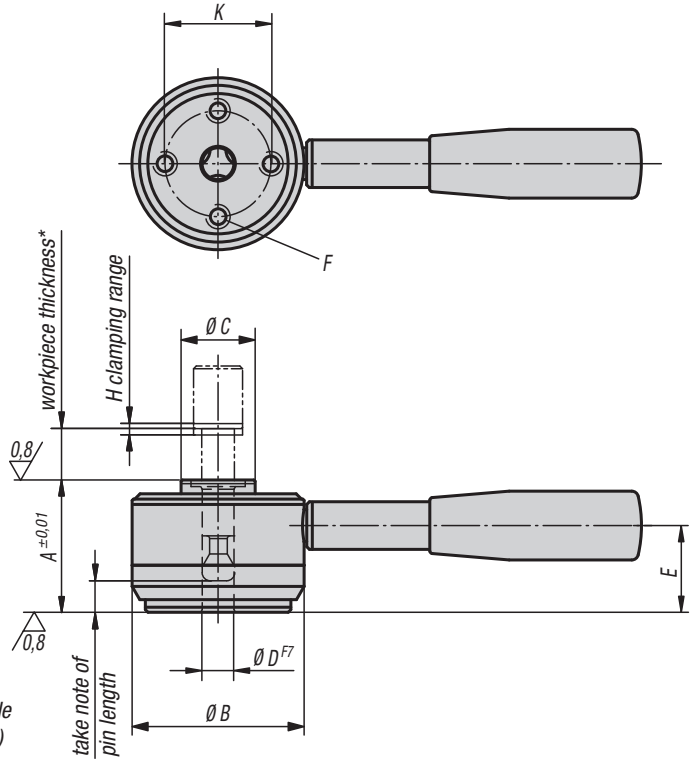
KIPP Clamping screws

Order No.	A	B	C	D	E	F	G	H	J
K0910.105060	5	M5	6	8	17	1,2	3	4	2,5
K0910.106070	5	M6	7	8	17	1,2	3	4	2,5
K0910.108090	8	M8	9	12	22	1,5	4,3	6	4
K0910.110110	8	M10	11	12	22	1,5	4,3	6	4

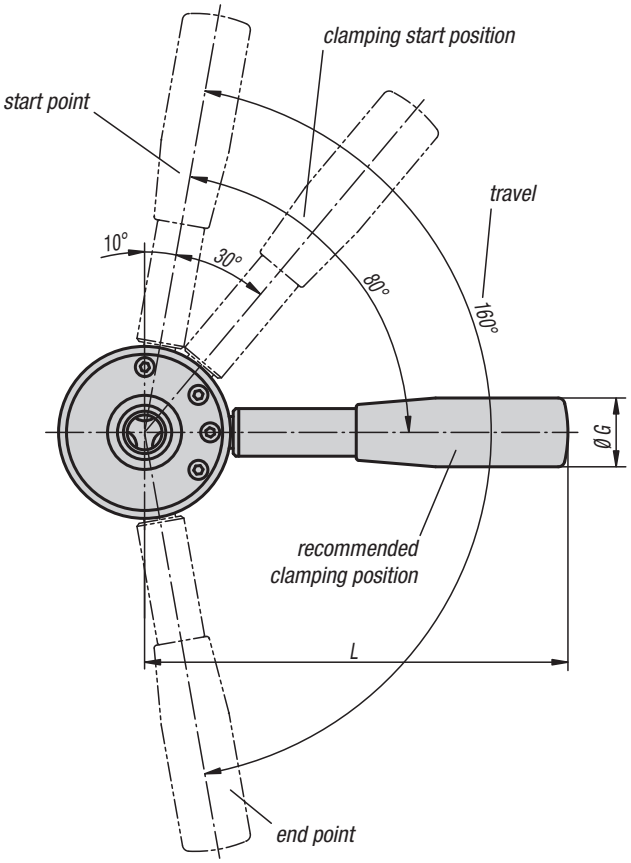
Pull clamps

(high force)





J
3 holes for screwing in the handle (angle between each hole is 35°)
3 possible handle positions



Material:
Housing, clamping ring and handles, carbon steel.
Grip thermoset PF 31.

Version:
Housing and clamping ring hardened and black oxidised.
Handles black oxidised.
Grip black.

Sample order:
K0911.506501

Note:
When clamping with a high force clamping pin the recommended workpiece tolerances must be maintained. The grip lever must lay between the recommended clamping position and end point for safe clamping.

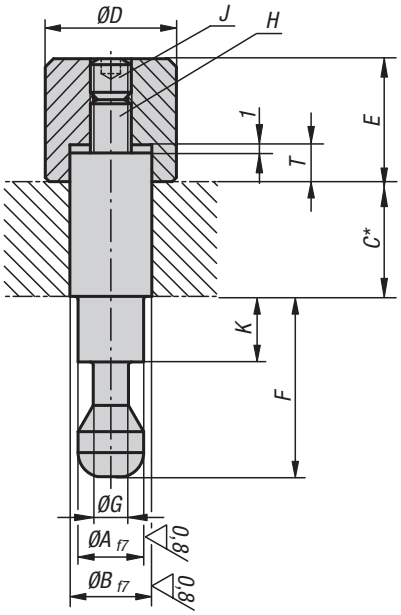
* Max. workpiece thickness, see clamping pin K0911 (dimension C).
** Admissible hand force for the handle.

KIPP Pull clamps (high force)

Order No.	A	B	C	D	E	F	G	H	J	K	L	Clamping force N	Recommended workpiece thickness tolerance	Hand force FH N	Holding force N
K0911.506501	50	65	28	12	36	M8x14	26	2	10	40	160	6000	±0,5*	600**	8000
K0911.638001	63	80	34	16	45	M10x18	28	2,5	12	50	180	8000	±0,8*	600**	14000

Clamping pins

(high force)

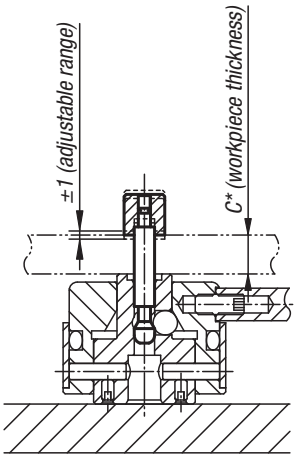


Material:
Carbon steel.

Version:
Pins tempered and ground.
Knurled knob tempered, black oxidised.

Sample order:
K0911.412100

Note:
* The clamping pin can be altered to suit the workpiece thickness.

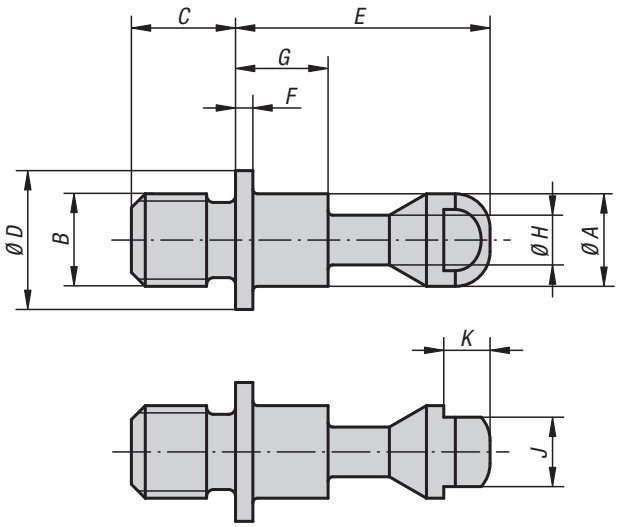


KIPP Clamping pins (high force)

Order No.	A	B	C	D	E	F	G	H	J	K	T	Suitable for
K0911.412100	12	12	100	18	23	38	6,5	M8	M8x8	21,5	7	K0911.506501
K0911.416100	12	16	100	24	23	38	6,5	M8	M8x8	21,5	7	K0911.506501
K0911.516120	16	16	120	24	29	48	9,5	M10	M10x10	28	9	K0911.638001
K0911.520120	16	20	120	30	29	48	9,5	M10	M10x10	28	9	K0911.638001

Clamping screws

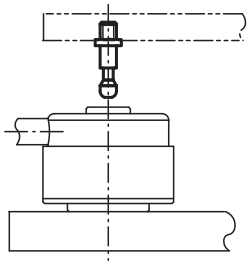
(high force)



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0911.1412013



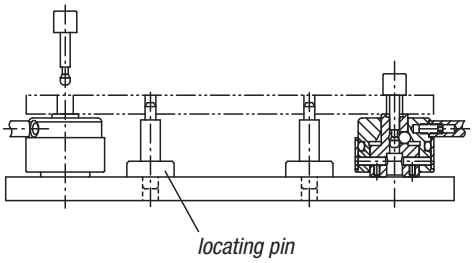
KIPP Clamping screws (high force)

Order No.	A	B	C	D	E	F	G	H	J	K	Suitable for
K0911.1412013	12	M12	13	20	38	2	21,5	6,5	10	4	K0911.506501
K0911.1416017	12	M16	17	20	38	2	21,5	6,5	10	4	K0911.506501
K0911.1516017	16	M16	17	25	48	2,5	28	9,5	13	5	K0911.638001
K0911.1520021	16	M20	21	25	48	2,5	28	9,5	13	5	K0911.638001

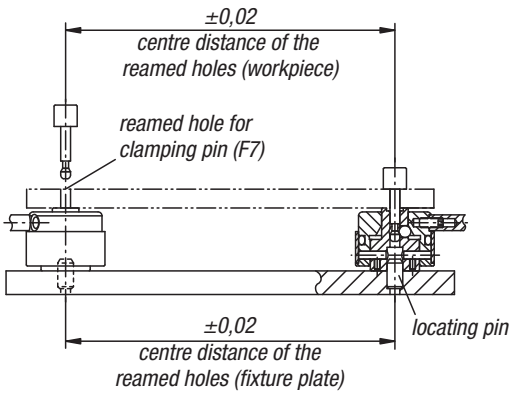
How to locate workpiece

Workpiece positioning

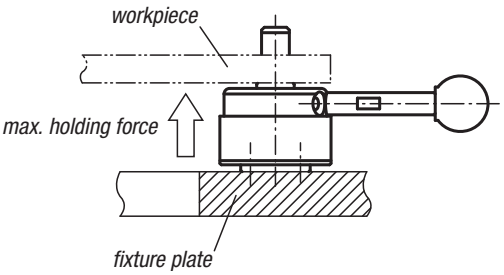
Clamping by means of pull clamp and clamping pin



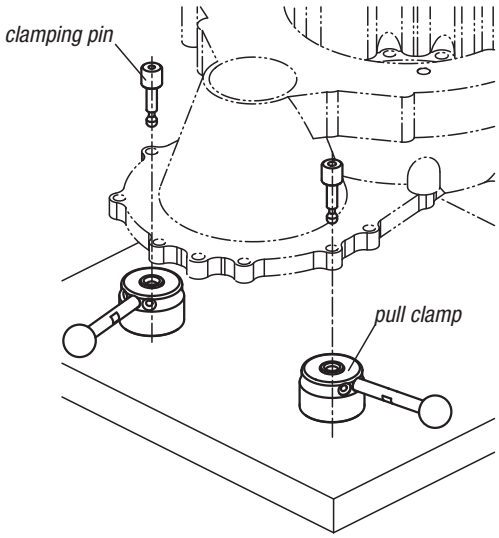
Simultaneous clamping and positioning of a workpiece



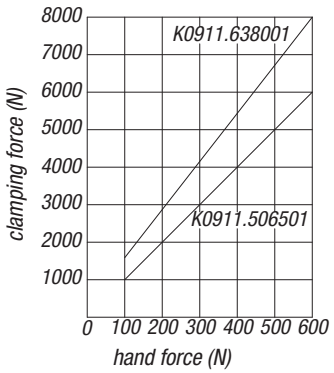
Holding forces for workpiece processing



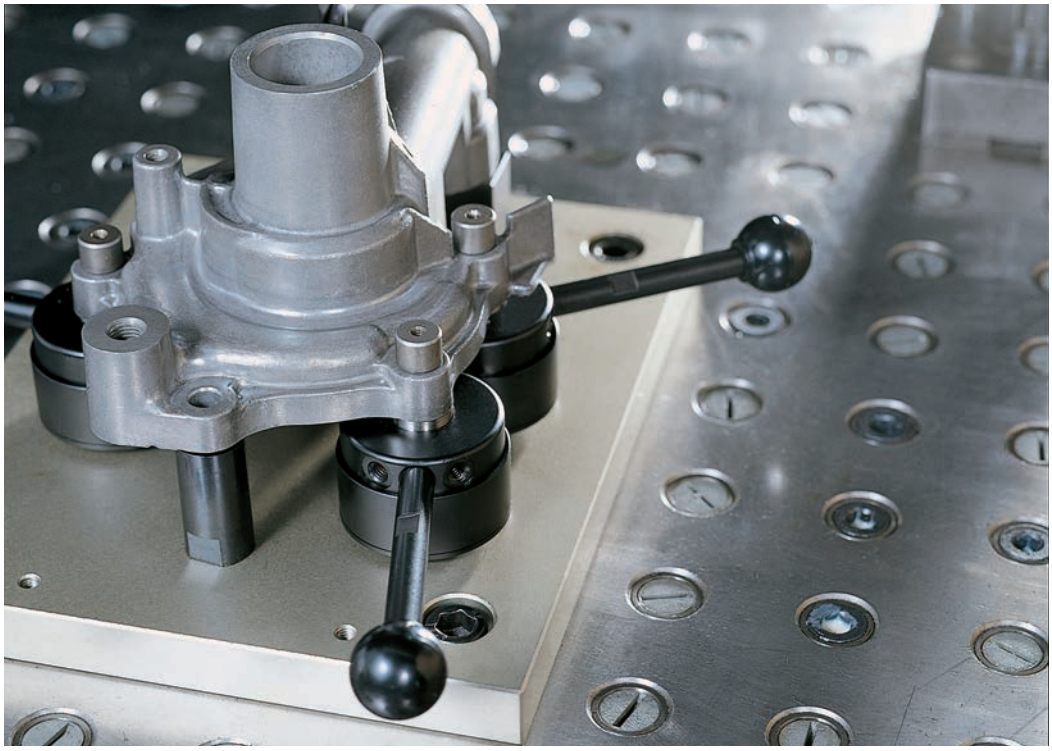
Make sure that no force exceeding the values
in the table is affecting the bottom of the workpiece.



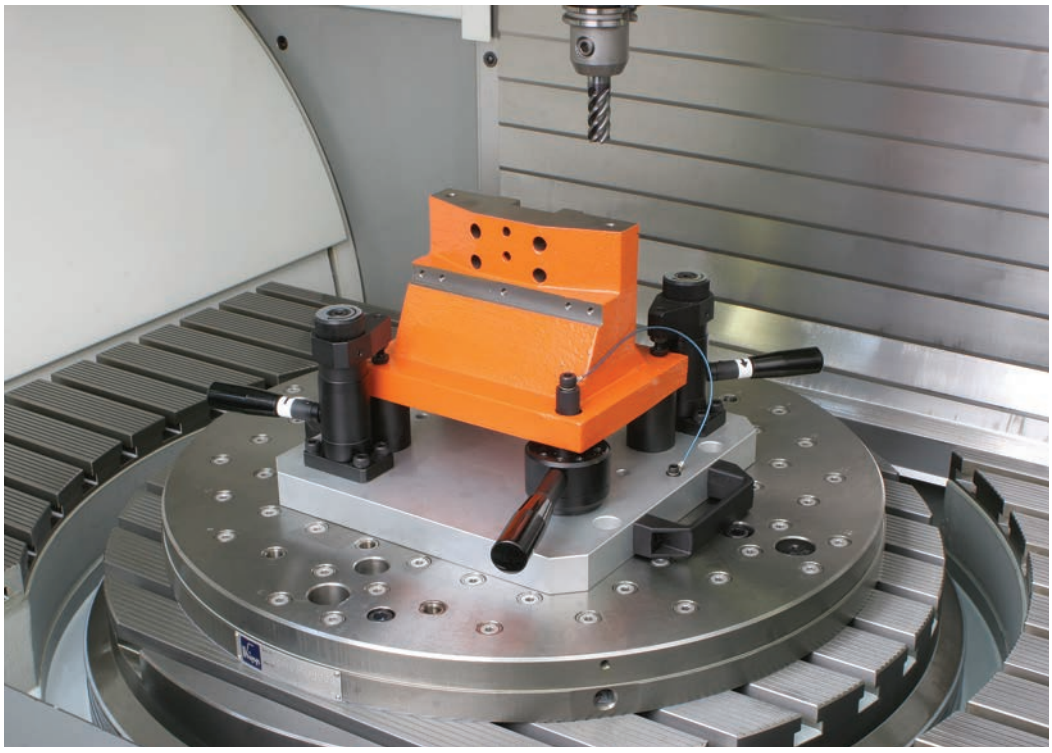
performance curve



Pull clamps

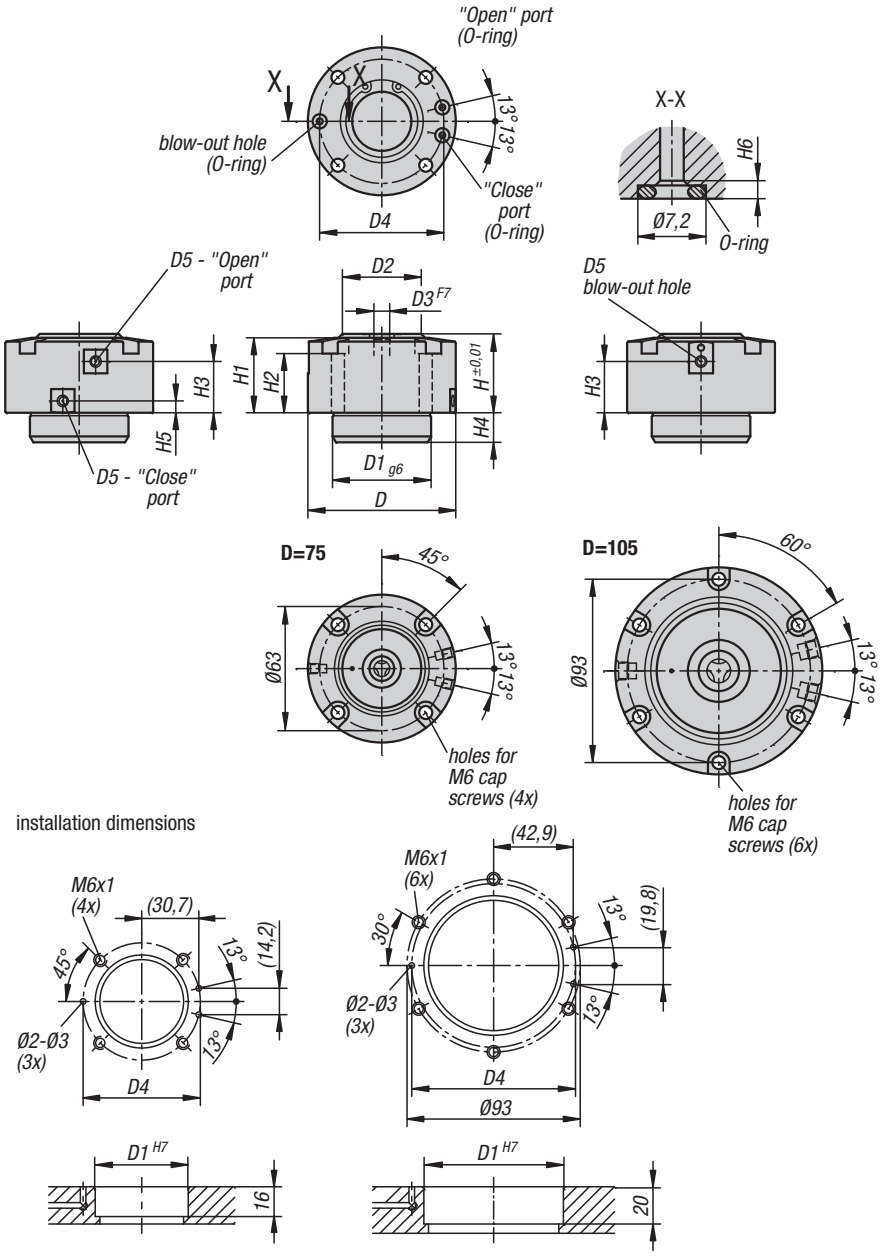


Pull clamps + Swing clamps (high force)



Pull clamps

pneumatic



Material:
Carbon steel.

Version:
Clamping element hardened, ground and black oxidised.

Sample order:
K1390.40075

Note:
Pneumatic pull clamps are used to clamp workpieces and fixtures.
The draw bolts are screwed onto the workpiece or fixture.

Clamping procedure:
Open the clamping element by applying compressed air to the „open“ connection.
Close clamping element (for clamping) by applying compressed air to the „close“ connection.

The third connection (D5) is used to blow out and clean the seating face. It can also be used to ensure the workpiece is correctly seated, or to ease lifting the workpiece off after the opening procedure.

The system can also be used as a zero-point clamping system.

The clamping forces indicated are based on 0.5 MPa.

KIPP Pull clamps, pneumatic

Order No.	D	D1	D2	D3	D4	D5	H	H1	H2	H3	H4	H5	H6	Clamping force kN	Operating pressure MPa
K1390.40075	75	50	40	8	63	M5	40	38	30	26	15	6	1,9	1	0,3 - 1,0
K1390.50105	105	75	63	12	88	G 1/8	50	47	35	31	19	10	1,9	2,5	0,3 - 1,0

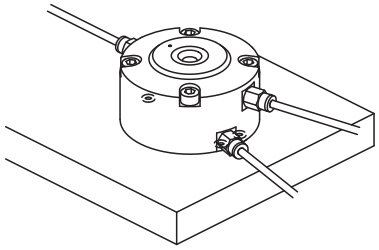
Pull clamps

pneumatic

Mounting instructions:

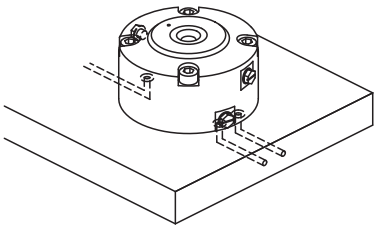
Using the side ports:

- Seal the lower ports with the O-rings provided.
- Check that no air coming is escaping from here.



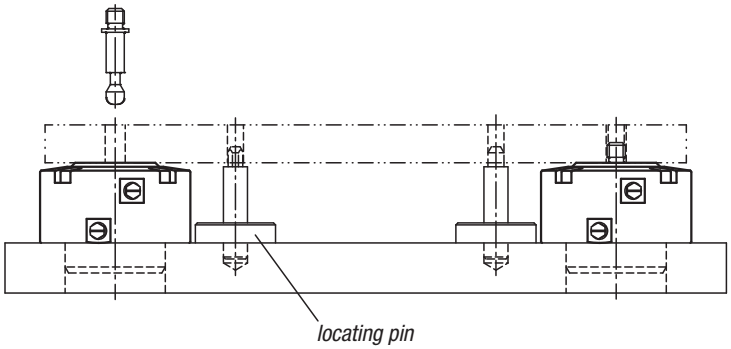
Using the lower ports:

- Fit the O-rings provided into the lower port.
- The side ports must be closed.

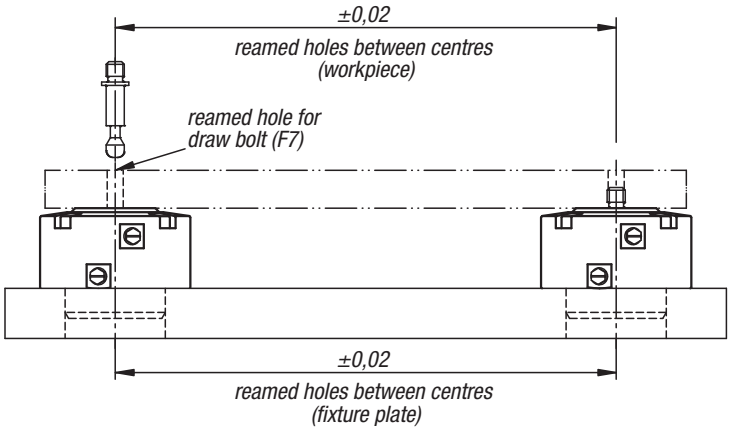


Positioning the workpiece

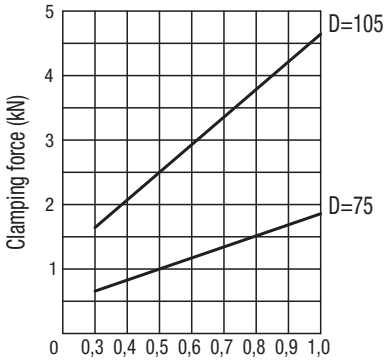
Clamping with pull clamp and draw bolt



Simultaneous clamping and positioning of a workpiece

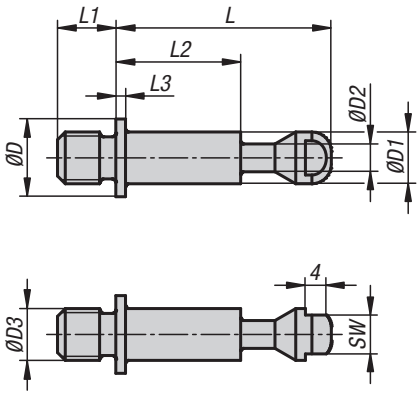


Performance curve



Draw bolts

for pneumatic pull clamps



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K1391.108090

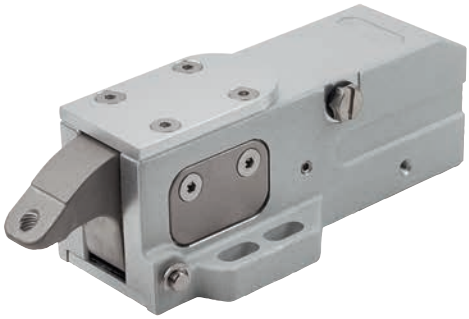
Note:
These draw bolts for the pneumatic pull clamp are screwed directly into the workpiece. This enables the workpiece to be quickly connected to and released from the pull clamp over a pneumatic valve.
The system can also be used as a zero-point clamping system.

KIPP Clamping screws for pneumatic pull clamps

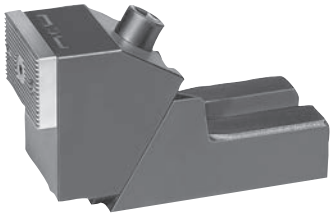
Order No.	D	D1	D2	D3	L	L1	L2	L3	SW
K1391.108090	12	8	4,3	M8	38	9	24	1,5	6
K1391.110011	12	8	4,3	M10	38	11	24	1,5	6
K1391.112013	20	12	6,5	M12	48	13	31,5	2	10
K1391.116017	20	12	6,5	M16	48	17	31,5	2	10

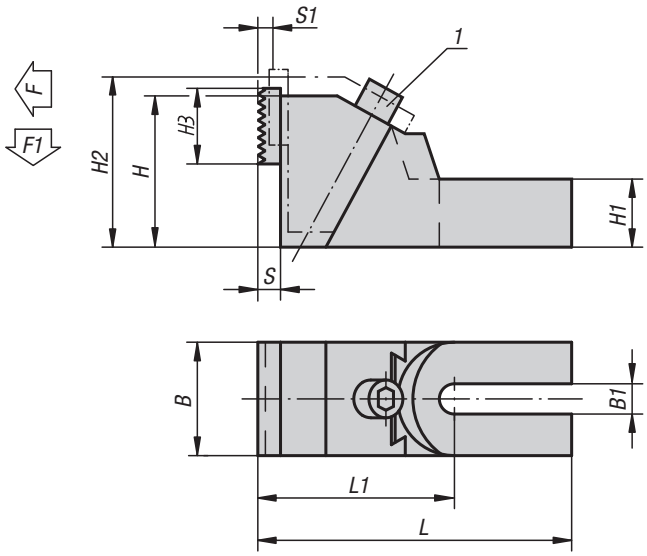
Notes

Side clamps



Robust side clamps



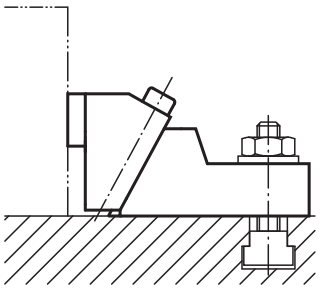


Material:
Body malleable iron.
Jaws mild steel.

Version:
Black oxidised.
Jaws case-hardened.

Sample order:
K0891.26

Note:
The jaws are reversible, smooth side for machined parts, serrated side for rough surfaces. We recommend using two bolts to mount the clamp to the machine table!

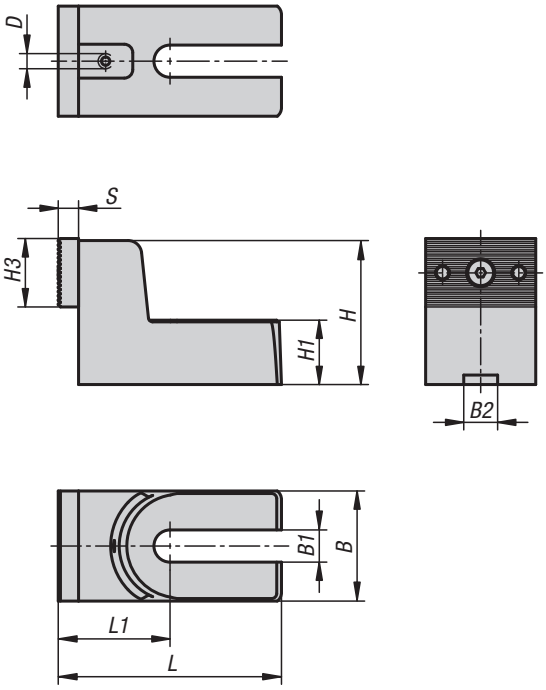


KIPP Robust side clamps

Order No.	suitable for slot width	L	L1	B	B1	H	H1	H2	H3	S	S1	Clamping force F (kN)	F1 kN	Tightening torque Nm
K0891.19	12/14/16/18	179	112,5	65	19	85	38	99	40	12	8	8/15/20/28	1,2/2,2/3/4,2	20/40/45/60
K0891.26	20/22/24/28/30	230	138,5	75	26	100	45	118	40	12	11	25/25/32/32/36	4,5/4,5/4,8/4,8/5,4	85/85/95/95/110
K0891.38	32/36/42	265	158	90	38	120	56	145	40	12	15	50	7,5	160

Fixed jaws

for robust side clamps



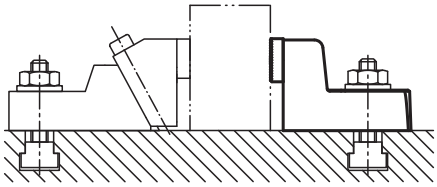
Material:
Cast steel body
Low-carbon steel jaw plates.

Version:
Black oxidised.
Jaw plates case-hardened.

Sample order:
K1467.19

Note:
Fixed jaws for workpieces or fixtures which are clamped or fastened on the machine table using a robust side clamp. The jaw plates are reversible, smooth side for machined faces, serrated side for rough faces.

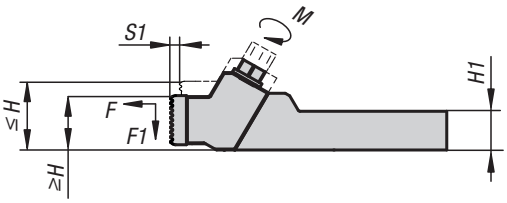
A flat slot key can be used to position the jaw precisely in the machine table slot.

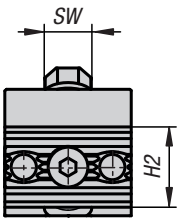


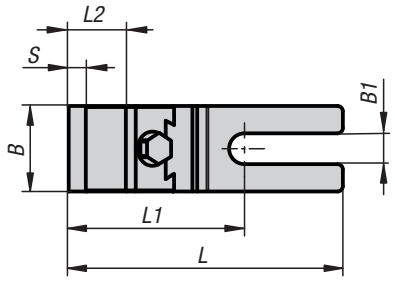
KIPP Fixed jaws for robust side clamps

Order No.	suitable for slot width	B	B1	B2	D	H	H1	H3	L	L1	S
K1467.19	12/14/16/18	65	19	20	M6	85	38	40	132	66	12
K1467.26	20/22/24/28/30	75	26	20	M6	100	45	40	177	85,5	12
K1467.38	32/36/42	90	38	20	M6	120	56	40	211	95	12

Robust side clamps, steel, flat







Material:
Body carbon steel.
Jaw plates mild steel.

Version:
Body black oxidised.
Jaw plates case hardened.

Sample order:
K1826.19

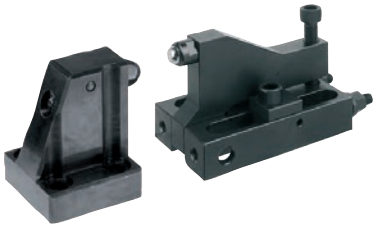
Note:
Both sides of the jaw plates can be used. Smooth side for machined faces, serrated side for rough faces. Two screws should be used to secure the robust side clamp to the machine table. Depending on the slot width, the screws for T-slots K0698 and K0699 make suitable mounting screws. These must be ordered separately.

KIPP Robust side clamps, steel, flat

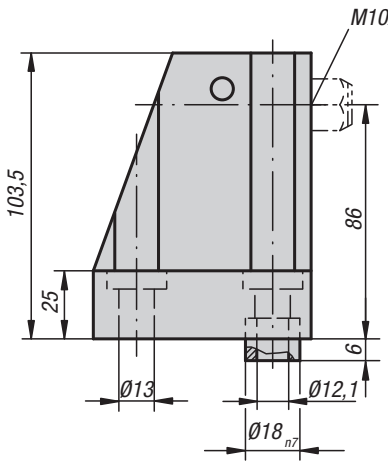
Order No.	suitable for slot width	L	L1	L2	B	B1	H max.	H min.	H1	H2	S	S1	Clamping force F (kN)	F1 kN	SW	Tightening torque Nm
K1826.13	12/14	128	82	19	40	14,4	33,5	28	20	25,4	8	3	8/15	1,2/2,2	13	20/40
K1826.19	12/14/16/18	177	113	29	65	19	60	50	30	40	12	6	8/15/20/28	1,2/2,2/3/4,2	16	20/40/45/60
K1826.26	20/22/24/28/30	224	135	29	75	26	73	60	36	40	12	7,5	25/25/32/32/36	4,5/4,5/4,8/4,8/5,4	18	85/85/95/95/110
K1826.38	32/36/42	256	152	34	90	38	91,5	74	46	40	12	10	50	7,5	21	160

Notes

Side clamps

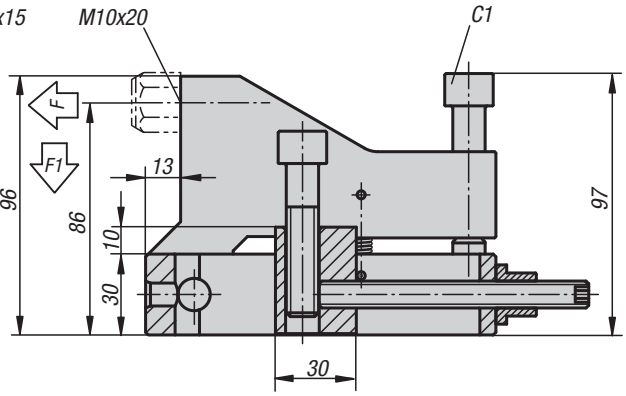


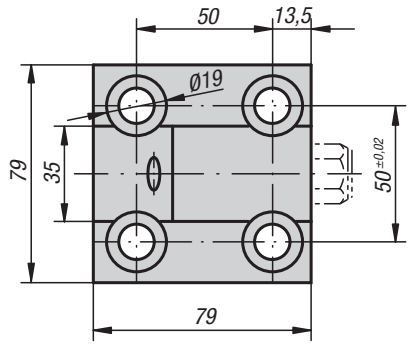
K0830.212

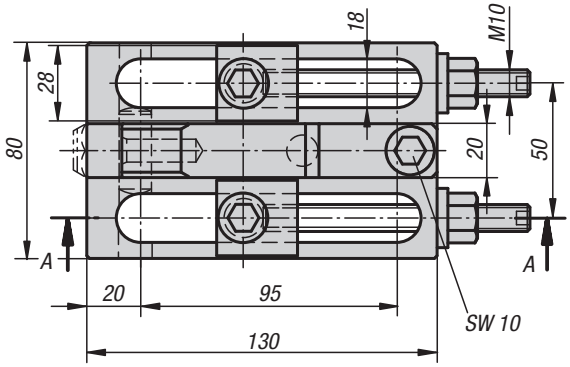


K0830.112

A-A







Material:
Body steel 1.1191.

Version:
Black oxidised.
Centring bush hardened.

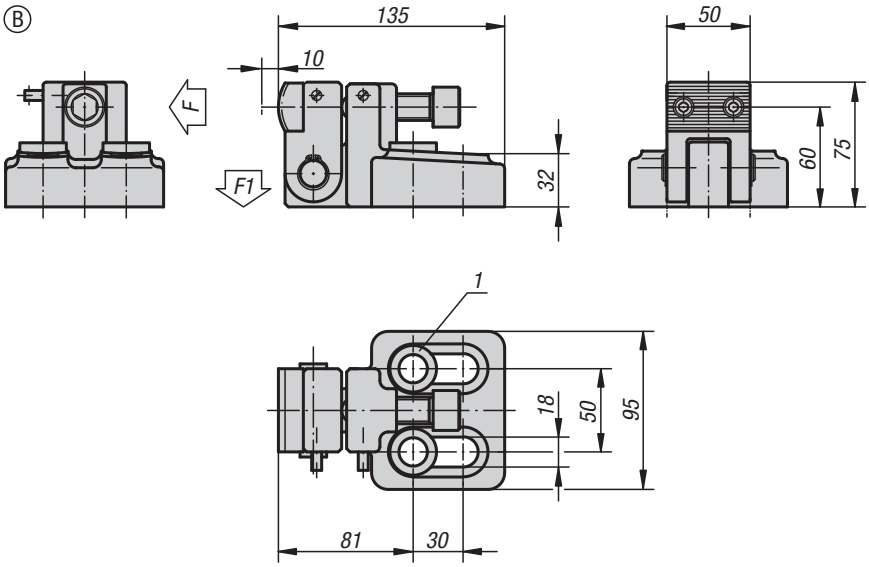
Sample order:
K0830.112
(self-aligning pad not supplied)

Note:
The unit comprises of an adjustable side clamp and a side stop and are used to clamp workpieces with a simultaneous positive down force. The side clamp has two DIN 913 grub screws which can be set to prevent backward slippage during clamping.

KIPP Side clamps

Order No.	F N	F1 N	Tightening torque of screw C1 Nm
K0830.112	25000	5000	30
K0830.212	22500	4500	30

Side clamps



Material:
Body ductile iron (SG iron).
Jaw hardened carbon steel.

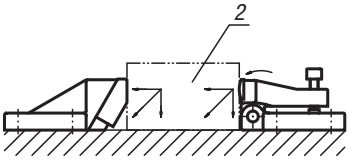
Version:
Painted black.
Jaw bright.

Sample order:
K0831.03

Note:
The workpiece is clamped between side clamps and the side stops, simultaneously producing a positive down force.
Side clamps and stops are secured with DIN 912 cylinder screws. A secure clamping is ensured when side clamps and side stops are used together.

Form B:
2 conical seats and 2 spherical washers for M12 and M16 are supplied.

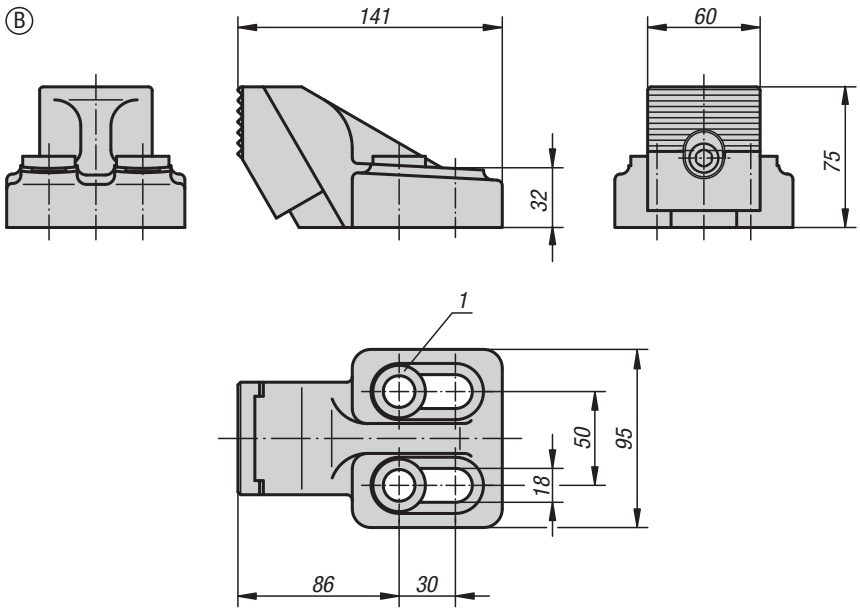
Drawing reference:
1) spherical washer set for M12 and M16
2) workpiece



KIPP Side clamps

Order No.	Form	F kN	F1 kN	Tightening torque Nm
K0831.03	B	58	2,4	150

Side stops



Material:
Body ductile iron (SG iron).
Jaw hardened carbon steel.

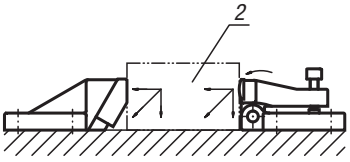
Version:
Painted black.
Jaw bright.

Sample order:
K0832.01

Note:
The workpiece is clamped between side clamps and the side stops, simultaneously producing a positive down force.
Side clamps and stops are secured with DIN 912 cylinder screws. A secure clamping is ensured when side clamps and side stops are used together.

Form B:
2 conical seats and 2 spherical washers for M12 and M16 are supplied.

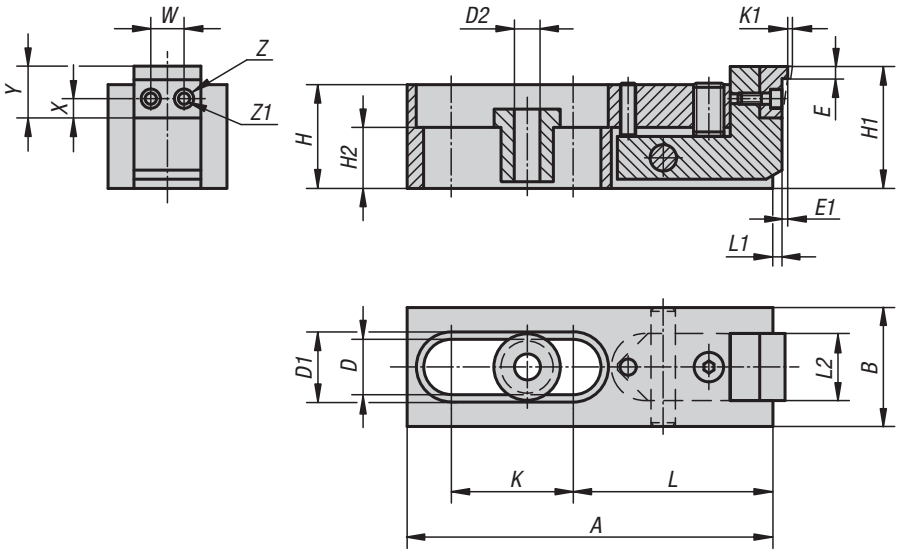
Drawing reference:
1) spherical washer set for M12 and M16
2) workpiece



KIPP Side stops

Order No.	Form
K0832.02	B

Side clamps

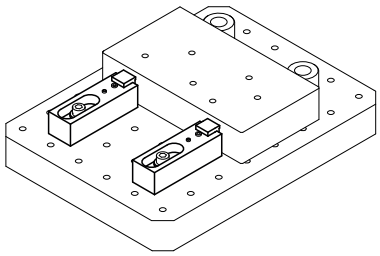


Material:
Body steel.
Jaw mild steel.
Centring bush with collar carbon steel.

Version:
Black oxidised.
Jaw plates case-hardened.

Sample order:
K0890.006

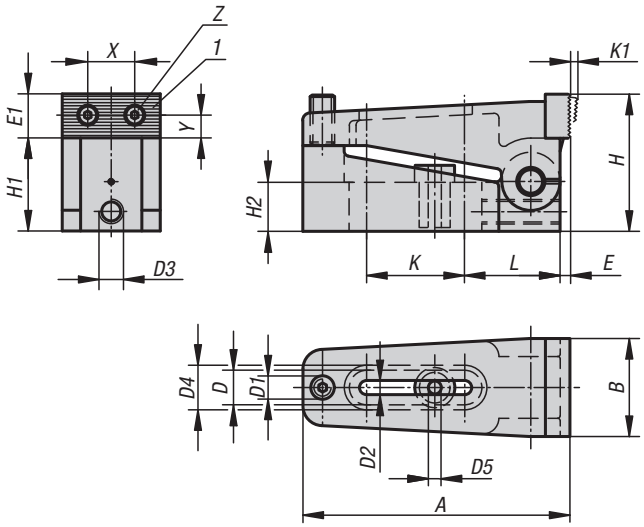
Note:
These flat design side clamps are ideal for machining low profile workpieces. The hardened jaws also provide positive down force.



KIPP Side clamps

Order No.	A	B	D	D1	D2	E	E1	H	H1	H2	K	K1	L	L1	L2	W	X	Y	Z	Z1	F=Retaining force N
K0890.006	80	24	12,2	16	6,5	2,5	0,6	21	25,5	9	25,5	2	44,5	2,5	13,5	7	4,5	11	5	3	3000
K0890.010	120	39	18,2	24	10,5	4	1	34	40	20	40,5	2,5	65,5	4	21,5	10	6	15	8	4,5	16000
K0890.016	186	60	26,2	35	17	7	1,5	51	59	22	60,5	4	105	6,5	35,5	16	9	24	14	9	31000

Side clamps



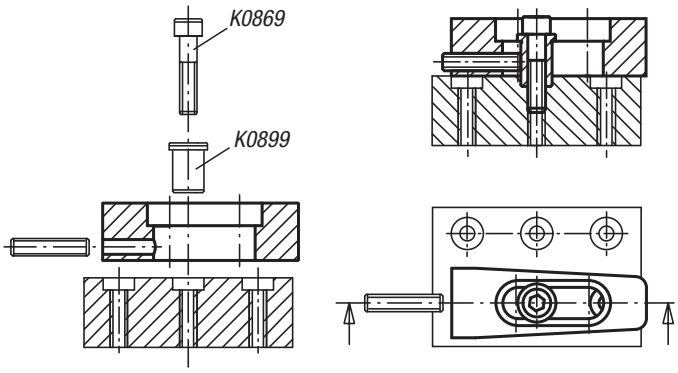
Material:
Body steel.
Jaw mild steel.
Centring bush carbon steel

Version:
Black oxidised.
Jaw plates case-hardened.

Sample order:
K0033.006

Note:
The jaws are reversible - smooth side for machined surfaces, serrated side for rough surfaces. A positive down force is also exerted during clamping.

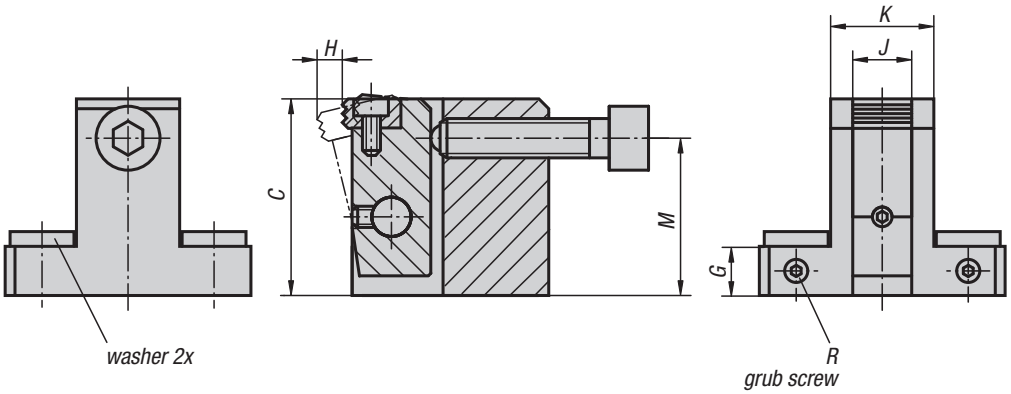
Drawing reference:
1) reversible jaw



KIPP Side clamps

Order No.	A	B	D	D1	D2	D3	D4	D5	E	E1	H	H1	H2	K	K1	L	X	Y	Z	F=Retaining force N
K0033.006	73	25	12,2	M6	7	M6	16	6,5	2,5	11	35	24	12,4	25,5	2,5	27	12	4,5	M3	10000
K0033.010	110	39	18,2	M10	11	M10	24	10,5	4	18	56	38	20	40,5	4	39	20,5	8	M5	40000
K0033.016	170	58	26,2	M16	17	M10	35	17	7	27	85	60	30	60,5	7	61	32	13	M8	100000

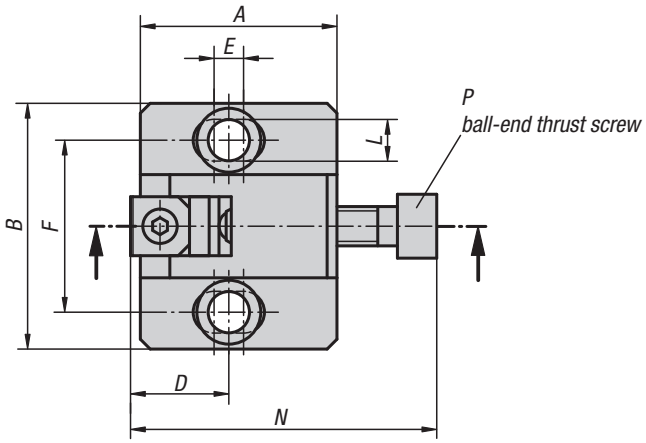
Side clamps

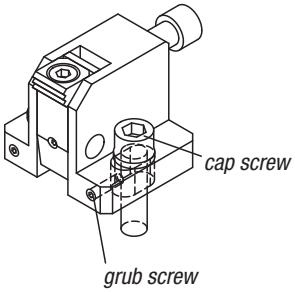


Material:
Housing and arm carbon steel.
Jaw tool steel.

Version:
Housing, black oxidised.
Arm and jaw tempered and black oxidised.

Sample order:
K0929.080400

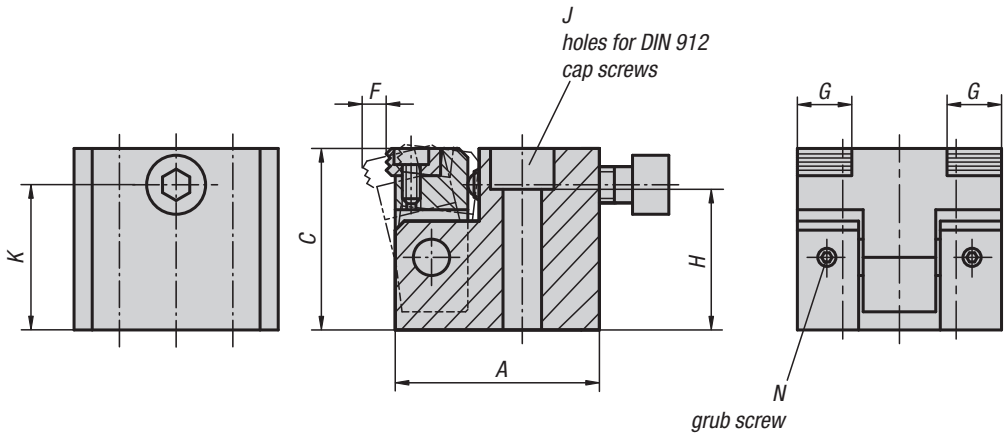


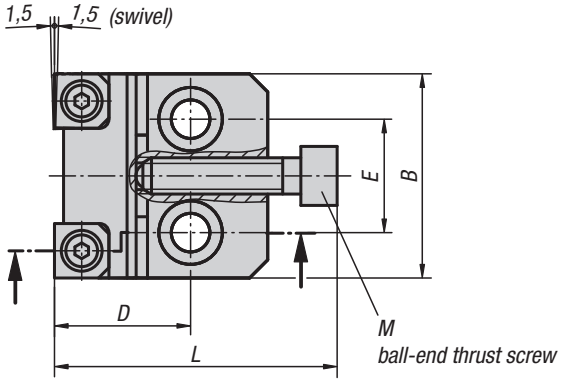


KIPP Side clamps

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	F=Retaining force N	Tightening torque Nm
K0929.080400	40	50	40	20	6	35	10	5,3	12	21	8,5	32	62,5	M8 x 35	M4x10	15000	25
K0929.100500	50	65	50	25	8	45	12	7,1	16	27	11	40	74	M10 x 40	M4x12	27000	50
K0929.120600	60	70	60	30	10	50	15	8	20	31	13	48	91	M12 x 50	M5x15	38000	90
K0929.160800	80	90	80	40	15	65	20	10,2	25	39	17	64	115	M16 x 60	M6x20	46000	130

Side clamps





Material:
Body and arm carbon steel.
Jaw tool steel.

Version:
Body black oxidised.
Arm and jaw tempered and black oxidised.

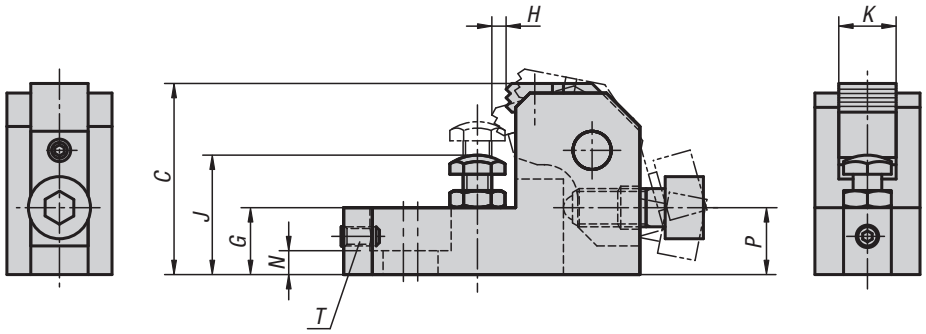
Sample order:
K0930.080400

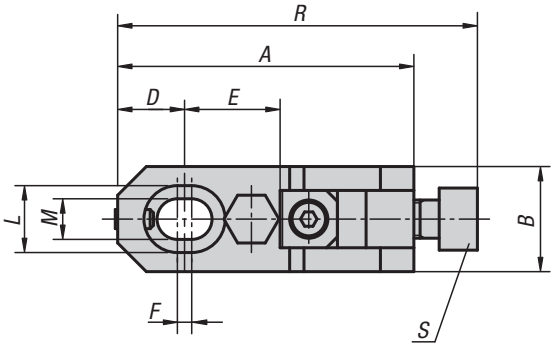
KIPP Side clamps

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	F=Retaining force N	Tightening torque Nm
K0930.080400	45	45	40	30	25	5,3	12	31	M8	32	62,5	M8x35	M4x4	15000	25
K0930.100500	55	55	50	40	30	7,1	16	39	M10	40	74	M10x40	M4x4	27000	50
K0930.120600	65	65	60	45	35	8	20	47	M12	48	91	M12x50	M5x5	38000	90

Side clamps

with rest pad



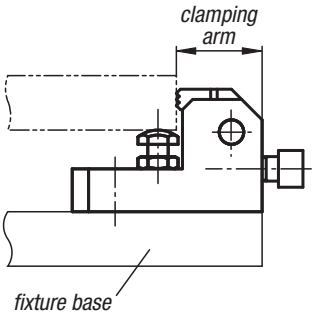


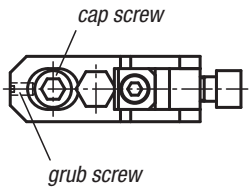
Material:
Housing and arm carbon steel.
Jaw tool steel.

Version:
Housing tempered and black oxidised.
Arm black oxidised.
Jaw tempered and black oxidised.

Sample order:
K0931.02508

Drawing reference:
T) grub screw
S) ball pressure screw

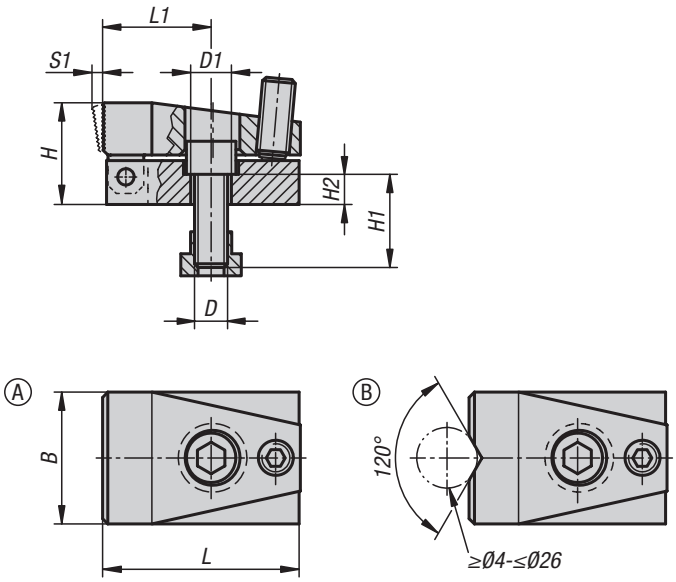




KIPP Side clamps with rest pad

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	F=Retaining force N	Tightening torque Nm
K0931.02508	62	22	40	14	20	3	14	3	25-32	12	14	8,5	5	14	75,5	M8x20	M4x8	6000	15
K0931.03210	78	25	50	18	25	4	18	3,7	32-40	16	17,5	11	7	17,5	95	M10x25	M5x10	10000	30
K0931.04012	93	32	60	21	30	5	21	4,5	40-48	20	20	13	8	21	113	M12x30	M6x12	17000	65
K0931.04816	124	38	80	28	40	6	27	6	48-63	25	26	17	10	28	151	M16x40	M8x16	25000	130

Side clamps



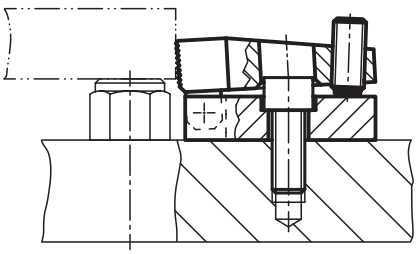
Material:
Steel.

Version:
Case-hardened and black oxidised.

Sample order:
K1386.110

Note:
Tightening the ball-end thrust screw moves the jaw plates forwards. The workpiece is pushed against the fixed stop and simultaneously forced down onto the seating face. The seating face for the workpiece can be mounted directly on the machine table.

Drawing reference:
Form A: with flat jaw
Form B: with prism jaw

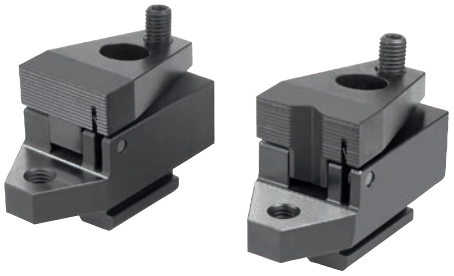


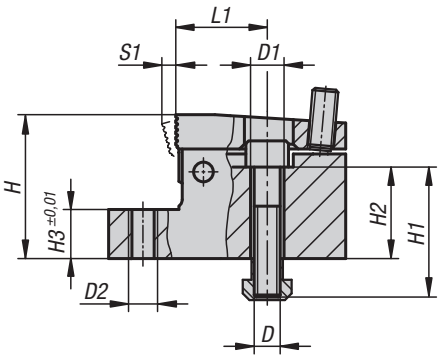
KIPP Side clamps

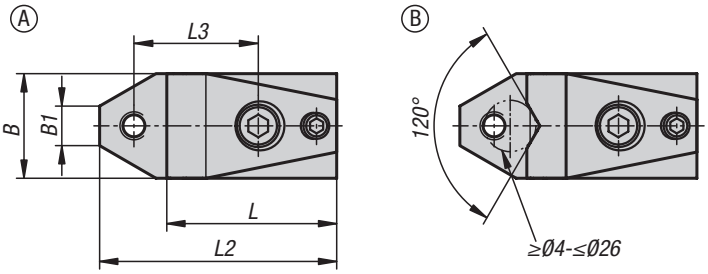
Order No. Form A	Order No. Form B	Slot width	B	D	D1	H	H1	H2	L	L1	S1 (travel)	Clamping force N	Tightening torque max. Nm
K1386.110	**K1386.210**	10	32	M8	8,4	24	20	8	52	28	3	7000	3
K1386.114	**K1386.214**	14	48	M12	12,5	37	30	11	72	40	4	15000	9
K1386.118	**K1386.218**	18	68	M16	16,5	47	35	13	86	41	7	21500	20

Side clamps

with support







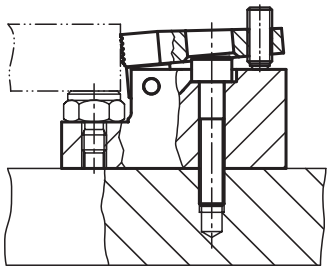
Material:
Steel.

Version:
Case-hardened and black oxidised.

Sample order:
K1387.110

Note:
Tightening the ball-end thrust screw moves the jaw plates forwards. The workpiece is pushed against the fixed stop and simultaneously forced down onto the seating face. This side clamp has a ground seating face and tapped hole for adjustable support elements.

Drawing reference:
Form A: with flat jaw
Form B: with prism jaw

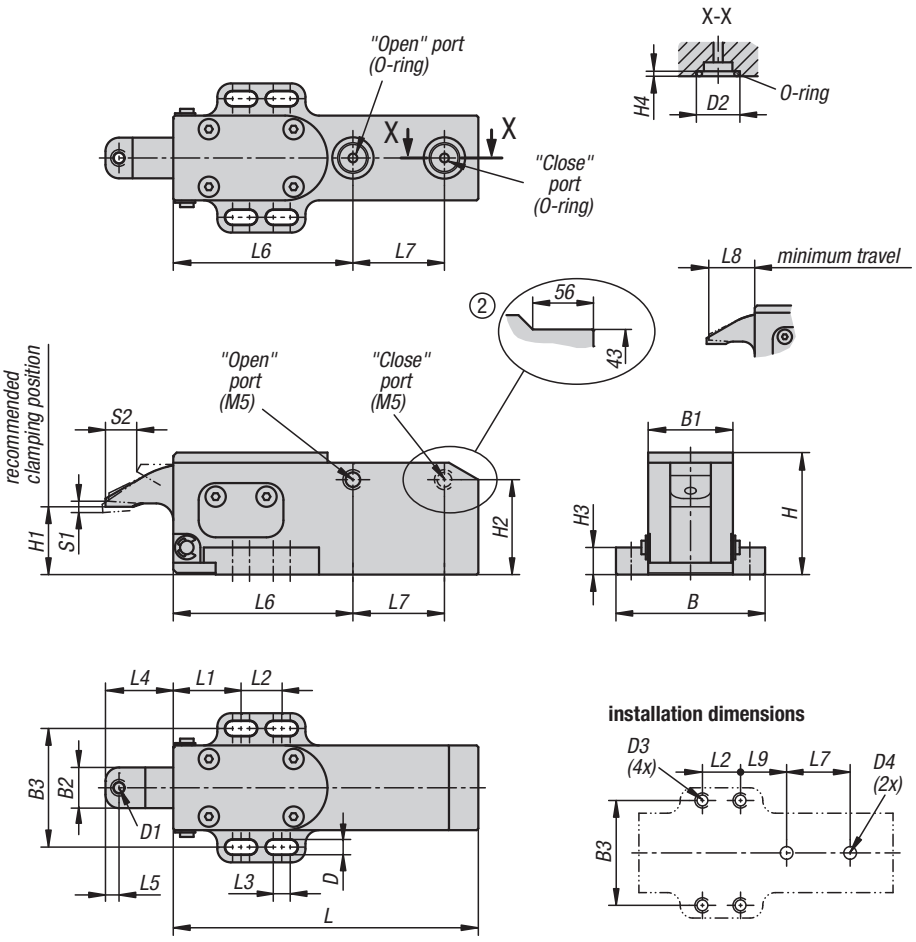


KIPP Side clamp clamp with support

Order No. Form A	Order No. Form B	Slot width	B	B1	D	D1	D2	H	H1	H2	H3	L	L1	L2	L3	S1 (travel)	Clamping force N	Tightening torque max. Nm
K1387.110	**K1387.210**	10	32	12,1	M8	8,4	M8	44	40	28	15	52	28	72,5	38	3	7000	3
K1387.114	**K1387.214**	14	48	16	M12	13	M12	53	45	27	15	72	40	100	55	4	15000	9
K1387.118	**K1387.218**	18	68	18,8	M16	17	M16	72	60	38	20	86	41	126	63	7	21500	20

Hold-down clamps

pneumatic



installation dimensions

Material:
Housing aluminium.
Clamping arm steel.

Version:
Housing anodised.
Clamping arm black oxidised.

Sample order:
K1409.090

Note:
The pneumatic hold-down clamp is suitable for clamping workpieces from above. This clamp is operated with standard pressure compressed air. The large swivel angle of the clamping arm makes it easy to insert and remove the workpieces without any obstructions, guaranteeing optimum accessibility to the workpiece. The block design of the housing offers universal fastening possibilities, which means that the clamp can be optimally adapted to the workpiece being clamped. Self-aligning pads with a smooth or serrated faces can be fitted in the clamping arm, enabling rough or machined workpieces to be clamped.
These pneumatic clamps can be placed in multiple positions on the workpiece and operated in any particular order. They can be controlled manually or automatically. As these clamps are pneumatically actuated, they relieve the operator, particularly where frequent clamping processes are carried out.

The clamping forces indicated are based on 0.5 MPa.

KIPP Pneumatic hold-down clamps

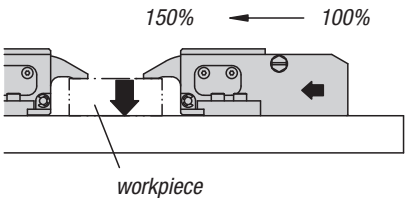
Order No.	Size	B	B1	B2	B3	D	D1	D2	D3	D4	H	H1	H2	H3	H4
K1409.090	1	44	25	12	35	4,5	M4	12,2	M4	2-4	36	20	28	8	1,9
K1409.135	2	65	40	18	53	6,5	M6	18	M6	2-6	54	30	33	12	2,4

Order No.	L	L1	L2	L3	L4	L5	L6	L7	L8	L9	S1 (travel)	S2	F=Retaining force N	Operating pressure MPa
K1409.090	90	20	12	5	20	4	53	27	19	21	2	9	140	0,3 - 1,0
K1409.135	135	30	20	8	32	6	84	38	30,5	34	3	15	320	0,3 - 1,0

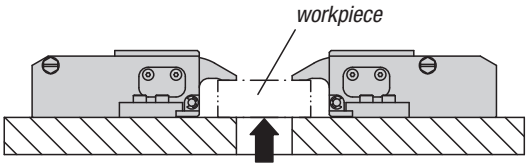
Hold-down clamps

pneumatic

The clamping mechanism increases the clamping force by 150% compared to a pneumatic cylinder of the same size.



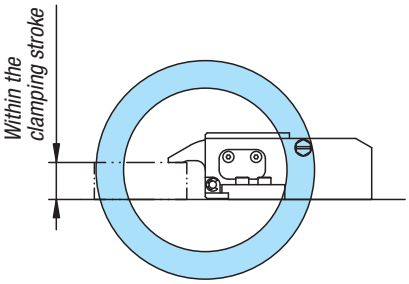
The clamping arm is operated via a wedge mechanism.
If the air pressure drops due to an air leak, the wedge mechanism prevents the clamping force from dropping rapidly.



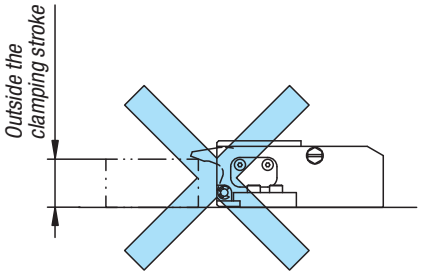
Permissible counterforce (per clamping element)

Size	Permissible clamping force (kN)
1	1
2	2,2

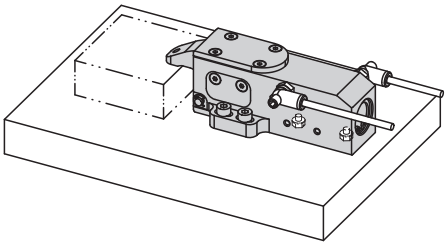
Use side clamp within the clamping travel.



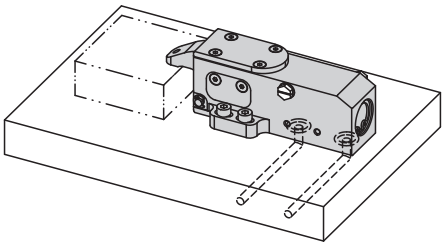
The wedge mechanism is used to clamp the workpiece securely in place.



The wedge mechanism will not function.

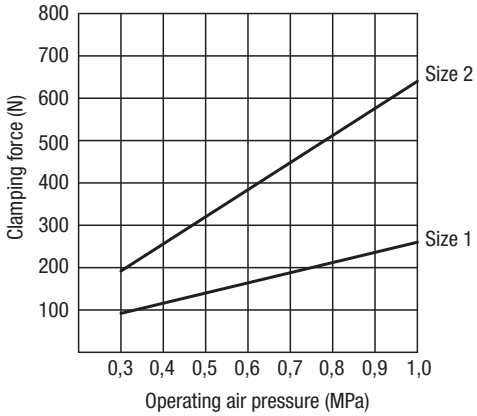


Side port as shown.
Lower ports must be sealed.
Screw plugs are supplied.



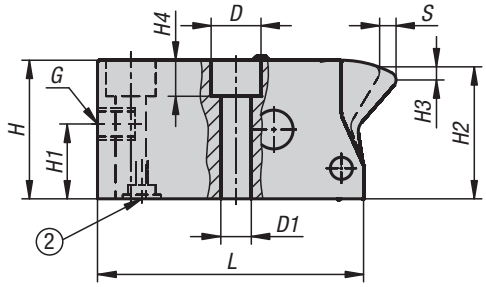
Connection from below.
The side ports must be sealed.
Screw plugs are supplied.

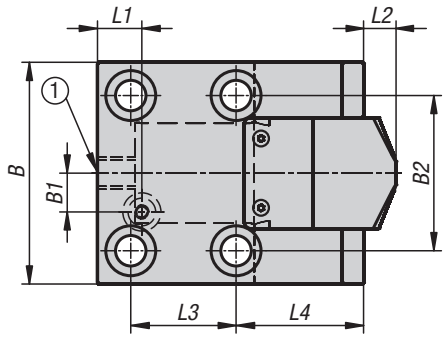
Performance curve

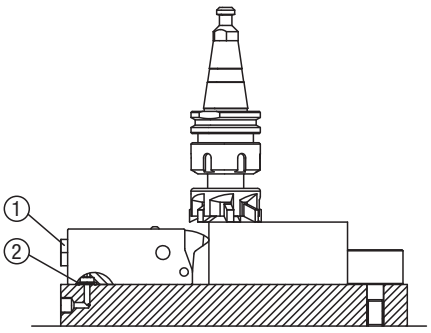


Side clamps, hydraulic

single-acting with spring return







Side clamps are used to apply the clamping force to the side of a workpiece. Side clamps are particularly suitable for clamping situations in which clamping from above cannot be carried out or is not required.
After the pressure has been released, the piston and the thrust pad are returned to the initial position with the aid of springs.

Material:
Housing and piston steel.

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1855.25102404

Note:
With the clamping force applied from the side, both a horizontal and a vertical force component are generated. The size of the force components depends on the travel respectively. An applied vertical force component can be max. 25 % of the clamping force. With this force, the workpiece is pushed down onto the seating face. The horizontal force component drops to min. 95 % of the initial force depending on the travel.

The clamping piston in side clamps has an integrated travel limiter.

Penetration of cutting and cooling fluids into the cylinder must be prevented.

Observe safety instructions.

Method of operation:
- Thread connection.
- O-ring flange connection.

Advantages:
- Low installation height.
- Integrated travel limit on the clamping piston.

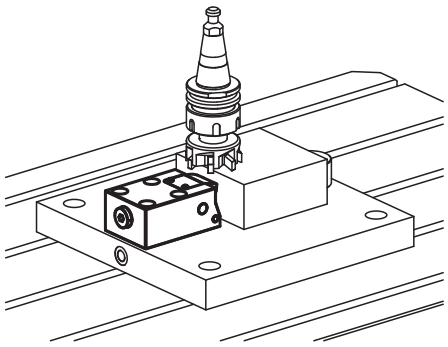
Supplied with:
1 O-ring 10x2 (for flange connection operating mode) supplied.

Technical data:
Max. operating pressure: 500 bar.

Drawing reference:
1) screw plug
2) O-ring

Side clamps, hydraulic

single-acting with spring return

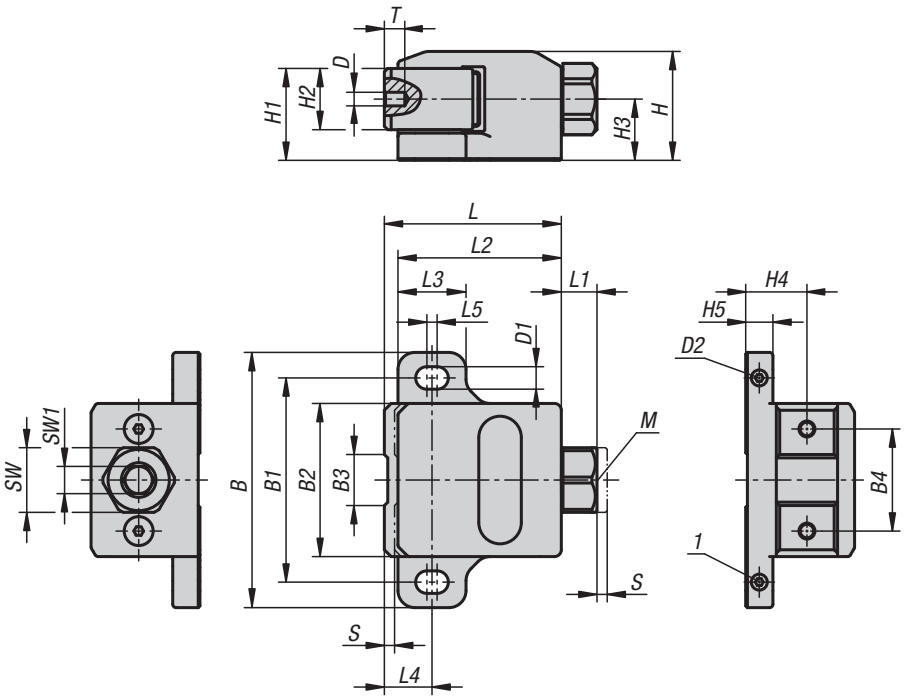


KIPP Side clamps hydraulic

Order No.	Piston Ø	Travel S	B	B1	B2	D	D1	G	H	H1	H2	H3	H4	L	L1	L2	L3	L4
K1855.16082404	16	8	50	-	32	13,5	8,5	1/4	32	19	31	4	8,5	68	13	2	27	32
K1855.25102404	25	10	60	-	40	15	9	1/4	40	23	39	4	9	90	14	2,5	38	42
K1855.36102404	36	10	80	14	56	18	11	1/4	50	27	49	4	11	96	16	2	38	46

Order No.	Piston Ø	Clamping force at 100 bar (kN)	Clamping force at 500 bar (kN)	Oil requirement / 10mm travel (cm^3)
K1855.16082404	16	1,7	8,5	2
K1855.25102404	25	4	20	4,9
K1855.36102404	36	8	40	10,2

Side clamps



Material:
Carbon steel.

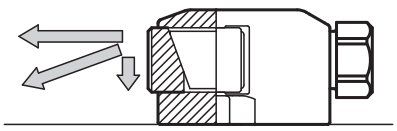
Version:
Body black oxidised.
Clamping face ground.

Sample order:
K1697.0900

Note:
Tighten the setscrew to prevent the side clamp sliding back during the clamping process.

Advantages:
- High clamping force
- Ground clamping face
- Pull-down force prevents the workpiece lifting

Drawing reference:
1) Setscrew
2) Cap screw

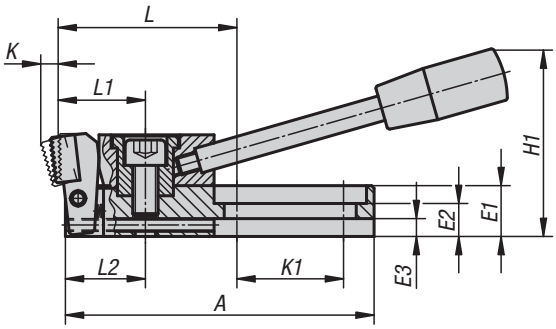


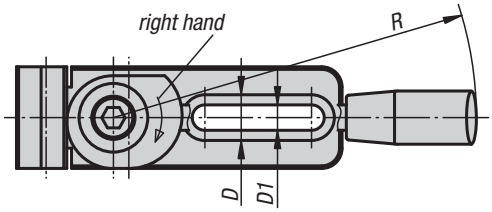
KIPP Side clamps

Order No.	B	B1	B2	B3	B4	D	D1	D2	H	H1	H2	H3	H4	H5	L	L1	L2	L3	L4	L5	SW	SW1	T	Travel S	Clamping force kN	Tightening torque max. Nm
K1697.0900	75	60	45	15	30	M4	6,6	M4x6	32	27	18	18	18	8	52	10	48	20	14	3	19	8	6	3	9	25
K1697.1400	100	80	60	20	40	M5	8,6	M5x8	40	33	22	22	22	10	69	13	63	26	19	4	24	10	8	4	14	50

Notes

Side clamps





Material:
Steel.

Version:
Case-hardened and black oxidised.

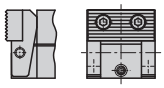
Sample order:
K0034.006010

Note:
This is a quick-action side clamp where workpieces are clamped by rotating a cam wheel which exerts pressure on the swivel jaw, simultaneously producing a positive down force. Using the stop screw and centring bush (see diagram), the side clamp can be mounted and positioned on a modular grid system.

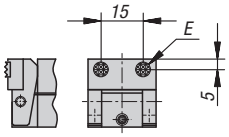
The versions K0034.006010, K0034.006015, K0034.006030 and K0034.006035 have 2 round carbide inserts.

Clamping force:
K0034.006... = 3800 N
K0034.010... = 7200 N

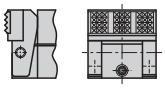
Form A
steel jaw
serrated



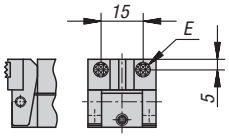
Form B
jaw with 2 round
carbide inserts



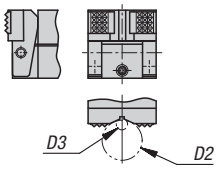
3 rectangular
carbide inserts



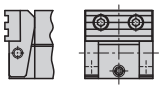
Form C
jaw with 2 round
carbide inserts
and central prism

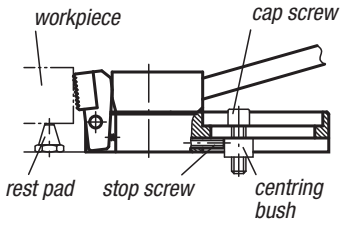


2 rectangular carbide
inserts and central prism



Form D
POM jaw
serrated

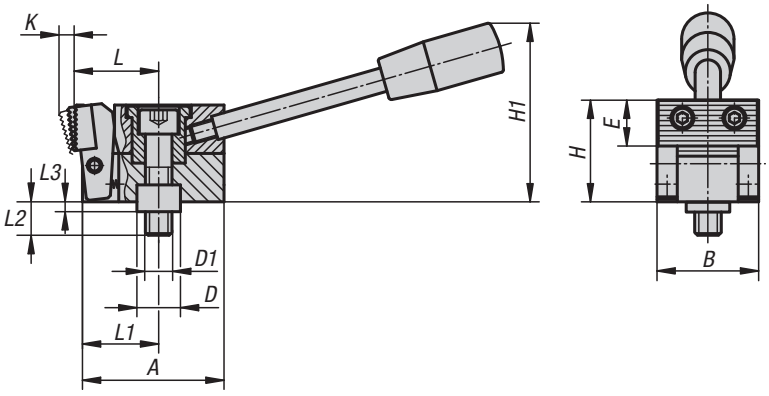


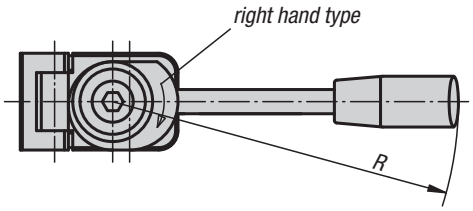


KIPP Side clamps

Order No.	Form	Version 1	A	B	D	D1	D2 max.	D3 min.	E	E1	E2	E3	H	H1	K	K1	L	L1	L2	R	F=Retaining force N
K0034.006005	A	right	78	25	12	6,2	-	-	11	12	8	4	25	45	4	26	46,5	22	20	110	3800
K0034.010005	A	right	121,5	40	18	10,2	-	-	18	20	13	7	40	74	6	42	71	35	31,5	143	7200
K0034.006025	A	left	78	25	12	6,2	-	-	11	12	8	4	25	45	4	26	46,5	22	20	110	3800
K0034.010025	A	left	121,5	40	18	10,2	-	-	18	20	13	7	40	74	6	42	71	35	31,5	143	7200
K0034.006010	B	right	78	25	12	6,2	-	-	ø8	12	8	4	24	45	3,5	26	46,5	22	20	110	3800
K0034.010010	B	right	121,5	40	18	10,2	-	-	12,7	20	13	7	39	74	5,5	42	73	35	31,5	143	7200
K0034.006030	B	left	78	25	12	6,2	-	-	ø8	12	8	4	24	45	3,5	26	46,5	22	20	110	3800
K0034.010030	B	left	121,5	40	18	10,2	-	-	12,7	20	13	7	39	74	5,5	42	73	35	31,5	143	7200
K0034.006015	C	right	78	25	12	6,2	9,5	2,5	ø8	12	8	4	24	45	3,5	26	46,5	22	20	110	3800
K0034.010015	C	right	121,5	40	18	10,2	27	4,5	12,7	20	13	7	39	74	5,5	42	73	35	31,5	143	7200
K0034.006035	C	left	78	25	12	6,2	9,5	2,5	ø8	12	8	4	24	45	3,5	26	46,5	22	20	110	3800
K0034.010035	C	left	121,5	40	18	10,2	27	4,5	12,7	20	13	7	39	74	5,5	42	73	35	31,5	143	7200
K0034.006020	D	right	78	25	12	6,2	-	-	11	12	8	4	25	45	4	26	46,5	22	20	110	3800
K0034.010020	D	right	121,5	40	18	10,2	-	-	18	20	13	7	40	74	6	42	70,5	35	31,5	143	7200
K0034.006040	D	left	78	25	12	6,2	-	-	11	12	8	4	25	45	4	26	46,5	22	20	110	3800
K0034.010040	D	left	121,5	40	18	10,2	-	-	18	20	13	7	40	74	6	42	70,5	35	31,5	143	7200

Side clamps





Material:
Steel.

Version:
Case-hardened and black oxidised.

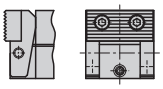
Sample order:
K0035.006005

Note:
This is a quick-action side clamp where workpieces are clamped by rotating a cam wheel which exerts pressure on the swivel jaw, simultaneously producing a positive down force.
Using the centring bush (see diagram), the side clamp can be mounted and positioned on a modular grid system.

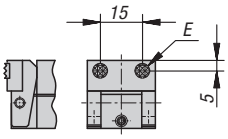
The versions K0035.006010, K0035.006015, K0035.006030 and K0035.006035 have 2 round carbide inserts.

Clamping force:
K0035.006... = 3800 N
K0035.010... = 7200 N

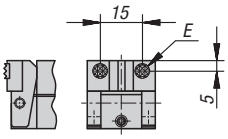
Form A
steel jaw
serrated



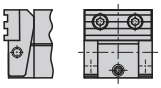
Form B
jaw with 2 round
carbide inserts



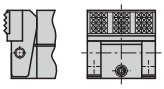
Form C
jaw with 2 round
carbide inserts
and central prism



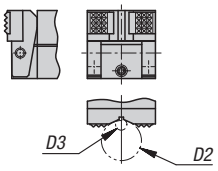
Form D
POM jaw
serrated

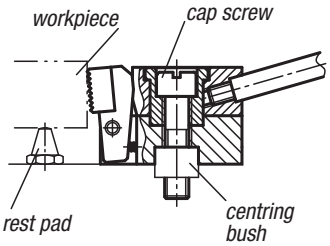


3 rectangular
carbide inserts



2 rectangular carbide
inserts and central prism



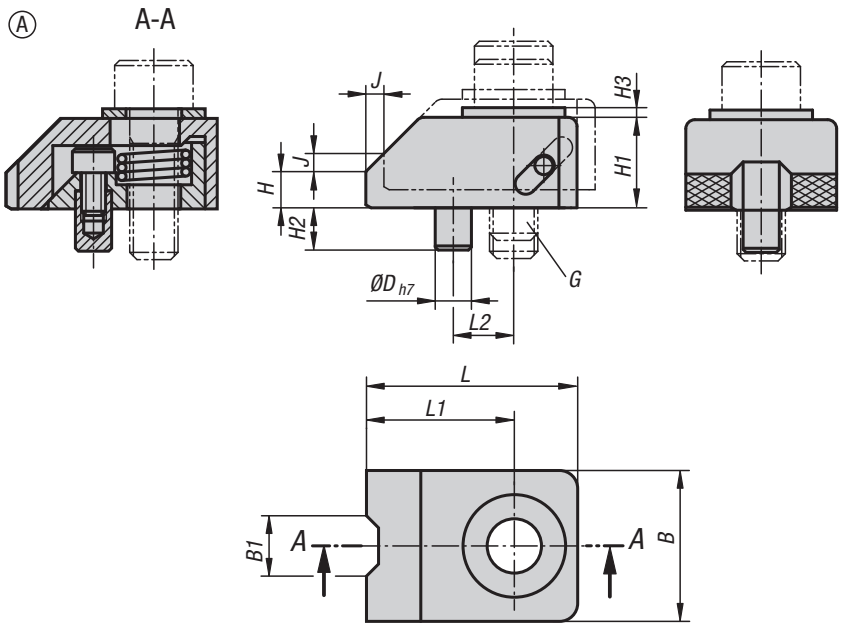


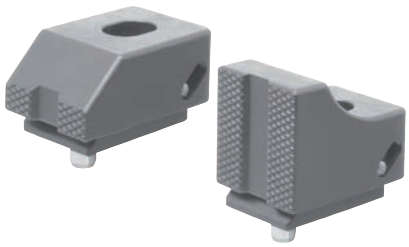
KIPP Side clamps

Order No.	Form	Version 1	A	B	D	D1	D2 max.	D3 min.	E	H	H1	K	L	L1	L2	L3	R	F=Retaining force N
K0035.006005	A	right	38,5	25	12	M6	-	-	11	25	45	4	22	20	17	4	110	3800
K0035.010005	A	right	58,5	40	18	M10	-	-	18	40	74	6	35	31,5	27	6	143	7200
K0035.006025	A	left	38,5	25	12	M6	-	-	11	25	45	4	22	20	17	4	110	3800
K0035.010025	A	left	58,5	40	18	M10	-	-	18	40	74	6	35	31,5	27	6	143	7200
K0035.006010	B	right	38,5	25	12	M6	-	-	ø8	24	45	3,5	22	20	17	4	110	3800
K0035.010030	B	left	58,5	40	18	M10	-	-	12,7	39	74	5,5	37	31,5	27	6	143	7200
K0035.006035	C	left	38,5	25	12	M6	9,5	2,5	ø8	24	45	3,5	22	20	17	4	110	3800
K0035.006020	D	right	38,5	25	12	M6	-	-	11	25	45	4,5	22	20	17	4	110	3800
K0035.010020	D	right	58,5	40	18	M10	-	-	18	40	74	7	34,5	31,5	27	6	143	7200
K0035.006040	D	left	38,5	25	12	M6	-	-	11	25	45	4,5	22	20	17	4	110	3800
K0035.010040	D	left	58,5	40	18	M10	-	-	18	40	74	7	34,5	31,5	27	6	143	7200

Toe Clamps

Toe clamps

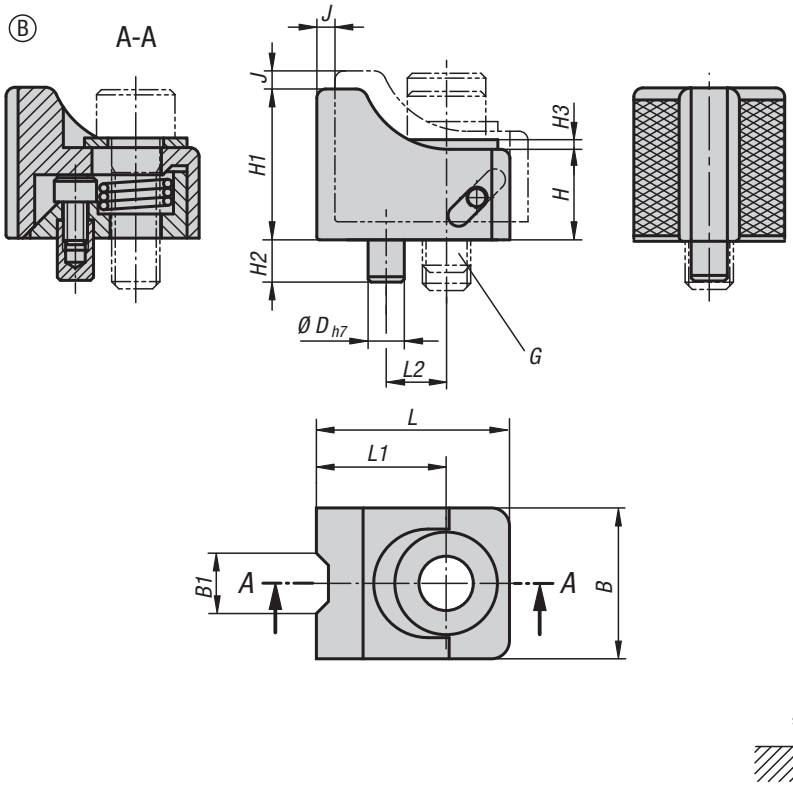




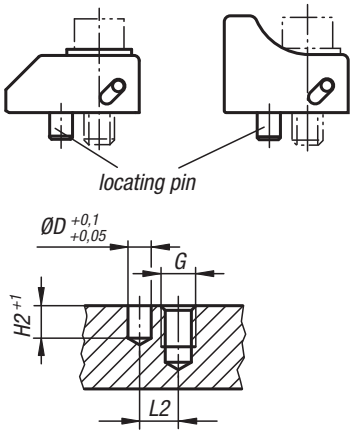
Material:
Carbon steel.

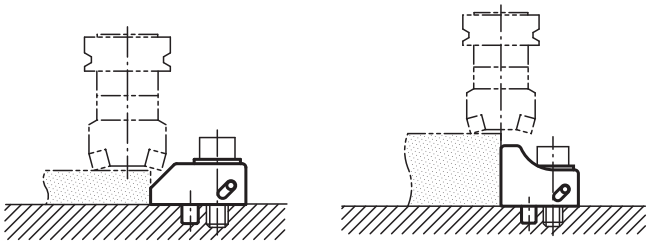
Version:
Tempered and black oxidised.

Sample order:
K0932.0806



mounting instructions:



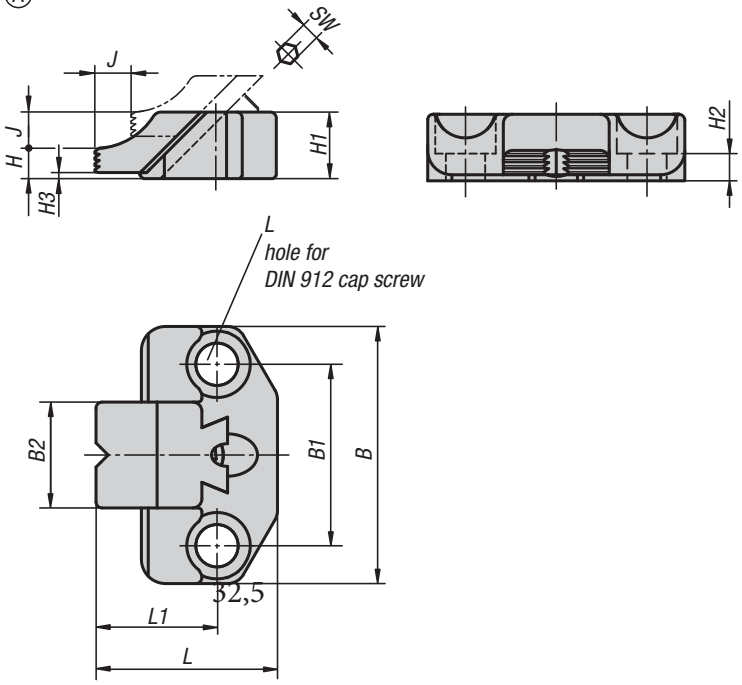


KIPP Toe clamps

Order No.	Form	B	B1	D	G	H	H1	H2	H3	J	L	L1	L2	Clamping force N	Tightening torque Nm
K0932.0806	A	25	10	6	M8	6	15	7	1,6	3	35	24,5	10	7000	25
K0932.1008	A	30	11	6	M10	8	19	7	2	4	43	29	12	8500	50
K0932.1209	A	35	12	8	M12	9	23	10	2,3	5	54	37	16	20000	90
K0932.1610	A	40	14	10	M16	10	25	10	3,2	6	65	45	20	40000	200
K0932.0825	B	25	10	6	M8	15	25	7	1,6	3	32	21,5	10	7000	25
K0932.1032	B	30	11	6	M10	19	32	7	2	4	40	26	12	8500	50
K0932.1238	B	35	12	8	M12	23	38	10	2,3	5	50	33	16	20000	90
K0932.1645	B	40	14	10	M16	25	45	10	3,2	6	60	40	20	40000	200

Toe clamps

Ⓐ

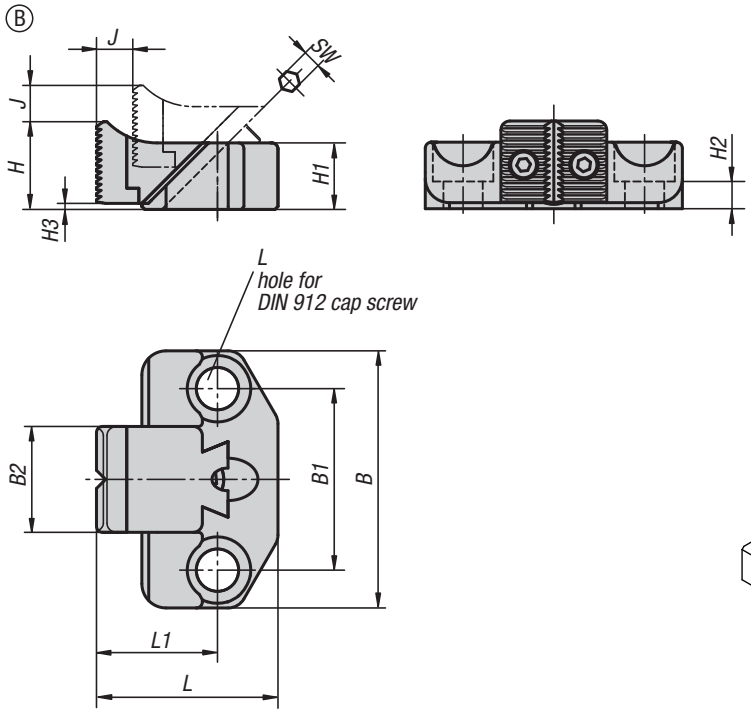


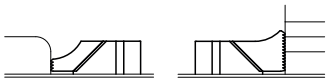
Material:
Carbon steel.

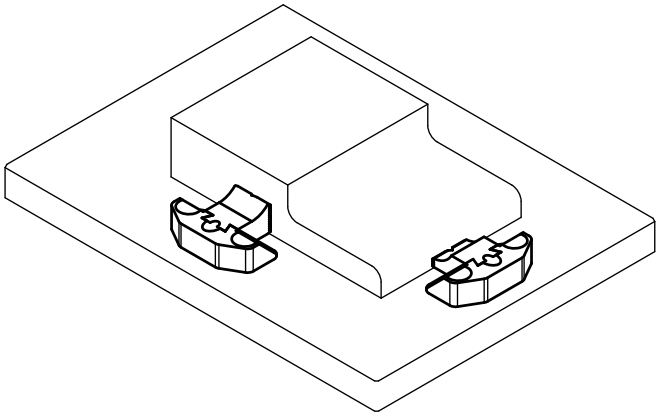
Version:
Body tempered and black oxidised.
Jaw plate black oxidised and tempered on the edges.

Sample order:
K0933.0808

Ⓑ





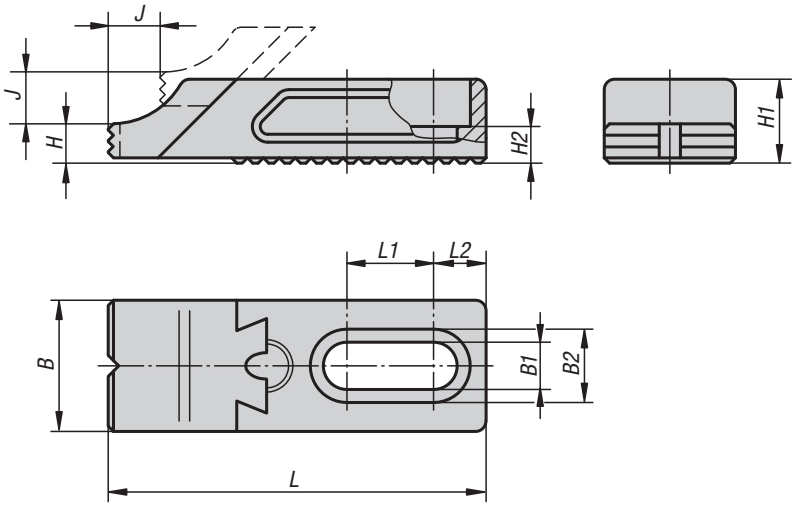


KIPP Toe clamps

Order No.	Form	B	B1	B2	G	H	H1	H2	H3	J	L	L1	SW	Clamping force N	Tightening torque Nm
K0933.0808	A	65	45	25	M8	7,5	16	7	1,5	7	39,5	25	4	4000	8
K0933.1210	A	85	60	35	M12	10	22	9	2	12	60	40	6	9000	26
K0933.1614	A	100	70	40	M16	14	30	13	2	14	77	50	8	17000	60
K0933.0820	B	65	45	25	M8	19,5	16	7	1,5	7	39,5	25	4	4000	8
K0933.1229	B	85	60	35	M12	29	22	9	2	12	60	40	6	9000	26
K0933.1638	B	100	70	40	M16	38	30	13	2	14	77	50	8	17000	60

Toe clamps

stepped



Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The clamping face of the jaw plate is serrated.

Sample order:
K0853.92008016

Note:
The adjustable toe clamp is used together with the rack plate CL.

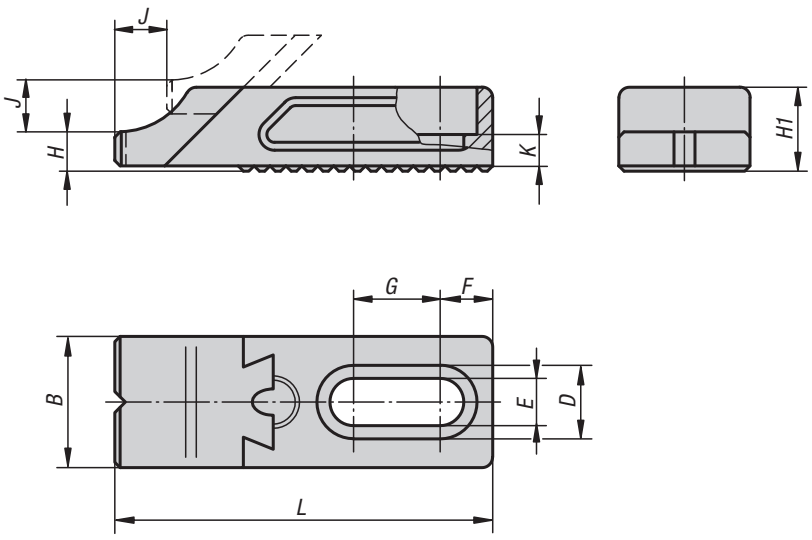
KIPP Toe clamps, stepped

Order No.	B	B1	B2	H	H1	H2	J	L	L1	L2	F1 kN	M1 Nm
K0853.92008016	25	8,5	14	7,5	16	7	7	72	16,5	10	3,6	6,5
K0853.92012022	35	13	20	10	22	9	12	105	26,5	13,5	7,4	19
K0853.92016030	40	17	26	14	30	13	14	137	30	17,5	11,7	32

K0853

Toe clamps

stepped



Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The clamping face of the jaw plate is ground.

Sample order:
K0853.92108016

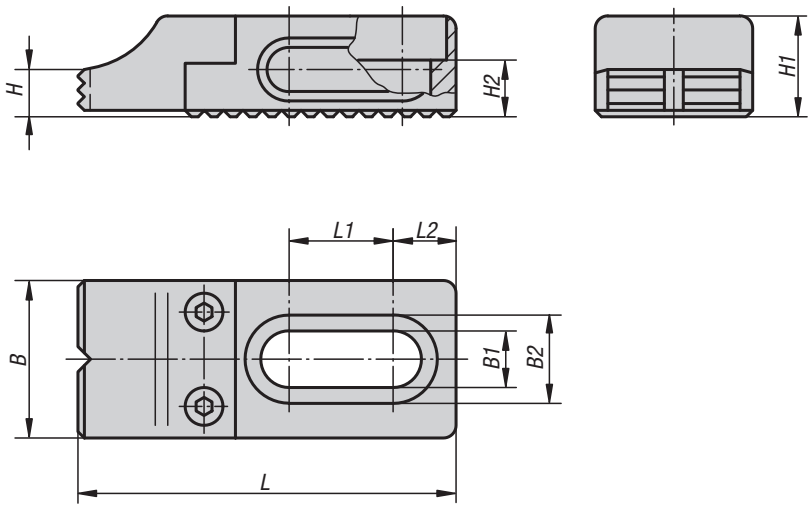
Note:
These toe clamps are used together with the rack plate CL.

KIPP Toe clamps, stepped

Order No.	B	B1	B2	H	H1	H2	J	L	L1	L2	F1 kN	M1 Nm
K0853.92108016	25	8,5	14	7,5	16	7	7	72	16,5	10	3,6	6,5
K0853.92112022	35	13	20	10	22	9	12	105	26,5	13,5	7,4	19
K0853.92116030	40	17	26	14	30	13	14	137	30	17,5	11,7	32

Toe stops

stepped



Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The contact face of the jaw plate is serrated.

Sample order:
K0853.96008016

Note:
The adjustable stop is used together with the rack plate CL.

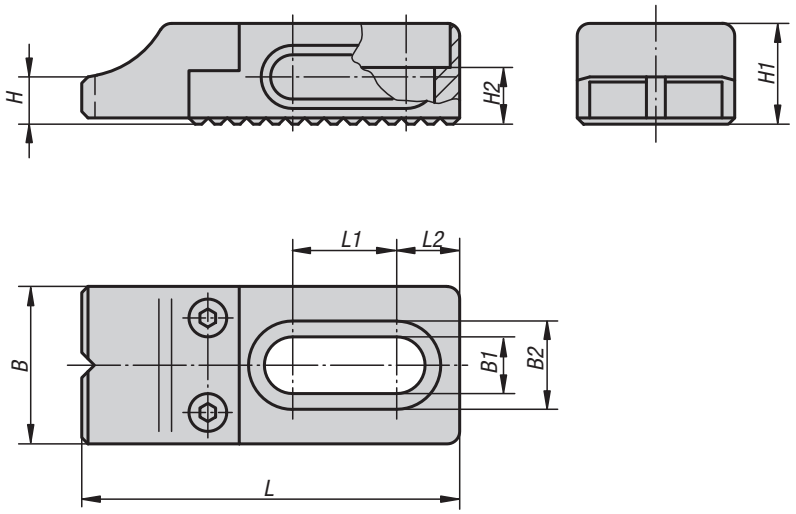
KIPP Toe stops, stepped

Order No.	B	B1	B2	H	H1	H2	L	L1	L2
K0853.96008016	25	8,5	14	7,5	16	7	60	16,5	10
K0853.96012022	35	13	20	10	22	10	90	26,5	13,5
K0853.96016030	40	17	26	14	30	13	115	30	17,5

K0853

Toe stops

stepped



Material:
Carbon steel.

Version:
Body black oxidised.
Jaws tempered and black oxidised.
The contact face of the jaw plate is ground.

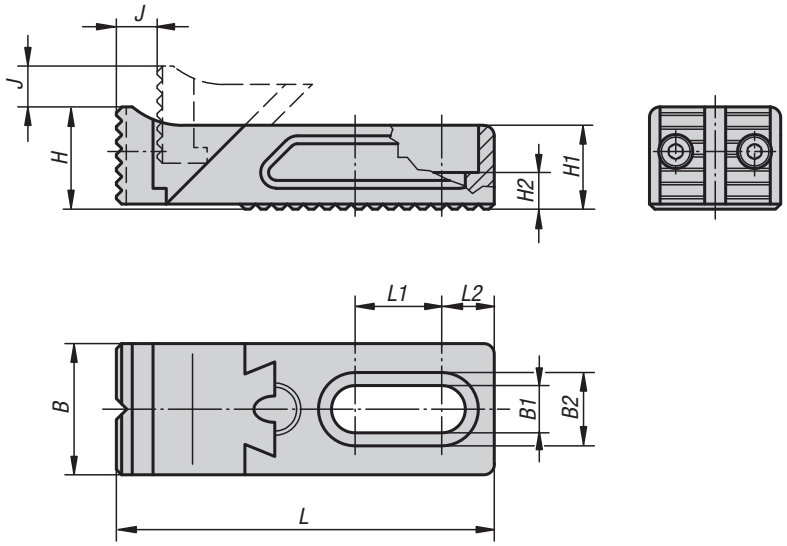
Sample order:
K0853.96108016

Note:
The adjustable stop is used together with the rack plate CL.

KIPP Toe stops, stepped

Order No.	B	B1	B2	H	H1	H2	L	L1	L2
K0853.96108016	25	8,5	14	7,5	16	7	60	16,5	10
K0853.96112022	35	13	20	10	22	10	90	26,5	13,5
K0853.96116030	40	17	26	14	30	13	115	30	17,5

Toe clamps



Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The clamping face of the jaw plate is serrated.

Sample order:
K0853.93008016

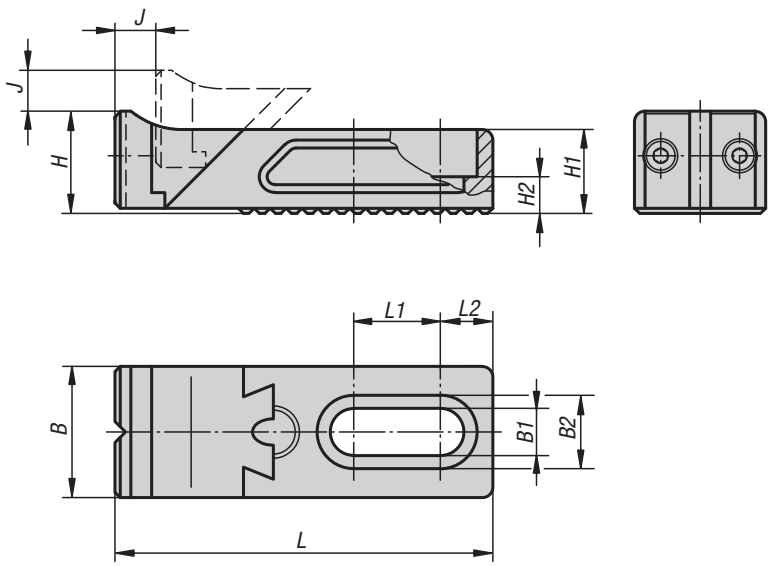
Note:
The adjustable toe clamp is used together with the rack plate CL.

KIPP Toe clamps

Order No.	B	B1	B2	H	H1	H2	J	L	L1	L2	F1 kN	M1 Nm
K0853.93008016	25	8,5	14	19,5	16	7	7	72	16,5	10	3,6	6,5
K0853.93012022	35	13	20	29	22	9	12	105	26,5	13,5	7,4	19
K0853.93016030	40	17	26	39	30	13	14	137	30	17,5	11,7	32

K0853

Toe clamps



Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The clamping face of the jaw plate is ground.

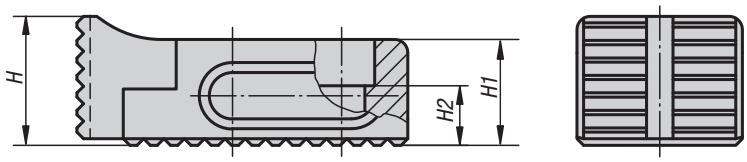
Sample order:
K0853.93108016

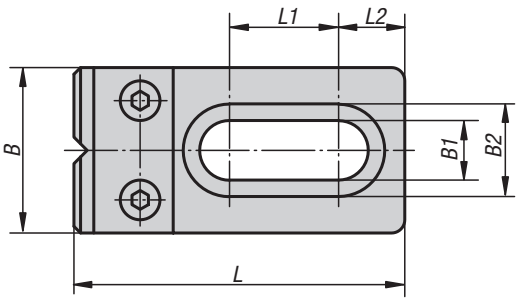
Note:
The adjustable toe clamp is used together with the rack plate CL.

KIPP Toe clamps

Order No.	B	B1	B2	H	H1	H2	J	L	L1	L2	F1 kN	M1 Nm
K0853.93108016	25	8,5	14	19,5	16	7	7	72	16,5	10	3,6	6,5
K0853.93112022	35	13	20	29	22	9	12	105	26,5	13,5	7,4	19
K0853.93116030	40	17	26	39	30	13	14	137	30	17,5	11,7	32

Toe stops





Material:
Carbon steel.

Version:
Body black oxidised.
Jaw plate tempered and black oxidised.
The contact face of the jaw plate is serrated.

Sample order:
K0853.97008016

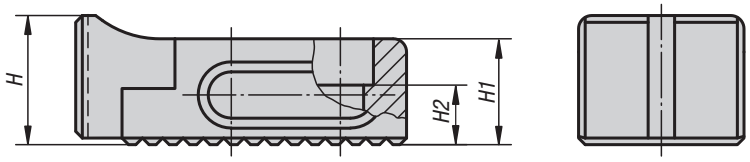
Note:
The adjustable stop is used together with the rack plate CL.

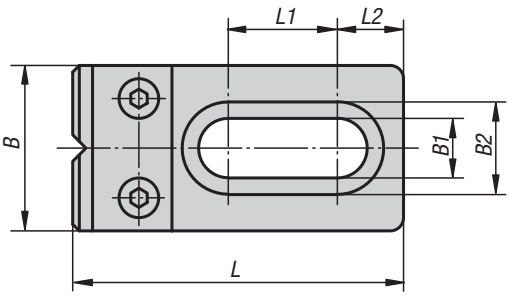
KIPP Toe stops

Order No.	B	B1	B2	H	H1	H2	L	L1	L2
K0853.97008016	25	8,5	14	19,5	16	7	50	16,5	10
K0853.97012022	35	13	20	29	22	10	75	20	13,5
K0853.97016030	40	17	26	39	30	13	95	30	17,5

K0853

Toe stops





Material:
Carbon steel.

Version:
Body black oxidised.
Jaws tempered and black oxidised.
The contact face of the jaw plate is ground.

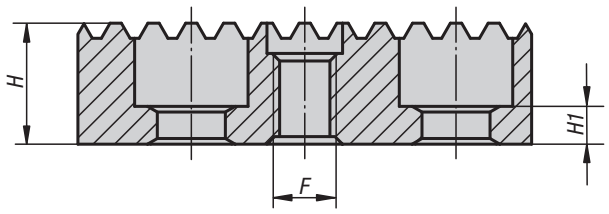
Sample order:
K0853.97108016

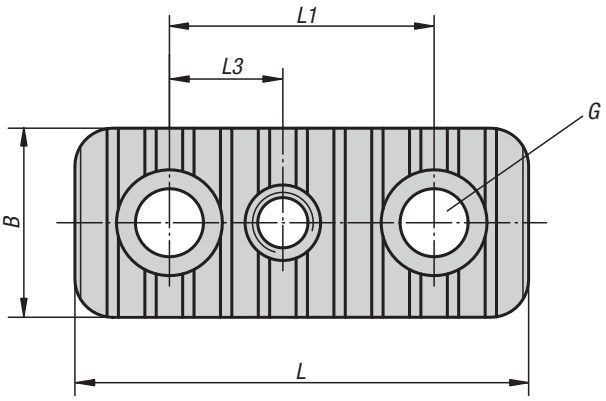
Note:
The adjustable stop is used together with the rack plate CL.

KIPP Toe stops

Order No.	B	B1	B2	H	H1	H2	L	L1	L2
K0853.97108016	25	8,5	14	19,5	16	7	50	16,5	10
K0853.97112022	35	13	20	29	22	10	75	26,5	13,5
K0853.97116030	40	17	26	39	30	13	95	30	17,5

Rack plates



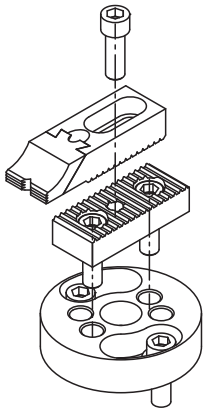


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0853.94008116

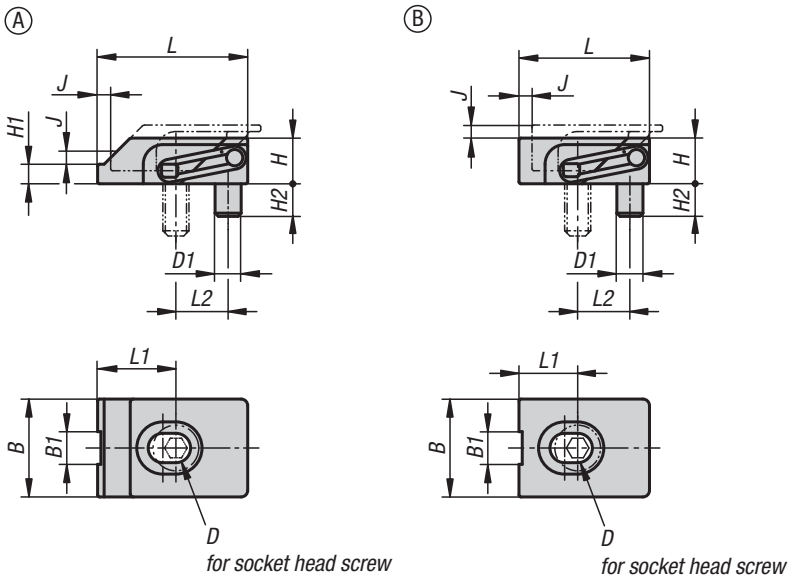
Note:
Rack plates are used to position stepped and standard toe clamps.
The holes (G) for DIN 912 socket head screws is used to fasten the rack plate to suitable base elements. The tapped hole (F) is used to secure the toe clamps.



KIPP Rack plates

Order No.	B	F	G hole for DIN 912 cap screw	H	H1	L	L1	L3
K0853.94008116	25	M8	M8	16	7	50	25	12,5
K0853.94008120	25	M8	M8	20	9	50	25	12,5
K0853.94008125	25	M8	M8	25	13	50	25	12,5
K0853.94008132	25	M8	M8	32	20	50	25	12,5
K0853.94008140	25	M8	M8	40	28	50	25	12,5
K0853.94012020	35	M12	M12	20	5	85	50	20
K0853.94012025	35	M12	M12	25	12	85	50	20
K0853.94012032	35	M12	M12	32	12	85	50	20
K0853.94012040	35	M12	M12	40	12	85	50	20
K0853.94012050	35	M12	M12	50	12	85	50	20
K0853.94016025	40	M16	M16	25	6	90	50	25
K0853.94016032	40	M16	M16	32	13	90	50	25
K0853.94016040	40	M16	M16	40	15	90	50	25
K0853.94016050	40	M16	M16	50	15	90	50	25
K0853.94016063	40	M16	M16	63	15	90	50	25

Flat clamps



Material:
Carbon steel.

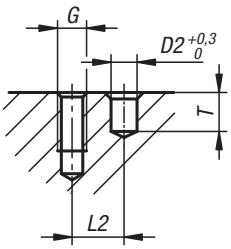
Version:
Hardened (33–39 HRC) and black oxidised.

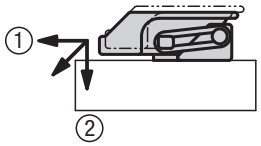
Sample order:
K1168.204

Note:
Particularly low workpieces can be clamped using these flat clamps.
Clamping element with pull-down effect.
Clamping element and fixed block in one compact unit.

Drawing reference:
Dimension L1 refers to clamped state.

installation instructions





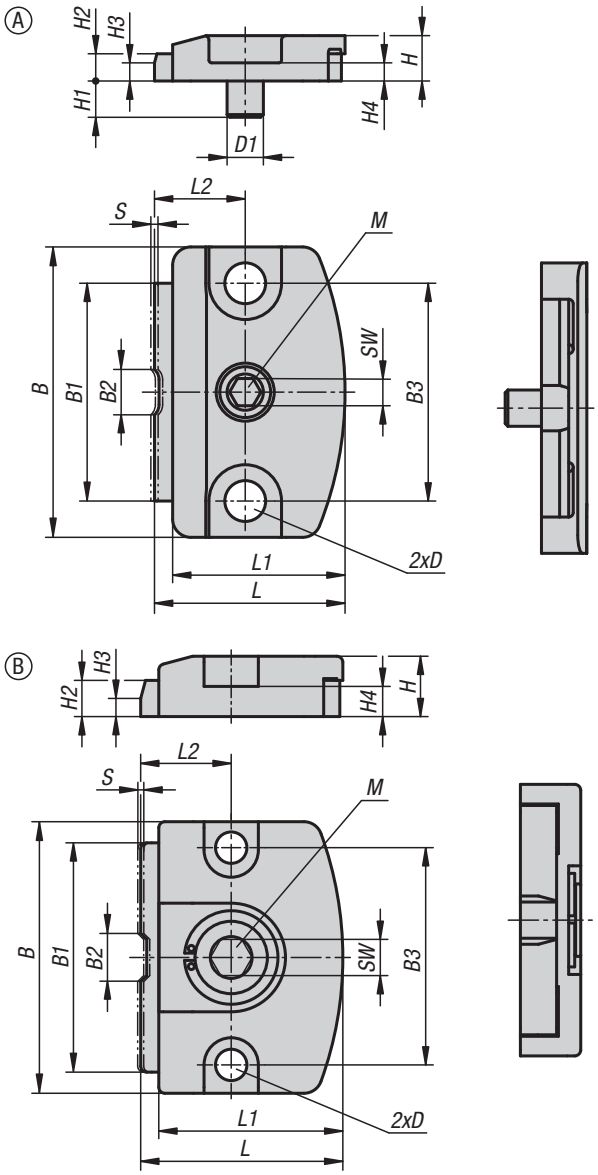
(Jaws exert positive down force)
1 Horizontal thrust against workpiece
2 Vertical thrust prevents the workpiece lifting

KIPP Flat clamps

Order No.	Form	B	B1	D1	D2	G	H	H1	H2	J	L	L1	L2	T	Clamping force max. kN	Tightening torque max. Nm
K1168.104	A	15	5	4	4	M4	7	3	5	2	23	12	8	6	2	2,7
K1168.105	A	19	7	5	5	M5	9	4	6	2,5	28	14	10	7	3	5,4
K1168.204	B	15	5	4	4	M4	7	-	5	2	20	9	8	6	2,5	2,7
K1168.205	B	19	7	5	5	M5	9	-	6	2,5	25	11	10	7	3,5	5,4

T-slot clamps

with cam



Material:
Carbon steel.

Version:
Black oxidised.

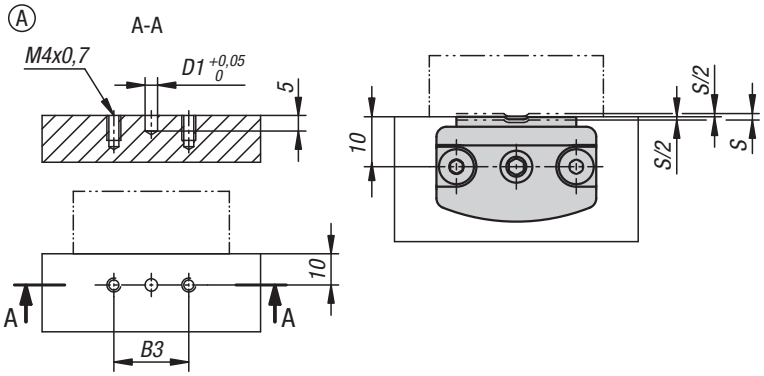
Sample order:
K1696.10400

Note:
Form A with locating pin.
Form B without locating pin.

Assembly:
See drawing (Form A).

Advantages:
- Compact and flat design
- Quick and easy clamping of components

mounting instructions:



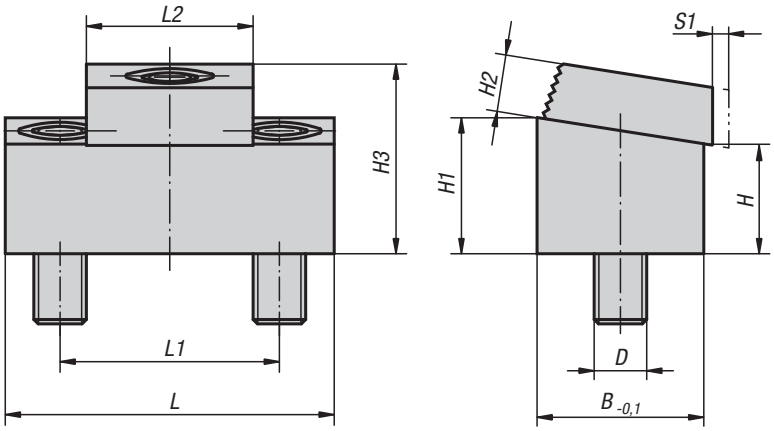
KIPP T-slot clamps with cam

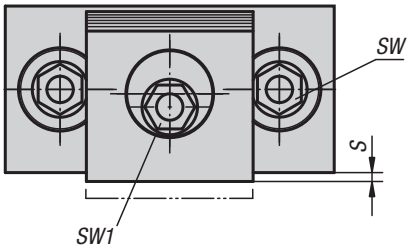
Order No.	Form	B	B1	B2	B3	D	D1	H	H1	H2	H3	H4	L	L1	L2	SW	Travel S	Clamping force kN	Tightening torque max. Nm
K1696.00130	A	32	24	5	24	4,5	4	5	4	3	2	2	21	19	10	3	0,8	1,3	2,1
K1696.10400	B	45	38	8	36	5,2	-	10	-	6	3	5	33,5	30,5	15	6	1	4	10
K1696.10600	B	70	60	12	55	8,2	-	15	-	9	5	7	50	46	22	10	2	6	27

Notes

Fixture clamps, cam clamps

Toe clamps compact





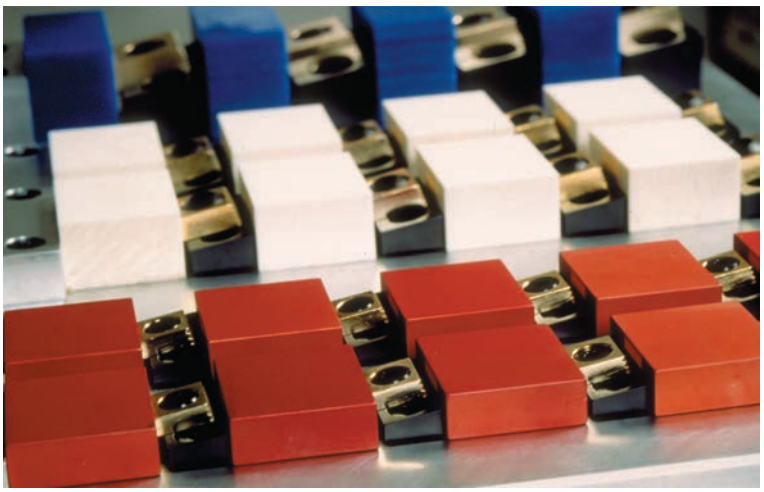
Material:
Steel.

Version:
Body tempered and black oxidised.
Square washer case-hardened and brass-plated.

Sample order:
K0036.10

Note:
This cam action compact toe clamp requires very little space to produce multi-fixture clamping.
Workpieces can be clamped in series by using the back side of a clamp as a stop for the next row.
Mount preferably in slots with B +0.05 mm. The height of the clamp can be adjusted by altering the slot depth.

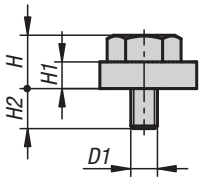
Example of series clamping using compact toe clamps

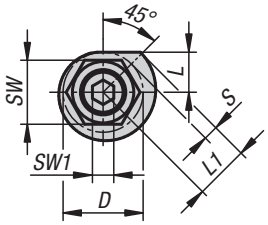


KIPP Toe clamps compact

Order No.	L	L1	L2	B	H	H1	H2	H3 max.	S	D	S1 (travel)	SW	SW1	Clamping force kN	Tightening torque max. Nm
K0036.08	43,2	25,4	19	19	12,7	15,7	6,4	21,4	1,5	M8	1,6	5	7	8,9	28
K0036.10	54	33,5	25,4	25,4	11,4	15,4	9,7	24,5	1,8	M10	2	7	8	17,8	88
K0036.12	75	50,8	38	38,1	25,5	31,5	13	43	2,05	M12	2,5	10	12	26,7	135

Clamping cams





Material:
Carbon steel.

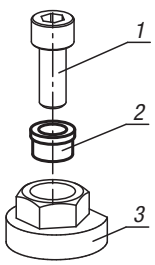
Version:
Black oxidised.

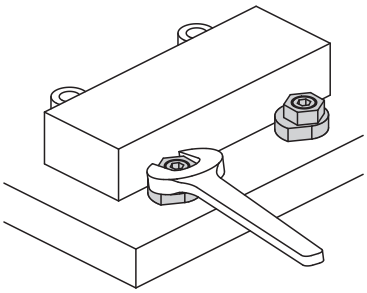
Sample order:
K1694.10

Assembly:
1. Screw the locking screw into the collar bush and fixture clamp and screw onto the baseplate.
2. The workpiece is clamped by tightening the fixture clamp with a spanner.

Advantages:
- Compact design
- Quick and easy clamping of components

Drawing reference:
1) Locking screw
2) Collar bush
3) Fixture clamp



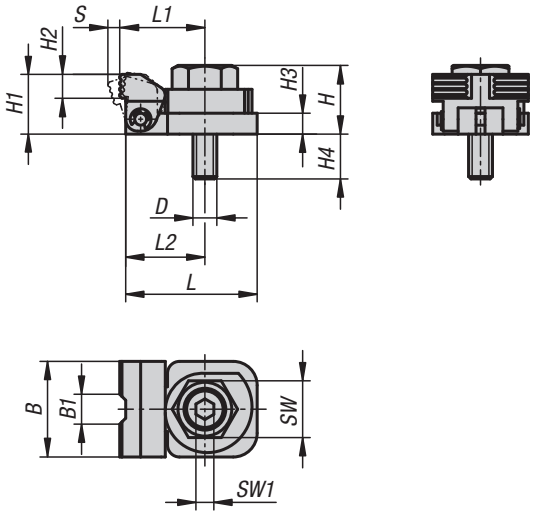


KIPP Clamping cams

Order No.	D	D1	H	H1	H2	L	L1	SW	SW1	Clamping force kN	Travel S	Tightening torque max. Nm
K1694.08	24	M8	16	8	12	12	16,4	19	6	5,2	4,4	50
K1694.10	30	M10	20	10	15	15	20,5	24	8	8	5,5	75
K1694.12	34	M12	24	12	18	17	23,2	27	10	9,3	6,2	90

Side clamps

with cam



Material:
Carbon steel.

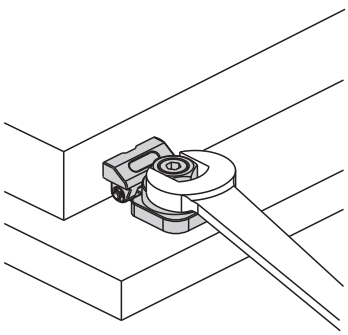
Version:
Black oxidised.

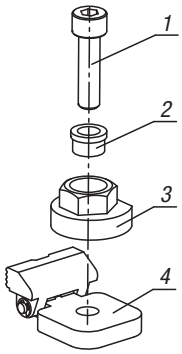
Sample order:
K1695.101

Assembly:
1. Screw the locking screw into the collar bush, fixture clamp and clamping unit and screw onto the baseplate.
2. The workpiece is clamped by tightening the fixture clamp with a spanner.

Advantages:
- Compact design
- Quick and easy clamping of components
- Pull-down effect

Drawing reference:
1) Locking screw
2) Collar bush
3) Fixture clamp
4) Clamping unit



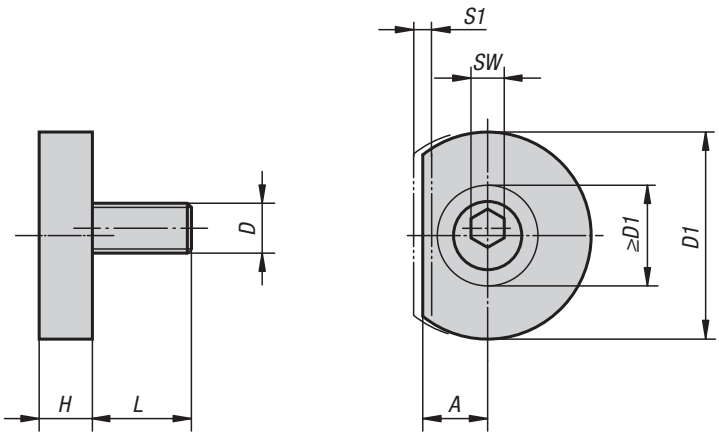


KIPP Side clamps with cam

Order No.	B	B1	D	H	H1	H2	H3	H4	L	L1	L2	SW	SW1	Travel S	Clamping force kN	Tightening torque max. Nm
K1695.081	32	10	M8	23	20	8	7	15	44	28,5	26,5	19	6	4	3,5	45
K1695.101	40	12	M10	29	25	10	9	16	54	35	33	24	8	5	5,5	55
K1695.121	46	14	M12	35	30	12	11	17	62	39,5	37,5	27	10	5,5	7	70

K0022

Fixture clamps machinable



Material:
Cam screw alloyed steel.
Clamping disc steel.

Version:
Cam screw and clamping disc black oxidised.

Sample order:
K0022.06

Note:
These fixture clamps have a round washer that can be machined to suit the contour of the workpiece being clamped. This allows positive clamping for round, contoured or fragile workpieces. The flat edge is the same distance from the screw centre as our hexagonal fixture clamps K0026 allowing an interchange between the two.

"A" = distance from workpiece to screw centre (cam screw).
"D1 min." = maximum depth of contour.

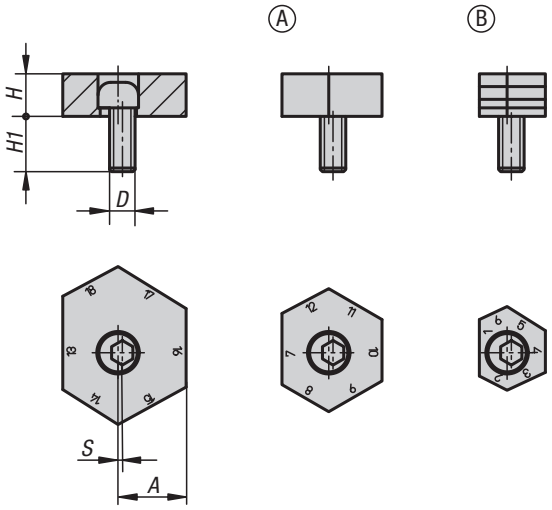
On request:
Replacement cam screws.

KIPP Fixture clamps machinable

Order No.	A	D	D1	D1 min.	H	L	SW	S1 (travel)	Clamping force kN
K0022.06	7,8	M6	24,9	12,1	6,4	11,9	4	1,01	3,3
K0022.10	10,2	M10	31,2	17,2	8,9	18	7	1,52	8,9
K0022.12	12,7	M12	37,6	22,4	11,4	22,9	8	2,03	17,8
K0022.16	15	M16	43,9	26,1	14	28,6	12	2,54	26,7

K0023

Fixture clamps unequal hexagon



Material:
Cam screw steel tempered to 10.9.
Hexagon washer mild steel.

Version:
Cam screw black oxidised.
Hexagon washer hardened and black oxidised.

Sample order:
K0023.13

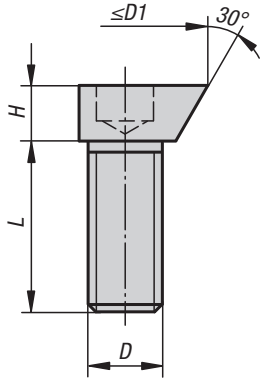
Note:
Theses unequal hexagon fixture clamps can minimise the cost of clamping in fixtures. The clamping range can be altered up to 17 mm from the same tapped hole. Simply rotate the hexagon washer.

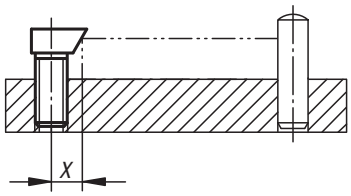
On request:
Replacement cam screws.

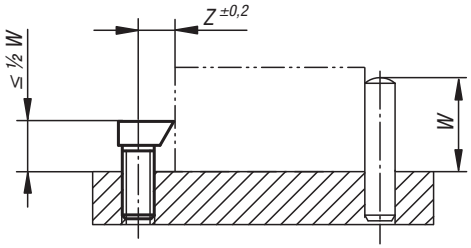
KIPP Fixture clamps unequal hexagon

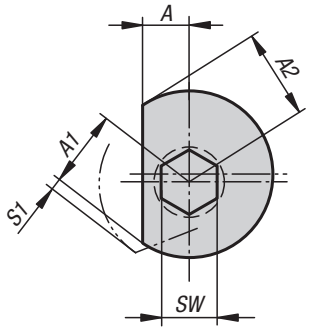
Order No. Form A smooth	Order No. Form B serrated	Distance A by face No.	D	H	H1	S (cam travel)	Clamping force kN
K0023.09	**K0023.13**	1/12, 2/13, 3/14, 4/15, 5/16, 6/17	M12	10	22	1	18
K0023.10	**K0023.14**	7/18, 8/19, 9/20, 10/21, 11/22, 12/23	M12	10	22	1	18
K0023.11	**K0023.15**	13/24, 14/25, 15/26, 16/27, 17/28, 18/29	M12	10	22	1	18

Spiral cam screws

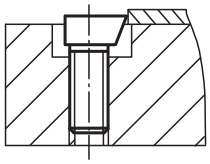








1)



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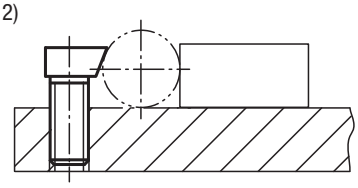


Material:
Steel.

Version:
Case-hardened (56 ±1 HRC) and blue electro zinc-plated.
Grade 8.8

Sample order:
K0024.0408

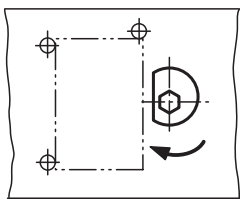
Note:
Robust, compact spiral cam clamping screws that exert a positive down force on diverse workpiece forms.

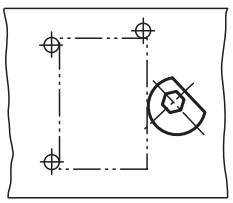
Assembly:
Drill and tap several holes at a distance X or Z (see diagram). Screw the cam screw into the required height and position with the flat side to the workpiece. Position the workpiece and tighten the cam screw with a hexagon key. Full clamping is achieved with approximately a 1/3 rotation. Lubricate the tapped hole regularly.

Place stops on the face towards which the screw turns to prevent the workpiece rotating away.

On request:
Spiral cam screws with LH thread.

Drawing reference:
1) clamping sheet metal
2) clamping round parts



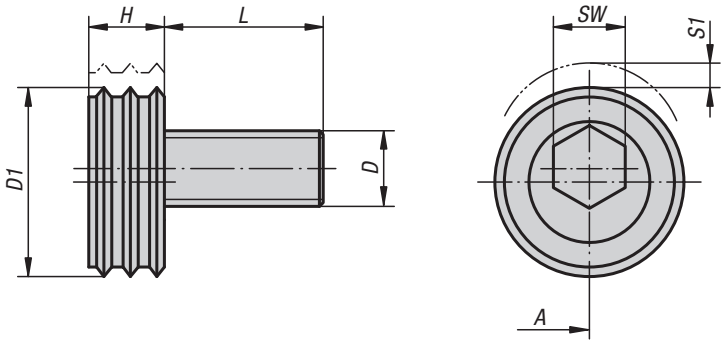


KIPP Spiral cam screws

Order No.	A	A1	A2	D	D1 max.	H	L	SW	S1 (travel)	X	Z	Clamping force kN	Tightening torque max. Nm
K0024.0408	3	4,6	4	M4	9,2	3	8	2,5	0,6	3,5	4,2	0,09	1,5
K0024.0510	3,5	5,7	5	M5	11,4	4	10	3	0,7	4,2	5,2	0,1	2
K0024.0612	4,5	7,1	6,1	M6	14,2	5	12	4	1	5,4	6,4	0,3	4,5
K0024.0816	5,5	8,9	7,7	M8	18	6	16	5	1,2	6,6	8	2,7	20
K0024.1020	6,5	11,1	9,4	M10	22,2	7	20	6	1,7	8,3	9,8	4	30
K0024.1224	8	13,5	11,6	M12	27	9	24	8	1,9	10,1	12	5,4	44

Cam screws

with knife edge washer



Material:
Knife edge washer.
Cam screw carbon steel.

Version:
Cam screw tempered to 10.9 and black oxidised.
Knife edge washer hardened and anodised.

Sample order:
K0025.16

Note:
Also called knife edge clamps.
The hardened knife edge washer is suitable for clamping rough cut stock, castings, forgings etc.

"A" = distance from workpiece to screw centre (cam screw).

On request:
Replacement cam screws.

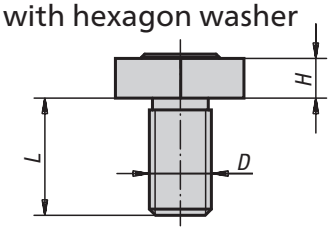
KIPP Cam screws with knife edge washer

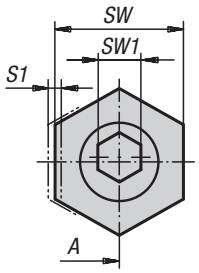
Order No.	A	D	D1	L	H	SW	S1 (travel)	Clamping force kN	Tightening torque max. Nm
K0025.12	12,7	M12	25,4	22,5	9,6	8	2	18	88
K0025.16	15	M16	30,1	26,8	12,7	12	2,5	27	135

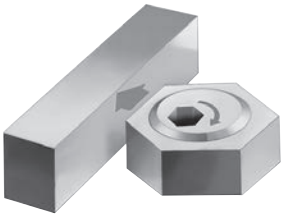
K0026

Cam screws

with hexagon washer







Material:
Cam screw carbon steel.
Hex washer brass.

Version:
Cam screw tempered to 10.9 and black oxidised.

Sample order:
K0026.12

Note:
Also called fixture clamps.
The minimal height of this fixture clamp allows numerous clamping problems in fixture and equipment construction to be solved. The brass hex washer offers a gentle yet extremely stable and safe clamping of workpieces. By using several fixture clamps entire pallets can be set-up.

"A" = distance from workpiece to screw centre (cam screw).

On request:
Replacement cam screws.

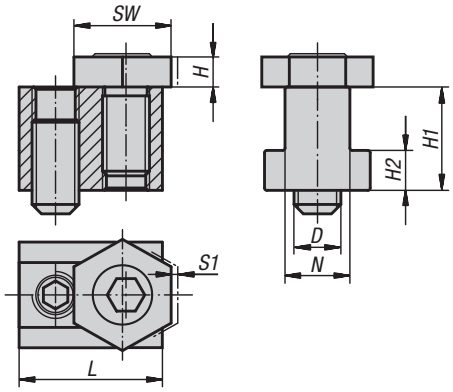
KIPP Cam screws with hexagon washer

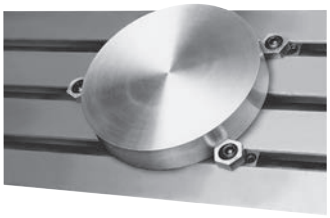
Order No.	A	D	H	L	SW	SW1	S1 (travel)	Clamping force kN	Tightening torque max. Nm
K0026.04	3,8	M4	2,8	10	8	3	0,8	0,9	2,2
K0026.06	7,8	M6	4,8	12	16	4	1	3,4	8,5
K0026.08	10,2	M8	4,8	15	20,6	5	1	3,6	11,3
K0026.10	10,2	M10	6,4	20	20,6	7	1,6	9,0	28,06
K0026.12	12,7	M12	9,5	25	25,4	8	2	18,0	88
K0026.16	15	M16	12,7	30	30,2	12	2,5	27,0	135

K0027

Cam screws

with hexagon washer, for T-slots





Material:
Carbon steel.
Hex washer brass.

Version:
Tempered to 10.9 and black oxidised.

Sample order:
K0027.12

Note:
Also called fixture clamps for T-slots.
These fixture clamps can be used directly on machine tables or other tables with T-slots. The grub screw at the rear locks the T-nut in the slot. Thin shims are recommended to prevent marking the bottom of the T-slot.

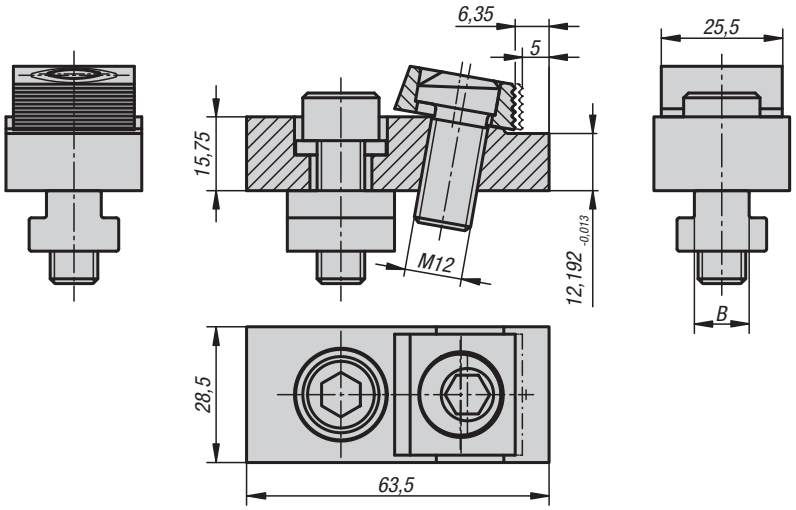
On request:
Replacement cam screws.

KIPP Cam screws with hexagon washer, for T-slots

Order No.	D	N	H	H1	H2	L	SW	S1 (travel)	Clamping force kN
K0027.08	M6	8	4,8	9,6	4,5	23	16	1	3,4
K0027.10	M6	10	4,8	14	4,5	23	16	1	3,4
K0027.12	M8	12	4,8	15,5	6,5	28	21	1	3,6
K0027.14	M10	14	6,4	22	8,5	30,5	21	1,6	9
K0027.16	M12	16	9,5	22,5	9	30,5	25	2	18
K0027.18	M12	18	9,5	28,5	10	34,5	25	2	18
K0027.20	M16	20	12,7	32	12	39	30	2,5	27
K0027.22	M16	22	12,7	38,2	14	44	30	2,5	27

K0028

Cam clamps with riser



Material:
Steel.

Version:
Body tempered and black oxidised.
Square washer case hardened and brass-plated.

Sample order:
K0028.16

Note:
Also called riser clamps.
These cam clamps with riser can be used directly on machine tables. A positive down force is exerted during clamping.

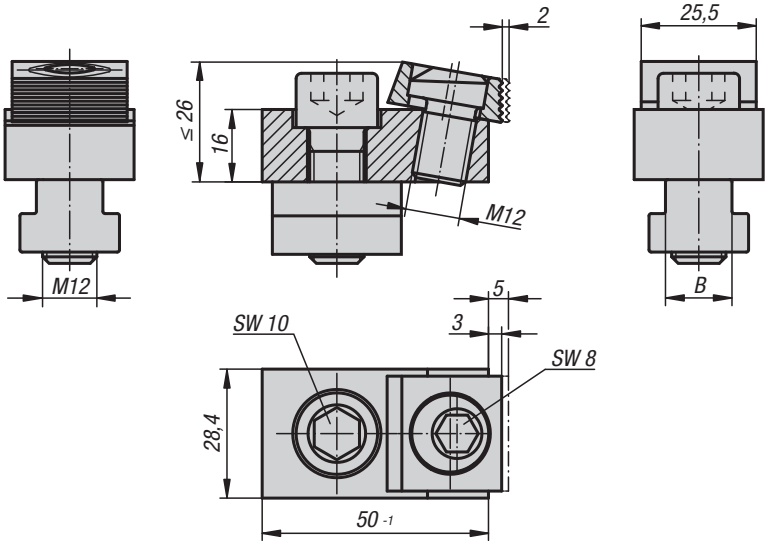
On request:
Replacement cam screws.

KIPP Cam clamps with riser

Order No.	B Slot width	Clamping force kN
K0028.12	12	12
K0028.14	14	12
K0028.16	16	12
K0028.18	18	12

K0029

Toe clamps for T-slots



Material:
Steel.

Version:
Body tempered and black oxidised.
Square washer case hardened and brass-plated.

Sample order:
K0029.14

Note:
These toe clamps can be used on machine tables or adapter plates. The positive down force holds the workpiece down on the supporting surface. The square washer can adapt slightly to an angular position i.e. the workpiece does not have to be exactly parallel. The clamping washer has a smooth side for machined surfaces and a serrated side for rough faces.

On request:
Replacement cam screws.

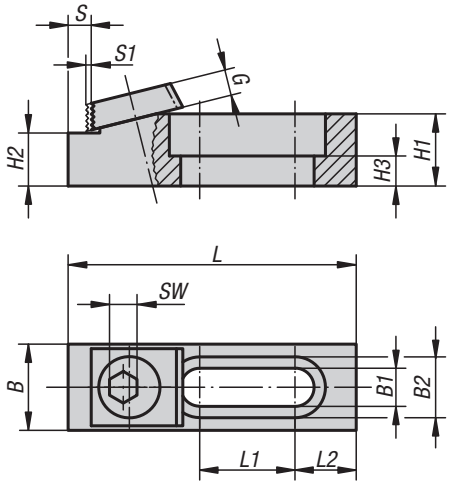
KIPP Toe clamps for T-slots

Order No.	B Slot width	Clamping force kN
K0029.00	without slot key	18
K0029.14	14	18
K0029.16	16	18
K0029.18	18	18

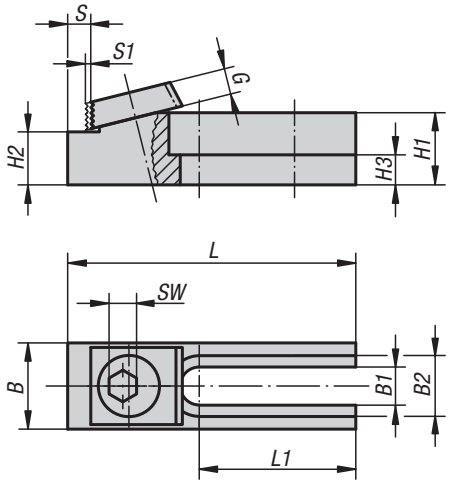
Cam clamps

adjustable with riser

K0031.08, K0031.12



K0031.16



Material:
Steel.

Version:
Body tempered, black oxidised, riser faces ground.
Square washer case hardened and brass-plated.

Sample order:
K0031.12

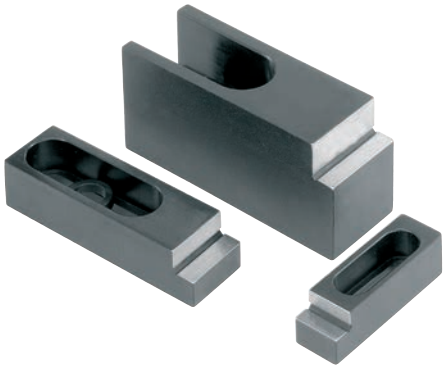
Note:
Also called multi-fixture clamps and stops.
Cost-effective custom made clamping fixtures can be produced using the adjustable riser cam clamps together with the matching riser stops.

On request:
Replacement cam screws.

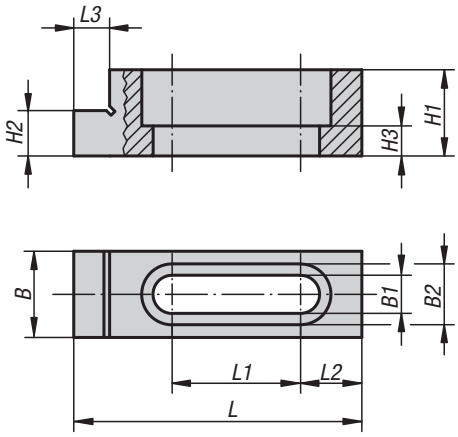
KIPP Cam clamps adjustable with riser

Order No.	suitable fastening screw	L	L1	L2	B	B1	B2	H1	H2	H3	S	S1	G	SW	Long hole	Clamping force kN	Tightening torque max. Nm
K0031.08	M8	63,5	21	13,5	19	8,4	13,4	15,9	11,684 -0,013	6,6	6,3	1,2	5,3	7	closed	8,9	28
K0031.12	M12	95,1	42,7	12,7	28,5	13	19,8	15,9	12,192 -0,013	6,9	7,1	2	9,5	8	closed	17,8	88
K0031.16	M16	107	46,3	-	38	17	24,8	41	35,001 -0,013	21	8,3	2,5	12,7	12	open	26,7	135

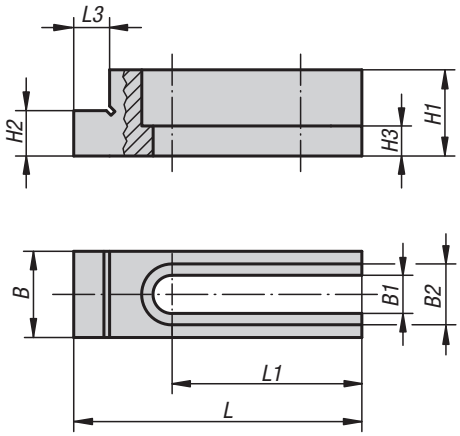
Riser stops



K0032.08, K0032.12



K0032.16



Material:
Steel.

Version:
Tempered, black oxidised.
Riser faces ground.

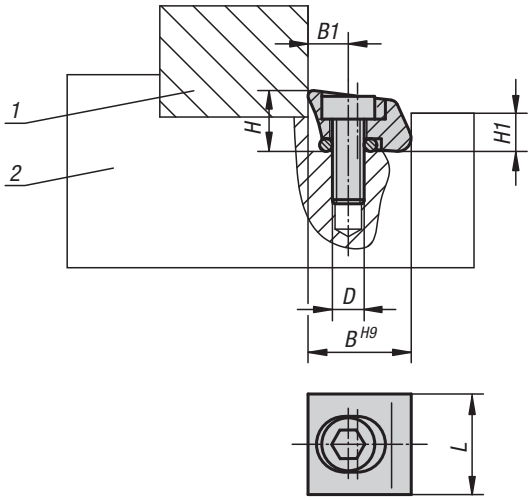
Sample order:
K0032.12

Note:
Also called multi-fixture clamps and stops.
Cost-effective custom made clamping fixtures can be produced using the adjustable riser cam clamps together with the matching riser stops.

KIPP Riser stops

Order No.	for screws	L	L1	L2	L3	B	B1	B2	H1	H2	H3	Long hole
K0032.08	M8	63,5	28,3	13,5	7,9	19	8,4	13,4	19	11,684 -0,013	6,6	closed
K0032.12	M12	95,2	42,7	12,7	7,9	28,5	13,4	19,8	22	12,192 -0,013	6,9	closed
K0032.16	M16	107	46,2	-	9,5	38	17	24,8	50,7	35,001 -0,013	21,3	open

Chock clamps



Material:
Clamping element steel or brass.

Version:
Steel hardened.

Sample order:
K0030.113

Note:
Also known as pitbull clamps.
Extremely space-saving design.
No protruding edges due to lateral clamping.
Positive down force.

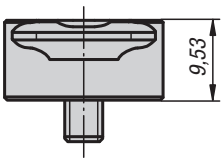
Drawing reference:
1) workpiece
2) Fixture

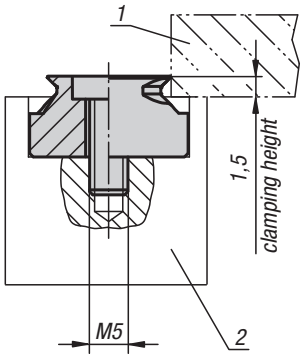
KIPP Chock clamps

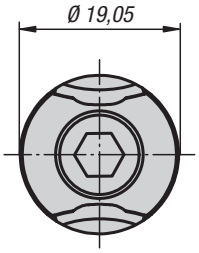
Order No.	Version	Main material	D	B	B1	H	H1	L	Clamping travel	Clamping force kN	Tightening torque max. Nm
K0030.110	with knife edge	steel	M2,5x8	9,5	3,8	6	3,6	9,5	0,15	2,8	1,8
K0030.113	with knife edge	steel	M4x12	12,7	5,1	8	4,8	13	0,4	6,6	5,6
K0030.119	with knife edge	steel	M6X16	19,05	7,6	11,5	7,2	19	0,6	16	22,5
K0030.210	with blunt edge	steel	M2,5x8	9,5	3,8	6	3,6	9,5	0,15	2,8	1,8
K0030.213	with blunt edge	steel	M4x12	12,7	5,1	8	4,8	13	0,4	6,6	5,6
K0030.219	with blunt edge	steel	M6X16	19,05	7,6	11,5	7,2	19	0,6	16	22,5
K0030.310	with blunt edge	brass	M2,5x8	9,5	3,8	6	3,6	9,5	0,15	0,9	0,56
K0030.313	with blunt edge	brass	M4x12	12,7	5,1	8	4,8	13	0,4	1,8	2,8
K0030.319	with blunt edge	brass	M6X16	19,05	7,6	11,5	7,2	19	0,6	4,2	5,6

Talon grips round

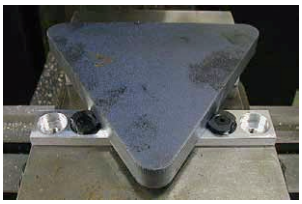
talon grip







special components



round components

Material:
Steel.

Version:
Hardened (52+2 HRC) and black oxidised.

Sample order:
K1957.0919

Note:
Talon grips are meant for installing into vice jaw plates. A tapped hole with counterbore is sufficient for the mounting. The sharp edges on the talons bite into the workpiece and prevent lateral and horizontal movement.

- Positive clamping for high cutting speeds.
- Low clamping height of 1.5 mm (saves material costs).
- The contour of the talons produces a slight pull-down effect.

Talon grips expand the application possibilities of your machine vice. Round, contoured and oversized workpieces can be quickly and securely clamped by using talon grips.

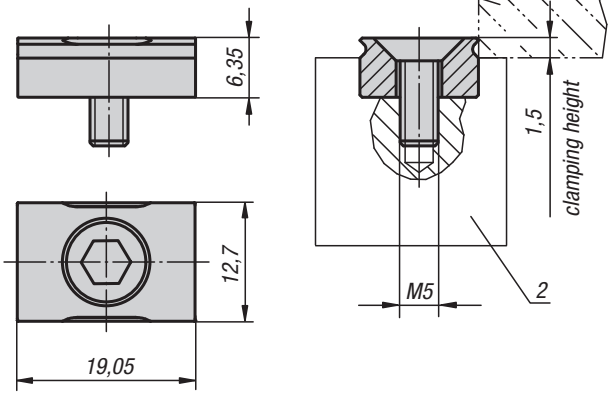
Drawing reference:
1) workpiece
2) clamping jaw

KIPP Round talon grip

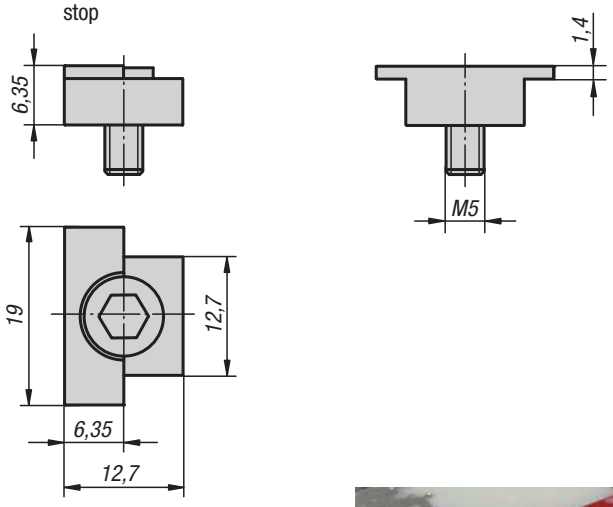
Order No.	Version
K1957.0919	talon grip

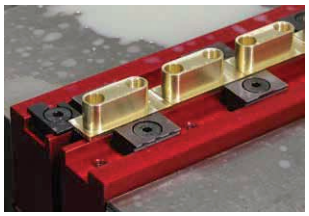
Talon grips

talon grip



stop





Material:
Steel.

Version:
Hardened (52+2 HRC) and black oxidised.

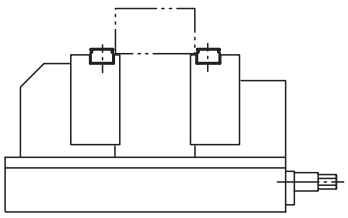
Sample order:
K1958.1219

Note:
Talon grips are meant for installing into vice jaw plates. A slot with tapped hole is sufficient for mounting. The sharp edges on the talons bite into the workpiece and prevent lateral and horizontal movement.

- Positive clamping for high cutting speeds.
- Low clamping height of 1.5 mm (saves material costs).
- The contour of the talons produces a slight pull-down effect.

A matching stop is available as an accessory.

Drawing reference:
1) workpiece
2) clamping jaw

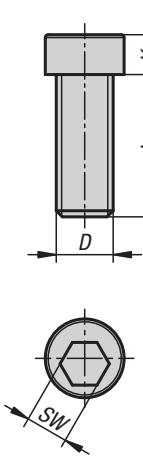


KIPP talon grip

Order No.	Version
K1958.1219	talon grip
K1958.12	stop

Replacement screw for cam screws

Ⓐ



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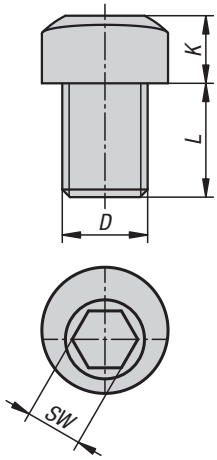


Material:
Cam screw carbon steel.

Sample order:
K1969.0612

Note:
Replacement screw for fixture clamps and cam screws.

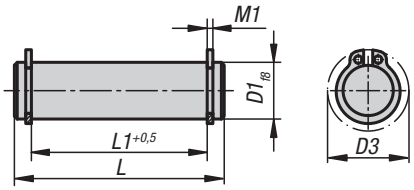
Accessories:
Machinable fixture clamps K0022.
Clamping cams K1694.
Unequal hexagon fixture clamps K0023.
Cam screws with knife edge washer K0025.
Cam screws with hexagon washer K0026.
Cam screws with hexagon washer for T-slots K0027.
Toe clamps for T-slots K0029
Toe clamps with adjustable riser K0031.
Toe clamps compact k0036.

KIPP Replacement screw for cam screws

Order No.	Form	D	K	L	SW
K1969.0410	A	M4	2,8	10	3
K1969.0612	A	M6	4	12	4
K1969.0815	A	M8	4,8	15	5
K1969.1013	A	M10	5,5	11,5	7
K1969.1020	A	M10	6,4	20	7
K1969.1624	A	M16	9,7	24	12
K1969.1630	A	M16	9,7	30	12

Order No.	Form	D	K	L	SW
K1969.1216	B	M12	6,6	16	8
K1969.1225	B	M12	6,3	25	8

Hinge pins steel or stainless steel



Material:
Steel or stainless steel.

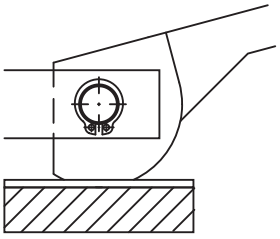
Version:
Steel version:
tempered to 1000 - 1200 N/mm², black oxidised.
Stainless steel version:
tempered to 900 - 1050 N/mm², bright.

Sample order:
K0007.08

Note for ordering:
2 matching DIN 471 circlips are supplied.

Note:
For use with:
Cam levers K0008 and K0009.
Eye bolts K0396 and K1418.
Clevis K0397.

Advantages:
Ground OD.
High dimensional accuracy.
Suitable for use as spare part.
Matching circlips included.

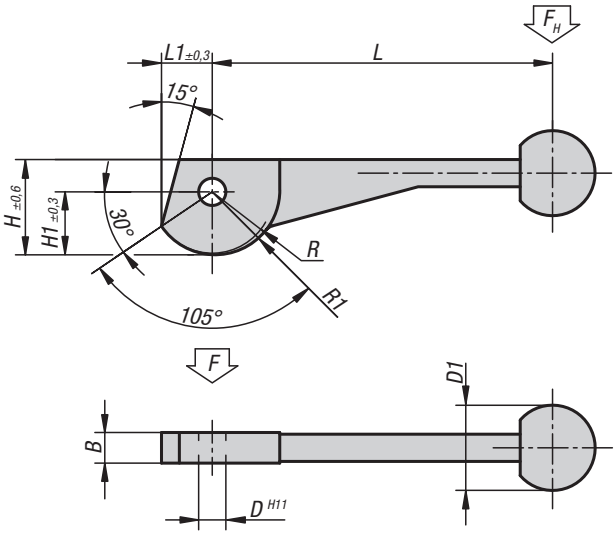


KIPP Hinge pins steel or stainless steel

Order No. steel	Order No. stainless steel	D1	L	L1	M1	D3
K0007.05	K0007.105	5	18	13	0,7	10,7
K0007.06	K0007.106	6	22	17	0,8	12,2
K0007.081	K0007.108	8	20	16	0,9	15,2
K0007.082	K0007.1081	8	27	21	0,9	15,2
K0007.08	K0007.1082	8	30	25	0,9	15,2
K0007.101	K0007.110	10	25	20	1,1	17,6
K0007.102	K0007.1101	10	35	29	1,1	17,6
K0007.10	K0007.1102	10	37	32	1,1	17,6
K0007.121	K0007.112	12	31	25	1,1	19,6
K0007.122	K0007.1121	12	37	31	1,1	19,6
K0007.12	K0007.1122	12	46	40	1,1	19,6
K0007.14	K0007.114	14	44	37	1,1	22
K0007.16	K0007.116	16	48	41	1,1	24,4
K0007.18	K0007.118	18	58	51	1,3	26,8

Cam levers

single



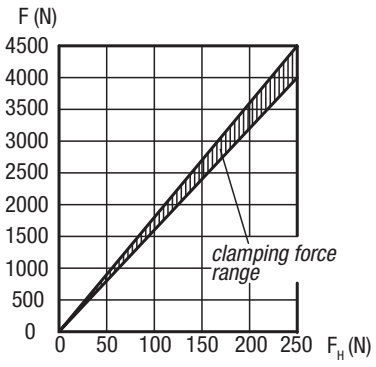
Material:
Carbon steel 1.7220.
Ball grip plastic.

Version:
Tempered and black oxidised.

Sample order:
K0008.10

Note:
Suitable hinge pin, see K0007.
The cam lever is an eccentric lever that moves along a logarithmic spiral. Its clamping properties are even over the entire contact surface of the cam.

Force diagram

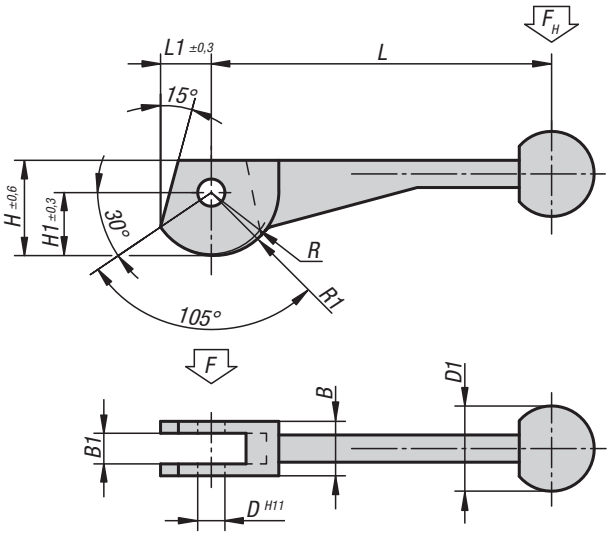


KIPP Cam levers, single

Order No.	L	L1	B	H	H1	D	D1	R	R1
K0008.08	104±2	14,9	9	28,2	18,7	8	25	17,2	19,2
K0008.10	123±2	18,6	12	34,8	23,3	10	30	21,5	24
K0008.12	146±3	24,3	14	43,8	30,3	12	30	28	31,2

Cam levers

double



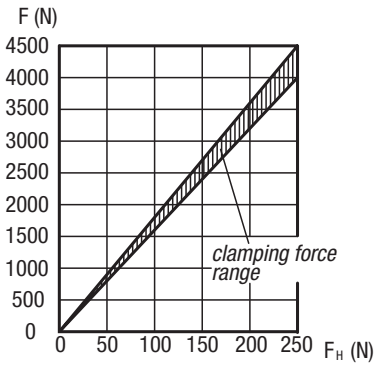
Material:
Carbon steel 1.7220.
Ball grip plastic.

Version:
Tempered and black oxidised.

Sample order:
K0009.12

Note:
Suitable hinge pin, see K0007.
The cam lever is an eccentric lever that moves along a logarithmic spiral. Its clamping properties are even over the entire contact surface of the cam.

Force diagram

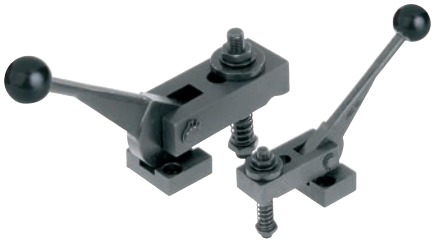


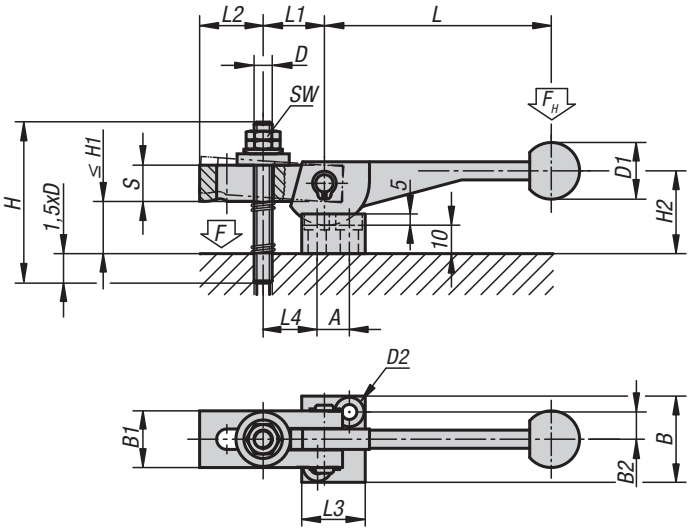
KIPP Cam levers, double

Order No.	L	L1	B	B1	H	H1	D	D1	R	R1
K0009.08	104±2	14,9	16	9	28,2	18,7	8	25	17,2	19,2
K0009.10	123±2	18,6	20	12	34,8	23,3	10	30	21,5	24
K0009.12	146±3	24,3	25	14	43,8	30,3	12	30	28	31,2

Cam clamps

single



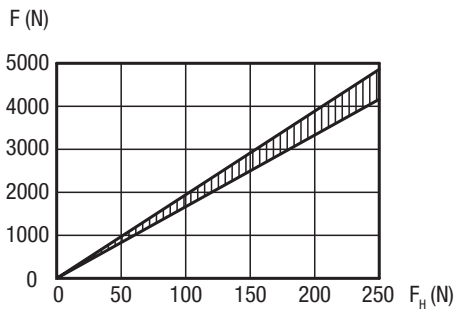


Material:
Cam lever carbon steel 1.7220.
Strap carbon steel 1.1191.

Version:
Black oxidised.

Sample order:
K0010.10

Force diagram

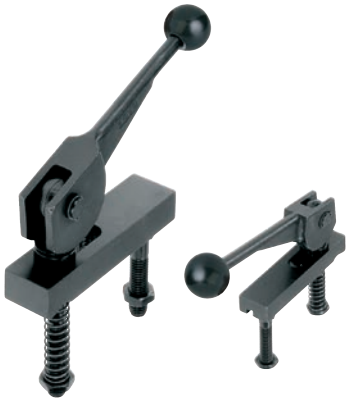


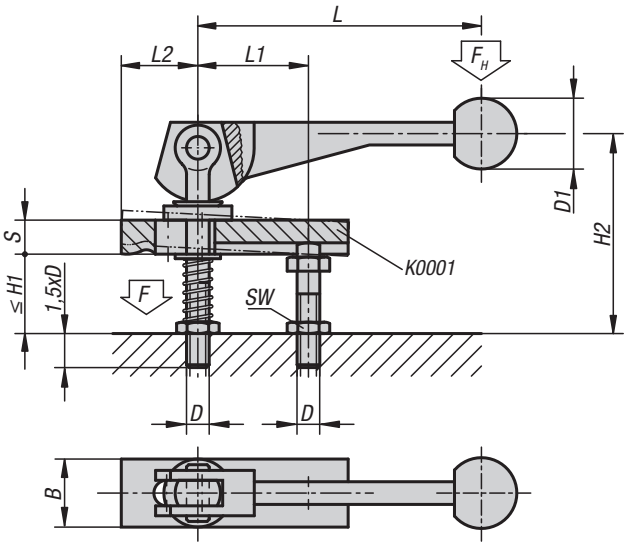
KIPP Cam clamps, single

Order No.	L	L1	L2	L3	L4	B	B1	B2	S	H	H1 max.	H2	D	D1	D2	A	SW
K0010.08	104±2	27	28	28	27	38	25	12	16	70	25	34	M8	25	7	14	13
K0010.10	123±2	34	36	32	35	41	32	13,5	20	80	24	40	M10	30	7	16	17
K0010.12	146±3	43	45	37	45	43	40	14,5	25	100	31	48	M12	30	7	19	19

Cam clamps

double



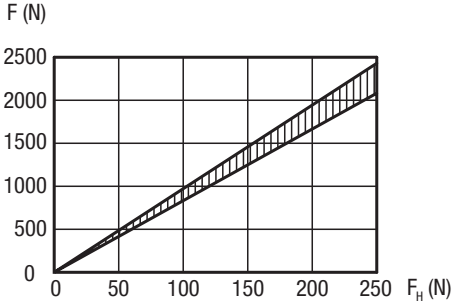


Material:
Cam lever carbon steel 1.7220.
Strap carbon steel 1.1191

Version:
Black oxidised.

Sample order:
K0011.12

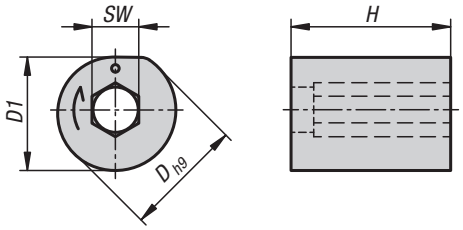
Force diagram



KIPP Cam clamps, double

Order No.	L	L1	L2	B	S	H1 max.	H2	D	D1	SW
K0011.08	104±2	39	37	20	12	28	74	M8	25	13
K0011.10	123±2	49	46	25	16	39	92	M10	30	17
K0011.12	146±3	61	58	32	20	49	120	M12	30	19

Clamp cam brass



Material:
Brass.

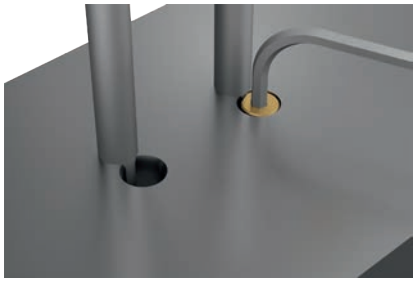
Sample order:
K1457.0808

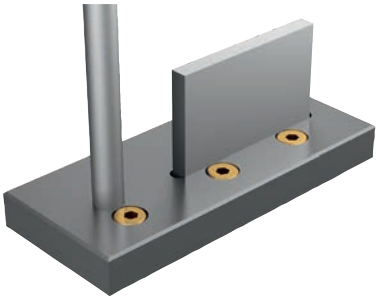
Application:
These clamping cams are used to fixate components in workpieces.
The clamped components can be easily and quckly released again.
Workpieces and components can be acurately positioned in an assembly.

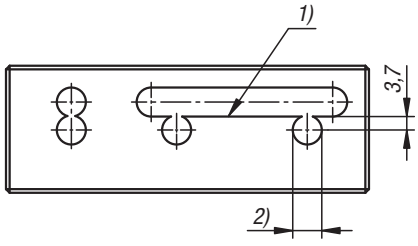
Advantages:
Using the cam clamps often saves the need for complex cross holes for clamping screws.
The bore for the clamping cam can be produced cost-effectively in the same machine set-up as the bore or slot for the component to be clamped.

Functional principle:
Insert the component to be clamped and the clamping cam into the workpiece. The indent mark on the clamp cam top face should be adjacent the part to be clamped.
The clamp cam is rotated with an hex key in the direction of the arrow.
The part can be released again by turning the cam in the opposite direction.

Drawing reference:
1) Clamping edge
2) 8 H9 min. depth 8





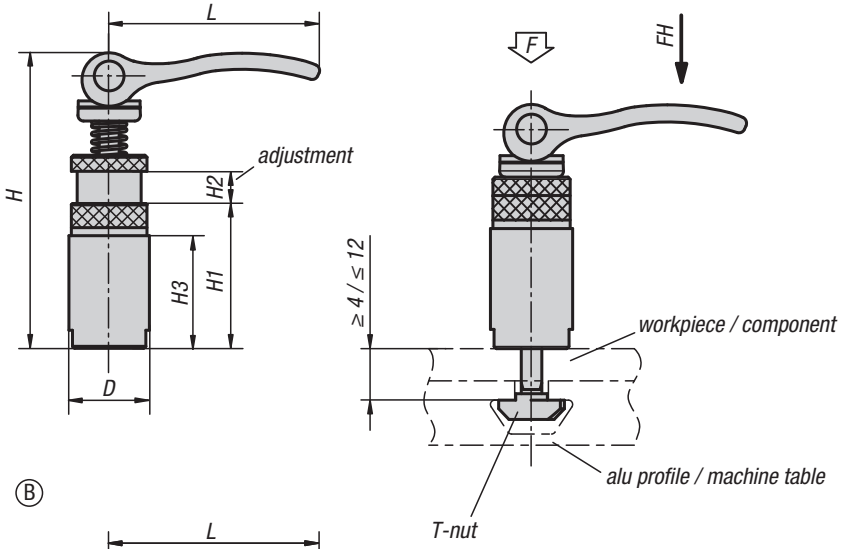


KIPP Clamp cam brass

Order No.	D	D1	H	SW
K1457.0808	8	7,5	8	3

Eccentric clamp modules

Ⓐ



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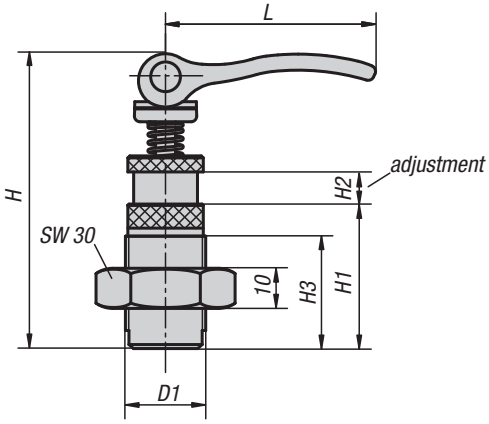


Material:
Body steel.
Cam levers cast aluminium.

Version:
Body black oxidised.
T-nut electro zinc-plated.
Cam levers black powder coated.

Sample order:
K0754.00200808

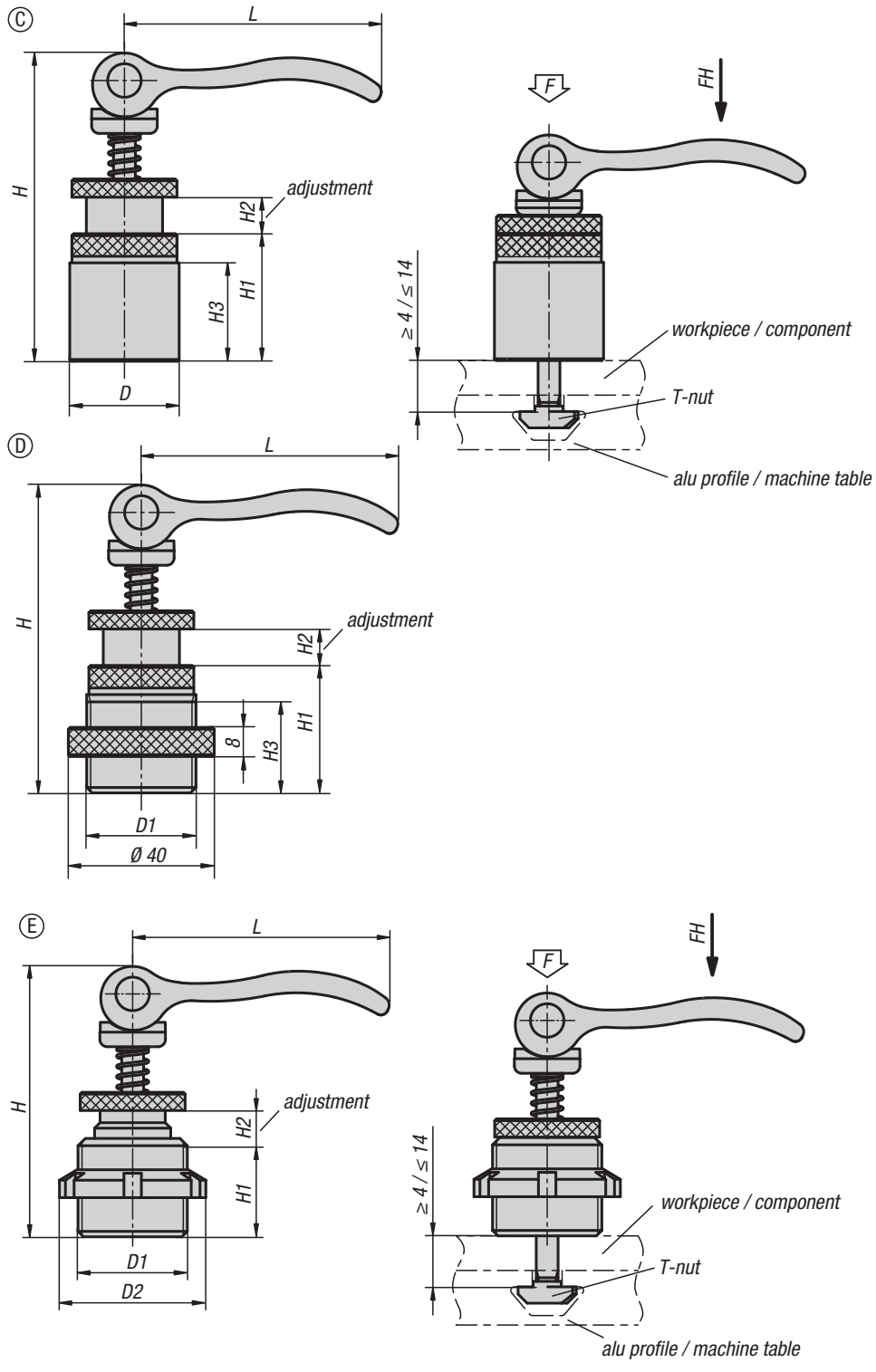
Note:
The clamp module is inserted into the T-slot from above and secured using the cam lever, no other tools required.

Advantages:
The eccentric clamp modules can be used on conventional aluminium profile systems or on T-slot tables as stops, fasteners or clamps for components and workpieces.

KIPP Eccentric clamp modules

Order No.	Form	D	D1	H	H1	H2	H3	L	suitable for slot width	Clamping force F (kN)	Hand force FH N
K0754.00200808	A	20	-	73,5	36	8	28	52,3	8	2,5	100
K0754.10200808	B	-	M20x1,5	73,5	36	8	28	52,3	8	2,5	100

Eccentric clamp modules

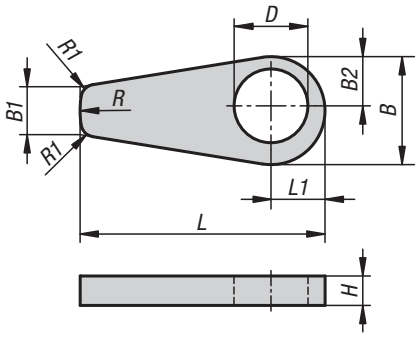


Order No.	Form	D	D1	H	H1	H2	H3	L	suitable for slot width	Clamping force F (kN)	Hand force FH N
K0754.21150606	C	15	-	34	10	6	7	35	6	1,5	90
K0754.21201008	C	20	-	44	13	8	10	52	8	2,5	100
K0754.21301008	C	30	-	84,6	35	10	25	70,4	8	4	120
K0754.31301008	D	-	M30x2	84,6	35	10	25	70,4	8	4	120

Order No.	Form	D1	D2	H	H1	H2	L	suitable for slot width	Clamping force F (kN)	Hand force FH N
K0754.41150706	E	M15X1	25	39	14	7	35	6	1,5	90
K0754.41200908	E	M20X1	32	50	18	9	52	8	2,5	100

Cam clamps

for eccentric clamp modules



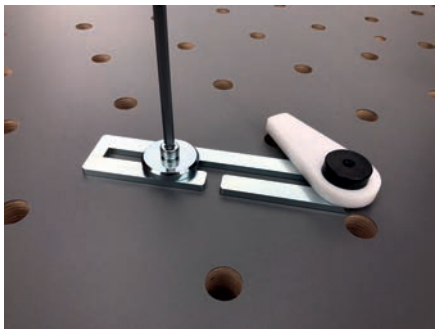
Material:
Steel or POM

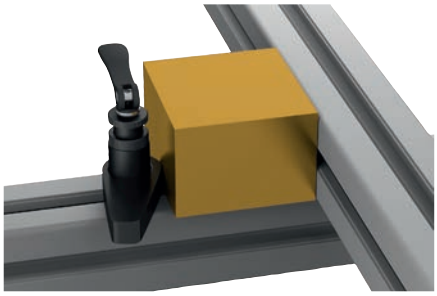
Version:
black oxidised. White.

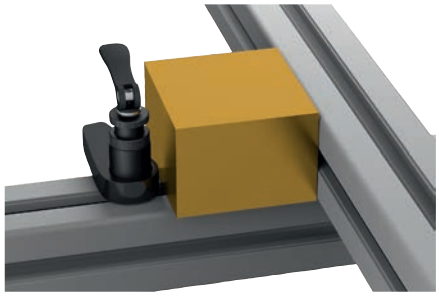
Sample order:
K1212.2008

Note:
Cam clamps for indirect clamping of sensitive parts in combination with pivot bearings or Form C eccentric clamp modules.

Advantages:
Tool-less operation.







KIPP Cam clamps for eccentric clamp modules

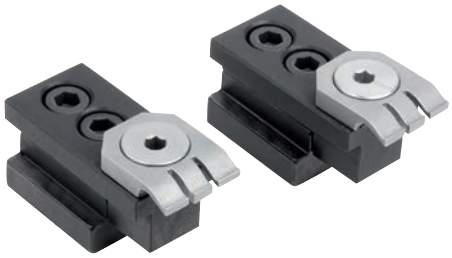
Order No.	Main material	B	B1	B2	D	H	L	L1	R	R1
K1212.1506	steel	22,1	10	10,05	15,1	6	50	11,05	22	3
K1212.2008	steel	29,4	13,34	13,37	20,1	8	66,67	14,7	29,4	3
K1212.3010	steel	44,1	20	20,05	30,1	10	100	22,05	44	3
K1212.23010	POM	44,1	20	20,05	30,1	10	100	22,05	44	3

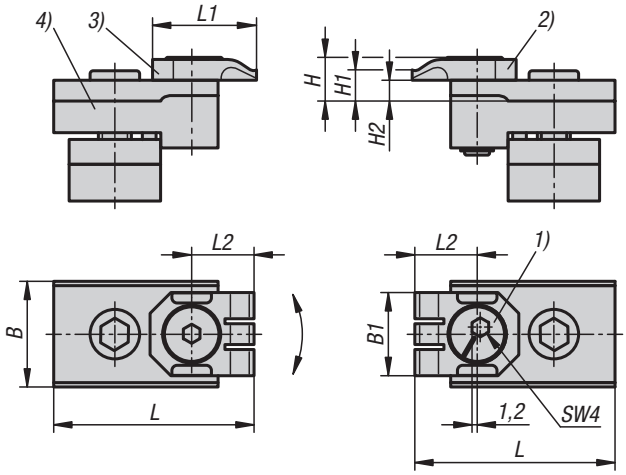
Notes

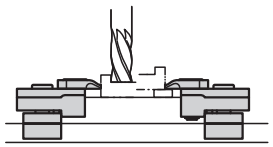
T-slot clamps

Flat clamps, steel

for T-slot







Workpiece clamped directly on the table top or supported on rests from below (e.g for drilling though).

Material:
Steel body.
Clamping element and stop made from spring steel.

Version:
Base element tempered.

Sample order:
K1540.10

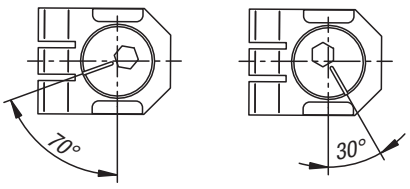
Note for ordering:
The order number includes one pair, made up of a clamping element and a stop.

Note:
By turning the cam screw on the clamping element the workpiece is forced downwards (positive down force). The clamping element also forces the workpiece against the stop, thereby providing a flat parallel seating.
The stop side provides a reference that makes precise replications possible.
Cam hub: 1.2 mm.

Application:
Suitable for clamping multiple and individual parts on fixtures and T-slot tables.

Drawing reference:
1) Cam screw
2) Clamping element
3) Stop
4) Body

Using the cam

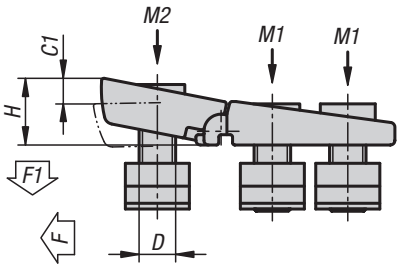


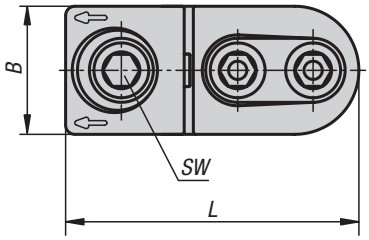
Quick clamp 1/4 rotation

KIPP Flat clamp, steel, for T-slot

Order No.	B	B1	H	H1	H2	L	L1	L2	SW	Slot width	F kN	Tightening torque Nm
K1540.10	18	20	10,5	7,5	5	46	25	15	4	10	4	9
K1540.12	18	20	10,5	7,5	5	48	25	15	4	12	4	9
K1540.14	22	20	10,5	7,5	5	52	25	15	4	14	4	9
K1540.16	25	20	10,5	7,5	5	48	25	15	4	16	4	9
K1540.18	25	20	10,5	7,5	5	48	25	15	4	18	4	9

T-slot clamps





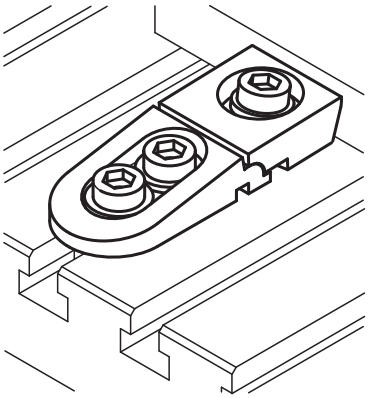
Material:
Clamping element (front) steel 1.7225.
Retaining element (rear) steel 1.0503.
Cap screws and slot keys grade 8.8 steel.

Version:
Body parts hardened and nickel-plated.
Fasteners black oxidised.

Sample order:
K1413.1214

Note:
Particularly low workpieces can be clamped using the T-slot clamps. The positive down force helps to hold the workpiece down on the machine table.

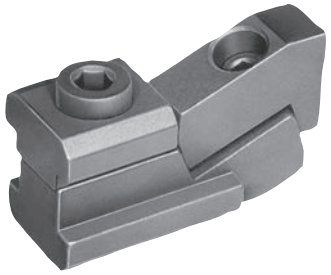
Application:
1. Slide the clamp in the machine table T-slot up to the workpiece.
2. Tighten the fastening screws with the appropriate torque.
3. Tighten the clamping screw to clamp the workpiece in place.

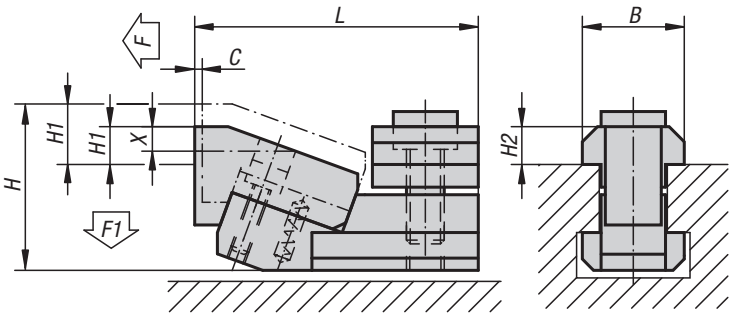


KIPP T-slot clamps

Order No.	Slot width	B	C1	D	H	L	SW	F kN	F1 kN	Tightening torque M1 Nm	Tightening torque M2 Nm
K1413.1214	14	44	8	M12	25	112	10	15	7,5	65	52
K1413.1618	18	56	10	M16	30	132	14	25	12,5	150	120
K1413.2022	22	62	11	M20	35	155	17	36	18	300	240

T-slot clamps



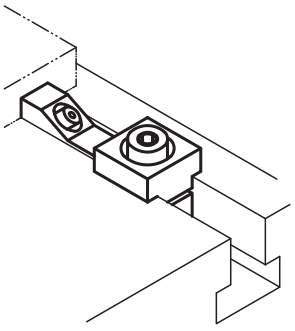


Material:
Steel.

Version:
Hardened, black oxidised.

Sample order:
K1230.12

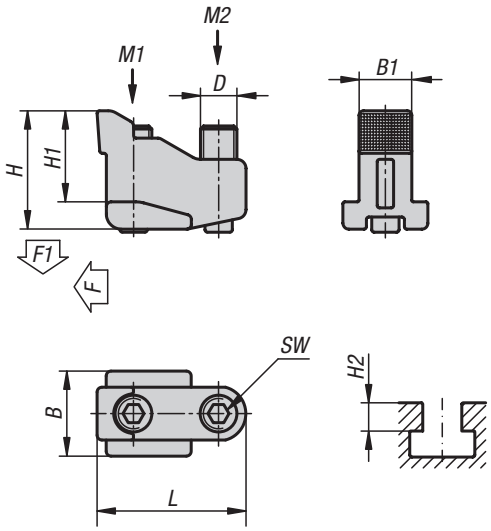
Note:
These T-slot clamps are especially useful for clamping low profile workpieces. The wedge operated jaws also provide positive down force.
Dimensions “H1” and “X” depend on the max. T-slot depth acc. to DIN 650.
To achieve the minimal clamping height by the minimal slot depth, the jaw can be ground down by the dimension “X”.



KIPP T-slot clamps

Order No.	Slot width	C	L	B	H	H1 min.	H1 max.	X	H2	F kN	F1 kN
K1230.12	12	1,8	52	18	31	3,5	8,5	5	7	5	0,6
K1230.14	14	1,8	55	22	34	2,5	7,5	5	8	5,5	0,7
K1230.16	16	2,5	68	25	41	4	11	6	9	8	0,9
K1230.18	18	2,5	71	28	43	2	9	6	10	9	1
K1230.22	22	3	89	35	53	5	14	9	14	16	1,9

T-slot clamps



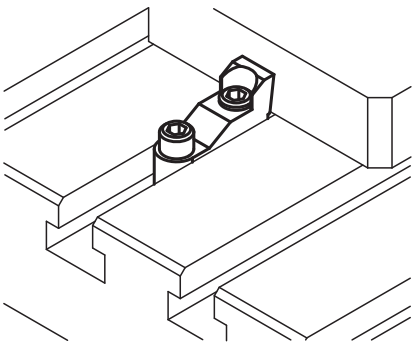
Material:
Body steel 1.7225.
Screws steel grade 8.8.

Version:
Body hardened and nickel-plated.
Screws black oxidised.

Sample order:
K1412.1014

Note:
Particularly low workpieces can be clamped using the T-slot clamps. The positive down force pushes the workpiece down on the machine table.

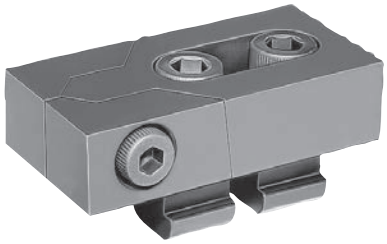
Application:
1. Slide the clamp in the machine table T-slot up to the workpiece.
2. Tighten the fastening screws with the appropriate torque.
3. Tighten the clamping screw to clamp the workpiece in place.

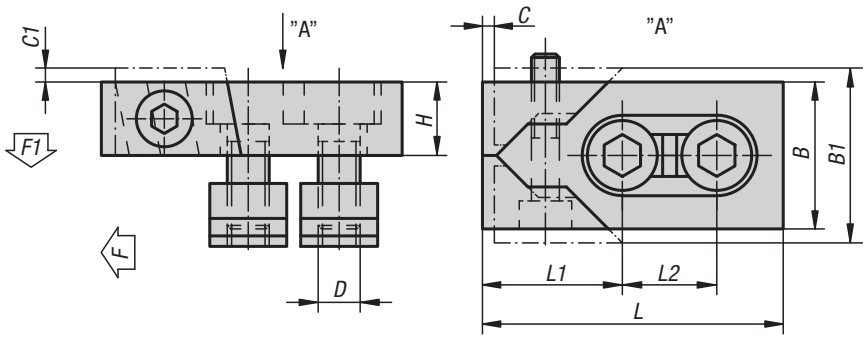


KIPP T-slot clamp

Order No.	Slot width	B	D	H	H1	H2	L	SW	B1	F kN	F1 kN	Tightening torque M1 Nm	Tightening torque M2 Nm
K1412.1214	14	22	M10	31	24	14-19	40	5	13,6	7	3,5	18	9
K1412.1618	18	28	M12	39	30	18-24	49	6	17,4	10	5	32	15
K1412.2022	22	35	M16	50	37	22-30	63	8	21,5	-	8	75	35

Low-profile clamps



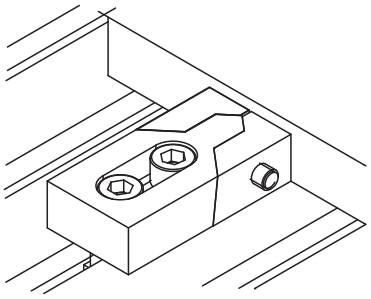


Material:
Steel.

Version:
Hardened, black oxidised.

Sample order:
K1229.16

Note:
These handy low-profile clamp jaws are ideal for machining most workpiece sizes. The hardened wedge operated jaws also provide positive down force.



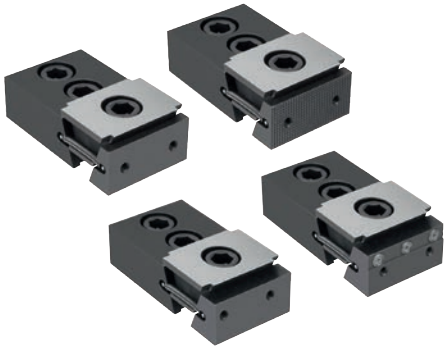
KIPP Low-profile clamps

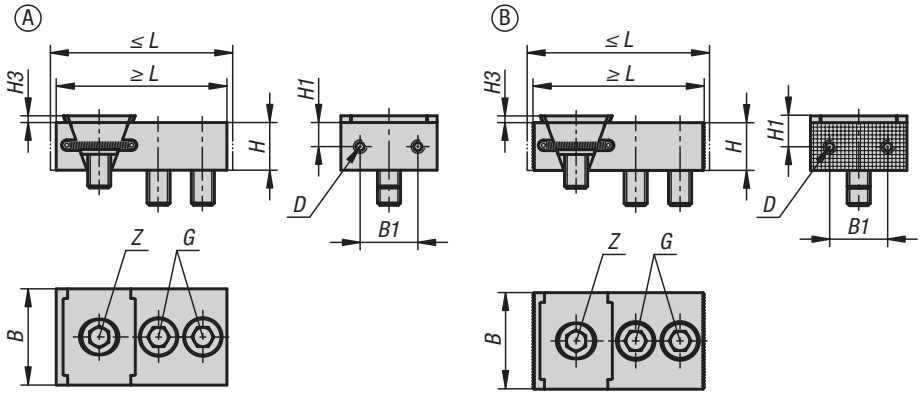
Order No.	Slot width	L	L1	L2	B	B1	H	C	C1	D	F kN	F1 kN	Tightening torque max. Nm
K1229.12	12	80	39	26	40	47	20	3	2,5	M10	16	0,6	15
K1229.14	14	80	39	26	40	47	20	3	2,5	M12	22	0,9	18
K1229.16	16	80	39	26	40	47	20	3	3	M12	22	0,9	18
K1229.161	16	100	46	34	50	59	25	4	2,5	M14	32	1,2	25
K1229.18	18	100	46	34	50	60	25	4	3	M16	36	1,4	35
K1229.20	20	100	46	34	50	60	25	4	3	M16	36	1,4	35
K1229.22	22	140	65	50	78	95	30	5	4	M20	36	1,4	45

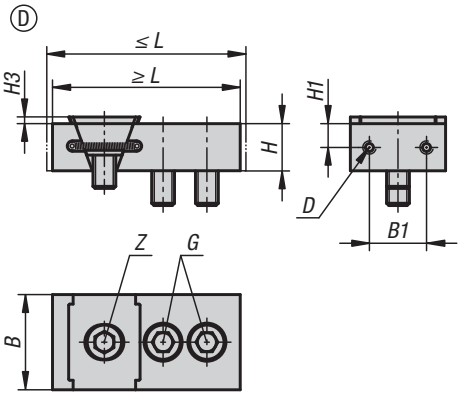
Notes

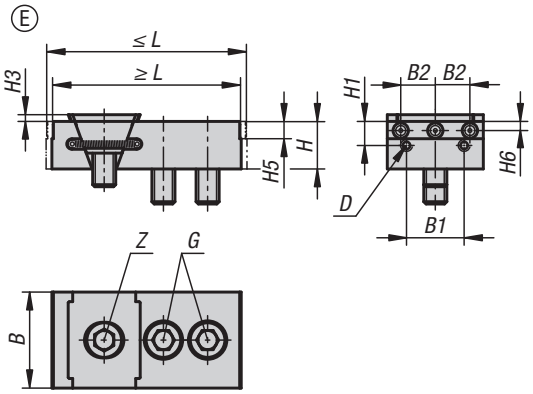
Wedge clamps

Wedge clamps with fixed jaw









The functioning principle make the wedge clamps ideal for multi-clamping.
The wedge shape creates high clamping forces.
These wedge clamps set into a T-slot for clamping.
Tightening the clamping screw moves the clamping segments outwards and presses the workpiece against the fixed jaws of the machining fixture.
The wedge has a slightly elongated hole allowing for movement to compensate for tolerances.
Displacement: M12 = ±1,0 mm.

Material:
Double wedge and clamping segments mild steel.

Version:
Double wedge and clamping segments hardened, phosphated.

Sample order:
K1745.0502

Note:
The two screw-on holes in the clamping faces also enable seating ledges to be mounted so as to optimise the clamping depth of the workpieces.
The underside is carbide-coated. This increases the coefficient of friction.

