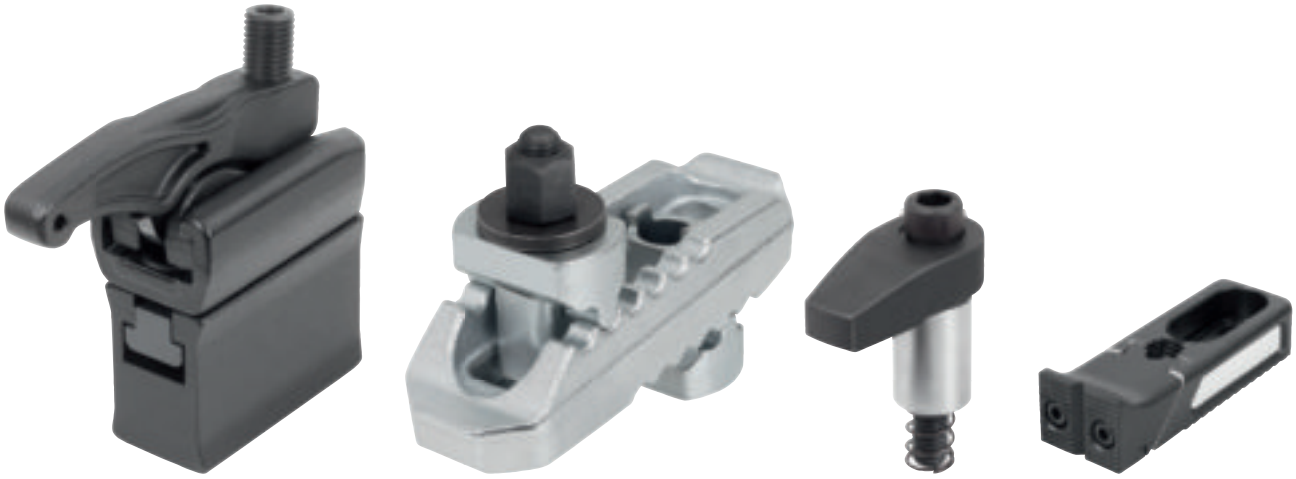
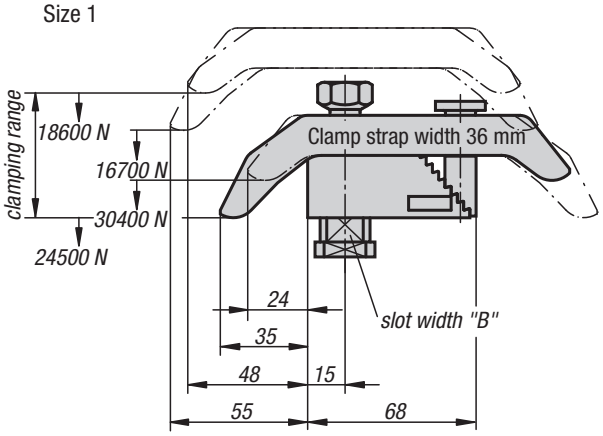
Clamping elements



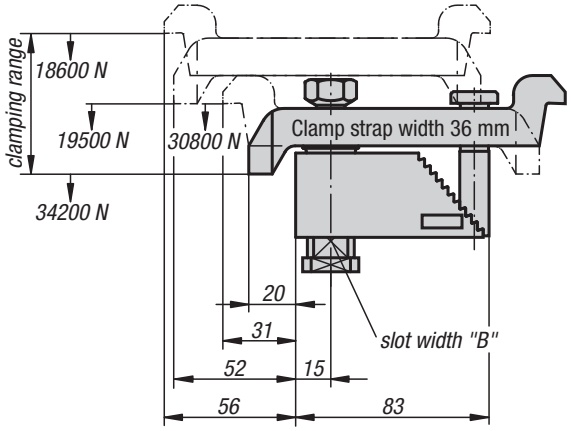
Clamp straps

with adjustment unit

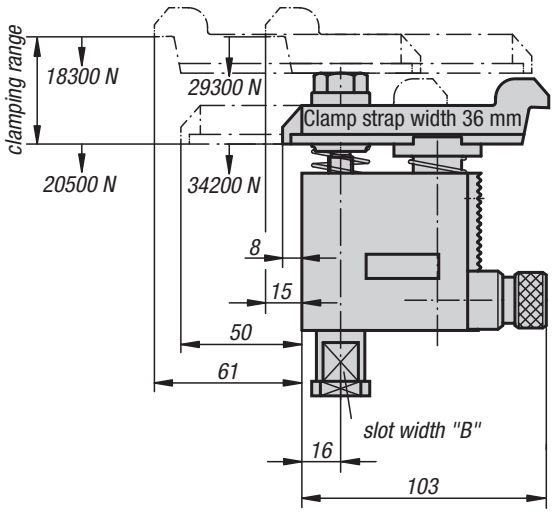
Size 1



Size 2



Size 3-5

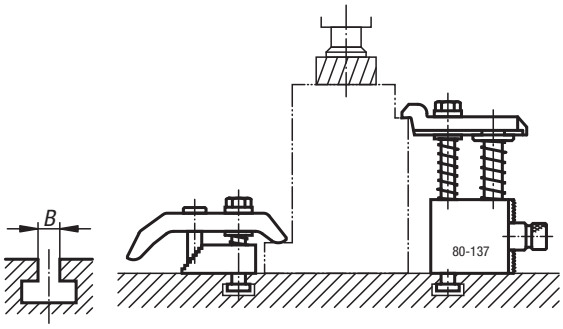


Material:
Base, ductile iron.
Clamp strap and clamping screw carbon steel.

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.

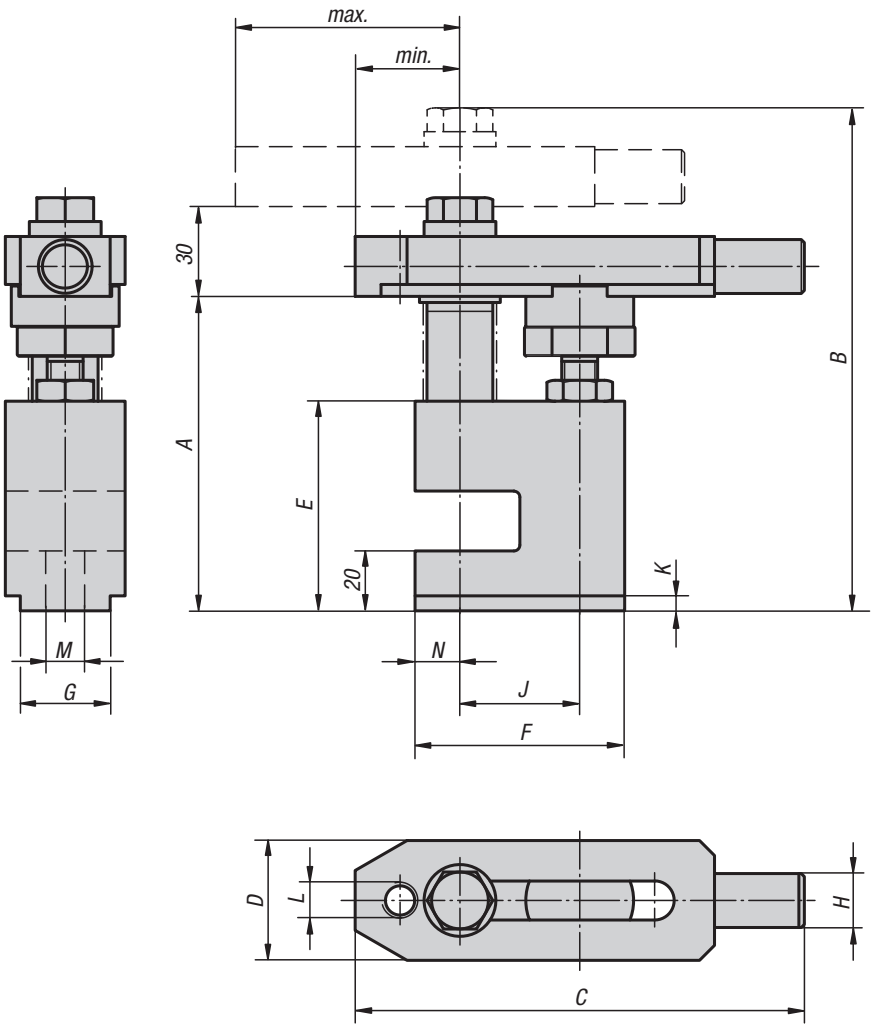


KIPP Clamp straps with adjustment unit

Order No.	Size	Clamp range	Slot width B to 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

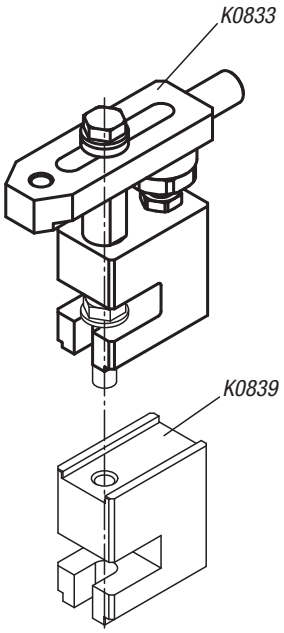
pin-end strap



Material, version:
Body carbon steel, black oxidised.
Strap carbon steel, tempered and black oxidised.
Clamping screw carbon steel, 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.

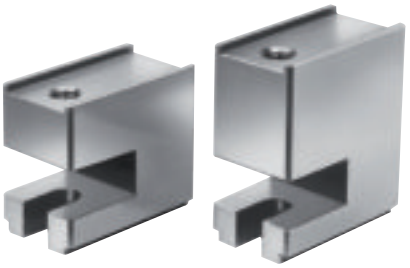


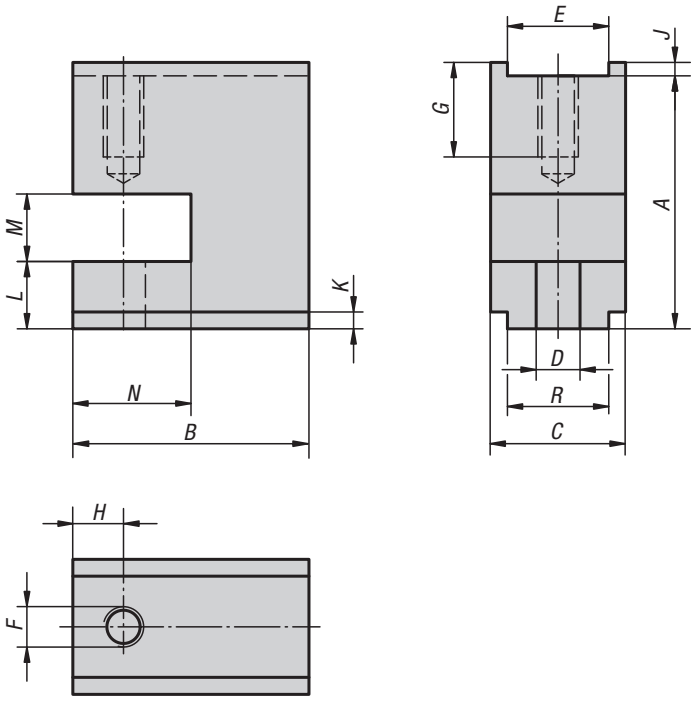
KIPP Clamping units, pin-end strap

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



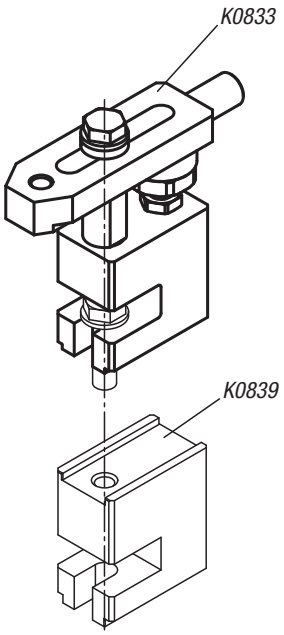


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0839.12075

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

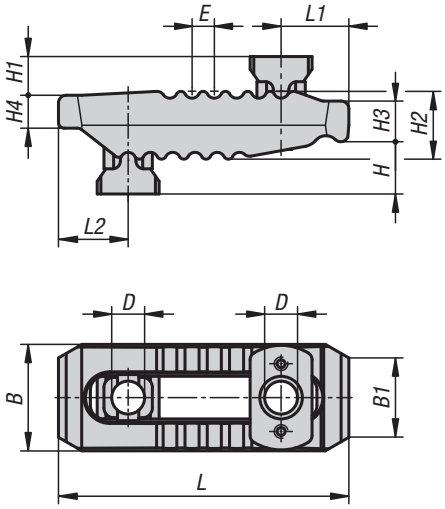


KIPP Riser blocks Form P

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

Clamp strap assemblies

Ⓐ



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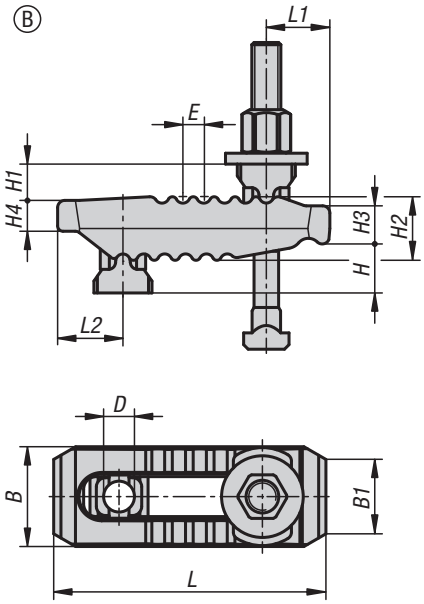

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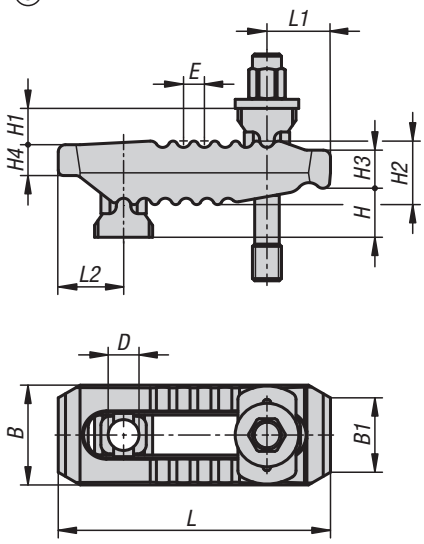


Material:
Steel.

Version:
Form A: Tempered and galvanized.
Form B: Tempered and galvanized.
Complete with DIN 787 screw for T-slots, DIN 6340 washer and DIN 6330B nut.
Form C: Tempered and galvanized.
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

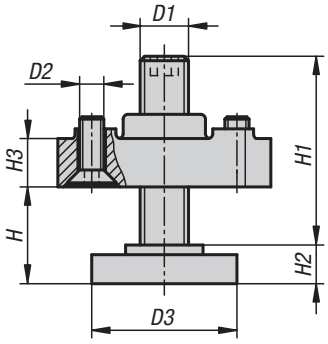
Order No.	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Nominal slot size	Clamping force kN
K1165.113115	A	44	30	13	11	0-55	18	27	17	12	115	25	30	10-12-14	30
K1165.117150	A	55	41	17	12	0-70	20	36	21	17	150	35	36	12-14-16-18	40
K1165.121187	A	62	30	21	14	0-80	30	42	27	20	187	44	44	16-18-20-22	60
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

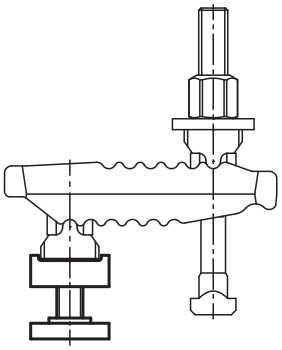
Order No. with T-slot nut	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Nominal slot size	Fastening screw(s)	Clamping force kN
K1165.210115100	B	44	30	13	11	0-40	18	27	17	12	115	25	30	10	M10X100	25
K1165.212115125	B	44	30	13	11	0-55	18	27	17	12	115	25	30	12	M12X125	30
K1165.214115125	B	44	30	13	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

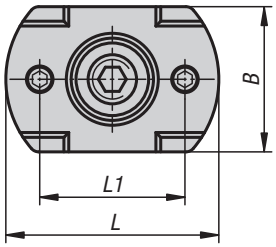
Order No. with stud	Form	B	B1	D	E	H clamping range	H1	H2	H3	H4	L	L1	L2	Fastening screw(s)	Clamping force kN
K1165.312115100	C	44	30	13	11	0-30	18	27	17	12	115	25	30	M12X100	30
K1165.312115125	C	44	30	13	11	0-55	18	27	17	12	115	25	30	M12X125	30
K1165.312150125	C	55	41	17	12	0-50	20	36	21	17	150	35	36	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

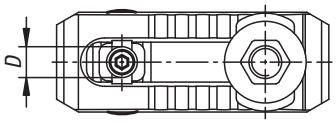
Adjustable heel supports

for clamp strap assembly









Material:
Carbon steel.

Version:
Body tempered and galvanized.
Support bolt tempered, grade 8.8.

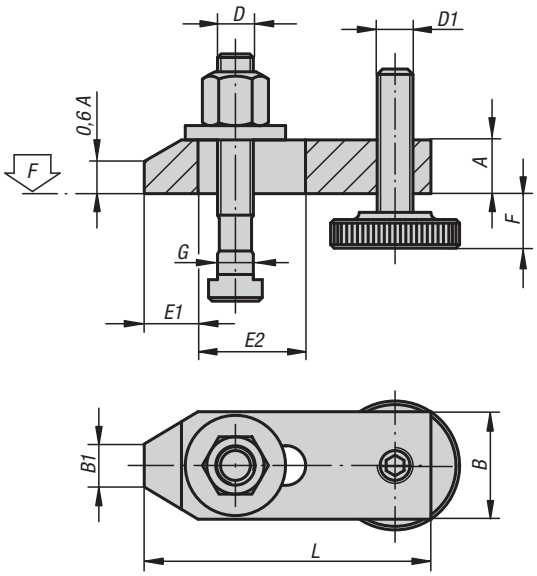
Sample order:
K1204.1039

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.

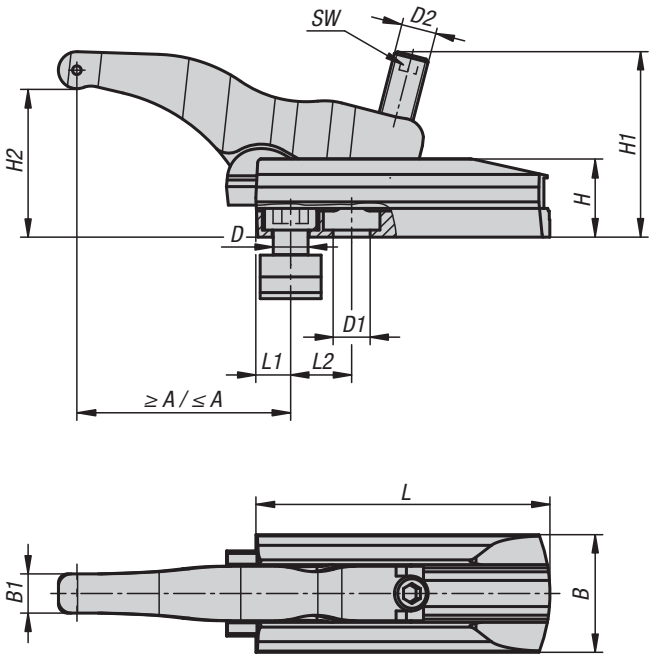
Sample order:
K0003.1616

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

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

Power clamp



Material:
Carbon steel.

Version:
Forged, black galvanized.

Sample order:
K1205.012135

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 30–49 kN.
- Low height.
- 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.