Supplied with:
Wedge clamps
Fastening screws.

Drawing reference:
Form A: Smooth jaw face
Form B: Serrated jaw face
Form D: With machining allowance
Form E: With jaw pins

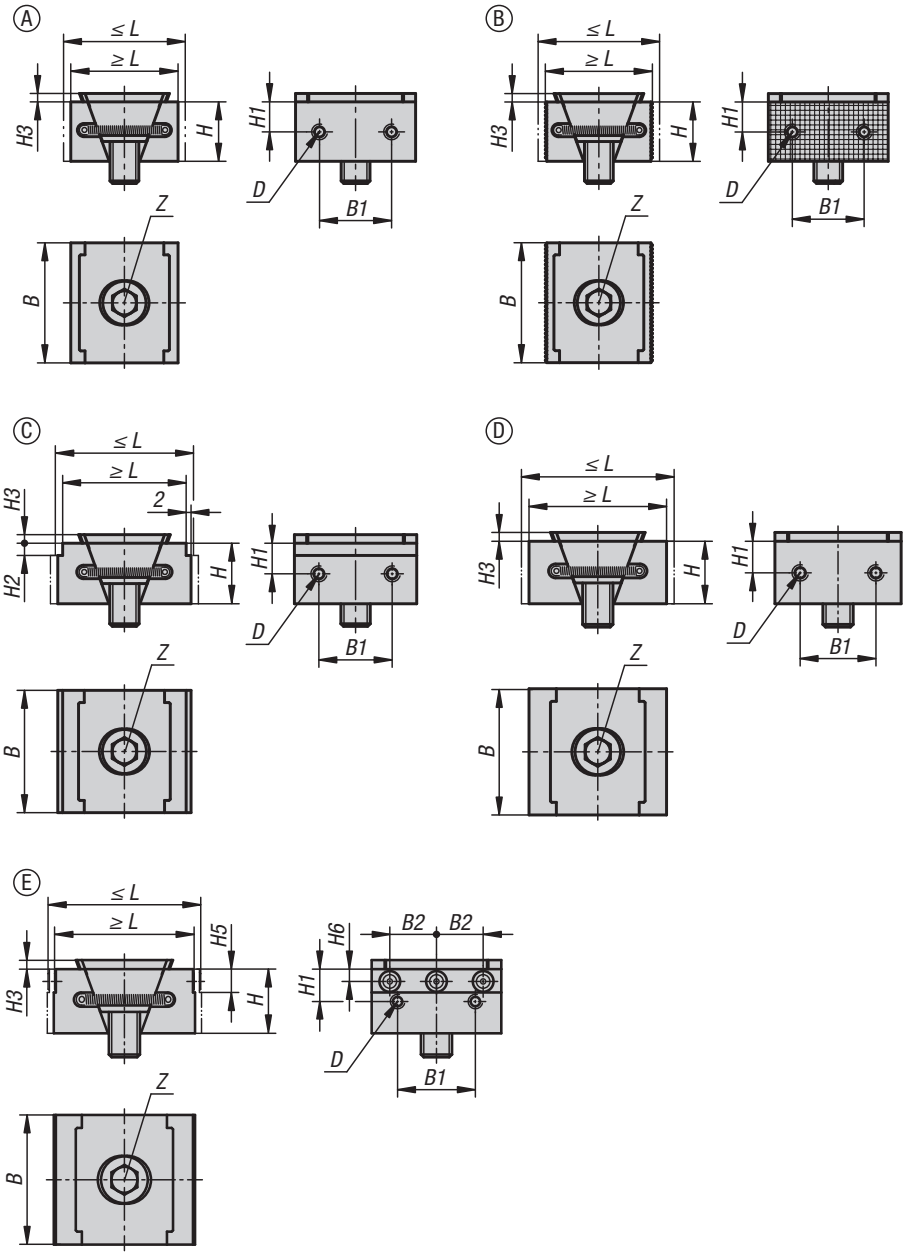
Wedge clamps with fixed jaw

KIPP Wedge clamps with fixed jaw

Order No.	Form	L min.	L max.	B	H	B1	B2	H1	H3	H5	H6
K1745.0500112	A	88,5	94,5	50	25	30	-	12,5	3,5	-	-
K1745.0500212	B	88,5	94,5	50	25	30	-	12,5	3,5	-	-
K1745.0500412	D	98,5	104,5	50	25	30	-	12,5	3,5	-	-
K1745.0500512	E	98	104	50	25	30	18	12,5	3,5	9	4,75

Order No.	Form	D Internal thread	G cap screw DIN 912	Z cap screw DIN 912	Clamping force max. kN	Tightening torque max. Nm
K1745.0500112	A	M5	M12x30	M12x25	30	85
K1745.0500212	B	M5	M12x30	M12x25	30	85
K1745.0500412	D	M5	M12x30	M12x25	30	85
K1745.0500512	E	M5	M12x30	M12x25	30	85

Wedge clamps



The functioning principle make the wedge clamps ideal for multi-clamping.
The wedge shape creates high clamping forces.
The wedge clamps can be used for clamping in conjunction with the clamping rail or mounted in tapped holes or T-slots.
Tightening the clamping screw moves the two clamping segments outwards and press the work-pieces against the fixed jaws of the machining fixture.
The double wedge has an elongated hole allowing for movement and to compensate for tolerances.
Displacement: M12 = ±1 mm.

Material:
Double wedge and clamping segments mild steel.

Version:
Double wedge and clamping segments hardened, phosphated.

Sample order:
K1748.05002

Note:
The two screw-on holes in the clamping faces also enable seating ledges to be mounted so as to optimise the clamping depth of the workpieces.

Supplied with:
Wedge clamps.
Fastening screw.

Drawing reference:
Form A: Smooth jaw face
Form B: Serrated jaw facet
Form C: With step
Form D: With machining allowance
Form E: With jaw pins

Wedge clamps

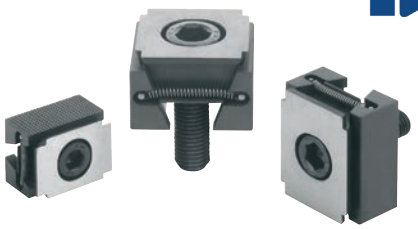
KIPP Wedge clamps

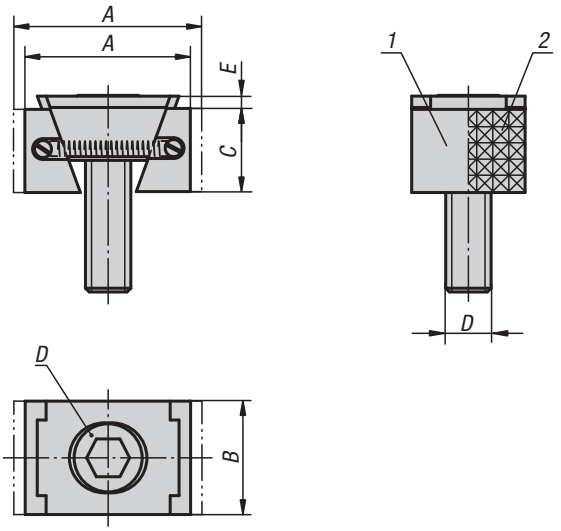
Order No.	Form	L min.	L max.	B	H	B1	B2	H1	H2	H3	H5	H6
K1748.0500112	A	44,5	50,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0500212	B	44,5	50,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0502312	C	50,5	56,5	50	25	30	-	12,5	2	3,5	-	-
K1748.0505312	C	50,5	56,5	50	25	30	-	12,5	5	3,5	-	-
K1748.0500412	D	54,5	60,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0500512	E	54	60	50	25	30	18	12,5	-	3,5	9	4,75

Order No.	Form	D Internal thread	Z cap screw DIN 912	Clamping force max. kN	Tightening torque max. Nm
K1748.0500112	A	M5	M12x25	30	85
K1748.0500212	B	M5	M12x25	30	85
K1748.0502312	C	M5	M12x25	30	85
K1748.0505312	C	M5	M12x25	30	85
K1748.0500412	D	M5	M12x25	30	85
K1748.0500512	E	M5	M12x25	30	85

Wedge clamps

jaw face smooth or serrated





Material:
Wedge and jaw segments carbon steel.

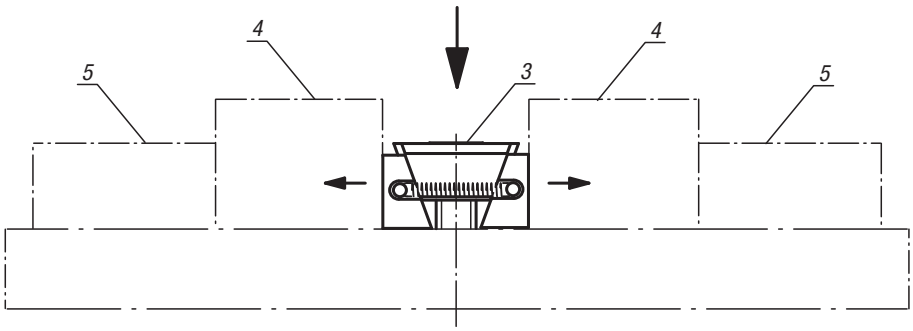
Version:
Wedge and jaw segments hardened, black.

Sample order:
K0039.2208

Note:
The functioning principle make the wedge clamps ideal for series clamping. The wedge form can exert high clamping forces.
These wedge clamps can be mounted in grid holes or T-slots. Tightening the socket screw moves the wedge down and the jaws out pressing the workpieces against the fixtures fixed stops.
The wedge has a slightly elongated hole allowing for movement to compensate for tolerances.

Spread width:
M8 = ±0.5 mm
M10 = ±1.0 mm
M12 = ±1.0 mm
M16 = ±1.5 mm

Drawing reference:
D) DIN 6912 cap screw



1) Jaw face smooth
2) Jaw face serrated
3) Wedge clamps
4) Workpiece
5) Fixed stop

KIPP Wedge clamps, narrow version

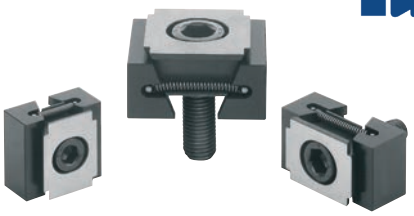
Order No. smooth	Order No. serrated	A min.	A max.	B	C	D	E	Clamping force max. kN	Tightening torque max. Nm
K0039.1108	**K0039.2108**	30,5	33,5	24	15	M8X25	2	15	25
K0039.1110	**K0039.2110**	32	37	28	19	M10X25	3,5	20	49
K0039.1112	**K0039.2112**	44	49,5	30	22	M12X40	3,5	30	85
K0039.1116	**K0039.2116**	55	62	40	29	M16X60	4	50	210

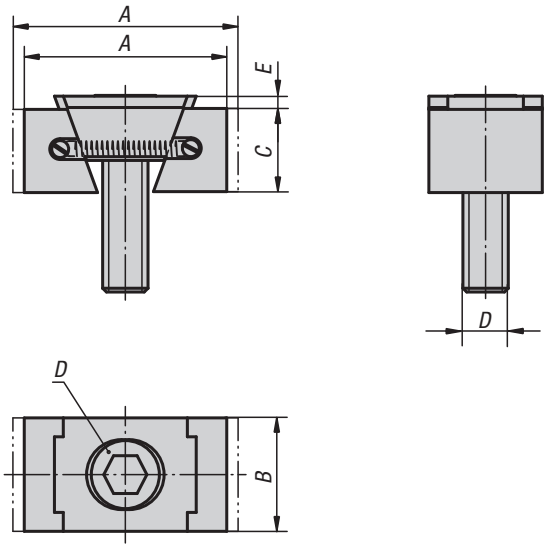
KIPP Wedge clamps, wide version

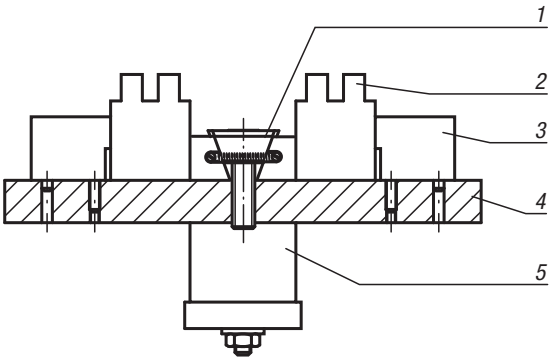
Order No. smooth	Order No. serrated	A min.	A max.	B	C	D	E	Clamping force max. kN	Tightening torque max. Nm
K0039.1208	**K0039.2208**	30,5	33,5	30	15	M8X25	2	15	25
K0039.1210	**K0039.2210**	32	37	38	19	M10X25	3,5	20	49
K0039.1212	**K0039.2212**	44	49,5	48	22	M12X40	3,5	30	85
K0039.1216	**K0039.2216**	55	62	48	29	M16X60	4	50	210

Wedge clamps

machinable







Material:
Wedge and jaw segments carbon steel.

Version:
Wedge and jaw segments hardened, black.

Sample order:
K0649.3110

Note:
The special feature of these wedge clamps is the machinable jaws. This extra material enables the jaws to be machined to suit the geometry of the workpiece. In addition, the functioning principle makes them suitable for series clamping. The wedge shape creates high clamping forces.
The wedge clamps can be mounted in tapped holes or T-slots. Tightening the clamping screw moves the two clamping segments outwards and press the workpieces against the fixed jaws of the machining fixture.
The wedge has a slightly elongated hole allowing for movement to compensate for tolerances.

Spread width:
M8 = ±0.5 mm
M10 = ±1.0 mm
M12 = ±1.0 mm
M16 = ±1.5 mm

Attention:
These wedge clamps have a machining allowance per jaw of 3 mm for version M8 and 5 mm for versions M10, M12 and M16.

Drawing reference:
D) DIN 6912 cap screw

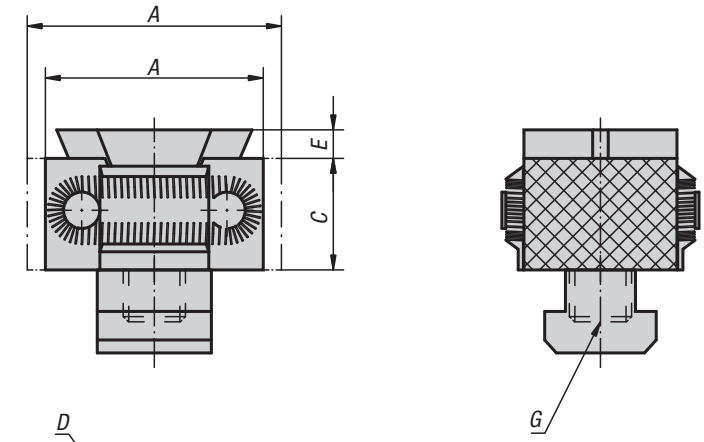
1) wedge clamps
2) workpiece
3) fixed stop
4) base plate
5) hydraulic/pneumatic cylinder

KIPP Wedge clamps machinable

Order No.	Version	A min.	A max.	B	C	D	E	Clamping force max. kN	Tightening torque max. Nm
K0649.3108	double sided	36,5	39,5	24	15	M8X25	2	11	19
K0649.3110	double sided	42	47	28	19	M10X25	3,5	15	37
K0649.3112	double sided	54	59,5	30	22	M12X40	3,5	23	65
K0649.3116	double sided	65	72	40	29	M16X60	4	38	160
K0649.3208	double sided	36,5	39,5	30	15	M8X25	2	11	19
K0649.3210	double sided	42	47	38	19	M10X25	3,5	15	37
K0649.3212	double sided	54	59,5	48	22	M12X40	3,5	23	65
K0649.3216	double sided	65	72	48	29	M16X60	4	38	160

Wedge clamps

jaw faces serrated



Material:
Body and clamping segments tool steel.

Version:
Body hardened.
Jaw segments hardened (49-51 HRC) black oxidised.
Wedge faces ground.

Sample order:
K0040.1618

Note:
The compact design makes these wedge clamps ideal for horizontal and vertical series clamping. The hardened and ground wedge faces can exert high clamping forces.
These wedge clamps can be mounted in grid holes or T-slots. Tightening the DIN 912 socket screw moves the wedge down and the jaws out pressing the workpieces against the fixtures fixed stops.

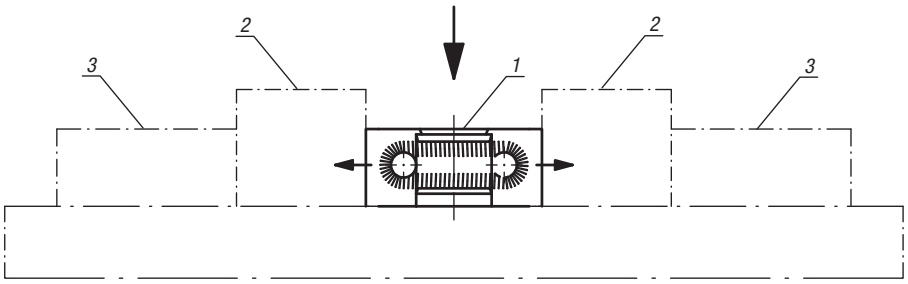
The jaws of version K0040.08 and K0040.0810 are not serrated.

The wedge has a slightly elongated hole allowing for movement.

Spread width:
K0040.08 = ±0.5 mm
K0040.12 = ±1.0 mm
K0040.16 = ±1.5 mm.

Drawing reference:
D) DIN 912 cap screw

1) Wedge clamps
2) Workpiece
3) Fixed stop

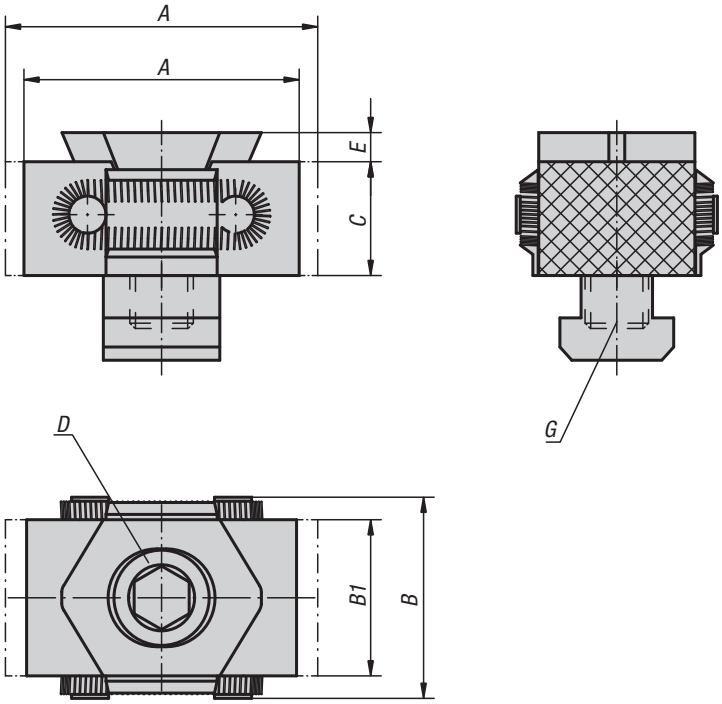


KIPP Wedge clamps, jaw faces serrated

Order No.	Version 1	A min.	A max.	B	B1	C	D	E	Version 2	G	Clamping force max. kN	Tightening torque max. Nm
K0040.08	smooth	27	31	29	21	15	M8X25	2,5	for tapped hole	M8	15	25
K0040.0810	smooth	27	31	29	21	15	M8X25	2,5	for t-slot	10	15	25
K0040.12	serrated	42	49	41	30	22	M12X40	4	for tapped hole	M12	30	85
K0040.1214	serrated	42	49	41	30	22	M12X30	4	for t-slot	14	30	85
K0040.16	serrated	57	66	56	42	29	M16X60	5	for tapped hole	M16	50	210
K0040.1618	serrated	57	66	56	42	29	M16X50	5	for t-slot	18	50	210

Wedge clamps

machinable



Material:
Body tool steel.
Jaw segments tool steel (30 HRC).

Version:
Body hardened.
Jaw segments black oxidised.
Wedge faces ground.

Sample order:
K0041.12

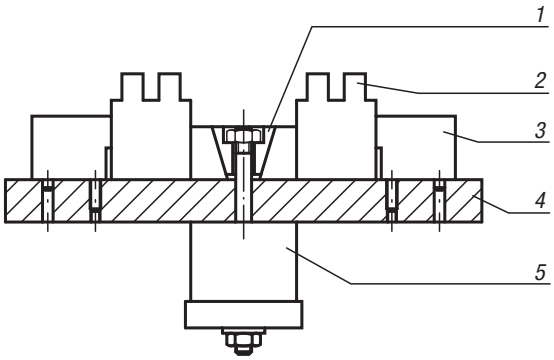
Note:
These wedge clamps have a machining allowance per jaw of 3 mm for version K0041.08 and 5 mm for versions K0041.12 and K0041.16.
This extra material allows the jaws to machined to suit the form of the workpiece.

The jaws version K0041.08 and K0041.0810 are not serrated.

Spread width:
K0041.08 = ±0.5 mm
K0041.12 = ±1.0 mm
K0041.16 = ±1.5 mm

On request:
Pre-formed jaw segments or other hardness grades.

Drawing reference:
D) DIN 912 cap screw



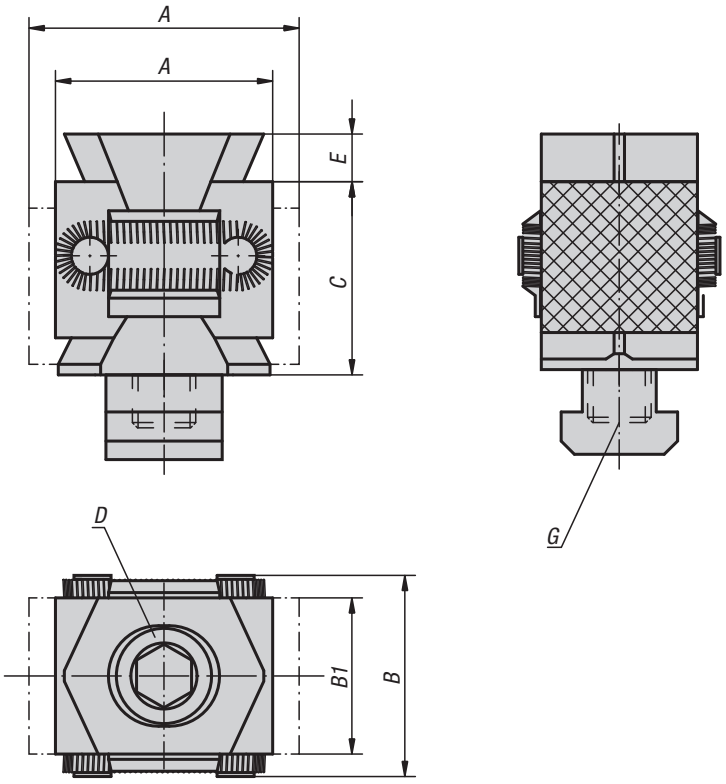
1) wedge clamps
2) workpiece
3) fixed stop
4) base plate
5) hydraulic/pneumatic cylinder

KIPP Wedge clamps machinable

Order No.	A min.	A max.	B	B1	C	D	E	Version 2	G	Clamping force max. kN	Tightening torque max. Nm
K0041.08	33	37	29	21	15	M8X25	2,5	for tapped hole	M8	15	25
K0041.0810	33	37	29	21	15	M8X25	2,5	for t-slot	10	15	25
K0041.12	52	59	41	30	22	M12X40	4	for tapped hole	M12	30	85
K0041.1214	52	59	41	30	22	M12X30	4	for t-slot	14	30	85
K0041.16	67	76	56	42	29	M16X60	5	for tapped hole	M16	50	210
K0041.1618	67	76	56	42	29	M16X50	5	for t-slot	18	50	210

Wedge clamps double

jaw faces serrated



Material:
Body and jaw segments tool steel.

Version:
Body hardened.
Jaw segments hardened (49-51 HRC) and black oxidised.
Wedge faces ground.

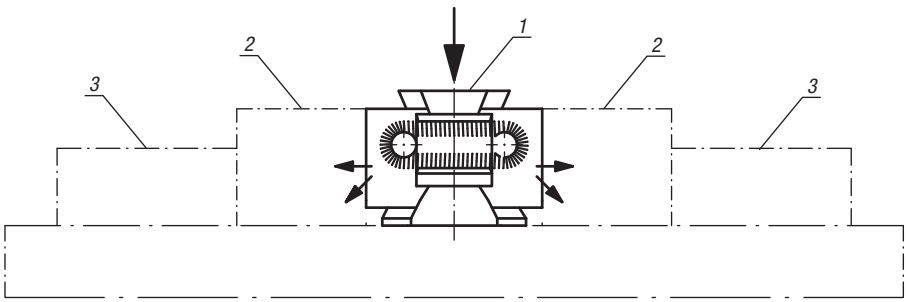
Sample order:
K0042.1214

Note:
The compact design makes these double wedge clamps ideal for horizontal and vertical series clamping. The hardened and ground wedge faces can exert high clamping forces.
These wedge clamps can be mounted in grid holes or T-slots. Tightening the DIN 912 socket screw pulls the wedges together and the jaws out pressing the workpieces against the fixtures fixed stops.
The double wedges create a positive down force.

Spread width:
K0042.12 = ±1.0 mm
K0042.16 = ±1.5 mm

Drawing reference:
D) DIN 912 cap screw

1) Wedge clamps
2) Workpiece
3) Fixed stop

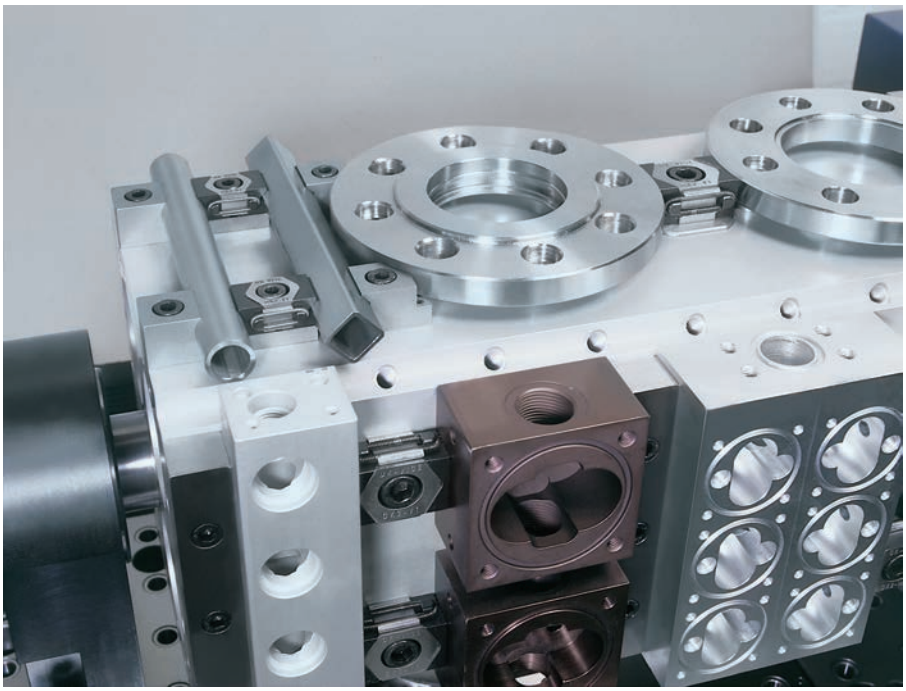


KIPP Wedge clamps double wedge, jaw faces serrated

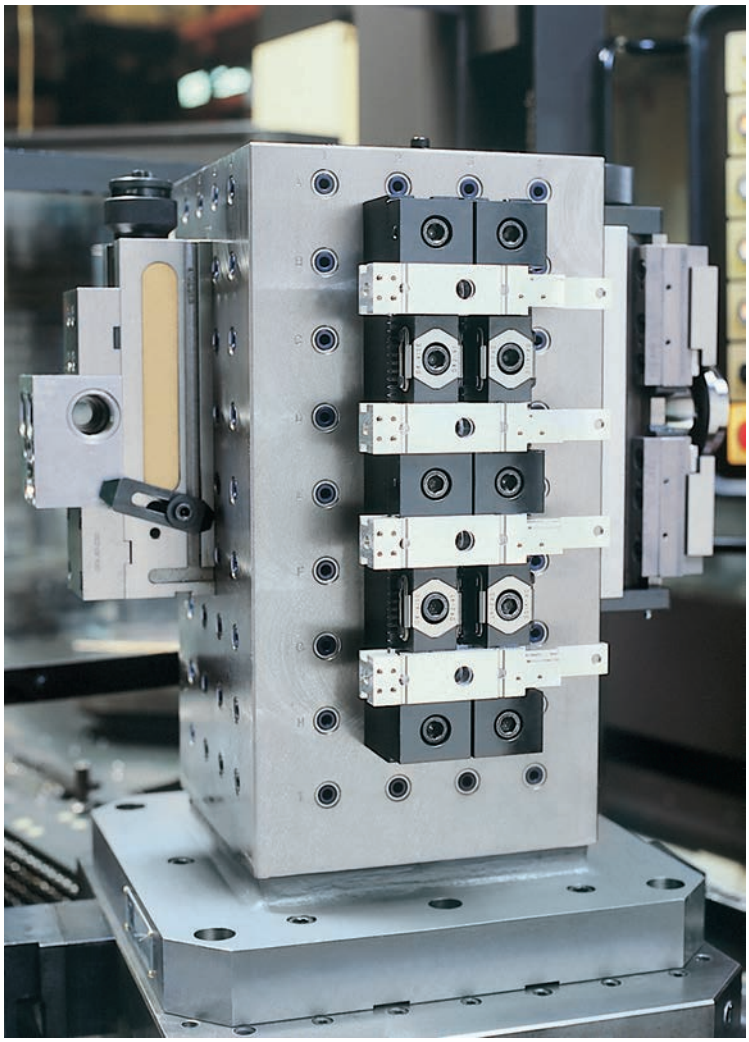
Order No.	A min.	A max.	B	B1	C	D	E	Version 2	G	Clamping force max. kN	Tightening torque max. Nm
K0042.12	42	49	41	30	36	M12X60	5	for tapped hole	M12	40	85
K0042.1214	42	49	41	30	36	M12X50	5	for t-slot	14	40	85
K0042.16	57	67	56	42	50	M16X80	5	for tapped hole	M16	60	210
K0042.1618	57	67	56	42	50	M16X70	5	for t-slot	18	60	210

Example of wedge clamps in use

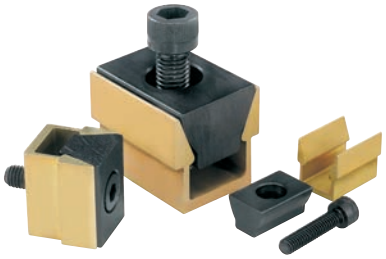
Wedge clamp

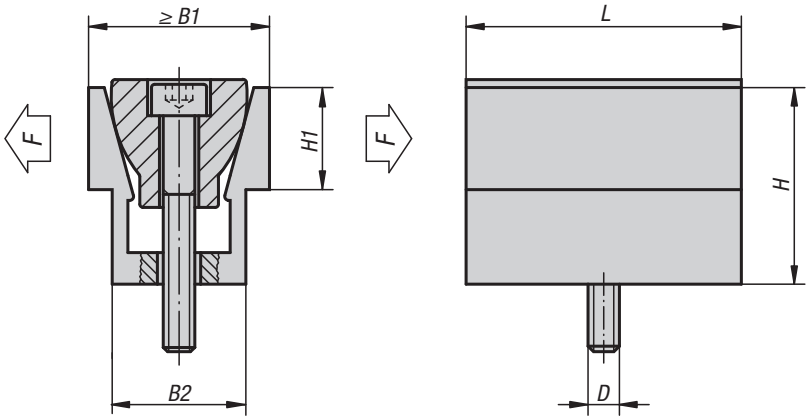


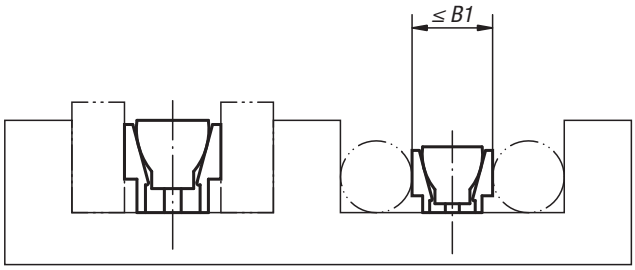
Double wedge clamps



Wedge clamps







Material:
Channel aluminium profile.
Wedge hardened steel.

Version:
Channel anodised.
Wedge black oxidised.

Sample order:
K0037.08

Note:
Two workpieces can be held simultaneously with the wedge clamp. They are ideal for clamping round or rectangular pieces. The compact design allows space-saving series clamping.

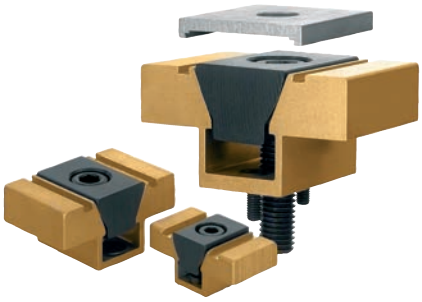
Drawing reference:
In clamped position dimension B1 max. given in the table should be achieved.

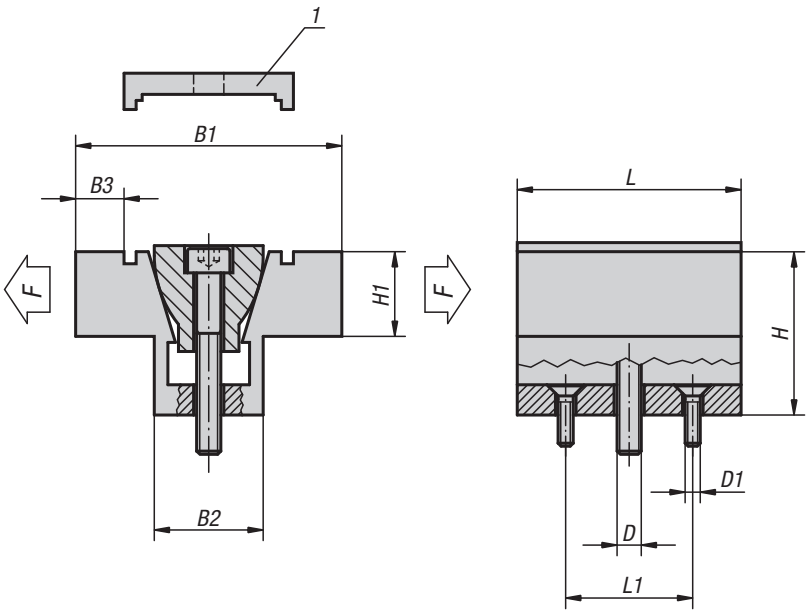
KIPP Wedge clamps

Order No.	D	L	B1 min. - max.	B2	H	H1	Clamping force max. kN	Tightening torque max. Nm
K0037.04	M4	15,9	12,3 - 13,1	10,4	12,7	5,6	2,2	3,4
K0037.06	M6	23,8	18,6 - 19,9	16,1	19	9,5	6,7	14,3
K0037.08	M8	31,7	24,8 - 26,6	20,8	25,4	12,7	8,9	14,5
K0037.12	M12	47,6	37,3 - 39,7	30,8	38,1	19	15,6	38,4
K0037.16	M16	63,5	49,7 - 52,8	41,2	50,8	25,4	26,7	74,6

Wedge clamps

machinable





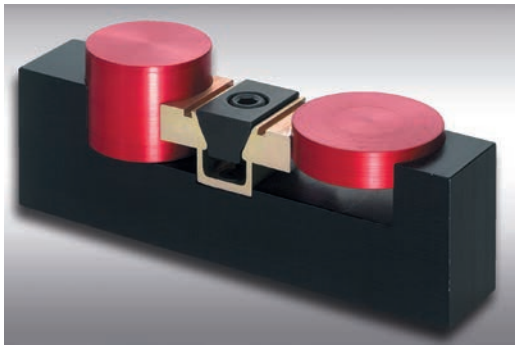
Material:
Channel aluminium profile.
Wedge hardened steel.

Version:
Channel anodised.
Wedge black oxidised.

Sample order:
K0038.08

Note:
Two workpieces can be held simultaneously with the wedge clamp. The jaws have extra material allowing them to be machined to conform to the shape of the workpiece. The compact design allows space-saving series clamping.

Drawing reference:
1) The locking plate is only used for machining the form, not for clamping the workpiece.

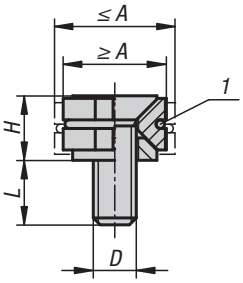


KIPP Wedge clamps machinable

Order No.	D	D1	L	L1	B1 min. - max.	B2	B3	H	H1	Clamping force max. kN	Tightening torque max. Nm
K0038.04	M4	M2	15,7	10,16	28,6 - 29,1	10,6	4,6	12,7	6,3	2,2	3,4
K0038.06	M6	M4	23,9	15,9	38,1 - 39	16,1	6,6	19,1	9,4	6,7	14,3
K0038.08	M8	M4	31,8	20,6	50,8 - 52	20,8	9,9	25,4	12,7	8,9	14,5
K0038.12	M12	M5	47,5	30,5	76,2 - 78	30,9	15,7	38,1	19	15,6	38,4
K0038.16	M16	M6	63,5	41,28	101,6 - 103,9	41,3	20,3	50,8	25,4	26,7	74,6

Wedge clamps

Ⓐ



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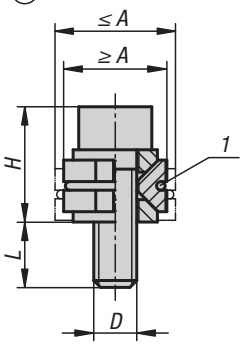
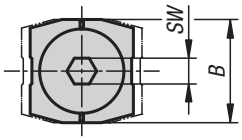
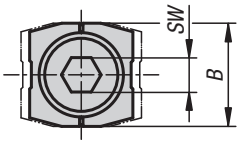
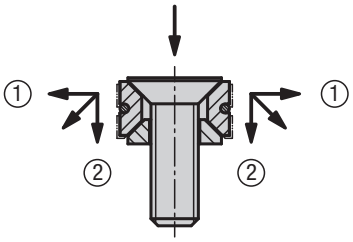








(Jaws exert positive down force)
① Horizontal thrust against workpiece
② Vertical thrust prevents the workpiece lifting

Material:
Carbon steel.

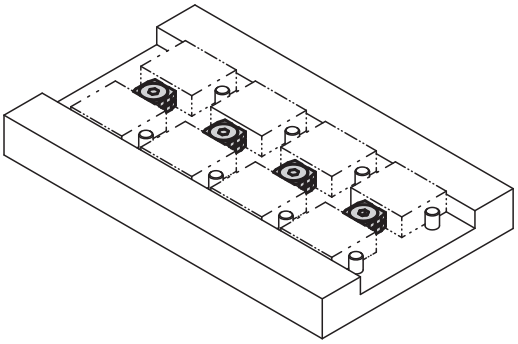
Version:
Jaw plate hardened (33–39 HRC) and black oxidised.

Sample order:
K1167.11205

Note:
Due to the functioning principle, wedge clamps are suitable for clamping in series.
The wedges generate higher clamping forces.
The wedge clamps are available with cap screws or countersunk screws.
Wedge clamps with pull-down effect.

Drawing reference:
Dimension L refers to ≤ A.
Dimension H refers to ≥ A.

1) O-ring



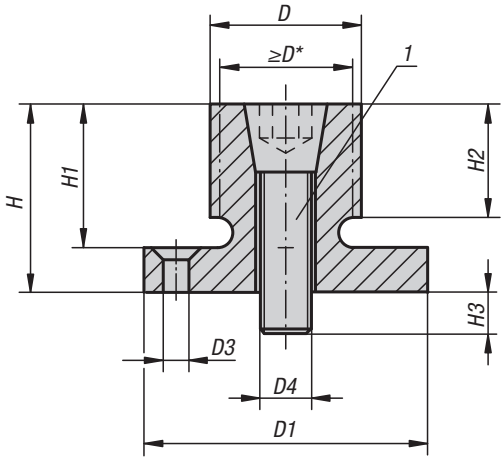
KIPP Wedge clamps

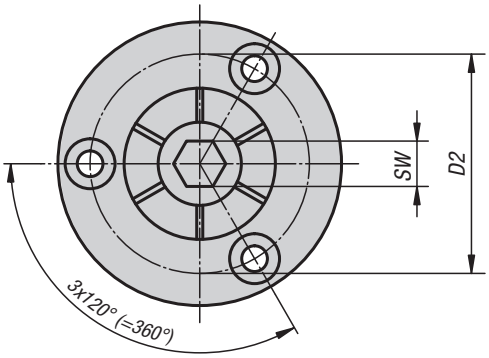
Order No.	Form	Version 2	A min.	A max.	B	D	H	L	SW	Clamping force max. kN	Tightening torque max. Nm
K1167.11205	A	with csk. screw	12	14	12	M5X15	7,5	9,5	3	2	4,3
K1167.11506	A	with csk. screw	15	17	14,8	M6X16	8,7	9,3	4	3,5	7,3
K1167.11808	A	with csk. screw	18,5	21,5	18,4	M8X20	11,8	11,3	5	5	18
K1167.21205	B	with socket head screw	12	14	12	M5X16	13,4	9,6	4	3	5,4
K1167.21506	B	with socket head screw	15	17	14,8	M6X18	15,8	10,2	5	4,5	9,1
K1167.21808	B	with socket head screw	18,5	21,5	18,4	M8X25	21,2	14,9	6	9	22

Notes

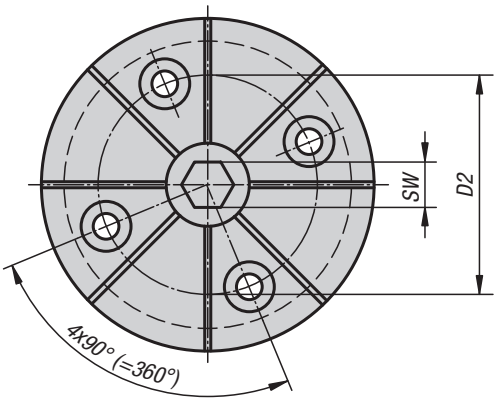
Centring clamps

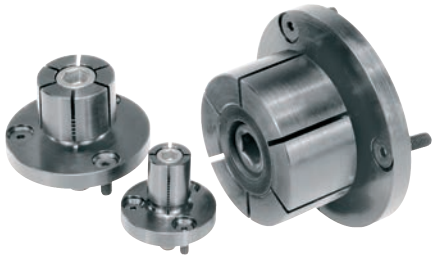
Mandrel collets





K0357.1630175





Material:
Mandrel mild steel.
Taper-head screw low-carbon steel

Version:
Mandrel black oxidised.
Taper-head screw case-hardened.

Sample order:
K0357.081420

Note:
The mandrel collet is ideal for finish machining turned parts. The diameter “D” can be turned or milled to suit the workpiece ID.
Low design - no interfering clamp straps.
Tightened using a hex socket wrench or hydraulics.

* D min. = smallest diameter to which “D” may be turned or milled.

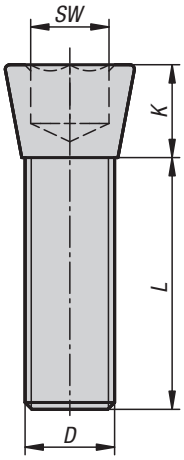
Assembly:
Expand the mandrel approx. 0.1 mm over the relaxed diameter. Turn or mill the mandrel to suit the internal diameter of the workpiece. The base flange can be centred in a pocket or using dowel pins.

Drawing reference:
1) taper-head screw

KIPP Mandrel collets

Order No.	D	D min.	D1	D2	D3 for screw ISO 10642	D4 Tapered-head bolt	H	H1	H2	H3	SW Tapered-head bolt	Tightening torque max. Nm	Clamping force max. kN
K0357.020407	7,4	4,1	20 h9	13,7	M2	M2	10,7	7,6	6,1	4,1	1,5	0,7	1,1
K0357.040812	12,4	8	29,72 h9	21	M3	M4	21,8	16	15	8	3	5	4,2
K0357.061214	14,2	12,2	31,5 h9	23,1	M3	M6	24,9	19	15	12	5	17	8,5
K0357.081420	20	13,5	37,5 h9	29	M3	M8	24,9	19	15	14	6	34	11,1
K0357.062027	27	18	50 h9	39,4	M4	M10	28,6	22,2	17,5	17	8	60	20
K0357.102535	35,3	23	56 h9	45,5	M4	M12	31,8	25,4	20,6	21	10	150	26,3
K0357.123442	42	29,3	69,5 h8	55,9	M5	M16	39,6	31,8	27	22	14	280	44,5
K0357.123452	51,5	29,3	75,5 h9	63,9	M5	M16	39,6	31,8	27	22	14	280	44,5
K0357.163077	77,7	29,3	107,5 h9	92,5	M6	M16	45,5	37,6	32,3	20	14	280	44,5
K0357.1630103	103	29,3	132,9 h9	118	M6	M16	45,5	37,6	32,3	20	14	280	44,5
K0357.1630175	175	29,3	132,9 h9	118	M6	M16	45,5	37,6	32,3	20	14	280	44,5

Replacement screw for mandrel collets



Material:
Taper-head screw low-carbon steel.

Version:
Taper-head screw case-hardened.

Sample order:
K1970.0425

Note:
Replacement screw for mandrel collets K0357.

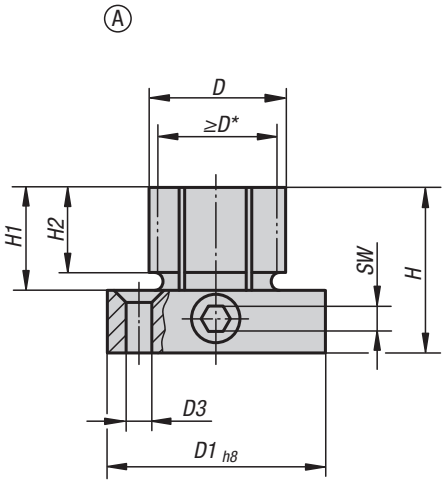
Accessories:
Mandrel collets K0357.

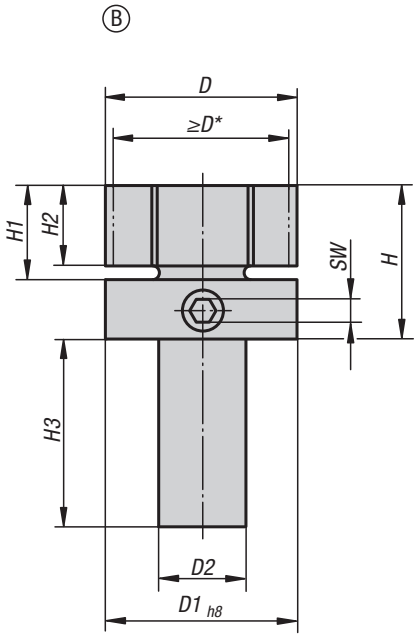
KIPP Replacement screw for mandrel collets

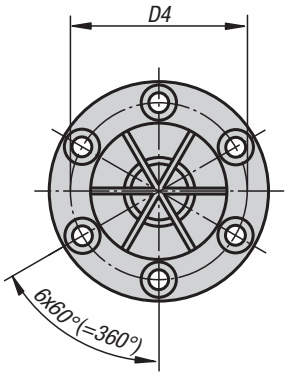
Order No.	D	K	L	SW
K1970.0212	M2	2,8	12	1,5
K1970.0425	M4	4,8	25	3
K1970.0630	M6	6,9	30	5
K1970.0830	M8	8,9	30	6
K1970.1035	M10	10,6	35	8
K1970.1240	M12	12,8	40	10
K1970.1645	M16	16,6	45	14

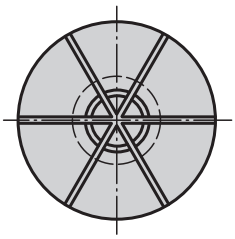
Mandrel collets

with side lock









Material:
Mandrel mild steel.
Clamping screw carbon steel.

Version:
Mandrel black oxidised.
Clamping screw tempered to 10.9, hardened and PTFE coated.

Sample order:
K0643.118029

Note:
The side lock make these mandrel collets ideal for finish machining parts with blind internal diameters. The diameter “D” can be turned or milled to suit the workpiece ID.

Manual tightening with hexagon socket wrench.

* D min. = smallest diameter to which “D” may be turned or milled.

Assembly:
Expand the mandrel approx. 0.1 mm over the relaxed diameter. Turn or mill the mandrel to suit the internal diameter of the workpiece. A locking ring is included for machining.
The shank or flange is centred in a reamed hole or pocket.
Form A is supplied with 6 fastening screws.

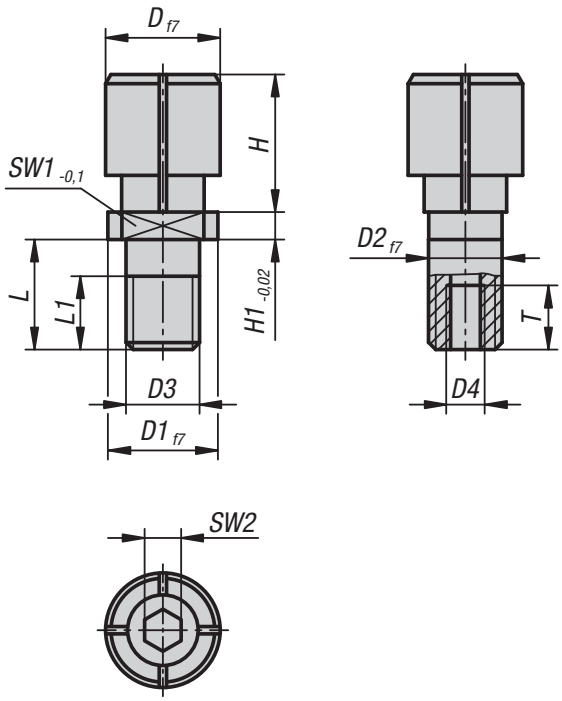
Drawing reference:
Form A:
for machining centres, drilling and milling machines
Form B:
with shaft for holding in lathe chucks

KIPP Mandrel collets with side lock

Order No.	Form	D	D min.	D1	D2	D3 for screw ISO 10642	D4	H	H1	H2	H3	SW	Tightening torque max. Nm	Clamping force max. kN
K0643.118029	A	28,7	17,8	50	-	M4	39,4	41,3	22,4	17,5	-	6	66	20
K0643.218053	B	53,3	18	53,3	25	-	-	44,4	25,4	21	45	6	66	20

Mandrel collets

for small bores



Material:
Stainless steel 1.4305.

Version:
Bright.

Sample order:
K1293.104050

Note:
The mandrel collet is used in small through bores to position and clamp workpieces. Clamping is carried out manually from above using a hex key. The mandrel diameter can be ground to suit the application. The bore for the mandrel should have an H7 tolerance.

D min = smallest permissible diameter to which D can be ground.

- applicable for holes from Ø5 to Ø12.5 mm
- compact design, small installation space
- simple handling
- mounting in any position
- different installation types possible
- surface pressure protects the workpiece surface
- individually adaptable to the diameter

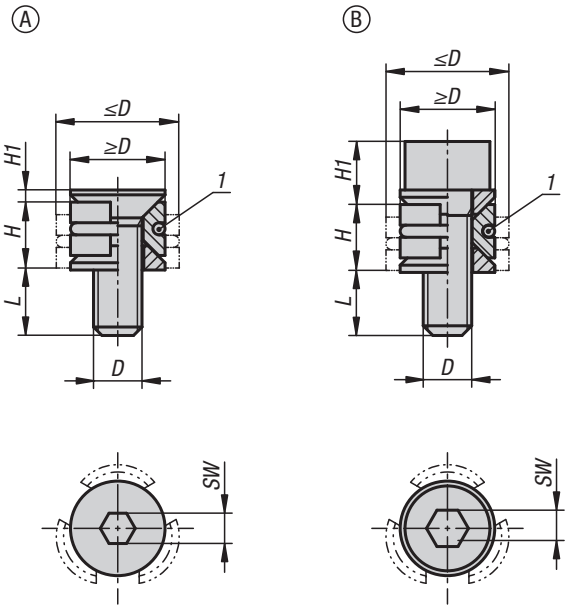
Assembly:
If required, diameter D can be adapted to suit the diameter being held. To do this, expand the mandrel collet ca. 0.2 mm over the required diameter. Grind the OD of the mandrel collet to suit the ID of the workpiece bore.

KIPP Mandrel collets for small bores

Order No.	D	D min.	D1	D2	D3	D4	H	H1	L	L1	SW1	SW2	T	Tightening torque max. Nm	Clamping force max. kN
K1293.105060	6	5	10	6	M6	M3	8	2,5	10	6	6	2	6	0,9	0,19
K1293.106080	8	6	10	6	M6	M3	10	2,5	10	6	6	2,5	6	2,4	0,34
K1293.108100	10	8	12	8	M8	M4	12	3	12	8	8	3	7	4,4	0,62
K1293.110125	12,5	10	12	8	M8	M4	15	3	12	8	8	4	7	8,1	0,62

Centring clamps

round



Material:
Carbon steel.

Version:
Hardened (33–39 HRC) and black oxidised.

Sample order:
K1166.10804

Note:
The centring clamp enables a workpiece to be centred and clamped in the bore.
The wedges generate higher clamping forces.
The centring clamp is available with a cap screw or countersunk screw.
Centring clamp with pull-down effect.

Drawing reference:
Form A: with countersunk screw
Form B: with cap screw

Dimension H refers to the height at ≥D.
Dimension L refers to the length at ≤D

1) O-ring

KIPP Centring clamp round

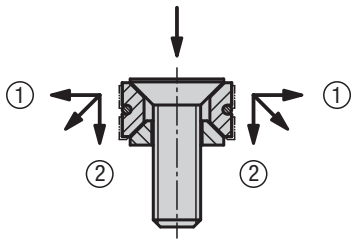
Order No.	Form	D	D min.	D max.	H	H1	L	SW	Clamping force max. kN	Tightening torque Nm
K1166.10804	A	M4x12	8	10,3	5,5	0,9	7,3	2,5	0,9	2,1
K1166.11005	A	M5X15	10	12,3	6,4	1,1	9,1	3	1,5	4,3
K1166.11206	A	M6X18	12	16,3	8,6	1,3	11,2	4	2,1	7,3
K1166.11608	A	M8X25	16	22	11,5	1,6	16,2	5	4	18
K1166.20804	B	M4x12	8	10,3	5,5	5,1	7,1	3	1,5	2,7
K1166.21005	B	M5X15	10	12,3	6,4	6,2	9	4	2,5	5,4
K1166.21206	B	M6X18	12	16,3	8,6	7,9	10,6	5	5	9,1
K1166.21608	B	M8X25	16	22	11,5	10,4	15,4	6	9	25

Centring clamps

round

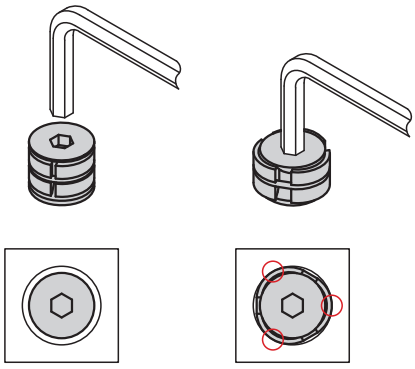
Technical information:

- These clamps grip the inside diameter of a workpiece.
- The wedge shape enables high clamping forces on the workpiece.



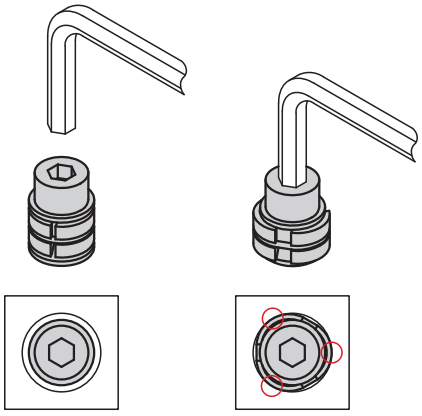
(Jaws exert positive down force)
① Horizontal thrust against workpiece
② Vertical thrust prevents the workpiece lifting

Form A:



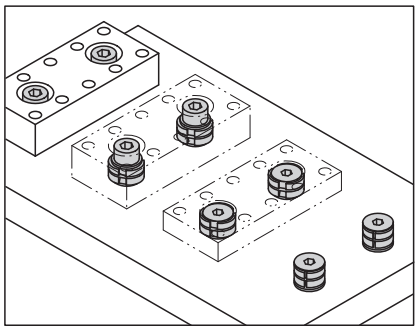
unclamped clamped

Form B:

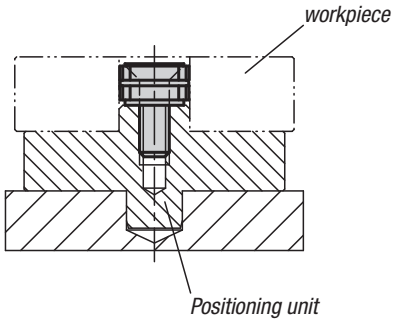


unclamped clamped

Note:
The clamp makes point contact with the bore wall when clamped.

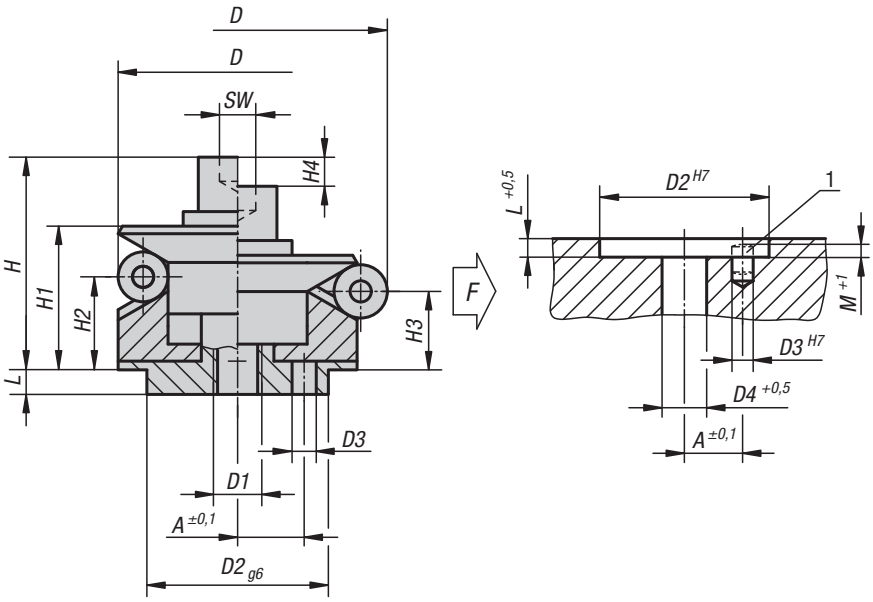


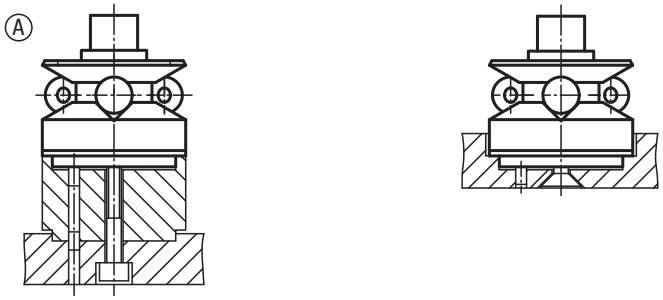
For accurate repeat positioning use these clamps together with a positioning unit.
Clamping is carried out with the centring clamp.

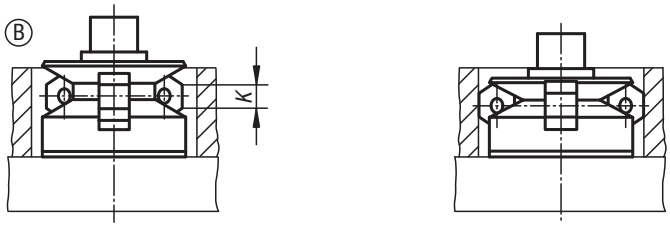


Centring clamps

with ball or hexagon segments







Material:
Body 1.2842.
Ball and hex segments 1.4112.
Tension spring 1.4310.

Version:
Body hardened and black oxidised.
Ball and hex segments hardened and ground.

Sample order:
K0358.101203

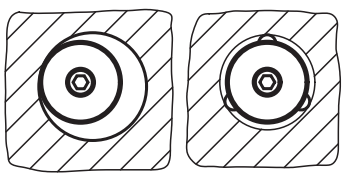
Application:
To position and centre existing bores on the machining surface.

Advantages:
- Precise self-centring.
- Distortion free clamping.
- Large spread range.
- Low overall height.

Technical data:
Repetitive accuracy ±0.025
Concentric accuracy ±0.05

Drawing reference:
Form A:
With balls for holes where light marking is acceptable.
Form B:
With hexagons for sensitive hole surfaces.

1) Mounting aid:
pin to accurately position the mandrel segments.



Centring clamps

with ball or hexagon segments

KIPP Centring clamps with ball segments

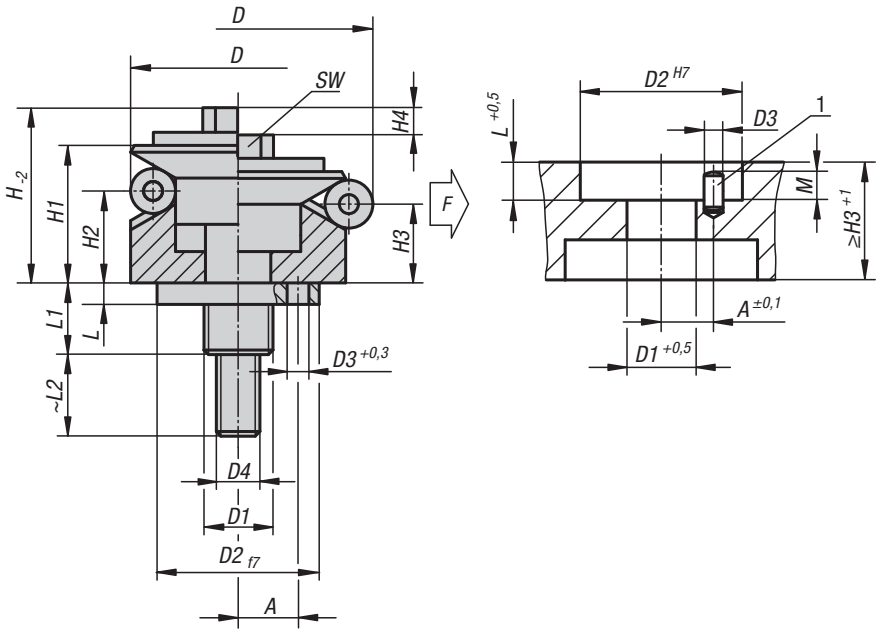
Order No.	Form	A	D min.	D max.	D1	D2	D3	D4	H	H1	H2	H3	H4	L	M	SW	Ball Ø	No. of balls	Clamping force max. kN	Tightening torque max. Nm
K0358.101203	A	3,5	11,7	14,2	M4	10	1,5	4,3	15	10	4,2	3	1,5	3,5	2,5	3	2,5	3	0,5	5
K0358.101504	A	4,5	14,5	18,5	M4	12	2	4,3	19,5	14,5	9,8	8,6	2,3	5,5	3	3	4	3	3,5	5
K0358.101905	A	5,5	18,5	22,5	M5	15	2,5	5,3	23,5	16,5	11,6	10,4	2,3	7,5	3	4	4	3	4	10
K0358.102306	A	7	22,5	26,5	M6	20	3	6,4	28,8	19,8	14,2	13	2,3	6	4	5	4	3	4,5	17
K0358.102706	A	7	26,5	30,5	M6	20	3	6,4	28,8	19,8	14,2	13	2,3	6	4,5	5	4	3	4,5	17
K0358.103106	A	9	30,5	38,5	M6	25	4	6,4	32,7	23,1	14,2	11,9	4,6	7	4,5	5	8	3	4,5	17
K0358.103908	A	11	38,5	46,5	M8	30	4	8,4	39,2	27,2	17,8	15,5	4,6	7,5	4,5	6	8	6	6,5	43
K0358.104708	A	11	46,5	54,5	M8	30	4	8,4	39,2	27,2	18	15,7	4,6	7,5	4,5	6	8	6	6,5	43
K0358.105510	A	15	54,5	70,5	M10	45	5	10,5	54,6	40,6	23,7	19,1	9,3	9	5,5	8	16	6	8	79
K0358.107112	A	17	70,5	86,5	M12	60	5	13	63,1	46,1	28,3	23,7	9,3	10	5,5	10	16	6	10	141
K0358.108712	A	25	86,5	102,5	M16	60	5	17	73	51	30,2	25,7	9,3	10	5,5	14	16	6	12,5	354

KIPP Centring clamps with hexagon segments

Order No.	Form	A	D min.	D max.	D1	D2	D3	D4	H	H1	H2	H3	H4	L	M	K	SW	No. of hex	Clamping force max. kN	Tightening torque max. Nm
K0358.201504	B	4,5	14,5	18,5	M4	12	2	4,3	19,5	14,5	9,8	8,6	2,3	5,5	3	4	3	3	3,5	5
K0358.201905	B	5,5	18,5	22,5	M5	15	2,5	5,3	23,5	16,5	11,6	10,4	2,3	7,5	3	4	4	3	4	10
K0358.202306	B	7	22,5	26,5	M6	20	3	6,4	28,8	19,8	14,2	13	2,3	6	4	4	5	3	4,5	17
K0358.202706	B	7	26,5	30,5	M6	20	3	6,4	28,8	19,8	14,2	13	2,3	6	4,5	4	5	3	4,5	17
K0358.203106	B	9	30,5	38,5	M6	25	4	6,4	32,7	23,1	14,2	11,9	4,6	7	4,5	8	5	3	4,5	17
K0358.203908	B	11	38,5	46,5	M8	30	4	8,4	39,2	27,2	17,8	15,5	4,6	7,5	4,5	8	6	6	6,5	43
K0358.204708	B	11	46,5	54,5	M8	30	4	8,4	39,2	27,2	18	15,7	4,6	7,5	4,5	8	6	6	6,5	43
K0358.205510	B	15	54,5	70,5	M10	45	5	10,5	54,6	40,6	23,7	19,1	9,3	9	5,5	16	8	6	8	79
K0358.207112	B	17	70,5	86,5	M12	60	5	13	63,1	46,1	28,3	23,7	9,3	10	5,5	16	10	6	10	141
K0358.208712	B	25	86,5	102,5	M16	60	5	17	73	51	30,2	25,7	9,3	10	5,5	16	14	6	12,5	354

Centring clamps

with ball or hexagon segments



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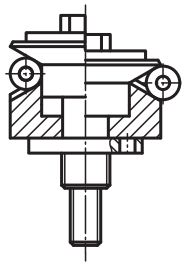

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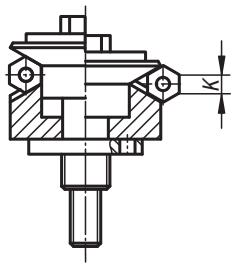


Material:
Body 1.2842.
Ball and hex segments 1.4112.
Tension spring 1.4310.

Version:
Body hardened and black oxidised.
Ball and hex segments hardened and ground.

Sample order:
K0644.0101203

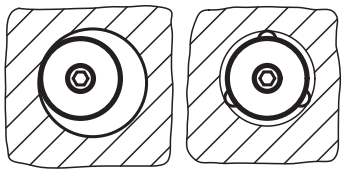
Application:
For centre positioning and clamping in blind holes. Operated from below, manual or automatic using pneumatics or hydraulics.

Advantages:
- Precise self-centring.
- Distortion free clamping.
- Large spread range.
- Low overall height.
- Positive down force.

Technical data:
Repetitive accuracy ±0.025
Concentric accuracy ±0.05

Drawing reference:
Form A:
With balls for holes where light marking is acceptable.
Form B:
With hexagons for sensitive hole surfaces.

1) Mounting aid:
pin to accurately position the mandrel segments.



Centring clamps

with ball or hexagon segments

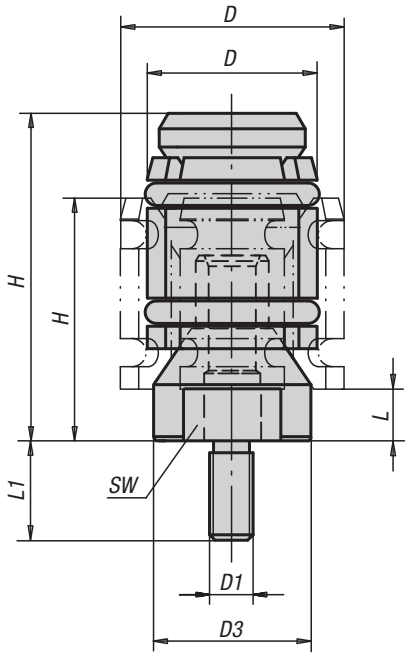
KIPP Centring clamps with ball segments

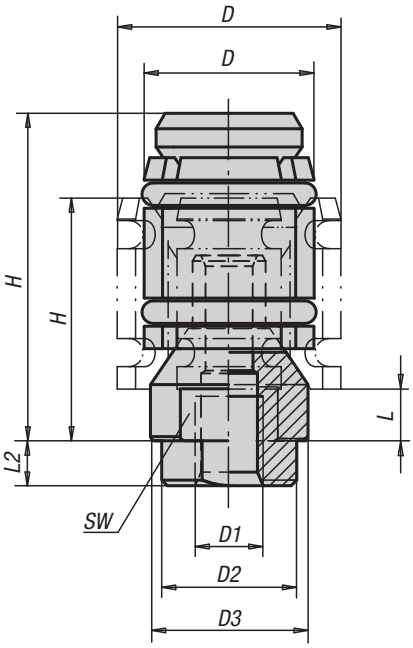
Order No.	Form	A	D min.	D max.	D1	D2	D3	D4	H	H1	H2	H3	H4	L	L1	L2	M	SW	Ball Ø	No. of balls	Clamping force max. kN	Tightening torque max. Nm
K0644.0101203	A	3,5	11,7	14,2	M5	10	1,5	M3	12,8	10	4,2	3	1,4	3,5	11	10	2	5,5	2,5	3	0,5	2
K0644.0101503	A	4,5	14,5	18,5	M6	12	2	M3	17,3	14,5	9,8	8,6	2,3	5,5	14,1	12	2,5	5,5	4	3	3,5	2
K0644.0101904	A	5,5	18,5	22,5	M8	15	2,5	M4	20,9	16,5	11,6	10,4	2,3	7,5	18,2	14	3,5	7	4	3	4	5
K0644.0102305	A	7	22,5	26,5	M10	20	3	M5	25,4	19,8	14,2	13	2,3	6	17,4	15	3,5	8	4	3	4,5	10
K0644.0102705	A	7	26,5	30,5	M10	20	3	M5	25,4	19,8	14,2	13	2,3	6	17,4	15	3,5	8	4	3	4,5	10
K0644.0103106	A	9	30,5	38,5	M12	25	4	M6	30,3	23,1	14,2	11,9	4,6	7	21,9	20	3,5	10	8	3	4,5	17
K0644.0103906	A	11	38,5	46,5	M12	30	4	M6	34,2	27,2	17,8	15,5	4,6	7,5	22,5	20	4,5	10	8	6	6,5	17
K0644.0104706	A	11	46,5	54,5	M12	30	4	M6	34,2	27,2	18	15,7	4,6	7,5	22,5	20	6,5	10	8	6	6,5	17
K0644.0105508	A	15	54,5	70,5	M14x1,5	45	5	M8	49,9	40,6	23,7	19,1	9,3	9	24,5	32	6,5	13	16	6	8	43
K0644.0107108	A	17	70,5	86,5	M16x1,5	60	5	M8	55,4	46,1	28,3	23,7	9,3	10	29,4	20	6,5	13	16	6	10	43
K0644.0108708	A	25	86,5	102,5	M16x1,5	60	5	M10	61,6	51	30,2	25,7	9,3	10	29,4	25	6,5	17	16	6	12,5	79

KIPP Centring clamps with hexagon segments

Order No.	Form	A	D min.	D max.	D1	D2	D3	D4	H	H1	H2	H3	H4	L	L1	L2	M	K	SW	No. of hex	Clamping force max. kN	Tightening torque max. Nm
K0644.0201503	B	4,5	14,5	18,5	M6	12	2	M3	17,3	14,5	9,8	8,6	1,4	5,5	14,1	12	2,5	4	5,5	3	3,5	2
K0644.0201904	B	5,5	18,5	22,5	M8	15	2,5	M4	20,9	16,5	11,6	10,4	2,3	7,5	18,2	14	3,5	4	7	3	4	5
K0644.0202305	B	7	22,5	26,5	M10	20	3	M5	25,4	19,8	14,2	13	2,3	6	17,4	15	3,5	4	8	3	4,5	10
K0644.0202705	B	7	26,5	30,5	M10	20	3	M5	25,4	19,8	14,2	13	2,3	6	17,4	15	3,5	4	8	3	4,5	10
K0644.0203106	B	9	30,5	38,5	M12	25	4	M6	30,3	23,1	14,2	11,9	4,6	7	21,9	20	3,5	8	10	6	4,5	17
K0644.0203906	B	11	38,5	46,5	M12	30	4	M6	34,2	27,2	17,8	15,5	4,6	7,5	22,5	20	4,5	8	10	6	6,5	17
K0644.0204706	B	11	46,5	54,5	M12	30	4	M6	34,2	27,2	18	15,7	4,6	7,5	22,5	20	6,5	8	10	6	6,5	17
K0644.0205508	B	15	54,5	70,5	M14	45	5	M8	49,9	40,6	23,7	19,1	9,3	9	24,5	32	6,5	16	13	6	8	43
K0644.0207108	B	17	70,5	86,5	M16	60	5	M8	55,4	46,1	28,3	23,7	9,3	10	29,4	20	6,5	16	13	6	10	43
K0644.0208708	B	25	86,5	102,5	M16	60	5	M10	61,6	51	30,2	25,7	9,3	10	29,4	25	6,5	16	16	6	12,5	79

Centring clamps



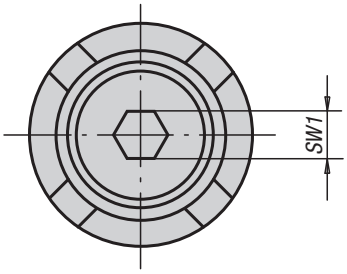


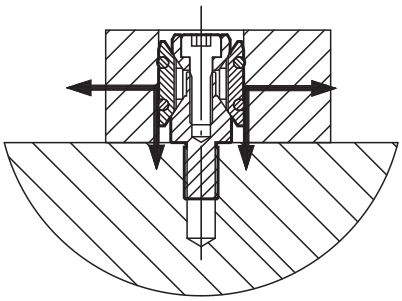
Material:
Body steel.
Bushes carbon steel.

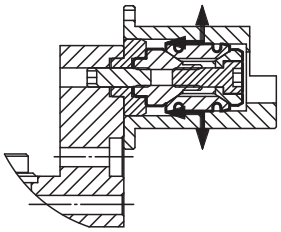
Version:
Black oxidised.

Sample order:
K0893.0615

Note:
These centring clamps enable workpieces to be centred on and lightly clamped in a bore. The clamps have a wide expansion range. The series covers a bore range of Ø12 to Ø30 mm. To increase the centring accuracy the clamps with internal thread have a centring spigot (D2) for a locating hole. The centring accuracy is ±0.2 mm.
Centring clamps with female threads fit on M6 grid systems (see illustration).





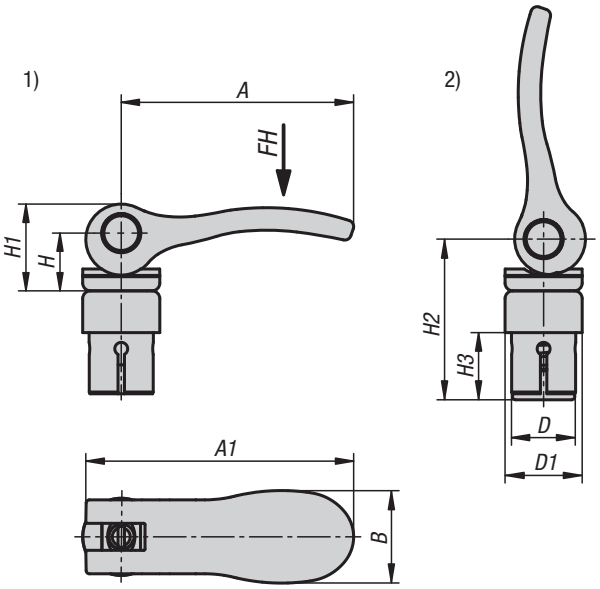


KIPP Centring clamps

Order No.	Thread type	D min.	D max.	D1	D2	D3	H min.	H max.	L min.	L1	L2	SW	SW1	Clamping force max. kN	Tightening torque max. Nm
K0893.0615	internal thread	12	15	M6	12	11,4	22	27,5	4,8	-	4	9	2,5	1,5	2,2
K0893.0619	internal thread	15	19	M6	12	14	24,5	32	4,8	-	4	12	4	2,5	6
K0893.0624	internal thread	19	24	M6	12	17,8	26	35	4,5	-	4	15	5	4	10
K0893.0630	internal thread	24	30	M6	12	23	32	44,5	7	-	4	19	5	4,5	10
K0893.061215	external thread	12	15	M6	-	11,4	22	27,5	4,8	12	-	9	2,5	1,5	2,2
K0893.061219	external thread	15	19	M6	-	14	24,5	32	4,8	12	-	12	4	2,5	6
K0893.081624	external thread	19	24	M8	-	17,8	26	35	4,5	16	-	15	5	4	10
K0893.081630	external thread	24	30	M8	-	23	32	44,5	7	16	-	19	5	4,5	10

Mandrel collets, steel

with cam lever



With this patented clamping system, two components can be positioned without tools via form fit and then clamped together by frictional connection. The clamping range and the holding force is adjustable.

Material:
Handles, cast aluminium, EN AC-46200.
Thrust washer, fibreglass reinforced PA 66 GF 35 X plastic.
Hinge pin stainless steel.
Tie rod, washer, collet, disc spring, steel.

Version:
Grips fine structure powder-coated, black or red RAL 3003.
Thrust washer, black.
Washer blue passivated.
Tie rod and collet black oxidised.

Sample order:
K1500.1001

Note:
It is recommended that the cam lever is in a vertical position when the collet is positioned in the bore.
The function of the clamping system was tested in bores with tolerance H7. All values for retaining force are guide values and are given without safety factor.
The suitability for the respective application must be checked by the user.

Advantages:
Two components can be joined together without tools. The components are perfectly centred in the clamped state.
The compact design means that the mandrel collet with cam lever can even be used in blind holes. There are no specific dimensional requirements for the holes. Additionally, the surfaces and design do not need to have any specific properties.

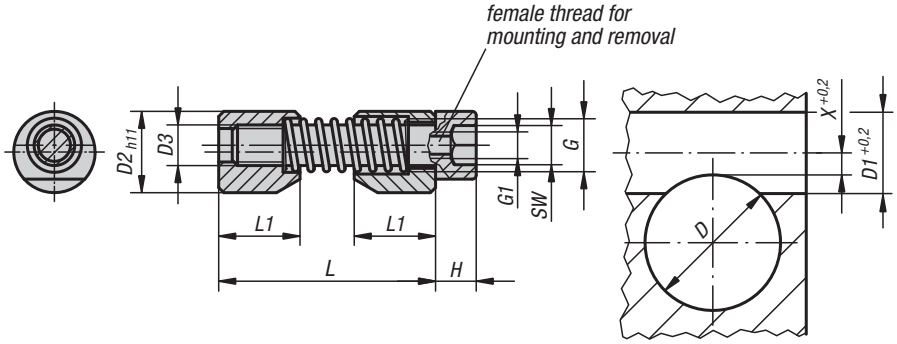
Functional principle:
The clamping system is inserted in the hole in the open state. At the beginning of the locking process, the mandrel collet expands and clamps itself in the lower component. The integrated disc spring assembly creates a positive down force that also clamps the two components to one another at the end of the locking process.

Drawing reference:
1) actuated
2) not actuated

KIPP Mandrel collets, steel with cam lever

Order No. black	Order No. red	A	A1	B	D	D1	H	H1	H2	H3	Hand force FH N	Holding force F kN
K1500.1001	**K1500.1004**	36,2	41,7	14,4	10	12	9	13	25	10,4	90	1,35
K1500.1202	**K1500.1205**	52,3	59,1	18	12	15,4	11,2	17	30	12,6	100	3
K1500.1403	**K1500.1406**	70,4	79,2	21,5	14	18,1	14,5	22	35	14,7	120	3,3

Shaft clamping units



Material:
Jaws steel.
Spring 1.4310.
Screw grade 8.8.

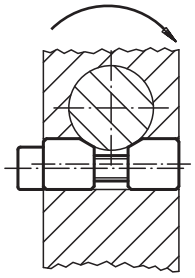
Version:
Jaws black oxidised.
Screw blue electro zinc-plated.

Sample order:
K0375.04

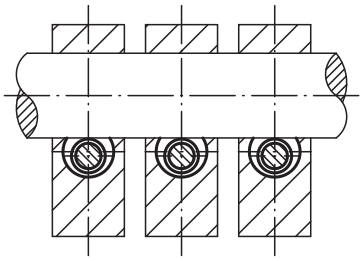
Note:
These shaft clamping units are the simple alternative to conventional shaft clamping (slot and grub screw). The units are suitable for various materials (metal, plastic, wood etc).
To loosen a jammed clamp simply hit it axially or extract it using a screw in the jaw end or screw head.

axial and radial clamping

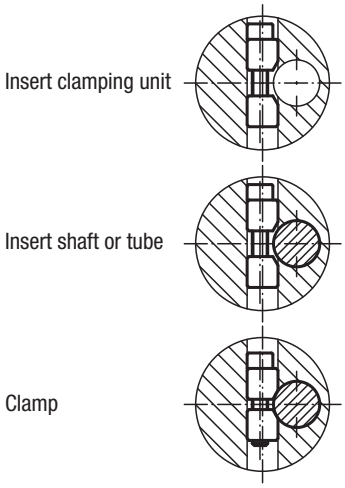
clamping torque Mx



adjusting and clamping



Special hex key with a threaded pin.
The pin is screwed into the hole G1 in the head of the cap screw to aid in positioning or removing the clamping unit.



KIPP Shaft clamping units

Order No.	D min.	D max.	D1	D2	D3	G	G1	H	L max.	L1	SW	X	Clamping torque Mx Nm	Tightening torque max. Nm	Order No. assembly tool
K0375.04	6	10	8	8	M4	M5	M2,5	4	27	8	3	2,8	max. 20	2,9	K0375.904
K0375.05	10	15	10	10	M5	M6	M3	5	33	10	4	3,3	max. 45	6	K0375.905
K0375.06	15	20	12	12	M6	M7	M4	6	39	12	5	3,5	max. 100	10	K0375.906
K0375.08	20	30	16	16	M8	M10	M5	8	46	16	6	4	max. 170	25	K0375.908
K0375.10	30	40	20	20	M10	M12	M6	10	53	20	8	4,8	max. 290	46	K0375.910
K0375.12	40	60	25	25	M12	M14	M8	12	70	25	10	5,6	max. 450	82	K0375.912
K0375.16	60	125	30	30	M16	M18	M10	16	81	30	14	7,9	max. 650	206	K0375.916

Assembly tools for shaft clamping units

Material, version:
Steel, black oxidised.

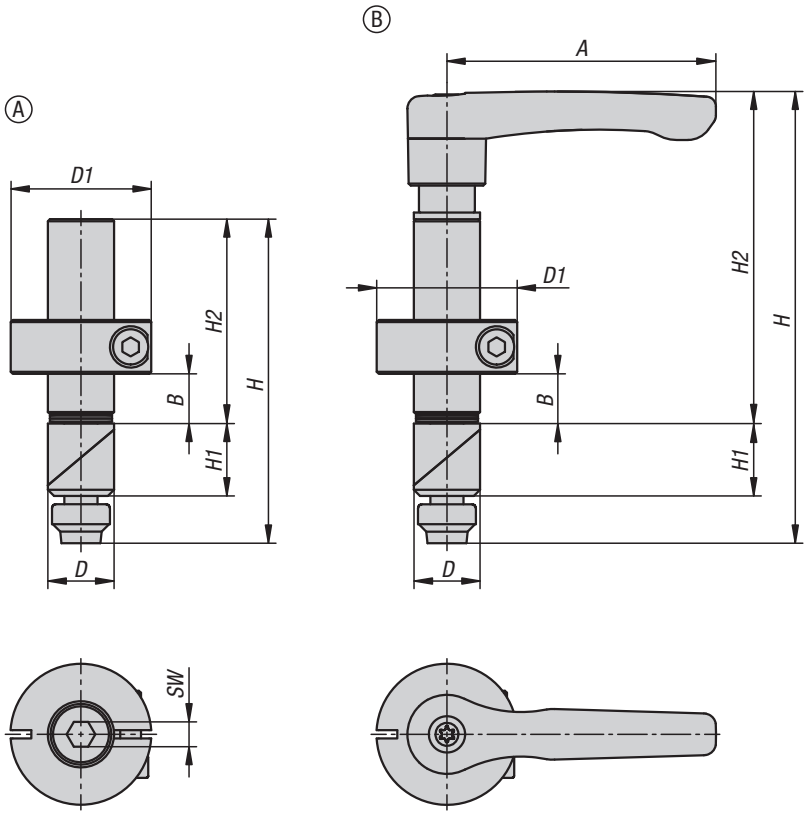
Note:
Special hexagon key with threaded pin. This is screwed into the thread G1 of the socket-head screw to position or release the shaft clamping unit.

Order No.	Suitable for
K0375.904	shaft clamping unit with M2.5 thread
K0375.905	shaft clamping unit with M3 thread
K0375.906	shaft clamping unit with M4 thread
K0375.908	shaft clamping unit with M5 thread
K0375.910	shaft clamping unit with M6 thread
K0375.912	shaft clamping unit with M8 thread
K0375.916	shaft clamping unit with M10 thread

Notes

Clamping elements for grid systems

Clamping pins, steel



Material:
Handle die-cast zinc acc. to DIN EN 12844.
Locating pin and wedges steel 1.0715.
Shaft collar steel.

Version:
Handle black, plastic coated.
Centring pin and shaft collar phosphated.
Wedges black oxidised.
Lasered division marks.

Sample order:
K1503.0016

Note:
The screw is tightened or the clamping lever is turned to expand the two wedges in the hole. The infinitely adjustable shaft collar enables one or more stop elements with various thicknesses to be securely fixated.

Application:
These clamping pins are perfect for fixing standard stop elements with various thicknesses to hole grid boards / welding tables with hole Ø 16 mm or 28 mm.

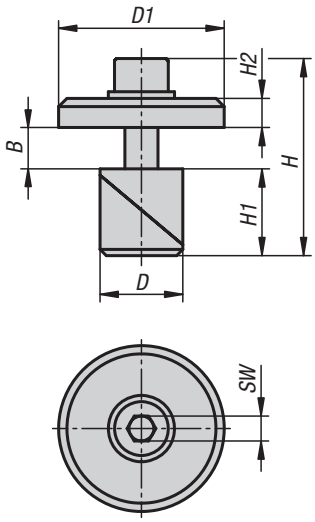
Advantages:
Infinitely adjustable clamping range of 0-36 mm and 0-75 mm.
Not affected by the diameter or surface quality of the bore (up to H12).
Clamping range can be easily preset using the scale.
Gentle clamping in the bore.
Pull-down effect even with thin table material (≥8 mm or ≥4 mm).
Compatible with conventional stop elements.

KIPP Clamping pins, steel

Order No.	Form	A	D	D1	H	H1	H2	SW	B Clamp range
K1503.0016	A	-	16	34	78	17,5	49	6	0-36
K1503.0028	A	-	28	48	129	28	90	6	0-75
K1503.0116	B	65	16	34	109	17,5	80	-	0-36
K1503.0128	B	80	28	48	168	28	129	-	0-75

Clamping pins, steel or stainless steel

with washer



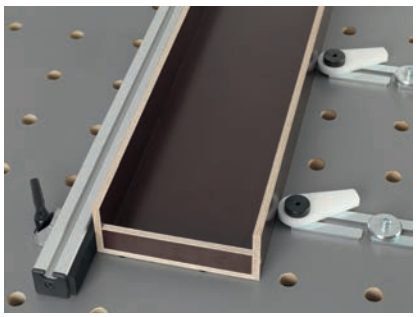
Material:
Washer steel 1.0715.
Wedges steel 1.0715 or stainless steel 1.4305.

Version:
Washer electro zinc-plated.
Wedges black oxidised or blank.

Sample order:
K1504.016

Note:
For fixating adapter plates, angles and plates open on grid hole tables or plates with Ø16 mm, Ø20 mm or Ø28 mm holes. Can also be used as a point end stop for positioning and fixating exchange clamping plates. By turning the cap screw, the lock wedges expand in the bore.

Advantages:
Functions also in thin table material (metal: ≥8 mm or ≥4 mm ; wood ≥18 mm).
Gentle clamping in the bore.
Low height.

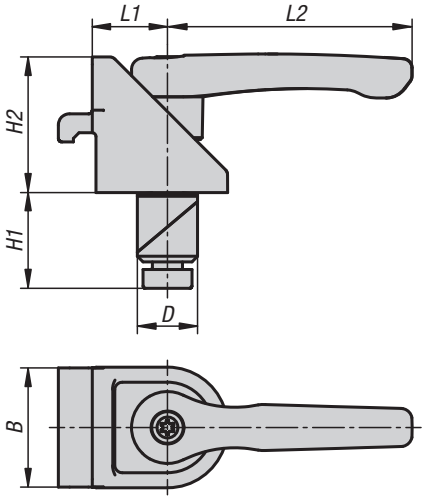


KIPP Clamping pins steel or stainless steel with washer

Order No.	Main material	D	D1	H	H1	H2	SW	B Clamp range
K1504.016	steel	16	40	48	17,5	7	6	0-14
K1504.120	stainless steel	20	40	48	21	7	6	0-10
K1504.028	steel	28	40	68	28	7	6	0-23

Clamping pins, steel or stainless steel

with clamping angle



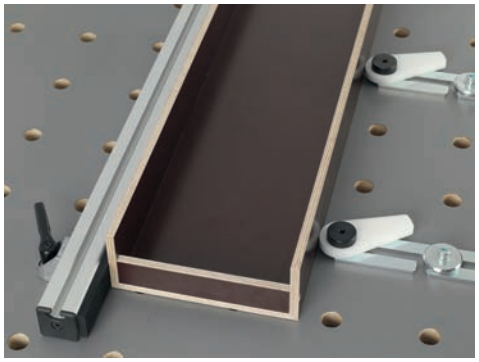
Material:
Handle die-cast zinc acc. to DIN EN 12844.
Clamping angle die-cast zinc.
Wedges steel 1.0715 or stainless steel 1.4305.

Version:
Handle black, plastic coated.
Wedges black oxidised or blank.

Sample order:
K1505.016

Note:
The clamping angles are suitable for fixating aluminium profiles on to grid hole tables or plates with Ø16 mm, Ø20 mm or Ø28 mm holes, e.g. an end stops. Loosen the clamping lever to detract the wedges and enable free rotation and movement. Clamping pins with clamping angles are mostly used in pairs.

Advantages:
Functions also in thin table material (metal: ≥8 mm or ≥4 mm ; wood ≥18 mm).
Gentle clamping in the bore.
Tool-less operation.



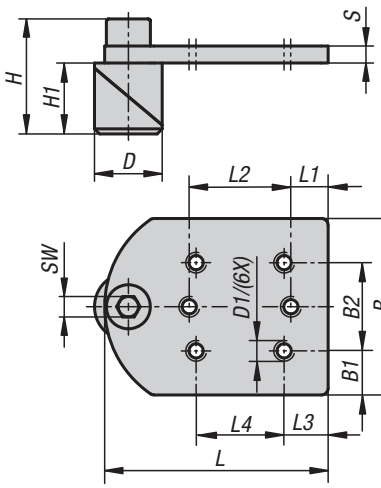
KIPP Clamping pins steel or stainless steel with clamping angle

Order No.	Main material	B	D	H1	H2	L1	L2
K1505.016	steel	32	16	25	36	20	65
K1505.120	stainless steel	32	20	21	36	20	65
K1505.028	steel	32	28	36	36	20	65

Clamping pins, steel or stainless steel

with adapter plate

Ⓐ



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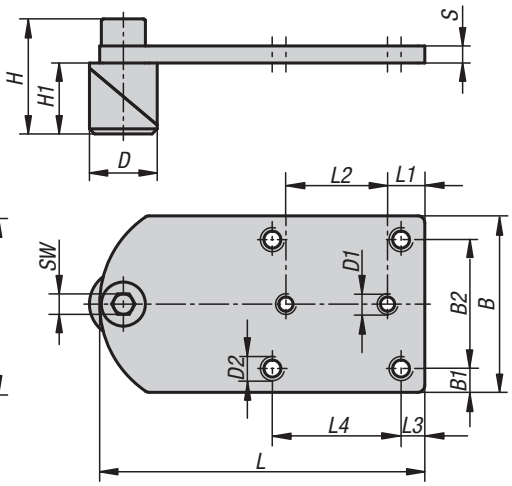

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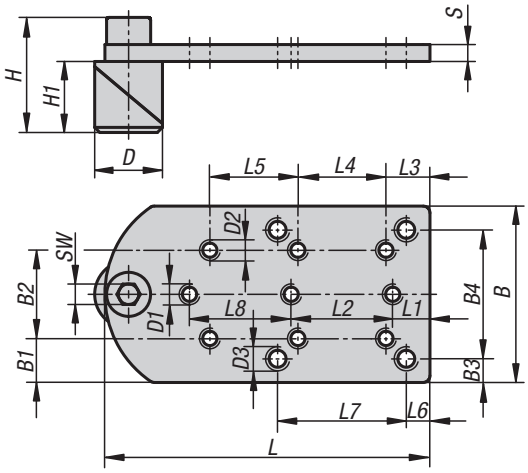


Material:
Adapter plate steel.
Wedges steel 1.0715 or stainless steel 1.4305.

Version:
Adapter plate electro zinc-plated.
Wedges black oxidised or blank.

Sample order:
K1506.0016

Note:
The adapter plates enable the toggle clamp to be compatible with hole pattern 3 or 4, for hole grid plates or plates with Ø16 mm, Ø20 mm or Ø28 mm holes. The clamping pin parts lock in the hole when the cap screw is turned.

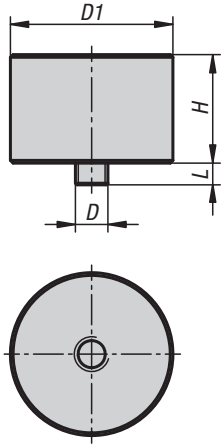
KIPP Clamping pins, steel or stainless steel with adapter plate

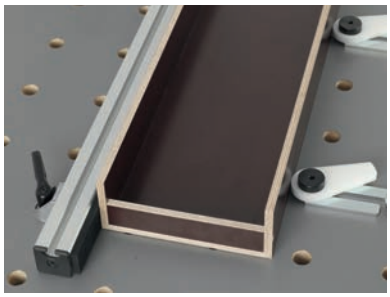
Order No.	Form	Main material	B	B1	B2	B3	B4	D	D1	D2	D3	H	H1	L	L1	L2	L3	L4	L5	L6	L7	L8	S	SW
K1506.0016	A	steel	52	13	26	-	-	16	M5	-	-	30,5	17,5	66	11	30	13	26	-	-	-	-	5	6
K1506.1020	A	stainless steel	52	13	26	-	-	20	M5	-	-	34	21	66	11	30	13	26	-	-	-	-	5	6
K1506.0028	A	steel	52	13	26	-	-	28	M5	-	-	41	28	66	11	30	13	26	-	-	-	-	5	6
K1506.0116	B	steel	52	7	38	-	-	16	M5	M6	-	30,5	17,5	96	11	30	7	38	-	-	-	-	5	6
K1506.1120	B	stainless steel	52	7	38	-	-	20	M5	M6	-	34	21	96	11	30	7	38	-	-	-	-	5	6
K1506.0128	B	steel	52	7	38	-	-	28	M5	M6	-	41	28	96	11	30	7	38	-	-	-	-	5	6
K1506.0216	C	steel	52	13	26	7	38	16	M5	M5	M6	30,5	17,5	96	11	30	13	26	26	7	38	30	5	6
K1506.1220	C	stainless steel	52	13	26	7	38	20	M5	M5	M6	34	21	96	11	30	13	26	26	7	38	30	5	6
K1506.0228	C	steel	52	13	26	7	38	28	M5	M5	M6	41	28	96	11	30	13	26	26	7	38	30	5	6

K1507

Pivot bearings, steel

with external thread





Material:
Pivot bearing steel 1.0715.
Threaded pin steel.

Version:
Pivot bearing black oxidised.Screw electro zinc-plated.

Sample order:
K1507.3006X04

Note:
Pivot bearings are used in combination with plates and a cam clamp for indirect clamping.

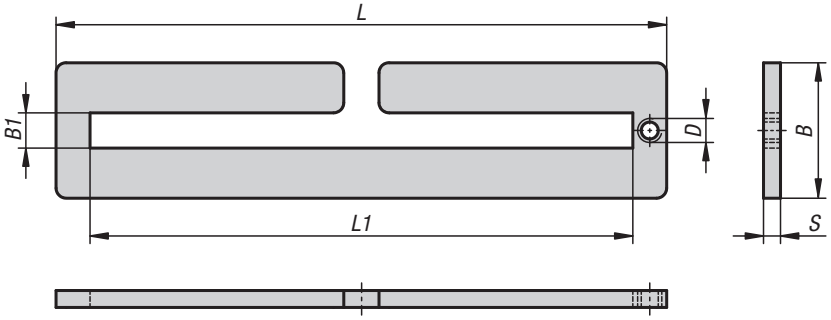
KIPP Pivot bearing steel, with external thread

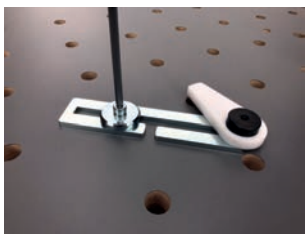
Order No.	D	D1	H	L
K1507.3006X04	M6	30	20	4

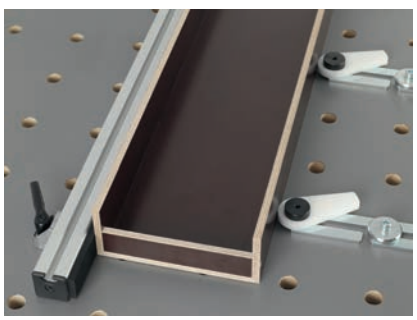
K1508

Plate, steel

open







Material:
Steel.

Version:
Electro zinc-plated and trivalent blue passivated.

Sample order:
K1508.0180X40

Note:
Plates can be used in combination with a pivot bearing and cam clamp for indirect clamping. The plates are fastened to grid hole tables using clamping pins and washers. They can also be clamped to machine slot tables by combining with eccentric clamp modules.

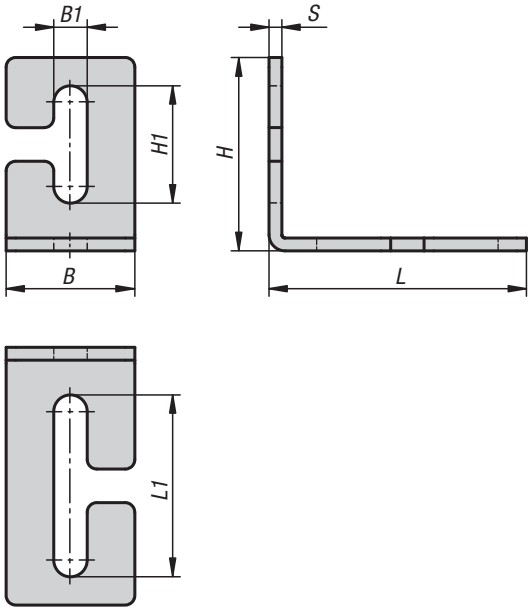
Advantages:
Flexible movement and positioning.
infinitely adjustable

KIPP Plates steel, open

Order No.	B	B1	D	L	L1	S
K1508.0180X40	40	10,4	M6	180	160	5

Angles, steel

open



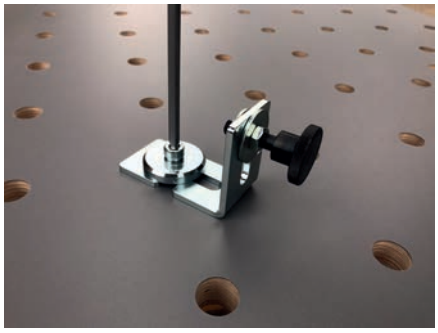
Material:
Steel.

Version:
Electro zinc-plated and trivalent blue passivated.

Sample order:
K1509.0804060

Note:
The angle can also be used as an end stop on grid hole and slot tables. Fine adjustment is possible when used in combination with knurled screws. The angles are fastened to grid hole tables using clamping pins and washers. They can also be clamped to machine slot tables by combining with eccentric clamp modules.

Advantages:
Flexible movement and positioning.
The opening enables easy assembly.
Infinitely adjustable



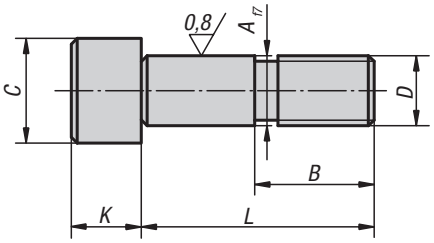
KIPP Angle, steel, open

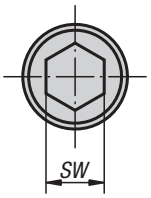
Order No.	B	B1	H	H1	L	L1	S
K1509.0804060	40	10,4	60	36	80	56	4

Locating elements

Shoulder screws

Form A





Material:
Carbon steel.

Version:
Tempered, black oxidised.
Precision diameters ground.

Sample order:
K0815.112045

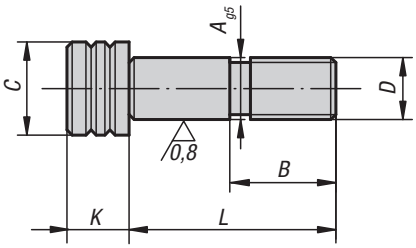
KIPP Shoulder screws Form A

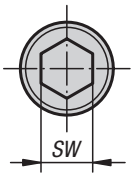
Order No.	Form	A	B	C	D	K	L	SW	Tightening torque max. Nm
K0815.112045	A	12	22	18	M12	12	45	10	88
K0815.112055	A	12	22	18	M12	12	55	10	88
K0815.112065	A	12	22	18	M12	12	65	10	88
K0815.112075	A	12	22	18	M12	12	75	10	88
K0815.116055	A	16	25	24	M16	16	55	14	216
K0815.116065	A	16	25	24	M16	16	65	14	216
K0815.116075	A	16	25	24	M16	16	75	14	216

K0815

Shoulder screws

Form B





Material:
Carbon steel.

Version:
Tempered, black oxidised.
Precision diameters ground.

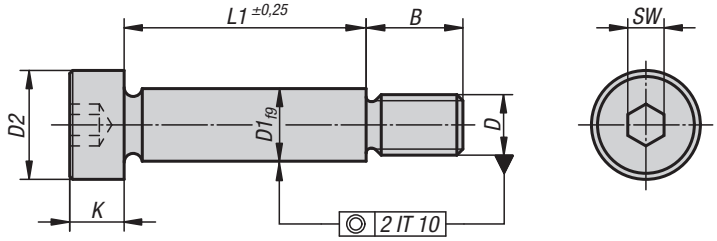
Sample order:
K0815.12065

KIPP Shoulder screws Form B

Order No.	Form	A	B	C	D	K	L	SW	Tightening torque max. Nm
K0815.12045	B	12	22	18	M12	12	45	10	88
K0815.12055	B	12	22	18	M12	12	55	10	88
K0815.12065	B	12	22	18	M12	12	65	10	88
K0815.12075	B	12	22	18	M12	12	75	10	88
K0815.16055	B	16	25	24	M16	16	55	14	216
K0815.16065	B	16	25	24	M16	16	65	14	216
K0815.16075	B	16	25	24	M16	16	75	14	216

Shoulder screws

similar to ISO 7379



Material:
Steel or stainless steel A2.

Version:
Grade 12.9. Shaft OD ground and bright.
Bright stainless steel or tempered steel.

Sample order:
K0705.06X20 (include length L1)

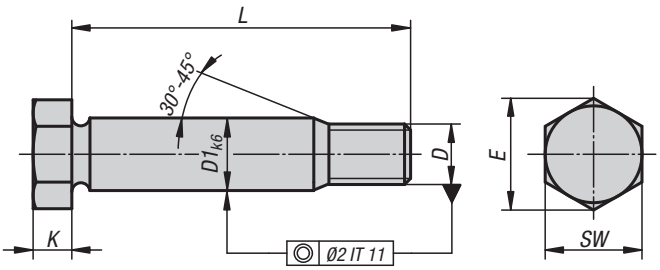
Note:
Hexagon socket head shoulder screws are precision construction elements for many applications. As they can simplify complicated constructions, they are frequently chosen as the most cost-effective solution. Shoulder screws provide the decisive rationalising effect required today.

KIPP Shoulder screws similar to ISO 7379

Order No.	Main material	D1	D	D2	B	K	SW	L1
K0705.04X	steel	4	M3	7	7	3	2	6/8/10/12/16/20/4/5/25/30
K0705.05X	steel	5	M4	9	8	4	2,5	16/20/8/10/30/40/5/6/12/25
K0705.06X	steel	6	M5	10	9,5	4,5	3	10/16/20/25/30/40/50/60/70/12/35/45/55/65/80
K0705.08X	steel	8	M6	13	11	5,5	4	16/20/25/30/40/50/60/70/90/45/55/65/80/100
K0705.10X	steel	10	M8	16	13	7	5	16/20/25/30/40/50/60/70/80/45/90/35/55/65/100
K0705.12X	steel	12	M10	18	16	9	6	100/16/20/25/30/40/50/60/70/80/90
K0705.12X	steel	12	M10	18	16	8	6	65/55/35/45
K0705.16X	steel	16	M12	24	18	11	8	100/120/25/30/40/50/55/60/65/70/80/90/45/35
K0705.20X	steel	20	M16	30	22	14	10	100/120/50/60/70/80/90/35/30/40/45/55/65
K0705.24X	steel	24	M20	36	27	16	12	60/70/65/50/55/80/90/100
K0705.104X	stainless steel A2	4	M3	7	7	3	2	6/8/10/16/20/4/5/12
K0705.105X	stainless steel A2	5	M4	9	8	4	2,5	8/10/16/20/30/40/5/6/12/25
K0705.106X	stainless steel A2	6	M5	10	9,5	4,5	3	16/20/25/30/40/50/60/10/12
K0705.108X	stainless steel A2	8	M6	13	11	5,5	4	16/20/25/30/40/50/60
K0705.110X	stainless steel A2	10	M8	16	13	7	5	16/20/25/30/40/50/60/70/80/90/100
K0705.112X	stainless steel A2	12	M10	18	16	9	6	16/20/25/30/40/50/60/70/80/90/100
K0705.116X	stainless steel A2	16	M12	24	18	11	8	30/40/50/60/70/80/90/100/120
K0705.120X	stainless steel A2	20	M16	30	22	14	10	30/40/50/60/70/80/90/100/120

Shoulder screws

with hexagon head similar to DIN 609



Material:
Steel.

Version:
Grade 8.8, black oxidised.
Shaft OD ground.

Sample order:
K0706.09X40 (include length L)

Note:
Shoulder screws are used if the screw connection is subjected to transverse forces or if workpieces must be positioned relative to each other.

KIPP Shoulder screws with hexagon head, similar to DIN 609

Order No.	D1	D	E	K	L	SW
K0706.09X25	9	M8	14,38	5,3	25	13
K0706.09X30	9	M8	14,38	5,3	30	13
K0706.09X35	9	M8	14,38	5,3	35	13
K0706.09X40	9	M8	14,38	5,3	40	13
K0706.09X45	9	M8	14,38	5,3	45	13
K0706.09X50	9	M8	14,38	5,3	50	13
K0706.09X60	9	M8	14,38	5,3	60	13
K0706.11X30	11	M10	17,77	6,4	30	17
K0706.11X35	11	M10	17,77	6,4	35	17
K0706.11X40	11	M10	17,77	6,4	40	17
K0706.11X45	11	M10	17,77	6,4	45	17
K0706.11X50	11	M10	17,77	6,4	50	17
K0706.11X60	11	M10	17,77	6,4	60	17
K0706.11X70	11	M10	17,77	6,4	70	17
K0706.11X80	11	M10	17,77	6,4	80	17
K0706.11X90	11	M10	17,77	6,4	90	17
K0706.11X100	11	M10	17,77	6,4	100	17

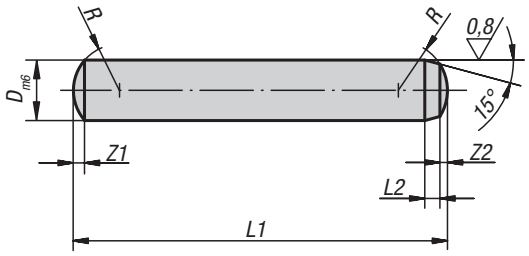
Shoulder screws

with hexagon head similar to DIN 609

Order No.	D1	D	E	K	L	SW
K0706.13X35	13	M12	19,85	7,5	35	19
K0706.13X40	13	M12	19,85	7,5	40	19
K0706.13X45	13	M12	19,85	7,5	45	19
K0706.13X50	13	M12	19,85	7,5	50	19
K0706.13X60	13	M12	19,85	7,5	60	19
K0706.13X70	13	M12	19,85	7,5	70	19
K0706.13X80	13	M12	19,85	7,5	80	19
K0706.13X90	13	M12	19,85	7,5	90	19
K0706.13X100	13	M12	19,85	7,5	100	19
K0706.17X40	17	M16	26,17	10	40	24
K0706.17X45	17	M16	26,17	10	45	24
K0706.17X50	17	M16	26,17	10	50	24
K0706.17X60	17	M16	26,17	10	60	24
K0706.17X70	17	M16	26,17	10	70	24
K0706.17X80	17	M16	26,17	10	80	24
K0706.17X90	17	M16	26,17	10	90	24
K0706.17X100	17	M16	26,17	10	100	24
K0706.21X50	21	M20	32,95	12,5	50	30
K0706.21X60	21	M20	32,95	12,5	60	30
K0706.21X70	21	M20	32,95	12,5	70	30
K0706.21X80	21	M20	32,95	12,5	80	30
K0706.21X90	21	M20	32,95	12,5	90	30
K0706.21X100	21	M20	32,95	12,5	100	30
K0706.21X120	21	M20	32,95	12,5	120	30
K0706.25X60	25	M24	39,35	15	60	36
K0706.25X70	25	M24	39,35	15	70	36
K0706.25X80	25	M24	39,35	15	80	36
K0706.25X90	25	M24	39,35	15	90	36
K0706.25X100	25	M24	39,35	15	100	36
K0706.25X120	25	M24	39,35	15	120	36

Cylindrical pins

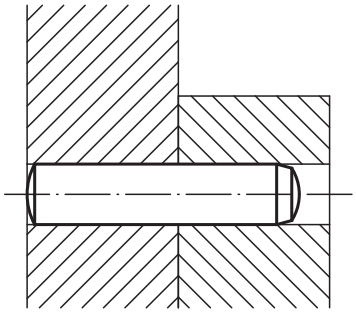
DIN 6325



Material:
Tool steel 1.2067

Version:
Hardened. Hardness 60 ±2 HRC.

Sample order:
K1908.14x36 (include length L)

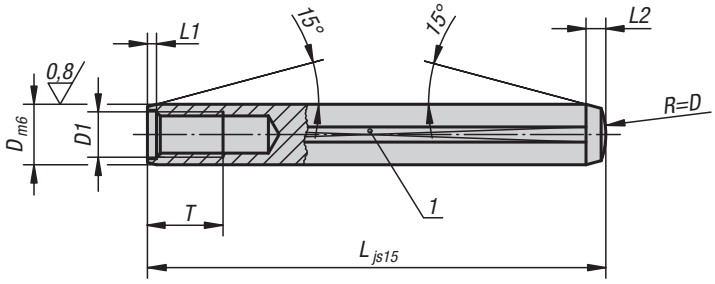


KIPP Dowel pins DIN 6325

Order No.	D	L1 = length	L2	R	Z1	Z2
K1908.02X	2	6/8/10/12/16/18	0,6	2	0,3	0,18
K1908.25X	2,5	6/8/10/12/14/16	0,7	2,5	0,4	0,25
K1908.03X	3	10/12/14/16/18/24/28/30	0,8	3	0,45	0,3
K1908.04X	4	8/10/12/14/16/18/20/22/24/28/30/32/40	1	4	0,6	0,4
K1908.05X	5	10/12/14/16/18/20/22/28/30/32/36/40/45/50	1,2	5	0,75	0,5
K1908.06X	6	10/12/14/16/18/20/22/24/30/32/40/45/50/60	1,5	6	0,9	0,6
K1908.08X	8	12/14/16/18/20/22/24/28/30/32/36/40/45/50/55/60/70/80	1,8	8	1,2	0,8
K1908.10X	10	16/20/24/28/30/32/36/40/45/50/55/60/70/80/90/100	2	10	1,5	1
K1908.12X	12	20/28/30/32/36/40/45/60/70/90/100/120	2,5	12	1,8	1,3
K1908.14X	14	24/36/40/45/50/80	2,5	16	2	1,3
K1908.16X	16	24/28/32/40/45/50/60/70/100/120	3	16	2,5	1,7

Cylindrical pins with internal thread

DIN EN ISO 8735



Material:
Tool steel 1.2067

Version:
Case hardened, hardness 60 ±2 HRC.
Annealed, ground and lapped.

Sample order:
K1909.14x60 (include length L)

Note:
Tapped cylindrical pins are chiefly used in blind holes. The milled flat prevents air compression in blind holes. The tapping makes it possible to use the extractor K0873.

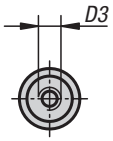
Drawing reference:
1) ground flat

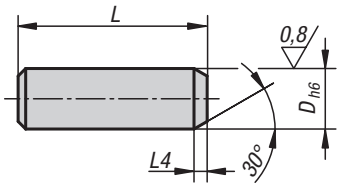
KIPP Dowel pins with internal thread DIN EN ISO 8735

Order No.	D	L	D1	T	L1 ca.	L2 ca.
K1909.05X	5	16/20/24/28/32/36/40/45	M3	6	0,6	1,7
K1909.06X	6	16/18/20/24/28/32/36/40/45/50/55/60	M4	6	0,8	2,1
K1909.08X	8	20/24/28/32/36/40/45/50/55/60/70/80/90/100	M5	8	1	2,6
K1909.10X	10	20/24/28/32/36/40/50/70/80/90/100	M6	10	1,2	3
K1909.12X	12	32/36/40/45/50/55/60/70/80/90/100/120	M6	10	1,6	3,8
K1909.14X	14	32/36/40/50/60/70/80/100/120	M8	12	1,8	4
K1909.16X	16	40/45/50/55/60/70/80/90/100/120	M8	12	2	4,7
K1909.20X	20	45/50/55/60/70/80/90/100/120	M10	16	2,5	6

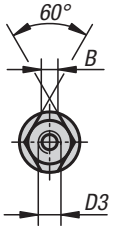
Removable locating pins Forms A and C

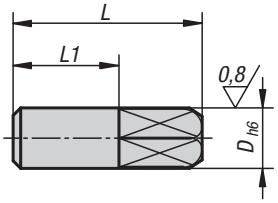
Ⓐ





Ⓒ





Material:
Tool steel.

Version:
Hardened and ground (HRC 56 +2).

Sample order:
K0817.12

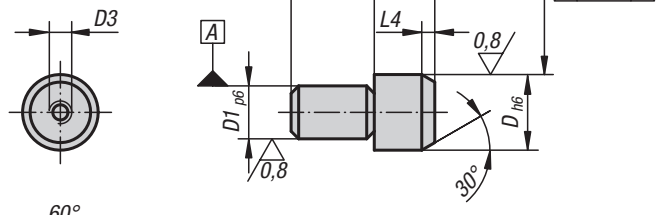
Note:
The locating pins can be easily removed with an extractor.

KIPP Locating pins Form A and C

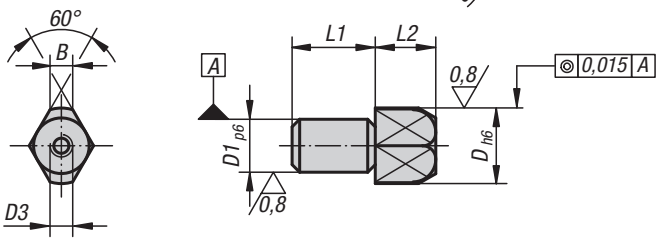
Order No. Form A	Order No. Form C	D	D3	L	L1	L4	B
K0817.08	**K0817.082**	8	M3	25	-/14	3/-	-/2,2
K0817.10	**K0817.102**	10	M3	30	-/17	3/-	-/3
K0817.12	**K0817.122**	12	M5	34	-/20	4/-	-/3,5
K0817.16	**K0817.162**	16	M5	42	-/26	4/-	-/5
K0817.20	**K0817.202**	20	M5	47	-/30	5/-	-/6
K0817.25	**K0817.252**	25	M5	49	-/30	5/-	-/8

Removable locating pins Forms B and D

Ⓑ



Ⓓ



Material:
Tool steel.

Version:
Hardened and ground (HRC 55-60).

Sample order:
K0818.20

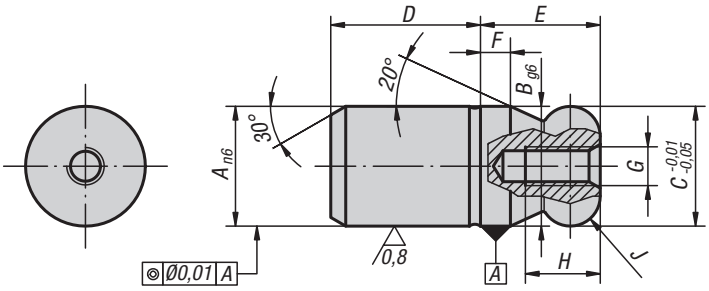
Note:
Locating pins can be easily removed with an extractor.

KIPP Locating pins Form B and D

Order No. Form B	Order No. Form D	D	D1	D3	L1	L2	L4	B
K0818.10	**K0818.102**	10	7	M3	11	11	3	-/3
K0818.12	**K0818.122**	12	8	M5	13	12	4	-/3,5
K0818.16	**K0818.162**	16	12	M5	18	14	4,5	-/5
K0818.20	**K0818.202**	20	14	M5	22	15	5	-/6
K0818.22	**K0818.222**	22	16	M5	22	17	5	-/7
K0818.25	**K0818.252**	25	18	M5	25	17	5	-/8

Locating pins

with ball-end Form A

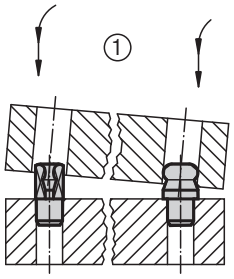


Material:
Tool steel or 1.4305 stainless steel.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0350.12

Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration).

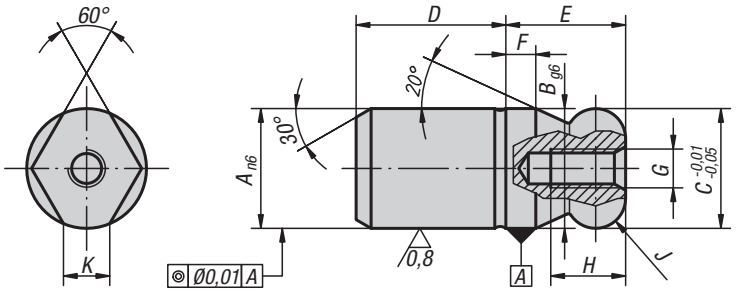


KIPP Locating pins with ball-end Form A

Order No. tool steel	Order No. stainless steel	A	B	C	D	E	F	G	H	J
K0350.05	K0350.505	5	5	5	6	5	2	M2,5	4,5	R 1
K0350.06	K0350.506	6	6	6	8	6	2	M3	5	R 1
K0350.08	K0350.508	8	8	8	10	8	2	M3	6	R 2
K0350.10	K0350.510	10	10	10	13	10	2,5	M3	6	R 2,5
K0350.12	K0350.512	12	12	12	15	12	3	M4	8	R 3
K0350.14	K0350.514	14	14	14	17	14	3,5	M4	8	R 3,5
K0350.16	K0350.516	16	16	16	20	16	4	M5	10	R 4
K0350.20	K0350.520	20	20	20	25	20	5	M5	10	R 5
K0350.25	-	25	25	25	25	25	6	M5	10	R 6
K0350.30	-	30	30	30	30	30	8	M6	12	R 8
K0350.40	-	40	40	40	40	40	10	M6	12	R 10
K0350.50	-	50	50	50	50	50	12	M6	12	R 12

Locating pins

with flattened ball-end Form C

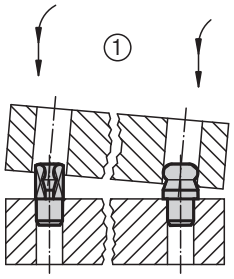


Material:
Tool steel or 1.4305 stainless steel.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0350.162

Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration).

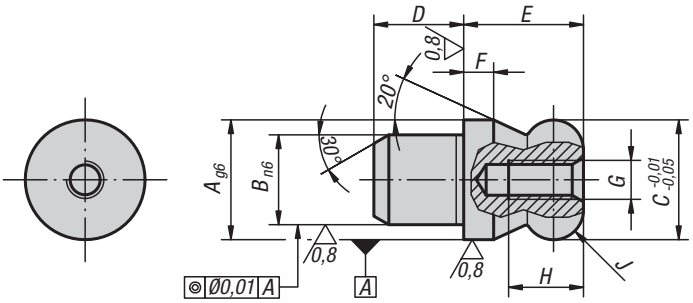


KIPP Locating pins with flattened ball-end Form C

Order No. tool steel	Order No. stainless steel	A	B	C	D	E	F	G	H	J	K
K0350.052	K0350.5052	5	5	5	6	5	2	M2,5	4,5	R 1	1,5
K0350.062	K0350.5062	6	6	6	8	6	2	M3	5	R 1	1,8
K0350.082	K0350.5082	8	8	8	10	8	2	M3	6	R 2	1,9
K0350.102	K0350.5102	10	10	10	13	10	2,5	M3	6	R 2,5	2,5
K0350.122	K0350.5122	12	12	12	15	12	3	M4	8	R 3	2,5
K0350.142	K0350.5142	14	14	14	17	14	3,5	M4	8	R 3,5	3,9
K0350.162	K0350.5162	16	16	16	20	16	4	M5	10	R 4	4,3
K0350.202	K0350.5202	20	20	20	25	20	5	M5	10	R 5	5
K0350.252	-	25	25	25	25	25	6	M5	10	R 6	5,6
K0350.302	-	30	30	30	30	30	8	M6	12	R 8	8,8
K0350.402	-	40	40	40	40	40	10	M6	12	R 10	12,8
K0350.502	-	50	50	50	50	50	12	M6	12	R 12	16,7

Locating pins

with ball-end Form B

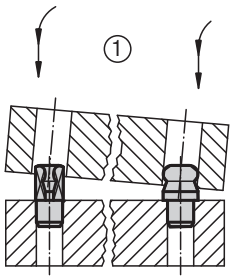


Material:
Tool steel or 1.4305 stainless steel.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0351.20

Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration).

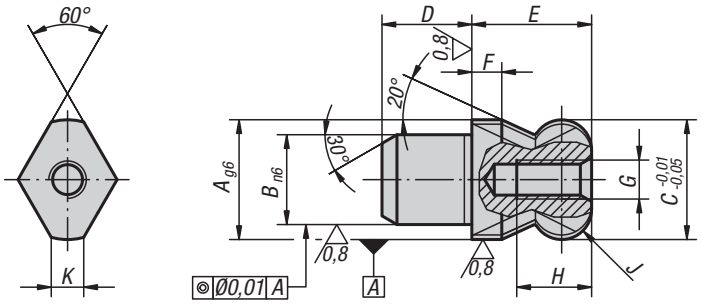


KIPP Locating pins with ball-end Form B

Order No. tool steel	Order No. stainless steel	A	B	C	D	E	F	G	H	J
K0351.06	**K0351.506**	6	4	6	4	6	2	M2,5	4,5	R 1
K0351.08	**K0351.508**	8	6	8	6	8	2	M3	6	R 2
K0351.10	**K0351.510**	10	7	10	7	10	2,5	M3	6	R 2,5
K0351.12	**K0351.512**	12	8	12	8	12	3	M4	8	R 3
K0351.14	**K0351.514**	14	10	14	10	14	3,5	M4	8	R 3,5
K0351.16	**K0351.516**	16	12	16	12	16	4	M5	10	R 4
K0351.20	**K0351.520**	20	14	20	14	20	5	M5	10	R 5
K0351.22	-	22	16	22	16	22	5,5	M5	10	R 5,5
K0351.25	-	25	18	25	18	25	6	M5	10	R 6

Locating pins

with flattened ball-end Form D

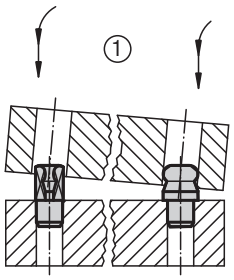


Material:
Tool steel or 1.4305 stainless steel.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0351.162

Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration).



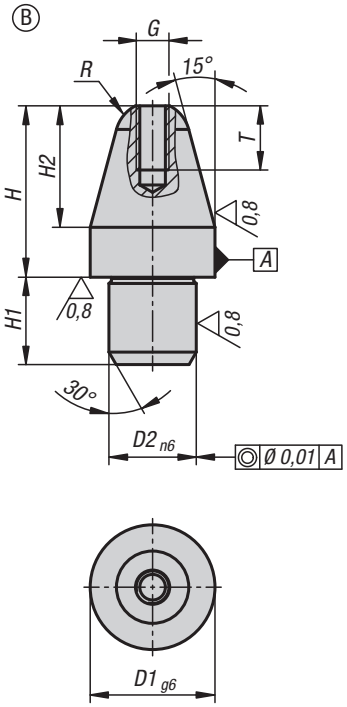
KIPP Locating pins with flattened ball-end Form D

Order No. tool steel	Order No. stainless steel	A	B	C	D	E	F	G	H	J	K
K0351.062	K0351.5062	6	4	6	4	6	2	M2,5	4,5	R 1	1,7
K0351.082	K0351.5082	8	6	8	6	8	2	M3	6	R 2	2
K0351.102	K0351.5102	10	7	10	7	10	2,5	M3	6	R 2,5	2,5
K0351.122	K0351.5122	12	8	12	8	12	3	M4	8	R 3	2,5
K0351.142	K0351.5142	14	10	14	10	14	3,5	M4	8	R 3,5	3,76
K0351.162	K0351.5162	16	12	16	12	16	4	M5	10	R 4	4,3
K0351.202	K0351.5202	20	14	20	14	20	5	M5	10	R 5	5
K0351.222	-	22	16	22	16	22	5,5	M5	10	R 5,5	5
K0351.252	-	25	18	25	18	25	6	M5	10	R 6	5,6

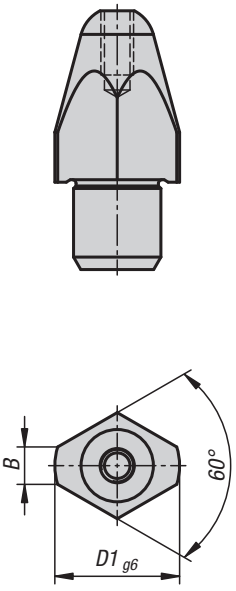
Locating pins

with internal thread

Ⓑ



Ⓒ



Material:
Steel.

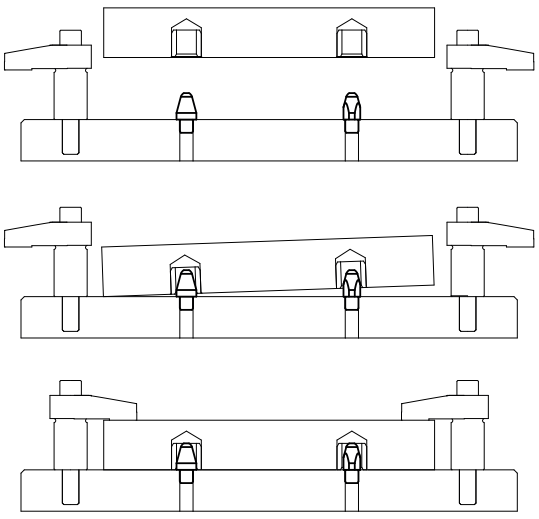
Version:
Hardened and ground (HRC 60 ±2).

Sample order:
K1094.208

Note:
The locating pins are designed to make the joining process easier. Used in combination with hardened locating bushes K1095, they enable exact, low-wear, and fast changes of the workpiece.

Versions D1 = 5 and D1 = 6 do not have an internal thread.

Drawing reference:
Form B: cylindrical pin
Form C: rhomboid pin



Locating pins

with internal thread

KIPP Locating pins, short

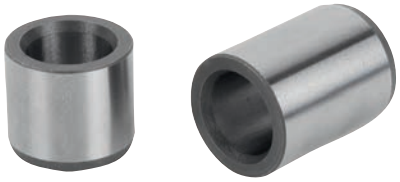
Order No. Form B	Order No. Form C	Version 1	D1	D2	G	H	H1	H2	R	B	T
K1094.205	**K1094.405**	short	5	3	-	8	3	5	1,50	-/-	-
K1094.206	**K1094.406**	short	6	4	-	10	4	6	1,80	-/-	-
K1094.208	**K1094.408**	short	8	6	M2,5	11,4	6	7,4	2,5	-/2,5	5
K1094.210	**K1094.410**	short	10	7	M2,5	13,7	7	9,7	3	-/3,0	5
K1094.212	**K1094.412**	short	12	8	M3	16	8	12	3,5	-/3,5	6
K1094.216	**K1094.416**	short	16	12	M4	20	12	15	5	-/5	8
K1094.220	**K1094.420**	short	20	14	M5	25,5	14	19,5	6	-/6	10

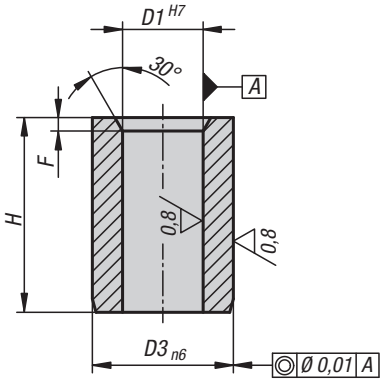
KIPP Locating pins, long

Order No. Form B	Order No. Form C	Version 1	D1	D2	G	H	H1	H2	R	B	T
K1094.305	**K1094.505**	long	5	3	-	10	3	5	1,50	-/-	-
K1094.306	**K1094.506**	long	6	4	-	12	4	6	1,80	-/-	-
K1094.308	**K1094.508**	long	8	6	M2,5	17,4	6	7,4	2,5	-/2,5	5
K1094.310	**K1094.510**	long	10	7	M2,5	21,7	7	9,7	3	-/3,0	5
K1094.312	**K1094.512**	long	12	8	M3	24	8	12	3,5	-/3,5	6
K1094.316	**K1094.516**	long	16	12	M4	29	12	15	5	-/5	8
K1094.320	**K1094.520**	long	20	14	M5	35,5	14	19,5	6	-/6	10

Locating bushes

for locating pins

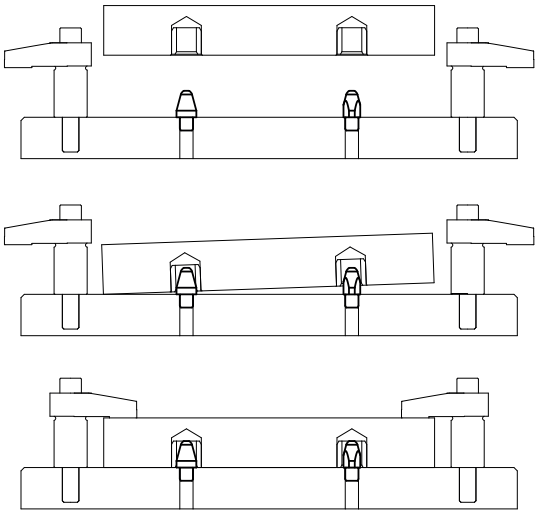




Material:
Steel.

Version:
Hardened and ground (HRC 60 ±2).

Sample order:
K1095.0812



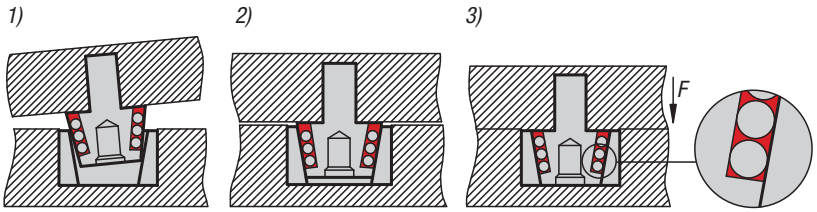
KIPP Locating bushes for locating pins

Order No.	Version 1	D1	D3	F	H
K1095.0508	short	5	8	1	8
K1095.0610	short	6	10	1	10
K1095.0812	short	8	12	1,2	12
K1095.1014	short	10	15	1,5	14
K1095.1216	short	12	18	1,5	16
K1095.1620	short	16	26	1,5	20
K1095.2026	short	20	30	2,5	26
K1095.0510	long	5	8	1	10
K1095.0612	long	6	10	1	12
K1095.0818	long	8	12	1,2	18
K1095.1022	long	10	15	1,5	22
K1095.1224	long	12	18	1,5	24
K1095.1630	long	16	26	1,5	30
K1095.2036	long	20	30	2,5	36

Technical note for centring unit

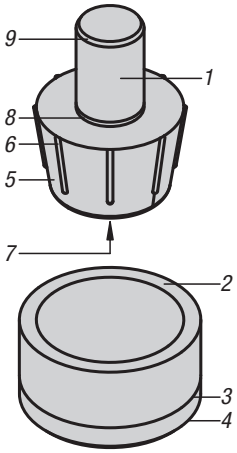
Functional description

1) To join two plates fitted with the centring unit, the cone is simply positioned into the bush.
2) The balls on the cone are now in light contact with the inner surface of the bush, but there is still a small gap between the two plates.
3) When a down force (F) is applied, the precision balls in the rubber jacket are pressed onto the surface of the cone and the surfaces of the two plates align with each other. The metal conical surfaces of the bush and cone both have the same overall hardness and can only deform within their elastic limit where the precision balls make contact. So the balls cannot damage the surfaces. Due to the prevailing balance of forces, the cone always strives to align itself with the centre of the bush. This centre alignment means that the component is always positioned precisely and with high repeat precision in the axis.



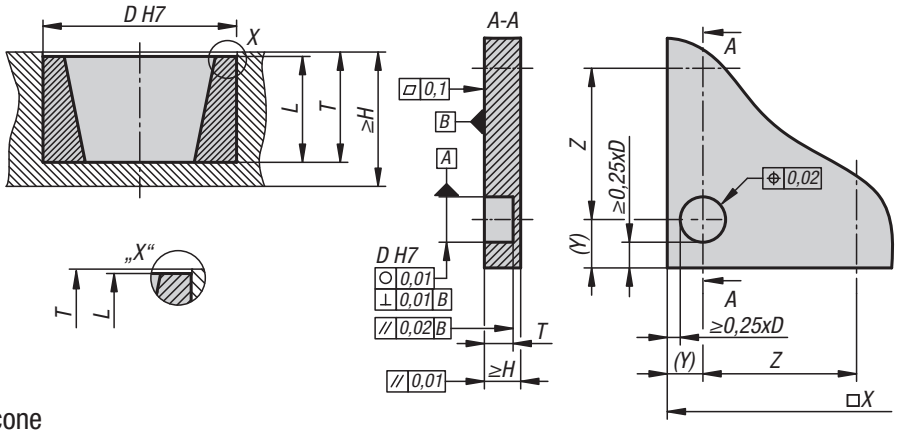
- Temperature differences of up to 30 K can be compensated for
- The rubber does not embrittle and is insensitive to dirt or swarf
- Embedded swarf splinters do not effect the system
- Ester-based or antifreeze coolants should be avoided
- Some form of undercut should be added to the receiving hole so that the bush can be pulled out and replaced

Centring unit in detail

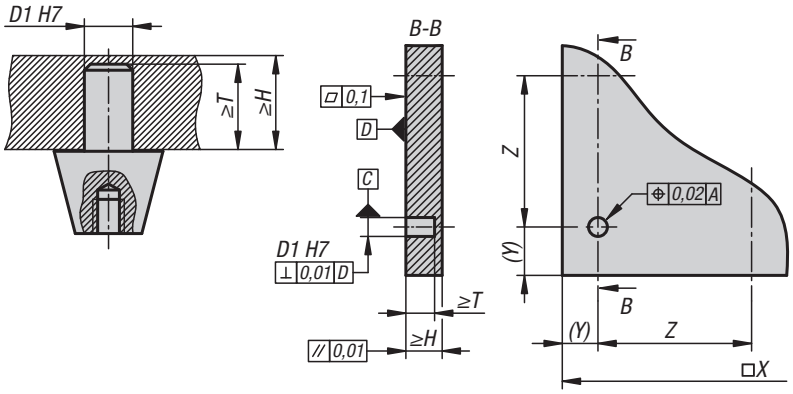
Description	
1 Cone **2 Bush** **3 Positioning diameter for easy assembly** **4 Lead-in chamfer for easy assembly** **5 Rubber for holding the precision balls** **6 Precision balls as centring element** **7 Tapped hole for removing the cone** **8 Undercut for flat-parallel installation of the cone** **9 Lead-in chamfer for easy assembly**	

Mounting dimensions

bush

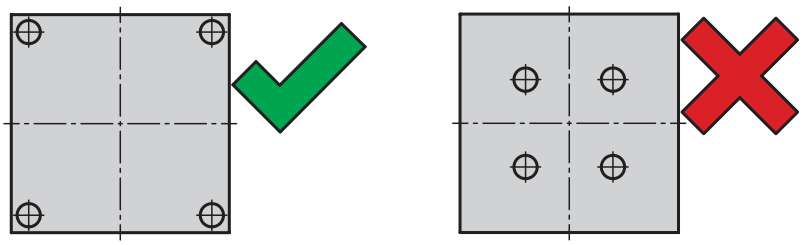


cone



component	bush		cone	
Size	1	3	1	3
D (bore diameter)	16^{H7}	32^{H7}		
L (bush length)	8,5	17,5		
T (bore depth)	9-0,1	18-0,1		
≥H (plate thickness)	12,5	25		
D1 (bore diameter)			6^{H7}	10^{H7}
≥T (bore depth)			9	18
≥H (plate thickness)			12	21

To obtain the best possible alignment of the two workpieces, the centring units should be positioned as far apart as possible.

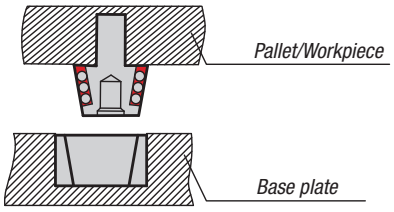


Minimum down force exerted by a retraction mechanism (e.g. bolts)

Size	1		3	
Number of centring units	1	4	1	4
Minimum down force (kN)	1,5	6	2,5	10

The down force applied by the retraction mechanism must be taken up by the components, as the centring units are only designed for centring, not taking up forces. Application of the minimum down force creates a frictional bond between the two components, leaving the centring units free from lateral forces.

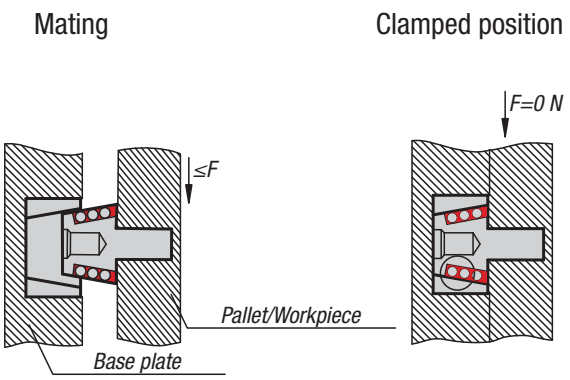
- The maximum working temperature is +80 °C
- Generally, the bush is pressed into the baseplate and the cone is pressed into a pallet or the workpiece
- The maximum centre offset between bush and cone should not exceed 3 mm when mating



Special aspects for horizontal mounting

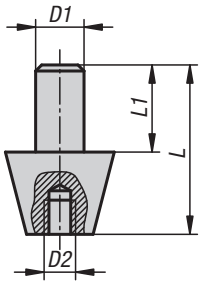
The same mounting dimensions apply as for vertical mounting. Since the workpieces take up the lateral forces when clamped by a down force, the centring units are left free of lateral forces. However, during pallet changes or when mating workpieces the centring units should only be subjected to the following maximum lateral forces:

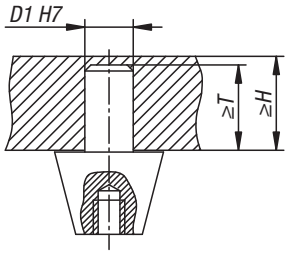
Size	1		3	
Number of centring units	1	4	1	4
Lateral force Fmax (N)	35		250	

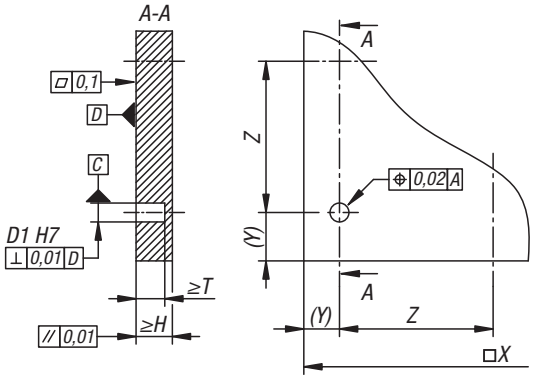


Positioning cones, steel,

for centring units







Material:
Cone, steel.
Balls, ball bearing steel.

Version:
Cone hardened and ground.
Balls embedded in rubber which is vucanised on the cones.

Sample order:
K1627.3

Note:
In conjunction with the position bushings, the position cones form a centring unit for the high-precision positioning of two components. The system achieves a repeat accuracy of <0.003 mm. The bonded rubber does not become brittle and is insensitive to contamination or swarf. Small embedded swarf splinters do not effect the system.

Temperature range:
+80 °C.

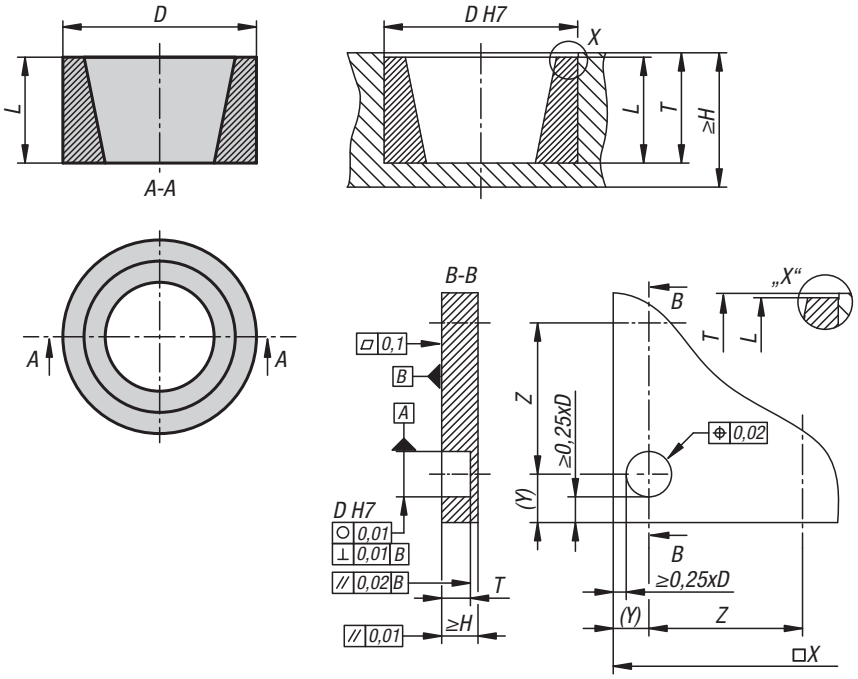
Functional principle:
When the positioning cone and bush are mated, the balls are pressed together within the rubbers elastic range and thus locate the two parts in which they have been fitted, with maximum accuracy. To ensure that the rubber in which the balls are embedded is deformed within the elastic range, one must merely ensure that the depth of the hole into which the positioning bush is later pressed is precisely observed. The positioning cone is supplied ready to fit into the positioning bush and must simply be fitted into the counterpart component. Henceforth, a precise zero point positioning system is in place.

KIPP Cone centring unit

Order No.	Size	D1	D2	H min.	L max.	L1	T min.	for Art. No.
K1627.1	1	6	M4	12	17,5	9	9	K1628.1
K1627.3	3	10	M8	21	35	18	18	K1628.3

Positioning bush steel

for centring units



Material:
Steel.

Version:
Hardened and ground.

Sample order:
K1628.3

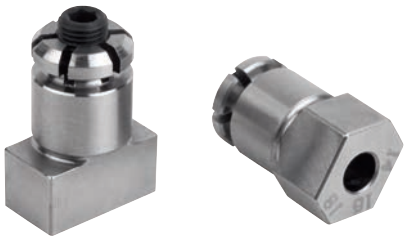
Note:
These positioning bushes match positioning cones.

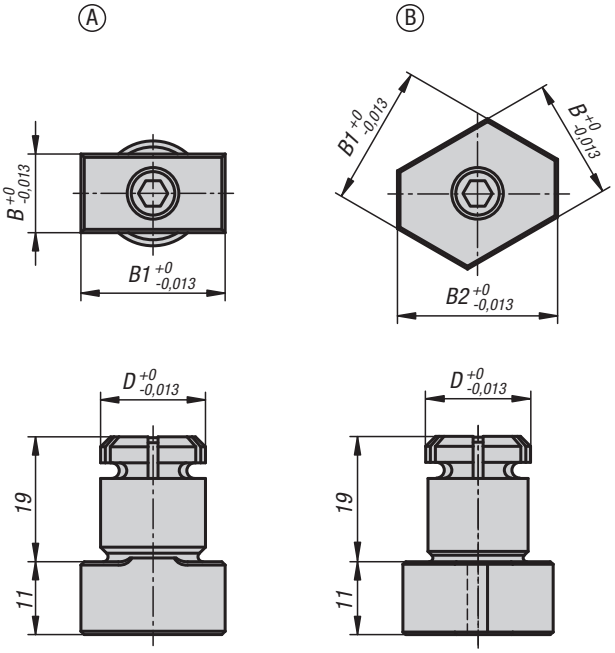
Temperature range:
+80 °C.

KIPP Bush centring unit

Order No.	Size	D	H min.	L max.	T	for Art. No.
K1628.1	1	16	12,5	8,5	9-0,1	K1627.1
K1628.3	3	32	25	17,5	18-0,1	K1627.3

Locating pins expanding





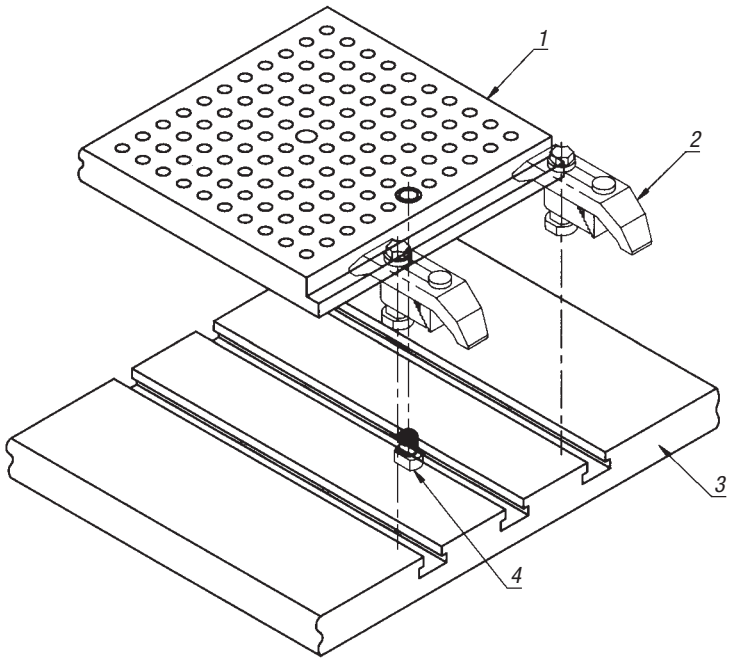
Material:
Carbon steel.

Version:
Tempered and black oxidised.
Locating diameter and guide faces ground.

Sample order:
K0356.1610

Note:
These expanding locating pins enable e.g. tooling plates to be positioned in the T-slots of machine tables (see illustration).
The plates to be positioned must have two holes matching the expanding pin diameter.
The expansion screw has a broached through hexagonal hole allowing the pin to be tightened or loosened from two sides.

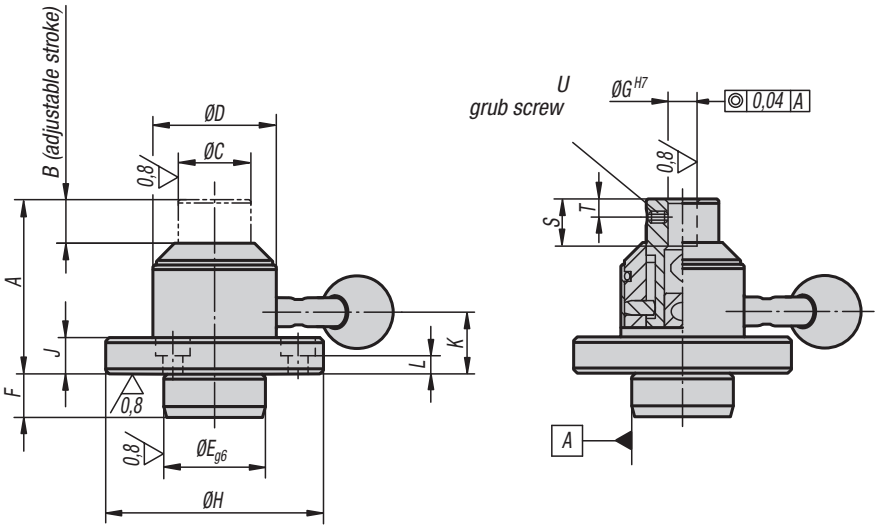
Drawing reference:
1) tooling plate
2) clamp straps
3) machine table
4) expanding locating pin



KIPP Locating pins, expanding

Order No.	Form	D	B	B1	B2	Recommended Ø
K0356.1610	A	16	10	20	-	16,01 ±0,01
K0356.1612	A	16	12	22	-	16,01 ±0,01
K0356.1614	B	16	14	16	18	16,01 ±0,01
K0356.2024	B	20	24	28	32	20,01 ±0,01

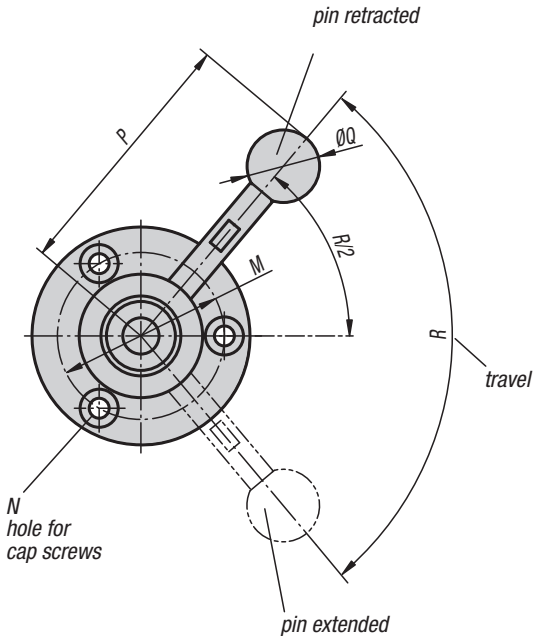
Positioning units



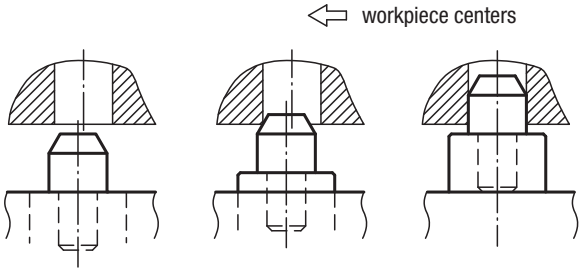
Material, version:
Body and locating pin carbon steel, tempered and black oxidised.
Handle carbon steel, tempered.
Ball knob black thermoset PF 31.

Sample order:
K0918.2808

Note:
* Admissible hand force for the handle.
** Workpieces up to this weight can be located.



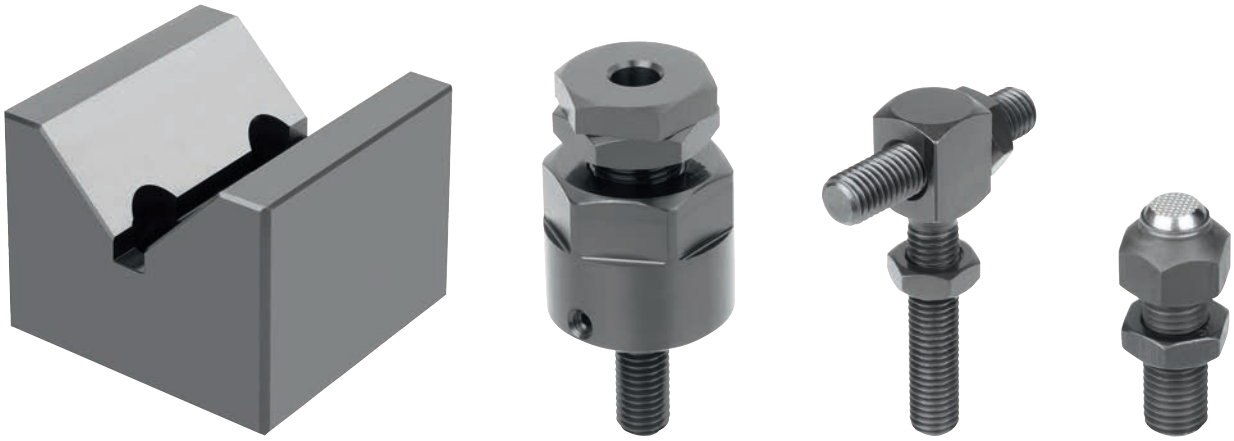
1. roughly position 2. raise pin 3. located



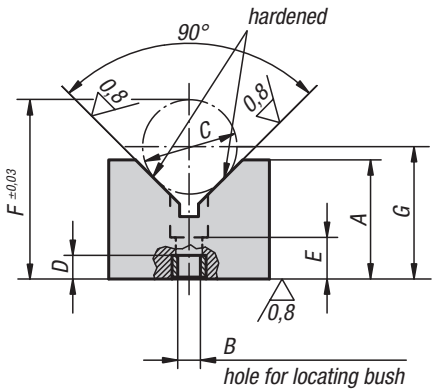
KIPP Positioning units

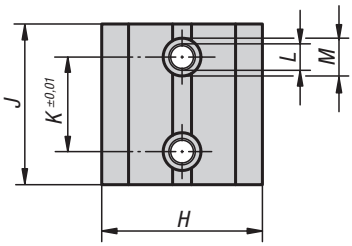
Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	Hand force FH N	Max. workpiece weight kg
K0918.2808	48	12	20	34	28	12	8	60	10	17	5	46	M5	71	20	100	13	5	M4x5	150*	250**
K0918.4212	61	15	30	48	42	14	12	80	13	23	7	63	M6	94	25	90	15	8	M6x8	200*	300**

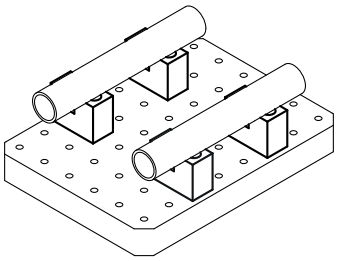
Rest and stop elements



V-blocks, vertical







Material:
Carbon steel.

Version:
Black oxidised.
Prism and contact faces ground.

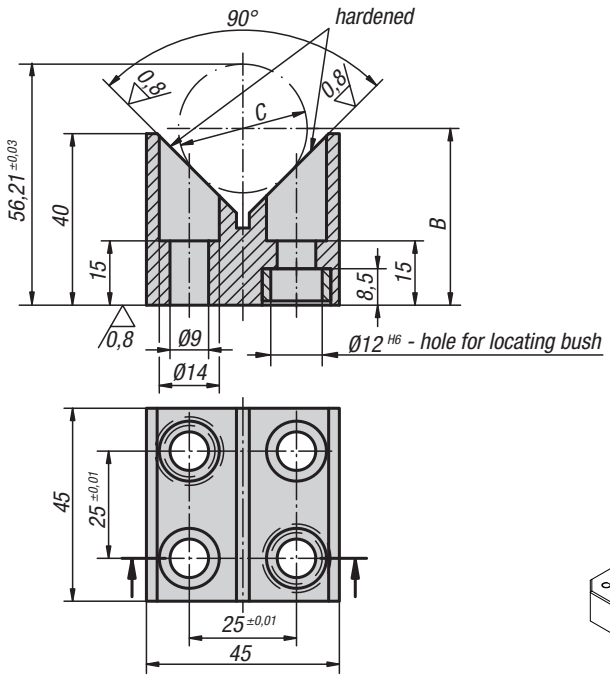
Sample order:
K0819.60008032

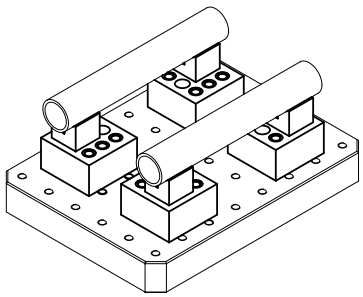
KIPP V-blocks vertical

Order No.	A	B Ø for locating bush	C min.	C max.	C Test-Ø	D	E	F	G	H	J	K	L	M
K0819.60008032	32	12 H6	10	25	15±0,003	8,5	13	40,1	C/2 x√ 2+22	25	45	25	9	14

K0819

V-blocks, vertical





Material:
Carbon steel.

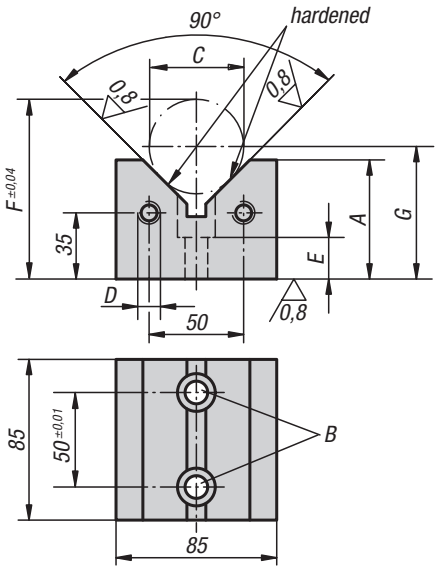
Version:
Black oxidised.
Prism and contact faces ground.

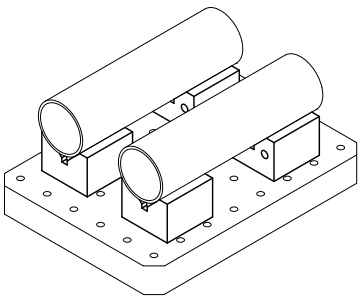
Sample order:
K0819.60008040

KIPP V-blocks vertical

Order No.	C min.	C max.	C Test-Ø	B
K0819.60008040	15	50	30±0,003	C/2X√2+20

V-blocks, vertical





Material:
Carbon steel.

Version:
Black oxidised.
Prism and contact faces ground.

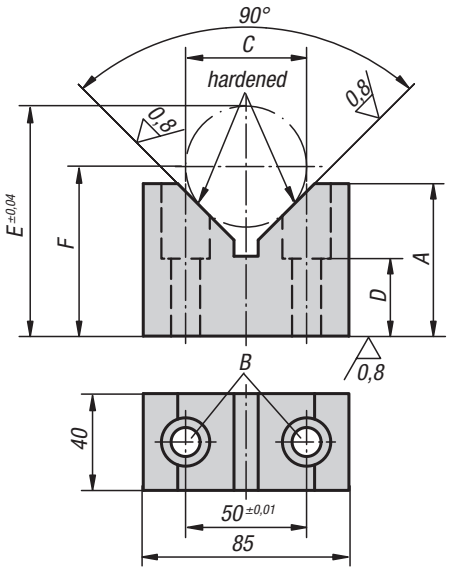
Sample order:
K0819.60012063

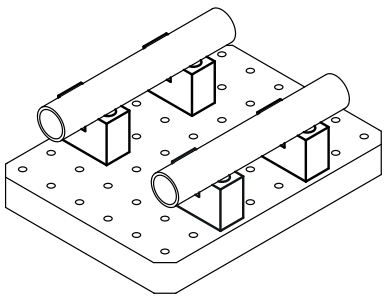
KIPP V-blocks vertical

Order No.	A	B Ø for shoulder screw	C min.	C max.	C Test-Ø	D	E	F	G	Suitable shoulder screw
K0819.60012063	63	12 F7	15	80	50±0,003	M12	22	95,071	C/2 x√ 2+34,716	K0815.112055
K0819.60012075	75	12 F7	15	100	70±0,003	M12	22	124,142	C/2 x√2+39,645	K0815.112055
K0819.60016063	63	16 F7	15	80	50±0,003	M16	25	95,071	C/2 x√ 2+34,716	K0815.116065
K0819.60016075	75	16 F7	15	100	70±0,003	M16	25	124,142	C/2 x√2+39,645	K0815.116065

K0819

V-blocks, vertical





Material:
Carbon steel.

Version:
Black oxidised.
Prism and contact faces ground.

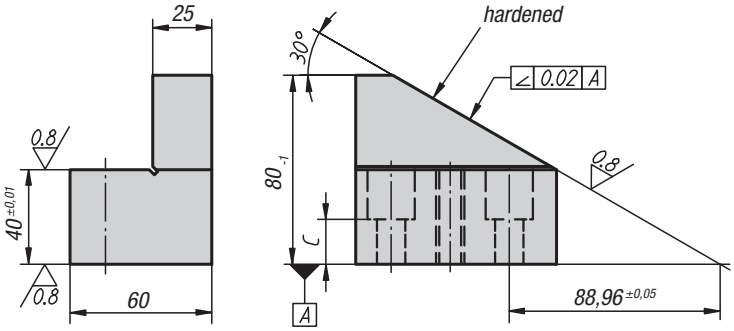
Sample order:
K0819.60512063

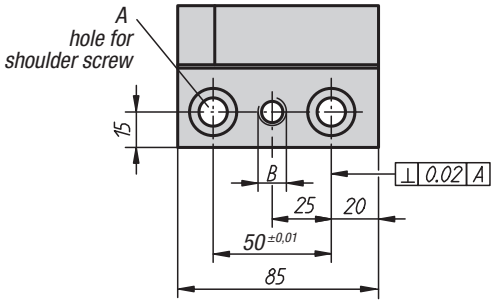
KIPP V-blocks, vertical

Order No.	A	B Ø for shoulder screw	C min.	C max.	C Test-Ø	D	E	F	Suitable shoulder screw
K0819.60512063	63	12 F7	15	80	50±0,003	32	95,071	C/2x√2+34,716	K0815.112065
K0819.60512075	75	12 F7	15	100	70±0,003	32	124,142	C/2x√2+39,645	K0815.112065
K0819.60516063	63	16 F7	15	80	50±0,003	25	95,071	C/2x√2+34,716	K0815.116065
K0819.60516075	75	16 F7	15	100	70±0,003	25	124,142	C/2x√2+39,645	K0815.116065

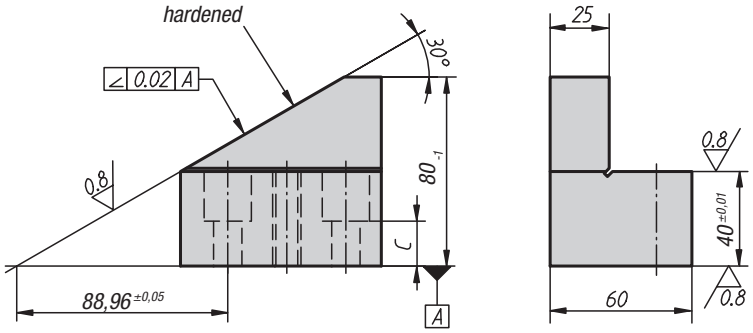
V-blocks split

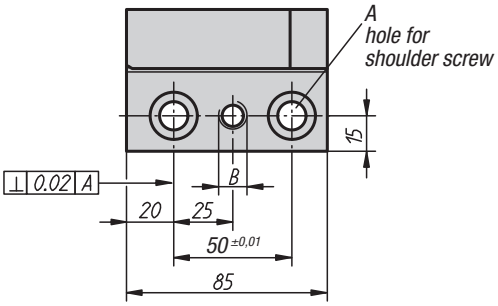
right hand





left hand



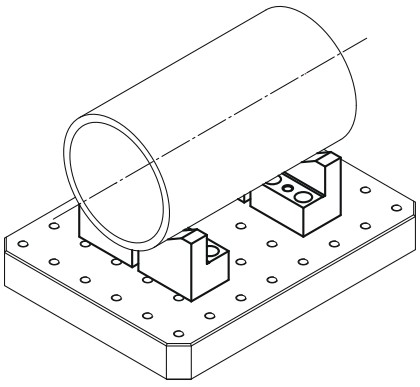


Material:
Carbon steel.

Version:
Black oxidised.
Half prism (30°) and contact faces ground.

Sample order:
K0819.6301230

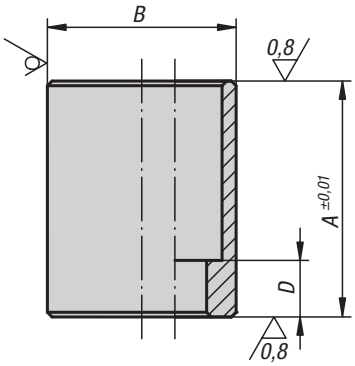
Note:
Right-hand and left-hand split V-blocks are used for positioning round parts. Split V-blocks permit adjustment to the respective workpiece diameter.

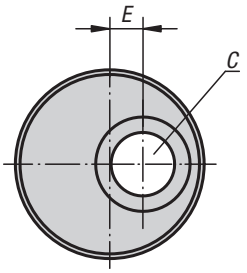


KIPP V-blocks split

Order No. right	Order No. left	A	B	C	D min.	D max.	Suitable shoulder screw
K0819.6301230	**K0819.6311230**	12 F7	M12	23	50	600	K0815.112055
K0819.6301630	**K0819.6311630**	16 F7	M16	20	50	600	K0815.116055

Eccentric supports





Material:
Special steel alloy.

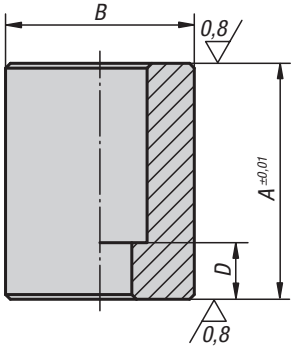
Version:
Tempered, black oxidised.
Contact faces ground.

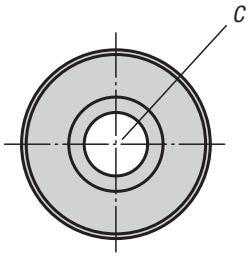
Sample order:
K0822.10040

KIPP Eccentric supports

Order No.	A	B	C hole for DIN 912 cap screw	D	E
K0822.08016	16	25	M8	7	3,5
K0822.08020	20	25	M8	7	3,5
K0822.08025	25	25	M8	7	3,5
K0822.08032	32	25	M8	7	3,5
K0822.08040	40	25	M8	7	3,5
K0822.08050	50	25	M8	7	3,5
K0822.10020	20	32	M10	9	5
K0822.10025	25	32	M10	9	5
K0822.10032	32	32	M10	9	5
K0822.10040	40	32	M10	9	5
K0822.10050	50	32	M10	9	5
K0822.10063	63	32	M10	9	5
K0822.12020	20	40	M12	7	7
K0822.12025	25	40	M12	12	7
K0822.12032	32	40	M12	12	7
K0822.12040	40	40	M12	12	7
K0822.12050	50	40	M12	12	7
K0822.12063	63	40	M12	12	7
K0822.12080	80	40	M12	22	7
K0822.12100	100	40	M12	22	7
K0822.12125	125	40	M12	22	7
K0822.16025	25	50	M16	8	10
K0822.16032	32	50	M16	15	10
K0822.16040	40	50	M16	15	10
K0822.16050	50	50	M16	15	10
K0822.16063	63	50	M16	15	10
K0822.16080	80	50	M16	35	10
K0822.16100	100	50	M16	35	10
K0822.16125	125	50	M16	35	10

Supports





Material:
Carbon steel.

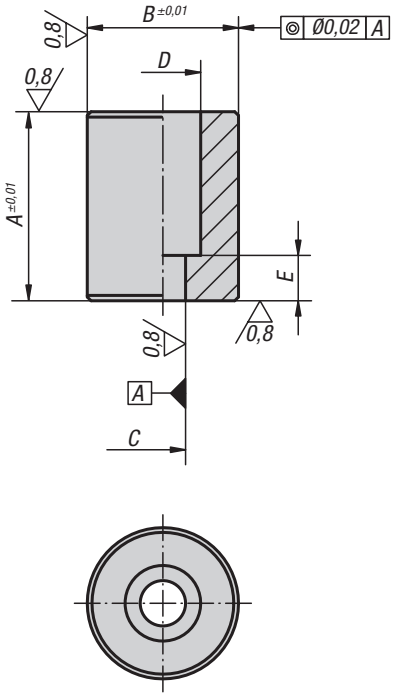
Version:
Tempered, black oxidised.
Contact faces ground.

Sample order:
K0823.08016

KIPP Supports

Order No.	A	B	C hole for DIN 912 cap screw	D
K0823.08016	16	25	M8	7
K0823.08020	20	25	M8	7
K0823.08025	25	25	M8	7
K0823.08032	32	25	M8	7
K0823.08040	40	25	M8	7
K0823.08050	50	25	M8	7
K0823.10020	20	32	M10	9
K0823.10025	25	32	M10	9
K0823.10032	32	32	M10	9
K0823.10040	40	32	M10	9
K0823.10050	50	32	M10	9
K0823.10063	63	32	M10	9
K0823.12020	20	40	M12	7
K0823.12025	25	40	M12	12
K0823.12032	32	40	M12	12
K0823.12040	40	40	M12	12
K0823.12050	50	40	M12	12
K0823.12063	63	40	M12	12
K0823.12080	80	40	M12	22
K0823.12100	100	40	M12	22
K0823.16025	25	50	M16	8
K0823.16032	32	50	M16	15
K0823.16040	40	50	M16	15
K0823.16050	50	50	M16	15
K0823.16063	63	50	M16	15
K0823.16080	80	50	M16	35
K0823.16100	100	50	M16	35
K0823.16125	125	50	M16	35

Locating supports

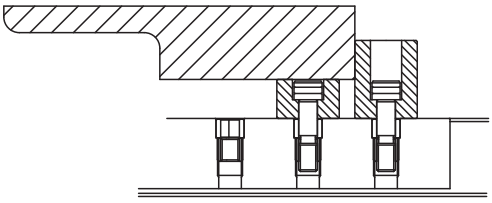


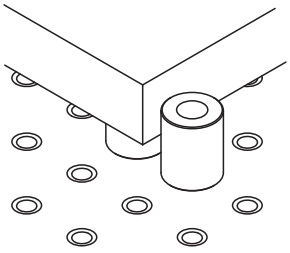
Material:
Carbon steel.

Version:
Tempered.
OD and support faces ground.

Sample order:
K0816.08020

Note:
Depending on the system (M8, M12, M16), the locating supports are positioned and secured using shoulder screws or locating sleeves with socket head screw.

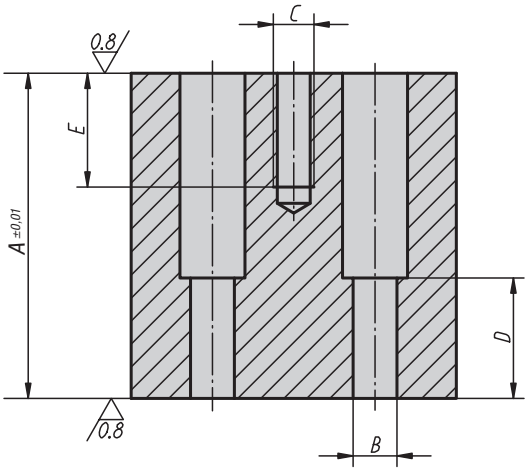


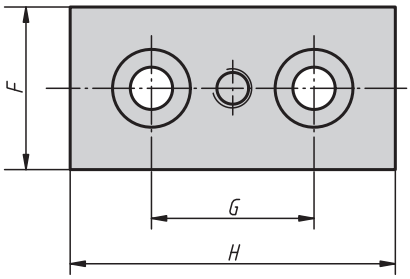


KIPP Locating supports

Order No.	A	B	C Ø for shoulder screw	D	E	Suitable shoulder screw
K0816.12025	25	40	12 H7	20	12	K0815.12045
K0816.12050	50	40	12 H7	20	12	K0815.12045
K0816.12075	75	40	12 H7	20	12	K0815.12045
K0816.16050	50	50	16 H7	26	15	K0815.16055
K0816.16075	75	50	16 H7	26	15	K0815.16055
K0816.16100	100	50	16 H7	26	25	K0815.16065
K0816.16125	125	50	16 H7	26	25	K0815.16065

Support blocks





Material:
Carbon steel.

Version:
Tempered, black oxidised.
Contact faces ground.

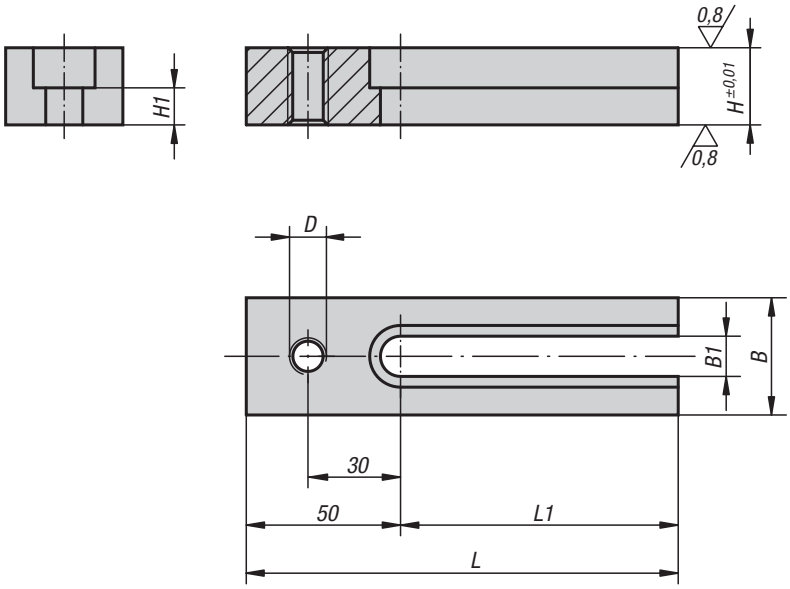
Sample order:
K0827.36012020

Note:
Support blocks are for placing under long workpieces to prevent bending during machining or clamping. The tapped hole is for mounting fixture elements between the grid holes.

KIPP Support blocks

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	H
K0827.36012020	20	M12	M12	7	20	50	50	100
K0827.36012025	25	M12	M12	12	25	50	50	100
K0827.36012032	32	M12	M12	19	32	50	50	100
K0827.36012040	40	M12	M12	27	40	50	50	100
K0827.36012050	50	M12	M12	37	35	50	50	100
K0827.36012063	63	M12	M12	37	35	50	50	100
K0827.36012080	80	M12	M12	37	35	50	50	100
K0827.36012100	100	M12	M12	37	35	50	50	100
K0827.36012125	125	M12	M12	37	35	50	50	100
K0827.36016025	25	M16	M16	8	25	50	50	100
K0827.36016032	32	M16	M16	15	32	50	50	100
K0827.36016040	40	M16	M16	23	40	50	50	100
K0827.36016050	50	M16	M16	33	35	50	50	100
K0827.36016063	63	M16	M16	46	35	50	50	100
K0827.36016080	80	M16	M16	46	35	50	50	100
K0827.36016100	100	M16	M16	46	35	50	50	100

Seating blocks adjustable

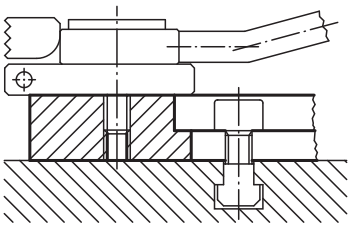


Material:
Carbon steel.

Version:
Tempered, black oxidised.
Contact faces ground.

Sample order:
K0824.12125

Note:
The tapped hole is for mounting fixture components. The slot allows the riser to be set in any desired position.



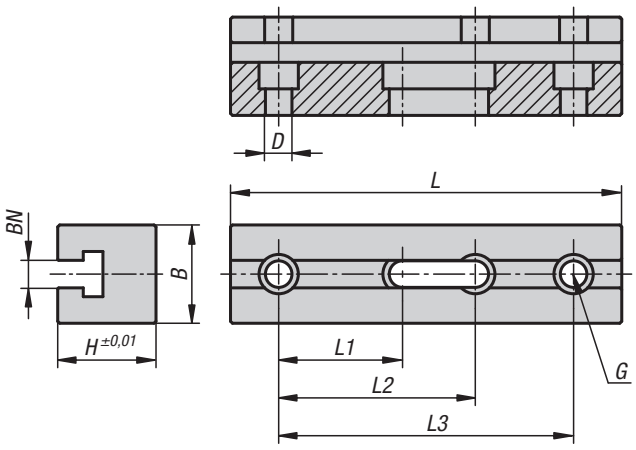
KIPP Seating blocks adjustable

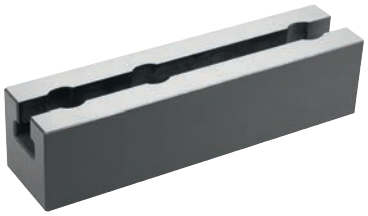
Order No.	D	L	L1	B	B1	H	H1
K0824.12025	M12	90	40	38	13	25	12
K0824.12032	M12	90	40	38	13	32	19
K0824.12040	M12	90	40	38	13	40	27
K0824.12050	M12	90	40	38	13	50	37
K0824.12125	M12	140	90	38	13	25	12
K0824.12132	M12	140	90	38	13	32	19
K0824.12140	M12	140	90	38	13	40	27
K0824.12150	M12	140	90	38	13	50	37
K0824.16032	M16	90	40	50	17	32	15
K0824.16040	M16	90	40	50	17	40	23
K0824.16050	M16	90	40	50	17	50	33
K0824.16132	M16	140	90	50	17	32	15
K0824.16140	M16	140	90	50	17	40	23
K0824.16150	M16	140	90	50	17	50	33

K1537

Straps

for fixture components





Material:
Steel 1.7131.

Version:
black oxidised,
case-hardened and ground.

Sample order:
K1537.14149

Note:
The straps are used to fasten fixture components via the T-slot.
The hole spacing on the straps enable flexible mounting on the machine table or a base element.
Diagonal installation is possible due to the combination of the fastening hole and fastening slot.

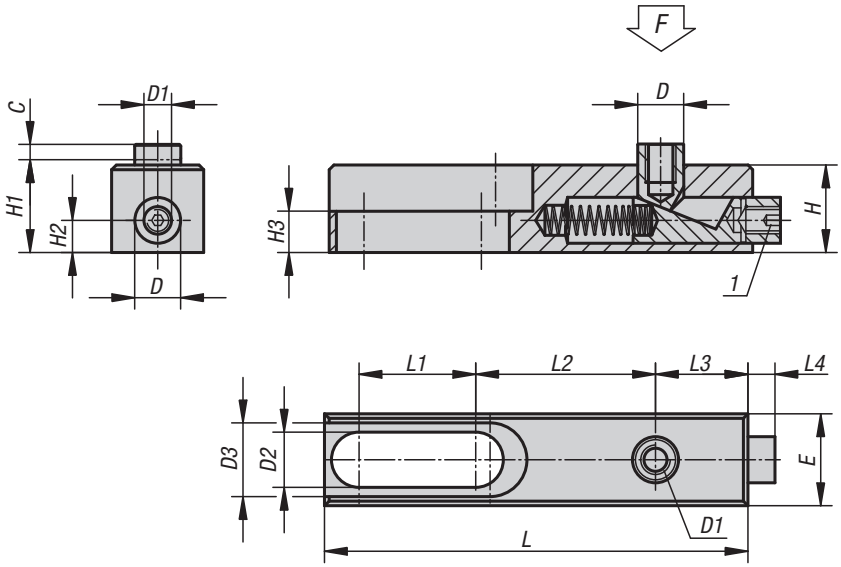
Accessories:
DIN 912 cap screws
Nuts for DIN 508 T-slots

KIPP Straps for fixture components

Order No.	BN=Slot width	B	D	H	L	L1	L2	L3	G for socket head screw
K1537.14149	14	48	13,5	50	149	63	100	-	M12
K1537.14199	14	48	13,5	50	199	63	100	150	M12
K1537.18149	18	58	17,5	60	149	63	100	-	M16
K1537.18199	18	58	17,5	60	199	63	100	150	M16

K0889

Workpiece supports



Material:
Steel.

Version:
Case-hardened, black oxidised and ground.

Sample order:
K0889.006

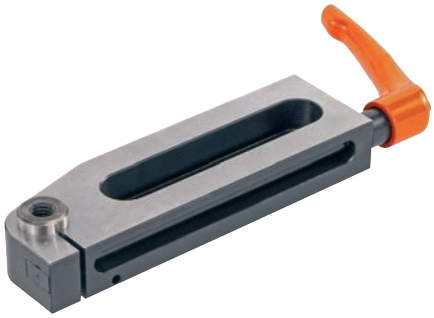
Note:
These supports are placed under long or thin workpieces to prevent vibration or bending during milling, drilling, grinding or shaping operations.

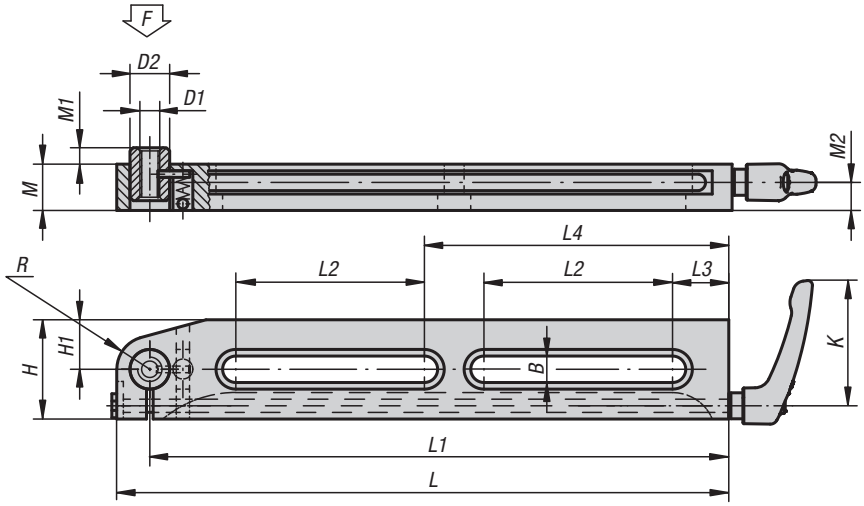
Drawing reference:
1) set screw

KIPP Workpiece supports

Order No.	C	D	D1	D2	D3	E	H	H1	H2	H3	L	L1	L2	L3	L4	F kN
K0889.006	4	10	M6	8,2	16,2	20	19	19,5	7	9	92	25,5	39	20	6	3
K0889.010	6	16	M10	12,5	24,4	30	30	31	10	10	149	44	61	32	11	15

Workpiece supports





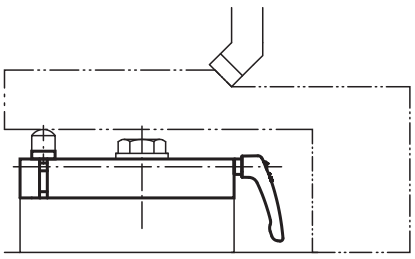
Material:
Steel.

Version:
Case-hardened, black oxidised and ground.

Sample order:
K1947.170

Note:
These supports are placed under long or thin workpieces to prevent vibration or bending during milling, drilling, grinding or shaping operations. The support can be accurately placed without the need to reach under the workpiece. The support pin contacts the workpiece under light pressure. It can be tightened in any position. Various types of pins can be screwed into the tapped hole in the thrust pin to adapt the support height.

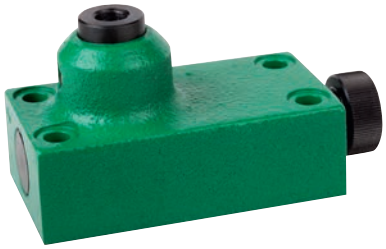
The supports K1947.075, K1947.150 and K1947.170 have only 1 slot.



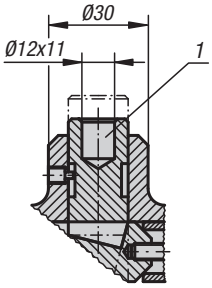
KIPP Compensating Spanner

Order No.	K	L	L1	L2	L3	L4	B	H	H1	D1	D2	M	M1	M2	R	F N
K1947.75	65	85	75	35	13	-	8,5	30	10	M8	13	19,5	3	11,5	-	500
K1947.150	80	165	150	90	20	-	13	50	25	M10	20	24	6	14	15	2500
K1947.170	-	190	170	100	25	-	17	60	20	M16	26	34	11	21,5	-	5000
K1947.300	-	315	300	100	30	160	13	50	25	M10	20	24	6	14	15	2500

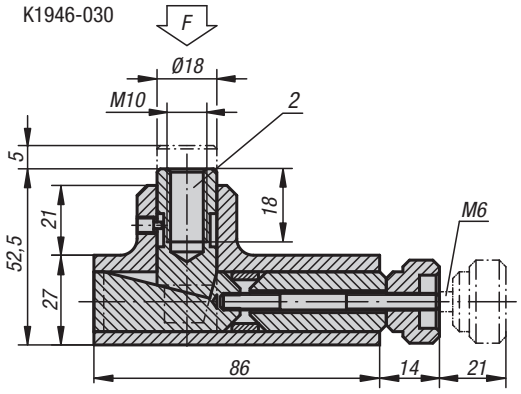
Rectangular support elements

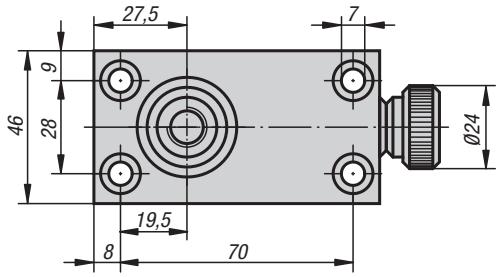


K1946-010



K1946-030



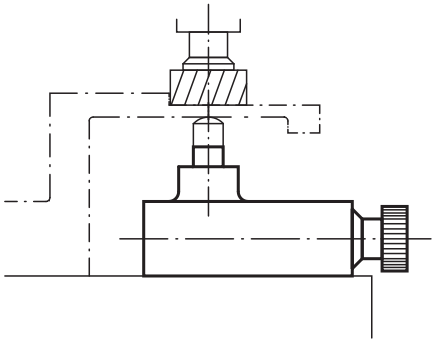


Material:
Housing GJL 250, thrust pads and locking parts carbon steel.

Version:
Housing painted, steel parts black oxidised.

Sample order:
K1946.030

Drawing reference:
1) centring hole for K1961
2) tapped hole for: K0282.110, K0282.310, K0282.910, K0296.10, K0296.101

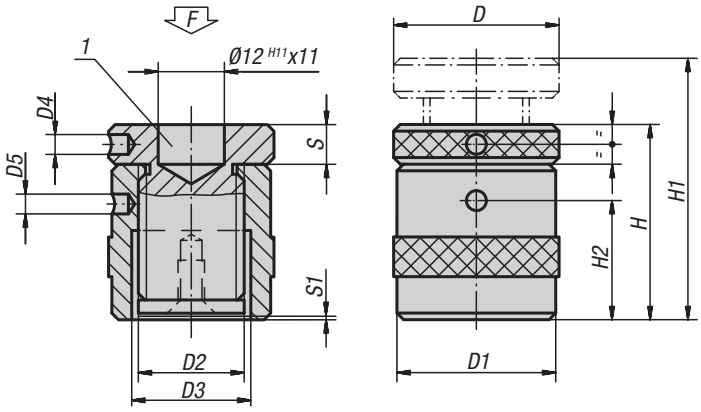


KIPP Rectangular Support Elements

Order No.	F max. kN
K1946.010	30
K1946.030	30

Screw rests

with flat face, steel



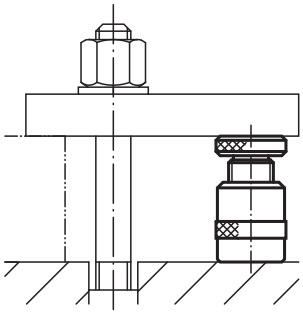
Material:
Carbon steel.

Version:
Painted, trapezoidal thread - self-locking, spindle has end lock

Sample order:
K1941.02

Note:
The version K1941-01 has no Ø 12 centring hole.

Drawing reference:
1) centring hole for K1961

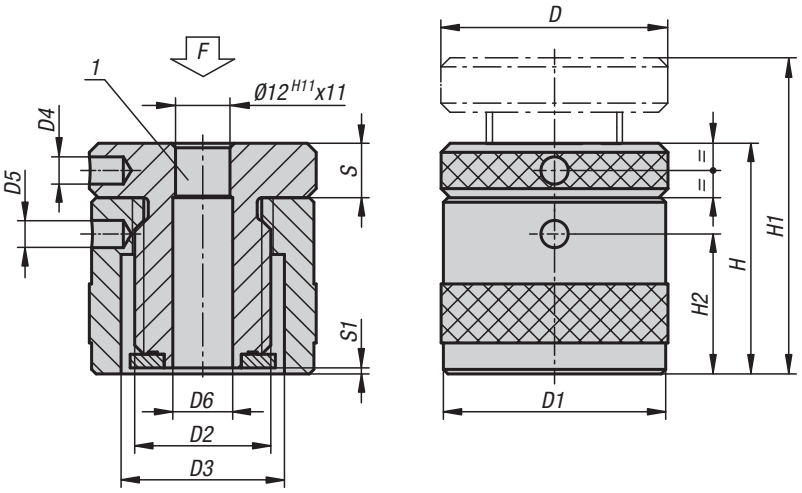


KIPP Screws rests with flat support face, steel

Order No.	D	D1	D2	D3	D4	D5	H	H1	H2	S	S1	F max. kN
K1941.01	31	31	Tr 20X4	23	4	4	38	52	23	8	2	15
K1941.015	50	49	Tr 30X4	36	6	6	42	52	24	12	2	60
K1941.02	50	49	Tr 30X4	36	6	6	50	72	30	12	0,5	60
K1941.03	50	49	Tr 30X4	36	6	6	71	102	43	16	1,5	60
K1941.04	65	70	Tr 40X7	43	6	6	100	140	58	25	2,5	100
K1941.05	70	80	Tr 50X8	55	6	6	140	212	90	30	4	170
K1941.06	80	100	Tr 65X10	70	6	8	190	300	126	34	5	350

Screw rests

with flat face, stainless steel



Material:
Stainless steel 1.4305.

Version:
Self-locking trapezoidal thread, spindle has end lock.

Sample order:
K1942.03

Note:
The through hole allows easy clamping and positioning of the workpiece.

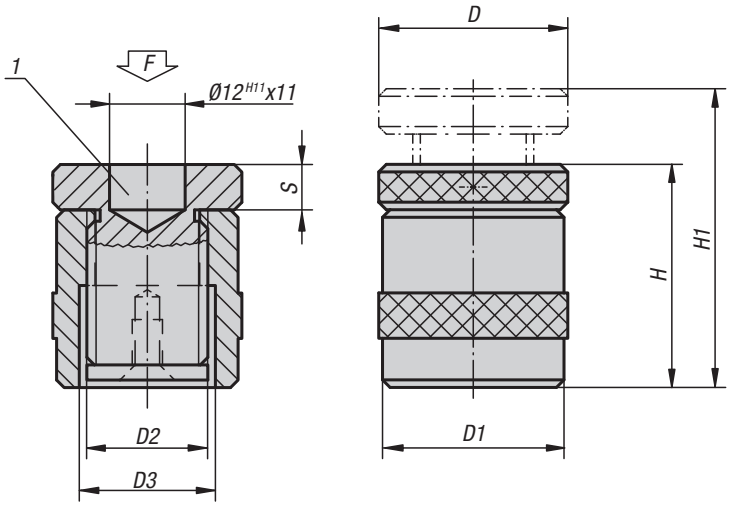
Drawing reference:
1) centring hole for K1961

KIPP Screw rests with flat face, stainless steel

Order No.	D	D1	D2	D3	D4	D5	D6	H	H1	H2	S	S1	F max. kN
K1942.015	50	49	Tr 30X4	36	6	6	13	42	52	24	12	2	50
K1942.02	50	49	Tr 30X4	36	6	6	13	50	72	30	12	0,5	50
K1942.03	50	49	Tr 30X4	36	6	6	13	71	102	43	16	1,5	50

Screw rests

with flat face, aluminium



Material:
Aluminium (400 N/mm² tensile strength).
Spindle carbon steel.

Version:
Self-locking trapezoidal thread, spindle has end lock.

Sample order:
K1943.03

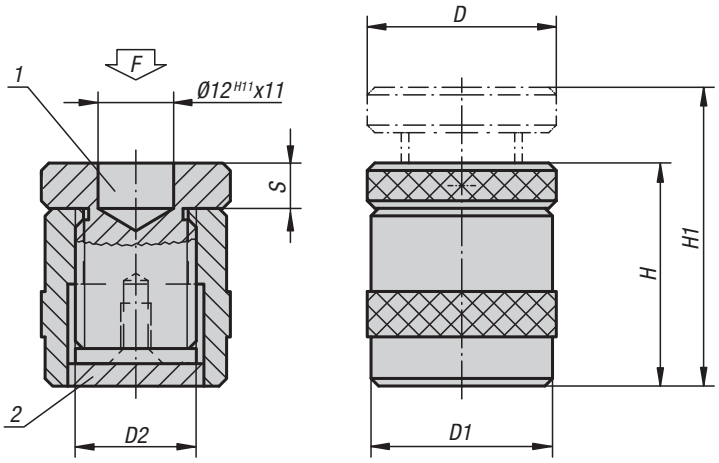
Drawing reference:
1) centring hole for K1961

KIPP Screw rests with flat support face, aluminium

Order No.	D	D1	D2	D3	H	H1	S	F max. kN
K1943.01	50	50	Tr 30X4	36	42	52	12	30
K1943.02	50	50	Tr 30X4	36	50	70	12	30
K1943.03	50	50	Tr 30X4	36	70	100	12	30

Screw rests

with flat face and magnetic foot, aluminium



Material:
Aluminium (400 N/mm² tensile strength).
Spindle carbon steel.

Version:
Self-locking trapezoidal thread, spindle has end lock.

Sample order:
K1944.02

Note:
Suitable for horizontal and vertical applications. The magnetic foot allows durable and accurate vertical positioning of the workpiece.

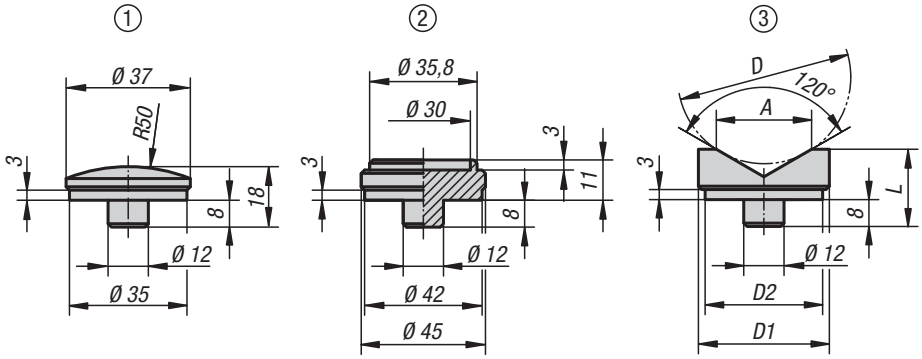
Drawing reference:
1) centring hole for K1961
2) magnetic foot

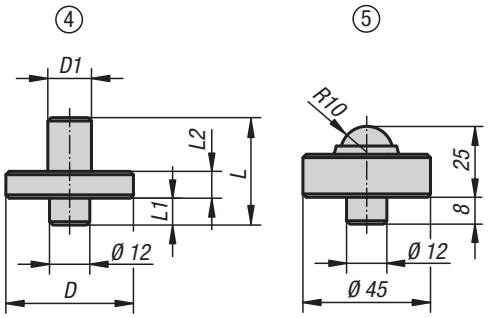
KIPP Screw rests with flat top and magnetic foot, aluminium

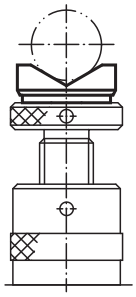
Order No.	D	D1	D2	H	H1	S	F max. kN
K1944.01	50	50	Tr 30X4	52	62	12	30
K1944.02	50	50	Tr 30X4	60	80	12	30
K1944.03	50	50	Tr 30X4	80	110	12	30

Screw rests inserts

spherical, centring disc, prism, locating pin, revolving ball







Material:
Carbon steel.

Version:
Tempered and black oxidised.
Ball hardened.

Sample order:
K1961.021

Note:
Can be used with
K1941
K1943
K1944
K1233
K1945
K1946.010

Drawing reference:
1) spherical
2) centring disc
3) prism
4) locating pin
5) revolving ball

KIPP spherical, centring disc, prism, locating pin, revolving ball

Order No.	Item
K1961.01	spherical
K1961.03	centring disc

Order No.	Item	D	D min.	D1	D2	L	A
K1961.02	prism	50	10	45	42	23	32
K1961.021	prism	100	22	65	62	38	56

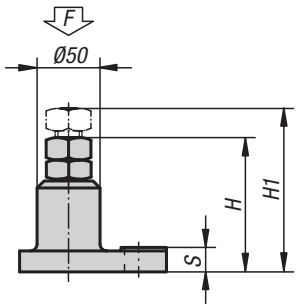
Order No.	Item	D	D1	L	L1	L2
K1961.04	locating pin	63	14	35	8	12
K1961.041	locating pin	78	25	53	8	15

Order No.	Item	Version 1	F max. kN
K1961.05	insert	with revolving ball	30

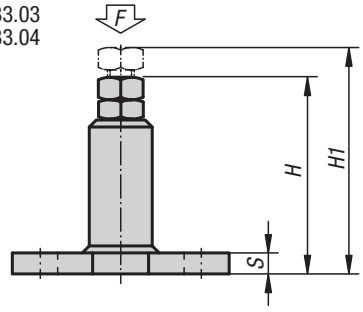
Atlas jack

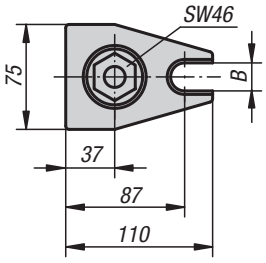
with locknut

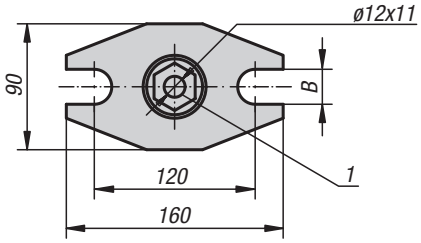
K1233.01
K1233.02



K1233.03
K1233.04



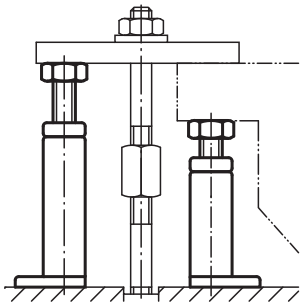




Material:
Carbon steel.

Version:
Hammertone, spindle with 30 x 6 trapezoidal thread.