Accessories:
Raiser K1206

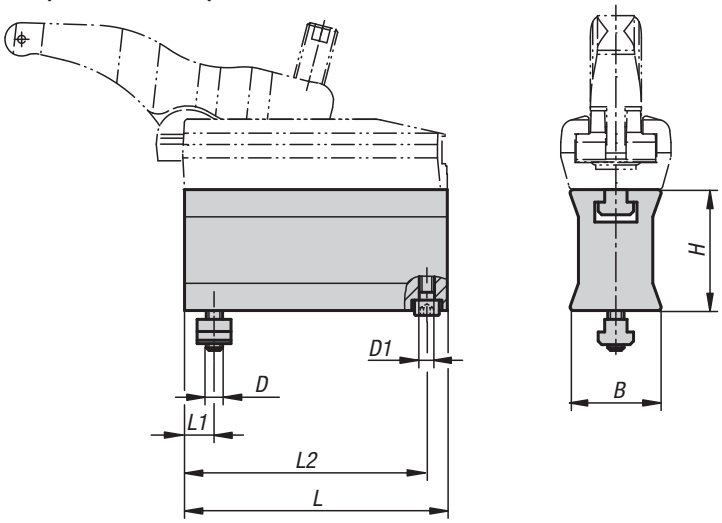
KIPP Power clamp

Order No.	Version	H2	A min.	A max.	B	B1	Slot width	D	D1	D2	H	H1	L	L1	L2	SW	Clamping force kN
K1205.112135	long	6-68	13	110	54	18	14	M12	13	M16	36	85	135	13	25	8	30
K1205.116135	long	6-68	16	114	54	18	18	M16	17	M16	36	85	135	16	28	8	30
K1205.116155	long	5-80	16	134	60	20	18	M16	17	M20	42	105	155	16	32	10	43
K1205.120175	long	7-88	19	165	75	25	22	M20	21	M24	52	125	175	19	36	12	49
K1205.212095	short	6-50	12	82	54	18	14	M12	13	M16	36	78	95	12	20	8	32
K1205.216110	short	6-50	15	95	60	20	18	M16	17	M20	42	92	110	15	26	10	40

K1206

Risers

for power clamp



Material:
Carbon steel.

Version:
Forged, black galvanized.

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 14-28 mm T-slots or M12, M16, M20 grid systems.

KIPP Raiser for power clamp

Order No.	Version	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	M12	70	155	16	145	43
K1206.020080	long	22	58	M20	M12	80	175	19	165	49
K1206.112060	short	14	44,5	M12	M8	60	95	12	88	32
K1206.116070	short	18	47,5	M16	M12	70	110	16	100	40

K1215

Thrust pads

for power clamp

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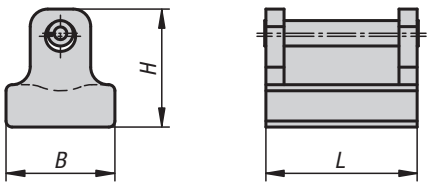

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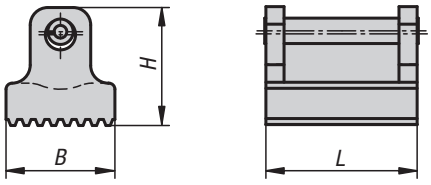


Material:
Stainless steel

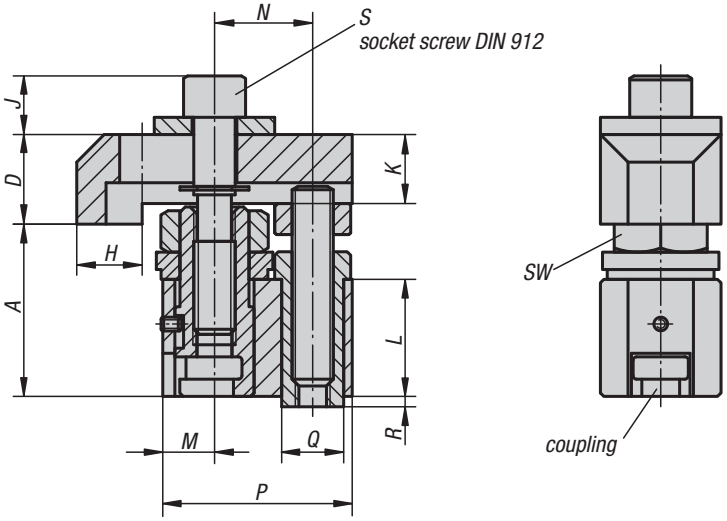
Sample order:
K1215.025

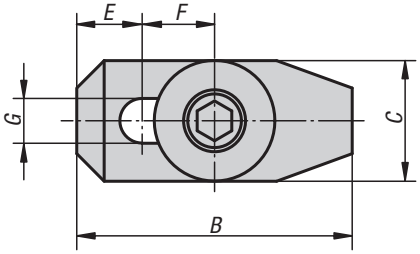
Note:
Power clamps can be fitted with serrated or smooth thrust pads.

KIPP Thrust pads for power clamp

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

Clamping units





Material:
Riser and clamp strap high-strength aluminium.
Accessories carbon steel.

Version:
Riser and clamp strap anodized.
Accessories black oxidised.

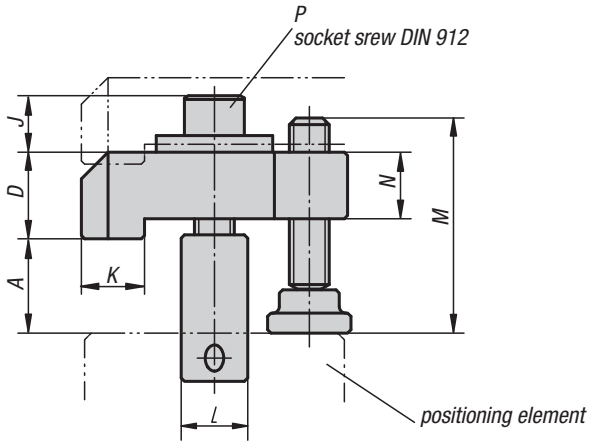
Sample order:
K0841.12050055

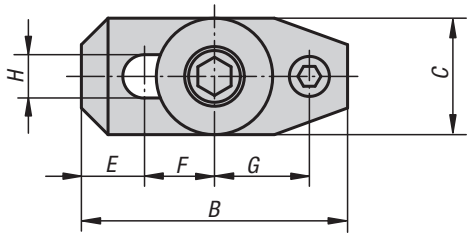
Note:
Clamping units can be combined with risers and positioning units to form a clamping module.
By using risers the height of the clamping units can be increased almost indefinitely.

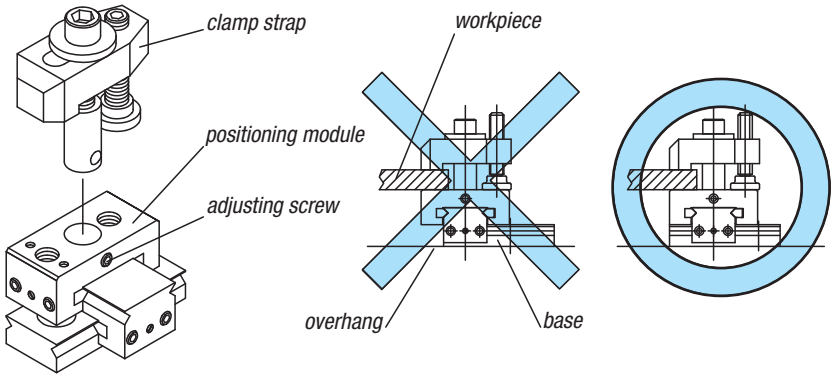
KIPP Clamping units

Order No.	Version	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	SW
K0841.16055068	short	55-80	100	45	34	24	26	17	24	22	27	36,5	18	35	68	22	4	M16x75	32
K0841.16055093	long	55-80	150	45	34	24	51	17	24	22	27	36,5	18	60	93	22	4	M16x75	32

Clamp strap unit







To secure the clamp tighten the adjusting screw located on the wide face of the upper slide.

The upper part of the positioning module must not project over the edge of the base if this is used to support a workpiece.

Material:
Strap high-strength aluminium.
Accessories carbon steel.

Version:
Clamp strap anodized.
Accessories black oxidised.

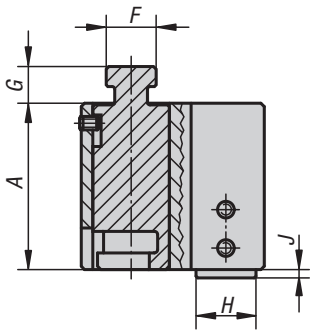
Sample order:
K0842.30016025

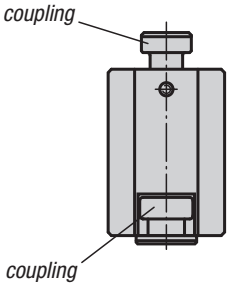
Note:
The clamp strap unit is mounted directly onto a positioning module.
The height of the clamp strap can be individually adjusted with a socket head screw (height adjustment 23-55 mm). For clamping heights 0-23 mm a connecting bush (K0850.700) must be used.

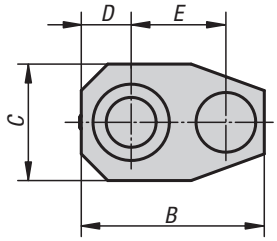
KIPP Clamp strap unit

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P
K0842.30016025	25-55	100	45	34	24	26	35	17	22	24	25	85	27	M16 x 75

Riser blocks







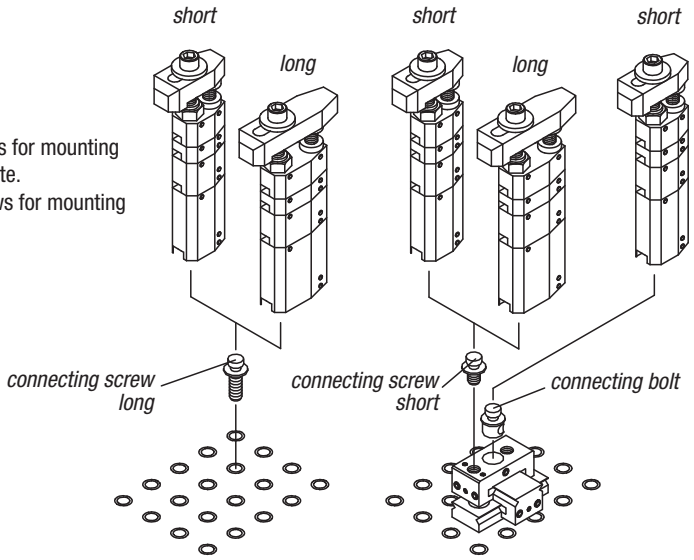
Material:
Riser blocks high-strength aluminium.
Connecting bolts and clamp screws carbon steel.

Version:
Riser blocks anodized.
Connecting bolts and clamp screws black oxidised.

Sample order:
K0843.16025068

Note:
The height of clamping units can be increased as required using these riser blocks.

Use long connecting screws for mounting directly onto the tooling plate.
Use short connecting screws for mounting onto a positioning unit.

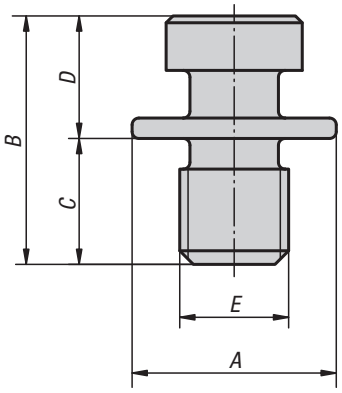


KIPP Riser blocks

Order No.	Version	A	B	C	D	E	F	G	H	J	Matching clamping units
K0843.16025068	short	25	68	45	18	35	25	9	22	4	K0841.16055068
K0843.16050068	short	50	68	45	18	35	25	9	22	4	K0841.16055068
K0843.16100068	short	100	68	45	18	35	25	9	22	4	K0841.16055068
K0843.16025093	long	25	93	45	18	60	25	9	22	4	K0841.16055093
K0843.16050093	long	50	93	45	18	60	25	9	22	4	K0841.16055093
K0843.16100093	long	100	93	45	18	60	25	9	22	4	K0841.16055093

K0844

Connecting screws short



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0844.16025

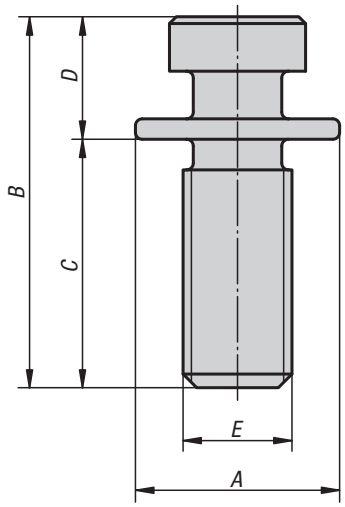
Note:
Short connecting screws are used for the quick positioning and locking of clamping units onto positioning units.
See application example K0843.

KIPP Connecting screws short

Order No.	A	B	C	D	E
K0844.16025	28	35	19	16	M16

K0845

Connecting screws long



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0845.42216025

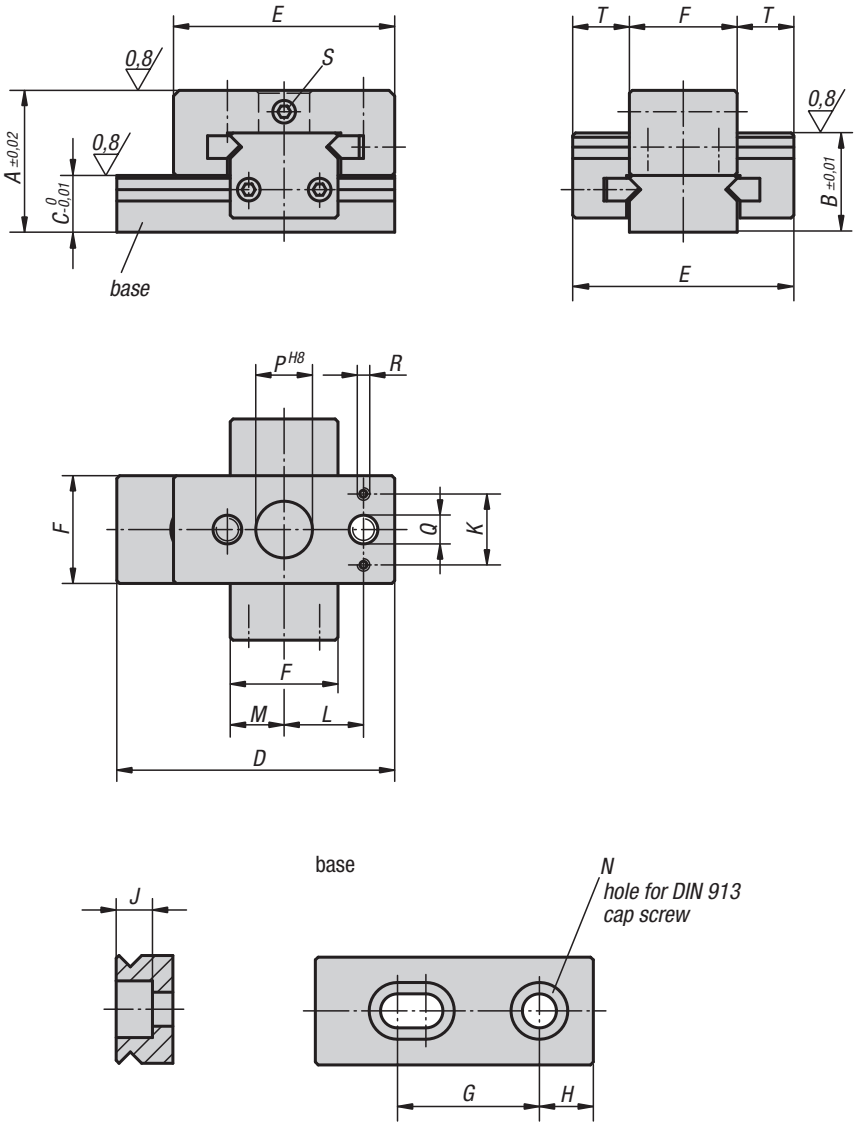
Note:
Long connecting screws are used for quick positioning and locking the clamping units directly onto a tooling plate.
See application example K0843.

KIPP Connecting screws long

Order No.	A	B	C	D	E
K0845.42216025	28	51	35	16	M16

Notes

Positioning units



Material:
Carbon steel.

Version:
Ground, black oxidised.

Sample order:
K0846.20012050

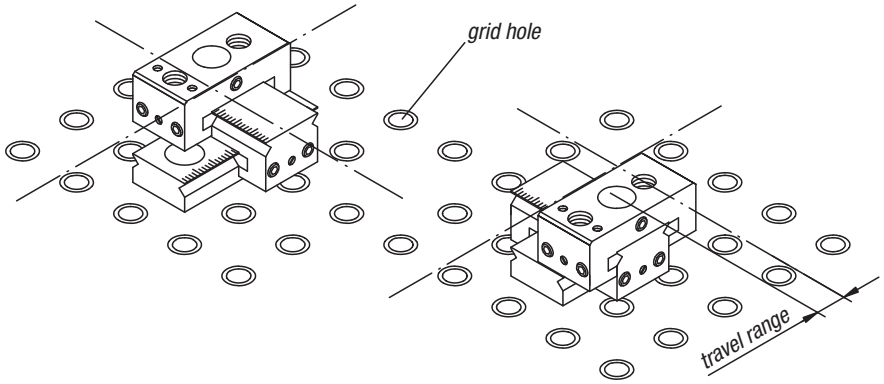
Note:
Positioning units allow workpieces and clamping units to be positioned anywhere on the tooling plate (travel 40-50 mm).
Graduation marks on the slides allow the position to be read, and the clamping fixture construction to be documented.
Positioning units are modules that can be combined with wedge clamps, stops and clamping units to form a flexible clamping fixture.

KIPP Positioning units

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
K0846.20016063	63	43	23	123	98	48	50	24	17	32	34	25	M16	25	M16x19	M6x12	M10	25

Technical notes for positioning units

Positioning units allow parts to be located at any desired position on the grid plate.



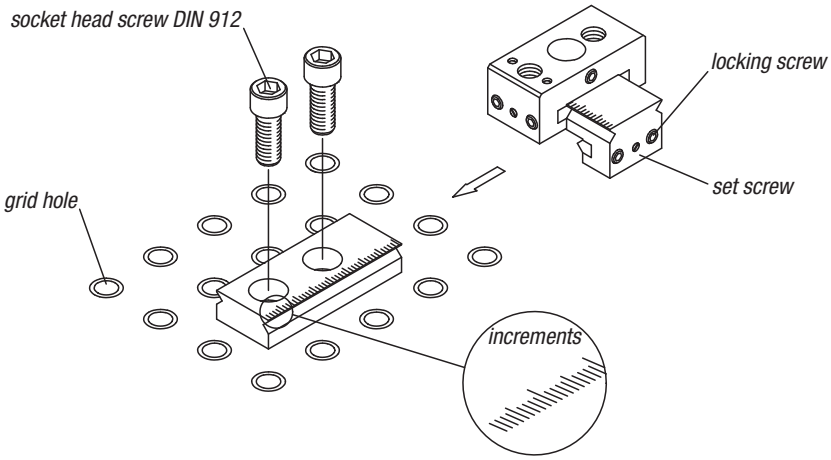
Note:

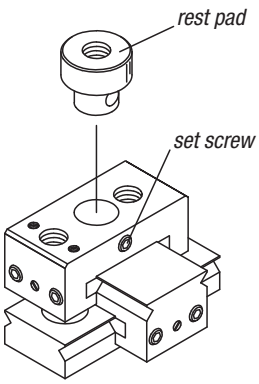
Use socket head screws to secure the base.

Tighten locking screws to lock the lower slide after positioning.

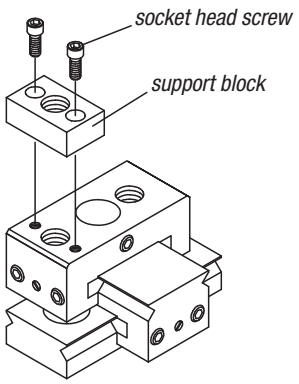
The set screw allows the slide pressure to be adjusted.

The graduations on the base unit allow you to read off the position and to document the adjustment path.

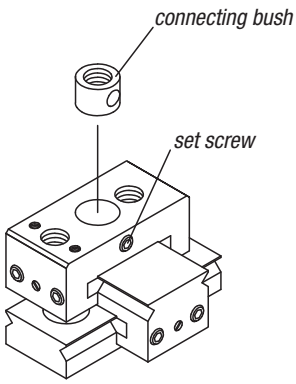




To secure, tighten the set screw.



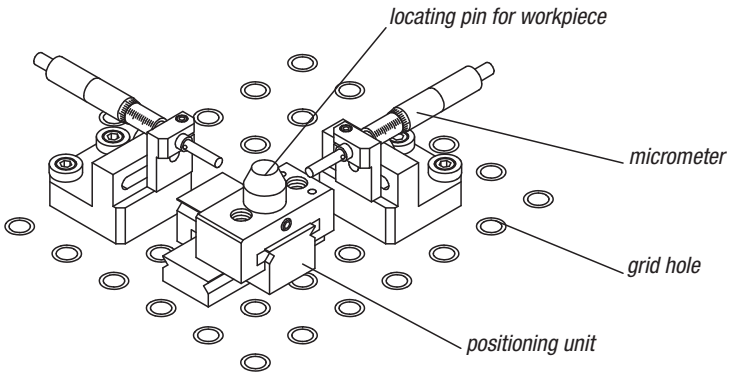
Secure support block on top slide with socket head screws.