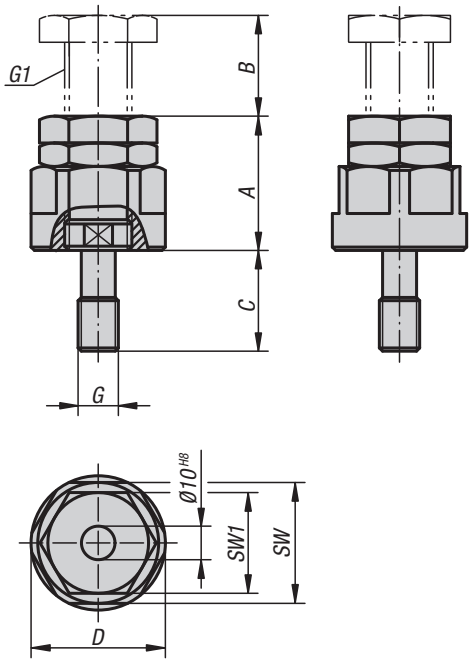
Sample order:
K1233.01



KIPP Atlas jack with locknut

Order No.	Adjustment range	base plate	H	H1	B	S	F kN
K1233.01	100 - 140	76x111	100	140	18	17	60
K1233.02	140 - 200	76x111	140	200	18	17	60
K1233.03	200 - 320	90x160	200	320	22	22	40
K1233.04	320 - 540	90x160	320	540	22	25	25

Adjustable supports



Material:
Carbon steel.

Version:
Black oxidised.
Adjustment spindle tempered.

Sample order:
K0825.16100

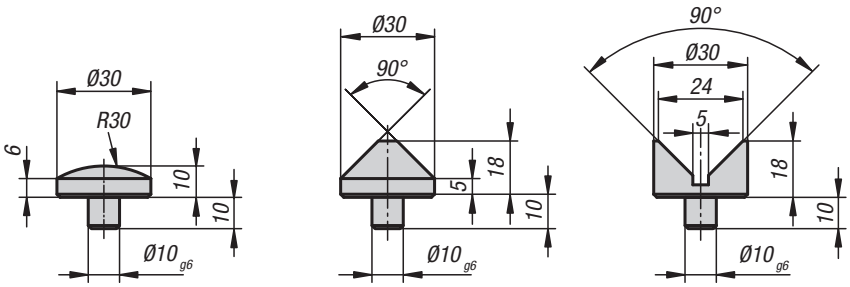
Note:
Inserts K0826 can be mounted in the top to suit the application.

KIPP Adjustable supports

Order No.	A min.	B max.	C	D	SW	SW1	G	G1
K0825.12040	40	10	30	40	36	30	M12	M20x1,5
K0825.12050	50	20	30	40	36	30	M12	M20x1,5
K0825.12070	70	40	30	40	36	30	M12	M20x1,5
K0825.12100	100	50	30	50	46	36	M12	M24x2
K0825.12150	150	100	30	50	46	36	M12	M24x2
K0825.16040	40	10	30	40	36	30	M16	M20x1,5
K0825.16050	50	20	30	40	36	30	M16	M20x1,5
K0825.16070	70	40	30	40	36	30	M16	M20x1,5
K0825.16100	100	50	30	50	46	36	M16	M24x2
K0825.16150	150	100	30	50	46	36	M16	M24x2

Inserts

① ② ③



Material:
Carbon steel.

Version:
Tempered to 1100-1200 N/mm², black oxidised.

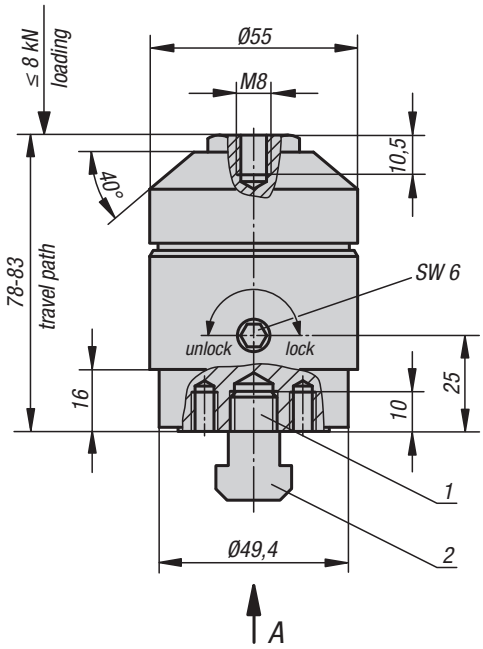
Sample order:
K0826.02

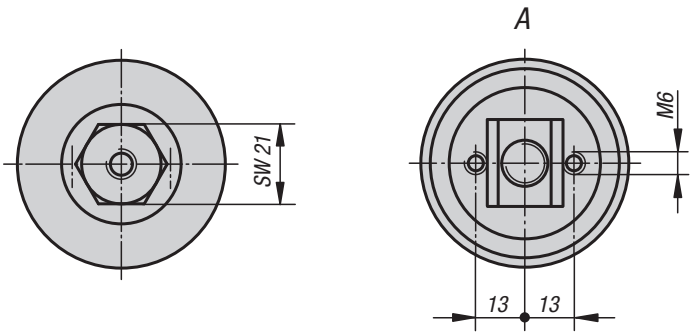
Drawing reference:
1) rounded insert
2) cone insert
3) prism insert

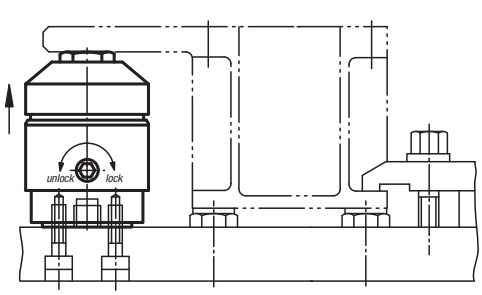
KIPP Inserts

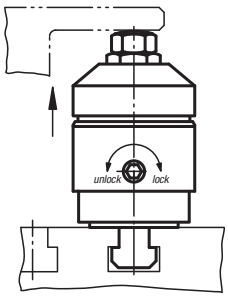
Order No.	Version
K0826.01	Rounded insert
K0826.02	Cone insert
K0826.03	Prism insert

Support elements









Material:
Main body hardened steel.
Housing aluminium.

Version:
Main body nitrated, manganese phosphated and ground.
Housing red anodised.

Note:
The support element is for supporting overhanging workpiece parts. It prevents vibration and bending during machining.

Method of operation:
1. Turn the cam screw (hex. socket SW 6) on the side of the housing, the support bolt will move out under light spring load until it makes contact with the workpiece.
2. Continue to turn to „lock“ position. The support bolt locks without changing position.
3. Turn the cam screw in the opposite direction and the support bolt will unlock. Continue turning to the „unlock“ position and the support bolt will slide back into the body.

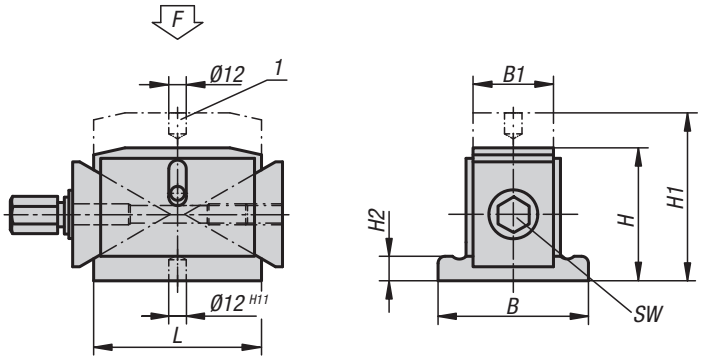
Assembly:
Mount the support element to the fixture using the two M6 tapped holes.
Alternatively: Exchange the M12x10 plug screw for a M12x30 grub screw and mount the support directly onto the machine table with a T-nut.
For safe operation the M12 tapped hole must always be filled.
It is possible to countersink the support element by 16 mm.
Various rest pads can be mounted into the M8 tapped hole on the support bolt.
Supplied with M12x30 grub screw and M12 nut for T-slots (DIN 508).

Drawing reference:
1) grub screw M12x30 DIN 913 (exchangeable)
2) nut for T-slots M12x14 DIN 508

KIPP Support element

Order No.	Load capacity N	Travel path
K1224.0508	8000	5 mm

Wedge supports



Material:
Carbon steel and ductile iron.

Version:
Tempered and black oxidised.
Wedge faces fine machined.

Sample order:
K1945.100

Note:
Fine adjustment by knurled screw or Allen key. Therefore vertical movement without lateral displacement. Especially suitable for marking or machining heavy parts. Ball handle K1961-01 is added to each height wedge.

H min is reached by removing the baseplate.

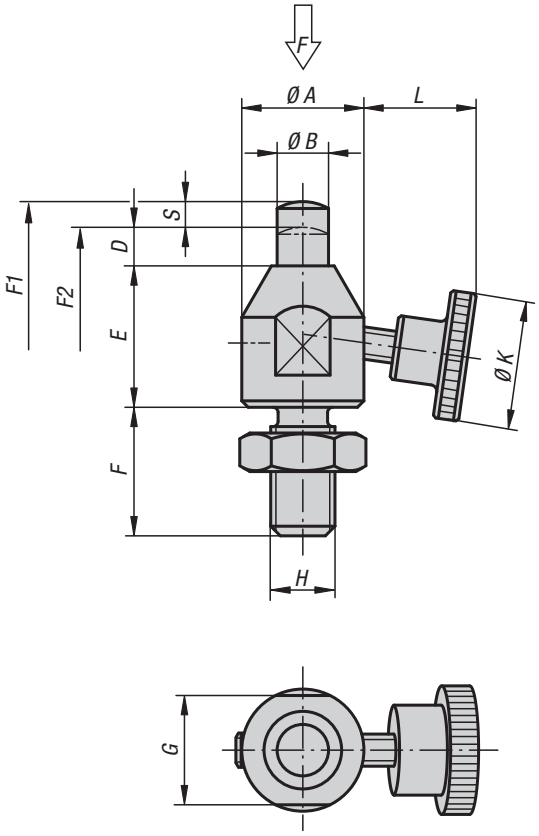
Drawing reference:
1) centring hole for K1961

KIPP Wedge supports

Order No.	Clamp range	B	B1	H	H1	H2	L	SW	travel per spindle rotation	F kN
K1945.50	50 - 68	63	40	50	68	7	63	13	0,86	40
K1945.100	100 - 125	115	60	100	125	20	125	24	1,16	100

Workpiece supports

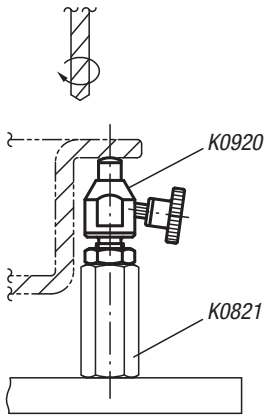
adjustable



Material:
Carbon steel.

Version:
Body black oxidised.
Rest pad hardened and black oxidised.

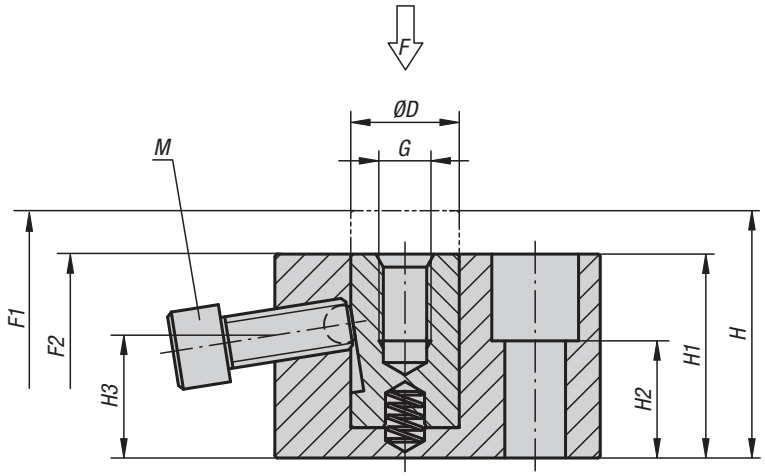
Sample order:
K0920.08023

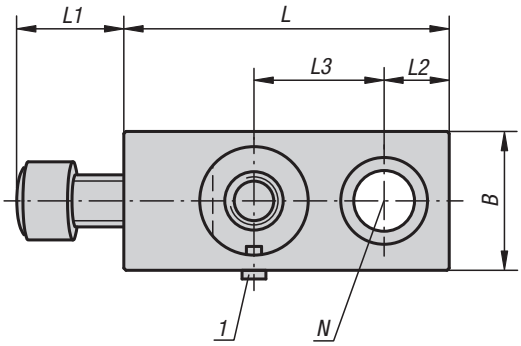


KIPP Workpiece supports, adjustable

Order No.	A	B	D	E	F	G	H	K	L	F N	Travel S	Spring force initial pressure F1 approx. N	Spring force final pressure F2 approx. N
K0920.08023	15	6	5	18	16	13	M8	20	13,2	200	3	1,5	3
K0920.10028	19	8	6	22	20	17	M10	25	16,3	300	4	1,8	3
K0920.12031	22	10	6	25	24	19	M12	28	22,3	400	4	1,8	3

Workpiece supports





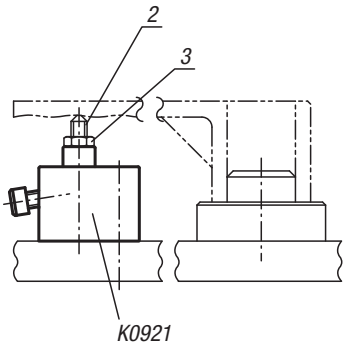
Material:
Carbon steel.

Version:
Body black oxidised.
Thrust pin tempered and black oxidised.

Sample order:
K0921.06029

Drawing reference:
M = ball pressure screw
N = through hole for socket head screw DIN 912

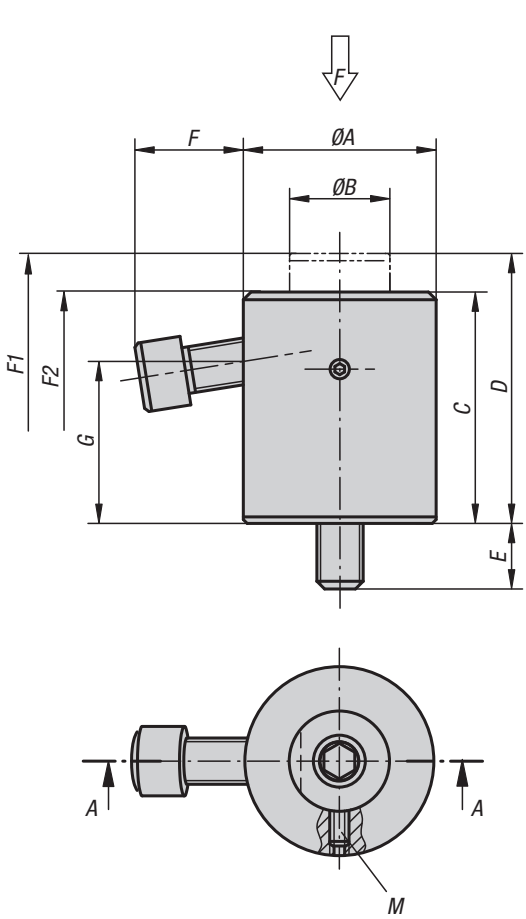
1) rotation lock
2) screw rest
3) hexagonal nut

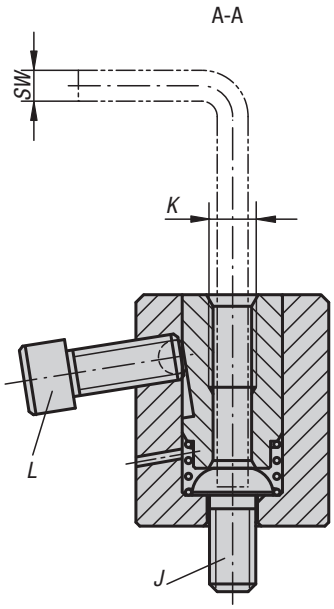


KIPP Workpiece supports

Order No.	B	D	G	H	H1	H2	H3	L	L1	L2	L3	M	N	F N	Tightening torque Mounting screws Nm	Spring force initial pressure F1 approx. N	Spring force final pressure F2 approx. N
K0921.06029	19	12	M6x10	35	29	15	17,6	38	13	8	15	M6x16	M6	4000	7,5	0	6
K0921.08037	22	16	M8x15	47	37	20	21,1	50	16	10	20	M8x20	M8	6000	14	0	7
K0921.12047	32	25	M12x20	57	47	27	28,3	75	25	15	30	M12x30	M12	9000	22	1	11

Workpiece support cylinders





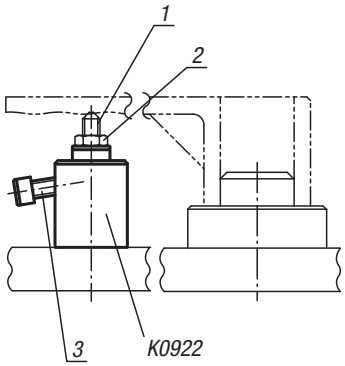
Material:
Carbon steel.

Version:
Body black oxidised.
Thrust pin hardened and black oxidised.

Sample order:
K0922.06039

Drawing reference:
J = mounting screw
L = ball-end thrust screw
M = grub screw

1) screw rest
2) hexagonal nut
3) ball-end thrust screw

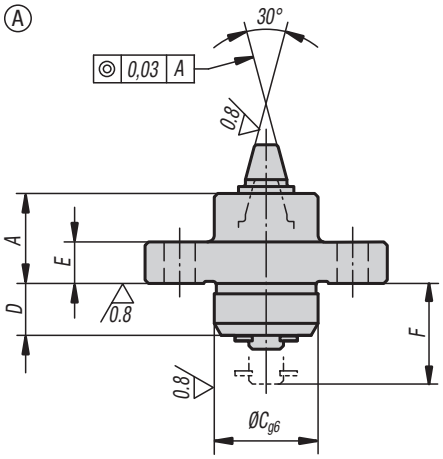


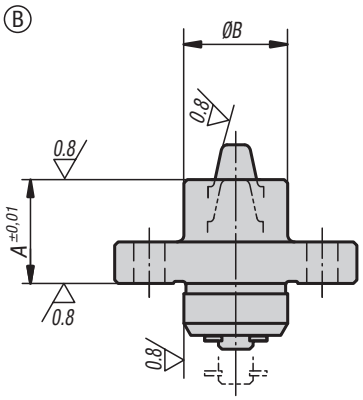
KIPP Workpiece support cylinders

Order No.	A	B	C	D	E	F	G	J	K	L	M	SW	F N	Spring force initial pressure F1 approx. N	Spring force final pressure F2 approx. N
K0922.06039	28	14	33	39	10	14,1	22	M6	M6x12	M6x16	M4x8	4	4000	10	22
K0922.08052	35	19	42	52	15	18,8	28,5	M8	M8x16	M8x20	M4x8	5	6000	10	27
K0922.12070	50	26	60	70	17	28,5	42	M12	M12x24	M12x30	M5x12	8	9000	15	30
K0922.16080	60	33	70	80	22	26,5	47	M16	M16x32	M12x30	M5x15	10	9000	15	35

Positioning units

spring-loaded

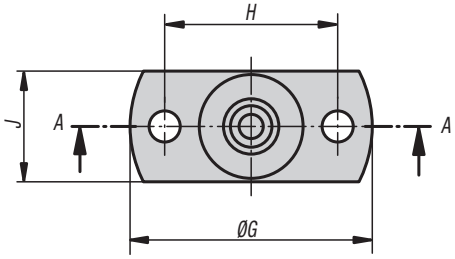


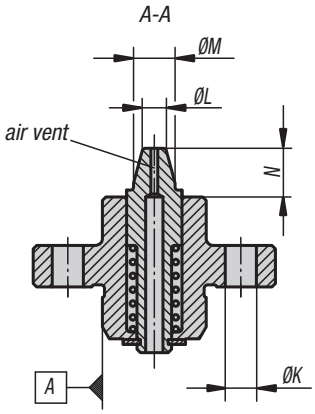


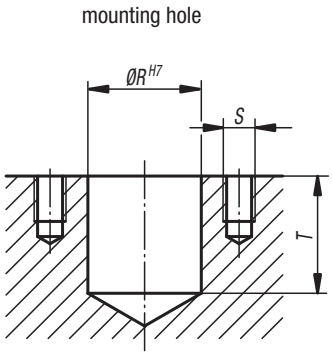
Material, version:
Body carbon steel, hardened and black oxidised.
Locating pin hardened tool steel.

Sample order:
K0917.15060

Note:
* The conical spigot can position holes within these limits.



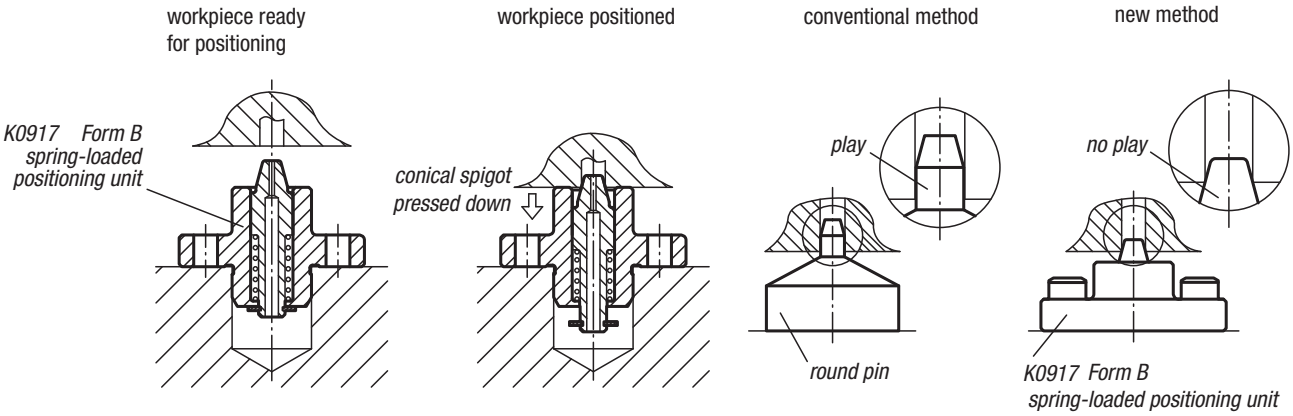




KIPP Positioning units, spring-loaded

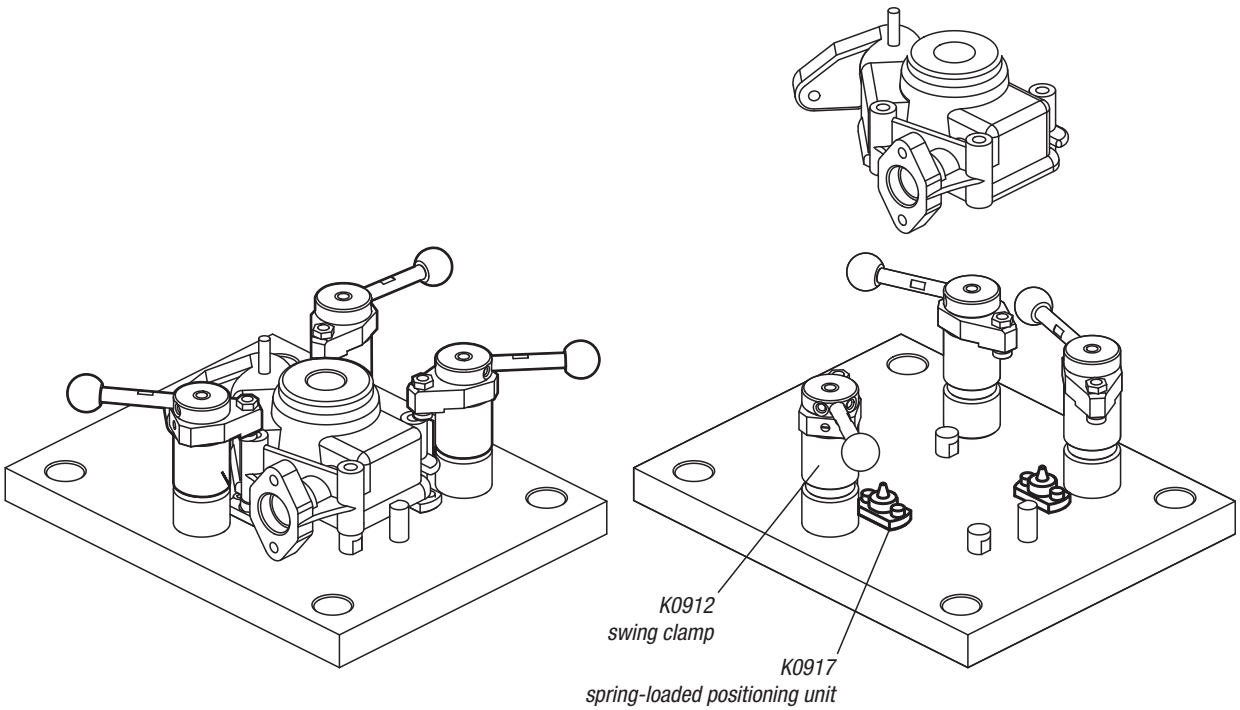
Order No.	Form	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	Receiving hole	Spring force cone N
K0917.15060	A	13	15	15	7,5	6	15	35	25	16	4,5	3,5	6	7,4	15	M4	16	ø3,8 - ø5,2*	6,4 - 19,3
K0917.15070	A	13	15	15	7,5	6	15	35	25	16	4,5	4,5	7	7,4	15	M4	16	ø4,8 - ø6,2*	6,4 - 19,3
K0917.20090	A	18	20	20	10	8	20	40	30	22	4,5	5,5	9	9,3	20	M4	21	ø5,8 - ø8,2*	5,5 - 20,5
K0917.20110	A	18	20	20	10	8	20	40	30	22	4,5	7,5	11	9,3	20	M4	21	ø7,8 - ø10,2*	5,5 - 20,5

Order No.	Form	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	Receiving hole	Spring force cone N
K0917.15061	B	15	15	15	7,5	6	15	35	25	16	4,5	3,5	6	5,4	15	M4	16	ø3,8 - ø5,2*	6,4 - 19,3
K0917.15071	B	15	15	15	7,5	6	15	35	25	16	4,5	4,5	7	5,4	15	M4	16	ø4,8 - ø6,2*	6,4 - 19,3
K0917.20091	B	20	20	20	10	8	20	40	30	22	4,5	5,5	9	7,3	20	M4	21	ø5,8 - ø8,2*	5,5 - 20,5
K0917.20111	B	20	20	20	10	8	20	40	30	22	4,5	7,5	11	7,3	20	M4	21	ø7,8 - ø10,2*	5,5 - 20,5



The conical spigot is pushed down when the workpiece is mounted on the positioning unit.

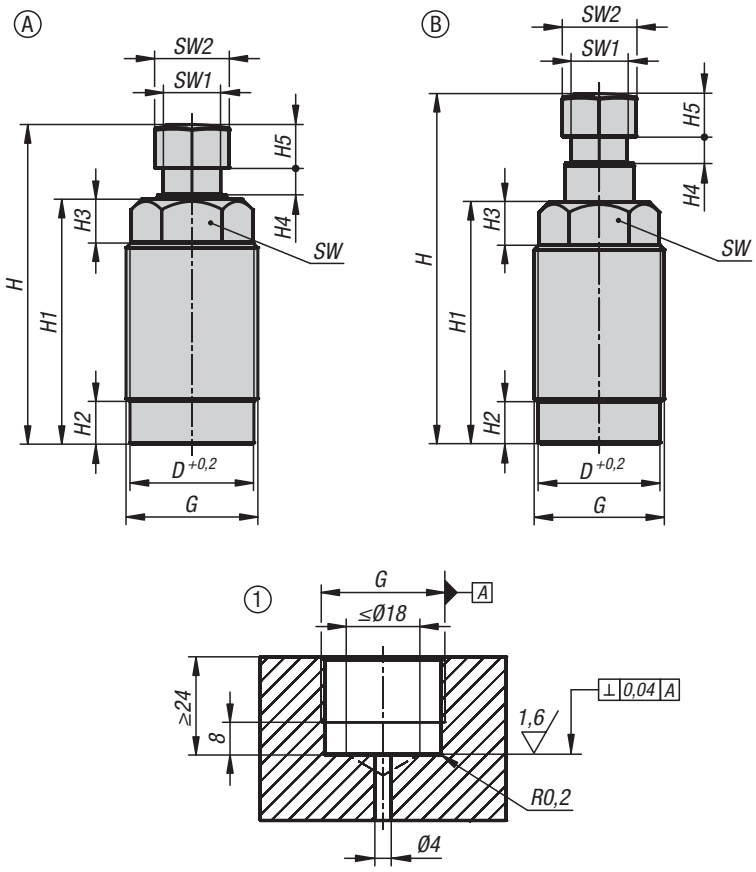
The conical spigot ensures precise positioning.



Note:
To prevent the positioning unit lifting the workpiece, hold it down by hand when loosening the swing clamp.

Support elements, hydraulic, screw-on

single-acting with spring return



Support elements are used during machining to prevent vibrations and deflections on the workpiece. The screw-on support elements can be mounted horizontally or vertically. The two mounting options enable space-saving positioning in the clamping fixtures. Hydraulic locking can be used in combination or separately with hydraulic clamping.

Material:
Housing and piston steel.

Version:
Housing black oxidised.
Piston hardened.

Sample order:
K1854.160823062

Note:
Form A, engaged by hydraulics:
Clamping bolt retracted in initial position. Pin hydraulically extended and engaged by spring force.
Form B, engaged by spring force:
Clamping pin extended in initial position. Engaged by spring force

Permitted loading forces must be taken into account.

Follow safety instructions.

Method of operation:
Drilled channels.

Assembly:
See mounting contour.

Advantages:
- Integrated metal wiper.
- Always engaged by spring force.
- Low mounting dimensions.
- Horizontal/vertical mounting possible.
- Separate/combined locking and clamping process

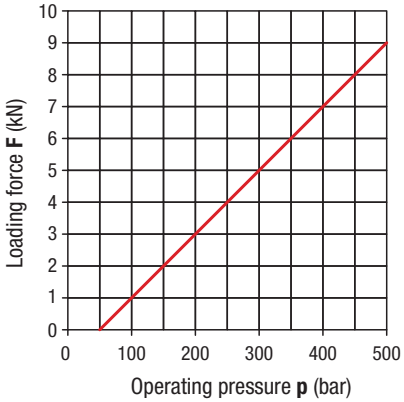
Supplied with:
1 Kantseal square washer supplied.

Technical data:
- Max. operating pressure: 500 bar.
- Permitted loading at 500 bar: 9 kN.
- Min. oil pressure: 100 bar.
- Max. tightening torque: 60 Nm.

Drawing reference:
1) Mounting contour

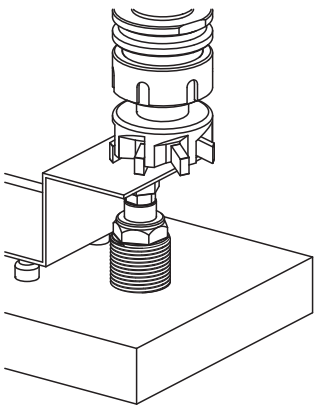
Clamping force diagram

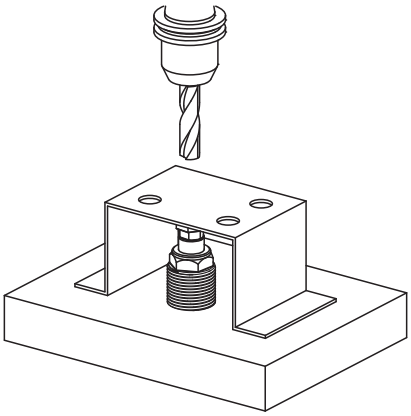
Permitted loading force **F**
dependent on operating pressure **p**

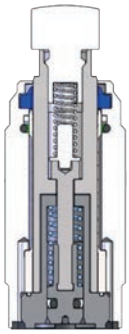


Support elements, hydraulic, screw-on

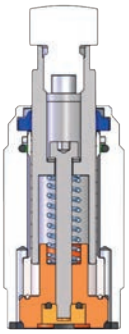
single-acting with spring return







Engaged by hydraulics

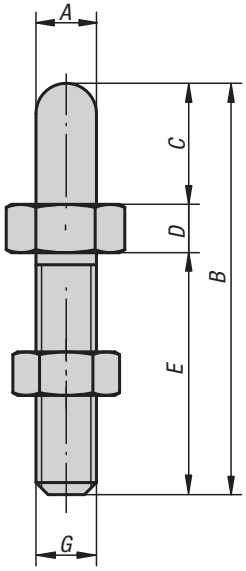


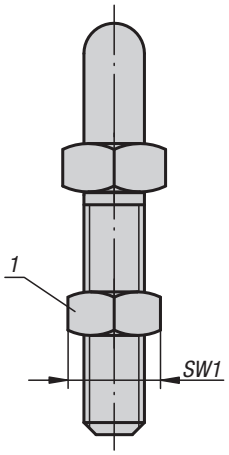
Engaged by spring force

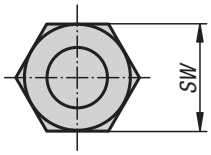
KIPP Support elements, hydraulic, screw-on

Order No.	Form	Piston Ø	travel	Connection type	D	G	H	H1	H2	H3	H4	H5	SW	SW1	SW2	Spring force min. (N)	Spring force F approx. (N)	Flow rate max. (cm^3/s)
K1854.160823061	A	16	8	drilled channels	28,2	M30x1,5	72,5	55,5	9,5	10	6	10	24	13	17	10	23	25
K1854.160823062	B	16	8	drilled channels	28,2	M30x1,5	80,5	55,5	9,5	10	6	10	24	13	17	8	13	-

Support bolts







Material:
Carbon steel, tempered.

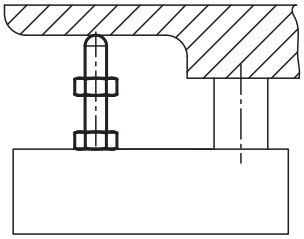
Version:
Black oxidised.

Sample order:
K0297.16016

Note:
The rounded nose also allows support bolts to be used as positioning elements for workpieces with matching holes.

The versions K0297.20020 and K0297-20040 have an octagonal collar.

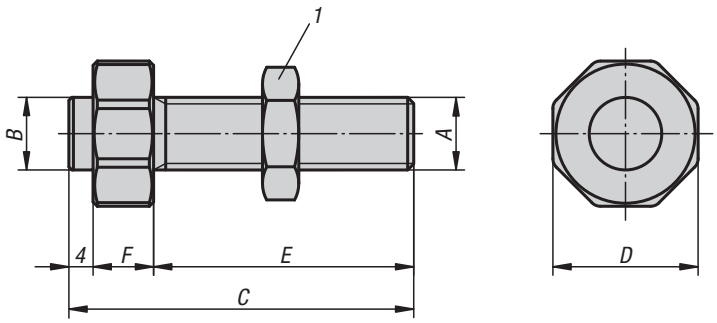
Drawing reference:
1) locknut



KIPP Support bolts

Order No.	A	B	C	D	E	G	SW	SW1
K0297.06006	6	37	6	6	25	M6	13	10
K0297.06012	6	43	12	6	25	M6	13	10
K0297.08008	8	45	8	7	30	M8	13	13
K0297.08016	8	53	16	7	30	M8	13	13
K0297.10010	10	58	10	8	40	M10	17	17
K0297.10020	10	68	20	8	40	M10	17	17
K0297.12012	12	72	12	10	50	M12	19	19
K0297.12024	12	84	24	10	50	M12	19	19
K0297.16016	16	89	16	13	60	M16	24	24
K0297.16032	16	105	32	13	60	M16	24	24
K0297.20020	20	115	20	15	80	M20	36	30
K0297.20040	20	135	40	15	80	M20	36	30

Support bolts

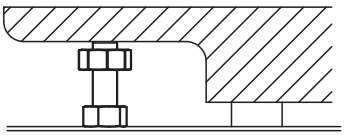


Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0828.08041

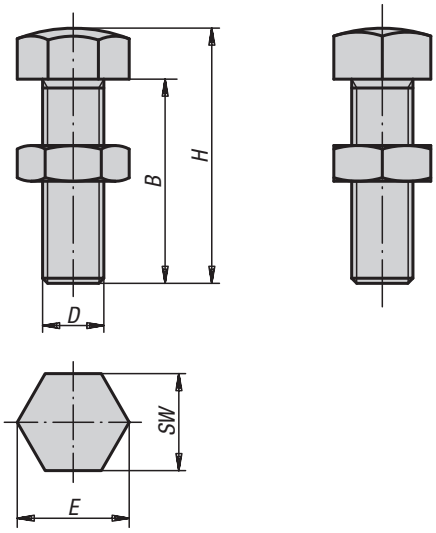
Drawing reference:
1) locknut



KIPP Support bolts

Order No.	A	B	C	D	E	F
K0828.08041	M8	8	41	17	30	7
K0828.08051	M8	8	51	17	40	7
K0828.12057	M12	12	57	24	43	10
K0828.12072	M12	12	72	24	58	10
K0828.16057	M16	16	57	30	43	10
K0828.16072	M16	16	72	30	58	10

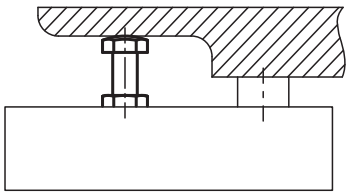
Rest pads



Material:
Carbon steel or brass

Version:
High-carbon steel tempered and black oxidised.
Brass bright.

Sample order:
K0307.16055

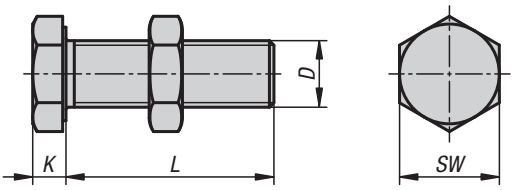


KIPP Rest pads

Order No.	Main material	B	D	E	H	SW
K0307.06030	high carbon steel	25	M6	11,5	30	10
K0307.06040	high carbon steel	35	M6	11,5	40	10
K0307.06050	high carbon steel	45	M6	11,5	50	10
K0307.08036	high carbon steel	30	M8	15	36	13
K0307.08046	high carbon steel	40	M8	15	46	13
K0307.08056	high carbon steel	50	M8	15	56	13
K0307.10042	high carbon steel	35	M10	19,6	42	17
K0307.10048	high carbon steel	40	M10	19,6	48	17
K0307.10058	high carbon steel	50	M10	19,6	58	17
K0307.10068	high carbon steel	60	M10	19,6	68	17
K0307.12048	high carbon steel	42	M12	21,9	50	19
K0307.12070	high carbon steel	60	M12	21,9	70	19
K0307.12080	high carbon steel	70	M12	21,9	80	19
K0307.16055	high carbon steel	45	M16	27,7	55	24
K0307.16075	high carbon steel	65	M16	27,7	75	24
K0307.16085	high carbon steel	75	M16	27,7	85	24
K0307.12148	brass	42	M12	21,9	50	19
K0307.16155	brass	45	M16	27,7	55	24

Stop screws

Ⓐ



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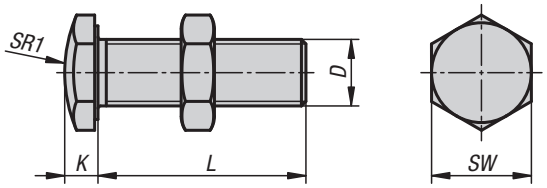


Material:
Steel grade 10.9
(M3 8.8)

Version:
Stop screw black oxidised.
Nut electro zinc-plated.

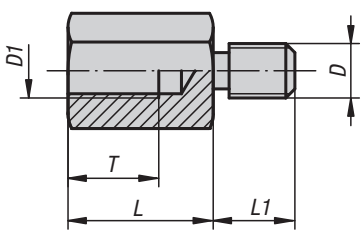
Sample order:
K1200.10820
(include length L e.g. 20 for L = 20 mm)

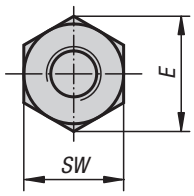
Note:
Size M3 stop screw only available in grade 8.8.

KIPP Stop screws

Order No.	Form	D	L	K	SW	SR1
K1200.103**	A	M3	16/25	2	5,5	-
K1200.104**	A	M4	16/25/35	2,5	7	-
K1200.105**	A	M5	16/25/35	3,5	8	-
K1200.106**	A	M6	25/35/40	3,8	10	-
K1200.108**	A	M8	12/16/20/25/30/35/40/45/50/55/65/70/85	5	13	-
K1200.110**	A	M10	35/40/50/60	6	17	-
K1200.112**	A	M12	40/60/70	7	19	-
K1200.116**	A	M16	50/60/70	9,5	24	-
K1200.203**	B	M3	16/25	2	5,5	10
K1200.204**	B	M4	16/25/35	2,5	7	10
K1200.205**	B	M5	16/25/35	3,5	8	12
K1200.206**	B	M6	25/35/40	3,8	10	15
K1200.208**	B	M8	12/16/20/25/30/35/40/45/50/55/65/70/85	5	13	20
K1200.210**	B	M10	35/40/50/60	6	17	30
K1200.212**	B	M12	40/60/70	7	19	30
K1200.216**	B	M16	50/60/70	9,5	24	35

Extension pieces



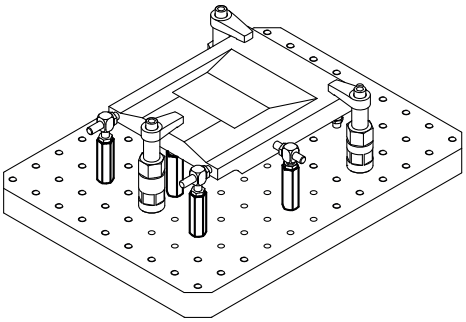


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0821.120750

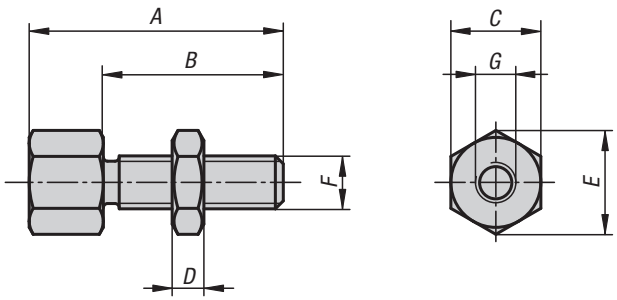
Note:
Extension pieces are used to extend self-aligning pads, spring plungers, positioning feet, rest pads etc.



KIPP Extension pieces

Order No.	L	L1	T	D	D1	E	SW
K0821.08025	25	13	15	M8	M8	15	13
K0821.08032	32	13	15	M8	M8	15	13
K0821.08040	40	13	15	M8	M8	15	13
K0821.10025	25	15	17	M10	M10	19,6	17
K0821.10032	32	15	17	M10	M10	19,6	17
K0821.10040	40	15	17	M10	M10	19,6	17
K0821.10050	50	16	20	M10	M10	19,6	17
K0821.10075	75	16	20	M10	M10	19,6	17
K0821.120320	32	18	20	M12	M12	25,4	22
K0821.120500	50	18	20	M12	M12	25,4	22
K0821.120750	75	18	20	M12	M12	25,4	22
K0821.160320	32	25	20	M16	M16	31,2	27
K0821.160500	50	25	30	M16	M16	31,2	27
K0821.160750	75	25	30	M16	M16	31,2	27
K0821.108025	25	19	15	M8	M8	15	13
K0821.108032	32	19	15	M8	M8	15	13
K0821.108040	40	19	15	M8	M8	15	13
K0821.112032	32	30	20	M12	M12	25,4	22
K0821.112050	50	30	20	M12	M12	25,4	22
K0821.112075	75	30	20	M12	M12	25,4	22
K0821.116032	32	30	20	M16	M16	31,2	27
K0821.116050	50	30	30	M16	M16	31,2	27
K0821.116075	75	30	30	M16	M16	31,2	27

Jack screws



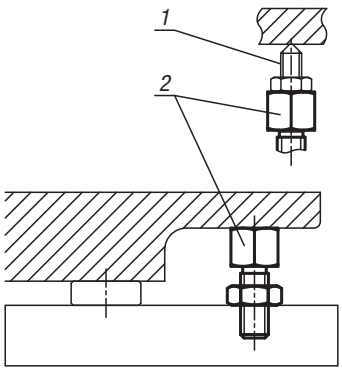
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0308.0803006

Note:
Various rests can be mounted on this jack screw.

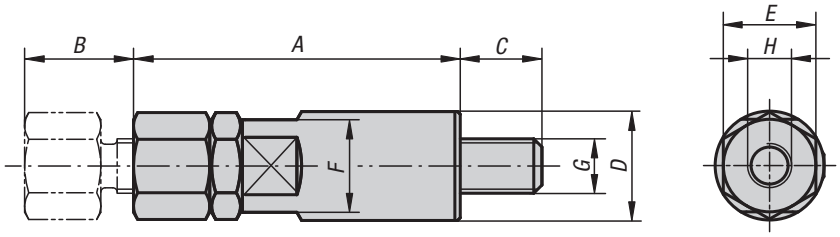
Drawing reference:
1) screw rest
2) jack screw



KIPP Jack screws

Order No.	A	B	C	D	E	F	G
K0308.0803006	30	20	13	5	14,4	M8	M6 x 6
K0308.0804006	40	30	13	5	14,4	M8	M6 x 6
K0308.1003808	38	24	17	6	18,9	M10	M8 x 8
K0308.1004808	48	34	17	6	18,9	M10	M8 x 8
K0308.1205110	51	33	22	7	24,5	M12	M10 x 10
K0308.1206610	66	48	22	7	24,5	M12	M10 x 10
K0308.1606212	62	40	27	10	30,1	M16	M12 x 12
K0308.1607712	77	55	27	10	30,1	M16	M12 x 12

Jack screws extended



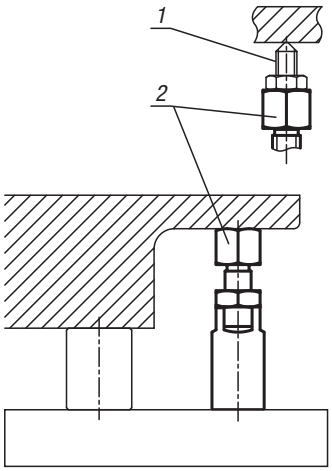
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0923.08040

Drawing reference:
1) screw rest
2) jack screw

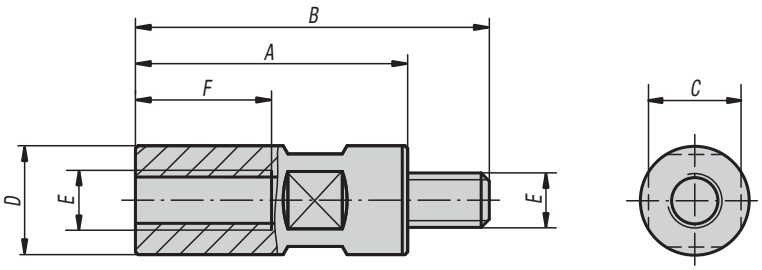
Jack screw for mounting various rests



KIPP Jack screws extended

Order No.	A	B	C	D	E	F	G	H
K0923.08040	40	10	12	16	13	13	M8	M6 x 6
K0923.08050	50	20	12	16	13	13	M8	M6 x 6
K0923.10050	50	10	14	20	17	17	M10	M8 x 8
K0923.10060	60	20	14	20	17	17	M10	M8 x 8
K0923.12065	65	15	19	24	22	22	M12	M10 x 10
K0923.12080	80	30	19	24	22	22	M12	M10 x 10
K0923.16080	80	15	24	32	27	27	M16	M12 x 12
K0923.16095	95	30	24	32	27	27	M16	M12 x 12

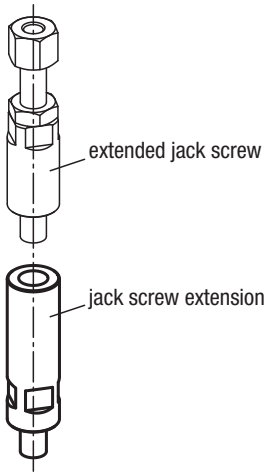
Extensions for jack screws



Material:
Carbon steel.

Version:
Black oxidised.

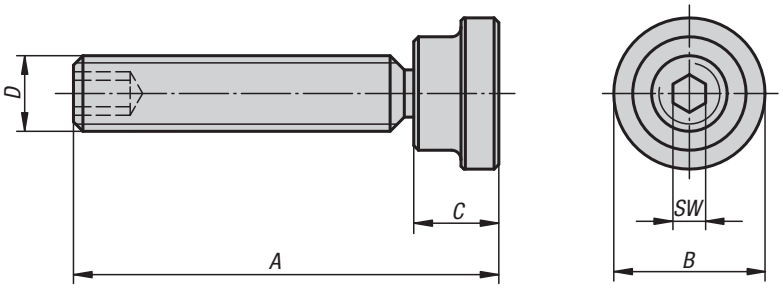
Sample order:
K0924.08032



KIPP Extensions for jack screws

Order No.	A	B	C	D	E	F
K0924.08032	32	44	13	16	M8	20
K0924.08040	40	52	13	16	M8	20
K0924.08050	50	62	13	16	M8	20
K0924.08065	65	77	13	16	M8	20
K0924.08080	80	92	13	16	M8	20
K0924.08100	100	112	13	16	M8	20
K0924.10040	40	54	17	20	M10	25
K0924.10050	50	64	17	20	M10	25
K0924.10065	65	79	17	20	M10	25
K0924.10080	80	94	17	20	M10	25
K0924.10100	100	114	17	20	M10	25
K0924.12050	50	69	22	24	M12	30
K0924.12065	65	84	22	24	M12	30
K0924.12080	80	99	22	24	M12	30
K0924.12100	100	119	22	24	M12	30
K0924.12125	125	144	22	24	M12	30
K0924.12160	160	179	22	24	M12	30
K0924.16050	50	74	27	32	M16	32
K0924.16065	65	89	27	32	M16	40
K0924.16080	80	104	27	32	M16	40
K0924.16100	100	124	27	32	M16	40
K0924.16125	125	149	27	32	M16	40
K0924.16160	160	184	27	32	M16	40

Grub screws with thrust pad



Material:
Carbon steel.

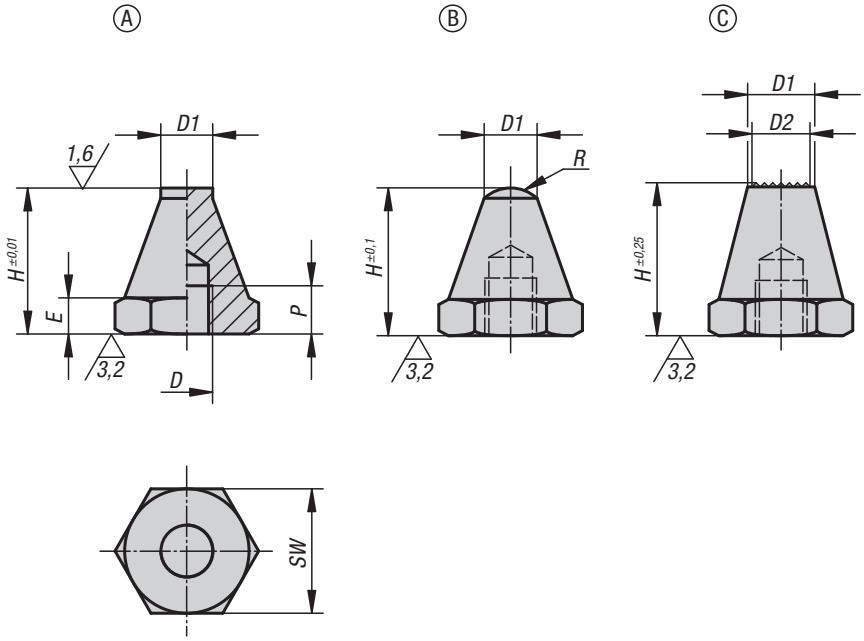
Version:
Thrust pad tempered and black oxidised
Grubscrew tempered.

Sample order:
K0829.08X43

KIPP Grub screws with thrust pad

Order No.	A	B	C	D	SW
K0829.08X43	43	16	9	M8	4
K0829.08X63	63	16	9	M8	4
K0829.10X64	64	20	11	M10	5
K0829.10X84	84	20	11	M10	5
K0829.12X65	65	25	13	M12	6
K0829.12X85	85	25	13	M12	6
K0829.12X105	105	25	13	M12	6
K0829.16X85	85	32	15	M16	8
K0829.16X105	105	32	15	M16	8
K0829.16X130	130	32	15	M16	8
K0829.20X105	105	40	16	M20	10
K0829.20X130	130	40	16	M20	10
K0829.20X155	155	40	16	M20	10

Rest pads



Material:
Body high carbon steel.

Version:
Body tempered and black oxidised.

Sample order:
K0294.106012

Note:
Rest pads are for supporting machined and non-machined parts. They can also be used as stops and thrust pads in fixtures and toolmaking.
Studs or grub screws can be screwed and glued into the tapped hole D to make a rest pad with external thread.

Drawing reference:
Form A: flat face
Form B: ball end
Form C: diamond grip

KIPP Rest pads

Order No. Form A	Order No. Form B	Order No. Form C	D	D1	D2	E	H	P	R	SW
K0294.106012	K0294.206012	K0294.306012	M6	6	-/-/5	3	12,5	4	-/5/-	11
K0294.106025	K0294.206025	K0294.306025	M6	6	-/-/5	3	25	7	-/5/-	11
K0294.108015	K0294.208015	K0294.308015	M8	8	-/-/6	4	15	6	-/8,5/-	13
K0294.108030	K0294.208030	K0294.308030	M8	8	-/-/6	4	30	9	-/8,5/-	13
K0294.110020	K0294.210020	K0294.310020	M10	10	-/-/8	5	20	9	-/9/-	17
K0294.110040	K0294.210040	K0294.310040	M10	10	-/-/8	5	40	13	-/9/-	17
K0294.112025	K0294.212025	K0294.312025	M12	12	-/-/9,5	6	25	11	-/12,75/-	19
K0294.112050	K0294.212050	K0294.312050	M12	12	-/-/9,5	6	50	16	-/12,75/-	19
K0294.116030	K0294.216030	K0294.316030	M16	16	-/-/13	8	30	12	-/17/-	24
K0294.116060	K0294.216060	K0294.316060	M16	16	-/-/13	8	60	20	-/17/-	24

Ball-end thrust screws with head

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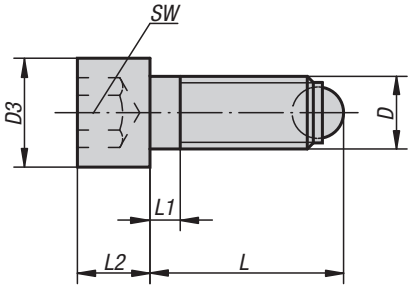

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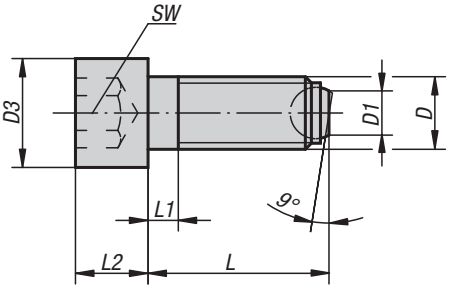
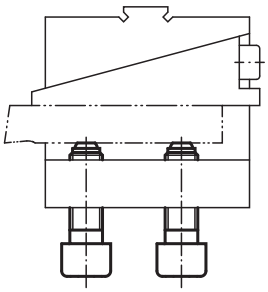


Material:
Screw carbon steel.
Ball ball-bearing steel.

Version:
Screw grade min. 10.9, black.
Ball hardened, bright.

Sample order:
K0380.10820

Drawing reference:
Form A: full ball
Form B: flattened ball
Form BV: flattened ball, rotation lock
Form F: serrated flattened ball
Form FV: serrated flattened ball, rotation lock



Note:
Form A with full ball is used when a clean, polished contact surface is required. Surfaces which are not flat and parallel can be firmly clamped or supported with Form B with flattened ball, the movable ball can adapt itself up to 9°.

KIPP Ball-end thrust screws with head

Order No.	Form	D	D3	L	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.10410	A	M4	7	9,9	2,1	4	2,5	3	3,5
K0380.10416	A	M4	7	15,9	2,1	4	2,5	3	3,5
K0380.10420	A	M4	7	19,9	2,1	4	2,5	3	3,5
K0380.10512	A	M5	8,5	12,1	2,4	5	3	4	4,5
K0380.10516	A	M5	8,5	16,1	2,4	5	3	4	4,5
K0380.10520	A	M5	8,5	20,1	2,4	5	3	4	4,5
K0380.10620	A	M6	10	20,8	3	6	4	5	9
K0380.10630	A	M6	10	30,8	3	6	4	5	9
K0380.10640	A	M6	10	40,8	16	6	4	5	9
K0380.10820	A	M8	13	21,2	3,5	8	5,5	6	15
K0380.10835	A	M8	13	36,2	3,5	8	5,5	6	15
K0380.10850	A	M8	13	51,2	22	8	5,5	6	15
K0380.11025	A	M10	16	26,7	4,5	10	7	8	20
K0380.11040	A	M10	16	41,7	4,5	10	7	8	20
K0380.11060	A	M10	16	61,7	28	10	7	8	20
K0380.11230	A	M12	18	32	5	12	8,5	10	30
K0380.11250	A	M12	18	52	5	12	8,5	10	30
K0380.11280	A	M12	18	82	44	12	8,5	10	30
K0380.11640	A	M16	24	43,3	6	16	12	14	60
K0380.11660	A	M16	24	63,3	6	16	12	14	60
K0380.11680	A	M16	24	83,3	36	16	12	14	60
K0380.12050	A	M20	30	54,2	7,5	20	15	17	90
K0380.12080	A	M20	30	84,2	28	20	15	17	90
K0380.120100	A	M20	30	104,2	48	20	15	17	90
K0380.12460	A	M24	36	64,7	9	24	18	19	120
K0380.12490	A	M24	36	94,7	30	24	18	19	120
K0380.124120	A	M24	36	124,7	60	24	18	19	120

Ball-end thrust screws with head

Order No. Form B	Order No. Form F	D	D1	D3	L	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.20410	-	M4	1,4	7	11,7	2,1	4	2,5	3	3,5
K0380.20416	-	M4	1,4	7	15,7	2,1	4	2,5	3	3,5
K0380.20420	-	M4	1,4	7	19,7	2,1	4	2,5	3	3,5
K0380.20512	-	M5	2	8,5	11,7	2,4	5	3	4	4,5
K0380.20516	-	M5	2	8,5	15,7	2,4	5	3	4	4,5
K0380.20520	-	M5	2	8,5	19,7	2,4	5	3	4	4,5
K0380.20620	-	M6	3,2	10	20	3	6	4	5	9
K0380.20630	-	M6	3,2	10	30	3	6	4	5	9
K0380.20640	-	M6	3,2	10	40	16	6	4	5	9
K0380.20820	-	M8	4,5	13	20	3,5	8	5,5	6	15
K0380.20835	-	M8	4,5	13	35	3,5	8	5,5	6	15
K0380.20850	-	M8	4,5	13	50	22	8	5,5	6	15
K0380.21025	K0380.31025	M10	6	16	25	4,5	10	7	8	20
K0380.21040	K0380.31040	M10	6	16	40	4,5	10	7	8	20
K0380.21060	K0380.31060	M10	6	16	60	28	10	7	8	20
K0380.21230	K0380.31230	M12	7,2	18	30	5	12	8,5	10	30
K0380.21250	K0380.31250	M12	7,2	18	50	5	12	8,5	10	30
K0380.21280	K0380.31280	M12	7,2	18	80	44	12	8,5	10	30
K0380.21640	K0380.31640	M16	10,7	24	40	6	16	12	14	60
K0380.21660	K0380.31660	M16	10,7	24	60	6	16	12	14	60
K0380.21680	K0380.31680	M16	10,7	24	80	36	16	12	14	60
K0380.22050	-	M20	13,5	30	50	7,5	20	15	17	90
K0380.22080	-	M20	13,5	30	80	28	20	15	17	90
K0380.220100	-	M20	13,5	30	100	48	20	15	17	90
K0380.22460	-	M24	15,8	36	60	9	24	18	19	120
K0380.22490	-	M24	15,8	36	90	30	24	18	19	120
K0380.224120	-	M24	15,8	36	120	60	24	18	19	120

Order No. Form BV	Order No. Form FV	D	D1	D3	L	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.40820	-	M8	4,5	13	20	3,5	8	5,5	6	9
K0380.40835	-	M8	4,5	13	35	3,5	8	5,5	6	9
K0380.40850	-	M8	4,5	13	50	22	8	5,5	6	9
K0380.41025	K0380.51025	M10	6	16	25	4,5	10	7	8	12
K0380.41040	K0380.51040	M10	6	16	40	4,5	10	7	8	12
K0380.41060	K0380.51060	M10	6	16	60	28	10	7	8	12
K0380.41230	K0380.51230	M12	7,2	18	30	5	12	8,5	10	18
K0380.41250	K0380.51250	M12	7,2	18	50	5	12	8,5	10	18
K0380.41280	K0380.51280	M12	7,2	18	80	44	12	8,5	10	18
K0380.41640	K0380.51640	M16	10,7	24	40	6	16	12	14	36
K0380.41660	K0380.51660	M16	10,7	24	60	6	16	12	14	36
K0380.41680	K0380.51680	M16	10,7	24	80	36	16	12	14	36

Ball-end thrust screws without head

with full ball

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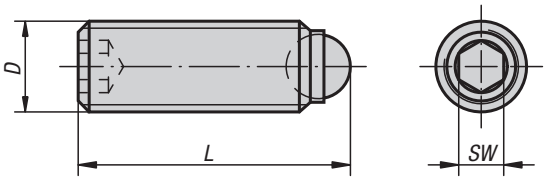


Material:
Screw, high-carbon steel, grade 10.9
Ball, ball-bearing steel or POM.

Version:
Screw black.
Ball hardened bright or POM.

Sample order:
K0383.10810

Note:
Ball-end thrust screws with full ball are used when a clean, polished contact surface is required.
Longer versions have been specially designed to be glued in, allowing mechanical connecting elements with external thread to be made cost-effectively for small and medium-sized series.

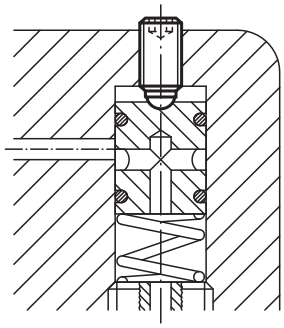
Drawing reference:
Form A: steel ball
Form D: POM ball

KIPP Ball-end thrust screws without head with full ball

Order No. Form A	Order No. Form D	D	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.1046	K0383.3046	M4	6	2,5	2	3,5/0,3
K0383.1048	K0383.3048	M4	8	2,5	2	3,5/0,3
K0383.10410	K0383.30410	M4	10	2,5	2	3,5/0,3
K0383.10412	K0383.30412	M4	12	2,5	2	3,5/0,3
K0383.10416	K0383.30416	M4	16	2,5	2	3,5/0,3
K0383.1058	K0383.3058	M5	8	3	2,5	4,5/0,5
K0383.10510	K0383.30510	M5	10	3	2,5	4,5/0,5
K0383.10512	K0383.30512	M5	12	3	2,5	4,5/0,5
K0383.10516	K0383.30516	M5	16	3	2,5	4,5/0,5
K0383.10520	K0383.30520	M5	20	3	2,5	4,5/0,5
K0383.10525	K0383.30525	M5	25	3	2,5	4,5/0,5
K0383.10610	K0383.30610	M6	10,8	4	3	9/0,9
K0383.10612	K0383.30612	M6	12,8	4	3	9/0,9
K0383.10616	K0383.30616	M6	16,8	4	3	9/0,9
K0383.10620	K0383.30620	M6	20,8	4	3	9/0,9
K0383.10625	K0383.30625	M6	25,8	4	3	9/0,9
K0383.10650	-	M6	50,8	4	3	9/0,9
K0383.10660	-	M6	60,8	4	3	9/0,9
K0383.10680	-	M6	80,8	4	3	9/0,9

Ball-end thrust screws without head

with full ball



KIPP Ball-end thrust screws without head with full ball

Order No. Form A	Order No. Form D	D	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.10810	**K0383.30810**	M8	11,2	5,5	4	10/15/1,5
K0383.10812	**K0383.30812**	M8	13,2	5,5	4	10/15/1,5
K0383.10816	**K0383.30816**	M8	17,2	5,5	4	10/15/1,5
K0383.10820	**K0383.30820**	M8	21,2	5,5	4	10/15/1,5
K0383.10825	**K0383.30825**	M8	26,2	5,5	4	10/15/1,5
K0383.10830	**K0383.30830**	M8	31,2	5,5	4	10/15/1,5
K0383.10850	-	M8	51,2	5,5	4	10/15/1,5
K0383.10860	-	M8	61,2	5,5	4	10/15/1,5
K0383.10880	-	M8	81,2	5,5	4	10/15/1,5
K0383.11012	**K0383.31012**	M10	13,7	7	5	20/2
K0383.11016	**K0383.31016**	M10	17,7	7	5	20/2
K0383.11020	**K0383.31020**	M10	21,7	7	5	20/2
K0383.11025	**K0383.31025**	M10	26,7	7	5	20/2
K0383.11035	**K0383.31035**	M10	36,7	7	5	20/2
K0383.11216	**K0383.31216**	M12	18	8,5	6	30/3
K0383.11220	**K0383.31220**	M12	22	8,5	6	30/3
K0383.11225	-	M12	27	8,5	6	30/3
K0383.11230	**K0383.31230**	M12	32	8,5	6	30/3
K0383.11232	-	M12	34	8,5	6	30/3
K0383.11240	**K0383.31240**	M12	42	8,5	6	30/3
K0383.11620	-	M16	23,3	12	8	60
K0383.11625	-	M16	28,3	12	8	60
K0383.11635	-	M16	38,3	12	8	60
K0383.11650	-	M16	53,3	12	8	60
K0383.12030	-	M20	34,2	15	10	90
K0383.12040	-	M20	44,2	15	10	90
K0383.12060	-	M20	64,2	15	10	90
K0383.12435	-	M24	39,7	18	12	120
K0383.12450	-	M24	54,7	18	12	120
K0383.12480	-	M24	84,7	18	12	120

Ball-end thrust screws without head

with flattened ball

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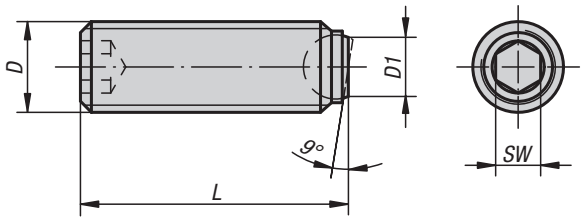


Material:
Screw carbon steel, grade 10.9
Ball, ball-bearing steel or POM.

Version:
Screw black.
Ball hardened bright or POM.

Sample order:
K0383.41012

Note:
Surfaces which are not flat and parallel can be firmly clamped or supported with Form B, C or F with flattened ball, the movable ball can adapt itself up to 9°.
Longer versions have been specially designed to glue in, allowing mechanical connecting elements with external thread to be made cost-effectively for small and medium-sized series.

Drawing reference:
Form B: steel ball
Form C: POM ball
Form F: steel ball diamond grip

KIPP Ball-end thrust screws without head with flattened POM ball

Order No.	Form	D	D1	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.7046	C	M4	1,8	5,9	2,5	2	0,3
K0383.7048	C	M4	1,8	7,9	2,5	2	0,3
K0383.70410	C	M4	1,8	9,9	2,5	2	0,3
K0383.70412	C	M4	1,8	11,9	2,5	2	0,3
K0383.70416	C	M4	1,8	15,9	2,5	2	0,3
K0383.70510	C	M5	2,1	9,8	3	2,5	0,5
K0383.70512	C	M5	2,1	11,8	3	2,5	0,5
K0383.70516	C	M5	2,1	15,8	3	2,5	0,5
K0383.70520	C	M5	2,1	19,8	3	2,5	0,5
K0383.7058	C	M5	2,1	7,8	3	2,5	0,5
K0383.70525	C	M5	2,1	24,8	3	2,5	0,5
K0383.70610	C	M6	3	10,3	4	3	0,9
K0383.70612	C	M6	3	12,3	4	3	0,9
K0383.70616	C	M6	3	16,3	4	3	0,9
K0383.70620	C	M6	3	20,3	4	3	0,9
K0383.70625	C	M6	3	25,3	4	3	0,9
K0383.70810	C	M8	4,2	10,4	5,5	4	1,5
K0383.70830	C	M8	4,2	30,4	5,5	4	1,5
K0383.70812	C	M8	4,2	12,4	5,5	4	1,5
K0383.70816	C	M8	4,2	16,4	5,5	4	1,5
K0383.70820	C	M8	4,2	20,4	5,5	4	1,5
K0383.70825	C	M8	4,2	25,4	5,5	4	1,5

KIPP Ball-end thrust screws without head with flattened serrated steel ball

Order No.	Form	D	D1	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.41012	F	M10	6	12	7	5	20
K0383.41016	F	M10	6	16	7	5	20
K0383.41025	F	M10	6	25	7	5	20
K0383.41035	F	M10	6	35	7	5	20
K0383.41216	F	M12	7,2	16	8,5	6	30
K0383.41220	F	M12	7,2	20	8,5	6	30
K0383.41240	F	M12	7,2	40	8,5	6	30
K0383.41230	F	M12	7,2	30	8,5	6	30
K0383.41620	F	M16	10,7	20	12	8	60
K0383.41625	F	M16	10,7	25	12	8	60
K0383.41635	F	M16	10,7	35	12	8	60
K0383.41650	F	M16	10,7	50	12	8	60

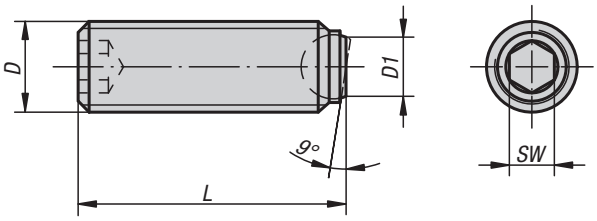
KIPP Ball-end thrust screws without head with flattened steel ball

Order No.	Form	D	D1	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.2046	B	M4	1,4	5,8	2,5	2	3,5
K0383.2048	B	M4	1,4	7,8	2,5	2	3,5
K0383.20410	B	M4	1,4	9,8	2,5	2	3,5
K0383.20412	B	M4	1,4	11,8	2,5	2	3,5
K0383.20416	B	M4	1,4	15,8	2,5	2	3,5
K0383.20510	B	M5	2	9,6	3	2,5	4,5
K0383.20512	B	M5	2	11,6	3	2,5	4,5
K0383.20516	B	M5	2	15,6	3	2,5	4,5
K0383.2058	B	M5	2	7,6	3	2,5	4,5
K0383.20520	B	M5	2	19,6	3	2,5	4,5
K0383.20525	B	M5	2	24,6	3	2,5	4,5
K0383.20612	B	M6	3	12,1	4	3	9
K0383.20616	B	M6	3	16,1	4	3	9
K0383.20610	B	M6	3	10,1	4	3	9
K0383.20620	B	M6	3	20,1	4	3	9
K0383.20680	B	M6	3	80,1	4	3	9
K0383.20625	B	M6	3	25,1	4	3	9
K0383.20650	B	M6	3	50,1	4	3	9
K0383.20660	B	M6	3	60,1	4	3	9
K0383.20812	B	M8	4,1	12,3	5,5	4	10
K0383.20816	B	M8	4,1	16,3	5,5	4	15
K0383.20820	B	M8	4,1	20,3	5,5	4	15
K0383.20810	B	M8	4,1	10,3	5,5	4	10
K0383.20825	B	M8	4,1	25,3	5,5	4	15
K0383.20880	B	M8	4,1	80,3	5,5	4	15
K0383.20830	B	M8	4,1	30,3	5,5	4	15
K0383.20850	B	M8	4,1	50,3	5,5	4	15
K0383.20860	B	M8	4,1	60,3	5,5	4	15
K0383.21016	B	M10	5,6	16,3	7	5	20
K0383.21020	B	M10	5,6	20,3	7	5	20
K0383.21025	B	M10	5,6	25,3	7	5	20
K0383.21012	B	M10	5,6	12,3	7	5	20
K0383.21035	B	M10	5,6	35,3	7	5	20
K0383.21216	B	M12	7	16,2	8,5	6	30
K0383.21220	B	M12	7	20,2	8,5	6	30
K0383.21230	B	M12	7	30,2	8,5	6	30
K0383.21240	B	M12	7	40,2	8,5	6	30
K0383.21620	B	M16	10,7	20	12	8	60
K0383.21650	B	M16	10,7	50	12	8	60
K0383.21625	B	M16	10,7	25	12	8	60
K0383.21635	B	M16	10,7	35	12	8	60
K0383.22040	B	M20	13,5	40	15	10	90
K0383.22030	B	M20	13,5	30	15	10	90
K0383.22060	B	M20	13,5	60	15	10	90
K0383.22435	B	M24	15,8	35	18	12	120
K0383.22450	B	M24	15,8	50	18	12	120
K0383.22480	B	M24	15,8	80	18	12	120

Ball-end thrust screws without head

with flattened ball and rotation lock

BV FV



Material:
Screw, high-carbon steel, grade 10.9
Ball, ball-bearing steel.

Version:
Screw black.
Ball hardened, bright.

Sample order:
K0383.50820

Note:
Surfaces which are not flat and parallel can be firmly clamped or supported with a flattened ball, the movable ball can adapt itself up to 9°.
Longer versions have been designed especially to be glued in. This enables mechanical connecting elements with male thread to be made cost-effectively for small and medium-sized series.

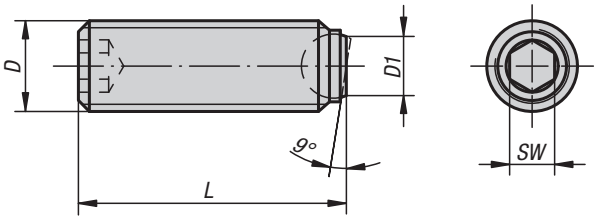
Drawing reference:
Form BV: flattened ball non-rotating
Form FV: flattened ball diamond grip non-rotating

KIPP Ball-end thrust screws without head, with flattened ball and rotation lock

Order No. Form BV	Order No. Form FV	D	D1	L	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.50616	-	M6	3	16,1	4	3	6
K0383.50620	-	M6	3	20,1	4	3	6
K0383.50612	-	M6	3	12,1	4	3	6
K0383.50625	-	M6	3	25,1	4	3	6
K0383.50816	K0383.60816	M8	4,1	16,3	5,5	4	9
K0383.50820	K0383.60820	M8	4,1	20,3	5,5	4	9
K0383.50825	K0383.60825	M8	4,1	25,3	5,5	4	9
K0383.50830	K0383.60830	M8	4,1	30,3	5,5	4	9
K0383.51025	K0383.61025	M10	5,6	25,3	7	5	12
K0383.51020	K0383.61020	M10	5,6	20,3	7	5	12
K0383.51035	K0383.61035	M10	5,6	35,3	7	5	12
K0383.51040	K0383.61040	M10	5,6	40,2	7	5	12
K0383.51220	K0383.61220	M12	7	20,2	8,5	6	18
K0383.51230	K0383.61230	M12	7	30,2	8,5	6	18
K0383.51240	K0383.61240	M12	7	40,2	8,5	6	18
K0383.51250	K0383.61250	M12	7	50	8,5	6	18
K0383.51635	K0383.61635	M16	10,7	35	12	8	36
K0383.51650	K0383.61650	M16	10,7	50	12	8	36
K0383.52030	K0383.62030	M20	13,5	30	15	10	60
K0383.52040	K0383.62040	M20	13,5	40	15	10	60
K0383.52050	K0383.62050	M20	13,5	50	15	10	60
K0383.52060	K0383.62060	M20	13,5	60	15	10	60
K0383.52435	K0383.62435	M24	15,8	35	18	12	80
K0383.52480	K0383.62480	M24	15,8	80	18	12	80
K0383.52450	K0383.62450	M24	15,8	50	18	12	80

Ball-end thrust screws without head

stainless steel with flattened ball and rotation lock



Material:
Screw and ball stainless steel.

Version:
Stainless steel bright.

Sample order:
K0384.50612

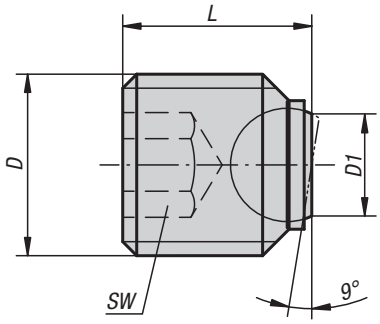
Note:
Surfaces which are not flat and parallel can be firmly clamped or supported with a flattened ball, the movable ball can adapt itself up to 9°.
Longer versions have been designed especially to be glued in. This enables mechanical connecting elements with male thread to be made cost-effectively for small and medium-sized series. Surfaces which are not flat and parallel can be firmly clamped or supported with a flattened ball, the movable ball can adapt itself up to 9°.
Longer versions have been designed especially to be glued in. This enables mechanical connecting elements with male thread to be made cost-effectively for small and medium-sized series.

KIPP Ball-end thrust screws without head stainless steel with flattened ball and rotation lock

Order No.	Form	D	D1	L	Ball-Ø	SW
K0384.50612	BV	M6	3	12,1	4	3
K0384.50616	BV	M6	3	16,1	4	3
K0384.50620	BV	M6	3	20,1	4	3
K0384.50625	BV	M6	3	25,1	4	3
K0384.50816	BV	M8	4,1	16,3	5,5	4
K0384.50820	BV	M8	4,1	20,3	5,5	4
K0384.50825	BV	M8	4,1	25,3	5,5	4
K0384.50830	BV	M8	4,1	30,3	5,5	4
K0384.51020	BV	M10	5,6	20,3	7	5
K0384.51025	BV	M10	5,6	25,3	7	5
K0384.51035	BV	M10	5,6	35,3	7	5
K0384.51040	BV	M10	5,6	40,2	7	5
K0384.51220	BV	M12	7	20,2	8,5	6
K0384.51230	BV	M12	7	30,2	8,5	6
K0384.51240	BV	M12	7	40,2	8,5	6
K0384.51250	BV	M12	7	50	8,5	6
K0384.51635	BV	M16	10,7	35	12	8
K0384.51650	BV	M16	10,7	50	12	8

Ball-end thrust screws without head

short version

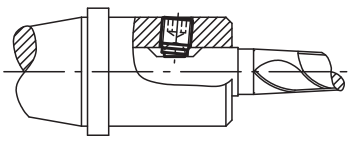


Material:
Screw carbon steel, ball ball-bearing steel.

Version:
Screw grade 12.9, black oxidised.
Ball hardened, bright.

Sample order:
K1913.1416

Note:
Short ball-end thrust screws are particularly suited to DIN 1835 E straight milling cutter shanks together with e.g. Whistle Notch or Weldon tool holders.



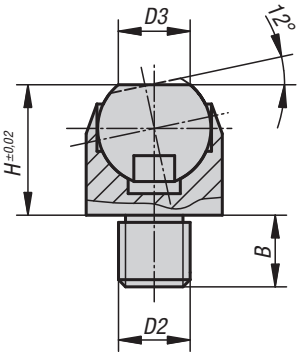
KIPP Ball-end thrust screws without head, short version

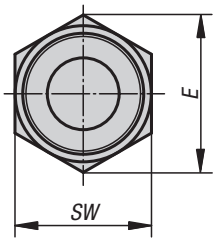
Order No.	D	D1	L	Ball-Ø	SW	Load rating max. kN (static load only)
K1913.1416	M14	7,2	16	8,5	6	30
K1913.1616	M16	7,2	16	8,5	8	30
K1913.1820	M18X2	10,7	20	12	10	60
K1913.2020	M20X2	10,7	20	12	10	60
K1913.2025	M20X2	10,7	25	12	10	60
K1913.2425	M24x2	13,5	25	15	12	90

Self-aligning pads

swivel angle 12°

Ⓒ





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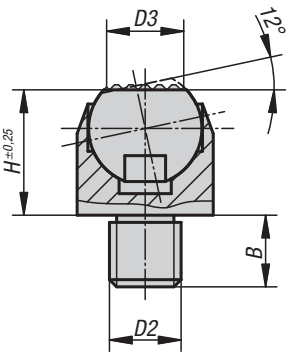
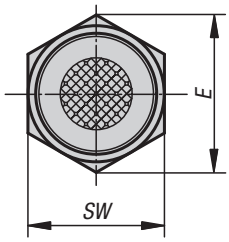




Material:
Body carbon steel.
Ball, ball-bearing steel 1.3505.

Version:
Body tempered.
Ball hardened (50 - 55 HRC).

Sample order:
K0302.106

Note:
Self-aligning pads serve as stops, supports and thrust pads in fixture construction.

Ball secured against rotation.

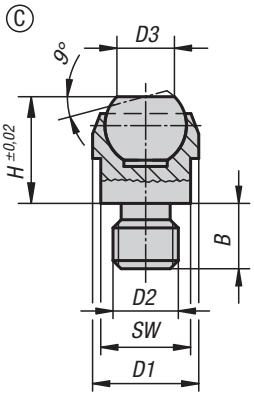
Drawing reference:
Form C: male thread, smooth flattened ball
Form F: male thread, serrated flattened ball

KIPP Self-aligning pads swivel angle 12°

Order No. Form C	Order No. Form F	B	D2	D3	H	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0302.106	**K0302.306**	7	M6	6,7	13	14,5	13	10	10
K0302.108	**K0302.308**	8	M8	6,7	13	14,5	13	10	10
K0302.110	**K0302.310**	10	M10	10	18	21,9	19	16	25
K0302.112	**K0302.312**	12	M12	10	18	21,9	19	16	25
K0302.116	**K0302.316**	16	M16	20	27	33	30	24	90
K0302.120	**K0302.320**	20	M20	20	27	33	30	24	90

Self-aligning pads

Ⓒ



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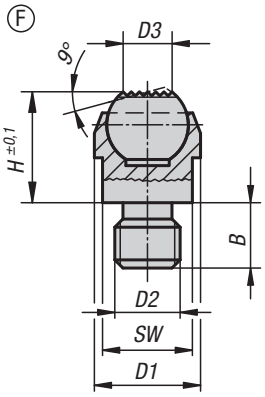

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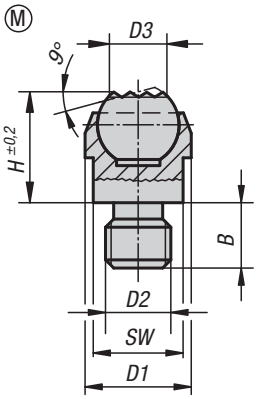

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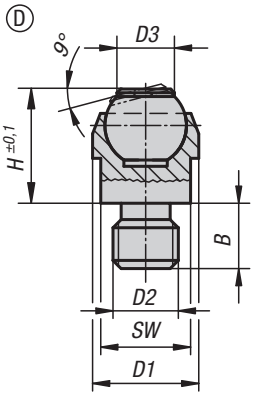

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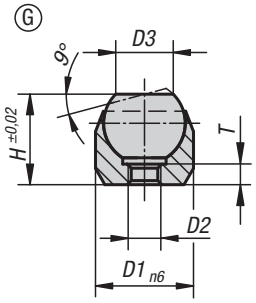

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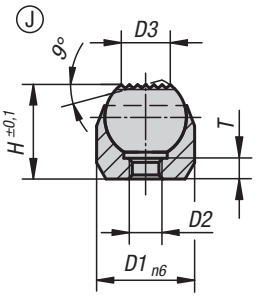

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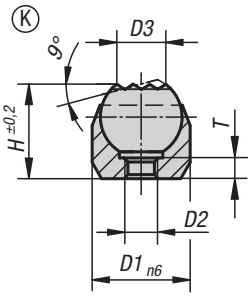

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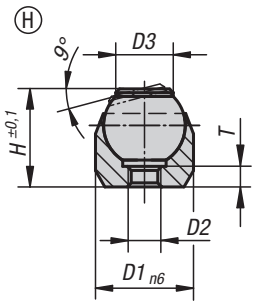
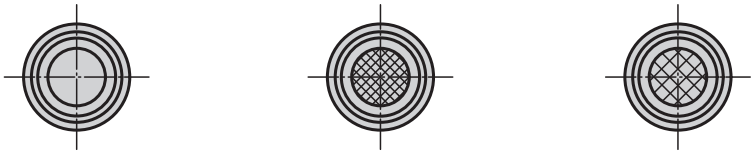




Material:
Body carbon steel.
Ball, ball bearing steel 1.2067.
Form D: Ball with POM insert.
Form H: Ball with POM insert.
Form K: Ball with carbide insert.
Form M has a carbide ball.

Version:
Body tempered and phosphated.
Ball hardened.
Form M ball nickel plated.

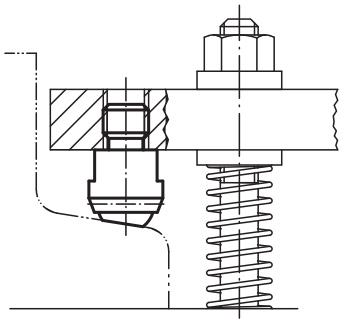
Sample order:
K0282.120

Note:
Self-aligning pads serve as stops, supports and thrust pads in fixture constructions.

Ball secured against rotation.

* Valid only if the minimum bore depth is observed.

Drawing reference:
Form C: with male thread, flattened ball, smooth.
Form D: with male thread, flattened ball, with POM insert.
Form F: with male thread, flattened ball, diamond grip.
Form M: with male thread, flattened ball, with carbide insert.
Form G: press fit, flattened ball, smooth.
Form H: press fit, flattened ball, with POM insert.
Form J: press fit, flattened ball, diamond grip.
Form K: press fit, flattened ball, with carbide insert.



Self-aligning pads

KIPP Self-aligning pads

Order No.	Form	B	D1	D2	D3	H	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.108	C	8	13	M8	7,2	13	10	11	10
K0282.110	C	10	20	M10	10,5	18	16	17	25
K0282.112	C	12	20	M12	10,5	18	16	17	25
K0282.116	C	16	30	M16	20	27	25	27	90
K0282.120	C	20	50	M20	34,5	35	40	41	165

Order No.	Form	B	D1	D2	D3	H	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.208	D	8	13	M8	7,9	13	10	11	10
K0282.210	D	10	20	M10	12,7	18	16	17	25
K0282.212	D	12	20	M12	12,7	18	16	17	25

Order No.	Form	B	D1	D2	D3	H	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.308	F	8	13	M8	7,2	13	10	11	10
K0282.310	F	10	20	M10	10,5	18	16	17	25
K0282.312	F	12	20	M12	10,5	18	16	17	25
K0282.316	F	16	30	M16	20	27	25	27	90
K0282.320	F	20	50	M20	34,5	35	40	41	165

Order No.	Form	B	D1	D2	D3	H	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.908	M	8	13	M8	7,7	13,3	10	11	10
K0282.910	M	10	20	M10	12	18	16	17	25
K0282.912	M	12	20	M12	12	18	16	17	25

Order No.	Form	D1	D2	D3	H	T	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.403	G	12	M3	7,2	11	3,5	10	ø 12 H7X6 min.	10*
K0282.404	G	18	M4	10,5	17	4,4	16	ø 18 H7X8 min.	25*
K0282.405	G	28	M5	20	25	6,3	25	ø 28 H7X13 min.	90*

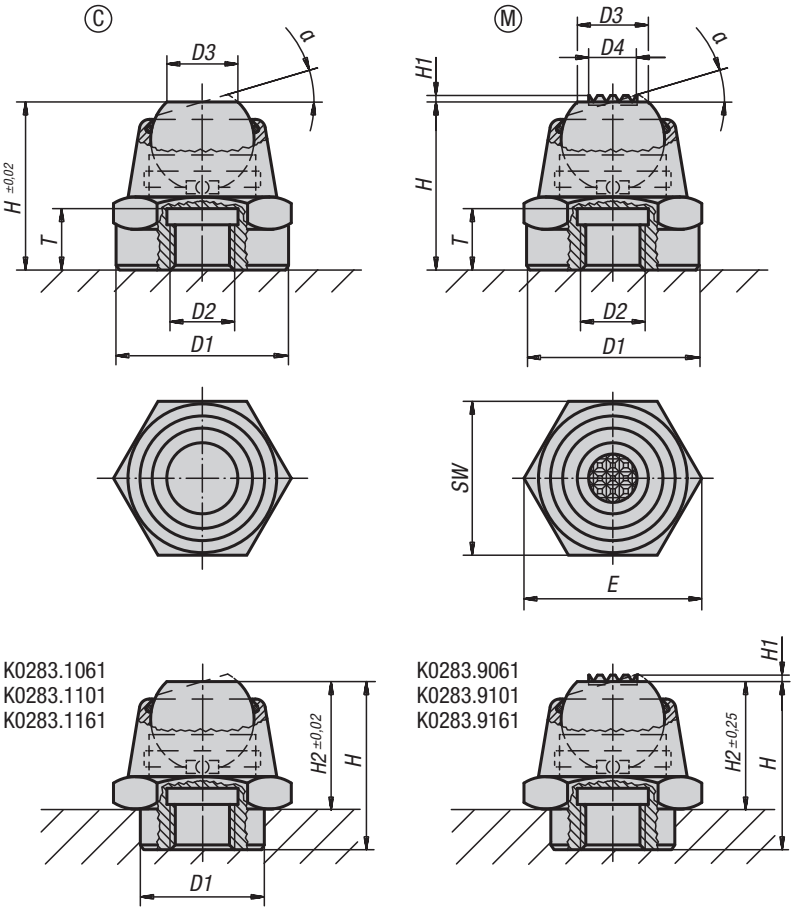
Order No.	Form	D1	D2	D3	H	T	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.503	H	12	M3	7,9	11	3	10	ø 12 H7X6 min.	10*
K0282.504	H	18	M4	12,7	17	4	16	ø 18 H7X8 min.	25*
K0282.505	H	28	M5	19,05	25	6	25	ø 28 H7X13 min.	90*

Order No.	Form	D1	D2	D3	H	T	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.603	J	12	M3	7,2	11	3,5	10	ø 12 H7X6 min.	10*
K0282.604	J	18	M4	10,5	17	4,4	16	ø 18 H7X8 min.	25*
K0282.605	J	28	M5	20	25	6,3	25	ø 28 H7X13 min.	90*

Order No.	Form	D1	D2	D3	H	T	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.803	K	12	M3	7,9	11	3	10	ø 12 H7X6 min.	10*
K0282.804	K	18	M4	12,7	17	4	16	ø 18 H7X8 min.	25*
K0282.805	K	28	M5	19,05	25	6	25	ø 28 H7X13 min.	90*

Self-aligning pads

swivel angle 14° and 20°



Material:
Body steel.
Ball rust and acid resistant steel.
Form M with carbide insert.

Version:
Body black oxidised.
Ball bright.

Sample order:
K0283.108

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces. They also serve as stops, supports and thrust pads in fixture and toolmaking.
Grub screws or threaded studs can be screwed and glued into thread D2 making a self-aligning pad with external thread.

Ball secured against rotation.

Advantages:
- Self-aligning pads can be swiveled.
- High load forces can be absorbed.
- The built-in o-ring keeps dirt and foreign particles out, which in turn guarantees reliable operation.

Self-aligning pads

swivel angle 14° and 20°

KIPP Form C, flattened ball, flat face

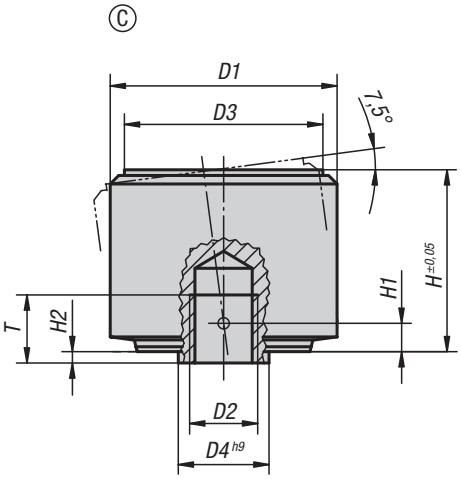
Order No.	Form	α	D1	D2	D3	H	H2	T	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0283.1061	C	14°	12	M6	7	17,5	12,5	6	19,6	17	10	14
K0283.106	C	14°	16	M6	7	17,5	-	6	19,6	17	10	14
K0283.108	C	20°	22	M8	11	26	-	9	27,7	24	16	34
K0283.1101	C	20°	18	M10	11	26	20	9	27,7	24	16	34
K0283.110	C	20°	22	M10	11	26	-	9	27,7	24	16	34
K0283.112	C	20°	22	M12	11	26	-	9	27,7	24	16	34
K0283.1161	C	20°	26	M16	18	40	30	15	41,6	36	25	90
K0283.116	C	20°	34	M16	18	40	-	15	41,6	36	25	90
K0283.120	C	20°	34	M20	18	40	-	15	41,6	36	25	90

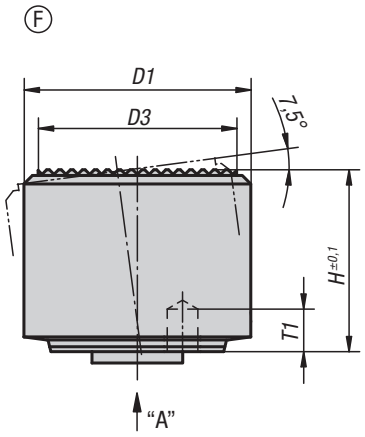
KIPP Form M, flattened ball, carbide steel diamond grip

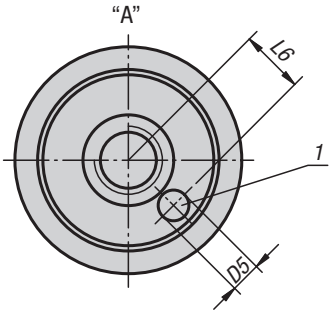
Order No.	Form	α	D1	D2	D3	D4	H	H1	H2	E	T	Ball-Ø	SW	Load rating max. kN (static load only)
K0283.9061	M	14°	12	M6	7	5	17,5	0,6	12,5	19,6	6	10	17	14
K0283.906	M	14°	16	M6	7	5	17,5	0,6	-	19,6	6	10	17	14
K0283.908	M	20°	22	M8	11	7,5	26	0,8	-	27,7	9	16	24	34
K0283.9101	M	20°	18	M10	11	7,5	26	0,8	20	27,7	9	16	24	34
K0283.910	M	20°	22	M10	11	7,5	26	0,8	-	27,7	9	16	24	34
K0283.912	M	20°	22	M12	11	7,5	26	0,8	-	27,7	9	16	24	34
K0283.9161	M	20°	26	M16	18	13	40	0,9	30	41,6	15	25	36	90
K0283.916	M	20°	34	M16	18	13	40	0,9	-	41,6	15	25	36	90
K0283.920	M	20°	34	M20	18	13	40	0,9	-	41,6	15	25	36	90

Self-aligning pads

self-righting







Material:
Carbon steel.

Version:
Hardened, black oxidised.

Sample order:
K0286.105

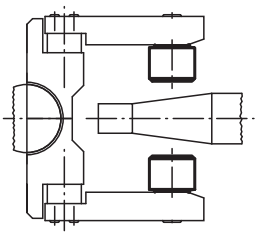
Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They also serve as stops, supports and thrust pads in fixtures and toolmaking.

Advantages:
– The built-in O-ring prevents dirt and foreign particles from entering.
– The clamping surface swivels back automatically after clamping.
– High load rating and small size.

Drawing reference:
Form C: smooth face
Form F: serrated face

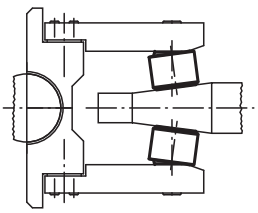
1) Hole for pin as a rotation lock

1. bring gripper into position



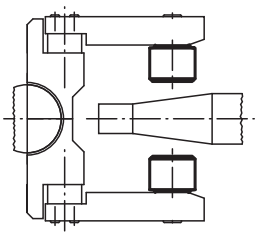
zero-point position of self-aligning pads

2. grip workpiece



self-aligning pads adapt to workpiece contour

3. open gripper



self-aligning pads swivel back automatically

KIPP Self-aligning pads self-righting

Order No.	Form	D1	D2	D3	D4	D5	H	H1	H2	T	T1	L6	Load rating max. kN (static load only)
K0286.105	C	18	M5	15	7	1,8	14	2,1	0,8	5	3	4,6	30
K0286.106	C	22	M6	18	8	2,8	16,5	2,5	1	6	4	5,6	50
K0286.108	C	28	M8	23	11	3,3	21,5	3,4	1,3	8	5	7,5	90
K0286.110	C	34	M10	29	13	4,4	27	4,2	1,6	10	6	9,2	140
K0286.112	C	40	M12	35	16	5,4	32	5	2	12	8	11,3	220
K0286.305	F	18	M5	15	7	1,8	14	2,1	0,8	5	3	4,6	30
K0286.306	F	22	M6	18	8	2,8	16,5	2,5	1	6	4	5,6	50
K0286.308	F	28	M8	23	11	3,3	21,5	3,4	1,3	8	5	7,5	90
K0286.310	F	34	M10	29	13	4,4	27	4,2	1,6	10	6	9,2	140
K0286.312	F	40	M12	35	16	5,4	32	5	2	12	8	11,3	220

Notes

Self-aligning pads

self-righting

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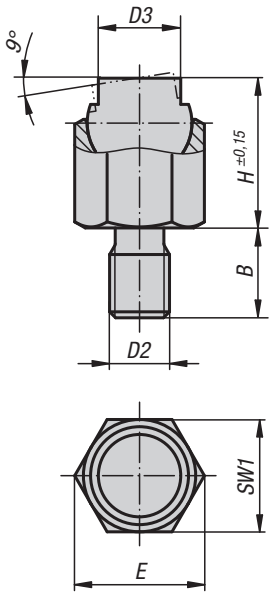

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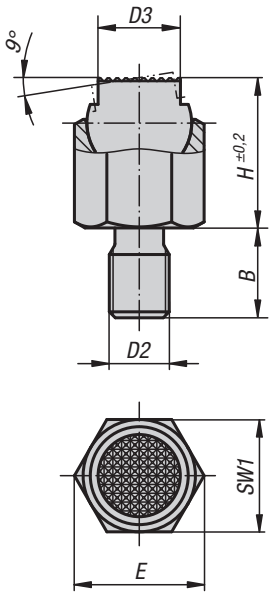

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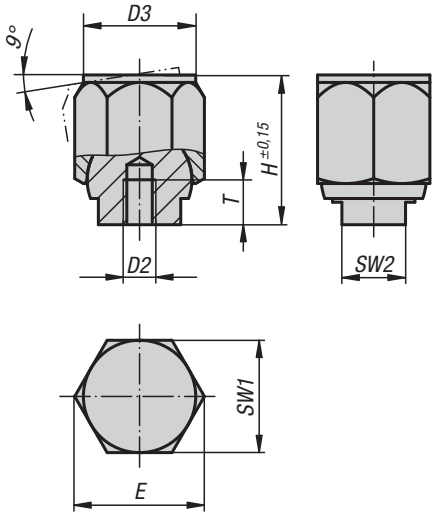

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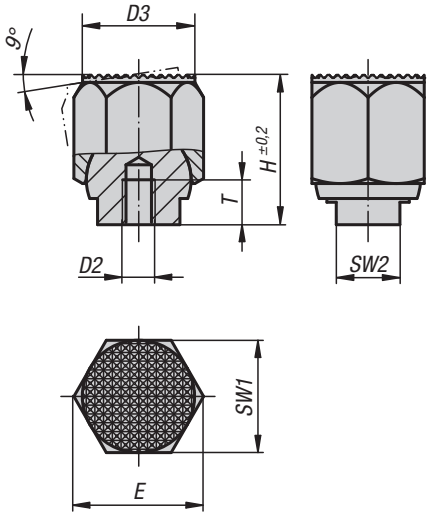


Material:
Form C and F:
Ball steel, ball seat high-carbon steel.
Form G and J:
Ball high-carbon steel, ball seat steel.

Version:
Form C and F:
Ball hardened and black oxidised, ball seat phosphated.
Form G and J:
Ball phosphated, ball seat hardened and black oxidised.

Sample order:
K1164.106

Note:
The self-aligning pads serve as stops, rests and thrust pads in fixture construction.
The seating face returns to the start position when the load is removed.

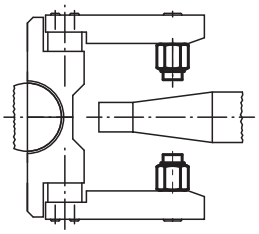
Ball secured against rotation.

Drawing reference:
Form C: male thread, flattened ball, smooth
Form F: male thread, flattened ball, diamond grip
Form G: press fit, flattened ball, smooth
Form J: press fit, flattened ball, diamond grip

Self-aligning pads

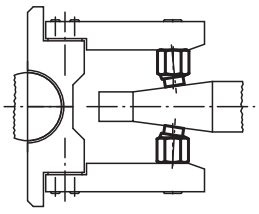
self-righting

1. bring gripper into position



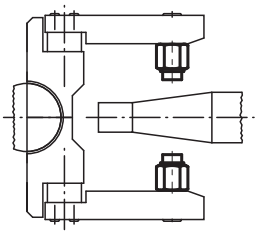
zero-point position of self-aligning pads

2. grip workpiece



self-aligning pads adapt to workpiece contour

3. open gripper



self-aligning pads swivel back automatically

KIPP Self-aligning pads, self-righting

Order No.	Form	B	D2	D3	H	E	SW1	Ball-Ø	Load rating max. kN (static load only)
K1164.106	C	9	M6	7	13	11,5	10	9	8
K1164.108	C	12	M8	9,5	18	15	13	12	16
K1164.110	C	15	M10	14	25	21,9	19	17	32
K1164.112	C	18	M12	20	36	31,2	27	25	64
K1164.116	C	24	M16	22	40	34,6	30	28	90

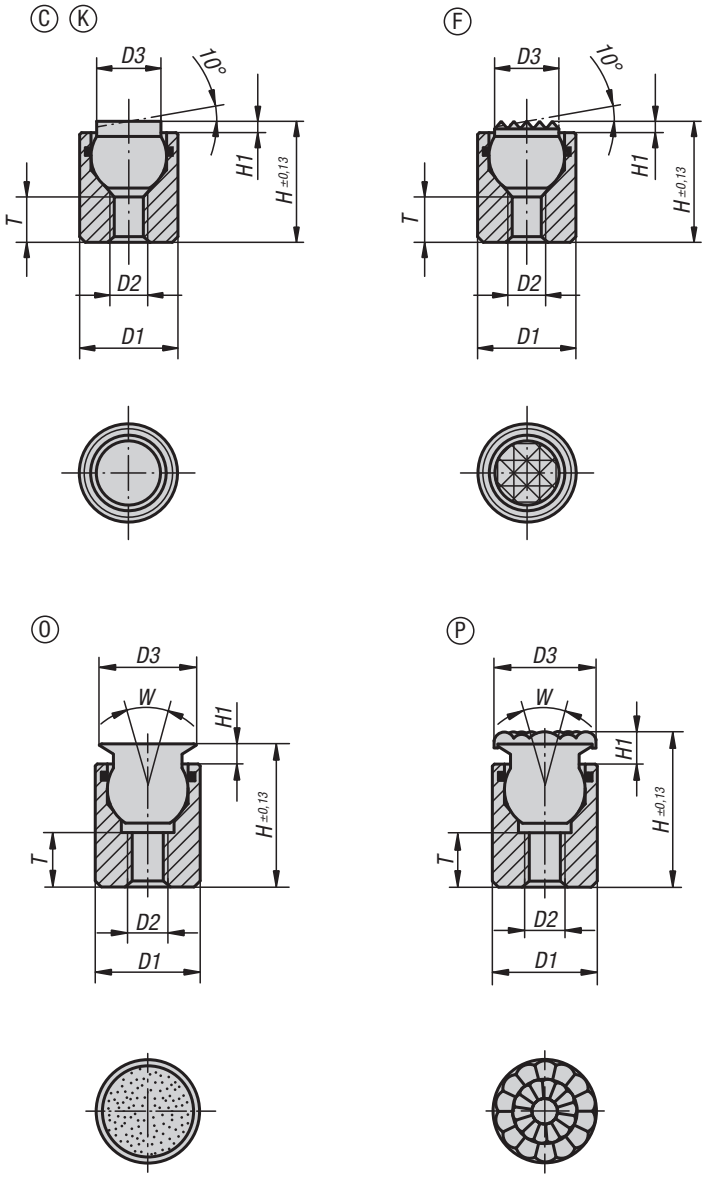
Order No.	Form	B	D2	D3	H	E	SW1	Ball-Ø	Load rating max. kN (static load only)
K1164.306	F	9	M6	7	13	11,5	10	9	8
K1164.308	F	12	M8	9,5	18	15	13	12	16
K1164.310	F	15	M10	14	25	21,9	19	17	32
K1164.312	F	18	M12	20	36	31,2	27	25	64
K1164.316	F	24	M16	22	40	34,6	30	28	90

Order No.	Form	D2	D3	H	E	T	SW1	SW2	Ball-Ø	Load rating max. kN (static load only)
K1164.403	G	M3	9	13	11,5	5	10	6	9	8
K1164.404	G	M4	12	18	15	6	13	8	12	16
K1164.405	G	M5	18	25	21,9	8	19	10	17	32
K1164.406	G	M6	26	36	31,2	10	27	16	25	64
K1164.408	G	M8	30	40	34,6	12	30	17	28	90

Order No.	Form	D2	D3	H	E	T	SW1	SW2	Ball-Ø	Load rating max. kN (static load only)
K1164.603	J	M3	9	13	11,5	5	10	6	9	8
K1164.604	J	M4	12	18	15	6	13	8	12	16
K1164.605	J	M5	18	25	21,9	8	19	10	17	32
K1164.606	J	M6	26	36	31,2	10	27	16	25	64
K1164.608	J	M8	30	40	34,6	12	30	17	28	90

Self-aligning pads

with o-ring



Material:
Body carbon steel.
Ball:
Form C, F tool steel.
Form K POM.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane face.

Version:
Body tempered, black oxidised.
Ball:
Form C, F hardened, black oxidised.
Form K POM ball, white.
Form O surface comparable to 100 grade abrasive grit.
Form P polyurethane, hardness 60 Shore.

Sample order:
K0284.704X012

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They also serve as stops, supports and thrust pads in fixtures and toolmaking.

Ball secured against rotation.

Form O: The abrasive diamond surface is fused firmly to the ball. It is ideally suited to supporting smooth or slippery applications with a minimum of clamping pressure. This allows the diamond particles to get a firm grip on a very small area with minimum damage to the surface. The diamond surface offers excellent wear resistance.

Form P: The polyurethane surface is permanently vulcanised on the ball. It is abrasion-resistant and does not discolour. Offers optimum protection against damage to delicate surfaces. The pearl-like surface gives a firm grip and allows air to escape so as to prevent any suction effect between the contact surface and the self-aligning pads.

Advantages:
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out ensuring smooth and even movement.

Self-aligning pads

with o-ring

KIPP Form C, flattened steel ball, smooth

Order No.	Form	D1	D2	D3	H	H1	T	Ball-Ø	Load rating max. kN (static load only)
K0284.104X012	C	10	M4	6	12	1,5	4,5	7	12
K0284.104X025	C	10	M4	6	25	1,5	12	7	12
K0284.105X016	C	13	M5	8,5	16	1,5	5	10	20
K0284.105X025	C	13	M5	8,5	25	1,5	12	10	20

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	D1	D2	D3	H	H1	T	Ball-Ø	Load rating max. kN (static load only)
K0284.304X012	F	10	M4	6	12	1,5	4,5	7	12
K0284.304X025	F	10	M4	6	25	1,5	12	7	12
K0284.305X016	F	13	M5	8,5	16	1,5	5	10	20
K0284.305X025	F	13	M5	8,5	25	1,5	12	10	20

KIPP Form K, flattened POM ball, smooth

Order No.	Form	D1	D2	D3	H	H1	T	Ball-Ø	Load rating max. kN (static load only)
K0284.704X012	K	10	M4	6	12	1,5	4,5	7	2
K0284.704X025	K	10	M4	6	25	1,5	12	7	2
K0284.705X016	K	13	M5	8,5	16	1,5	5	10	4
K0284.705X025	K	13	M5	8,5	25	1,5	12	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

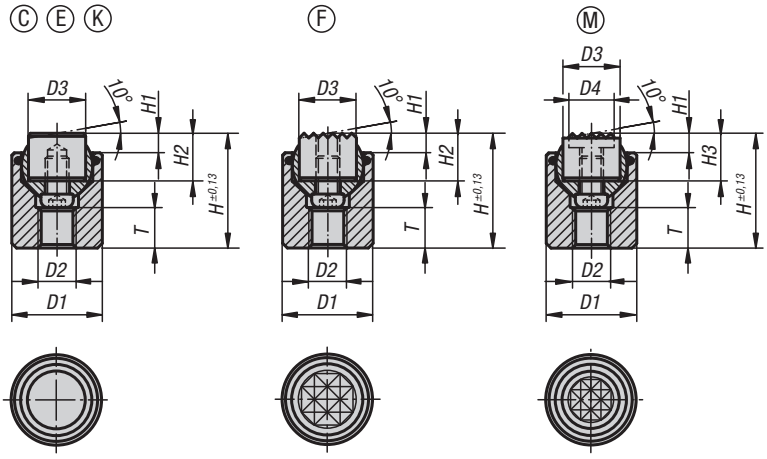
Order No.	Form	D1	D2	D3	H	H1	T	W	Ball-Ø	Load rating max. kN (static load only)
K0284.504X012	O	10	M4	8	12,5	2	3,5	28	7	11,5
K0284.504X025	O	10	M4	8	25,5	2	9	28	7	11,5
K0284.505X017	O	13	M5	11	17,5	3	6,5	28	10	19,8
K0284.505X026	O	13	M5	11	26,5	3	9	28	10	19,8
K0284.506X021	O	17	M6	14	21	3	7,5	28	13	27,4
K0284.508X024	O	19	M8	19	24	4	8,5	24	15	38,6
K0284.510X028	O	24	M10	21	28	4	9	24	20	58,3

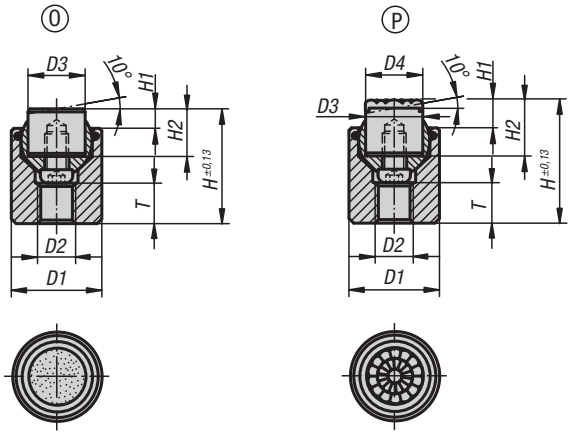
KIPP Form P, stainless-steel ball with polyurethane face

Order No.	Form	D1	D2	D3	H	H1	W	T	Ball-Ø
K0284.604X014	P	10	M4	10	14,5	4	28	3,5	7
K0284.604X027	P	10	M4	10	27,5	4	28	9	7
K0284.605X019	P	13	M5	13	19,5	5	28	6,5	10
K0284.605X028	P	13	M5	13	28,5	5	28	9	10
K0284.606X023	P	17	M6	16	23	5	28	7,5	13
K0284.608X026	P	19	M8	21	26	6	24	8,5	15
K0284.610X030	P	24	M10	23	30	6	24	9	20

Self-aligning pads

with O-ring and exchangeable inserts





Material:
Body carbon steel.
Ball rust and acid resistant steel.
Inserts:
Form C, F, M tool steel
Form K POM
Form E stainless steel.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

Version:
Body tempered, black oxidised.
Ball hardened, bright.
Inserts:
Form C, F hardened, black oxidised.
Form M with carbide serrations, black oxidised.
Form K white.
Form E hardened, bright.
Form O diamond impregnated surface comparable to 100 grade abrasive grit.
Form P polyurethane surface, hardness 60 Shore.

Sample order:
K0285.736X036

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They can also be used as stops, supports and thrust pads in fixtures and toolmaking.
The ball can be removed from the housing by applying light pressure to the socket head screw.

Ball secured against rotation.

Advantages:
Highly cost-effective as inserts can be exchanged.
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out, ensuring uniform movement.

KIPP Form C, flattened steel insert, smooth

Order No.	Form	D1	D2	D3	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0285.117X022	C	17	M6	10	22	4	10	7	13	28	K0385.10108
K0285.119X024	C	19	M8	12	24	4	10	8	15	39	K0385.12108
K0285.124X028	C	24	M10	16	28	4	10	8	20	58	K0385.16108
K0285.130X030	C	30	M12	20	30	4	10	9	23	95	K0385.20108
K0285.136X036	C	36	M12	25	36	4	10	11	28	136	K0385.25108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	D1	D2	D3	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0285.230X030	E	30	M12	20	30	4	10	9	23	95	K0385.20102
K0285.217X022	E	17	M6	10	22	4	10	7	13	28	K0385.10102
K0285.236X036	E	36	M12	25	36	4	10	11	28	136	K0385.25102
K0285.219X024	E	19	M8	12	24	4	10	8	15	39	K0385.12102
K0285.224X028	E	24	M10	16	28	4	10	8	20	58	K0385.16102

KIPP Form F, flattened, diamond grip

Order No.	Form	D1	D2	D3	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0285.317X022	F	17	M6	10	22	4	10	7	13	28	K0385.1010
K0285.319X024	F	19	M8	12	24	4	10	8	15	39	K0385.1210
K0285.324X028	F	24	M10	16	28	4	10	8	20	58	K0385.1610
K0285.330X030	F	30	M12	20	30	4	10	9	23	95	K0385.2010
K0285.336X036	F	36	M12	25	36	4	10	11	28	136	K0385.2510

KIPP Form K, flattened POM insert, smooth

Order No.	Form	D1	D2	D3	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0285.717X022	K	17	M6	10	22	4	10	7	13	4	K0385.10109
K0285.719X024	K	19	M8	12	24	4	10	8	15	7	K0385.12109
K0285.724X028	K	24	M10	16	28	4	10	8	20	14	K0385.16109
K0285.730X030	K	30	M12	20	30	4	10	9	23	27	K0385.20109
K0285.736X036	K	36	M12	25	36	4	10	11	28	47	K0385.25109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	D1	D2	D3	D4	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0285.936X036	M	36	M12	25	19	36	4	10	11	28	136	K0385.25107
K0285.924X028	M	24	M10	16	12,7	28	4	10	8	20	58	K0385.16107
K0285.930X030	M	30	M12	20	15,9	30	4	10	9	23	95	K0385.20107
K0285.919X024	M	19	M8	12	9,5	24	4	10	8	15	39	K0385.12107
K0285.917X022	M	17	M6	10	7,9	22	4	10	7	13	28	K0385.10107

KIPP Form O, stainless-steel insert, diamond impregnated

Order No.	Form	D1	D2	D3	H	H1	H2	T	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0285.517X022	O	17	M6	10	22	4	10	7	13	28	K0385.10105
K0285.519X024	O	19	M8	12	24	4	10	8	15	39	K0385.12105
K0285.524X028	O	24	M10	16	28	4	10	8	20	58	K0385.16105
K0285.530X030	O	30	M12	20	30	4	10	9	23	95	K0385.20105
K0285.536X036	O	36	M12	25	36	4	10	11	28	136	K0385.25105

KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	D1	D2	D3	D4	H	H1	H2	T	Ball-Ø	Order No. stainless steel insert, polyurethane surface
K0285.617X024	P	17	M6	10	10	24	6	12	7	13	K0385.10126
K0285.619X026	P	19	M8	12	13	26	6	12	8	15	K0385.12126
K0285.624X030	P	24	M10	16	16	30	6	12	8	20	K0385.16126
K0285.630X032	P	30	M12	20	21	32	6	12	9	23	K0385.20126
K0285.636X038	P	36	M12	25	27	38	6	12	11	28	K0385.25126

Self-aligning pads

adjustable

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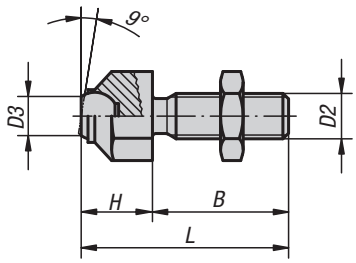

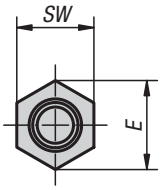

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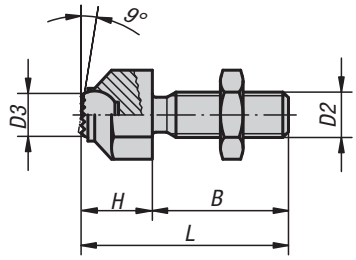
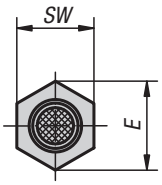




Material:
Steel or stainless steel.

Version:
Steel version:
Housing tempered and manganese phosphated.
Nut black oxidised.

Stainless steel version:
Housing tempered and electropolished.
Nut bright.

Sample order:
K0287.316

Note:
Ball secured against rotation.

KIPP Form C, flattened ball, flat face

Order No.	Form	Main material	B	D2	D3	H	L	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0287.108	C	steel	25	M8	5,8	11,6	36,6	14,5	13	8,5	8
K0287.110	C	steel	30	M10	8,6	15,7	45,7	19	17	12	8
K0287.112	C	steel	35	M12	8,6	15,7	50,7	19	17	12	15
K0287.116	C	steel	40	M16	10,5	20,7	60,7	27	24	16	25
K0287.120	C	steel	50	M20	20	27,3	77,3	33	30	25	90
K0287.1081	C	stainless steel	25	M8	5,8	11,6	36,6	14,5	13	8,5	8
K0287.1101	C	stainless steel	30	M10	8,6	15,7	45,7	19	17	12	8
K0287.1121	C	stainless steel	35	M12	8,6	15,7	50,7	19	17	12	15
K0287.1161	C	stainless steel	40	M16	10,5	20,7	60,7	27	24	16	25
K0287.1201	C	stainless steel	50	M20	20	27,3	77,3	33	30	25	90

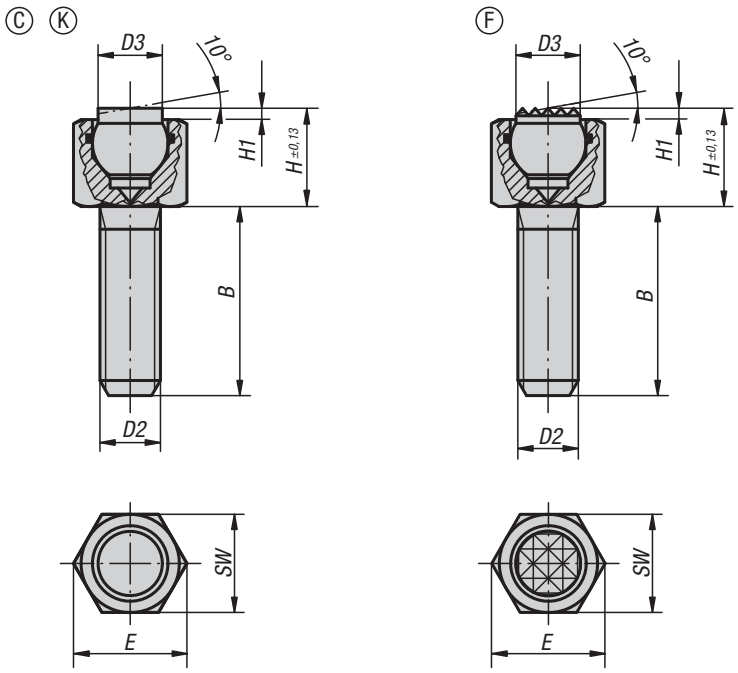
KIPP Form F, flattened ball, diamond grip

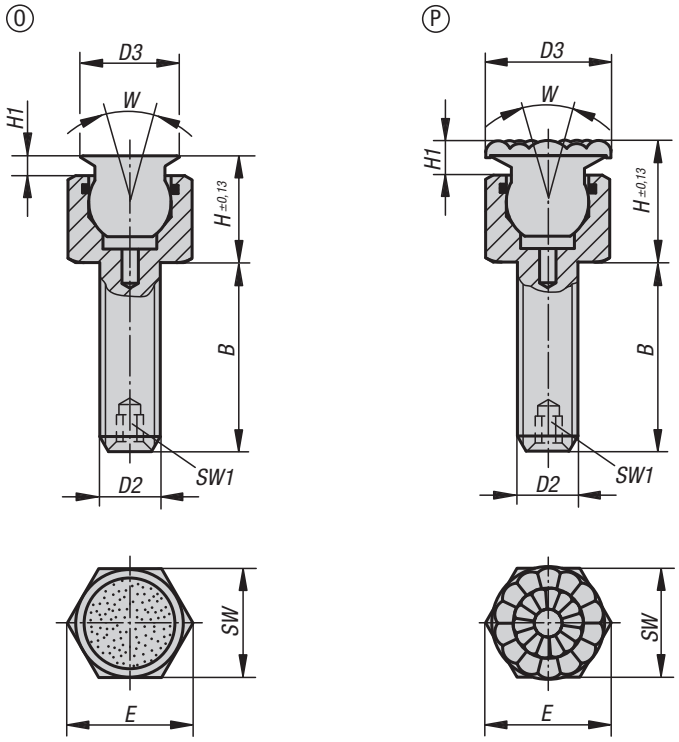
Order No.	Form	Main material	B	D2	D3	H	L	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0287.308	F	steel	25	M8	5,8	11,6	36,6	14,5	13	8,5	8
K0287.310	F	steel	30	M10	8,6	15,7	45,7	19	17	12	8
K0287.312	F	steel	35	M12	8,6	15,7	50,7	19	17	12	15
K0287.316	F	steel	40	M16	10,5	20,7	60,7	27	24	16	25
K0287.320	F	steel	50	M20	20	27,3	77,3	33	30	25	90
K0287.3081	F	stainless steel	25	M8	5,8	11,6	36,6	14,5	13	8,5	8
K0287.3101	F	stainless steel	30	M10	8,6	15,7	45,7	19	17	12	8
K0287.3121	F	stainless steel	35	M12	8,6	15,7	50,7	19	17	12	15
K0287.3161	F	stainless steel	40	M16	10,5	20,7	60,7	27	24	16	25
K0287.3201	F	stainless steel	50	M20	20	27,3	77,3	33	30	25	90

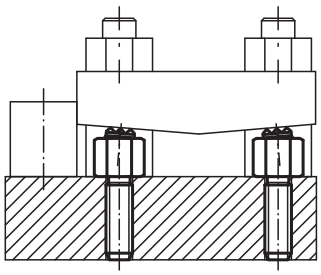
Notes

Self-aligning pads adjustable

with o-ring







Material:
Body carbon steel.
Ball:
Form C, F, tool steel.
Form K POM.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

Version:
Body tempered, black oxidised.
Ball:
Form C, F hardened, black oxidised.
Form K POM ball, white.
Form O surface comparable to 100 grade abrasive grit.
Form P polyurethane, hardness 60 Shore.

Sample order:
K0288.506X012
(include length B)

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces. They also serve as stops, supports and thrust pads in fixtures and toolmaking.

Ball secured against rotation.

Form O: The abrasive diamond surface is bonded firmly to the ball. It is ideally suited to supporting smooth or slippery applications with a minimum of clamping pressure. This allows the diamond particles to get a firm grip on a very small area with minimum damage to the surface.
The diamond surface offers excellent wear resistance.

Form P: The polyurethane surface is vulcanised firmly to the ball. It is abrasion-resistant and does not discolour.
It offers optimum protection against damage to delicate surfaces. The pearl-like surface gives a firm grip and allows air to escape so as to prevent any suction effect between the contact surface and the self-aligning pads.

Advantages:
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out, ensuring uniform movement.

Self-aligning pads adjustable

with o-ring

KIPP Form C, flattened steel ball, smooth

Order No.	Form	B	D2	D3	H	H1	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.106X012	C	12	M6	6	9,5	1,5	11,5	10	7	9
K0288.106X025	C	25	M6	6	9,5	1,5	11,5	10	7	9
K0288.106X040	C	40	M6	6	9,5	1,5	11,5	10	7	9
K0288.108X012	C	12	M8	8,5	13	1,5	15	13	10	15
K0288.108X025	C	25	M8	8,5	13	1,5	15	13	10	15
K0288.108X040	C	40	M8	8,5	13	1,5	15	13	10	15

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	B	D2	D3	H	H1	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.306X012	F	12	M6	6	9,5	1,5	11,5	10	7	9
K0288.306X025	F	25	M6	6	9,5	1,5	11,5	10	7	9
K0288.306X040	F	40	M6	6	9,5	1,5	11,5	10	7	9
K0288.308X012	F	12	M8	8,5	13	1,5	15	13	10	15
K0288.308X025	F	25	M8	8,5	13	1,5	15	13	10	15
K0288.308X040	F	40	M8	8,5	13	1,5	15	13	10	15

KIPP Form K, flattened POM ball, smooth

Order No.	Form	B	D2	D3	H	H1	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.706X012	K	12	M6	6	9,5	1,5	11,5	10	7	2
K0288.706X025	K	25	M6	6	9,5	1,5	11,5	10	7	2
K0288.706X040	K	40	M6	6	9,5	1,5	11,5	10	7	2
K0288.708X012	K	12	M8	8,5	13	1,5	15	13	10	4
K0288.708X025	K	25	M8	8,5	13	1,5	15	13	10	4
K0288.708X040	K	40	M8	8,5	13	1,5	15	13	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

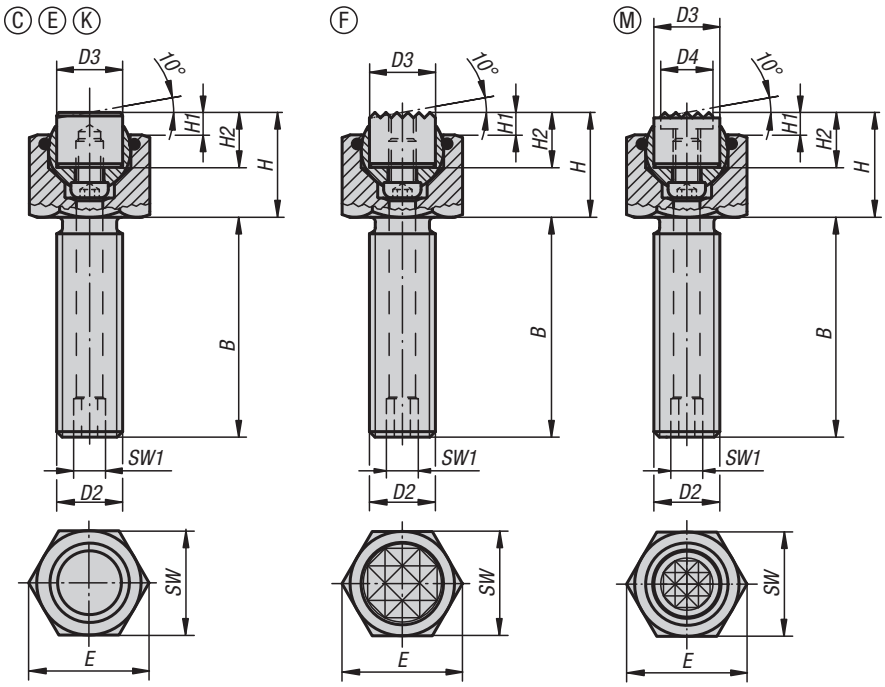
Order No.	Form	B	D2	D3	H	H1	E	SW	SW1	W	Ball-Ø	Load rating max. kN (static load only)
K0288.506X	O	12/25/40	M6	8	10	2	11,5	10	-	28	7	9,2
K0288.508X	O	12/25/40	M8	11	14,5	3	15	13	-	28	10	15,5
K0288.510X	O	15/30/50	M10	14	16	3	19,6	17	3	28	13	18,8
K0288.512X	O	20/40/60	M12	19	19	4	21,9	19	5	24	15	29,8
K0288.516X	O	25/50/80	M16	21	23	4	27,7	24	6	24	20	50,3

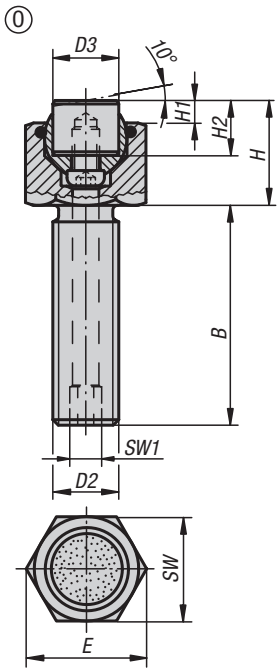
KIPP Form P, stainless-steel ball with polyurethane face

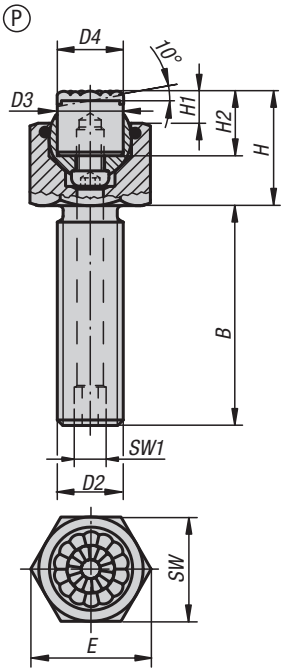
Order No.	Form	B	D2	D3	H	H1	E	SW	SW1	W	Ball-Ø
K0288.606X	P	12/25/40	M6	10	12	4	11,5	10	-	28	7
K0288.608X	P	12/25/40	M8	13	16,5	5	15	13	-	28	10
K0288.610X	P	15/30/50	M10	16	18	5	19,6	17	3	28	13
K0288.612X	P	20/40/60	M12	21	21	6	21,9	19	5	24	15
K0288.616X	P	25/50/80	M16	23	25	6	27,7	24	6	24	20

Self-aligning pads adjustable

with O-ring and exchangeable inserts







Material:
Body carbon steel.
Ball rust and acid resistant steel.
Inserts:
Form C, F, M tool steel
Form K POM
Form E stainless steel.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

Version:
Body tempered, black oxidised.
Ball hardened, bright.
Inserts:
Form C, F hardened, black oxidised.
Form M with carbide serrations, black oxidised.
Form K white.
Form E hardened, bright.
Form O diamond impregnated surface comparable to 100 grade abrasive grit.
Form P polyurethane surface, hardness 60 Shore.

Sample order:
K0289.124X100

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They also serve as stops, supports and thrust pads in fixtures and toolmaking.
The ball can be removed from the housing by applying light pressure to the socket head screw.

Ball secured against rotation.

Advantages:
Highly cost-effective as inserts can be exchanged.
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out, ensuring uniform movement.

KIPP Form C, flattened steel insert, smooth

Order No.	Form	B	D2	D3	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0289.110X015	C	15	M10	10	17	4	10	19,6	17	3	13	19	K0385.10108
K0289.110X030	C	30	M10	10	17	4	10	19,6	17	3	13	19	K0385.10108
K0289.110X050	C	50	M10	10	17	4	10	19,6	17	3	13	19	K0385.10108
K0289.112X020	C	20	M12	12	19	4	10	21,9	19	5	15	30	K0385.12108
K0289.112X040	C	40	M12	12	19	4	10	21,9	19	5	15	30	K0385.12108
K0289.112X060	C	60	M12	12	19	4	10	21,9	19	5	15	30	K0385.12108
K0289.116X025	C	25	M16	16	23	4	10	27,7	24	6	20	50	K0385.16108
K0289.116X050	C	50	M16	16	23	4	10	27,7	24	6	20	50	K0385.16108
K0289.116X080	C	80	M16	16	23	4	10	27,7	24	6	20	50	K0385.16108
K0289.120X030	C	30	M20	20	24	4	10	34,6	30	8	23	85	K0385.20108
K0289.120X060	C	60	M20	20	24	4	10	34,6	30	8	23	85	K0385.20108
K0289.120X100	C	100	M20	20	24	4	10	34,6	30	8	23	85	K0385.20108
K0289.124X040	C	40	M24	25	30	4	10	41,6	36	10	28	121	K0385.25108
K0289.124X100	C	100	M24	25	30	4	10	41,6	36	10	28	121	K0385.25108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	B	D2	D3	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0289.210X015	E	15	M10	10	17	4	10	19,6	17	3	13	19	K0385.10102
K0289.210X030	E	30	M10	10	17	4	10	19,6	17	3	13	19	K0385.10102
K0289.210X050	E	50	M10	10	17	4	10	19,6	17	3	13	19	K0385.10102
K0289.212X020	E	20	M12	12	19	4	10	21,9	19	5	15	30	K0385.12102
K0289.212X040	E	40	M12	12	19	4	10	21,9	19	5	15	30	K0385.12102
K0289.212X060	E	60	M12	12	19	4	10	21,9	19	5	15	30	K0385.12102
K0289.216X025	E	25	M16	16	23	4	10	27,7	24	6	20	50	K0385.16102
K0289.216X050	E	50	M16	16	23	4	10	27,7	24	6	20	50	K0385.16102
K0289.216X080	E	80	M16	16	23	4	10	27,7	24	6	20	50	K0385.16102
K0289.220X030	E	30	M20	20	24	4	10	34,6	30	8	23	85	K0385.20102
K0289.220X060	E	60	M20	20	24	4	10	34,6	30	8	23	85	K0385.20102
K0289.220X100	E	100	M20	20	24	4	10	34,6	30	8	23	85	K0385.20102
K0289.224X040	E	40	M24	25	30	4	10	41,6	36	10	28	121	K0385.25102
K0289.224X100	E	100	M24	25	30	4	10	41,6	36	10	28	121	K0385.25102

KIPP Form F, flattened, diamond grip

Order No.	Form	B	D2	D3	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0289.310X015	F	15	M10	10	17	4	10	19,6	17	3	13	19	K0385.1010
K0289.310X030	F	30	M10	10	17	4	10	19,6	17	3	13	19	K0385.1010
K0289.310X050	F	50	M10	10	17	4	10	19,6	17	3	13	19	K0385.1010
K0289.312X020	F	20	M12	12	19	4	10	21,9	19	5	15	30	K0385.1210
K0289.312X040	F	40	M12	12	19	4	10	21,9	19	5	15	30	K0385.1210
K0289.312X060	F	60	M12	12	19	4	10	21,9	19	5	15	30	K0385.1210
K0289.316X025	F	25	M16	16	23	4	10	27,7	24	6	20	50	K0385.1610
K0289.316X050	F	50	M16	16	23	4	10	27,7	24	6	20	50	K0385.1610
K0289.316X080	F	80	M16	16	23	4	10	27,7	24	6	20	50	K0385.1610
K0289.320X030	F	30	M20	20	24	4	10	34,6	30	8	23	85	K0385.2010
K0289.320X060	F	60	M20	20	24	4	10	34,6	30	8	23	85	K0385.2010
K0289.320X100	F	100	M20	20	24	4	10	34,6	30	8	23	85	K0385.2010
K0289.324X040	F	40	M24	25	30	4	10	41,6	36	10	28	121	K0385.2510
K0289.324X100	F	100	M24	25	30	4	10	41,6	36	10	28	121	K0385.2510

Self-aligning pads adjustable

with O-ring and exchangeable inserts

KIPP Form K, flattened POM insert, smooth

Order No.	Form	B	D2	D3	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0289.710X015	K	15	M10	10	17	4	10	19,6	17	3	13	4	K0385.10109
K0289.710X030	K	30	M10	10	17	4	10	19,6	17	3	13	4	K0385.10109
K0289.710X050	K	50	M10	10	17	4	10	19,6	17	3	13	4	K0385.10109
K0289.712X020	K	20	M12	12	19	4	10	21,9	19	5	15	7	K0385.12109
K0289.712X040	K	40	M12	12	19	4	10	21,9	19	5	15	7	K0385.12109
K0289.712X060	K	60	M12	12	19	4	10	21,9	19	5	15	7	K0385.12109
K0289.716X025	K	25	M16	16	23	4	10	27,7	24	6	20	14	K0385.16109
K0289.716X050	K	50	M16	16	23	4	10	27,7	24	6	20	14	K0385.16109
K0289.716X080	K	80	M16	16	23	4	10	27,7	24	6	20	14	K0385.16109
K0289.720X030	K	30	M20	20	24	4	10	34,6	30	8	23	27	K0385.20109
K0289.720X060	K	60	M20	20	24	4	10	34,6	30	8	23	27	K0385.20109
K0289.720X100	K	100	M20	20	24	4	10	34,6	30	8	23	27	K0385.20109
K0289.724X040	K	40	M24	25	30	4	10	41,6	36	10	28	47	K0385.25109
K0289.724X100	K	100	M24	25	30	4	10	41,6	36	10	28	47	K0385.25109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	B	D2	D3	D4	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0289.910X015	M	15	M10	10	7,9	17	4	10	19,6	17	3	13	19	K0385.10107
K0289.910X030	M	30	M10	10	7,9	17	4	10	19,6	17	3	13	19	K0385.10107
K0289.910X050	M	50	M10	10	7,9	17	4	10	19,6	17	3	13	19	K0385.10107
K0289.912X020	M	20	M12	12	9,5	19	4	10	21,9	19	5	15	30	K0385.12107
K0289.912X040	M	40	M12	12	9,5	19	4	10	21,9	19	5	15	30	K0385.12107
K0289.912X060	M	60	M12	12	9,5	19	4	10	21,9	19	5	15	30	K0385.12107
K0289.916X025	M	25	M16	16	12,7	23	4	10	27,7	24	6	20	50	K0385.16107
K0289.916X050	M	50	M16	16	12,7	23	4	10	27,7	24	6	20	50	K0385.16107
K0289.916X080	M	80	M16	16	12,7	23	4	10	27,7	24	6	20	50	K0385.16107
K0289.920X030	M	30	M20	20	15,9	24	4	10	34,6	30	8	23	85	K0385.20107
K0289.920X060	M	60	M20	20	15,9	24	4	10	34,6	30	8	23	85	K0385.20107
K0289.920X100	M	100	M20	20	15,9	24	4	10	34,6	30	8	23	85	K0385.20107
K0289.924X040	M	40	M24	25	19	30	4	10	41,6	36	10	28	121	K0385.25107
K0289.924X100	M	100	M24	25	19	30	4	10	41,6	36	10	28	121	K0385.25107

Self-aligning pads adjustable

with O-ring and exchangeable inserts

KIPP Form O, stainless-steel insert, diamond impregnated

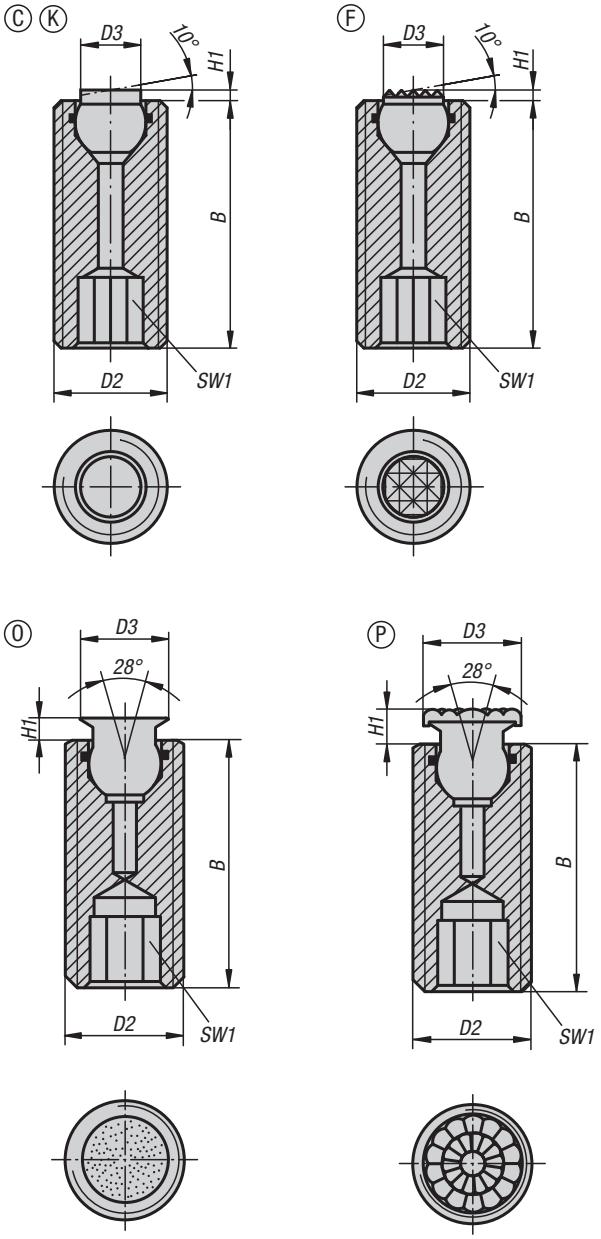
Order No.	Form	B	D2	D3	H	H1	H2	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0289.510X015	O	15	M10	10	17	4	10	19,6	17	3	13	19	K0385.10105
K0289.510X030	O	30	M10	10	17	4	10	19,6	17	3	13	19	K0385.10105
K0289.510X050	O	50	M10	10	17	4	10	19,6	17	3	13	19	K0385.10105
K0289.512X020	O	20	M12	12	19	4	10	21,9	19	5	15	30	K0385.12105
K0289.512X040	O	40	M12	12	19	4	10	21,9	19	5	15	30	K0385.12105
K0289.512X060	O	60	M12	12	19	4	10	21,9	19	5	15	30	K0385.12105
K0289.516X025	O	25	M16	16	23	4	10	27,7	24	6	20	50	K0385.16105
K0289.516X050	O	50	M16	16	23	4	10	27,7	24	6	20	50	K0385.16105
K0289.516X080	O	80	M16	16	23	4	10	27,7	24	6	20	50	K0385.16105
K0289.520X030	O	30	M20	20	24	4	10	34,6	30	8	23	85	K0385.20105
K0289.520X060	O	60	M20	20	24	4	10	34,6	30	8	23	85	K0385.20105
K0289.520X100	O	100	M20	20	24	4	10	34,6	30	8	23	85	K0385.20105
K0289.524X040	O	40	M24	25	30	4	10	41,6	36	10	28	121	K0385.25105
K0289.524X100	O	100	M24	25	30	4	10	41,6	36	10	28	121	K0385.25105

KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	B	D2	D3	D4	H	H1	H2	E	SW	SW1	Ball-Ø	Order No. stainless steel insert, polyurethane surface
K0289.610X015	P	15	M10	10	10	19	6	12	19,6	17	3	13	K0385.10126
K0289.610X030	P	30	M10	10	10	19	6	12	19,6	17	3	13	K0385.10126
K0289.610X050	P	50	M10	10	10	19	6	12	19,6	17	3	13	K0385.10126
K0289.612X020	P	20	M12	12	13	21	6	12	21,9	19	5	15	K0385.12126
K0289.612X040	P	40	M12	12	13	21	6	12	21,9	19	5	15	K0385.12126
K0289.612X060	P	60	M12	12	13	21	6	12	21,9	19	5	15	K0385.12126
K0289.616X025	P	25	M16	16	16	25	6	12	27,7	24	6	20	K0385.16126
K0289.616X050	P	50	M16	16	16	25	6	12	27,7	24	6	20	K0385.16126
K0289.616X080	P	80	M16	16	16	25	6	12	27,7	24	6	20	K0385.16126
K0289.620X030	P	30	M20	20	21	26	6	12	34,6	30	8	23	K0385.20126
K0289.620X060	P	60	M20	20	21	26	6	12	34,6	30	8	23	K0385.20126
K0289.620X100	P	100	M20	20	21	26	6	12	34,6	30	8	23	K0385.20126
K0289.624X040	P	40	M24	25	27	32	6	12	41,6	36	10	28	K0385.25126
K0289.624X100	P	100	M24	25	27	32	6	12	41,6	36	10	28	K0385.25126

Self-aligning pads adjustable

with O-ring and hexagon socket



Material:
Body carbon steel.
Ball:
Form C, F, tool steel.
Form K POM.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

Version:
Body tempered, black oxidised.
Ball:
Form C, F hardened, black oxidised.
Form K POM ball, white.
Form O surface comparable to 100 grade abrasive grit.
Form P polyurethane, hardness 60 Shore.

Sample order:
K0290.510X026
(include length B)

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They also serve as stops, supports and thrust pads in fixtures and toolmaking.

Ball secured against rotation.

Form O: The abrasive diamond surface is bonded firmly to the ball. It is ideally suited to supporting smooth or slippery applications with a minimum of clamping pressure. This allows the diamond particles to get a firm grip on a very small area with minimum damage to the surface.
The diamond surface offers excellent wear resistance.

Form P: The polyurethane surface is vulcanised firmly to the ball. It is abrasion-resistant and does not discolour. Offers optimum protection against damage to delicate surfaces. The pearl-like surface gives a firm grip and allows air to escape so as to prevent any suction effect between the contact surface and the toggle locator.

Advantages:
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out, ensuring uniform movement.
The hexagon socket allows easy adjustment and positioning in through holes.

Self-aligning pads adjustable

with O-ring and hexagon socket

KIPP Form C, flattened steel ball, smooth

Order No.	Form	B	D2	D3	H1	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.112X025	C	25	M12	6	1,5	6	7	15
K0290.112X035	C	35	M12	6	1,5	6	7	15
K0290.112X050	C	50	M12	6	1,5	6	7	15
K0290.116X025	C	25	M16	8,5	1,5	8	10	23
K0290.116X035	C	35	M16	8,5	1,5	8	10	23
K0290.116X050	C	50	M16	8,5	1,5	8	10	23

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	B	D2	D3	H1	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.312X025	F	25	M12	6	1,5	6	7	15
K0290.312X035	F	35	M12	6	1,5	6	7	15
K0290.312X050	F	50	M12	6	1,5	6	7	15
K0290.316X025	F	25	M16	8,5	1,5	8	10	23
K0290.316X035	F	35	M16	8,5	1,5	8	10	23
K0290.316X050	F	50	M16	8,5	1,5	8	10	23

KIPP Form K, flattened POM ball, smooth

Order No.	Form	B	D2	D3	H1	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.712X025	K	25	M12	6	1,5	6	7	2
K0290.712X035	K	35	M12	6	1,5	6	7	2
K0290.712X050	K	50	M12	6	1,5	6	7	2
K0290.716X025	K	25	M16	8,5	1,5	8	10	4
K0290.716X035	K	35	M16	8,5	1,5	8	10	4
K0290.716X050	K	50	M16	8,5	1,5	8	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

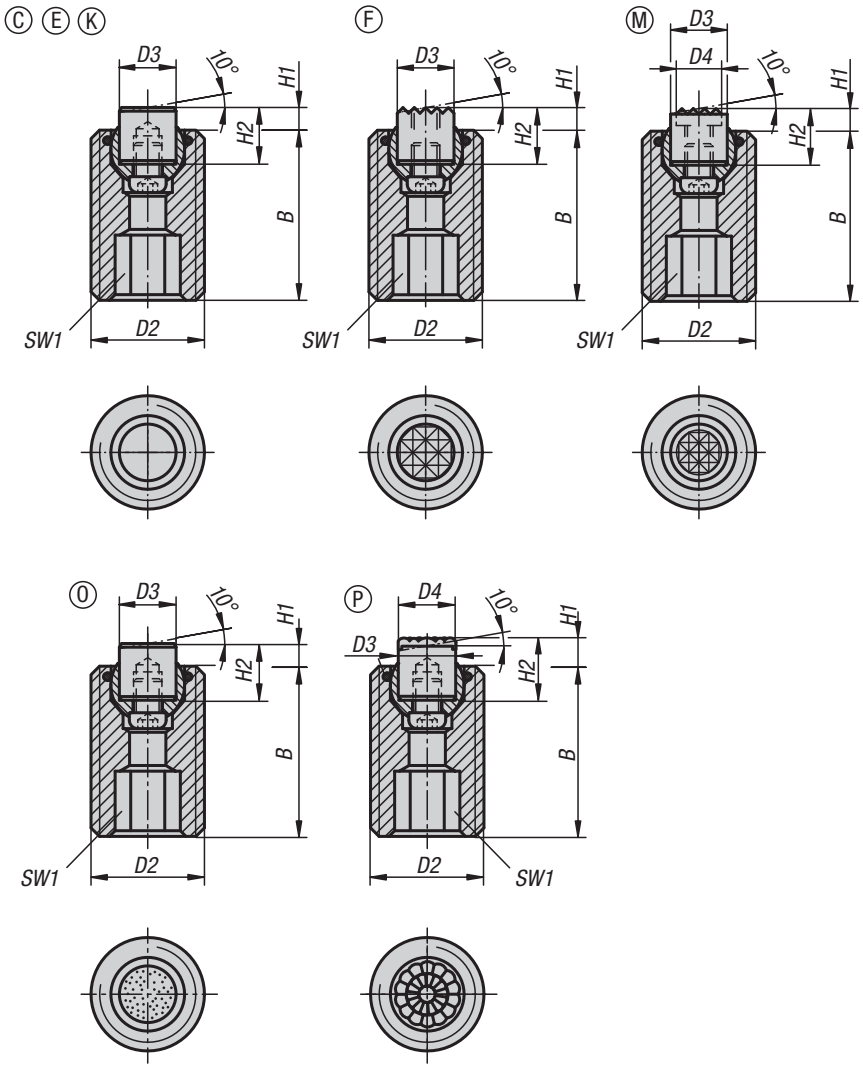
Order No.	Form	B	D2	D3	H1	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.510X	O	25/35/50	M10	6	1,5	5	5	-
K0290.512X	O	25/35/50	M12	8	2	6	7	15,4
K0290.516X	O	25/35/50	M16	11	3	8	10	23,3
K0290.520X	O	30/50/70	M20	14	3	10	13	37,7

KIPP Form P, stainless-steel ball with polyurethane face

Order No.	Form	B	D2	D3	H1	SW1	Ball-Ø
K0290.610X	P	25/35/50	M10	8	3,5	5	5
K0290.612X	P	25/35/50	M12	10	4	6	7
K0290.616X	P	25/35/50	M16	13	5	8	10
K0290.620X	P	30/50/70	M20	16	5	10	13

Self-aligning pads adjustable

with O-ring, exchangeable inserts and hexagon socket



Material:
Body carbon steel.
Ball rust and acid resistant steel.
Inserts:
Form C, F, M tool steel
Form K POM
Form E stainless steel.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

Version:
Body tempered, black oxidised.
Ball hardened, bright.
Inserts:
Form C, F hardened, black oxidised.
Form M with carbide serrations, black oxidised.
Form K white.
Form E hardened, bright.
Form O diamond impregnated surface comparable to 100 grade abrasive grit.
Form P polyurethane surface, hardness 60 Shore.

Sample order:
K0291.720X070

Note:
Self-aligning pads are used to support and clamp unmachined and machined workpieces.
They also serve as stops, supports and thrust pads in fixtures and toolmaking.
The ball can be removed from the housing by applying light pressure to the socket head screw.

Ball secured against rotation.

Advantages:
Highly cost-effective as inserts can be exchanged.
The built-in O-ring holds the ball in place and keeps dirt and foreign particles out, ensuring uniform movement.

KIPP Form C, flattened steel insert, smooth

Order No.	Form	B	D2	D3	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0291.120X030	C	30	M20	10	4	10	10	13	37	K0385.10108
K0291.120X050	C	50	M20	10	4	10	10	13	37	K0385.10108
K0291.120X070	C	70	M20	10	4	10	10	13	37	K0385.10108
K0291.124X040	C	40	M24	12	4	10	10	15	55	K0385.12108
K0291.124X080	C	80	M24	12	4	10	10	15	55	K0385.12108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	B	D2	D3	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0291.220X030	E	30	M20	10	4	10	10	13	37	K0385.10102
K0291.220X050	E	50	M20	10	4	10	10	13	37	K0385.10102
K0291.220X070	E	70	M20	10	4	10	10	13	37	K0385.10102
K0291.224X040	E	40	M24	12	4	10	10	15	55	K0385.12102
K0291.224X080	E	80	M24	12	4	10	10	15	55	K0385.12102

KIPP Form F, flattened, diamond grip

Order No.	Form	B	D2	D3	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0291.320X030	F	30	M20	10	4	10	10	13	37	K0385.1010
K0291.320X050	F	50	M20	10	4	10	10	13	37	K0385.1010
K0291.320X070	F	70	M20	10	4	10	10	13	37	K0385.1010
K0291.324X040	F	40	M24	12	4	10	10	15	55	K0385.1210
K0291.324X080	F	80	M24	12	4	10	10	15	55	K0385.1210

KIPP Form K, flattened POM insert, smooth

Order No.	Form	B	D2	D3	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0291.720X030	K	30	M20	10	4	10	10	13	4	K0385.10109
K0291.720X050	K	50	M20	10	4	10	10	13	4	K0385.10109
K0291.720X070	K	70	M20	10	4	10	10	13	4	K0385.10109
K0291.724X040	K	40	M24	12	4	10	10	15	7	K0385.12109
K0291.724X080	K	80	M24	12	4	10	10	15	7	K0385.12109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	B	D2	D3	D4	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0291.920X030	M	30	M20	10	7,9	4	10	10	13	37	K0385.10107
K0291.920X050	M	50	M20	10	7,9	4	10	10	13	37	K0385.10107
K0291.920X070	M	70	M20	10	7,9	4	10	10	13	37	K0385.10107
K0291.924X040	M	40	M24	12	9,5	4	10	10	15	55	K0385.12107
K0291.924X080	M	80	M24	12	9,5	4	10	10	15	55	K0385.12107

KIPP Form O, stainless-steel insert, diamond impregnated

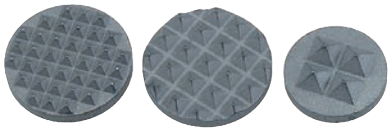
Order No.	Form	B	D2	D3	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0291.524X040	O	40	M24	12	4	10	10	15	55	K0385.12105
K0291.520X050	O	50	M20	10	4	10	10	13	37	K0385.10105
K0291.524X080	O	80	M24	12	4	10	10	15	55	K0385.12105
K0291.520X030	O	30	M20	10	4	10	10	13	37	K0385.10105
K0291.520X070	O	70	M20	10	4	10	10	13	37	K0385.10105

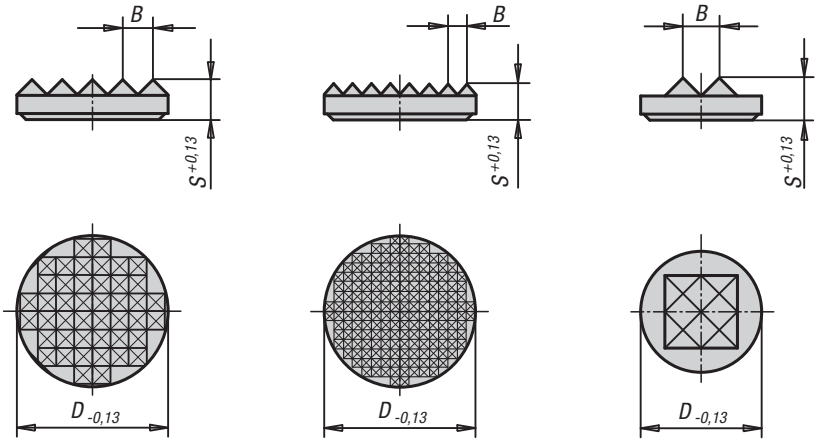
KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	B	D2	D3	D4	H1	H2	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, polyurethane surface
K0291.620X030	P	30	M20	10	10	6	12	10	13	37	K0385.10126
K0291.620X050	P	50	M20	10	10	6	12	10	13	37	K0385.10126
K0291.620X070	P	70	M20	10	10	6	12	10	13	37	K0385.10126
K0291.624X040	P	40	M24	12	13	6	12	10	15	55	K0385.12126
K0291.624X080	P	80	M24	12	13	6	12	10	15	55	K0385.12126

Gripper pads round

carbide





Material:
Carbide.

Version:
sintered.

Sample order:
K1914.211

Note:
These carbide gripper pads are available as 4-point or serrated. They have many uses i.e. they can be glued onto cast iron base plates.

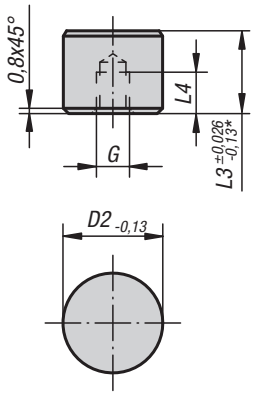
KIPP Baseplates metal carbide

Order No.	Version 2	D	S	B
K1914.110	serrated	6,35	3,2	2,3
K1914.111	serrated	7,9	3,2	2,3
K1914.112	serrated	9,5	3,2	3
K1914.113	serrated	12,7	3,2	3
K1914.114	serrated	19,05	3,2	3
K1914.211	fine serrated	7,9	3,2	1,5
K1914.212	fine serrated	9,5	3,2	2,3
K1914.213	fine serrated	12,7	3,2	2,3
K1914.214	fine serrated	19,05	3,2	2,3
K1914.215	fine serrated	25,4	4	2,3
K1914.411	4-point contact	7,9	3,2	3
K1914.412	4-point contact	9,5	3,2	3
K1914.413	4-point contact	12,7	4	3,5

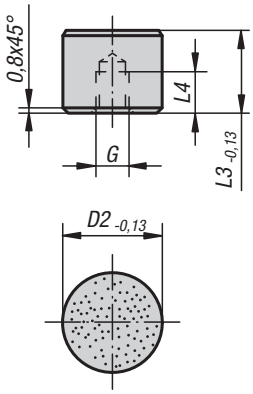
Notes

Grippers and inserts round

Form C, E, K

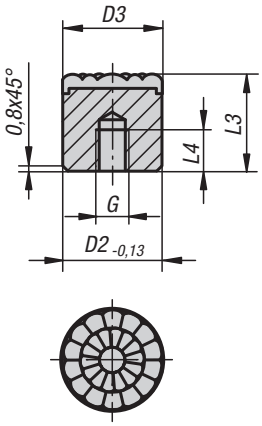


Form O
stainless steel insert
diamond impregnated

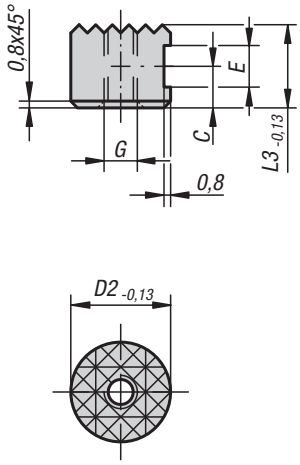


* Applies to Form K

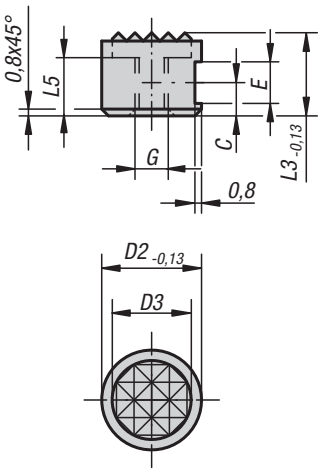
Form P
stainless steel insert,
PUR surface



Form F
diamond grip insert



Form M
carbide steel
diamond grip insert



Material:
Form C, F, M tool steel
Form E, O, P stainless steel
Form K POM

Version:
Form C hardened and black oxidised.
Form E hardened, bright.
Form K white.
Form O with diamond impregnated surface comparable to 100 grade abrasive grit.
Form P with polyurethane surface, hardness Shore 60.
Form F, hardened and black oxidised.
Form M with carbide serrations, black oxidised.

Sample order:
K0385.2510

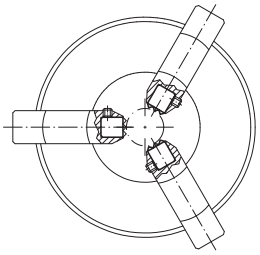
Note:
Grippers and inserts are ideal for use in clamping arms, gripping systems, clamping fixtures, clamping jaws and self-aligning pads. The use of grippers allows the transfer of very high torque values and above average grip, even with hard materials and surface irregularities.

Form O: The abrasive diamond surface is bonded firmly to the base. It is ideally suited to supporting smooth or slippery applications with a minimum of clamping pressure. This allows the diamond particles to get a firm grip on a very small area with minimum damage to the surface.
The diamond surface offers excellent wear resistance.

Form P: The polyurethane surface is vulcanised firmly to the ball. It is abrasion-resistant and does not discolour. It offers optimum protection against damage to delicate surfaces. The pearl-like surface gives a firm grip and allows air to escape so as to prevent any suction effect between the contact surface and the self-aligning pads.

Grippers and inserts can be fitted in the following self-aligning pads:
Order No. K0285.117X022 up to K0285.936X036
Order No. K0289.110X015 up to K0289.924X100
Order No. K0291.120X030 up to K0291.924X080

Grippers and inserts round



KIPP Round inserts Form C, E, K, O

Order No. Form C	Order No. Form E	Order No. Form K	Order No. Form O	D2	L3	L4	G
K0385.10108	**K0385.10102**	**K0385.10109**	**K0385.10105**	10	10	5	M5
K0385.10128	**K0385.10122**	**K0385.10129**	**K0385.10125**	10	12	6,4	M5
K0385.12108	**K0385.12102**	**K0385.12109**	**K0385.12105**	12	10	5	M5
K0385.12128	**K0385.12122**	**K0385.12129**	**K0385.12125**	12	12	6,4	M5
K0385.16108	**K0385.16102**	**K0385.16109**	**K0385.16105**	16	10	5	M6
K0385.16128	**K0385.16122**	**K0385.16129**	**K0385.16125**	16	12	6,4	M6
K0385.20108	**K0385.20102**	**K0385.20109**	**K0385.20105**	20	10	5	M6
K0385.20128	**K0385.20122**	**K0385.20129**	**K0385.20125**	20	12	6,4	M6
K0385.25108	**K0385.25102**	**K0385.25109**	**K0385.25105**	25	10	5	M6
K0385.25128	**K0385.25122**	**K0385.25129**	**K0385.25125**	25	12	6,4	M6

KIPP Round inserts Form P

Order No.	Form	D2	D3	L3	L4	G
K0385.08126	P	8	8	12	6	M4
K0385.10126	P	10	10	12	6	M5
K0385.12126	P	12	13	12	6	M5
K0385.16126	P	16	16	12	6	M6
K0385.20126	P	20	21	12	6	M6
K0385.25126	P	25	27	12	6	M6

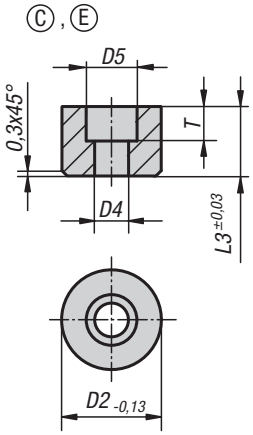
KIPP Grippers Form F, M

Order No. Form F	Order No. Form M	D2	D3	L3	L5	C	E	G
K0385.1010	**K0385.10107**	10	-/7,9	10	-/6	4,5	4,75	M5
K0385.1210	**K0385.12107**	12	-/9,5	10	-/6	4,5	4,75	M5
K0385.1212	**K0385.12127**	12	-/9,5	12	-/7	6	4,75	M5
K0385.1610	**K0385.16107**	16	-/12,7	10	-/6	4,5	4,75	M6
K0385.2010	**K0385.20107**	20	-/15,9	10	-/6	4,5	4,75	M6
K0385.2510	**K0385.25107**	25	-/19	10	-/6	4,5	4,75	M6

Grippers and inserts

round, with counterbore

Ⓒ, Ⓔ



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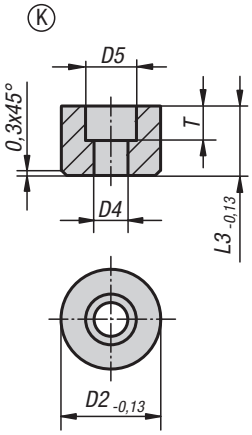

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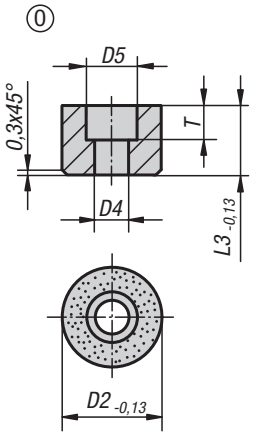

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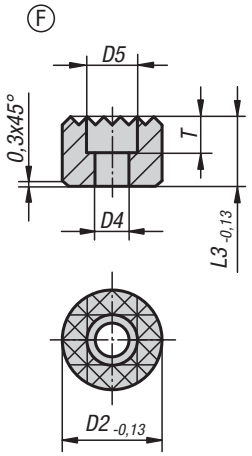


Material:
Form C, F tool steel
Form E, O stainless steel
Form K POM

Version:
Form C, F hardened and black oxidised.
Form E, hardened, bright.
Form K white.
Form O with diamond impregnated surface comparable to 100 grade abrasive grit.

Sample order:
K0385.110108

Note:
Grippers and inserts are ideal for use in clamping arms, gripping systems, clamping fixtures, clamping jaws and self-aligning pads. The use of grippers allows the transfer of very high torque values and above average grip, even with hard materials and surface irregularities.

Form O: The abrasive diamond surface is bonded firmly to the base. It is ideally suited to supporting smooth or slippery applications with a minimum of clamping pressure. This allows the diamond particles to get a firm grip on a very small area with minimum damage to the surface.
The diamond surface offers excellent wear resistance.

Grippers and inserts

round, with counterbore

KIPP Round inserts

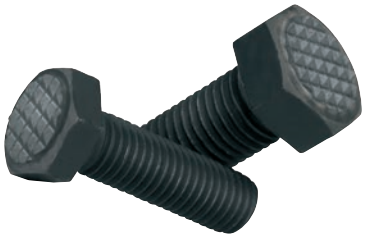
Order No. Form C	Order No. Form O	Order No. Form K	Order No. Form E	D2	D4	D5	L3	T
K0385.110108	K0385.110105	K0385.110109	K0385.110102	10	3,4	6	10	5
K0385.110128	K0385.110125	K0385.110129	K0385.110122	10	3,4	6	12	5
-	K0385.112105	-	-	12	4,5	8	10	5,6
-	K0385.112125	-	-	12	4,5	8	12	5,6
K0385.112108	-	K0385.112109	K0385.112102	12	4,5	9	10	5,6
K0385.112128	-	K0385.112129	K0385.112122	12	4,5	9	12	5,6
K0385.116108	K0385.116105	K0385.116109	K0385.116102	16	5,5	11	10	6,6
K0385.116128	K0385.116125	K0385.116129	K0385.116122	16	5,5	11	12	6,6
K0385.120108	K0385.120105	K0385.120109	K0385.120102	20	6,6	11	10	7,6
K0385.120128	K0385.120125	K0385.120129	K0385.120122	20	6,6	11	12	7,6
K0385.125108	K0385.125105	K0385.125109	K0385.125102	25	6,6	11	10	7,6
K0385.125128	K0385.125125	K0385.125129	K0385.125122	25	6,6	11	12	7,6

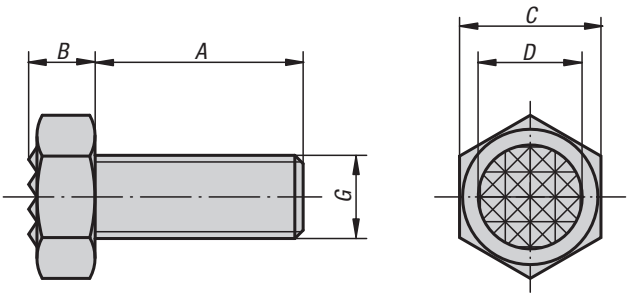
KIPP Round grippers

Order No. Form F	D2	D4	D5	L3	T
K0385.11210	12	4,5	8	10	5,6
K0385.11212	12	4,5	8	12	5,6
K0385.11610	16	4,5	8	10	5,6
K0385.11612	16	4,5	8	12	5,6
K0385.12010	20	5,5	10	10	6,6
K0385.12012	20	5,5	10	12	6,6
K0385.12510	25	6,6	11	10	7,6
K0385.12512	25	6,6	11	12	7,6

Gripper screws

hexagonal





Material:
Hex head screw, grade 10.9.
Serrations carbide, hardness 72-74 HRC.

Version:
Black oxidised.

Sample order:
K0386.1710

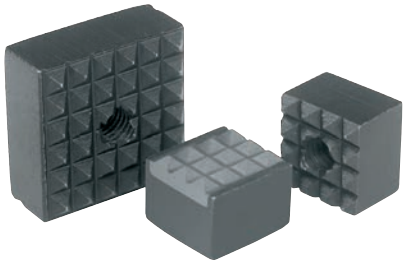
Note:
The serrated carbide tips are soldered in.

KIPP Grippers hexagonal

Order No.	A	B	C	D	G	Serration
K0386.1006	25	5	10	7,9	M6	extra fine
K0386.1308	25	6,4	13	9,5	M8	fine
K0386.1710	25	7,5	17	12,7	M10	fine
K0386.17102	40	7,5	17	12,7	M10	fine
K0386.1912	25	8,7	19	15,9	M12	fine
K0386.19122	40	8,7	19	15,9	M12	fine
K0386.2416	35	11	24	19	M16	fine
K0386.24162	50	11	24	19	M16	fine
K0386.3020	40	13,7	30	25,4	M20	extra fine
K0386.30202	60	13,7	30	25,4	M20	extra fine

Gripper pads

square



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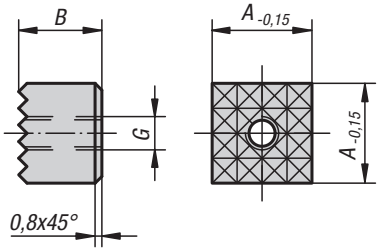

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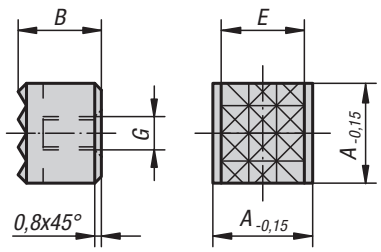

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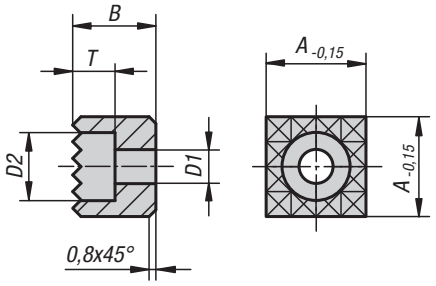


Material:
Hardened tool steel or carbide.

Version:
Black oxidised.

Sample order:
K0387.2506

Note:
Grippers and inserts are ideal for use in clamping arms, gripping systems, clamping fixtures, clamping jaws and self-aligning pads.
Grippers transfer very high torque values,even with hard materials and surface irregularities. Grippers guarantee above average holding forces at high cutting forces.
The serrated carbide tips are soldered in.

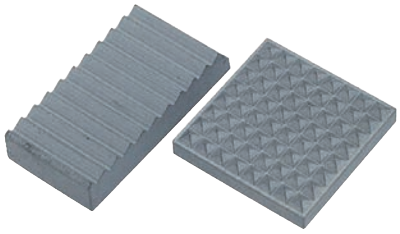
Drawing reference:
Form A: tool steel
Form B: tool steel, carbide diamond grip
Form C: tool steel

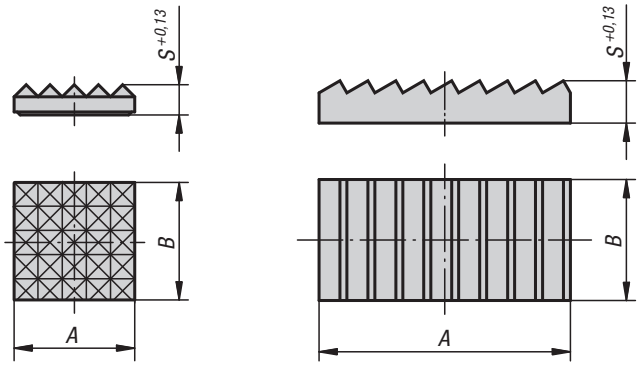
KIPP Gripper pads, square

Order No.	Form	A	B	D1	D2	E	G	T	Serration
K0387.121205	A	12	12	-	-	-	M5	-	fine
K0387.101205	A	10	12	-	-	-	M5	-	extra fine
K0387.2005	A	20	10	-	-	-	M5	-	fine
K0387.1005	A	10	10	-	-	-	M5	-	extra fine
K0387.161206	A	16	12	-	-	-	M6	-	fine
K0387.2506	A	25	10	-	-	-	M6	-	fine
K0387.201205	A	20	12	-	-	-	M5	-	fine
K0387.1205	A	12	10	-	-	-	M5	-	fine
K0387.1606	A	16	10	-	-	-	M6	-	fine
K0387.251206	A	25	12	-	-	-	M6	-	fine
K0387.12057	B	12	10	-	-	10,3	M5	-	fine
K0387.1212048	C	12	12	4,5	8	-	-	5,6	fine
K0387.2012058	C	20	12	5,5	10	-	-	6,6	fine
K0387.2512068	C	25	12	6,6	11	-	-	7,6	fine
K0387.2510068	C	25	10	6,6	11	-	-	7,6	fine
K0387.1210048	C	12	10	4,5	8	-	-	5,6	fine
K0387.1612048	C	16	12	4,5	8	-	-	5,6	fine
K0387.2010058	C	20	10	5,5	10	-	-	6,6	fine
K0387.1610048	C	16	10	4,5	8	-	-	5,6	fine

Gripper pads square

carbide





Material:
Carbide.

Version:
sintered.

Sample order:
K1915.201

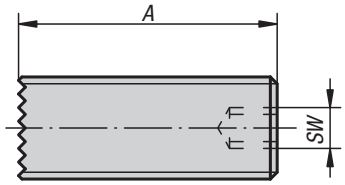
Note:
These carbide gripper pads are available as serrated or wedge grips. They have many uses i.e. they can be glued onto cast iron base plates.

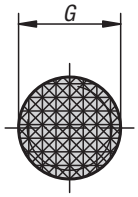
KIPP Hard metal baseplatessquare

Order No.	Version 2	A	B	S
K1915.101	serrated	9,5 -0,13	9,5 -0,13	3,2
K1915.102	serrated	12,7 -0,13	12,7 -0,13	3,2
K1915.201	fine serrated	9,5 -0,13	9,5 -0,13	3,2
K1915.202	fine serrated	12,7 -0,13	12,7 -0,13	3,2
K1915.203	fine serrated	15,9 -0,13	15,9 -0,13	3,2
K1915.206	fine serrated	19,05 -0,13	19,05 -0,13	4
K1915.207	fine serrated	25,4 -0,13	25,4 -0,13	4
K1915.308	wedge-shaped	25,7 +0,5	13,05 -0,13	4,8
K1915.309	wedge-shaped	38,4 +0,5	19,5	6,35

Gripper studs

Ⓐ





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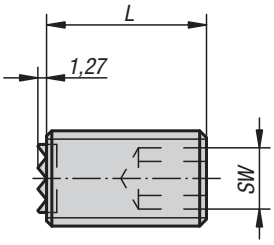

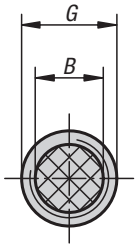

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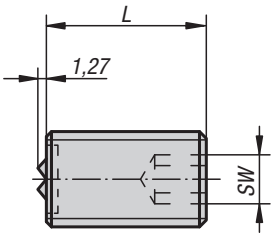
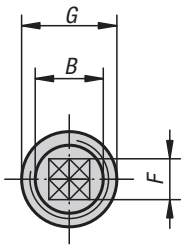




Material:
Hardened tool steel or carbide.

Version:
Black oxidised.

Sample order:
K0388.5012

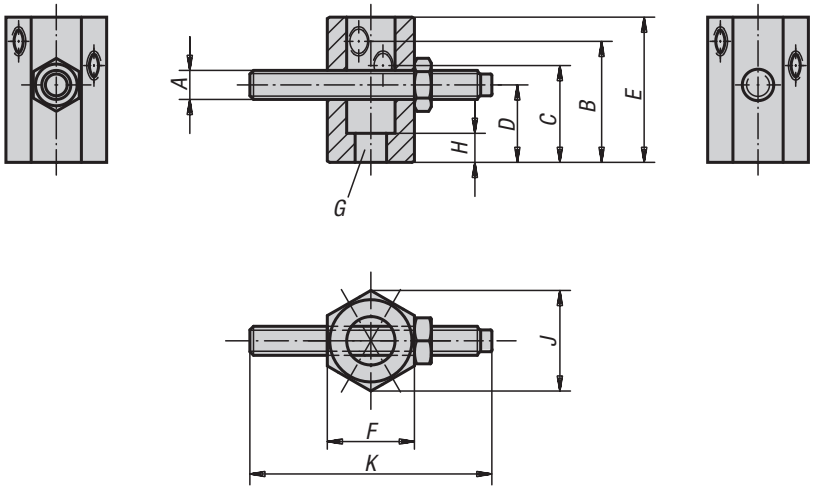
Note:
The full thread on the grippers allows exact adjustment to the clamping application.
The carbide tips are soldered in.

Drawing reference:
Form A: tool steel
Form B: tool steel, carbide diamond grip
Form C: 4-point carbide insert

KIPP Gripper studs

Order No.	Form	A	L	B	G	F	SW
K0388.4010	A	40	-	-	M10	-	3
K0388.4012	A	40	-	-	M12	-	5
K0388.4016	A	40	-	-	M16	-	6
K0388.4020	A	40	-	-	M20	-	8
K0388.2510	B	-	25	6,4	M10	-	5
K0388.5010	B	-	50	6,4	M10	-	5
K0388.2512	B	-	25	7,9	M12	-	6
K0388.5012	B	-	50	7,9	M12	-	6
K0388.2516	B	-	25	11,2	M16	-	8
K0388.5016	B	-	50	11,2	M16	-	8
K0388.2520	B	-	25	12,7	M20	-	10
K0388.5020	B	-	50	12,7	M20	-	10
K0388.25124	C	-	25	7,9	M12	6,5	6
K0388.50124	C	-	50	7,9	M12	6,5	6
K0388.25164	C	-	25	11,2	M16	8	8
K0388.50164	C	-	50	11,2	M16	8	8
K0388.25204	C	-	25	12,7	M20	8	10
K0388.50204	C	-	50	12,7	M20	8	10

Adjustable stops

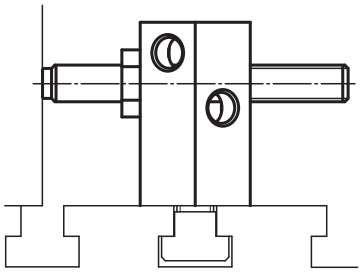


Material:
Body and set screw carbon steel.

Version:
Body black oxidised.
Set screw tempered and black oxidised.

Sample order:
K0813.16063

Note:
The adjustable stops have three tapped holes to accept the set screws.

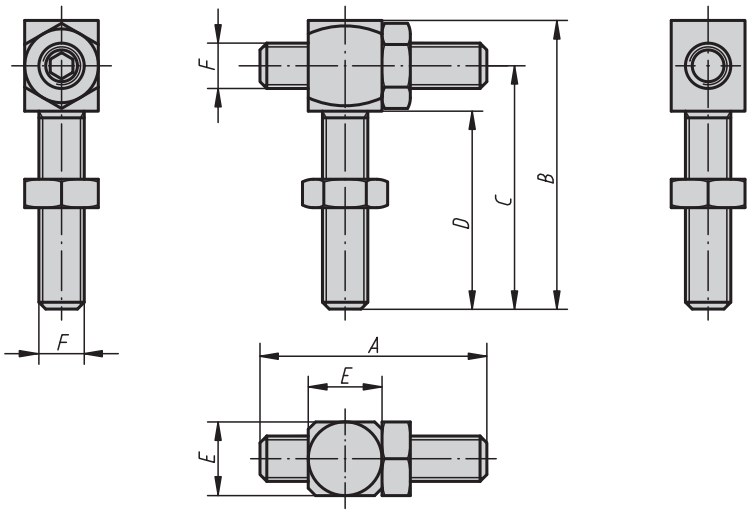


KIPP Adjustable stops

Order No.	A	B	C	D	E	F	G hole for DIN 912 cap screw	H	J	K
K0813.08032	M8	32	25	20	40	21	M8	7	24,3	50
K0813.12050	M12	50	40	32	60	36	M12	12	41,6	100
K0813.16063	M16	63	50	40	80	46	M16	16	53,1	100

Screw stop

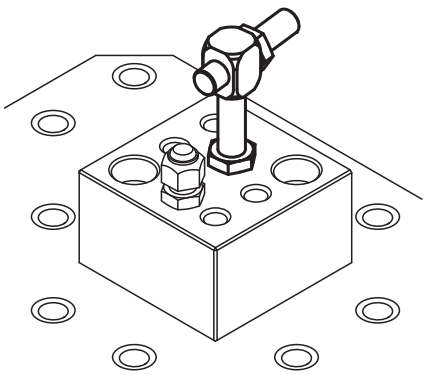
adjustable



Material:
Carbon steel, tempered.

Version:
Black oxidised.

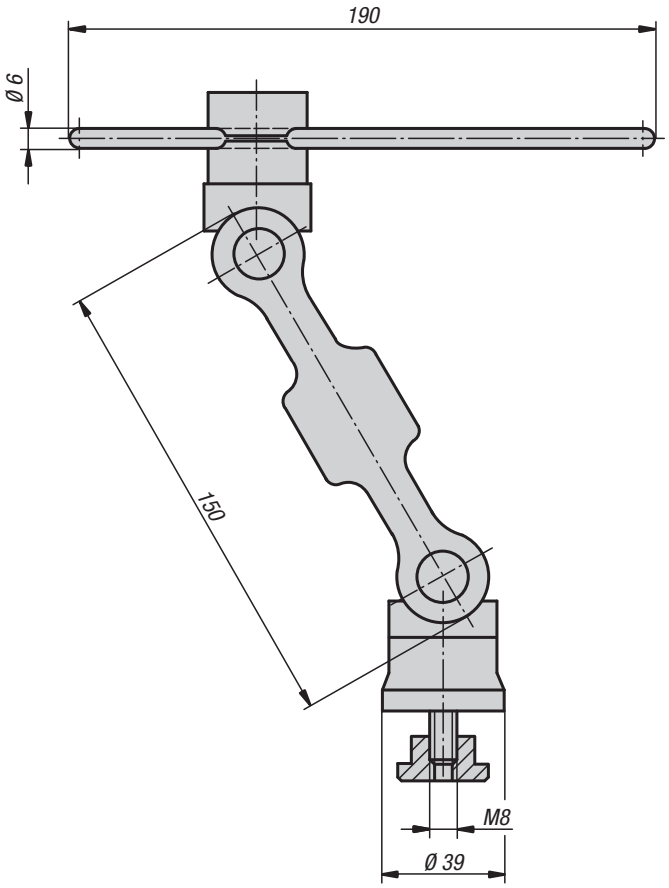
Sample order:
K0820.10



KIPP Screw stop adjustable

Order No.	A	B	C	D	E	F
K0820.06	30	44	37	30	10	M6
K0820.08	40	56	48	40	13	M8
K0820.10	50	70	60	50	17	M10
K0820.12	60	84	72	60	19	M12
K0820.16	80	112	96	80	24	M16

5D workpiece stops



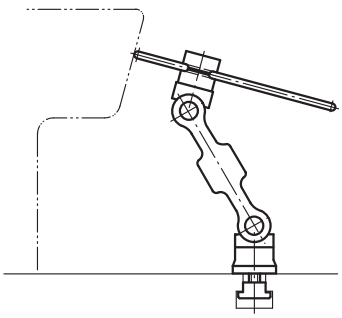
Material:
Clamping joint high-tensile aluminium.
Hinge pin, support plate and stop bar, steel.

Version:
Clamping joint anodised blue and black.
Hinge pins, support plate and stop bar black oxidised.

Sample order:
K1234.15012

Note:
The 5D-swivelling stop serves, among other things, as a versatile instrument for positioning on machining tools or for assembly work. It is infinitely adjustable, quickly and flexibly in 5 axes.
Supplied complete with M8x12 T-slot nut and hex key.

On request:
Connecting element for combining several 5D-swivelling stops.

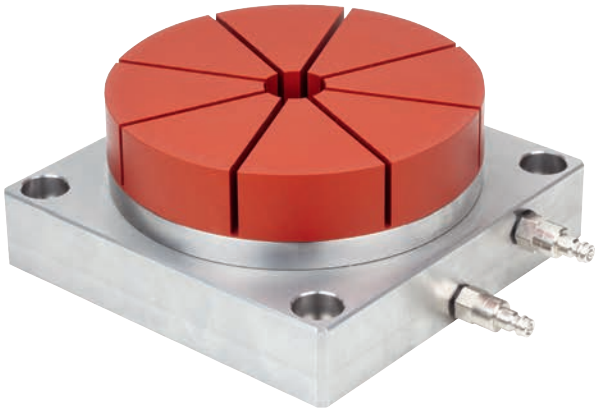


KIPP 5D workpiece stops

Order No.	Size
K1234.15012	150

Notes

Form holding systems



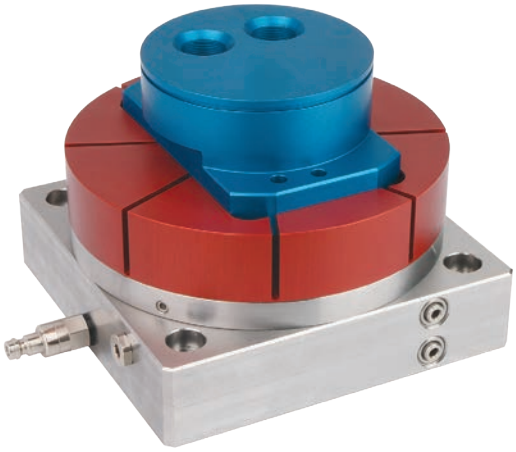
Technical information for machinable collet systems

The clamping system for prototypes, samples and small to medium production series.

The machinable collet system consists of a base element with a flange plate and the machinable collet. To clamp a wide variety of workpieces only the collet needs to be exchanged, the base element with flange plate remain the same. Standard aluminium collet blanks are used for clamping workpieces. The contour of the workpiece to be clamped is machined into this collet blank.

Both external and internal contours can be clamped with the machinable collet system. Different collets for internal and external clamping are available for this purpose.

The integrated spring package generates a clamping force of 5.8 kN. The clamping force can be raised to 43.5 kN by pneumatic post-clamping.



Machinable collets for workpieces that couldn't otherwise be clamped

- whether geometrical or free-form: you have full control of the most difficult workpiece contours
- can be set up on grid plates, T-slot plates and your own fixtures
- clamping range of 25 - 140 mm and workpiece weights up to 25 kg
- clamps rough parts, machined parts, round and irregular-shaped parts
- low clamping depth of 1 mm can be achieved
- designed for external and internal clamping
- repeat accuracy of < 0.01 mm

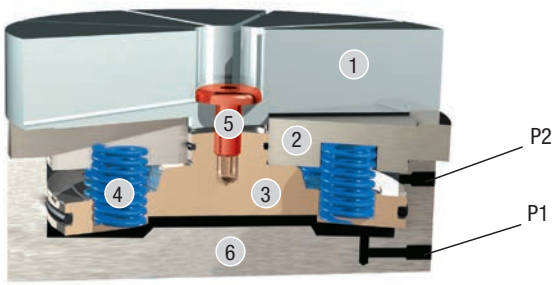
Machinable collet clamping and holding force

spring release pressure	spring clamping force	spring retaining force	post-clamping pressure	post-clamping force	post-clamping retaining force
6 bar	5.81 kN	2.8 kN	6 bar	13.39 kN	10.39 kN
6 bar	5.81 kN	2.8 kN	12 bar	20.93 kN	17.93 kN
6 bar	5.81 kN	2.8 kN	30 bar	43.55 kN	40.55 kN

Machinable collet - system construction

pos.	Description	piece
1	collet	1
2	flange plate	1
3	piston	1
4	spring package	8
5	screw / tension cone	2
6	base element	1

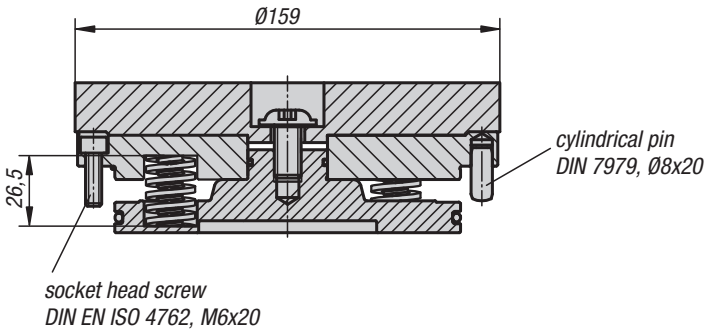
P1 Release collet with compressed air pistol connection
P2 Post-clamp with compressed air pistol connection



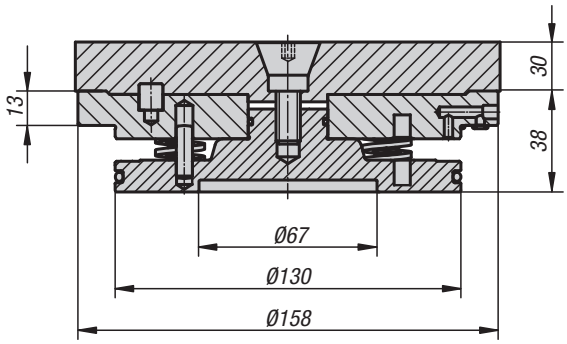
Machinable collet system

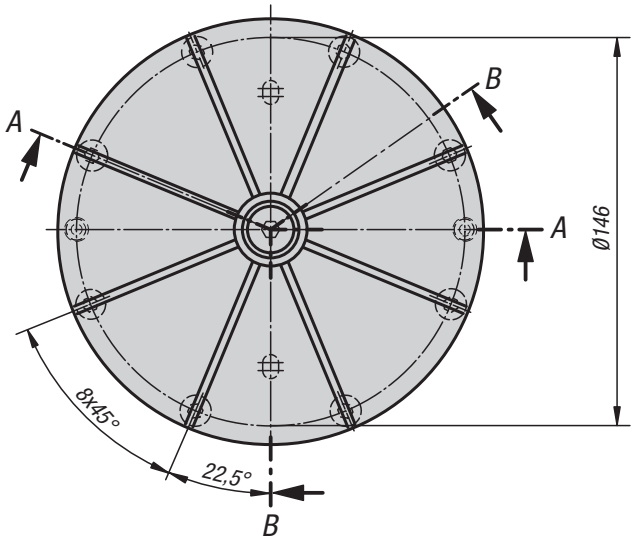
for self-installation

view A-A
external clamping



view B-B
internal clamping





Material:
Flange plate, pistons and body steel.
Seals NBR.
Screws DIN EN ISO 4762 grade 8.8.
Collet aluminium.

Version:
Flange plate, piston and body rust-resistant, bright.
Screws electro zinc-plated.
Collet red or clear anodised.

Sample order:
K0500.116030

Note:
The machinable collet system is suitable for mounting on fixtures and clamping systems. Collets for external and internal clamping can be mounted on the flange plate. The contour of the workpiece to be clamped is machined into the collet. Free-form and asymmetrical contours can be clamped.

The integrated spring package generates a clamping force of 5.8 kN. The clamping force can be raised to 43.5 kN by pneumatic post-clamping. The clamp is released by blowing compressed air onto the lower piston surface pushing the piston upwards and releasing the clamping force on the collet.
Clamping travel 0.2 mm.
Repeat accuracy < 0.01 mm.

Installation dimensions on request.

Accessories:
Collet for external or internal clamping K0502

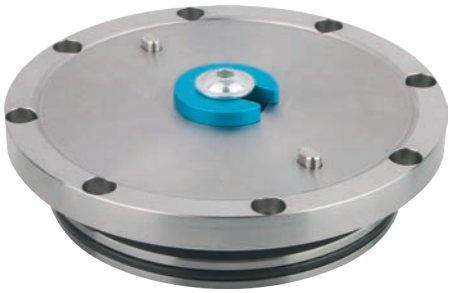


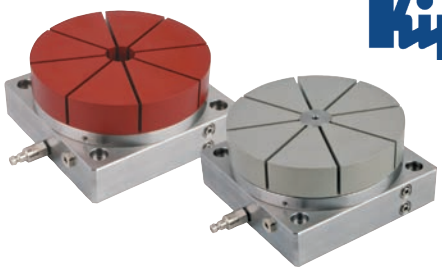
Illustration without collet with transport lock

KIPP Machinable collet system for self-installation

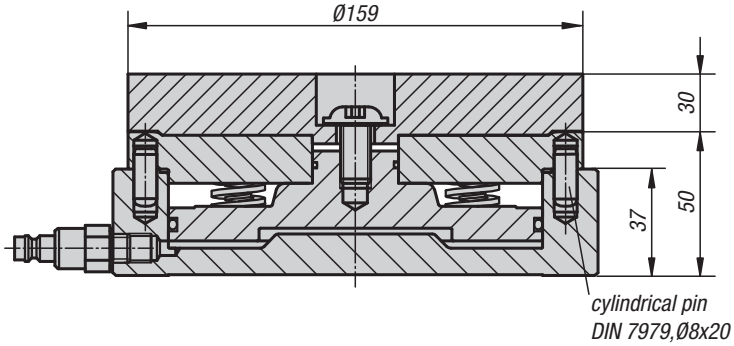
Order No.	Version 2	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)
K0500.116030	for external clamping	Ø 30 - Ø 140	1-20	25
K0500.216030	for internal clamping	Ø 30 - Ø 140	1-20	25

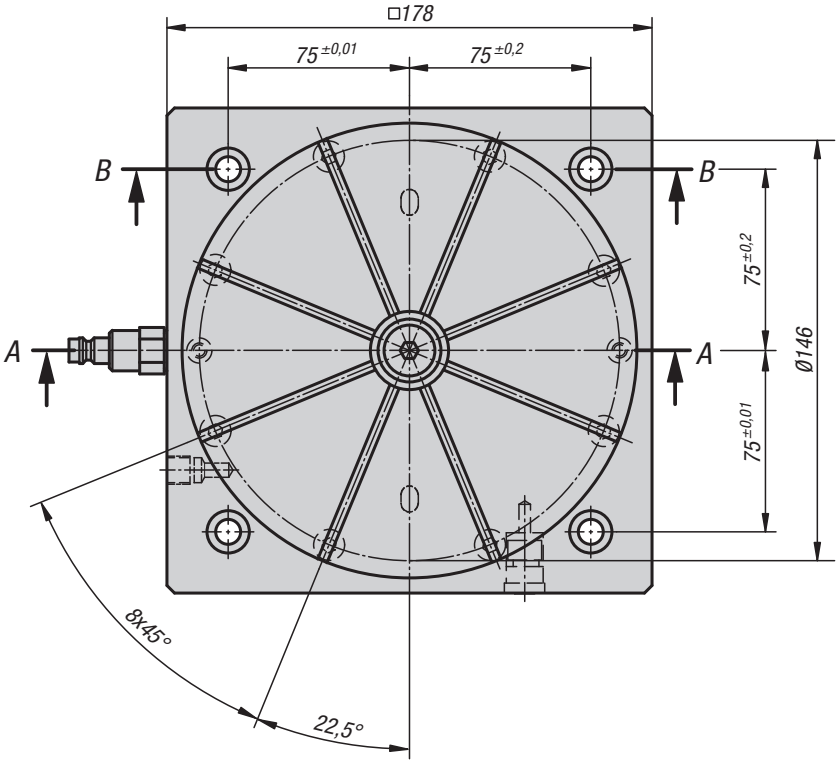
Machinable collet system

for grid plates

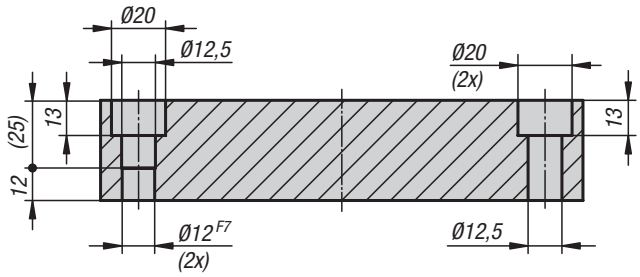


view A-A





view B-B
(base only)



Material:
Flange plate, pistons and body steel.
Seals NBR.
Screws DIN EN ISO 4762 grade 8.8.
Collet aluminium.

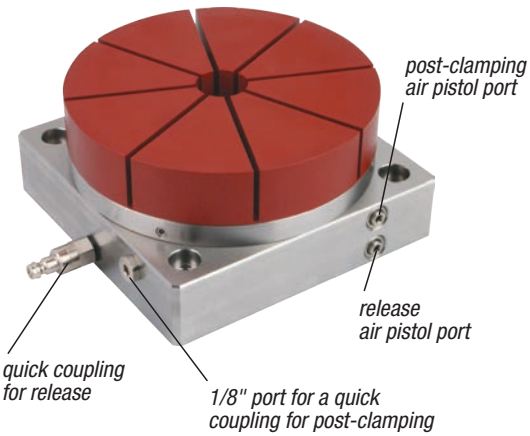
Version:
Flange plate, piston and body rust-resistant, bright.
Screws electro zinc-plated.
Collet red or clear anodised.

Sample order:
K0501.11603050

Note:
Machinable collet system with base plate for mounting on 50mm pitch grid plates. The flange plate can be used for external or internal clamping collets. The contour of the workpiece to be clamped is machined into the collet. Free-form and asymmetrical contours can be clamped.

The integrated spring package generates a clamping force of 5.8 kN. The clamping force can be raised to 43.5 kN by pneumatic post-clamping. The clamp is released by blowing compressed air onto the lower piston surface pushing the piston upwards and releasing the clamping force on the collet.
Clamping travel 0.2 mm.
Repeat accuracy < 0.01 mm.

Accessories:
Collet for external or internal clamping K0502

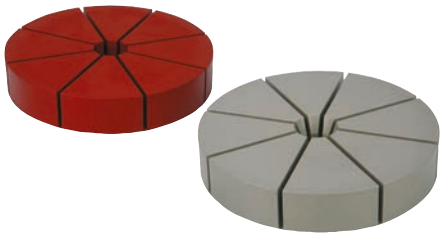


KIPP Machinable collet system for grid plates

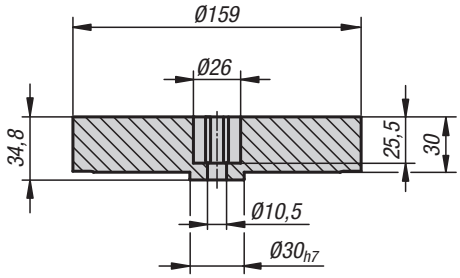
Order No.	Version 2	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)	Suitable shoulder screw
K0501.11603050	for external clamping	Ø 30 - Ø 140	1-20	25	K0815.12055
K0501.21603050	for internal clamping	Ø 30 - Ø 140	1-20	25	K0815.12055

Collets

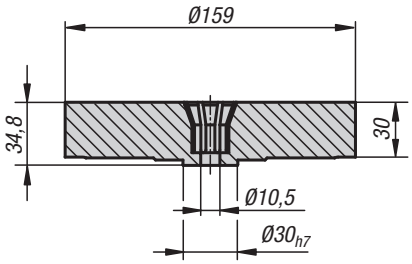
for external or internal clamping

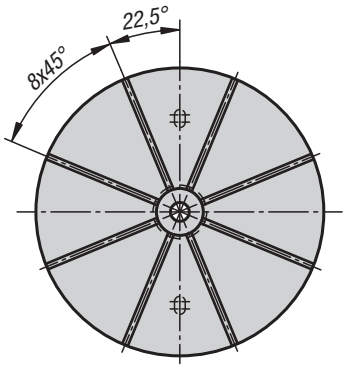


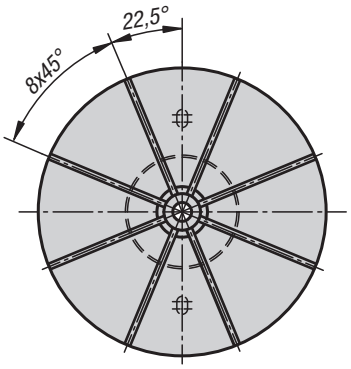
external clamping

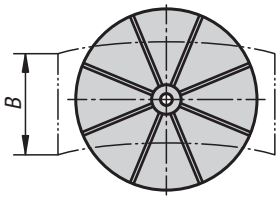


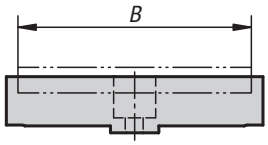
internal clamping











The workpiece width "B" should be maximum 90% of the collet diameter.
In special cases the workpiece may also project over the collet.

Material, version:
High-strength aluminium, red (external clamping) or clear (internal clamping), anodised.

Sample order:
K0502.116030

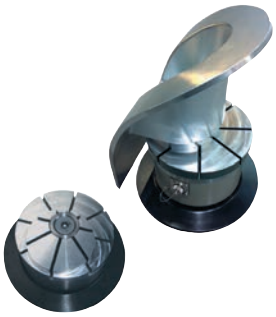
Note:
Collet for clamping external or internal contours. The contour of the workpiece to be clamped is machined into the collet. Free-form and asymmetrical contours can be clamped.

Clamping travel 0.2 mm.

Tension cone K0502.1024 is required for internal clamping collets.

Accessories:
Tension cone K0502.1024

external clamping



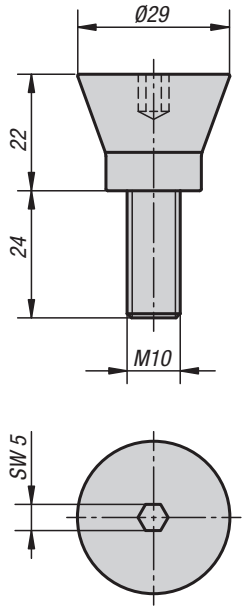
internal clamping

KIPP Collets for external or internal clamping

Order No.	Version 2	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)
K0502.116030	for external clamping	Ø 30 - Ø 140	1-20	25
K0502.216030	for internal clamping	Ø 30 - Ø 140	1-20	25

Tension cone

for internal clamping collet



Material:
Carbon steel.