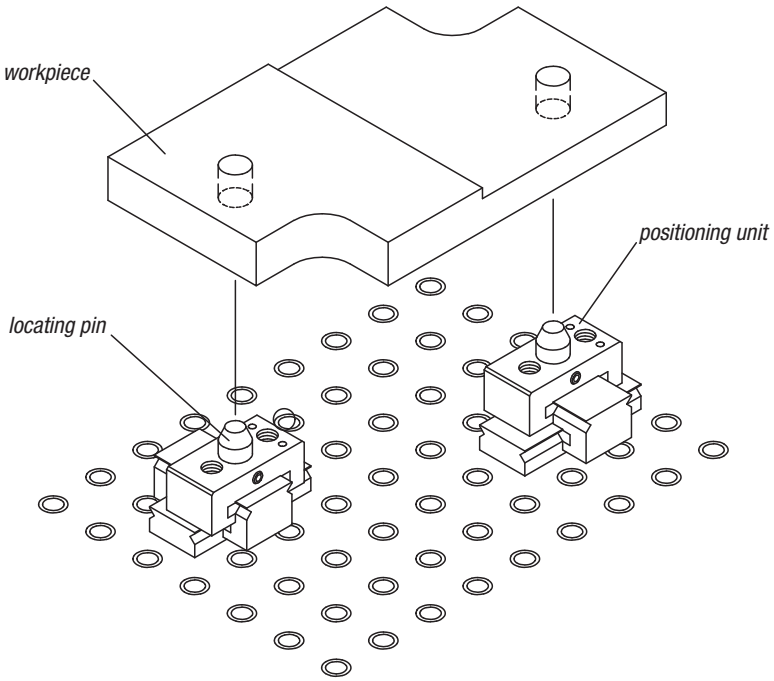
To secure, tighten the set screw.

Example of positioning unit use

The micrometer eases the precise positioning of the locating pin on the base unit to a desired distance from a grid hole on the grid plate.

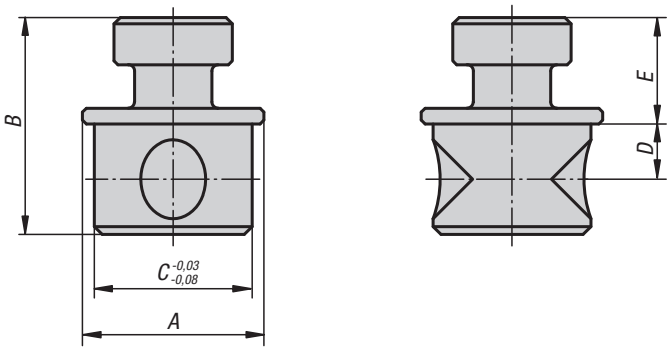


One application is positioning workpieces which have pre-drilled holes.



K0847

Connecting bolts



Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0847.42016025

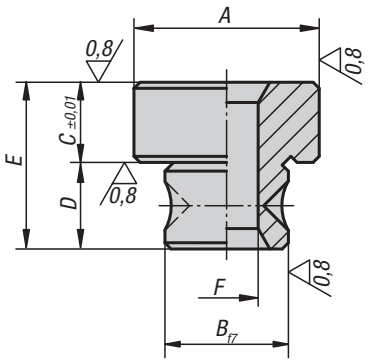
Note:
Connecting bolts are used for quickly positioning and locking clamping units (K0841.16055068) on positioning units.
See application example K0843.

KIPP Connecting bolts

Order No.	A	B	C	D	E
K0847.42016025	28	35	25	9,5	16

K0848

Rest pads



Material:
Carbon steel.

Version:
Case-hardened and ground.

Sample order:
K0848.55016040

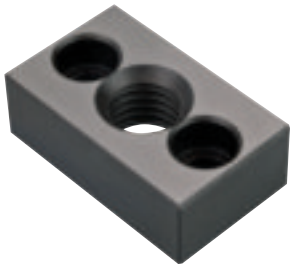
Note:
These rest pads are for supporting workpieces on positioning units.

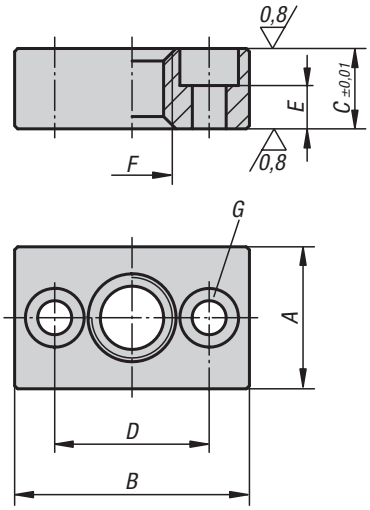
KIPP Rest pads

Order No.	A	B	C	D	E	F
K0848.55016040	40	25	17	19	36	M16

K0849

Support blocks





Material:
Carbon steel.

Version:
Case-hardened, ground, black oxidised.

Sample order:
K0849.60016017

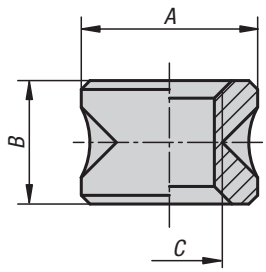
Note:
Support blocks are used to support workpieces on positioning units.

KIPP Support blocks

Order No.	A	B	C	D	E	F	G for socket head screw
K0849.60016017	30	48	17	32	10	M16	M6

K0850

Connecting bushes



Material:
Carbon steel.

Version:
Case-hardened and black oxidised.

Sample order:
K0850.70016025

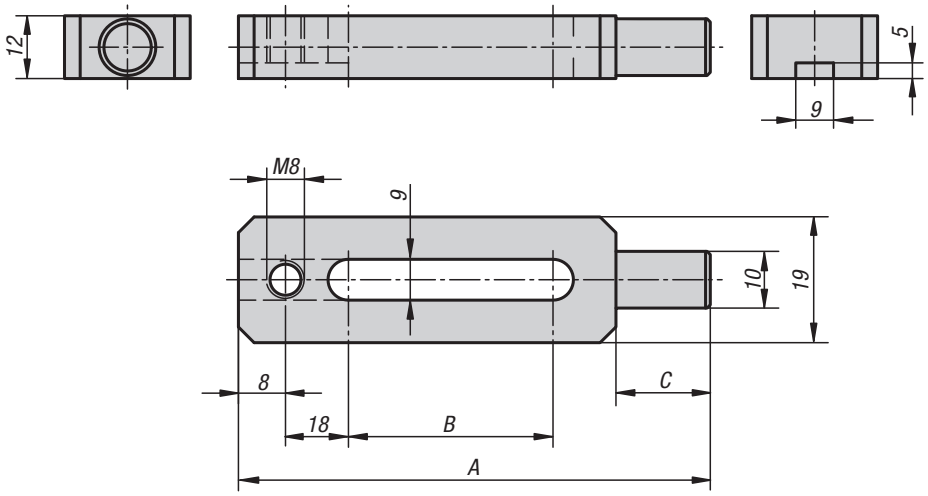
KIPP Connecting bushes

Order No.	A	B	C
K0850.70016025	25	18	M16

Clamp straps

pin-end

K0834.08063
K0834.08075



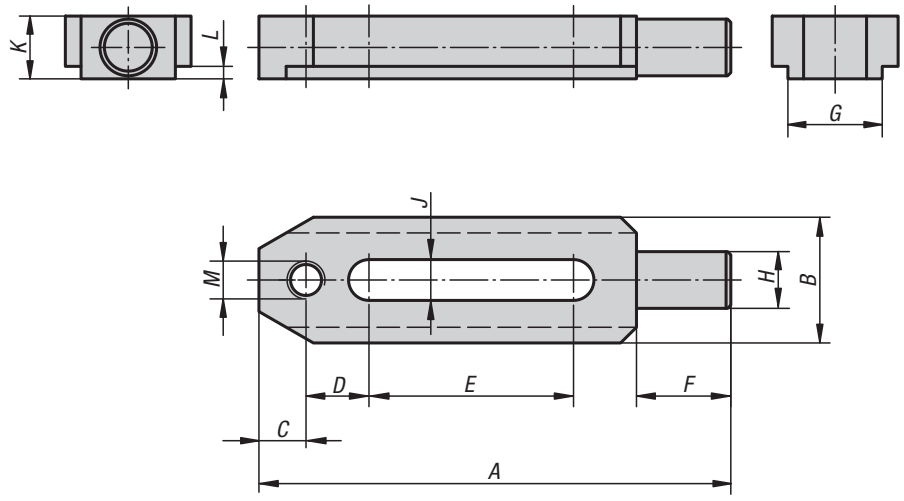
Material:
Carbon steel.

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.

K0834.12150
K0834.16190



KIPP Pin-end straps

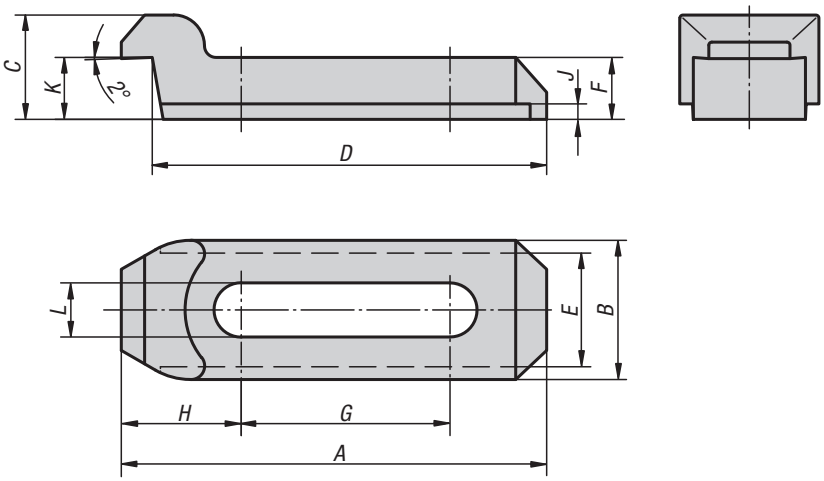
Order No.	A	B	C
K0834.08063	63	15	14
K0834.08075	75	20	20

KIPP Pin-end straps

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

goose-neck



Material:
Carbon steel 1.7225

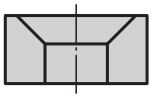
Version:
Tempered to 1000 N/mm², black oxidised.