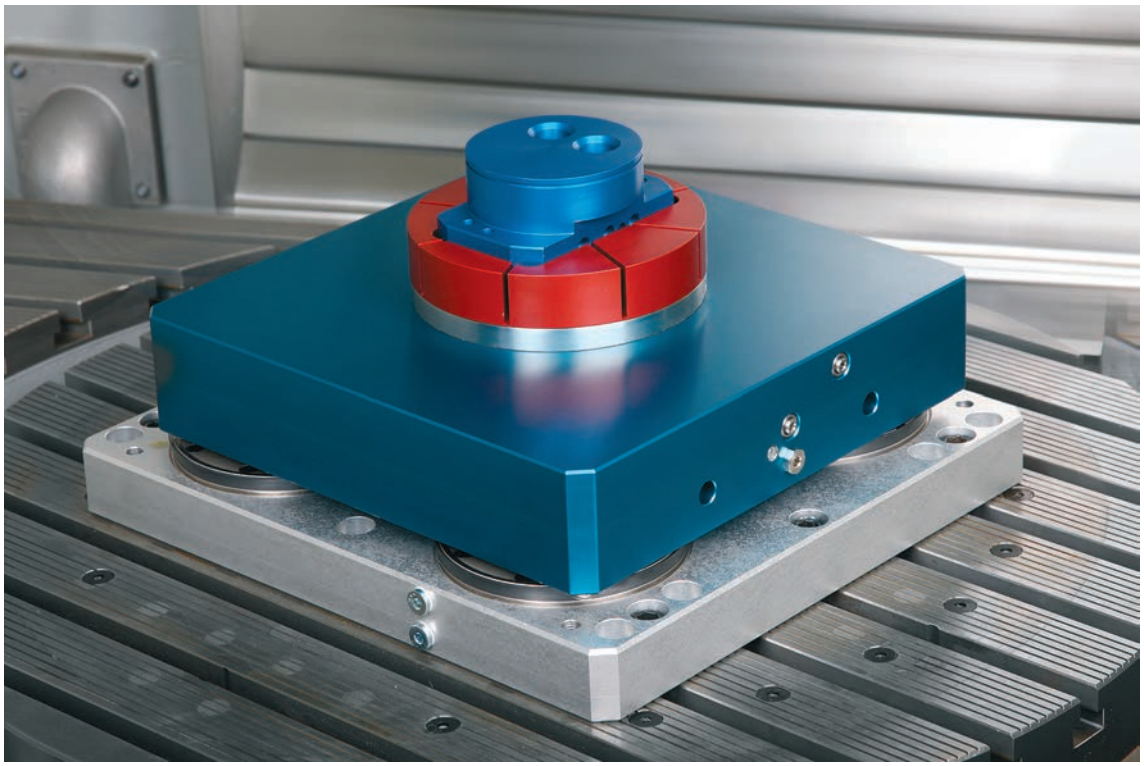
Version:
Bright.

Sample order:
K0502.1024

Accessories:
Collet for internal clamping K0502.216030

KIPP Tension cone for internal clamping collet

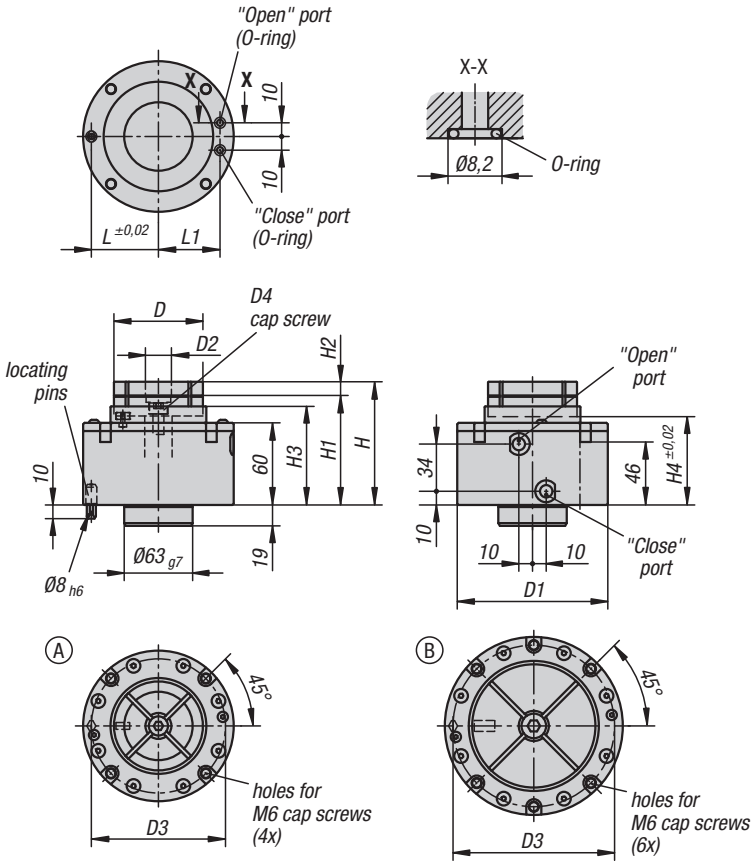
Order No.	Suitable for
K0502.1024	mandrel collet



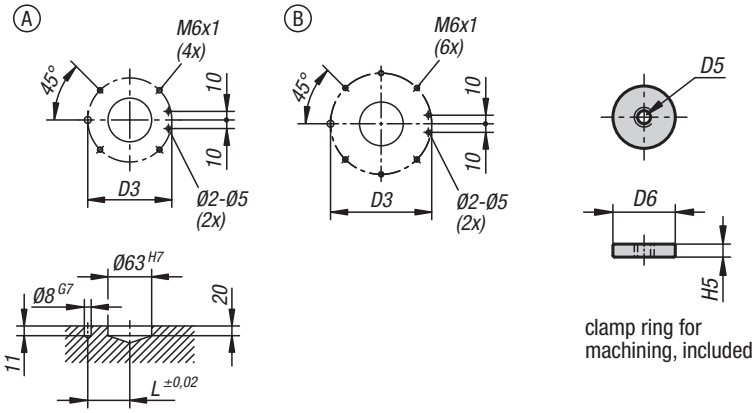
Notes

Machinable collets

pneumatic



installation dimensions



Material:
Chuck high-carbon steel, nickel-plated.
Collet high-strength aluminium, blue anodised.

Sample order:
K1392.1065090

Note:
The pneumatic collet system consists of a chuck and a machinable collet.
The chuck can be screwed onto fixtures according to the mounting dimensions.

Clamping procedure:
The collet is opened by applying compressed air to the „open“ port.
The collet is closed (for clamping) by applying compressed air to the „close“ port.
The pneumatic connections can be screwed on either from below or from the side. If the air is connected from below, the side ports must be closed.

Machining the collet for external clamping:
The negative form of the workpiece to be clamped is machined into the collet. Free-form and asymmetrical contours are possible.
Different workpieces can be clamped quickly and securely by simply exchanging the collet.
The collet can be milled down to height H2. This enables multiple workpiece contours to be machined into one collet.

Repeat accuracy for workpiece: +/-0.03
Repeat accuracy after replacing the collet +/- 0.02
The collet radial clamping travel is 0.15 mm per clamping segment.
To prevent damage the collet should not be tightened without a workpiece or clamping ring in place.
The operating air pressure should lay between 0.45 - 0.55 MPa.
The clamping forces indicated are based on 0.5 MPa.

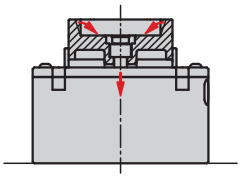
Accessories:
Clamping ring for machining the contour.
O-ring.
Locating pin.
Clamping screw for collet.

KIPP Machinable collets, pneumatic

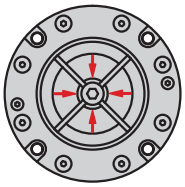
Order No.	Form	D	D1	D2	D3	D4	D5	D6	H	H1	H2	H3	H4	H5	L	L1	Operating pressure MPa	Clamping force N	Order No. Collet
K1392.1065090	A	65	110	19	98	M8	M4	18	90	80	10	72	65	4	49	45	0,5	4000	K0934.065025
K1392.1090100	B	90	130	23	118	M10	M5	22	100	85	15	74	66	6	59	55	0,5	6000	K0934.090034

Machinable collets

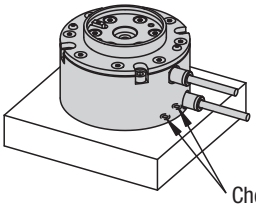
pneumatic



Applying compressed air draws the cylinder down.
The 4 clamping segments move inwards and
clamp the workpiece.

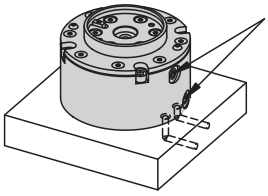


Using the side ports:
- Seal the lower ports with the O-rings provided.
- Check that no air escaping from here.



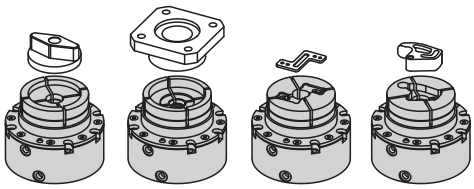
Check that the
lower ports are sealed.

Using the lower ports:
- Fit the O-rings provided into the lower ports.
- The side ports must be closed.

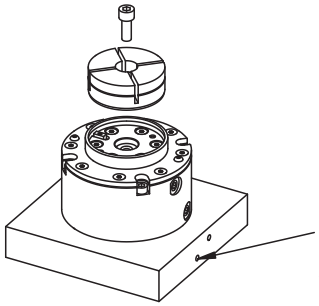


Seal the air connections
and check them for tightness.

Different workpiece shapes can be machined into the collets.

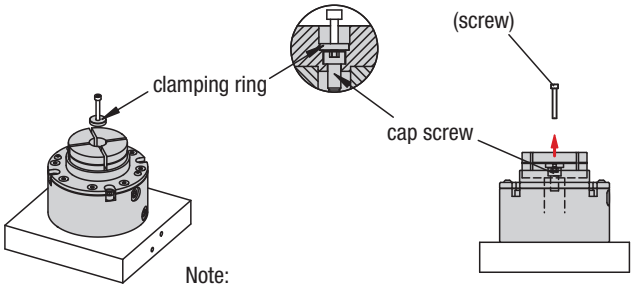


Mounting the collet:
When mounting the collet, make sure that air is connected to ,
the "open" connection.
The cylinder and fastening screw are loose.

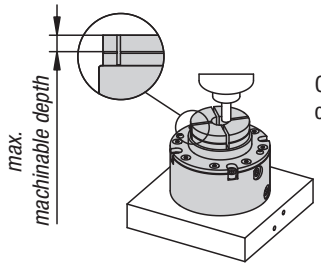


Note:
Connect air to
the "open" port

Machine the collet:
Insert the clamping ring into the collet.
(A screw can be used as an insertion aid)



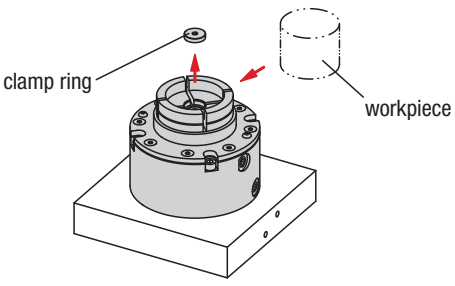
Note:
Position the clamping ring over
the fastening screw of the collet.



Clamp the collet
over the "close" port.

Machine the collet to suit to the workpiece shape.

Clamp the workpiece:
After machining the collet, remove the clamping ring.
Insert the workpiece and apply air to the “close” port to clamp it.

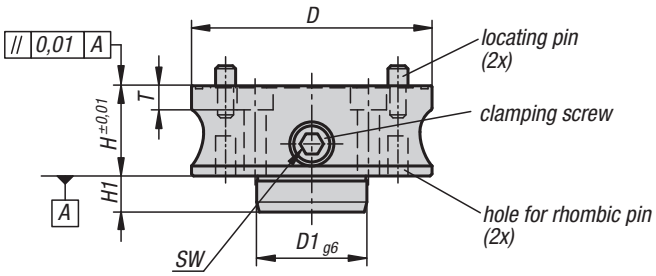


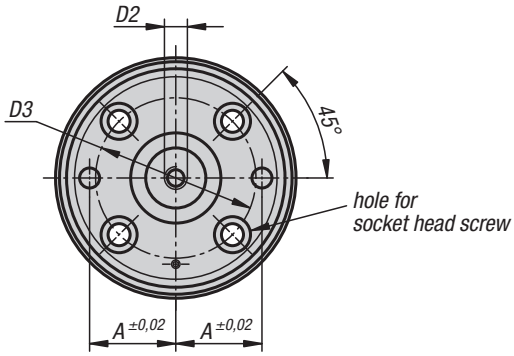
Application examples for collets

External clamping

Internal clamping

Adapter for collets





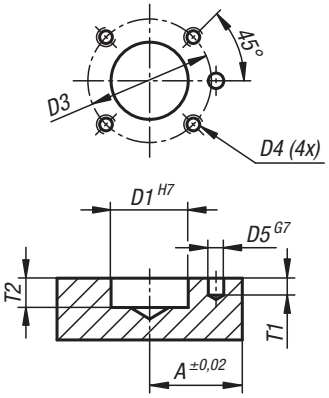
Material:
Carbon steel.

Version:
nickel-plated.

Sample order:
K1183.065

Note:
With this adaptor, collets for internal and external clamping can be mounted.
The workpiece is clamped by tightening the screw on the side.
A dowel pin is used to secure the adaptor against rotation.
The collet is positioned on the adaptor with 2 dowel pins.

installation dimensions

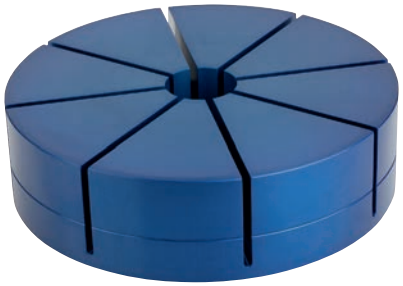


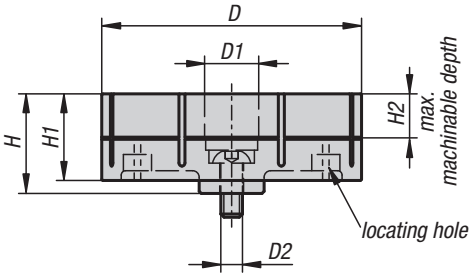
KIPP Adapter for collets

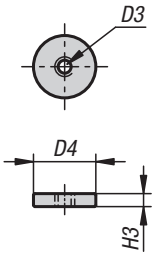
Order No.	A	D	D1	D2	D3	D4	D5	H	H1	SW	T	T1	T2	for screws	Tightening torque max. Nm	F1=Max. outer clamping (kN)	F2=Max. internal clamping (kN)
K1183.065	22	65	28	M8	42	M6x1	6	35	12	8	8	6	13	M6	15	4,5	4,5
K1183.090	30	90	42	M10	60	M8x1,25	8	40	14	8	10	8	15	M8	25	7	7
K1183.120	43	120	55	M10	80	M10x1,5	10	45	18	10	12	11	19	M10	40	10	10
K1183.160	60	160	63	M12	110	M12x1,75	12	50	24	10	14	13	25	M12	40	12	10

Collets

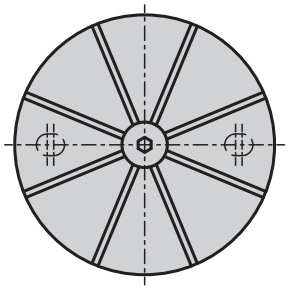
for external clamping







clamp ring for machining, included



Material:
High-strength aluminium alloy

Version:
blue anodised.

Sample order:
K1184.1065

Note:
Collets for clamping external contours.
The contour of the workpiece to be held is machined into the collet. Free-form and asymmetrical contours can be held.
The collet mechanism enables a secure clamping of the workpiece.
Clamping travel per collet segment (8x) max. 0.15 mm.
Workpiece repeat accuracy: ±0.03.
Collet repeat accuracy: ±0.02.
Matching adaptor K1183.

KIPP Collets for external clamping

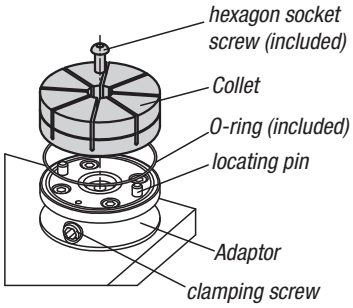
Order No.	D	D1	D2	D3	D4	H	H1	H2	H3
K1184.1065	65	21	M8	M5	20	29	25	10	4
K1184.1090	90	25	M10	M6	24	40	35	15	5
K1184.1120	120	25	M10	M6	24	46	40	20	5
K1184.1160	160	29	M12	M8	28	52	45	25	6

Collets

for external clamping

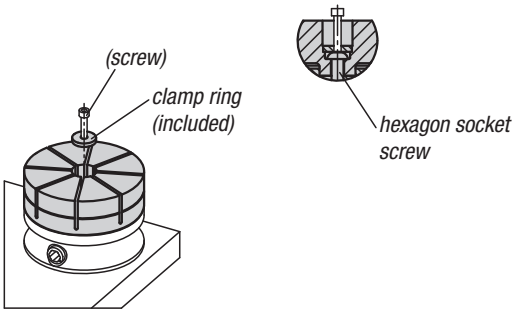
1. Mounting collet:
- Insert an O-ring into the groove on the top face of the clamp base.
- Set a collet on the base making sure the locating pins fit into the locating holes on the undeside of the collet. Secure the collet using a buttonhead hex socket screw.

Note:
Before mounting the collet, ensure the cam cylinder is fully loosened by turning the tightening screw counterclockwise until it stops.

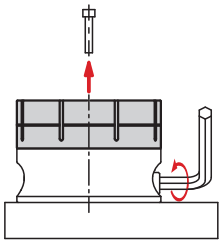


2. Machining collet:

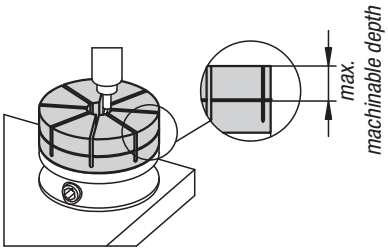
2.1
Place the clamp ring in the centre of the collet.
(Use a screw as an insertion aid)



2.2
Tighten the cam cylinder to clamp the clamp ring (recommended torque: 15Nm).
Remove the screw from the clamp ring before machining.

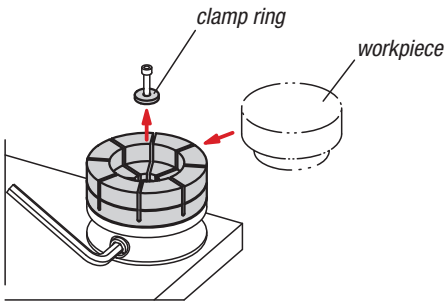


2.3
Machine the contour of the part that is to be held into the collet.

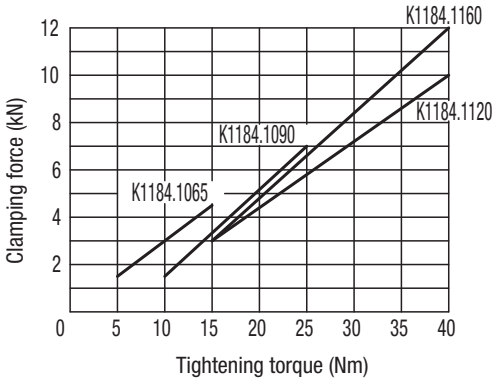


Note:
Do not machine the contour deeper than the permitted depth.

3. Mounting workpiece:
- Loosen the cam cylinder and remove the clamp ring.
- Place the workpiece in the contour and re-tighten the cam cylinder.



Performance curve

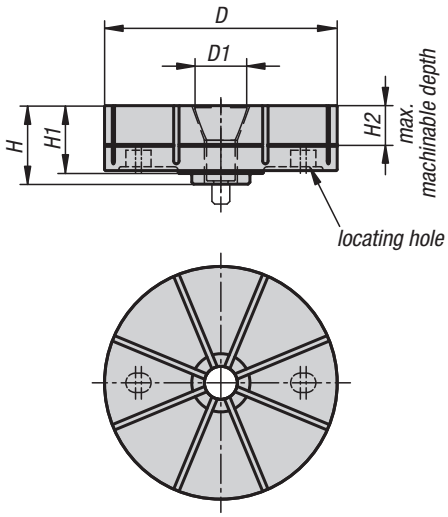


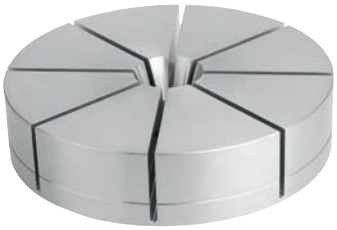
To avoid damaging the collet do not tighten the clamp without a workpiece or clamp ring.
Observe the maximum tightening torque in the table.

K1184

Collets

for internal clamping





Material:
High-strength aluminium alloy

Version:
natural tone anodised

Sample order:
K1184.2065

Note:
Collets for clamping internal contours.
The contour of the workpiece to be held is machined into the collet. Free-form and asymmetrical contours can be held.
The collet mechanism enables a secure clamping of the workpiece.
Clamping travel per collet segment (8x) max. 0.15 mm.
Workpiece repeat accuracy: ±0.03.
Collet repeat accuracy: ±0.02.
The traction cone K1185 is required when using the collet for internal clamping.
Matching adaptor K1183.

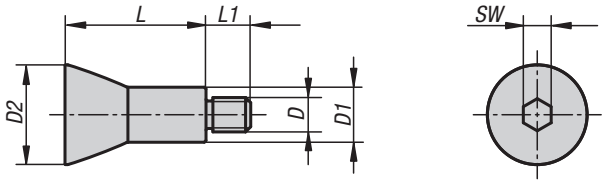
KIPP Collets for internal clamping

Order No.	D	D1	H	H1	H2
K1184.2065	65	22,5	28,5	25	10
K1184.2090	90	27	34,5	30	15
K1184.2120	120	29	40,5	35	20
K1184.2160	160	33	46,5	40	25

K1185

Traction cone

for internal clamping collet



Material:
Carbon steel.

Version:
hardened and nickel-plated.

Sample order:
K1185.0829

Note:
The traction cone is required for the collet for internal clamping.

KIPP Traction cone for internal clamping collet

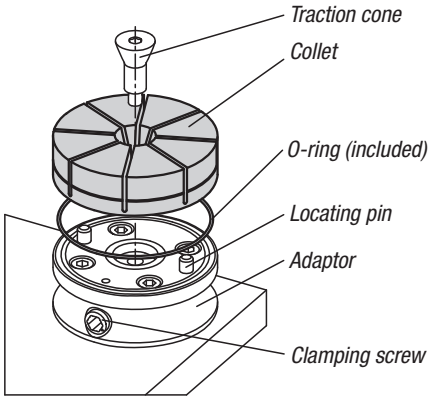
Order No.	D	D1	D2	L	L1	SW
K1185.0829	M8	13,2	22,5	29	10	6
K1185.1035	M10	16	27	35	11	8
K1185.1041	M10	16	29	41	13	8
K1185.1247	M12	18	33	47	14	10

Collets

for internal clamping

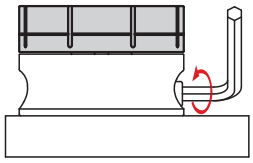
1. Mounting collet:
- Insert an O-ring into the groove on the top face of the clamp base.
- Set a collet on the base making sure the locating pins fit into the locating holes on the undeside of the collet. Secure the collet using a tapered screw.

Note:
Before mounting the collet, ensure the cam cylinder is fully loosened by turning the tightening screw counterclockwise until it stops.

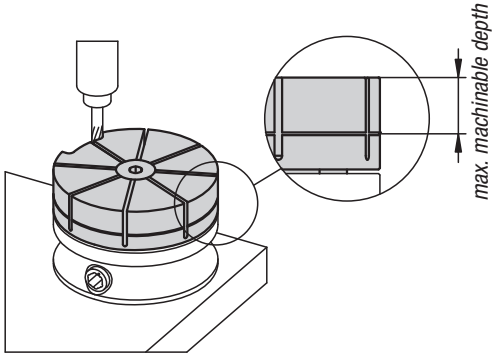


2. Machining collet:

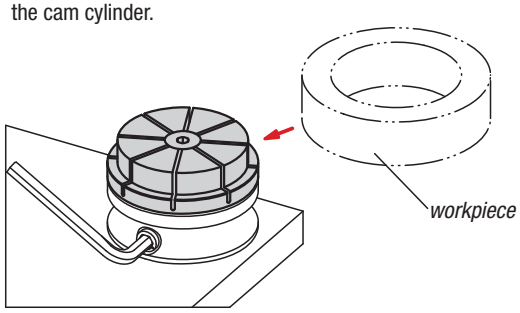
2.1
Fully loosen the cam cylinder and measure the OD of the collet. Tighten the cam cylinder until the collet OD has expanded by 0.15 mm.



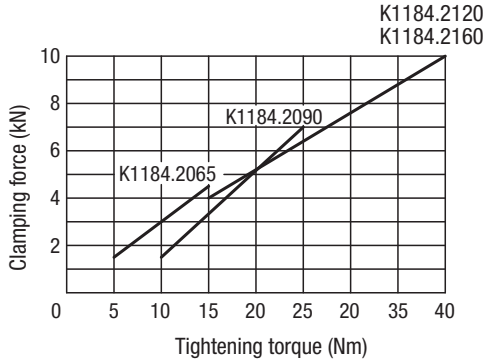
2.2
Machine the contour of the part that is to be held into the collet.



3. Mounting workpiece:
- Loosen the cam cylinder and remove the clamp ring.
- Place the workpiece in the contour and re-tighten the cam cylinder.

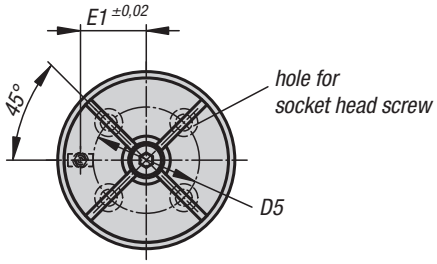


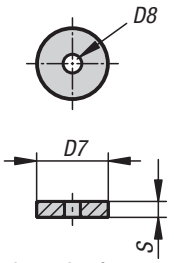
Performance curve



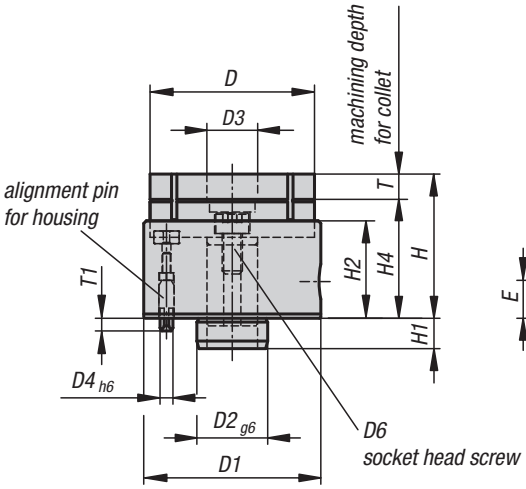
To avoid damaging the collet do not tighten the clamp without a workpiece or clamp ring.
Observe the maximum tightening torque in the table.

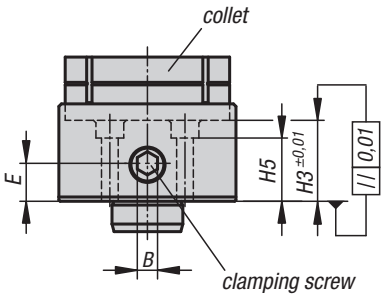
Clamping collets machinable





clamp ring for
machining, included





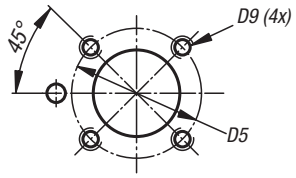
Material:
Housing and clamping ring carbon steel 1.0503.
Locating pins carbon steel 1.7220.
Collet aluminium 3.4365.

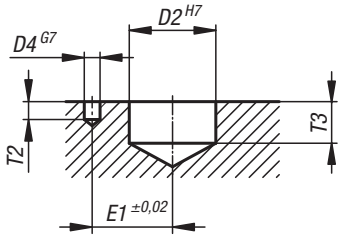
Version:
Housing, locating pins and clamping ring black oxidised.
Collet blue anodised.

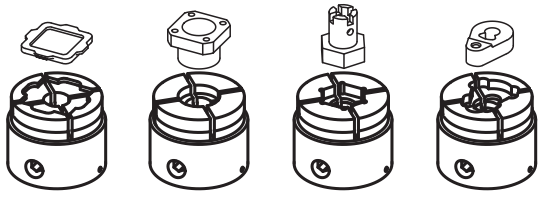
Sample order:
K0934.065057

Note:
Do not tighten the clamping screw without the clamping ring or a workpiece in the collet.
Tighten the clamping screw on the side to clamp the workpiece around its circumference.
The collet can be machined to suit the contour of the workpiece.
Ideal clamping element for machining workpieces on machining centres, milling centres, 5-axis machines, etc.

mounting hole pattern





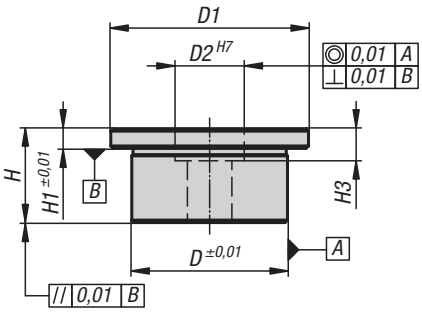


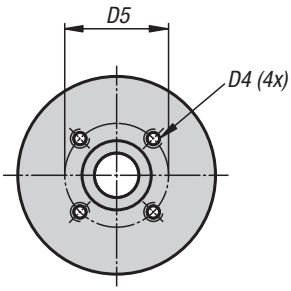
KIPP Clamping collets machinable

Order No.	B	D	D1	D2	D3	D4	D5	D6	D7	D8	D9	E	E1	H	H1	H2	H3	H4	H5	T	T1	T2	T3	S	Clamping force N	Tightening torque max. Nm	Order No. Collet
K0934.065057	8	65	70	28	19	6	42	M8x15	18	M4	M6	15	26	59,5	12	39	34,5	47	25	10	5	6	13	4	4000	60	K0934.065025
K0934.090072	10	90	95	42	23	8	60	M10x20	22	M5	M8	17	36	72,5	14	46	38,5	57	28	15	7	8	15	6	6000	100	K0934.090034

Mounting plates

for clamping collets



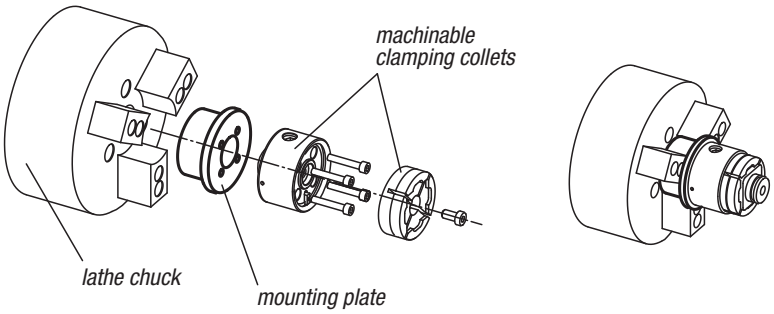


Material:
Carbon steel 1.7262.

Version:
Black oxidised and case-hardened.

Sample order:
K0934.065038

Note:
Suitable for clamping collets
K0934.065057 and K0934.090072.

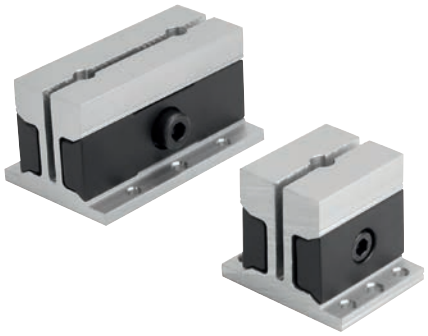


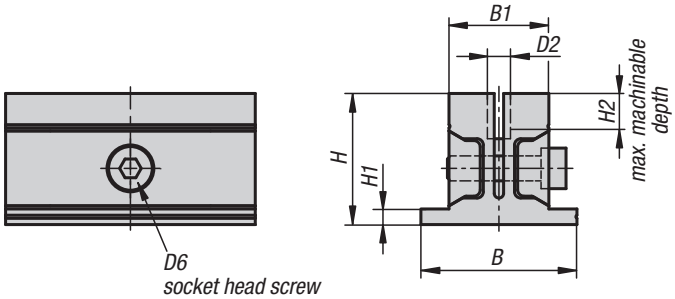
Mounting plate for holding the collet in a lathe chuck

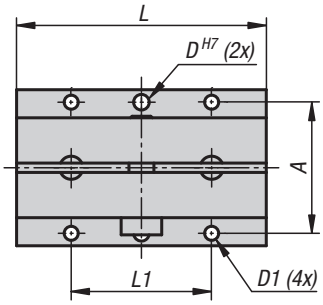
KIPP Mounting plates for clamping collets

Order No.	D	D1	D2	D4	D5	H	H1	H3
K0934.065038	63	80	28	M6x12	42	38	8	13
K0934.090043	80	100	42	M8x16	60	43	8	15

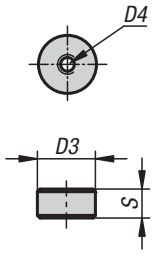
Machinable jaws rectangular



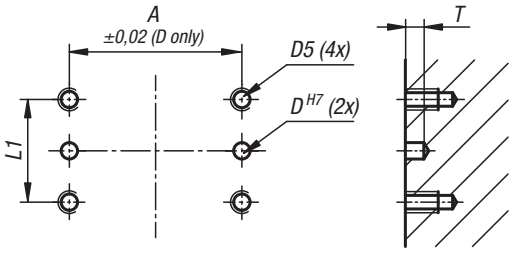




clamp ring for machining, included



installation dimensions



Material:
Body EN AC-51400.
Wedges high-carbon steel.

Version:
Body natural colour anodised.
Wedges black oxidised.

Sample order:
K1169.32040

Note:
The lateral clamping screw tightens the jaws and clamps the workpiece on the circumference.
The simple and compact design allows 2 workpieces to be clamped.
The clamping travel is max. 0.5 mm.
The jaws must be pre-tensioned before machining the contour, the supplied clamping ring is used for this purpose.

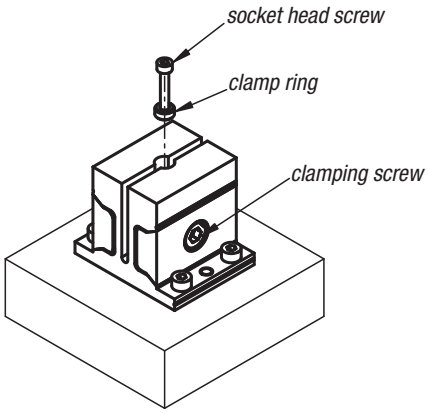
KIPP Machinable jaws, rectangular

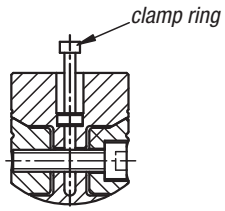
Order No.	A	B	B1	D	D1	D2	D3	D4	D5	D6	H	H1	H2	L	L1	S	T	Clamping force N	Tightening torque Nm
K1169.32040	42	50	32	5	4,5	7,4	7	M3x0,5	M4x0,7	M6	42	5	10	40	25	3,5	5	2500	7,5
K1169.32080	42	50	32	5	4,5	7,7	7	M3x0,5	M4x0,7	M8	42	5	10	80	45	3,5	5	2500	14
K1169.50050	62	72	50	6	5,5	11,4	11	M3x0,5	M5x0,8	M10	63	7	15	50	30	5,5	8	5500	26
K1169.50100	62	72	50	6	5,5	11,4	11	M3x0,5	M5x0,8	M12	63	7	15	100	58	5,5	8	5500	46

Machinable jaws rectangular

Machining the jaws:

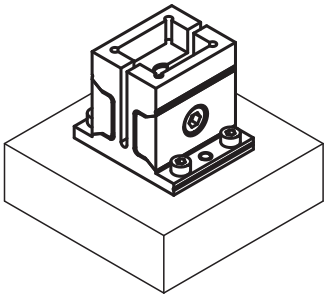
1. Inserting the clamp ring:
Insert the clamp ring into the bore in the centre of and between the jaws.
Tighten the clamp screw to hold the clamp ring in place.
(Use a cap screw to aid inserting the clamp ring)





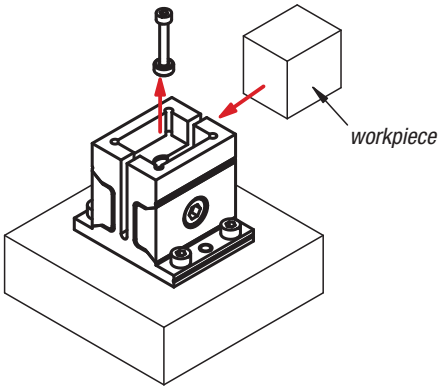
Note:
The clamp ring must be placed at the bottom of the bore.

2. Machine the jaws:
Remove the cap screw from the clamp ring.
Machine the contour of the workpiece to be held into the jaws.

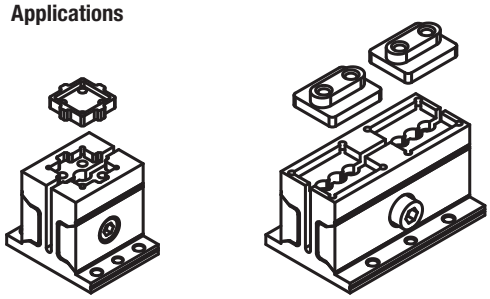


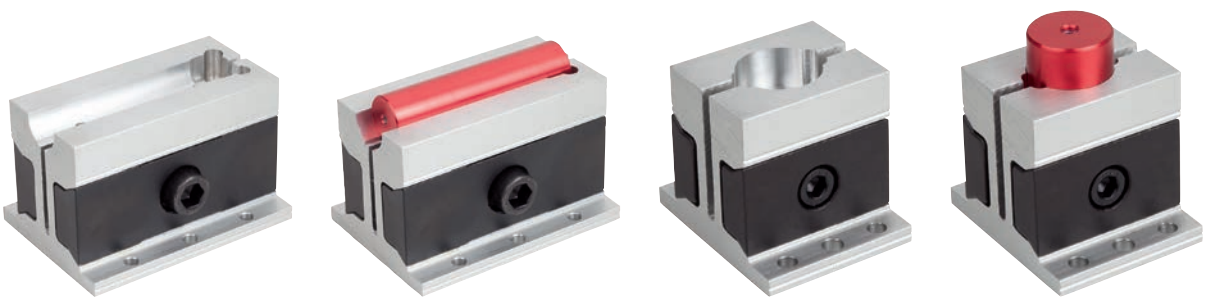
Note:
The contour should not be deeper than the max. permitted depth.

3. Mounting the workpiece:
Loosen the clamp screw and remove the clamp ring.
Place the workpiece into the contour and tighten the clamp screw.



Applications



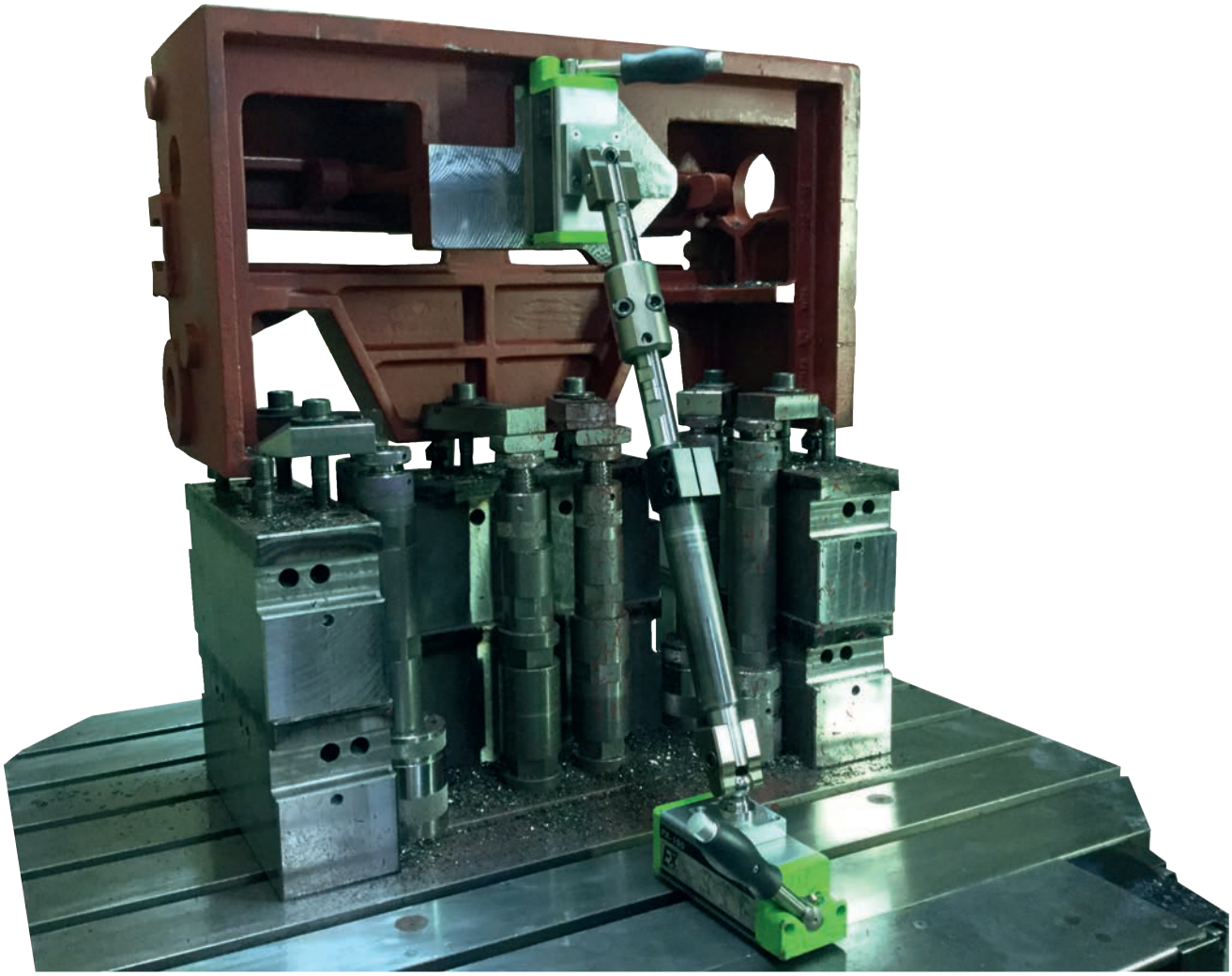


Workpiece stabiliser

Technical information Workpiece stabiliser

The workpiece stabiliser has been developed specifically for minimising vibrations and oscillations when machining sensitive and thin-walled workpieces.

This system is extremely flexible thanks to its different methods of fixing to the workpiece and the machine table.



1 Fastening set for T-slots
2 Magnet
3 Fastening set for zero-point interface
4 Workpiece stabiliser
5 Fine adjustment
6 Clamp strap
7 Clamping ball with cup

Workpiece stabiliser set

with case

Material:
Case plastic.
See corresponding product group for contents.

Version:
black.

Sample order:
K1296.925

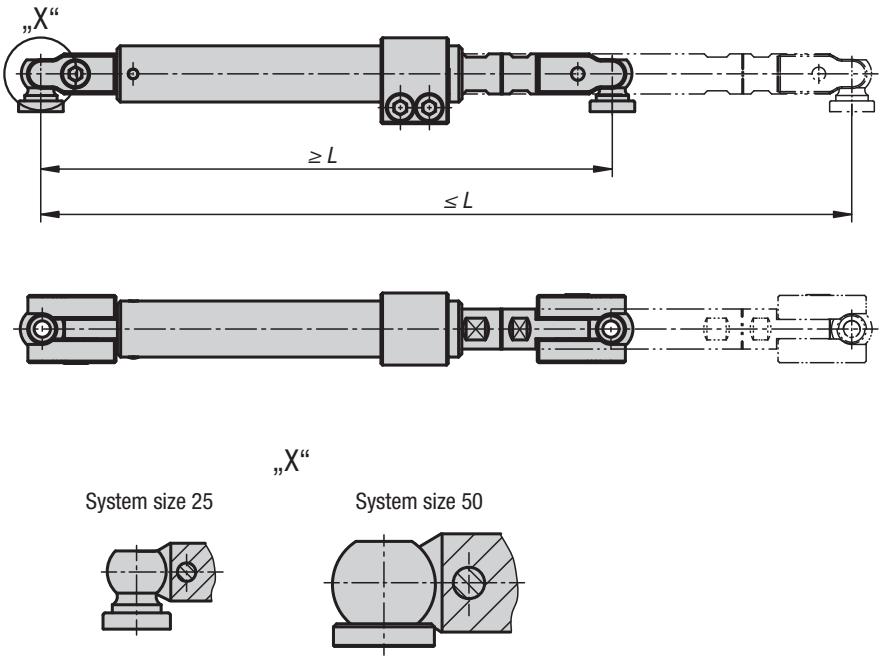
Note:
Objects sized between 355 and 980 mm can be set up using this stabiliser set.
It is basic equipment for supporting workpieces.
The individual parts are safely stored in a plastic case.
The length of the workpiece stabiliser is infinitely adjustable.
With the locking mechanism, the shaft can be securely locked against tension and compression.

Supplied with:
- Case
- Workpiece stabiliser, K1170.355505
- Extension shaft L75, K1186.1625075
- Extension shaft L100, K1186.1625100
- Extension shaft L150, K1186.1625150
- Precision adjustment, K1187.25120150
- Fastening set for T-slots, 14 mm T-slot set, K1189.2514
- 18 mm T-slot block with M10, K0378.18.005
- 22 mm T-slot block with M10, K0378.22.005
- Clamping ball with cup M12, K1193.3251240
- Clamping ball with cup M16, K1193.3251640

KIPP Workpiece stabiliser set with case

Order No.	Item	Version 1
K1296.925	Workpiece Stabiliser Set	with case

Workpiece stabiliser



Material:
Steel.

Version:
Telescopic clamping unit and fastening set black oxidised.
Shaft bright.

Sample order:
K1170.255305

Note:
The length of the workpiece stabiliser is infinitely adjustable. The shaft can be securely clamped against tension and thrust by means of a locking mechanism.

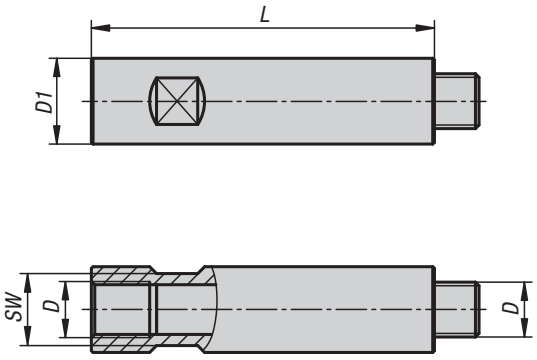
The workpiece stabiliser consists of a telescopic clamping unit with two fastening sets and two clamping balls with Form B cups for system sizes 25 or 50.

KIPP Workpiece stabiliser

Order No.	Size	L min.	L max.	weight kg
K1170.255305	25	255	305	1,9
K1170.355505	25	355	505	2,5
K1170.50350450	50	350	450	6,7
K1170.50450650	50	450	650	7,7

Extension shafts

for workpiece stabiliser



Material:
Steel.

Sample order:
K1186.1625075

Note:
The extension shafts extend the adjustment range. They are mounted with the clamping ball between the workpiece stabiliser and the fastening set.

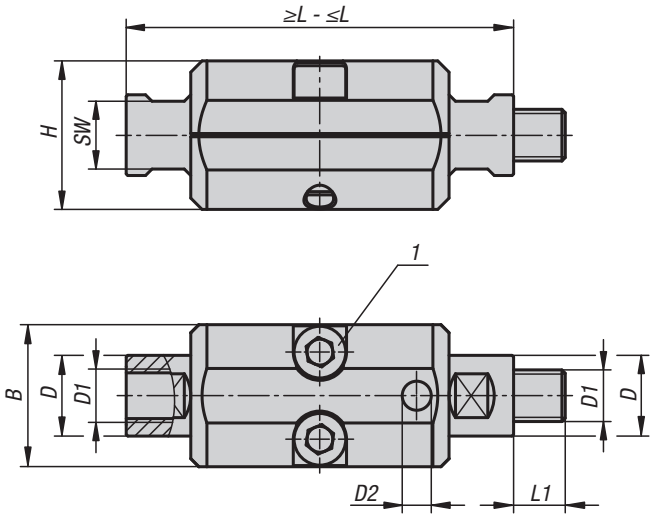
KIPP Extension shafts for workpiece stabiliser

Order No.	Size	D	D1	L	SW	weight kg
K1186.1625075	25	M16x1,5	25	75	21	0,233
K1186.1625100	25	M16x1,5	25	100	21	0,293
K1186.1625150	25	M16x1,5	25	150	21	0,416
K1186.1625250	25	M16x1,5	25	250	21	0,697
K1186.1625500	25	M16x1,5	25	500	21	1,3
K1186.2750100	50	M27x2	40	100	36	0,726
K1186.2750150	50	M27x2	40	150	36	1,04
K1186.2750250	50	M27x2	40	250	36	1,623
K1186.2750500	50	M27x2	40	500	36	3,12

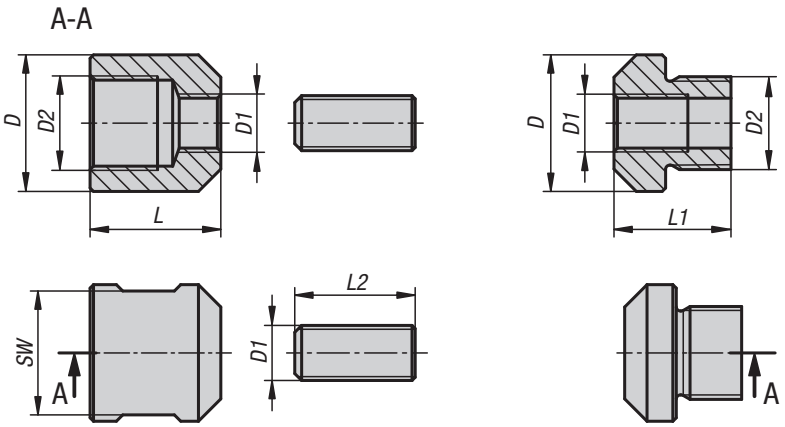
Fine adjustment

for workpiece stabiliser

System size 25



Adapter for system size 50



The fine adjustment enables the distance between the workpiece and support table to be precisely set. If required, the fine adjustment can be used to set the workpiece stabiliser under tensile or compressive load.

Material:
Steel.

Version:
Adapter piece black oxidised.
Half shells nitrided.

Sample order:
K1187.25120150

Note:
Only the fine adjuster K1187.25120150 is required for workpiece stabiliser system size 25.

When using fine adjustment on the workpiece stabiliser system size 50, the fine adjuster K1187.25120150 and the adapter K1187.50 (consisting of 2 adapter pieces and a grub screw) are required at the respective ends.

Drawing reference:
1) DIN EN ISO 4762 M10 cap screw

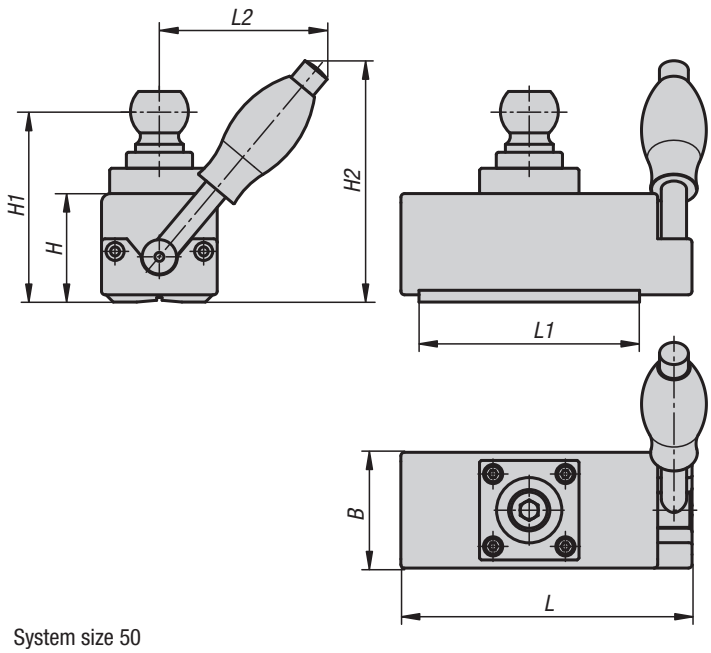
KIPP Fine adjustment for workpiece stabiliser

Order No.	Item	Size	B	D	D1	D2	H	L min.	L max.	L	L1	L2	SW
K1187.25120150	Fine Adjustment	25	44	25	M16x1,5	9	46	120	150	-	16	-	21
K1187.50	Adapter	50	-	39,7	M16x1,5	M27x2	-	-	-	38	34	35	36

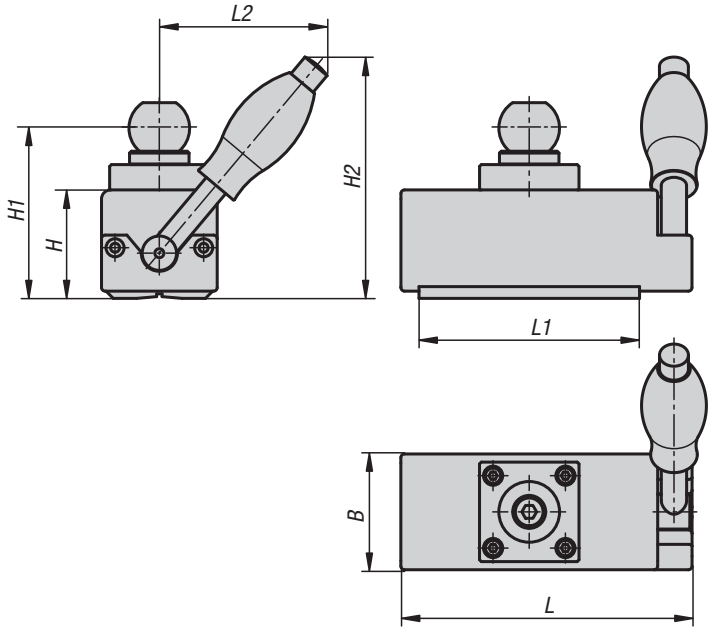
Magnet

for workpiece stabiliser

System size 25



System size 50



The magnet is connected to the workpiece stabiliser. The magnet can be positioned anywhere enabling flexible placement on the machine table.

Sample order:
K1188.25161064

Note:
Maximum hold with the magnet K1188.25161064 for workpiece stabiliser system size 25 is achieved with a material thickness from 8 mm.
Maximum hold with the magnet K1188.50205087 for workpiece stabiliser system size 50 is achieved with a material thickness from 15 mm.
Must not be used as a hoisting tool.

The clamping balls can be exchanged between the two system sizes by using the matching adapter plates.

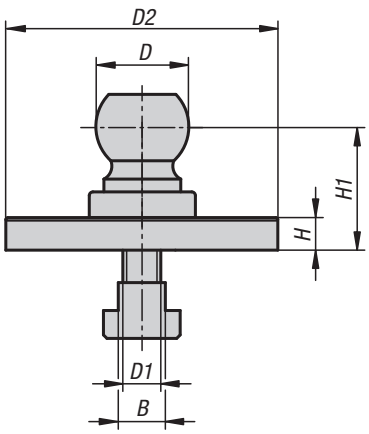
KIPP Magnet for workpiece stabiliser

Order No.	Size	B	H	H1	H2	L	L1	L2	Magnetic force N	weight kg
K1188.25161064	25	64	60	102	133	161	122	92	1470	3,73
K1188.50205087	50	87	78	134	181	205	162	145	1960	8,6

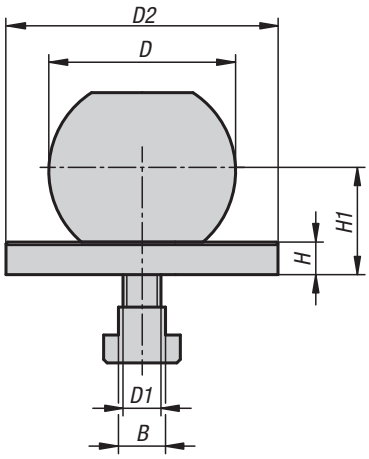
Fastening set for T-slot

workpiece stabiliser

System size 25



System size 50

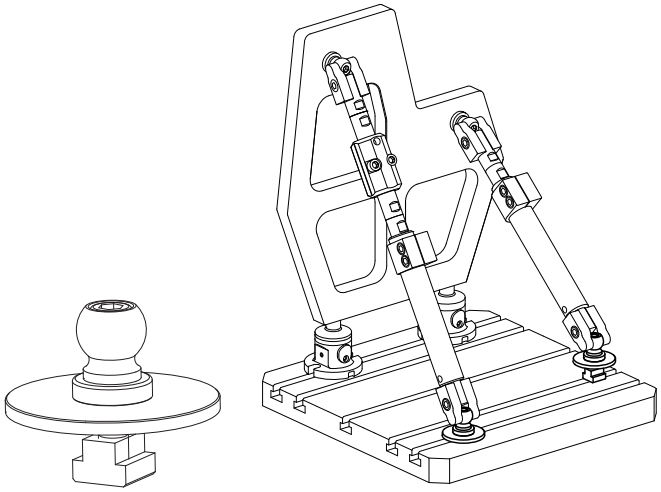


Material:
Steel.

Sample order:
K1189.2512

Note:
These fastening sets for T-slots are for adapting to machine tables with T-slots.

The clamping balls can be exchanged between the two system sizes.



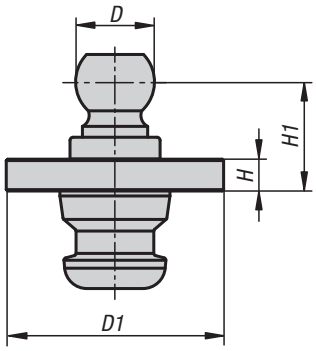
KIPP Fastening set for T-slot workpiece stabiliser

Order No.	Size	B	D	D1	D2	H	H1
K1189.2514	25	14	25,4	M10	78	10	35
K1189.2518	25	18	25,4	M10	78	10	35
K1189.2522	25	22	25,4	M10	78	10	35
K1189.2528	25	28	25,4	M10	78	10	35
K1189.5014	50	14	50	M10	78	10	30
K1189.5018	50	18	50	M10	78	10	30
K1189.5022	50	22	50	M10	78	10	30
K1189.5028	50	28	50	M10	78	10	30

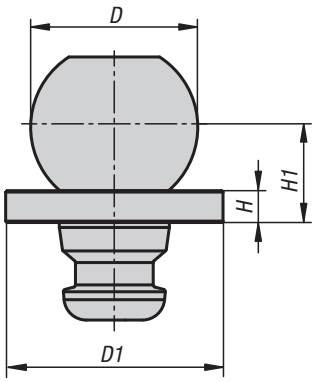
Fastening set for zero-point clamping technology

workpiece stabiliser

System size 25



System size 50

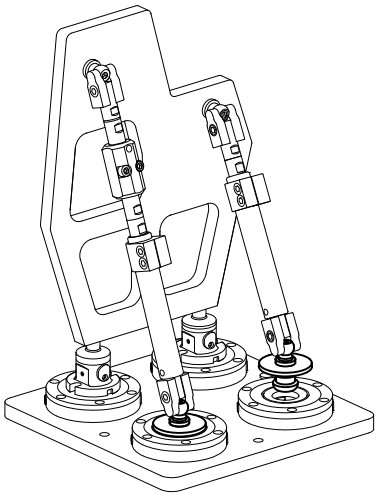


Material:
Steel.

Sample order:
K1190.2540

Note:
The fastening set is suitable for adaption to UNILOCK zero point clamping technology.

The clamping balls can be exchanged between the two system sizes.



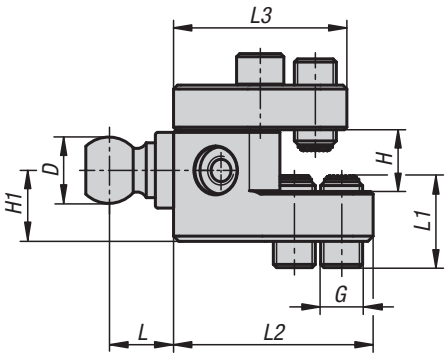
KIPP Fastening set for zero-point clamping technology workpiece stabiliser

Order No.	Size	D	D1	H	H1
K1190.2540	25	25,4	78	10	35
K1190.5040	50	50	78	10	30

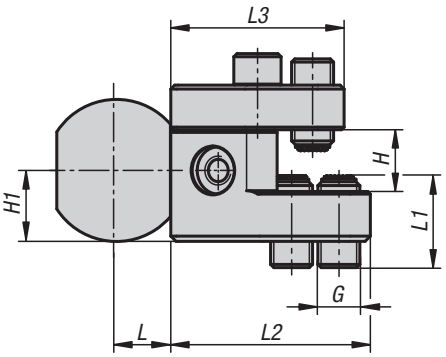
Claw clamps

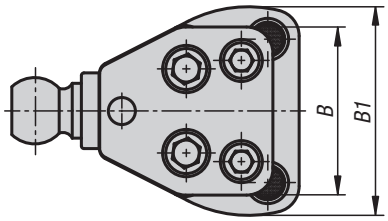
for workpiece stabiliser

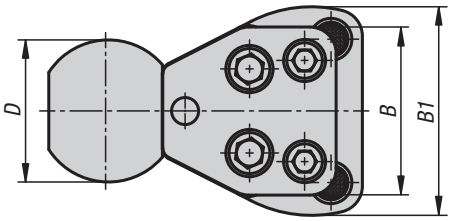
System size 25



System size 50







Material:
Steel.

Version:
Claw clamps black oxidised.
Clamping ball bright.

Sample order:
K1192.258076

Note:
The clamping unit is used for connecting to the workpiece. The clamping ball can be attached to several points on the claw clamp. This enables flexible adjustment of the claw clamp.

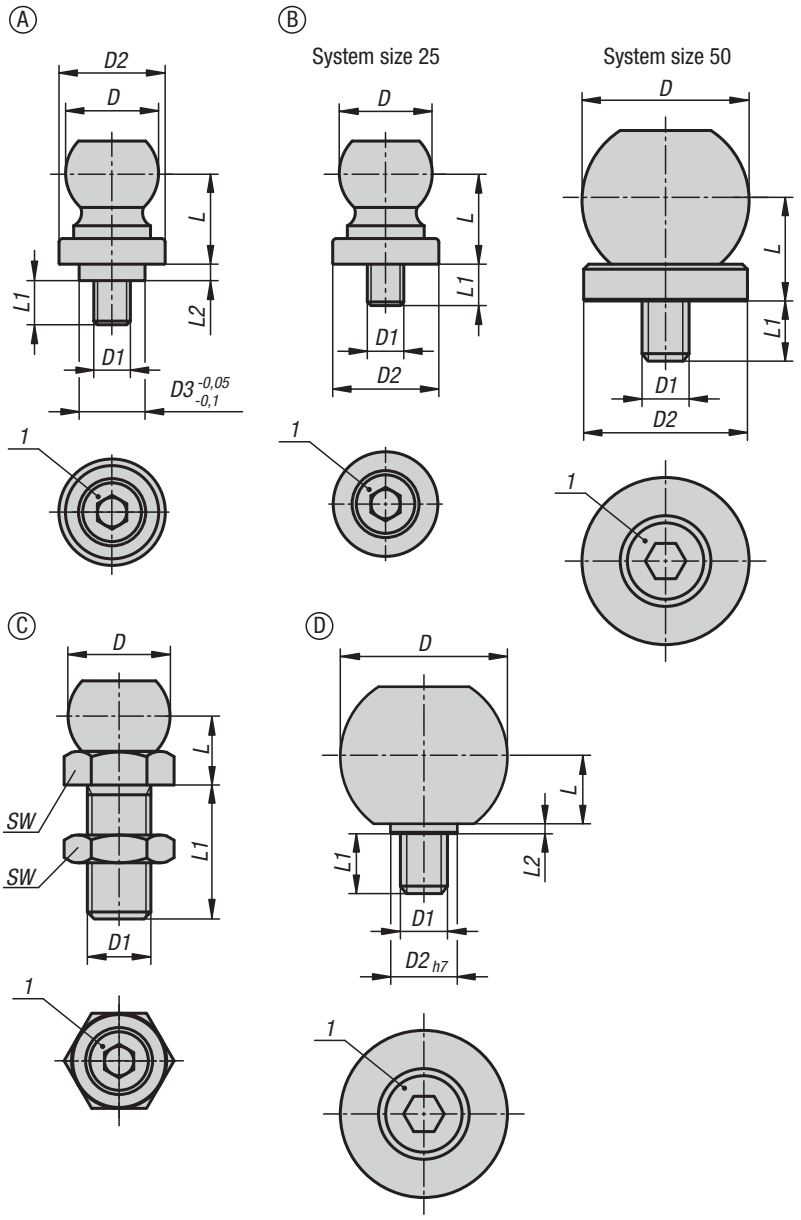
The clamping balls can be exchanged between the two system sizes.

KIPP Clamps strap for workpiece stabiliser

Order No.	Size	B	B1	D	G	H clamping range	H1	L	L1	L2	L3
K1192.258076	25	64	79	25,4	M16	0-45	27	25	25	76	66
K1192.508076	50	64	79	50	M16	0-45	27	20	25	76	66

Clamping balls with cup

for workpiece stabiliser



Material:
Steel.

Version:
DIN EN ISO 4017 hex head bolt , grade 8.8, black.
DIN EN ISO 4762 cap screw grade 8.8, black.
Clamping ball bright.

Sample order:
K1193.125

Note:
The clamping balls enable flexible connections between the workpiece and the workpiece stabiliser. The clamping balls provide a high degree of freedom on the workpiece.

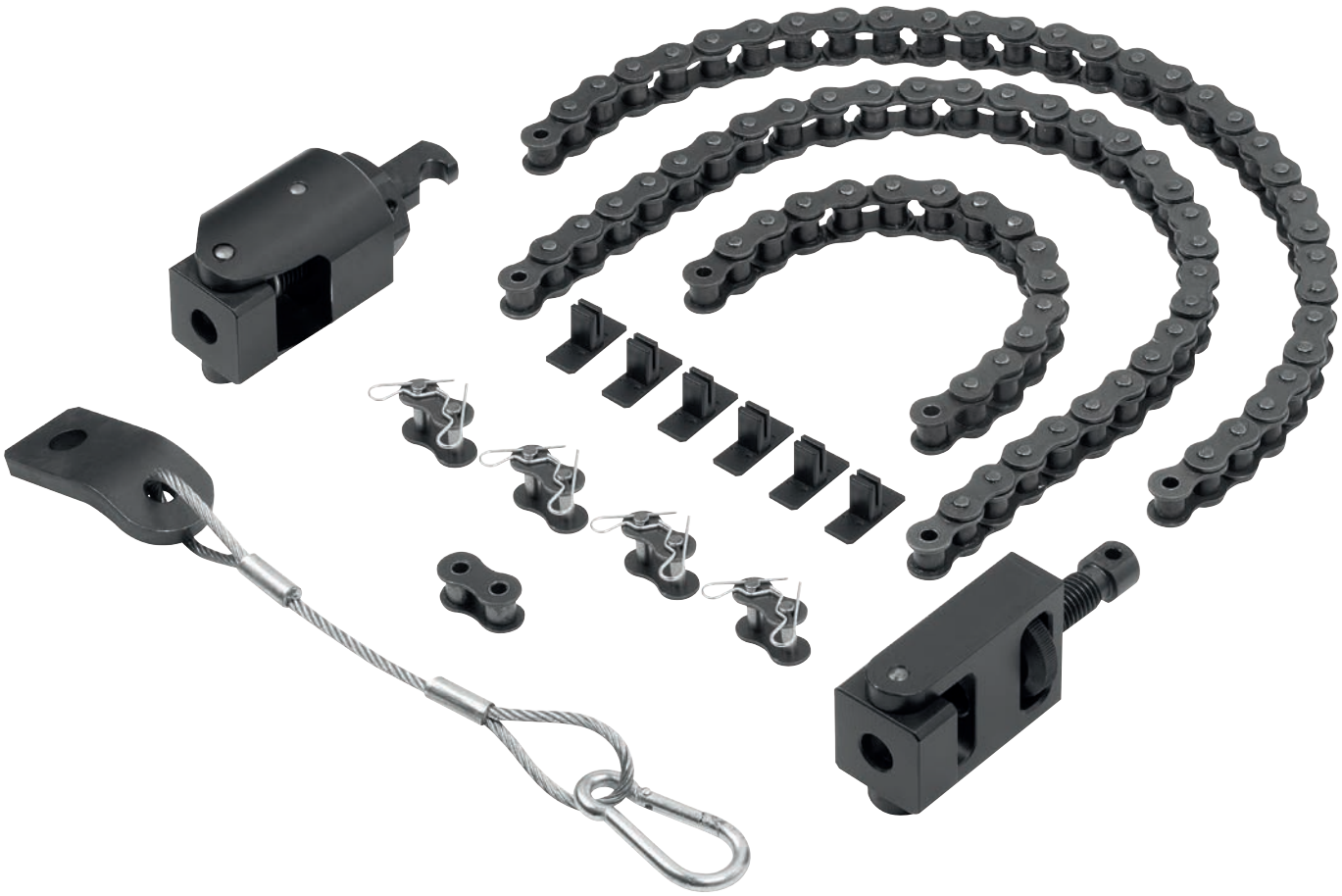
Drawing reference:
1) DIN EN ISO 4762 cap screw

KIPP Clamping balls with cup for workpiece stabiliser

Order No.	Form	Size	D	D1	D2	D3	L	L1	L2	SW
K1193.125	A	25	25,4	M10	29	18	25	12,2	4,5	-
K1193.225	B	25	25,4	M10	29	-	25	11	-	-
K1193.250	B	50	50	M16	49	-	30	20,5	-	-
K1193.3251240	C	25	25,4	M12	-	-	17,3	40	-	18
K1193.3251640	C	25	25,4	M16	-	-	19,8	40	-	24
K1193.3252050	C	25	25,4	M20	-	-	22,3	50	-	30
K1193.3252450	C	25	25,4	M24	-	-	24,8	50	-	36
K1193.3502450	C	50	50	M24	-	-	34,5	50	-	36
K1193.3503060	C	50	50	M30	-	-	34,5	60	-	46
K1193.3503670	C	50	50	M36	-	-	34,5	70	-	55
K1193.450	D	50	50	M16	25	-	20	18	3,5	-

Notes

Chain clamps



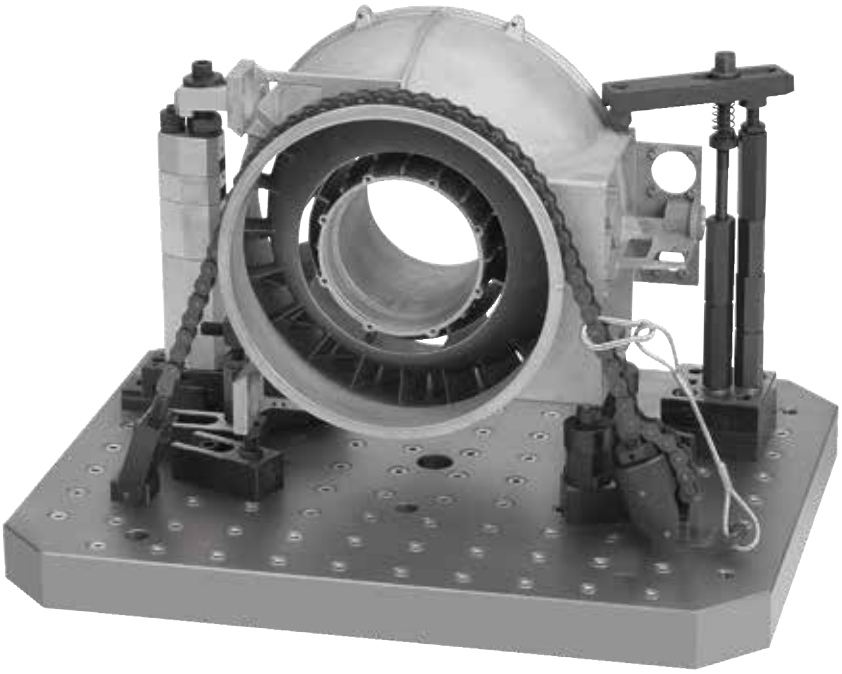
Technical note on chain clamps

Chain clamps are used mainly in machine and plant construction and enable the secure clamping and fixation of workpieces with irregular contours and shapes. Chain clamps enable workpieces to be effectively clamped. Specially made fixtures with special equipment for clamping complex workpieces are not required. The uniform force distribution from the chain means that workpieces can be clamped relatively distortion-free. Chain clamps are fastened to machine tables or clamping plates using the fastening screws and T-slot keys.

Features:

- Even pressure distribution
- Plastic elements to protect the workpiece
- Large adjustment range
- No need for special solution clamping fixtures
- High clamping force

Application examples:



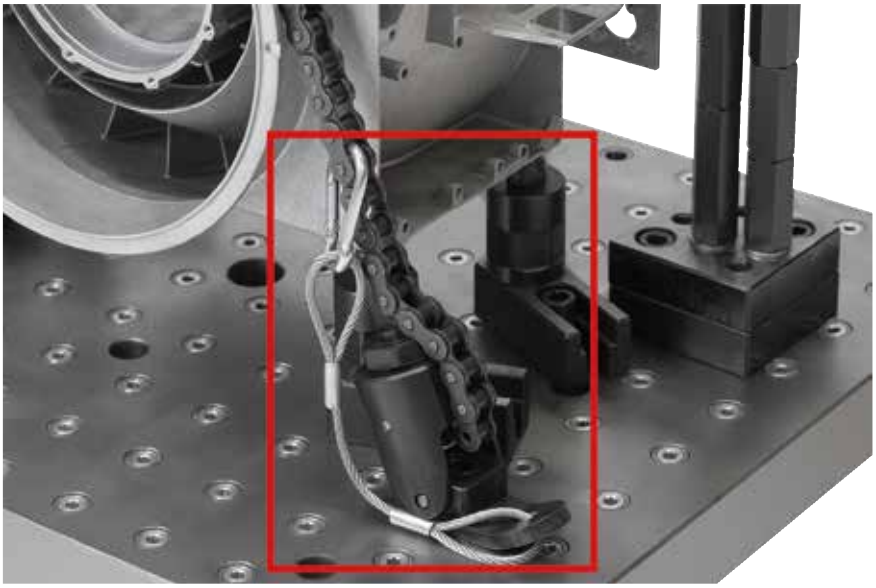
Mounting:

1. Mount the clamping hook and clamping bracket as close as possible to the workpiece on the machine table or clamping plate.
2. Chain clamp set K1650.15
   The clamping hook and clamping bracket can be fastened to a machine table or clamping plate using DIN 508 T-slot nuts (K0377) and DIN 912 / DIN EN ISO 4762 cap screws (K0869) (see Table 1).
   Chain clamp set K1650.40
   The clamping hook and clamping bracket can be fastened to a machine table or clamping plate using DIN 508 T-slot nuts (K0377) and DIN 912 / DIN EN ISO 4762 cap screws (K0869) (see Table 1).

3. Tighten the knurled nut on the clamping bracket until the tension rod is fully extended.

4. The length of the chain can be adjusted to the workpiece by removing or adding chain links. One end must then be fastened to the tension rod.

5. The free end is hooked onto the clamping hook and must then be secured using the securing set for clamping chains.

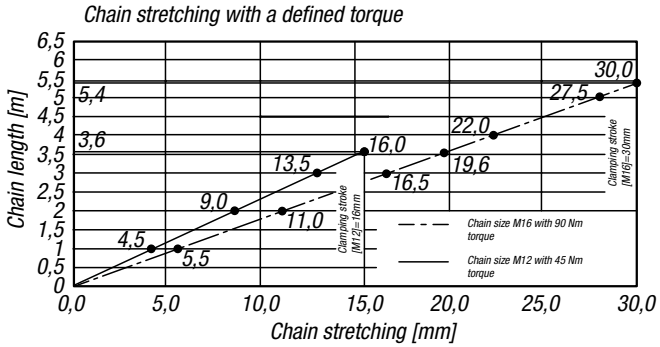


6. The knurled nut on the clamping bracket is now turned until the chain exerts a light pressure on the workpiece.

7. The actual clamping process is carried out by tightening the nut on the clamping hook.

Table 1

Order No.	Nut	Screw	max. torque Nm	Clamping force max. kN	Weight g
K1650.15	K0377	K0869	45	15	2628
K1650.40	K0377	K0869	90	40	7640



Steel turnbuckles for chain clamp sets

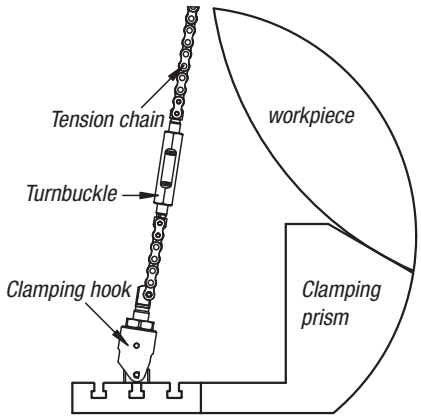
A turnbuckle is used to pre-tension the chain clamp. The turnbuckle is mounted between two chain links and is tightened or loosened by turning the hex. head screw. The chain is pre-tensioned and any play is removed by the shortening of the chain length.
The use of a turnbuckle is always recommended for chains 3 m or more in length.

Advantages:

- Optimal pre-tension
- With long chains, the turnbuckles counteract the chain elongation

Table 2

Order No.	L	Clamping force max. kN
K1656.15052	52	15
K1656.40066	66	40



Steel roller chains for chain clamp sets

In addition to the chains provided in the set, KIPP also offers other chain lengths suitable for chain clamp sets K1650.15 and K1650.40. These additional chain lengths make it possible to adapt flexibly to the widest variety of workpiece diameters and shapes.

Advantages:

- The chain length of the chain clamp can be flexibly adjusted and lengthened
- Minimum chain stretching through pre-tension
- Resistance to dirt and temperature influences

Table 3

Order No.	L	Clamping force max. kN
K1655.150125	126	15
K1655.150250	253	15
K1655.150500	507	15
K1655.151000	1015	15
K1655.400125	148	40
K1655.400250	250	40
K1655.400500	504	40
K1655.401000	1012	40

120° prisms, steel, for chain clamp sets

The flexible positioning of the prisms on the machine table enables optimal use of the chain clamp set for clamping. These are fastened to the machine table using the DIN 508 T-slot nuts K0377. If necessary, the prisms can also be aligned exactly on the machine table using a slot key.

Table 4 shows a number of ways that workpieces with a certain diameter can be mounted, and the corresponding chain lengths which are required.

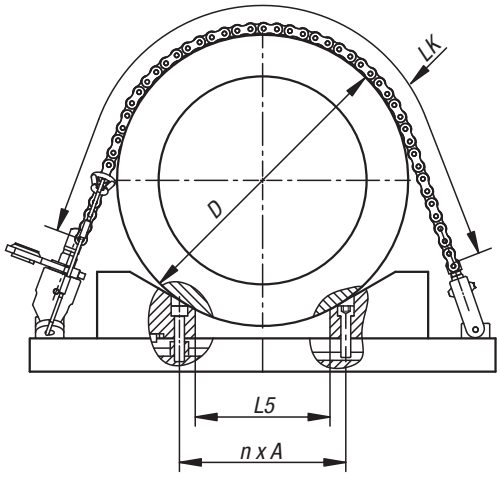
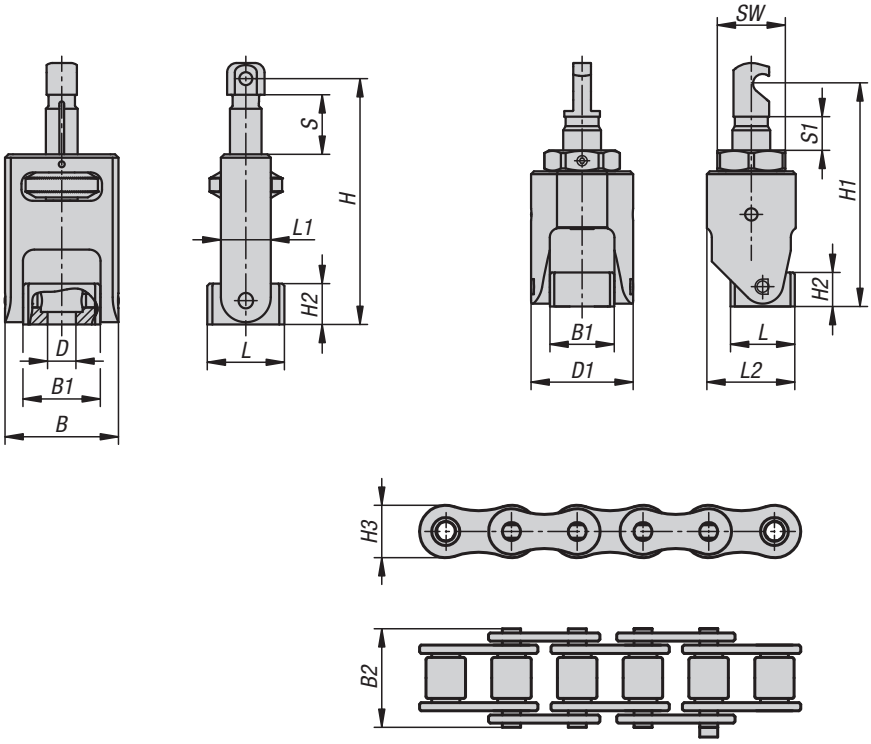


Table 4

Order No.	n x A	Ø D [mm]	Chain length LK [mm] (x) = Number of links	L5
K1662.11847080	1 x 40 = 40	190 - 280	413 (26) - 635 (40)	2
	2 x 40 = 80	250 - 360	413 (26) - 635 (40)	42
	3 x 40 = 120	270 - 440	603 (38) - 1048 (66)	82
	4 x 40 = 160	300 - 520	635 (40) - 1238 (78)	122
	5 x 40 =200	350 - 600	762 (48) - 1429 (90)	162
	6 x 40 = 240	430 - 680	953 (60) 1619 (102)	202
	7 x 40 = 280	510 - 760	1143 (72) - 1810 (114)	242
	8 x 40 = 320	620 - 840	1397 (88) - 2000 (126)	282
	9 x 40 = 360	760 - 920	1778 (112) - 2191 (138)	322
	10 x 40 = 400	920 - 1000	2191 (138) - 2413 (152)	362
K1662.14847100	1 x 50 = 50	250 - 370	559 (22) - 864 (34)	2
	2 x 50 = 100	320 - 470	711 (28) - 1118 (44)	52
	3 x 50 =150	320 - 570	711 (28) - 1372 (54)	102
	4 x 50 =200	320 - 670	711 (28) - 1575 (62)	152
	5 x 50 =250	430 - 770	965 (38) - 1829 (72)	202
	6 x 50 = 300	530 - 870	1168 (46) - 2083 (82)	252
	7 x 50 = 350	630 - 970	1422 (56) - 2337 (92)	302
	8 x 50 = 400	760 - 1070	1727 (68) - 2591 (102)	352
	9 x 50 = 450	960 - 1170	2235 (88) - 1794 (110)	402
	10 x 50 = 500	1160 - 1270	2743 (108) - 3048 (120)	452

Chain clamp sets, steel



Material:
Clamping hook, steel.
Clamping bracket, steel.
Roller chain, steel.

Version:
Steel parts, tempered.

Sample order:
K1650.15

Note:
Chain clamps are used mainly in machine and plant construction.
Chain clamps enable cylindrical, complicated and large to very large workpieces to be clamped securely and effectively in the quickest and easiest way.

Suitable for cylindrical workpieces, valve bodies, pistons etc.

The workpiece surface can be protected by attaching the plastic elements.

Application:
The knurled nut on the clamping bracket can be used to preset the chain length and the clamping force. The required torque is set on the clamping hook.

Supplied with:
Chain clamp set K1650.15:
- Clamping hook.
- Clamping bracket.
- 4x roller chains (2x 492 mm, 1x 238 mm, 1x 15.9 mm).
- 4x connecting links with cotter pins to connect.
- 6x snap-on plastic elements.
- Securing set for clamping chains.

Chain clamp set K1650.40:
- Clamping hook.
- Clamping bracket.
- 4x roller chains (1x 991 mm, 1x 483 mm, 1x 229 mm, 1x 25.4 mm).
- 4x connecting links with cotter pins to connect.
- 6x snap-on plastic elements.
- Securing set for clamping chains.

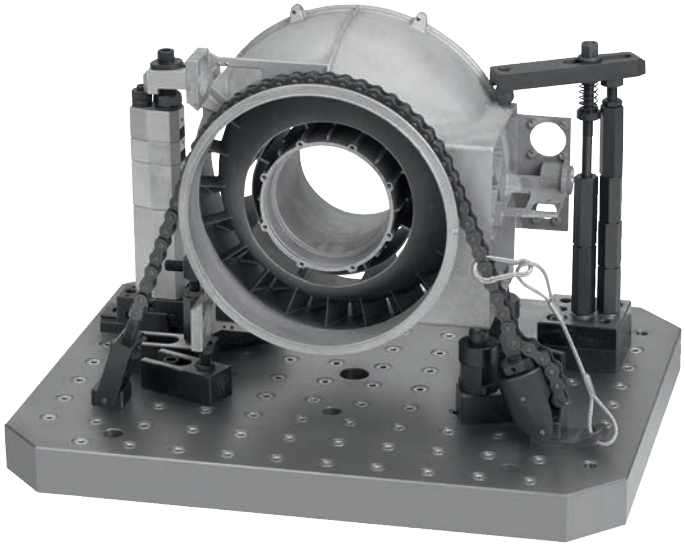
KIPP Chain clamp sets, steel

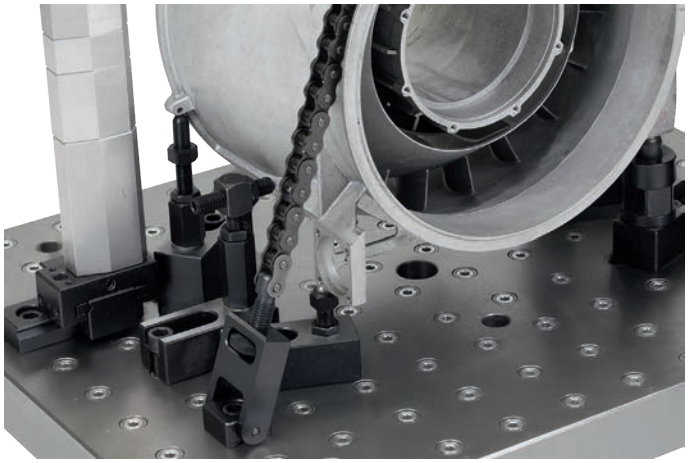
Order No.	B	B1	B2	D	D1	H max.	H min.	H1 max.	H1 min.	H2	H3	Travel S	L	L1	L2	S1	SW	Max. torque Nm	Clamping force max. kN
K1650.15	50	34	20	M12	54	108	83	118	100	18	15	25	34	21	46,5	18	36	45	15
K1650.40	64	44	33	M16	70	146	110	153	122	25	21	36	37	29	61,5	31	46	90	40

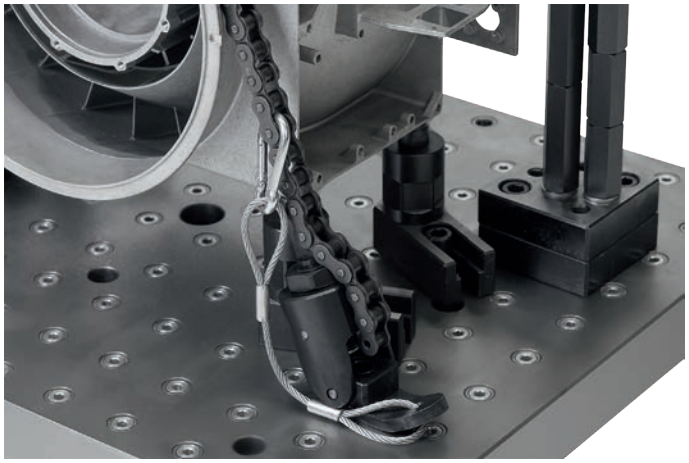
Chain clamp sets, steel

Accessories:
Steel roller chains for chain clamp sets K1655.
Steel turnbuckles for chain clamp sets K1656.
Steel prisms for chain clamp sets K1662.
Nuts for T-slots DIN 508 enhanced, K0377.
Cap screws DIN EN ISO 4762, K0869.

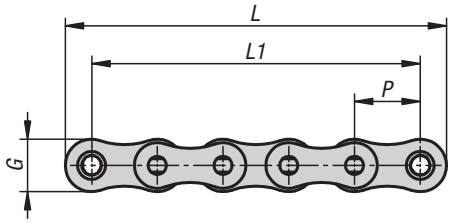
Attention:
- The opening angle of the chain should not exceed 30°.
- Do not exceed max. permitted tightening torques.

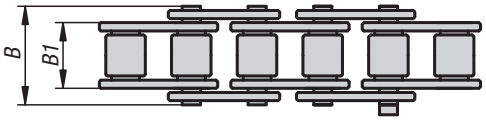






Roller chains, steel, for chain clamp sets





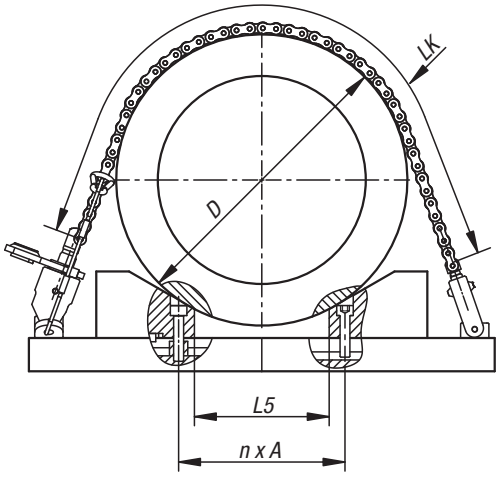
Material:
Steel.

Sample order:
K1655.150250

Note:
Roller chains for chain clamp sets can be used with chain clamp sets (K1650) for clamping round, irregular, and large to very large workpieces. Roller chains can be shortened and joined together with other roller chains as desired.

Supplied with:
1x roller chain

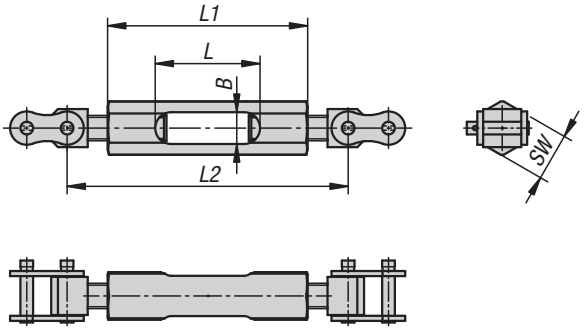
Accessories:
Steel turnbuckles for chain clamp sets K1656.



KIPP Roller chains, steel, for chain clamp sets

Order No.	B	B1	G	L	L1	P	Clamping force max. kN
K1655.150125	20	13	15	126	111	15,875	15
K1655.150250	20	13	15	253	238	15,875	15
K1655.150500	20	13	15	507	492	15,875	15
K1655.151000	20	13	15	1015	1000	15,875	15
K1655.400125	33	25	21	148	127	25,4	40
K1655.400250	33	25	21	250	229	25,4	40
K1655.400500	33	25	21	504	483	25,4	40
K1655.401000	33	25	21	1012	991	25,4	40

Turnbuckles, steel, for chain clamp sets

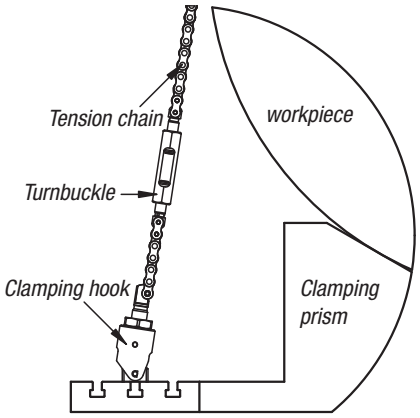


Material:
Steel.

Sample order:
K1656.15052

Note:
Steel turnbuckles for chain clamp sets are mounted between the chains. The turnbuckles are used to pre-tension the chain and remove any play, which is always greater with longer chains.

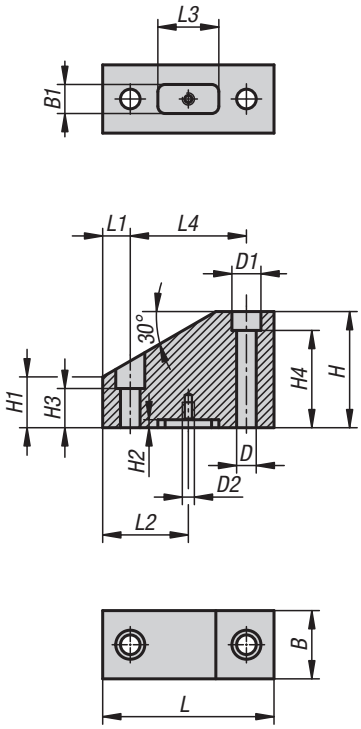
Accessories:
Steel roller chains for chain clamp sets K1655.



KIPP Turnbuckles, steel, for chain clamp sets

Order No.	B	L	L1	L2	SW	Clamping force max. kN
K1656.15052	14	52	97	111-147	24	15
K1656.40066	20	66	126	151-203	30	40

Prisms, steel, for chain clamp sets



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K1662.11847080

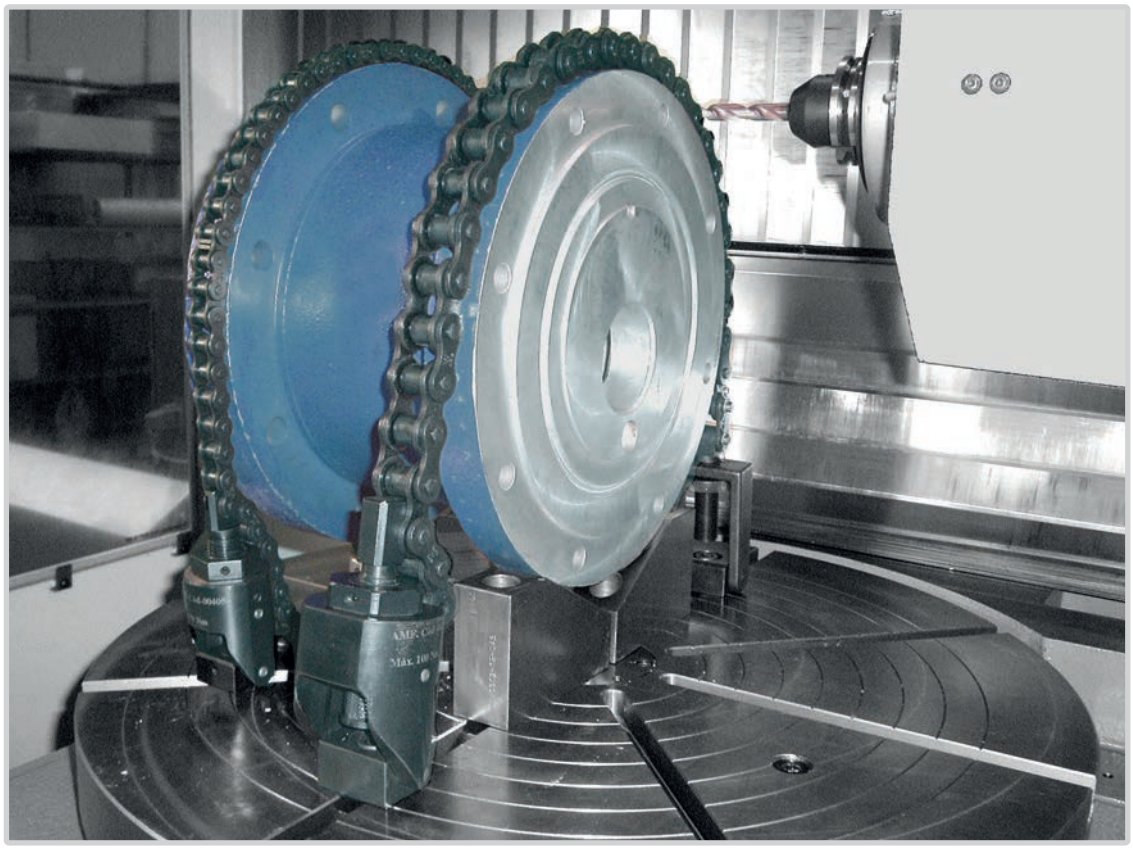
Note:
Prisms for chain clamp sets enable flexible positioning of the workpiece. The prisms can be fastened to the machine table using T-slot nuts.

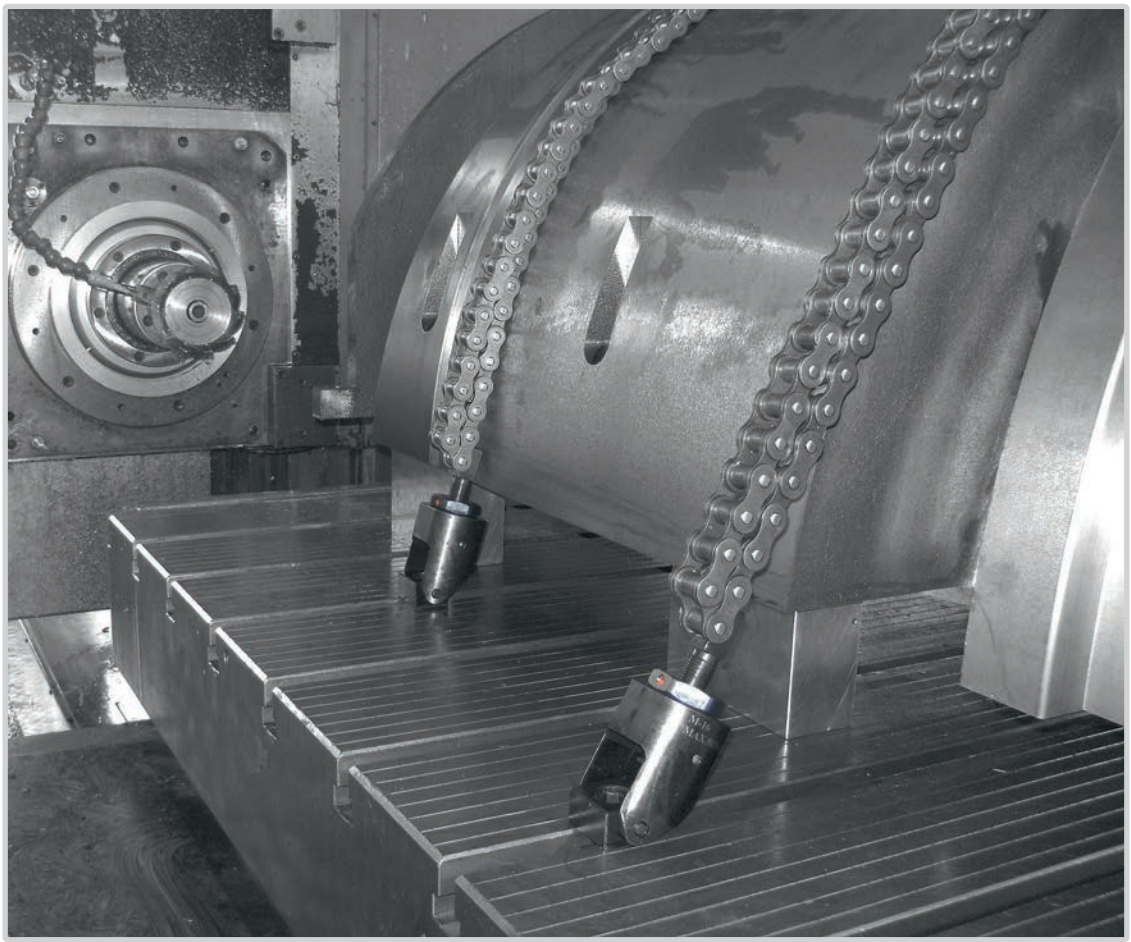
Accessories:
Nuts for T-slots DIN 508 enhanced, K0377.

KIPP Prisms, steel, for chain clamp sets

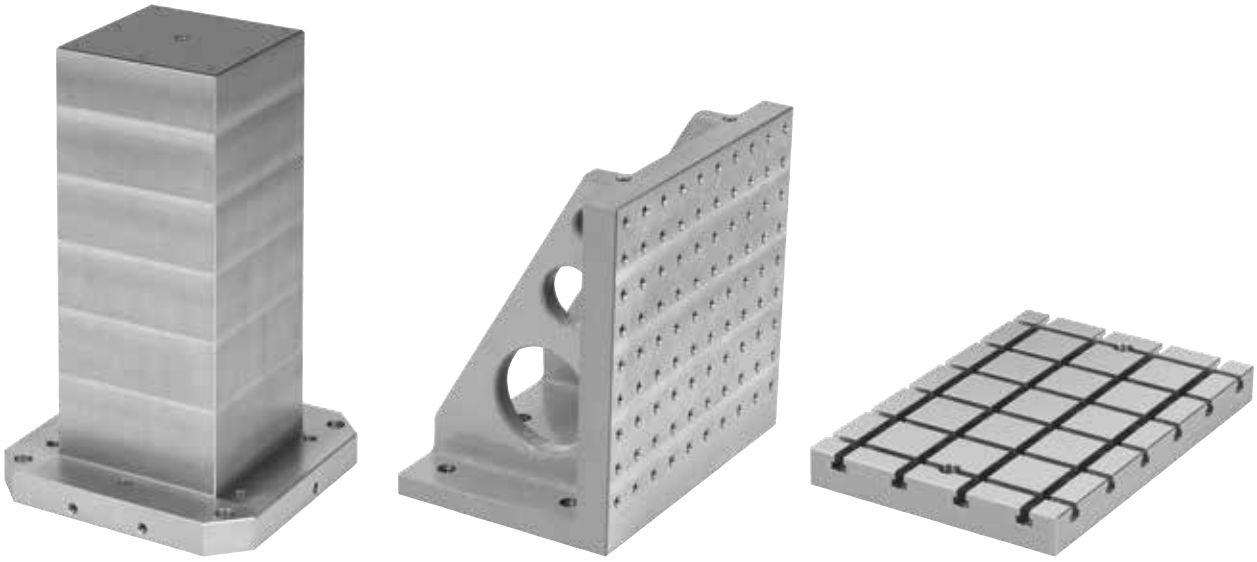
Order No.	B	B1	D	D1	D2	H	H1	H2	H3	H4	L	L1	L2	L3	L4
K1662.11847080	47	20	13,5	20	M6	80	35	5,5	27	67	118	19	59	42	80
K1662.14847100	47	20	17,5	26	M6	100	44	5,5	33	33	148	24	74	44	100

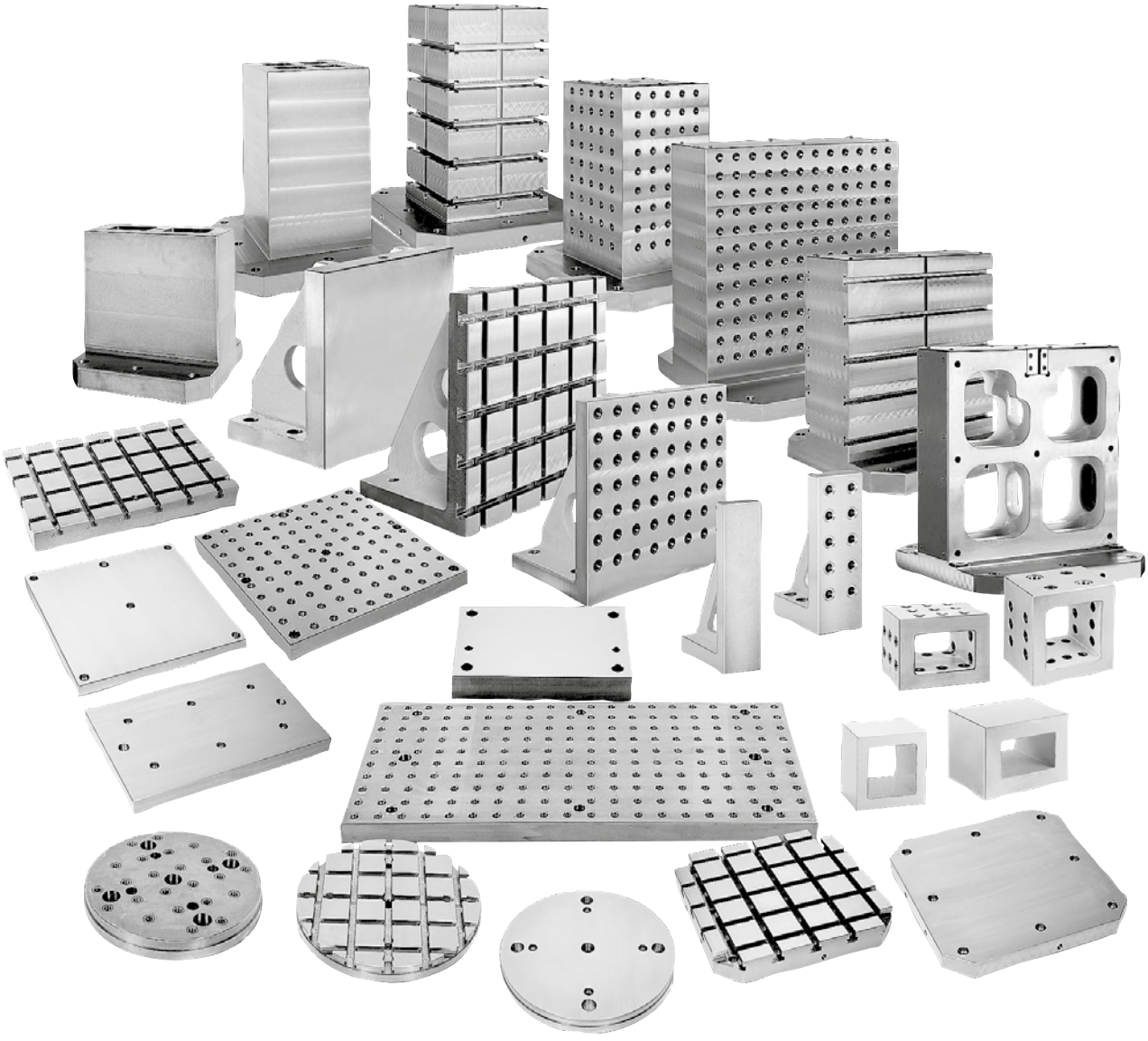
Application example

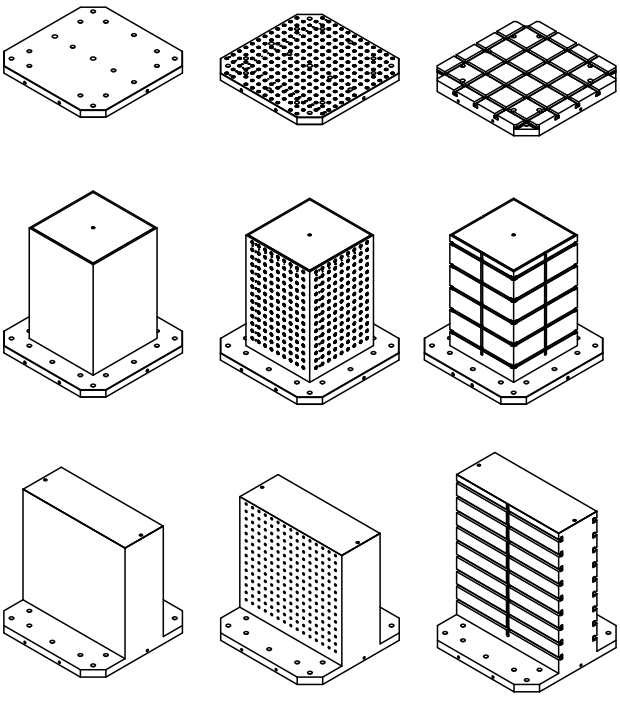




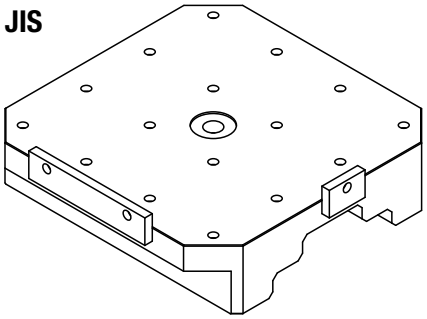
Basic elements



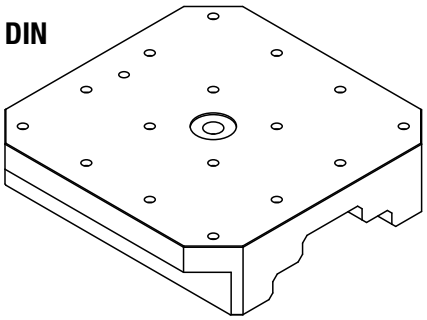




JIS



DIN



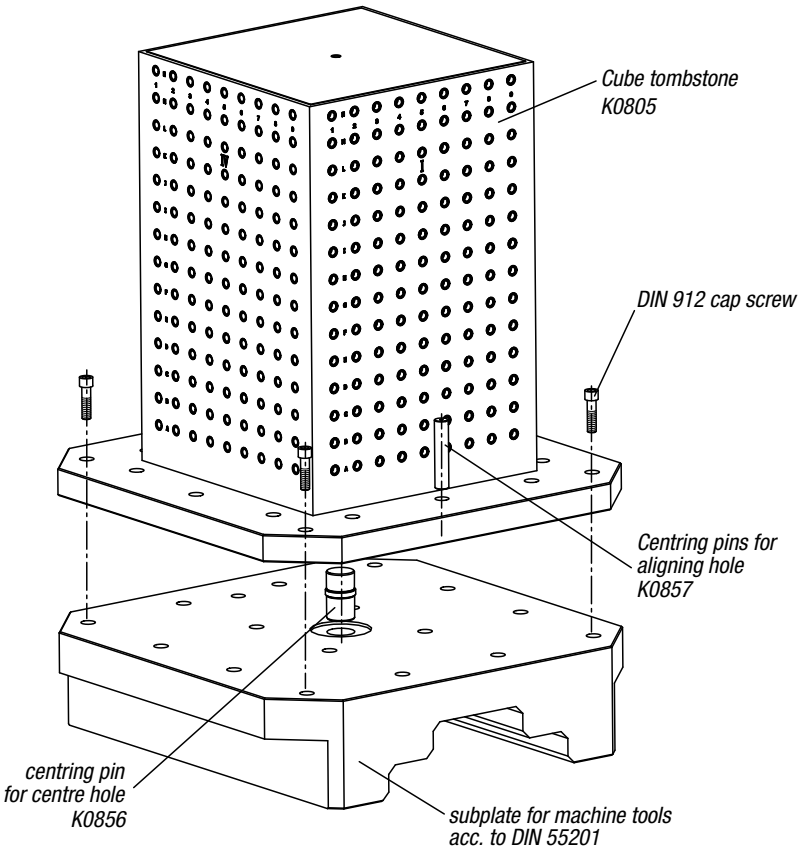
Positioning the base elements

Double side tombstone K0803, cube tombstone K0805 and subplates K0806 have two positioning options:

a) Positioning on subplates for machine-tools acc. to DIN 55 201.

Positioning procedure:

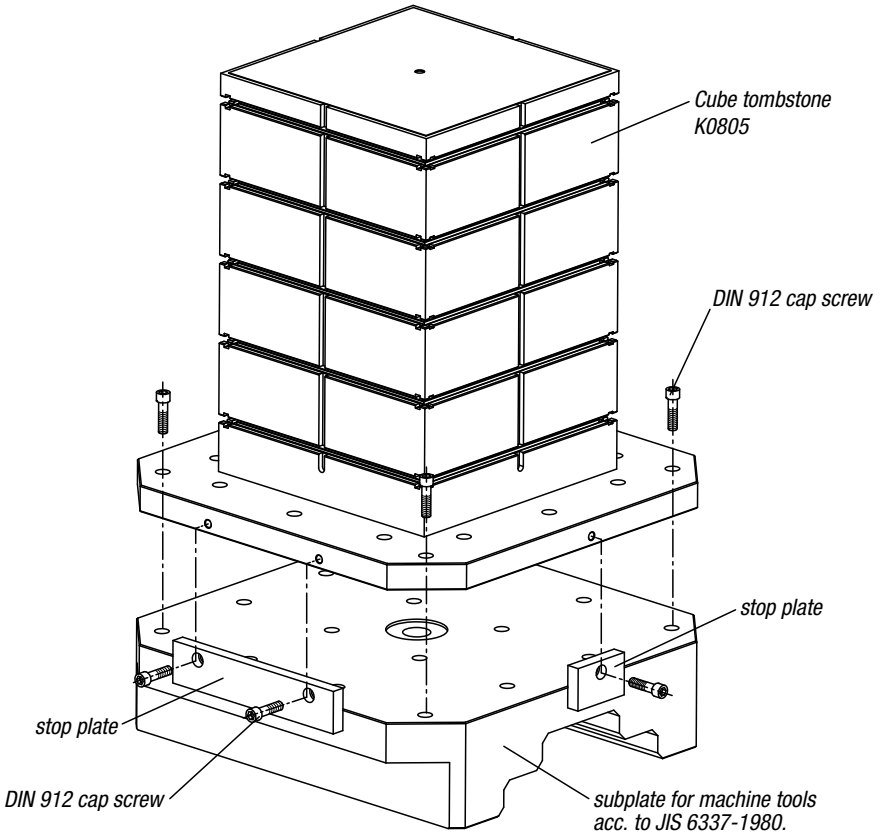
1. Insert locating pin in the centre bore of the subplate.
2. Position the tombstones, cube tombstones and subplates over the central hole.
3. Use the locating pin for the aligning hole to align the basic elements.



b) Positioning on subplates for machine tools acc. to JIS 6337-1980.

Positioning procedure:

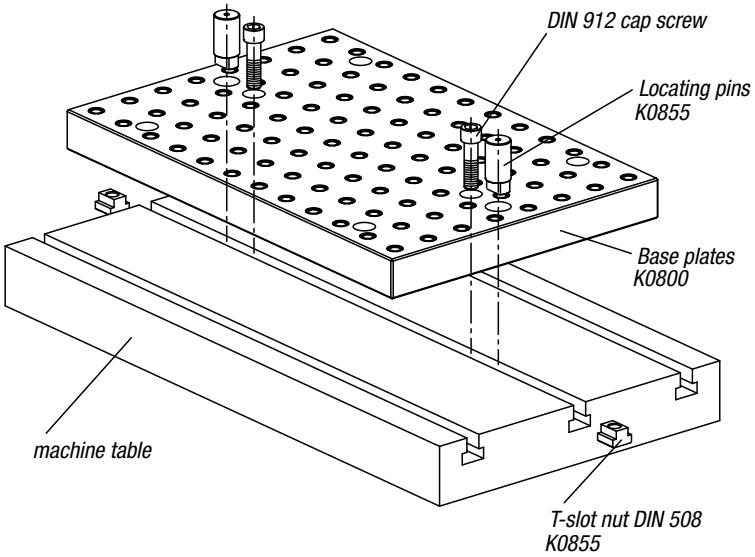
1. Mount stop plates on the machine table.
2. Attach stop points to the reference faces (stop plates) using socket head screws.



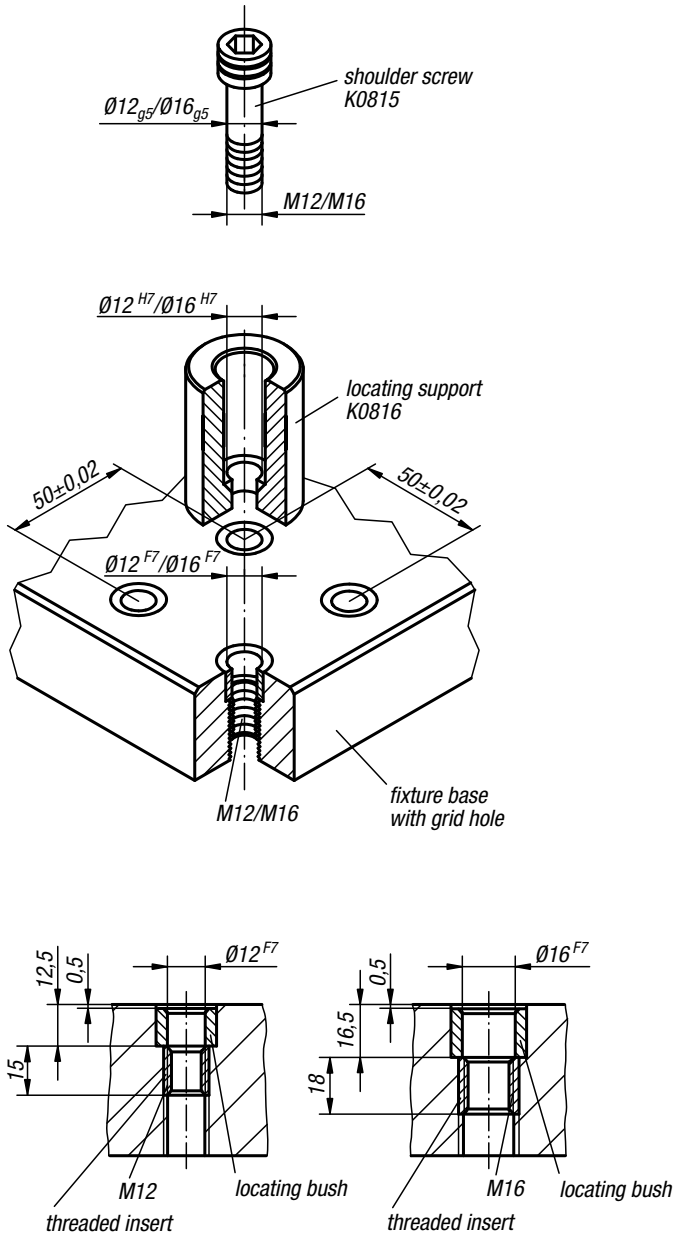
Positioning base elements on machine tables

Locating pins are used for positioning tooling plates K0800. The tooling plates each have four precision holes for the locating pins (two holes on each axis).

An M6 screw inserted into the head of the locating pin is used to insert this pin accurately into the T-slots or to remove it.



Grid holes and pitches



Grid hole:

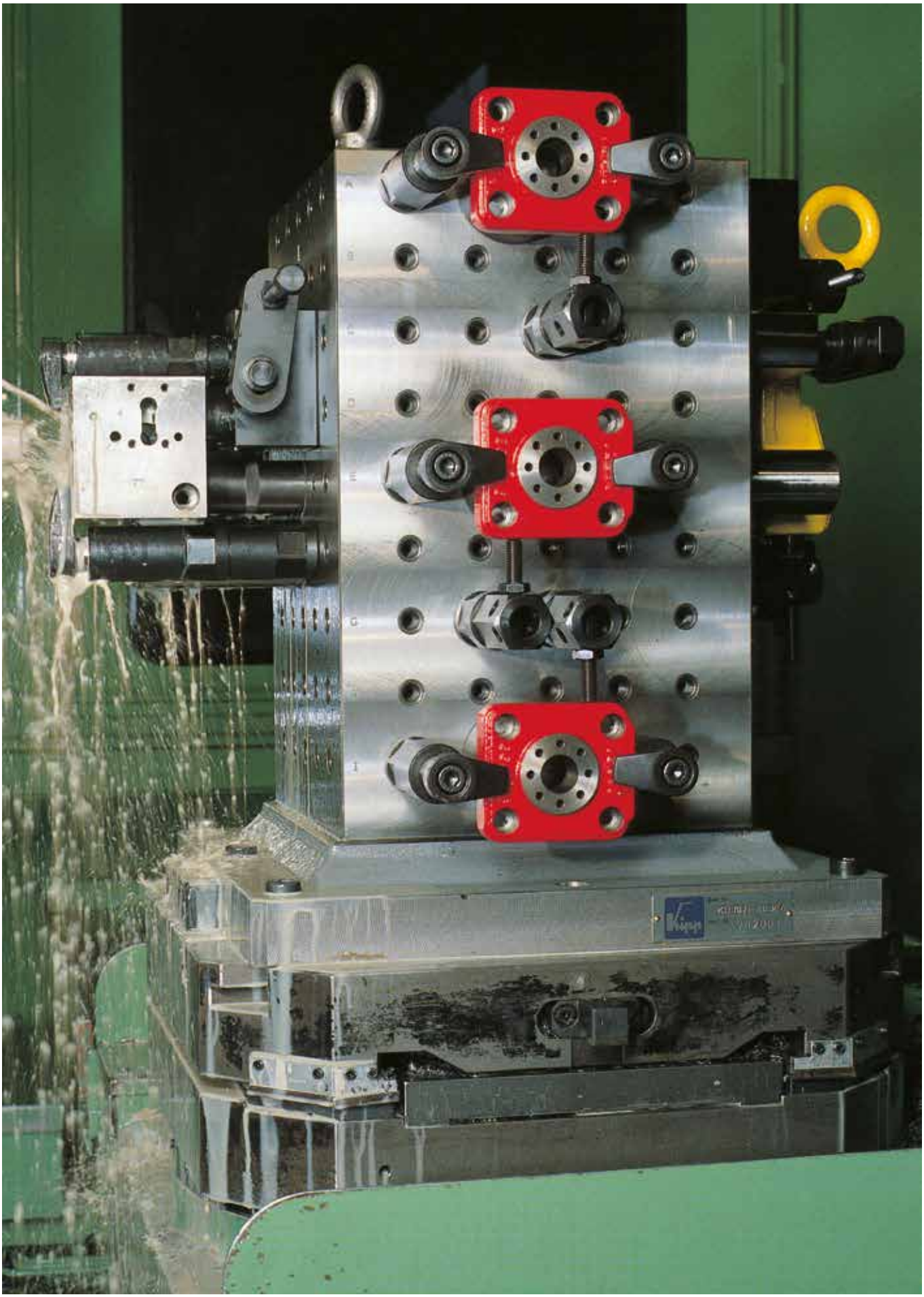
The characteristic feature of the grid hole is its dual function: the coaxial arrangement of the locating and the threaded parts allows positioning and fastening at the same time with one grid hole (see illustrations). As a result, the size of the fixture elements can be reduced to a minimum and their flexibility increased accordingly.

Each grid hole consists of two parts:

a) reamed bush. Material: hardened tool steel.

b) threaded insert. Material: carbon steel, tempered to ca. 1100-1300 N/mm^2.

Since the reamed bushes are recessed 0.5 mm from the surface of the fixture bases, the mounting surfaces can be re-machined in the event of wear.



Mineral cast KIPPblock

"KIPPblock" workholding towers are used as an alternative to cast or steel tooling columns. Due to its low specific weight (lighter than aluminium), mineral cast towers are suitable for keeping the loading on 4 and 5-axis machines as low as possible. Ideal for use on machines with high accelerations and rapid traverse speeds.

The flexibility of design is highly convincing. Steel jacketed versions are also available in a wide range of shapes and sizes.

ADVANTAGES:
· Outstanding absorption properties, 6-10 times better than grey cast iron
· Very low specific weight, lighter than aluminium
· Low heat conductivity
· Flexible planning regarding design
· Up to 30% increased service life of cutting tools

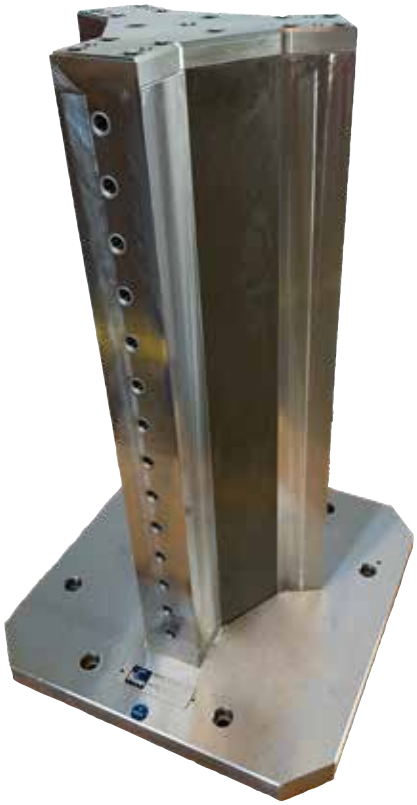
For many years mineral cast has been used as an alternative to iron castings and steel constructions. Today it is the leading technology for many applications. It is thanks to mineral cast that new innovations in electronics and medical technology were made possible.

MINERAL CAST TECHNOLOGY

1. Mineral cast is a duel component system consisting of a mineral filler and an epoxy resin bonding agent.
2. The mineral filler makes up roughly 90% of the total weight.
3. Mineral cast is produced using a cold casting method injected into precision negative moulds at room temperature.
4. Due to the true form and high precision casting method, added elements such as plates, thread inserts, guides or tubes can be precisely placed in the casting mould.

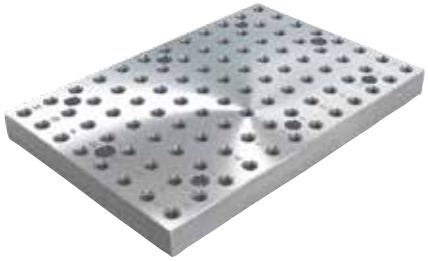
Mineral cast pyramid

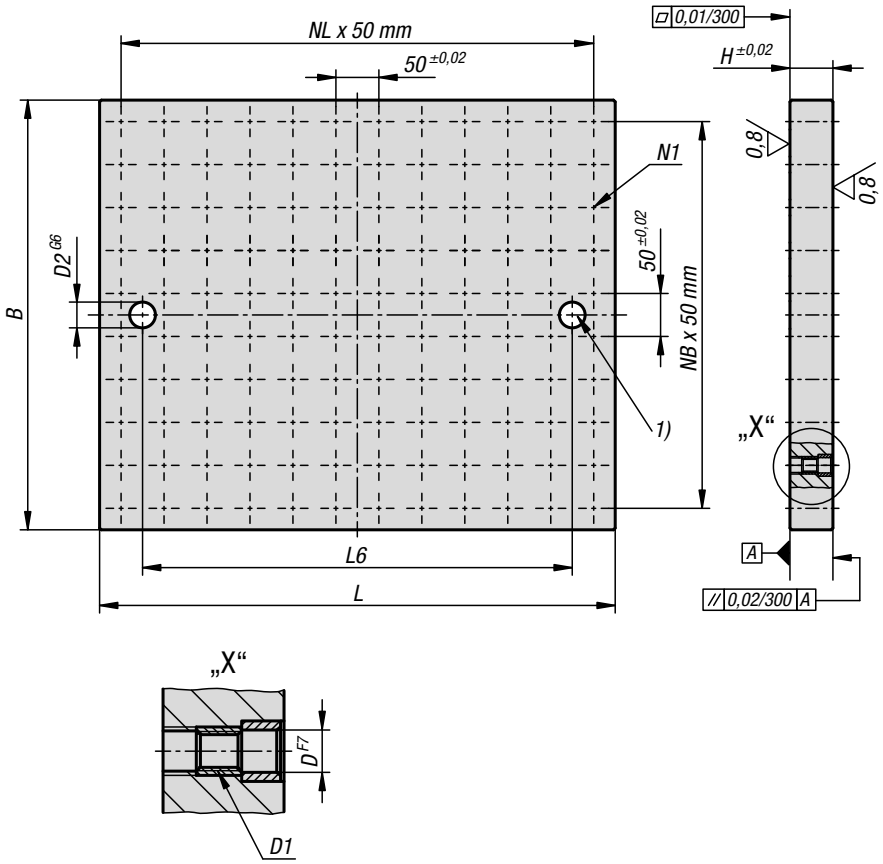
Mineral cast workholding tower with steel jacket



Baseplates, grey cast iron

with grid holes





Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0800.21240060

Note:
Grid spacing 50 ±0.02 mm.
Baseplates with grid holes are used for constructing modular fixtures. These baseplates are positioned and mounted directly on machine tables.
The two aligning holes are used to align the baseplate on the machine table.
Fastening holes are produced by the customer to suit their machine table.
The alphanumerically labelled grid holes guarantee a defined assignment of clamping elements by repeat setups.
Please order positioning pins to equip the baseplates separately.
Please order protection plugs to plug unused grid holes separately..
Ring bolts for hoisting are supplied.
Other dimensions available on request.

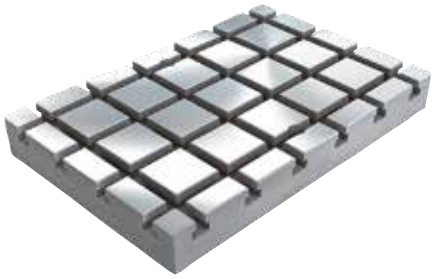
Drawing reference:
1) locating hole

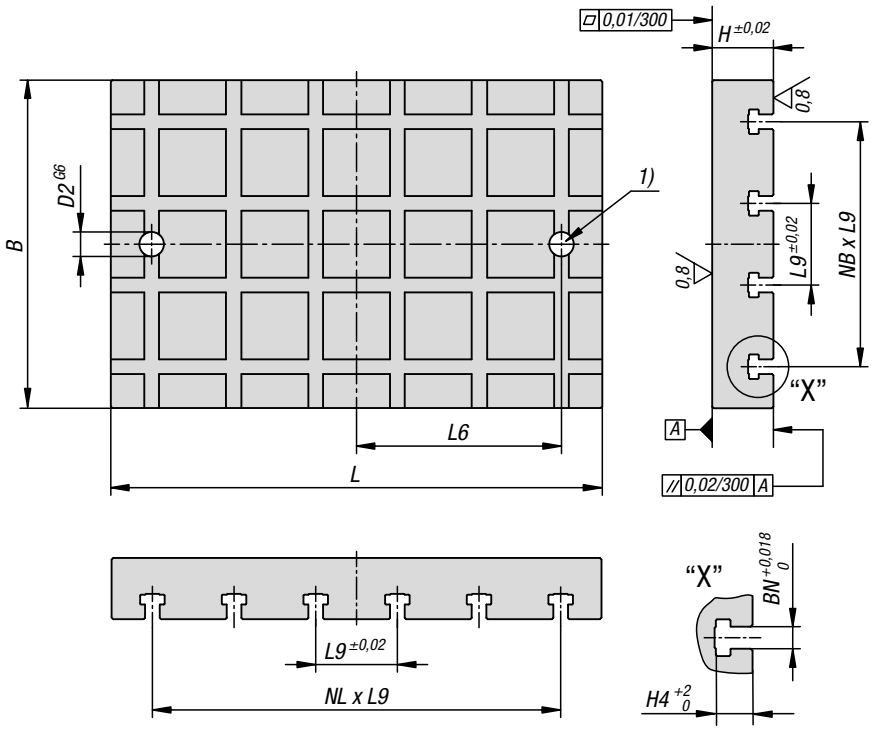
KIPP Baseplates, grey cast iron with grid holes

Order No.	L	B	H	L6	D	D1	D2	N1=No. of grid holes	NL=No. lengthwise	NB= No. across
K0800.21240060	600	400	50	500	12	M12	30	96	11	7
K0800.21250060	600	500	50	500	12	M12	30	120	11	9
K0800.21260060	600	600	50	500	12	M12	30	144	11	11
K0800.21240080	800	400	50	700	12	M12	30	128	15	7
K0800.21245090	900	450	50	800	12	M12	30	158	17	8
K0800.21250100	1000	500	50	900	12	M12	30	200	19	9
K0800.21260120	1200	600	50	1100	12	M12	30	288	23	11
K0800.21640060	600	400	50	500	16	M16	30	96	11	7
K0800.21650060	600	500	50	500	16	M16	30	120	11	9
K0800.21660060	600	600	50	500	16	M16	30	144	11	11
K0800.21640080	800	400	50	700	16	M16	30	128	15	7
K0800.21645090	900	450	50	800	16	M16	16	158	17	8
K0800.21650100	1000	500	50	900	16	M16	30	200	19	9
K0800.21660120	1200	600	50	1100	16	M16	30	288	23	11

Baseplates, grey cast iron

with T-slots





Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0800.31440060

Note:
Baseplates with T-slots are used for constructing modular fixtures. These baseplates are positioned and mounted directly on machine tables.
The precise longitudinal and transverse slot spacing ensures very high repeat clamping accuracy.
The two locating holes are used to align the baseplate on the machine table.
Fastening holes are produced by the customer to suit their machine table.
Please order locating pins to locate the baseplates separately.
Ring bolts with T-nuts for hoisting are supplied.
Other dimensions available on request.

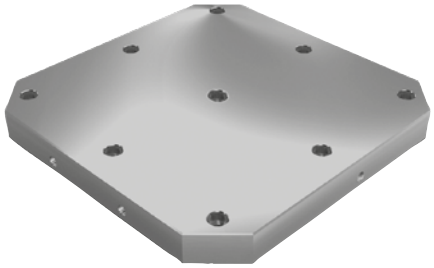
Drawing reference:
1) locating hole

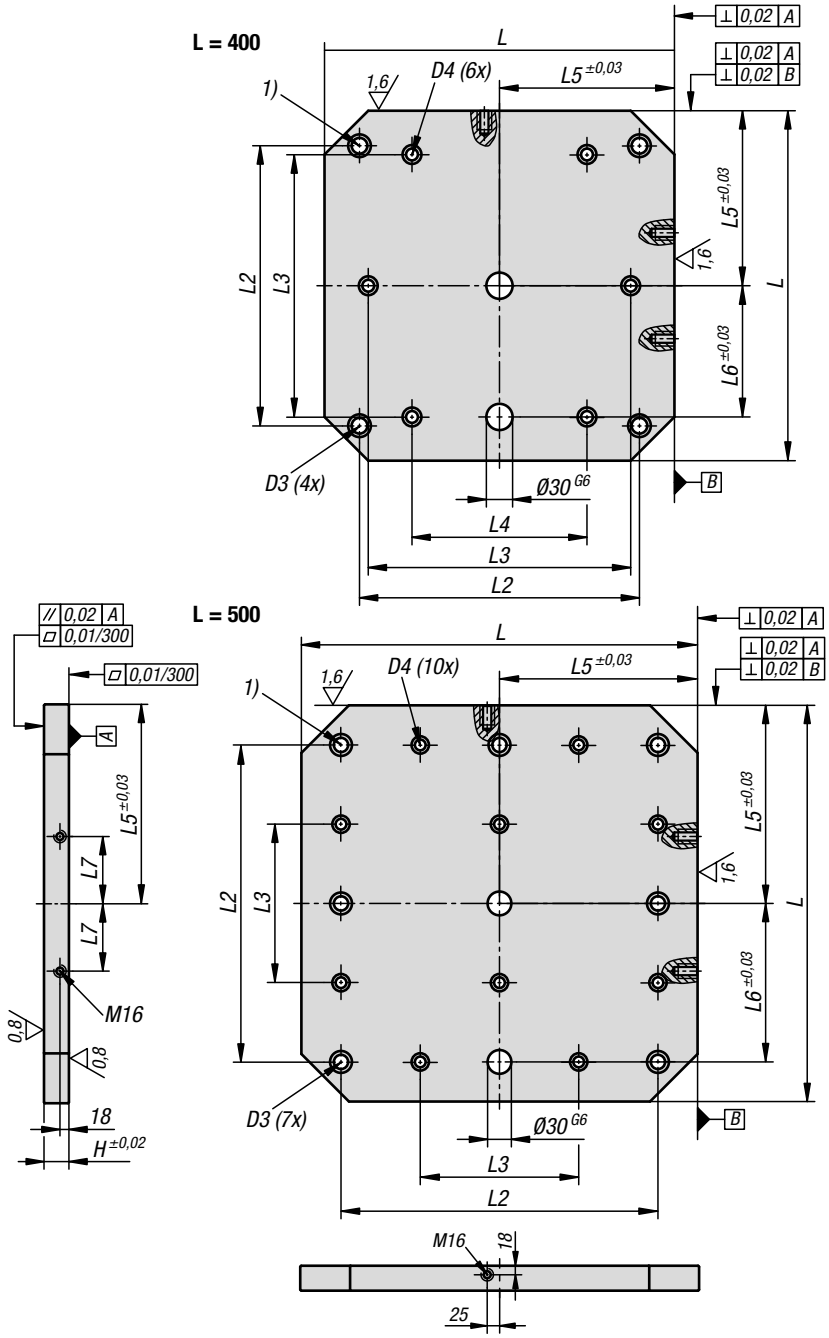
KIPP Baseplates, grey cast iron with T-slots

Order No. BN=Slot width 14	Order No. BN=Slot width 18	L	B	H	D2	L6	L9	NL=No. lengthwise	NB= No. across
K0800.31440060	K0800.31840060	600	400	60/75	30	500	100	5	3
K0800.31450060	K0800.31850060	600	500	60/75	30	500	100	5	4
K0800.31460060	K0800.31860060	600	600	60/75	30	500	100	5	5
K0800.31440080	K0800.31840080	800	400	60/75	30	700	100	7	3
K0800.31445090	K0800.31845090	900	450	60/75	30	800	100	8	3
K0800.31450100	K0800.31850100	1000	500	60/75	30	900	100	9	4
K0800.31460120	K0800.31860120	1200	600	60/75	30	1100	100	11	5

Subplates, grey cast iron

with pre-machined clamping faces





Material:
GJL 300.

Version:
Support and mounting surfaces ground

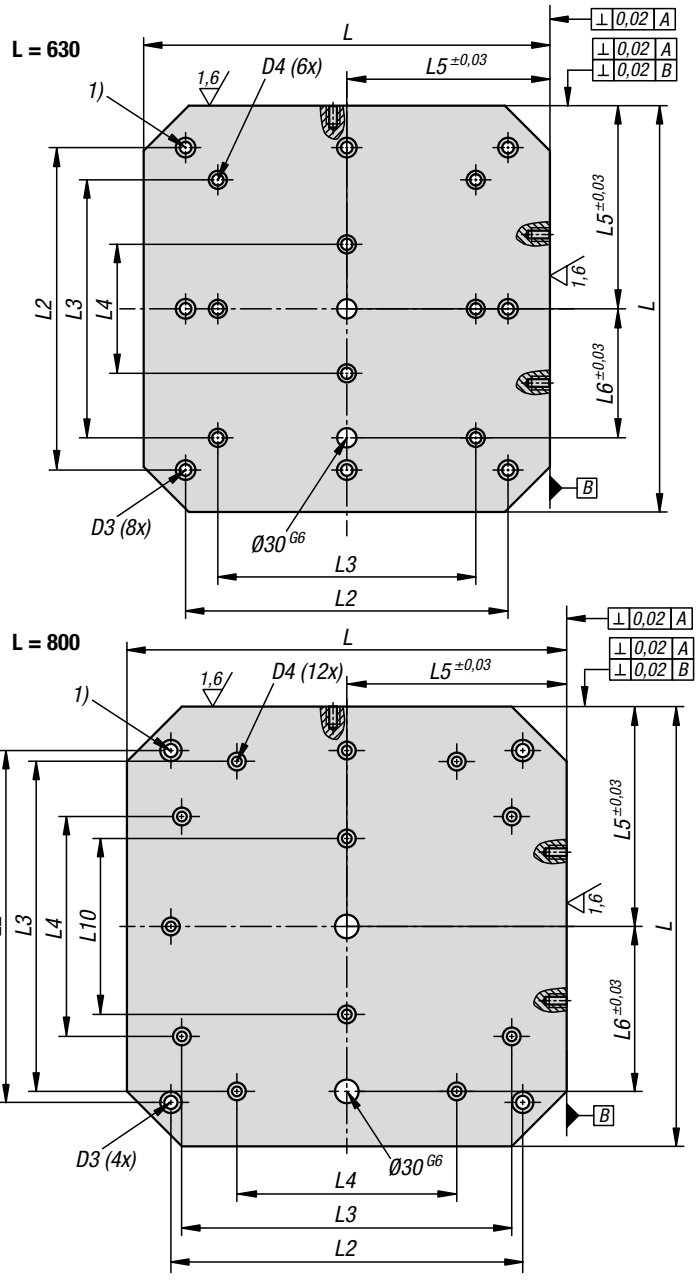
Sample order:
K0806.1004040

Note:
Subplates with pre-machined clamping faces provide a quick and economic way of producing bodies with specific grid or individual holes. The subplates conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Subplates, grey cast iron

with pre-machined clamping faces

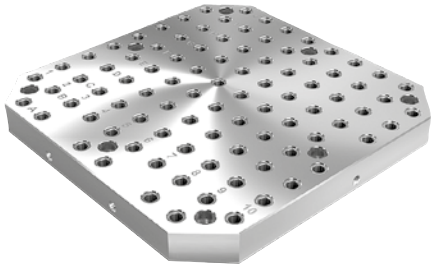


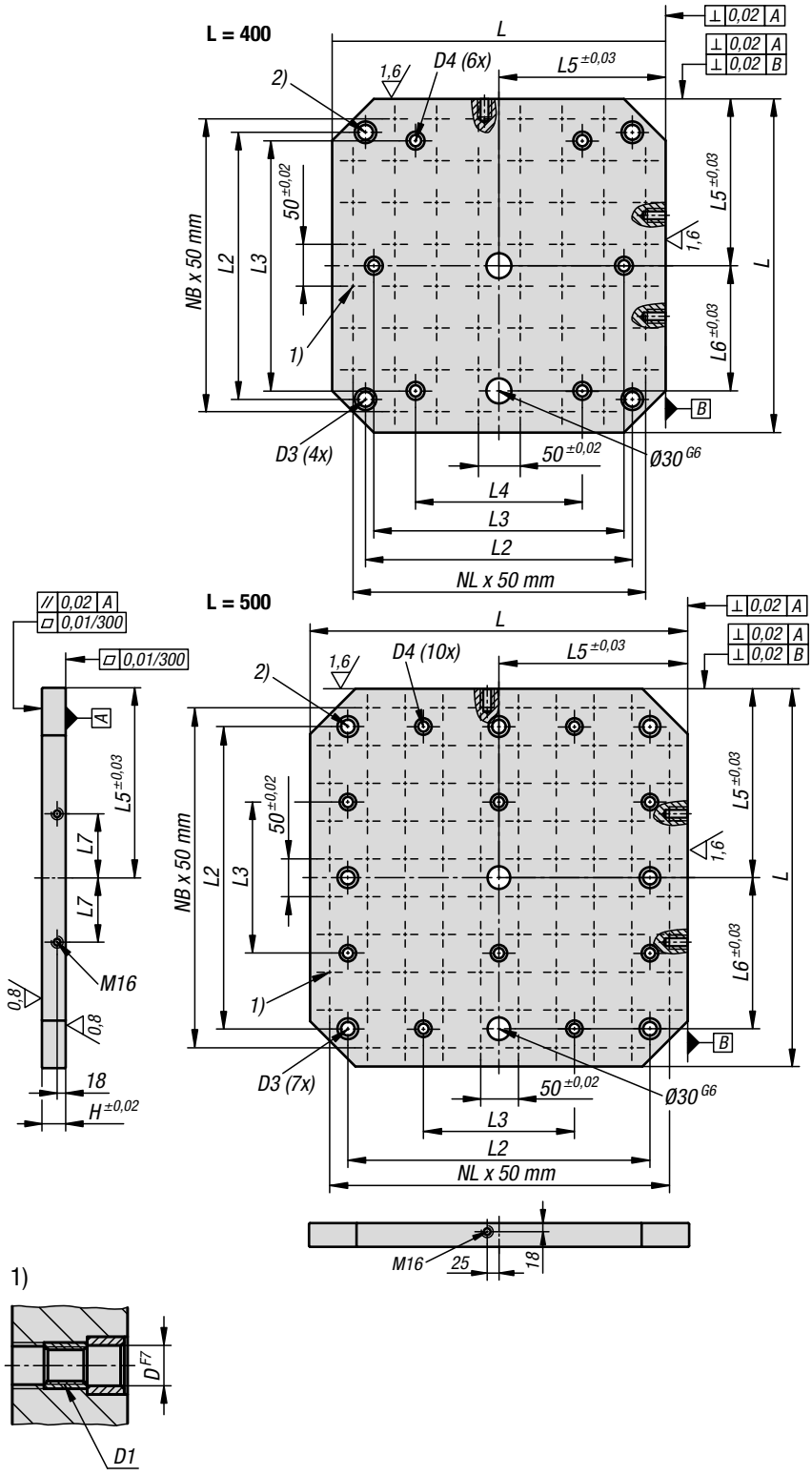
KIPP Subplates, grey cast iron with pre-machined clamping faces

Order No.	L	H	D3	D4	L2	L3	L4	L5	L6	L7	L10
K0806.1004040	400	50	M16	M12	320	300	200	200	150	55	-
K0806.1005050	500	50	M16	M12	400	200	-	250	200	75	-
K0806.1006363	630	50	M16	M16	500	400	200	315	200	100	-
K0806.1008080	800	50	M16	M16	640	600	400	400	300	135	320

Subplates, grey cast iron

with grid holes





Material:
GJL 300.

Version:
Support and mounting surfaces ground

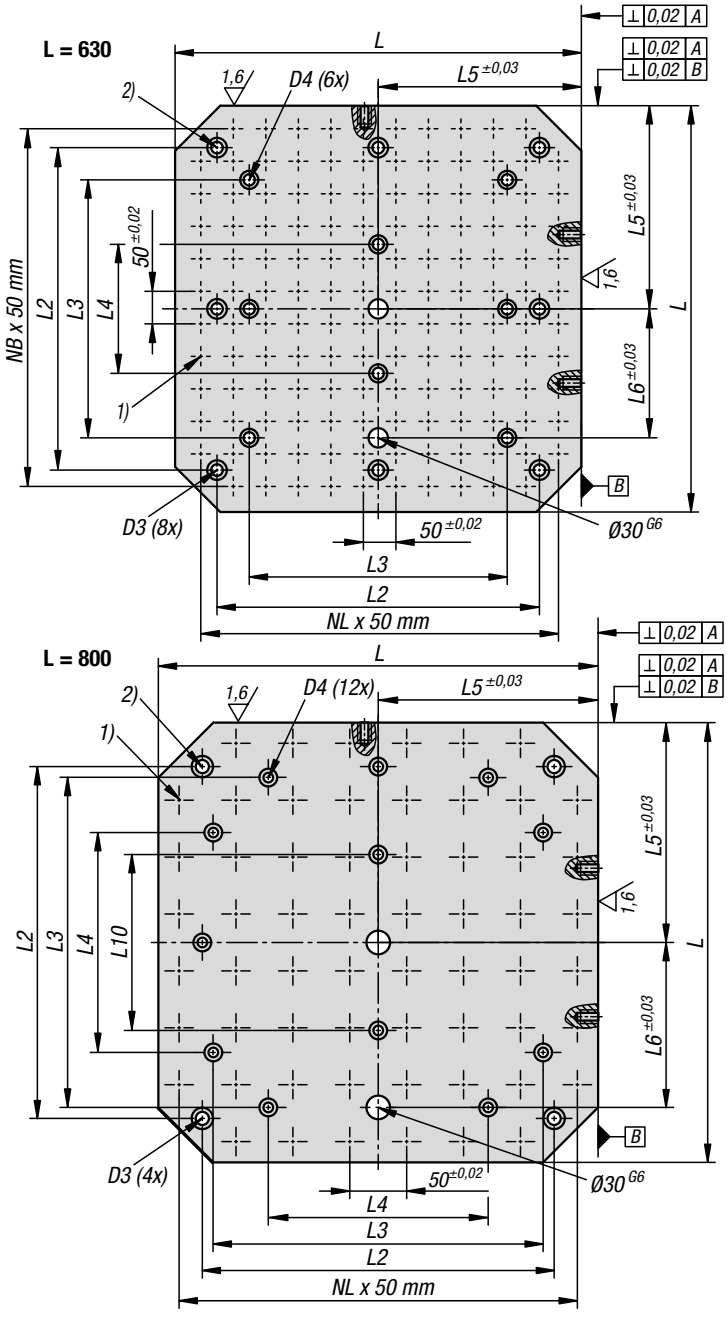
Sample order:
K0806.2124040

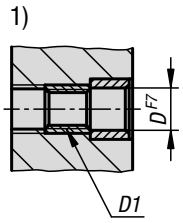
Note:
Grid spacing 50 ±0.02 mm.
Plates with grid holes are used for constructing modular fixtures. These plates are positioned and fastend directly on machine tables.
The alphanumerically labelled grid holes guarantee a defined assignment of clamping elements by repeat setups.
The subplates conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

Subplates, grey cast iron

with grid holes



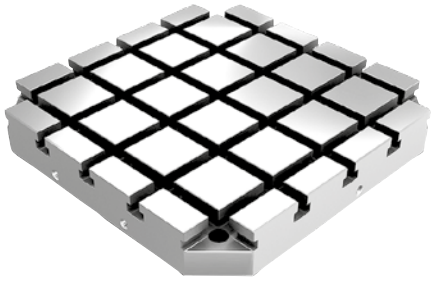


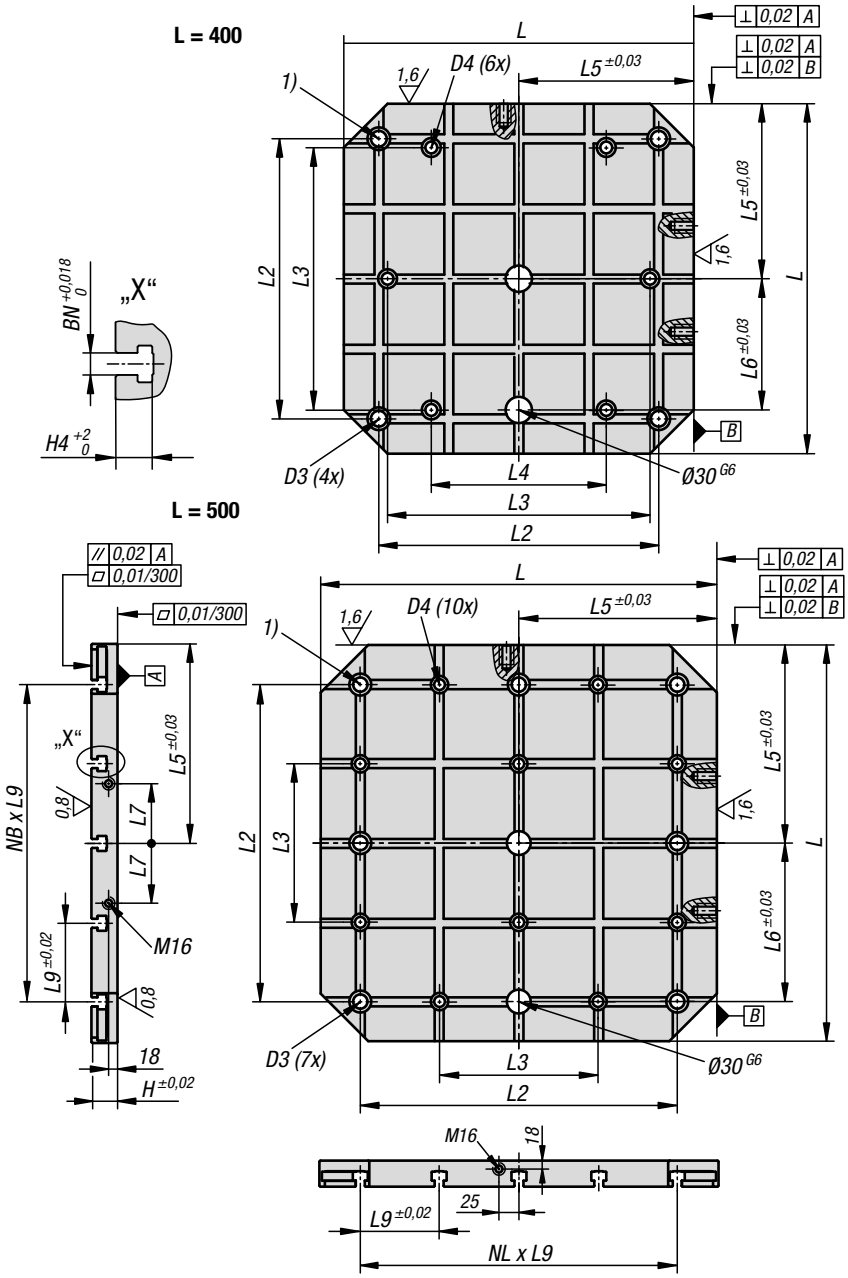
KIPP Subplates, grey cast iron with grid holes

Order No.	L	H	D	D1	D3	D4	L2	L3	L4	L5	L6	L7	L10	N1=No. of grid holes	NL=No. lengthwise	NB= No. across
K0806.2124040	400	50	12	M12	M16	M12	320	300	200	200	150	55	-	59	7	7
K0806.2125050	500	50	12	M12	M16	M12	400	200	-	250	200	75	-	93	9	9
K0806.2126363	630	50	12	M12	M16	M16	500	400	200	315	200	100	-	139	11	11
K0806.2128080	800	50	12	M12	M16	M16	640	600	400	400	300	135	320	237	15	15
K0806.2164040	400	50	16	M16	M16	M12	320	300	200	200	150	55	-	59	7	7
K0806.2165050	500	50	16	M16	M16	M12	400	200	-	250	200	75	-	93	9	9
K0806.2166363	630	50	16	M16	M16	M16	500	400	200	315	200	100	-	139	11	11
K0806.2168080	800	50	16	M16	M16	M16	640	600	400	400	300	135	320	237	15	15

Subplates, grey cast iron

with T-slots





Material:
GJL 300.

Version:
Support and mounting surfaces ground

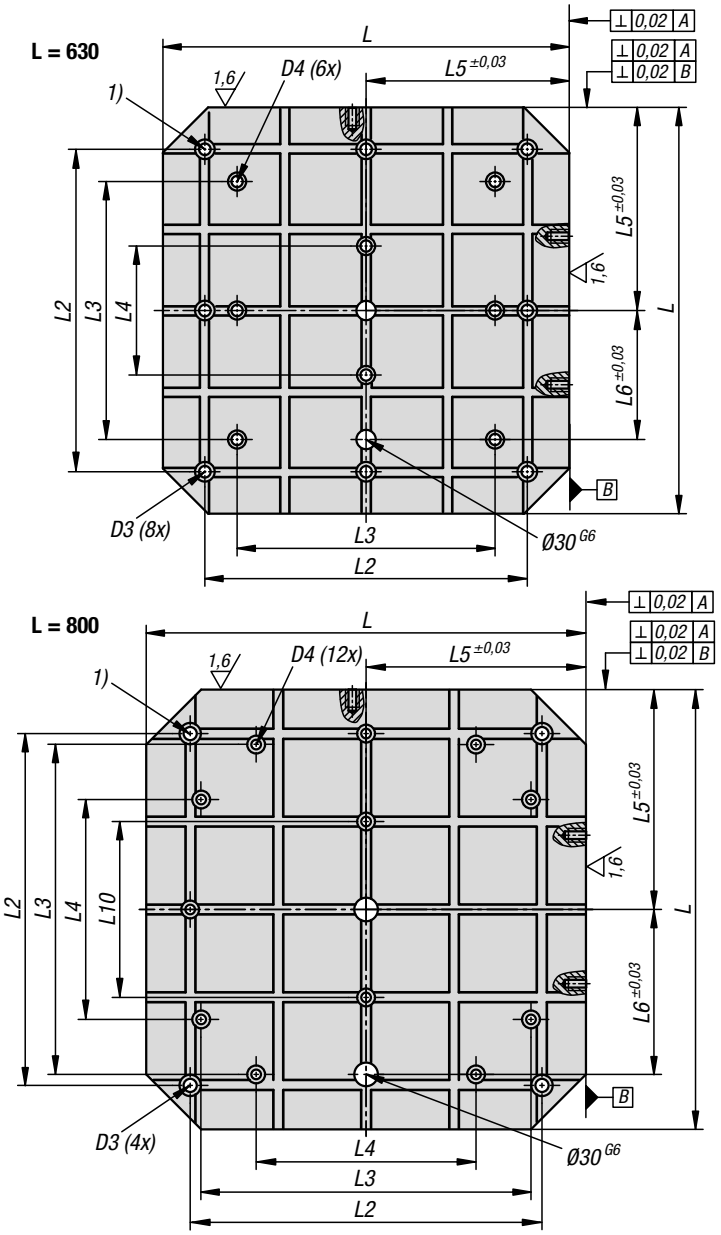
Sample order:
K0806.3144040

Note:
Subplates with T-slots are used for constructing modular fixtures. These subplates are positioned and fastened directly on machine tables.
The precise longitudinal and transverse slot spacing ensures very high repeat clamping accuracy. The subplates conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately. Ring bolts with T-nuts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Subplates, grey cast iron

with T-slots



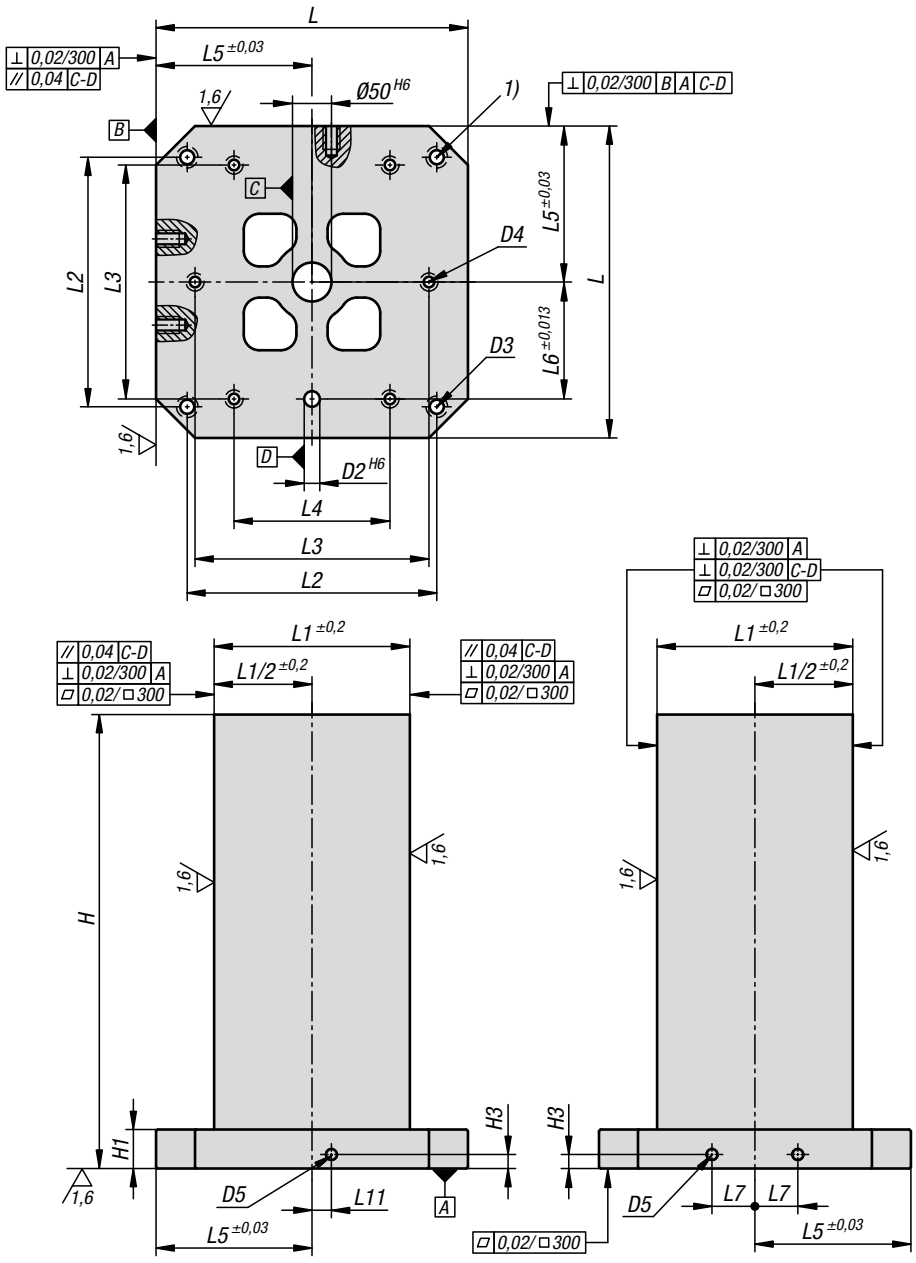
KIPP Subplates, grey cast iron with T-slots

Order No.	L	H	D3	D4	L2	L3	L4	L5	L6	L7	L9	L10	Slot width	NL=No. lengthwise	NB= No. across
K0806.3144040	400	60	M16	M12	320	300	200	200	150	55	80	-	14	4	4
K0806.3145050	500	60	M16	M12	400	200	-	250	200	75	100	-	14	4	4
K0806.3146363	630	60	M16	M16	500	400	200	315	200	100	125	-	14	4	4
K0806.3148080	800	60	M16	M16	640	600	400	400	300	135	160	320	14	4	4
K0806.3184040	400	75	M16	M12	320	300	200	200	150	55	80	-	18	4	4
K0806.3185050	500	75	M16	M12	400	200	-	250	200	75	100	-	18	4	4
K0806.3186363	630	75	M16	M16	500	400	200	315	200	100	125	-	18	4	4
K0806.3188080	800	75	M16	M16	640	600	400	400	300	135	160	320	18	4	4

Workholding cubes, grey cast iron

with pre-machined clamping faces

L = 300/400



Material:
GJL 300.

Version:
Support and clamping faces are precision-machined. The clamping faces have a +0.5 mm allowance.

Sample order:
K0805.100030050

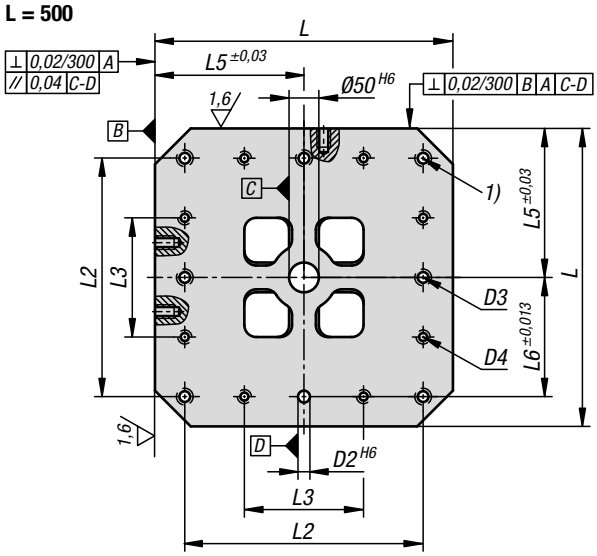
Note:
Workholding cubes with pre-machined clamping faces provide a quick and economic way of producing base elements with specific grid or individual holes. The foot is ready for mounting on the machine table. The four clamping faces can be machined to the end dimensions by the user. The workholding cubes conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

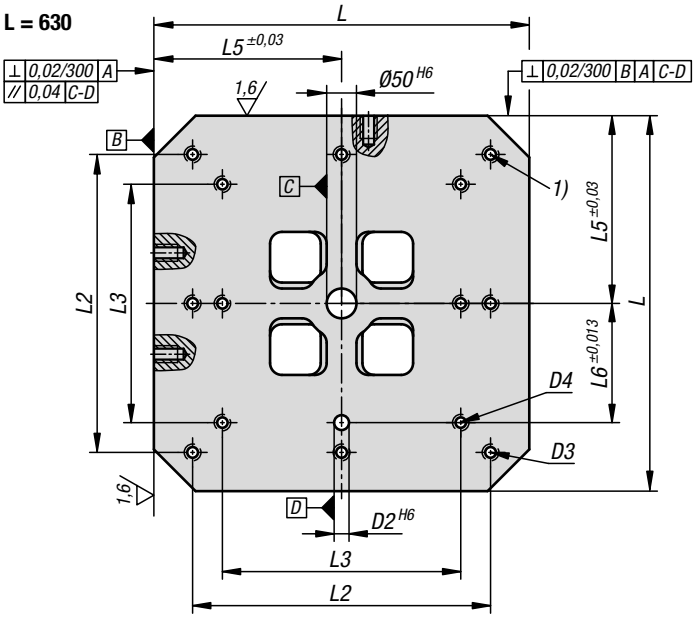
Workholding cubes, grey cast iron

with pre-machined clamping faces

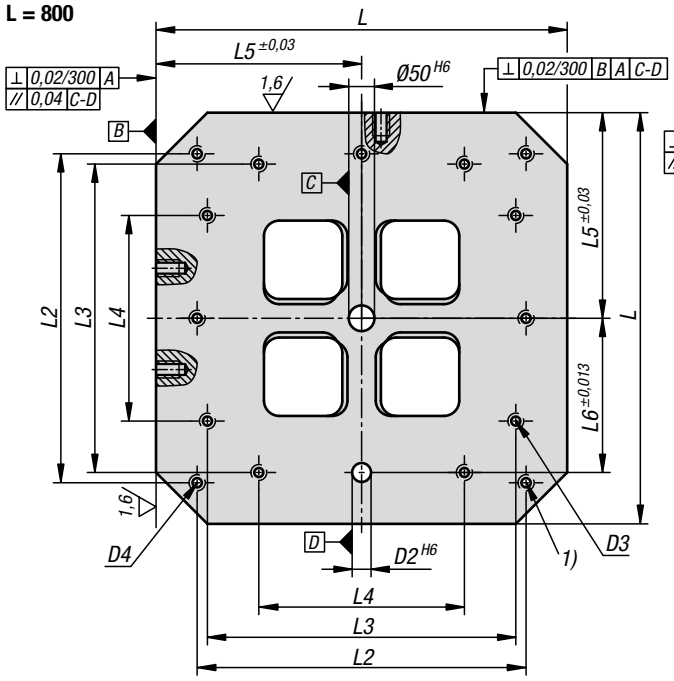
L = 500



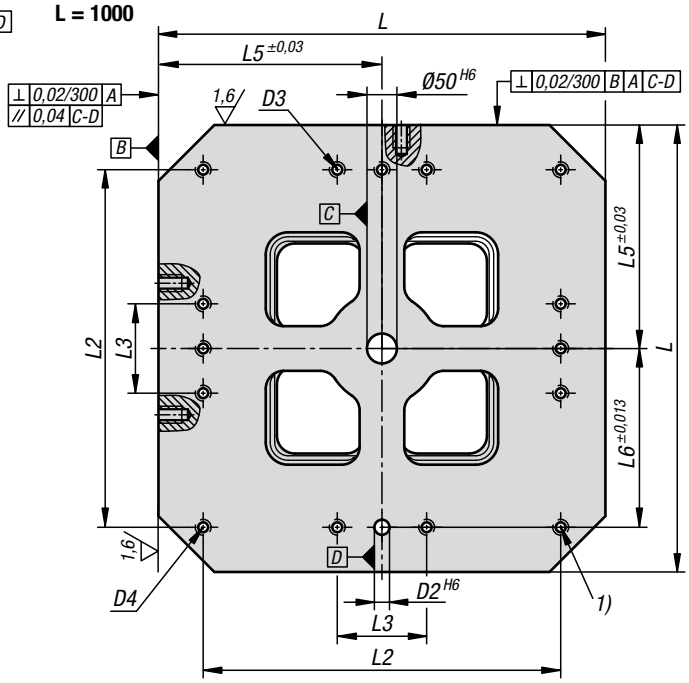
L = 630



L = 800



L = 1000

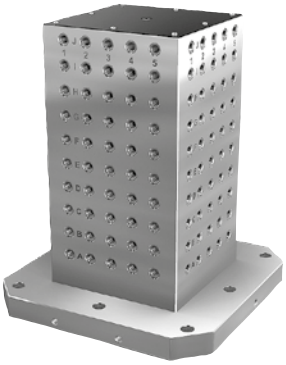


KIPP Workholding cubes, grey cast iron with pre-machined clamping faces

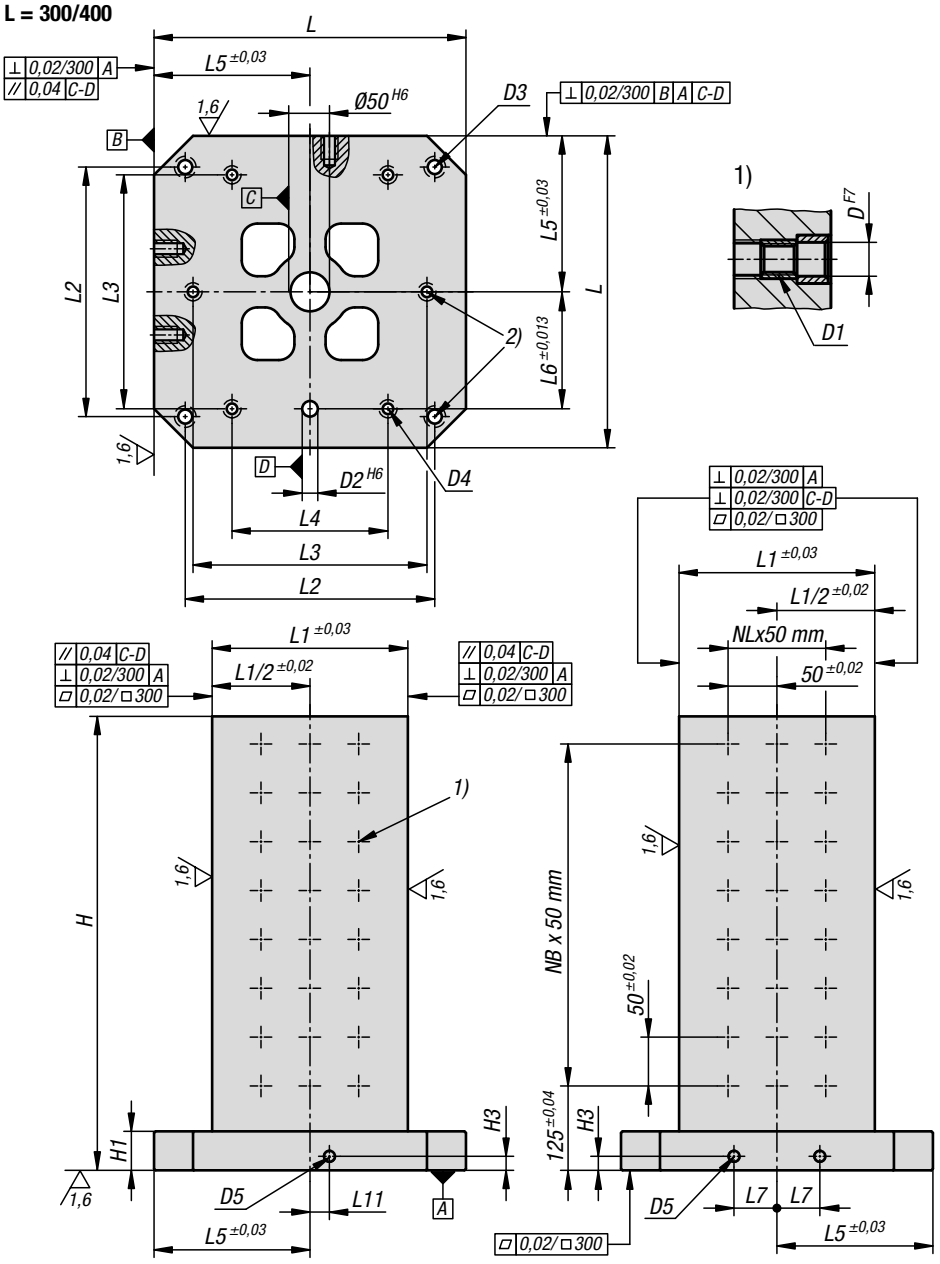
Order No.	L	H	H1	D2	D3	D4	D5	H3	L1	L2	L3	L4	L5	L6	L7	L11
K0805.100030050	300	500	50	20	M12	M10	M12	15	151	250	200	-	150	100	40	0
K0805.100040050	400	500	50	20	M16	M12	M16	18	251	320	300	200	200	150	55	25
K0805.100040065	400	650	50	20	M16	M12	M16	18	251	320	300	200	200	150	55	25
K0805.100050060	500	600	50	20	M16	M12	M16	18	301	400	200	-	250	200	75	25
K0805.100050075	500	750	50	20	M16	M12	M16	18	301	400	200	-	250	200	75	25
K0805.100063070	630	700	50	25	M16	M16	M16	18	351	500	400	-	315	200	100	25
K0805.100063085	630	850	50	25	M16	M16	M16	18	351	500	400	-	315	200	100	25
K0805.100080080	800	800	50	25	M16	M16	M16	18	501	640	600	400	400	300	135	25
K0805.100080100	800	1000	50	25	M16	M16	M16	18	501	640	600	400	400	300	135	25
K0805.100100100	1000	1000	55	25	M20	M20	M16	18	601	800	200	-	500	400	165	25
K0805.100100125	1000	1250	55	25	M20	M20	M16	18	601	800	200	-	500	400	165	25

Workholding cubes, grey cast iron

with grid holes



L = 300/400



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0805.212030050

Note:
Grid spacing 50 ±0.02 mm.
Tombstones with grid holes are used on horizontal machining centres.
The alphanumerically labelled grid holes guarantee a defined assignment of clamping elements by repeat setups.
The tombstones conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

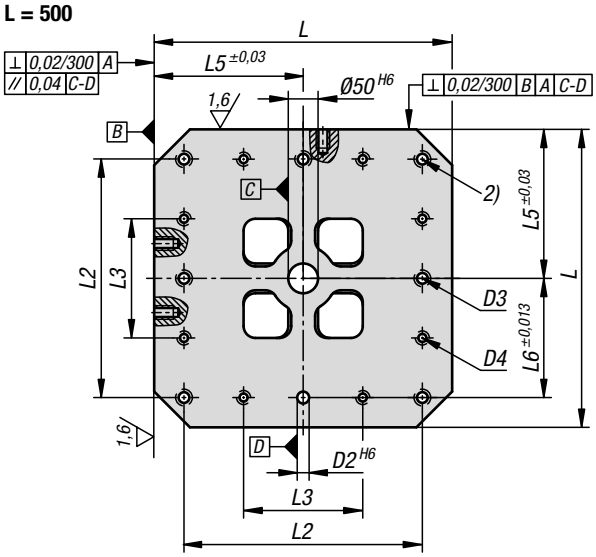
KIPP Workholding cubes, grey cast iron with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L	H	H1	D1	D2	D3	D4	D5	H3	L1	L2
K0805.212030050	K0805.216030050	300	500	50	M12/M16	20	M12	M10	M12	15	150	250
K0805.212040050	K0805.216040050	400	500	50	M12/M16	20	M16	M12	M16	18	250	320
K0805.212040065	K0805.216040065	400	650	50	M12/M16	20	M16	M12	M16	18	250	320
K0805.212050060	K0805.216050060	500	600	50	M12/M16	20	M16	M12	M16	18	300	400
K0805.212050075	K0805.216050075	500	750	50	M12/M16	20	M16	M12	M16	18	300	400
K0805.212063070	K0805.216063070	630	700	50	M12/M16	25	M16	M16	M16	18	350	500
K0805.212063085	K0805.216063085	630	850	50	M12/M16	25	M16	M16	M16	18	350	500
K0805.212080080	K0805.216080080	800	800	50	M12/M16	25	M16	M16	M16	18	500	640
K0805.212080100	K0805.216080100	800	1000	50	M12/M16	25	M16	M16	M16	18	500	640
K0805.212100100	K0805.216100100	1000	1000	55	M12/M16	25	M20	M20	M16	18	600	800
K0805.212100125	K0805.216100125	1000	1250	55	M12/M16	25	M20	M20	M16	18	600	800

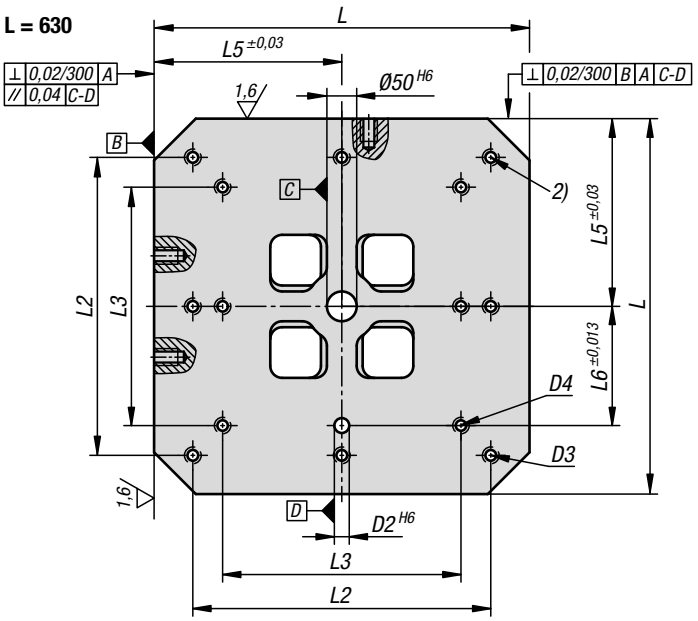
Workholding cubes, grey cast iron

with grid holes

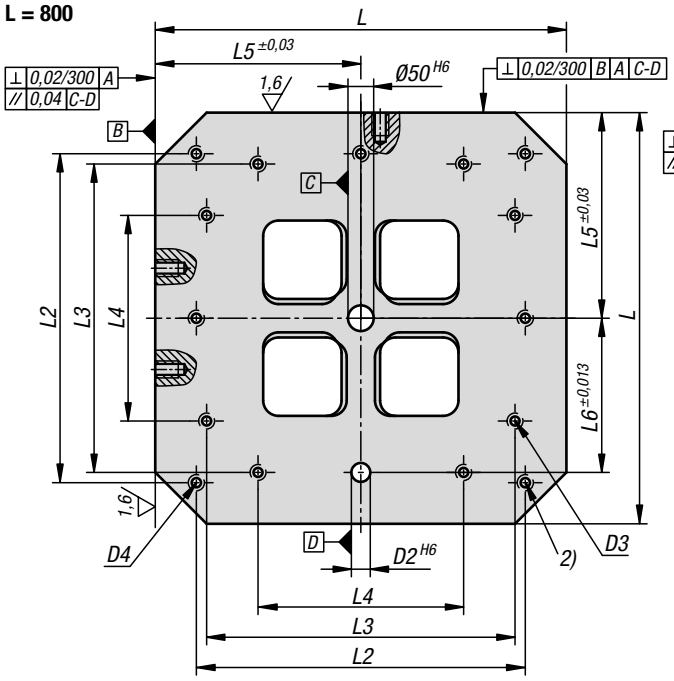
L = 500



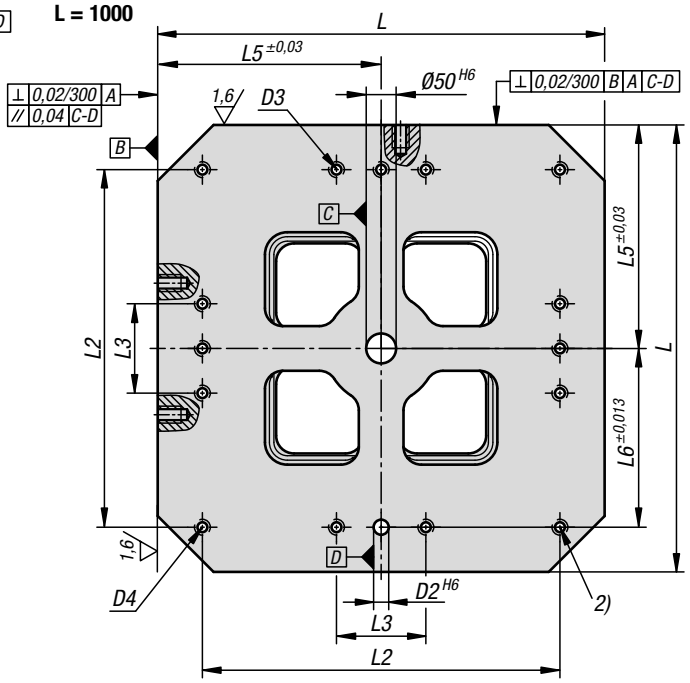
L = 630



L = 800



L = 1000



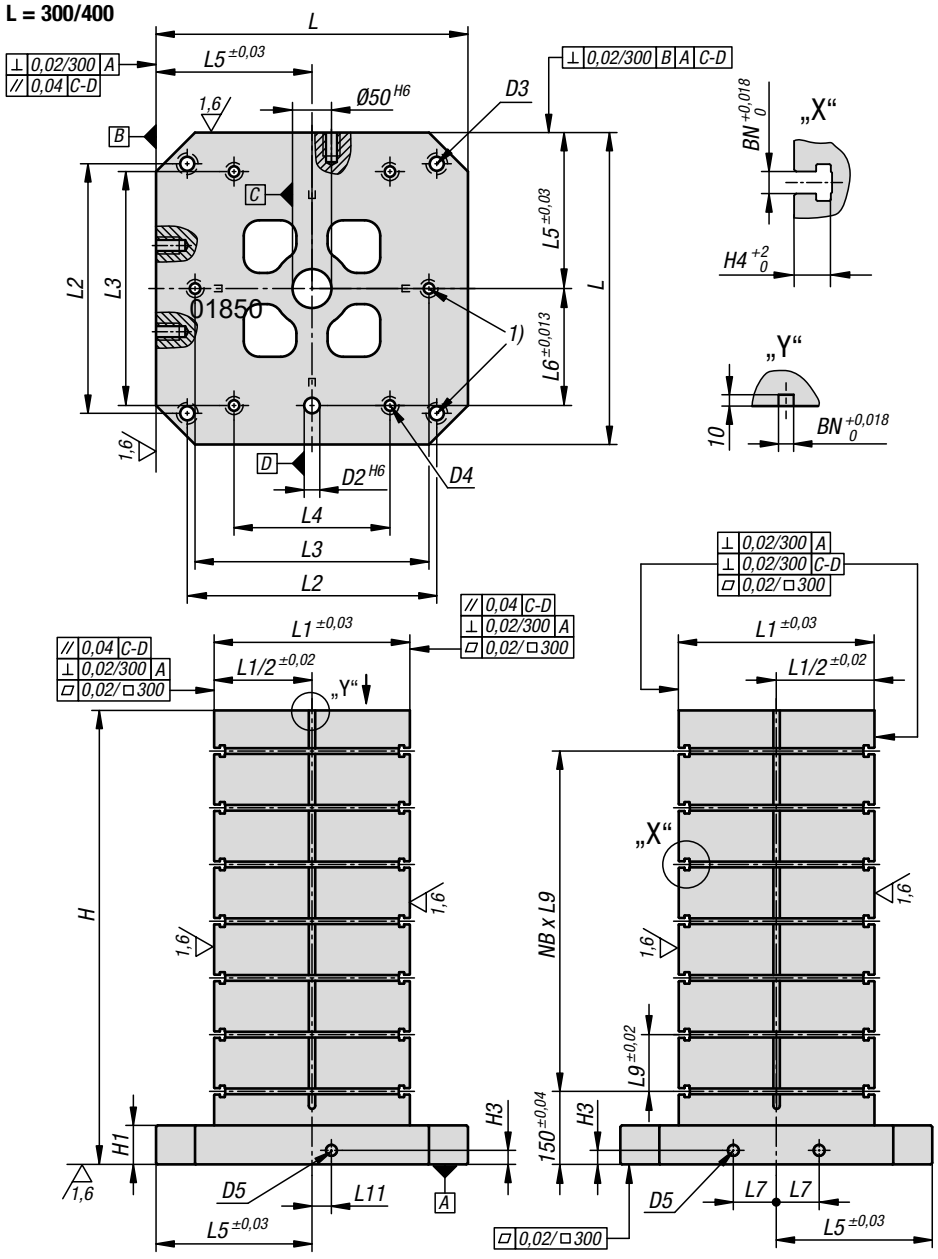
KIPP Workholding cubes, grey cast iron with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L3	L4	L5	L6	L7	L11	No. of grid holes	NL=No. lengthwise	NB= No. across
K0805.212030050	K0805.216030050	200	-	150	100	40	0	64	1	7
K0805.212040050	K0805.216040050	300	200	200	150	55	25	128	3	7
K0805.212040065	K0805.216040065	300	200	200	150	55	25	176	3	10
K0805.212050060	K0805.216050060	200	-	250	200	75	25	200	4	9
K0805.212050075	K0805.216050075	200	-	250	200	75	25	260	4	12
K0805.212063070	K0805.216063070	400	-	315	200	100	25	288	5	11
K0805.212063085	K0805.216063085	400	-	315	200	100	25	360	5	14
K0805.212080080	K0805.216080080	600	400	400	300	135	25	504	8	13
K0805.212080100	K0805.216080100	600	400	400	300	135	25	648	8	17
K0805.212100100	K0805.216100100	200	-	500	400	165	25	792	10	17
K0805.212100125	K0805.216100125	200	-	500	400	165	25	1012	10	22

Workholding cubes, grey cast iron

with T-slots

L = 300/400



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0805.314040050

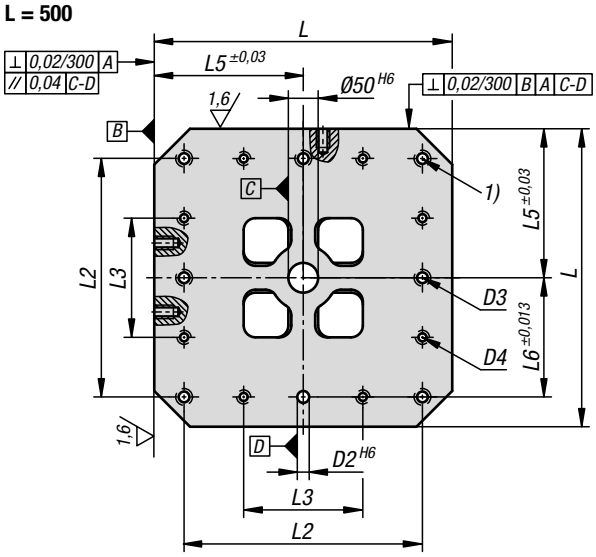
Note:
Workholding cubes with T-slots are used for constructing modular fixtures on horizontal machines.
The precise longitudinal and transverse slot spacing ensures very high repeat clamping accuracy.
The workholding cubes conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

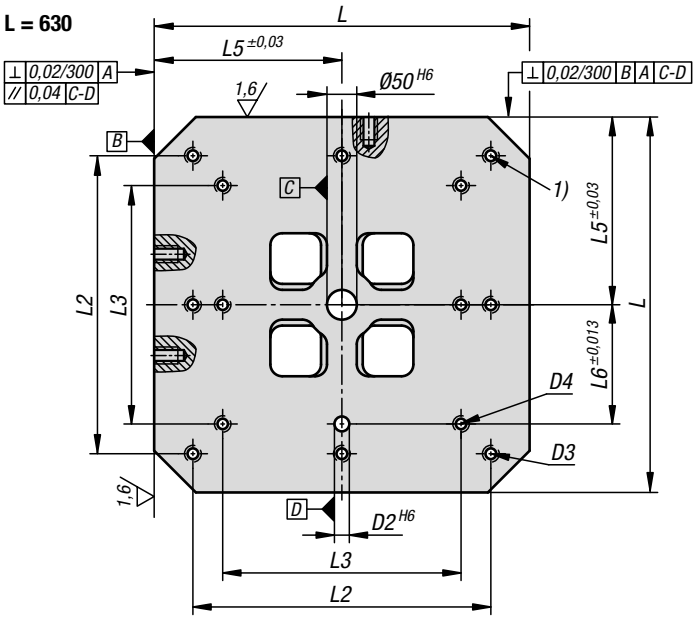
Workholding cubes, grey cast iron

with T-slots

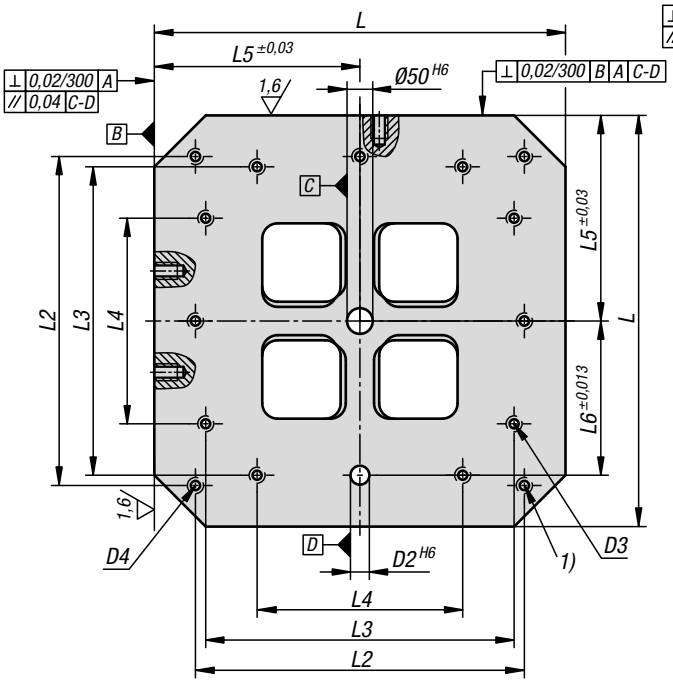
L = 500



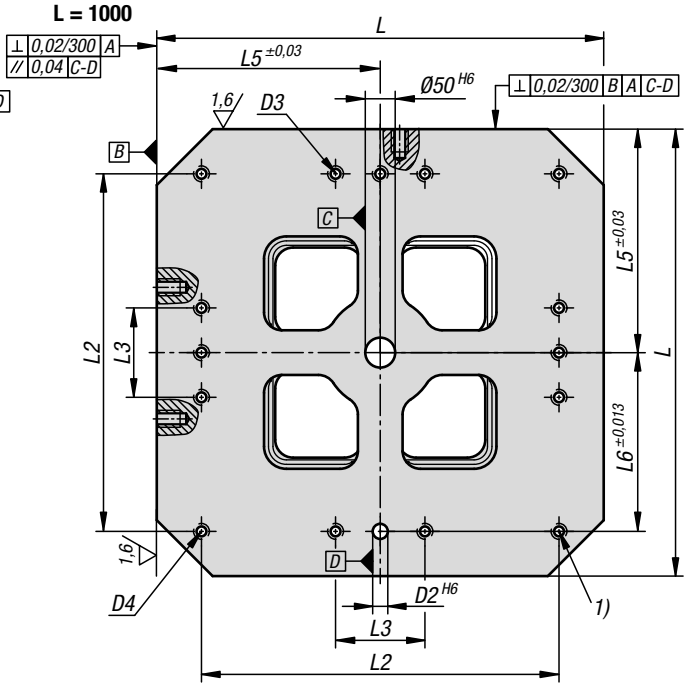
L = 630



L = 800



L = 1000

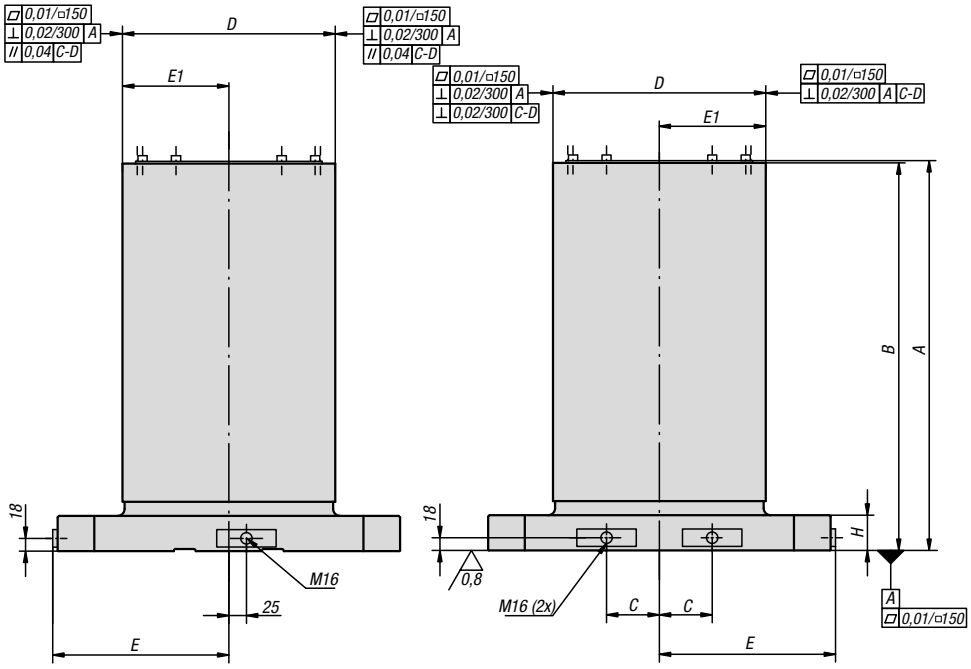


KIPP Workholding cubes, grey cast iron with T-slots

Order No. BN=Slot width 14	Order No. BN=Slot width 18	L	H	H1	D2	D3	D4	D5	H3	L1	L2	L3	L4	L5	L6	L7	L9	L11	NB= No. across
K0805.314040050	K0805.318040050	400	500	50	20	M16	M12	M16	18	250	320	300	200	200	150	55	100	25	3
K0805.314040065	K0805.318040065	400	650	50	20	M16	M12	M16	18	250	320	300	200	200	150	55	100	25	4
K0805.314050060	K0805.318050060	500	600	50	20	M16	M12	M16	18	300	400	200	-	250	200	75	100	25	4
K0805.314050075	K0805.318050075	500	750	50	20	M16	M12	M16	18	300	400	200	-	250	200	75	100	25	5
K0805.314063070	K0805.318063070	630	700	50	25	M16	M16	M16	18	350	500	400	-	315	200	100	125	25	4
K0805.314063085	K0805.318063085	630	850	50	25	M16	M16	M16	18	350	500	400	-	315	200	100	125	25	5
K0805.314080080	K0805.318080080	800	800	50	25	M16	M16	M16	18	500	640	600	400	400	300	135	150	25	4
K0805.314080100	K0805.318080100	800	1000	50	25	M16	M16	M16	18	500	640	600	400	400	300	135	150	25	5
K0805.314100100	K0805.318100100	1000	1000	55	25	M20	M20	M16	18	600	800	200	-	500	400	165	160	25	5
K0805.314100125	K0805.318100125	1000	1250	55	25	M20	M20	M16	18	600	800	200	-	500	400	165	160	25	6

Tombstones cube

without grid holes



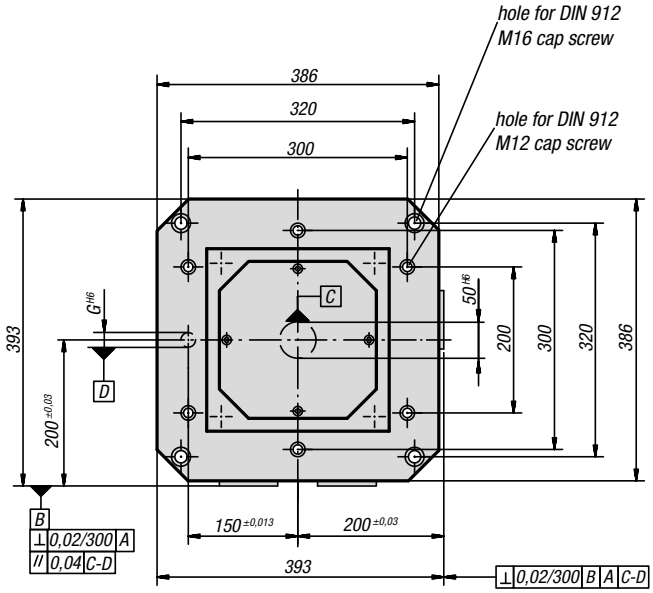
Material:
GJL 300.

Version:
Reference surfaces precision machined.
The clamping surfaces have 0.5 mm allowance.

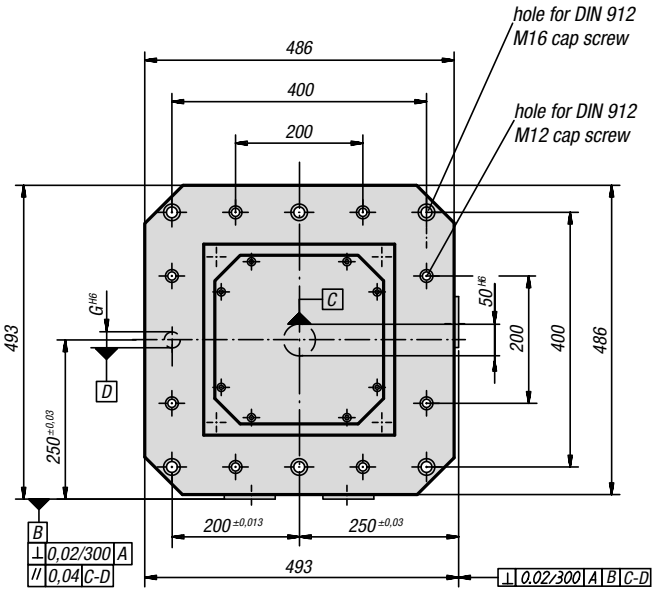
Sample order:
K0805.005030

Note:
The cube tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.
Ring bolts for lifting are supplied. A cover prevents the cavities filling with swarf.

K0805.0040251



K0805.005030
K0805.0050301



KIPP Cube tombstones without grid holes

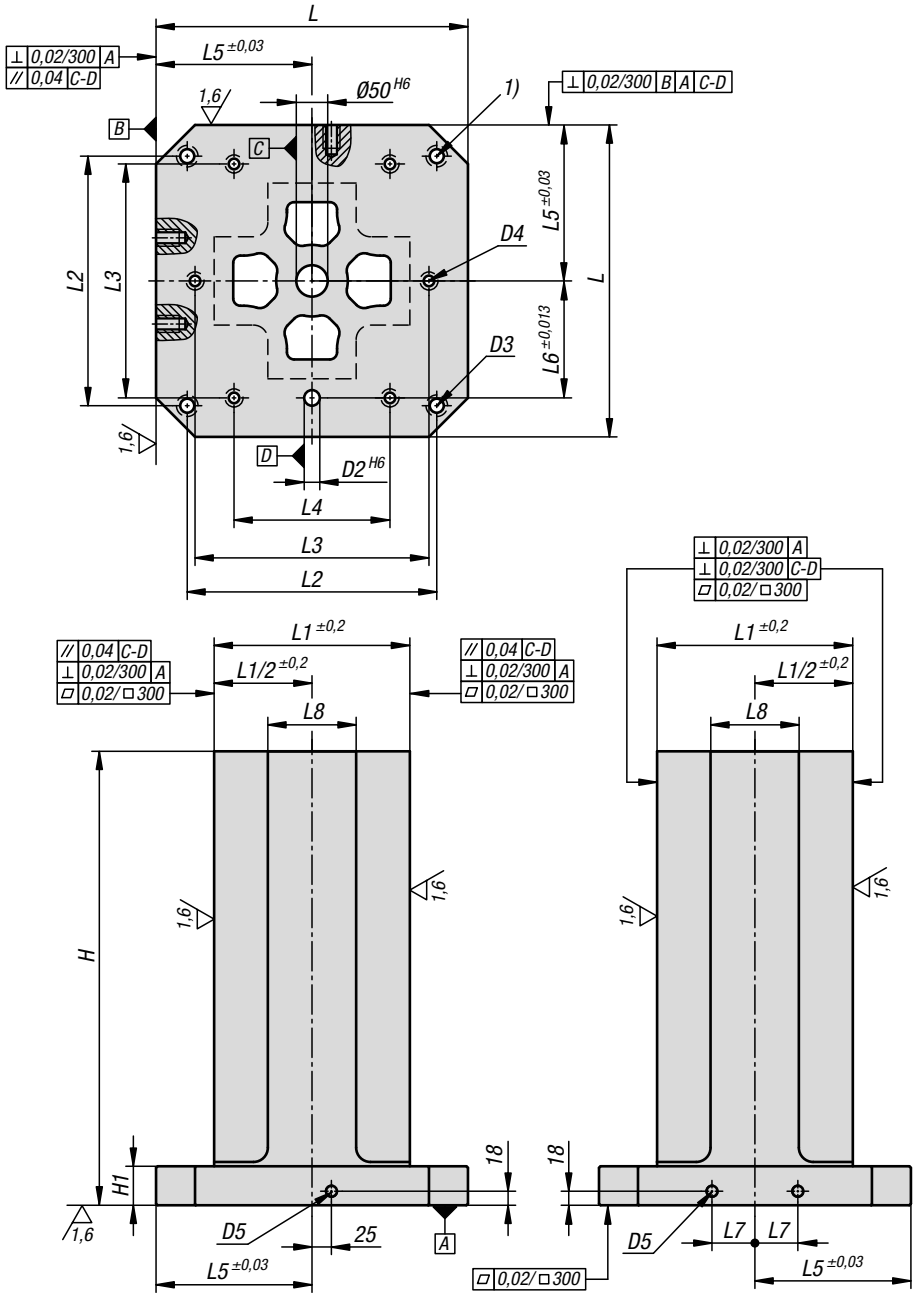
Order No.	A	B	C	D	E	E1	G	H	weight ca. kg
K0805.0040251	553	550	55	251 ±0,2	200	125,5 ±0,2	20	50	183
K0805.005030	553	550	75	301 ±0,2	250	150,5 ±0,2	20	50	231
K0805.0050301	653	650	75	301 ±0,2	250	150,5 ±0,2	20	50	268

Notes

Clamping towers, grey cast iron, 4-sided,

with pre-machined clamping faces

L = 400



Material:
GJL 300.