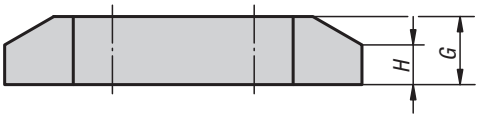
Sample order:
K0002.10

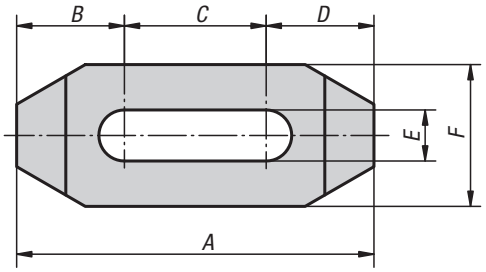
KIPP Clamp straps goose-neck

Order No.	A	B	C	D	E	F	G	H	J	K	L
K0002.10	110	36	27	102	29	16	54	31	4	15	13
K0002.16	165	50	50	145	40	25	70	60	5	24,5	18

Clamp straps



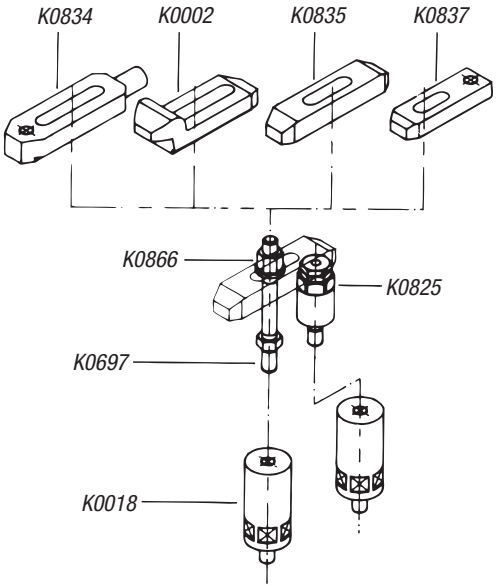




Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0835.08063

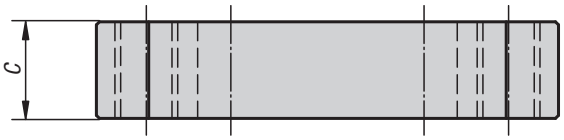


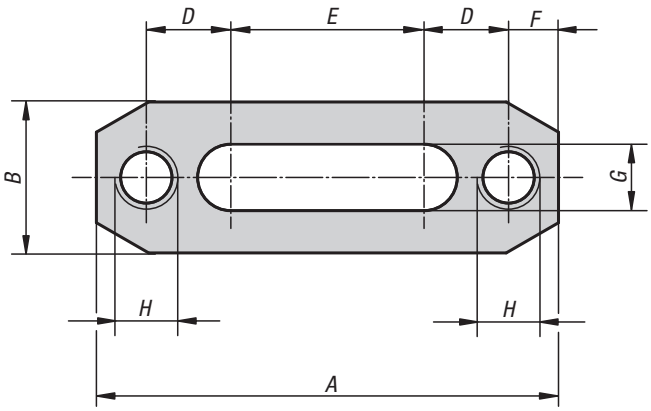
KIPP Clamp straps

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.

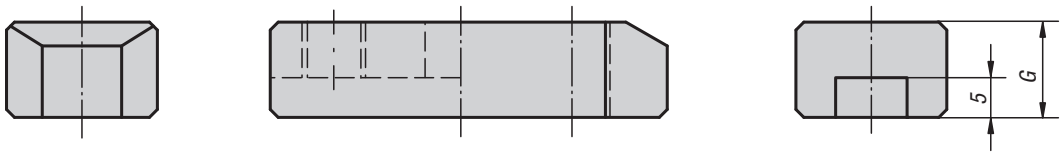
Sample order:
K0836.08063

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

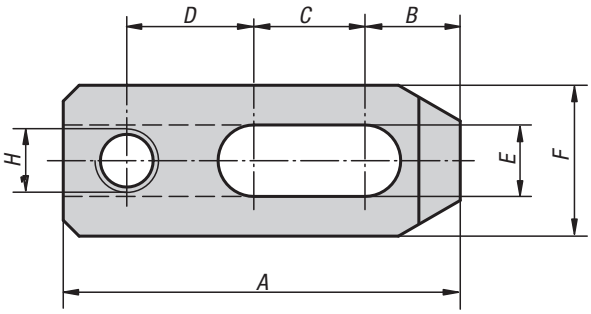
tapped heel



Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0837.08040

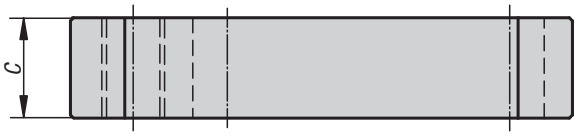


KIPP Clamp straps, tapped heel

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

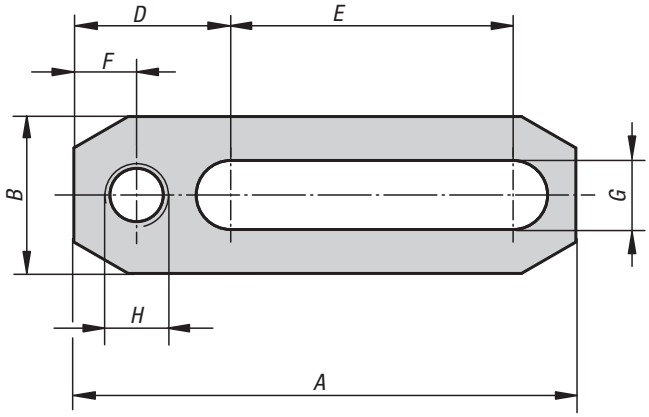
tapped heel

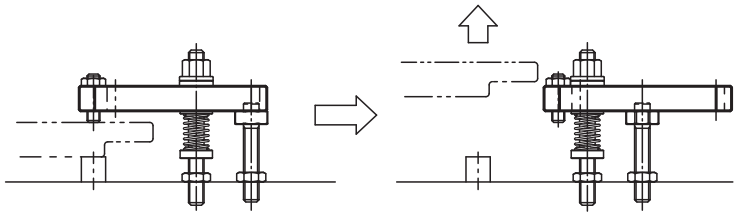


Material:
Carbon steel 1.0503.

Version:
Tempered and black oxidised.

Sample order:
K0838.08063

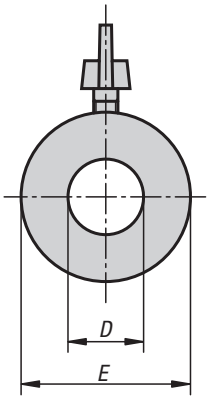


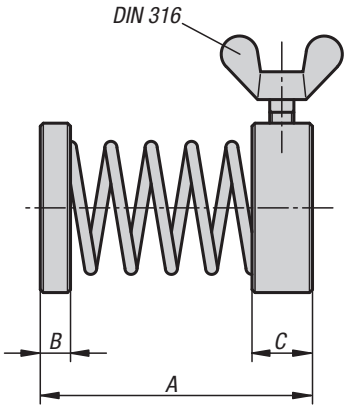


KIPP Clamp straps, tapped heel

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 springs

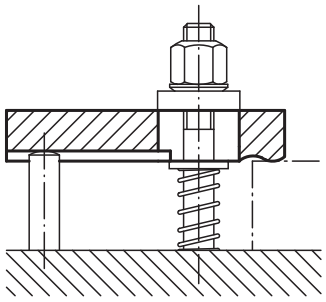


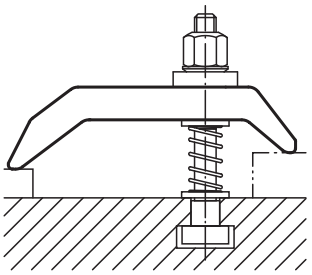


Material:
Thrust and retaining ring carbon steel, spring spring steel

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

Hook clamps ground

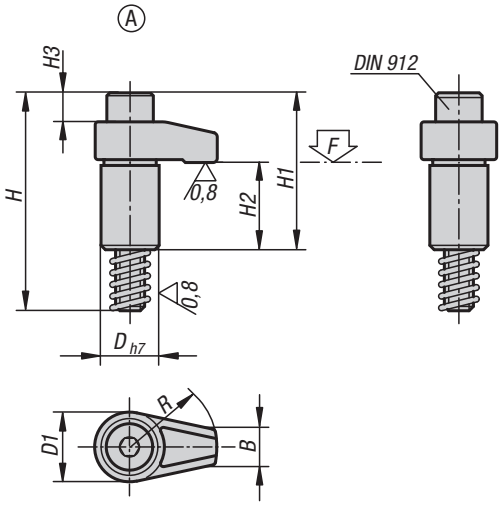
Form A/B/C

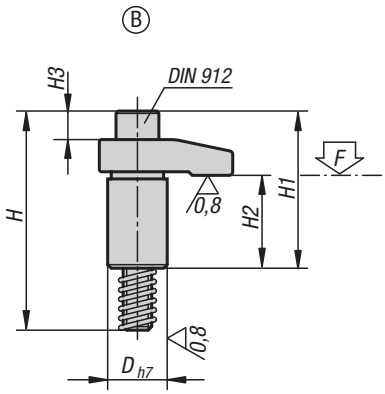
Material:
Carbon steel, tempered.

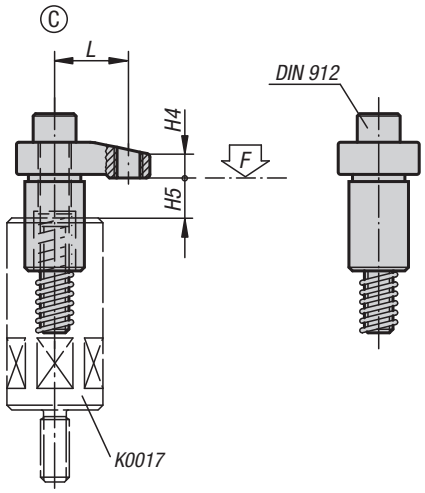
Version:
Black oxidised. Shaft OD ground.