Version:
Support and clamping faces are precision-machined.
The clamping faces have a +1 mm allowance.

Sample order:
K1533.10040050

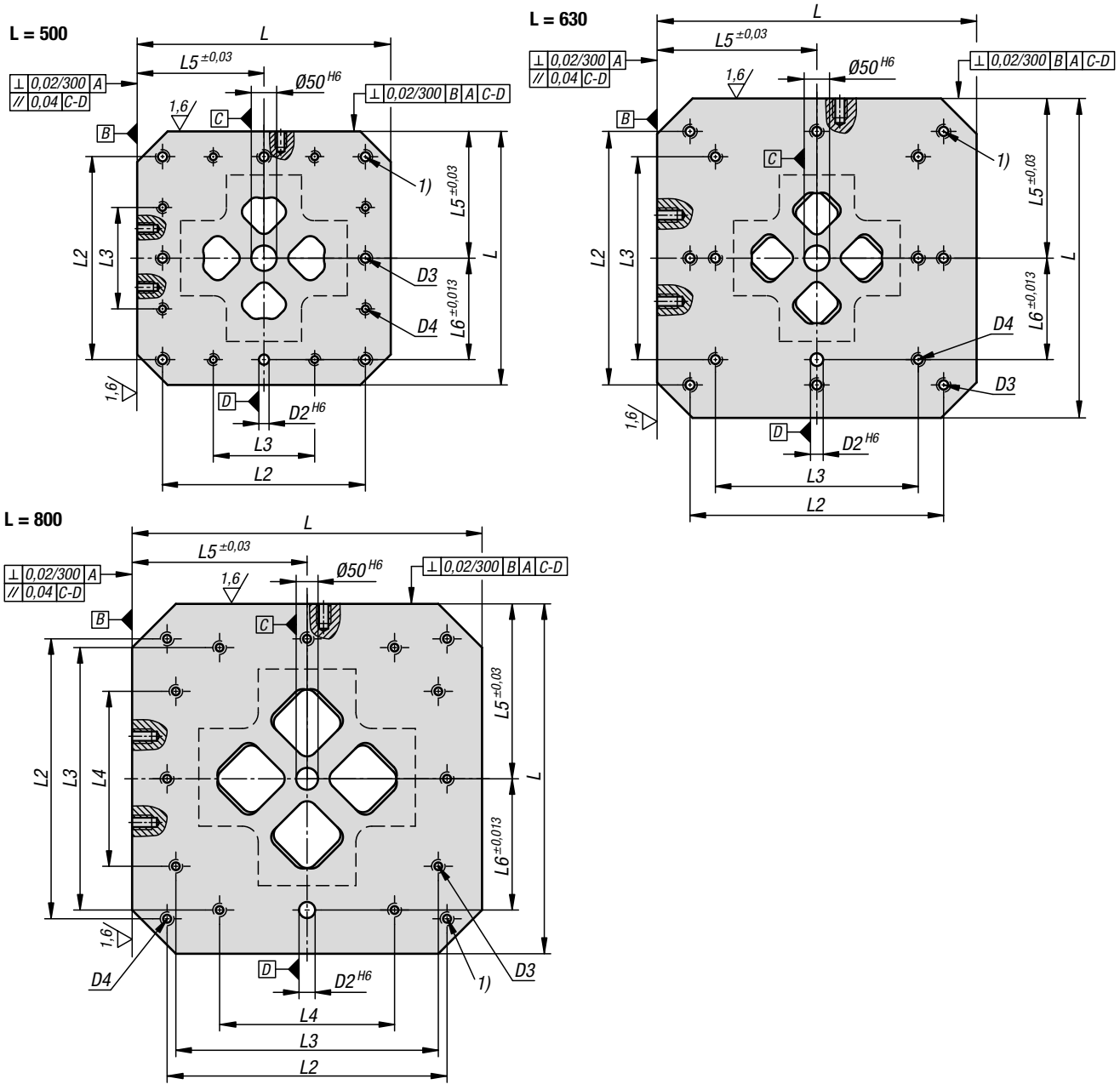
Note:
Clamping towers with pre-machined clamping faces provide a fast and economic way of producing bodies with specific grid or individual holes. The base is ready for mounting on the machine table. The clamping faces can be machined to the end dimensions by the user. The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Clamping towers, grey cast iron, 4-sided,

with pre-machined clamping faces

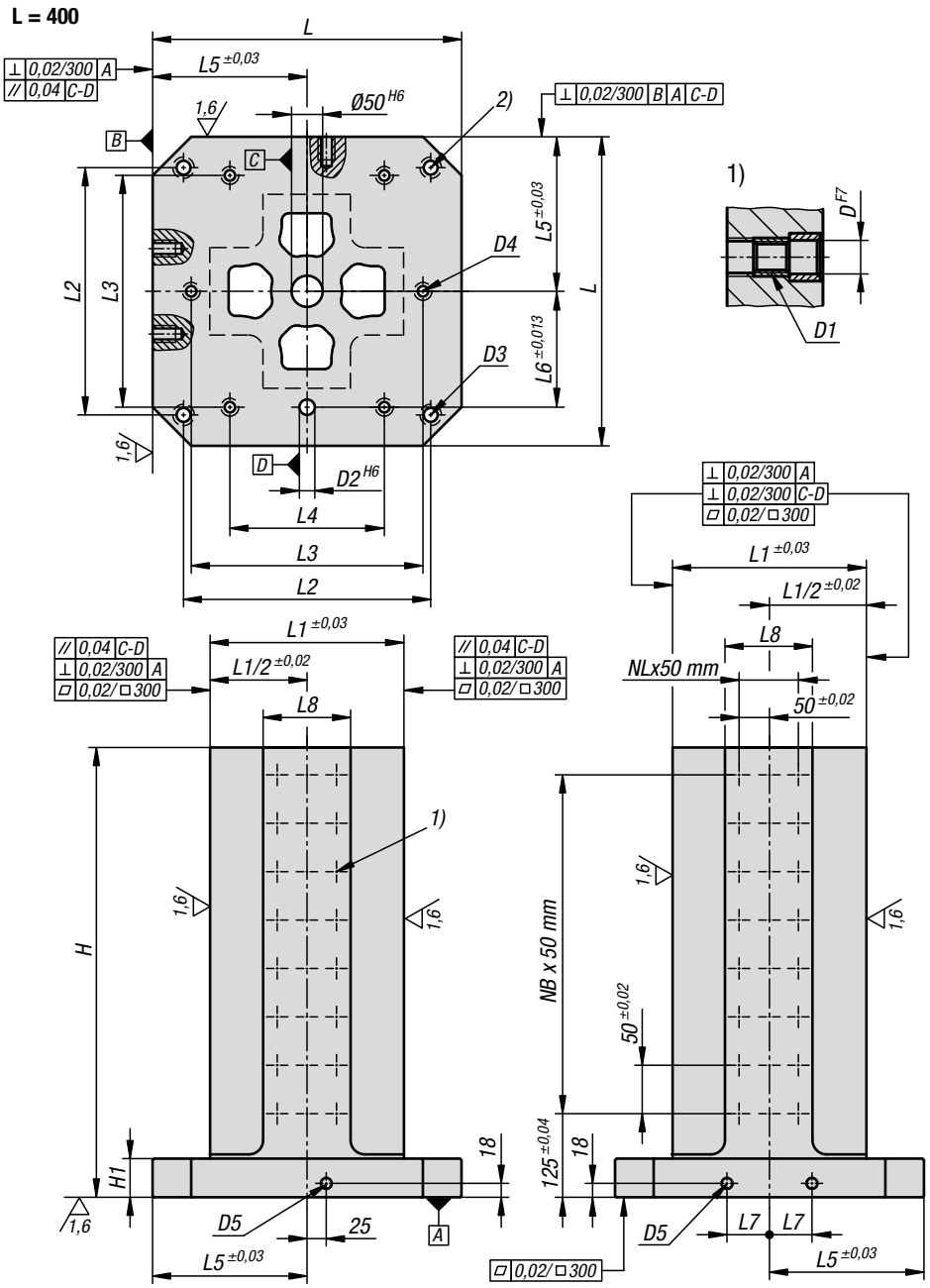


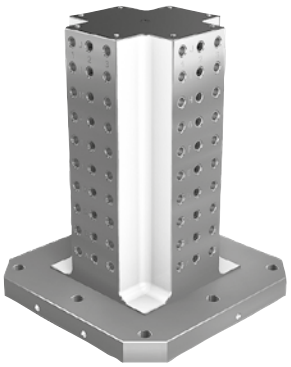
KIPP Clamping towers, grey cast iron, 4-sided, with pre-machined clamping faces

Order No.	L	H	H1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	L8
K1533.10040050	400	500	50	20	M16	M12	M 16	251	320	300	200	200	150	55	125
K1533.10040065	400	650	50	20	M16	M12	M 16	251	320	300	200	200	150	55	125
K1533.10050060	500	600	50	20	M16	M12	M 16	301	400	200	-	250	200	75	150
K1533.10050075	500	750	50	20	M16	M12	M 16	301	400	200	-	250	200	75	150
K1533.10063070	630	700	50	25	M16	M16	M 16	351	500	400	-	315	200	100	200
K1533.10063085	630	850	50	25	M16	M16	M 16	351	500	400	-	315	200	100	200
K1533.10080080	800	800	50	25	M16	M16	M 16	501	640	600	400	400	300	135	300
K1533.10080100	800	1000	50	25	M16	M16	M 16	501	640	600	400	400	300	135	300

Clamping towers, grey cast iron, 4-sided,

with grid holes





Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1533.21240050

Note:
Grid spacing 50 ±0.02 mm.
Clamping towers with grid holes are used on horizontal machining centres.
The alphanumerically labelled grid holes mean that the clamping elements can be assigned in a defined manner in the event of repeat setups.
The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

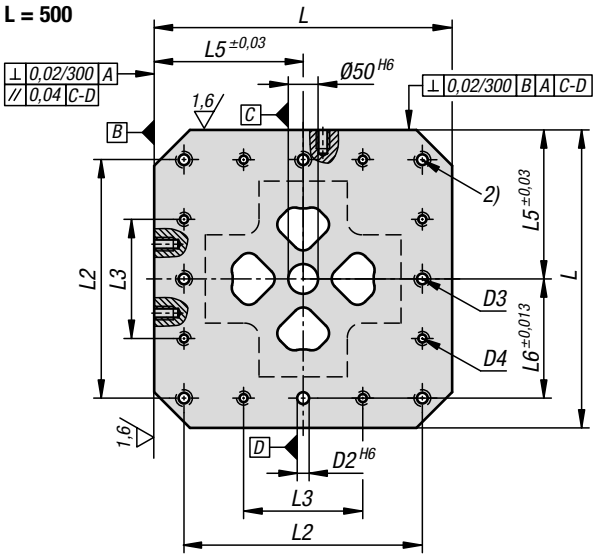
KIPP Clamping towers, grey cast iron, 4-sided, with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L	H	H1	D1	D2	D3	D4	D5	L1	L2
K1533.21240050	K1533.21640050	400	500	50	M12/M16	20	M16	M12	M 16	250	320
K1533.21240065	K1533.21640065	400	650	50	M12/M16	20	M16	M12	M 16	250	320
K1533.21250060	K1533.21650060	500	600	50	M12/M16	20	M16	M12	M 16	300	400
K1533.21250075	K1533.21650075	500	750	50	M12/M16	20	M16	M12	M 16	300	400
K1533.21263070	K1533.21663070	630	700	50	M12/M16	25	M16	M16	M 16	350	500
K1533.21263085	K1533.21663085	630	850	50	M12/M16	25	M16	M16	M 16	350	500
K1533.21280080	K1533.21680080	800	800	50	M12/M16	25	M16	M16	M 16	500	640
K1533.21280100	K1533.21680100	800	1000	50	M12/M16	25	M16	M16	M 16	500	640

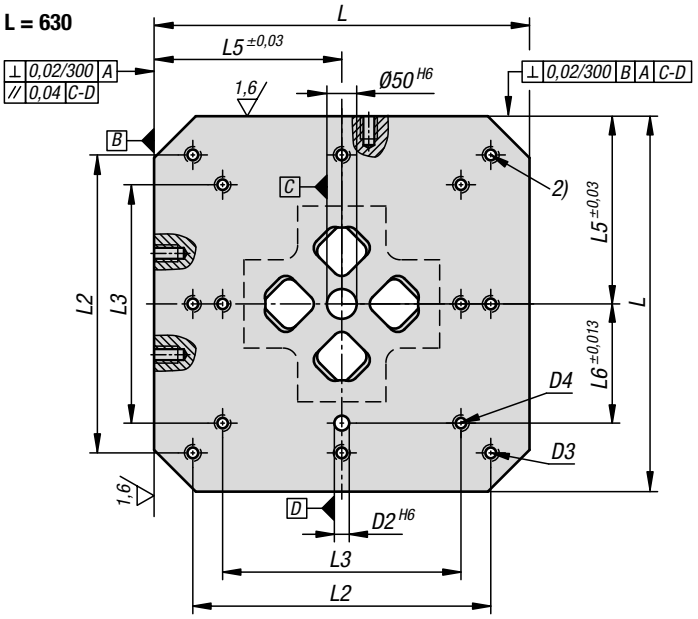
Clamping towers, grey cast iron, 4-sided,

with grid holes

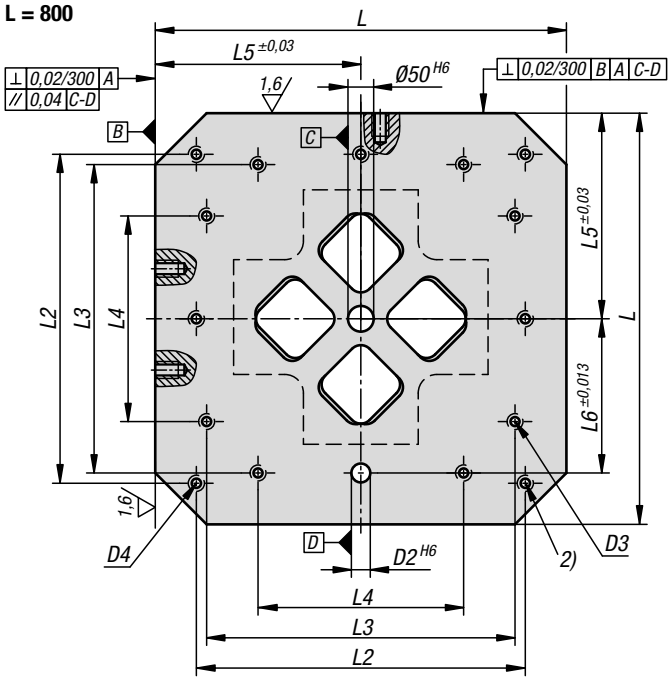
L = 500



L = 630



L = 800

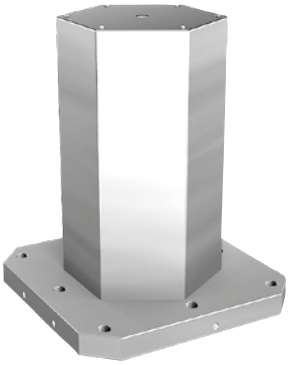


KIPP Clamping towers, grey cast iron, 4-sided, with grid holes

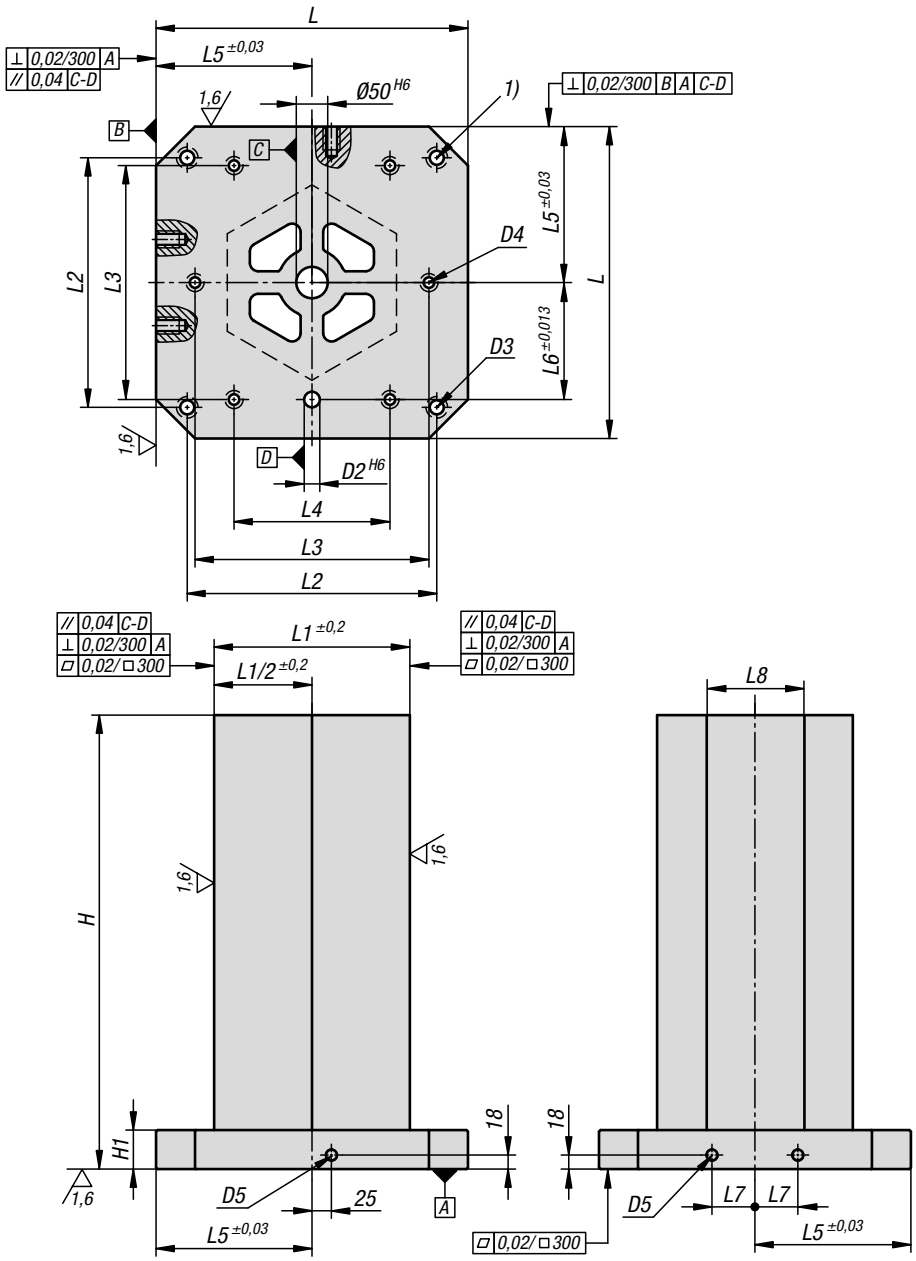
Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L3	L4	L5	L6	L7	L8	No. of grid holes	NL=No. lengthwise	NB= No. across
K1533.21240050	K1533.21640050	300	200	200	150	55	125	64	1	7
K1533.21240065	K1533.21640065	300	200	200	150	55	125	88	1	10
K1533.21250060	K1533.21650060	200	-	250	200	75	150	120	2	9
K1533.21250075	K1533.21650075	200	-	250	200	75	150	156	2	12
K1533.21263070	K1533.21663070	400	-	315	200	100	200	192	3	11
K1533.21263085	K1533.21663085	400	-	315	200	100	200	240	3	14
K1533.21280080	K1533.21680080	600	400	400	300	135	300	336	5	13
K1533.21280100	K1533.21680100	600	400	400	300	135	300	432	5	17

Clamping towers, grey cast iron, 6-sided,

with pre-machined clamping faces



L = 400



Material:
GJL 300.

Version:
Support and clamping faces are precision-machined. The clamping faces have a +1 mm allowance.

Sample order:
K1534.10040050

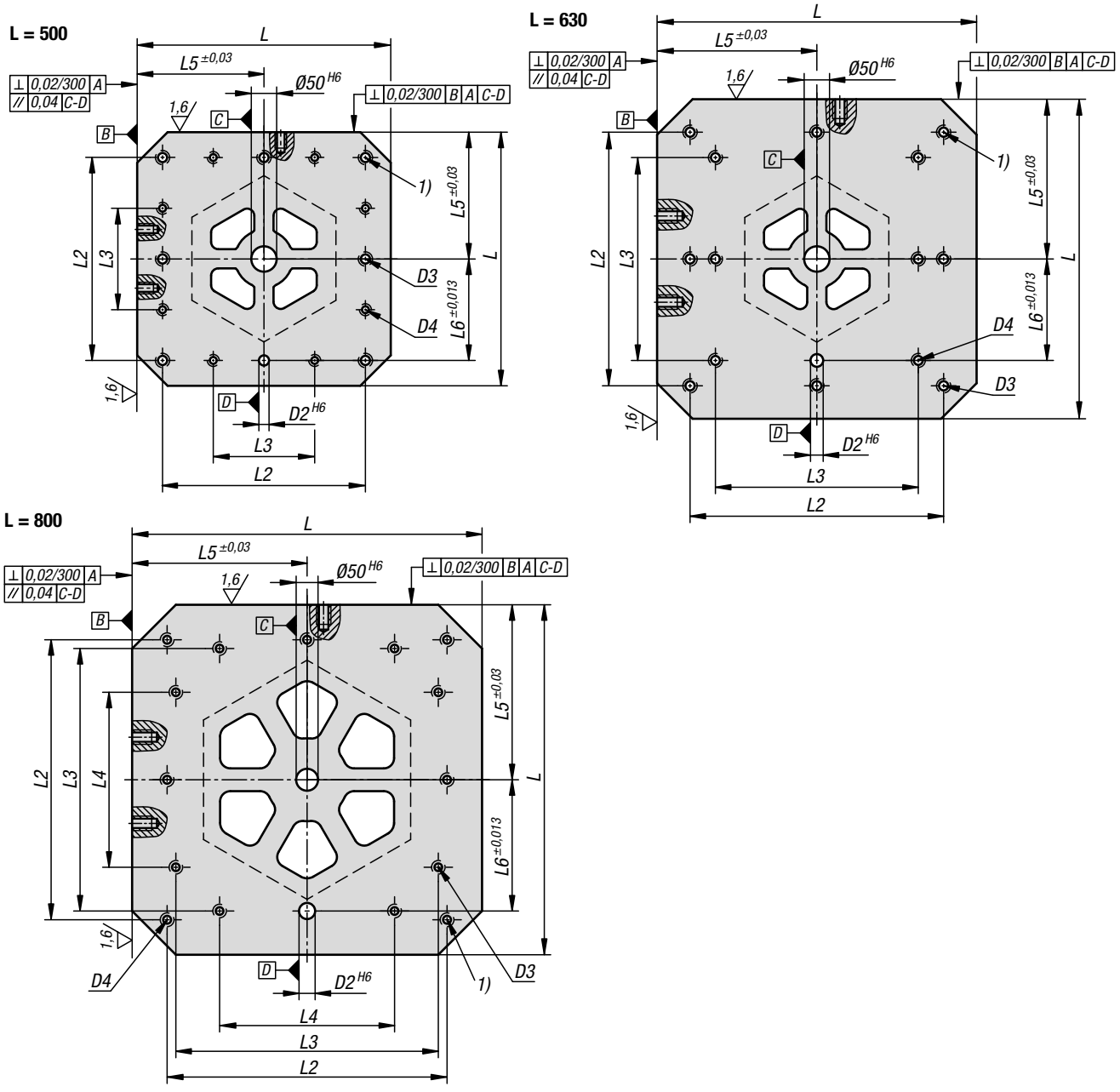
Note:
Clamping towers with pre-machined clamping faces provide a fast and economic way of producing bodies with specific grid or individual holes. The base is ready for mounting on the machine table. The clamping faces can be machined to the end dimensions by the user. The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Clamping towers, grey cast iron, 6-sided,

with pre-machined clamping faces

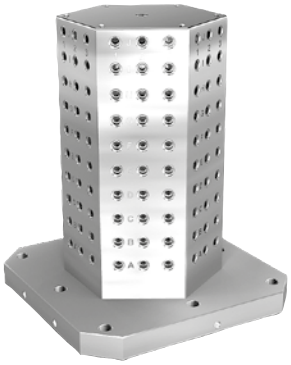


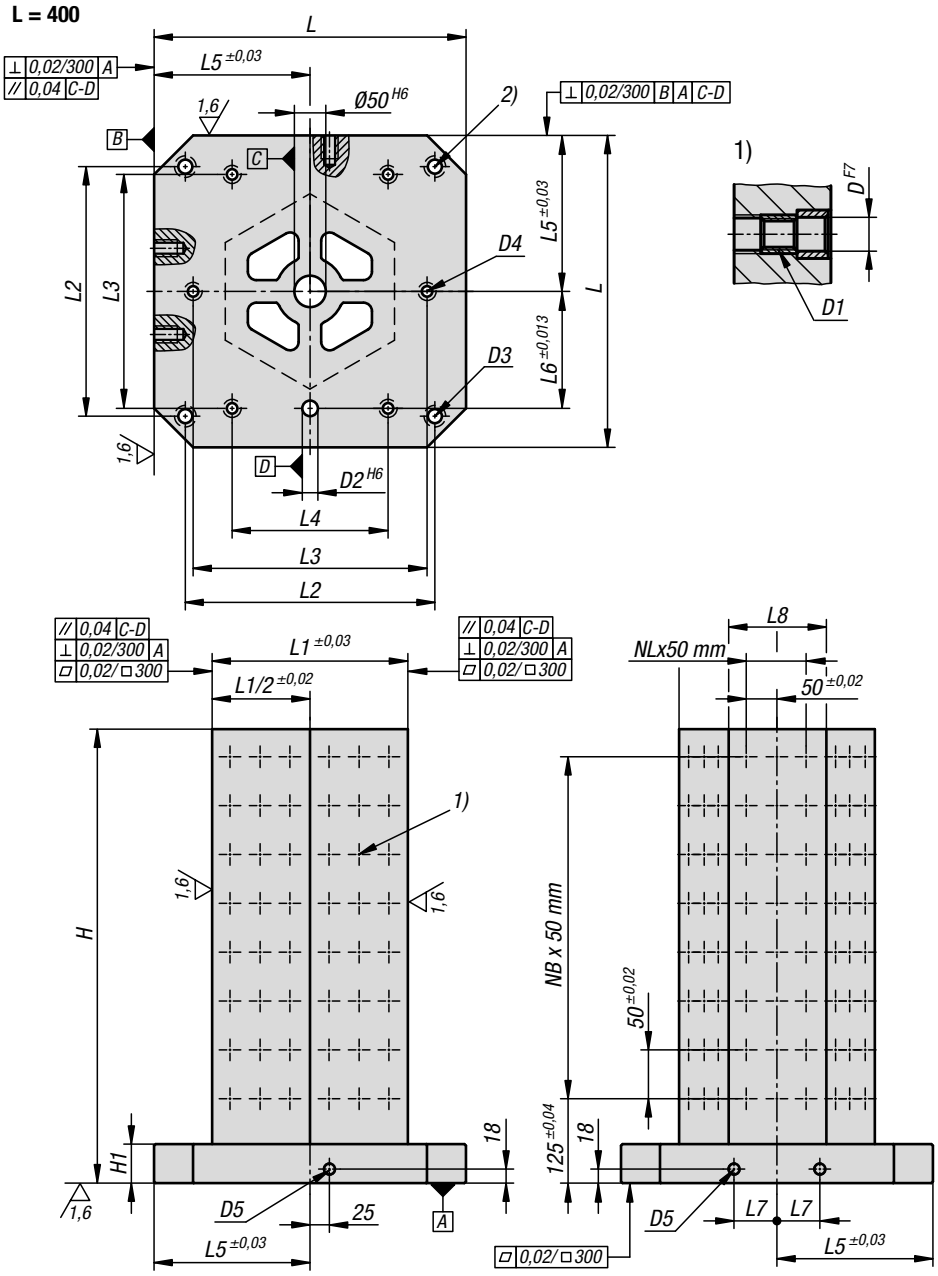
KIPP Clamping towers, grey cast iron, 6-sided, with pre-machined clamping faces

Order No.	L	H	H1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	L8
K1534.10040050	400	500	50	20	M16	M12	M 16	251	320	300	200	200	150	55	144,6
K1534.10040065	400	650	50	20	M16	M12	M 16	251	320	300	200	200	150	55	144,6
K1534.10050060	500	600	50	20	M16	M12	M 16	301	400	200	-	250	200	75	173,6
K1534.10050075	500	750	50	20	M16	M12	M 16	301	400	200	-	250	200	75	173,6
K1534.10063070	630	700	50	25	M16	M16	M 16	351	500	400	-	315	200	100	202,6
K1534.10063085	630	850	50	25	M16	M16	M 16	351	500	400	-	315	200	100	202,6
K1534.10080080	800	800	50	25	M16	M16	M 16	501	640	600	400	400	300	135	289,6
K1534.10080100	800	1000	50	25	M16	M16	M 16	501	640	600	400	400	300	135	289,6

Clamping towers, grey cast iron, 6-sided,

with grid holes





Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1534.21240050

Note:
Grid spacing 50 ±0.02 mm.
Clamping towers with grid holes are used on horizontal machining centres.
The alphanumerically labelled grid holes mean that the clamping elements can be assigned in a defined manner in the event of repeat setups.
The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

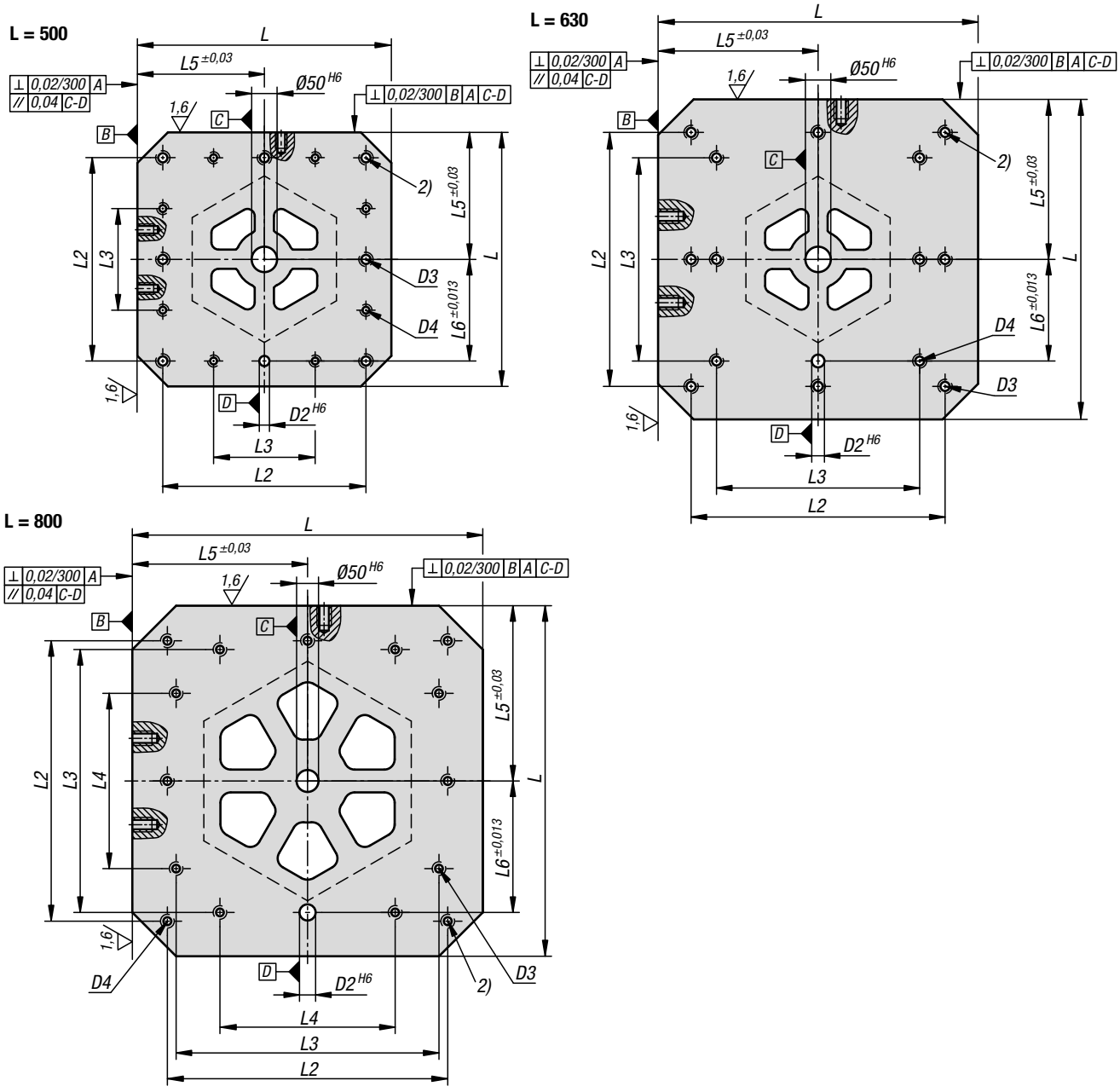
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

KIPP Clamping towers, grey cast iron, 6-sided, with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L	H	H1	D1	D2	D3	D4	D5	L1	L2
K1534.21240050	**K1534.21640050**	400	500	50	M12/M16	20	M16	M12	M 16	250	320
K1534.21240065	**K1534.21640065**	400	650	50	M12/M16	20	M16	M12	M 16	250	320
K1534.21250060	**K1534.21650060**	500	600	50	M12/M16	20	M16	M12	M 16	300	400
K1534.21250075	**K1534.21650075**	500	750	50	M12/M16	20	M16	M12	M 16	300	400
K1534.21263070	**K1534.21663070**	630	700	50	M12/M16	25	M16	M16	M 16	350	500
K1534.21263085	**K1534.21663085**	630	850	50	M12/M16	25	M16	M16	M 16	350	500
K1534.21280080	**K1534.21680080**	800	800	50	M12/M16	25	M16	M16	M 16	500	640
K1534.21280100	**K1534.21680100**	800	1000	50	M12/M16	25	M16	M16	M 16	500	640

Clamping towers, grey cast iron, 6-sided,

with grid holes



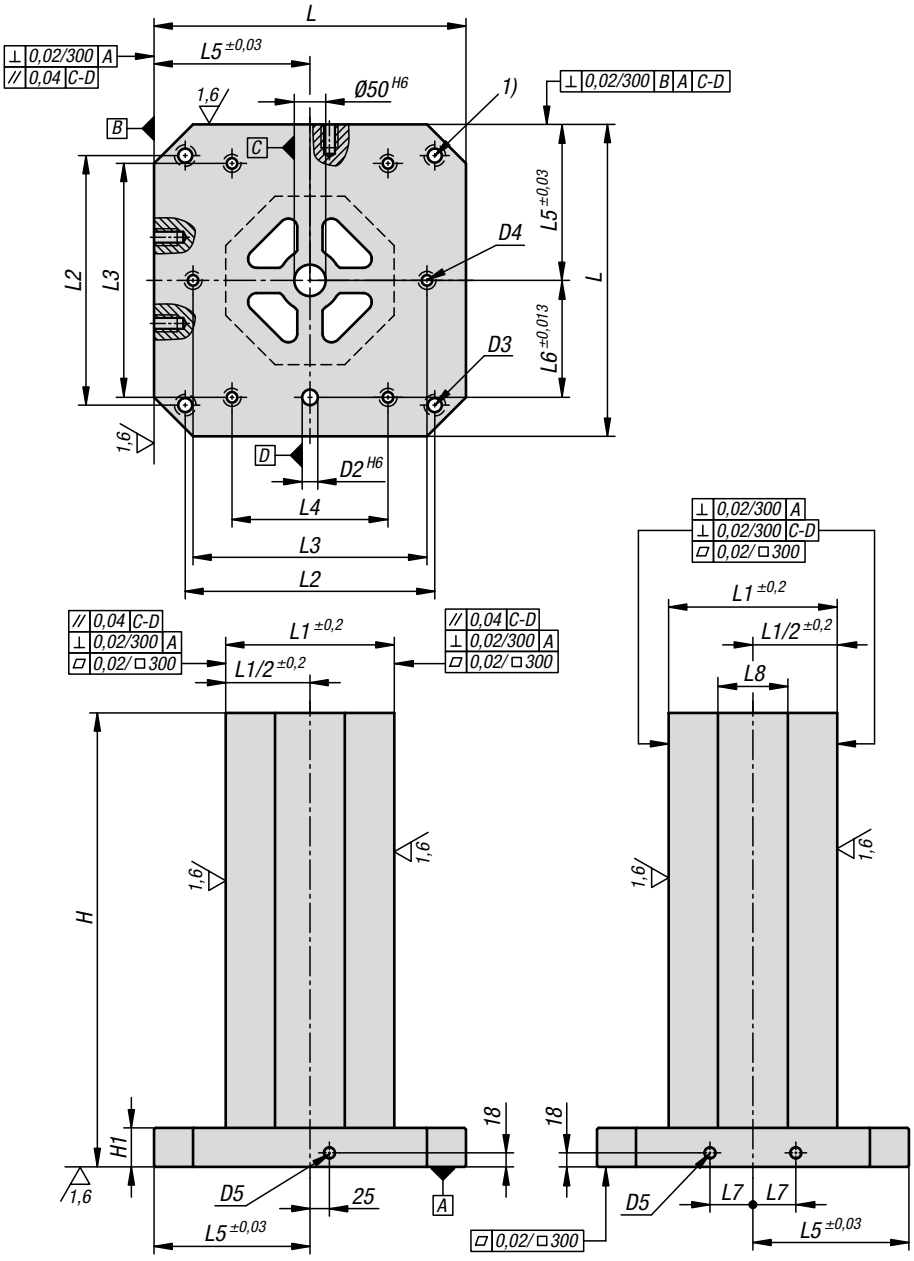
KIPP Clamping towers, grey cast iron, 6-sided, with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L3	L4	L5	L6	L7	L8	No. of grid holes	NL=No. lengthwise	NB= No. across
K1534.21240050	K1534.21640050	300	200	200	150	55	144	96	1	7
K1534.21240065	K1534.21640065	300	200	200	150	55	144	132	1	10
K1534.21250060	K1534.21650060	200	-	250	200	75	-	180	2	9
K1534.21250075	K1534.21650075	200	-	250	200	75	-	234	2	12
K1534.21263070	K1534.21663070	400	-	315	200	100	202	216	2	11
K1534.21263085	K1534.21663085	400	-	315	200	100	202	270	2	14
K1534.21280080	K1534.21680080	600	400	400	300	135	-	420	4	13
K1534.21280100	K1534.21680100	600	400	400	300	135	-	540	4	17

Clamping towers, grey cast iron, 8-sided,

with pre-machined clamping faces

L = 400



Material:
GJL 300.

Version:
Support and clamping faces are precision-machined. The clamping faces have a +1 mm allowance.

Sample order:
K1535.10040050

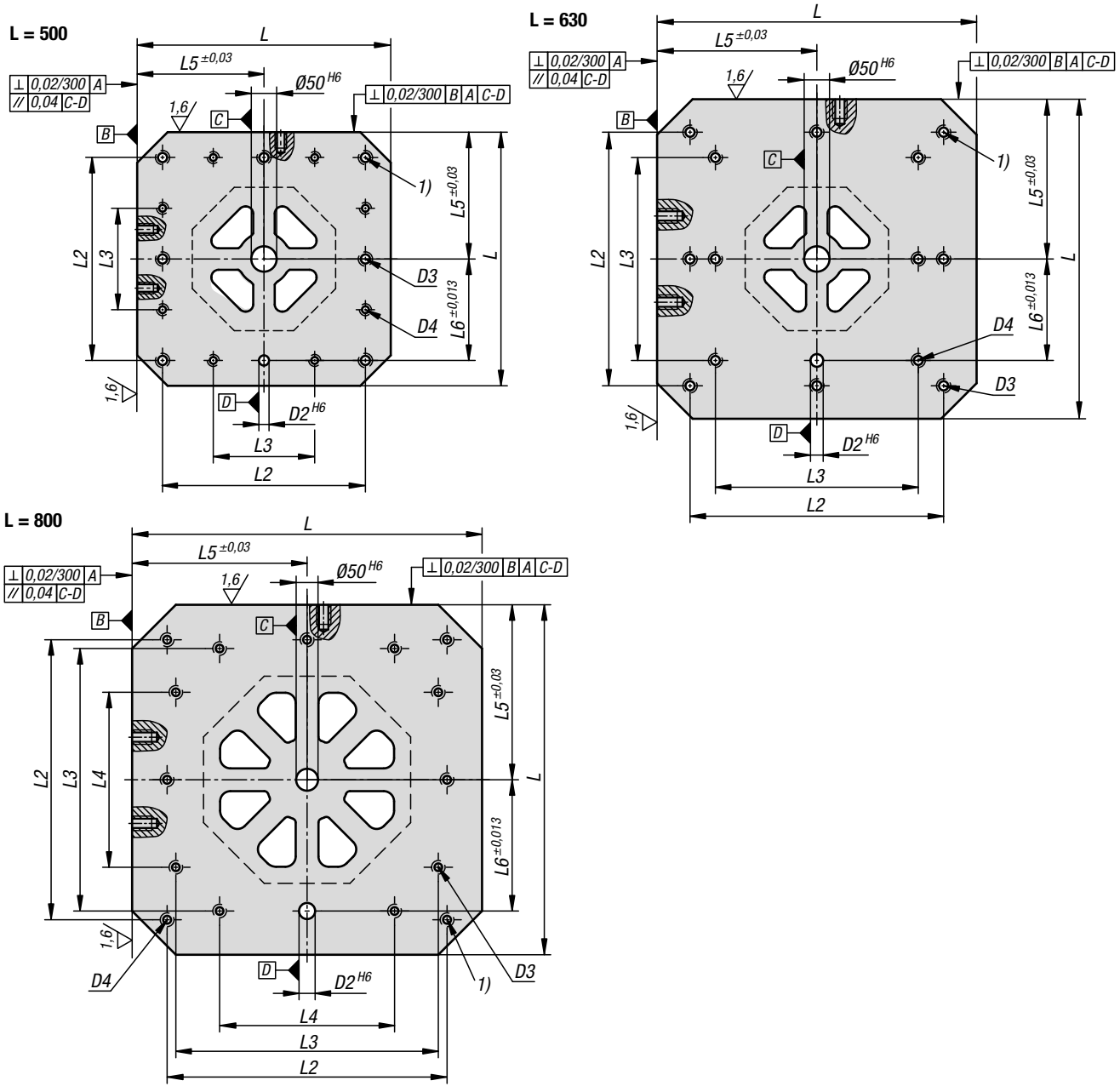
Note:
Clamping towers with pre-machined clamping faces provide a fast and economic way of producing bodies with specific grid or individual holes. The base is ready for mounting on the machine table. The clamping faces can be machined to the end dimensions by the user. The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980. Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Clamping towers, grey cast iron, 8-sided,

with pre-machined clamping faces

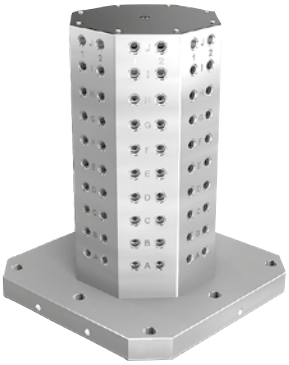


KIPP Clamping towers, grey cast iron, 8-sided, with pre-machined clamping faces

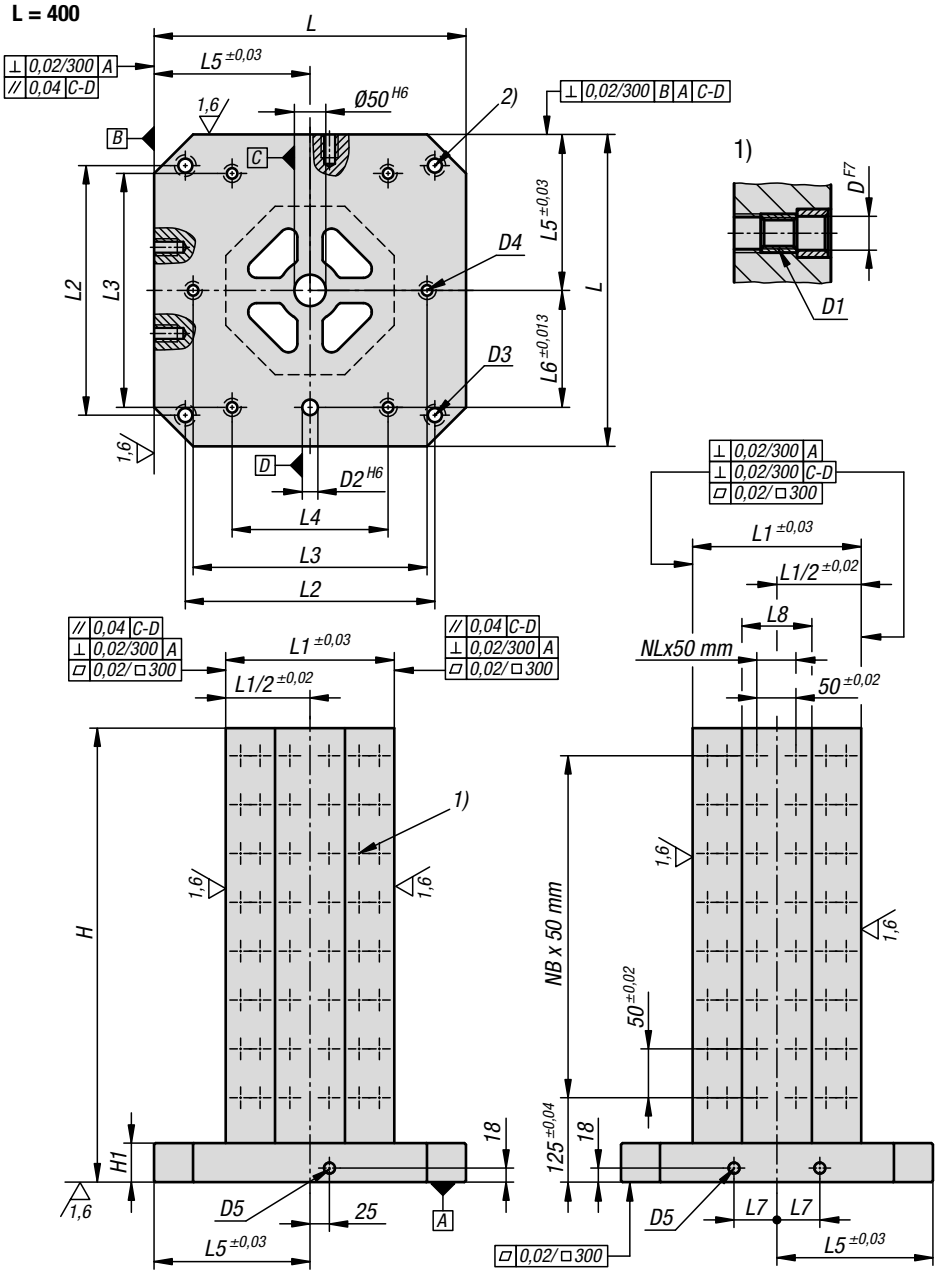
Order No.	L	H	H1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	L8
K1535.10040050	400	500	50	20	M16	M12	M 16	251	320	300	200	200	150	55	103,4
K1535.10040065	400	650	50	20	M16	M12	M 16	251	320	300	200	200	150	55	103,4
K1535.10050060	500	600	50	20	M16	M12	M 16	301	400	200	-	250	200	75	124,4
K1535.10050075	500	750	50	20	M16	M12	M 16	301	400	200	-	250	200	75	124,4
K1535.10063070	630	700	50	25	M16	M16	M 16	351	500	400	-	315	200	100	145,4
K1535.10063085	630	850	50	25	M16	M16	M 16	351	500	400	-	315	200	100	145,4
K1535.10080080	800	800	50	25	M16	M16	M 16	501	640	600	400	400	300	135	207,4
K1535.10080100	800	1000	50	25	M16	M16	M 16	501	640	600	400	400	300	135	207,4

Clamping towers, grey cast iron, 8-sided,

with grid holes



L = 400



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1535.21240050

Note:
Grid spacing 50 ±0.02 mm.
Clamping towers with grid holes are used on horizontal machining centres.
The alphanumerically labelled grid holes mean that the clamping elements can be assigned in a defined manner in the event of repeat setups.
The clamping towers conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

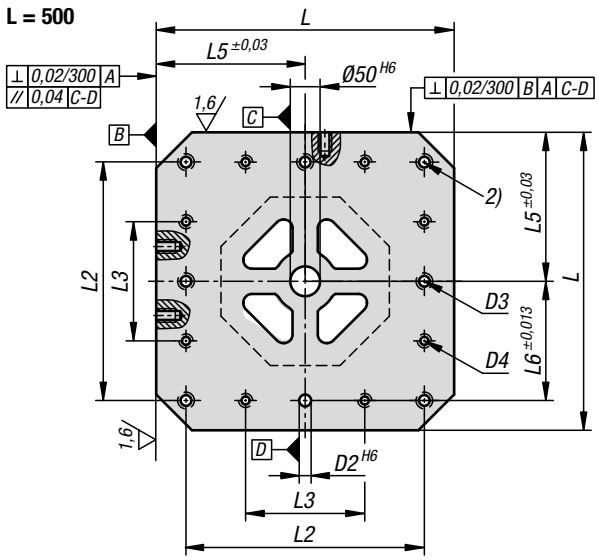
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

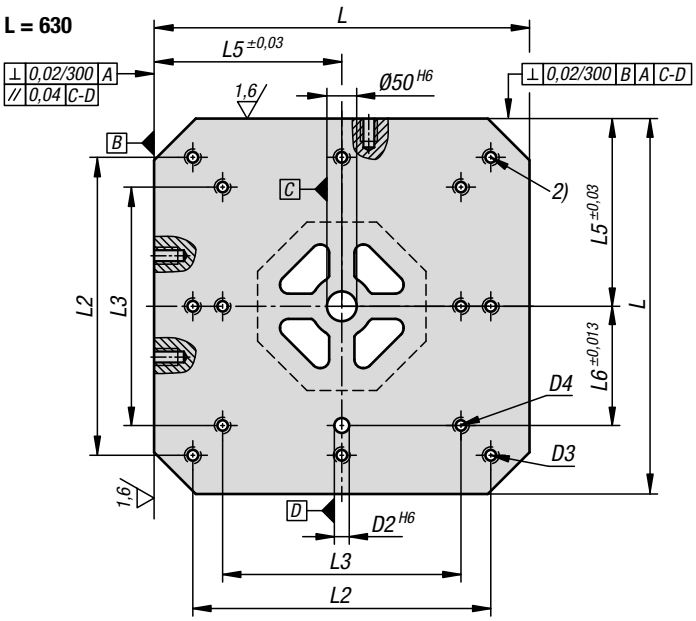
KIPP Clamping towers, grey cast iron, 8-sided, with grid holes

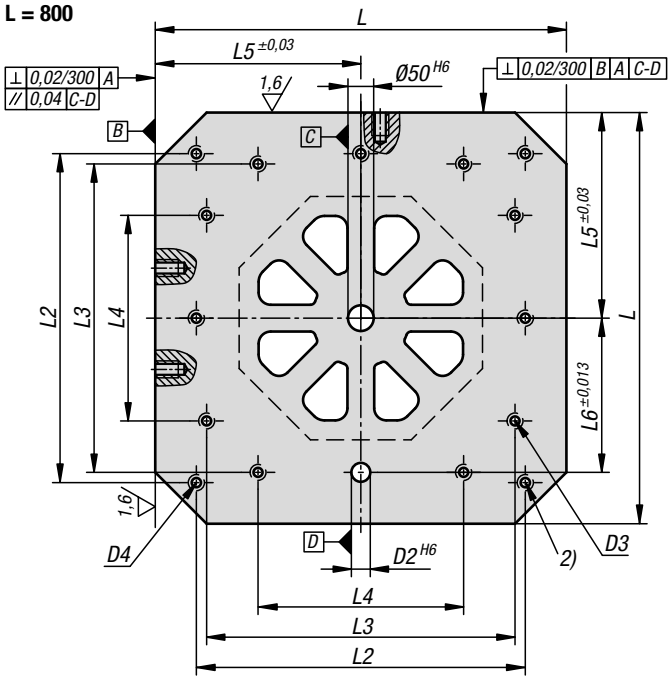
Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L	H	H1	D1	D2	D3	D4	D5	L1	L2
K1535.21240050	K1535.21640050	400	500	50	M12/M16	20	M16	M12	M 16	250	320
K1535.21240065	K1535.21640065	400	650	50	M12/M16	20	M16	M12	M 16	250	320
K1535.21250060	K1535.21650060	500	600	50	M12/M16	20	M16	M12	M 16	300	400
K1535.21250075	K1535.21650075	500	750	50	M12/M16	20	M16	M12	M 16	300	400
K1535.21263070	K1535.21663070	630	700	50	M12/M16	25	M16	M16	M 16	350	500
K1535.21263085	K1535.21663085	630	850	50	M12/M16	25	M16	M16	M 16	350	500
K1535.21280080	K1535.21680080	800	800	50	M12/M16	25	M16	M16	M 16	500	640
K1535.21280100	K1535.21680100	800	1000	50	M12/M16	25	M16	M16	M 16	500	640

Clamping towers, grey cast iron, 8-sided,

with grid holes





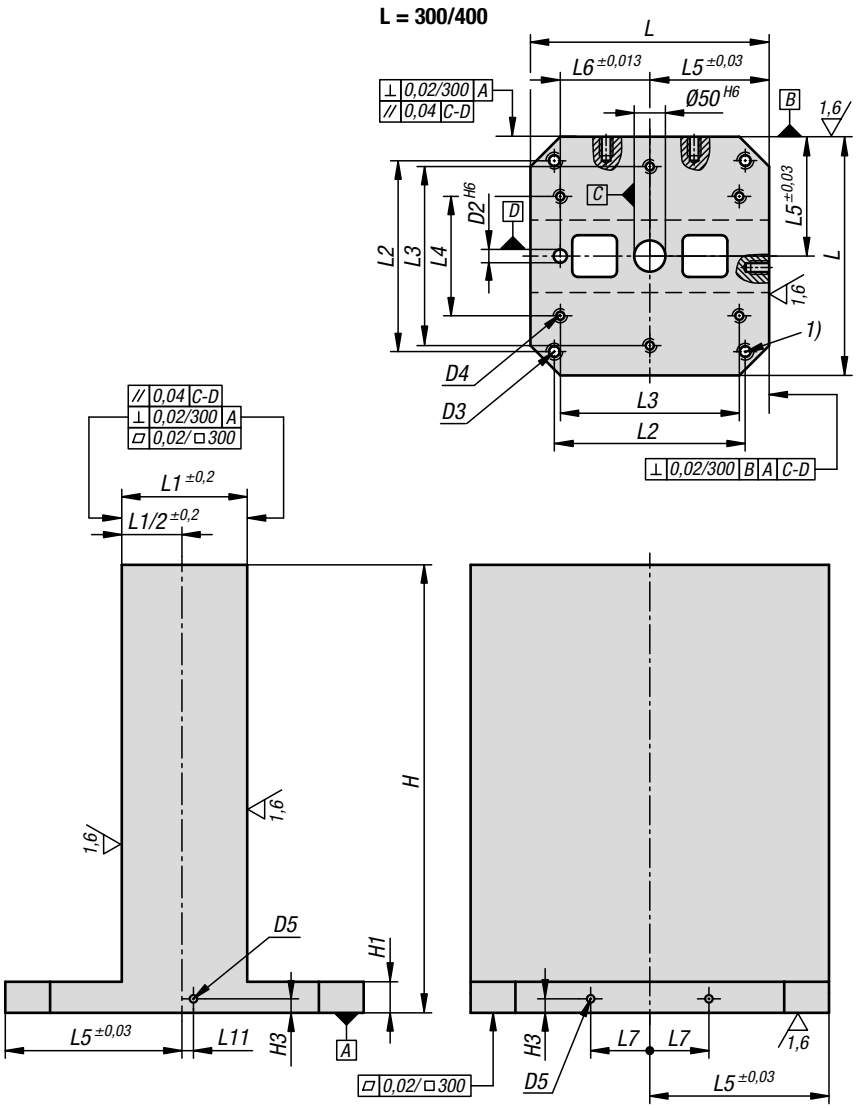


KIPP Clamping towers, grey cast iron, 8-sided, with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L3	L4	L5	L6	L7	L8	No. of grid holes	NL=No. lengthwise	NB= No. across
K1535.21240050	K1535.21640050	300	200	200	150	55	103	128	1	7
K1535.21240065	K1535.21640065	300	200	200	150	55	103	176	1	10
K1535.21250060	K1535.21650060	200	-	250	200	75	124	160	1	9
K1535.21250075	K1535.21650075	200	-	250	200	75	124	208	1	12
K1535.21263070	K1535.21663070	400	-	315	200	100	145	192	1	11
K1535.21263085	K1535.21663085	400	-	315	200	100	145	240	1	14
K1535.21280080	K1535.21680080	600	400	400	300	135	207	448	3	13
K1535.21280100	K1535.21680100	600	400	400	300	135	207	576	3	17

Tombstones, grey cast iron, double-sided,

with pre-machined clamping faces



Material:
GJL 300.

Version:
Support and clamping faces are precision-machined. The clamping faces have a +1 mm allowance.

Sample order:
K0803.100030050

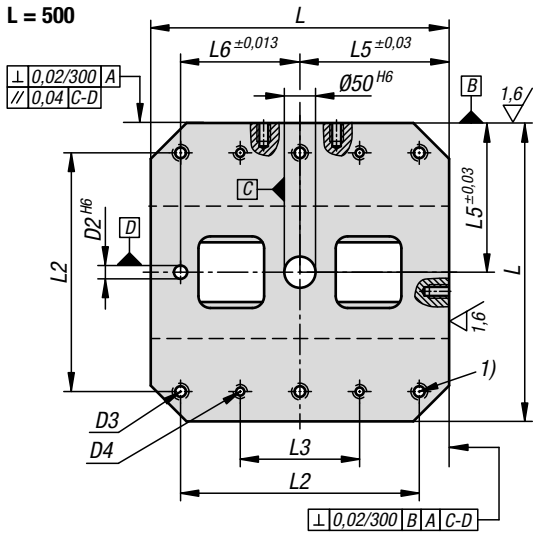
Note:
Tombstones with pre-machined clamping faces provide a fast and economic method of producing a body with specific grid or individual holes. The base is ready for mounting on the machine table. The two clamping faces can be machined to the end dimensions by the user. The tombstones conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980. Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

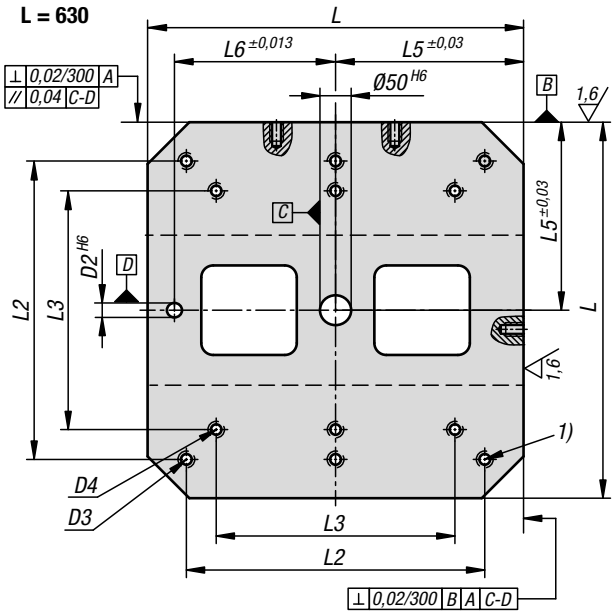
Tombstones, grey cast iron, double-sided,

with pre-machined clamping faces

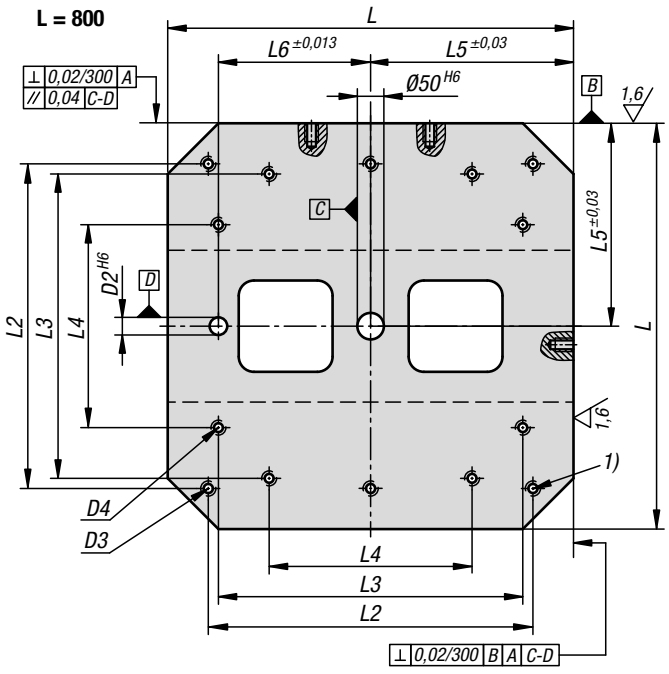
L = 500



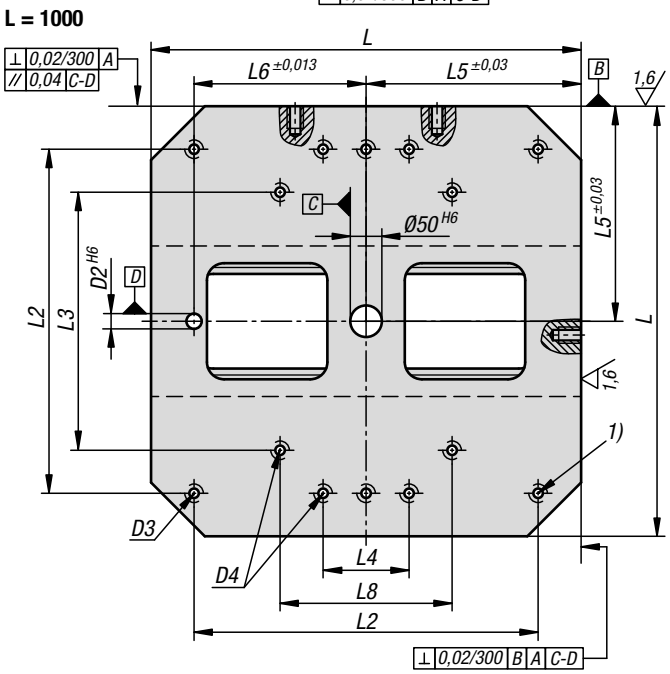
L = 630



L = 800



L = 1000

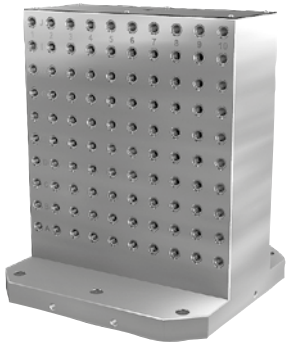


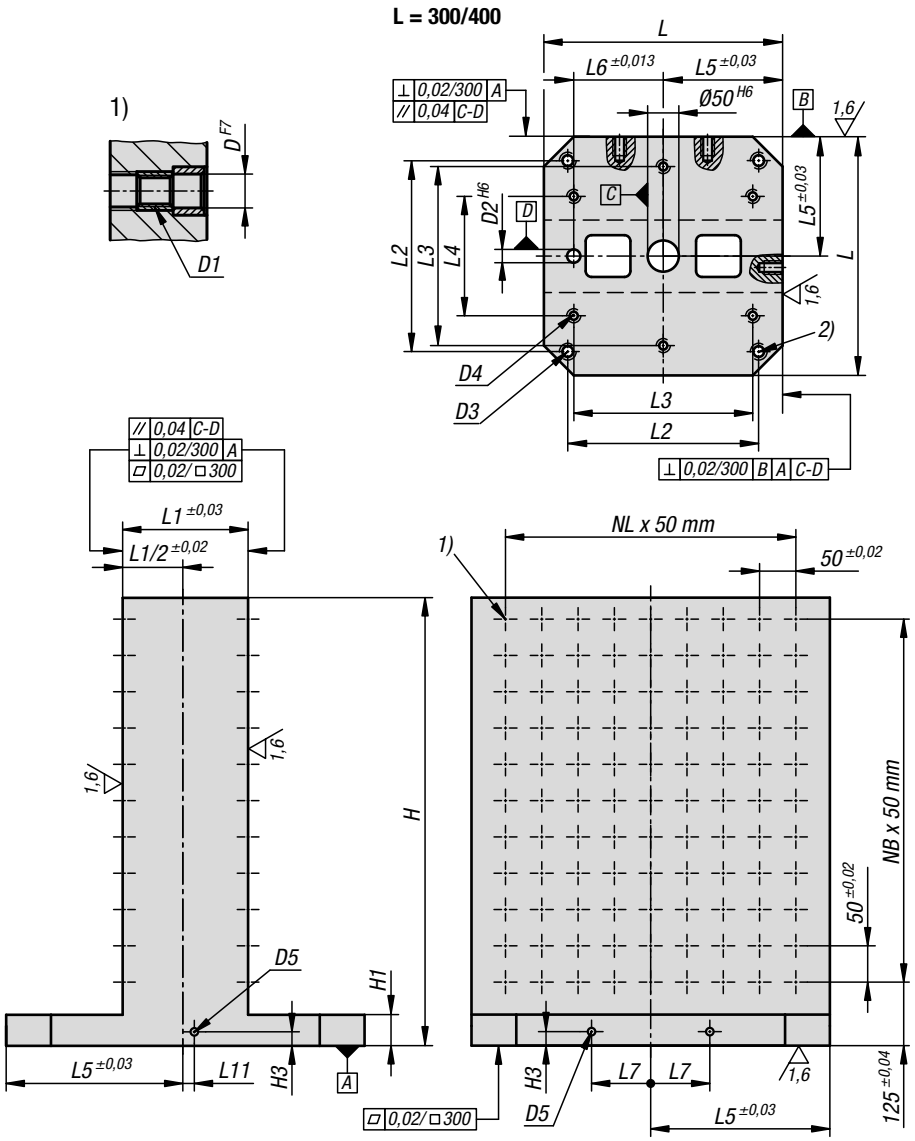
KIPP Tombstones, grey cast iron, double-sided, with pre-machined clamping faces

Order No.	L	H	H1	D2	D3	D4	D5	H3	L1	L2	L3	L4	L5	L6	L7	L8	L11
K0803.100030050	300	500	50	20	M12	M10	M12	15	81	250	200	-	150	100	40	-	0
K0803.100040050	400	500	50	20	M16	M12	M16	18	151	320	300	200	200	150	55	-	25
K0803.100040065	400	650	50	20	M16	M12	M16	18	151	320	300	200	200	150	55	-	25
K0803.100050060	500	600	50	20	M16	M12	M16	18	201	400	200	-	250	200	75	-	25
K0803.100050075	500	750	50	20	M16	M12	M16	18	201	400	200	-	250	200	75	-	25
K0803.100063070	630	700	50	25	M16	M16	M16	18	251	500	400	-	315	200	100	-	25
K0803.100063085	630	850	50	25	M16	M16	M16	18	251	500	400	-	315	200	100	-	25
K0803.100080080	800	800	50	25	M16	M16	M16	18	301	640	600	400	400	300	135	-	25
K0803.100080100	800	1000	50	25	M16	M16	M16	18	301	640	600	400	400	300	135	-	25
K0803.100100100	1000	1000	55	25	M20	M20	M16	18	351	800	600	200	500	400	165	400	25
K0803.100100125	1000	1250	55	25	M20	M20	M16	18	351	800	600	200	500	400	165	400	25

Tombstones, grey cast iron, double-sided,

with grid holes





Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0803.212030050

Note:
Grid spacing 50 ±0.02 mm.
Tombstones with grid holes are used on horizontal machining centres.
The alphanumerically labelled grid holes guarantee a defined assignment of clamping elements by repeat setups.
The tombstones conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

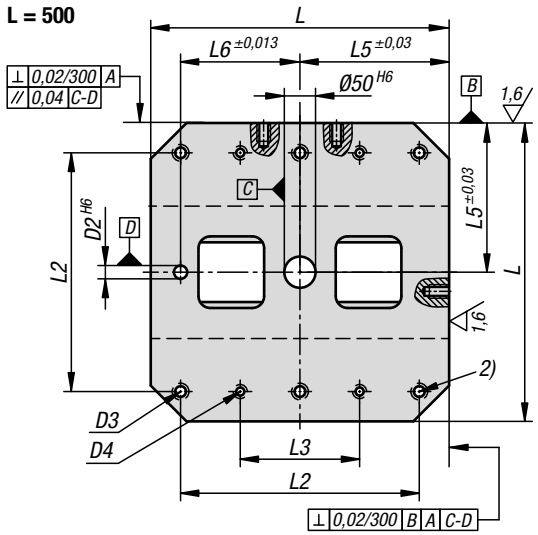
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D3/D4)

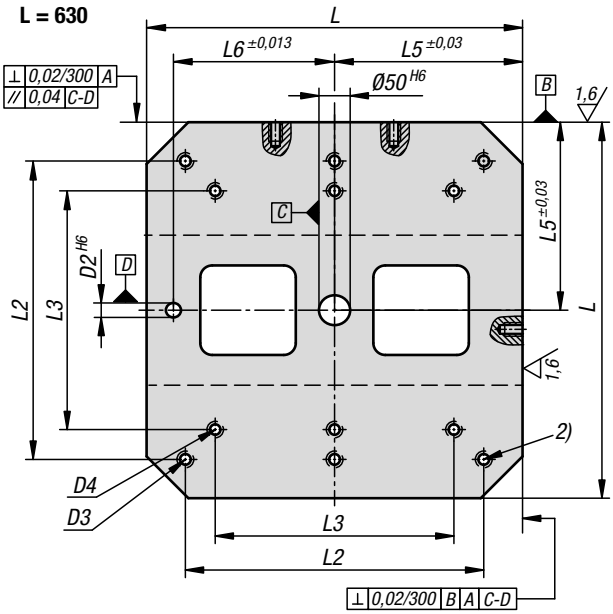
KIPP Tombstones, grey cast iron, double-sided, with grid holes

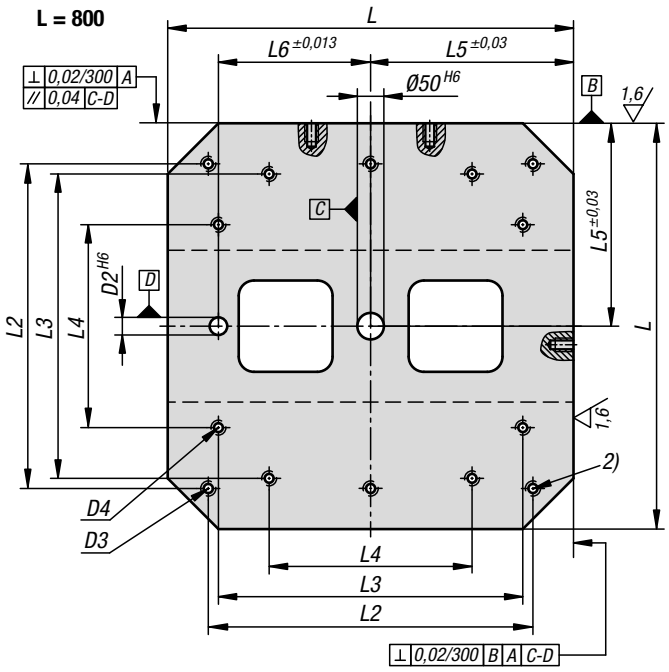
Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L	H	H1	D1	D2	D3	D4	D5	H3
K0803.212030050	K0803.216030050	300	500	50	M12/M16	20	M12	M10	M12	15
K0803.212040050	K0803.216040050	400	500	50	M12/M16	20	M16	M12	M16	18
K0803.212040065	K0803.216040065	400	650	50	M12/M16	20	M16	M12	M16	18
K0803.212050060	K0803.216050060	500	600	50	M12/M16	20	M16	M12	M16	18
K0803.212050075	K0803.216050075	500	750	50	M12/M16	20	M16	M12	M16	18
K0803.212063070	K0803.216063070	630	700	50	M12/M16	25	M16	M16	M16	18
K0803.212063085	K0803.216063085	630	850	50	M12/M16	25	M16	M16	M16	18
K0803.212080080	K0803.216080080	800	800	50	M12/M16	25	M16	M16	M16	18
K0803.212080100	K0803.216080100	800	1000	50	M12/M16	25	M16	M16	M16	18
K0803.212100100	K0803.216100100	1000	1000	55	M12/M16	25	M20	M20	M16	18
K0803.212100125	K0803.216100125	1000	1250	55	M12/M16	25	M20	M20	M16	18

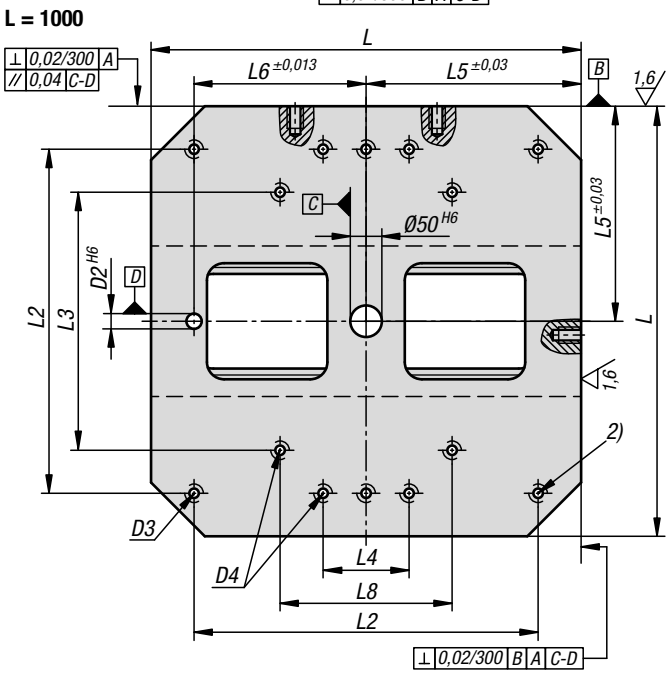
Tombstones, grey cast iron, double-sided,

with grid holes







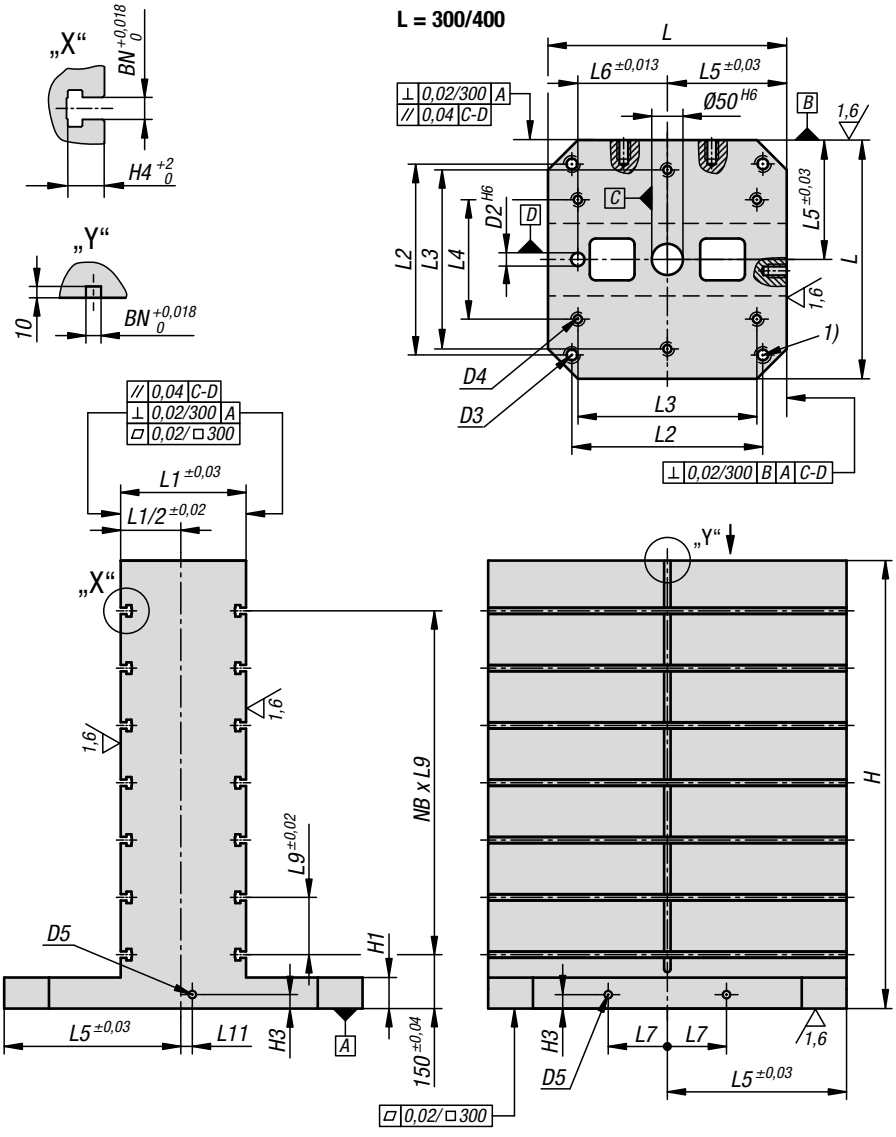


KIPP Tombstones, grey cast iron, double-sided, with grid holes

Order No. D=Reamed hole 12	Order No. D=Reamed hole 16	L1	L2	L3	L4	L5	L6	L7	L8	L11	No. of grid holes	NL=No. lengthwise	NB= No. across
K0803.212030050	K0803.216030050	80	250	200	-	150	100	40	-	0	96	5	7
K0803.212040050	K0803.216040050	150	320	300	200	200	150	55	-	25	128	7	7
K0803.212040065	K0803.216040065	150	320	300	200	200	150	55	-	25	176	7	10
K0803.212050060	K0803.216050060	200	400	200	-	250	200	75	-	25	200	9	9
K0803.212050075	K0803.216050075	200	400	200	-	250	200	75	-	25	260	9	12
K0803.212063070	K0803.216063070	250	500	400	-	315	200	100	-	25	288	11	11
K0803.212063085	K0803.216063085	250	500	400	-	315	200	100	-	25	360	11	14
K0803.212080080	K0803.216080080	300	640	600	400	400	300	135	-	25	420	14	13
K0803.212080100	K0803.216080100	300	640	600	400	400	300	135	-	25	540	14	17
K0803.212100100	K0803.216100100	350	800	600	200	500	400	165	400	25	684	18	17
K0803.212100125	K0803.216100125	350	800	600	200	500	400	165	400	25	874	18	22

Tombstones, grey cast iron, double-sided,

with T-slots



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

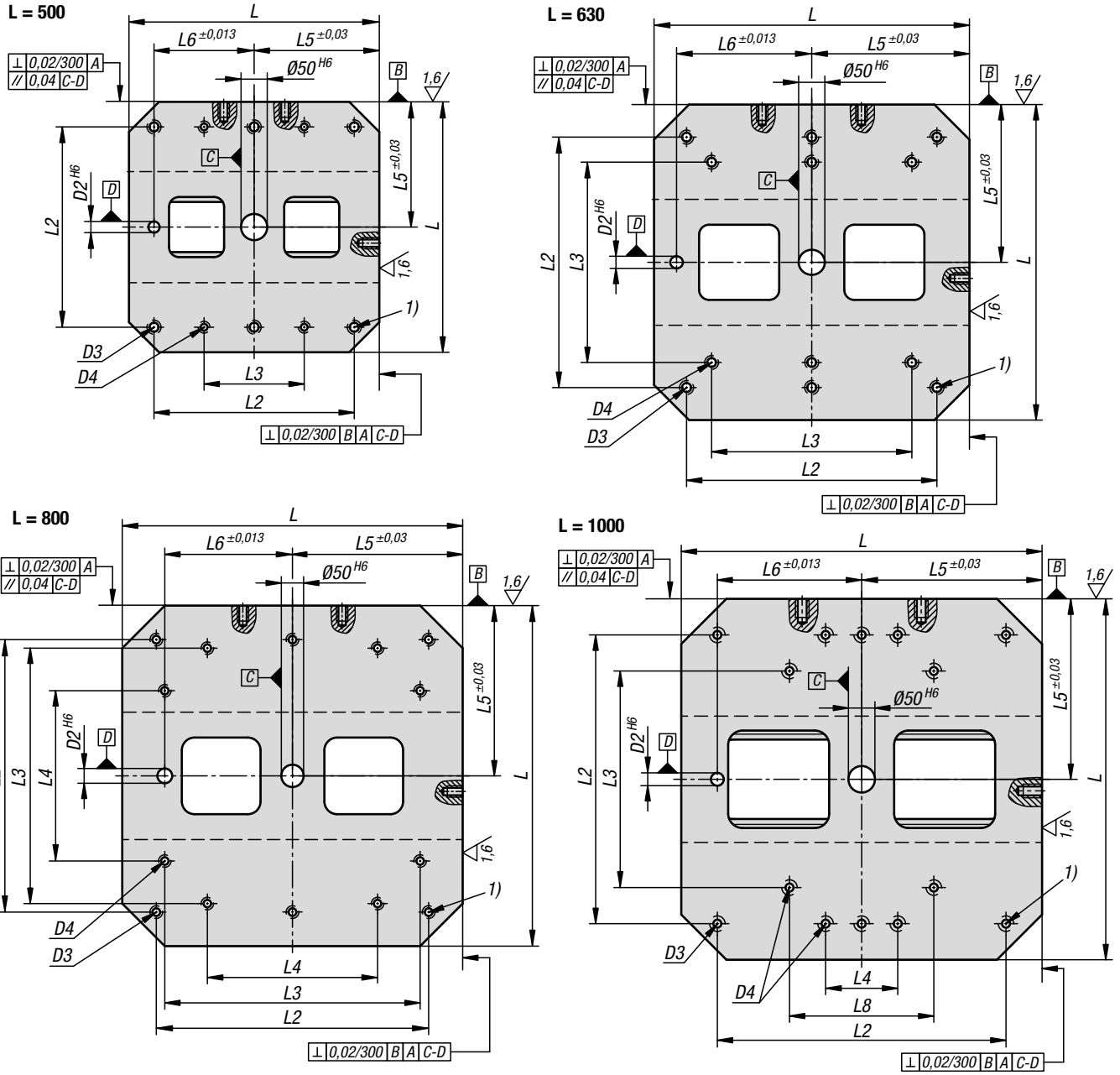
Sample order:
K0803.314040050

Note:
Workholding cubes with T-slots are used for constructing modular fixtures on horizontal machines. The precise longitudinal and transverse slot spacing ensures very high repeat clamping accuracy.
The workholding cubes conform to machine tables for machine tools acc. to DIN 55201 and JIS 6337-1980.
Please order locating pins for positioning subplates on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

Drawing reference:
1) hole for DIN 912 cap screw (D3/D4)

Tombstones, grey cast iron, double-sided,

with T-slots

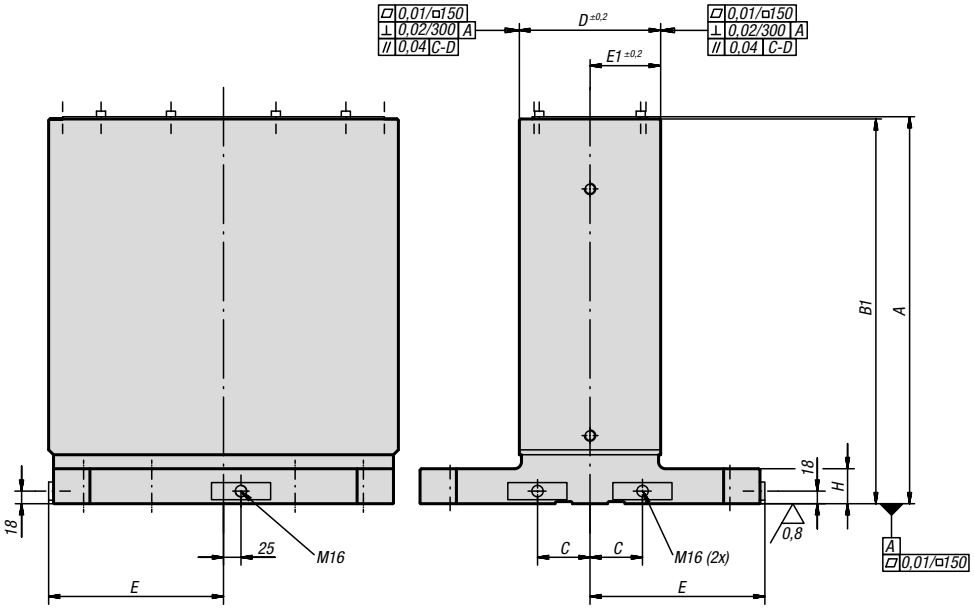


KIPP Tombstones, grey cast iron, double-sided, with T-slots

Order No. BN=Slot width 14	Order No. BN=Slot width 18	L	H	H1	D2	D3	D4	D5	H3	L1	L2	L3	L4	L5	L6	L7	L8	L9	L11	NB= No. across
K0803.314040050	K0803.318040050	400	500	50	20	M16	M12	M16	18	150	320	300	200	200	150	55	-	100	25	3
K0803.314040065	K0803.318040065	400	650	50	20	M16	M12	M16	18	150	320	300	200	200	150	55	-	100	25	4
K0803.314050060	K0803.318050060	500	600	50	20	M16	M12	M16	18	200	400	200	-	250	200	75	-	100	25	4
K0803.314050075	K0803.318050075	500	750	50	20	M16	M12	M16	18	200	400	200	-	250	200	75	-	100	25	5
K0803.314063070	K0803.318063070	630	700	50	25	M16	M16	M16	18	250	500	400	-	315	200	100	-	125	25	4
K0803.314063085	K0803.318063085	630	850	50	25	M16	M16	M16	18	250	500	400	-	315	200	100	-	125	25	5
K0803.314080080	K0803.318080080	800	800	50	25	M16	M16	M16	18	300	640	600	400	400	300	135	-	150	25	4
K0803.314080100	K0803.318080100	800	1000	50	25	M16	M16	M16	18	300	640	600	400	400	300	135	-	150	25	5
K0803.314100100	K0803.318100100	1000	1000	55	25	M20	M20	M16	18	350	800	600	200	500	400	165	400	160	25	5
K0803.314100125	K0803.318100125	1000	1250	55	25	M20	M20	M16	18	350	800	600	200	500	400	165	400	160	25	6

Tombstones double-sided

without grid holes



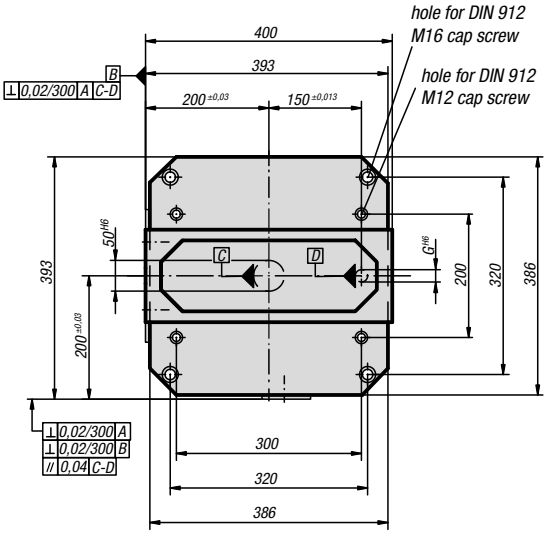
Material:
GJL 300.

Version:
Reference surfaces precision machined.
The clamping surfaces have 0.5 mm allowance.

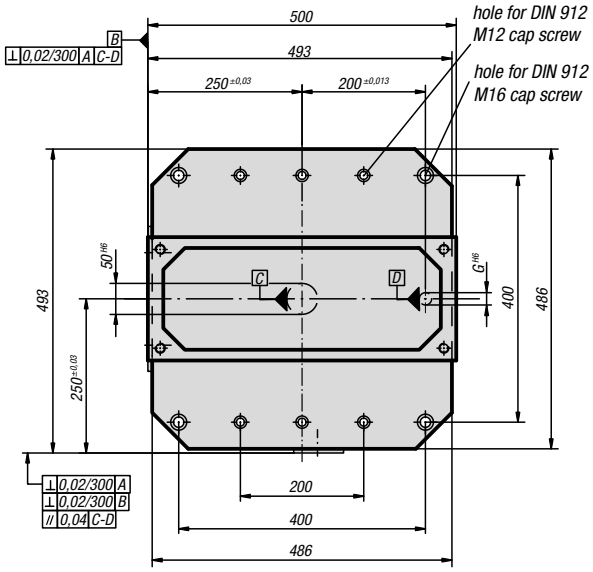
Sample order:
K0803.0040151

Note:
The double-sided tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.
Ring bolts for lifting are supplied. A cover prevents the cavity of the tombstone filling up with swarf.

K0803.0040151



K0803.0050201

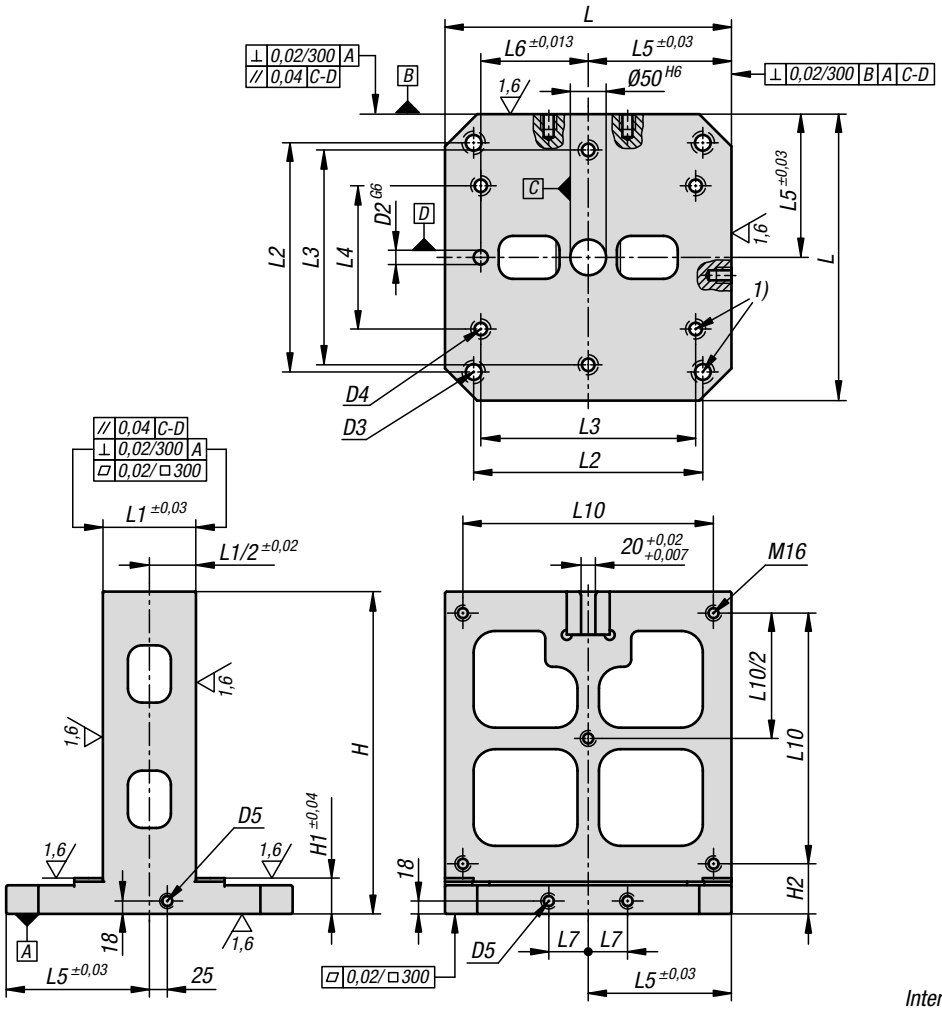


KIPP Tombstones double-sided without grid holes

Order No.	A	B1	C	D	E	E1	G	H	weight ca. kg
K0803.0040151	553	550	55	151±0,2	200	75,5 ±0,2	20	50	202
K0803.0050201	653	650	75	201±0,2	250	101,5 ±0,2	20	50	317

Tombstone, grey cast iron, double-sided,

for interchangeable subplates



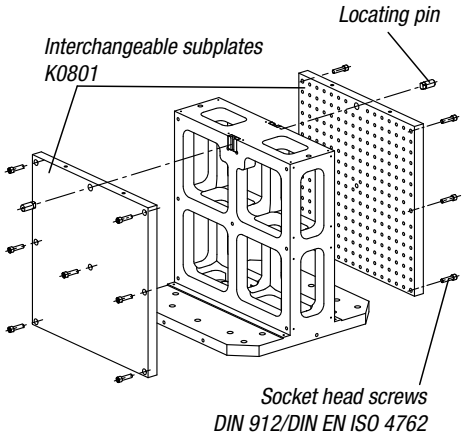
Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0804.14045

Note:
Interchangeable subplates can be positioned and mounted on both sides of the tombstone. This means that clamping fixtures can be replaced efficiently. The tombstones conform to machine tables for machine tools acc. to DIN 55201 and JIS6337-1980. Please order locating pins for positioning tombstones on machine tables acc. to DIN 55201 separately.
Ring bolts for hoisting are supplied, as well as 2 positioning pins for positioning the interchangeable subplates.

Drawing reference:
1) hole for DIN 912 cap screw

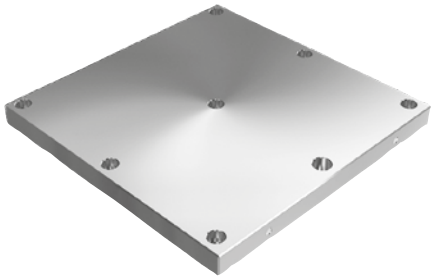


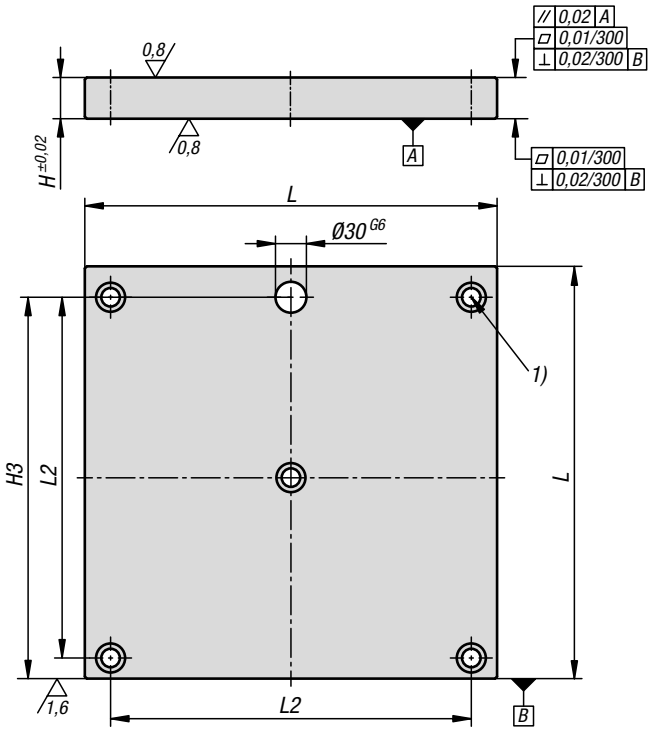
KIPP Tombstone, grey cast iron, double-sided, for interchangeable subplates

Order No.	L	L1	H	D2	D3	D4	D5	H1	H2	L2	L3	L4	L5	L6	L7	L10
K0804.14045	400	130	450	20	M16	M12	M 16	50	70	320	300	200	200	150	55	350
K0804.15055	500	150	550	20	M16	M12	M 16	55	75	400	200	-	250	200	75	450
K0804.16369	630	220	690	25	M16	M16	M 16	60	80	500	400	-	315	200	100	580
K0804.18086	800	250	860	25	M16	M16	M 16	60	80	640	600	400	400	300	135	750

Interchangeable subplates, grey cast iron,

with pre-machined clamping faces





Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0801.1004040

Note:
Interchangeable subplates with pre-machine clamping faces are used double-sided, together with the tombstones. The interchangeable subplates are positioned and mounted on both sides of the tombstone. This means that clamping fixtures can be replaced efficiently. The interchangeable subplates can be machined accordingly by the customer.

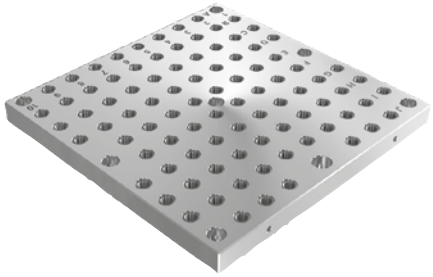
Drawing reference:
1) hole for DIN 912 cap screw, M16

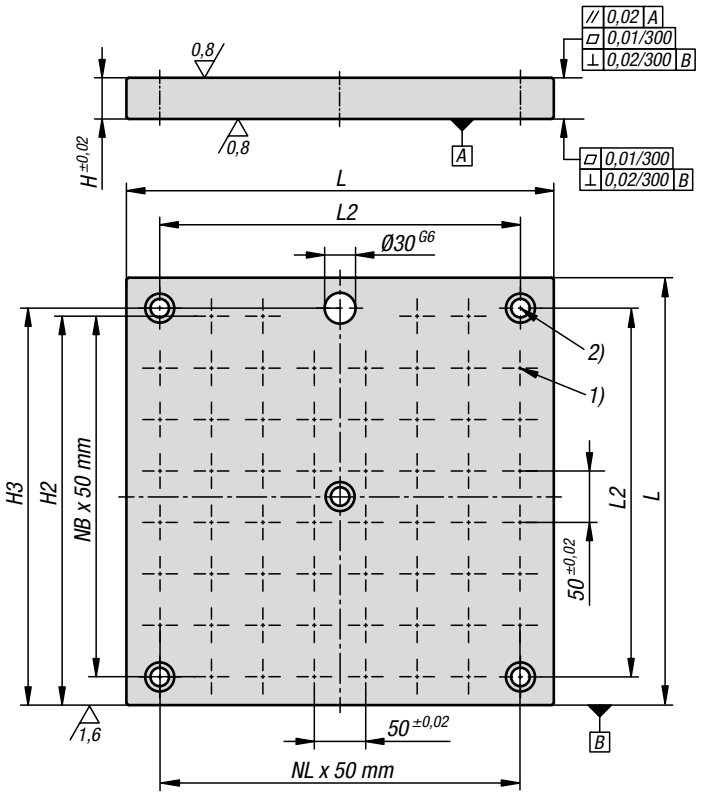
KIPP Interchangeable subplates, grey cast iron, with pre-machined clamping faces

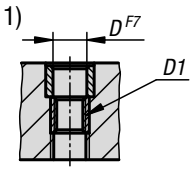
Order No.	L	H	H3	L2	No. of fastening holes
K0801.1004040	400	40	370	350	5
K0801.1005050	500	40	470	450	7
K0801.1006363	630	40	600	580	7
K0801.1008080	800	50	770	750	7

Interchangeable subplates, grey cast iron

with grid holes







Material:
GJL 300.

Version:
Mounting surfaces ground

Sample order:
K0801.2124040

Note:
Interchangeable subplates with grid holes are used double-sided, together with the tombstones. The interchangeable subplates are positioned and mounted on both sides of the tombstone. This means that clamping fixtures can be replaced efficiently.
The alphanumerically labelled grid holes mean that the clamping elements can be assigned in a defined manner in the event of repeat setups.
Please order protection plugs to plug unused grid holes separately.

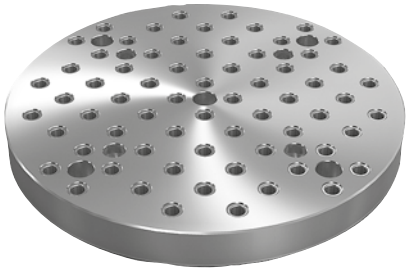
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw, M16

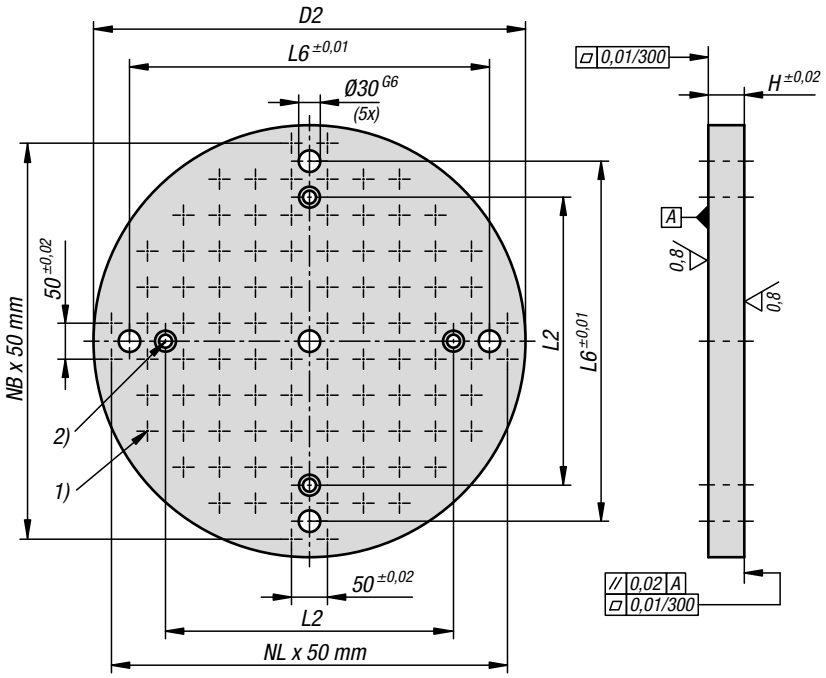
KIPP Interchangeable subplates, grey cast iron, with grid holes

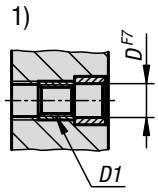
Order No.	L	H	D	D1	H2	H3	L2	N1=No. of grid holes	NL=No. lengthwise	NB= No. across	No. of fastening holes
K0801.2124040	400	40	12	M12	370	370	350	58	7	7	5
K0801.2125050	500	40	12	M12	470	470	450	94	9	9	7
K0801.2126363	630	40	12	M12	585	600	580	138	11	11	7
K0801.2128080	800	50	12	M12	770	770	750	250	15	15	7
K0801.2164040	400	40	16	M16	370	370	350	58	7	7	5
K0801.2165050	500	40	16	M16	470	470	450	90	9	9	7
K0801.2166363	630	40	16	M16	585	600	580	138	11	11	7
K0801.2168080	800	50	16	M16	770	770	750	246	15	15	7

Baseplates, grey cast iron, round,

with grid holes







Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K1532.21230050

Note:
Grid spacing 50 ±0,02 mm.
Round baseplates with grid holes are used for setting up modular fixtures. These baseplates are positioned and mounted directly on machine tables.
The aligning holes are used to align the baseplate on the machine table.
Please order locating pins to locate the baseplates separately.
Please order protection plugs to plug unused grid holes separately.
Ring bolts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

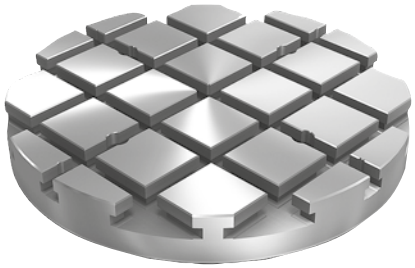
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw (D4)

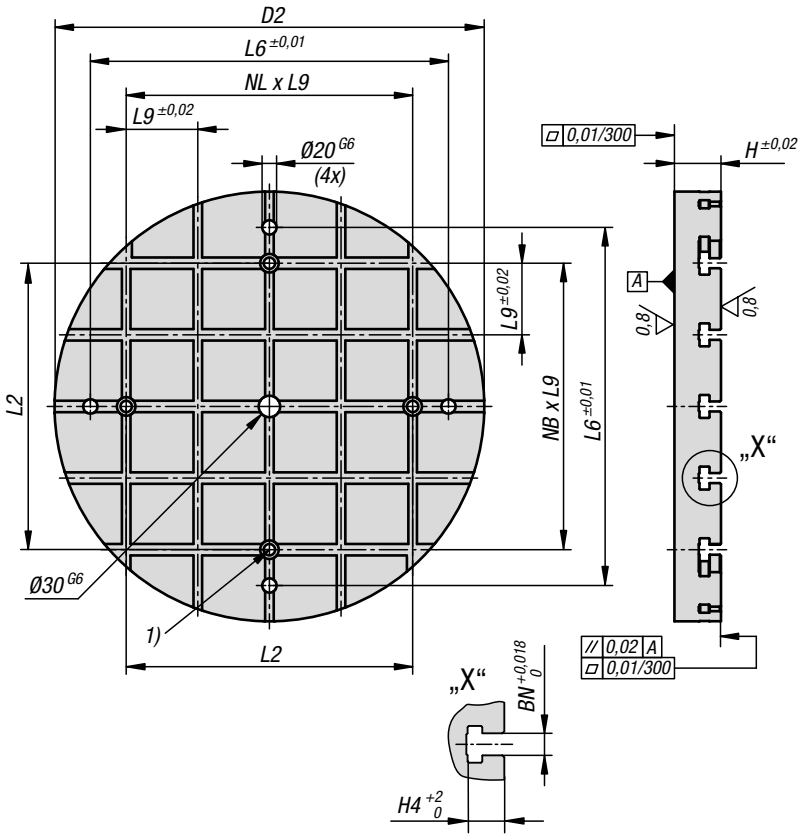
KIPP Baseplates, grey cast iron, round, with grid holes

Order No.	D2	H	D	D1	D4	L2	L6	N1=No. of grid holes	NL=No. lengthwise	NB= No. across
K1532.21230050	300	50	12	M12	M12	150	220	24	5	5
K1532.21240050	400	50	12	M12	M12	250	320	44	7	7
K1532.21250050	500	50	12	M12	M16	300	400	68	9	9
K1532.21260050	600	50	12	M12	M16	400	500	96	11	11
K1532.21650050	500	50	16	M16	M16	300	400	68	9	9
K1532.21660050	600	50	16	M16	M16	400	500	96	11	11

Baseplates, grey cast iron, round,

with T-slots





Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K1532.31430050

Note:
Round baseplates with T-slots are used for constructing modular fixtures. These baseplates are positioned and mounted directly on machine tables. The precise longitudinal and transverse slot spacing ensures very high repeat clamping accuracy.
The aligning holes are used to align the baseplate on the machine table.
Please order locating pins to locate the baseplates separately.
Ring bolts with T-nuts for hoisting are supplied.
Other dimensions available on request.

On request:
other dimensions.

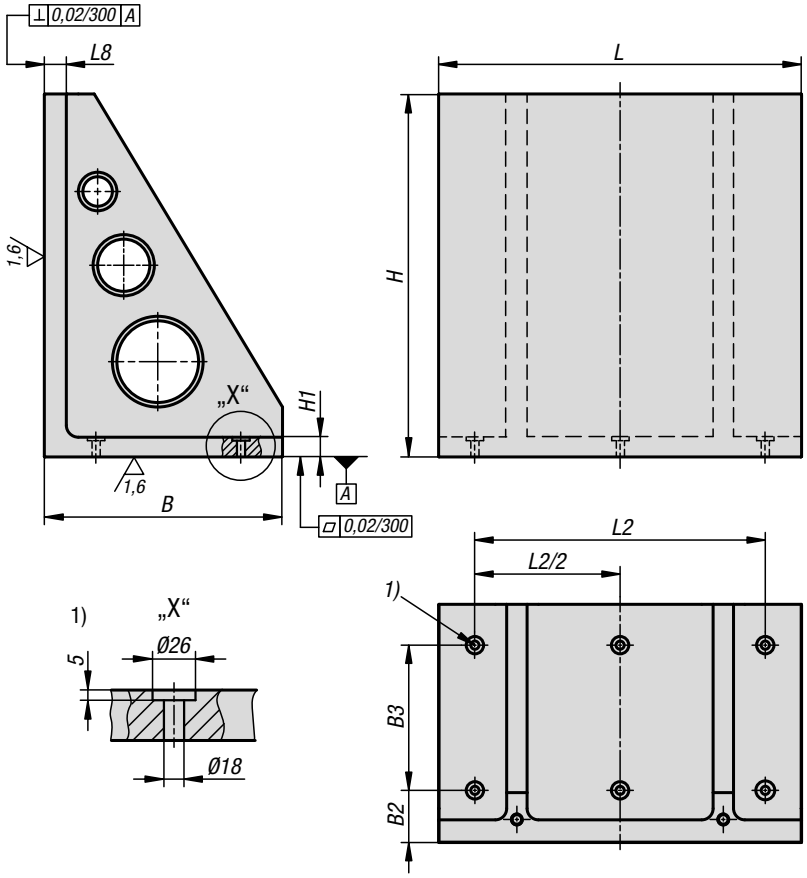
Drawing reference:
1) hole for DIN 912 cap screw (D4)

KIPP Baseplates, grey cast iron, round, with T-slots

Order No.	D2	H	D4	L2	L6	L9	BN=Slot width	NL=No. lengthwise	NB= No. across
K1532.31430050	300	50	M12	150	250	75	14	2	2
K1532.31440050	400	50	M12	250	350	75	14	4	4
K1532.31850065	500	65	M16	300	450	100	18	4	4
K1532.31860065	600	65	M16	400	550	100	18	4	4

Angle plates, grey cast iron, wide

with pre-machined clamping faces



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1531.100302230

Note:
Angle plates are used for the vertical positioning and mounting of workpieces and fixtures. Angle plates with pre-machined clamping faces provide a quick and economic method of producing a base with specific grid or individual holes.
Ring bolts for hoisting are supplied.

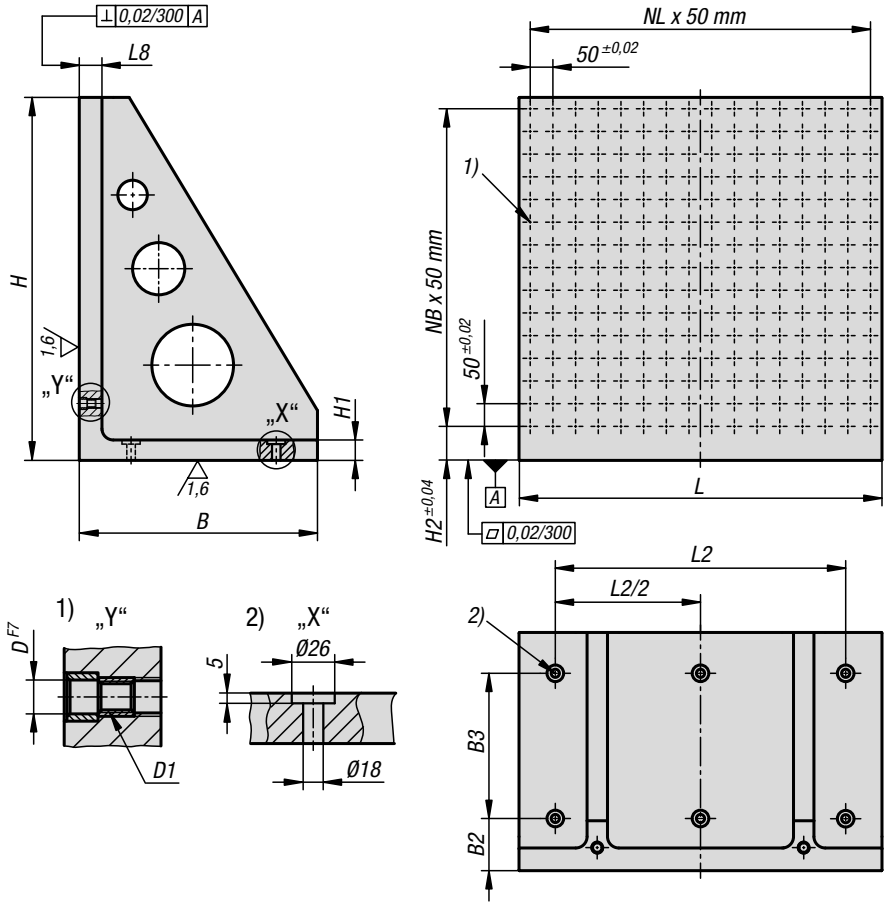
Drawing reference:
1) hole for DIN 912 cap screw

KIPP Angle plates, grey cast iron, wide with pre-machined clamping faces

Order No.	L	B	H	L2	B2	B3	H1	L8
K1531.100302230	300	220	300	250	90	100	30	40
K1531.100402840	400	280	400	320	90	160	30	40
K1531.100503450	500	340	500	400	90	200	35	50
K1531.100634363	630	435	630	500	100	250	40	50
K1531.100805280	800	525	800	640	115	320	45	50

Angle plates, grey cast iron, wide

with grid holes



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1531.212302230

Note:
Grid spacing 50 ±0.02 mm.
Angle plates are used for the vertical positioning and mounting of workpieces and fixtures. These angle plates with grid holes provide a quick and economic method of clamping workpieces with standardised clamping elements. The alphanumerically labelled grid holes guarantee a defined assignment of clamping elements by repeat setups.
Ring bolts for hoisting are supplied.
Please order protection plugs to plug unused grid holes separately.

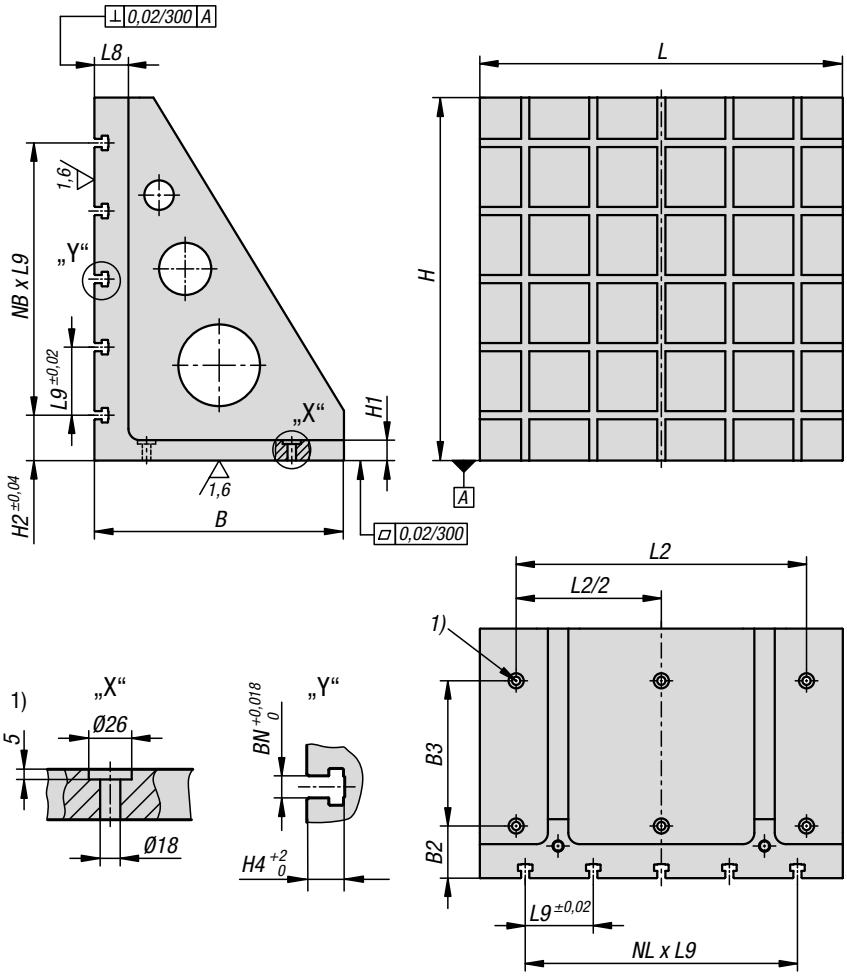
Drawing reference:
1) grid hole
2) hole for DIN 912 cap screw

KIPP Angle plates, grey cast iron, wide with grid holes

Order No.	L	H	L2	B	B2	B3	H1	H2	L8	D	D1	N1=No. of grid holes	NL=No. lengthwise	NB= No. across
K1531.212302230	300	300	250	220	90	100	30	75	40	12	M12	30	5	4
K1531.212402840	400	400	320	280	90	160	30	75	40	12	M12	56	7	6
K1531.212503450	500	500	400	340	90	200	35	75	50	12	M12	90	9	8
K1531.212634363	630	630	500	435	100	250	40	40	50	12	M12	144	11	11
K1531.212805280	800	800	640	525	115	320	45	75	50	12	M12	240	15	14
K1531.216302230	300	300	250	220	90	100	30	75	40	16	M16	30	5	4
K1531.216402840	400	400	320	280	90	160	30	75	40	16	M16	56	7	6
K1531.216503450	500	500	400	340	90	200	35	75	50	16	M16	90	9	8
K1531.216634363	630	630	500	435	100	250	40	40	50	16	M16	144	11	11
K1531.216805280	800	800	640	525	115	320	45	75	50	16	M16	240	15	14

Angle plates, grey cast iron, wide

with T-slots



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K1531.314302230

Note:
Angle plates are used for the vertical positioning and mounting of workpieces and fixtures. These angle plates with T-slots provide a quick and economic way of clamping workpieces with standardised clamping elements. The precise longitudinal and transverse slot spacing ensures high repeat clamping accuracy. Ring bolts for hoisting are supplied.

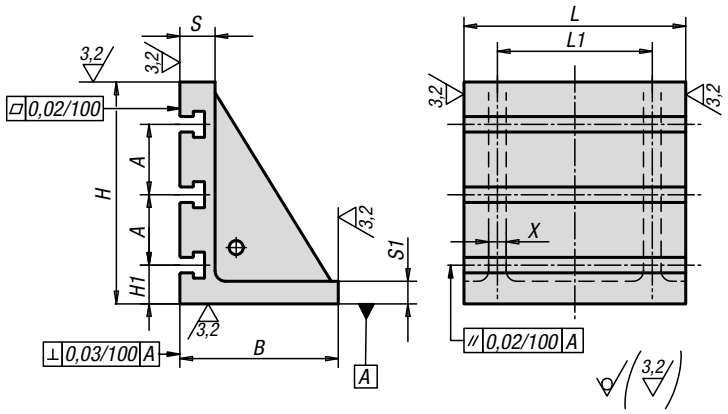
Drawing reference:
1) hole for DIN 912 cap screw

KIPP Angle plates, grey cast iron, wide with T-slots

Order No.	L	B	H	L2	B2	B3	H1	H2	L8	L9	BN=Slot width	NL=No. lengthwise	NB= No. across
K1531.314302230	300	220	300	250	90	100	30	50	60	100	14	2	2
K1531.314402840	400	300	400	320	90	160	30	50	60	100	14	3	3
K1531.314503450	500	350	500	400	90	200	35	50	60	100	14	4	4
K1531.314634363	630	450	630	500	100	250	40	65	65	125	14	4	4
K1531.314805280	800	550	800	640	115	320	45	100	75	150	14	4	4
K1531.318302230	300	220	300	250	90	100	30	50	60	100	18	2	2
K1531.318402840	400	300	400	320	90	160	30	50	60	100	18	3	3
K1531.318503450	500	350	500	400	90	200	35	50	60	100	18	4	4
K1531.318634363	630	450	630	500	100	250	40	65	65	125	18	4	4
K1531.318805280	800	550	800	640	115	320	45	100	75	150	18	4	4

Angle plates

with or without T-slots cast iron

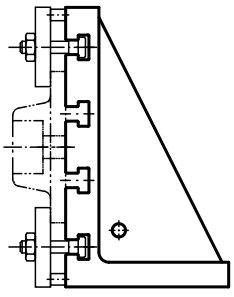


Material:
GJL 250 annealed.

Sample order:
K1451.3203701

On request:
Other slot widths.

Drawing reference:
machined faces: +0.2 mm/ +0.5 mm
unmachined faces: ±2 mm



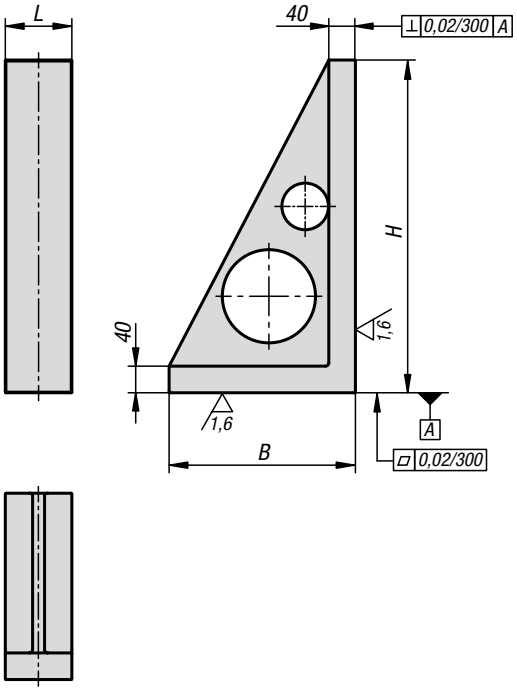
KIPP Angle plates with or without T-slots cast iron

Order No. without slot	Order No. with t-slot	L	L1	B	H	H1	S	S1	A	X	T-slot
K1451.100125	-	100	40	100	125	-	20	10	-	10	-
K1451.125160	-	125	100	100	160	-	20	10	-	10	-
K1451.200250	-	200	120	125	250	-	30	15	-	15	-
K1451.250300	-	250	200	150	300	-	40	20	-	20	-
K1451.320370	**K1451.3203701**	320	280	200	370	-/65	50	25	-/80	25	-/14
K1451.400450	**K1451.4004501**	400	280	265	450	-/75	60	30	-/100	30	-/18
K1451.500550	**K1451.5005501**	500	360	315	550	-/75	70	35	-/100	35	-/18

Add-on elements

Angle plates, grey cast iron, narrow

with pre-machined clamping faces



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0807.100181030

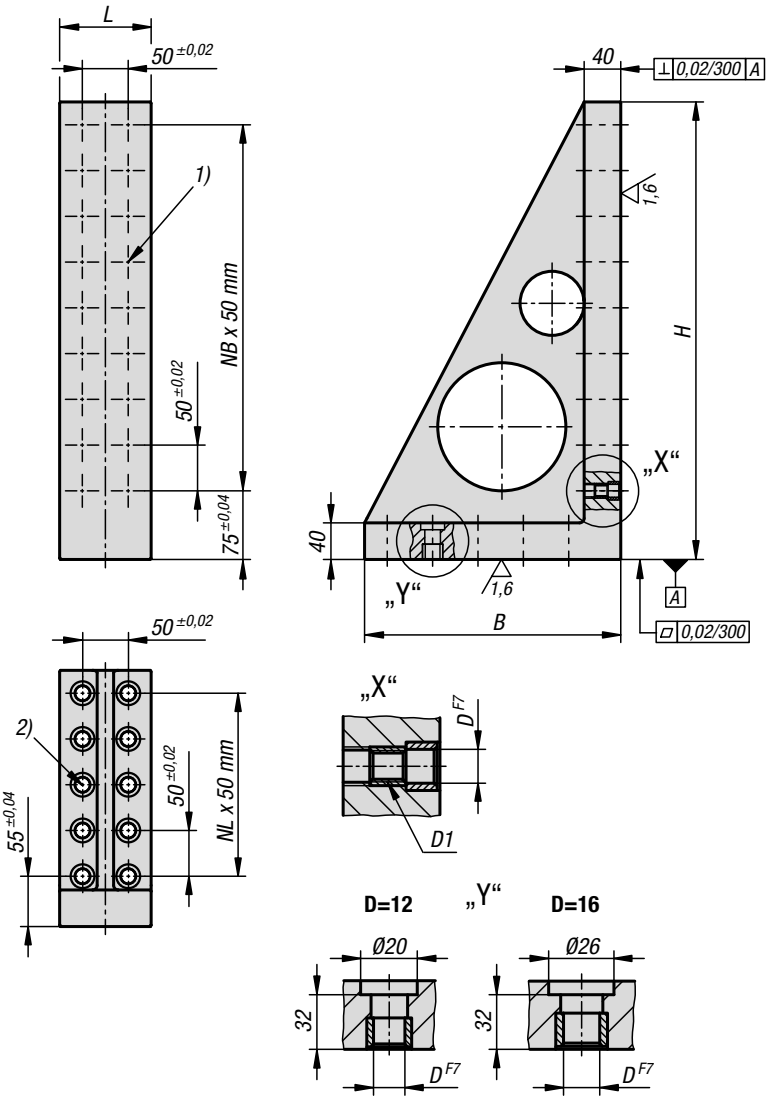
Note:
Angle plates are used for the vertical positioning and mounting of workpieces and fixtures. These angle plates with pre-machined clamping faces provide a quick and economic method of producing bodies with specific grid or individual holes.

KIPP Angle plates, grey cast iron, narrow with pre-machined clamping faces

Order No.	L	B	H
K0807.100181030	100	180	300
K0807.100231040	100	230	400
K0807.100281050	100	280	500

Angle plates, grey cast iron, narrow

with grid holes



Material:
GJL 300.

Version:
Support and mounting surfaces precision machined

Sample order:
K0807.212181030

Note:
Grid spacing 50 ±0.02 mm.
Angle plates are used for the vertical positioning and mounting of workpieces and fixtures. The shoulder screws K0815 are used to position and fasten the angle plates on the grid plates K0800 or subplates K0806.
Size M12 angle plates are fastened using shoulder screws K0815.112065.
Size M16 angle plates are fastened using shoulder screws K0815.116065.
Please order protection plugs to plug unused grid holes separately.

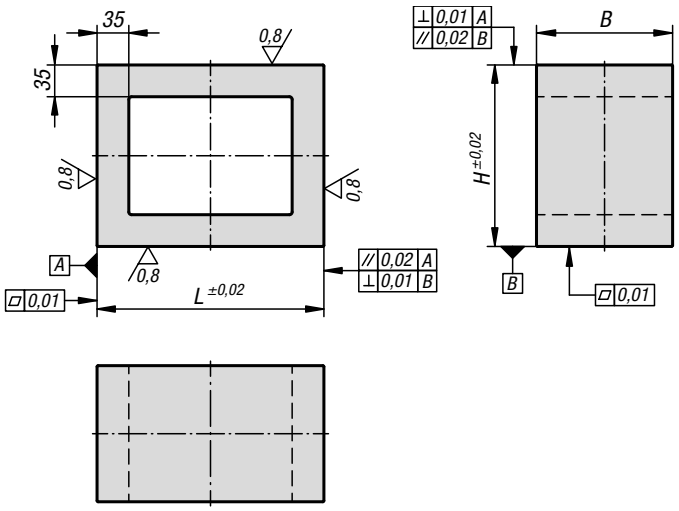
Drawing reference:
1) grid hole
2) hole for shoulder screw

KIPP Angle plates, grey cast iron, narrow with grid holes

Order No.	L	B	H	D	D1	N1=No. of grid holes	No. of fastening holes	NL=No. lengthwise	NB= No. across
K0807.212181030	100	180	300	12	M12	10	6	2	4
K0807.212231040	100	230	400	12	M12	14	8	3	6
K0807.212281050	100	280	500	12	M12	18	10	4	8
K0807.216181030	100	180	300	16	M16	10	6	2	4
K0807.216231040	100	230	400	16	M16	14	8	3	6
K0807.216281050	100	280	500	16	M16	18	10	4	8

Tooling blocks, grey cast iron

with pre-machined clamping faces



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0809.100201515

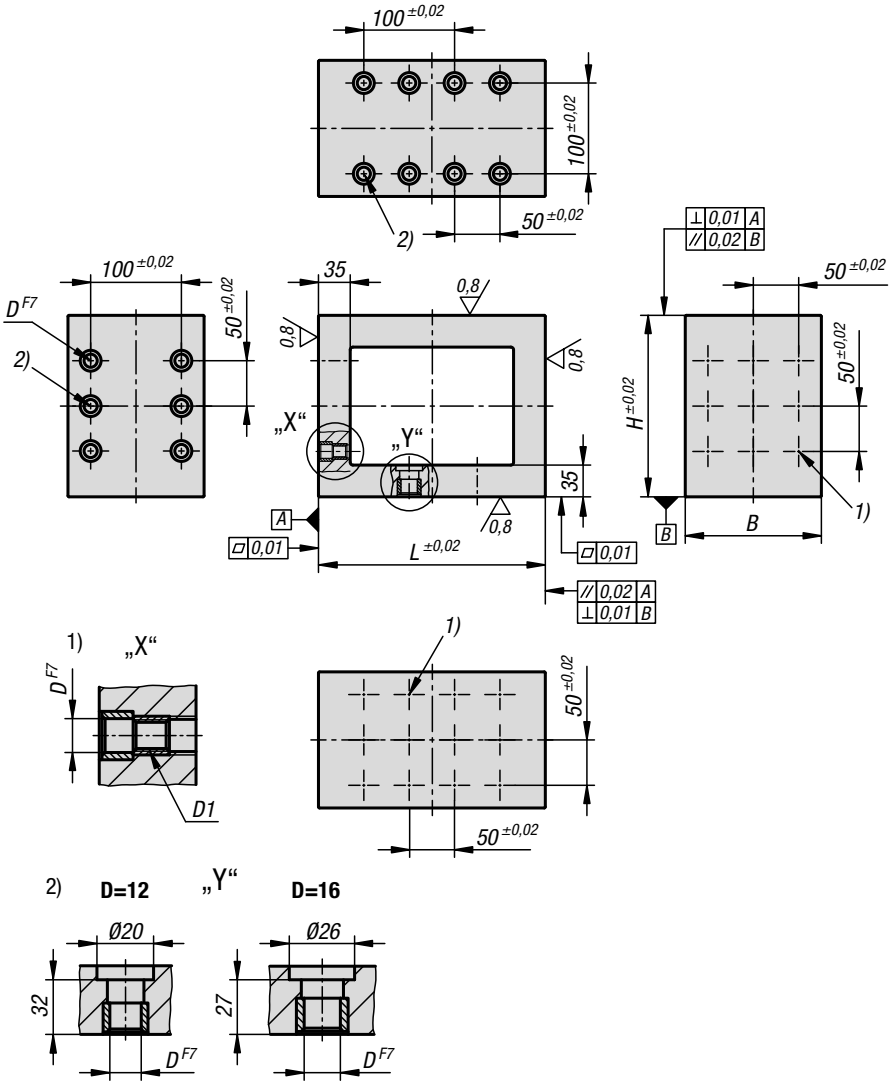
Note:
Tooling blocks with pre-machined clamping faces are used for constructing fixtures. These tooling blocks provide a fast and economic way of producing elements with specific grid or idividual holes. Tooling blocks can also be used as a base for clamping smaller workpieces.
By length L=300, the middle reinforcing rib should be taken into consideration.

KIPP Tooling blocks, grey cast iron with pre-machined clamping faces

Order No.	L	B	H
K0809.100201515	200	150	150
K0809.100251520	250	150	200
K0809.100302025	300	200	250

Tooling blocks, grey cast iron

with grid holes



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0809.212201515

Note:
Grid spacing 50 ±0.02 mm.
Tooling blocks with grid holes are used for constructing modular fixtures. They can be positioned and mounted precisely on grid systems. This means that the grid hole spacing is maintained on the raised clamping face.
Tooling blocks can also be used as a base element for clamping smaller workpieces.
Size M12 tooling blocks are fastened using shoulder screws K0815.112065. Size M16 tooling blocks are fastened using shoulder screws K0815.116065.
Please order protection plugs to plug unused grid holes separately.

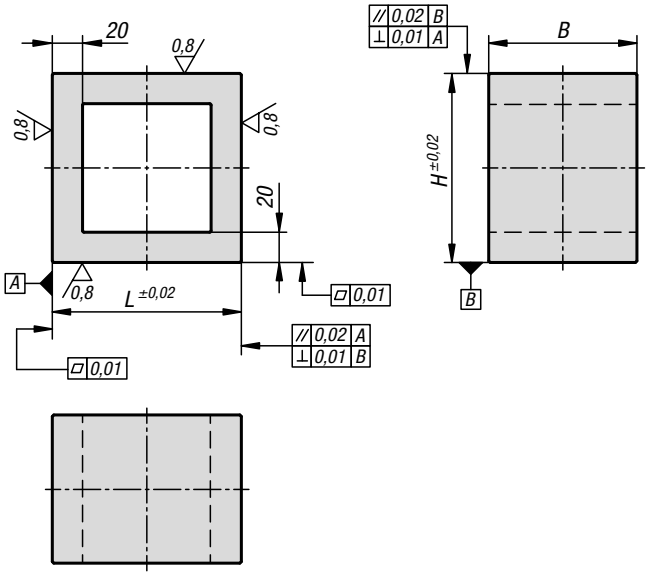
Drawing reference:
1) grid hole
2) hole for shoulder screw

KIPP Tooling blocks, grey cast iron with grid holes

Order No.	L	B	H	D	D1	N1=No. of grid holes	No. of fastening holes
K0809.212201515	200	150	150	12	M12	15	10
K0809.2122515201	250	150	200	12	M12	21	14
K0809.216201515	200	150	150	16	M16	15	10
K0809.2162515201	250	150	200	16	M16	21	14

Mini tooling blocks, grey cast iron

with pre-machined clamping faces



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0809.10012598125

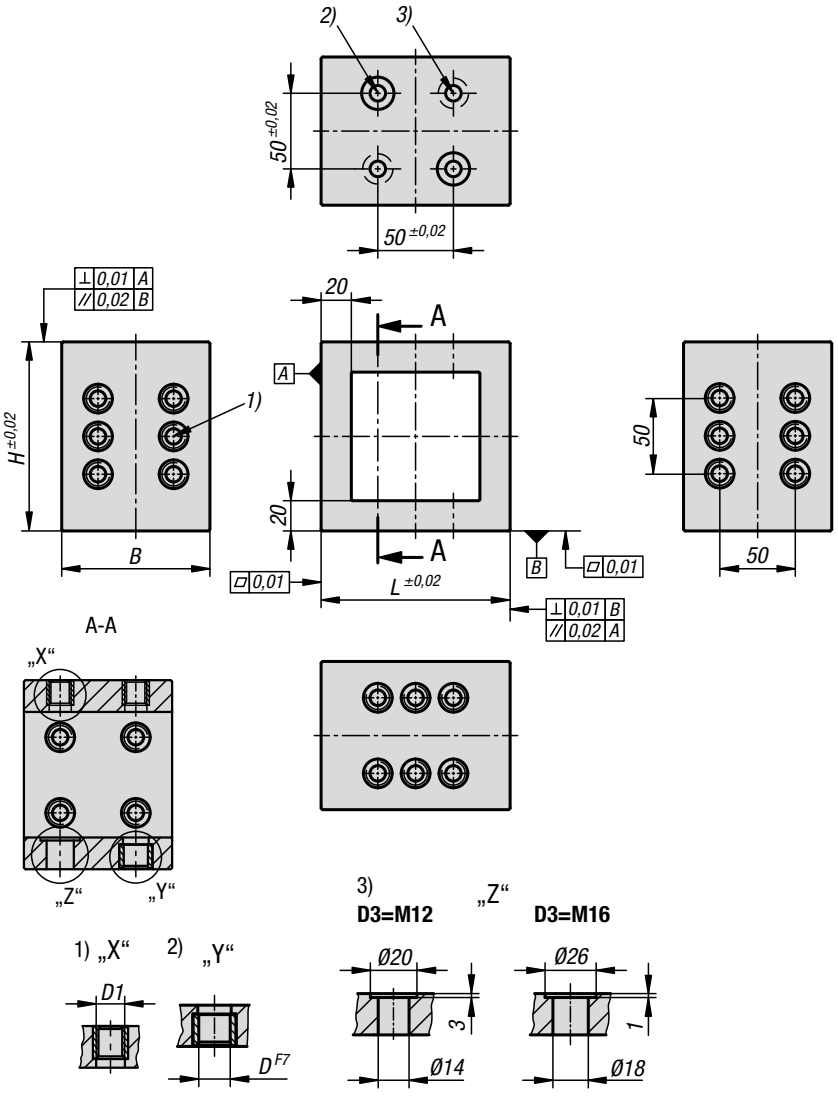
Note:
Tooling blocks with pre-machined clamping faces are used for constructing fixtures. These tooling blocks provide a fast and economic method of producing bodies with specific grid or individual holes. Tooling blocks can also be used as a body for clamping smaller workpieces.

KIPP Mini tooling blocks, grey cast iron with pre-machined clamping faces

Order No.	L	B	H
K0809.10012598125	125	98	125

Mini tooling blocks, grey cast iron

with grid holes



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K0809.21212598125

Note:
Grid spacing 50 ±0.02 mm.
Tooling blocks with grid holes are used for constructing modular fixtures. They can be positioned and mounted precisely on grid systems. This means that the grid hole spacing is maintained on the raised clamping face.
Tooling blocks can also be used as a base element for clamping smaller workpieces.
Size M12 tooling blocks are fastened using shoulder screws K0815.112065. Size M16 tooling blocks are fastened using shoulder screws K0815.116065.
Please order protection plugs to plug unused grid holes separately.

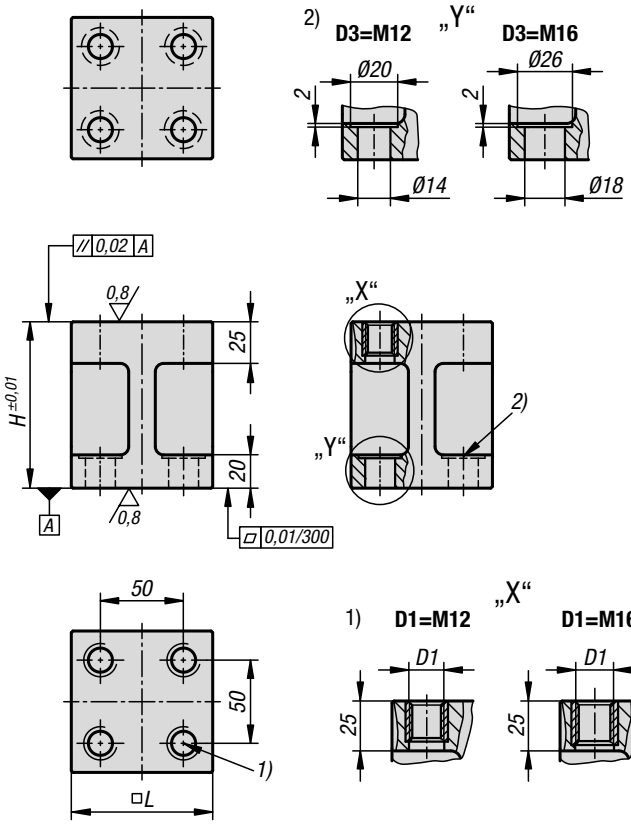
Drawing reference:
1) tapped hole
2) hole for shoulder screw
3) hole for DIN 912 cap screw

KIPP Mini tooling blocks, grey cast iron with grid holes

Order No.	L	B	H	D	D1	D3
K0809.21212598125	125	98	125	12	M12	M12
K0809.21612598125	125	98	125	16	M16	M16

Riser blocks, grey cast iron

Form H, short version



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K1536.21208585100

Note:
Riser blocks are used for constructing modular fixtures. Several riser blocks can be mounted on each other. Support elements, clamping devices, and stops can then be mounted on the top riser block. Riser blocks are fastened using DIN 912 cap screws.

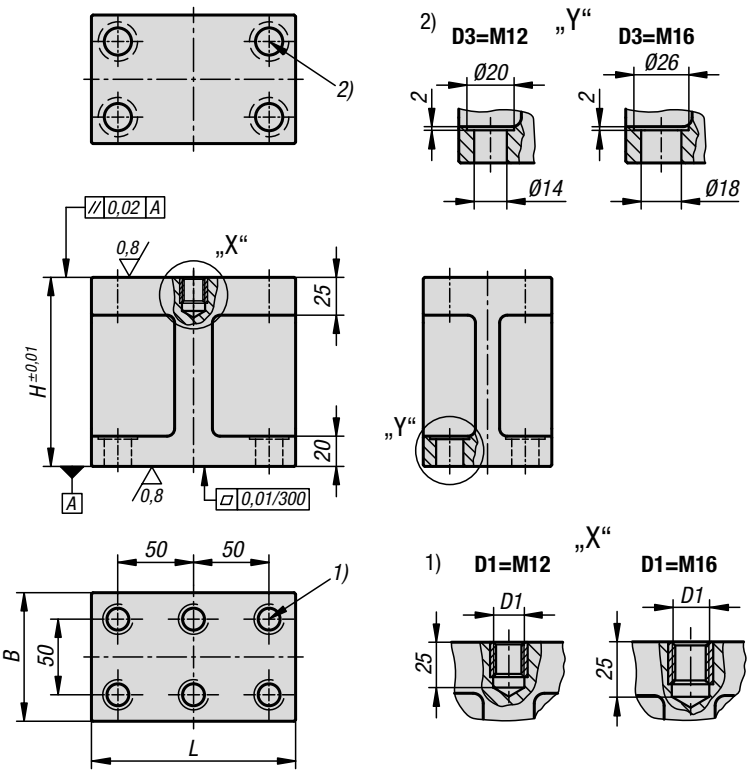
Drawing reference:
1) tapped hole
2) hole for DIN 912 cap screw

KIPP Riser blocks, grey cast iron Form H, short version

Order No.	D1	D3	H	L
K1536.21208585100	M12	M12	100	85
K1536.21208585125	M12	M12	125	85
K1536.21608585100	M16	M16	100	85
K1536.91608585125	M16	M16	125	85

Riser blocks, grey cast iron

Form H, long version



Material:
GJL 300.

Version:
Support and mounting surfaces ground

Sample order:
K1536.21213585100

Note:
Riser blocks are used for constructing modular fixtures. Several riser blocks can be mounted on each other. Support elements, clamping devices, and stops can then be mounted on the top riser block. Riser blocks are fastened using DIN 912 cap screws.

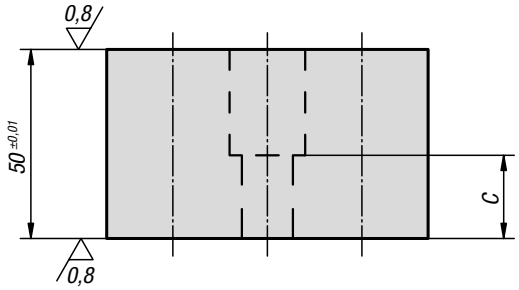
Drawing reference:
1) tapped hole
2) hole for DIN 912 cap screw

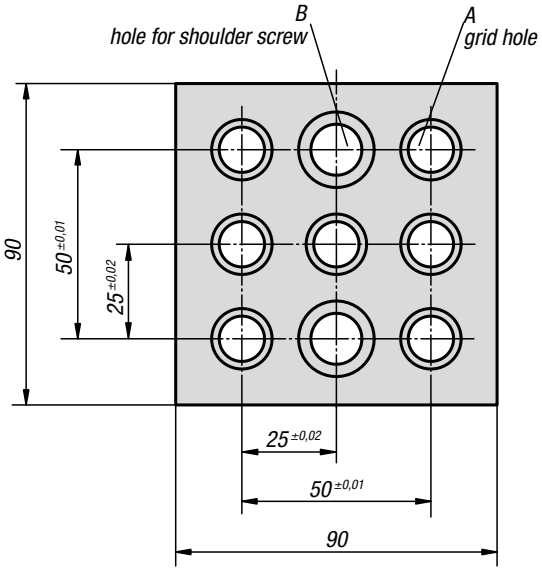
KIPP Riser blocks, grey cast iron Form H, long version

Order No.	L	B	H	D1	D3
K1536.21213585100	135	85	100	M12	M12
K1536.21213585125	135	85	125	M12	M12
K1536.21613585100	135	85	100	M16	M16
K1536.21613585125	135	85	125	M16	M16

Fastening blocks

Form M



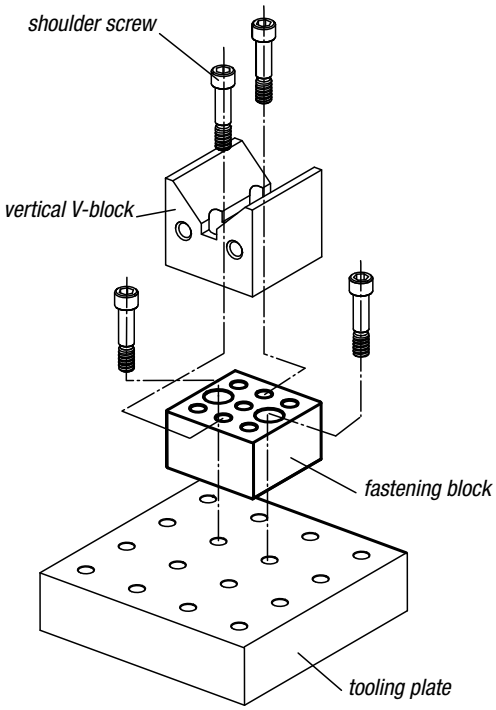


Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

Sample order:
K0810.12112050

Note:
Fastening blocks are used as risers for all system elements which have no movable seating faces - these include locating supports K0816, vertical V-blocks K0819.600.
They also allow positioning and fastening elements within a 50 ±0.01 mm pitch (see application example).

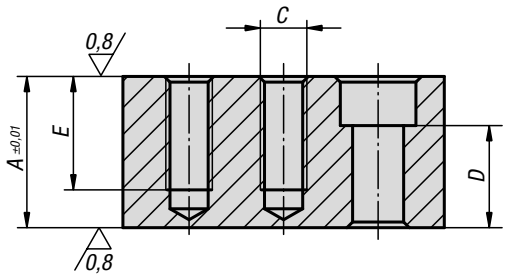


KIPP Fastening blocks Form M

Order No.	A locating hole	A thread	B Ø for shoulder screw	C	No. of grid holes	No. of mounting holes	Suitable shoulder screw	weight kg
K0810.12112050	12 F7	M12	12 F7	22	7	2	K0815.112055	2,693
K0810.12116050	16 F7	M16	16 F7	26	7	2	K0815.116055	2,38

Precision riser blocks

Form D

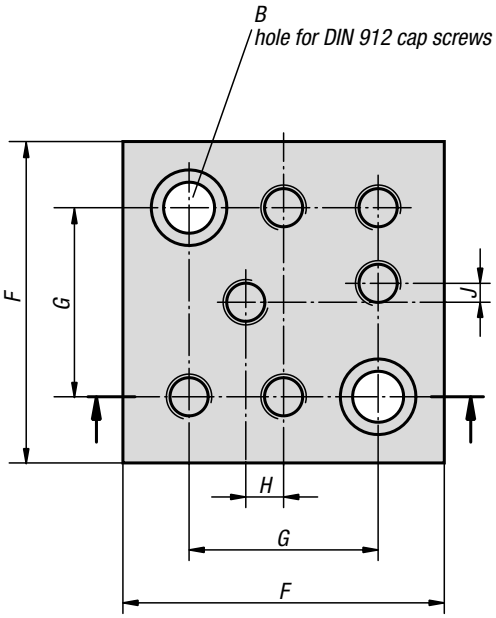


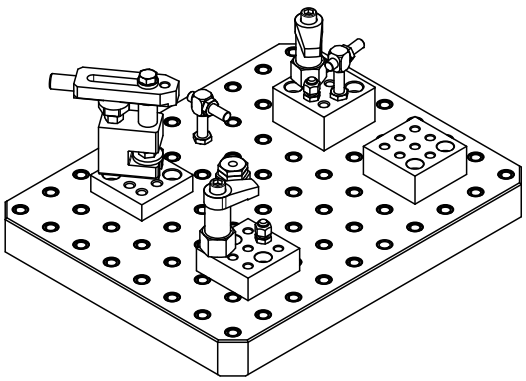
Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

Sample order:
K0811.14012025

Note:
Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.



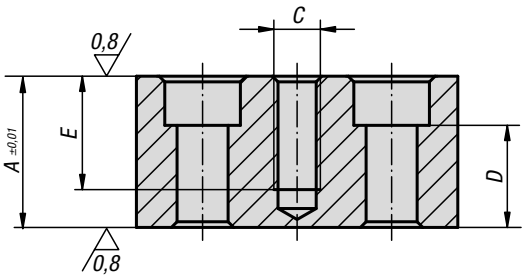


KIPP Precision riser blocks Form D

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	H	J	weight kg
K0811.14012025	25	M12	M12	12	25	85	50	10	5	1,218
K0811.14012032	32	M12	M12	19	32	85	50	10	5	1,56
K0811.14012040	40	M12	M12	27	30	85	50	10	5	1,97
K0811.14012050	50	M12	M12	37	30	85	50	10	5	2,5
K0811.14016025	25	M16	M16	8	25	85	50	10	5	1,039
K0811.14016032	32	M16	M16	15	32	85	50	10	5	1,33
K0811.14016040	40	M16	M16	23	35	85	50	10	5	1,7
K0811.14016050	50	M16	M16	33	35	85	50	10	5	2,123

Precision riser blocks

Form M

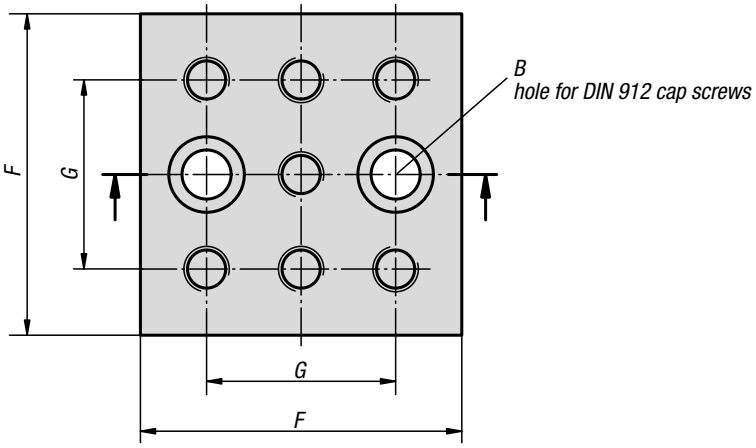


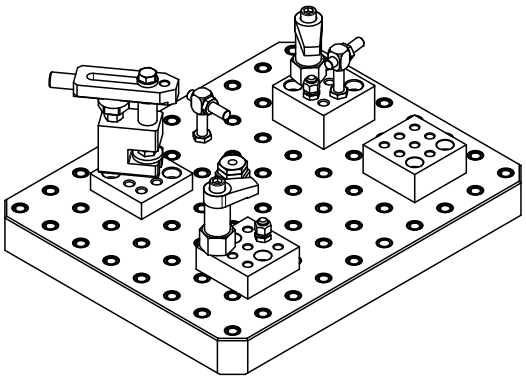
Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

Sample order:
K0811.14112025

Note:
Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.



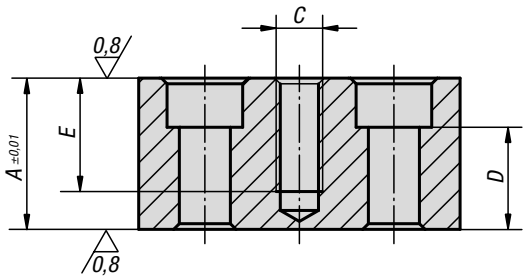


KIPP Precision riser blocks Form M

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	weight kg
K0811.14112025	25	M12	M12	12	25	85	50	1,199
K0811.14112032	32	M12	M12	19	32	85	50	1,535
K0811.14112040	40	M12	M12	27	30	85	50	1,955
K0811.14112050	50	M12	M12	37	30	85	50	2,43
K0811.14116025	25	M16	M16	8	25	85	50	1,007
K0811.14116032	32	M16	M16	15	32	85	50	1,31
K0811.14116040	40	M16	M16	23	35	85	50	1,648
K0811.14116050	50	M16	M16	33	35	85	50	2,104

Precision riser blocks

Form E

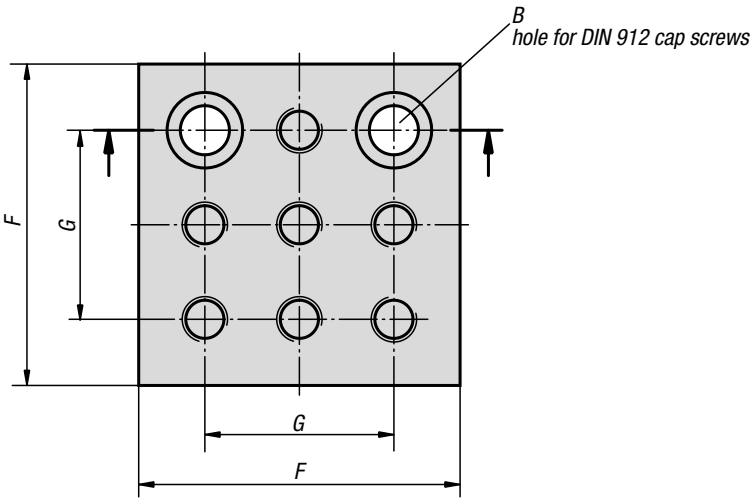


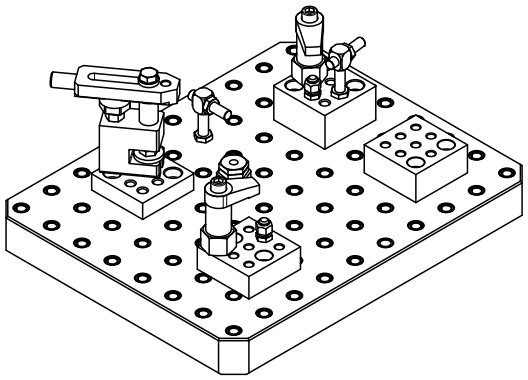
Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

Sample order:
K0811.14212025

Note:
Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.



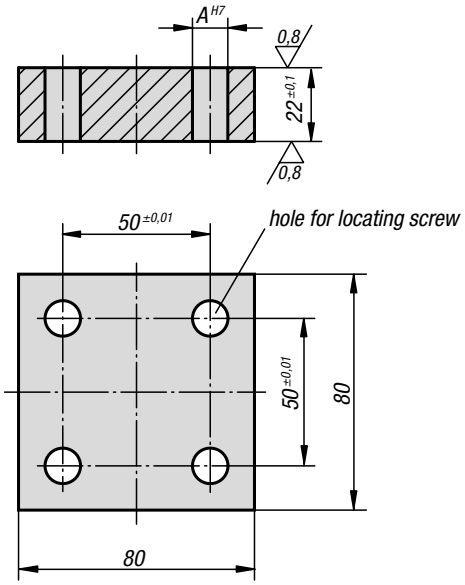


KIPP Precision riser blocks Form E

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	weight kg
K0811.14212025	25	M12	M12	12	25	85	50	1,208
K0811.14212032	32	M12	M12	19	25	85	50	1,52
K0811.14212040	40	M12	M12	27	30	85	50	1,95
K0811.14212050	50	M12	M12	37	30	85	50	2,454
K0811.14216025	25	M16	M16	8	25	85	50	1,005
K0811.14216032	32	M16	M16	15	32	85	50	1,289
K0811.14216040	40	M16	M16	23	35	85	50	1,68
K0811.14216050	50	M16	M16	33	35	85	50	2,18

Fastener elements, accessories

Connecting blocks



Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

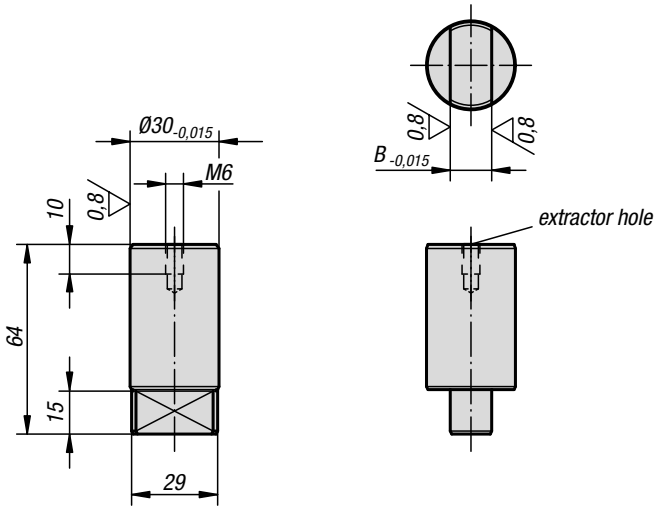
Sample order:
K0854.40012050

Note:
When several tooling plates K0800 are used, connecting blocks are needed to maintain the correct grid hole pitch from one plate to the next. They are secured using 4 shoulder screws K0815.1....

KIPP Connecting blocks

Order No.	A	Suitable shoulder screw
K0854.40012050	12	K0815.112055
K0854.40016050	16	K0815.116065

Locating pins

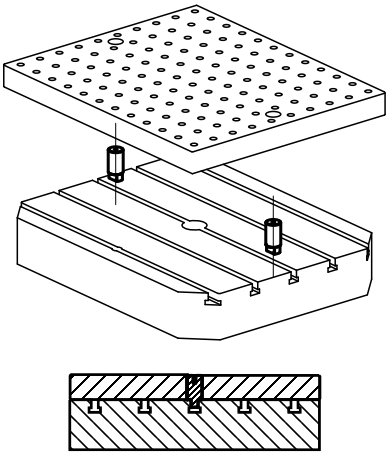


Material:
Carbon steel.

Version:
Tempered and black oxidised.
Precision diameters and guide faces ground.

Sample order:
K0855.14030

Note:
Locating pins are used for positioning grid plates K0800 on machine tables.

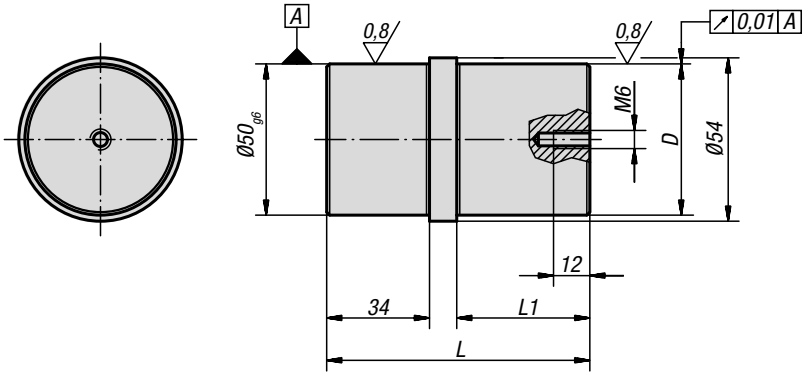


KIPP Locating pins

Order No.	B
K0855.14030	14
K0855.18030	18
K0855.20030	20
K0855.22030	22

Centring pins

for central hole

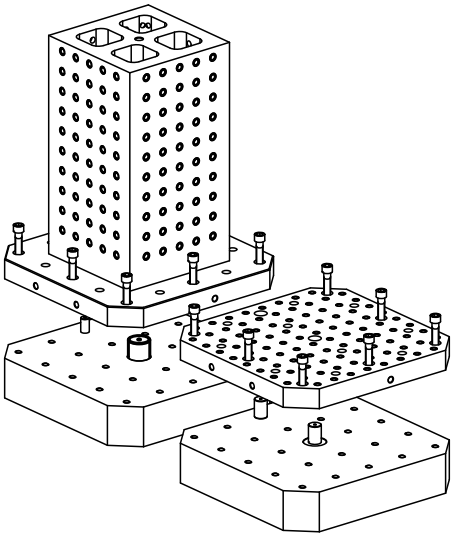


Material:
Steel.

Version:
Case-hardened.
Toleranced diameter ground.

Sample order:
K0856.5025

Note:
Centring pins for central holes are suitable for basic elements K0806, K0803, K0804 and K0805.

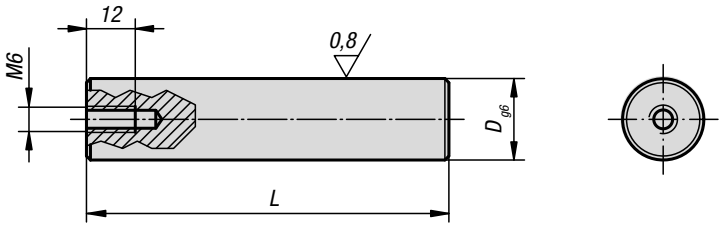


KIPP Centering pins for central hole

Order No.	D	L	L1
K0856.5025	25 g6	77	34
K0856.5030	30 h6	87	44
K0856.5050	50 g6	87	44

Centring pins

for aligning hole

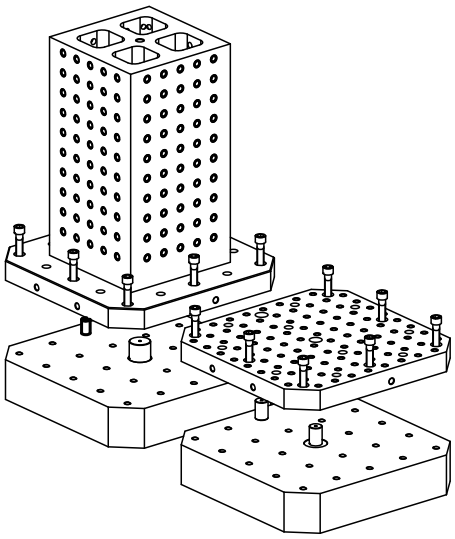


Material:
Steel.

Version:
Case-hardened.
Toleranced diameter ground.

Sample order:
K0857.25125

Note:
Centring pins for aligning holes are suitable for basic elements K0803 and K0805.

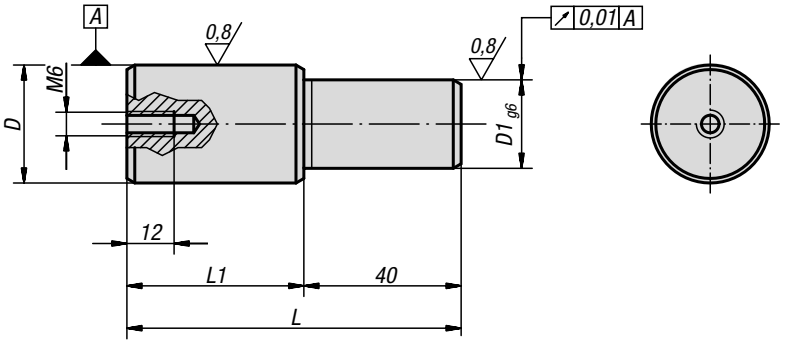


KIPP Centering pins for aligning hole

Order No.	D	L
K0857.20075	20	75
K0857.20089	20	89
K0857.25125	25	125

Centring pins

for aligning hole

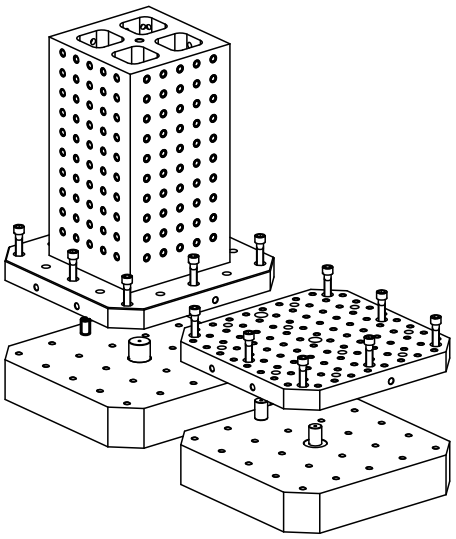


Material:
Steel.

Version:
Case-hardened.
Toleranced diameter ground.

Sample order:
K0858.2520

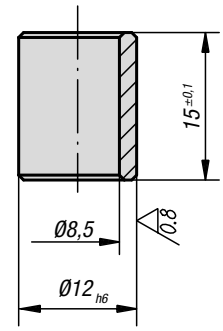
Note:
Centring pins for aligning holes are suitable for subplates K0806.

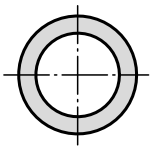


KIPP Centering pins for aligning hole

Order No.	D	D1	L	L1
K0858.2520	25 g6	20	75	35
K0858.3020	30 h6	20	85	45
K0858.3025	30 h6	25	85	45

Locating sleeve





Material:
Tool steel.

Version:
Hardened and black oxidised.
Toleranced diameter ground.

Sample order:
K0814.44008012

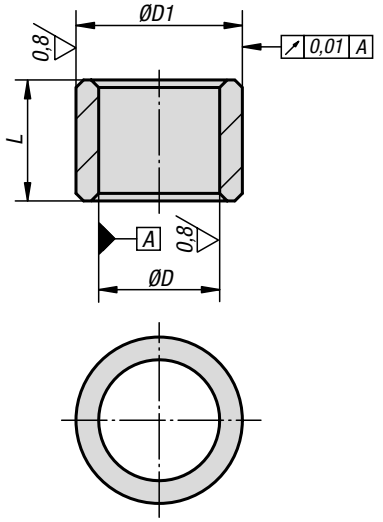
KIPP Locating sleeve

Order No.	Dimensions
K0814.44008012	see drawing

Notes

Locating bushings

for grid systems

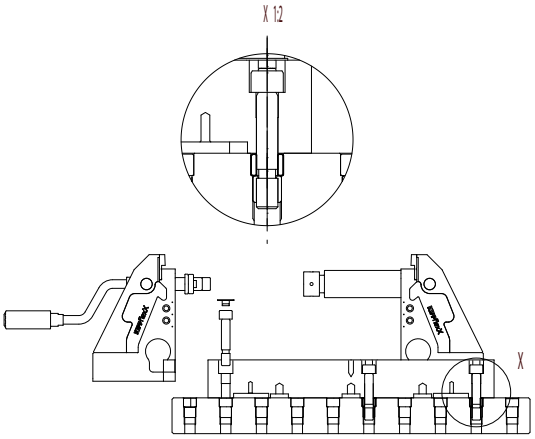


Material:
Special case-hardened steel

Version:
Hardened and ground.

Sample order:
K0861.01508305002

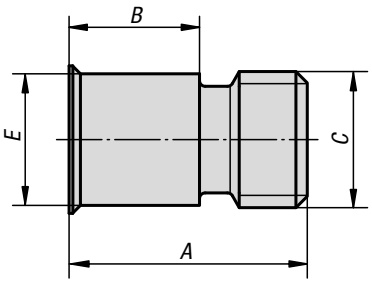
Note:
See next page for assembly instructions for changing locating bushings.

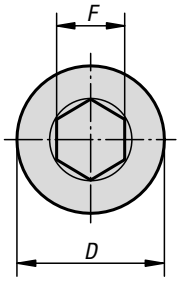


KIPP Locating bushings for grid systems

Order No.	D	D1	L
K0861.01508305002	12 H6	16 g5	8
K0861.01012304002	12 F7	18 g6	12
K0861.01016405002	16 F7	22 g6	16

Aluminium protection plugs



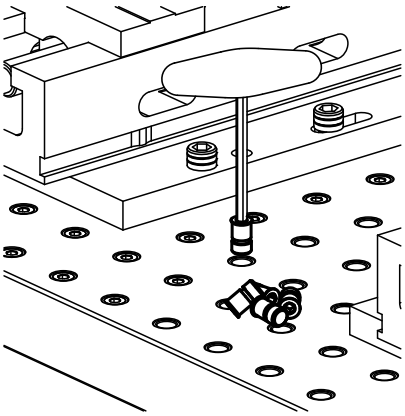


Material:
Aluminium.

Version:
Bright.

Sample order:
K0862.60108015

Note:
Use these plugs to seal grid holes and protect them from swarf and dirt.
Leave the protection plugs in holes not in use!
Aluminium plugs are used when aggressive coolants are used or when cutting dry.

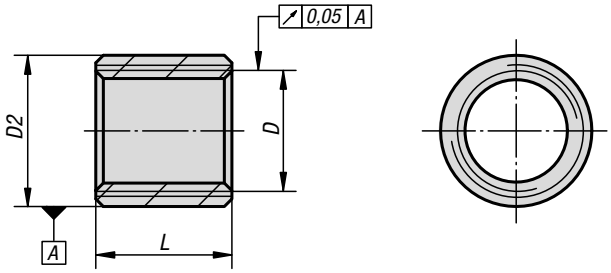


KIPP Aluminium protection plugs

Order No.	A	B	C	D	E	F
K0862.60108015	15	7,5	M8	12,6	11,8	5
K0862.60112021	21	11,5	M12	13	11,6	6
K0862.60116026	26	15	M16	17	15,6	8

Threaded bushings

for grid systems



Material:
Carbon steel.

Version:
Tempered to 1100-1300 N/mm².

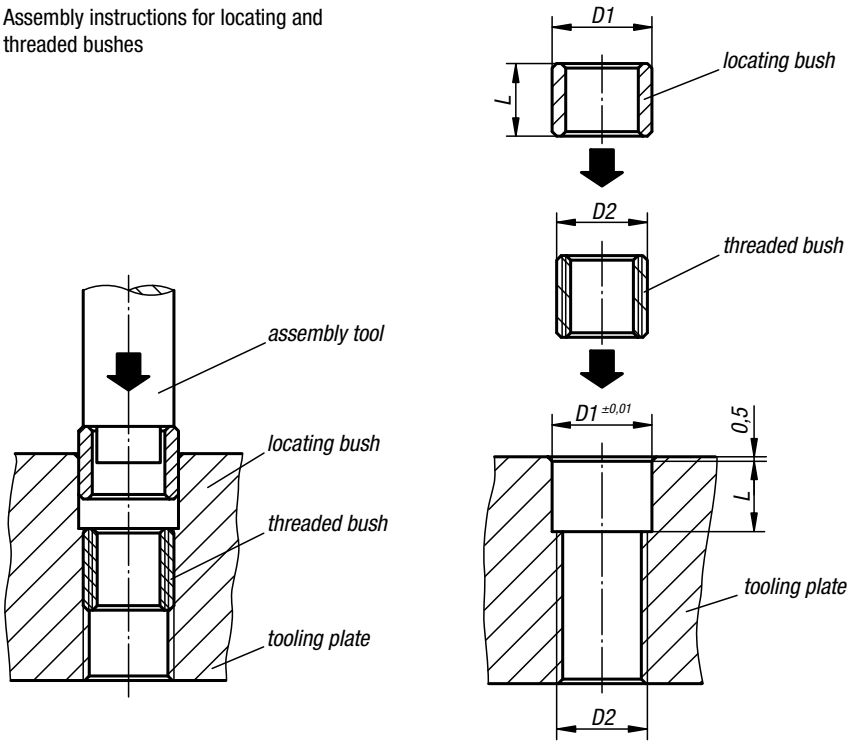
Sample order:
K0863.01508305003

Note:
Assembly instructions for changing threaded bushing.

Inserting the locating and threaded bushing

1. Remove grease from the locating and threaded bushing.
2. Apply adhesive (Loctite 638) in the hole.
3. Apply adhesive (Loctite 638) on the threaded bushing and screw in.
4. Apply adhesive (Loctite 638) to the locating bushing and insert it. If the locating bushing cannot be inserted by hand, please use an assembly tool as shown application example:.
5. Remove any adhesive pressed out by insertion of the locating and threaded bushing before it hardens.

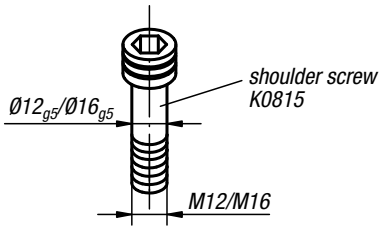
Assembly instructions for locating and threaded bushes

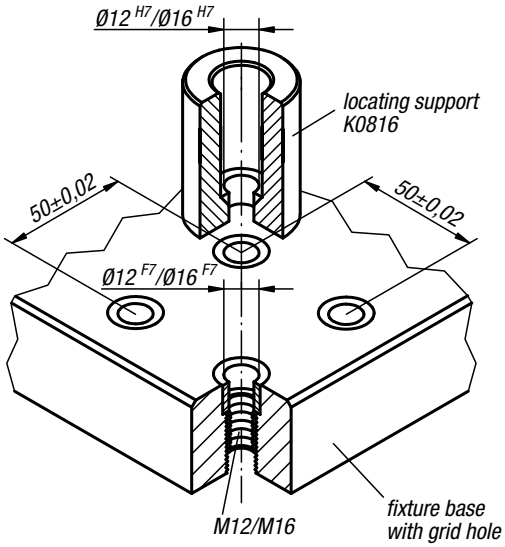


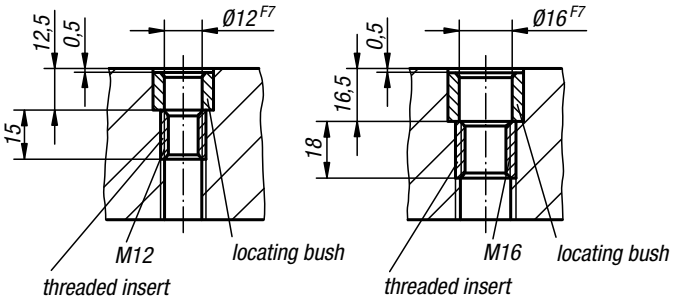
KIPP Threaded bushings for grid systems

Order No.	D	D2	L
K0863.01508305003	M8	M12x1,75	12
K0863.01012304003	M12	M16x1,5	15
K0863.01016405003	M16	M20x1,5	18

Grid holes and pitches







Grid hole:

The characteristic feature of the grid hole is its dual function: the coaxial arrangement of the locating and the threaded parts allows positioning and fastening at the same time with one grid hole (see illustrations). As a result, the size of the fixture elements can be reduced to a minimum and their flexibility increased accordingly.

Each grid hole consists of two parts:

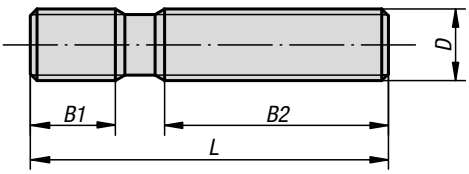
a) reamed bush. Material: hardened tool steel.

b) threaded insert. Material: carbon steel, tempered to ca. 1100-1300 N/mm^2.

Since the reamed bushes are recessed 0.5 mm from the surface of the fixture bases, the mounting surfaces can be re-machined in the event of wear.

Studs

DIN 6379



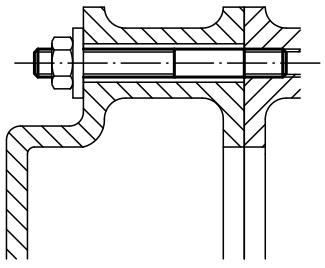
Material:
Carbon steel.

Version:
Thread rolled.
M6-M12 tempered to 10.9, black.
M14-M36 tempered to 8.8, black.

Sample order:
K0697.12125

KIPP Studs DIN 6379

Order No.	D	L	B1	B2
K0697.0632	M6	32	9	16
K0697.0640	M6	40	9	20
K0697.0650	M6	50	9	30
K0697.0663	M6	63	9	40
K0697.0680	M6	80	9	50
K0697.06100	M6	100	9	63
K0697.0840	M8	40	11	20
K0697.0863	M8	63	11	40
K0697.0880	M8	80	11	50
K0697.08100	M8	100	11	63
K0697.08125	M8	125	11	75
K0697.08160	M8	160	11	100
K0697.1050	M10	50	13	25
K0697.1080	M10	80	13	50
K0697.10100	M10	100	13	75
K0697.10125	M10	125	13	75
K0697.10160	M10	160	13	100
K0697.10200	M10	200	13	125
K0697.1250	M12	50	15	25
K0697.1263	M12	63	15	32
K0697.1280	M12	80	15	50
K0697.12100	M12	100	15	63
K0697.12125	M12	125	15	75
K0697.12160	M12	160	15	100
K0697.12200	M12	200	15	125
K0697.1463	M14	63	17	32
K0697.1480	M14	80	17	50
K0697.14100	M14	100	17	63
K0697.14125	M14	125	17	75
K0697.14160	M14	160	17	100
K0697.14200	M14	200	17	125
K0697.14250	M14	250	17	160
K0697.1663	M16	63	19	32
K0697.1680	M16	80	19	50
K0697.16100	M16	100	19	63
K0697.16125	M16	125	19	75
K0697.16160	M16	160	19	100
K0697.16200	M16	200	19	125
K0697.16250	M16	250	19	160
K0697.16315	M16	315	19	180
K0697.16350	M16	350	19	200
K0697.16500	M16	500	20	315

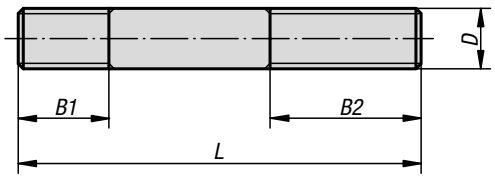


Studs

DIN 6379

Order No.	D	L	B1	B2
K0697.1880	M18	80	23	50
K0697.18125	M18	125	23	75
K0697.18160	M18	160	23	100
K0697.18200	M18	200	23	125
K0697.18250	M18	250	23	150
K0697.18315	M18	315	23	180
K0697.2080	M20	80	27	32
K0697.20125	M20	125	27	70
K0697.20160	M20	160	27	100
K0697.20200	M20	200	27	125
K0697.20250	M20	250	27	160
K0697.20315	M20	315	27	200
K0697.20400	M20	400	27	250
K0697.20500	M20	500	27	315
K0697.22100	M22	100	31	45
K0697.22160	M22	160	31	100
K0697.22200	M22	200	31	125
K0697.22250	M22	250	31	160
K0697.22315	M22	315	31	180
K0697.22400	M22	400	31	250
K0697.24100	M24	100	35	45
K0697.24125	M24	125	35	63
K0697.24160	M24	160	35	100
K0697.24200	M24	200	35	125
K0697.24250	M24	250	35	160
K0697.24315	M24	315	35	200
K0697.24400	M24	400	35	250
K0697.24500	M24	500	35	315
K0697.24630	M24	630	35	315
K0697.27125	M27	125	39	56
K0697.27200	M27	200	39	125
K0697.27315	M27	315	39	200
K0697.27400	M27	400	39	250
K0697.27500	M27	500	39	315
K0697.30125	M30	125	43	56
K0697.30200	M30	200	43	125
K0697.30315	M30	315	43	200
K0697.30500	M30	500	43	315
K0697.30700	M30	700	43	400
K0697.301000	M30	1000	44	400
K0697.36160	M36	160	51	80
K0697.36200	M36	200	51	125
K0697.36250	M36	250	51	160
K0697.36315	M36	315	51	200
K0697.36400	M36	400	51	250
K0697.36500	M36	500	51	315
K0697.36700	M36	700	51	400

Studs



Material:
Carbon steel 1.1181.

Version:
Tempered to 8.8 and black oxidised.

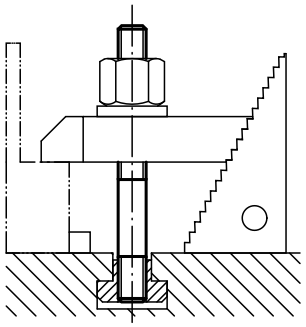
Sample order:
K1910.308

Note:
Permissible loading see Technical Information.
Thread end with oval point is permissible.

On request:
Stainless steel.

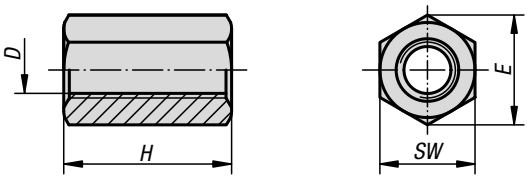
KIPP Studs

Order No.	D	L	B1	B2
K1910.105	M5	20	7	10
K1910.205	M5	30	7	10
K1910.106	M6	25	10	12
K1910.206	M6	35	10	12
K1910.306	M6	45	10	12
K1910.406	M6	60	10	12
K1910.108	M8	40	12	25
K1910.208	M8	50	12	25
K1910.308	M8	70	12	25
K1910.408	M8	80	12	25
K1910.110	M10	50	15	30
K1910.210	M10	67	15	30
K1910.310	M10	80	15	30
K1910.410	M10	100	15	30
K1910.112	M12	56	18	30
K1910.212	M12	67	18	30
K1910.312	M12	80	18	30
K1910.412	M12	100	18	30
K1910.512	M12	125	18	30
K1910.114	M14	60	20	30
K1910.214	M14	80	20	30
K1910.314	M14	100	20	30
K1910.414	M14	125	20	30
K1910.514	M14	150	20	30
K1910.116	M16	75	25	30
K1910.216	M16	100	25	30
K1910.316	M16	125	25	30
K1910.416	M16	150	25	30
K1910.120	M20	100	30	40
K1910.220	M20	125	30	40
K1910.320	M20	150	30	40
K1910.420	M20	180	30	40



Extension nuts

height 3xD



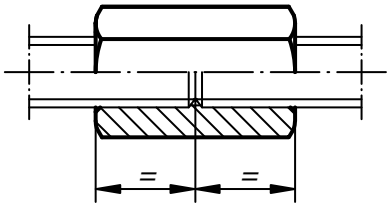
Material:
Carbon steel.

Version:
Steel grade 10, black oxidised.

Sample order:
K0865.16

Note:
For functional and safety reasons screws should be screwed into a maximum of half the nut height from both sides. Minimum thread depth 1x diameter.

On request:
DIN ISO 272 spanner sizes.

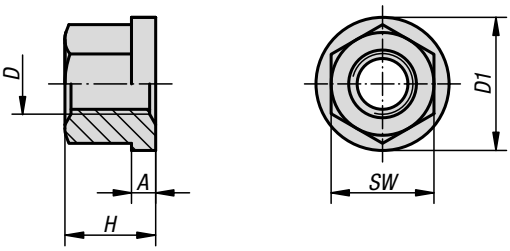


KIPP Extension nuts height 3xD

Order No.	D	H = 3 x D	SW	E
K0865.06	M6	18	10	11,5
K0865.08	M8	24	13	15
K0865.10	M10	30	17	19,6
K0865.12	M12	36	19	21,9
K0865.16	M16	48	24	27,7
K0865.20	M20	60	30	34,6

Hexagon nuts with collar

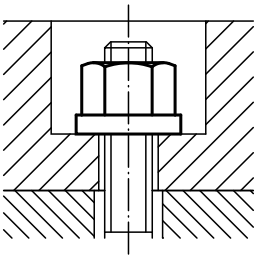
height 1.5xD, DIN 6331 enhanced



Material:
High-carbon steel, stainless steel A2 or A4.

Version:
Steel grade 10, bright (blackened).
Stainless steel bright.

Sample order:
K0701.16

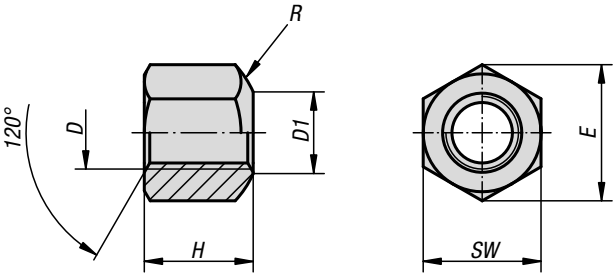


KIPP Hexagon nuts with collars, height 1.5xD, DIN 6331

Order No. high carbon steel	Order No. stainless steel A2	Order No. stainless steel A4	D	H = 1,5 x D	A	D1	SW
K0701.05	-	-	M5	7,5	2	12	9
K0701.06	**K0701.806**	-	M6	9	3	14	10
K0701.08	**K0701.808**	**K0701.908**	M8	12	3,5	18	13
K0701.10	**K0701.810**	-	M10	15	4	22	16
K0701.101	**K0701.811**	**K0701.910**	M10	15	4	22	17
K0701.12	**K0701.812**	-	M12	18	4	25	18
K0701.121	**K0701.8121**	**K0701.912**	M12	18	4	25	19
K0701.14	-	-	M14	21	4,5	28	22
K0701.16	**K0701.816**	**K0701.916**	M16	24	5	31	24
K0701.18	-	-	M18	27	5	34	27
K0701.20	**K0701.820**	**K0701.920**	M20	30	6	37	30
K0701.22	-	-	M22	33	6	40	34
K0701.24	-	-	M24	36	6	45	36
K0701.30	-	-	M30	45	8	58	46
K0701.36	-	-	M36	54	10	68	55

Hexagon nuts

height 1.5xD, DIN 6330 enhanced

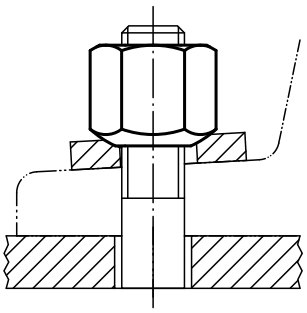


Material:
Carbon steel or stainless steel A2.

Version:
Steel grade 10, bright (blackened).
Stainless steel A2-70, bright

Sample order:
K0702.12

Note:
These hexagon nuts can be used with the conical seats K0729, Form D and G.



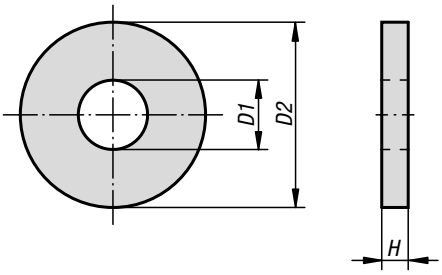
KIPP Hexagon nuts height 1.5xD, DIN 6330 enhanced

Order No.	Main material	D	H = 1,5 x D	D1	SW	E	R
K0702.05	high carbon steel	M5	7,5	6,5	9	10,4	7
K0702.06	high carbon steel	M6	9	7	10	11,5	9
K0702.08	high carbon steel	M8	12	9	13	15	11
K0702.10	high carbon steel	M10	15	11,5	16	18,4	15
K0702.101	high carbon steel	M10	15	11,5	17	19,6	15
K0702.12	high carbon steel	M12	18	14	18	20,7	17
K0702.121	high carbon steel	M12	18	14	19	21,9	17
K0702.14	high carbon steel	M14	21	16	22	25,4	20
K0702.16	high carbon steel	M16	24	18	24	27,7	22
K0702.18	high carbon steel	M18	27	20	27	31,2	24,5
K0702.20	high carbon steel	M20	30	22	30	34,6	27
K0702.22	high carbon steel	M22	33	24	32	36,9	29
K0702.24	high carbon steel	M24	36	26	36	41,6	32
K0702.30	high carbon steel	M30	45	32	46	53,1	41
K0702.36	high carbon steel	M36	54	38	55	63,5	50
K0702.806	stainless steel A2	M6	9	7	10	11,5	9
K0702.808	stainless steel A2	M8	12	9	13	15	11
K0702.810	stainless steel A2	M10	15	11,5	16	18,4	15
K0702.811	stainless steel A2	M10	15	11,5	17	19,6	15
K0702.812	stainless steel A2	M12	18	14	18	20,7	17
K0702.816	stainless steel A2	M16	24	18	24	27,7	22
K0702.820	stainless steel A2	M20	30	22	30	34,6	27

K0867

Washers for clamps

DIN 6340



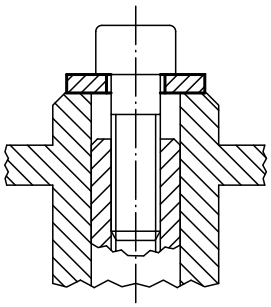
Material:
Steel.

Version:
Stamped out, pressed flat and tempered to 1200-1400 N/mm², black.

Sample order:
K0867.16

KIPP Heavy-duty washers DIN 6340

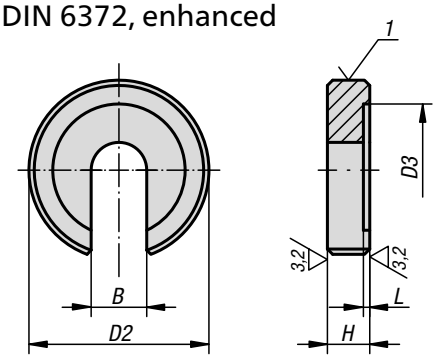
Order No. steel	D1	D2	H	for screw
K0867.06	6,4	17	3	M6
K0867.08	8,4	23	4	M8
K0867.10	10,5	28	4	M10
K0867.12	13	35	5	M12
K0867.16	17	45	6	M16
K0867.20	21	50	6	M20



K0730

C-washers

DIN 6372, enhanced



Material:
Carbon steel.

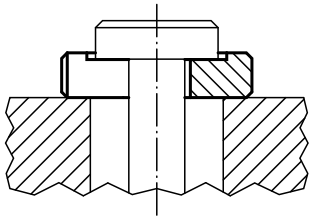
Version:
Tempered and black oxidised.

Sample order:
K0730.12

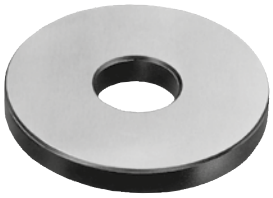
Drawing reference:
1) cross knurl

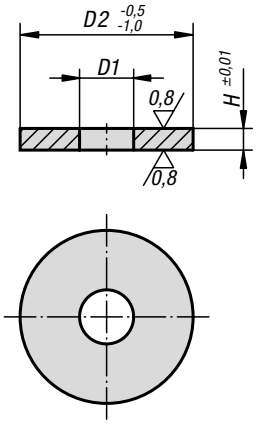
KIPP C-washers for fixtures DIN 6372, enhanced

Order No.	B	D2	D3	H	L
K0730.05	5,25	17	12	5	0,75
K0730.06	6,4	22	16	6	0,8
K0730.08	8,4	28	21	7	1
K0730.10	10,5	34	25	8	1,2
K0730.12	13	40	30	9	1,8
K0730.14	14,5	48	33	12	1,8
K0730.16	17	56	37	12	1,8
K0730.20	21	64	45	14	2
K0730.24	25	75	52	16	2
K0730.30	31	90	65	18	2
K0730.36	37	100	75	20	2,5



Spacing washers



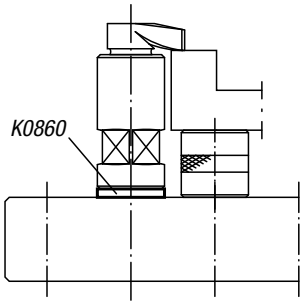


Material:
Carbon steel.

Version:
Tempered, black oxidised.
Contact faces ground.

Sample order:
K0860.16005

Note:
The spacing washer is used to alter the clamping range of hook clamps and hook holders. When a spacing washer is inserted between the base and the hook holder or riser cylinder it prevents damage to the support face.

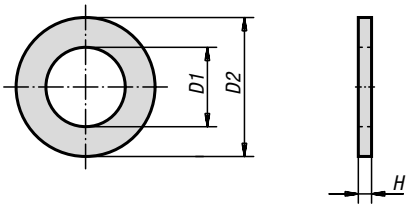


KIPP Spacer washers, ground

Order No.	D1	D2	H
K0860.08003	9	24	3
K0860.08005	9	24	5
K0860.08008	9	24	8
K0860.12001	12,5	40	1
K0860.12003	12,5	40	3
K0860.12005	12,5	40	5
K0860.16001	16,5	50	1
K0860.16003	16,5	50	3
K0860.16005	16,5	50	5
K0860.16105	16,5	60	5

Washers

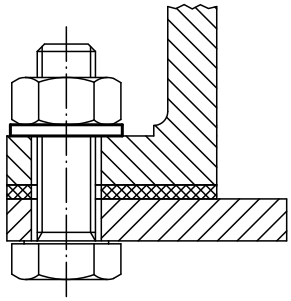
medium, DIN EN ISO 7089 A



Material:
Steel, stainless steel A2 or stainless steel A4.

Version:
Steel, bright.
Stainless steel A2, bright.
Stainless steel A4, bright.

Sample order:
K0868.10



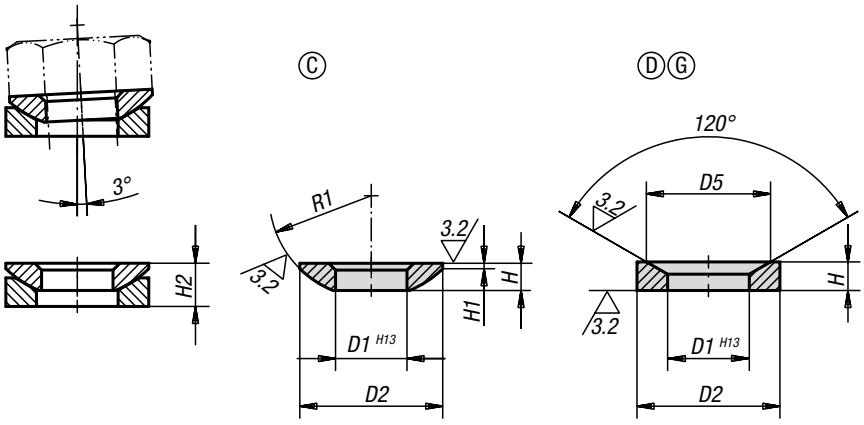
KIPP Medium washers DIN EN ISO 7089 A

Order No. steel	Order No. stainless steel A2	Order No. stainless steel A4	for screws	D1	D2	H
K0868.03	**K0868.103**	**K0868.603**	M3	3,2	7	0,5
K0868.04	**K0868.104**	**K0868.604**	M4	4,3	9	0,8
K0868.05	**K0868.105**	**K0868.605**	M5	5,3	10	1
K0868.06	**K0868.106**	**K0868.606**	M6	6,4	12	1,6
K0868.08	**K0868.108**	**K0868.608**	M8	8,4	16	1,6
K0868.10	**K0868.110**	**K0868.610**	M10	10,5	20	2
K0868.12	**K0868.112**	**K0868.612**	M12	13	24	2,5
K0868.14	**K0868.114**	**K0868.614**	M14	15	28	2,5
K0868.16	**K0868.116**	**K0868.616**	M16	17	30	3
K0868.20	**K0868.120**	**K0868.620**	M20	21	37	3
K0868.24	**K0868.124**	**K0868.624**	M24	25	44	4
K0868.30	**K0868.130**	**K0868.630**	M30	31	56	4
K0868.36	**K0868.136**	**K0868.636**	M36	37	66	5

Notes

Spherical washers

DIN 6319, 10/01



Material:
Mild steel, Q&T steel or stainless steel.

Version:
Mild steel, case hardened, manganese-phosphated.
Tempered steel (HV 390 ±40), manganese-phosphated.
Stainless steel, bright.

Sample order:
K0729.216

Note:
Conical seat Form G should be used over slots.

Drawing reference:
Form C: spherical washer
Form D: conical seat
Form G: conical seat for slots

KIPP Spherical washers Form C, DIN 6319, edition 10/01

Order No. mild steel	Order No. stainless steel	Form	D1	D2	H	H1	R1	Load rating max. kN (static load only)
K0729.105	-	C	5,25	10,5	2	0,4	7,5	6,5
K0729.106	**K0729.0106**	C	6,4	12	2,3	0,7	9	9/6
K0729.108	**K0729.0108**	C	8,4	17	3,2	0,6	12	17/12
K0729.110	**K0729.0110**	C	10,5	21	4	0,8	15	26/16
K0729.112	**K0729.0112**	C	13	24	4,6	1,1	17	38/24
K0729.114	-	C	15	28	5	1,2	22	53
K0729.116	**K0729.0116**	C	17	30	5,3	1,3	22	73/45
K0729.120	**K0729.0120**	C	21	36	6,3	2	27	117/71
K0729.124	**K0729.0124**	C	25	44	8,2	2,4	32	168/105
K0729.130	**K0729.0130**	C	31	56	11,2	3,6	41	269/191
K0729.136	**K0729.0136**	C	37	68	14	4,6	50	394/-
K0729.142	**K0729.0142**	C	43	78	17	6,5	58	542/-
K0729.148	**K0729.0148**	C	50	92	21	8	67	714/-
K0729.156	-	C	58	103	23	9,5	79	960
K0729.164	-	C	66	120	27	12	93	1269

Spherical washers

DIN 6319, 10/01

KIPP Conical seats Form D, DIN 6319, edition 10/01

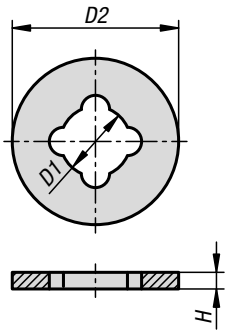
Order No. mild steel	Order No. stainless steel	Form	D1	D2	D5	H	H2	Load rating max. kN (static load only)
K0729.205	-	D	6	10,5	9,25	2,1	3,1	6,5
K0729.206	**K0729.0206**	D	7,1	12	11	2,8	4,2	9/6
K0729.208	**K0729.0208**	D	9,6	17	14,5	3,5	5,6	17/12
K0729.210	**K0729.0210**	D	12	21	18,5	4,2	6,5	26/16
K0729.212	**K0729.0212**	D	14,2	24	20	5	8	38/24
K0729.214	-	D	16,5	28	24,8	5,6	8,5	53
K0729.216	**K0729.0216**	D	19	30	26	6,2	9,5	73/45
K0729.220	**K0729.0220**	D	23,2	36	31	7,5	11,7	117/71
K0729.224	**K0729.0224**	D	28	44	37	9,5	15,2	168/105
K0729.230	**K0729.0230**	D	35	56	49	12	19,2	269/191
K0729.236	**K0729.0236**	D	42	68	60	15	23,5	394/-
K0729.242	**K0729.0242**	D	49	78	70	18	29	542/-
K0729.248	**K0729.0248**	D	56	92	82	22	35,5	714/-
K0729.256	-	D	65	103	92	25	39,7	960
K0729.264	-	D	75	120	110	30	46,5	1269

KIPP Conical seats Form G, DIN 6319 Edition 10/01

Order No. high carbon steel	Order No. stainless steel	Form	D1	D2	D5	H	H2	Load rating max. kN (static load only)
K0729.305	-	G	6	15	9,25	2,5	3,5	6,5
K0729.306	**K0729.0306**	G	7,1	17	11	4	5,4	9/6
K0729.308	**K0729.0308**	G	9,6	24	14,5	5	7,1	17/12
K0729.310	**K0729.0310**	G	12	30	18,5	5	7,3	26/16
K0729.312	**K0729.0312**	G	14,2	36	20	6	9	38/24
K0729.314	-	G	16,5	40	24,8	6	9,5	53
K0729.316	**K0729.0316**	G	19	44	26	7	10,4	73/45
K0729.320	**K0729.0320**	G	23,2	50	31	8	12,2	117/71
K0729.324	**K0729.0324**	G	28	60	37	10	15,7	168/105
K0729.330	**K0729.0330**	G	35	68	49	12	19,7	269/191
K0729.336	-	G	42	80	60	12	20,3	394

Washers plastic

captive



Material:
Polyamide.

Version:
white.

Sample order:
K1526.05

Note:
The washers are vibration dampers and protect the screw connection during e.g. pre-assembly.
The washers also protect the surface from damage.
Only suitable for threads with undercut i.e. ring bolts

Application:
Press or twist the washers over the thread.

Attention:
When shim washers with rings bolts are used, the forces specified for the ring bolts cannot be guaranteed.

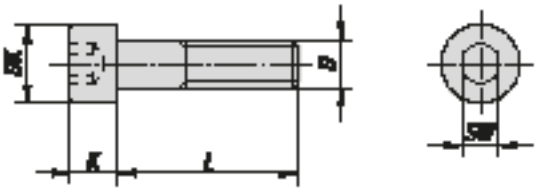
KIPP Captive washers, plastic

Order No.	D1	D2	G	H
K1526.05	4,3	10	M5	0,5
K1526.06	5,1	12	M6	0,5
K1526.08	6,2	14	M8	0,5
K1526.10	8,4	20	M10	1
K1526.12	9,8	20	M12	1
K1526.16	13,5	28	M16	1

Notes

Socket head screws

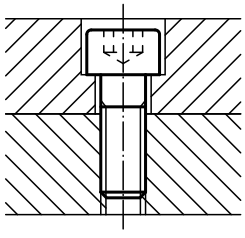
DIN 912 / DIN EN ISO 4762, steel or stainless steel



Material:
Steel, stainless steel A2 or stainless steel A4.

Version:
Steel grade 8.8, bright (black) or electro zinc-plated.
Steel grade 10.9, bright (black) or electro zinc-plated.
Steel grade 12.9, bright (black)
Stainless steel A2-70, bright.
Stainless steel A4-70, bright.

Sample order:
K0869.08X40 (include length L)



Socket head screws

DIN 912 / DIN EN ISO 4762, steel or stainless steel

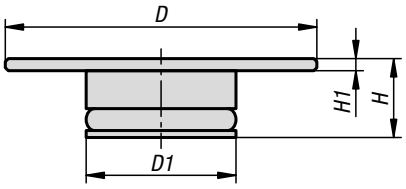
Order No. steel bright (black)	Order No. steel galvanised	Grade	D	L	DK	K	SW
K0869.304X	**K0869.504X**	10.9	M4	10/12/16/18/20/25	7	4	3
K0869.305X	**K0869.505X**	10.9	M5	10/12/16/18/20/25/30/40	8,5	5	4
K0869.306X	**K0869.506X**	10.9	M6	10/12/16/18/20/25/30/35/40/55/45/50/60	10	6	5
K0869.308X	**K0869.508X**	10.9	M8	16/18/20/25/30/35/40/45/50/60/70/80	13	8	6
K0869.310X	**K0869.510X**	10.9	M10	16/18/20/25/30/35/40/45/50/60/70/80/90/100	16	10	8
K0869.312X	**K0869.512X**	10.9	M12	20/25/30/35/40/45/50/60/70/80/90/100/110/120	18	12	10
K0869.314X	**K0869.514X**	10.9	M14	50/80/120	21	14	12
K0869.316X	**K0869.516X**	10.9	M16	30/35/40/45/50/60/70/80/90/100/110/120	24	16	14
K0869.320X	**K0869.520X**	10.9	M20	40/45/50/60/70/80/90/100/110/120	30	20	17

Order No. steel bright (black)	Grade	D	DK	K	L	SW
K0869.206X	12.9	M6	10	6	18/20/25/30/35/40/45/50/55/60/65/70/80/90/100	5
K0869.208X	12.9	M8	13	8	20/25/30/35/40/45/50/55/60/65/70/80/90/100/120	6
K0869.210X	12.9	M10	16	10	30/35/40/45/50/55/60/65/70/75/80/90/100/110/120/130/140	8
K0869.212X	12.9	M12	18	12	30/35/40/45/50/55/60/65/70/75/80/90/100/110/120/130/140	10
K0869.216X	12.9	M16	24	16	35/40/45/50/55/60/65/70/75/80/90/100/110/120/130/140/150/160/170/180/200	14
K0869.218X	12.9	M18	27	18	35/40/45/50/55/60/65/70/75/80/90/100/110/120/130/140/150/160/170/180/200	14
K0869.220X	12.9	M20	30	20	40/45/50/55/60/65/70/75/80/90/100/110/120/130/140/150/160/170/180/200	17

Order No. stainless steel A2	Order No. stainless steel A4	D	L	DK	K	SW
K0869.104X	**K0869.604X**	M4	10/12/16/18/20/25	7	4	3
K0869.105X	**K0869.605X**	M5	10/12/16/18/20/25/30/40	8,5	5	4
K0869.106X	**K0869.606X**	M6	10/12/16/18/20/25/30/35/40/45/50/55/60	10	6	5
K0869.108X	**K0869.608X**	M8	16/18/20/25/30/35/40/45/50/60/70/80	13	8	6
K0869.110X	**K0869.610X**	M10	16/18/20/25/30/35/40/45/50/60/70/80/90/100	16	10	8
K0869.112X	**K0869.612X**	M12	20/25/30/35/40/45/50/60/70/80/90/100/110/120	18	12	10
K0869.114X	**K0869.614X**	M14	50/80/120	21	14	12
K0869.116X	**K0869.616X**	M16	30/35/40/45/50/60/70/80/90/100/110/120	24	16	14
K0869.120X	**K0869.620X**	M20	40/45/50/60/70/80/90/100/110/120	30	20	17

Aluminium cap

for holes and screw heads with hex socket



Using caps on the holes in the machining area reduces set-up times, as less time is required for cleaning, e.g. the accumulation of coolants in screw heads.

Material:
Aluminium cap.
Screw stainless steel,
O-ring NBR.

Version:
Cap black anodised.

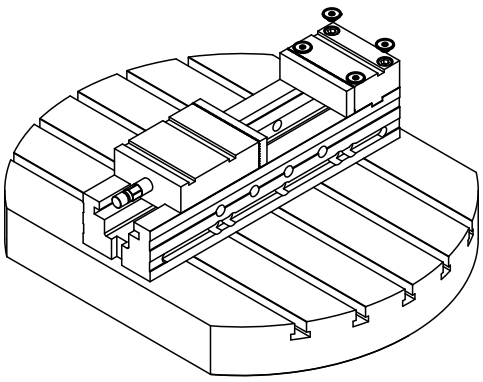
Sample order:
K1798.02310

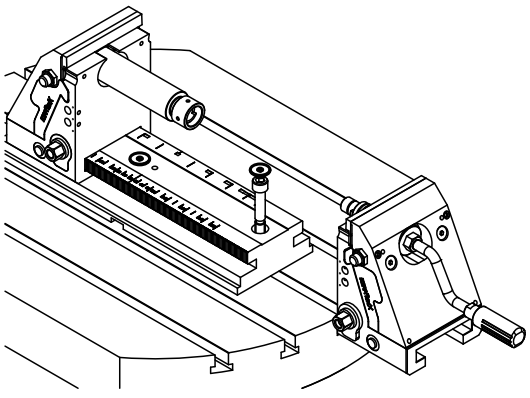
Assembly:
Insert the cap into the hole or hexagon and tighten it with the help of a screwdriver until the screw head and the end face of the cap are flush.

Advantages:
Non-destructive reusable system.
Prevents swarf and coolant from building up and accumulating in screw heads and counterbores.
Quick and easy assembly and dismantling. Minimises the spraying of coolants when blowing out with compressed air.

On request:
Individual versions and colours.

Accessories:
Socket head screws DIN 912.





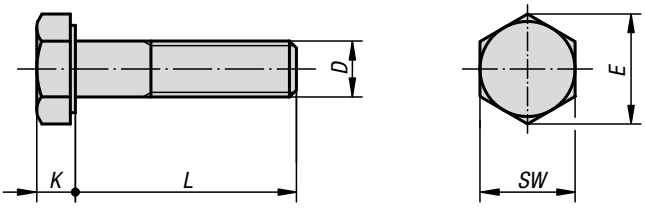
KIPP Aluminium cap for holes and screw heads with hex socket

Order No.	D	D1	H	H1	Suitable for bores / hex sockets
K1798.02108	21	7,9	6,5	1	8
K1798.02310	23	9,9	8,3	1	10
K1798.02914	29	13,9	9	1,2	14
K1798.03717	37	16,9	10,6	1,5	17

Notes

Hexagon head bolts

DIN 931/ISO 4014



Material:
Steel, stainless steel A2 or stainless steel A4.

Version:
Steel grade 8.8, bright (black) or electro zinc-plated.
Steel grade 10.9, bright (black) or electro zinc-plated.
Steel grade 12.9, bright (black)
Stainless steel A2-70, bright.
Stainless steel A4-70, bright.

Sample order:
K0870.110X50 (include length L)

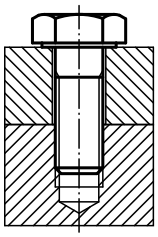
On request:
DIN ISO 272 spanner sizes.

KIPP Hexagon head bolts with shaft DIN 931/ISO 4014

Order No. steel Grade 8.8	Order No. steel Grade 10.9	Surface finish body	D	E	K	L	SW
K0870.04X	-	bright (black)	M4	7,66	2,8	25/30/35/40/45/50	7
K0870.05X	-	bright (black)	M5	8,79	3,5	25/30/35/40/45/50/60	8
K0870.06X	**K0870.306X**	bright (black)	M6	11,05	4	30/35/40/45/50/60/70	10
K0870.08X	**K0870.308X**	bright (black)	M8	14,38	5,3	35/40/45/50/60/70/80	13
K0870.10X	**K0870.310X**	bright (black)	M10	18,9	6,4	40/45/50/60/70/80/90/100	17
K0870.12X	**K0870.312X**	bright (black)	M12	21,1	7,5	45/50/60/70/80/90/100/110/120	19
K0870.16X	**K0870.316X**	bright (black)	M16	26,75	10	60/70/80/90/100/110/120	24
K0870.20X	**K0870.320X**	bright (black)	M20	33,53	12,5	70/80/90/100/110/120	30
K0870.404X	-	galvanised	M4	7,66	2,8	25/30/35/40/45/50	7
K0870.405X	-	galvanised	M5	8,79	3,5	25/30/35/40/45/50/60	8
K0870.406X	**K0870.506X**	galvanised	M6	11,05	4	30/35/40/45/50/60/70	10
K0870.408X	**K0870.508X**	galvanised	M8	14,38	5,3	35/40/45/50/60/70/80	13
K0870.410X	**K0870.510X**	galvanised	M10	18,9	6,4	40/45/50/60/70/80/90/100	17
K0870.412X	**K0870.512X**	galvanised	M12	21,1	7,5	45/50/60/70/80/90/100/110/120	19
K0870.416X	**K0870.516X**	galvanised	M16	26,75	10	60/70/80/90/100/110/120	24
K0870.420X	**K0870.520X**	galvanised	M20	33,53	12,5	70/80/90/100/110/120	30

Hexagon head bolts

DIN 931/ISO 4014

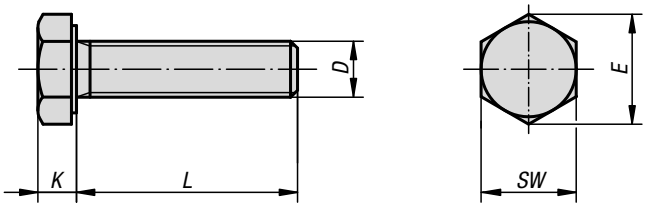


Order No. steel Grade 12.9	Surface finish body	D	E	K	L	SW
K0870.210X	bright (black)	M10	18,9	6,4	40/45/50/60/70/80/90/100	17
K0870.212X	bright (black)	M12	21,1	7,5	45/50/60/70/80/90/100/120	19
K0870.216X	bright (black)	M16	26,75	10	60/70/80/90/100/120	24
K0870.220X	bright (black)	M20	33,53	12,5	70/80/90/100/120	30

Order No. stainless steel A2	Order No. stainless steel A4	Surface finish body	D	E	K	L	SW
K0870.105X	**K0870.605X**	bright	M5	8,79	3,5	25/30/35/40/45/50/60	8
K0870.106X	**K0870.606X**	bright	M6	11,05	4	30/35/40/45/50/60/70	10
K0870.108X	**K0870.608X**	bright	M8	14,38	5,3	35/40/45/50/60/70/80	13
K0870.110X	**K0870.610X**	bright	M10	18,9	6,4	100/40/45/50/60/70/80/90	17
K0870.112X	**K0870.612X**	bright	M12	21,1	7,5	100/110/120/45/50/60/70/80/90	19
K0870.116X	**K0870.616X**	bright	M16	26,75	10	100/110/120/60/70/80/90	24

Hexagon head bolts

full thread DIN 933



Material:
Steel, stainless steel A2 or stainless steel A4.

Version:
Steel grade 8.8, bright (black) or electro zinc-plated.
Steel grade 10.9, bright (black) or electro zinc-plated.
Steel grade 12.9, bright (black)
Stainless steel A2-70, bright.
Stainless steel A4-70, bright.

Sample order:
K0871.05X40 (include length L)

KIPP Hexagon head bolts DIN 933/ISO 4017

Order No. steel Grade 8.8	Order No. steel Grade 10.9	Surface finish body	D	E	K	L	SW
K0871.04X	-	bright (black)	M4	7,66	2,8	10/12/16/18/20/25	7
K0871.05X	-	bright (black)	M5	8,79	3,5	10/12/16/18/20/25/30/35/40	8
K0871.06X	**K0871.306X**	bright (black)	M6	11,05	4	10/12/16/18/20/25/30/35/40/45/50/55/60	10
K0871.08X	**K0871.308X**	bright (black)	M8	14,38	5,3	16/18/20/25/30/35/40/45/50/60/70/80/90/100	13
K0871.10X	**K0871.310X**	bright (black)	M10	18,9	6,4	16/18/20/25/30/35/40/45/50/60/70/80/90/100	17
K0871.12X	**K0871.312X**	bright (black)	M12	21,1	7,5	20/25/30/35/40/45/50/60/70/80/90/100/110/120	19
K0871.14X	-	bright (black)	M14	24,49	8,8	30/35/40/45/50/60/70/80/90/100/110/120	22
K0871.16X	**K0871.316X**	bright (black)	M16	26,75	10	30/35/40/45/50/60/70/80/90/100/110/120	24
K0871.20X	**K0871.320X**	bright (black)	M20	33,53	12,5	40/45/50/60/70/80/90/100/110/120	30
K0871.404X	-	galvanised	M4	7,66	2,8	10/12/16/18/20/25	7
K0871.405X	-	galvanised	M5	8,79	3,5	10/12/16/18/20/25/30/35/40	8
K0871.406X	**K0871.506X**	galvanised	M6	11,05	4	10/12/16/18/20/25/30/35/40/45/50/55/60	10
K0871.408X	**K0871.508X**	galvanised	M8	14,38	5,3	16/18/20/25/30/35/40/45/50/60/70/80/90/100	13
K0871.410X	**K0871.510X**	galvanised	M10	18,9	6,4	16/18/20/25/30/35/40/45/50/60/70/80/90/100	17
K0871.412X	**K0871.512X**	galvanised	M12	21,1	7,5	20/25/30/35/40/45/50/60/70/80/90/100/110/120	19
K0871.414X	-	galvanised	M14	24,49	8,8	30/35/40/45/50/60/70/80/90/100/110/120	22
K0871.416X	**K0871.516X**	galvanised	M16	26,75	10	30/35/40/45/50/60/70/80/90/100/110/120	24
K0871.420X	**K0871.520X**	galvanised	M20	33,53	12,5	40/45/50/60/70/80/90/100/110/120	30

Hexagon head bolts

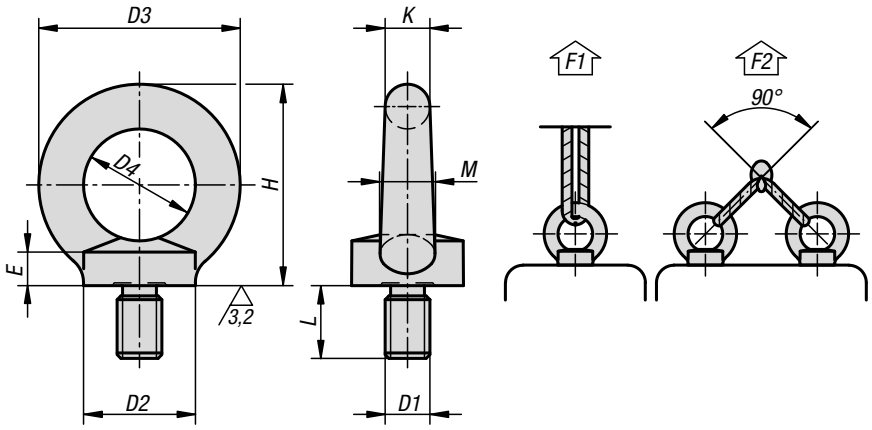
full thread DIN 933

Order No.	Main material	Grade	Surface finish body	D	E	K	L	SW
K0871.206X	steel	12.9	bright (black)	M6	11,05	4	12/16/20/25/30	10
K0871.208X	steel	12.9	bright (black)	M8	14,38	5,3	16/20/25/30/35/40/45/50/60	13
K0871.210X	steel	12.9	bright (black)	M10	18,9	6,4	20/25/30/35/40/45/50/60	17
K0871.212X	steel	12.9	bright (black)	M12	21,1	7,5	25/30/35/40/45/50/60	19
K0871.216X	steel	12.9	bright (black)	M16	26,75	10	30/35/40/45/50/60/70/80/90/100	24
K0871.220X	steel	12.9	bright (black)	M20	33,53	12,5	40/45/50/60/70/80/90/100	30

Order No. stainless steel A4	Order No. stainless steel A2	Grade	Surface finish body	D	E	K	L	SW
K0871.603X	-	70	bright	M3	6,01	2	6/8/10	5,5
K0871.604X	**K0871.104X**	70	bright	M4	7,66	2,8	10/12/16/18/20/25/8	7
K0871.605X	**K0871.105X**	70	bright	M5	8,79	3,5	10/12/16/18/20/25/30/35/40	8
K0871.606X	**K0871.106X**	70	bright	M6	11,05	4	10/12/16/18/20/25/30/35/40/45/50/55/60	10
K0871.608X	**K0871.108X**	70	bright	M8	14,38	5,3	16/18/20/25/30/35/40/45/50/60/70/80/90/100	13
K0871.610X	**K0871.110X**	70	bright	M10	18,9	6,4	16/18/20/25/30/35/40/45/50/60/70/80/90/100	17
K0871.612X	**K0871.112X**	70	bright	M12	21,1	7,5	20/25/30/35/40/45/50/60/70/80/90/100/110/120	19
K0871.616X	**K0871.116X**	70	bright	M16	26,75	10	30/35/40/45/50/60/70/80/90/100/110/120	24
K0871.620X	**K0871.120X**	70	bright	M20	33,53	12,5	40/45/50/60/70/80/90/100/110/120	30

Ring bolts

DIN 580



Material:
1.1141 steel, 1.4301 stainless steel or 1.4401 stainless steel.

Version:
Drop forged.
Steel, bright.
Steel electro zinc-plated. Drop forged.
Steel, bright.
Steel electro zinc-plated.

Sample order:
K0767.20

Note:
For high demand hoisting and carrying tasks in safety-relevant areas (machine construction, load handling equipment, lifting tackle).
The CE mark is impressed into the ring bolt.
F2 permissible load under max. 45° per ring bolt.

On request:
Certificate of conformity.

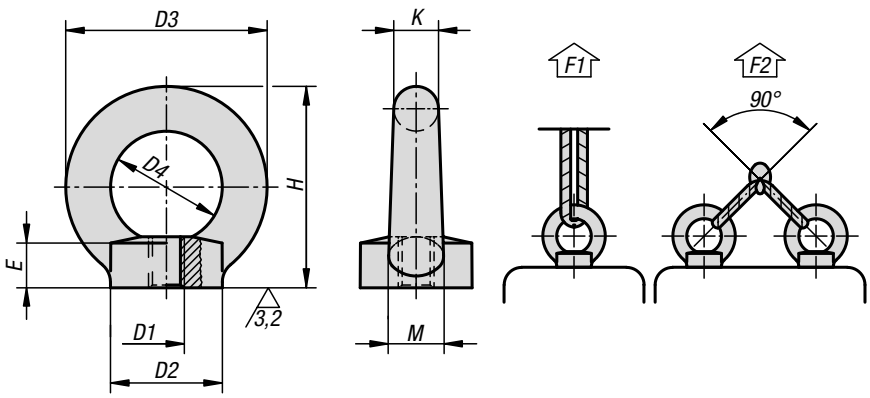
KIPP Ring bolts DIN 580

Order No. steel bright	Order No. steel galvanised	D1	L	D2	D3	D4	E	H	K	M	F1 max. kN	F2 max. kN
K0767.08	**K0767.008**	M8	13	20	36	20	6	36	8	10	1,4	0,95
K0767.10	**K0767.010**	M10	17	25	45	25	8	45	10	12	2,3	1,7
K0767.12	**K0767.012**	M12	20,5	30	54	30	10	53	12	14	3,4	2,4
K0767.16	**K0767.016**	M16	27	35	63	35	12	62	14	16	7	5
K0767.20	**K0767.020**	M20	30	40	72	40	14	71	16	19	12	8,3
K0767.24	**K0767.024**	M24	36	50	90	50	18	90	20	24	18	12,7

Order No. stainless steel 1.4301	Order No. stainless steel 1.4401	D1	L	D2	D3	D4	E	H	K	M	F1 max. kN	F2 max. kN
K0767.108	**K0767.208**	M8	13	20	36	20	6	36	8	10	1,4	0,95
K0767.110	**K0767.210**	M10	17	25	45	25	8	45	10	12	2,3	1,7
K0767.112	**K0767.212**	M12	20,5	30	54	30	10	53	12	14	3,4	2,4
K0767.116	**K0767.216**	M16	27	35	63	35	12	62	14	16	7	5
K0767.120	**K0767.220**	M20	30	40	72	40	14	71	16	19	12	8,3
K0767.124	**K0767.224**	M24	36	50	90	50	18	90	20	24	18	12,7

Ring nuts

DIN 582



Material:
1.1141 steel, 1.4301 stainless steel or 1.4401 stainless steel.

Version:
Drop forged.
Steel, bright.
Steel electro zinc-plated.

Sample order:
K0768.10

Note:
For high demand hoisting and carrying tasks in safety-relevant areas (machine construction, load handling equipment, lifting tackle).
The CE mark is impressed into the ring bolt.
F2 permissible load under max. 45° per ring bolt.

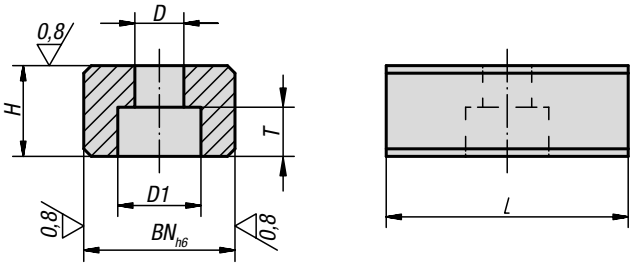
On request:
Certificate of conformity.

KIPP Ring nuts DIN 582

Order No. steel bright	Order No. steel galvanised	D1	D2	D3	D4	E	H	K	M	F1 max. kN	F2 max. kN
K0768.08	**K0768.008**	M8	20	36	20	8,5	36	8	10	1,4	0,95
K0768.10	**K0768.010**	M10	25	45	25	10	45	10	12	2,3	1,7
K0768.12	**K0768.012**	M12	30	54	30	11	53	12	14	3,4	2,4
K0768.16	**K0768.016**	M16	35	63	35	13	62	14	16	7	5
K0768.20	**K0768.020**	M20	40	72	40	16	71	16	19	12	8,3
K0768.24	**K0768.024**	M24	50	90	50	20	90	20	24	18	12,7

Order No. stainless steel 1.4301	Order No. stainless steel 1.4401	D1	D2	D3	D4	E	H	K	M	F1 max. kN	F2 max. kN
K0768.108	**K0768.208**	M8	20	36	20	8,5	36	8	10	1,4	0,95
K0768.110	**K0768.210**	M10	25	45	25	10	45	10	12	2,3	1,7
K0768.112	**K0768.212**	M12	30	54	30	11	53	12	14	3,4	2,4
K0768.116	**K0768.216**	M16	35	63	35	13	62	14	16	7	5
K0768.120	**K0768.220**	M20	40	72	40	16	71	16	19	12	8,3
K0768.124	**K0768.224**	M24	50	90	50	20	90	20	24	18	12,7

Slot keys

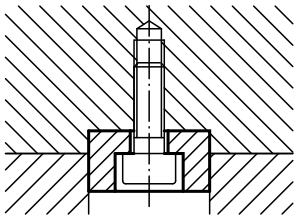


Material:
Steel.

Version:
Case-hardened, black oxidised and ground.

Sample order:
K0864.16

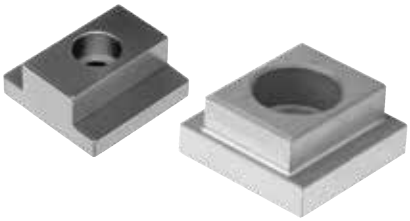
Note:
Slot keys are used to align fixtures and clamps on machine tables with DIN 650 T-slots. They are screwed into the fixture alignment slots. Slot keys are only used when the fixture and machine table have the same slot width.



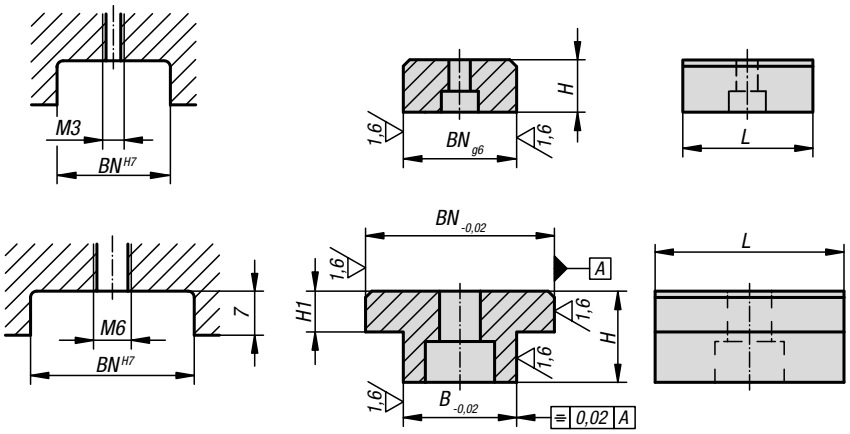
KIPP Slot keys

Order No.	BN=Slot width	D	D1	H	L	T	for screws DIN 84 or 912
K0864.10	10	4,5	8	8	20	4,3	M4x10
K0864.12	12	5,3	10	8	20	5,3	M5x12
K0864.14	14	6,6	11	10	22	6,3	M6x16
K0864.16	16	6,6	11	10	22	6,3	M6x16
K0864.18	18	6,6	11	10	22	6,3	M6x16
K0864.20	20	6,6	11	10	22	6,3	M6x16
K0864.22	22	6,6	11	12	32	6,3	M6x16

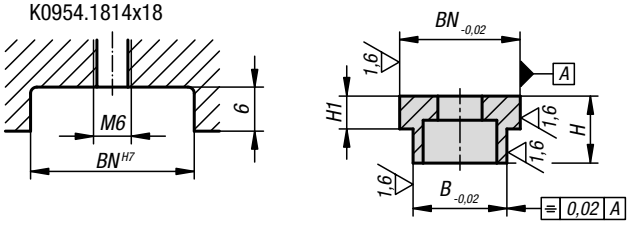
T-slot keys



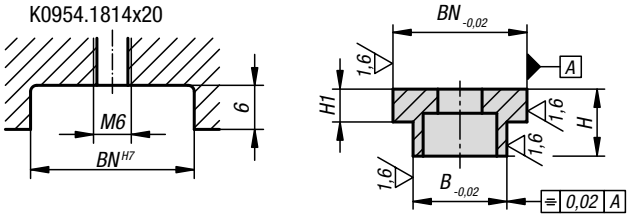
Ⓐ
K0954.08x8



Ⓑ
K0954.1814x18



K0954.1814x20



Material:
Carbon steel 1.1191

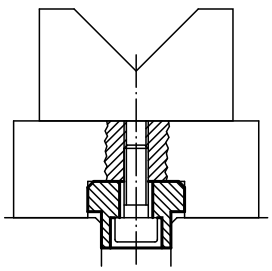
Version:
Black oxidised.

Sample order:
K0954.08X8 (include dimension BN)

Note:
Slot guide nuts are used for positioning fixture components quickly and exactly.
The time-consuming work to align components is no longer required.
Version B can be mounted at 90° for a wider mark-out dimension. The slot guide nut can therefore be used for two different slot widths.

Application:
The slot guide nuts are screwed into a slot with the fixture components and then marked out on the counterpiece.

Advantages:
Very time-saving when mounting fixture components.

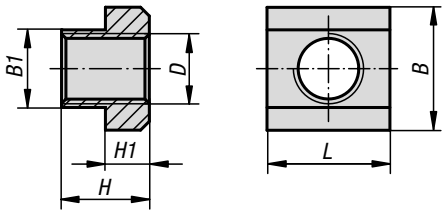


KIPP T-slot keys

Order No.	Form	Form-Type	BN=Slot width	B	H	H1	L	L1
K0954.08X	A	single	8	8	8	-	20	-
K0954.12X	A	single	20/22/30	12	14	6	30	-
K0954.14X	A	single	20/22/30	14	14	6	30	-
K0954.16X	A	single	20/22/30	16	14	6	30	-
K0954.18X	A	single	20/22/30	18	14	6	30	-
K0954.22X	A	single	20/22/30	22	14	6	30	-
K0954.1814X	B	both sides	18	14	10	4,9	18	18
K0954.1814X	B	both sides	20	14	10	4,9	20	18

Nuts for T-slots

DIN 508 enhanced



KIPP Nuts for T-slots to DIN 508 enhanced

Order No.	Main material	Slot width	B	B1	D	H	H1	L
K0377.05	high carbon steel	6	10	5,6	M5	8	4	10
K0377.06	high carbon steel	8	13	7,6	M6	10	6	13
K0377.061	high carbon steel	10	15	9,6	M6	12	6	15
K0377.08	high carbon steel	10	15	9,6	M8	12	6	15
K0377.081	high carbon steel	12	18	11,6	M8	14	7	18
K0377.082	high carbon steel	14	22	13,6	M8	16	8	22
K0377.10	high carbon steel	12	18	11,6	M10	14	7	18
K0377.101	high carbon steel	14	22	13,6	M10	16	8	22
K0377.12	high carbon steel	14	22	13,6	M12	16	8	22
K0377.121	high carbon steel	16	25	15,6	M12	18	9	25
K0377.122	high carbon steel	18	28	17,6	M12	20	10	28
K0377.123	high carbon steel	20	32	19,6	M12	24	12	32
K0377.124	high carbon steel	22	35	21,6	M12	28	14	35
K0377.14	high carbon steel	16	25	15,6	M14	18	9	25
K0377.141	high carbon steel	18	28	17,6	M14	20	10	28
K0377.16	high carbon steel	18	28	17,6	M16	20	10	28
K0377.161	high carbon steel	20	32	19,6	M16	24	12	32
K0377.163	high carbon steel	24	40	23,6	M16	32	16	40
K0377.164	high carbon steel	28	44	27,6	M16	36	18	44
K0377.18	high carbon steel	20	32	19,6	M18	24	12	32
K0377.181	high carbon steel	22	35	21,6	M18	28	14	35
K0377.20	high carbon steel	22	35	21,6	M20	28	14	35
K0377.201	high carbon steel	24	40	23,6	M20	32	16	40
K0377.202	high carbon steel	28	44	27,6	M20	36	18	44
K0377.22	high carbon steel	24	40	23,6	M22	32	16	40
K0377.24	high carbon steel	28	44	27,6	M24	36	18	44
K0377.241	high carbon steel	36	54	35,5	M24	44	22	54
K0377.27	high carbon steel	32	50	31,5	M27	40	20	50
K0377.30	high carbon steel	36	54	35,5	M30	44	22	54
K0377.36	high carbon steel	42	65	41,5	M36	52	26	65
K0377.204	aluminium	6	10	5,6	M4	8	4	10
K0377.206	aluminium	8	13	7,6	M6	10	6	13
K0377.2061	aluminium	10	15	9,6	M6	12	6	15
K0377.208	aluminium	12	18	11,6	M8	14	7	18
K0377.210	aluminium	14	22	13,6	M10	16	8	22
K0377.216	aluminium	22	35	21,6	M16	28	14	35
K0377.806	stainless steel A4	8	13	7,6	M6	10	6	13
K0377.808	stainless steel A4	10	15	9,6	M8	12	6	15
K0377.810	stainless steel A4	12	18	11,6	M10	14	7	18
K0377.812	stainless steel A4	14	22	13,6	M12	16	8	22
K0377.814	stainless steel A4	16	25	15,6	M14	18	9	25
K0377.816	stainless steel A4	18	28	17,6	M16	20	10	28

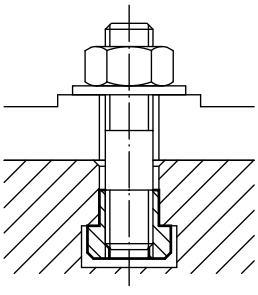
Material:
Carbon steel grade 10, EN AW-7075 or stainless steel 1.4571.

Version:
Steel tempered (black).
Aluminium and stainless steel bright. Steel tempered (black).
Aluminium and stainless steel bright.

Sample order:
K0377.20

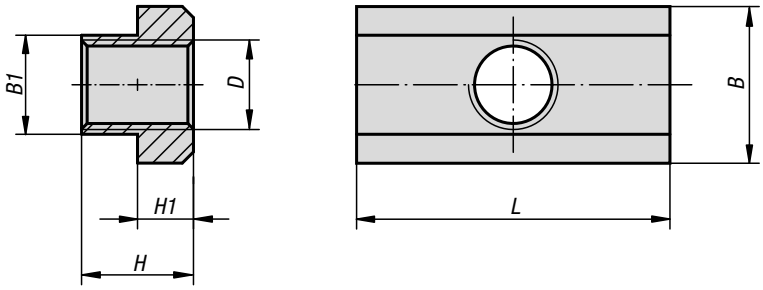
Note:
Aluminium T-slot nuts have steel threaded inserts.

Strength of stainless steel version:
Rm = 700 N/mm², Rp0,2 = 450 N/mm².



Nuts for T-slots

long



Material:
Carbon steel.

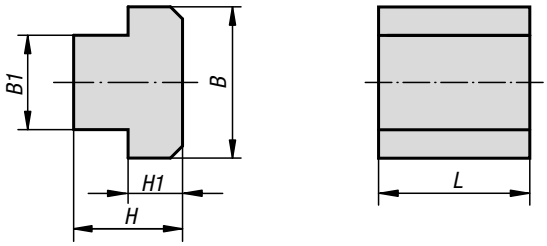
Version:
Tempered to 10.

Sample order:
K1911.12

KIPP Nuts for T-slots, long

Order No.	Slot width	B	B1	D	H	H1	L
K1911.08	10	15	9,7	M8	12	6	30
K1911.10	12	18	11,7	M10	14	7	36
K1911.12	14	22	13,7	M12	16	8	44
K1911.14	16	25	15,7	M14	18	9	50
K1911.16	18	28	17,7	M16	20	10	56
K1911.18	20	32	19,7	M18	24	12	64
K1911.20	22	35	21,7	M20	28	14	70
K1911.24	28	44	27,7	M24	36	18	88
K1911.30	36	54	35,6	M30	44	22	108

T-slot keys steel or stainless steel



Material:
High carbon steel or stainless steel 1.4305.

Sample order:
K0378.16

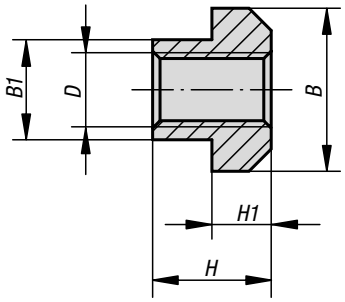
Note:
These blank nuts are used to make nuts for T-slots with all sorts of thread sizes cost-effectively.

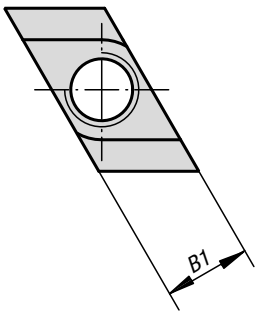
KIPP T-slot keys steel or stainless steel

Order No. high carbon steel	Order No. stainless steel	Slot width	B	B1	H	H1	L
K0378.06	-	6	10	5,6	8	4	10
K0378.08	**K0378.808**	8	13	7,6	10	6	13
K0378.10	**K0378.810**	10	15	9,6	12	6	15
K0378.12	**K0378.812**	12	18	11,5	14	7	18
K0378.14	**K0378.814**	14	22	13,5	16	8	22
K0378.16	-	16	25	15,6	18	9	25
K0378.18	-	18	28	17,5	20	10	28
K0378.20	-	20	32	19,6	24	12	32
K0378.22	-	22	35	21,6	28	14	35
K0378.24	-	24	40	23,6	32	16	40
K0378.28	-	28	44	27,6	36	18	44
K0378.36	-	36	54	35,5	44	22	54
K0378.42	-	42	65	41,6	52	26	65

Nuts for T-slots

rhombic form





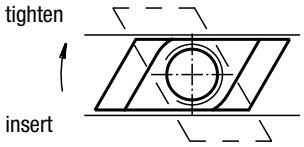
Material:
Carbon steel.

Version:
Tempered to 8 and black oxidised.

Sample order:
K0379.114

Note:
The benefit of rhombic nuts for T-slots is that they can be fitted in the slot from the top. They are particularly useful for long T-slots, or when the configuration on the machine table does not permit clamping screws or nuts for T-slots to be inserted from the side.

Application:
Insert from above then twist in the slot until it stops.

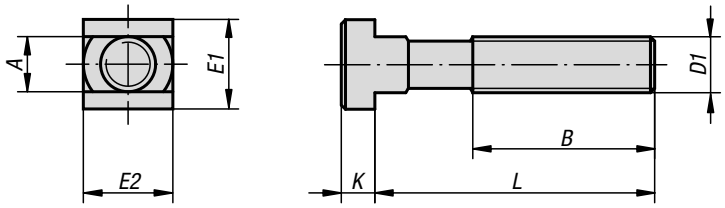


KIPP Nuts for T-slots, rhombic form

Order No.	Slot width	B	B1	D	H	H1
K0379.105	6	10	5,6	M5	8	4
K0379.106	8	13	7,6	M6	10	6
K0379.108	10	15	9,7	M8	12	6
K0379.110	12	18	11,7	M10	14	7
K0379.210	14	22	13,5	M10	16	8
K0379.310	18	28	17,5	M10	20	10
K0379.112	14	22	13,7	M12	16	8
K0379.114	16	25	15,7	M14	18	9
K0379.116	18	28	17,7	M16	20	10
K0379.216	20	32	19,7	M16	24	12
K0379.316	22	35	21,5	M16	28	14
K0379.416	28	44	27,5	M16	36	18
K0379.118	20	32	19,7	M18	24	12
K0379.120	22	35	21,7	M20	28	14
K0379.124	28	44	27,7	M24	36	18
K0379.130	36	54	35,6	M30	44	22
K0379.136	42	65	41,5	M36	52	26

T-slot bolts

DIN 787



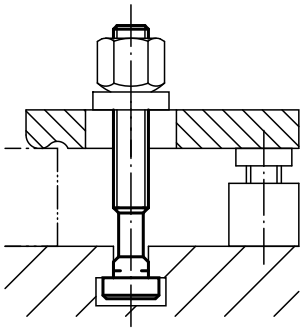
KIPP T-slot bolts DIN 787

Order No.	Slot width	D1	L	A	B	E1/E2	K
K0698.0625	6	M6	25	5,7	15	10	4
K0698.0640	6	M6	40	5,7	28	10	4
K0698.0663	6	M6	63	5,7	40	10	4
K0698.0832	8	M8	32	7,7	22	13	6
K0698.0850	8	M8	50	7,7	35	13	6
K0698.0880	8	M8	80	7,7	50	13	6
K0698.1040	10	M10	40	9,7	30	15	6
K0698.1063	10	M10	63	9,7	45	15	6
K0698.10100	10	M10	100	9,7	60	15	6
K0698.1250	12	M12	50	11,7	35	18	7
K0698.1263	12	M12	63	11,7	40	18	7
K0698.1280	12	M12	80	11,7	55	18	7
K0698.12100	12	M12	100	11,7	65	18	7
K0698.12125	12	M12	125	11,7	75	18	7
K0698.12160	12	M12	160	11,7	100	18	7
K0698.12200	12	M12	200	11,7	120	18	7
K0698.1450	14	M12	50	13,7	35	22	8
K0698.1463	14	M12	63	13,7	45	22	8
K0698.1480	14	M12	80	13,7	55	22	8
K0698.14100	14	M12	100	13,7	65	22	8
K0698.14125	14	M12	125	13,7	75	22	8
K0698.14160	14	M12	160	13,7	100	22	8
K0698.14200	14	M12	200	13,7	120	22	8
K0698.16631	16	M14	63	15,7	45	25	9
K0698.16801	16	M14	80	15,7	55	25	9
K0698.161001	16	M14	100	15,7	65	25	9
K0698.161251	16	M14	125	15,7	75	25	9
K0698.161601	16	M14	160	15,7	100	25	9
K0698.162501	16	M14	250	15,7	150	25	9
K0698.1663	16	M16	63	15,7	45	25	9
K0698.1680	16	M16	80	15,7	55	25	9
K0698.16100	16	M16	100	15,7	65	25	9
K0698.16125	16	M16	125	15,7	85	25	9
K0698.16160	16	M16	160	15,7	100	25	9
K0698.16200	16	M16	200	15,7	125	25	9
K0698.16250	16	M16	250	15,7	150	25	9
K0698.1863	18	M16	63	17,7	45	28	10

Material:
Carbon steel.

Version:
Forged and milled, rolled thread.
M6-M12 tempered to 10.9, black.
M14-M36 tempered to 8.8, black.

Sample order:
K0698.1263



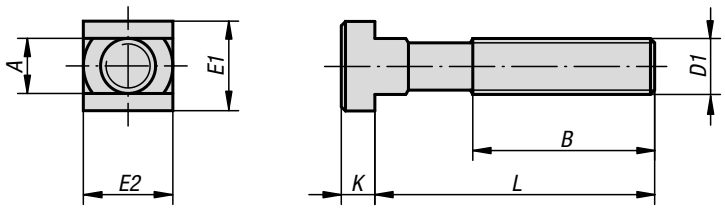
T-slot bolts

DIN 787

Order No.	Slot width	D1	L	A	B	E1/E2	K
K0698.1880	18	M16	80	17,7	55	28	10
K0698.18100	18	M16	100	17,7	65	28	10
K0698.18125	18	M16	125	17,7	85	28	10
K0698.18160	18	M16	160	17,7	100	28	10
K0698.18200	18	M16	200	17,7	125	28	10
K0698.18250	18	M16	250	17,7	150	28	10
K0698.2080	20	M20	80	19,7	55	32	12
K0698.20100	20	M20	100	19,7	65	32	12
K0698.20125	20	M20	125	19,7	85	32	12
K0698.20160	20	M20	160	19,7	110	32	12
K0698.20200	20	M20	200	19,7	125	32	12
K0698.20250	20	M20	250	19,7	150	32	12
K0698.20315	20	M20	315	19,7	190	32	12
K0698.2280	22	M20	80	21,7	55	35	14
K0698.22100	22	M20	100	21,7	65	35	14
K0698.22125	22	M20	125	21,7	85	35	14
K0698.22160	22	M20	160	21,7	110	35	14
K0698.22200	22	M20	200	21,7	125	35	14
K0698.22250	22	M20	250	21,7	150	35	14
K0698.22315	22	M20	315	21,7	190	35	14
K0698.24100	24	M24	100	23,7	70	40	16
K0698.24125	24	M24	125	23,7	85	40	16
K0698.24160	24	M24	160	23,7	110	40	16
K0698.24200	24	M24	200	23,7	125	40	16
K0698.24250	24	M24	250	23,7	150	40	16
K0698.24315	24	M24	315	23,7	190	40	16
K0698.24400	24	M24	400	23,7	240	40	16
K0698.28100	28	M24	100	27,7	70	44	18
K0698.28125	28	M24	125	27,7	85	44	18
K0698.28160	28	M24	160	27,7	110	44	18
K0698.28200	28	M24	200	27,7	125	44	18
K0698.28250	28	M24	250	27,7	150	44	18
K0698.28315	28	M24	315	27,7	190	44	18
K0698.28400	28	M24	400	27,7	240	44	18
K0698.36125	36	M30	125	35,6	80	54	22
K0698.36160	36	M30	160	35,6	110	54	22
K0698.36200	36	M30	200	35,6	135	54	22
K0698.36250	36	M30	250	35,6	150	54	22
K0698.36315	36	M30	315	35,6	200	54	22
K0698.36500	36	M30	500	35,6	300	54	22
K0698.42160	42	M36	160	41,6	100	65	26
K0698.42250	42	M36	250	41,6	175	65	26
K0698.42400	42	M36	400	41,6	250	65	26

T-slot bolts

DIN 787, 12.9



KIPP T-slot bolts DIN 787, 12.9

Order No.	Slot width	D1	L	A	B	E1/E2	K
K0699.11250	12	M12	50	11,7	35	18	7
K0699.11280	12	M12	80	11,7	55	18	7
K0699.112100	12	M12	100	11,7	65	18	7
K0699.112125	12	M12	125	11,7	75	18	7
K0699.112160	12	M12	160	11,7	100	18	7
K0699.112200	12	M12	200	11,7	120	18	7
K0699.11450	14	M12	50	13,7	35	22	8
K0699.11480	14	M12	80	13,7	55	22	8
K0699.114100	14	M12	100	13,7	65	22	8
K0699.114125	14	M12	125	13,7	75	22	8
K0699.114160	14	M12	160	13,7	100	22	8
K0699.114200	14	M12	200	13,7	120	22	8
K0699.11663	16	M16	63	15,7	45	25	9
K0699.116100	16	M16	100	15,7	65	25	9
K0699.116125	16	M16	125	15,7	85	25	9
K0699.116160	16	M16	160	15,7	100	25	9
K0699.116250	16	M16	250	15,7	150	25	9
K0699.11863	18	M16	63	17,7	45	28	10
K0699.118100	18	M16	100	17,7	65	28	10
K0699.118125	18	M16	125	17,7	85	28	10
K0699.118160	18	M16	160	17,7	100	28	10
K0699.118250	18	M16	250	17,7	150	28	10
K0699.12080	20	M20	80	19,7	55	32	12
K0699.120125	20	M20	125	19,7	85	32	12
K0699.120200	20	M20	200	19,7	125	32	12
K0699.120315	20	M20	315	19,7	190	32	12
K0699.12280	22	M20	80	21,7	55	35	14
K0699.122125	22	M20	125	21,7	85	35	14
K0699.122200	22	M20	200	21,7	125	35	14
K0699.122315	22	M20	315	21,7	190	35	14
K0699.124100	24	M24	100	23,7	70	40	16
K0699.124160	24	M24	160	23,7	110	40	16
K0699.124250	24	M24	250	23,7	150	40	16
K0699.124400	24	M24	400	23,7	240	40	16
K0699.128100	28	M24	100	27,7	70	44	18
K0699.128160	28	M24	160	27,7	110	44	18
K0699.128250	28	M24	250	27,7	150	44	18
K0699.128400	28	M24	400	27,7	240	44	18

Material:
Carbon steel.

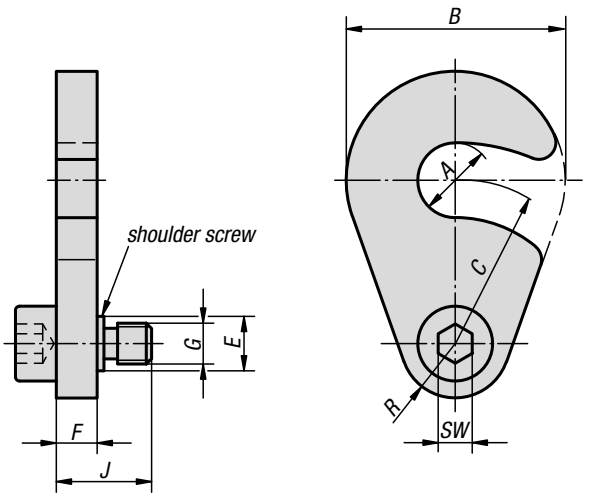
Version:
Forged and milled, rolled thread, tempered to 12.9, black.

Sample order:
K0699.112125

K0872

C-washers

captive, with shoulder screw



Material:
Captive C-washer mild steel.
Shoulder screw Q&T steel.

Version:
Captive C-washer case-hardened and black oxidised.
Shoulder screw tempered and black oxidised.

Sample order:
K0872.90010

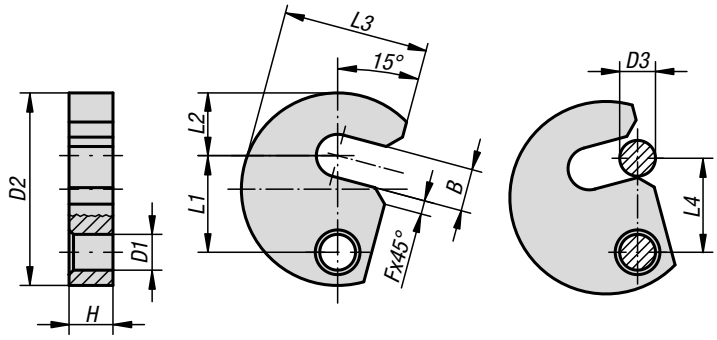
KIPP C-washers, captive, with shoulder screw

Order No.	B	C	D	E	F	G	SW	J
K0872.90010	32	24	8	8	6	M6	5	14
K0872.90012	40	27	10	10	8	M8	6	19
K0872.90016	50	33	10	10	8	M8	6	19

K0703

C-washers captive

DIN 6371



Material:
Carbon steel 1.0760.

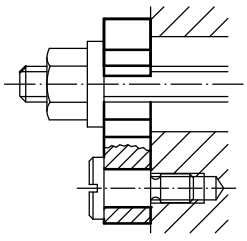
Version:
Nitrided and black oxidised.

Sample order:
K0703.12

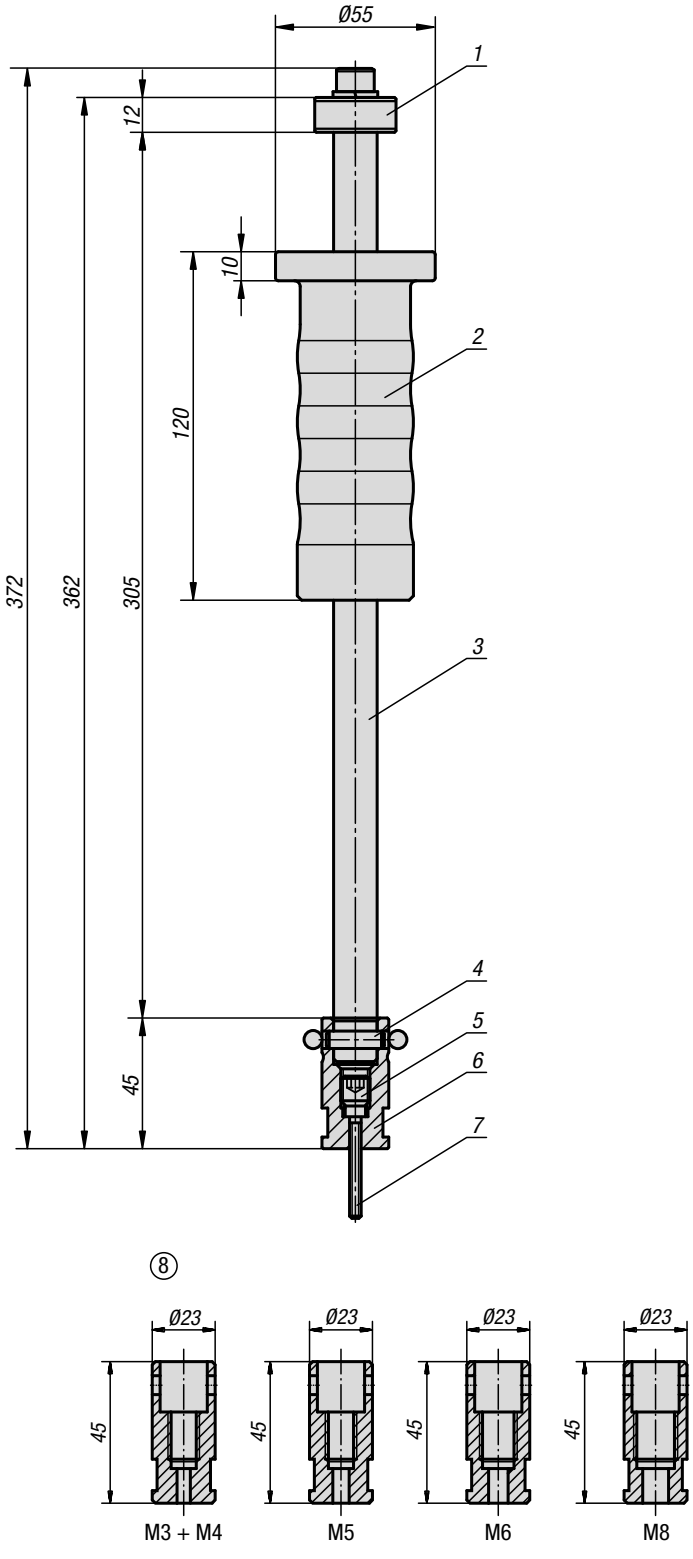
Note:
K0703.14 is not standard. Suitable shoulder screws see K0704.

KIPP C-washers captive DIN 6371

Order No.	B	D1	D2	D3	F	H	L1	L2	L3	L4
K0703.06	7,5	9	38	6	3	9,8	19,6	11	29	19
K0703.08	9,5	9	43	8	3	9,8	21,6	14	32,5	21
K0703.10	11,5	9	48	10	3	9,8	23,6	17	36,5	23
K0703.12	13,5	11	61	12	3	11,8	29,6	22	45	29
K0703.14	15,5	11	65	14	3	11,8	31,6	23	49	31
K0703.16	17,5	11	68	16	3	11,8	33,6	25	50	33
K0703.20	21,5	11	74	20	4	11,8	36,6	28	55	36



Dowel pin puller



Material:
Hammer head carbon steel.
Shaft, stop and guide sleeves tool steel.

Version:
Slide hammer tempered and chromed.
Shaft, stop and guide sleeve hardened and chromed.

Sample order:
K0873.40

Note:
These extractors are used to remove locating pins and centring pins (K0817, K0818, K0350, K0351) with M3 - M8 tapped holes.

Accessories:
Storage case for guide sleeves.

Drawing reference:
1) stop
2) slide hammer
3) shaft
4) cross pin
5) lock screw
6) guide sleeve
7) cap screw
8) 1 set guide sleeves

KIPP Dowel pin puller

Order No.	Dimensions
K0873.40	see drawing

Notes

Zero-point clamping system

Technical information zero-point clamping system

Application

The modular structured flexible zero-point clamping system was specifically developed for the machining and non-machining fields. This system enables a quick and accurate clamping and referencing of fixtures and workpieces on all production machines, machining centres, EDM's and inspection equipment. Whether subplate, fixture, vice or workpiece, this system allows an exchange with a defined reference point in a matter of seconds and repeat accuracy of less than 0.005 mm.

The advantages

- Modular system
- Compact flat design
- Workpiece or fixture change within seconds
- Pneumatic system
- Positive locking
- Holding forces up to 75 kN and pull-in forces up to 25 kN
- Turbo function
- Positioning via short conical locator
- Works reliably in every mounting position
- Sealing air function

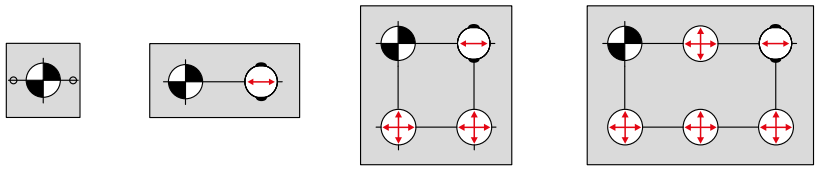
Your benefit

- Can be combined with our modular clamping system
- Better machine room utilisation
- Increased productive machine running times, significantly reduced set-up times
- Reliable system
- Very high cutting forces possible
- High operating and process safety
- Increased pull-in forces are standard
- Very high repeat accuracy
- Clamping cylinder installation in both vertical and horizontal positions
- Blow out function can be activated when changing pallets

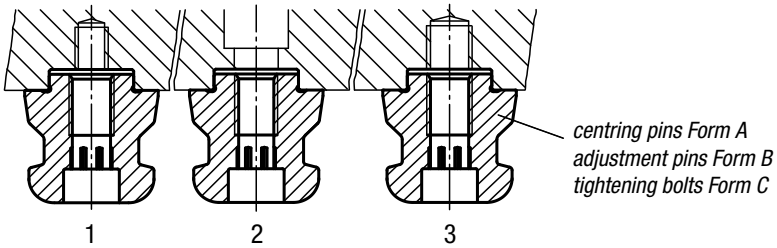
Spigot arrangement/set-up

The workpieces, fixtures or subplates are positioned and clamped using spigots. There are three different spigot types.

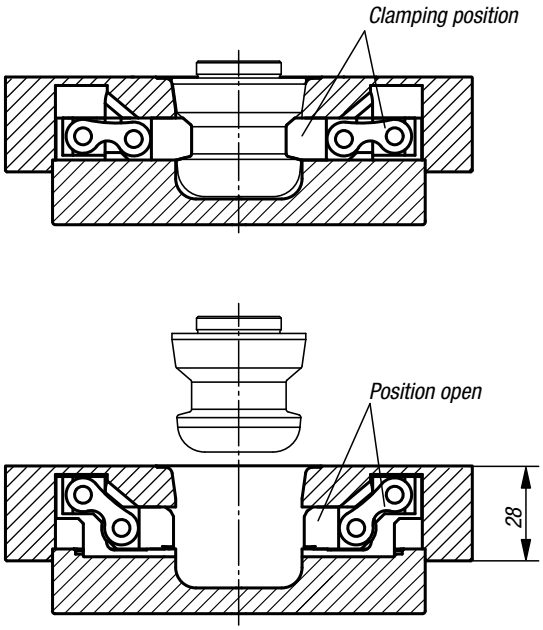
Centring spigot	fixed in x and y direction (reference point)
Compensating pin	fixes the free axis (studs)
Clamping spigot	Spigot with undersize (no centring function only clamping function)
Cylindrical pin	For individual clamping, positioning is done with centring spigot + 2 cylindrical pins



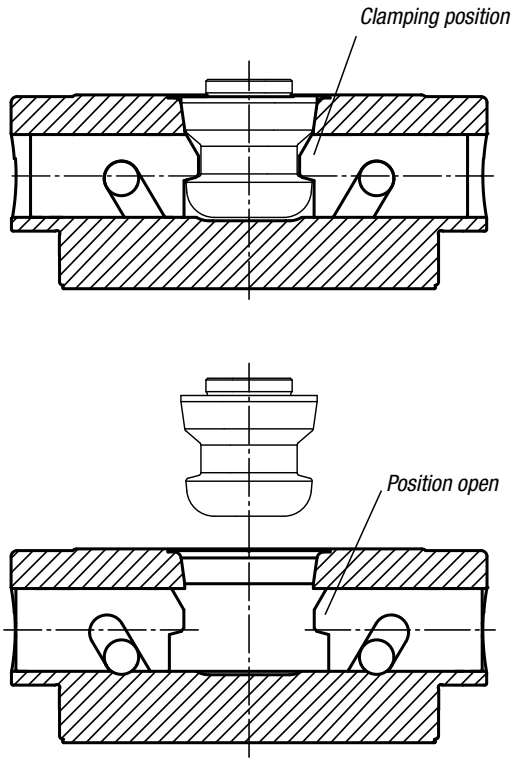
1 = fastening with DIN 912 screw through the tightening bolt
2 = fastening with DIN 912 screw through the fixture or workpiece
3 = fastening with grub screw DIN 913



Function



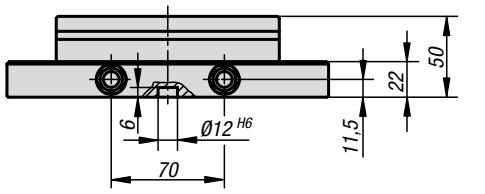
UNILOCK clamping module ERGO 138

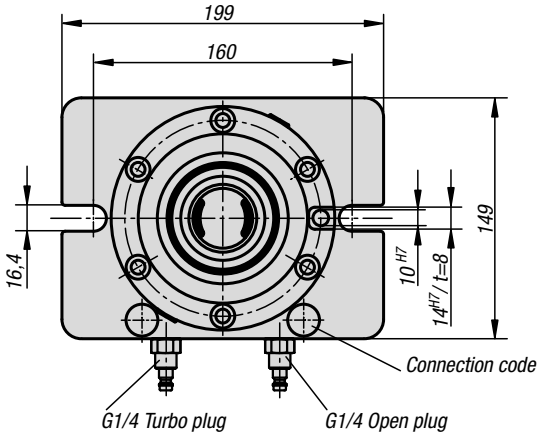


UNILOCK clamping module ESM 138-C
UNILOCK clamping module ESM 176
UNILOCK clamping module EFM 138

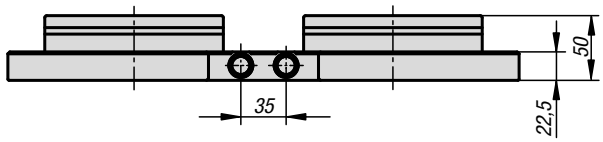
UNILOCK clamping station

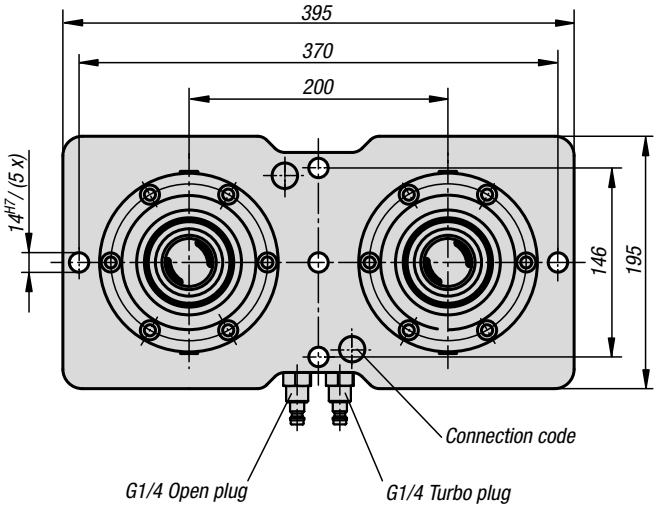
1x





2x





Material:
Clamping module high-carbon steel.
Baseplate steel 1.1730.

Version:
Clamping module contact faces hardened and ground.
Baseplate ground on both sides.

Sample order:
K1009.1000149199

Note:
Pre-assembled multi-clamping stations with integrated UNILOCK clamping modules ERGO 138. The clamping stations can be screwed directly onto machine tables or secured using claw clamps.
Standard hole patterns on the back for fastening are pre-centred.
The clamping stations can be aligned using the 14H7 reference holes.
The clamping modules are actuated using a central pneumatic connection.
The high clamping forces are generated by the integrated spring package. (the unit clamps in while not under pressure).
Clamping is released pneumatically.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N/module
- Clamping force (M12) 50,000 N/module
- Clamping force (M16) 75,000 N/module
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

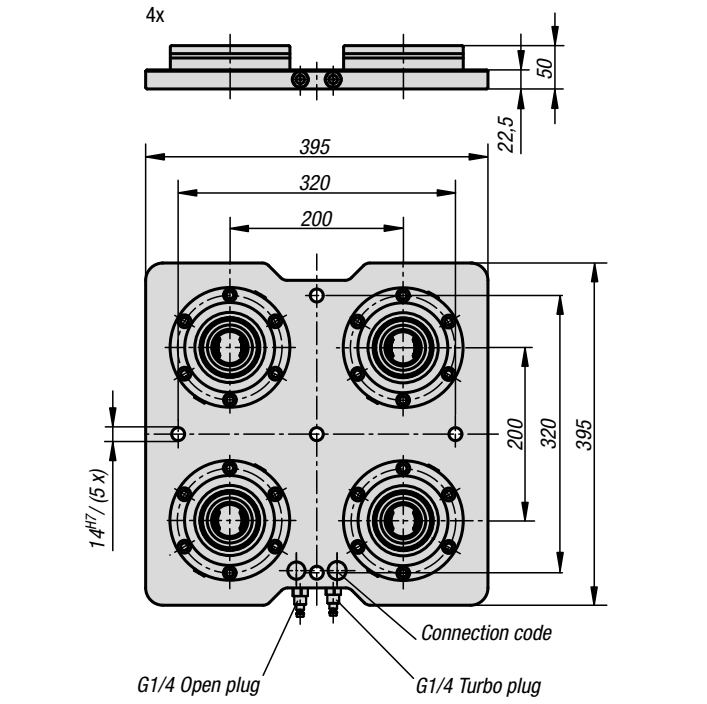
On request:
Clamping station in special dimensions.

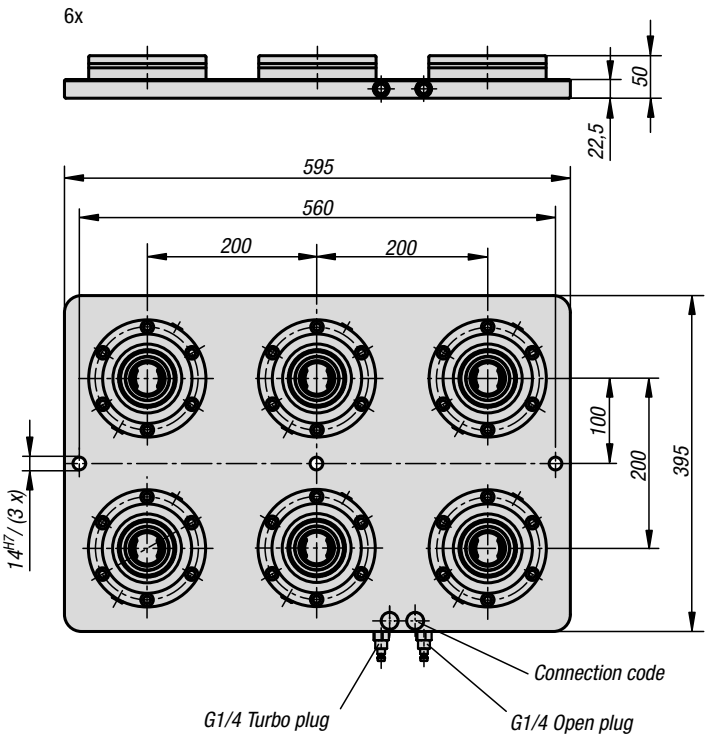
Technical data:
- Retraction force with turbo from 18 kN/module
- Opening pressure: 6 bar, lubricated air.
- Turbo pressure: 6 bar.
- Air connection: G1/4
- Repeat accuracy ≤ 0.005 mm
- Reference holes 14H7 to align the clamping plate.

KIPP UNILOCK clamping station

Order No.	Version 2	Form	Form-Type	weight kg
K1009.1000149199	1x	A	without rotation lock	7,08
K1009.10001491991	1x	B	with rotation lock	7,2
K1009.2200395195	2x	A	without rotation lock	17,62

UNILOCK clamping station





Material:
Clamping module high-carbon steel.
Baseplate steel 1.1730.

Version:
Clamping module contact faces hardened and ground.
Baseplate ground on both sides.

Sample order:
K1009.4200395395

Note:
Pre-assembled multi-clamping stations with integrated UNILOCK clamping modules ERGO 138. The clamping stations can be screwed directly onto machine tables or secured using claw clamps.
Standard hole patterns on the back for fastening are pre-centred.
The clamping stations can be aligned using the 14H7 reference holes.
The clamping modules are actuated using a central pneumatic connection.
The high clamping forces are generated by the integrated spring package. (the unit clamps in while not under pressure).
Clamping is released pneumatically.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N/module
- Clamping force (M12) 50,000 N/module
- Clamping force (M16) 75,000 N/module
Clamping force with DIN EN ISO 4762 -12.9 cap screws

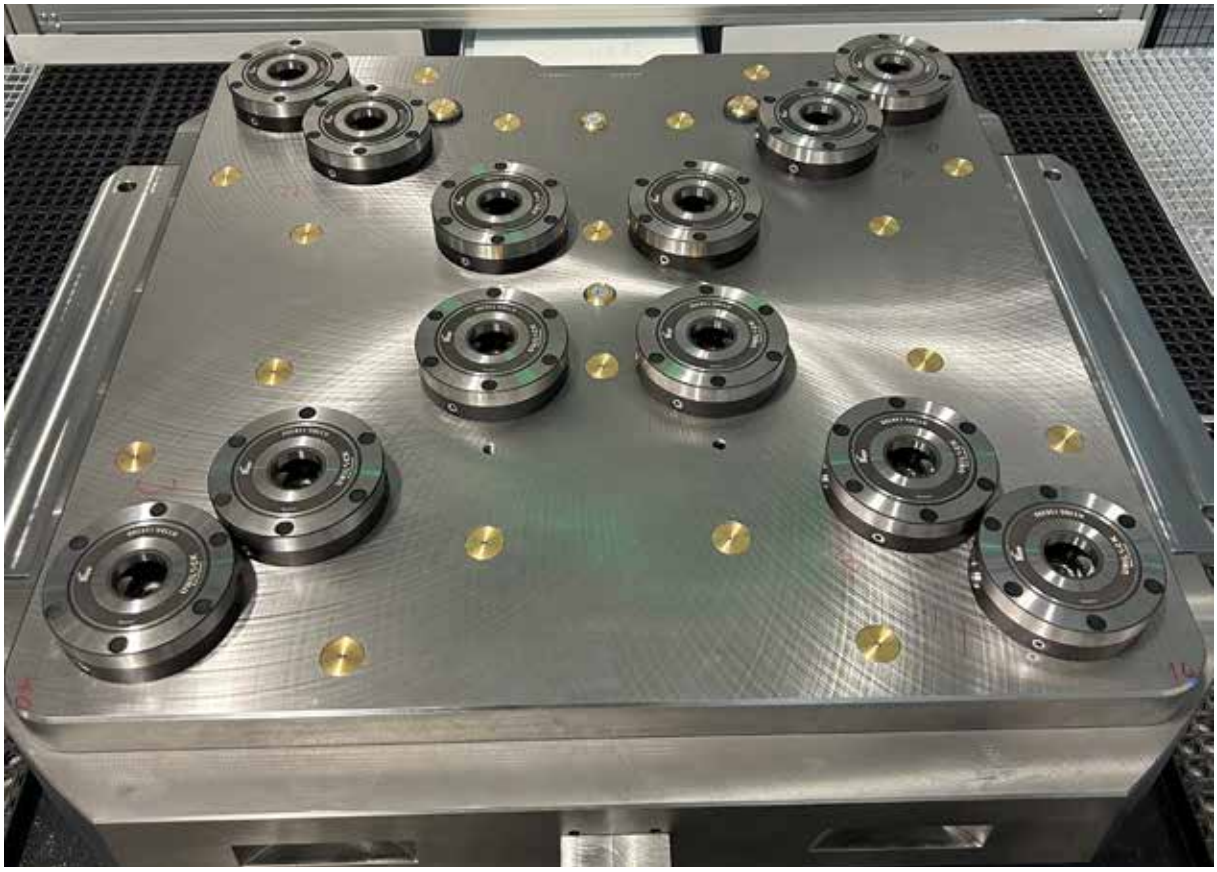
Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

On request:
Clamping station in special dimensions.

Technical data:
- Retraction force with turbo from 18 kN/module
- Opening pressure: 6 bar, lubricated air.
- Turbo pressure: 6 bar.
- Air connection: G1/4
- Repeat accuracy ≤ 0.005 mm
- Reference holes 14H7 to align the clamping plate.

KIPP UNILOCK clamping station

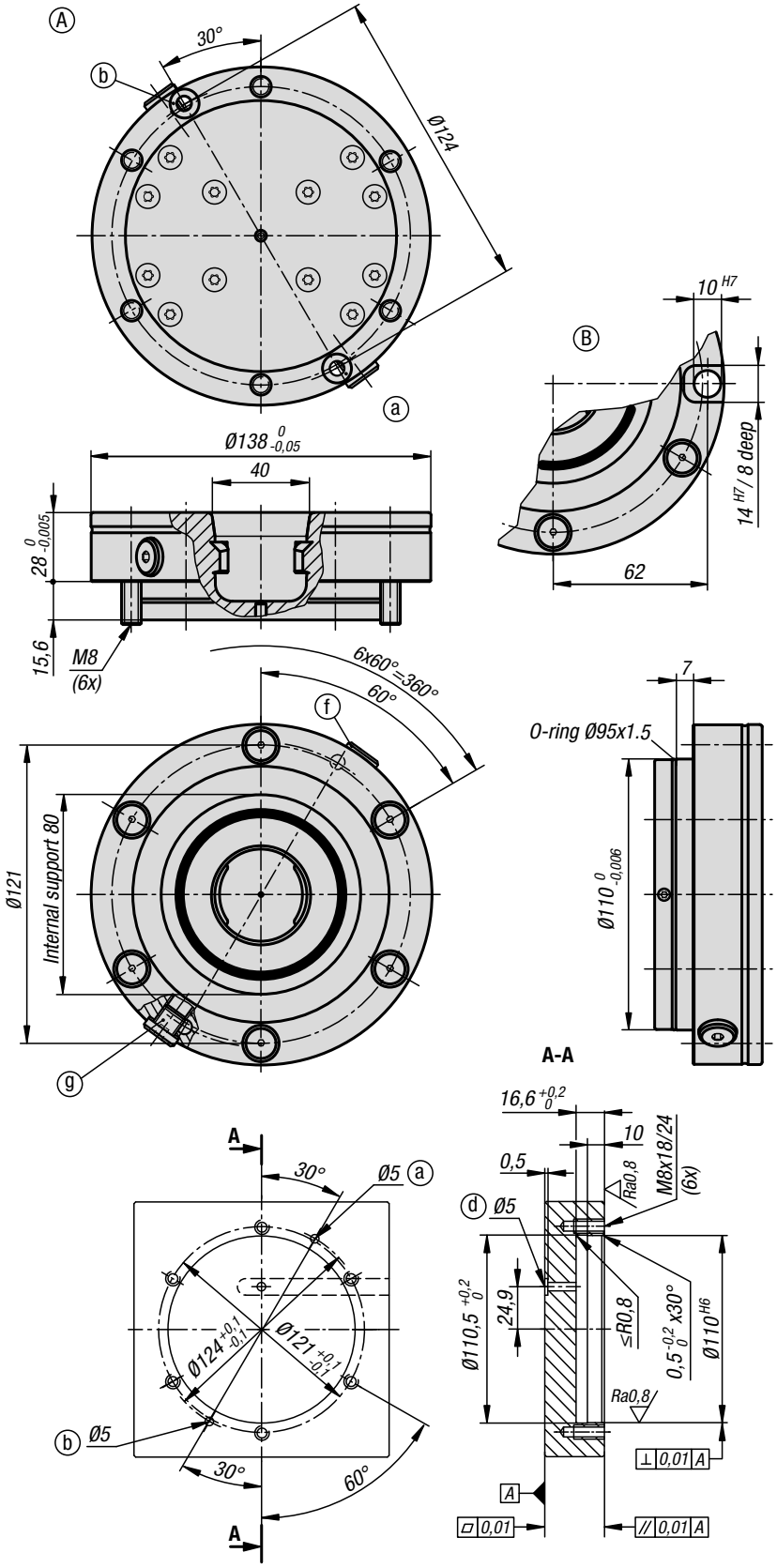
Order No.	Version 2	Form	Form-Type	weight kg
K1009.4200395395	4x	A	without rotation lock	35
K1009.6200595395	6x	A	without rotation lock	52,2



Notes

UNILOCK clamping module

ERGO 138



Material:
Carbon steel.

Version:
Contact faces hardened and ground.

Sample order:
K1003.138280

Note:
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together,thus an individual zero-point clamping system can be fabricated.The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

A very low installation height of the clamping modules is achieved by the compact design of the flat clamping slides.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).
The release process is pneumatic.
Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

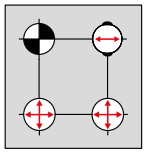
The ERGO clamping modules are available with and without rotation lock.

KIPP UNILOCK clamping module ERGO 138

Order No.	Form	Form-Type	Operating pressure bar	Retraction force with turbo kN	weight kg
K1003.138280	A	without rotation lock	6	18	3,56
K1003.138281	B	with rotation lock	6	18	3,52

UNILOCK clamping module

ERGO 138



Centring pins = Form A — fixes in x and y axis (reference point)

Adjustment pins =Form B — fixes the free axis (bayonet pin)

Tightening bolts = Form C — Pins with undersize (no centring function, clamping only)

Advantages:
- Compact flat design through flat slides.
- Turbo-function as standard.
- Repeat accuracy ≤0.005 mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

Supplied with:
1x clamping module.
1x O-ring Ø95x1,5.
2x O-rings Ø8x2 for media feed.
6x fastening screws.
6x cover caps for fastening screws.

Accessories:
Clamping pin K0967.
Protective bolt for clamping module K1010.
Protective plug for clamping module K1010.

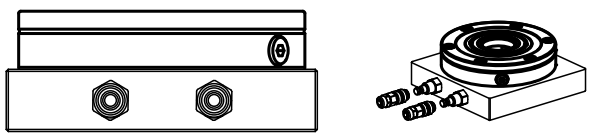
Attention:
Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
- From five clamping modules, hose size 8 mm.

Functional principle:
The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:
1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

1)



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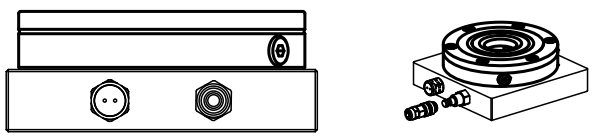

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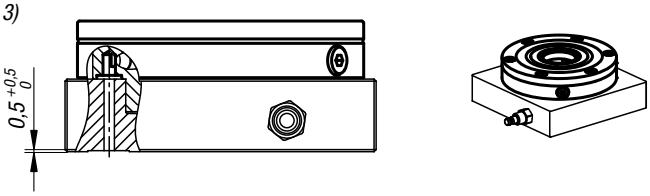

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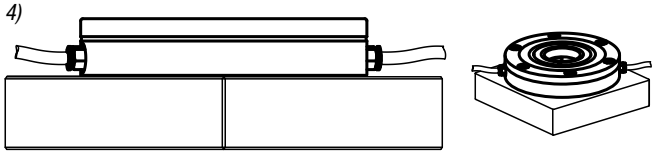
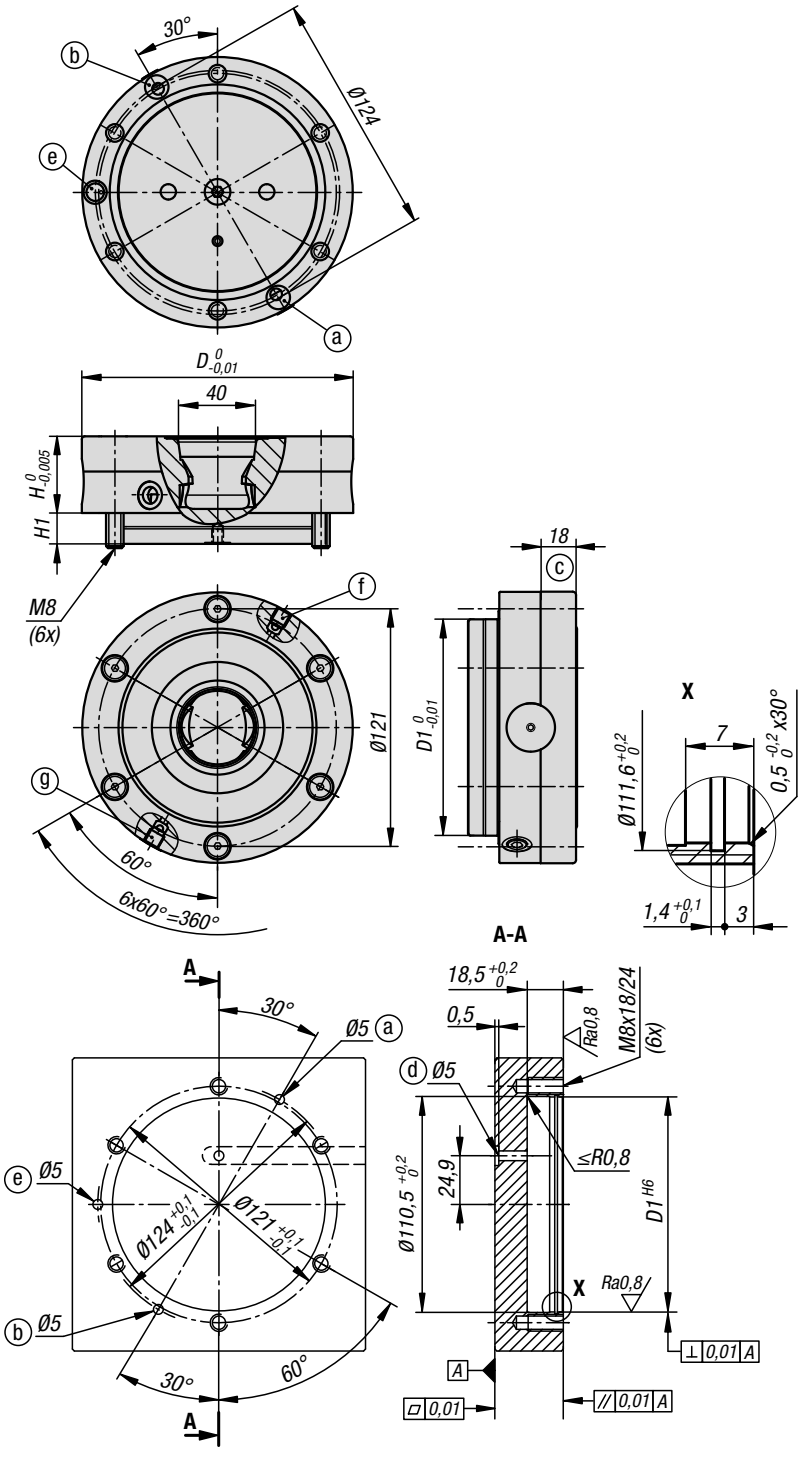


Technical data:
- Traction force with turbo from 18 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy ≤0.005 mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.

Drawing reference:
a) Underside hose-less port (open)
O-ring Ø8x2
b) Underside hose-less port (turbo)
O-ring Ø8x2
c) Centring rim
d) Vent
f) Lateral connection G1/8 (actuator open)
g) Lateral connection G1/8 (turbo)

UNILOCK clamping module

ESM 138-C



Material:
Steel.

Version:
Contact faces case-hardened and ground.

Sample order:
K1385.138390

Note:
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together,thus an individual zero-point clamping system can be fabricated.The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).
The release process is pneumatic.
Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

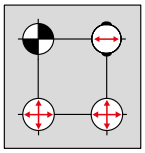
Advantages:
- Automation-capable through various query options.
- Turbo-function as standard.
- Repeat accuracy ≤0.005 mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

KIPP UNILOCK clamping module ESM 138-C

Order No.	Form	Form-Type	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1385.138390	A	without rotation lock	138	110	39	16,7	6	25

UNILOCK clamping module

ESM 138-C



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)

Supplied with:
1x clamping module.
1x O-ring Ø110x1.
3x O-rings Ø9x1.5 for media feed.
6x fastening screws.
6x cover caps for fastening screws.

Accessories:
Clamping pin K0967.
Protective bolt for clamping module K1010.
Protective plug for clamping module K1010.

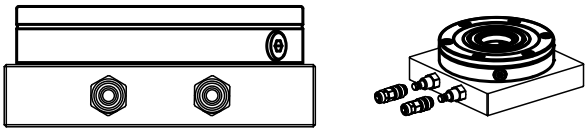
Attention:
Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
- From five clamping modules, hose size 8 mm.

Functional principle:
The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:
1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

1)



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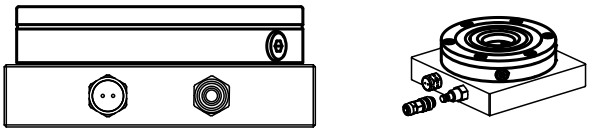

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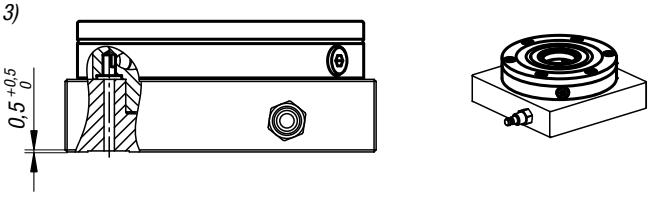

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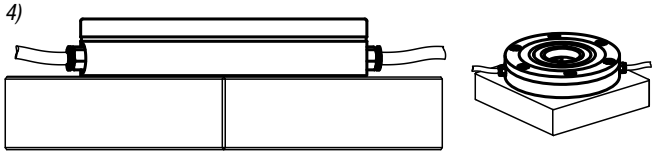
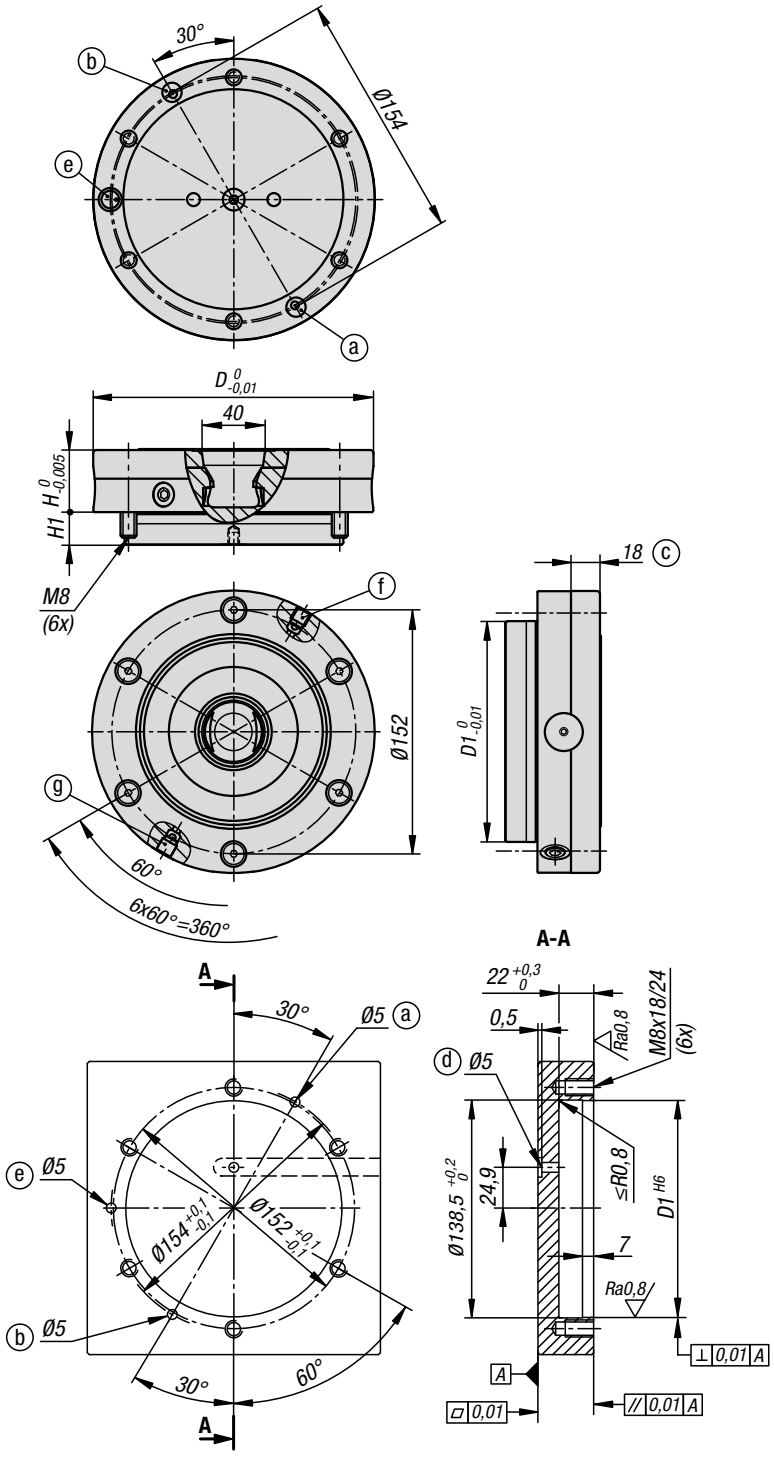


Technical data:
- Traction force with turbo from 25 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy ≤0.005 mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.
- The third air port can be used as a query function to report if clamping slides are open or closed.

Drawing reference:
a) Underside hose-less port (open)
O-ring Ø9x1.5
b) Underside hose-less port (turbo)
O-ring Ø9x1.5
c) Centring rim
d) Vent
e) Underside hose-less port
(dynamic pressure detection / clamp slider position)
O-ring Ø9x1.5
f) Lateral connection G1/8 (actuator open)
g) Lateral connection G1/8 (turbo)

UNILOCK clamping module

ESM 176



Material:
Steel.

Version:
Contact faces case-hardened and ground.

Sample order:
K1389.176390

Note:
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together,thus an individual zero-point clamping system can be fabricated.The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).
The release process is pneumatic.
Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

Advantages:
- Automation-capable through various query options.
- Turbo-function as standard.
- Repeat accuracy ≤0.005 mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

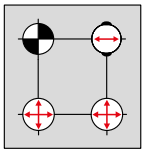
On request:
Installation clamp with rotation lock.

KIPP UNILOCK clamping module ESM 176

Order No.	Form	Form-Type	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1389.176390	A	without rotation lock	176	138	39	20,8	6	40

UNILOCK clamping module

ESM 176



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)

Supplied with:
1x clamping module.
3x O-rings Ø9x1.5 for media feed.
6x fastening screws.
6x cover caps for fastening screws.

Accessories:
Clamping pin K0967.
Protective bolt for clamping module K1010.
Protective plug for clamping module K1010.

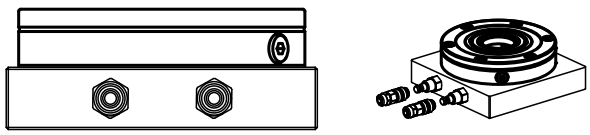
Attention:
Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
- From five clamping modules, hose size 8 mm.

Functional principle:
The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:
1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

1)



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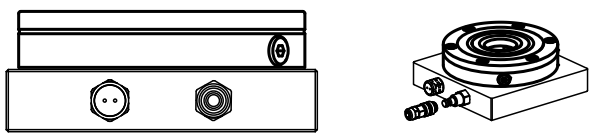

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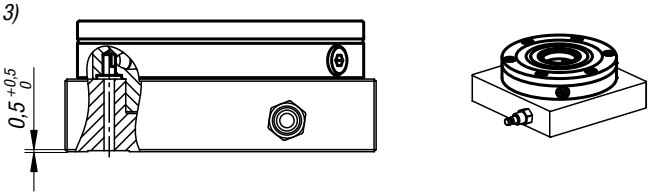

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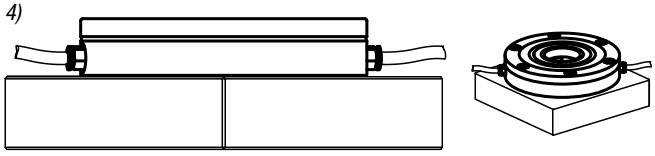
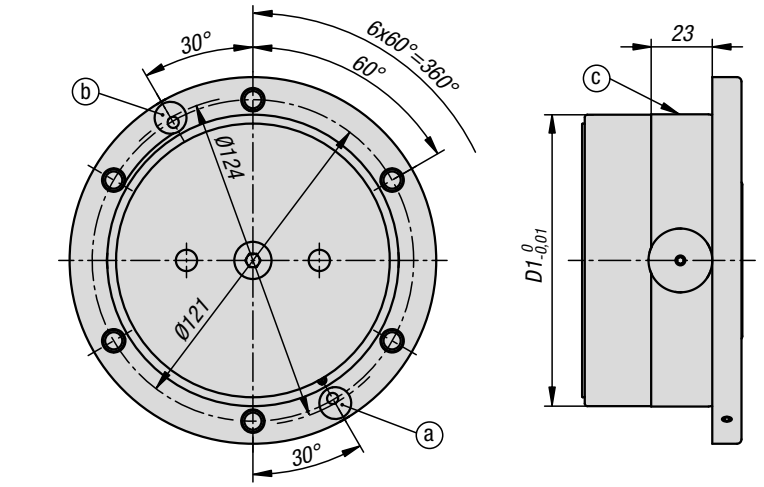


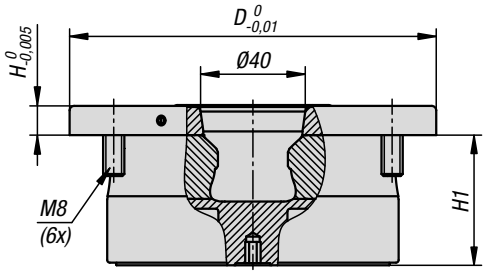
Technical data:
- Traction force with turbo from 25 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy ≤0.005 mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.
- The third air port can be used as a query function to report if clamping slides are open or closed.

Drawing reference:
a) Underside hose-less port (open)
O-ring Ø9x1.5
b) Underside hose-less port (turbo)
O-ring Ø9x1.5
c) Centring rim
d) Vent
e) Underside hose-less port
(dynamic pressure detection / clamp slider position)
O-ring Ø9x1.5
f) Lateral connection G1/8 (actuator open)
g) Lateral connection G1/8 (turbo)

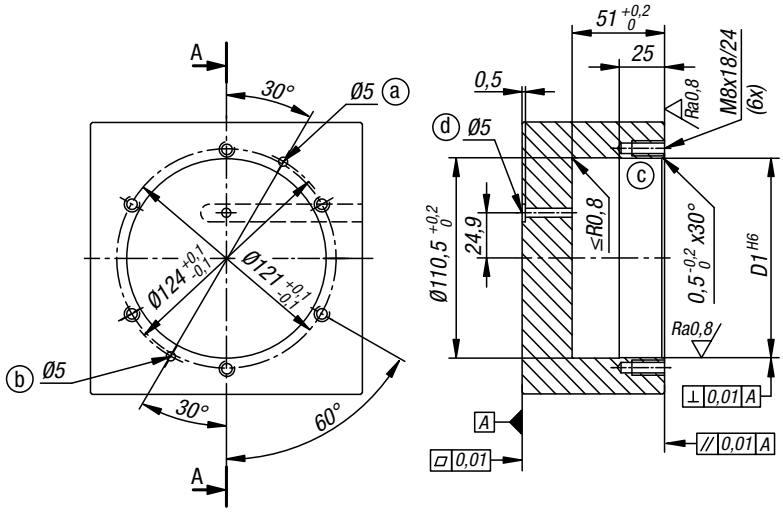
UNILOCK clamping module

EFM 138





A-A



Material:
Steel.

Version:
Contact faces hardened and ground.

Sample order:
K1866.138110

Note:
The UNILOCK clamp modules EFM 138 can be installed in machine tables, in fixtures (plates, cubes, towers etc) with or without overhang in any position.
The UNILOCK clamping module EFM 138 is particularly suitable for installation in workholding towers by machining a deep recess for the module.
With a maximum protusion of 11 mm above the installation surface, only minor interference contours occur, thus permitting optimum horizontal machining on the workpiece.

The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated.
The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).
The release process is pneumatic.
Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port additionally increases the normal traction force achieved by the springs significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

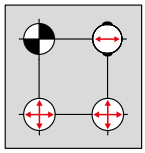
A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse applications.

KIPP UNILOCK clamping module EFM 138

Order No.	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1866.138110	138	110	11	49	6	20

UNILOCK clamping module

EFM 138



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)

Advantages:
- Optimal for mounting on workholding towers due to the low mounting height of 11 mm.
- Turbo function as standard.
- Repeat accuracy ≤0.005 mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

Supplied with:
1x clamping module.
6x fastening screws.
6x screw protection caps.
2x air connection O-rings Ø9x1,5.

Accessories:
Clamping pin K0967.
Protective bolt for clamping module K1010.
Protective plug for clamping module K1010.

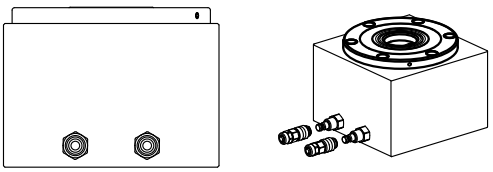
Attention:
Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
- From five clamping modules, hose size 8 mm.

Functional principle:
The clamping modules are controlled via the connections on the base plate.

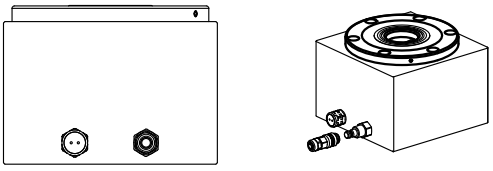
In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented by one of the following three options:
1) Connection and use of the turbo function in the base plate, or in the workholding tower next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
2) A single hole for the air to escape in the baseplate/workholing tower which is connected to the turbo port. Do not use a connection with a shut-off function to seal the hole against dirt, instead a venting screw should be used.
3) In the third case, the piston chamber can be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.

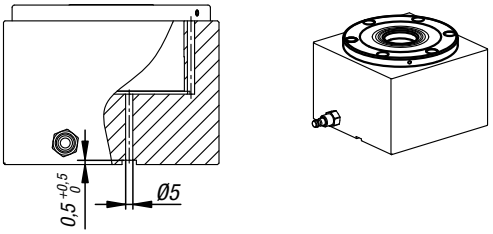
1)



2)



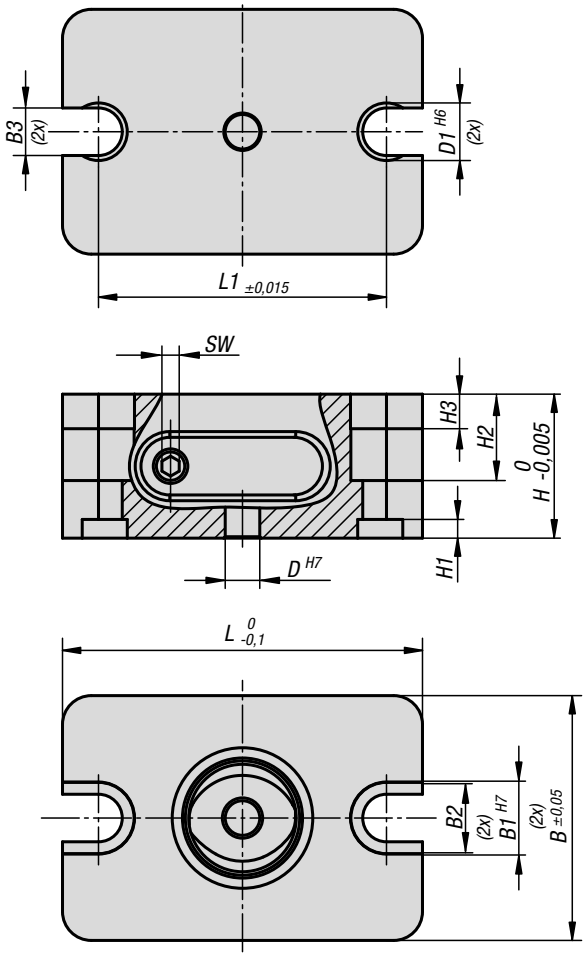
3)

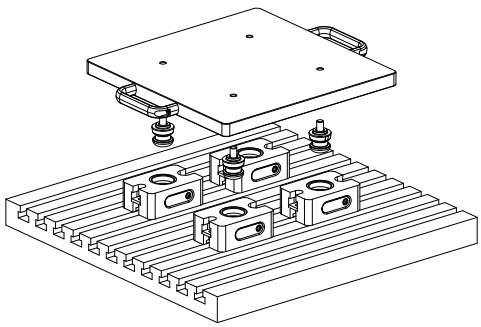


Technical data:
- Traction force with turbo 20 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy ≤ 0.005 mm.
- Temperature range 5° to 60° C.
- Optional port for blow-our air.

Drawing reference:
a) Underside hose-less port (open)
O-ring Ø9x1.5
b) Underside hose-less port (turbo)
O-ring Ø9x1.5
c) Centring rim
d) Vent

UNILOCK manual clamping module





Material:
Carbon steel.

Version:
Contact faces hardened and ground.

Sample order:
K1123.1605050

Note:
UNILOCK manual clamping modules can be adapted directly to machine tables with grid holes or T-slots, and to grid hole subplates with 50 mm grid spacing system size M12/M16.
The UNILOCK manual clamping module H50 is particularly suitable for machines with reduced Z travel. The low installation height of the manual clamping module facilitates full utilisation of the Z travel.
The UNILOCK manual clamping module H50 can be mounted in any position.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N
Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

The UNILOCK manual clamping module can be fastened using DIN EN ISO 4762 -10.9 M12 or M16 cap screws.

The positioning of the UNILOCK manual clamping modules can be carried out using the two alignment holes D1 or the central alignment hole D.
In addition, there are two positioning holes B1 in the UNILOCK manual clamping modules for aligning interchangeable fixtures on the support surface.

Supplied with:
1 manual clamping module incl. fastening accessories.

Technical data:
Max. operating torque: 15 Nm.
Max. retraction force: 15 Nm.
Repeat accuracy ≤0.005 mm

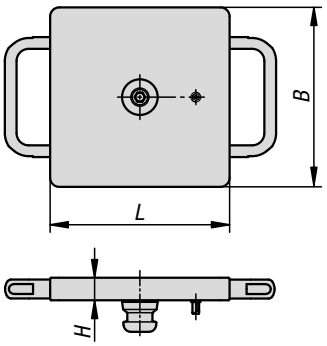
KIPP UNILOCK manual clamping module

Order No.	B	B1	B2	B3	D	D1	D2	D3	H	H1	H2	H3	L	L1	L2	SW	weight kg
K1123.1605050	85	25	24,75	16,5	12	20	13	17	50	6,5	30	12	125	100	24,3	6	3,52

UNILOCK interchangeable subplates

for zero-point clamping system

Ⓐ



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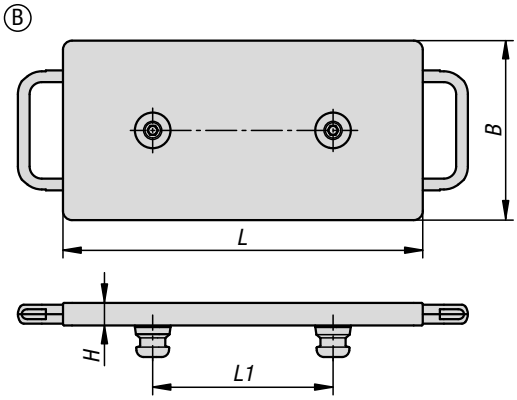

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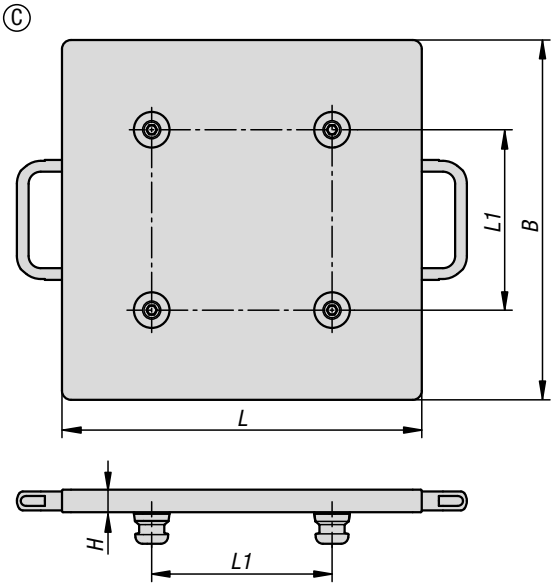
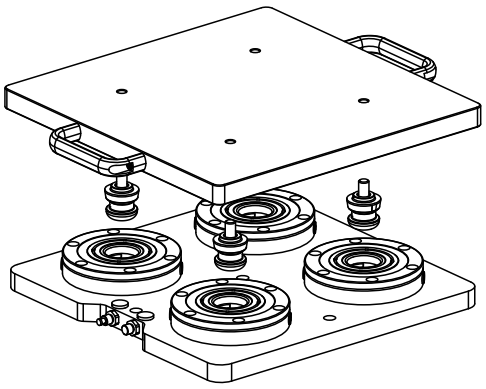


Material:
High-strength aluminium.

Sample order:
K1218.1000200200

Note:
Interchangeable subplates are particularly suitable for quickly exchanging fixtures on zero point clamping plates. Ground on both sides, standard clamping pin gauge of 200 mm. Complete with clamping pins and handles.

On request:
Further gauges and special sizes.

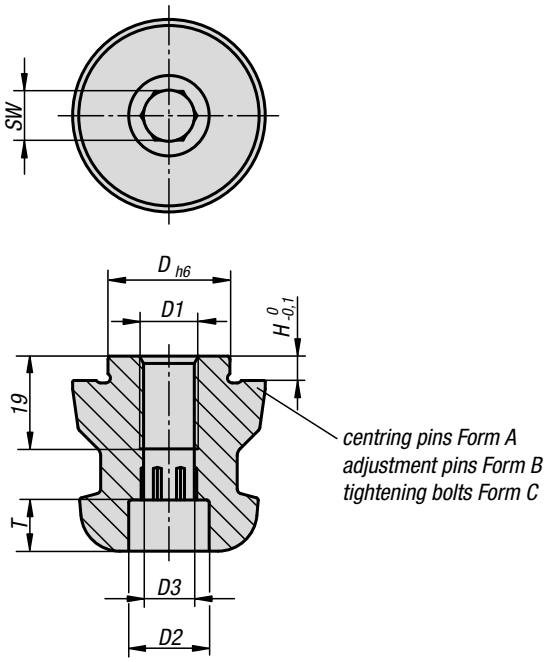


KIPP UNILOCK interchangeable subplates for zero-point clamping system

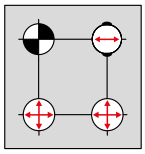
Order No.	Form	B	H	L	L1	weight ca. kg
K1218.1000200200	A	199	25	199	-	2,95
K1218.2200200200	B	199	25	399	200	6,02
K1218.4200400400	C	399	25	399	200	11,88

UNILOCK clamping pins

size 80 mm



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)



Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0967.140160512

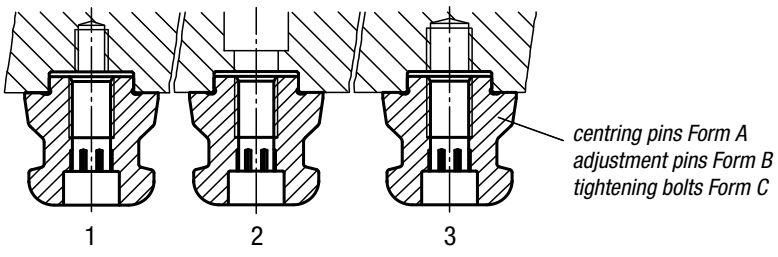
Note:
The UNILOCK clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

The following retaining forces are possible when the UNILOCK clamping pins are used together with M10, M12 or M16 fastening screws:
- Retaining force (M10) 35,000N
- Retaining force (M12) 50,000N
- Retaining force (M16) 75,000N

Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Other clamping pins in the same system size are available under K1471, K0968 and K0967 with threaded pin.

1 = fastening with DIN 912 screw through the tightening bolt
2 = fastening with DIN 912 screw through the fixture or workpiece
3 = fastening with grub screw DIN 913

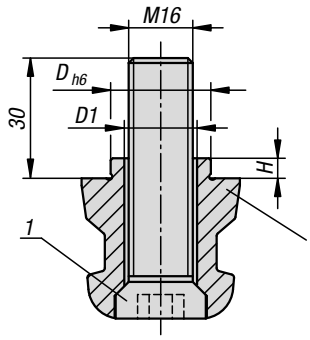


KIPP UNILOCK clamping pins

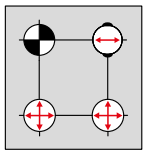
Order No. Form A	Order No. Form B	Order No. Form C	D	D1	D2	D3	H	T	SW
K0967.140160512	**K0967.240160512**	**K0967.340160512**	16	M12	16,5	10,3	5	10,5	10
K0967.140180512	**K0967.240180512**	**K0967.340180512**	18	M12	16,5	10,3	5	10,5	10
K0967.140220516	**K0967.240220516**	**K0967.340220516**	22	M16	18,5	14,2	5	12,5	17
K0967.140250512	**K0967.240250512**	**K0967.340250512**	25	M12	16,5	10,3	5	10,5	10
K0967.140250516	**K0967.240250516**	**K0967.340250516**	25	M16	18,5	14,2	5	12,5	17

UNILOCK clamping pins

with through hole, system size 80 mm



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)



Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.
Swivel fastening screw M16x65, tempered and black oxidised.

Sample order:
K1471.140250516

Note:
The UNILOCK clamping pint is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

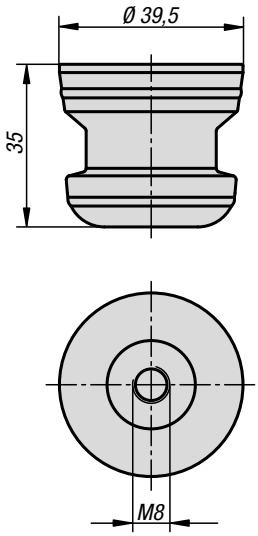
Drawing reference:
1) Swivel fastening screw M16x65.
Grade 10.9.

KIPP UNILOCK clamping pins with through hole

Order No.	Form	D	D1	H	Tightening torque max. Nm
K1471.140250516	A	25	16,5	5	120
K1471.240250516	B	25	16,5	5	120
K1471.340250516	C	25	16,5	5	120

UNILOCK protective bolt

for clamping module

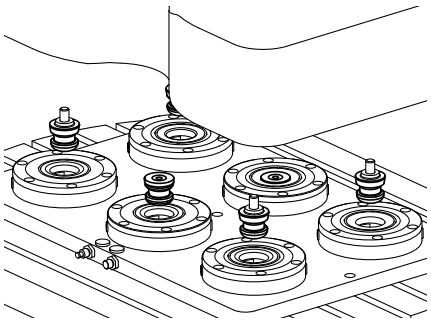


Material:
Aluminium.

Version:
anodised.

Sample order:
K1010.040

Note:
Protection bolt to cover the hole.



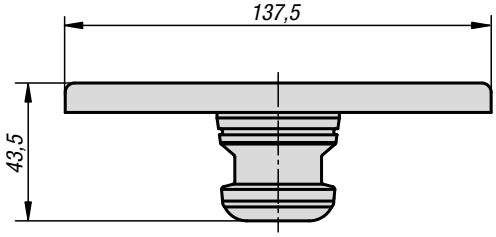
KIPP UNILOCK protective bolt for clamping module

Order No.	Dimensions
K1010.040	see drawing

K1010

UNILOCK protective plug

for clamping module

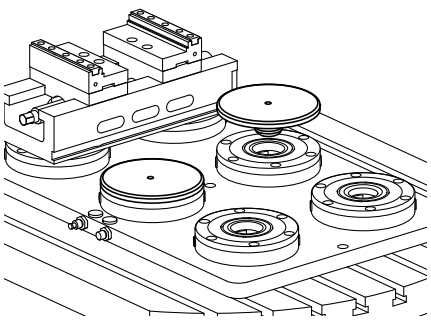


Material:
Aluminium.

Version:
anodised.

Sample order:
K1010.138

Note:
Protective plug for clamping module D = 138.

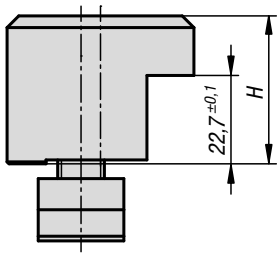


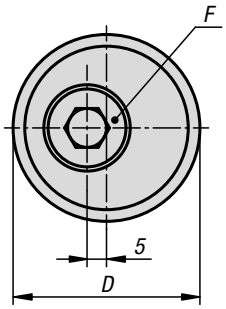
KIPP UNILOCK protective plug for clamping module

Order No.	Dimensions
K1010.138	see drawing

UNILOCK clamping bracket

for UNILOCK clamping station





Material:
Carbon steel.

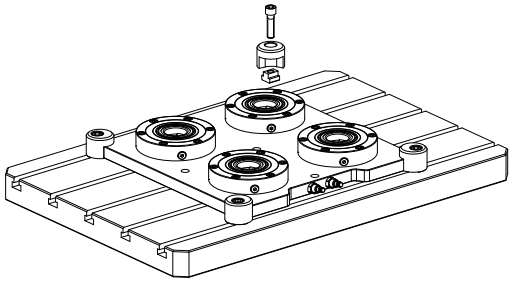
Version:
Body black oxidised.

Sample order:
K1869.482212

Note:
The UNILOCK clamping brackets are used for rapid fastening of the clamping stations on all conventional machine tables.
The clamping brackets can be attached to the sides of the clamping stations or to the four rounded corners.

Advantages:
Rapid fastening of the UNILOCK clamping stations via adapted clamping brackets.
No fastening holes drilled through the clamping stations required.
Low, flat design eliminates protruding edges.
No swarf deposits due to the enclosed form of the clamping bracket.
The supplied screw head caps prevent the accumulation of swarf and coolants.

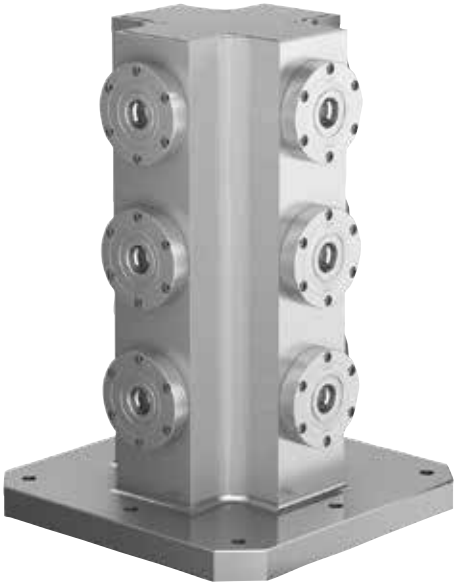
Supplied with:
Clamping bracket
Cap for cap screw heads
Cap screw
T-slot nut (M12 = slot width 14 mm, M16 = slot width 18 mm)

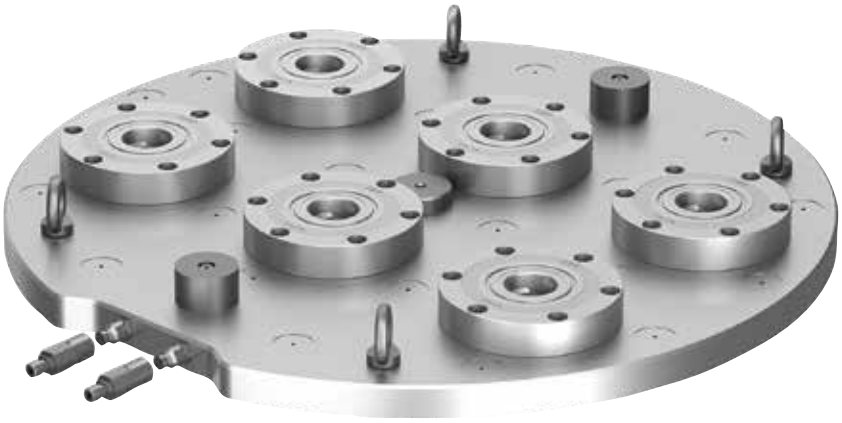


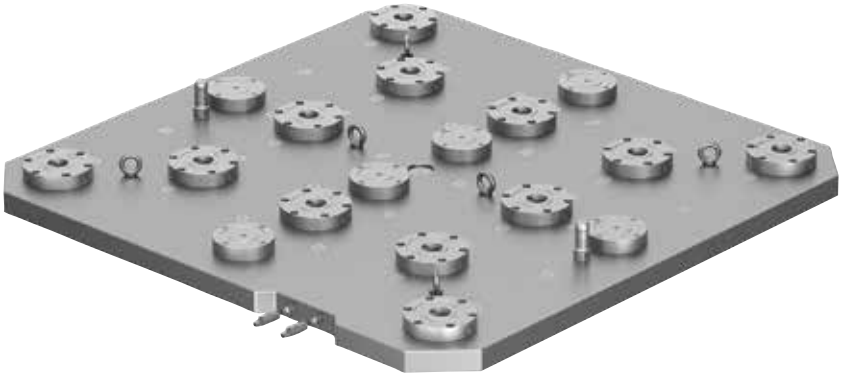
KIPP UNILOCK clamping bracket for UNILOCK clamping station

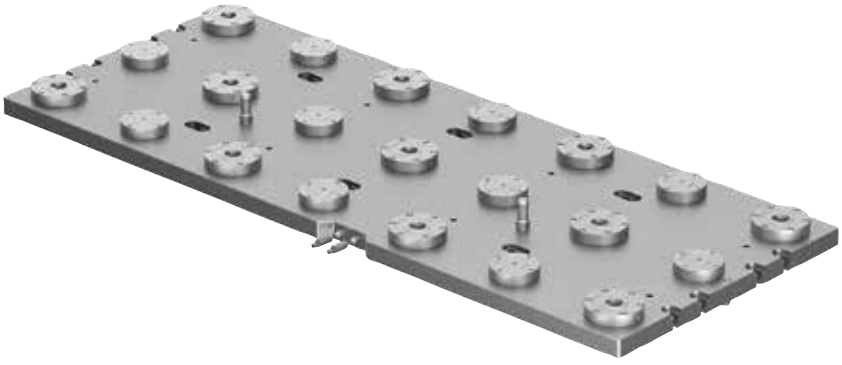
Order No.	D	H	F hole for ISO 4762 cap screw
K1869.482212	48	38	M12
K1869.482216	48	38	M16

Applications









Applications

5-axis module clamping system 80

Function

UNILOCK was developed specifically for 5-side machining. Ideal for clamping complex workpiece‘s. They can then be machined completely in a single clamping operation. Even machining from the 6th side is possible. The workpiece‘s are connected to the 5-axis module system by a screw connection.

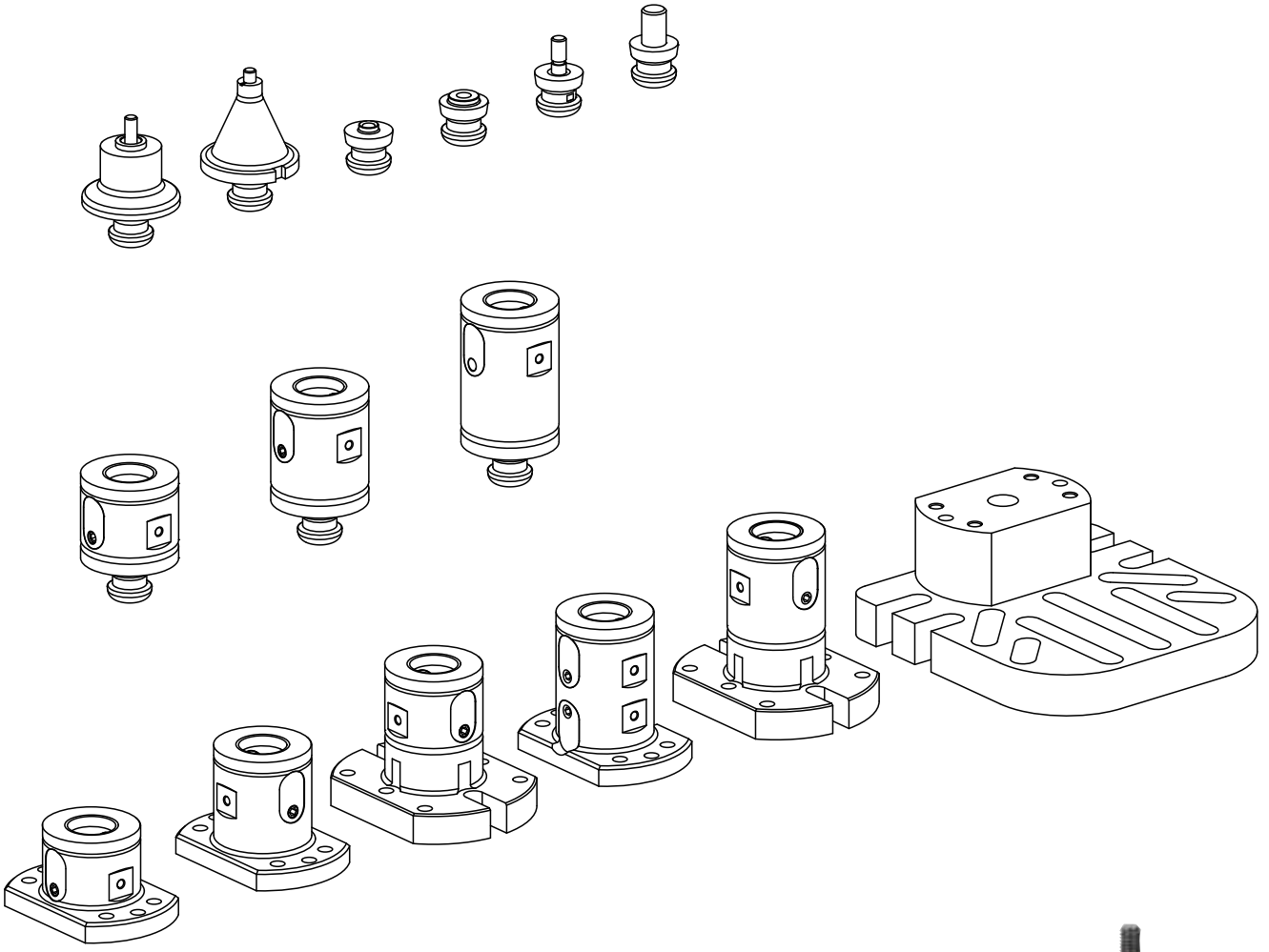
System size 80 mm

ADVANTAGES:

- **5-side machining with no protruding edges**
- **Modular construction guarantees maximum flexibility**
- **Interfaces with commonly used systems**
- **Variable workpiece fastening**
- **The workpiece is positively joined to the clamping system**
- **The workpiece is simply positioned with screws or seating‘s**
- **The zero point is transferred to the workpiece**
- **High module clamping force**
- **Very high repeat accuracy**

Thanks to the modular construction and the variety of modules, the system can be configured individually and recombined for many applications.

More than 70 elements are available: basic modules, add-on modules and accessories. In combination, they guarantee a variety of heights, docking to interfaces and machining of complex workpiece‘s.



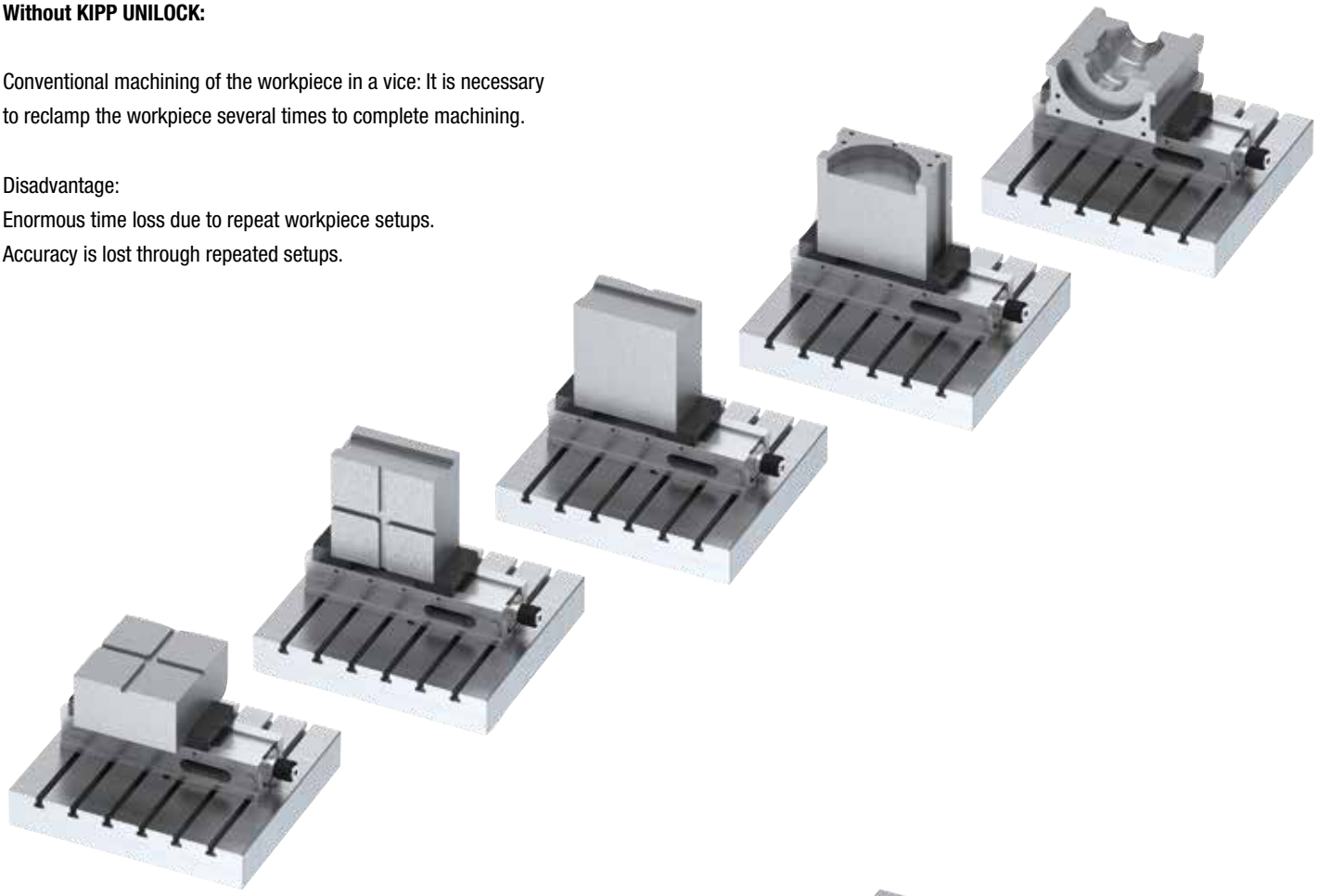
Flexible stack heights through a wide variety of basic and add-on clamp modules

Setup times

Without KIPP UNILOCK:

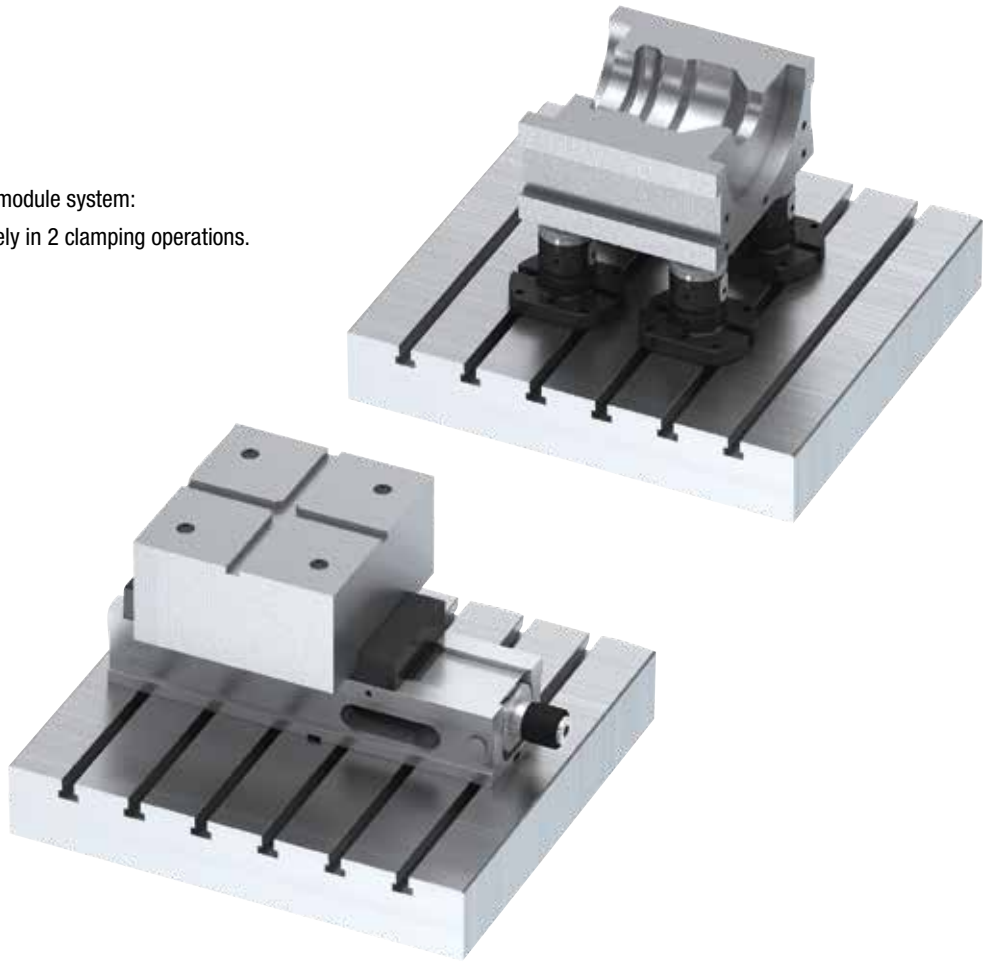
Conventional machining of the workpiece in a vice: It is necessary to reclamp the workpiece several times to complete machining.

Disadvantage:
Enormous time loss due to repeat workpiece setups.
Accuracy is lost through repeated setups.



With KIPP UNILOCK:

Machining with the UNILOCK 5-axis module system:
The workpiece is machined completely in 2 clamping operations.



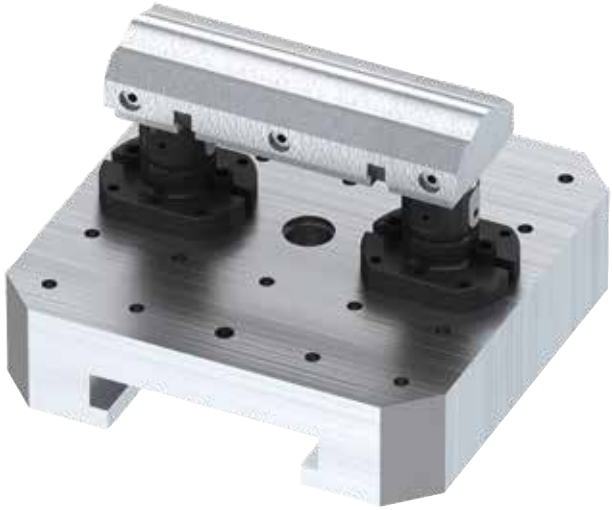
Interfaces

The 5-axis module system can be mounted on T slot tables, grid systems or directly to machine tables.
Moreover, the basic modules can be adapted to most common zero-point clamping systems.

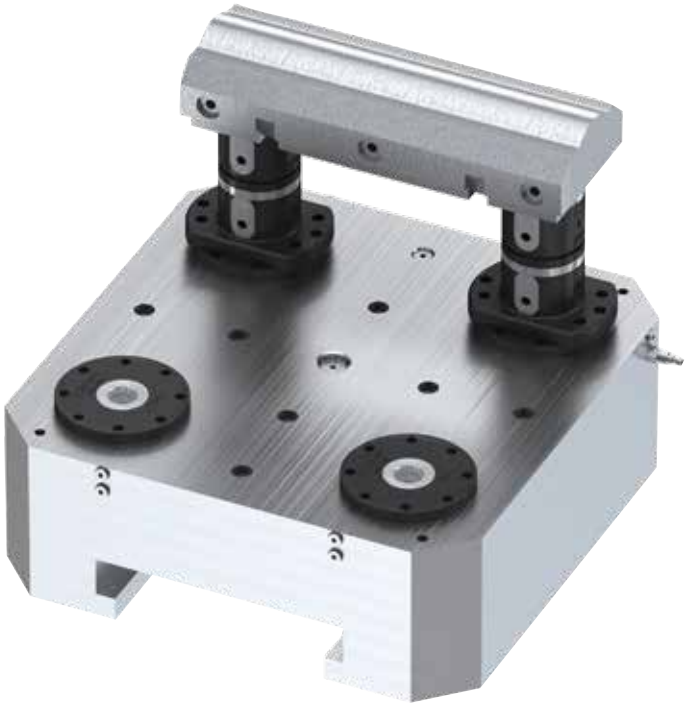
T-slot tables

Grid systems

Machine tables



Zero-point clamping systems



Technical information for 5-axis module clamping system 80

Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	15 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

Retraction force in axial direction

Retraction force by 15 Nm actuation torque = 15,000 N

Axial load and retraction path

Axial load F_{Axial} = 30,000 N (3 t)

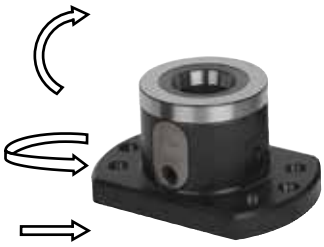
Retraction travel = 0.5 mm

Tilt/torque single module

$M_{tilt\ module}$ = 400 Nm (empirically determined)

$M_{rotation\ module}$ = 60 Nm

$F_{lateral\ force}$ = 1,500 N [lateral force without relative movement]*

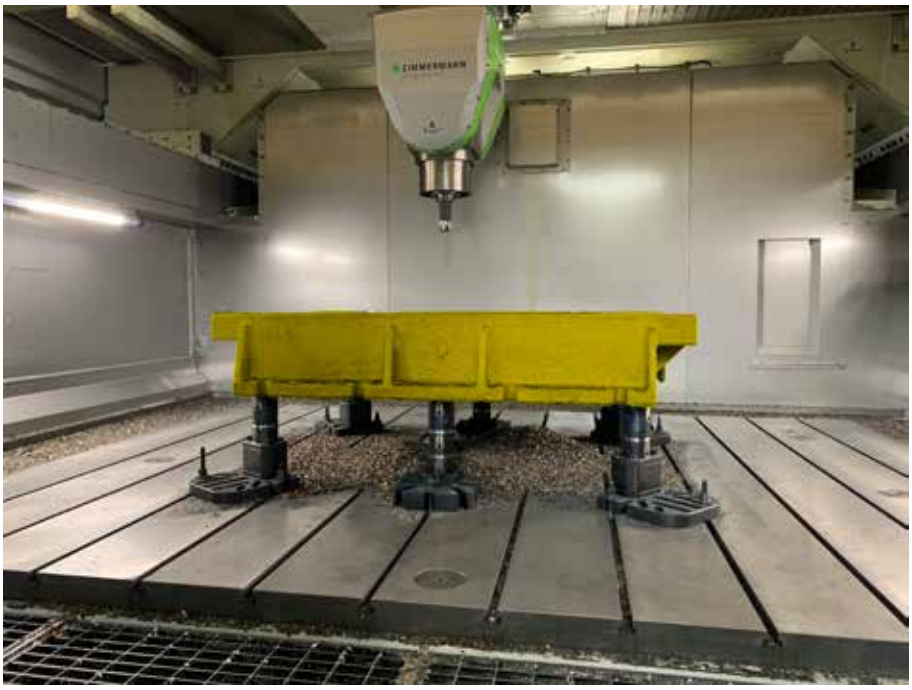


* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 1,500 N. The failsafe and personal safety of the clamping modules is assured up to a critical lateral force of 14,000 N.

Applications

The workpiece is secured on one, two or more stable module columns. Additional columns can be added easily for large parts. The clamping system is actuated manually without the need for power sources and can be converted very quickly for other workpiece‘s or fixtures.

Assembling the modules is remarkably simple: position basic module (bolt on from above or below), place add-on clamp modules, position reducer adaptors with bolted-on workpiece and then use a torque wrench to tighten manually. The system is now stable and ready for 5-axis machining.



Applications

4 basic modules H=100 positioned directly on the machine table. The 4 reducers H=50 on top facilitate optimum access to workpieces.

Clamping height 150 mm

4 double clamp basic modules positioned on a tooling plate. Optimum 5-side machining is possible.

Clamping height 125 mm

Applications

Solid workpiece mounted on 4 basic modules and 4 add-on modules.

Clamping height 150 mm

2 basic modules with a centring clamp adapted directly to a zero-point clamping system.

Clamping height 125 mm

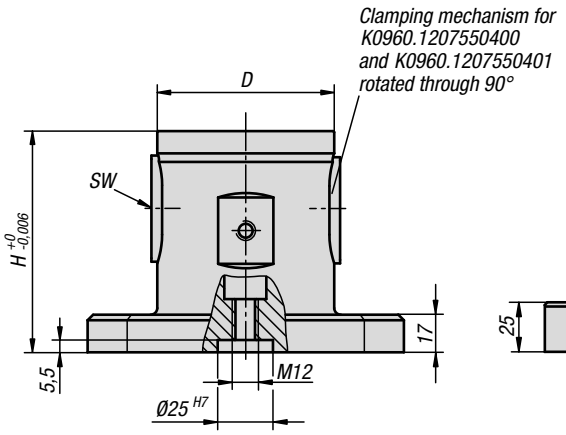
Loading procedure for mounting a long and heavy workpiece on 3 basic modules. Clamp spigots are mounted directly on the workpiece. The workpiece is positioned during clamping.

Clamping height 100 mm

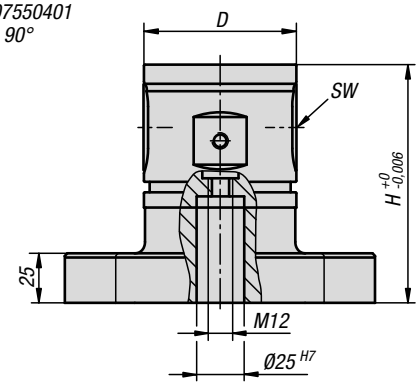
UNILOCK 5-axis basic module

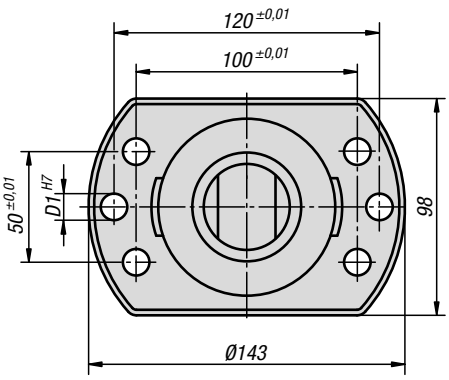
system size 80 mm

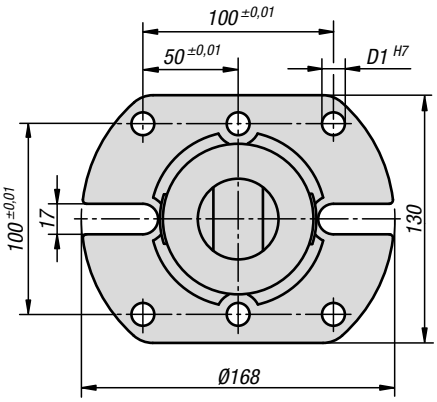
foot without elongated hole

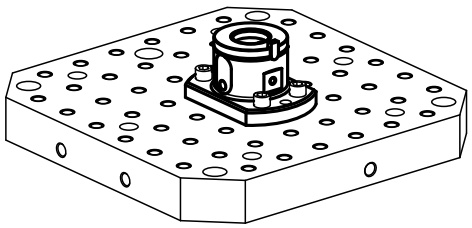


foot with elongated hole









Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K0960.1207550400

Note:
The UNILOCK 5-axis basic module can be adapted directly to subplates with grid holes or T-slots or to tooling plates with a hole pitch of 40/50 mm system size M12. Suitable for UNILOCK zero point clamping system with UNILOCK clamping bolts. Can also be used on the conventional zero point clamping systems by mounting an appropriate adapter clamping bolt.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

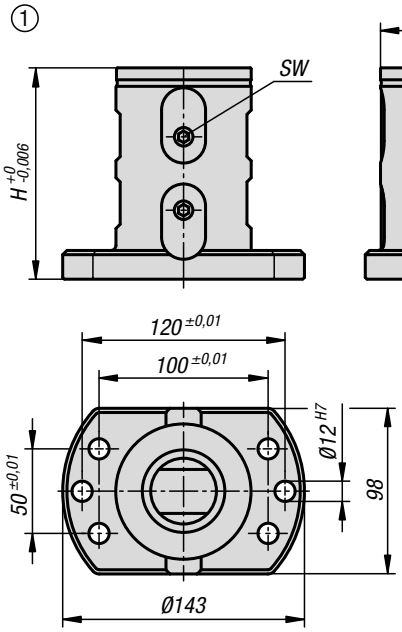
On request:
With rotation lock

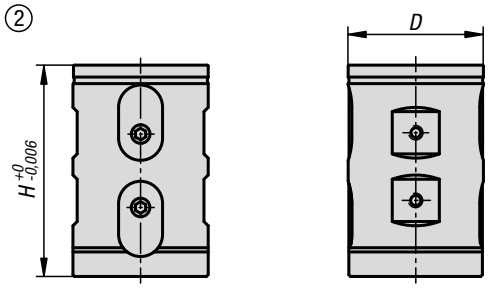
KIPP UNILOCK 5-axis basic module

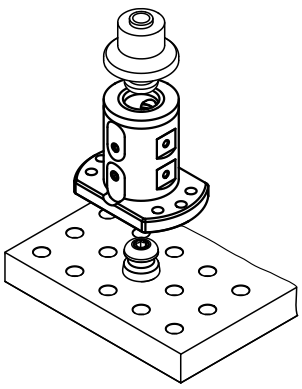
Order No.	Version 2	Form	Form-Type	H	D	D1	SW	Tightening torque max. Nm	weight kg
K0960.1207550400	foot without elongated hole	A	without rotation lock	75	80	12	6	15	3,64
K0960.1210050400	foot without elongated hole	A	without rotation lock	100	80	12	6	15	4,6
K0960.12125500	foot with elongated hole	A	without rotation lock	125	80	12	6	15	6,8
K0960.12150500	foot with elongated hole	A	without rotation lock	150	80	12	6	15	7,8
K0960.12175500	foot with elongated hole	A	without rotation lock	175	80	12	6	15	9,26
K0960.16125500	foot with elongated hole	A	without rotation lock	125	80	16	6	15	6,55
K0960.16150500	foot with elongated hole	A	without rotation lock	150	80	16	6	15	7,6
K0960.16175500	foot with elongated hole	A	without rotation lock	175	80	16	6	15	8,45

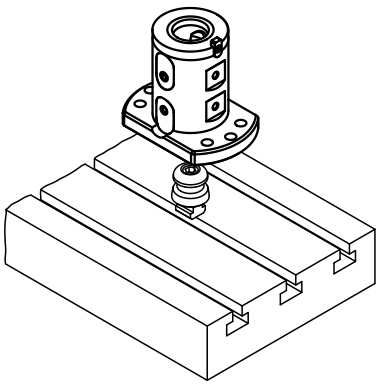
UNILOCK 5-axis basic module double clamp

size 80 mm









Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K0961.1212550400

Note:
The UNILOCK 5-axis basic module can be adapted directly to subplates with grid holes or T-slots or to tooling plates with a hole pitch of 40/50 mm system size M12. Suitable for UNILOCK zero point clamping system with UNILOCK clamping bolts. Can also be used on the conventional zero point clamping systems by mounting an appropriate adapter clamping bolt.
The basic module without base is particularly suitable for space-saving set-ups.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

On request:
With rotation lock

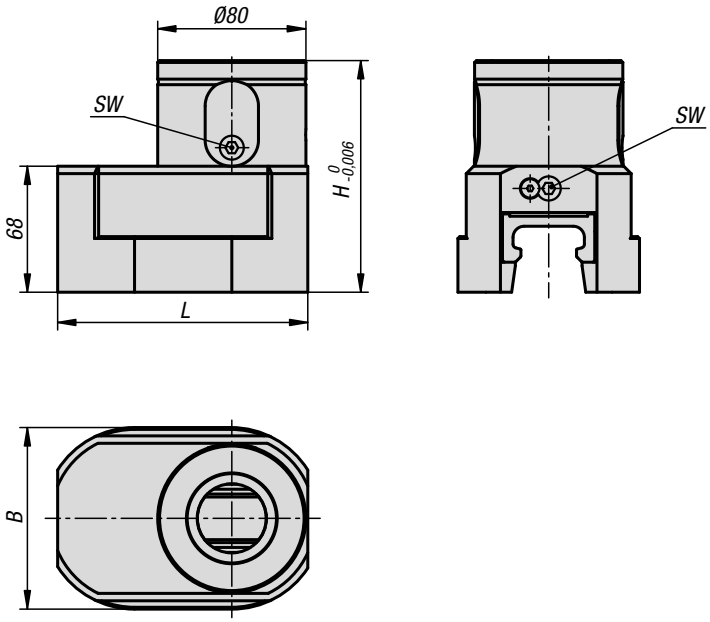
Drawing reference:
1) with foot
2) without foot

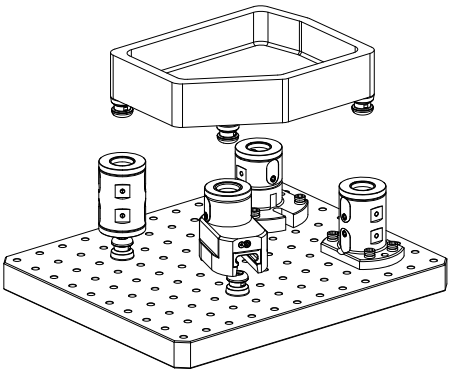
KIPP UNILOCK 5-axis basic module double clamp

Order No.	Product type	Form	Form-Type	D	H	SW	Tightening torque max. Nm	weight kg
K0961.1212550400	with foot	A	without rotation lock	80	125	6	15	4,96
K0961.12500	without foot	A	without rotation lock	80	125	6	15	4,31

UNILOCK 5-axis basic module VARIO

system size 80 mm





Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K1868.135981250

Note:
The UNILOCK 5-axis basic module VARIO enables flexible positioning when clamping workpieces and fixtures.
The basic module VARIO can be mounted via one or two UNILOCK clamping pins located in the rail in the base. If two clamping pins are used, the rail is guided between the clamping pins and can only be moved forwards or backwards along the direction of the clamping pins. When using only one UNILOCK clamping pin, the VARIO basic module can be freely rotated. The position is secured using the hex head screw at the rear. Variable gauge sizes can thus be achieved. This basic module is often used as a third or fourth clamping point.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size by the 5-axis module clamping system 80 and compatibility to pneumatic zero-point clamping systems guarantee diverse combinations of application possibilities.

Advantages:
- Adjustable, flexible basic module.
- Mechanical actuation.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

Accessories:
Clamping pins K0967, K0968, K0969, K1471.

Technical data:
- Traction force 15 kN.
- Tightening torque 15 Nm.
- Repeat accuracy ≤ 0.005 mm.

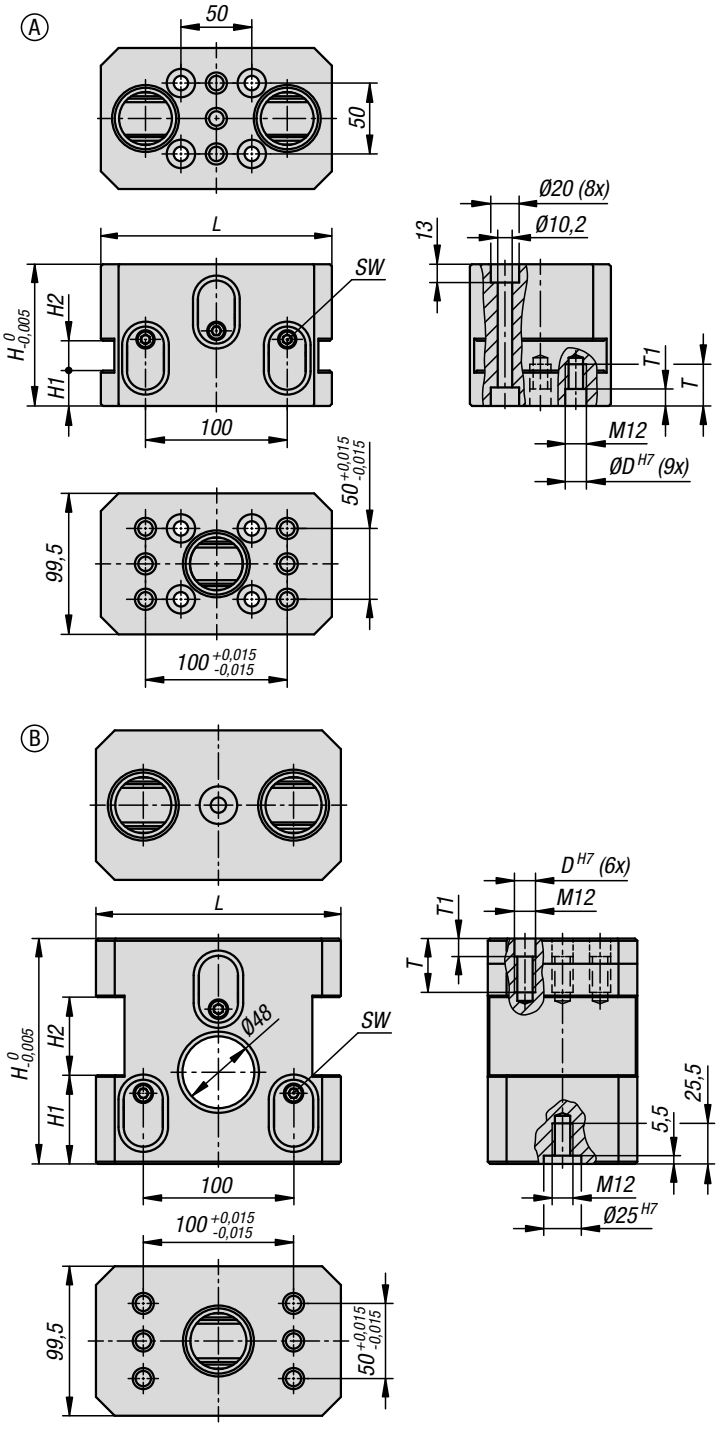
KIPP UNILOCK 5-axis basic module VARIO system size 80 mm

Order No.	L	B	H	SW	Tightening torque max. Nm	Retraction force kN
K1868.135981250	135	98	125	6	15	15

Notes

UNILOCK 5-axis basic module DUO

system size 80 mm



Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K1867.12100500

Note:
The UNILOCK 5-axis basic modules DUO with their three interfaces for clamping pins are used for robust, elevated set-ups with heavy workpieces.
Compared to round basic modules, the larger sizes provide a larger contact surface.
The DUO basic modules can be used with the double interface positioned downwards or upwards.
The through holes on both sides of Form A enable additional fastening with cap screws. The Form B version can also be fastened downwards via a clamping bolt on the double interface side.
Clamping claws can be used on the lateral clamping edge.
The reamed bores enable additional positioning.

For stable vice elevation, two UNILOCK 5-axis basic modules DUO are mounted on the machine table with the double interface facing downwards. The vices are attached to the upwards facing single interface.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:
- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size by the 5-axis module clamping system 80 and compatibility to pneumatic zero-point clamping systems guarantee diverse application possibilities.

KIPP UNILOCK 5-axis basic module DUO system size 80 mm

Order No.	Form	L	H	D	H1	H2	SW	T	T1	Tightening torque max. Nm	Retraction force kN
K1867.12075500	A	149,5	75	12	25	25	6	16,5	5,5	15	15
K1867.12100500	A	162,5	100	12	25	21	6	30	12	15	15
K1867.12150500	B	162,5	150	12	59	52	6	35	12	15	15

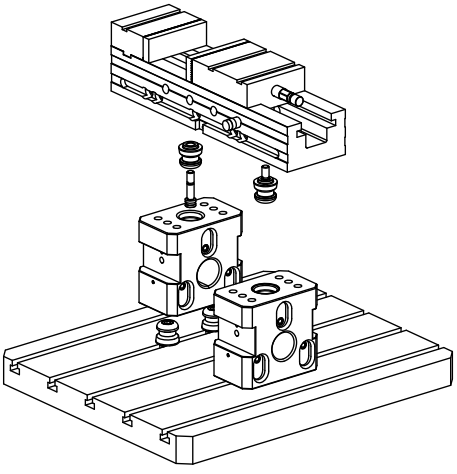
UNILOCK 5-axis basic module DUO

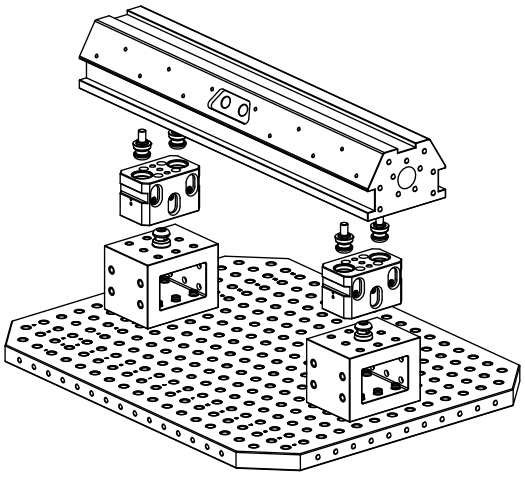
system size 80 mm

Advantages:
- Robust basic module.
- Three interfaces for clamping pins.
- Flexible fastening possibilities.
- Mechanical actuation.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

Accessories:
Clamping pins K0967, K0968, K0969, K1471.

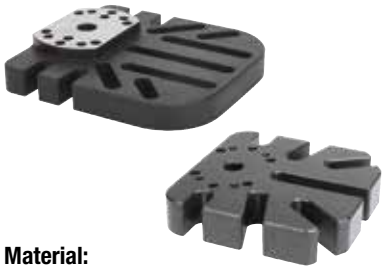
Technical data:
- Traction force 15 kN.
- Tightening torque 15 Nm.
- Repeat accuracy ≤ 0.005 mm.

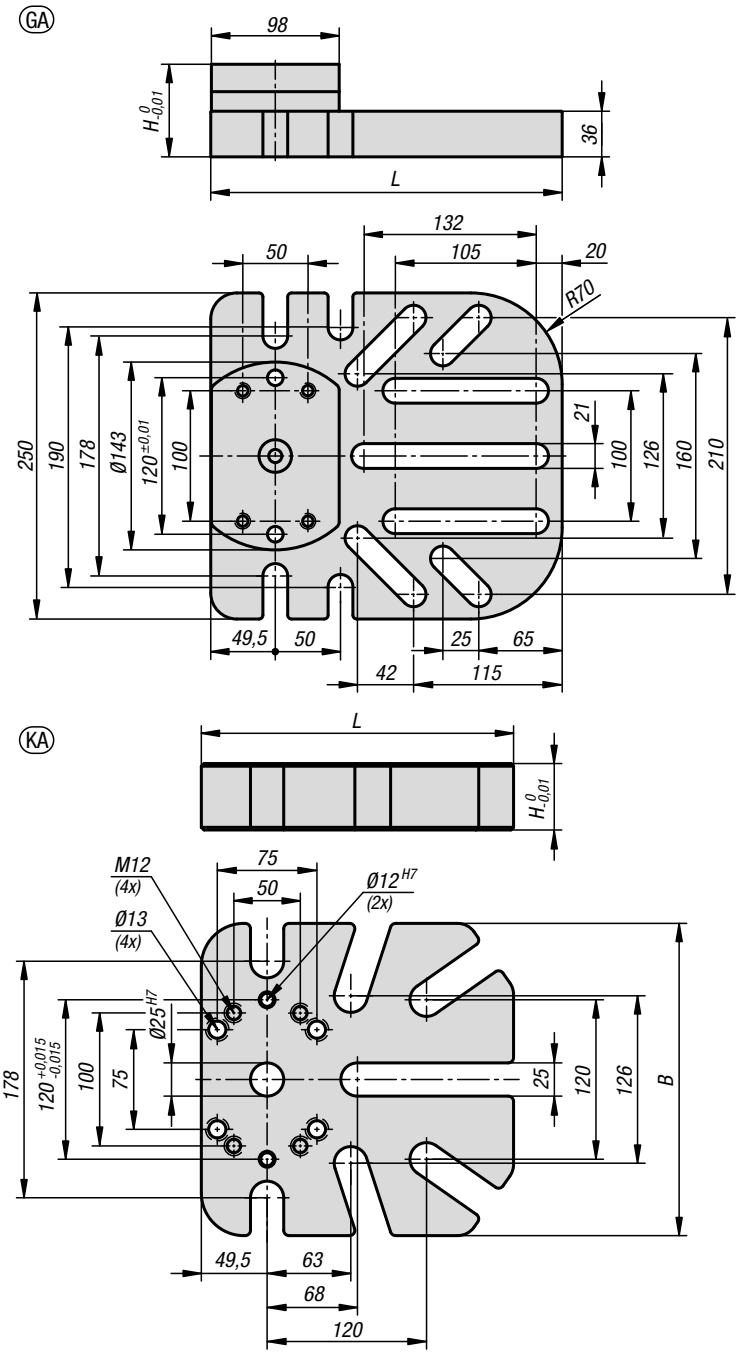




UNILOCK 5-axis base plate

for general clamping, system size 80 mm





Material:
Steel.

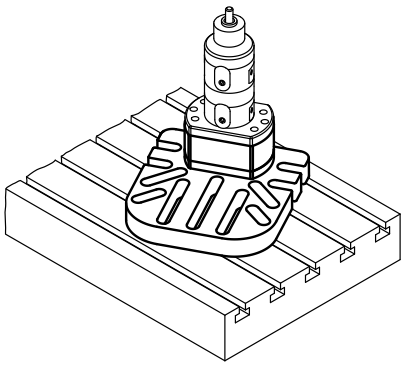
Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K0962.25027005021

Note:
The UNILOCK 5-axis baseplates for general clamping fit onto machine tables with grid hole systems or in T-slots, or onto grid hole tooling plates. Due to their robust construction, these elevated devices are ideal as a base supports for large and heavy workpieces. The arrangement of the fastening slots facilitates flexible adaptation to the workpiece and the machine table. Wider T-slot spacings can be achieved with the larger version.
In the small version, the fastening slots are open for improved chip evacuation.

Advantages:
Stable base structure for mounting the 5-axis basic modules for clamping large and heavy workpieces.
Rapid fastening of the base plates onto a machine table due to a large number of fastening slots.
Flexible positioning of the workpieces on the machine table.

Drawing reference:
Form GA: large version
Form KA: small version

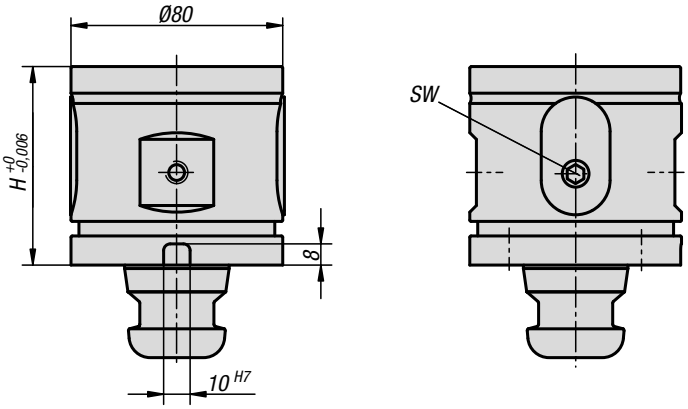


KIPP UNILOCK 5-axis base plate for general clamping

Order No.	Version 2	L	B	H	Fastening hole	weight kg
K0962.25027005021	large version	269,5	250	50	max. M20	14,7
K0962.23523505025	small version	235	235	50	max. M24	15,3

UNILOCK 5-axis add-on clamping module

size 80 mm



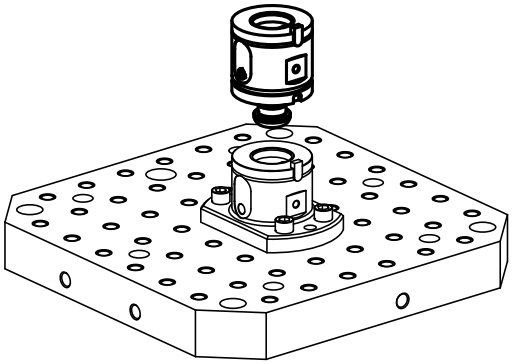
Material:
Body Q&T steel.
Clamping pin mild steel.

Version:
Body and clamping pin oxidised.
Contact faces hardened and ground.

Sample order:
K0963.120750

Note:
The UNILOCK 5-axis add-on modules are used for raising basic modules and mounting base. Depending on the clamping situation, optimum assembly height can be achieved using a combination of the basic module and add-on module.

On request:
With rotation lock

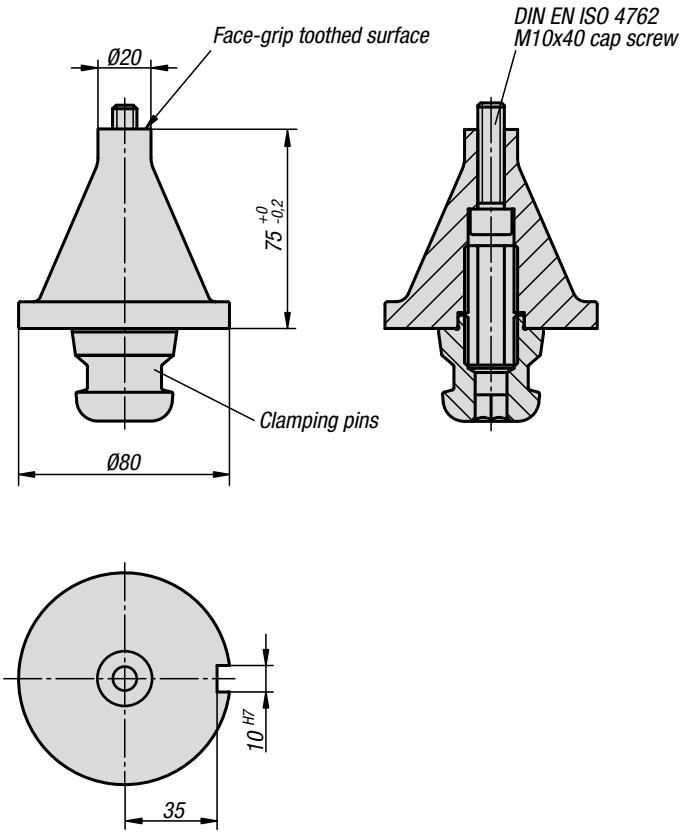


KIPP UNILOCK 5-axis add-on clamping module

Order No.	Form-Type	H	SW	Tightening torque max. Nm	weight kg
K0963.120750	without rotation lock	75	6	15	2,64
K0963.121000	without rotation lock	100	6	15	3,78
K0963.121250	without rotation lock	125	6	15	4,625

UNILOCK 5-axis face-grip adapter

size 80 mm

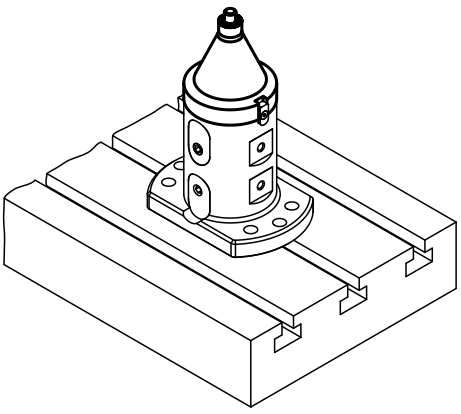


Material:
Body rust-free tool steel.
Clamping pin low carbon steel.

Version:
Contact faces on the body hardened and ground. Clamping pin oxidised. Contact faces hardened and ground.

Sample order:
K0965.2007510

Note:
The UNILOCK 5-axis face-grip adapters are suitable for clamping workpieces, which must be machined on all sides. The workpieces are freely accessible without interfering edges from the clamping elements. The workpieces are attached from below using a socket head screw to pull them onto the face-grip toothed surface. The face-grip adapters can be directly mounted on the basic module with rotation lock or on the add-on module H 75 mm with rotation lock.

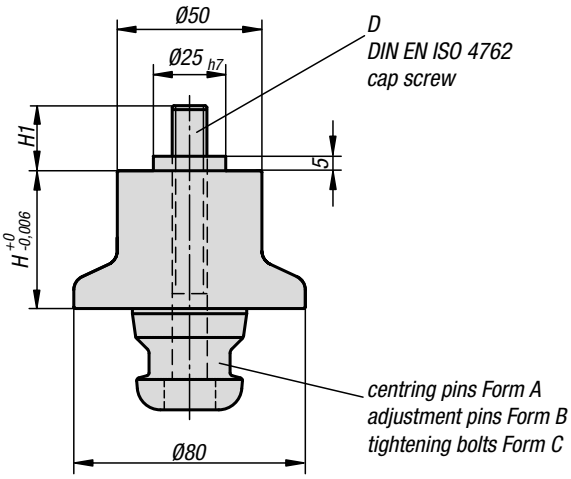


KIPP UNILOCK 5-axis face-grip adapter

Order No.	Dimensions
K0965.2007510	see drawing

UNILOCK 5-axis reducer adapter

size 80 mm



Material:
Body rust-free tool steel.
Clamping pin low carbon steel.

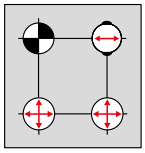
Version:
Contact faces on the body hardened and ground.
Clamping pin oxidised. Contact faces hardened and ground.

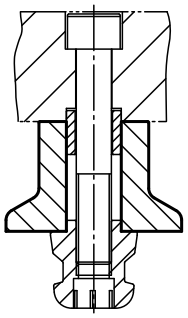
Sample order:
K0966.501120

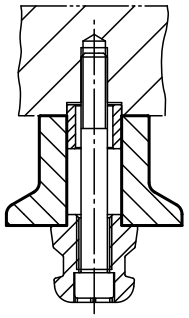
Note:
The UNILOCK 5-axis reducer adapter is suitable for clamping and positioning workpieces. Reducer adapters can be screwed onto the workpiece and mounted on the basic module or add-on module. Reducer adapters are available as hardened versions.

On request:
- Soft version
- Height 25 mm

Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)





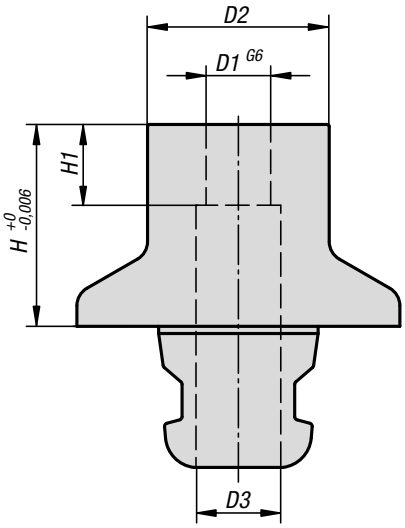


KIPP UNILOCK 5-axis reducer adapter

Order No.	Form	Form-Type	D	H	H1
K0966.501101	A	Centring Pin	M10 x 100	50	25,5
K0966.502101	B	Adjustment pin	M10 x 100	50	25,5
K0966.503101	C	Clamping Pin	M10 x 100	50	25,5
K0966.501121	A	Centring Pin	M12 x 100	50	27,5
K0966.502121	B	Adjustment pin	M12 x 100	50	27,5
K0966.503121	C	Clamping Pin	M12 x 100	50	27,5

UNILOCK 5-axis reducer adapter

size 80 mm

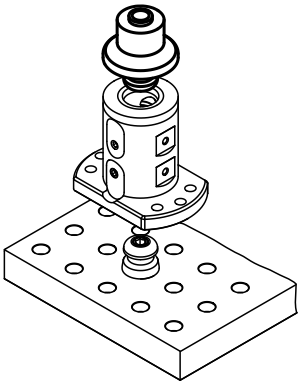


Material:
Rust resistant tool steel.

Version:
One-piece.
Contact faces hardened and ground.

Sample order:
K0966.5011611

Note:
The UNILOCK 5-axis reducer adaptors are suitable for clamping and positioning workpieces.
The workpiece is positioned and screwed to the reducer adapter using the UNILOCK shoulder screw for workpiece fastening.

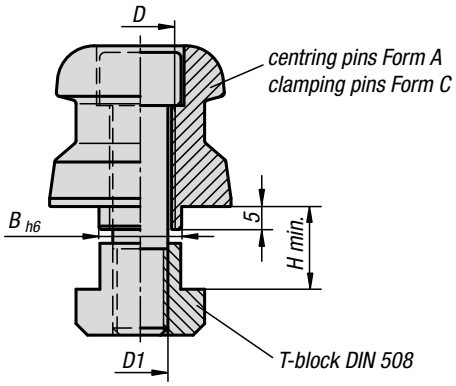


KIPP UNILOCK 5-axis reducer adapter

Order No.	D1	D2	D3	H	H1
K0966.5011611	16	40	21	50	20

UNILOCK T-slot centring clamp bolt

size 80 mm

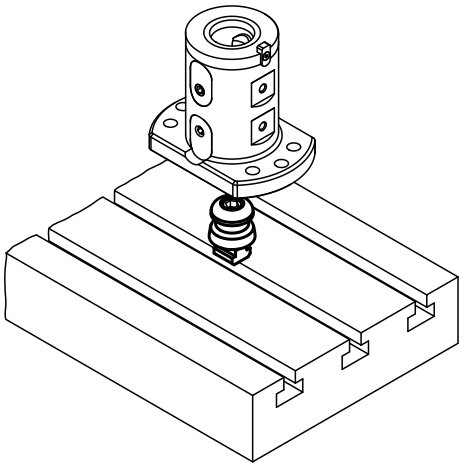


Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0969.114

Note:
The UNILOCK T-slot centring clamp bolt is suitable for clamping and positioning the basic module with double manual clamping. T-slot centring clamp bolts are positioned and fastened on the T-slot machine table.

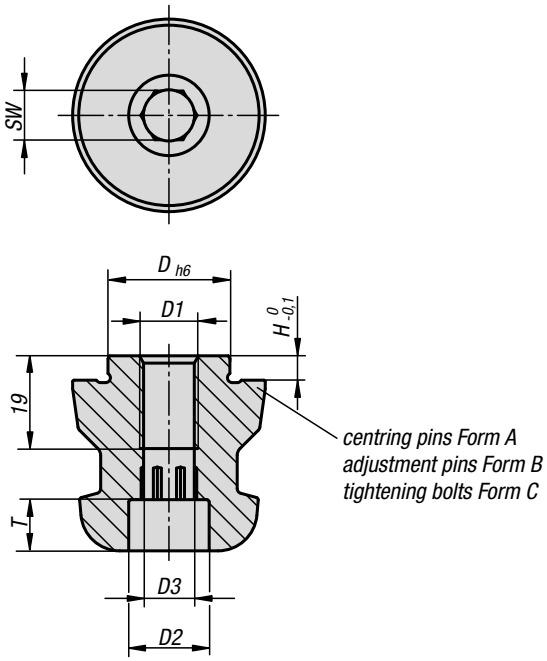


KIPP UNILOCK T-slot centring clamp bolt

Order No.	Form	D	D1	B	H min.
K0969.114	A	M12	M10	14	14
K0969.118	A	M16	M12	18	18

UNILOCK clamping pins

size 80 mm



Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0967.140160512

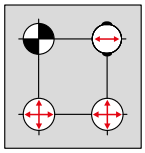
Note:
The UNILOCK clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

The following retaining forces are possible when the UNILOCK clamping pins are used together with M10, M12 or M16 fastening screws:
- Retaining force (M10) 35,000N
- Retaining force (M12) 50,000N
- Retaining force (M16) 75,000N

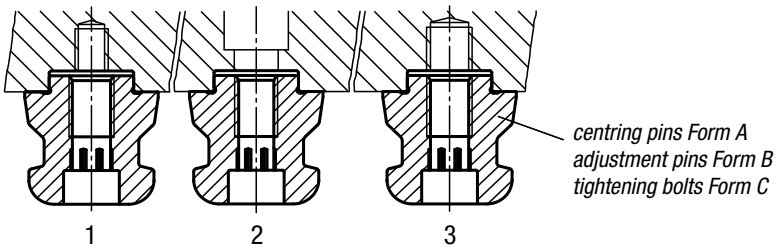
Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Other clamping pins in the same system size are available under K1471, K0968 and K0967 with threaded pin.

Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)



1 = fastening with DIN 912 screw through the tightening bolt
2 = fastening with DIN 912 screw through the fixture or workpiece
3 = fastening with grub screw DIN 913

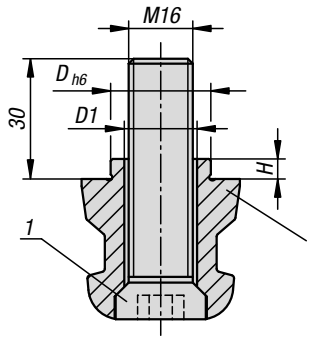


KIPP UNILOCK clamping pins

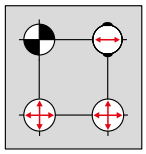
Order No. Form A	Order No. Form B	Order No. Form C	D	D1	D2	D3	H	T	SW
K0967.140160512	**K0967.240160512**	**K0967.340160512**	16	M12	16,5	10,3	5	10,5	10
K0967.140180512	**K0967.240180512**	**K0967.340180512**	18	M12	16,5	10,3	5	10,5	10
K0967.140220516	**K0967.240220516**	**K0967.340220516**	22	M16	18,5	14,2	5	12,5	17
K0967.140250512	**K0967.240250512**	**K0967.340250512**	25	M12	16,5	10,3	5	10,5	10
K0967.140250516	**K0967.240250516**	**K0967.340250516**	25	M16	18,5	14,2	5	12,5	17

UNILOCK clamping pins

with through hole, system size 80 mm



Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)



Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.
Swivel fastening screw M16x65, tempered and black oxidised.

Sample order:
K1471.140250516

Note:
The UNILOCK clamping pint is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

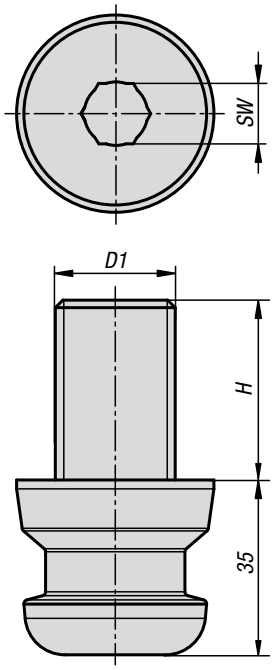
Drawing reference:
1) Swivel fastening screw M16x65.
Grade 10.9.

KIPP UNILOCK clamping pins with through hole

Order No.	Form	D	D1	H	Tightening torque max. Nm
K1471.140250516	A	25	16,5	5	120
K1471.240250516	B	25	16,5	5	120
K1471.340250516	C	25	16,5	5	120

UNILOCK clamping pin

with threaded pin size 80 mm



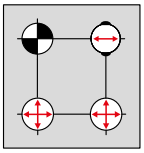
Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0967.140003020

Note:
The UNILOCK clamping pint is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)



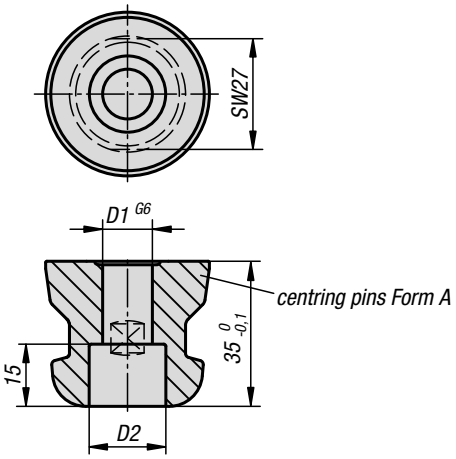
KIPP UNILOCK clamping pin with threaded pin

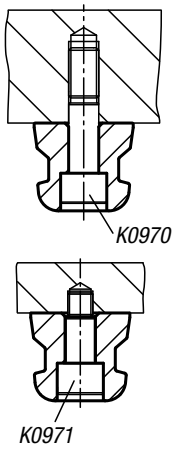
Order No.	Form	D1	H	SW
K0967.140002416	A	M16	24	17
K0967.140003020	A	M20	30	17
K0967.140003624	A	M24	36	17

K0968

UNILOCK 5-axis clamping bolts

for fastening to workpieces size 80 mm





Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0968.12

Note:
The UNILOCK clamping bolt is suitable for clamping and positioning the workpiece. Clamping bolts are screwed onto the workpiece and positioned on the basic module or add-on module. Using the locating bolts (K0970, K0971), the clamping bolts are screwed onto the workpiece.

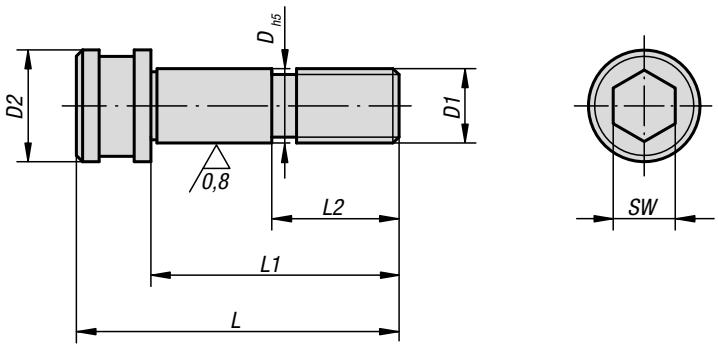
KIPP UNILOCK 5-axis clamping bolts for fastening to workpieces

Order No.	Form	D1	D2
K0968.12	A	12	18,4
K0968.16	A	16	21,1

K0970

UNILOCK 5-axis shoulder screws

size 80 mm



Material:
Carbon steel.

Version:
Hardened surface.
ground locating seat.

Sample order:
K0970.12050

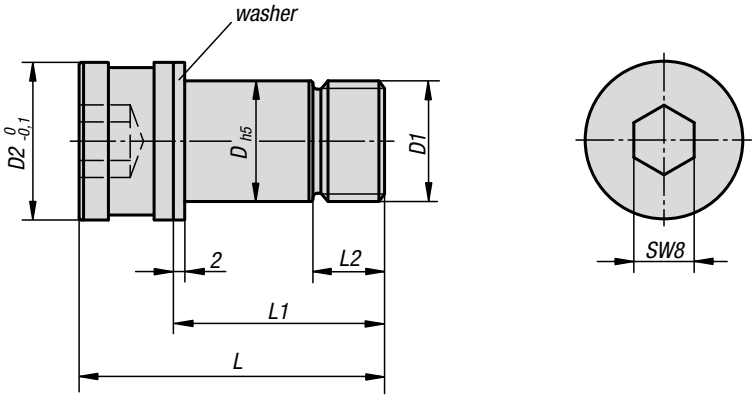
Note:
The UNILOCK 5-axis locating bolts are suitable for clamping and positioning the clamping bolts for fastening to workpieces. They are also used for positioning and fastening the basic module.

KIPP UNILOCK 5-axis shoulder screws

Order No.	D	D1	D2	L	L1	L2	SW
K0970.12050	12	M12	18	62	50	22	10
K0970.16055	16	M16	20,9	71	55	25	14

UNILOCK 5-axis shoulder screws

for fastening to workpieces, size 80 mm

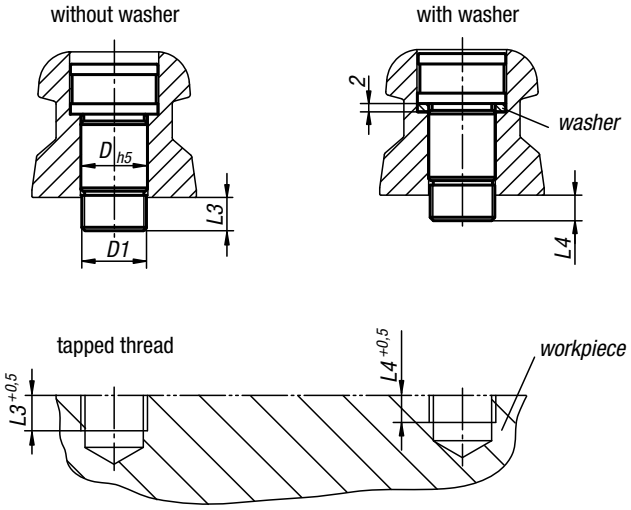


Material:
Carbon steel.

Version:
Hardened surface.
ground locating seat.

Sample order:
K0971.16121040

Note:
The UNILOCK 5-axis locating bolts for fastening to workpieces are suitable for clamping and positioning workpieces. These locating bolts are passed through the clamping bolts for fastening to workpieces, screwed directly into the workpiece and positioned on the basic module or add-on module. The thread is used for fastening and positioning the workpiece.

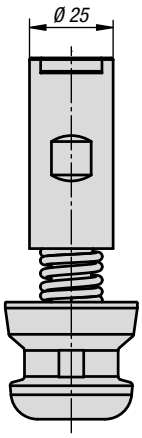


KIPP UNILOCK 5-axis shoulder screws for screwing clamping bolt to workpiece

Order No.	Version	D	D1	D2	L	L1	L2	L3	L4	Tightening torque max. Nm
K0971.16101040	without washer	16	M10x1,5	20,9	40,5	28	9,5	8	6	47
K0971.16121040	with washer	16	M12x1,75	20,9	40,5	28	9,5	8	6	63
K0971.16121049	without washer	16	M12x1,75	20,9	50	37,5	18	17,5	15,5	80
K0971.16161055	without washer	16	M16x2	20,9	56	43,5	24	23,5	21,5	100

UNILOCK centring clamping bolt

size 80 mm



Material:
Steel.

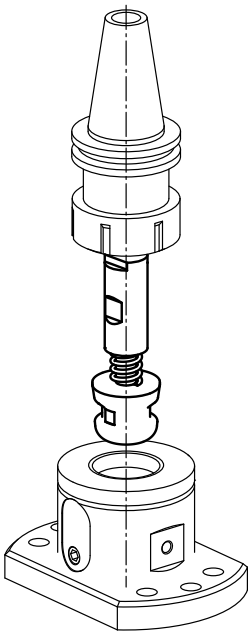
Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K1012.1240

Note:
The centring clamping bolts can be used to position basic modules on machine tables.
Centring clamping bolts can be clamped in collet holders. The position of the module is defined via the machine‘s spindle/control unit.

Can be used in Weldon, Whistle Notch and collet holders.
Repeat accuracy: < 0.021mm
Positioning accuracy: < 0.049mm

Shock absorber function to protect the machine spindle
Cushioning travel: 5.4mm
Caution: Exceeding the cushioning travel of 5.4mm may damage the machine.

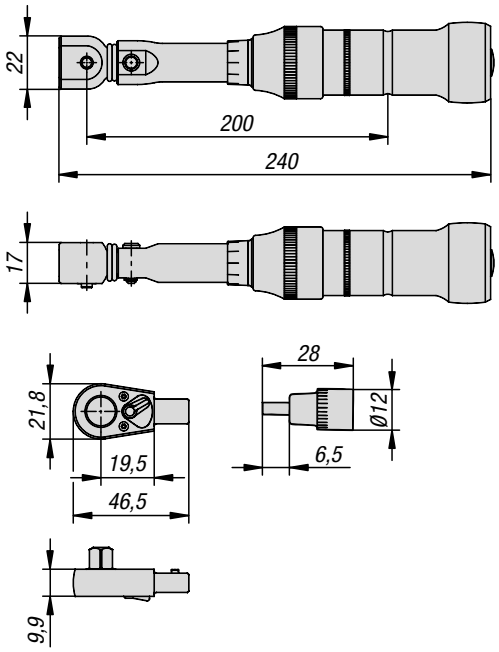


KIPP UNILOCK centring clamping bolt, size 80 mm

Order No.	Dimensions
K1012.1240	see drawing

Torque wrench

for 5-axis module clamping system



Material:
Steel.

Version:
Surface: hard chromed

Sample order:
K1488.01

Note:
Torque wrench 4-40 set:
Release precision +/- 2% of the scale value (in direction of actuation)
High-precision premium metrology instrument – for highest demands
Robust and tough hard chrome-plated steel construction in a slim model
Secure: - haptic (shortcut release)
- acoustic (buckling element)
User-friendly reversible ratchet.
Service-friendly (ratchet repair sets for customer-oriented self-assembly)
Integrated switch lever
Setting of the desired torque value fast and securely though turning of the handle
Twist knob for additional locking of the setting
Ergonomically shaped handle with collar reduces danger of slipping or injury
Exact, fine scale gradation
With serial number and calibration certificate
Hard chrome-plated surface
DIN EN ISO 6789-2:2017, square acc. to DIN 3120, ISO 1174-1

Details of plug-in reversible ratchet:
20 teeth, max. 40Nm
Output 6.3 = 1/4 inch
Square acc. to DIN 3120, ISO 1174-1
Drop forged
Chromed surface

Note for plug-in reversible ratchet:
Through fast insertion of the plug-in reversible ratchet into the torque wrench, the precision of 2% in both directions can be guaranteed.

Screwdriver bit:
Surface TiN
DIN 7422
Square 1/4 inch
Suitable for reversible ratchet

Recommendation:
Annual check interval for torque wrenches, in which the upper limit is 5,000 load cycles.

Supplied with:
Set comprising:
Torque wrench
Plug-in reversible ratchet
Screwdriver insert SW4
Screwdriver insert SW6
Screwdriver insert SW8

Functional principle:
Operating principle of torque wrench handles
To unlock, pull handle back approximately 8 mm.
Continue to turn handle up to the desired torque.
Then turn the handle back a bit to lock it.

Suitable for:
5-axis module clamping system 80
5-axis module clamping system 50
5-axis module clamping system 138

KIPP Torque wrench for 5-axis module clamping system

Order No.	Item	Version 1	Product type	Torque Nm
K1488.01	Torque Wrench	set	revolving grip	4 - 40

Notes

5-axis module clamping system 50

Technical information for 5-axis module clamping system 50

Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	10 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

Retraction force in axial direction

Retraction force by 10 Nm actuation torque = 10,000 N

Axial load and retraction path

Axial load F_{Axial} = 25,000 N (2.5 t)

Retraction travel = 0.3 mm

Tilt/torque single module

$M_{tilt\ module}$ = 150 Nm (empirically determined)

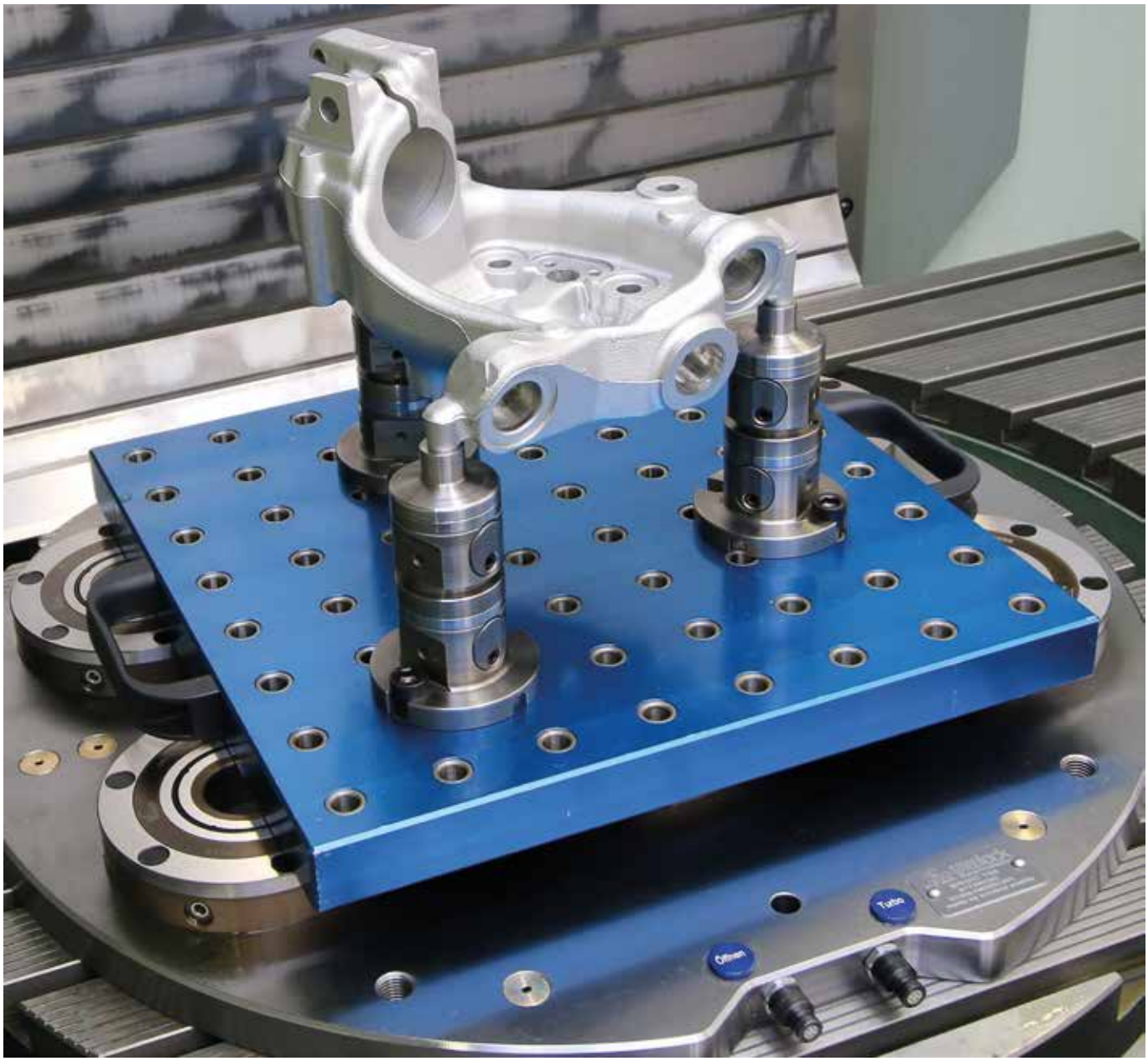
$M_{rotation\ module}$ = 25 Nm

$F_{lateral\ force}$ = 1,000 N [lateral force without relative movement]*

* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 1,000 N. The failsafe and personal safety of the clamping modules is assured up to a critical lateral force of 7,000 N.

Function

The UNILOCK clamping system 50 mm has been developed specifically for 5-side machining of small workpieces.

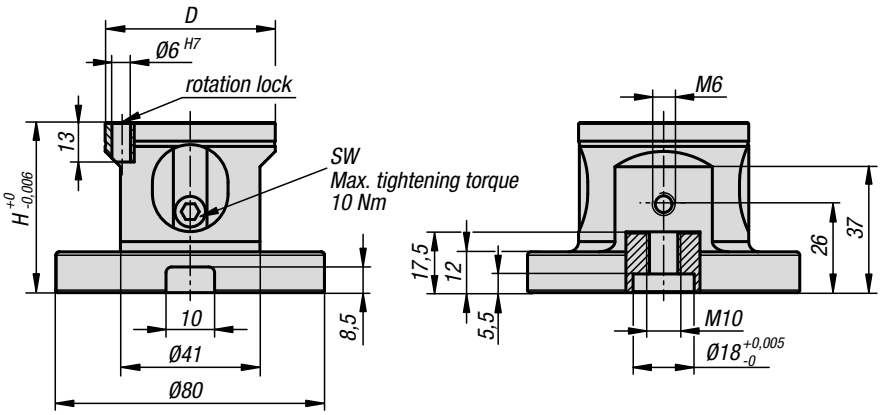


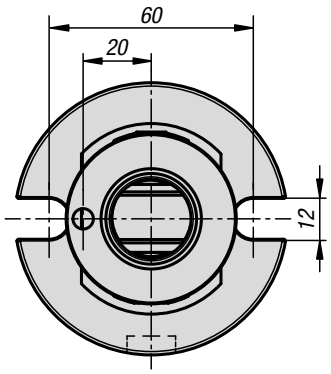
Advantages:

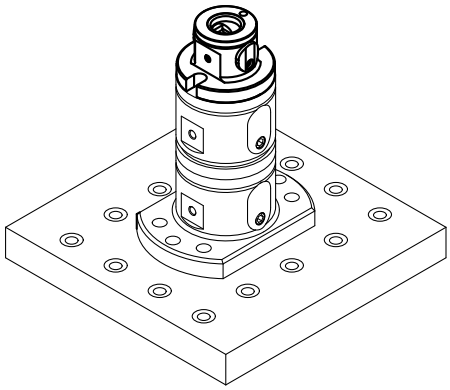
- 5-side machining with no protruding edges
- Modular construction guarantees maximum flexibility
- Can be combined with the UNILOCK modular system 80 mm
- Small gauges for modules from 40 mm possible
- Small clamping pin, D 25 mm, for workpieces with smaller dimensions
- Variable workpiece fastening
- The workpiece is simply positioned and clamped with screws or seatings
- High module clamping force
- Very high repeat accuracy

UNILOCK 5-axis basic module

system size 50 mm







Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K1117.12050601

Note:
UNILOCK 5-axis basic modules, system size 50, can be adapted directly to machine tables with grid holes or T-slots, as well as grid hole subplates. The basic module system size 50 can also be combined with system size 80, This enables smaller workpieces to be easily clamped using the module clamping system.

Fits onto UNILOCK zero-point clamping system with UNILOCK clamping pin D=18 mm.
Can also be mounted directly onto commonly available zero-point clamping systems if a suitable clamping pin is used.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:
- Clamping force (M8) 15,000 N
- Clamping force (M10) 25,000 N
Clamping force with DIN EN ISO 4762 -12.9 cap screws.

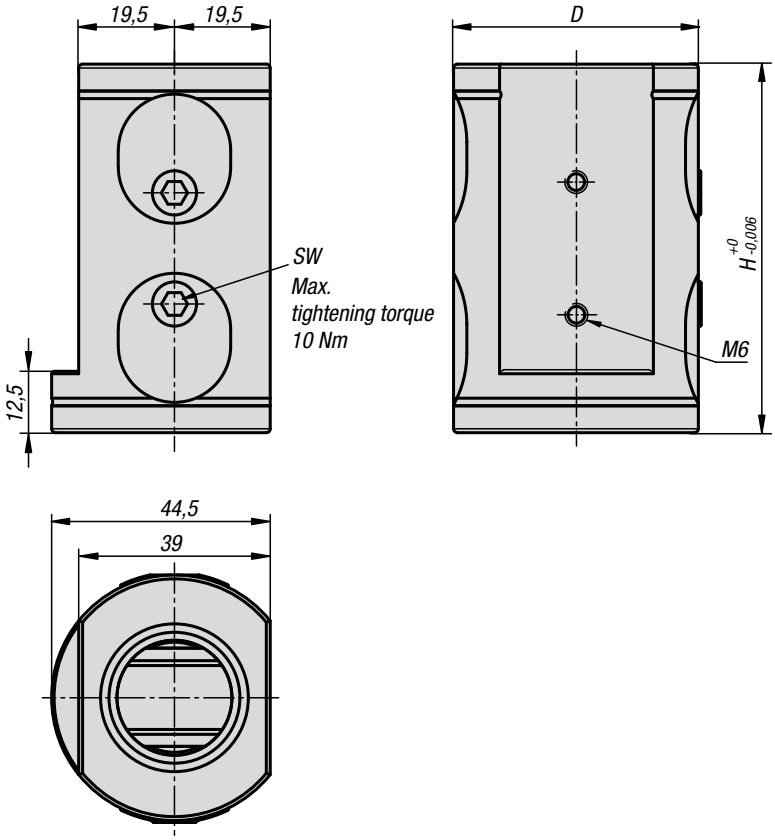
Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

KIPP UNILOCK 5-axis basic module, system size 50 mm

Order No.	Form	Form-Type	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1117.12050601	B	with rotation lock	50	50	4	10	10

UNILOCK 5-axis basic module double clamp

system size 50 mm



Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

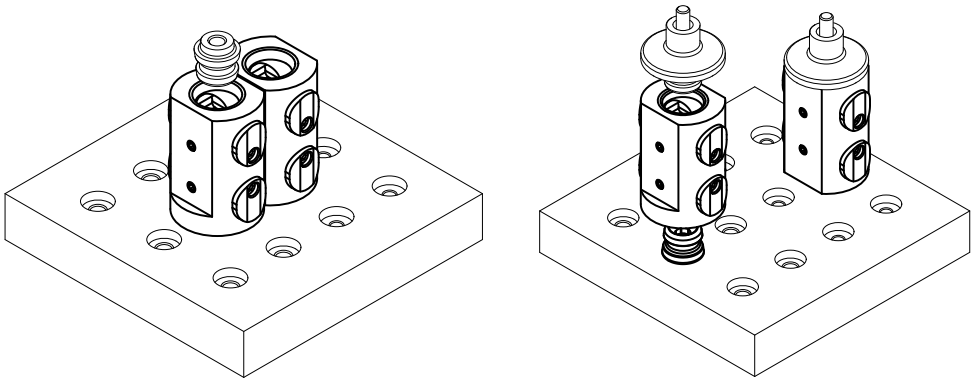
Sample order:
K1118.000750

Note:
The UNILOCK 5-axis double clamp basic modules can be adapted directly to machine tables with grid holes or T-slots, as well as grid hole subplates.

The narrow design of the basic module enables it to be used on grid spacings from 20 mm.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:
- Clamping force (M8) 15,000 N
- Clamping force (M10) 25,000 N
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

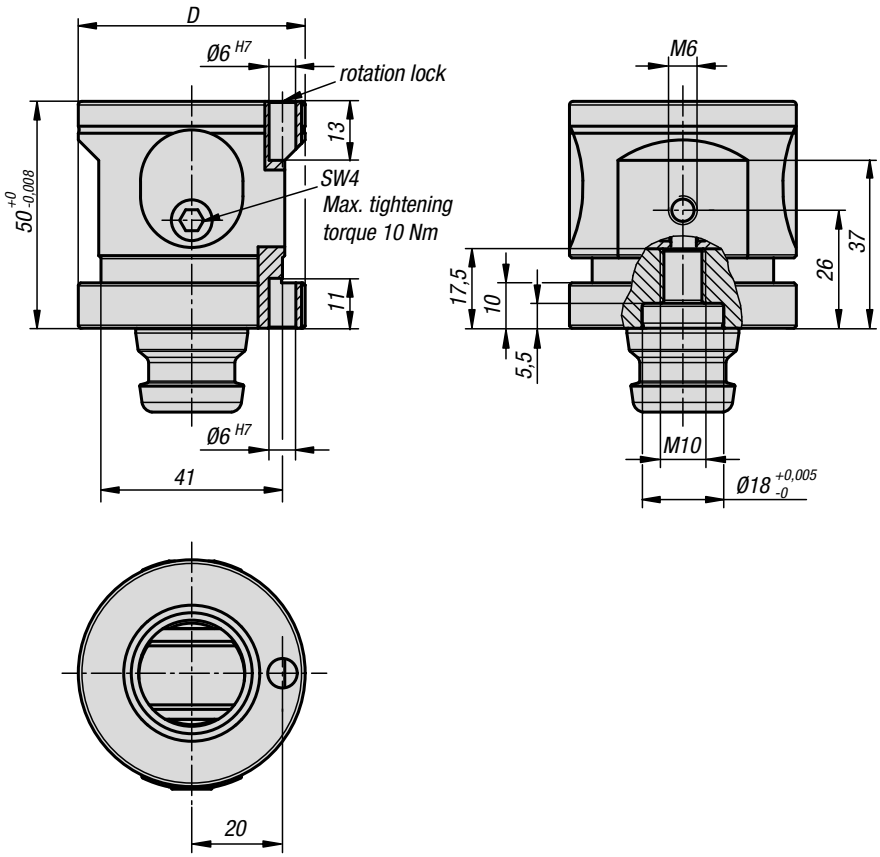


KIPP UNILOCK 5-axis basic module, double clamp, system size 50 mm

Order No.	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1118.000750	50	75	4	10	10

UNILOCK 5-axis add-on module

system size 50 mm



Material:
Body Q&T steel.
Clamping pin mild steel.

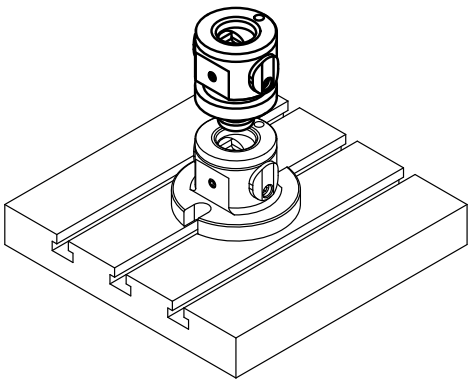
Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K1119.0501

Note:
UNILOCK 5-axis add-on clamp modules are used for raising basic modules and mounting bases.
Depending on the clamping situation, optimum assembly height can be achieved using a combination of basic module and add-on module.
The add-on clamping module system size 50 can also be combined with system size 80.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:
- Clamping force (M8) 15,000 kN
- Clamping force (M10) 25,000 kN
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

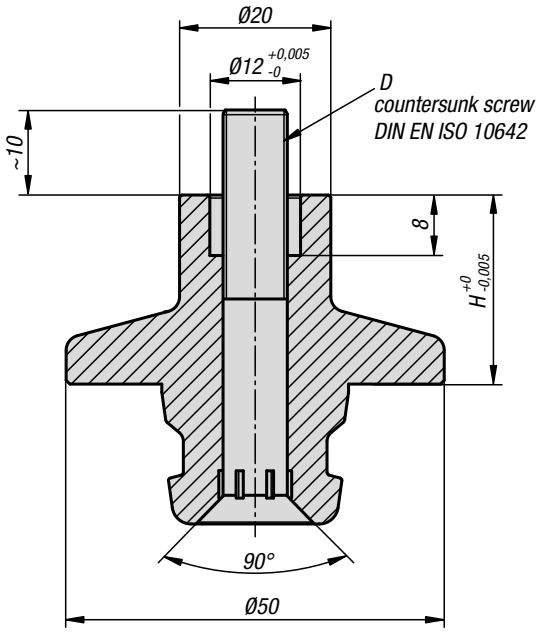


KIPP UNILOCK 5-axis add-on module, system size 50 mm

Order No.	Form	Form-Type	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1119.0501	B	with rotation lock	50	50	4	10	10

UNILOCK 5-axis reducer adapter

system size 50 mm

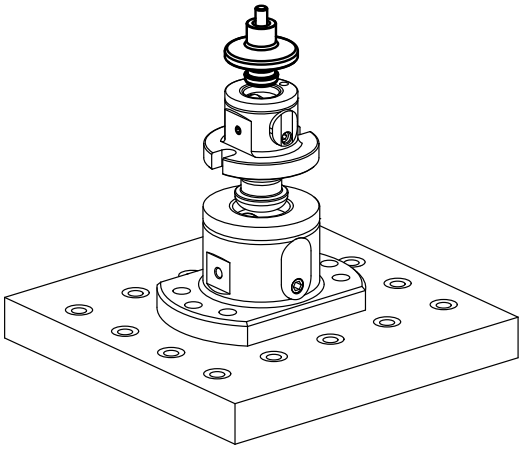


Material:
Rust resistant tool steel.

Version:
Contact faces hardened and ground.
Body and clamping pin are one piece.

Sample order:
K1120.251081

Note:
The UNILOCK 5-axis reducer adapter is suitable for clamping and positioning workpieces.
Reducer adapters can be screwed onto the workpiece and mounted on the basic module or add-on clamp module.
The system size 50 add-on module can also be combined with the system size 80.