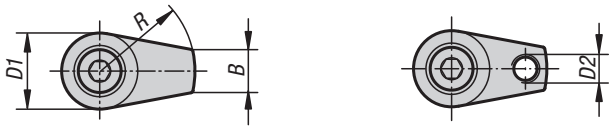
Sample order:
K0014.216040

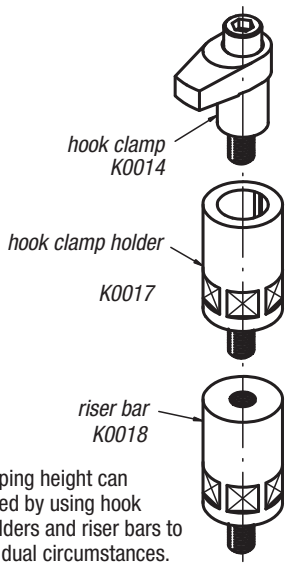
Note:
The stated clamping forces (F max.) and tightening torques are valid within the stated clamping ranges (H5).









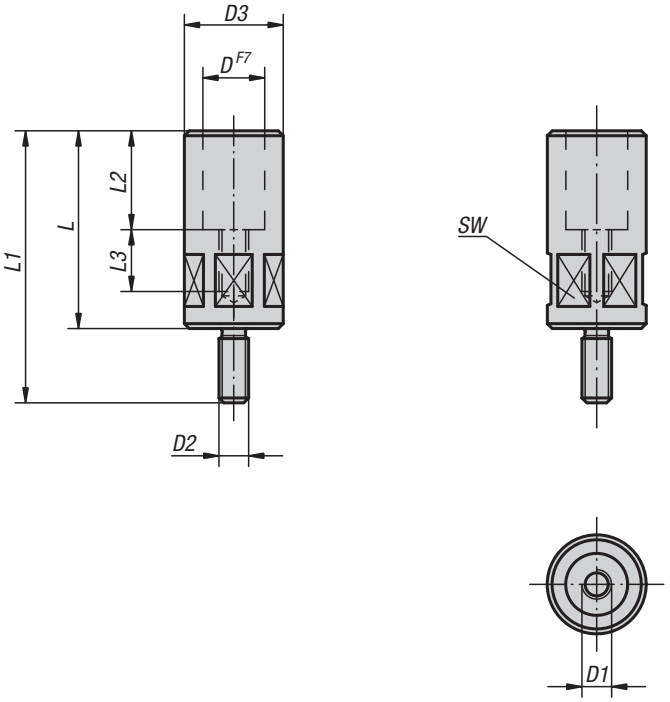


The clamping height can be adjusted by using hook clamp holders and riser bars to suit individual circumstances.

KIPP Hook clamps, ground, Form A/B/C

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	50	M16x85	127,4	33

Hook clamp holders

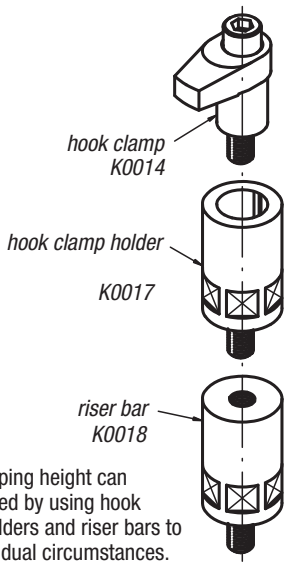


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0017.12080

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

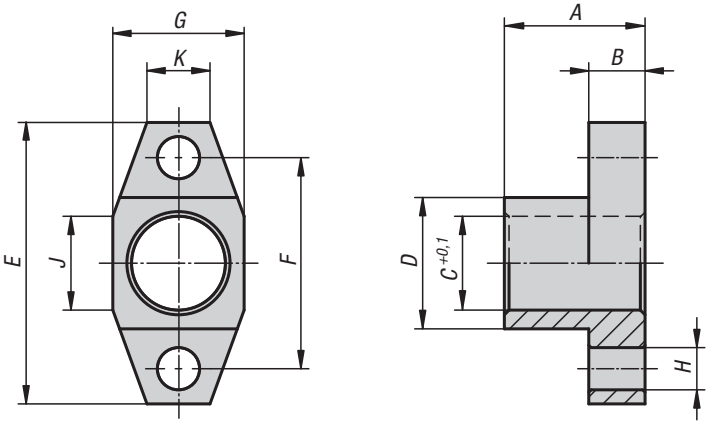


The clamping height can be adjusted by using hook clamp holders and riser bars to suit individual circumstances.

KIPP Hook clamp holders

Order No.	D	D1	D2	D3	L	L1	L2	L3	SW	Tightening torque max. Nm
K0017.08055	18	M8	M8	24	55	74	25	20	22	29,4
K0017.10063	20	M10	M12	32	63	93	30	21	30	39,2
K0017.10080	20	M10	M12	32	80	110	30	23	30	39,2
K0017.12080	25	M12	M12	40	80	110	40	25	36	49
K0017.12100	25	M12	M12	40	100	130	40	28	36	49
K0017.16080	32	M16	M16	50	80	110	40	25	46	78,4
K0017.16100	32	M16	M16	50	100	130	40	28	46	78,4

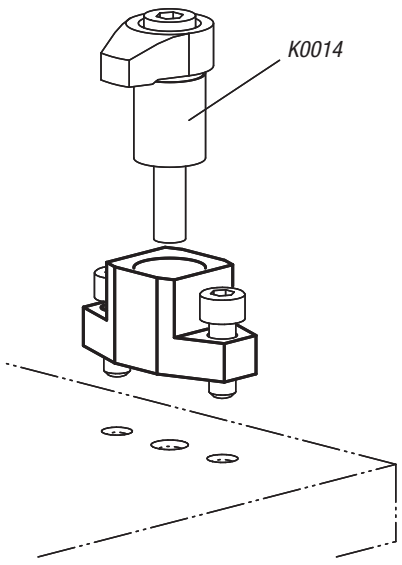
Hook clamp holders



Material:
Carbon steel 1.0503.

Version:
Black oxidised.

Sample order:
K0851.08025

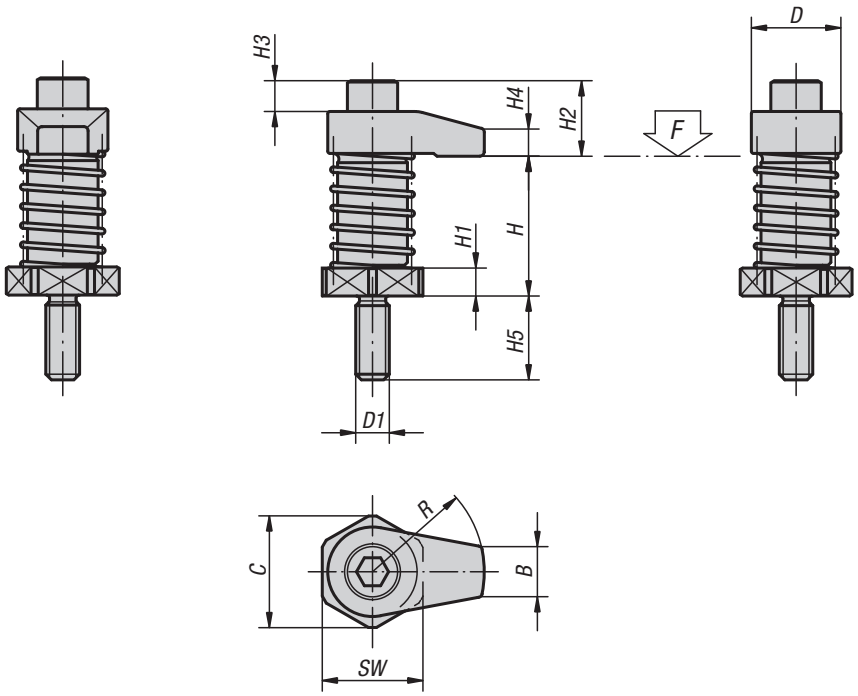


KIPP Hook clamp holders

Order No.	A	B	C	D	E	F	G	H	J	K
K0851.08025	25	10	18	24	50	38	24	6,6	15	11,3
K0851.10030	30	12	20	28	60	45	28	9	20	13,4
K0851.12040	40	14	25	35	75	55	35	11	20	15
K0851.16040	40	16	32	42	85	65	42	13,5	25	20,2

Hook clamps

with collar



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

Version:
Black oxidised.

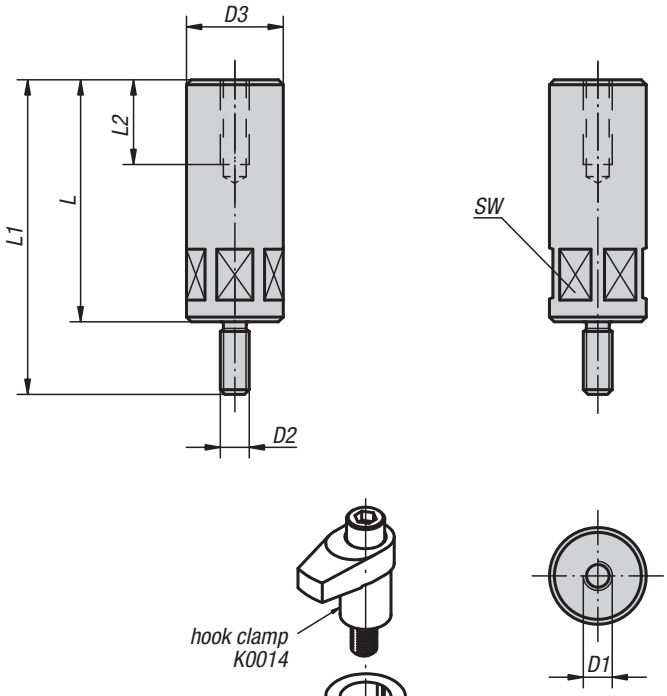
Sample order:
K0015.12060

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



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

Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0018.16050

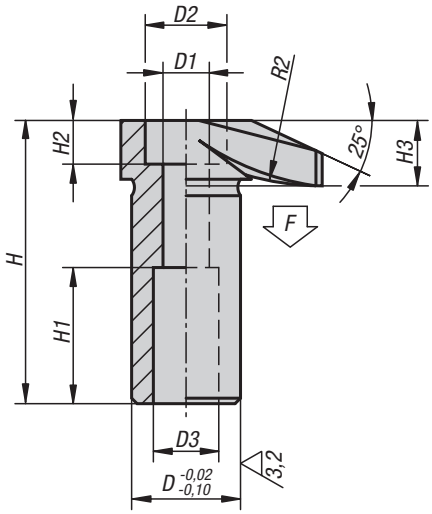
Note:
The height of the hook clamps and hook clamp holders can be raised using these riser bars.