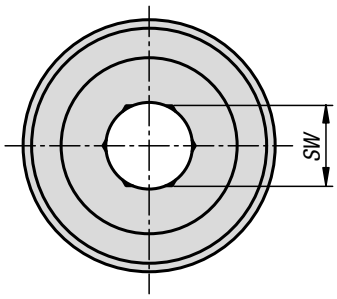


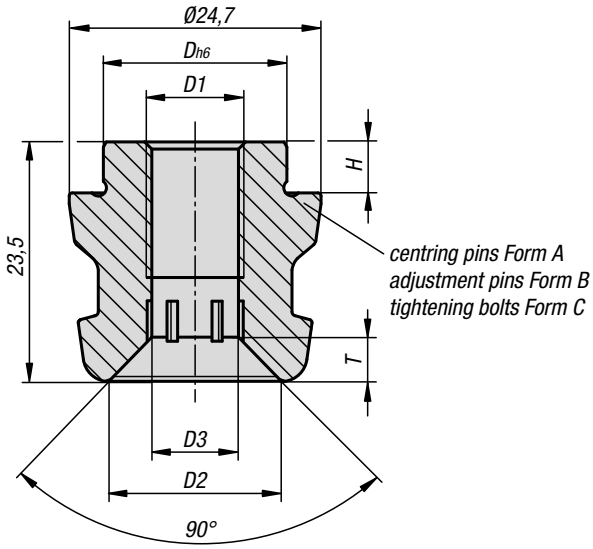
KIPP UNILOCK 5-axis reducer adapter, system size 50 mm

Order No.	Form	D	H
K1120.251081	A	M8	25
K1120.501081	A	M8	50

UNILOCK clamping pin

system size 50 mm





Material:
Steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

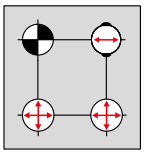
Sample order:
K1121.125180510

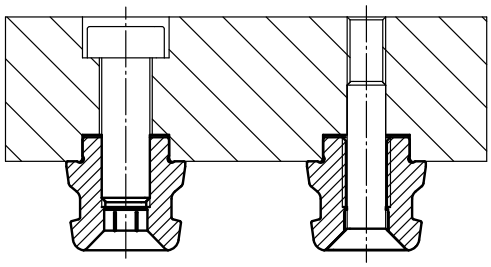
Note:
The UNILOCK clamping pint is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:
- Clamping force (M8) 15,000 N
- Clamping force (M10) 25,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Centring pins = Form A	fixes in x and y axis (reference point)
Adjustment pins =Form B	fixes the free axis (bayonet pin)
Tightening bolts = Form C	Pins with undersize (no centring function, clamping only)





KIPP UNILOCK clamping pin, system size 50 mm

Order No.	Form	D1	D	D2	D3	H	T	SW
K1121.125180510	A	M10	18	16,5	9	5	5	8
K1121.225180510	B	M10	18	16,5	9	5	5	8
K1121.325180510	C	M10	18	16,5	9	5	5	8

Application example

Notes

5-axis module clamping system 138

Technical information for 5-axis module clamping system 138

Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	30 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

Retraction force in axial direction

Retraction force by 30 Nm actuation torque = 30,000 N

Axial load and retraction path

Axial load F_{Axial} = 45,000 N (4.5 t)

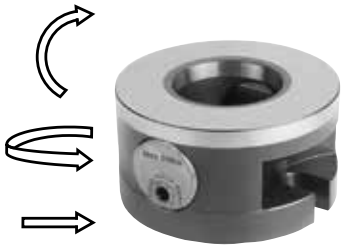
Retraction travel = 0.7 mm

Tilt/torque single module

$M_{tilt\ module}$ = 1,000 Nm (empirically determined)

$M_{rotation\ module}$ = 200 Nm

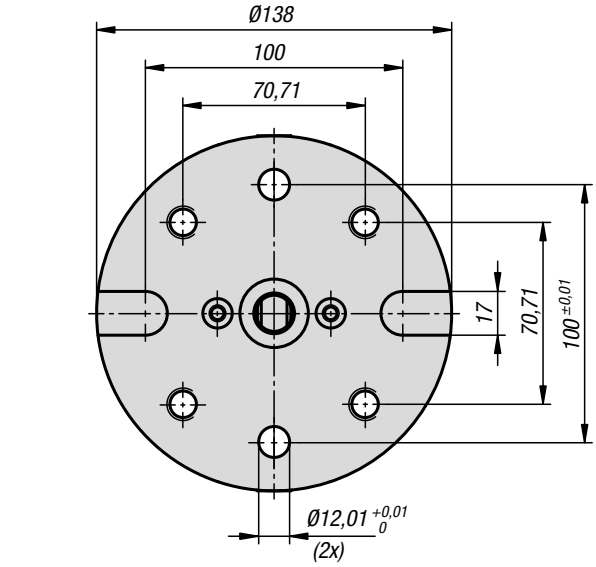
$F_{lateral\ force}$ = 3,000 N [lateral force without relative movement]*

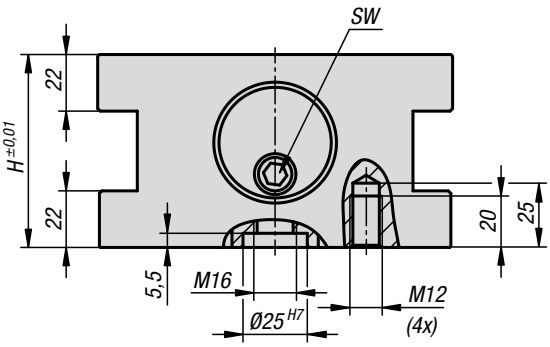


* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 3,000 N. The failsafe and personal safety of the clamping modules is assured up to a critical lateral force of 20,000 N.

UNILOCK 5-axis basic module

system size 138 mm





Material:
Carbon steel.

Version:
Main body oxidised.
Contact faces hardened and ground.

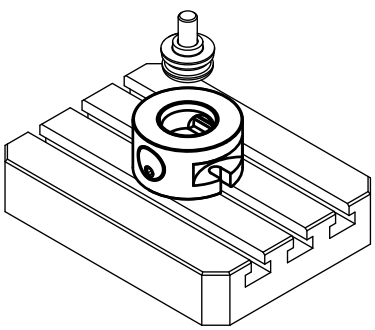
Sample order:
K1419.1380750

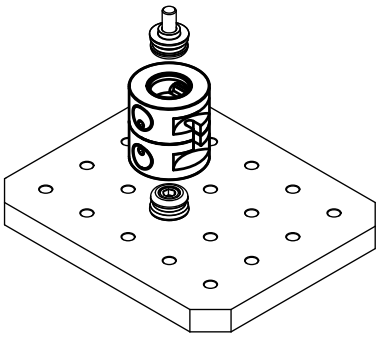
Note:
The UNILOCK 5-axis basic module with system size 138 is suitable for clamping large and heavy workpieces. The workpiece can be set directly in the basic module using the clamping bolt or reducer adapter. The basic modules are fastened via the corresponding baseplates or directly to the machine table. A flexible positioning is possible. A double clamping module can also be created by placing two modules together, underside to underside.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M16, M20, M24 fastening screws:
- Clamping force (M16) 75,000 N
- Clamping force (M20) 160,000 N
- Clamping force (M24) 230,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.



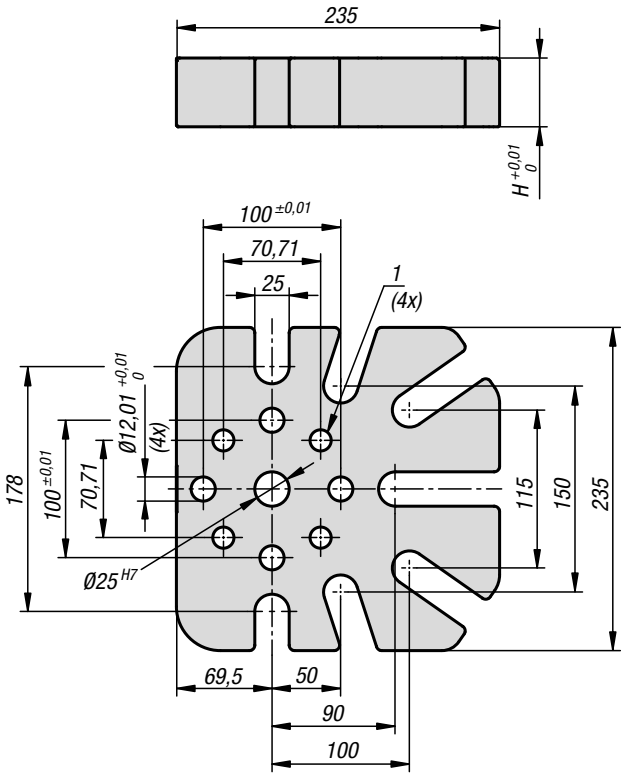


KIPP UNILOCK 5-axis basic module, system size 138 mm

Order No.	Form	Form-Type	H	SW	Tightening torque max. Nm
K1419.1380750	A	without rotation lock	75	8	30

UNILOCK 5-axis baseplate

for general clamping, size 138 mm



Material:
Steel.

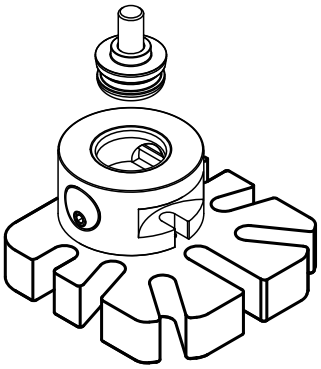
Version:
Main body oxidised.
Contact faces hardened and ground.

Sample order:
K1420.23523505025

Note:
The UNILOCK baseplates can be easily mounted on T-slot or grid plate machine tables. Due to their variable designs, these baseplates can be positioned anywhere on the machine table enabling every part of the machine table to be used.
Due to their sturdy design, these baseplates are ideal for use as a basic element for large and heavy workpieces.

On request:
Other versions.

Drawing reference:
1) for DIN 912 M12 cap screw

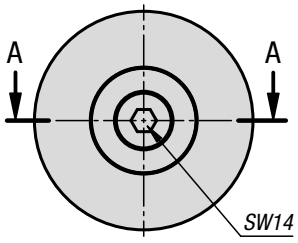


KIPP UNILOCK 5-axis baseplate for general clamping, size 138 mm

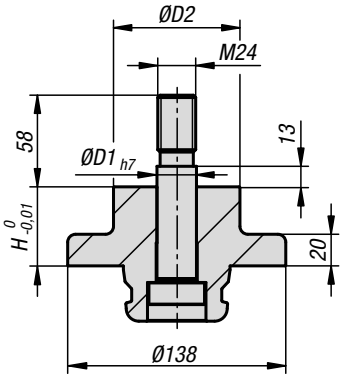
Order No.	H
K1420.23523505025	50

UNILOCK 5-axis reducer adapter

system size 138 mm



A-A



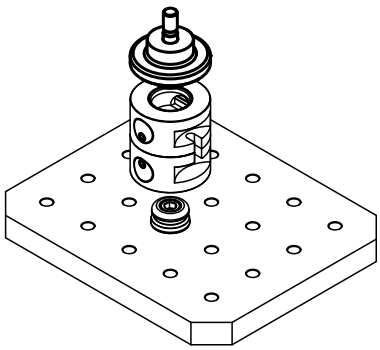
Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K1422.0501241080

Note:
The UNILOCK 5-axis reducer adapter is suitable for clamping and positioning workpieces.
Reducer adapters can be screwed onto the workpiece and mounted on the basic module or add-on clamp module.

On request:
Other versions.

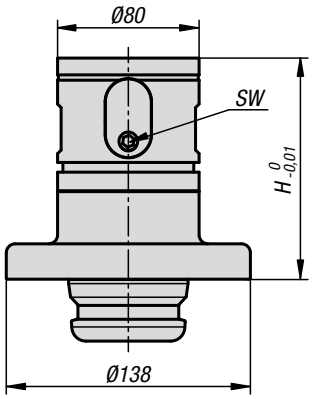


KIPP UNILOCK 5-axis reducer adapter, system size 138 mm

Order No.	D1	D2	H
K1422.0501241080	25	80	50

UNILOCK 5-axis reducer adapter

system size 138 mm



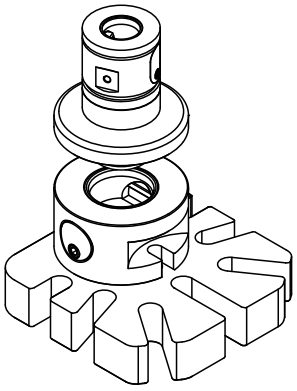
Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K1423.1251

Note:
The UNILOCK 5-axis reducer adapters are used to convert from size 80 to size 138.
They therefore allow all size 80 elements to continue to be used.

On request:
Other versions.

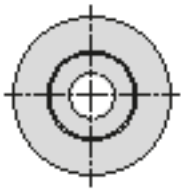


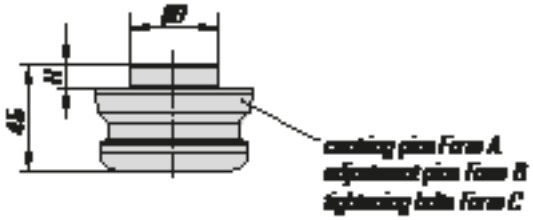
KIPP UNILOCK 5-axis reducer adapter, system size 138 mm

Order No.	H	SW	Holding force F kN	Tightening torque max. Nm
K1423.1251	125	6	50	15

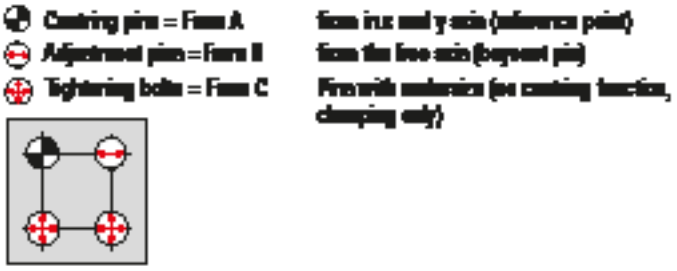
UNILOCK clamping pin

system size 138 mm





centring pins Form A
adjustment pins Form B
tightening bolts Form C



Material:
Steel.

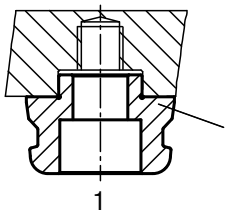
Version:
Main body black oxide finish.
Contact faces hardened and ground.

Sample order:
K1424.168381025

Note:
The UNILOCK clamping pins are suitable for clamping and positioning workpieces and fixtures. The clamping pins are screwed onto the exchange element.

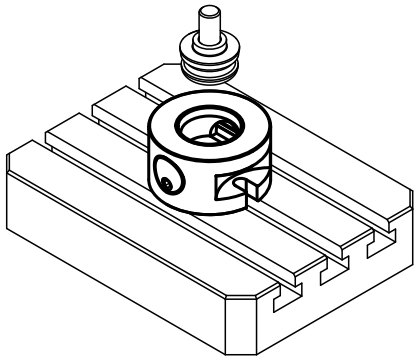
On request:
Other versions.

1 = fastening with DIN 912 screw through the tightening bolt



centring pins Form A
adjustment pins Form B
tightening bolts Form C

1

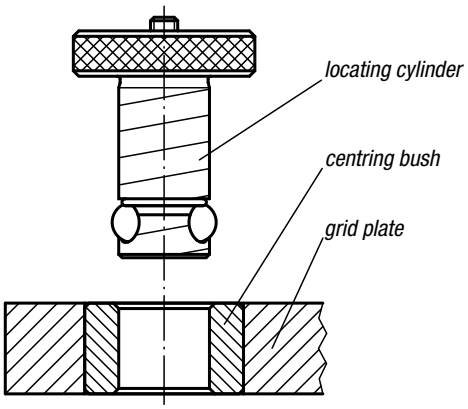


KIPP UNILOCK clamping pin, system size 138 mm

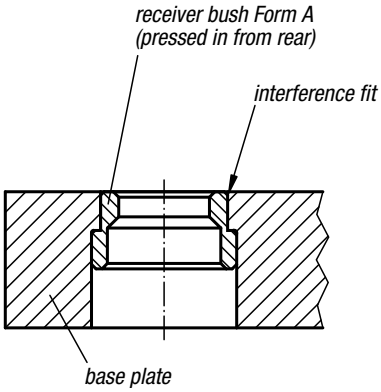
Order No.	Form	D	H
K1424.168381025	A	38	10
K1424.268381025	B	38	10
K1424.368381025	C	38	10

Locating and clamping systems

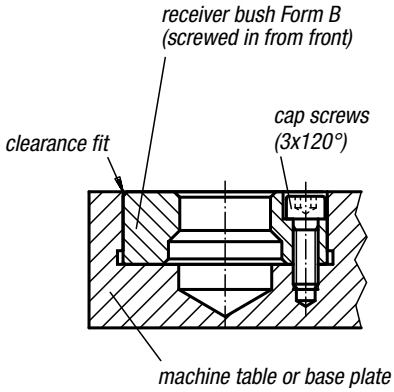
Locating and clamping system, mechanical



recommanded installation



alternative installation



General information

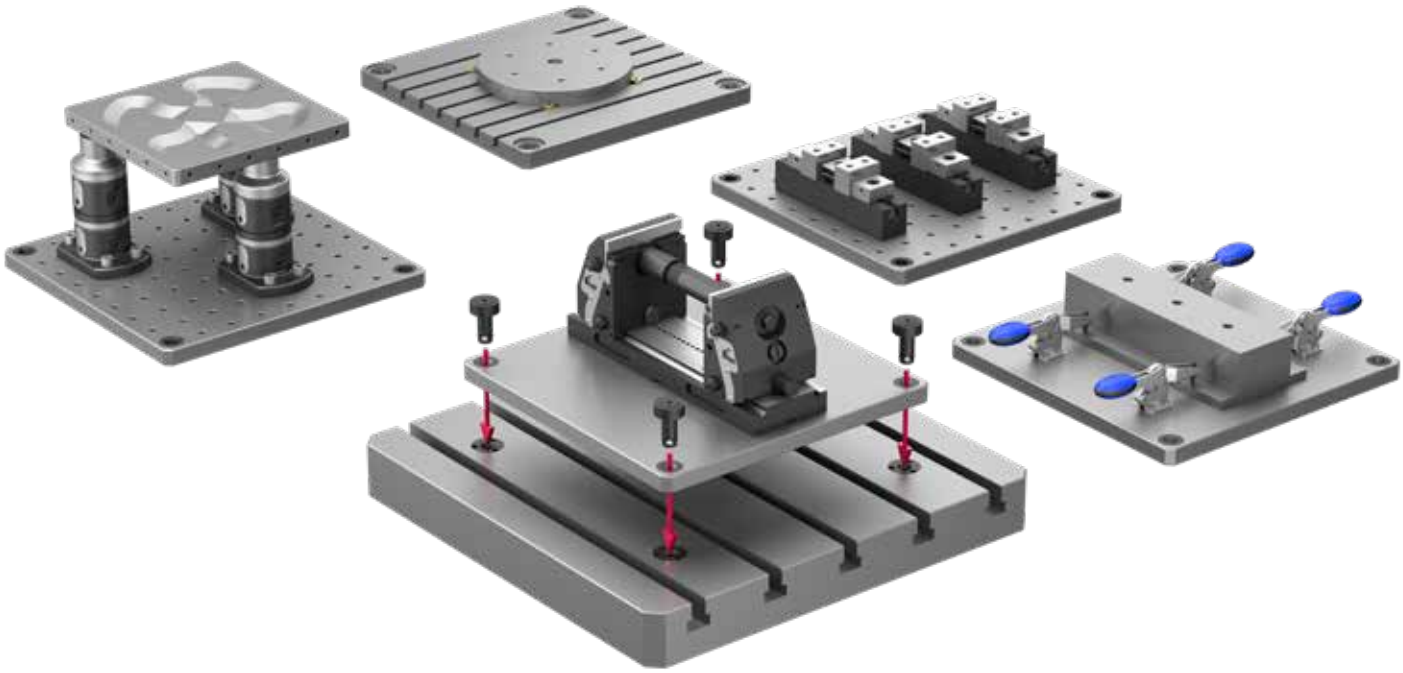
1. With the mechanical locating and clamping system, base and tooling plates can be precisely positioned and fastening in a couple of seconds. The system consists of a locating cylinder, a centring bush and a receiver bush.

2. Three easy steps to applying the positioning and clamping system:
   Mount two receiver bushes on the machine table or on the base plate, and two centring bushes on the clamping plate.
   Insert the locating cylinder through the centring bush into the receiver bush to attain precise positioning.
   Turn the set screws in each locating cylinder roughly two rotations to clamp tight.
   Eighteen different locating cylinders, two centring bush types and two receiver bush models are available.

3. A centring bush grade I (below left) and a centring bush grade I or II (above right) should be installed in each fastening plate as far apart from one another as possible. More than two positioning points bring no further advantages.
   When more than two locating cylinders are used for additional holding force (dependent on application), holes in the fastening plate must be 0.4 mm to 0.8 mm bigger than the selected locating cylinder diameter.

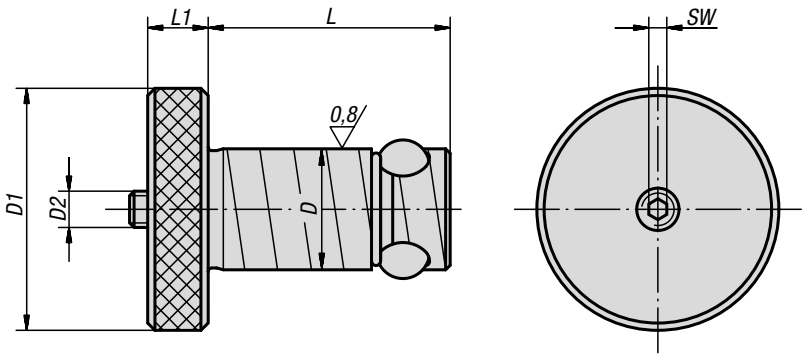
4. If the centre distance between the two positioning holes in the e.g. machine table and the clamping plate is kept within a tolerance of ±0.005 mm and two centring bushings grade I are used, a repeat accuracy within ±0.013 mm can be achieved.
   For a somewhat lower repeat accuracy within ±0.04 mm, one centring bushing grade I and one centring bushing grade II with a centre distance tolerance of ±0.03 mm are used.

5. The difference between the centring bush grade I and the centring bush grade II is that the centring bush grade II has a larger internal diameter in order to correspond to the greater centre distance tolerance in the machine table or the base plate.



Locating cylinders

Ball Lock



Material:
Locating cylinder carbon steel.
Balls roller bearing steel.

Version:
Locating cylinder tempered, black oxidised.
Balls hardened, bright.

Sample order:
K0935.16020

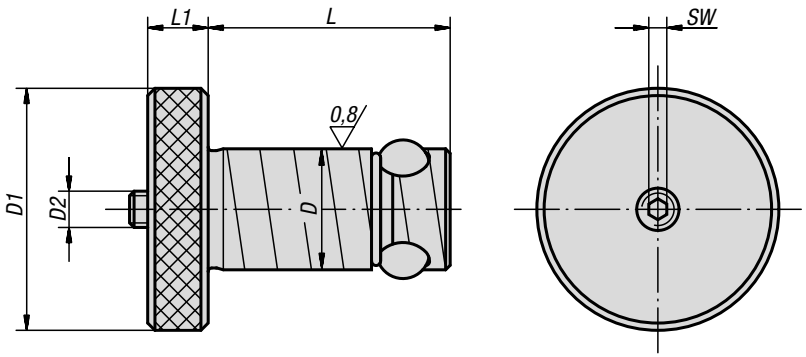
Note:
By tightening the thrust screw (D2) the centre ball is pressed downwards and in turn forces the three locking balls outwards, where they locked in the receiver bush.
With this easy to use system machine set-up times are up to twelve times shorter than when conventional methods are used.

KIPP Locating cylinders Ball lock

Order No.	Grid plate thickness ±0,05	D	D1	D2	L	L1	SW	Holding force F kN	Tightening torque max. Nm	Order No. Repair Kit
K0935.13013	13	13	22	M5	27,6	6	2,5	3,3	1	K0935.913013
K0935.13020	20	13	22	M5	34,6	6	2,5	3,3	1	K0935.913020
K0935.16020	20	16	32	M6	36,5	8	3	5,3	3	K0935.916020
K0935.16025	25	16	32	M6	41,5	8	3	5,3	3	K0935.916025
K0935.20020	20	20	40	M6	39,5	10	3	13,3	4	K0935.920020
K0935.20025	25	20	40	M6	44,5	10	3	13,3	4	K0935.920025
K0935.25020	20	25	45	M8	44	10	4	30	9	K0935.925020
K0935.25025	25	25	45	M8	49	10	4	30	9	K0935.925025
K0935.30020	20	30	50	M10	49	13	5	44	15	K0935.930020
K0935.30025	25	30	50	M10	54	13	5	44	15	K0935.930025
K0935.35020	20	35	60	M12	51	13	6	68	25	K0935.935020
K0935.35025	25	35	60	M12	56	13	6	68	25	K0935.935025
K0935.35040	40	35	60	M12	71	13	6	68	25	K0935.935040
K0935.35050	50	35	60	M12	81	13	6	68	25	K0935.935050
K0935.50020	20	50	75	M20	64	20	10	88	50	K0935.950020
K0935.50025	25	50	75	M20	69	20	10	88	50	K0935.950025
K0935.50040	40	50	75	M20	84	20	10	88	50	K0935.950040
K0935.50050	50	50	75	M20	94	20	10	88	50	K0935.950050

Locating cylinders stainless steel

Ball Lock



Material:
Locating cylinder and ball stainless steel 1.4542.

Version:
Locating cylinder and ball hardened to min. 40 HRC, bright.

Sample order:
K1474.16020

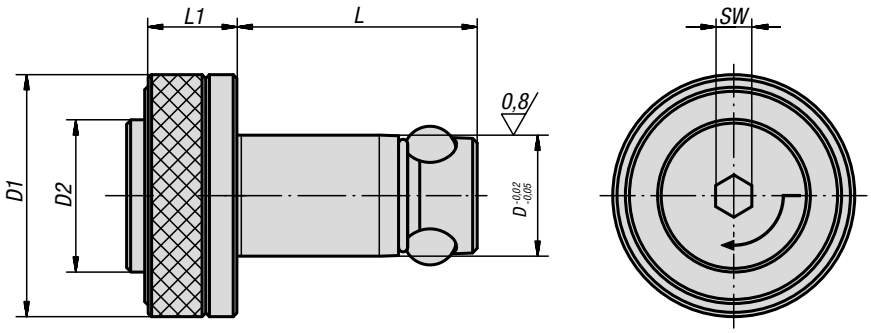
Note:
By tightening the thrust screw (D2) the centre ball is pressed downwards and in turn forces the three locking balls outwards, where they locked in the receiver bush.
With this easy to use system machine set-up times are up to twelve times shorter than when conventional methods are used.

KIPP Locating cylinders stainless steel Ball Lock

Order No.	Grid plate thickness ±0.13	D	D1	D2	L	L1	SW	Holding force F kN	Tightening torque max. Nm	Order No. Repair Kit
K1474.13013	13	13	22	M5	27,6	6	2,5	3,3	1,2	K1474.913013
K1474.13020	20	13	22	M5	34,6	6	2,5	3,3	1,2	K1474.913020
K1474.16020	20	16	32	M6	36,5	8	3	5,3	4,5	K1474.916020
K1474.16025	25	16	32	M6	41,5	8	3	5,3	4,5	K1474.916025
K1474.20020	20	20	40	M6	39,5	10	3	13,3	5,3	K1474.920020
K1474.20025	25	20	40	M6	44,4	10	3	13,3	5,3	K1474.920025
K1474.25020	20	25	45	M8	44	10	4	30	11	K1474.925020
K1474.25025	25	25	45	M8	49	10	4	30	11	K1474.925025
K1474.30020	20	30	50	M10	49	13	5	44	18	K1474.930020
K1474.30025	25	30	50	M10	54	13	5	44	18	K1474.930025
K1474.35020	20	35	60	M12	51	13	6	68	33	K1474.935020
K1474.35025	25	35	60	M12	56	13	6	68	33	K1474.935025
K1474.35040	40	35	60	M12	71	13	6	68	33	K1474.935040
K1474.35050	50	35	60	M12	81	13	6	68	33	K1474.935050
K1474.50020	20	50	75	M20	64	20	10	88	65	K1474.950020
K1474.50025	25	50	75	M20	69	20	10	88	65	K1474.950025
K1474.50040	40	50	75	M20	84	20	10	88	65	K1474.950040
K1474.50050	50	50	75	M20	94	20	10	88	65	K1474.950050

Locating cylinder

with quick clamping system



Material:
Locating cylinder carbon steel.
Balls roller bearing steel.

Version:
Locating cylinder tempered, black oxidised.
Balls hardened, bright.

Sample order:
K0935.112013

Note:
Locating cylinder with quick-clamp system for extra timesaving during setups.

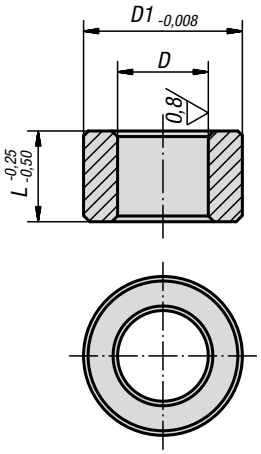
Insert the locating cylinder into the receiving hole and press the button. The three balls are pushed out and position the components. By tightening the set screw a 1/4 turn using an hexagonal key, the components are positively and securely held.

KIPP Locating cylinder with quick clamping system

Order No.	Grid plate thickness ±0,05	D	D1	D2	L	L1	SW	Holding force F kN	Tightening torque max. Nm
K0935.116025	25	16	32	20	41,5	15	6	8	2
K0935.113013	13	13	25	16	27,6	12	4	4	1
K0935.116020	20	16	32	20	36,5	15	6	8	2
K0935.120020	20	20	40	25	39,5	15	6	8	2
K0935.113020	20	13	25	16	34,6	12	4	4	1
K0935.120025	25	20	40	25	44,5	15	6	8	2

Notes

Centring bushes

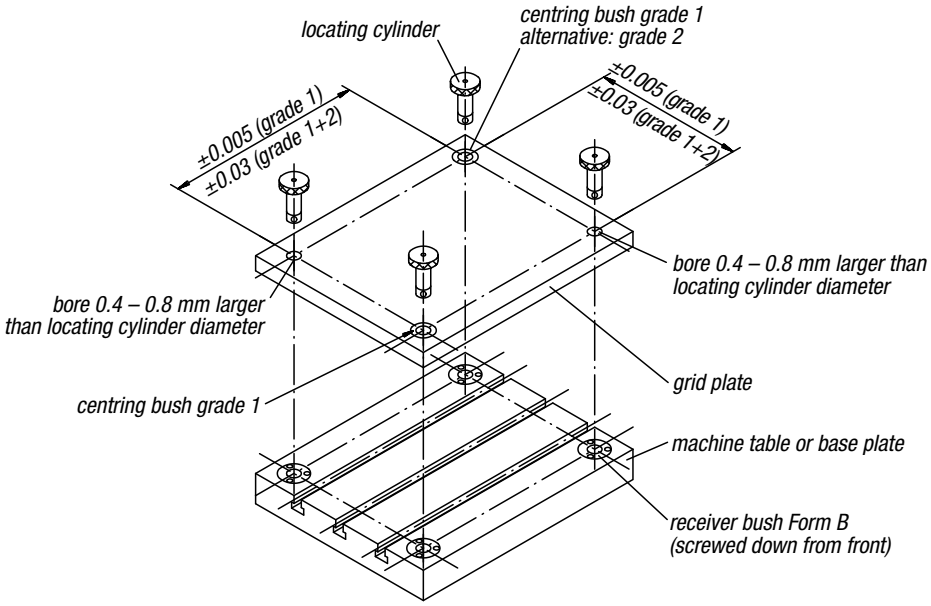


Material:
Ball bearing steel

Version:
Hardened, black oxidised.

Sample order:
K0936.113020

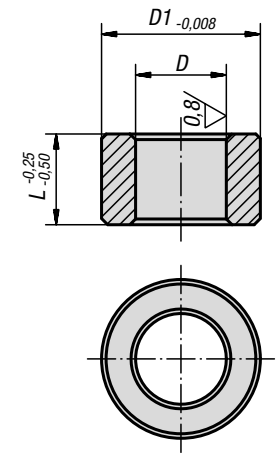
Note:
By a centre distance tolerance of ±0.005 mm and two grade I centring bushes a repeat accuracy of ±0.013 mm is possible.
By a centre distance tolerance of ±0.03 mm and one grade I and one grade II centring bush a repeat accuracy of 0.04 mm is possible.
The centring bushes are pressed into the receiver holes of the tooling plates using a light pressure.
For further details see “General information”.



KIPP Centring bushes

Order No. grade I	T=tolerance grade I	Order No. grade II	T=tolerance grade II	D	D1	L	Bore size for centring bush Ø +0.01
K0936.113013	+0,005 - +0,018	**K0936.213013**	+0,025 - +0,050	13	19,04	13	19,016
K0936.113020	+0,005 - +0,018	**K0936.213020**	+0,025 - +0,050	13	19,04	20	19,016
K0936.116020	+0,005 - +0,018	**K0936.216020**	+0,025 - +0,050	16	25,042	20	25,016
K0936.116025	+0,005 - +0,018	**K0936.216025**	+0,025 - +0,050	16	25,042	25	25,016
K0936.120020	+0,005 - +0,018	**K0936.220020**	+0,025 - +0,050	20	35,042	20	35,018
K0936.120025	+0,005 - +0,018	**K0936.220025**	+0,025 - +0,050	20	35,042	25	35,018
K0936.125020	+0,005 - +0,018	**K0936.225020**	+0,025 - +0,050	25	35,042	20	35,018
K0936.125025	+0,005 - +0,018	**K0936.225025**	+0,025 - +0,050	25	35,042	25	35,018
K0936.130020	+0,005 - +0,018	**K0936.230020**	+0,025 - +0,050	30	45,042	20	45,018
K0936.130025	+0,005 - +0,018	-	-	30	45,042	25	45,018
K0936.135020	+0,005 - +0,018	-	-	35	45,042	20	45,018
K0936.135025	+0,005 - +0,018	**K0936.235025**	+0,025 - +0,050	35	45,042	25	45,018
K0936.135040	+0,005 - +0,018	**K0936.235040**	+0,025 - +0,050	35	45,042	40	45,018
K0936.135050	+0,005 - +0,018	**K0936.235050**	+0,025 - +0,050	35	45,042	50	45,018
K0936.150020	+0,005 - +0,018	-	-	50	63,546	20	63,521
-	-	**K0936.250025**	+0,025 - +0,050	50	63,546	25	63,521
K0936.150040	+0,005 - +0,018	**K0936.250040**	+0,025 - +0,050	50	63,546	40	63,521
K0936.150050	+0,005 - +0,018	**K0936.250050**	+0,025 - +0,050	50	63,546	50	63,521

Centring bushes stainless steel

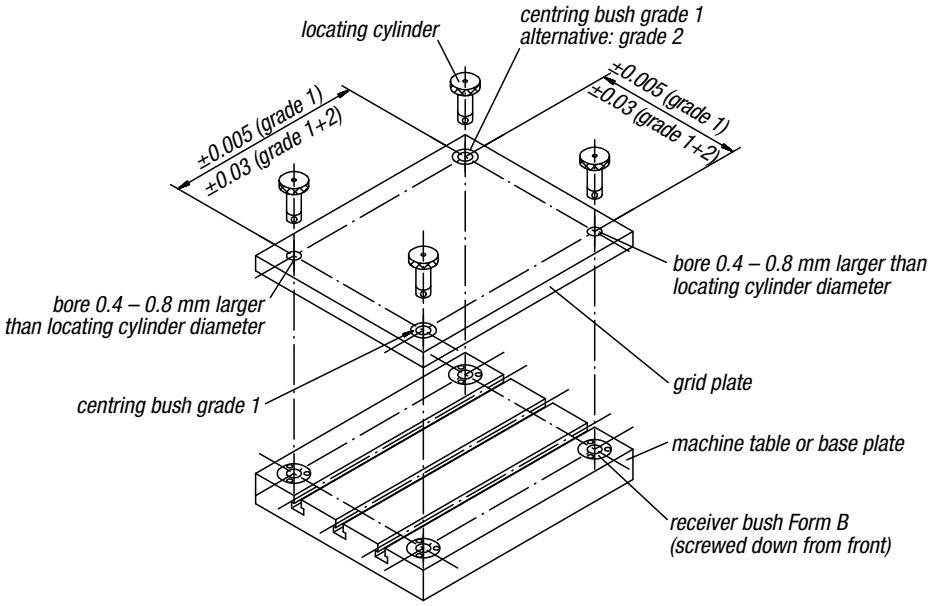


Material:
Stainless steel 1.4548.

Version:
Hardened to min. 40 HRC, bright.

Sample order:
K1475.113020

Note:
By a centre distance tolerance of ±0.005 mm and two grade I centring bushes a repeat accuracy of ±0.013 mm is possible.
By a centre distance tolerance of ±0.03 mm and one grade I and one grade II centring bush a repeat accuracy of 0.04 mm is possible.
The centring bushes are pressed into the receiver holes of the tooling plates using a light pressure.
For further details see “General information”.



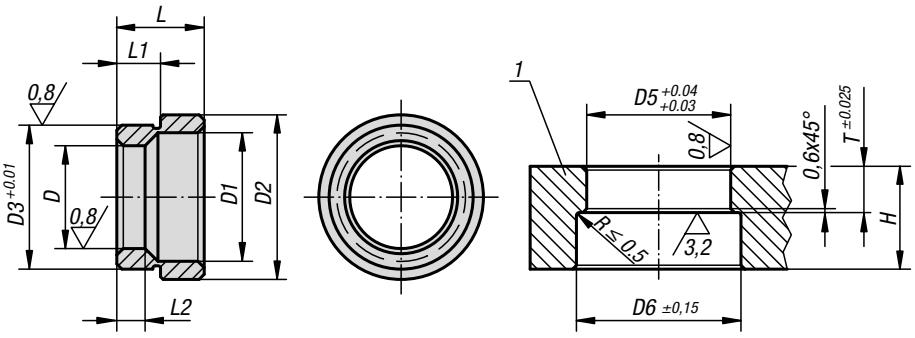
KIPP Centring bushes stainless steel

Order No. grade I	T=tolerance grade I	Order No. grade II	T=tolerance grade II	D	D1	L	Bore size for centring bush Ø +0.01
K1475.113013	+0,005 - +0,018	**K1475.213013**	+0,025 - +0,050	13	19,04	13	19,016
K1475.113020	+0,005 - +0,018	**K1475.213020**	+0,025 - +0,050	13	19,04	20	19,016
K1475.116020	+0,005 - +0,018	**K1475.216020**	+0,025 - +0,050	16	25,042	20	25,016
K1475.116025	+0,005 - +0,018	**K1475.216025**	+0,025 - +0,050	16	25,042	25	25,016
K1475.120020	+0,005 - +0,018	**K1475.220020**	+0,025 - +0,050	20	35,042	20	35,018
K1475.120025	+0,005 - +0,018	**K1475.220025**	+0,025 - +0,050	20	35,042	25	35,018
K1475.125020	+0,005 - +0,018	**K1475.225020**	+0,025 - +0,050	25	35,042	20	35,018
K1475.125025	+0,005 - +0,018	**K1475.225025**	+0,025 - +0,050	25	35,042	25	35,018
K1475.130020	+0,005 - +0,018	**K1475.230020**	+0,025 - +0,050	30	45,042	20	45,018
K1475.130025	+0,005 - +0,018	**K1475.230025**	+0,025 - +0,050	30	45,042	25	45,018
K1475.135020	+0,005 - +0,018	**K1475.235020**	+0,025 - +0,050	35	45,042	20	45,018
K1475.135025	+0,005 - +0,018	**K1475.235025**	+0,025 - +0,050	35	45,042	25	45,018
K1475.135040	+0,005 - +0,018	**K1475.235040**	+0,025 - +0,050	35	45,042	40	45,018
K1475.135050	+0,005 - +0,018	**K1475.235050**	+0,025 - +0,050	35	45,042	50	45,018
K1475.150020	+0,005 - +0,018	**K1475.250020**	+0,025 - +0,050	50	63,546	20	63,521
K1475.150025	+0,005 - +0,018	**K1475.250025**	+0,025 - +0,050	50	63,546	25	63,521
K1475.150040	+0,005 - +0,018	**K1475.250040**	+0,025 - +0,050	50	63,546	40	63,521
K1475.150050	+0,005 - +0,018	**K1475.250050**	+0,025 - +0,050	50	63,546	50	63,521

K0937

Locating bushes

Form A (pressed in from rear)



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0937.20

Drawing reference:
1) grid plate

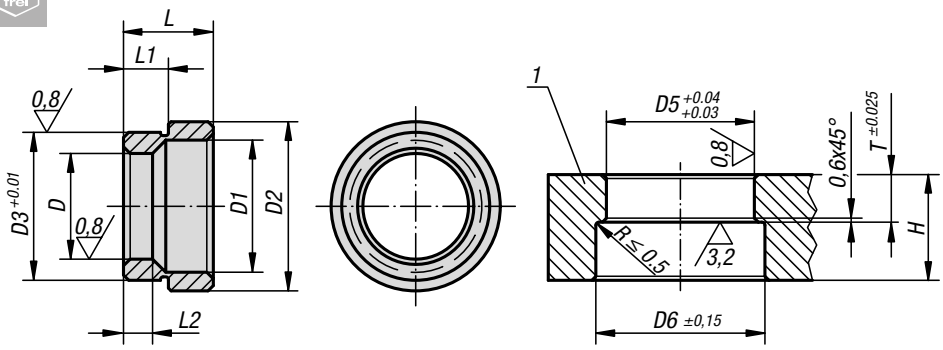
KIPP Locating bushes Form A (pressed in from rear)

Order No.	D	D1	D2	D3	L	L1	L2	D5	D6	T	Min. grid plate thickness H
K0937.13	13	17,3	25	20,03	12,1	6,6	5,58	20	26	6,92	20
K0937.16	16	20,7	28,6	22,03	12,1	6,9	6,6	22	29	7,24	20
K0937.20	20	24,8	32,2	28,03	17,1	8,42	8,13	28	33	8,74	25
K0937.25	25	30,4	40,2	35,03	21	10,22	10,16	35	41	10,54	25
K0937.30	30	36,2	48,2	42,03	21,8	10,63	11,18	42	49	10,95	30
K0937.35	35	41,3	54,2	48,03	25,1	12,18	14,78	48	55	12,5	32
K0937.50	50	58,4	75,2	67,03	31,1	15,43	18,67	67	76	15,75	45

K1476

Locating bushes, stainless steel

Form A (pressed in from rear)



Material:
Stainless steel 1.4548.

Version:
Hardened to min. 40 HRC, bright.

Sample order:
K1476.20

Drawing reference:
1) grid plate

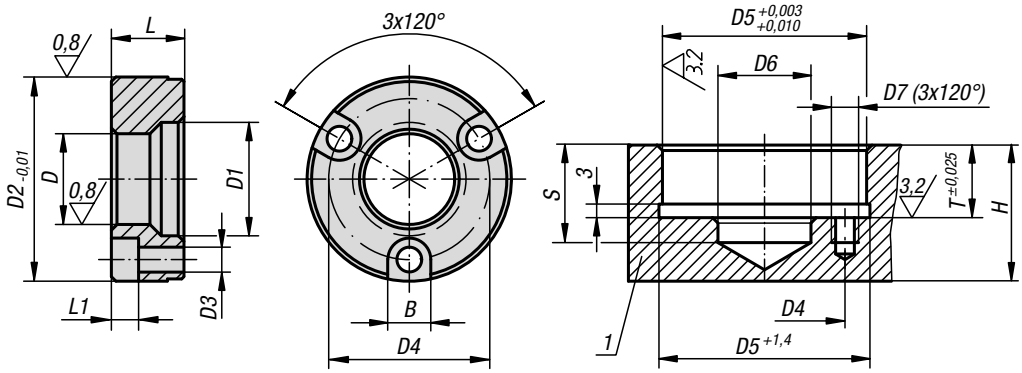
KIPP Locating bushes stainless steel Form A (pressed in from rear)

Order No.	D	D1	D2	D3	L	L1	L2	D5	D6	T	Min. grid plate thickness H
K1476.13	13	17,3	25	20,03	12,1	6,6	5,58	20	26	6,92	20
K1476.16	16	20,7	28,6	22,03	12,1	6,9	6,6	22	29	7,24	20
K1476.20	20	24,8	32,2	28,03	17,1	8,42	8,13	28	33	8,74	25
K1476.25	25	30,4	40,2	35,03	21	10,22	10,16	35	41	10,54	25
K1476.30	30	36,2	48,2	42,03	21,8	10,63	11,18	42	49	10,95	30
K1476.35	35	41,3	54,2	48,03	25,1	12,18	14,78	48	55	12,5	32
K1476.50	50	58,4	75,2	67,03	31,1	15,43	18,67	67	76	15,75	45

K0938

Locating bushes

Form B (screwed down from front)



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0938.13

Note:
Fastening screws included.

Drawing reference:
1) grid plate

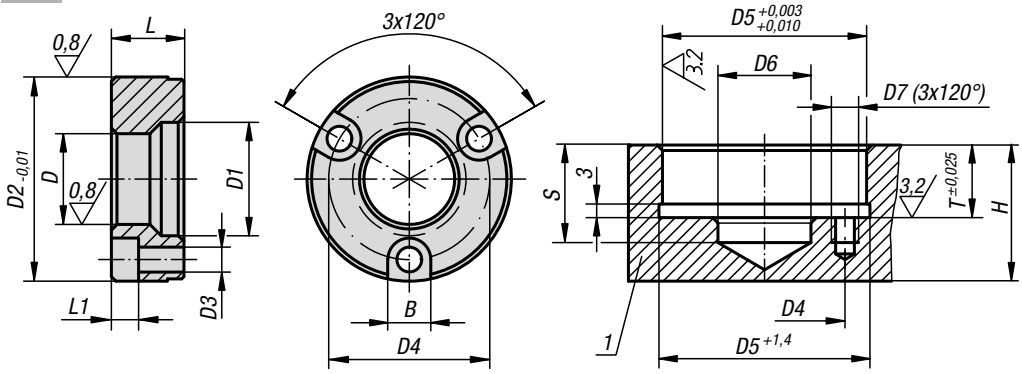
KIPP Locating bushes Form B (screwed down from front)

Order No.	D	D1	D2	D3	D4	L	L1	B	D5	D6	D7	S	T	Min. grid plate thickness H
K0938.13	13	17,3	34,99	4,4	25	11,56	4,5	7,6	35	13,5	M4x7	20	11,91	20
K0938.16	16	20,7	36,99	4,4	29	11,56	4,5	7,6	37	21	M4x7	20	11,91	20
K0938.20	20	24,8	44,99	5,4	35	15,82	6	9,5	45	21	M5x9	25	16,21	25
K0938.25	25	30,4	54,99	6,4	42	19,94	7	11	55	25,5	M6x10	25	20,32	25
K0938.30	30	36,2	59,99	6,4	48	21,77	7	11	60	30,5	M6x11	30	22,15	30
K0938.35	35	41,3	69,99	8,4	56	22,61	9	14	70	40	M8x17	32	22,99	32
K0938.50	50	58,4	91,99	10,4	75	31,12	11	17	92	55	M10x18	45	31,5	45

K1477

Locating bushes, stainless steel

Form B (screwed down from front)



Material:
Stainless steel 1.4548.

Version:
Hardened to min. 40 HRC, bright.

Sample order:
K1477.13

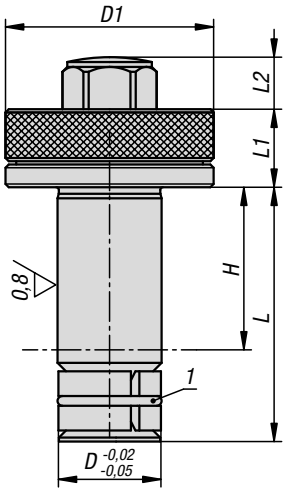
Note:
Fastening screws included.

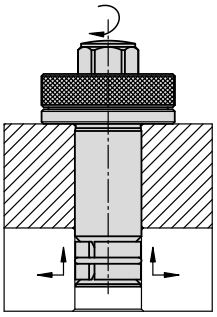
Drawing reference:
1) grid plate

KIPP Receiver bushes stainless steel Form B (screwed down from front)

Order No.	D	D1	D2	D3	D4	L	L1	B	D5	D6	D7	S	T	Min. grid plate thickness H
K1477.13	13	17,3	34,99	4,4	25	11,56	4,5	7,6	35	13,5	M4x7	20	11,91	20
K1477.16	16	20,7	36,99	4,4	29	11,56	4,5	7,6	37	21	M4x7	20	11,91	20
K1477.20	20	24,8	44,99	5,4	35	15,82	6	9,5	45	21	M5x9	25	16,21	25
K1477.25	25	30,4	54,99	6,4	42	19,94	7	11	55	25,5	M6x10	25	20,32	25
K1477.30	30	36,2	59,99	6,4	48	21,77	7	11	60	30,5	M6x11	30	22,15	30
K1477.35	35	41,3	69,99	8,4	56	22,61	9	14	70	40	M8x17	32	22,99	32
K1477.50	50	58,4	91,99	10,4	75	31,12	11	17	92	55	M10x18	45	31,5	45

Locating cylinder with wedge clamp system





Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K1802.1625

Note:
A workpiece can be easily secured and centred in a bore using the locating cylinder.
Due to the low surface friction on rigid contact faces generated by the integrated axial needle bearing, increased clamping forces can be achieved.
The high load rating of the bearing guarantees a long service life.
Clamping cylinder with pull-down effect.

Assembly:
Insert the locating cylinder through the mounting hole in the workpiece being secured.
Tighten the screw first by hand using the knurled part of the screw and then tighten further using a suitable spanner.
The knurled part can also be sunk into a counterbore provided for this purpose.

Advantages:
Easily adjustable clamping range
Independent of the bores diameter and surface finish (up to H12)
Pull-down effect
Significant increase in clamping force for same tightening torque, in comparison with the version with balls
High-quality axial needle bearing with high load rating and long service life

Applications:
Ideal for fastening standard elements of various thicknesses. The clamping cylinder can also be used for quick-change systems.

Drawing reference:
The dimension H refers to the clamping area.

1) O-ring

KIPP Locating cylinder with wedge clamp system

Order No.	D	D1	H clamping range	L	L1	L2	SW	Holding force F kN	Tightening torque Nm	Order No. Repair Kit
K1802.1010	10	20	0-10	20	8	5	8	5,4	4,4	K1802.91010
K1802.1215	12	26	0-15	27	10	6	10	8,8	10,5	K1802.91215
K1802.1625	16	32	0-25	39	12	8	13	16,8	22	K1802.91625
K1802.2030	20	38	0-30	49,5	15	9	17	22,6	31	K1802.92030

Pneumatic positioning and clamping system

General information

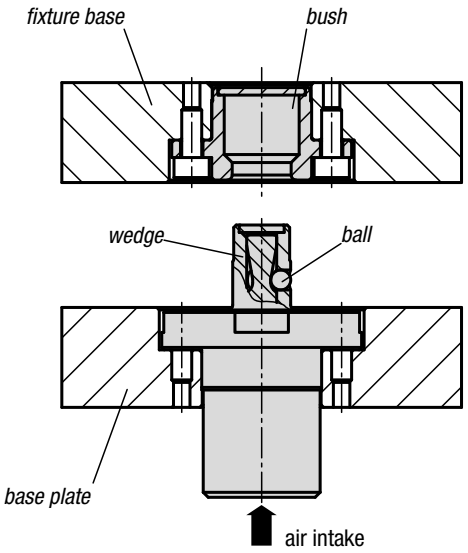
1. The pneumatic positioning and clamping system enables rapid and precise fixation and positioning of grid plates. The system consists of a locating cylinder and a locating bush.

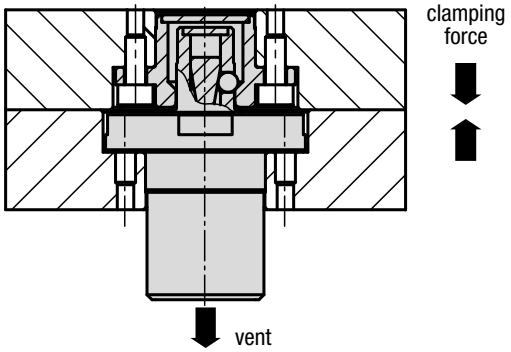
2. The locating cylinder is actuated pneumatically.

3. To use the positioning and clamping system, follow these three simple steps:
   Install two locating cylinders on the machine table or baseplate. At the same time install the locating bushes with the interchangeable subplates in line with the specified dimensions.
   Feed in air to open the locating cylinder mechanism to make the clamping balls move inwards. Insert the interchangeable subplate with the locating bushes and close the air valve again.
   The interchangeable subplate is now positioned and clamped.

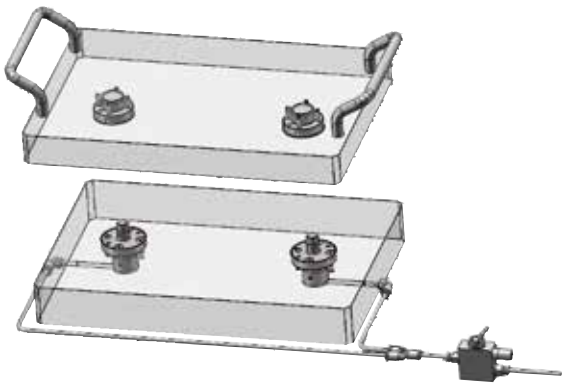
4. The system is clamped without an air supply. Spring force is used for clamping in the locating cylinder. An air supply of 6 bar is required to open the mechanism.

5. 2 different installation variants are available.





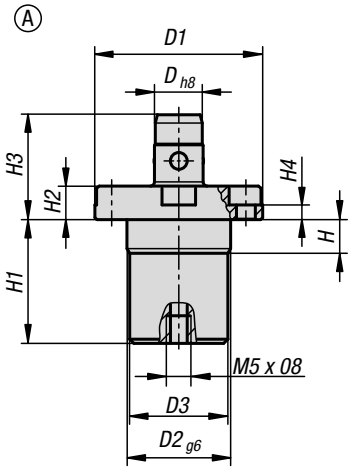
Applications

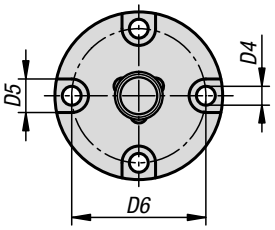


Locating cylinders

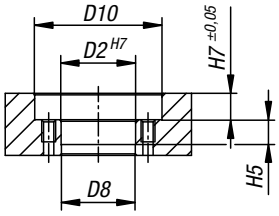
pneumatic

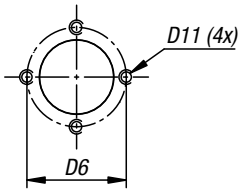
Ⓐ





mounting instructions:





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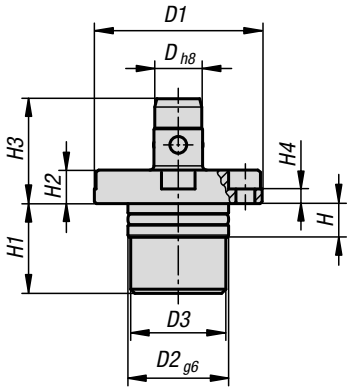
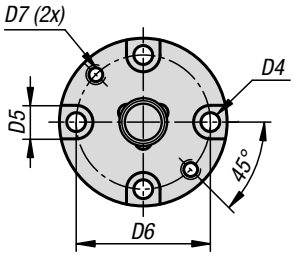
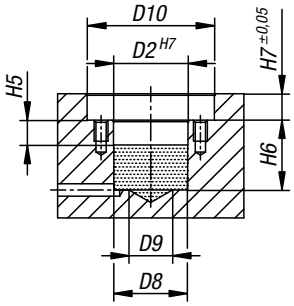
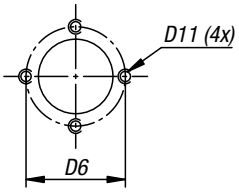




mounting instructions:





Material:
Carbon steel.

Version:
nickel-plated.

Sample order:
K1219.112

Note:
The 3 clamping balls are pneumatically released. The 3 clamping balls retract and the fixture can be exchanged. If the air is stopped, the 3 clamping balls advance and the fixture is clamped.
This easy-to-operate system significantly reduces the changeover times.

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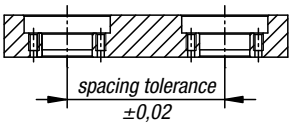

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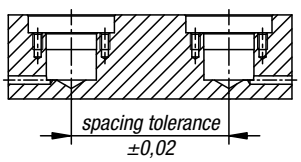
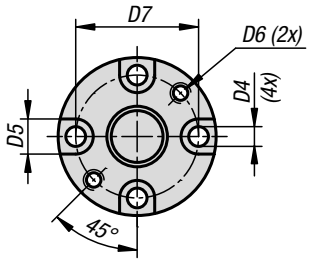


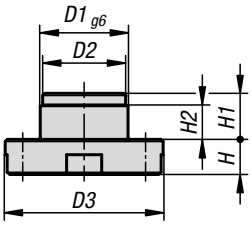
KIPP Locating cylinders pneumatic

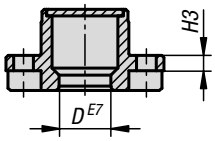
Order No.	Form	D	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	H	H1	H2	H3	H4	H5	H6	H7	Retaining force F1 N
K1219.112	A	12	40	24	23,4	4,5	8	32	-	23,8	-	41	M4	8	29,5	8	25	3,5	8,5	-	8,5	250
K1219.116	A	16	51	32	31,4	5,5	9,5	41	-	31,8	-	52	M5	8,5	31,7	9,5	28,5	4	9	-	10	350
K1219.212	B	12	40	24	23,4	4,5	8	32	M4	23,8	14	41	M4	8	24,5	8	25	3,5	8,5	25,5	8,5	250
K1219.216	B	16	51	32	31,4	5,5	9,5	41	M5	31,8	20	52	M5	8,5	25,5	9,5	28,5	4	9	26,5	10	350

Locating bushes

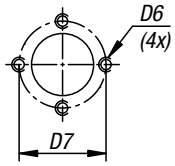
for pneumatic locating cylinder

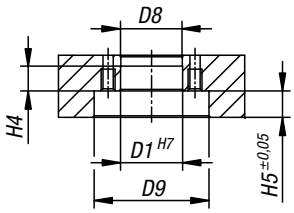


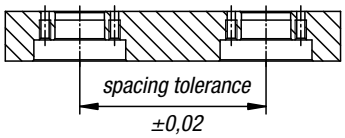




mounting instructions:







Material:
Carbon steel.

Version:
nickel-plated.

Sample order:
K1220.12

Note:
Locating bushes are placed in a fixture or interchangeable subplate and form the counterpart to the locating cylinder.
The locating bushes are centred in a reamed hole and then fastened with 4 screws.
The balls of the locating cylinder engage in the groove in the locating bush, thereby forming a fast, secure and highly accurate changeover unit, and reducing setup and changeover times.

KIPP Locating bushes for pneumatic locating cylinder

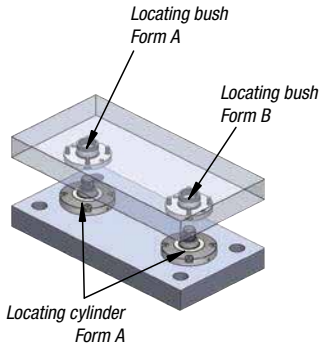
Order No.	D	D1	D2	D3	D4	D5	D6	D7	D8	D9	H	H1	H2	H3	H4	H5
K1220.12	12,1	20	19,6	36	4,5	8	M4	28	19,8	37	8	10,5	7,5	3,5	8	8,5
K1220.16	16,1	25	24,6	44	5,5	9,5	M5	34	24,8	45	9,5	11	7	4	7,5	10

Pneumatic positioning and clamping system

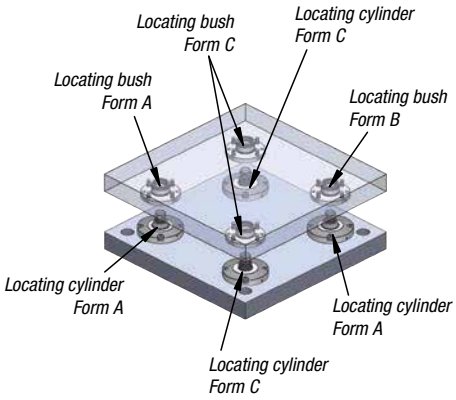
General information

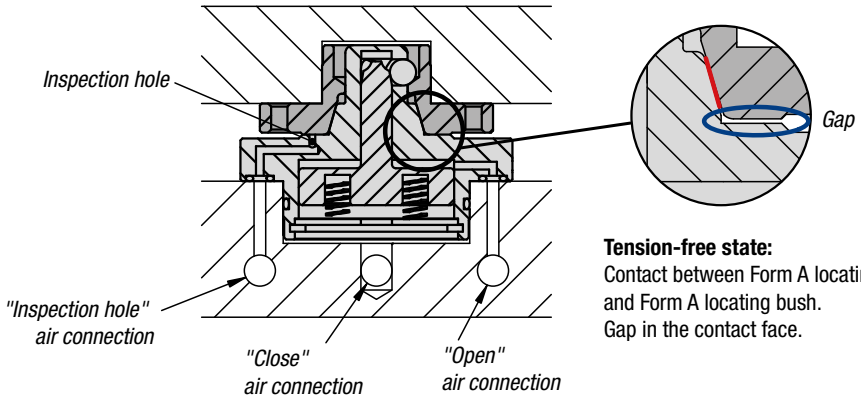
1. The pneumatic positioning and clamping system enables rapid and precise positioning and fastening of tooling and base plates. The system consists of a locating cylinder and locating bush.
2. The locating cylinders are actuated pneumatically.
3. The positioning and clamping system is made ready for use in three easy steps:
   Install two (or 4) locating cylinders on the machine table or baseplate. Likewise, the locating bushes with the interchangeable subplates are installed according to the specified dimensions.
   To release the locating cylinder mechanism, blow compressed air into the opening circuit. This makes the clamping balls move inwards. Insert the interchangeable subplate with the locating bushes and actuate the air valve for the closing circuit.
   The open port should now be switched off.
   The interchangeable subplate is now positioned and clamped.
   To open the mechanism, an air connection of at least 4.5 bar is required.
4. When clamped, compressed air must remain connected to the „close“ port. The air valve remains opened.
   If the air supply fails, the locating cylinder still clamps using the reduced force of the clamping springs.
5. There are 2 system sizes to choose from.

Application example for 2x clamping station:

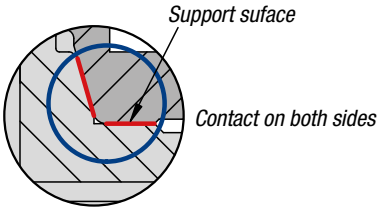


Application example for 4x clamping station:





Tension-free state:
Contact between Form A locating cylinder (cone) and Form A locating bush.
Gap in the contact face.

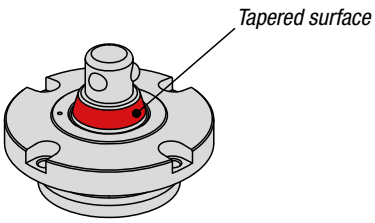


Clamped state:
Cone surfaces and contact faces have contact.

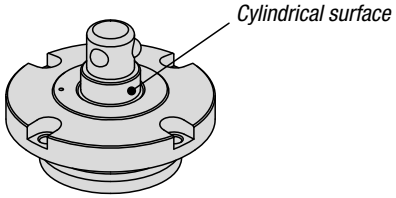
- If the air supply fails, the wedge mechanism and the springs of the locating cylinder prevent a sudden reduction of the clamping force.
- Clamping force of the locating cylinder when no air is connected (spring clamping force only):
  - D1 = 70 … 1.2 kN
  - D1 = 85 … 1.8 kN
- The air connection for support control is used to check if the locating bush lies correctly on the locating cylinder.
- Repeat accuracy 3 µm.

Pneumatic positioning and clamping system

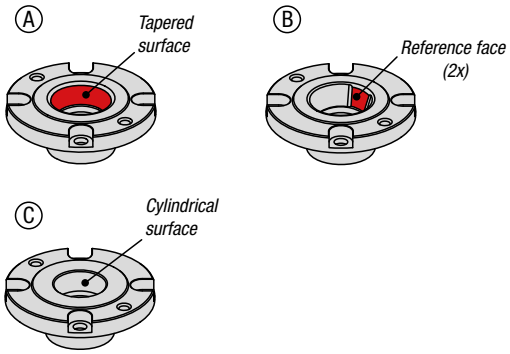
Function:



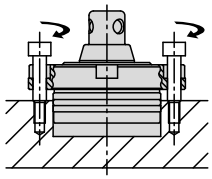
Positioning via tapered Form A locating cylinder



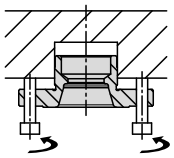
Clamping with cylindrical Form C locating cylinder



Disassembly of the locating cylinders:



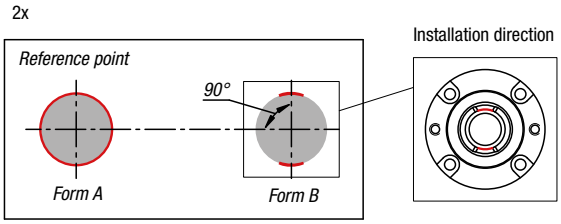
Disassembly of the locating bushes:

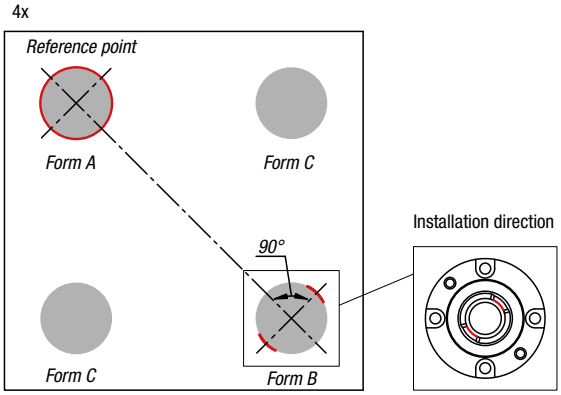


Arrangement of the locating bushes:

Mount the Form A locating bush (centring) and the Form B locating bush (compensation) as in the following illustrations.

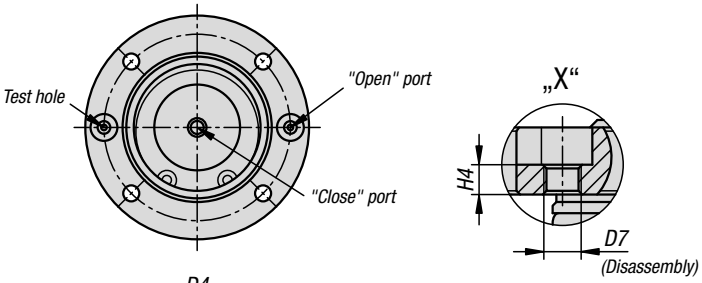
Observe the installation angle of the Form B locating bush (compensation), as this differs for a 2x station and a 4x station.

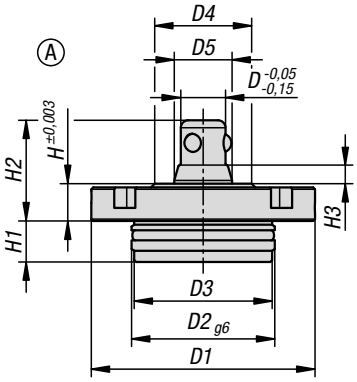


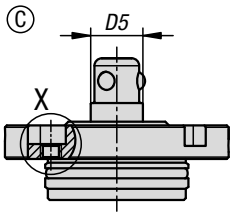


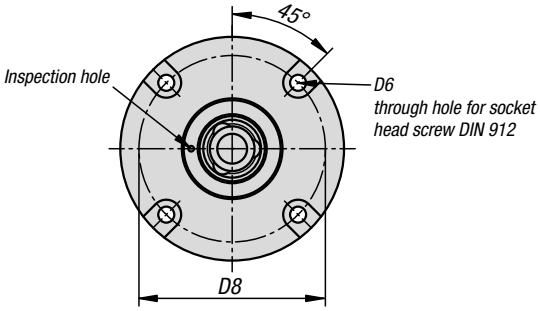
Locating cylinders

pneumatic

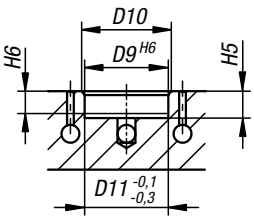


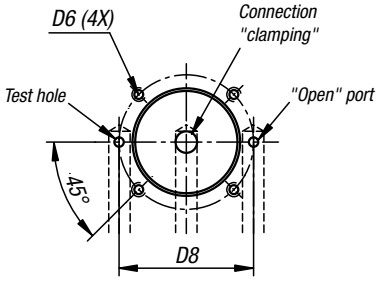


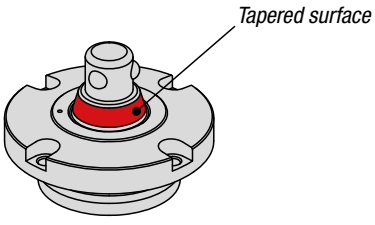


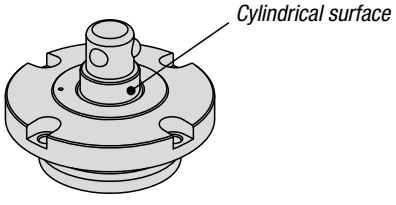


mounting instructions:









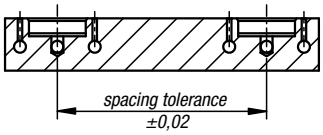
Material:
Housing and clamping cylinder, carbon steel.
Balls, stainless steel 1.0503.

Version:
Housing hardened and black oxidised.
Contact faces ground.

Sample order:
K1486.11670

Note:
This positioning and clamping system is especially suitable for installation in fixtures (plates, clamping tower blocks, etc.) in all mounting positions. The modular design allows the number of and distance between the locating cylinders to be ideally adjusted to suit the clamping task. Due to the small diameters, the spacing between the locating cylinders can also be reduced.

The 3 clamping balls are mechanically released through control of the locating cylinder with the „opening“ connection. The 3 clamping balls move inward and the fixture can be changed quickly.
For clamping, the air is taken from the „opening“ connection and the „clamping“ connection then receives air on the locating cylinder. The 3 clamping balls are mechanically driven outward again and the new fixture is clamped.
To achieve optimal retaining force, the locating cylinder remains connected to the air.

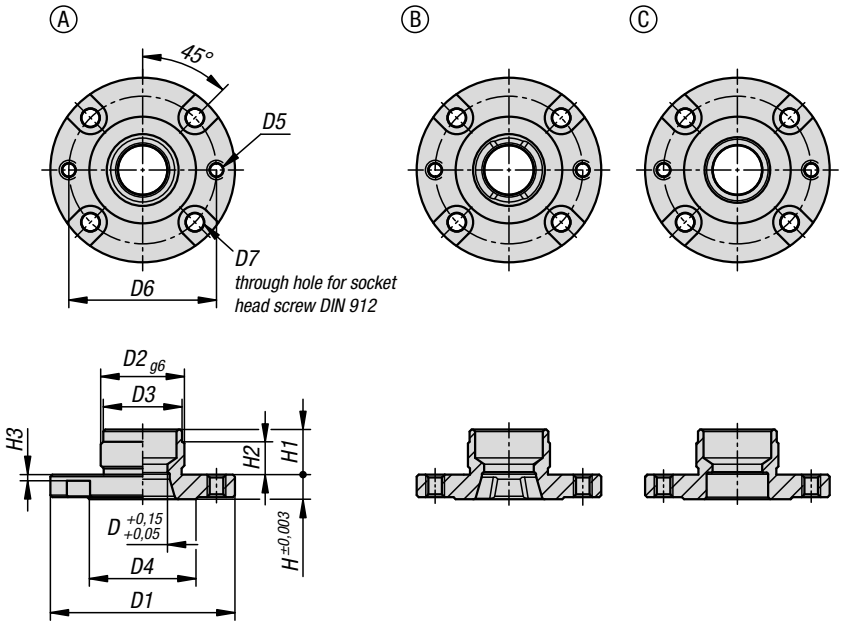


KIPP Locating cylinders pneumatic

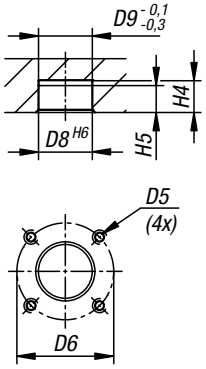
Order No.	Version 2	Form	D	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	H	H1	H2	H3	H4	H5	H6	Retaining force F1 N
K1486.11670	conical	A	16	70	48	47,5	38	24,5	M5	M6	60	48	50	48	12	15	35	8	5	16	12	4000
K1486.31670	cylindrical	C	16	70	48	47,5	38	20	M5	M6	60	48	50	48	12	15	35	8	5	16	12	4000
K1486.12085	conical	A	20	85	58	57,5	48	31,5	M6	M8	72	58	60	58	15	19	44	10	6	20	16	6300
K1486.32085	cylindrical	C	20	85	58	57,5	48	26	M6	M8	72	58	60	58	15	19	44	10	6	20	16	6300

Locating bushes

for pneumatic locating cylinder



mounting instructions:



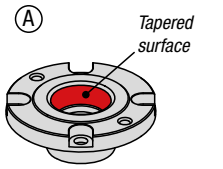
Material:
Carbon steel.

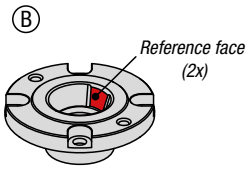
Version:
Housing hardened and black oxidised.
Contact faces ground.

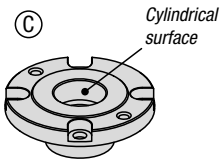
Sample order:
K1487.11660

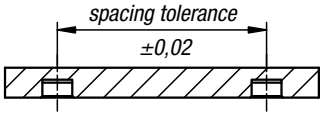
Note:
Locating bushes are placed in a fixture or interchangeable subplate and form the counterpart to the locating cylinder.
The locating bushes are centred in a reamed hole and then fastened with 4 screws.
The balls of the locating cylinder engage in the groove in the locating bush, thereby forming a fast, secure and highly accurate changeover unit, and reducing setup and changeover times.

Attention:
Please observe installation notes of the locating bushes.







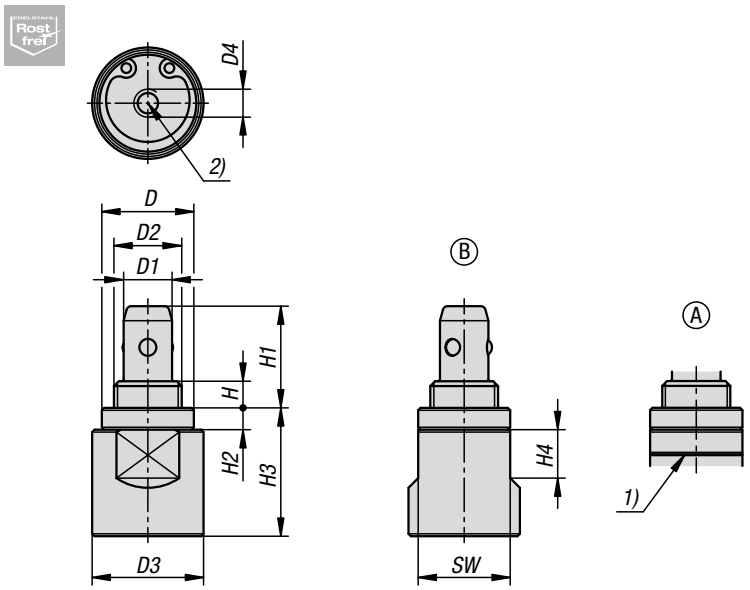


KIPP Locating bushes for pneumatic locating cylinder

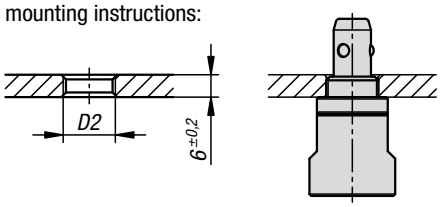
Order No. Form A	Order No. Form B	Order No. Form C	D	D1	D2	D3	D4	D5	D6	D7	D8	D9	H	H1	H2	H3	H4	H5
K1487.11660	K1487.21660	K1487.31660	16	60	28	27,5	38	M5	50	M5	28	28	8	15	10	2,5	16	12
K1487.12075	K1487.22075	K1487.32075	20	75	36	35,5	48	M6	62	M6	36	36	10	19	14	3,5	20	16

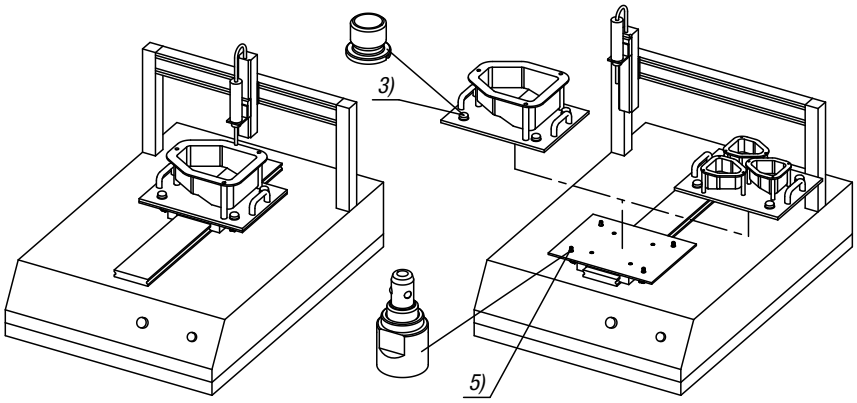
Locating cylinders stainless steel

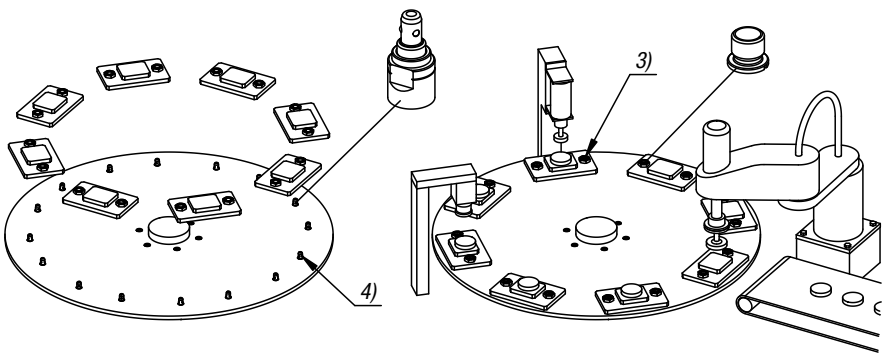
pneumatic



mounting instructions:







By locating cylinder Form A, the clamping balls are pushed out by a spring. Compressed air is used to retract the balls.

By locating cylinder Form B, the clamping balls are initially retracted. Compressed air pushes the balls out.

Material:
Body, stainless steel.
Seal, NBR.

Version:
Stainless steel bright.

Sample order:
K1738.10140

Note for ordering:
Form A is marked with a groove.

Note:
The stated clamping and retaining forces are related to an operating pressure of 0.5 Mpa.
When using several positioning units, the distance tolerance of ± 0.1 mm should not be exceeded.
Repeat accuracy ±0.2 mm.

Assembly:
Installation dimensions are for a 6 mm thick plate.

Accessories:
K1739 locating bushes stainless steel.

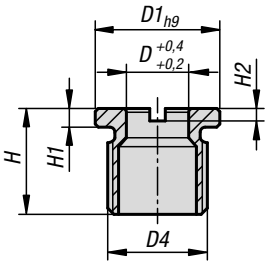
Drawing reference:
1) Form A ID groove
2) Pneumatic connection
3) Locating bush for locating cylinder
4) Form A locating cylinder
5) Form B locating cylinder

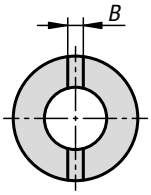
KIPP Locating cylinders stainless steel, pneumatic

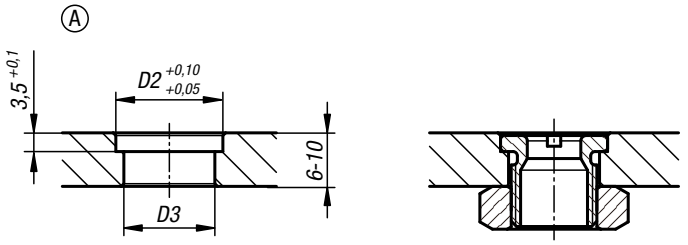
Order No.	Form	Form-Type	D	D1	D2	D3	D4	H	H1	H2	H3	H4	SW	Operating pressure MPa	F N	Holding force N
K1738.10140	A	spring-loaded	19	10	M14x1	23	M5	5,5	21	4,5	26,5	10	19	0,3 - 0,7	50	150
K1738.10141	B	Clamped pneumatically	19	10	M14x1	23	M5	5,5	21	4,5	26,5	10	19	0,3 - 0,7	150	300

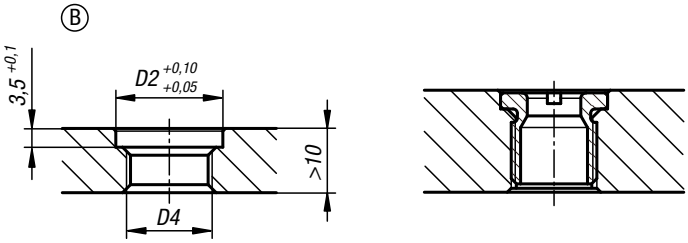
Locating bushes stainless steel

for locating cylinders, pneumatic









Material:
Stainless steel

Version:
Hardened.

Sample order:
K1739.101

Note:
Mounting dimensions Form A:
Mounting with nut, max. plate thickness 10 mm.
Mounting dimensions Form B:
Screwed in, for plate thicknesses over 10 mm or in a blind hole.
Colour may differ from the image due to the hardening process.

On request:
Suitable nuts and assembly tool.

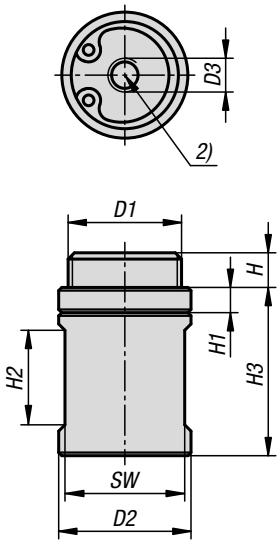
Accessories:
K1738 Locating cylinder stainless steel, pneumatic

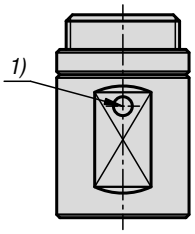
KIPP Locating bushes stainless steel for locating cylinders, pneumatic

Order No.	B	D	D1	D2	D3	D4	H	H1	H2
K1739.101	2,5	10	20	20	17	M16x1,5	17	3	2

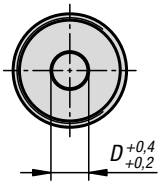
Locating adapters, cylindrical, stainless steel

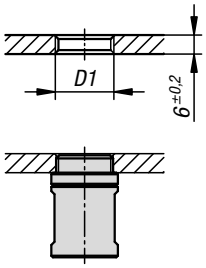
pneumatic





mounting instructions:





Clamped using compressed air.
Released via integrate spring.

Material:
Body, stainless steel.
Seal, NBR.

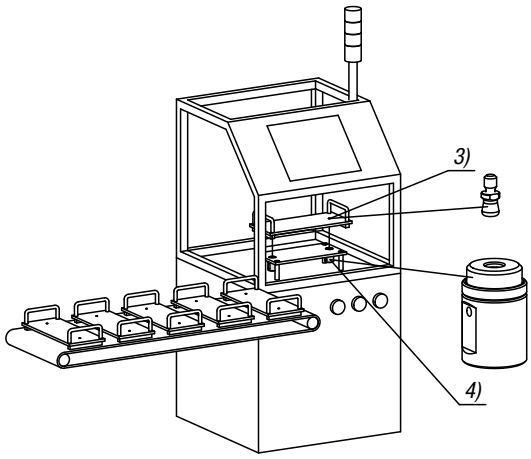
Version:
Stainless steel bright.

Sample order:
K1740.0618

Note:
Installed dimensions for plate thickness 6 mm.
The stated clamping and retaining forces are related to an operating pressure of 0.5 Mpa.
When using several positioning units, the distance tolerance of ±0.1 mm should not be exceeded.
Repeat accuracy ±0.2 mm.

Accessories:
Clamping pins K1564.

Drawing reference:
1) Air valve (one-sided)
2) Pneumatic connection
3) Clamping pin
4) Locating adapter

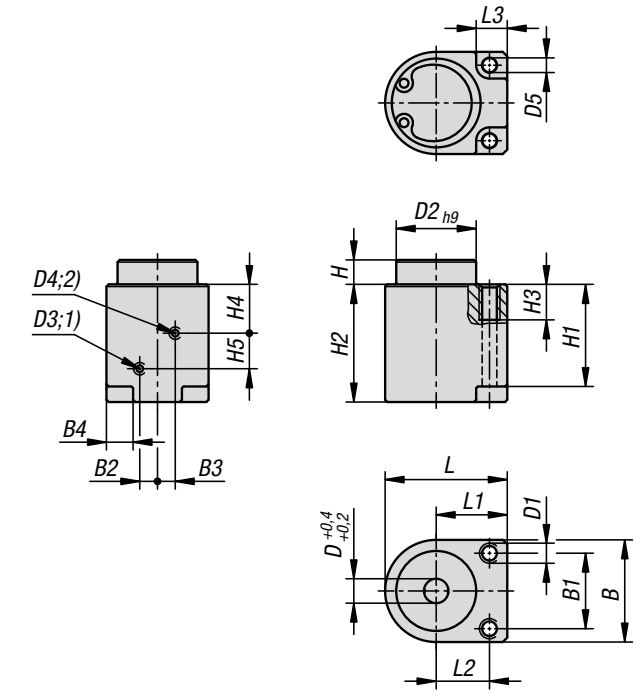


KIPP Locating adapters, cylindrical, stainless steel, pneumatic

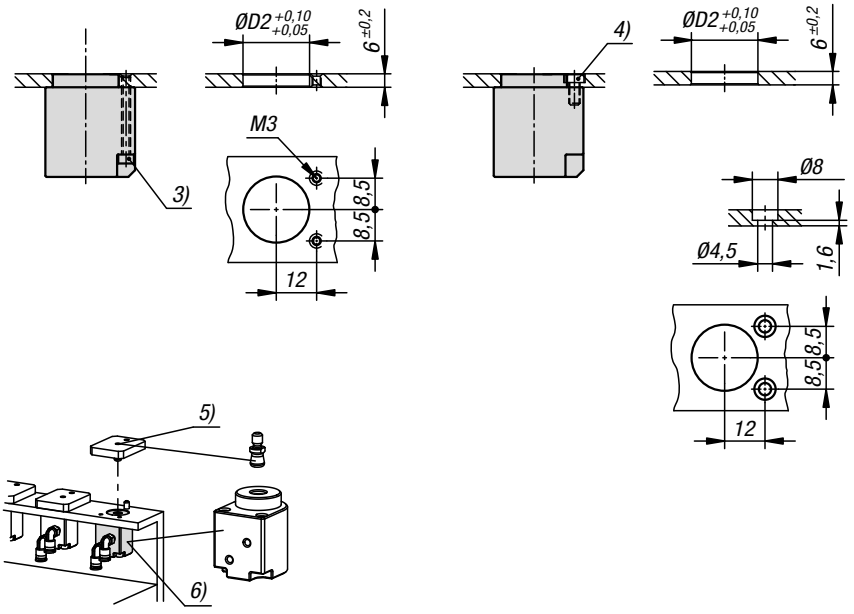
Order No.	D	D1	D2	D3	H	H1	H2	H3	SW	Operating pressure MPa	F N	Holding force N
K1740.0618	6	M18x1	21	M5	5,5	4	15	26,7	19	0,3 - 0,7	30	75

Locating adapters, flange, stainless steel

pneumatic



mounting instructions:



Clamped using compressed air. If the pressure fails, tension is retained by a spring.
A spring force of 6 N must be overcome to release the positioning adapters using compressed air.

Material:
Body, stainless steel.
Seal, NBR.

Version:
Stainless steel bright.

Sample order:
K1741.0618

Note for ordering:
M3x28 cap screws for fastening from below are supplied.
M4 cap screws for fasteing from above are not supplied.

Note:
Installed dimensions for plate thickness 6 mm.
The stated clamping and retaining forces are related to an operating pressure of 0.5 Mpa.
When using several positioning units, the distance tolerance of ±0.1 mm should not be exceeded.
Repeat accuracy ±0.2 mm.

Accessories:
Clamping pins K1564.

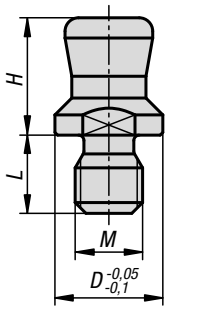
Drawing reference:
1) „Clamping“ connection
2) „Release“ connection
3) M3 cap screw
4) M4 cap screw
5) Clamping pin
6) Locating fixture

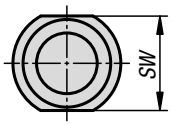
KIPP Locating adapters, flange, stainless steel, pneumatic

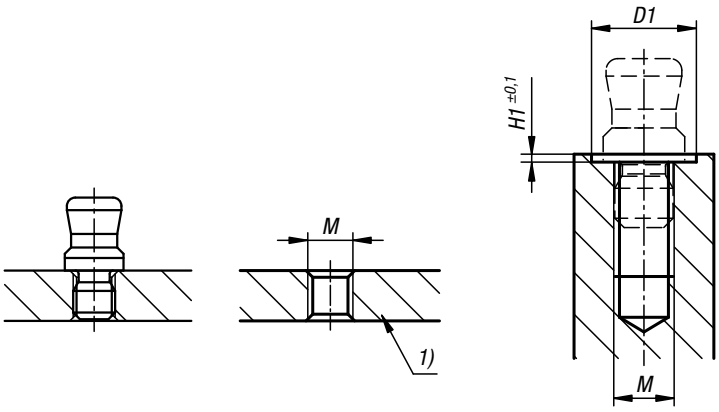
Order No.	B	B1	B2	B3	B4	D	D1	D2	D3	D4	D5	H	H1	H2
K1741.0618	23	17	4	4	6	6	M4	18	M3	M3	3,3	5,5	23	26,5

Order No.	H3	H4	H5	L	L1	L2	L3	Operating pressure MPa	F=clamping force N (Pneu. clamped)	F1=Retaining force N (spring-loaded)	Holding force N
K1741.0618	8	11	8	27,5	16	12	7	0,3 - 0,7	40	6	100

Clamping pins stainless steel







Material:
Stainless steel

Version:
Hardened.

Sample order:
K1564.16

Note:
Colour may differ from image due to curing process.

Method of operation:
Screw the clamping pin into the thread and tighten.
See assembly drawing.

Accessories:
Locating fixture round K1740.
Locating fixture flange K1741.

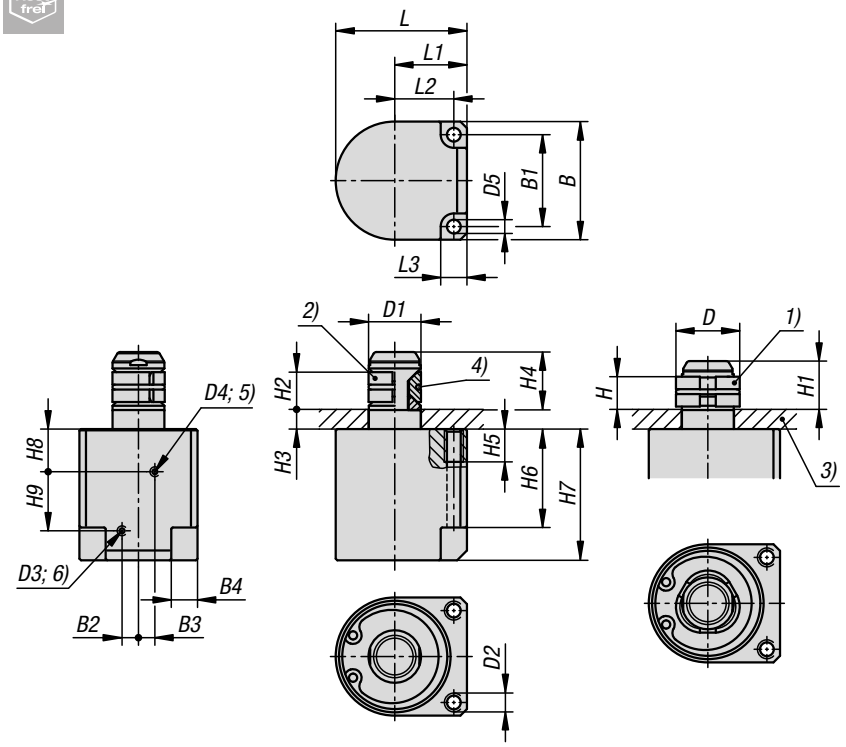
Drawing reference:
1) plate

KIPP Clamping pins stainless steel

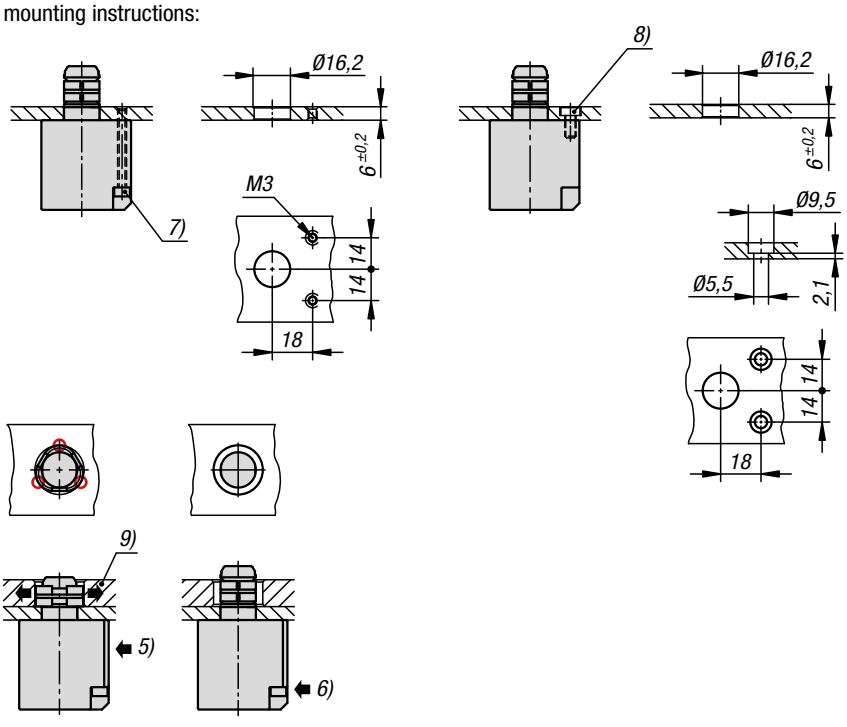
Order No.	D	D1	H	H1	L	M	SW
K1564.16	6	7	7,6	0,5	5,8	M04X0,7	5
K1564.18	8	9	8,7	0,5	5,8	M05X0,8	7

Centring clamps stainless steel

pneumatic



mounting instructions:



Workpieces are clamped and released by compressed air.
The possible clamping diameter is from 16 to 20 mm.

Material:
Body, stainless steel.
Seal, NBR.

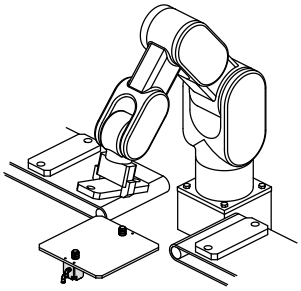
Version:
Stainless steel bright.

Sample order:
K1742.16

Note for ordering:
Cylinder head screws M4X35 for fastening from below are included with delivery.
Cylinder head screws with low head M5 for fastening from above are not included with delivery.

Note:
Installed dimensions for plate thickness 6 mm.
The stated retaining forces are related to an operating pressure of 0.5 Mpa and a surface quality of Ra 1.6 µm.
Repeat accuracy in this case is ±0.2 mm.

Drawing reference:
1) „Clamping“ position
2) „Release“ position
3) Mounting plate
4) O-ring
5) „Clamping“ connection
6) „Release“ connection
7) Cylinder head screw M4
8) Cylinder screw with low head M5
9) Workpiece



KIPP Centring clamps stainless steel, pneumatic

Order No.	B	B1	B2	B3	B4	D	D1	D2	D3	D4	D5	H	H1	H2
K1742.16	36	28	5	5	7,5	20	16	M5	M3	M3	4,2	10	14,7	11,3

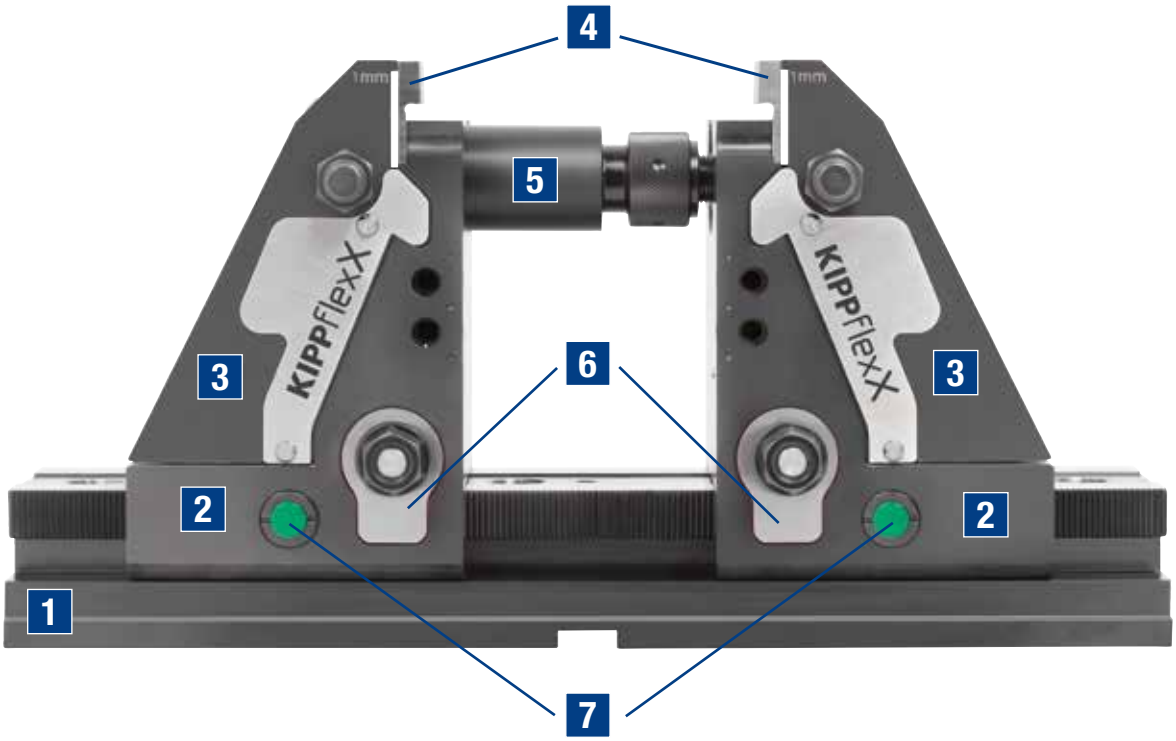
Order No.	H3	H4	H5	H6	H7	H8	H9	L	L1	L2	L3	Holding force N	Operating pressure MPa
K1742.16	6	17,5	10	30	40	13	18	40	22	18	8	77	0,3 - 0,7

KIPPflexX 5-axis vice
5-axis clamping system compact

KIPPflexX 5-axis vice

Function

The KIPPflexX 5-axis vice is the 3rd generation of vices for 5-axis milling machines.
The new generation, KIPPflexX, convinces by being much more user-friendly through the use of a crank handle and the proven clamping physics from the 5-axis vice compact series.
The KIPPflexX 5-axis vice can be used for clamping blanks or with positive-down effect. An enormous clamping force of 52 kN, optimum accessibility for short tools and very high rigidity are further advantages milling machine operators.



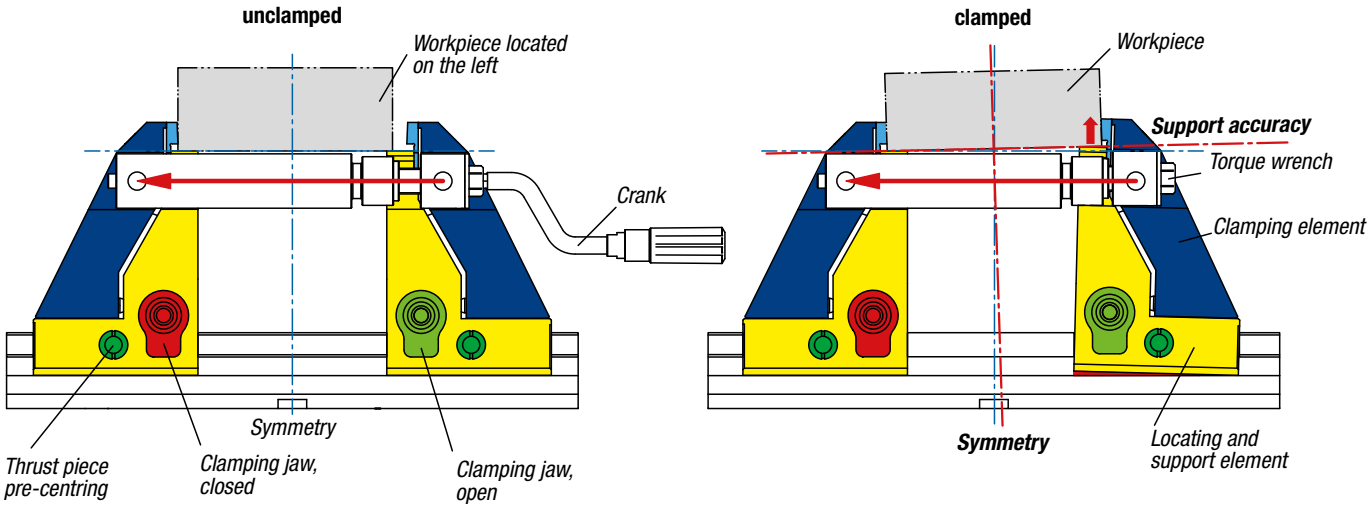
1 Base plate
2 Positioning elements
3 Vice jaws
4 Jaw plates
5 Extension shafts and threaded spindle
6 Clamping element with nut
7 Thrust pin for pre-centring

ADVANTAGES:

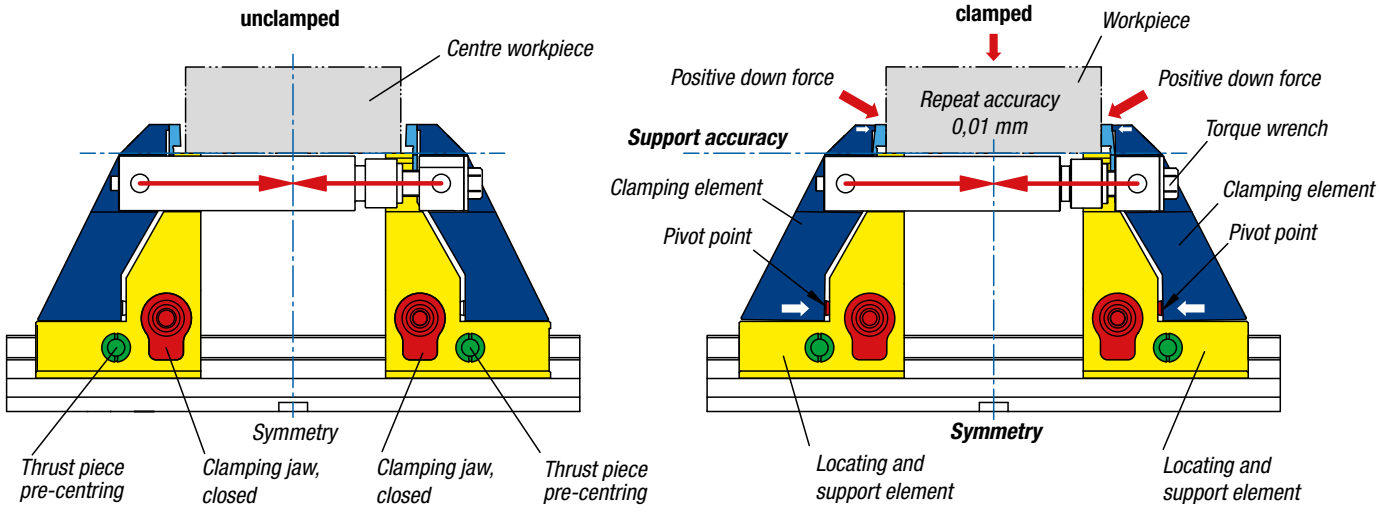
- Normal vice and centric vice 2 in 1
- Clamping with integrated positive- down effect
- Quick adjustment with the crank function
- Very high clamping force directly on the workpiece
- Highest rigidity in the system
- Best tool accessibility from all sides

Technical explanation of the difference between positive-down force clamping and normal clamping

Blank clamping / Vice principle



Downthrust clamping



Clamping jaw (red) open on one side

-> used as a standard vice

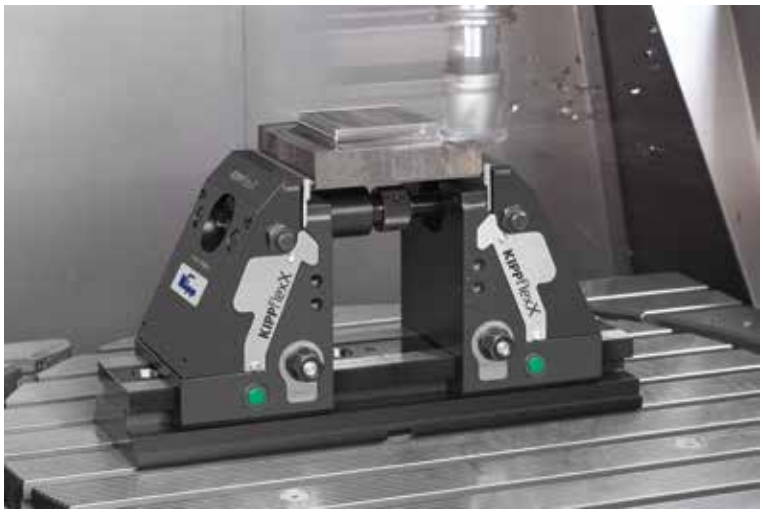
Clamping jaw closed on both sides

-> used as a centric vice with pull-down effect

Applications

5-axis vice KIPPflexX in use clamping a blank. The left red jaw is open. Quick adjustment is carried out using the crank handle.

Positive-down effect clamping with the KIPPflexX.
Both jaws are closed so that a sure positive down force takes place onto the workpiece rest.



5-side machining on a 5-axis milling machine.
Optimum tool accessibility for machining directly over the 5-axis vice KIPPflexX.

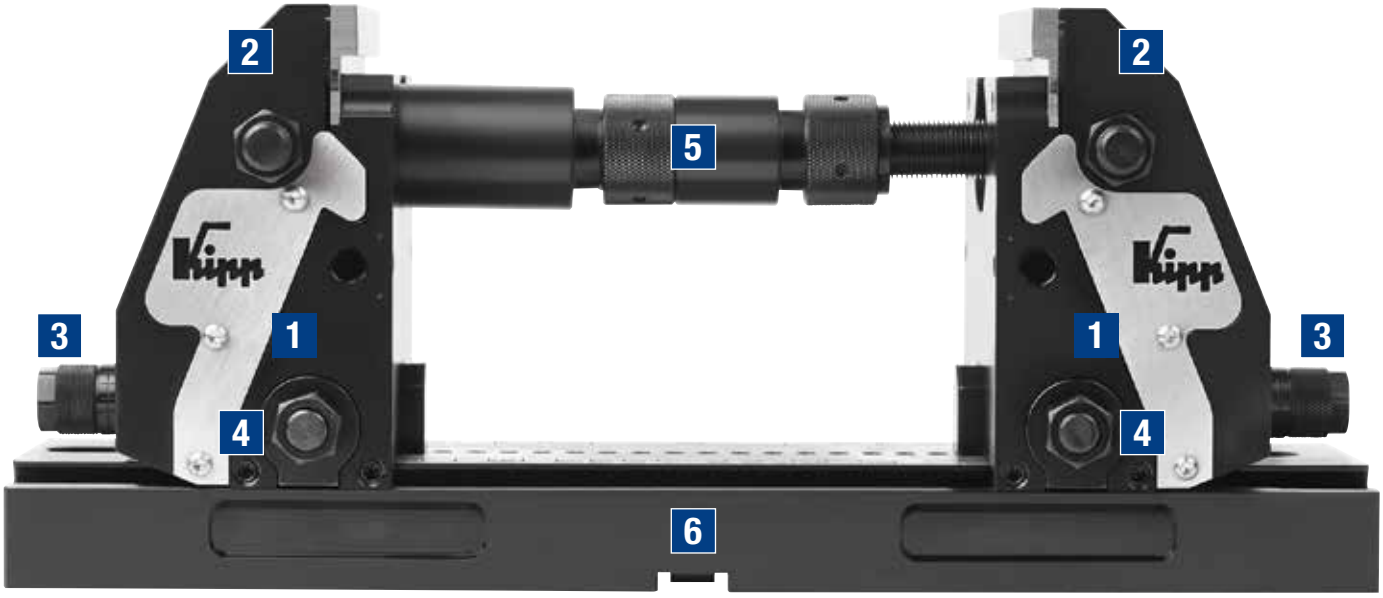
Applications

5-axis clamping system compact

Function

We are setting standards with the new „KIPP 5-axis clamping system compact“ in this field. The system was specifically designed for the optimal machining of complex workpieces on modern 5-axis machines.

The intelligent clamping technology increases clamping rigidity for the highest cutting and feed forces. The optimal accessibility to the workpiece allows short, standard tooling to be used. Tooling costs are significantly reduced.



1 Positioning unit with jaw plate
2 Vice jaws
3 Fine adjustment with knurled screw
4 Clamping screw
5 Extension shafts
6 Base plate

ADVANTAGES:

- Very high tractive force
- High stiffness in the system
- Pull-down function of the jaw plates on both sides
- Optimum fine adjustment of the jaw plates on the workpiece
- Increased tool service life
- The workpiece is always centred due to the systematic construction
- Large clamping width, 20 mm to 320 mm, freely extendable
- Clamping depth adjustable from 3 to 20 mm using seating ledges
- Best tool accessibility from all sides
- Easy to clean

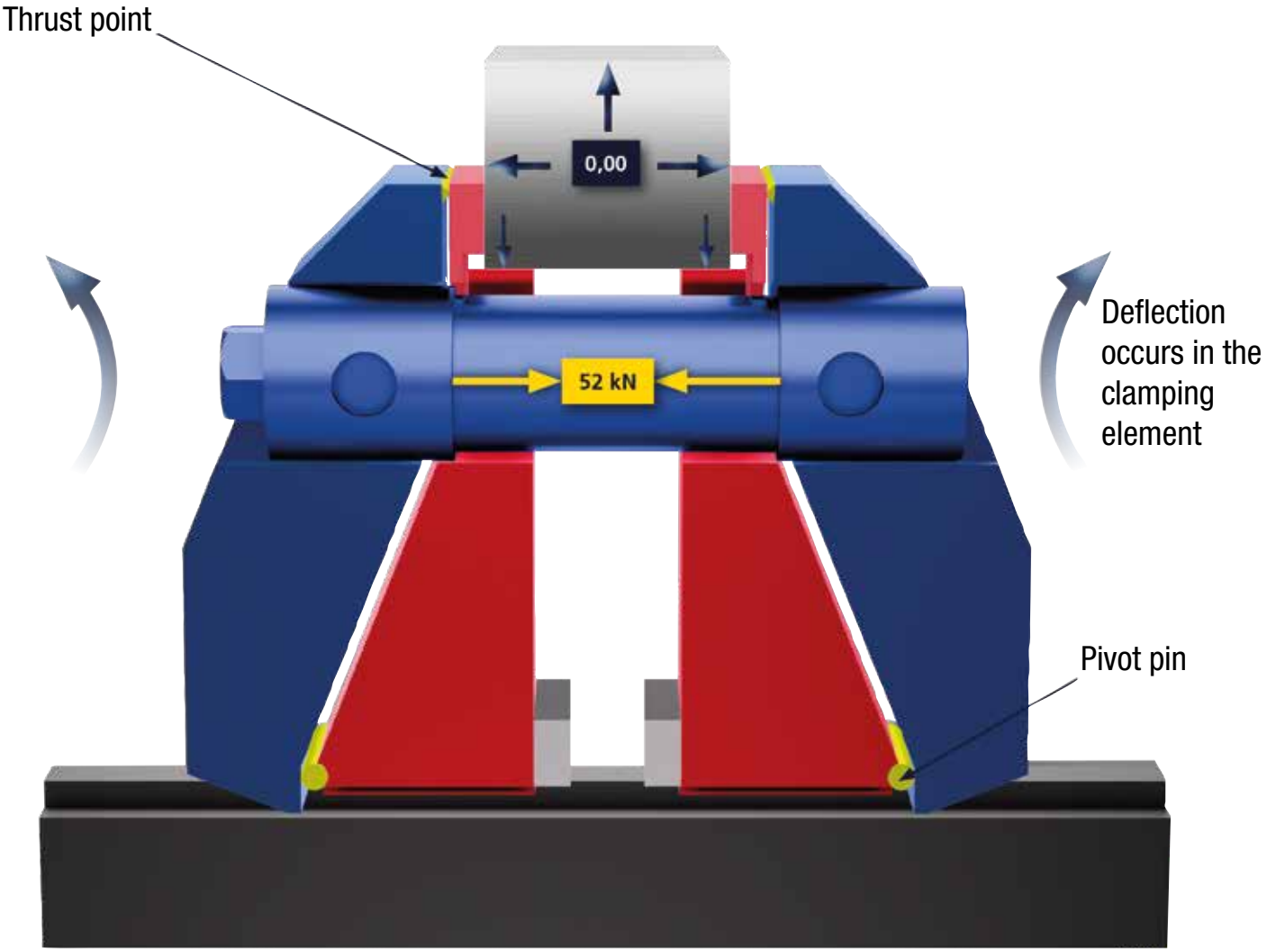
Forces

The new clamping technology ensures force flow separation and workpiece positioning. The intelligent force distribution in the system allows only weak forces to be transferred to the machine table.

NEW CLAMPING TECHNOLOGY

PATENT GRANTED

- Division of force flow and positioning
- Highest clamping force on the workpiece
- Maximum stiffness
- Centric tension

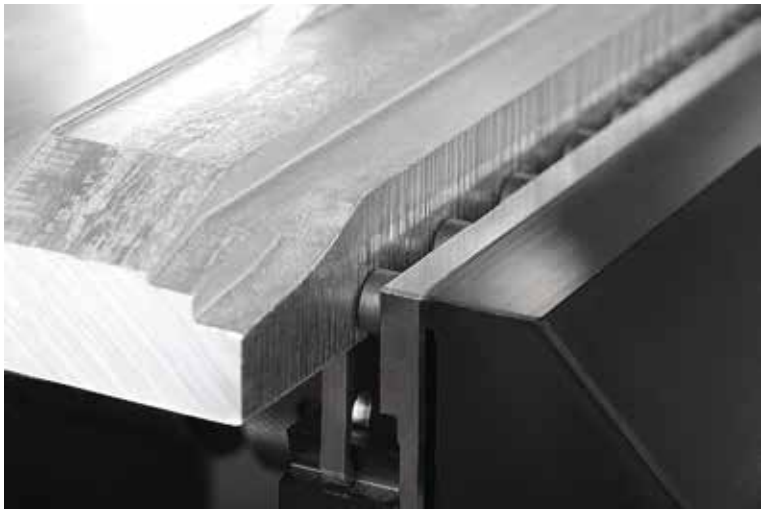


- Clamping elements
- Locators

Applications

5-axis clamping system compact incl. jaw with pins for clamping unmachined parts, and screw-on seating ledges. The clamping depth can be determined by machining the ledge.

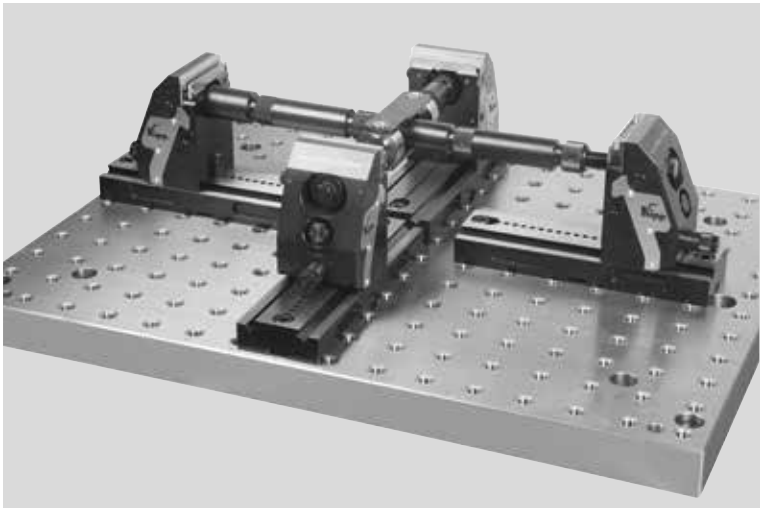
Clamped blank. Sure set-up through positive clamping pins.



Blank after clamping. Clamping pin imprint is visible on the edge of the workpiece.

Applications

With the coupling for cross-clamping, two 5-axis clamping systems can be compactly connected with each other offset by 90 degrees. Setups for workpieces with different dimensions of 4 sides are possible.



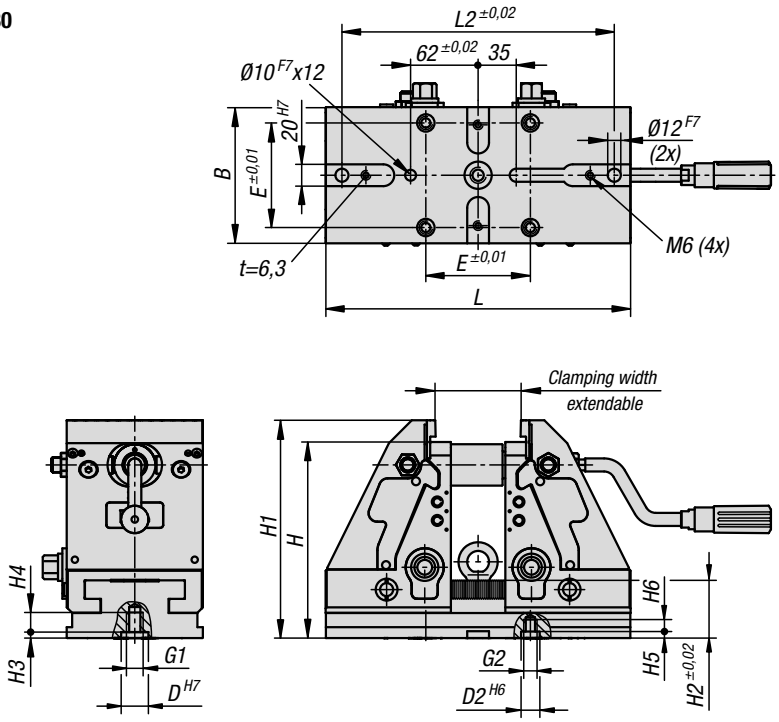
5-axis clamping system compact positioned directly on the machine table.
Use of pendulum jaws which also act as fixed jaws.
Workpiece clamping with smooth jaws.

Positioning directly on the KIPP zero-point clamping system with integrated clamping pins in the 5-axis vice compact baseplate.

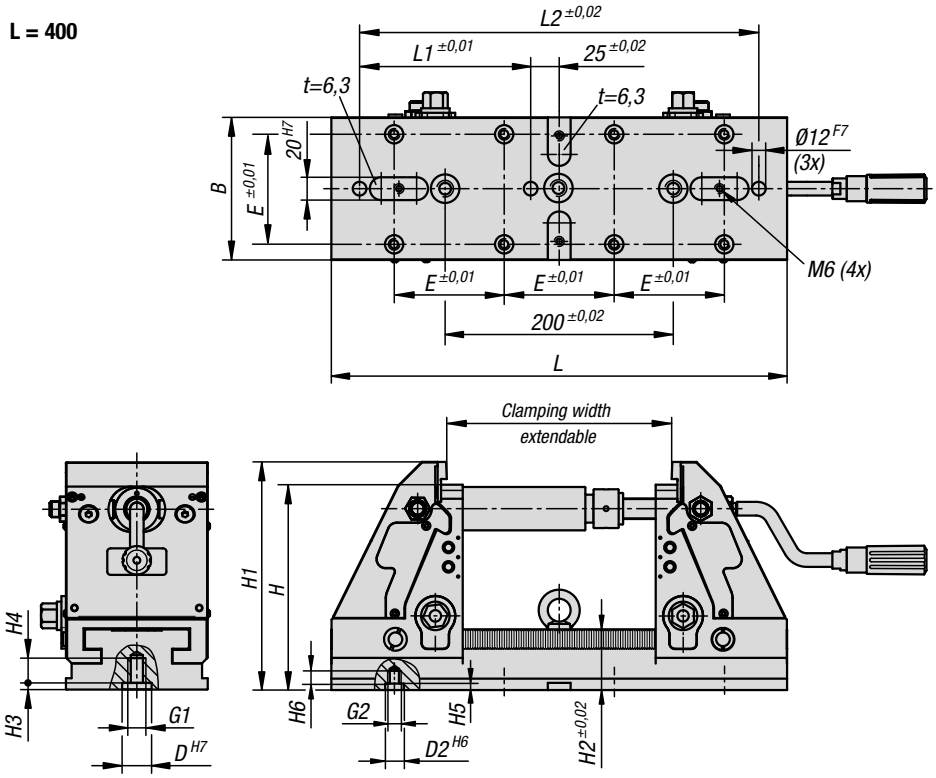
KIPPflexX 5-axis vice

jaw plates smooth

L = 280



L = 400



The KIPPflexX 5-axis vice features excellent stability and flexibility, and is extremely easy to use. The KIPPflexX 5-axis vice can be used as a positive-down force vice or normal vice. When the positive down force function is used, the workpiece can be held with a repeat accuracy of ±0.01 mm. A workpiece clamping height of 155/180 mm enables easy access during machining. The clamping width is preset using the crank handle, cutting down on setup times. Additionally, the closed geometries and the resistance to dirt that they provide keep maintenance and repair times to a minimum.

Material:
Steel.

Version:
Baseplate and workpiece support hardened.

Sample order:
K1555.124001251800

Note:
Additional product information can be found in the operating instructions.

Method of operation:
Quick adjustment using crank handle.

Advantages:
For use as centric-clamping device with positive down force function or vice.
Straightforward, infinite clamping width adjustment using crank handle.
Optimum clamping height for 5-axis machining.
Flexible options for connection to machine tables.

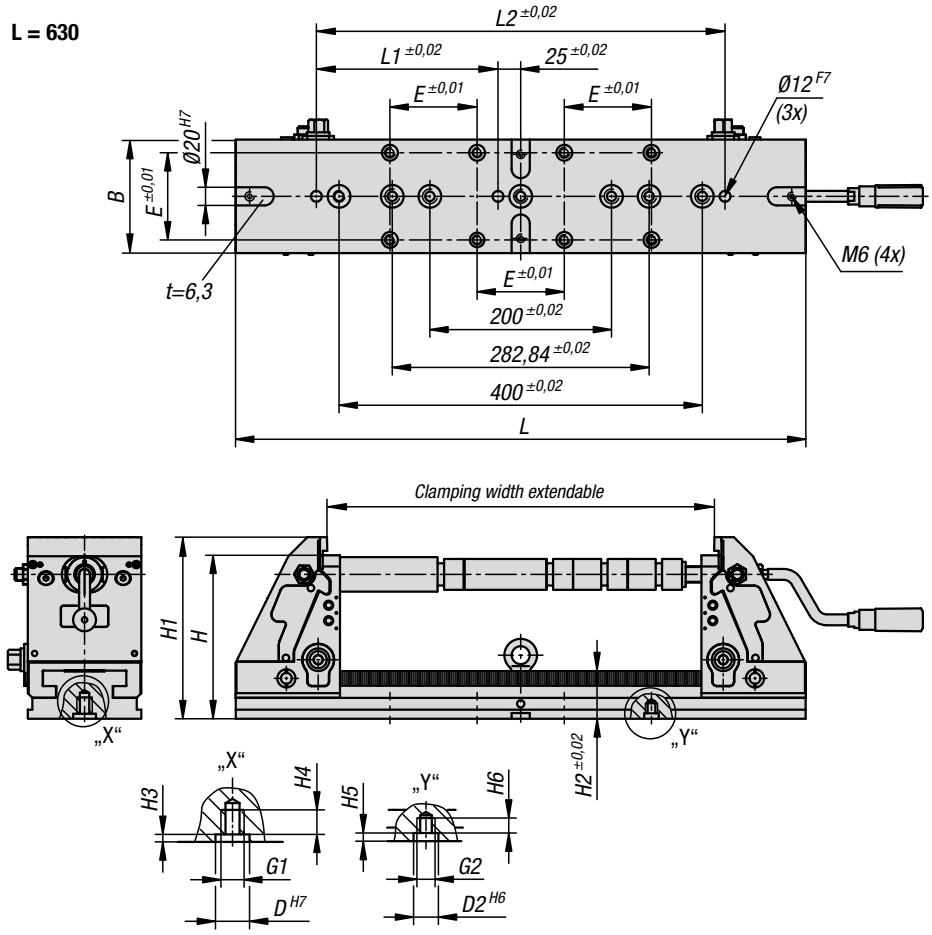
On request:
Various spare parts, larger clamping widths.

Supplied with:
Depending on the baseplate length, see operating instructions.

KIPPflexX 5-axis vice

jaw plates smooth

L = 630



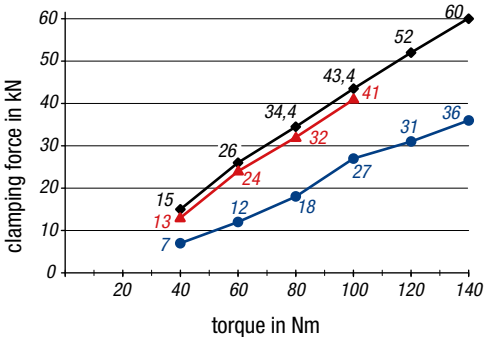
Accessories:
Baseplates K1556
Jaw plates with pins K1557
Combination jaw plates, smooth/with pins K1557
Jaw plates, machinable K0975
Seating ledges K0974
Extension shafts K0990
Cylinder clamping set K0989
Stop set K0993
Clamping pin K0967.140250516,
K0967.240250516
Clamping claw sets K1008
Slot nuts K0954.1814X20
Fitted bolts K0815.12065
Socket head screws K0869.12X60
Torque wrench K1489.01

Clamping force:
see diagram

Applications:
Suitable for T-slot and grid hole tables and zero-point clamping systems.
Size 282.84mm for diagonal alignment on zero-point clamping systems with gauge 52/96/200mm.

Tolerances:
With a clamping depth of > 5 mm, the repeat accuracy while the positive down force function is being used is ±0.01.

5-axis vice KIPPflexX clamping force diagram



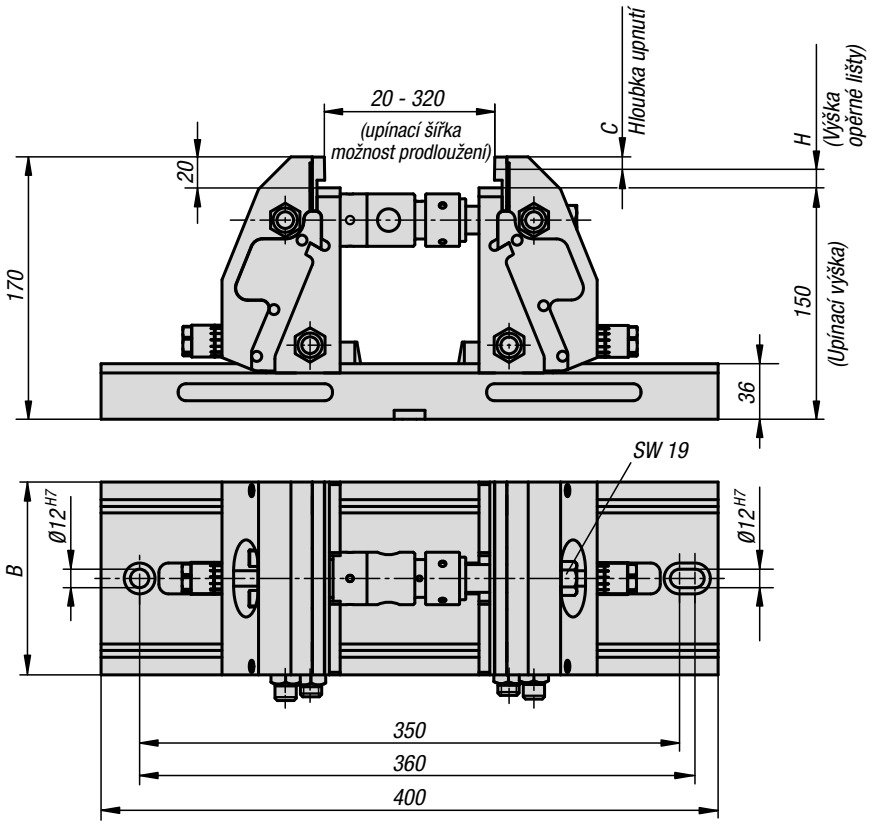
■ Spindle tractive force
▲ Normal vice / clamping blanks
● Positive-down effect clamping by 1 mm travel

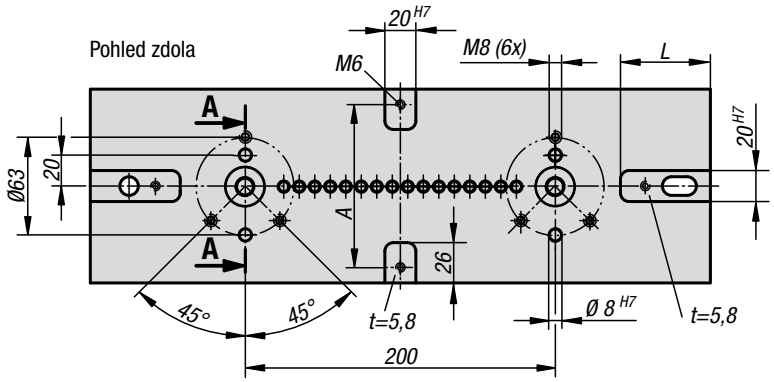
KIPP KIPPflexX 5-axis vice jaw plates smooth

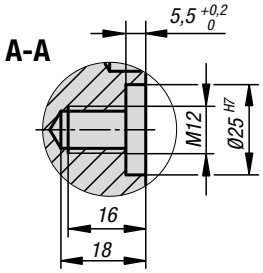
Order No.	B	L	H	L1	L2	H1	H2	H3	H4	H5	H6	D	D2	E	G1	G2	Clamping width extendable	Tractive force max. kN
K1555.122800901550	90	280	155	-	250	175	53	5,5	18	6	11	25H7	12H6	52	M12	M8	28-180	see diagram
K1555.124000901550	90	400	155	150	350	175	53	5,5	18	6	11	25H7	12H6	52	M12	M8	28-300	see diagram
K1555.122801251800	125	280	180	-	250	200	53	5,5	18	6	11	25H7	16H6	96	M12	M10	28-180	see diagram
K1555.124001251800	125	400	180	150	350	200	53	5,5	18	6	11	25H7	16H6	96	M12	M10	28-300	see diagram
K1555.126301251800	125	630	180	200	450	200	53	5,5	18	6	11	25H7	16H6	96	M12	M10	28-528	see diagram

5-axis clamping system compact

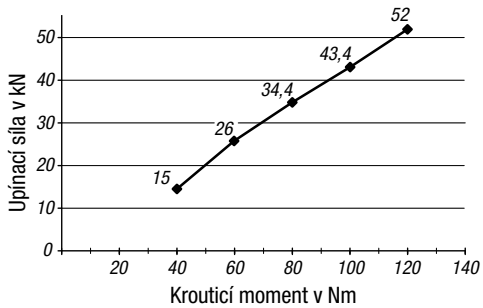
smooth vice jaws







Upínací síla 5osého kompaktního upínače



Material:
Base plate and jaw hardened steel.
Vice jaws tool steel.

Version:
Jaws black oxidised.
Jaw plates bright.

Sample order:
K0973.124000901500

Note:
The easy operability and rapid adjustment using a scale means that the clamping jaws can be quickly and surely adapted to new workpieces
The workpiece is always centred through the systematic construction of the 5-axis compact clamping system.
The optimal accessibility to the workpiece allows short, standard tooling to be used. Tooling costs are significantly reduced.

Positive down force by a clamping depth of >5 mm.
Clamping widths of 20 mm to 320 mm are possible.

Assembly:
The 5-axis clamping system compact can be mounted on T-slot tables, grid systems or, using an adapter flange on conventional zero-point clamping systems.

Supplied with:
Baseplate K0994
Clamping jaw K0976
Extension shaft K0990.060
Extension shaft K0990.120
Adapter shaft K0991.060
Adapter shaft K0991.120
Threaded spindle K0940.999.002
Spindle nut K0940.999.003

Accessories:
Seating ledges K0974
Jaw plates K0975
Pendulum jaws K0988
Centre jaws K0987
Coupling for cross-clamping K0992

Order the seating ledges and jaw plates with pins separately.

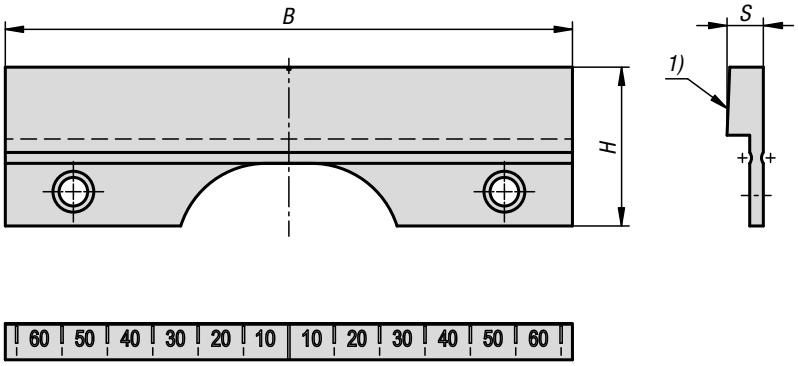
KIPP 5-axis clamping system compact, smooth vice jaws

Order No.	A	B	C	H	L	Tractive force max. kN	Suitable shoulder screw	weight kg
K0973.124000901500	70	90	8/3	12/17	57,5	see diagram	K0815.12055	21,96
K0973.124001251500	105	125	8/3	12/17	58	see diagram	K0815.12055	30,16

K1557

Jaw plates smooth

carbide-coated



The smooth jaw plates are used for pull-down clamping of pre-machined and ground workpiece surfaces.

Material:
Steel.

Version:
Hardened, bright.
Laser marked scale.
Clamping surface carbide coated.

Sample order:
K1557.1250

Note:
Additional product information can be found in the operating instructions.

Accessories:
Torx screws M6x10

Applications:
For pre-machined and ground workpiece surfaces.

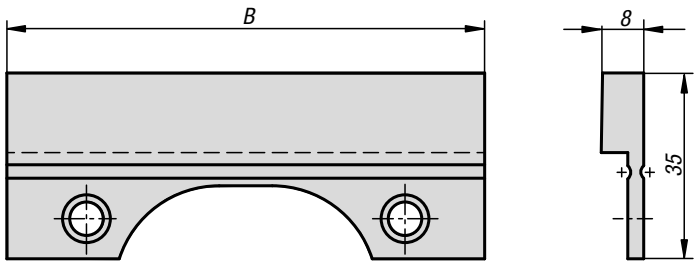
Drawing reference:
1) Clamping surface carbide coated

KIPP Jaw plates smooth, carbide-coated

Order No.	B	H	S
K1557.0900	90	35	8
K1557.1250	125	35	8,5

K0975

Jaw plates smooth



Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
K0975.0900

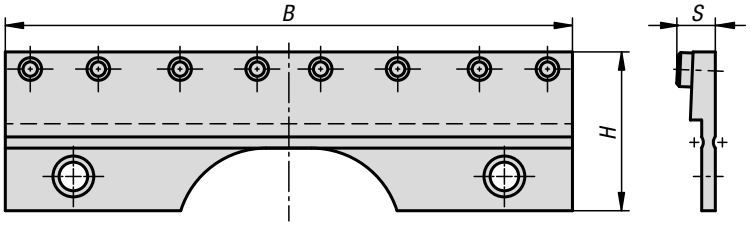
Note:
For clamping pre-machined workpieces and for final machining.

Supplied singly.

KIPP Jaw plates smooth

Order No.	B
K0975.0900	90
K0975.1250	125

Jaw plates with pins



The jaw plates with pins are used for positive clamping without pre-forming; e.g. on blanks, castings and for roughing out.

Material:
Steel.

Version:
Hardened, bright jaw plates.
Hardened, black-oxidised jaw pins.
Laser marked scale.

Sample order:
K1557.1251

Note:
Additional product information can be found in the operating instructions.

Accessories:
Torx screws M6x10

Applications:
Positive clamping without pre-forming.

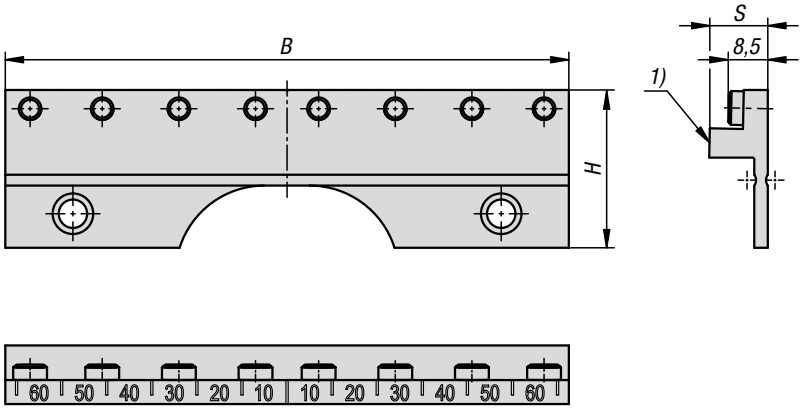
KIPP Jaw plates with pins

Order No.	B	H	S	No. of pins
K1557.0901	90	35	8,5	6
K1557.1251	125	35	8,5	8

Application example

Combination jaw plates

smooth and with pins



The combination jaw plates are used for positive clamping without pre-machining, e.g. for blanks, heavy duty cutting, castings etc. and for pull-down clamping of pre-machined and ground workpiece surfaces.

Material:
Steel.

Version:
Jaw plates hardened, bright.
Jaw pins hardened, black oxidised.
Clamping surface carbide coated.
Laser marked scale.

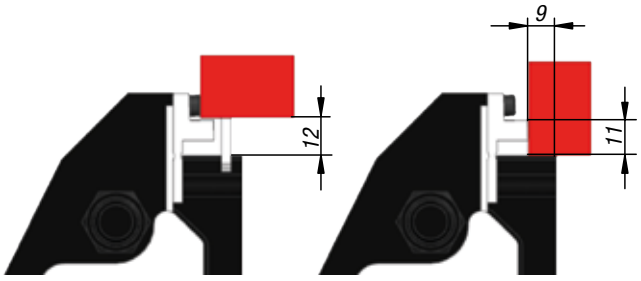
Sample order:
K1557.1252

Note:
When using the combi smooth / with pins jaw plates for clamping, the workpiece must be placed on a seating ledge with a height of 12 mm near to the clamping pins.

Accessories:
Torx screws M6x10

Applications:
Positive clamping without pre-machining.
Pre-machined and ground workpiece surfaces.

Drawing reference:
1) Clamping surface carbide coated

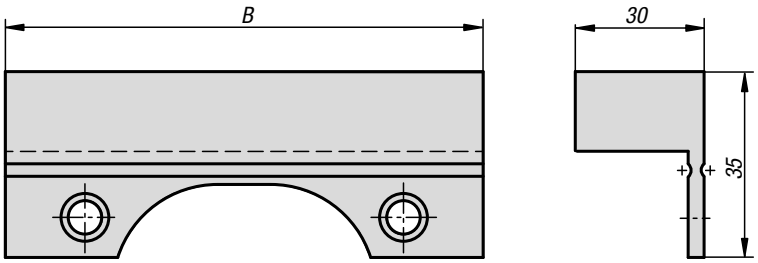


KIPP Combination jaw plates, smooth and with pins

Order No.	B	H	S	No. of pins
K1557.0902	90	35	13	6
K1557.1252	125	35	13	8

Jaw plates

machinable



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0975.0902

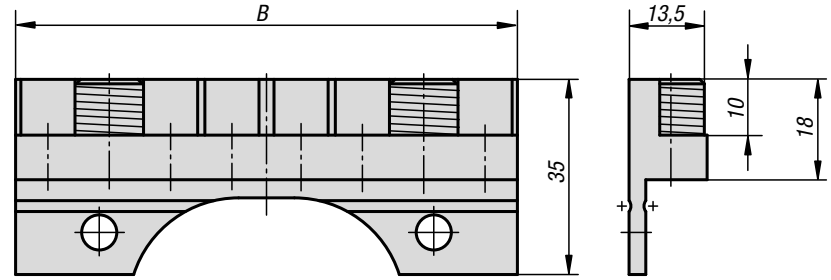
Note for ordering:
Supplied singly.

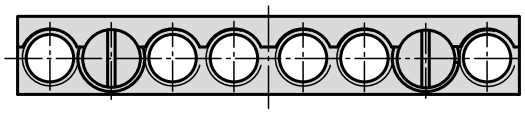
Note:
Machinable jaw plates are ideal for gripping on workpiece contours and machining in steps.

KIPP Jaw plates, machinable

Order No.	B
K0975.0902	90
K0975.1252	125

Cylinder clamping sets





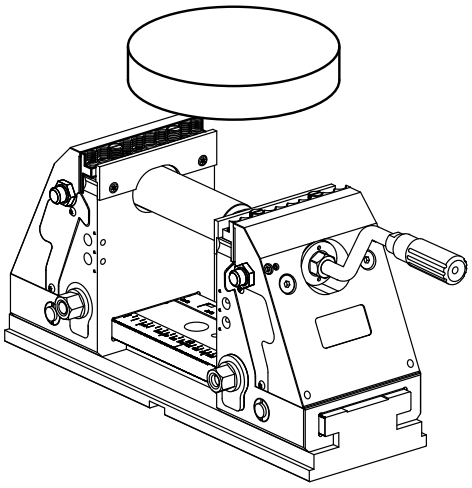
Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Sample order:
K0989.09035

Note:
For holding round workpieces.
Max. clamping travel of jaw is 1 mm.

Supplied in pairs.

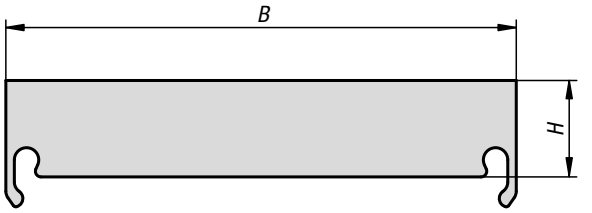


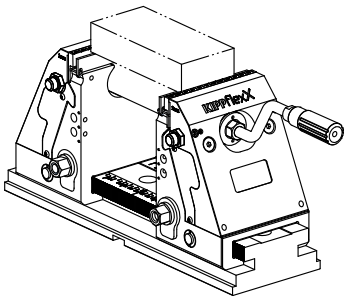
KIPP Cylinder clamping sets

Order No.	B	Clamping range min. - max.
K0989.09035	90	20 mm - 250 mm
K0989.12535	125	20 mm - 320 mm

Seating ledges

to clip on





Material:
Hardened steel

Version:
Bright.

Sample order:
K0974.0900312

Note:
The seating ledges are suitable for adjusting the clamping depth of the workpiece on the compact 5-axis clamping system/ KIPPflexX.
The 12 mm version does not interfere with the positive-down effect.
By the 17 mm version, the positive-down force is reduced but causes less edge deformation.

Supplied in pairs.

Accessories:
for K0973, K1555

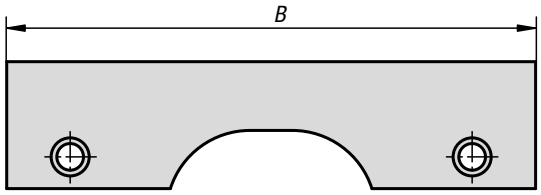
KIPP Seating ledges to clip on

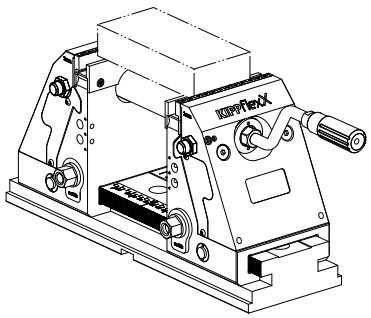
Order No.	B	H
K0974.0900312	90	12
K0974.0900317	90	17
K0974.1250312	125	12
K0974.1250317	125	17

K0974

Seating ledges

screw-on





Material:
Steel.

Version:
Bright.

Sample order:
K0974.0900515

Note:
Screw-on seating ledges are used to set the seating height of the workpiece. The desired seating height is achieved by milling over the screwed on ledges. A very high accuracy of the height to the machine table can be achieved.

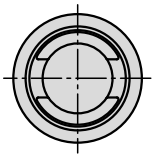
Supplied in pairs.

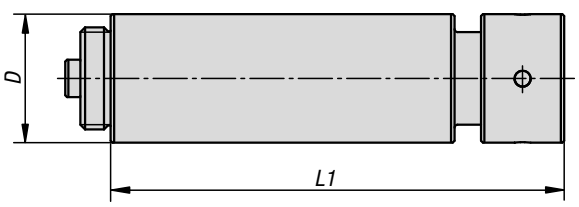
Accessories:
for K0973, K1555

KIPP Seating ledges, screw-on

Order No.	B	H
K0974.0900515	90	15
K0974.1250515	125	15

Extension shafts





Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0990.060

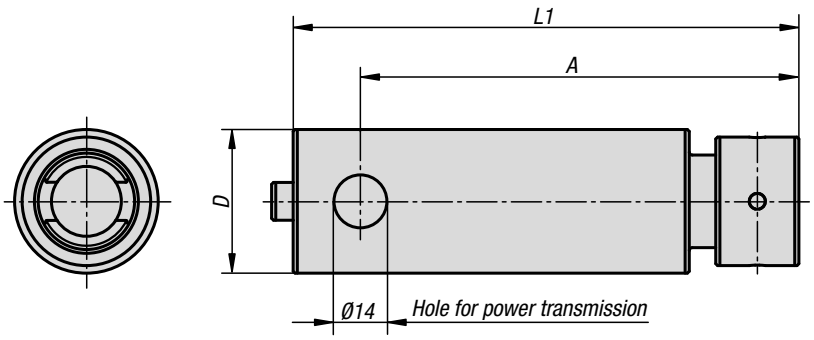
Note:
For setting the clamping width.
Supplied with union nut.
The extension shafts can be combined as required.

KIPP Extension shafts

Order No.	D	L1	Clamp range
K0990.060	34	60	extension by 60 mm
K0990.120	34	120	extension by 120 mm
K0990.240	34	240	extension by 240 mm
K0990.480	34	480	extension by 480 mm

Notes

Adapter shafts

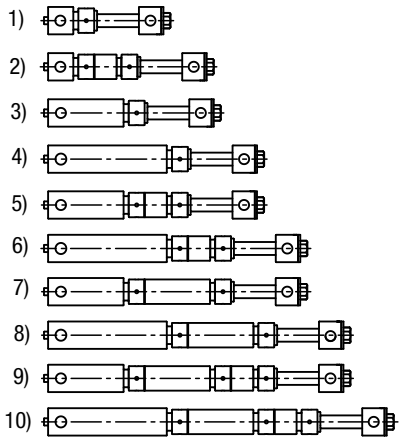


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0991.060

Note:
For setting the clamping width.
Supplied with union nut.
The adapter shafts are linked to the vice jaws by the lateral holes.
An adapter shaft must be mounted in every compact 5-axis clamp/KIPPflexX.



Drawing reference:
1) Clamping width 20-72 mm
- Adapter shaft 60 mm + threaded spindle

2) Clamping width 72-135 mm
- Adapter shaft 60 mm + expansion rod 60 mm + threaded spindle

3) Clamping width 80-140 mm
- Adapter shaft 120 mm + threaded spindle

4) Clamping width 140-200 mm
- Adapter shaft 180 mm + threaded spindle

5) Clamping width 140-200 mm
- Adapter shaft 120 mm + extension shaft 60 mm + threaded spindle

6) Clamping width 200-260 mm
- Adapter shaft 180 mm + extension shaft 60 mm + threaded spindle

7) Clamping width 200-260 mm
- Adapter shaft 120 mm + extension shaft 120 mm + threaded spindle

8) Clamping width 260-320 mm
- Adapter shaft 180 mm + extension shaft 120 mm + threaded spindle

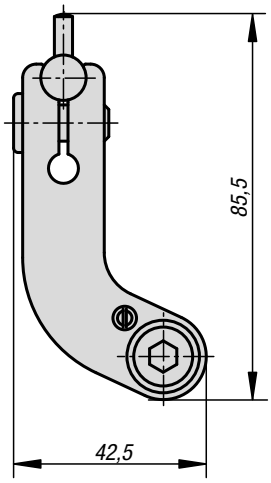
9) Clamping width 260-320 mm
- Adapter shaft 120 mm + extension shaft 120 mm + extension shaft 60 mm + threaded spindle

10) Clamping width 320-380 mm
- Adapter shaft 180 mm + extension shaft 120 mm + extension shaft 60 mm + threaded spindle

KIPP Adapter shafts

Order No.	A	D	L1	Clamp range
K0991.060	56	38	74	20-80
K0991.120	116	38	134	80-140
K0991.180	176	38	194	140-200

Stop sets



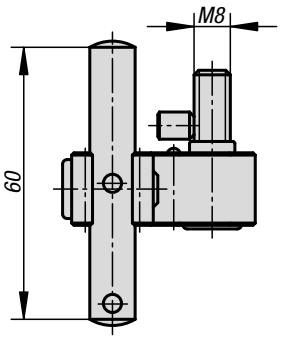
Material:
Steel.

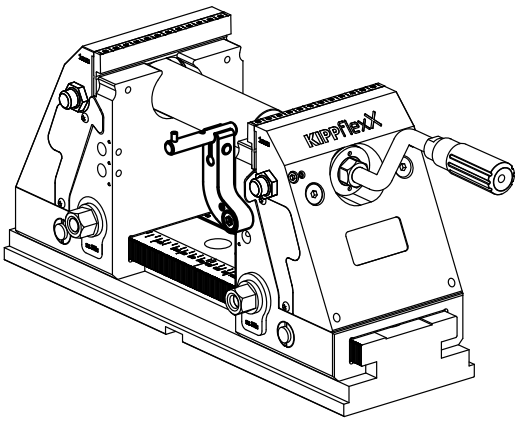
Version:
Swivel arm, black oxidised.
Stop pin bright.

Sample order:
K0993.150

Note:
Stop set for direct fastening to jaws.The stop can be swivelled aside for machining the workpiece without losing the stop dimension.

Supplied complete with attachment parts.



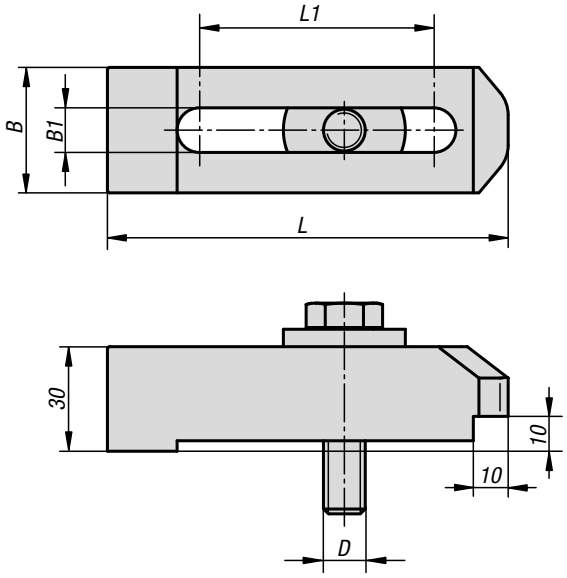


KIPP Stop sets

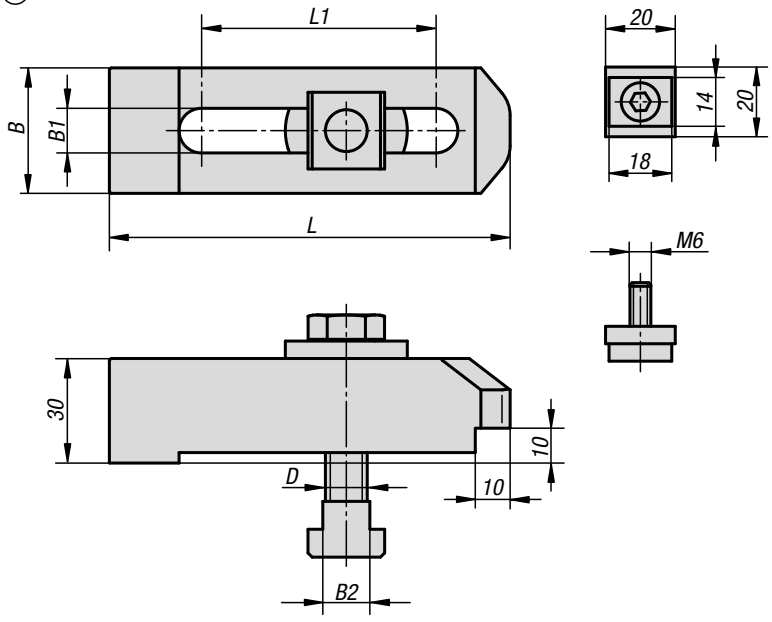
Order No.	Suitable for
K0993.150	5-axis vice compact and KIPPflexX

Clamping claw sets

Ⓐ



Ⓑ



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K1008.0012

Supplied with:
Form A
K1008.0012
4x M12 claw clamps
4x M12x55 hex head screws grade 12.9
4x M12 washers for clamps

K1008.0016
4x M16 claw clamps
4x M16x60 hex head screws grade 12.9
4x M16 washers for clamps

Form B
K1008.1412
4x M12 claw clamps
4x M12x55 hex head screws grade 12.9
4x M12 washers for clamps
4x T-slot nuts for 14mm slots
2x Slot keys
2x M6x12 cap screws

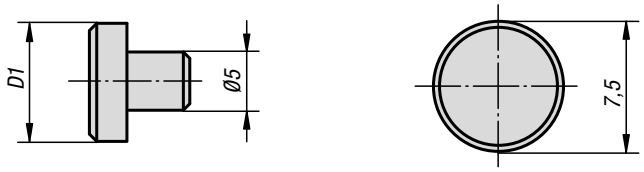
K1008.1816
4x M16 claw clamps
4x M16x60 hex head screws grade 12.9
4x M16 washers for clamps
4x T-slot nuts for 18mm slots
2x Slot keys
2x M6x12 cap screws

KIPP Clamping claw sets

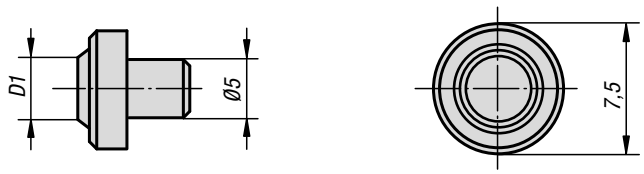
Order No.	Form	Form-Type	B	B1	B2	D	L	L1
K1008.0012	A	without slot key	40	12,8	-	M12	115	67,2
K1008.0016	A	without slot key	40	16,8	-	M16	115	67,2
K1008.1412	B	with t-slot key	40	12,8	13,5	M12	115	67,2
K1008.1816	B	with t-slot key	40	16,8	17,5	M16	115	67,2

Jaw pins

flattened



cup point



Material:
Tool steel.

Version:
Hardened.

Sample order:
K0946.05600

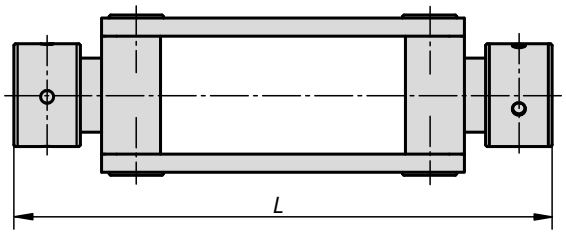
Note:
Suitable for standard jaw plates and jaw adapters of round workpieces.
Installed by pressing in.

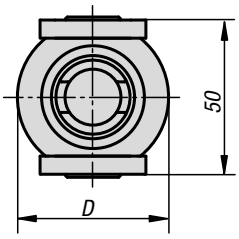
KIPP Jaw pins

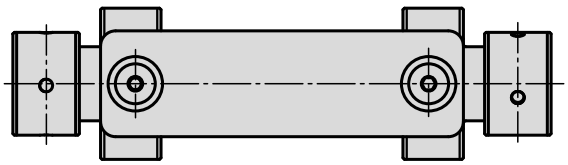
Order No.	Version 1	D1	Application
K0946.05000	flattened	7,5	material over 1000 N/mm² tensile strength
K0946.05400	cup point	4	material up to ca. 1000 N/mm² tensile strength
K0946.05600	cup point	6	material up to ca. 1000 N/mm² tensile strength

Couplings

for cross-clamping







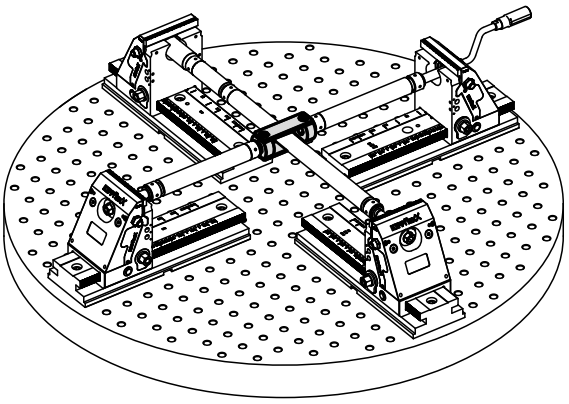
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0992.178

Note:
With the coupling for cross-clamping, two 5-axis clamping systems compact / KIPPflexX can be connected with each other.
This enables workpieces to be clamped from four sides.
To enable the coupling for cross-clamping to be precisely centred on the transverse spindle, a threaded spindle and a spindle nut is required for each end.
These items must be ordered separately as accessories under the following numbers:
Threaded spindle K1555.999.008
Spindle nut K0940.999.003

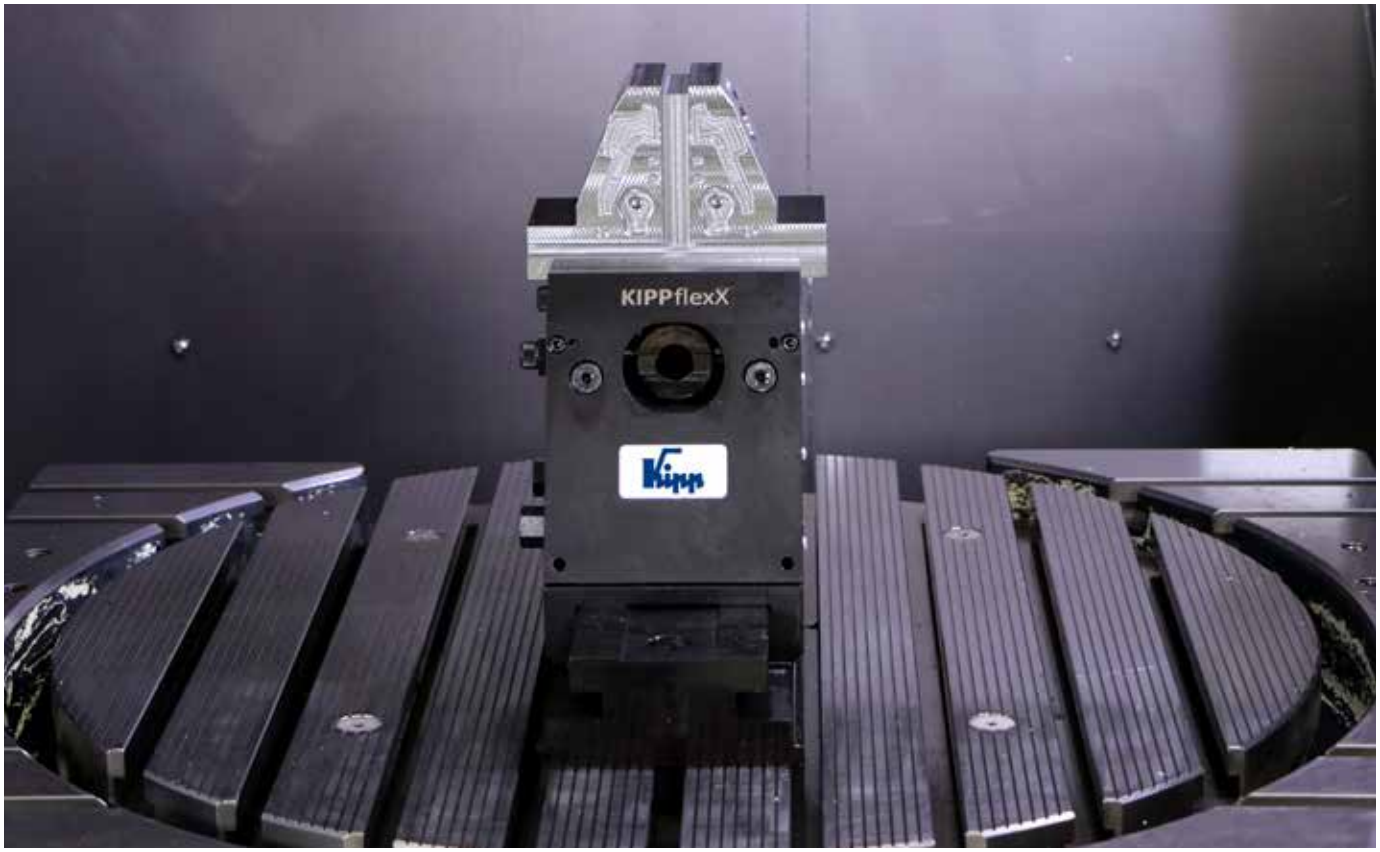
Attention:
Due to the design of the coupling, the maximum clamping depth for cross clamping is 12mm.

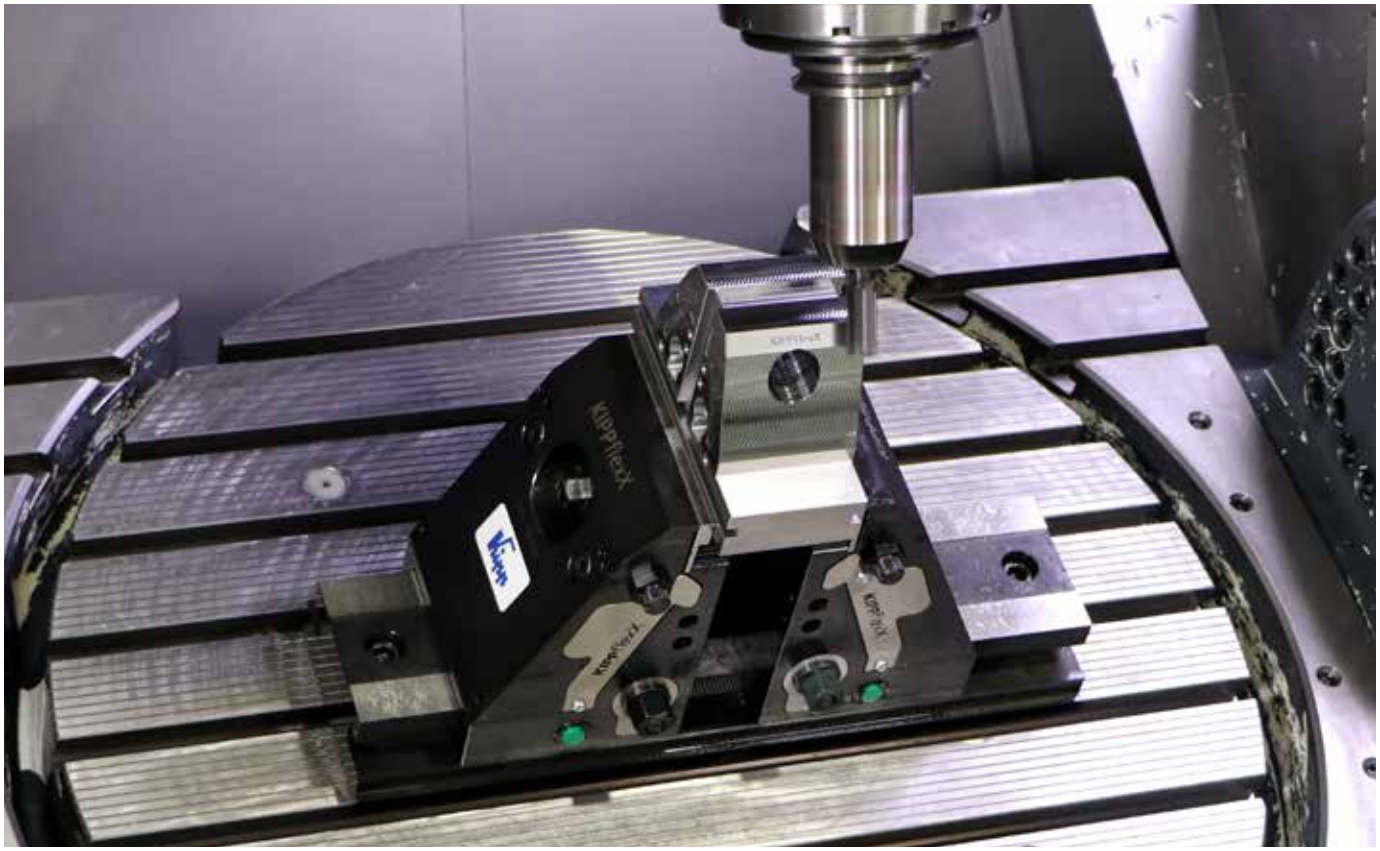


KIPP Couplings for cross-clamping

Order No.	D	L
K0992.178	50	178

Applications

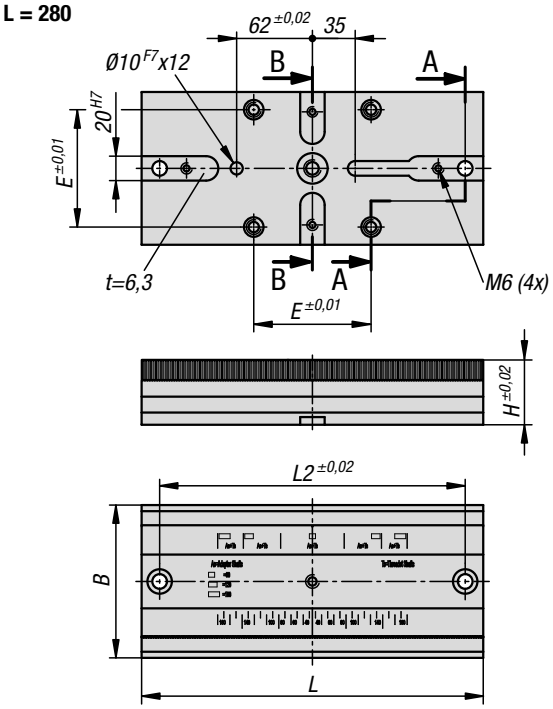


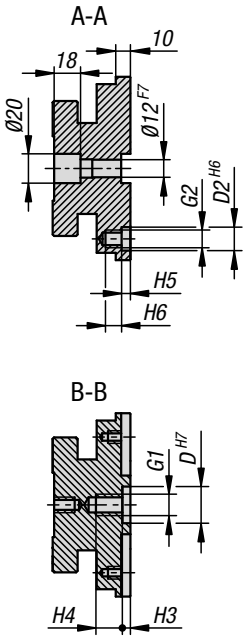


Baseplates

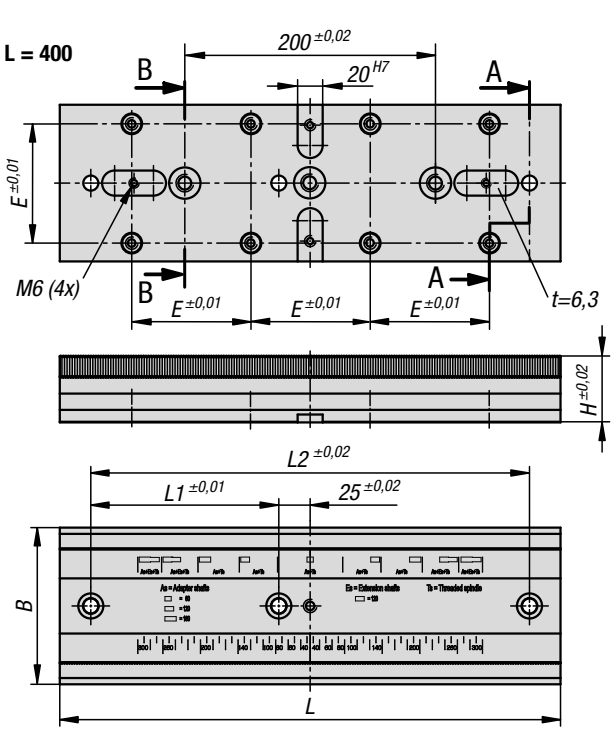
KIPPflexX 5-axis vice

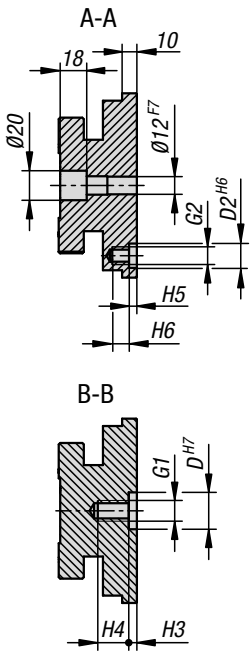
L = 280





L = 400





The baseplates offer versatile connection options. The locating slots on the underside can be used to perform alignment directly on the machine table using slot keys. Fastening in 12F7 grid holes with grid spacing of 50 mm is also possible. Claw clamps or separate clamping devices can be located on the side recess. The baseplate is also suitable for all standard zero-point clamping systems with a centre distance of 52/96/200 mm.
The integrated central hole can also be used for alignment. In this case, a specific centre pin is used to perform central alignment on the machine table.

Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K1556.125400

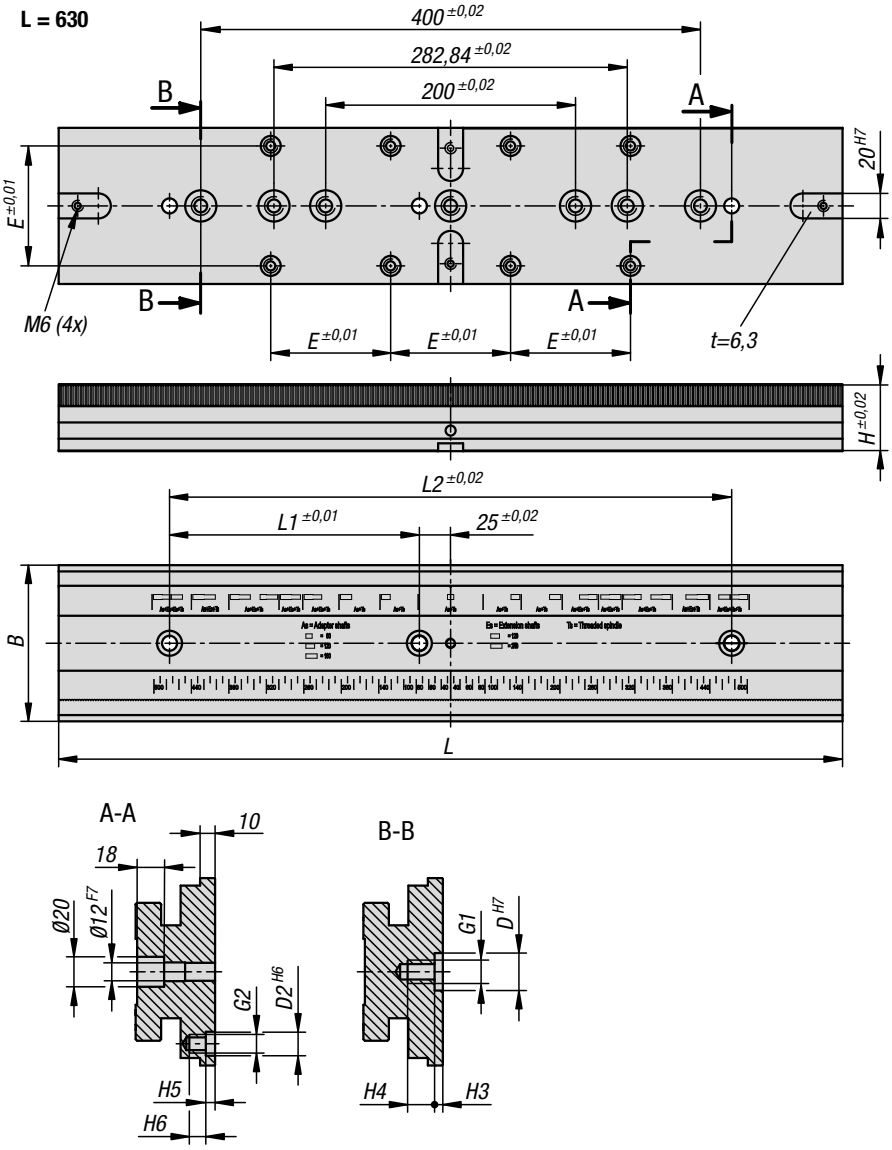
Note:
Additional product information can be found in the operating instructions.

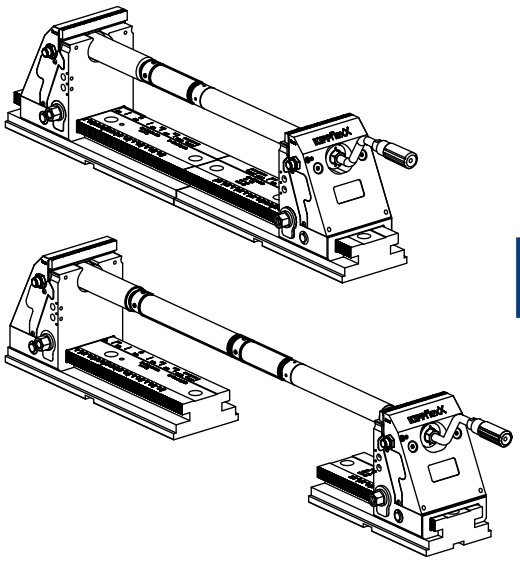
On request:
other dimensions.

Applications:
Suitable for T-slot tables, basic elements with grid holes and zero-point clamping systems.

Baseplates

KIPPflexX 5-axis vice



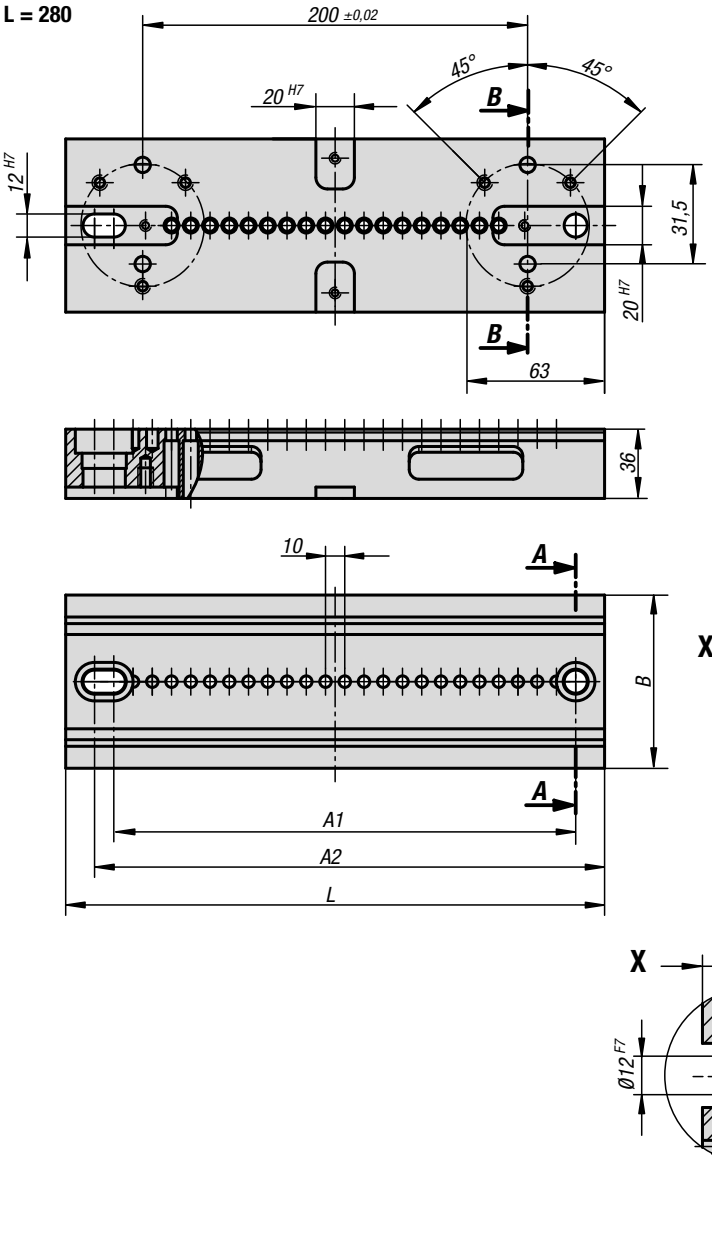


KIPP Baseplates, KIPPflexX 5-axis vice

Order No.	B	H	L	L1	L2	H3	H4	H5	H6	D	D2	E	G1	G2
K1556.090280	90	53	280	-	250	5,5	18	6	11	25H7	12H6	52	M12	M8
K1556.090400	90	53	400	150	350	5,5	18	6	11	25H7	12H6	52	M12	M8
K1556.125280	125	53	280	-	250	5,5	18	6	11	25H7	16H6	96	M12	M10
K1556.125400	125	53	400	150	350	5,5	18	6	11	25H7	16H6	96	M12	M10
K1556.125630	125	53	630	200	450	5,5	18	6	11	25H7	16H6	96	M12	M10

Base plates

5-axis clamping system compact



Material:
Steel.

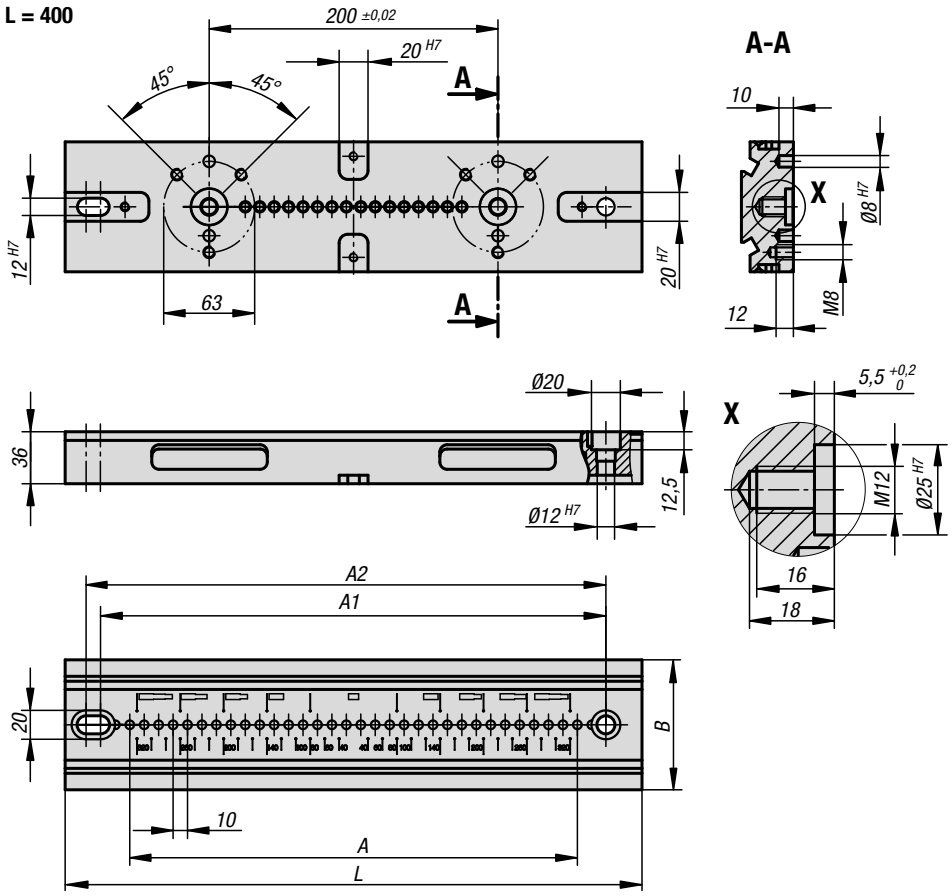
Version:
Black oxidised.
Function faces ground.

Sample order:
K0994.090280

Note:
Base plates with locating slots on the underside for easy alignment of the plate on the machine table.
Securing via grid holes 12F7 for 40 mm and 50 mm grid spacing possible.
Lateral recesses provided for separate clamping means.

Base plates

5-axis clamping system compact

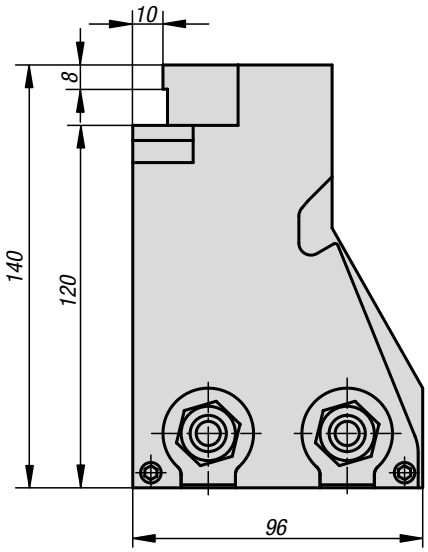


KIPP Base plates, 5-axis clamping system compact

Order No.	A	A1	A2	B	L	Suitable shoulder screw	weight kg
K0994.090280	20x10	240	250	90	280	K0815.12055	6,14
K0994.090400	31x10	350	360	90	400	K0815.12055	8,58
K0994.125280	20x10	240	250	125	280	K0815.12055	8,86
K0994.125400	31x10	350	360	125	400	K0815.12055	12,24

Pendulum jaws

5-axis-clamping-system compact

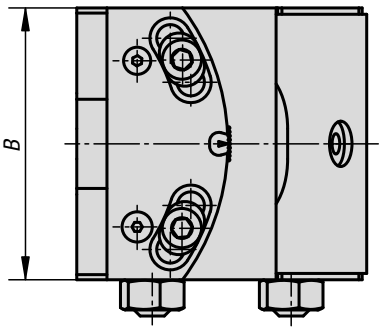


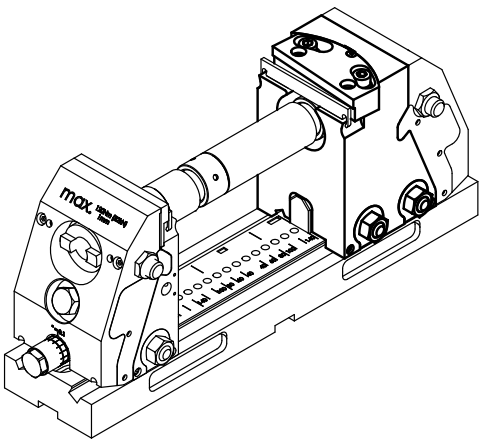
Material:
Body mild steel.
Jaw plates tool steel.

Version:
Body black oxidised.
Vice jaws hardened, bright.

Sample order:
K0988.09015010

Note:
Pendulum jaws are used to hold oblique workpieces.
The jaw plates of the pendulum jaws can be swivelled by ±4°.
Pendulum jaws can also be used as fixed jaws.
Rigid design with 2 fastening screws.



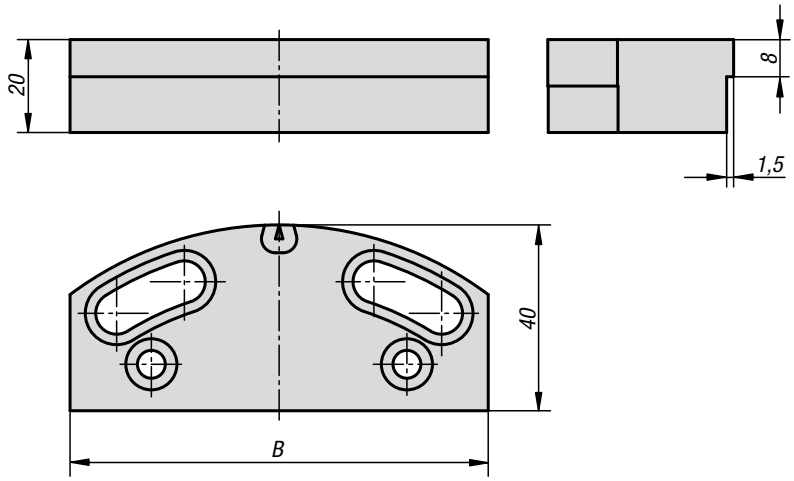


KIPP Pendulum jaws, 5-axis-clamping-system compact

Order No.	B	weight kg
K0988.09015010	90	6
K0988.12515010	125	8,77

Jaw plates smooth for pendulum jaw

5-axis clamping system compact



Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
K1001.0900

Note:
For clamping pre-machined and ground workpieces.

Supplied singly.

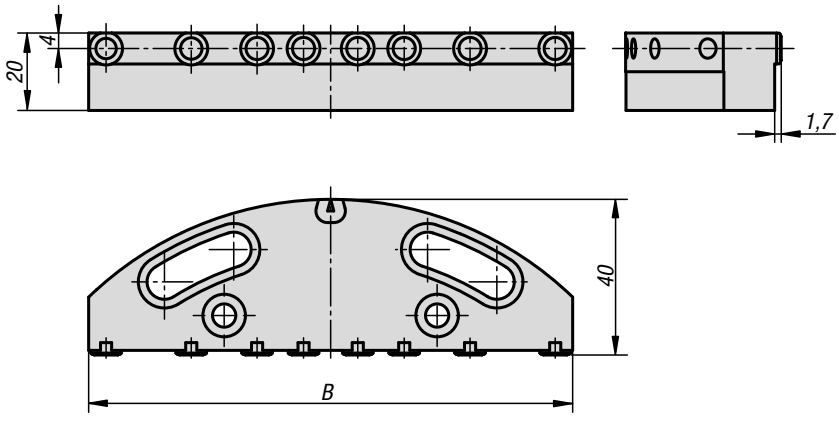
KIPP Jaw plates smooth for pendulum jaw, 5-axis clamping system compact

Order No.	B
K1001.1250	125
K1001.0900	90

K1001

Jaw plates with pins for pendulum jaw

5-axis clamping system compact



Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Sample order:
K1001.0901

Note:
For positive clamping without preforming, e.g. rough pieces, heavy cutting, castings etc.

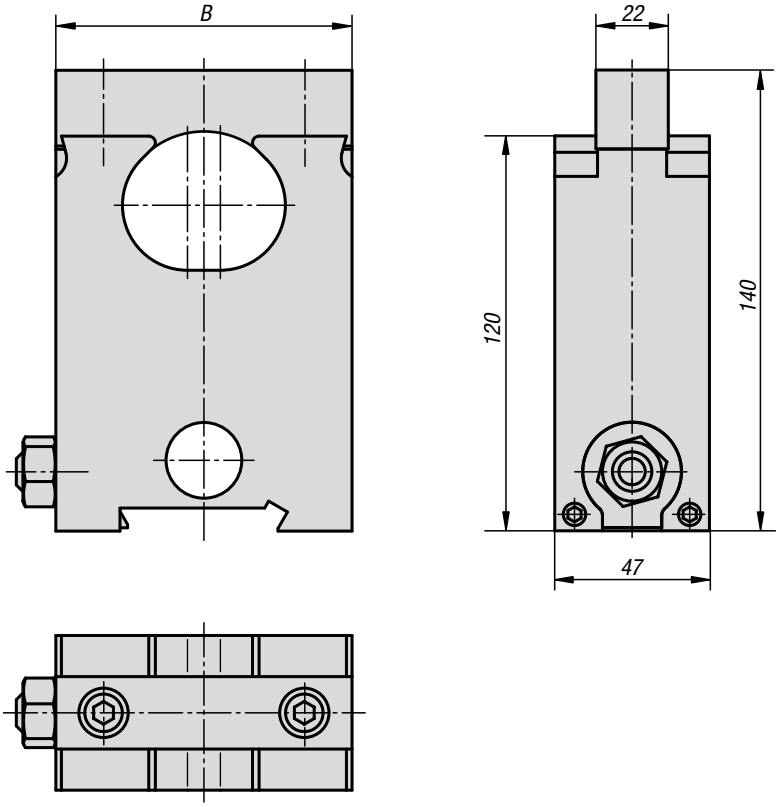
Supplied singly.

KIPP Jaw plates with pins for pendulum jaw, 5-axis clamping system compact

Order No.	B	No. of pins
K1001.1251	125	8
K1001.0901	90	6

Centre jaws

5-axis clamping system compact

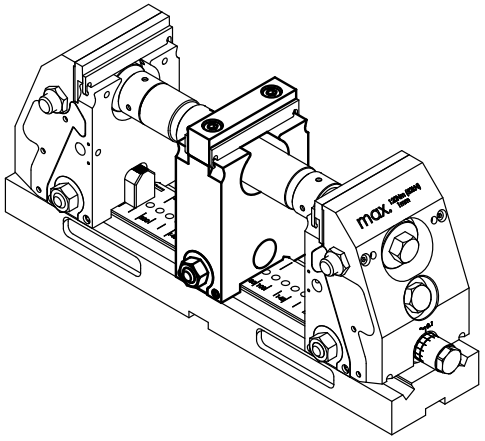


Material:
Body mild steel.
Jaw plates tool steel.

Version:
Body black oxidised.
Vice jaws hardened, bright.

Sample order:
K0987.0901500

Note:
Centre jaws are used to clamp 2 workpieces simultaneously.
The centre jaws can be moved to suit the size of the workpiece. 2 different sized workpiece can be clamped.

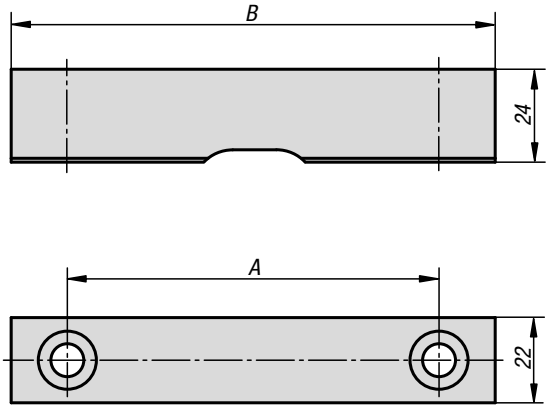


KIPP Centre jaws, 5-axis clamping system compact

Order No.	B	weight kg
K0987.0901500	90	3,38
K0987.1251500	125	5,1

Jaw plates smooth for centre jaw

5-axis clamping system compact



Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
K1002.0900

Note:
For clamping pre-machined and ground workpieces.

Supplied singly.

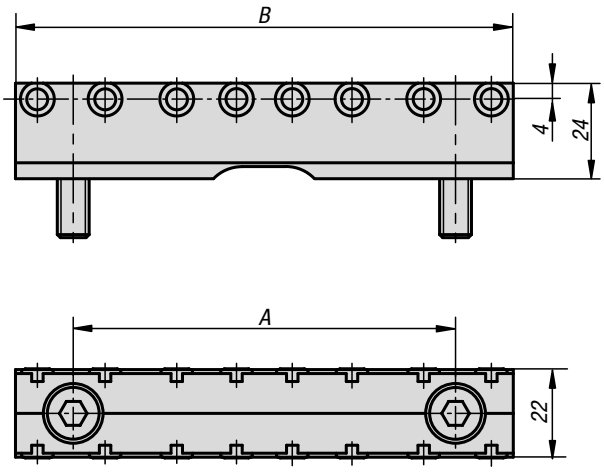
KIPP Jaw plates smooth for centre jaw, 5-axis clamping system compact

Order No.	A	B
K1002.0900	61	90
K1002.1250	96	125

K1002

Jaw plates with pins for centre jaw

5-axis clamping system compact



Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Sample order:
K1002.0901

Note:
For positive clamping without preforming, e.g. rough pieces, heavy cutting, castings etc.

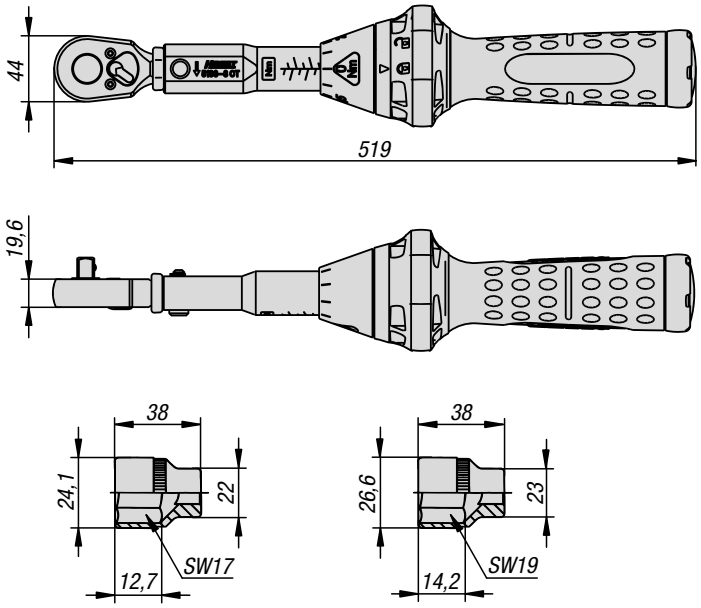
Supplied singly.

KIPP Jaw plates with pins for centre jaw, 5-axis clamping system compact

Order No.	A	B	No. of pins
K1002.0901	61	90	6
K1002.1251	96	125	8

Torque wrench

for 5-axis clamping system



Material:
Steel.

Version:
Surface: hard chromed

Sample order:
K1489.01

Note:
Torque wrench 40-200 set:
Precision +/- 3% of the scale value (in direction of actuation)
(5107-3 CT +/- 4% release precision)
Secure: - haptic (short path trip)
- acoustic (snap element)
Designed for rough workshop use.
Broad spectrum of use for controlled screw tightening. Applications in industry and trades.
Optimised sealing ring for protection from foreign matter.
Ratchet repair set for customer-oriented self-assembly permits use for decades.
Handle with anti-roll for easier power transmission through more grip.
Adjustment aid through indexing points for optimised operator guidance guarantees secure and fast setting of the desired torque value by turning the handle.
Secure locking of the setting values through detent on the swivel head.
Lock symbols signal the respective locking condition.
Possibility to fasten rope loop through openings on the locking mechanism swivel head.
Easily readable, contrast-rich scale.
Permanent readability through laser labelling of the scale sleeve.
Integrated switch lever.
Certified acc. to DIN EN ISO 6789-2:2017.
With calibration certificate and serial number.
Supplied in stable hexagonal hinged box.
Square acc. to DIN 3120, ISO 1174-1, DIN EN ISO 6789-2:2017.

Functional principle:
Operating principle of torque wrench
Unlock.
Press handle ca. 8 mm forward and rotate in the desired direction.
Continue to turn handle to set the desired torque.
Turn the handle backwards a little.
Lock.

Suitable for:
3 Axis clamping system
5 Axis clamping system
5 Axis Clamping system compact
KIPPflexX 5-axis vice

Key insert (hex):
With knurling
Surface: chrome-plated, polished
DIN 3124, ISO 2725-1

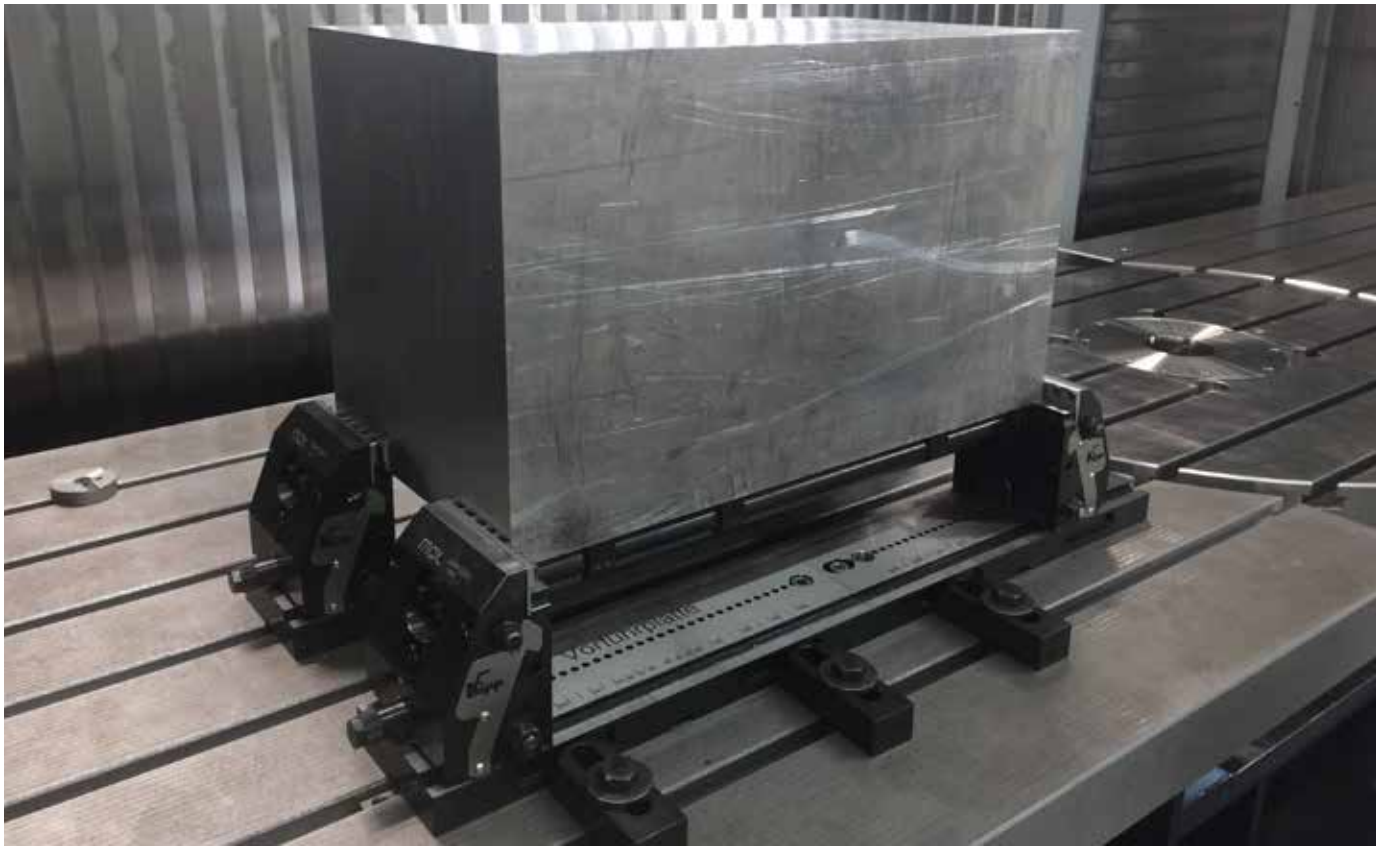
Recommendation:
Annual check interval for torque wrenches, in which the upper limit is 5,000 load cycles.

Supplied with:
Set comprising:
Torque wrench
Key insert SW17
Key insert SW19

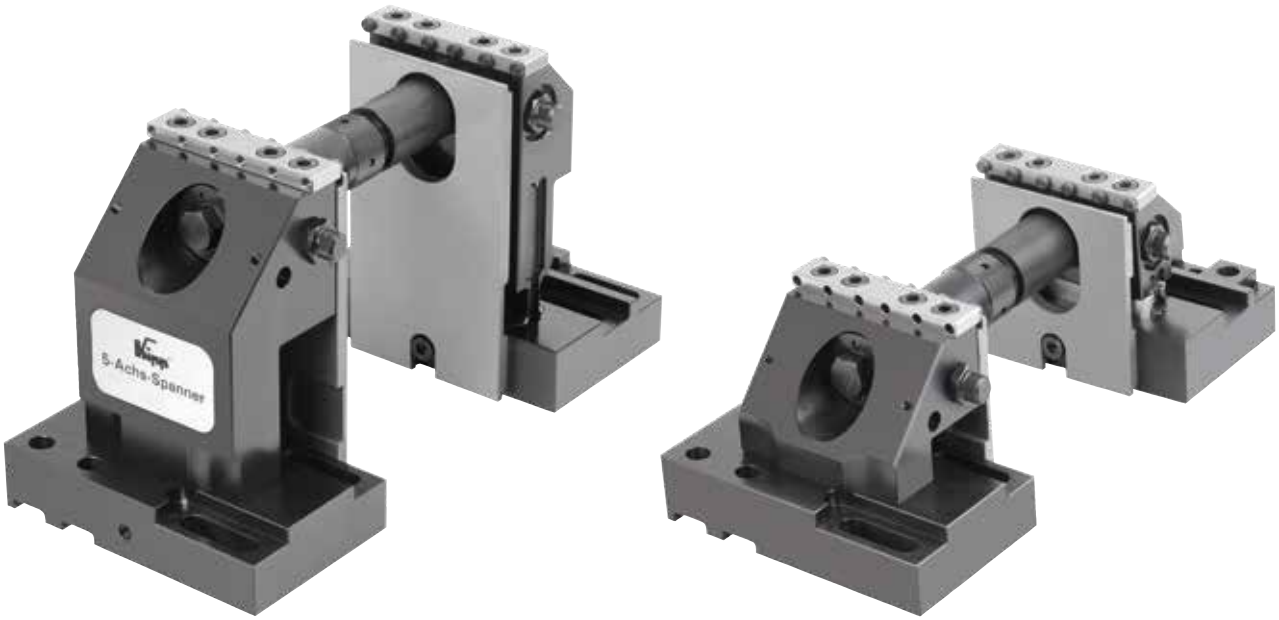
KIPP Torque wrench for 5-axis clamping system

Order No.	Item	Version 1	Product type	Torque Nm
K1489.01	Torque Wrench	set	revolving grip	40 - 200

Applications



3-axis clamping system
5-axis clamping system



5 Axis clamping system

Trend-setting clamping concept for 5-sided machining

The 5-Axis Clamping System is an unbeatable overall concept to supplement state-of-the-art milling centres.

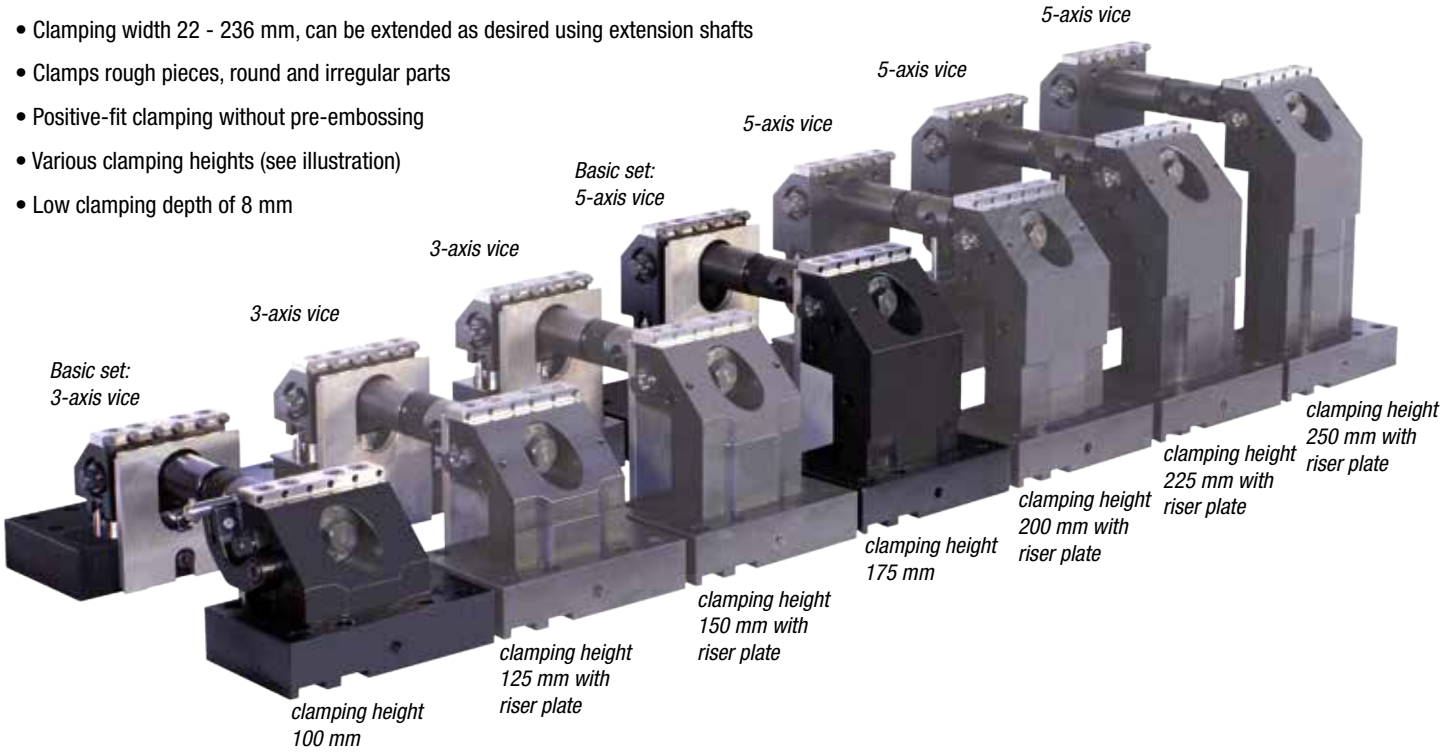
Many products are becoming more complicated than ever, and also have to be produced in an extremely short time and with maximum precision. In order to satisfy these criteria, the complete machining of workpieces is becoming increasingly more common. For this reason, state-of-the-art manufacturing technologies at machine tool manufacturers have developed toward 5-axis machining. Complete machining of workpieces on 5-axis centres transfers the entire high machine precision to the workpiece.

Due to the greater freedom for designing workpieces provided by 5-axis machining, a high-performance clamping system is an essential precondition for the efficient use of these machines.
Among other things, an optimised clamping system helps guarantee that the machine's complex travel can produce a high-precision workpiece.

The 5-axis clamping systems allow machining free of interfering edges and vibration, with extremely high cutting and feed forces. They enable the application of extremely short tools in order to guarantee the required tolerances and surfaces.

5 and 3 axis vices for trouble-free 5-sided machining with a single setup

- Can be set up on grid hole plates, on T-slot plates and on your own fixtures
- Clamping force up to 42 kN by installing a tension spindle immediately under the workpiece
- Clamping width 22 - 236 mm, can be extended as desired using extension shafts
- Clamps rough pieces, round and irregular parts
- Positive-fit clamping without pre-embossing
- Various clamping heights (see illustration)
- Low clamping depth of 8 mm



5 Axis clamping system

Special technical features - clamping process

before clamping

The clamping process involves the penetration of hardened, exchangeable clamping pins in to the workpiece. This guarantees positive-fit clamping without pre-embossing. Optionally, flattened clamping pins are available for clamping workpieces with sensitive surfaces. Additional flexible applications are possible using accessories, including clamping jaws for specific clamping tasks and round clamping elements for clamping round parts.

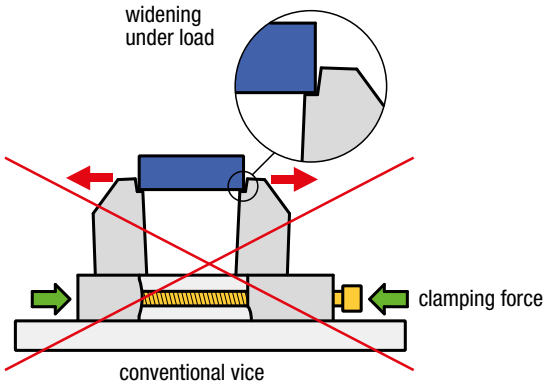
The 5 axis clamping systems provides you with a universal clamping element that is able to clamp workpieces with a clamping width of 22 - 236 mm. The clamping width can be extended as desired through the use of extension shafts.

after clamping

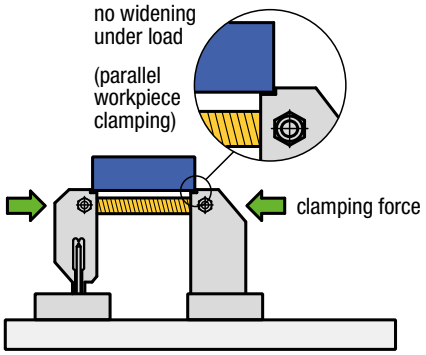
High clamping forces up to 42 kN that are not lost due to flexing

By installing a tension spindle directly under the workpiece support the clamping force is generated where it is required.

- no widening the jaws under load
- no distortion of the machine table
- extreme rigidity allows highest cutting forces



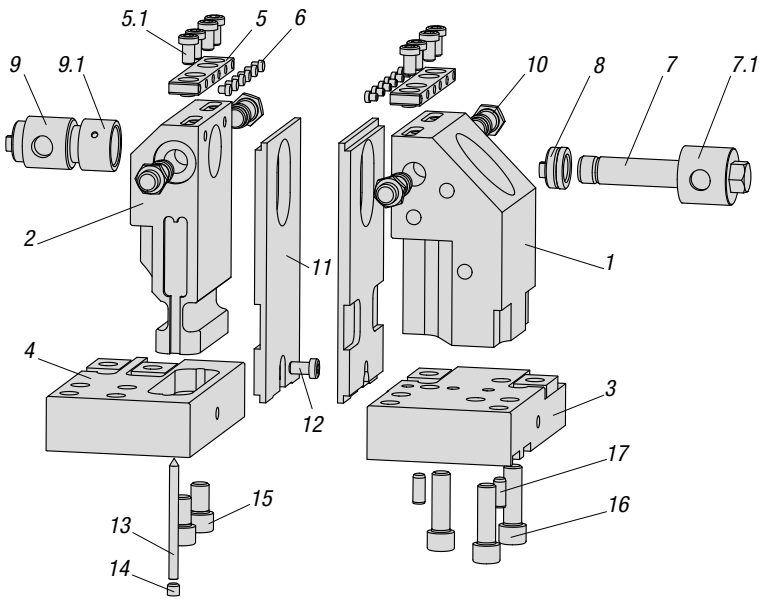
conventional vice



5-axis vice

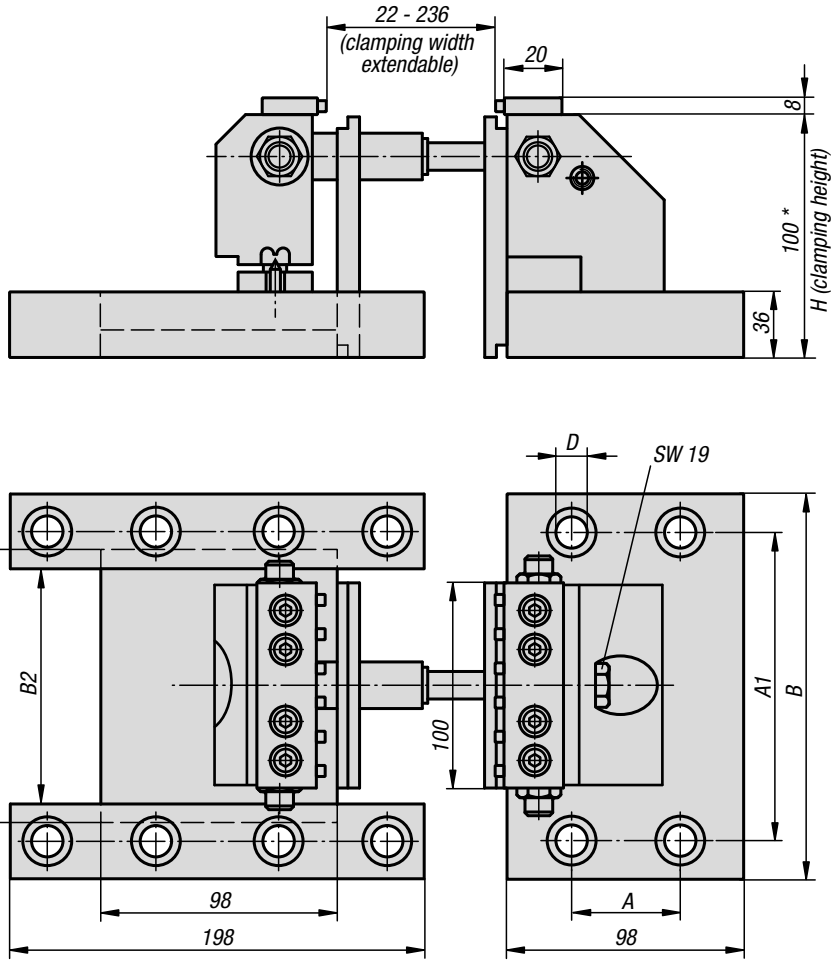
5-axis vice - system design

pos.	description	pcs.
1	fixed jaws	1
2	moveable jaws	1
3	base plate for fixed jaws	1
4	base plate for movable jaws	1
5	standard jaw pads with cap screws (5.1)	2
6	clamping pin	12
7	threaded spindle (7) with tension housing (7.1)	1
8	spindle nut	1
9	extension shaft (9) with union nut (9.1)	1
10	fastening screw	4
11	seating ledge	2
12	DIN 6912 M8x12 cap screw	2
13	pointer	1
14	DIN 913 M8x8 grub screw	1
15	DIN 912 M12x20 cap screw	2
16	DIN 912 M12x40 cap screw	3
17	DIN 7979 8x20 dowel pin	2



3-axis clamping system

for grid plates



Material:
Base plates and jaws low-carbon steel.
Seating ledges steel.
Jaw plates special steel.
Clamping pins tool steel.

Version:
Base plates and jaws black oxidised.
Seating ledges hardened, bright.
Jaw plates bright.
Clamping pins hardened, bright.

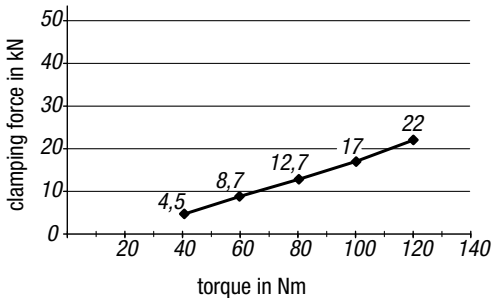
Sample order:
K0939.4012100

Note:
3-axis vices for mounting on grid plates.
These vices enable 3-sided machining free of interfering edges with a clamping depth of only 8 mm.
With this clamping system, clamping widths of 22 - 236 mm are possible, and can be extended as desired using the optionally available K0947 extension shafts.
By installing a tension spindle immediately under the workpiece support, a force of up to 22 kN is applied to the workpiece; this is not lost due to flexing. The use of clamping pins with a 4 mm cup point allows positive-fit clamping without pre-embossing.
The shoulder screws K0815 are recommended for mounting the vices on grid hole plates.
The set includes one extension shaft with L = 60 mm and one with L = 120 mm.

* The clamping height can be extended with the riser plates K0941 and seating ledges K0942.

Accessories:
Stop set K0948
Shoulder screws K0815

clamping force 3 axis clamping system

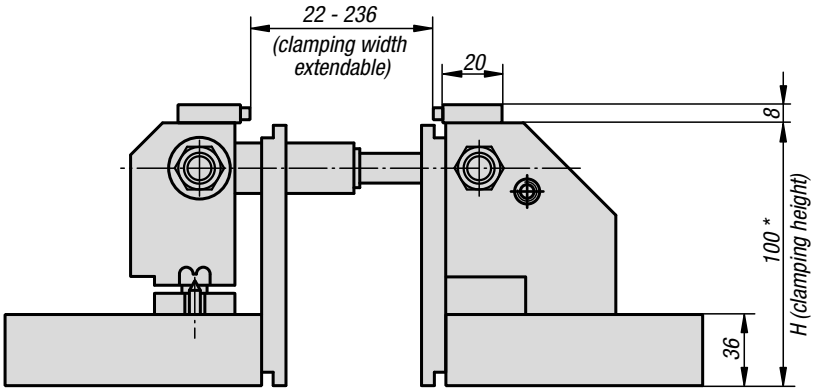


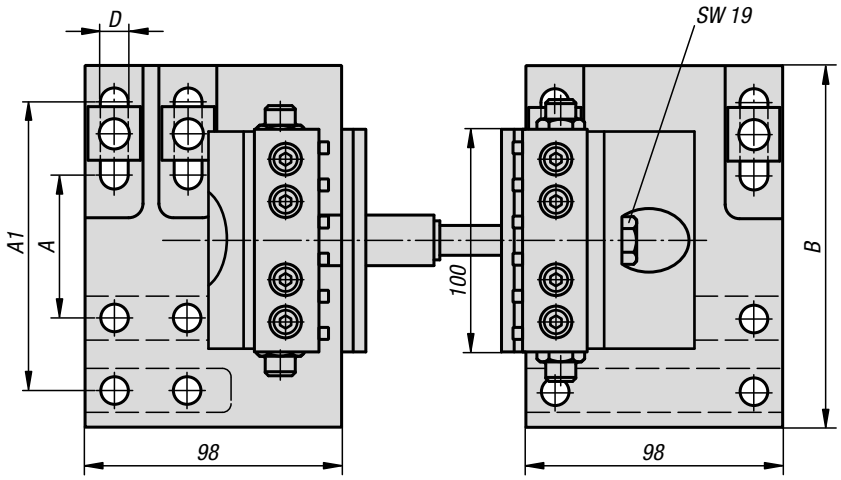
KIPP 3 Axis clamping system for grid plates

Order No.	Grid spacing	A	A1	B	B1	B2	D	H	Clamping force max. kN	weight kg
K0939.4012100	40x40 (M12)	40	160	190	148	124	12	100 *	22	18,88
K0939.5012100	50x50 (M12)	50	150	190	138	114	12	100 *	22	19,445
K0939.5016100	50x50 (M16)	50	150	190	134	110	16	100 *	22	18,74

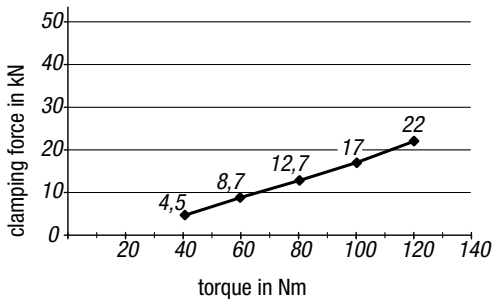
3-axis clamping system

for T-slots





clamping force 3 axis clamping system



Material:
Base plates and jaws low-carbon steel.
Seating ledges steel.
Jaw plates special steel.
Clamping pins tool steel.

Version:
Base plates and jaws black oxidised.
Seating ledges hardened, bright.
Jaw plates bright.
Clamping pins hardened, bright.

Sample order:
K0940.063100

Note:
3-axis vices for mounting on machine tables with T-slots. These vices enable 3-sided machining free of interfering edges with a clamping depth of only 8 mm. With this clamping system, clamping widths of 22 - 236 mm are possible, and can be extended as desired using the optionally available K0947 extension shafts. By installing a tension spindle immediately under the workpiece support, a force of up to 22 kN is applied to the workpiece, this is not lost due to flexing. The use of clamping pins with a 4 mm cup point allows positive-fit clamping without pre-embossing.
The fastening set K0951 is recommended for mounting the vices on T-slot tables.
The set includes one extension shaft with L = 60 mm and one with L = 120 mm.

* The clamping height can be extended with the riser plates K0941 and seating ledges K0942.

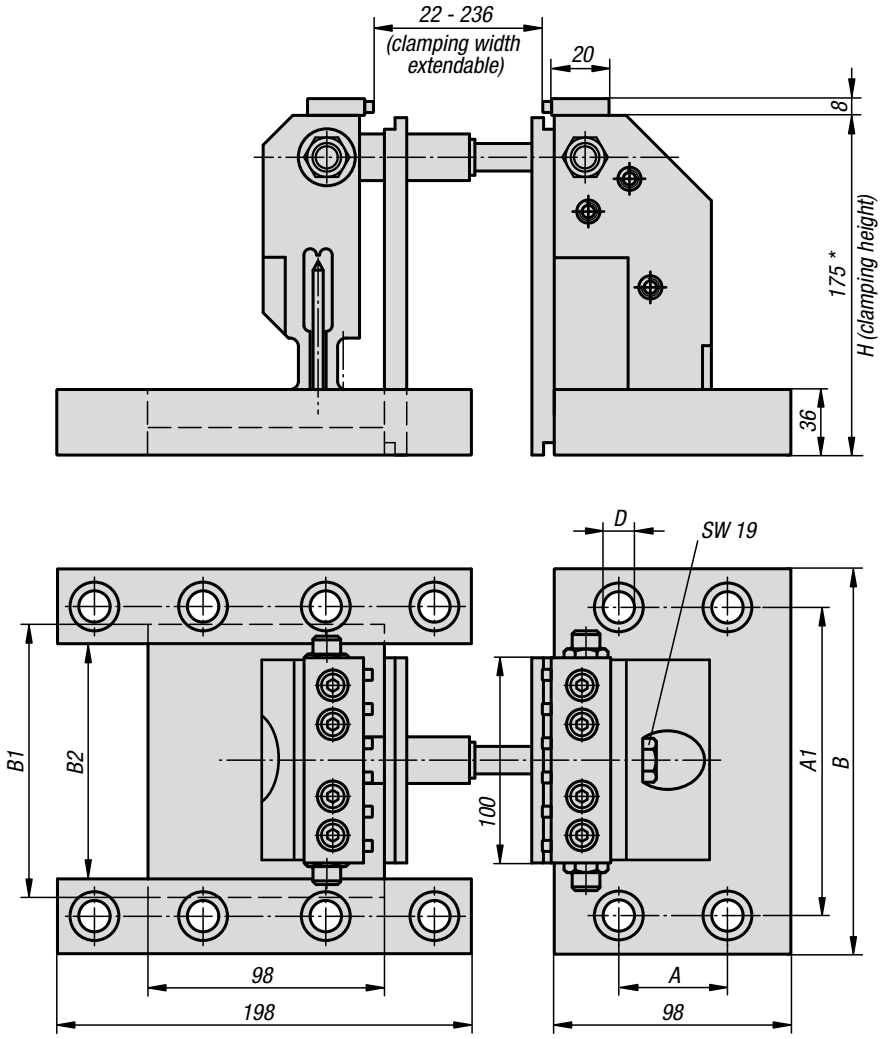
Accessories:
Stop set K0948
Fastening set K0951

KIPP 3 Axis clamping system for T-slots

Order No.	Suitable for	A	A1	B	D	H	Clamping force max. kN	weight kg
K0940.063100	slot spacing 63 - 126	63	126	158	12,5	100 *	22	14,8

5-axis clamping system

for grid plates



Material:
Base plates and jaws low-carbon steel.
Seating ledges steel.
Jaw plates special steel.
Clamping pins tool steel.

Version:
Base plates and jaws black oxidised.
Seating ledges hardened, bright.
Jaw plates bright.
Clamping pins hardened, bright.

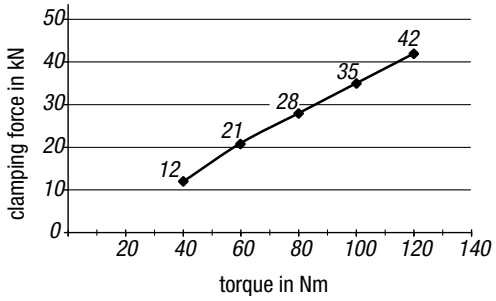
Sample order:
K0939.4012175

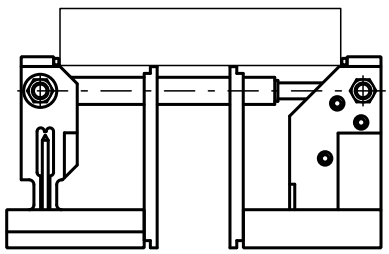
Note:
5-axis vices for mounting on grid plates.
These vices enable 5-sided machining free of interfering edges with a clamping depth of only 8 mm.
With this clamping system, clamping widths of 22 - 236 mm are possible, and can be extended as desired using the optionally available K0947 extension shafts.
By installing a tension spindle immediately under the workpiece support, a force of up to 42 kN is applied to the workpiece; this is not lost due to bending. The use of clamping pins with a 4 mm cup point allows positive-fit clamping without pre-embossing.
The shoulder screws K0815 are recommended for mounting the vices on grid hole plates.
The set includes one extension shaft with L = 60 mm and one with L = 120 mm.

* The clamping height can be extended with the riser plates K0941 and seating ledges K0942.

Accessories:
Stop set K0948
Locating bolts K0815

clamping force 5 axis clamping system



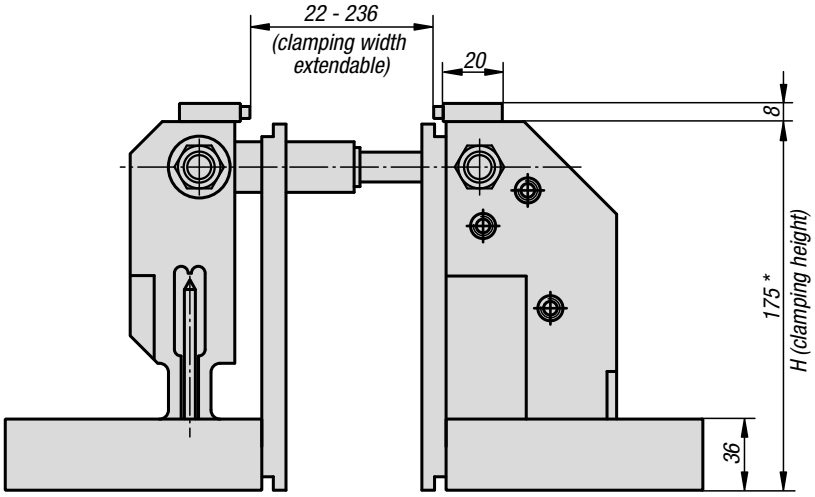


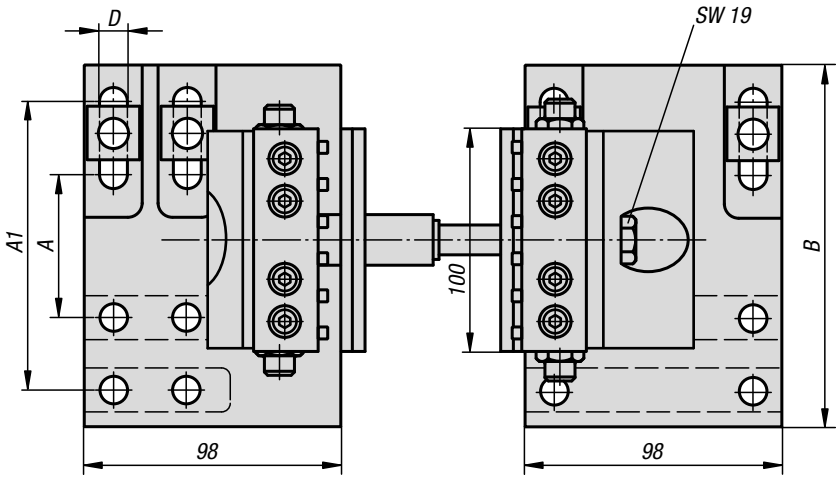
KIPP 5 Axis clamping system for grid plates

Order No.	Grid spacing	A	A1	B	B1	B2	D	H	Clamping force max. kN	weight kg
K0939.4012175	40x40 (M12)	40	160	190	148	124	12	175*	42	25,095
K0939.5012175	50x50 (M12)	50	150	190	138	114	12	175*	42	25,232
K0939.5016175	50x50 (M16)	50	150	190	134	110	16	175*	42	25

5-axis clamping system

for T-slots





Material:
Base plates and jaws low-carbon steel.
Seating ledges steel.
Jaw plates special steel.
Clamping pins tool steel.

Version:
Base plates and jaws black oxidised.
Seating ledges hardened, bright.
Jaw plates bright.
Clamping pins hardened, bright.

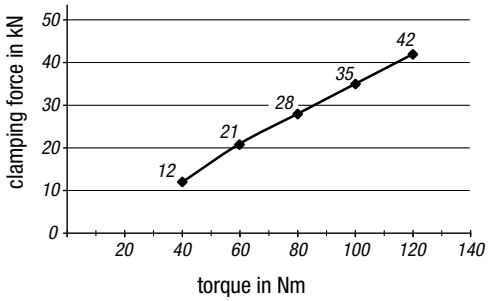
Sample order:
K0940.063175

Note:
5-axis vices for mounting on machine tables with T-slots. These vices enable 5-sided machining free of interfering edges with a clamping depth of only 8 mm. With this clamping system, clamping widths of 22–236 mm are possible, and can be extended as desired using the optionally available K0947 extension shafts. By installing a tension spindle immediately under the workpiece support, a force of up to 42 kN is applied to the workpiece, this is not lost due to flexing. The use of clamping pins with a 4 mm cup point allows positive-fit clamping without pre-embossing.
The fastening set K0951 is recommended for mounting the vices on T-slot tables.
The set includes one extension shaft with L = 60 mm and one with L = 120 mm.

* The clamping height can be extended with the riser plates K0941 and seating ledges K0942.

Accessories:
Stop set K0948
Fastening set K0951

clamping force 5 axis clamping system

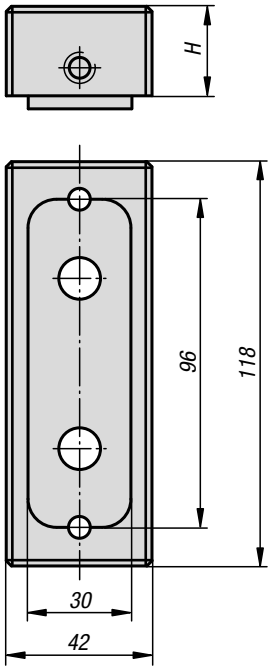


KIPP 5 Axis clamping system for T-slots

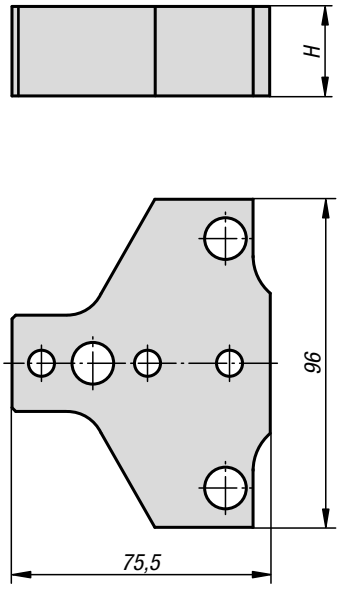
Order No.	Suitable for	A	A1	B	D	H	Clamping force max. kN	weight kg
K0940.063175	slot spacing 63 - 126	63	126	158	12,5	175 *	42	21,32

Riser plates

risers for
moveable side



risers for
fixed side



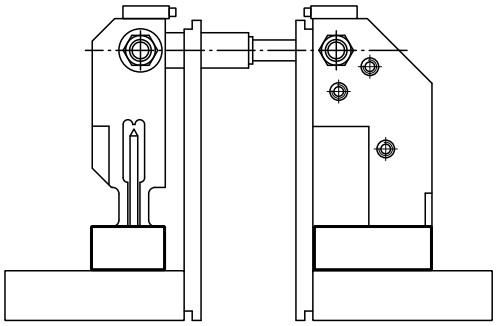
Material:
Steel.

Version:
Black oxidised.

Sample order:
K0941.025
(supplied in pairs)

Note:
The riser plates are mounted between the base plate and the jaw body, raising the 3-axis vices to 125 or 150 mm. The 5-axis vices can be raised to 200, 225 or 250 mm. When using the riser plates the matching seating ledges K0942 must also be installed.

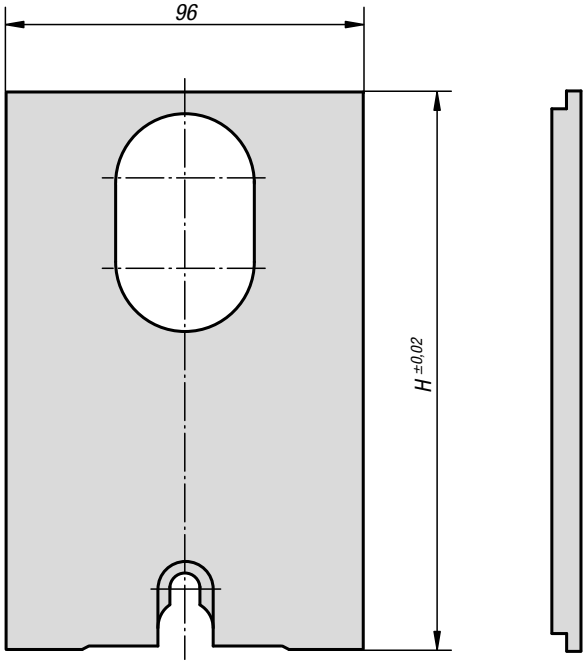
Supplied with fastening screws and cylindrical pins.



KIPP Riser plates

Order No.	H	weight kg
K0941.025	25	1,945
K0941.050	50	3,68
K0941.075	75 (25 + 50)	5,271

Seating ledges



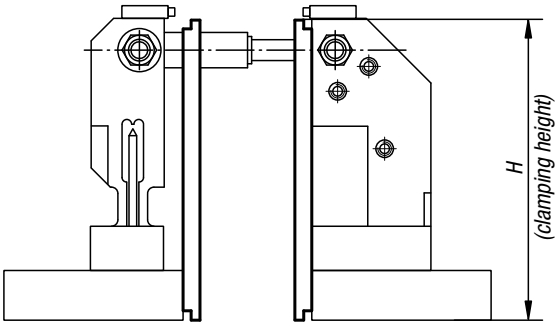
Material:
Steel.

Version:
Hardened and bright.

Sample order:
K0942.100
(supplied in pairs)

Note:
If the riser plates K0941 are used to raise the height, the seating ledges must be changed to suit.

*Including 12 jaw pins K0946.05600.

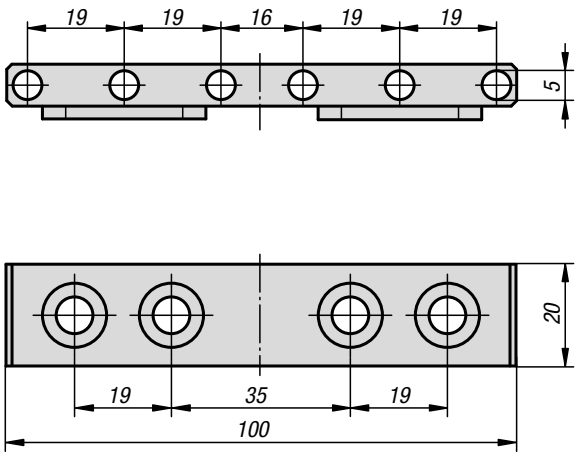


KIPP Seating ledges

Order No.	H	Suitable for
K0942.100	100	3-axis vice basic set
K0942.105*	105	3-axis vice basic set
K0942.125	125	3-axis vice with 25 mm riser plate
K0942.150	150	3-axis vice with 50 mm riser plate
K0942.175	175	5-axis vice basic set
K0942.180*	180	5-axis vice basic set
K0942.200	200	5-axis vice with 25 mm riser plate
K0942.225	225	5-axis vice with 50 mm riser plate
K0942.250	250	5-axis vice with 75 mm riser plate (25 + 50)

K0943

Jaw plates standard



Material:
Special steel.

Version:
Bright.

Sample order:
K0943.110008

Note:
Jaw plates with holes to press the jaw pins into.
Suitable for all 3-axis and 5-axis vices.

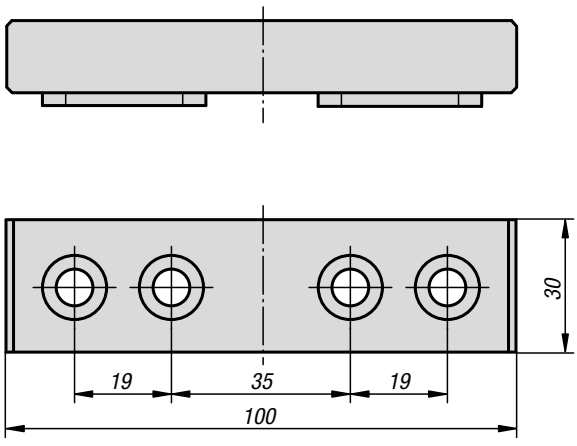
Accessories:
Jaw pins K0946

KIPP Jaw plates, standard

Order No.	Suitable for
K0943.110008	All 3-axis and 5-axis clamping systems

K0944

Jaw plates machinable



Material:
Steel 1.0503.

Version:
Bright.

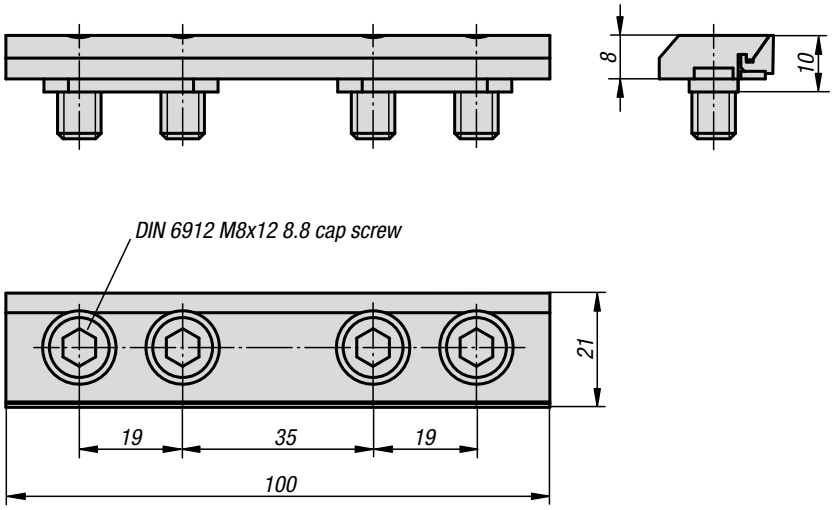
Sample order:
K0944.210020

Note:
Machinable jaw plates can be machined to suit specific workpieces. Suitable for all 3-axis and 5-axis vices.

KIPP Jaw plates, machinable

Order No.	Suitable for
K0944.210020	All 3-axis and 5-axis clamping systems

Draw-down jaws



Material:
Special steel.

Version:
Bright.

Sample order:
K0953.110008

Note:
Positive down jaw plates for clamping pre-machined workpieces.
Suitable for all 3-axis and 5-axis vices.

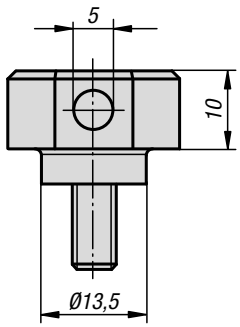
Supplied in pairs.

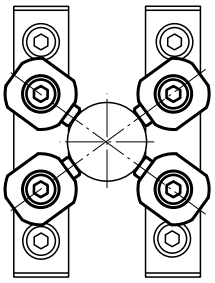
KIPP Draw-down jaws

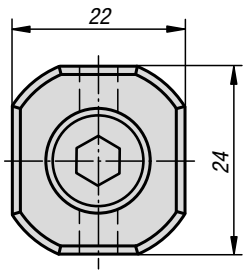
Order No.	Suitable for
K0953.110008	All 3-axis and 5-axis clamping systems

Jaw adapters

for round workpieces







Material:
Jaw adapters Q&T steel.
Cap screw steel.

Version:
Jaw adapters black oxidised.
Cap screw, grade 10.9.

Sample order:
K0945.135010
(supplied in sets of 4)

Note:
For clamping round workpieces with a diameter of 30–200 mm. Screwed directly into the standard or machinable jaw plates.

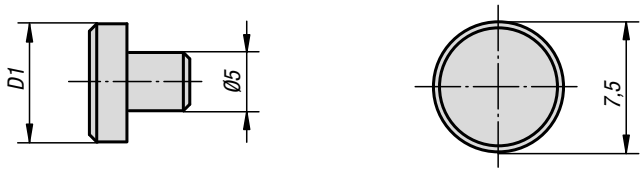
Accessories:
Jaw pins K0946

KIPP Jaw adapters for round workpieces

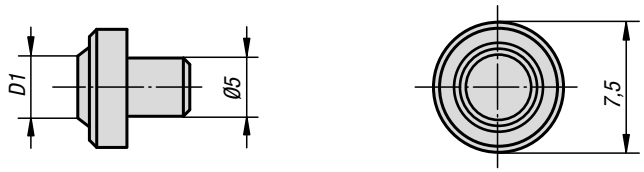
Order No.	Suitable for
K0945.135010	All 3-axis and 5-axis clamping systems

Jaw pins

flattened



cup point



Material:
Tool steel.

Version:
Hardened.

Sample order:
K0946.05600

Note:
Suitable for standard jaw plates and jaw adapters of round workpieces.
Installed by pressing in.

KIPP Jaw pins

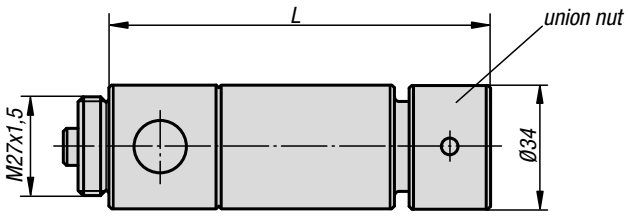
Order No.	Version 1	D1	Application
K0946.05000	flattened	7,5	material over 1000 N/mm² tensile strength
K0946.05400	cup point	4	material up to ca. 1000 N/mm² tensile strength
K0946.05600	cup point	6	material up to ca. 1000 N/mm² tensile strength

Applications

K0947

Extension shafts

with union nut



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0947.060

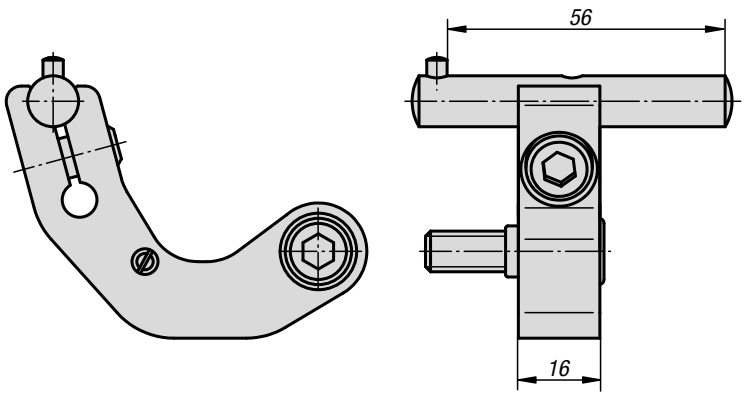
Note:
To extend the clamping width.
Supplied with union nut. The extension shafts can be combined as desired.

KIPP Extension shafts with union nut

Order No.	L	Clamp range
K0947.060	60	22-82
K0947.120	120	82-142
K0947.240	240	extension by 240 mm
K0947.480	480	extension by 480 mm

K0948

Stop set



Material:
Steel.

Version:
Swivel arm, black oxidised.
Stop pin bright.

Sample order:
K0948.100

Note:
Stop set for direct fastening to fixed jaws. The stop can be swivelled aside for machining of the workpiece without losing the stop dimension. Supplied complete with attaching parts.

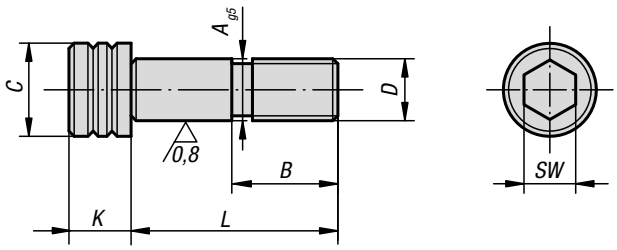
KIPP Stop set

Order No.	Suitable for
K0948.100	All 3-axis and 5-axis clamping systems

K0815

Shoulder screws

Form B



Material:
Carbon steel.

Version:
Tempered, black oxidised.
Precision diameters ground.

Sample order:
K0815.12055

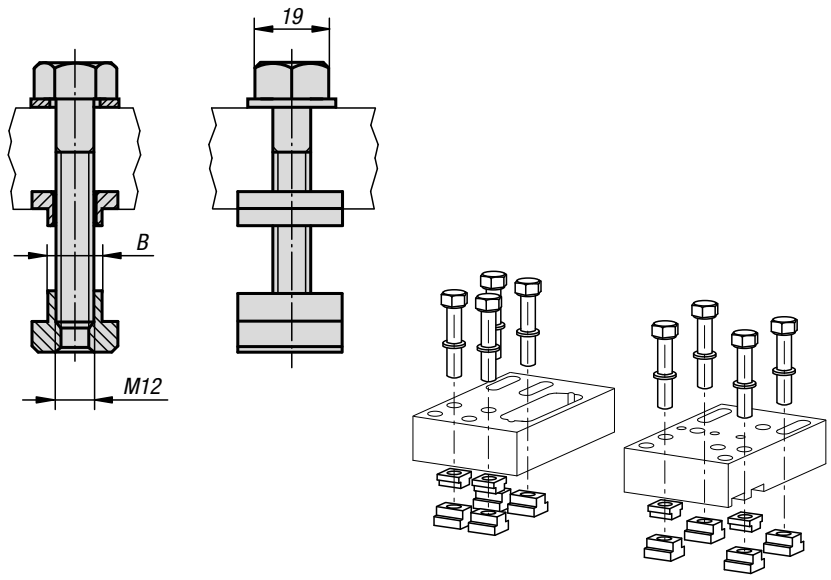
KIPP Shoulder screws Form B

Order No.	Form	A	B	C	D	K	L	SW	Tightening torque max. Nm
K0815.12055	B	12	22	18	M12	12	55	10	88
K0815.16055	B	16	25	24	M16	16	55	14	216

K0951

Fastening set

for T-slots



Material:
Carbon steel.

Version:
Black oxidised.

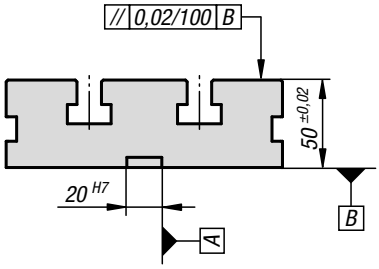
Sample order:
K0951.1412

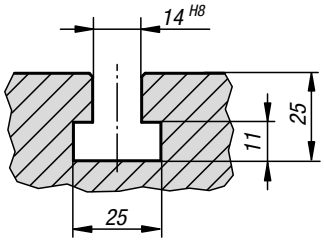
Note:
Fastening sets for aligning and securing 3 and 5 axis vices on tables with T-slots sizes 14 or 18.
Sets consisting of:
8x ISO 4014 M 12x60 12.9 hex head bolts
8x DIN 508 T-slot nuts
8x washers
4x slot keys

KIPP Fastening set for T-slots

Order No.	Version	B
K0951.1412	Slot width 14	14
K0951.1812	Slot width 18	18

T-slot plate



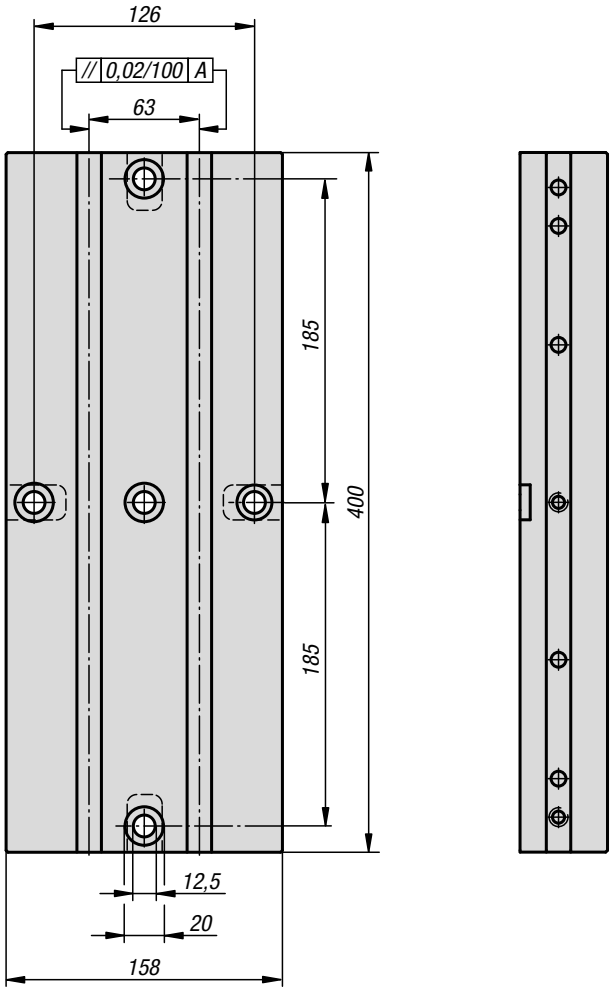


Material:
Carbon steel.

Version:
Black oxidised.
Contact faces ground.

Sample order:
K0952.14063400

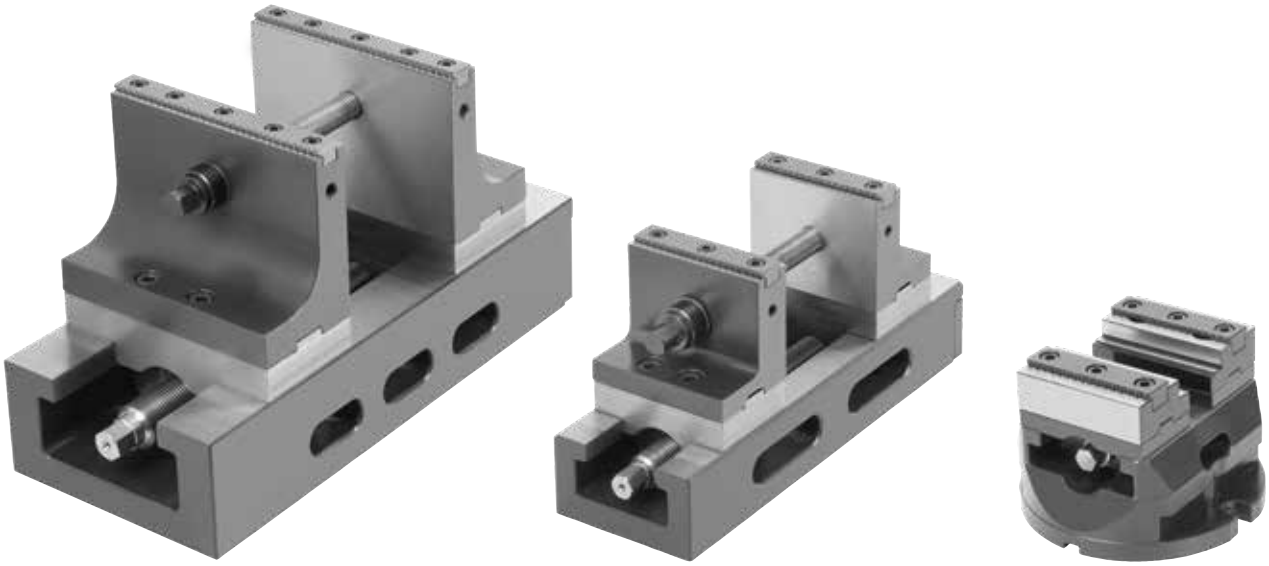
Note:
T-slot plates with locating slots on the underside for easy alignment of the plate on the machine table.



KIPP T-slot plate

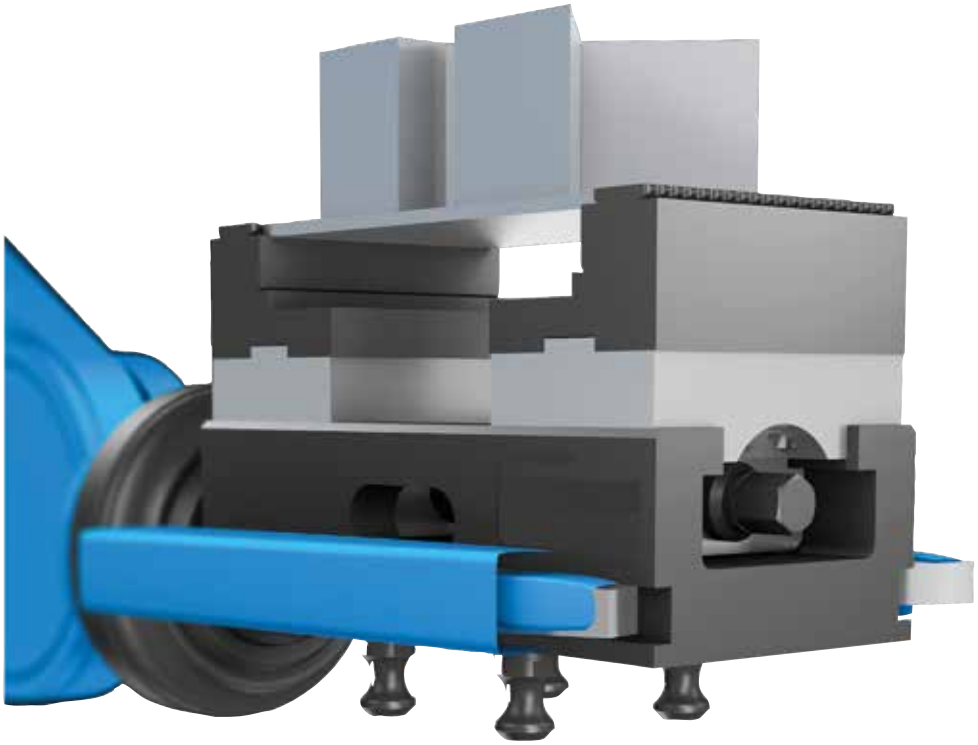
Order No.	Version	weight kg
K0952.14063400	Slot width 14 / slot spacing 63	21,135

Centric vices



Technical information for centric vices

Mechanically actuated centric vice
Centring precision +/- 0.02 mm across the entire clamping range.
We recommend using a torque wrench for controlling the clamping force.

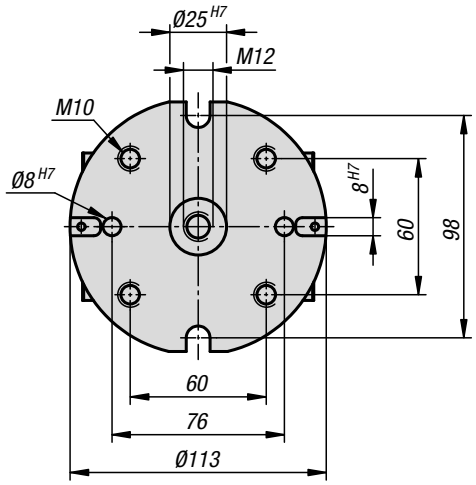


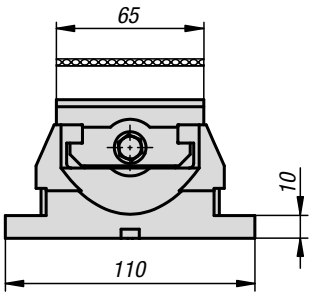
Flexible connection options:

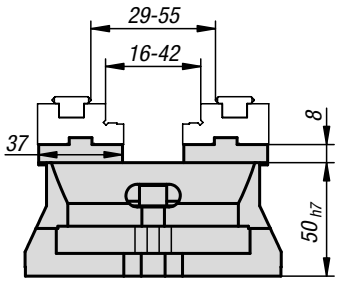
1. Support for the zero-point clamping system. Fitting 25H6/M12.
   Reamed and tapped holes for clamping pins for zero-point clamping systems are integrated into each centric vice. These vices can therefore be used on conventional zero-point clamping systems.
2. Support for handling systems / suitable for automation.
   There is also the option of transporting the centric vices using handling systems.
3. Support with adapter plate for grid system M12/Ø12F7, grid spacing 50 mm.
   Assembly with an adapter plate suitable for grid systems M12/Ø12F7 ensures flexible positioning on basic elements with a grid system.
4. Support directly on the machine table.
   Using the lateral fastening slots, the centric vices can also be mounted on the machine table as required.

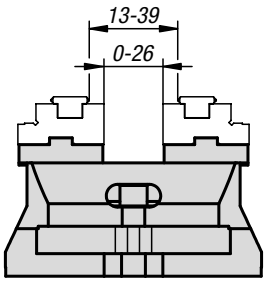
Centric vices

jaw width 65 mm









Material:
Body and jaw holder mild steel.
Spindle high-strength special steel.

Version:
Body and jaw holder hardened and ground.

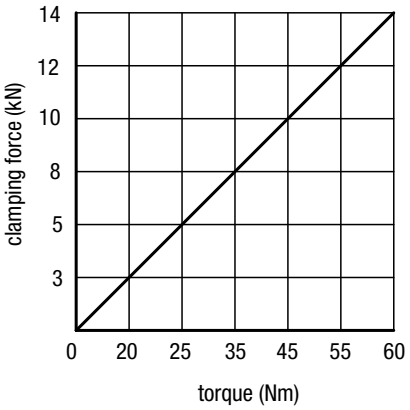
Sample order:
K1236.065100

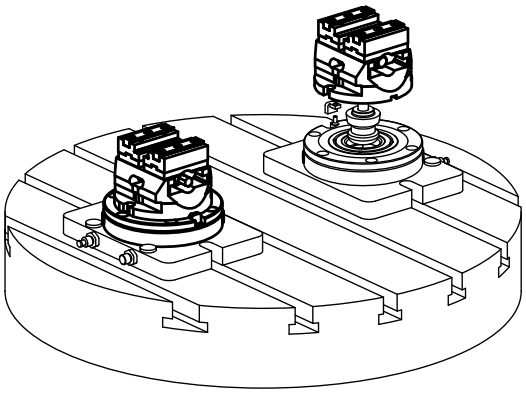
Note for ordering:
Supplied with hexagon crank handle.
Order jaw plates separately.

Note:
Mechanically operated centric vice.
Suitable for automation: prepared with gripper slot for handling systems.
Flexible mounting: suitable for zero-point systems, mounting on machine tables or on custom systems via a baseplate.
Centring precision: +/- 0.02 mm.

The use of a torque wrench is recommended to achieve a controlled clamping force.

Features:
- Clamping slide and spindle nut in one piece
- Slots and fastening threads for mounting attachment jaws
- Reversible jaws (accessories) with lateral thread for workpiece stop enables a wider clamping range
- Good swarf and coolant removal



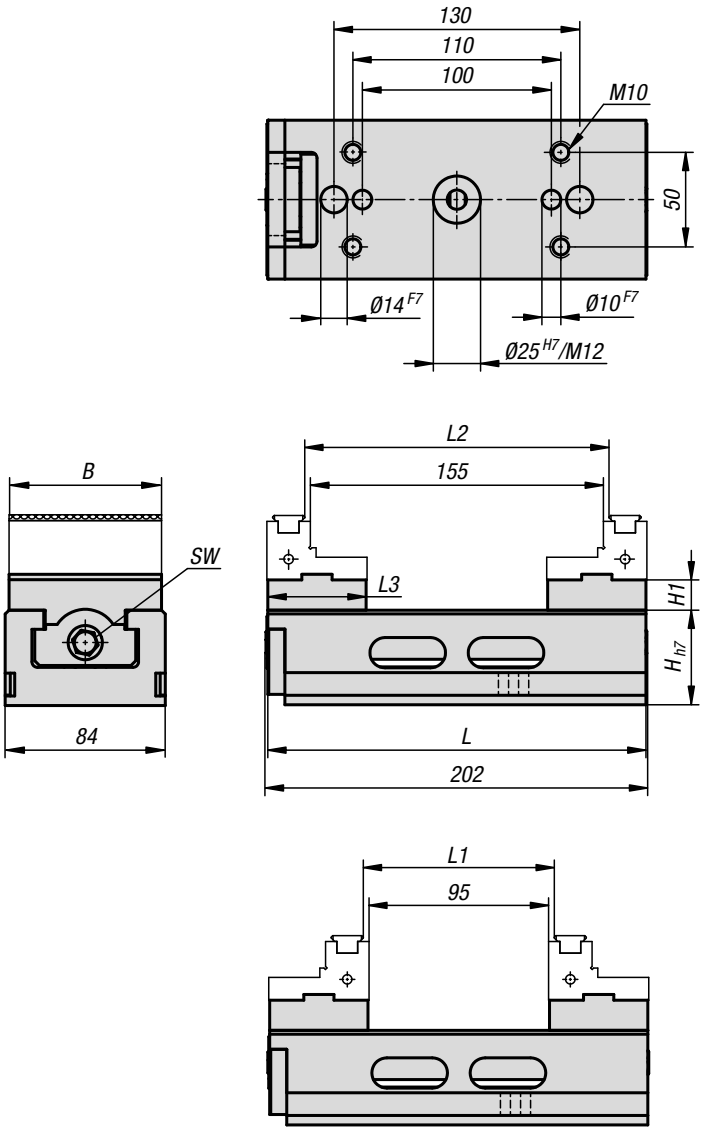


KIPP Centric vice jaw width 65 mm

Order No.	Dimensions	weight kg
K1236.065100	see drawing	2,95

Centric vices

jaw width 80–125 mm



Material:
Body and jaw holder mild steel.
Spindle high-strength special steel.

Version:
Body and jaw holder hardened and ground.

Sample order:
K1237.080200

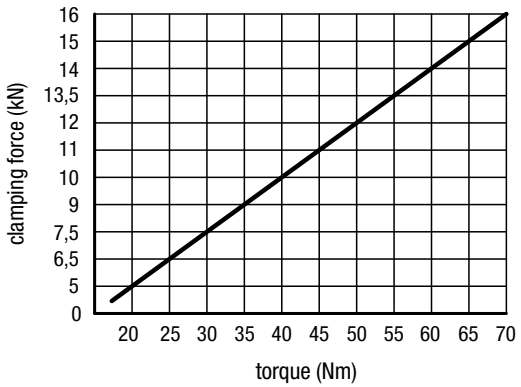
Note for ordering:
Supplied with hexagon crank handle.
Order jaw plates separately.

Note:
Mechanically operated centric vice.
Suitable for automation: prepared with gripper slot for handling systems.
Flexible mounting: suitable for zero-point systems, mounting on machine tables or on custom systems via a baseplate.
Centring precision: +/- 0.02 mm.

The use of a torque wrench is recommended to achieve a controlled clamping force.

Features:
- Clamping slide and spindle nut in one piece
- Slots and fastening threads for mounting attachment jaws
- Reversible jaws (accessories) with lateral thread for workpiece stop enables a wider clamping range
- Good swarf and coolant removal

B = 80 mm

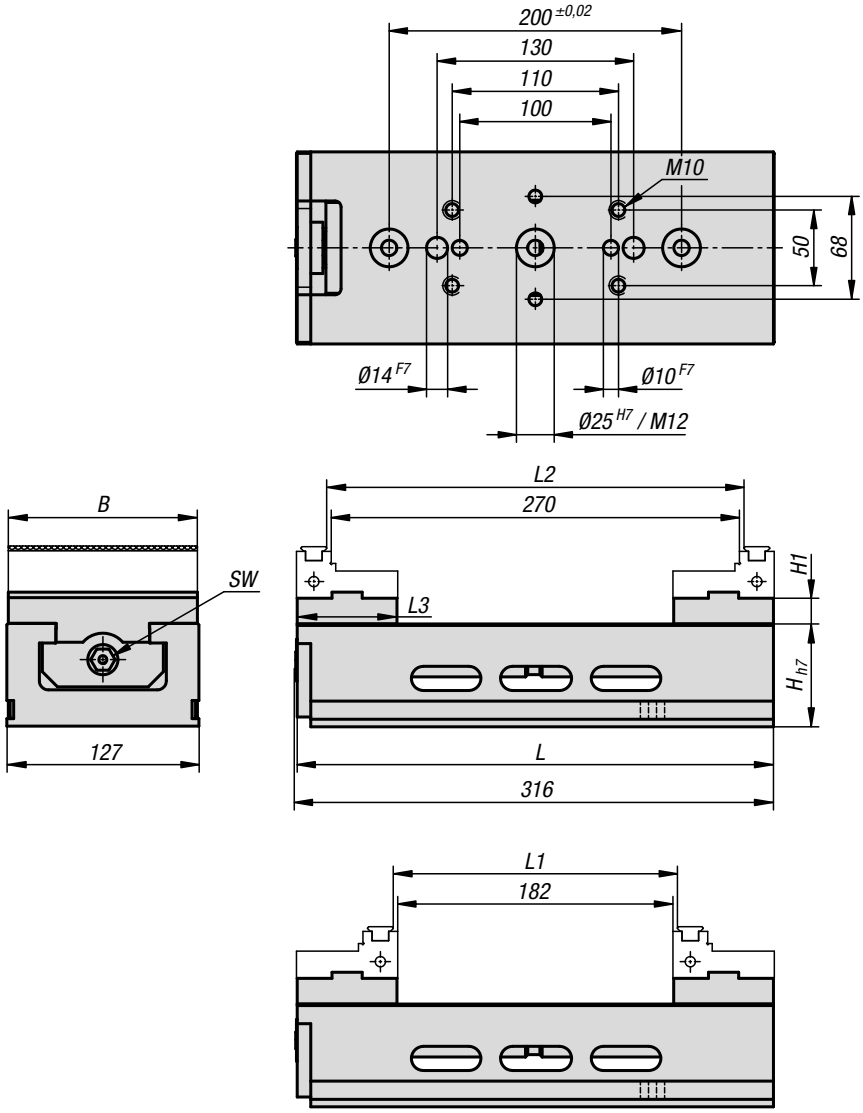


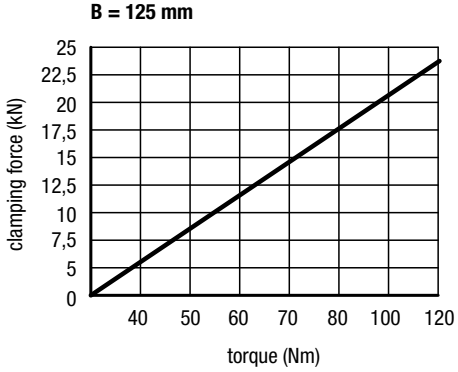
KIPP Centric vices, jaw width 80 mm

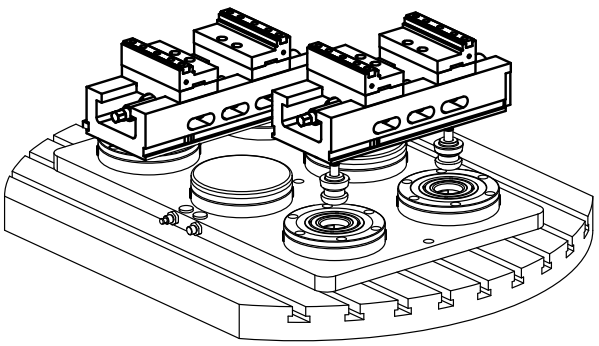
Order No.	B	H	H1	L	L1	L2	L3	SW	weight kg
K1237.080200	80	50h7	16	200	6-101	66-161	52	12	5,82

Centric vices

jaw width 80–125 mm





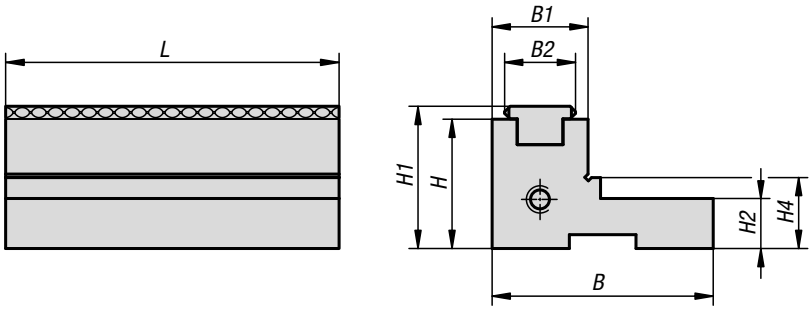


KIPP Centric vices, jaw width 125 mm

Order No.	B	H	H1	L	L1	L2	L3	SW	weight kg
K1237.125315	125	68h7	17	315	6-188	94-276	66	14	16,85

Attachment jaws

stepped, with grip rail



Material:
Steel.

Version:
Stepped jaws hardened, clamping faces ground.
Grip rail hardened.

Sample order:
K0587.0801

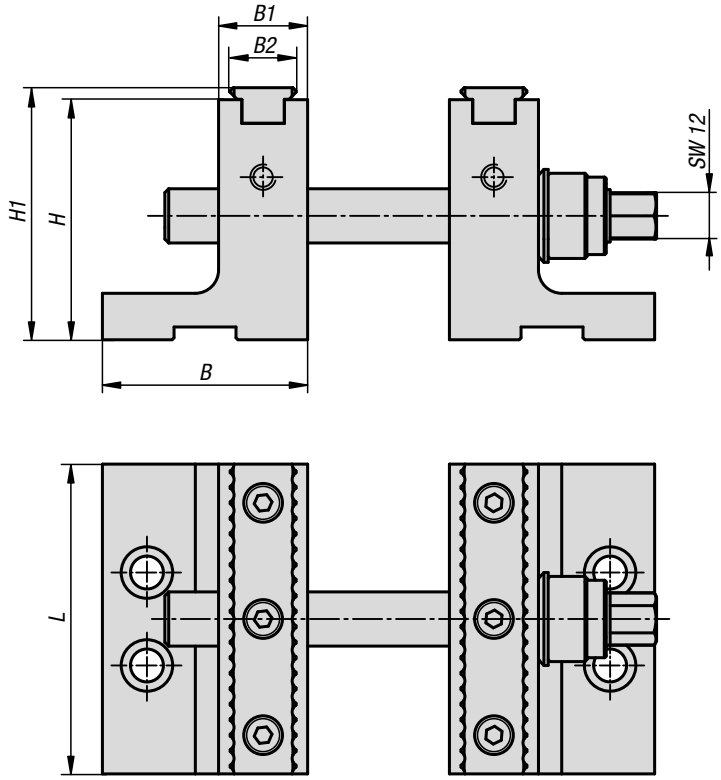
Note:
These attachment step jaws are suitable for centric vices. The clamping width can be increased or decreased by reversing the jaws. The gripper jaw pads can also be exchanged for smooth jaw pads.

KIPP Attachment jaws, stepped, with grip rail

Order No.	B	B1	B2	H	H1	H2	H4	L	weight kg
K0587.0651	38	30	17	18	21,1	9	9,5	65	0,354
K0587.0801	53	23	17	31	34,1	12	17	80	0,5
K0587.1251	67	23	17	31	34,1	18	23	125	1,55

Step jaw attachment

for 5-axis machining



Material:
Steel.

Version:
Stepped jaws hardened, clamping faces ground.
Grip rail hardened.

Sample order:
K1115.0801

Note for ordering:
High attachment step jaws in pairs with two gripper inserts and three different lengths of clamping spindle.

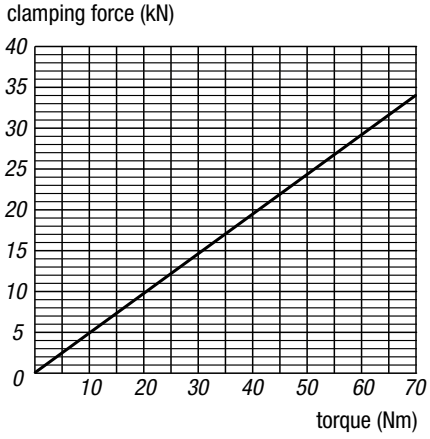
Note:
The workpiece is first centred using the lower centring spindle, then finally clamped using the upper clamping spindle.

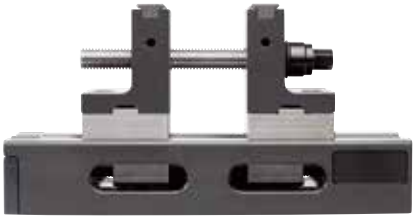
Basic set:
For 80 mm jaw width.
Supplied with a pair of high add-on step jaws with 2 gripper inserts and 3 clamping spindles in various lengths.
1. length 80 mm clamping range 6mm - 35mm.
2. length 140 mm clamping range 6mm - 95mm.
3. length 200 mm clamping range 6mm - 155mm.

For jaw width 125 mm.
Supplied with a pair of high attachment step jaws with 2 gripper inserts and 3 clamping spindles in various lengths.
1. Length 110 mm, clamping range 6 mm – 60 mm.
2. Length 245 mm, clamping range 6 mm – 200 mm.
3. Length 315 mm, clamping range 6 mm – 270 mm.

Advantages:
Ideal for 5-side machining. High setup on the machine table for 5-axis machines. Clamping force directly under the workpiece. The attachment jaws can be retrofitted for the 80 mm and 125 mm centric vices. The workpiece is first centred using the lower centring spindle, then finally clamped using the upper clamping spindle.

clamping force diagram





KIPP Step jaw attachment for 5-axis machining

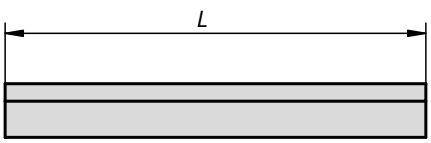
Order No.	Version 1	B	B1	B2	H	H1	L	weight kg
K1115.0801	for 5-axis machining	53	23	17	62	65,1	80	2,689
K1115.1251	for 5-axis machining	67	23	17	90	93,1	125	6,32

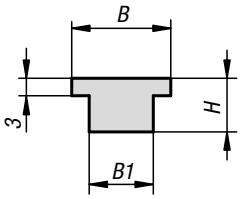
K0591

Inserts

for stepped jaw

Ⓐ





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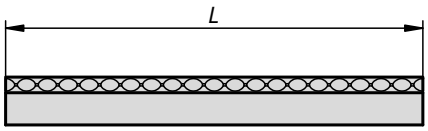
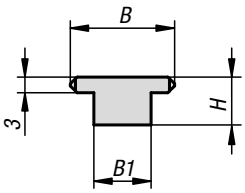




Material:
Steel.

Version:
Hardened and ground.

Sample order:
K0591.080117

Note:
Inserts Form A with smooth face Form B serrated face for maximum holding force.

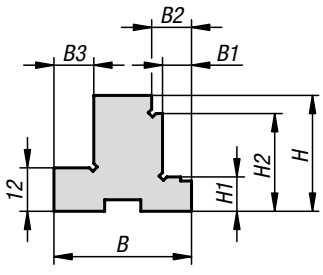
KIPP Inserts for stepped jaws

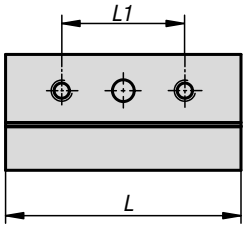
Order No. Form A	Order No. Form B	B	B1	H	L
K0591.065117	**K0591.065217**	17	11	9,2	65
K0591.080117	**K0591.080217**	17	11	9,2	80
K0591.125117	**K0591.125217**	17	11	9,2	125

K1383

Attachment step jaws

for centric vice, jaw width 65 mm





Material:
Steel.

Version:
Hardened.

Sample order:
K1383.06532

Note:
Attachment step jaws are the base onto which the jaw pads are screwed. They in turn are screwed directly onto the centric vice base. They enable various jaw plates to be exchanged quickly.

Suitable for K1236

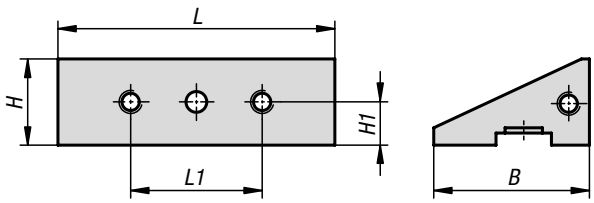
KIPP Attachment step jaws for centric vice, jaw width 65 mm

Order No.	B	B1	B2	B3	H	H1	H2	L	L1
K1383.06532	38	8	11	11	32	9,5	27	65	34

Attachment step jaws

for centric vice, jaw width 80–125 mm

Ⓐ



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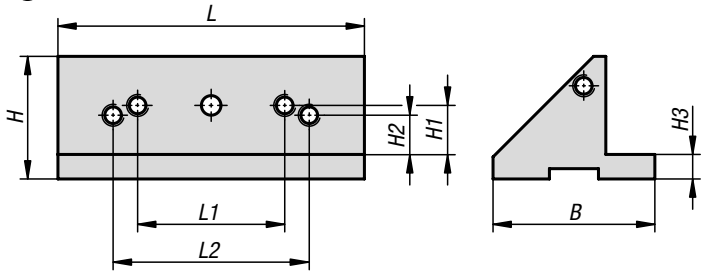


Material:
Steel.

Version:
Hardened.

Sample order:
K1384.08025

Note:
Attachment step jaws are the base onto which the jaw pads are screwed. They in turn are screwed directly onto the centric vice base. They enable various jaw plates to be exchanged quickly.

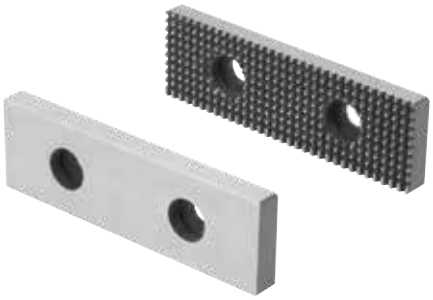
Suitable for K1237

KIPP Attachment step jaws for centric vice, jaw width 80–125 mm

Order No.	Form	B	H	H1	H2	H3	L	L1	L2
K1384.08025	A	45	25	12,5	-	-	80	38	-
K1384.12550	B	66	50	20	16	10	125	60	80

Jaw pads

for centric vice 65-80-125 mm



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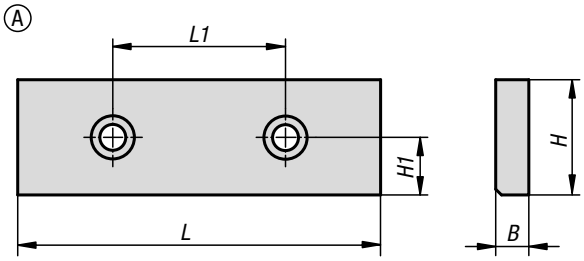

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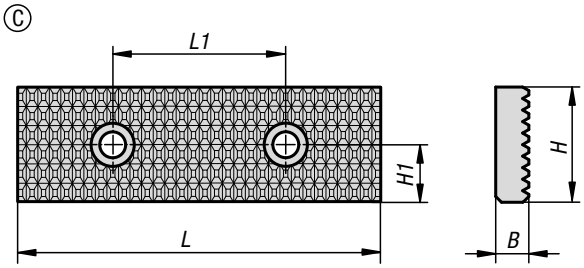


Material:
Steel hardened.

Version:
Clamping faces ground.

Sample order:
K0598.0651

Note:
These jaw pads can be used for clamping various workpiece types. Depending on the pad used, rough or pre-machined workpieces can be held.
The jaw pads are screwed onto the attachment jaws.

Suitable for K1236, K1237

Drawing reference:
Form A: smooth
Form C: serrated

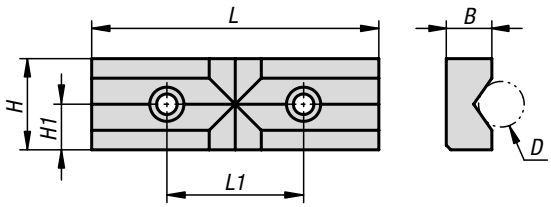
KIPP Jaw pads for centric vice 65-80-125 mm

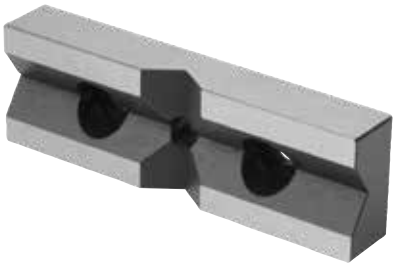
Order No.	Form	B	H	H1	L	L1
K0598.0651	A	7,5	20	10	66	34
K0598.0801	A	7,5	25	12,5	81	38
K0598.1251	A	11,5	40	20	126	60
K0598.0653	C	7,5	20	10	66	34
K0598.0803	C	7,5	25	12,5	81	38
K0598.1253	C	11,5	40	20	126	60

K1375

Prism jaw pads

for centric vice, 65–80–125 mm





Material:
Steel.

Version:
Hardened.

Sample order:
K1375.065

Note:
Prism jaws are used for clamping round material, tubes, rods, profiles, etc. The prisms are machined in horizontally and vertically.
The prism jaw pads are screwed onto the attachment jaws.

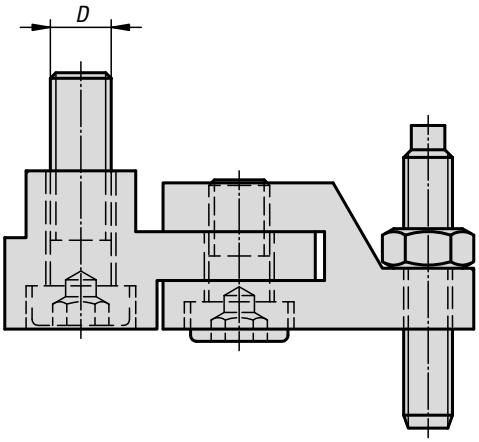
Suitable for K1236 and K1237

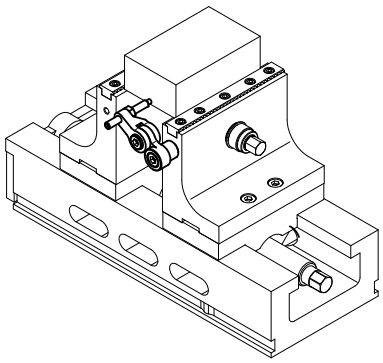
KIPP Prism jaw pads for centric vice, 65–80–125 mm

Order No.	B	D	H	H1	L	L1
K1375.065	12,5	5-25	20	10	66	34
K1375.080	12,5	5-25	25	12,5	81	38
K1375.125	20	8-38	40	20	126	60

K0607

Hinged stops





Material:
Steel.

Version:
Black oxidised.

Sample order:
K0607.080

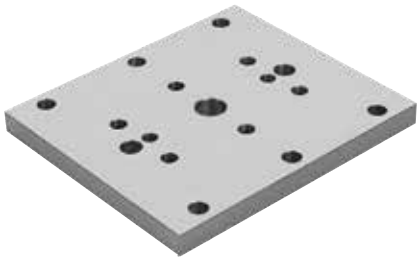
Note:
Hinged stop for fastening directly to the sliding or middle jaw.

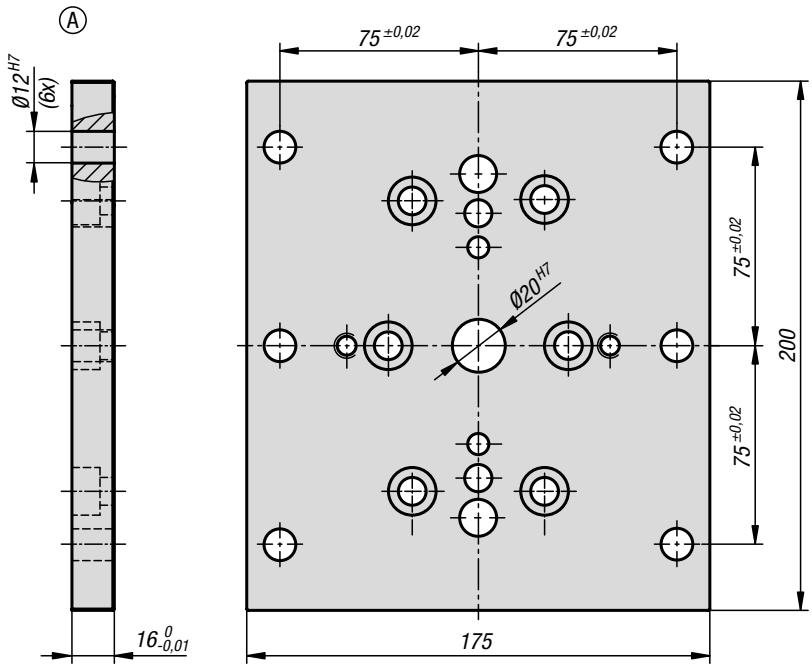
KIPP Hinged stops

Order No.	D	Suitable for
K0607.080	M6	centric vice 65, 80
K0607.100	M8	centric vice 125

Baseplate

for centric vice





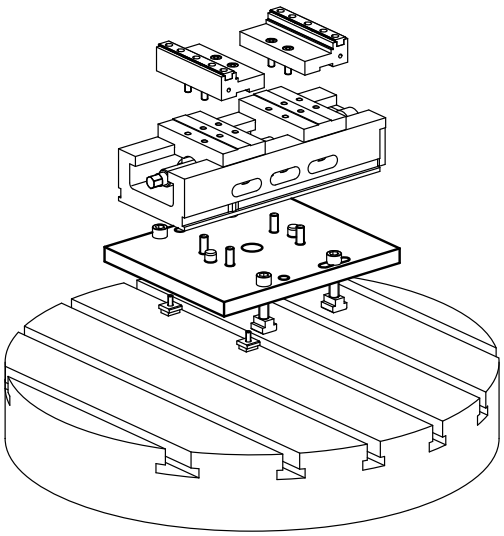
Material:
Steel.

Version:
Hardened and ground.

Sample order:
K1274.12175200

Note:
Form A:
The baseplate enables the centric vices (65 - 80 - 125) to be mounted onto 50 mm x M12/12F7 grid systems.

Form B+C:
The baseplate enables the centric vices (65 -80 - 125) to be mounted on machine tables with T-slots.



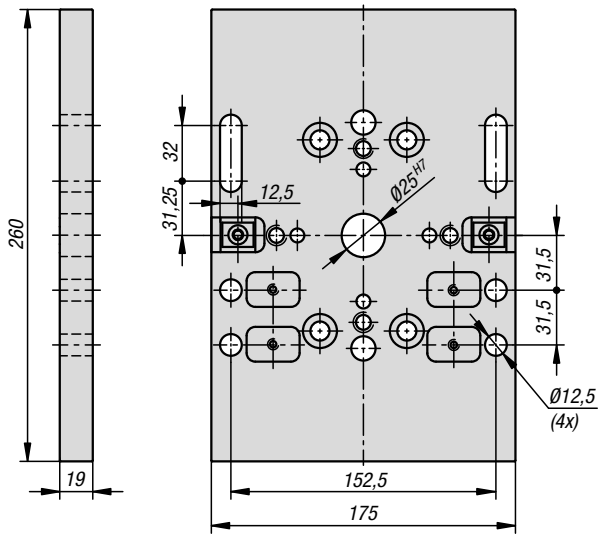
KIPP Baseplate for centric vice

Order No.	Form	Suitable for	weight kg
K1274.12175200	A	centric vice 65, 80, 125	4,03

Baseplate

for centric vice

Ⓑ



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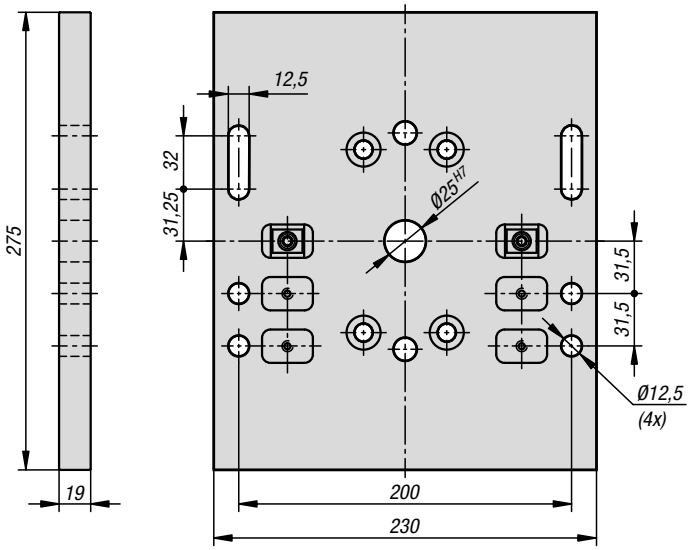
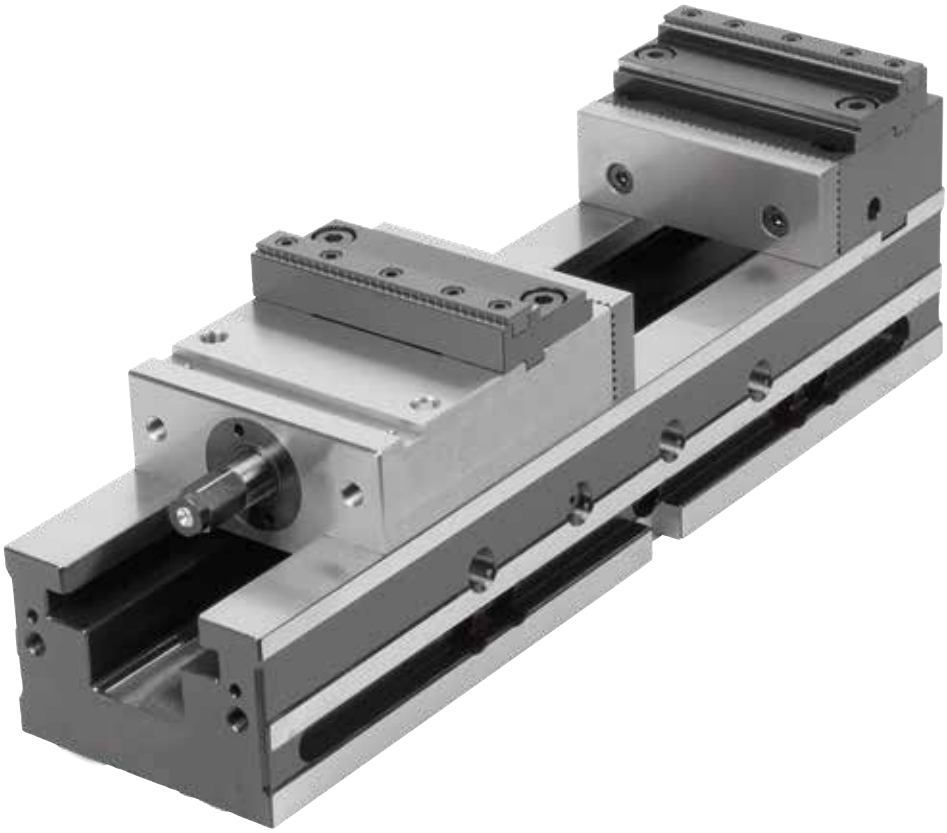


KIPP Baseplate for centric vice

Order No.	Form	Suitable for	weight kg
K1274.00175260	B	centric vice 65, 80	6,3
K1274.00230275	C	centric vice 125	7,5

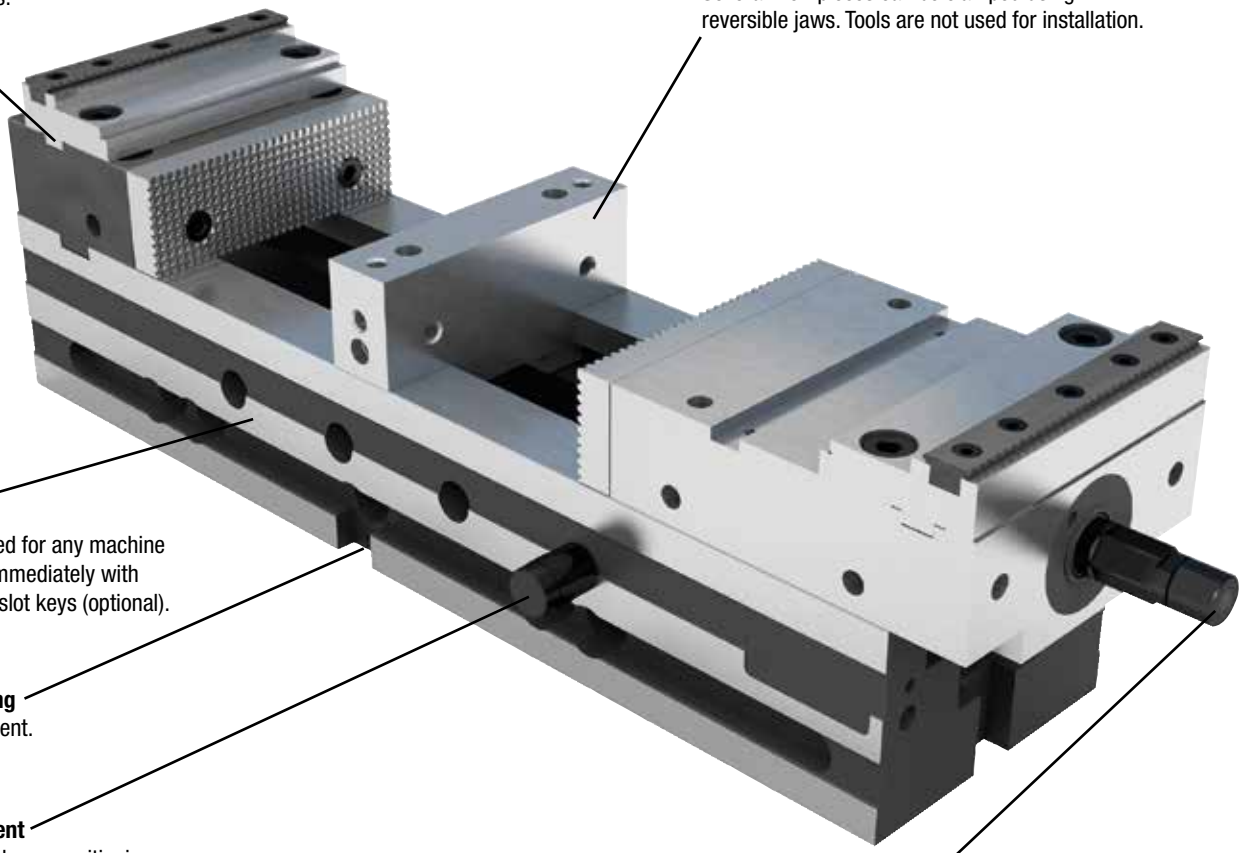
NC Vices



Technical information for NC vices

Adaptable
Slot and thread for attachment jaws and for grippers.

Optional
Multiple clamping
Several workpieces can be clamped using reversible jaws. Tools are not used for installation.



Individual
Flexible – can be used for any machine table, ready to use immediately with clamp strap set and slot keys (optional).

Optimum positioning
Cross slot for alignment.

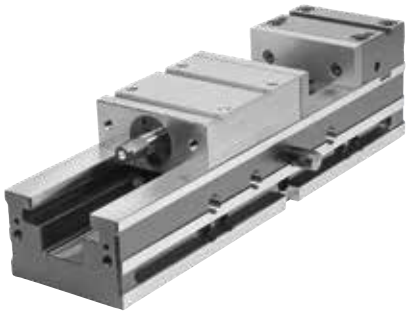
Quick pre-adjustment
Locking pins for quick pre-positioning.

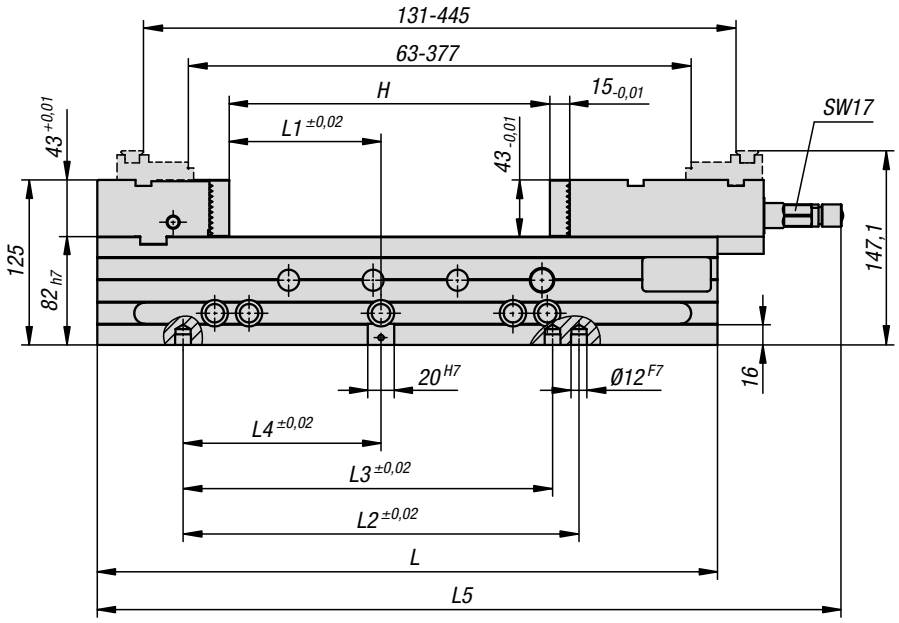
Spindle drive
Mechanical-hydraulic version up to 40 kN or purely mechanical clamping up to 10 kN.

Impressive advantages:
- Repeat accuracy ≤ 0.01 mm
- Fixed jaw locked in all directions (X,Y,Z)
- Wide clamping range due to use of attachment step jaws
- Basic equipment: 2 reversible screw-on jaws and 1 crank handle
- Can be laid on the side, with fastening holes for slot spacing of 63 mm and 100 mm.

NC vice

jaw width 125 mm



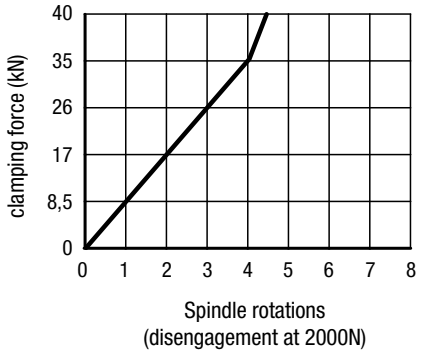


Material:
Body and jaw holder mild steel.

Version:
Hardened and ground all sides.

Sample order:
K1238.125470

Features:
NC vices can be used for a wide range of clamping tasks:
- Repeat accuracy ≤0.01 mm
- Fixed jaw locked in all directions (X,Y,Z)
- Vertical use directly on the machine table
- Wide clamping range by using attachment step jaws
- Can be laid on the side, with fastening holes for slot spacing of 63 mm and 100 mm
- Quick pre-adjustment of the clamping range using locking pins
- Basic equipment includes two reversible screw-on jaws and one crank handle



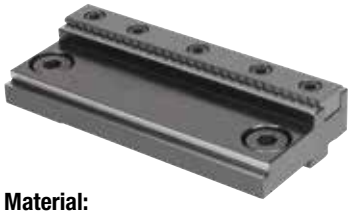
KIPP NC vice jaw width 125 mm

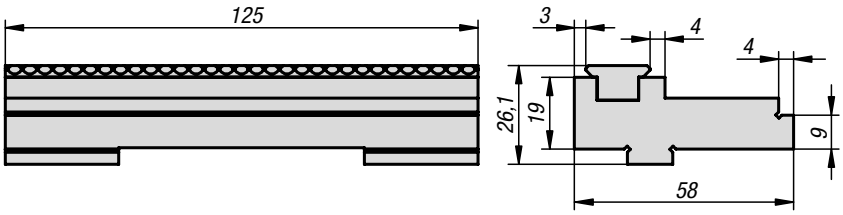
Order No.	B	L	L1	L2	L3	L4	L5	H clamping range	weight kg
K1238.125470	125	470	115	300	280	150	564	0-239	37,6

K1273

Attachment step jaw

with gripper for NC vice



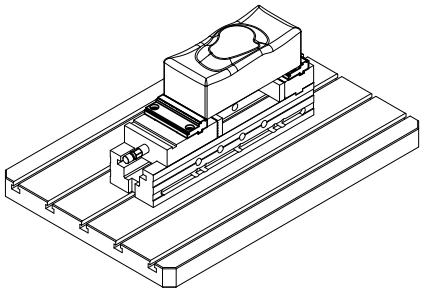


Material:
Steel.

Version:
Hardened and ground.

Sample order:
K1273.1251

Note:
The attachment step jaws are for expanding the NC vice clamping width. The gripper jaw pads can be exchanged for smooth jaw pads K0591.125117.



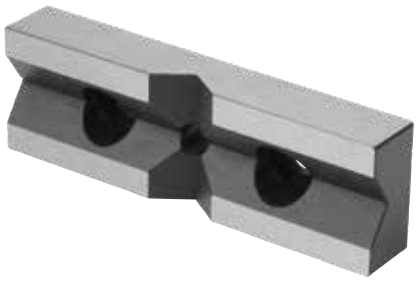
KIPP Attachment step jaw with gripper jaw pad for NC vice

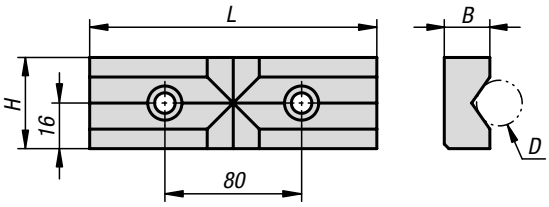
Order No.	Suitable for
K1273.1251	NC vice 125

K1376

Prism jaws

for NC vice





Material:
Steel.

Version:
Hardened.

Sample order:
K1376.125

Note:
Prism jaw for clamping round material, tubes, rods, profiles, etc. Prism machined horizontally and vertically.

Suitable for K1238.125470

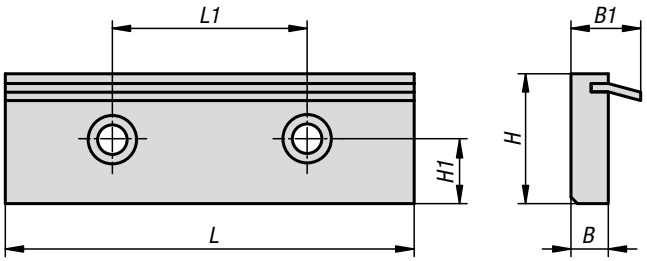
KIPP Prism jaws for NC vice

Order No.	B	D	H	L
K1376.125	20	8-38	43	125

K0601

Hold-down jaw pads with spring blade

for NC vice



Material:
Steel.

Version:
Hardened.

Sample order:
K0601.125

Note:
The hold-down jaw pads with spring blade are used for clamping rough workpieces. The spring blade exerts extra pressure to the workpiece, forcing it onto the seating face.

Suitable for K1238.125470

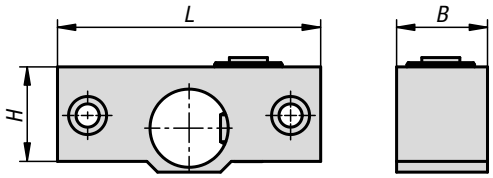
KIPP Hold-down jaw pads with spring blade for NC vice

Order No.	B	B1	H	H1	L	L1
K0601.125	11,5	21,5	43	16	125	80

K1377

Angle drives

for NC vice



Material:
Housing steel.
Drive, steel.

Sample order:
K1377.125

Note:
The angle drive is used to operate the NC vice from above or in tight spaces.

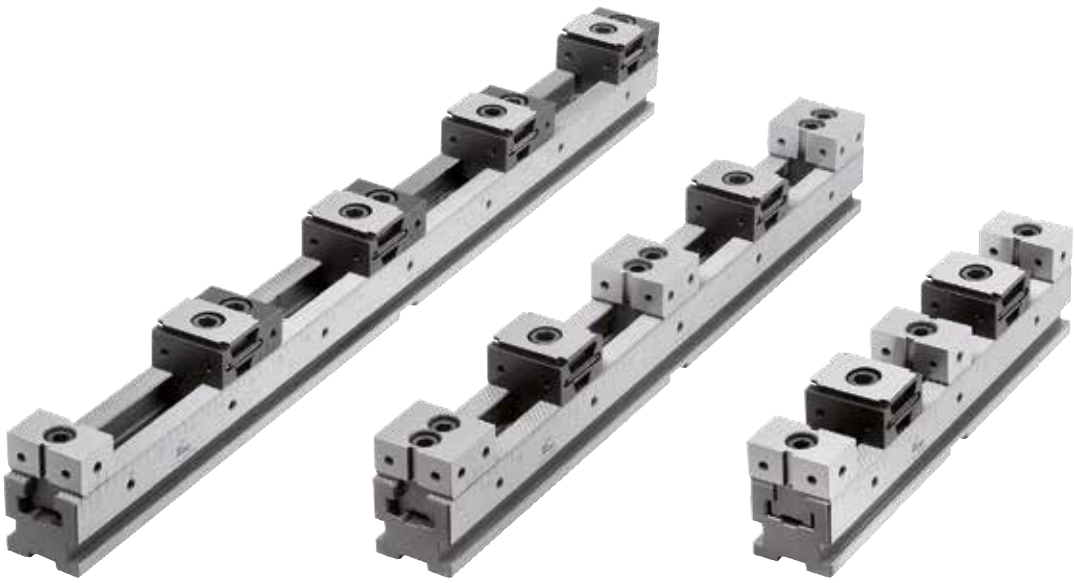
- The ratio is 1:1.4
- NC vice without angle drive max. 4.5 turns. With angle drive max. 6.3 turns.
- The angle drive is especially useful for horizontal use of NC vices, e.g. in the case of clamping cubes or workholding towers. The angle drive can also be used to operate the NC vice from above or in tight spaces.

Suitable for K1238.125470

KIPP Angle drives for NC vice

Order No.	B	H	L
K1377.125	43	45	124,5

Multi-clamping system



Multi-clamping system

Multi-clamping systems are mainly used for machining large workpiece batches.

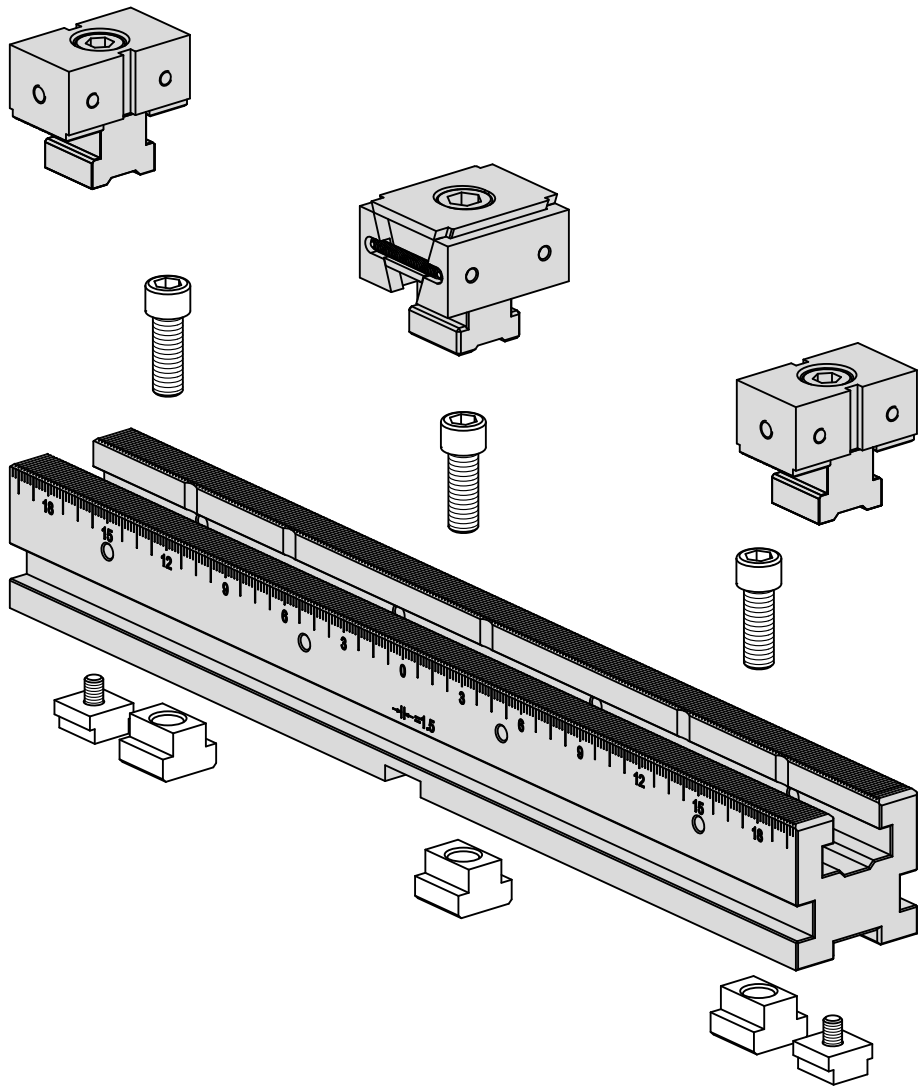
The system can be optionally set up for one or more workpieces.

Depending on the workpiece size and clamping rail length, several workpieces can thus be clamped simultaneously.

Due to the large component selection of the multiple clamping system (clamping rails, fixed jaws, wedge clamps and accessories) workpieces of different quantities and dimensions can be machined without problems and with optimised set-up times.

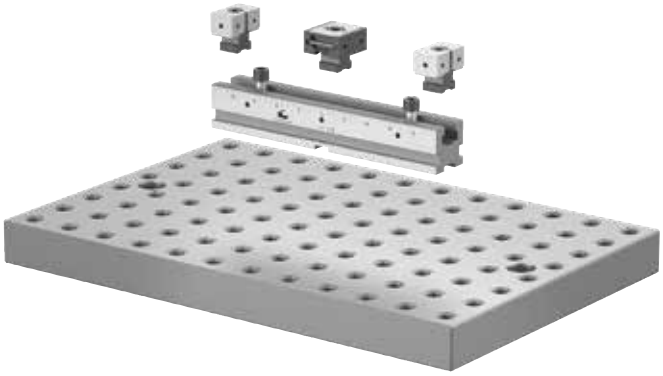
The user can choose between single-sided or double-sided types of wedge clamps.

The teeth on the clamping rails are precision-ground and guarantee secure and precise fastening of the fixed stops. By mounting several clamping rails along and across the table, the working area and the number of workpieces can be effectively optimised.



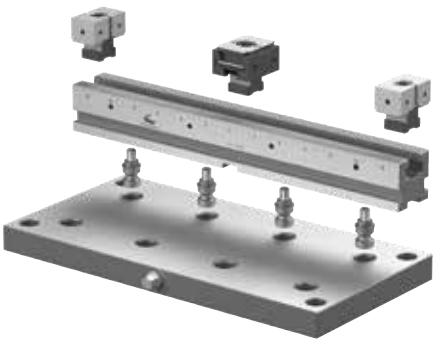
Interfaces

Mounting of the multi-clamping system along and across a T-slot machine table is possible.
Alignment with slot keys. Secured using screws or clamping claws.



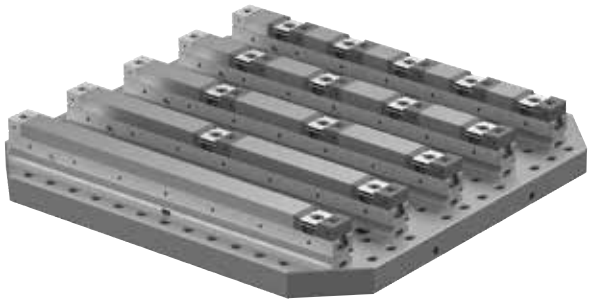
Mounting the multi-clamping system on a grid system.
Positioned and fastened using shoulder screws.

Adaptation of the multi-clamping system to a conventional zero-point clamping system.
Fits on 200 mm gauge size.
Ø25H6 locating hole and M12 fastening screw.

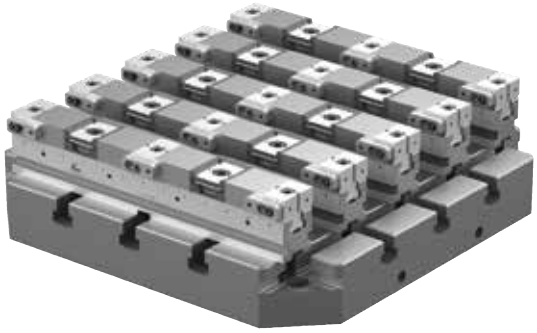


Adaptation of the multi-clamping system to a mechanical zero-point clamping system.
Fits on 96mm gauge size.
Ø16H6 locating hole and M10 fastening thread.

Example of a multi-clamping system



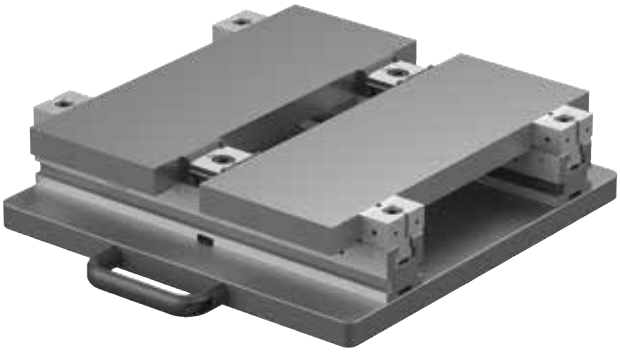
Application of the multi-clamping system with different workpieces.
Wedge clamps used here have the force coming from one side.
Depending on the workpiece size, several workpieces can be clamped using identical clamping rails.
The multi-clamping system can be modified flexibly and quickly.



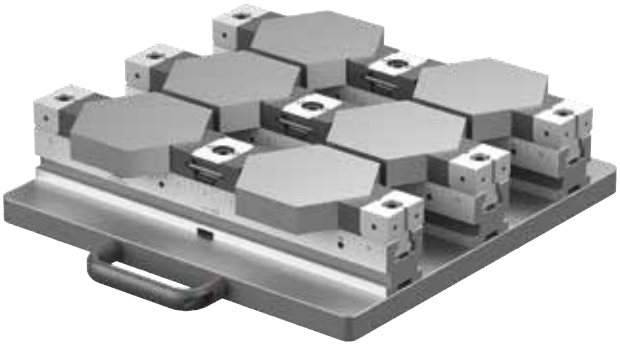
Multi-clamping system aligned and secured on pallet with T-slots.
Multi-clamping system set up for 20 identical workpieces.
Space-saving fixed jaws with one mounting screw.
Wedge clamps constructed as double-sided clamping element.

Flexible application of the multi-clamping system on an octagonal workholding tower.
With this clamping arrangement, many workpieces can be clamped simultaniously to extend the machine running time.

Example of a multi-clamping system



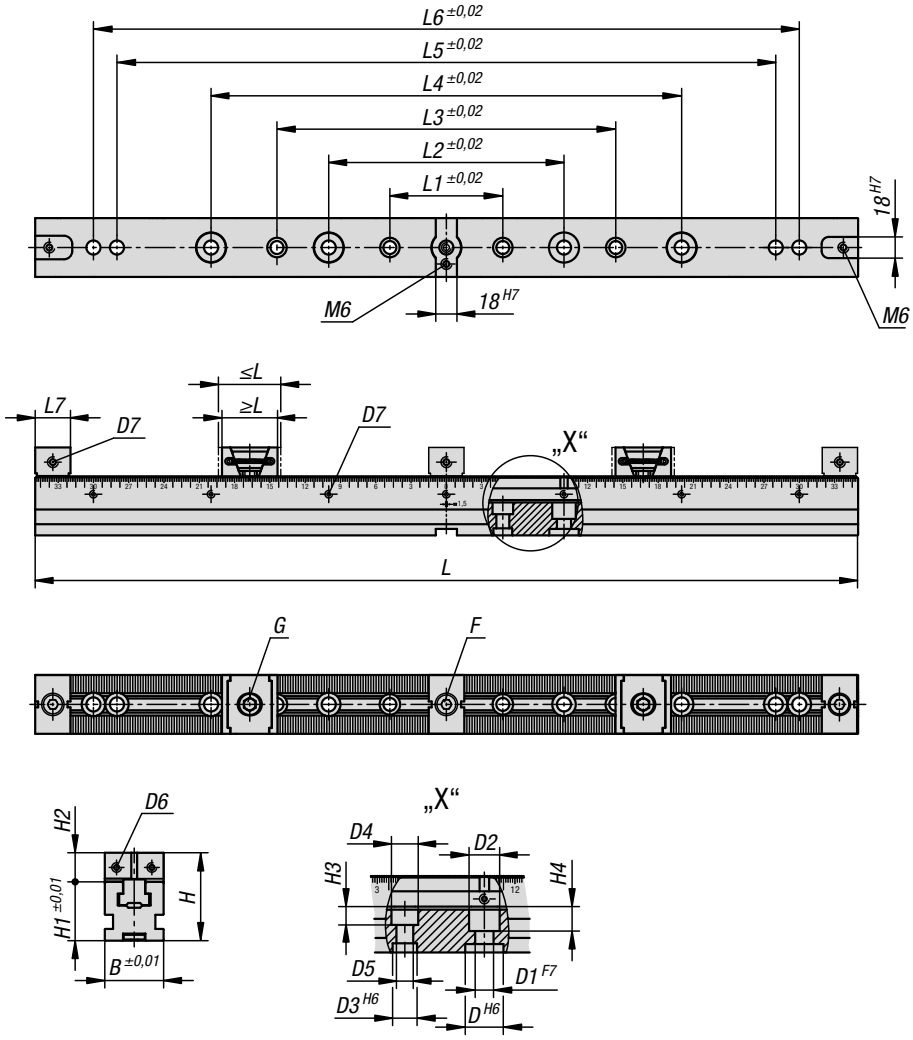
Mutli-clamping system mounted on an interchangeable pallet.
The workpieces can be reloaded externally to the machine to extend the machine running time.
With the double-sided arrangement of the wedge clamps, both plates can be clamped simultaneously.



Multi-clamping system mounted on an interchangeable pallet.
Attachment jaws with prisms are screwed onto the fixed jaws of the multi-clamping system.
Machinable wedge clamps are used on the clamping elements. The workpiece contour is machined into the excess material.

Multi-clamping system double-sided wedge clamps

Fixed jaw ES



Material:
Clamping rail and fixed jaw tool steel.
Wedge clamp mild steel.

Version:
Clamping rail and fixed jaw hardened and ground (HRC 55 ±2).
Wedge clamp hardened, phosphated.

Sample order:
K1828.05040001

Note:
The multi-clamping system can be fastened using various interfaces.

1. Lateral clamping edge for clamping claw set. Claw clamps can be fastened at any position.
2. Holes for DIN cap screws.
3. Ø25 mm locating holes for conventional zero-point clamping systems with 200 mm spacing.
4. Ø16 mm locating holes for zero-point clamping systems with 96 mm spacing.
5. Three 18H7 alignment slots for crosswise and lengthwise alignment on T- slot tables.
6. Ø12F7 and Ø16F7 reamed holes for 40 and 50 mm grid systems.

Three different versions are available:
- Multi-clamping system double-sided wedge clamp with OS fixed jaw / K1828.
- Multi-clamping system double-sided wedge clamp with DS fixed jaw / K1829.
- Multi-clamping system single-sided wedge clamp with OS fixed jaw / K1830.

Application:
A number of multi-clamping systems with different lengths can be mounted one behind the other or beside each other. The precision toothing enables highly precise positioning of the fixed jaws. Due to the lateral graduations on the clamping rails, each position of the fixed jaws can be documented and reset identically. Stops can be mounted in the tapped holes on the side. Turning the clamping screw moves the clamping segments outwards and press the workpieces against the fixed jaw.

Advantages:
Universal and flexible.
For small and large batch sizes.
Large components can also be clamped next to each other on several multiple clamping systems.

Multi-clamping system double-sided wedge clamps

Fixed jaw ES

Supplied with:
- 1x clamping rail.
- 2x double-sided wedge clamps.
- 3x fixed jaws ES.

Accessories:
Clamping pin K0967.
Cap screws K0869.10X30.
Cap screws K0869.12X25.
Shoulder screws K0815.12045 / K0815.16055.
Seating ledges K1752.
Attachment jaws with machining allowance K1753.
Attachment jaws with prism K1754.
Workpiece stop K1755.
Spacer K1756.
Clamping claw set K1757.
T-slot nut K1758.
T-slot key K0954.

KIPP Multi-clamping system double-sided wedge clamps, fixed jaw ES

Order No. smooth	Order No. serrated	L	B	H	L min.	L max.	L1	L2	L3	L4	L5	L6	L7
K1828.05030001	K1828.05030002	300	50	75	44,5	50,5	96	200	-	-	-	-	30
K1828.05040001	K1828.05040002	400	50	75	44,5	50,5	96	200	288	300	-	-	30
K1828.05050001	K1828.05050002	500	50	75	44,5	50,5	96	200	288	400	-	-	30
K1828.05060001	K1828.05060002	600	50	75	44,5	50,5	96	200	288	400	500	-	30
K1828.05070001	K1828.05070002	700	50	75	44,5	50,5	96	200	288	400	560	600	30

Order No. smooth	Order No. serrated	L	D	D1	D2	D3	D4	D5	D6	D7	H1	H2	H3	H4	F Socket head screw DIN 912	G cap screw DIN 912
K1828.05030001	K1828.05030002	300	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1828.05040001	K1828.05040002	400	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1828.05050001	K1828.05050002	500	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1828.05060001	K1828.05060002	600	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1828.05070001	K1828.05070002	700	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25

Maximum workpiece size

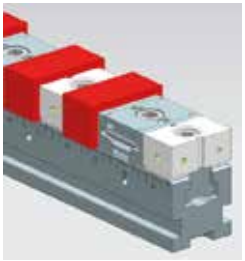
Maximum workpiece size for types double-sided wedge clamps and fixed jaw ES

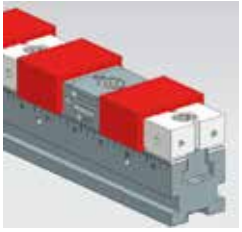
Clamping rails	1 pcs.	2 pcs.
	B=50	B=50
L=300	193	96
L=400	292	146
L=500	394	197
L=600	493	246
L=700	592	296

Clamping rails	3 pcs.	4 pcs.
	B=50	B=50
L=300	39	29
L=400	72	54
L=500	106	79
L=600	139	104
L=700	172	129

Clamping rails	5 pcs.	6 pcs.
	B=50	B=50
L=300	8	6
L=400	27	23
L=500	48	40
L=600	68	56
L=700	87	73

Clamping rails	7 pcs.	8 pcs.
	B=50	B=50
L=300	-	-
L=400	9	8
L=500	23	20
L=600	37	33
L=700	51	45



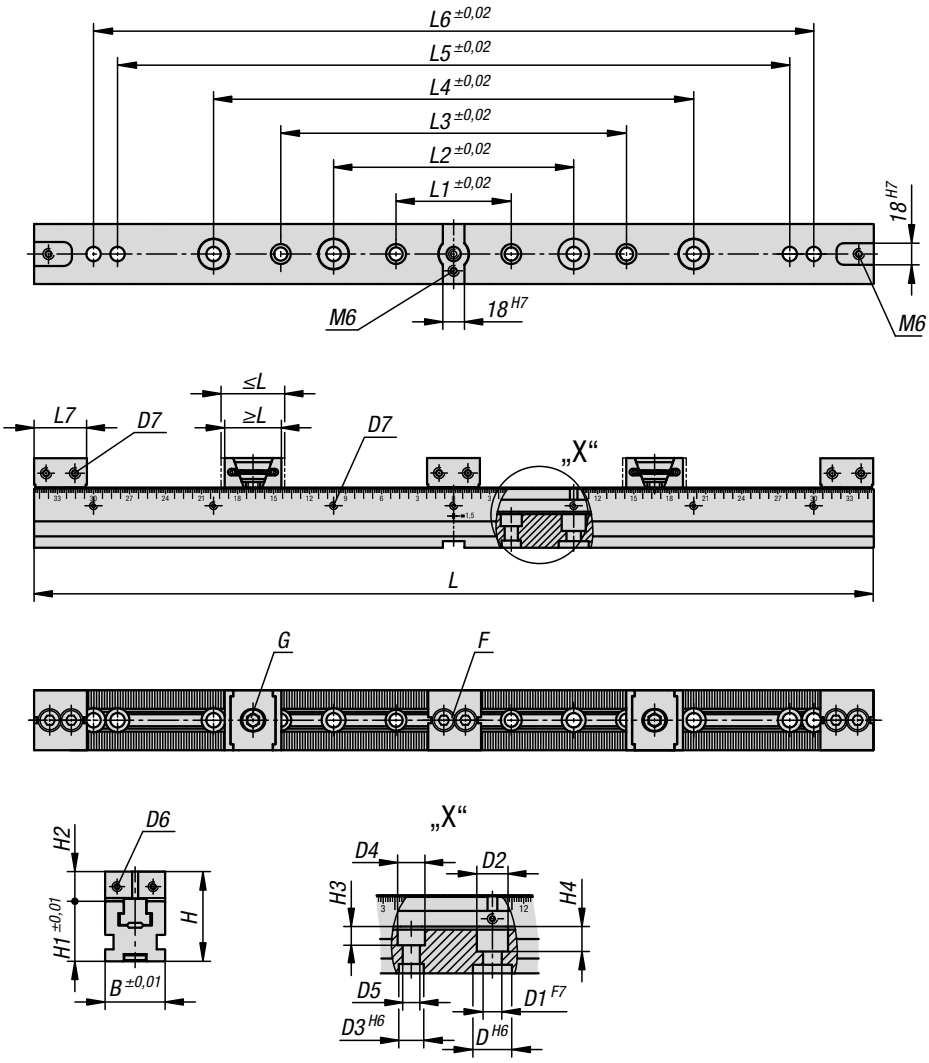


Combination of clamping rails for multi-clamping system K1746.
Wedge clamp K1748 and
Fixed jaw ES for multi-clamping system K1750.

Notes

Multi-clamping system double-sided wedge clamps

Fixed jaw DS



Material:
Clamping rail and fixed jaw tool steel.
Wedge clamp mild steel.

Version:
Clamping rail and fixed jaw hardened and ground (HRC 55 ±2).
Wedge clamp hardened, phosphated.

Sample order:
K1829.05040001

Note:
The multi-clamping system can be fastened using various interfaces.

1. Lateral clamping edge for clamping claw set. Claw clamps can be fastened at any position.
2. Holes for DIN cap screws
3. Ø25 mm locating holes for conventional zero-point clamping systems with 200 mm spacing.
4. Ø16 mm locating holes for zero-point clamping systems with 96 mm spacing.
5. Three 18H7 alignment slots for crosswise and lengthwise alignment on T- slot tables.
6. Ø12F7 and Ø16F7 reamed holes for 40 and 50 mm grid systems.

Three different versions are available:
- Multi-clamping system double-sided wedge clamp with OS fixed jaw / K1828.
- Multi-clamping system double-sided wedge clamp with DS fixed jaw / K1829.
- Multi-clamping system single-sided wedge clamp with OS fixed jaw / K1830.

Application:
A number of multi-clamping systems with different lengths can be mounted one behind the other or beside each other. The precision toothing enables highly precise positioning of the fixed jaws. Due to the lateral graduations on the clamping rails, each position of the fixed jaws can be documented and reset identically. Stops can be mounted in the tapped holes on the side.
Turning the clamping screw moves the clamping segments outwards and press the workpieces against the fixed jaw.

Advantages:
Universal and flexible.
For small and large batch sizes.
Large components can also be clamped next to each other on several multiple clamping systems.

Multi-clamping system double-sided wedge clamps

Fixed jaw DS

Supplied with:
- 1x clamping rail.
- 2x double-sided wedge clamps.
- 3x fixed jaws DS.

Accessories:
Clamping pin K0967.
Cap screws K0869.10X30.
Cap screws K0869.12X25.
Shoulder screws K0815.12045 / K0815.16055.
Seating ledges K1752.
Attachment jaws with machining allowance K1753.
Attachment jaws with prism K1754.
Workpiece stop K1755.
Spacer K1756.
Clamping claw set K1757.
T-slot nut K1758.
T-slot key K0954.

KIPP Multi-clamping system double-sided wedge clamps, fixed jaw DS

Order No. smooth	Order No. serrated	L	B	H	L min.	L max.	L1	L2	L3	L4	L5	L6	L7
K1829.05030001	**K1829.05030002**	300	50	75	44,5	50,5	96	200	-	-	-	-	44
K1829.05040001	**K1829.05040002**	400	50	75	44,5	50,5	96	200	288	300	-	-	44
K1829.05050001	**K1829.05050002**	500	50	75	44,5	50,5	96	200	288	400	-	-	44
K1829.05060001	**K1829.05060002**	600	50	75	44,5	50,5	96	200	288	400	500	-	44
K1829.05070001	**K1829.05070002**	700	50	75	44,5	50,5	96	200	288	400	560	600	44

Order No. smooth	Order No. serrated	L	D	D1	D2	D3	D4	D5	D6	D7	H1	H2	H3	H4	F Socket head screw DIN 912	G cap screw DIN 912
K1829.05030001	**K1829.05030002**	300	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1829.05040001	**K1829.05040002**	400	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1829.05050001	**K1829.05050002**	500	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1829.05060001	**K1829.05060002**	600	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25
K1829.05070001	**K1829.05070002**	700	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25

Maximum workpiece size

Maximum workpiece sizes for the types double-sided wedge clamp and fixed jaw DS

Clamping rails	1 pcs.	2 pcs.
	B=50	B=50
L=300	164	82
L=400	263	131
L=500	365	182
L=600	464	232
L=700	563	281

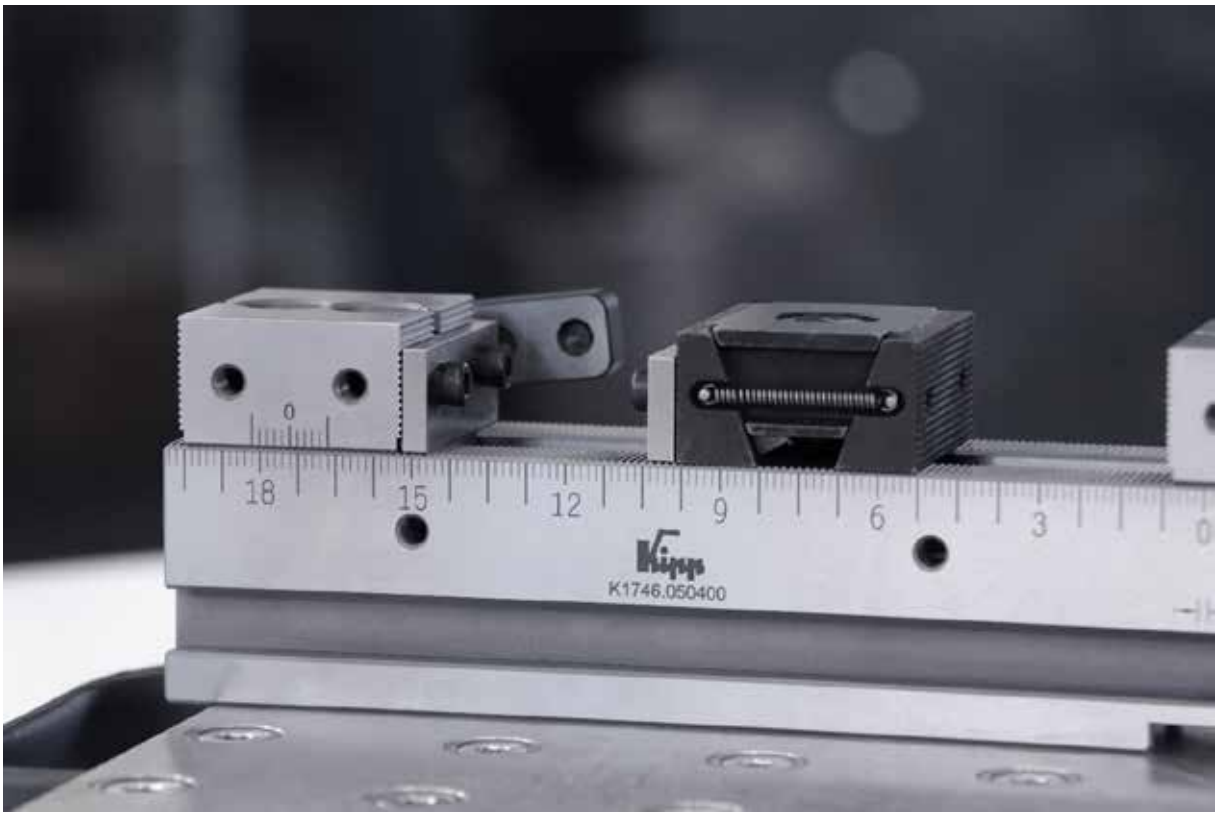
Clamping rails	3 pcs.	4 pcs.
	B=50	B=50
L=300	24	18
L=400	57	43
L=500	91	68
L=600	124	93
L=700	157	118

Clamping rails	5 pcs.	6 pcs.
	B=50	B=50
L=300	-	-
L=400	16	13
L=500	36	30
L=600	56	47
L=700	76	63

Clamping rails	7 pcs.	8 pcs.
	B=50	B=50
L=300	-	-
L=400	-	-
L=500	13	11
L=600	27	24
L=700	41	36

Combination of clamping rails for multi-clamping system K1746.
Wedge clamp K1748 and
Fixed jaw DS for multi-clamping system K1751.

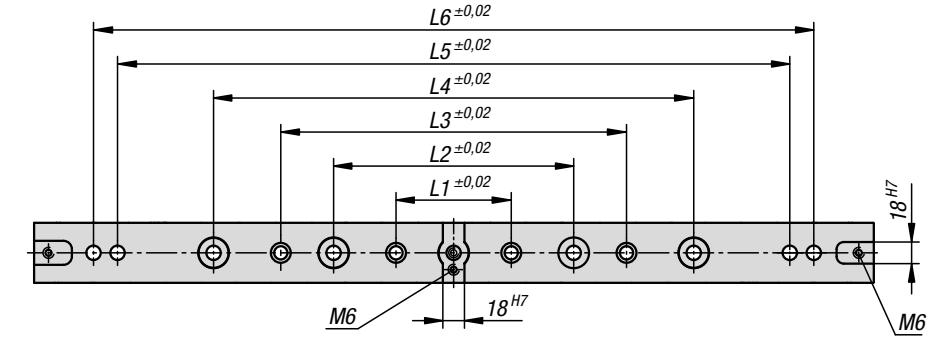
Applications

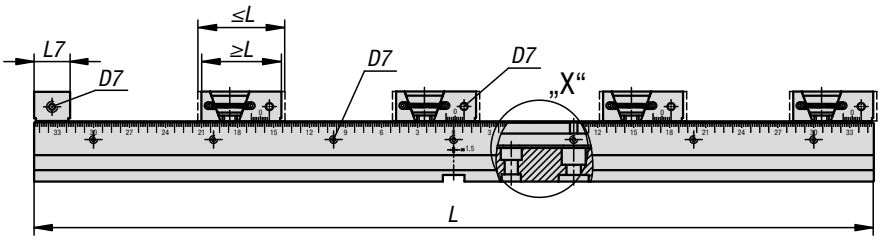


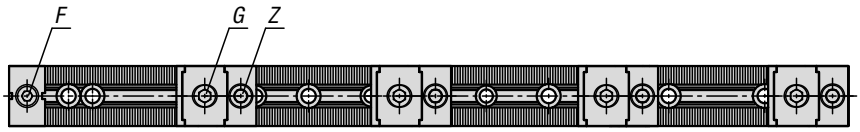
Notes

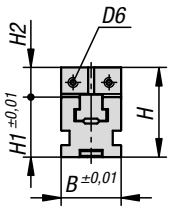
Multi-clamping system single-sided wedge clamps

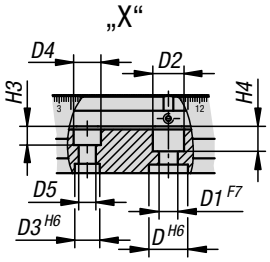
Fixed jaw ES











Material:
Clamping rail and fixed jaw tool steel.
Wedge clamp mild steel.

Version:
Clamping rail and fixed jaw hardened and ground (HRC 55 ±2).
Wedge clamp hardened, phosphated.

Sample order:
K1830.05050001

Note:
The multi-clamping system can be fastened using various interfaces.

1. Lateral clamping edge for clamping claw set. Claw clamps can be fastened at any position.
2. Holes for DIN cap screws.
3. Ø25 mm locating holes for conventional zero-point clamping systems with 200 mm spacing.
4. Ø16 mm locating holes for zero-point clamping systems with 96 mm spacing.
5. Three 18H7 alignment slots for crosswise and lengthwise alignment on T- slot tables.
6. Ø12F7 and Ø16F7 reamed holes for 40 and 50 mm grid systems.

Three different versions are available:

- Multi-clamping system double-sided wedge clamp with OS fixed jaw / K1828.
- Multi-clamping system double-sided wedge clamp with DS fixed jaw / K1829.
- Multi-clamping system single-sided wedge clamp with OS fixed jaw / K1830.

Application:
A number of multi-clamping systems with different lengths can be mounted one behind the other or beside each other. The precision toothing enables highly precise positioning of the fixed jaws. Due to the lateral graduations on the clamping rails, each position of the fixed jaws can be documented and reset identically. Stops can be mounted in the tapped holes on the side.
Turning the clamping screw moves the clamping segments outwards and press the workpieces against the fixed jaw.

Advantages:
Universal and flexible.
For small and large batch sizes.
Large components can also be clamped next to each other on several multiple clamping systems.

Multi-clamping system single-sided wedge clamps

Fixed jaw ES

Supplied with:
- 1x clamping rail.
- 3x single-sided wedge clamps.
- 1x fixed jaw ES.

Accessories:
Clamping pin K0967.
Cap screws K0869.10X30.
Cap screws K0869.12X25.
Shoulder screws K0815.12045 / K0815.16055.
Seating ledges K1752.
Attachment jaws with machining allowance K1753.
Attachment jaws with prism K1754.
Workpiece stop K1755.
Spacer K1756.
Clamping claw set K1757.
T-slot nut K1758.
T-slot key K0954.

KIPP Multi-clamping system single-sided wedge clamps fixed jaw ES

Order No. smooth	Order No. serrated	L	B	H	L min.	L max.	L1	L2	L3	L4	L5	L6	L7
K1830.05040001	K1830.05040002	400	50	75	64	70	96	200	288	300	-	-	30
K1830.05050001	K1830.05050002	500	50	75	64	70	96	200	288	400	-	-	30
K1830.05060001	K1830.05060002	600	50	75	64	70	96	200	288	400	500	-	30
K1830.05070001	K1830.05070002	700	50	75	64	70	96	200	288	400	560	600	30

Order No. smooth	Order No. serrated	L	D	D1	D2	D3	D4	D5	D6	D7	H1	H2	H3	H4	F Socket head screw DIN 912	G cap screw DIN 912	Z cap screw DIN 912
K1830.05040001	K1830.05040002	400	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25	M12x30
K1830.05050001	K1830.05050002	500	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25	M12x30
K1830.05060001	K1830.05060002	600	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25	M12x30
K1830.05070001	K1830.05070002	700	25	12	20	16	17,5	11	M5	M6	50	25	12	16	M10x30	M12x25	M12x30

Maximum workpiece size

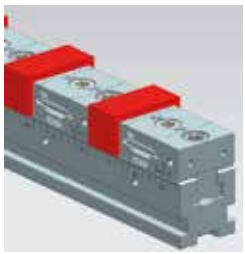
Maximum workpiece sizes for the types wedge clamp with fixed jaw

Clamping rails	1 pcs.	2 pcs.
	B=50	B=50
L=300	203	68
L=400	302	118
L=500	404	169
L=600	503	218
L=700	602	268

Clamping rails	3 pcs.	4 pcs.
	B=50	B=50
L=300	23	-
L=400	56	26
L=500	90	51
L=600	123	76
L=700	156	101

Clamping rails	5 pcs.	6 pcs.
	B=50	B=50
L=300	-	-
L=400	7	-
L=500	27	12
L=600	47	28
L=700	67	45

Clamping rails	7 pcs.	8 pcs.
	B=50	B=50
L=300	-	-
L=400	-	-
L=500	-	-
L=600	15	5
L=700	29	17



Combination of clamping rails for
multi-clamping system K1746.
Wedge clamp with fixed jaw for multi-clamping system K1749 and
1x fixed jaw ES for multi-clamping system K1750.

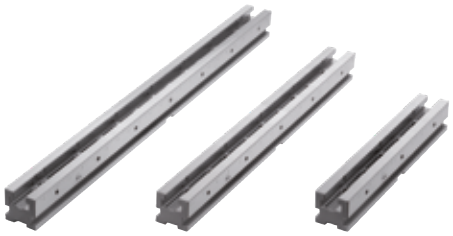
Multi-clamping system single-sided wedge clamps

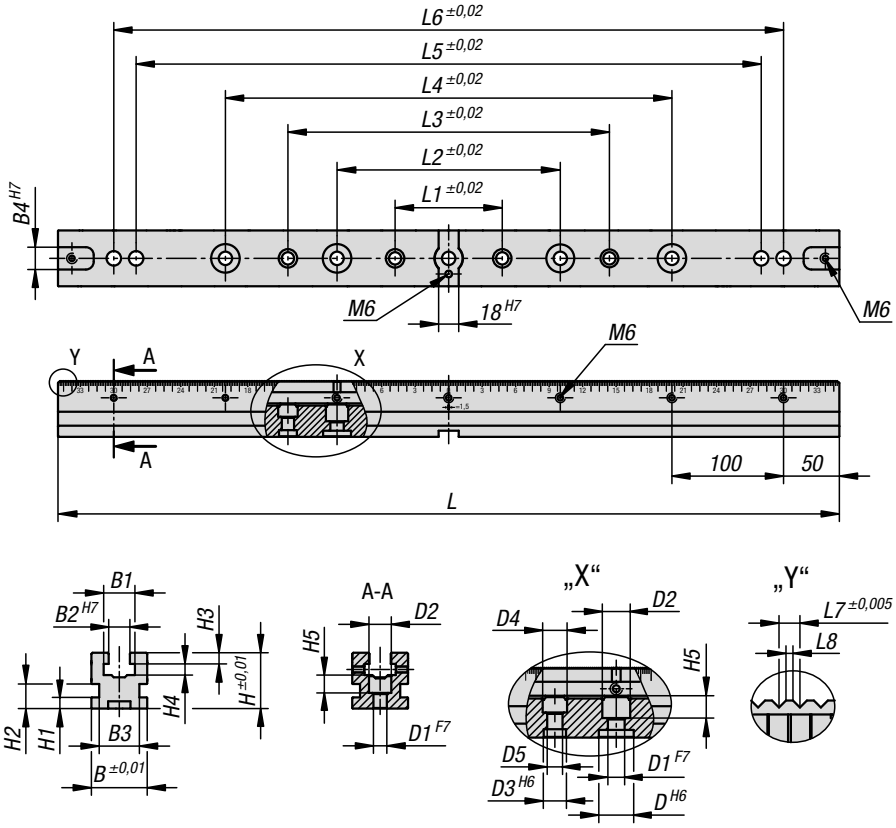
Fixed jaw ES

Notes

Clamping rails

for multi-clamping system





Material:
Tool steel.

Version:
Hardened and ground (HRC 55 ±2).

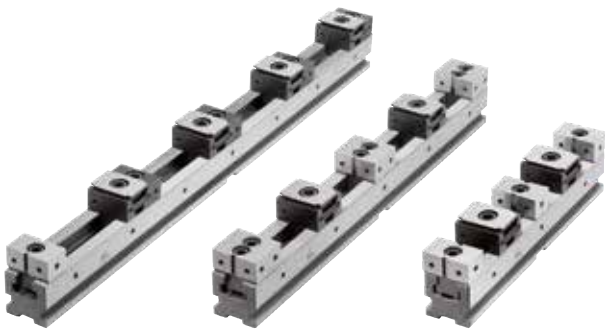
Sample order:
K1746.050300

Note:
The clamping rails can be fastened using various methods.

1. Lateral edge for claw clamp set. Claw clamps can be fastened at any desired position.
2. Holes for DIN cap screws.
3. Ø25H6 mm locating holes for conventional zero-point clamping systems with 100 mm system spacing.
4. Ø16H6 mm locating holes for zero-point clamping systems with 96 mm system spacing.
5. Three 18H7 alignment slots for T-slot tables.
6. Ø12F7 and Ø16F7 reamed holes for 40 mm and 50 mm grid systems.

Application:
Several clamping rails with different lengths can be mounted one behind the other or next to each other. The precision toothing enables very accurate positioning of the fixed jaws. Due to the scale on the side of the clamping rails, each position of the fixed jaws can be documented and reset identically. Stops can be mounted in the tapped holes on the side.

Advantages:
Universal and flexible.
For small and large batch sizes.
Large components can also be clamped beside each other on a number of clamping rails.

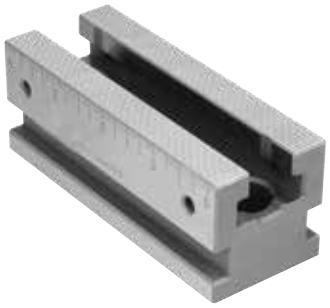


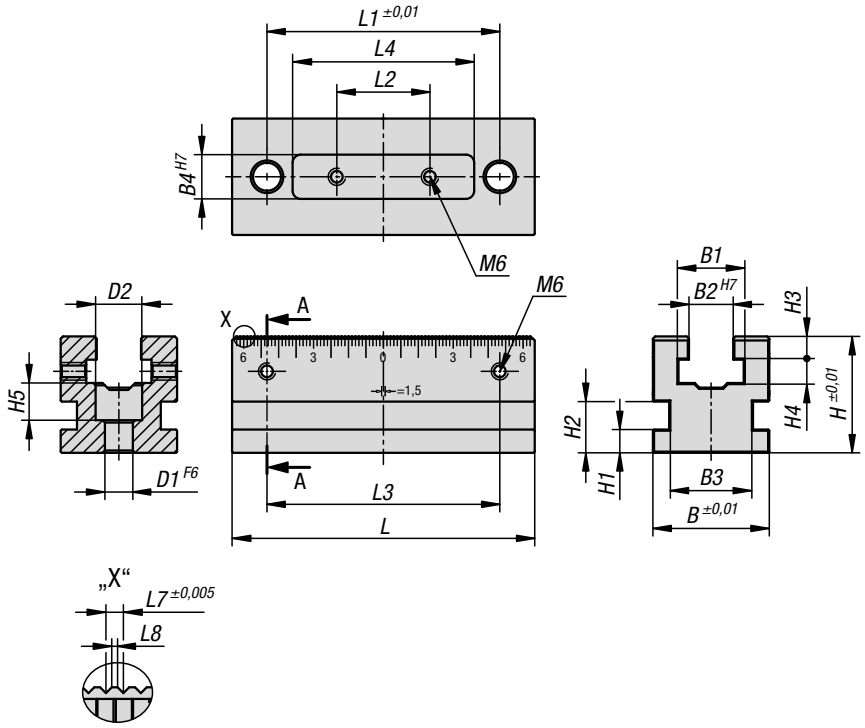
KIPP Clamping rails for multi-clamping system

Order No.	suitable for system width	L	B	H	L1	L2	L3	L4	L5	L6	L7	L8	B1	B2	B3	B4	H1	H2	H3	H4	H5	D	D1	D2	D3	D4	D5
K1746.050300	50	300	50	50	96	200	-	-	-	-	1,5	0,5	28	19	36	18	10	22	10	10	16	25	12	20	16	17,5	11
K1746.050400	50	400	50	50	96	200	288	300	-	-	1,5	0,5	28	19	36	18	10	22	10	10	16	25	12	20	16	17,5	11
K1746.050500	50	500	50	50	96	200	288	400	-	-	1,5	0,5	28	19	36	18	10	22	10	10	16	25	12	20	16	17,5	11
K1746.050600	50	600	50	50	96	200	288	400	500	-	1,5	0,5	28	19	36	18	10	22	10	10	16	25	12	20	16	17,5	11
K1746.050700	50	700	50	50	96	200	288	400	560	600	1,5	0,5	28	19	36	18	10	22	10	10	16	25	12	20	16	17,5	11

Clamping rails, short

for multi-clamping system





Material:
Tool steel.

Version:
Hardened and ground (HRC 55 ±2).

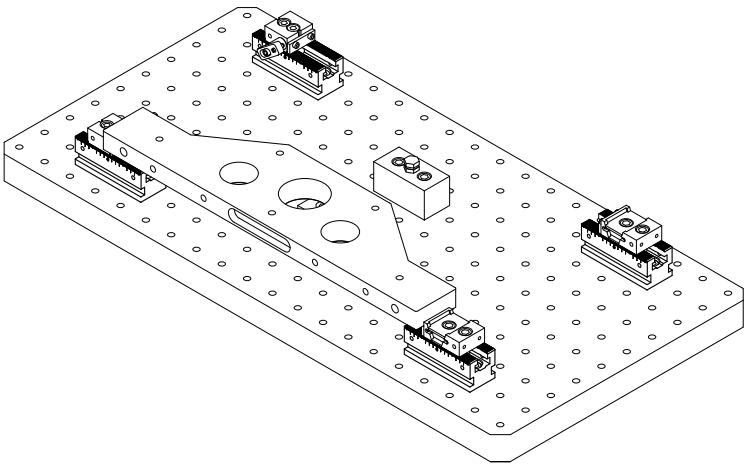
Sample order:
K1747.050130

Note:
The clamping rails can be fastened using various methods.

1. Lateral edge for claw clamp set. Claw clamps can be fastened at any desired position.
2. Holes for DIN cap screws.
3. One 18H7 alignment slot for T-slot tables.
4. Ø12F7 and Ø16F7 reamed holes for 50 mm grid systems.

Application:
With the short clamping rails, clamping tasks can be implemented with low space requirements. The precision toothing enables very accurate positioning of the fixed jaws. Due to the scale on the side of the clamping rails, each position of the fixed jaws can be documented and reset identically. Stops can be mounted in the tapped holes on the side.

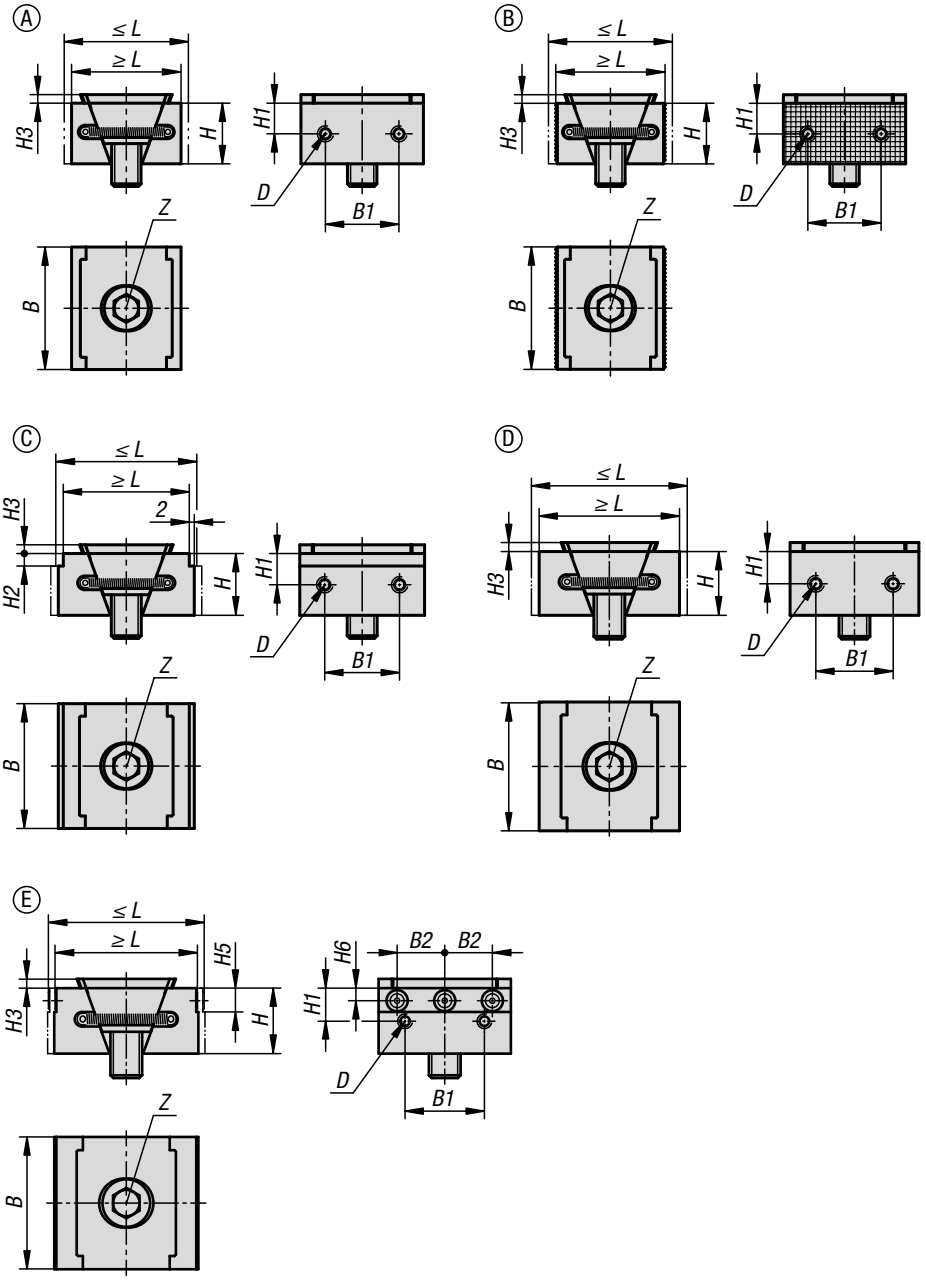
Advantages:
Universal and flexible application.
A number of short clamping rails can also be used to adapt flexibly to different clamping situations.



KIPP Short clamping rails for multi-clamping system

Order No.	suitable for system width	L	B	H	L1	L2	L3	L4	L7	L8	B1	B2	B3	B4	H1	H2	H3	H4	H5	D1	D2
K1747.050130	50	130	50	50	100	40	100	77	1,5	0,5	28	19	36	18	10	22	10	10	16	12	20

Wedge clamps



The functioning principle make the wedge clamps ideal for multi-clamping.
The wedge shape creates high clamping forces.
The wedge clamps can be used for clamping in conjunction with the clamping rail or mounted in tapped holes or T-slots.
Tightening the clamping screw moves the two clamping segments outwards and press the workpieces against the fixed jaws of the machining fixture.
The double wedge has an elongated hole allowing for movement and to compensate for tolerances.
Displacement: M12 = ±1 mm.

Material:
Double wedge and clamping segments mild steel.

Version:
Double wedge and clamping segments hardened, phosphated.

Sample order:
K1748.05002

Note:
The two screw-on holes in the clamping faces also enable seating ledges to be mounted so as to optimise the clamping depth of the workpieces.

Supplied with:
Wedge clamps.
Fastening screw.

Drawing reference:
Form A: Smooth jaw face
Form B: Serrated jaw facet
Form C: With step
Form D: With machining allowance
Form E: With jaw pins

Wedge clamps

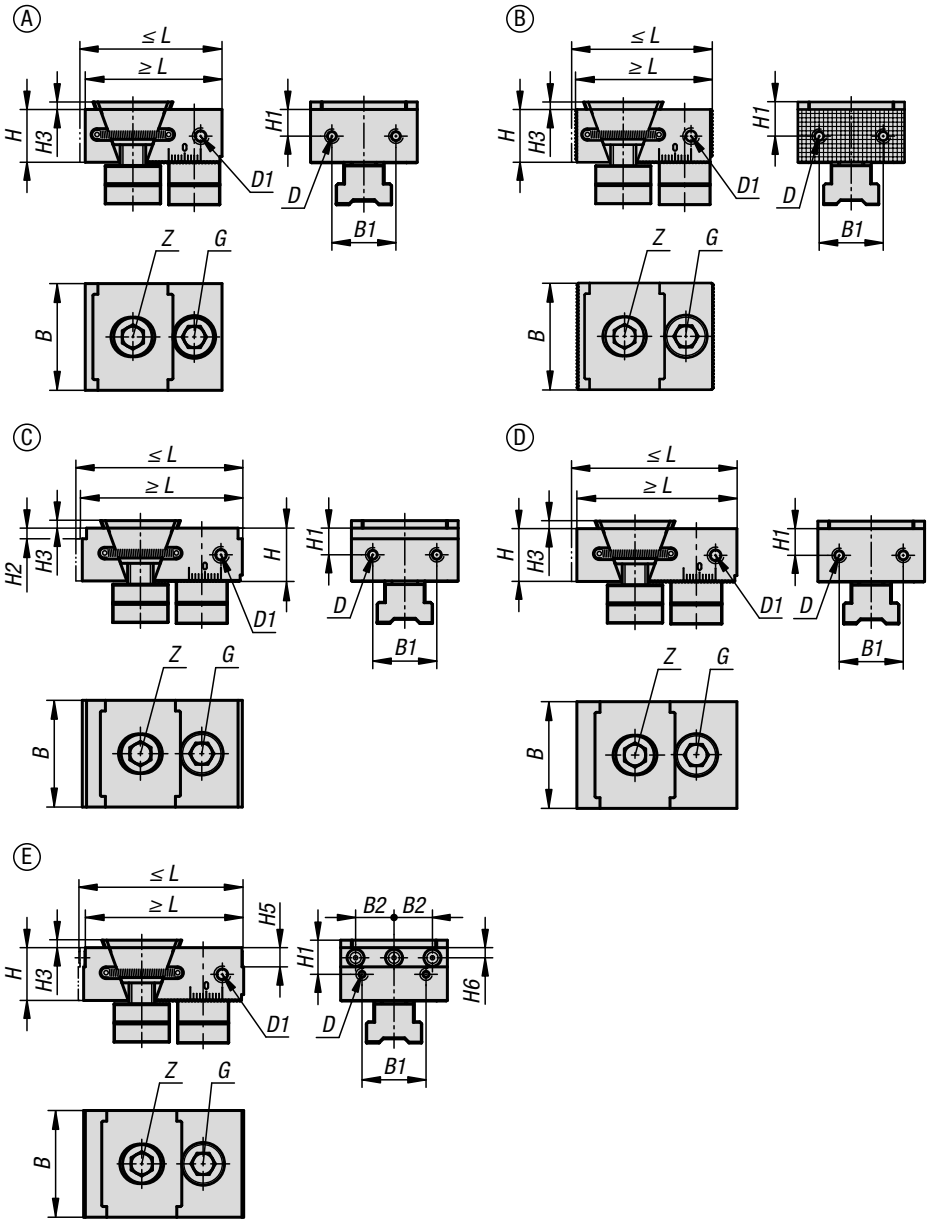
KIPP Wedge clamps

Order No.	Form	L min.	L max.	B	H	B1	B2	H1	H2	H3	H5	H6
K1748.0500112	A	44,5	50,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0500212	B	44,5	50,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0502312	C	50,5	56,5	50	25	30	-	12,5	2	3,5	-	-
K1748.0505312	C	50,5	56,5	50	25	30	-	12,5	5	3,5	-	-
K1748.0500412	D	54,5	60,5	50	25	30	-	12,5	-	3,5	-	-
K1748.0500512	E	54	60	50	25	30	18	12,5	-	3,5	9	4,75

Order No.	Form	D Internal thread	Z cap screw DIN 912	Clamping force max. kN	Tightening torque max. Nm
K1748.0500112	A	M5	M12x25	30	85
K1748.0500212	B	M5	M12x25	30	85
K1748.0502312	C	M5	M12x25	30	85
K1748.0505312	C	M5	M12x25	30	85
K1748.0500412	D	M5	M12x25	30	85
K1748.0500512	E	M5	M12x25	30	85

Wedge clamps with fixed jaw

for multi-clamping system



The functioning principle make the wedge clamps ideal for multi-clamping. The wedge shape creates high clamping forces. Tightening the clamping screw moves the clamping segments outwards and press the workpieces against the fixed jaws.
The wedge has a slightly elongated hole allowing for movement to compensate for tolerances.
Displacement: M12 = ±1 mm.

Material:
Double wedge and clamping segments mild steel.

Version:
Double wedge and clamping segments hardened, phosphated.

Sample order:
K1749.05002

Note:
These wedge clamps can only be used in conjunction with the clamping rail K1746 for multiple clamping.
The lateral fastening holes are used to fasten workpiece stops.
The two screw-on holes in the clamping faces also enable seating ledges to be mounted so as to optimise the clamping depth of the workpieces.

Advantages:
The lateral scale on the clamping rail and the fixed jaw guarantees a very high repeat clamping accuracy.

Supplied with:
Wedge clamps
Fastening screws.
Slot keys.

Drawing reference:
Form A: Smooth jaw face
Form B: Serrated jaw facet
Form C: With step
Form D: With machining allowance
Form E: With jaw pins

Wedge clamps with fixed jaw

for multi-clamping system

KIPP Wedge clamps with fixed jaw for multi-clamping system

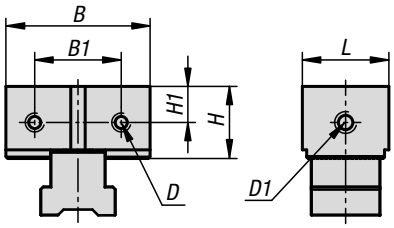
Order No.	Form	L min.	L max.	B	H	B1	B2	H1	H2	H3	H5	H6
K1749.0500112	A	64	70	50	25	30	-	12,5	-	3,5	-	-
K1749.0500212	B	64	70	50	25	30	-	12,5	-	3,5	-	-
K1749.0502312	C	71	77	50	25	30	-	12,5	2	3,5	-	-
K1749.0505312	C	71	77	50	25	30	-	12,5	5	3,5	-	-
K1749.0500412	D	75	81	50	25	30	-	12,5	-	3,5	-	-
K1749.0500512	E	74,5	80,5	50	25	30	18	12,5	-	3,5	9	4,75

Order No.	Form	D Internal thread	D1	G cap screw DIN 912	Z cap screw DIN 912	Clamping force max. kN	Tightening torque max. Nm
K1749.0500112	A	M5	M6	M12x30	M12x25	30	85
K1749.0500212	B	M5	M6	M12x30	M12x25	30	85
K1749.0502312	C	M5	M6	M12x30	M12x25	30	85
K1749.0505312	C	M5	M6	M12x30	M12x25	30	85
K1749.0500412	D	M5	M6	M12x30	M12x25	30	85
K1749.0500512	E	M5	M6	M12x30	M12x25	30	85

Fixed jaws ES

for multi-clamping system

Ⓐ



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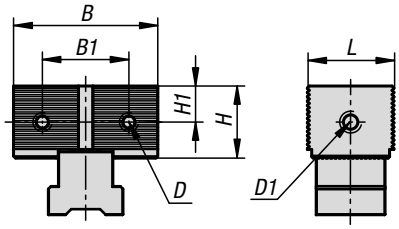

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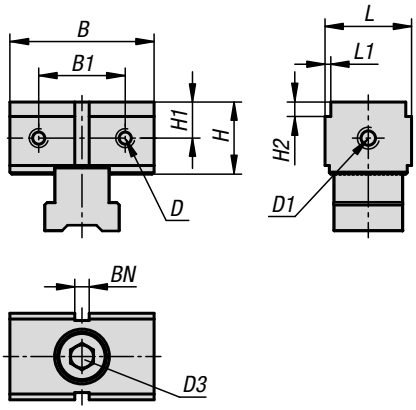


Material:
Tool steel.

Version:
Hardened and ground (HRC 55 ±2).

Sample order:
K1750.0503001

Note:
There are three different fixed jaw versions to choose from:
- Smooth version Form A for pre-machined workpieces.
- Serrated version Form B for raw parts.
- Offset jaws Form C for clamping with a small clamping edge.

The lateral fastening holes are used to fasten workpiece end stops. The two screw-on holes on the clamping surfaces also allow seating ledges to be mounted so as to optimise the clamping depth of the workpieces.

Application:
The ES fixed jaws are positioned on the clamping rails according to the clamping situation. When the fastening screw is tightened, the toothing allows a form-fit connection to be created. This allows high retaining forces to be carried through the clamping elements. With its slim design, the ES fixed jaw is especially suitable for clamping processes with smaller workpieces and large batch sizes. This also means that large production batches can be processed economically.

Advantages:
The lateral scale on the clamping rails and the fixed jaws allows precise positioning of the fixed stops.

Supplied with:
ES fixed jaw.
Fastening screw.
Slot key.

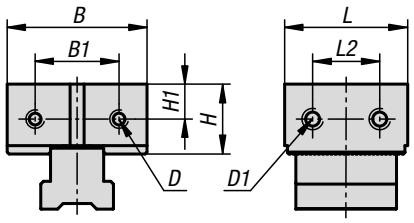
KIPP Fixed jaws ES for multi-clamping system

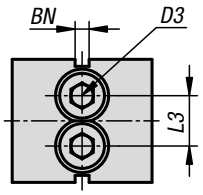
Order No.	suitable for system width	Form	Form-Type	L	B	H	L1	B1	H1	H2	D Internal thread	D1 internal thread	D3	BN=Slot width
K1750.0503001	50	A	smooth	30	50	25	-	30	12,5	-	M5	M6	M10x30	5
K1750.0503002	50	B	serrated	30	50	25	-	30	12,5	-	M5	M6	M10x30	5
K1750.0503023	50	C	stepped	30	50	25	2	30	12,5	2	M5	M6	M10x30	5
K1750.0503053	50	C	stepped	30	50	25	2	30	12,5	5	M5	M6	M10x30	5

Fixed jaws DS

for multi-clamping system

Ⓐ





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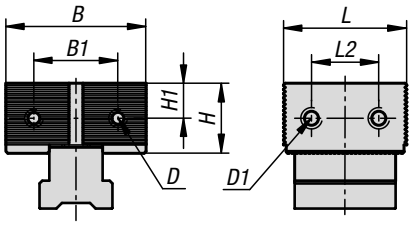

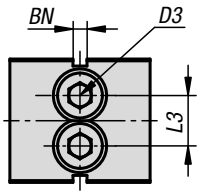

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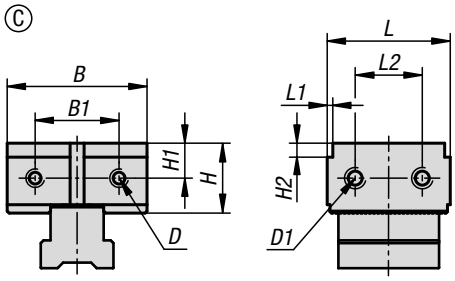
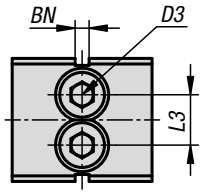




Material:
Tool steel.

Version:
Hardened and ground (HRC 55 ±2).

Sample order:
K1751.0504401

Note:
There are three different fixed jaw versions to choose from:
- Smooth version Form A for pre-machined workpieces.
- Serrated version Form B for raw parts.
- Offset jaws Form C for clamping with a small clamping edge.

The lateral fastening holes are used to fasten workpiece end stops. The two screw-on holes on the clamping surfaces also allow seating ledges to be mounted so as to optimise the clamping depth of the workpieces.

Application:
The DS fixed jaws are positioned on the clamping rails according to the clamping situation.
When the fastening screw is tightened, the toothing allows a form-fit connection to be created.
Fixed jaws with two fastening screws are to be preferred where higher machining forces are to be applied.

Advantages:
The lateral scale on the clamping rails and the fixed jaws allows precise positioning of the fixed stops.

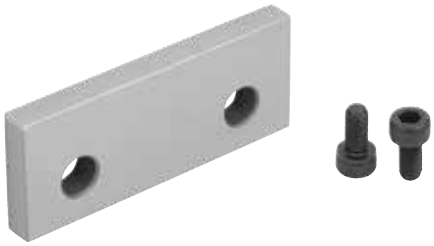
Supplied with:
DS fixed jaw.
Fastening screw.
Slot key.

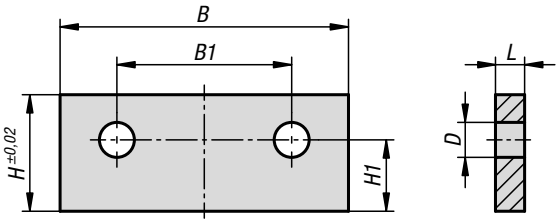
KIPP Fixed jaws DS for multi-clamping system

Order No.	suitable for system width	Form	Form-Type	L	B	H	L1	L2	L3	B1	H1	H2	D Internal thread	D1 internal thread	D3	BN=Slot width
K1751.0504401	50	A	smooth	44	50	25	-	24	18	30	12,5	-	M5	M6	M10x30	5
K1751.0504402	50	B	serrated	44	50	25	-	24	18	30	12,5	-	M5	M6	M10x30	5
K1751.0504423	50	C	stepped	44	50	25	2	24	18	30	12,5	2	M5	M6	M10x30	5
K1751.0504453	50	C	stepped	44	50	25	2	24	18	30	12,5	5	M5	M6	M10x30	5

Screw-on seating ledges

for multi-clamping system





Material:
Tool steel.

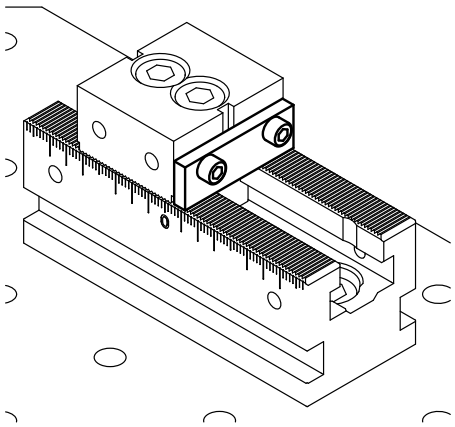
Version:
Hardened and ground (HRC 55 ±2).

Sample order:
K1752.050175

Note:
The seating ledges allow different workpiece clamping depths to be set.

Application:
The seating ledges can be screwed together with the ES and DS fixed jaws and with the wedge clamps.

Advantages:
Quick setup of workpieces on the multiple clamping system. Uniform clamping depth of the workpieces with the ground support surface height.



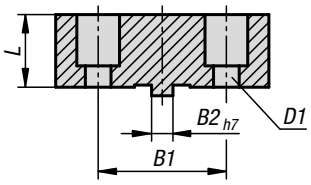
KIPP Screw-on seating ledges for multi-clamping system

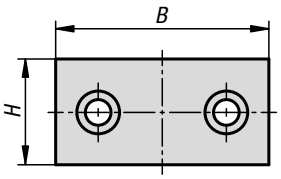
Order No.	suitable for system width	L	B	H	B1	H1	D
K1752.050175	50	5	49,5	17	30	12,3	6
K1752.050205	50	5	49,5	20	30	12,3	6
K1752.050223	50	3	49,5	22	30	12,3	6

Notes

Attachment jaws machinable

for fixed jaws DS and ES





Material:
Tool steel.

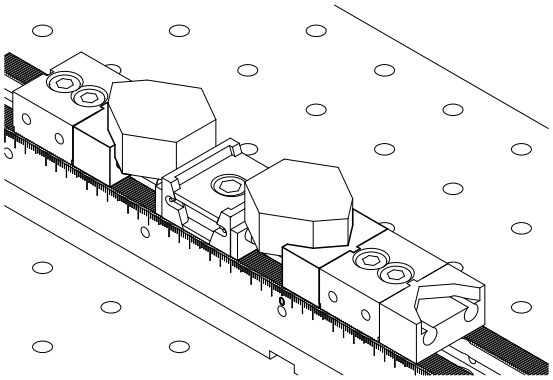
Version:
tempered (HRC32).

Sample order:
K1753.05017

Note:
Attachment jaws are used to incorporate customer-specific workpiece contours.

Application:
The attachment jaws are screwed onto the ES and DS fixed stops.

Advantages:
Machined attachment jaws can be re-used for later series productions.

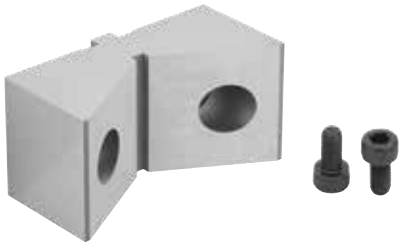


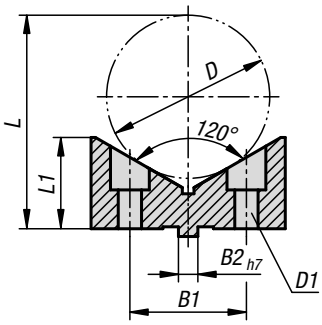
KIPP Machinable attachment jaws for DS and ES fixed jaws

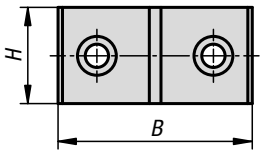
Order No.	suitable for system width	L	B	H	B1	B2	D1 for screw to DIN 912
K1753.05017	50	17	50	25	30	5	M5
K1753.05027	50	27	80	25	30	5	M5

Attachment jaws with prism

for fixed jaws DS and ES







Material:
Tool steel.

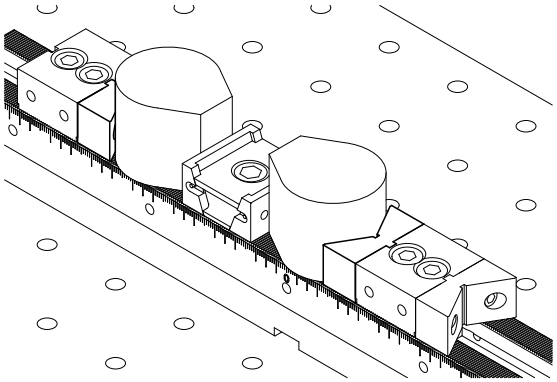
Version:
Hardened and ground (HRC 55).

Sample order:
K1754.05070

Note:
Attachment jaws with prism are used for clamping round workpieces. With the longitudinal slot on the back, they can be aligned exactly on the ES and DS fixed jaws.

Application:
The attachment jaws with prism are screwed onto the ES and DS fixed stops.

Advantages:
The attachment jaws with prism ensure repeat accuracy when clamping workpieces.

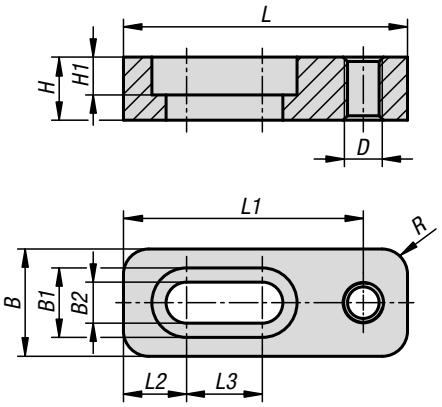


KIPP Attachment jaws with prism for DS and ES fixed jaws

Order No.	suitable for system width	L	B	H	L1	B1	B2	D	max. clamping diameter	D1 for screw to DIN 912
K1754.05070	50	54,98	50	25	23,5	30	5	42	70	M5

Workpiece stops

for multi-clamping system



Material:
Carbon steel.

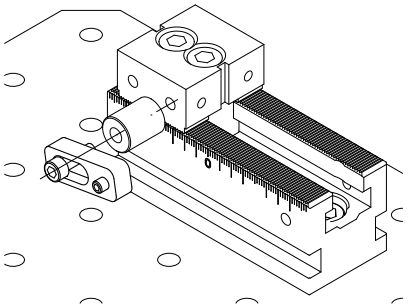
Version:
Tempered and flat faces ground (HRC 32).

Sample order:
K1755.05045

Note:
Workpieces can be positioned laterally using the workpiece stops for multi-clamping systems.

Application:
The end stop can be mounted laterally on both surfaces of the fixed jaws.

Advantages:
Flexible adjustment with the elongated hole.

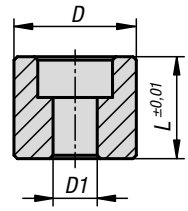


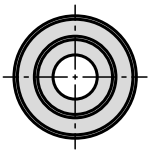
KIPP Workpiece stops for multi-clamping system

Order No.	suitable for system width	L	B	H	L1	L2	L3	B1	B2	H1	R	D Internal thread
K1755.05045	50	45	17	10	38	10	12	11	6,5	6	4	M6

Spacers

for multi-clamping system workpiece stop





Material:
Carbon steel.

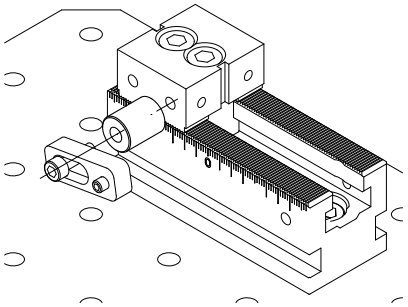
Version:
Tempered and flat faces ground (HRC 32).

Sample order:
K1756.05010

Note:
The spacer for the workpiece stop is used to extend the lateral stop dimension.

Application:
The spacer is screwed onto the side of the fixed jaw together with the workpiece stop.

Advantages:
Increases the adjustment range of the lateral end stop.

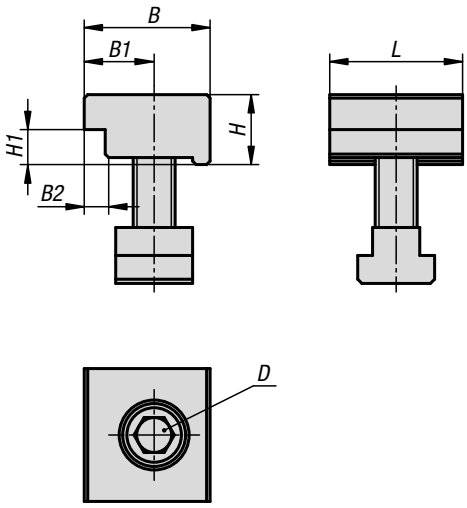


KIPP Spacers for multi-clamping system workpiece stops

Order No.	suitable for system width	L	D	D1 for screw to DIN 912
K1756.05010	50/72	10	18	M6
K1756.05015	50/72	15	18	M6
K1756.05023	50/72	23	18	M6

Clamping claw sets

for multi-clamping system



Material:
Carbon steel.

Version:
Tempered. Support faces ground (HRC 32).

Sample order:
K1757.05012

Note:
Using these clamping claw sets, the clamping rails can be secured at any position on the machine table.

Application:
The clamping claw set is inserted into the T-slot on the machine table and slid along to the desired position on the clamping rail. Tightened using a cap screw.

Advantages:
The clamping claw set can also be used for other types of mounting in the multi-clamping system.

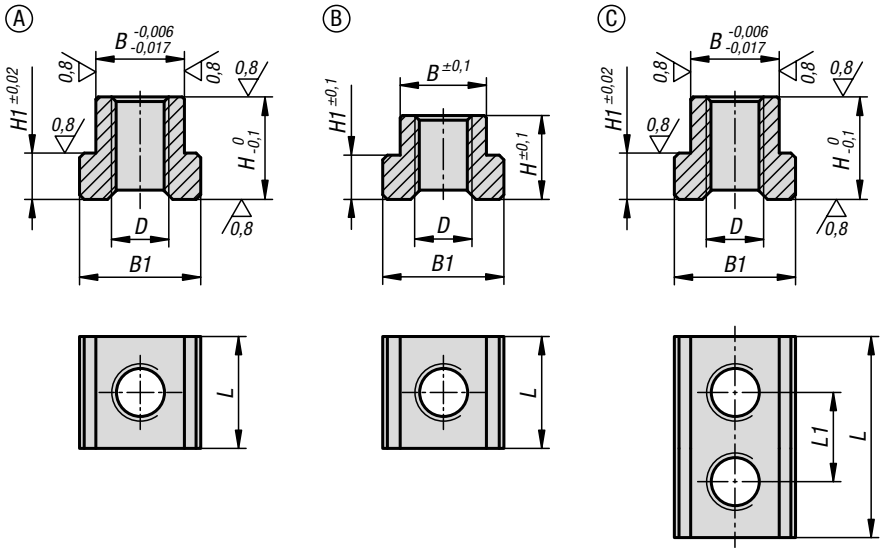
Supplied with:
4x claw clamps.
4x DIN 912 cap screws.
4x DIN 508 T-slot nuts.

KIPP Clamping claw sets for multi-clamping system

Order No.	suitable for system width	L	B	H	B1	B2	H1	D for screw DIN 912	Slot width
K1757.05012	50	38	36	20	20	6	10	M12	14
K1757.07216	72/100	40	50	28	27	8	14	M16	18

T-slot keys

for wedge clamps



Material:
Carbon steel.

Version:
Tempered. Guide faces ground (HRC 38).

Sample order:
K1758.05010241

Note:
T-slot keys are matched to the multiple clamping system.
Form A/C are used for fixed stops.
Form B is for operating the clamping wedge of the clamping wedge segments.

Application:
The T-slot keys are inserted into the clamping rail at the appropriate position.The cap screw is used to screw the T-slot keys to the fixed stops and wedge clamps.

Advantages:
With Form A/C, the T-slot key has very little play in the clamping rail, so the fixed stops can also be inserted from the side.

KIPP T-slot keys for wedge clamps

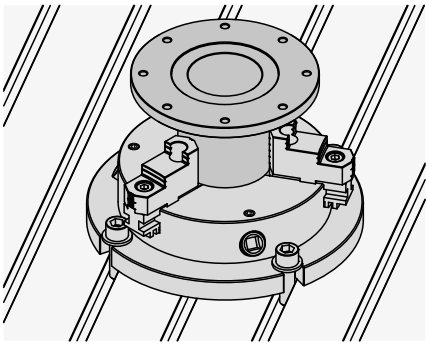
Order No.	suitable for system width	Suitable for	Form	L	L1	B	H	B1	H1	D Internal thread
K1758.05010241	50	fixed jaw single-sided	A	24	-	19	22	26	9,95	M10
K1758.05010361	50	fixed jaw double-sided	C	36	18	19	22	26	9,95	M10
K1758.05012241	50	wedge clamp with fixed jaw	A	24	-	19	22	26	9,95	M12
K1758.05012262	50	double-sided wedge clamp	B	26	-	18,5	18	26	9,5	M12

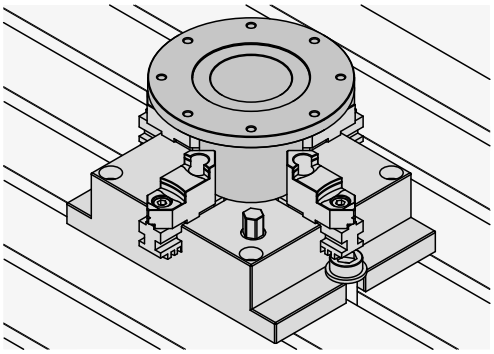
Stationary chucks

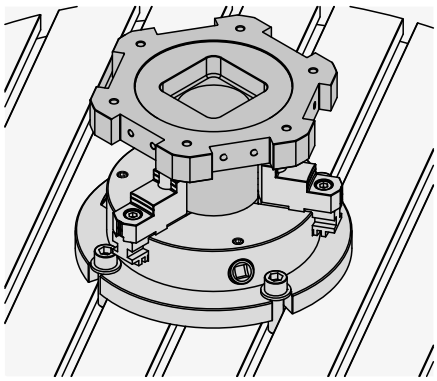
Technical information for stationary chucks

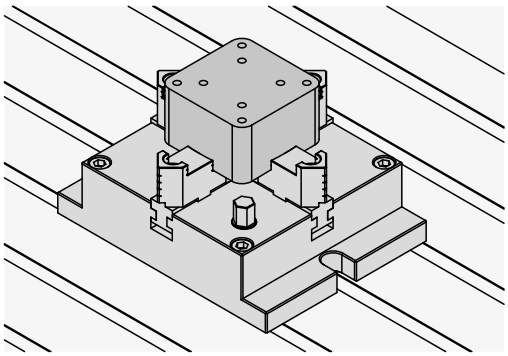
Function

Stationary 3 and 4-jaw chucks are especially suitable for centric workpiece holding on drilling and milling machines. The flexible arrangement of the hard and soft jaws enable diverse sizes and shapes of workpieces to be easily held on the outside or inside faces.





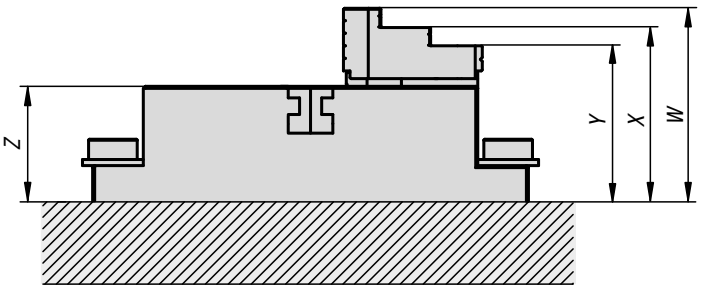




Precision

1. The chucks are precision ground. The W, X, Y, Z tolerances between the chucks is within 0.05 mm.

2. The repeat accuracy by centric clamping with hard jaws is within 0.02 mm.



Technical information for stationary chucks

Actuation

The moveable jaw bases are driven by the internal scroll plate.
The rotation of the pinion transfers the force over the scroll plate to the jaw bases and generates a synchronous movement of the jaws inwards or outwards.

Chuck advantages

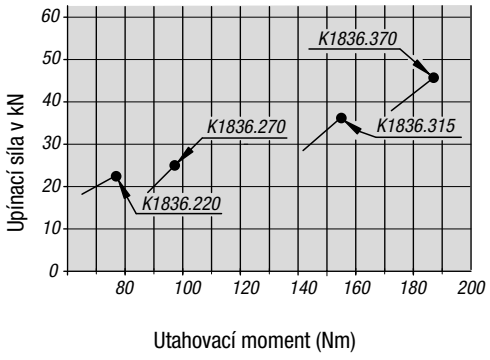
1. Body precision ground
2. Flat design
3. Optimum accessibilty to the lubrication system
4. Wide chuck bore for holding bar material
5. Actuated using a hex key. Quick and easy operation.
6. Soft jaws can also be attached to the jaw bases.

Note

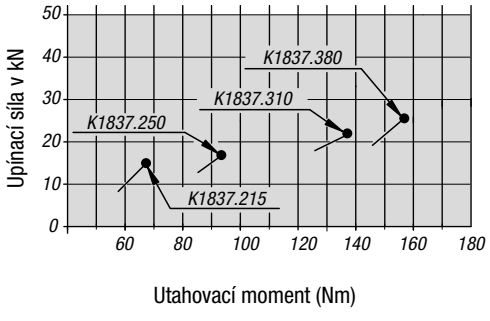
Inadequate lubrication leads to excessive wear and reduction of the clamping force.
Please ensure regular lubrication intervals.

Stationary 3-jaw chuck

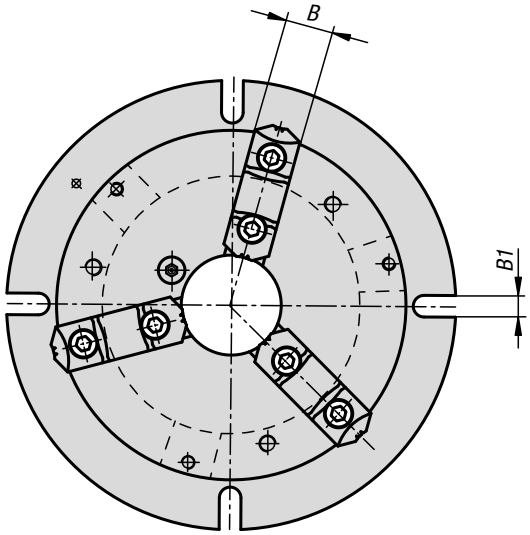
Torque and clamping force specifications for the jaws.

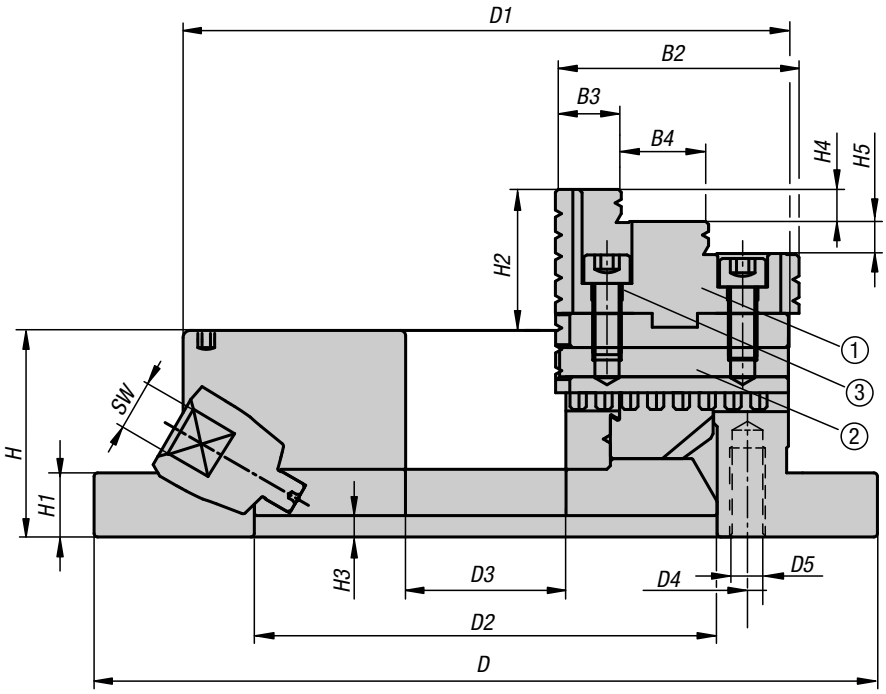


Stationary 4-jaw chuck



Stationary 3-jaw steel chuck





Stationary 3-jaw chucks are especially suitable for centric workpiece holding on drilling and milling machines. The flexible arrangement of the hard and soft jaws enable diverse sizes and shapes of workpieces to be easily held on the outside or inside faces.

Material:
Steel.

Version:
Contact faces on base ground.
Jaw plates hardened, ground.

Sample order:
K1836.270

Note:
Take note of the jaw numbers when mounting.
The chucks are precision ground. The W, X, Y, Z tolerances between the jaws is within 0.05 mm.
The repeat accuracy by centric clamping with hard jaws is within 0.02 mm.
The moveable jaw bases are driven by the internal scroll plate.
The rotation of the pinion transfers the force over the scroll plate to the jaw bases and generates a synchronous movement of the jaws inwards or outwards.
Inadequate lubrication leads to excessive wear and reduction of the clamping force. Please ensure regular lubrication intervals.

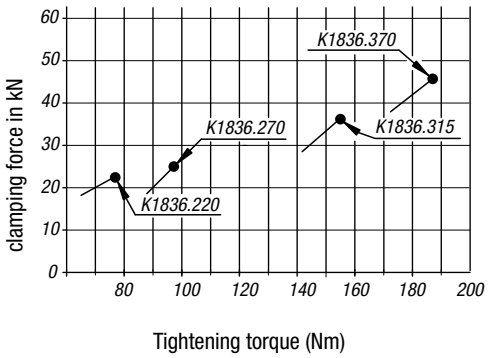
Advantages:
The repeat accuracy by centric clamping is 0.02 mm.
Flat design.
For drilling and milling machines.
The body is precision ground.
Optimum accessibility to the lubrication system.
Wide chuck bore for holding bar material.
Actuated using a hex key. Quick and easy to operation.
Soft jaws can also be attached to the jaw bases.

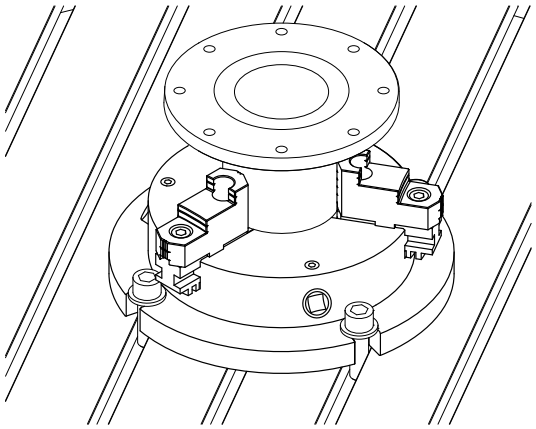
Supplied with:
Tightening key.

Accessories:
K1838 Steel jaws, soft

Drawing reference:
1) Reversible jaw
2) Standard jaws
3) Fastening screws

Stationary 3-jaw steel chuck



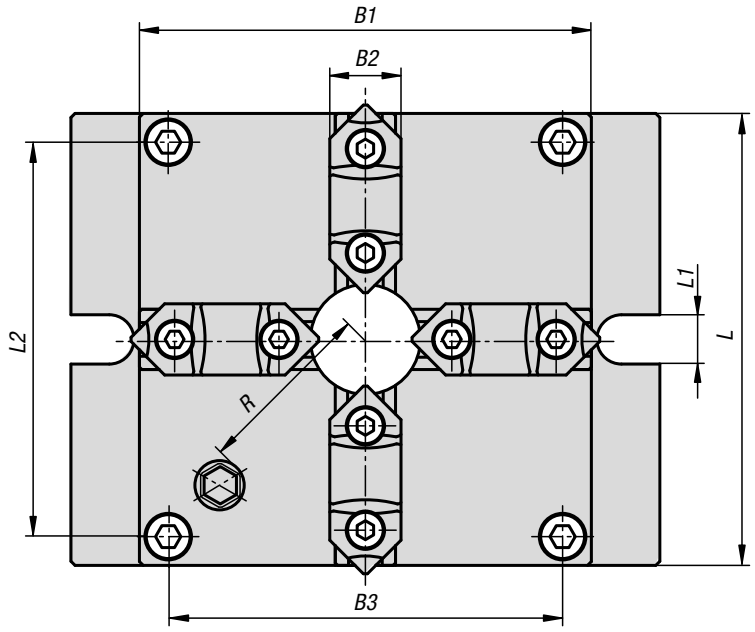


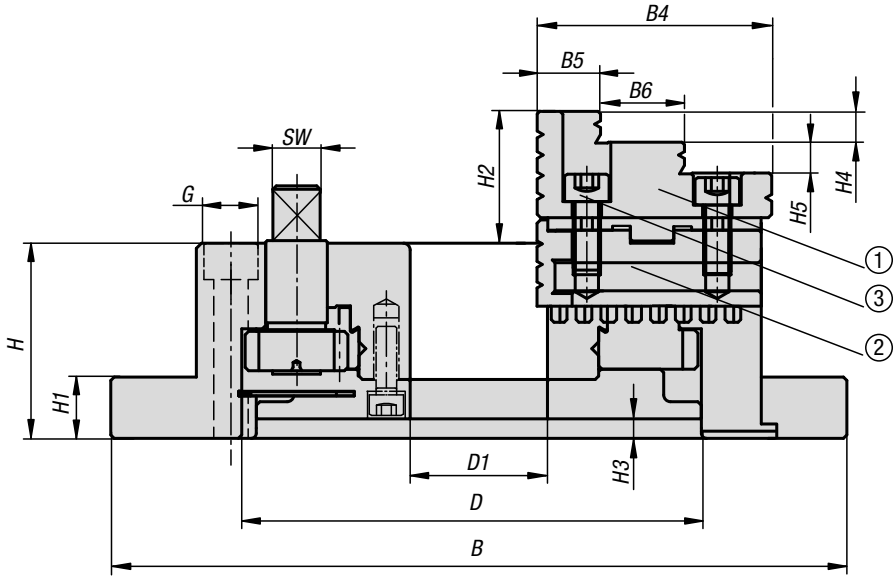
KIPP Stationary 3-jaw steel chuck

Order No.	D	D1	D2	D3	D4	D5	B	B1	B2	B3	B4
K1836.220	220	170	130	45	147	M10	26	13	68	18,5	24,5
K1836.270	270	210	155	60	172	M10	28	13	82	22,7	27,9
K1836.315	315	255	190	80	210	M12	32	16	93	24,9	32,5
K1836.370	370	305	250	105	285	M12	40	18	118	31,3	40,6

Order No.	H	H1	H2	H3	H4	H5	SW	Outer clamping range	Inner clamping range	Tightening torque max. Nm	Clamping force F (kN)	Accessories
K1836.220	58	18	40	6	9	9	10	8-160	48-150	78	21	K1838.2203
K1836.270	65	20	43	6	10	10	11	11-200	62-190	98	25	K1838.2703
K1836.315	73	20	52	6	12	12	12	12-250	72-240	156	36	K1838.3153
K1836.370	80	22	59	5	15	15	14	15-300	86-290	186	44	K1838.3703

Stationary 4-jaw steel chuck





Stationary 4-jaw chucks are especially suitable for centric workpiece holding on drilling and milling machines. The flexible arrangement of the hard and soft jaws enable diverse sizes and shapes of workpieces to be easily held on the outside or inside faces.

Material:
Steel.

Version:
Contact faces on base ground.
Jaw plates hardened, ground.

Sample order:
K1837.250

Note:
Take note of the jaw numbers when mounting.
The chucks are precision ground. The W, X, Y, Z tolerances between the jaws is within 0.05 mm.
The repeat accuracy by centric clamping with hard jaws is within 0.02 mm.
The moveable jaw bases are driven by the internal scroll plate.
The rotation of the pinion transfers the force over the scroll plate to the jaw bases and generates a synchronous movement of the jaws inwards or outwards.
Inadequate lubrication leads to excessive wear and reduction of the clamping force. Please ensure regular lubrication intervals.

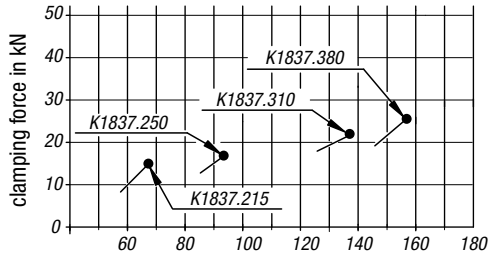
Advantages:
The repeat accuracy by centric clamping is 0.02 mm.
Flat design.
For drilling and milling machines.
The body is precision ground.
Optimum accessibility to the lubrication system.
Wide chuck bore for holding bar material.
Actuated using a hex key. Quick and easy to operation.
Soft jaws can also be attached to the jaw bases.

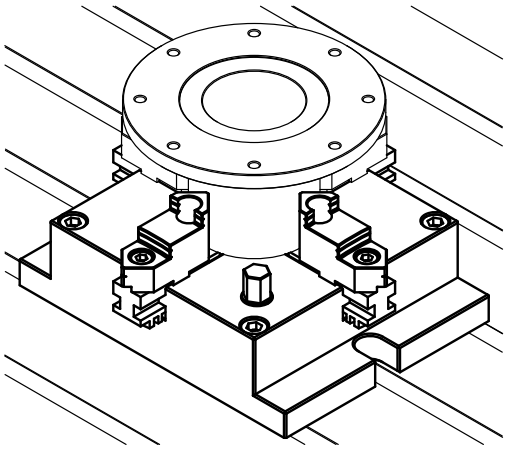
Supplied with:
Tightening key.

Accessories:
K1838 Steel jaws, soft

Drawing reference:
1) Reversible jaw
2) Standard jaws
3) Fastening screws

Stationary 4-jaw steel chuck





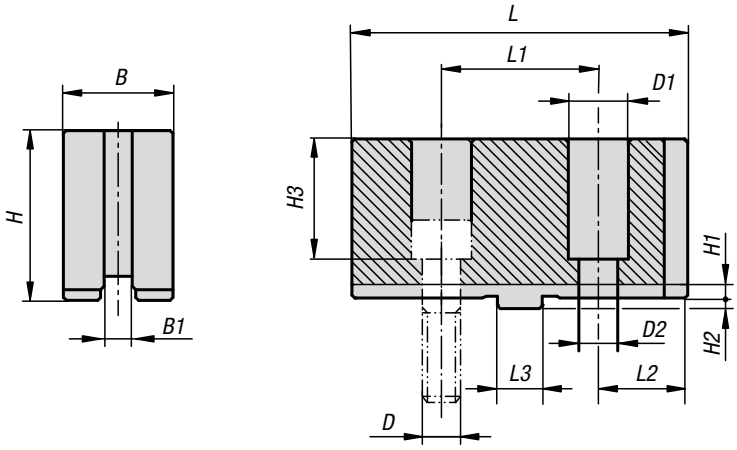
KIPP Stationary 4-jaw steel chuck

Order No.	L	L1	L2	B	B1	B2	B3	B4	B5	B6	D	D1	G for socket head screw	H	H1	H2
K1837.215	165	18	144	215	165	26	144	68	18,5	24,5	130	40	M10	57	18	39
K1837.250	200	18	174	250	200	28	174	82	23	27,9	160	55	M12	65	20	43
K1837.310	250	18	218	310	250	32	218	93	24,9	32,5	200	70	M14	72	22	50
K1837.380	310	22	274	380	310	40	274	117	31,2	40,6	260	100	M16	85	25	56

Order No.	H3	H4	H5	SW	R	Outer clamping range	Inner clamping range	Tightening torque max. Nm	Clamping force F (kN)	Accessories
K1837.215	5,5	9	9	14	66	4-128	55-128	68	15	K1838.2154
K1837.250	6	10	10	17	83	5-162	62-162	93	18	K1838.2154
K1837.310	6	12	12	21	104	6-200	72-200	137	22	K1838.2154
K1837.380	7	15	15	23	135	10-265	90-265	156	25	K1838.2154

Jaws, soft steel

for stationary chuck



Sets comprising 3 or 4 jaws

Soft jaws can be flexibly machined to generate custom contours and diameters.

Material:
Steel.

Version:
soft.

Sample order:
K1838.2703

Note:
The jaw set comprising 3 jaws are only suitable for the stationary 3-jaw chuck K1836.The jaw set comprising 4 jaws are only suitable for the stationary 4-jaw chuck K1837.

Advantages:
The soft jaws can be machined for internal or external gripping and are reversible.

Accessories:
K1836 Stationary 3-jaw chuck.
K1837 Stationary 4-jaw chuck.

KIPP Jaws, steel, soft, for stationary chuck

Order No.	Packaging unit	B	B1	H	H1	H2	H3	L	L1	L2	L3	D	D1	D2	Accessories
K1838.2203	3	26	7,94	37	3,5	3	25	73	38,1	17,45	12,68	M8	14	9	K1836.220
K1838.2703	3	31	7,94	48	3,8	3	34	95	44,4	25,3	12,68	M10	17	11	K1836.270
K1838.3153	3	37	12,7	48	4,2	3	34	110	54	28	19,03	M12	19	13	K1836.315
K1838.3703	3	42	12,7	54	4,2	3	38	125	63,5	30,75	19,03	M12	19	13	K1836.370
K1838.2154	4	26	7,94	37	3,5	3	25	73	38,1	17,45	12,68	M8	14	9	K1837.215
K1838.2504	4	31	7,94	48	3,8	3	34	95	44,4	25,3	12,68	M10	17	11	K1837.250
K1838.3104	4	37	12,7	48	4,2	3	34	110	54	28	19,03	M12	19	13	K1837.310
K1838.3804	4	42	12,7	54	4,2	3	38	125	63,5	30,75	19,03	M12	19	13	K1837.380

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