KIPP Riser bars

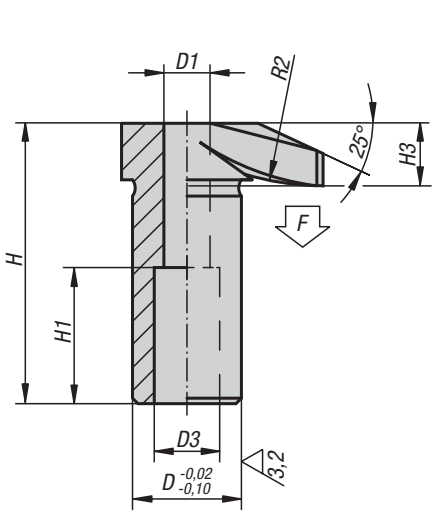
Order No.	D1	D2	D3	L	L1	L2	SW	Tightening torque max. Nm
K0018.08032	M8	M8	24	32	51	20	22	29,4
K0018.08040	M8	M8	24	40	59	20	22	29,4
K0018.08050	M8	M8	24	50	69	20	22	29,4
K0018.08065	M8	M8	24	65	84	20	22	29,4
K0018.12050	M12	M12	40	50	80	35	36	49
K0018.12065	M12	M12	40	65	95	35	36	49
K0018.12080	M12	M12	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

Ⓐ



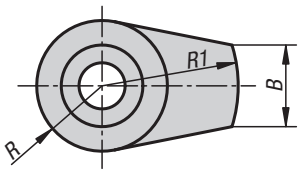
Ⓑ

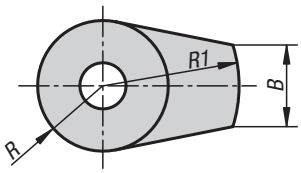


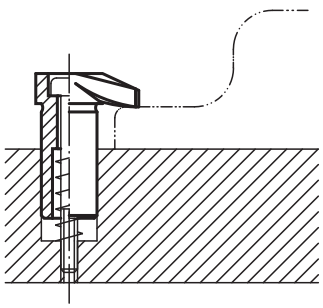
Material:
Carbon steel, tempered.

Version:
Black oxidised.

Sample order:
K0012.10







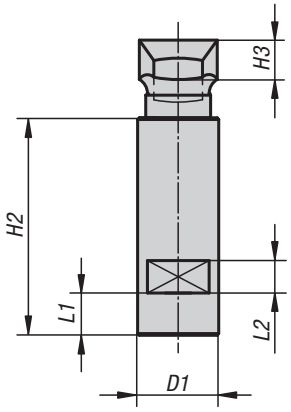
KIPP Hook clamps

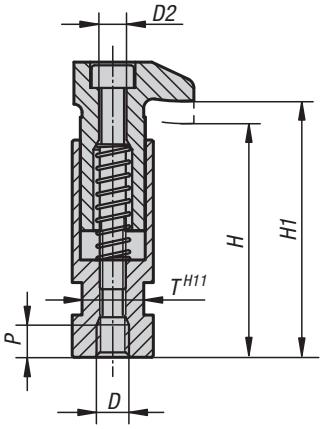
Order No.	Form	D	D1	D2	D3	H	H1	H2	H3	B	R	R1	R2	F max. kN
K0012.06	A	16	6,5	11	10	42	20	6	10	11	9	20	30	4,8
K0012.08	A	20	8,5	15	12	52	25	8	12	15	12	25	50	8,8
K0012.10	A	25	10,5	18	14	66	32	10	16	17	14	32	60	13,9
K0012.12	A	32	12,5	20	17	83	40	12	20	20	18	40	80	20,2

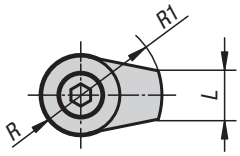
Order No.	Form	D	D1	D3	H	H1	H3	B	R	R1	R2	F max. kN
K0012.106	B	16	6,5	10	41,5	20	9,5	11	9	20	30	4,8
K0012.108	B	20	8,5	12	51,5	25	11,5	15	12	25	50	8,8
K0012.110	B	25	10,5	14	65,5	32	15,5	17	14	32	60	13,9
K0012.112	B	32	12,5	17	82,5	40	19,5	20	18	40	80	20,2

Hook clamps

with collar







Material:
Carbon steel.

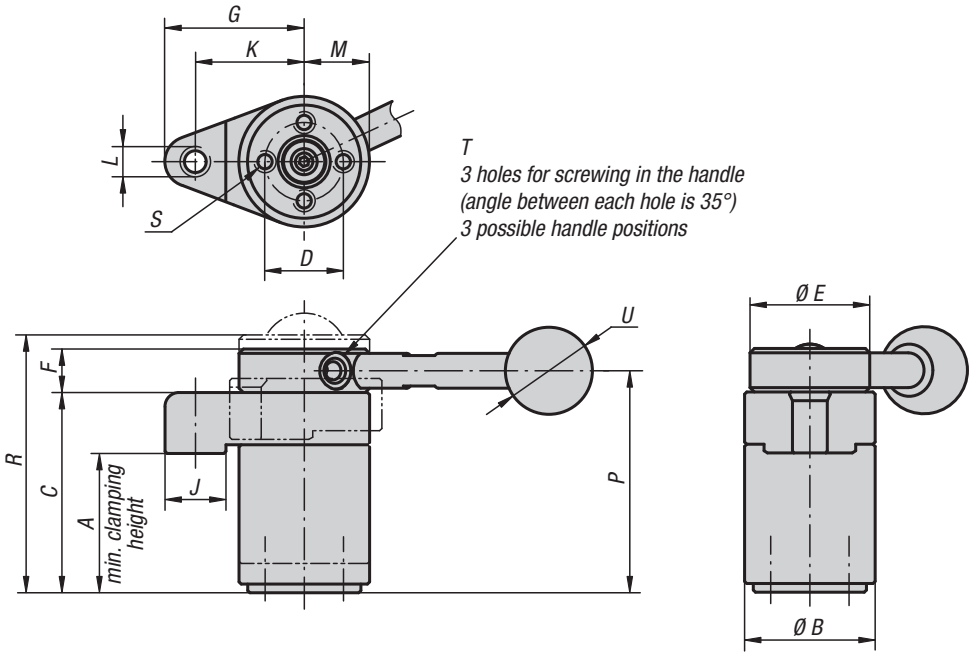
Version:
Tempered and black oxidised.

Sample order:
K0013.06

KIPP Hook clamps with collar

Order No.	D	D1	D2	H	H1	H2	H3	L	L1	L2	P	R	R1	T	Clamping force kN
K0013.06	M6	20	6	56	60	53	10	11	9	8	8	9	20	17	4,82
K0013.08	M8	20	6	56	60	53	10	11	9	8	8	9	20	17	8,77
K0013.10	M10	25	8	72	79	67	12	15	13	10	10	12	25	19	13,9
K0013.12	M12	32	10	88	96	82	16	17	18	12	12	14	32	27	20,2
K0013.16	M16	40	12	109	118	102	20	20	22	12	16	18	40	32	37,8

Swing clamps



Material:
Carbon steel.
Ball knob plastic.

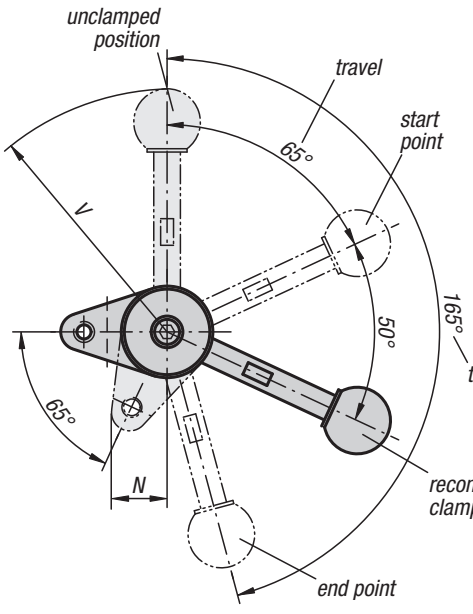
Version:
Tempered and black oxidised.
Ball knob Duroplast PF 31, black.

Sample order:
K0912.013232

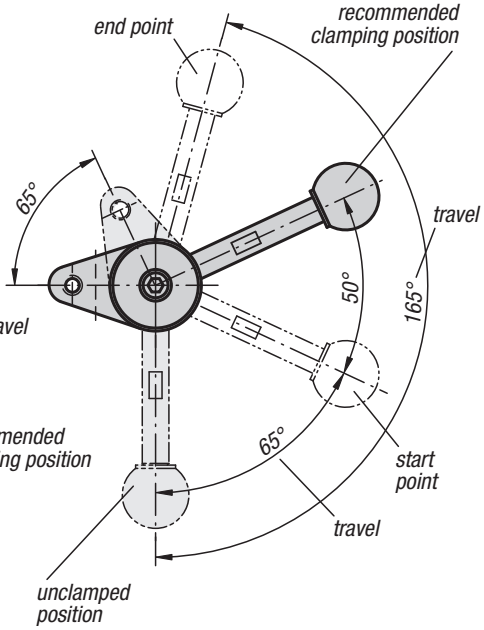
Note:
* Admissible hand force to operate the handle.

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

Right hand



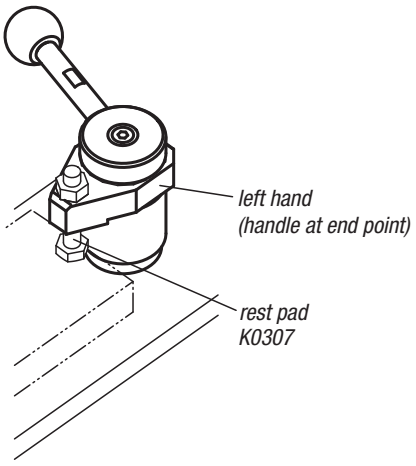
Left hand

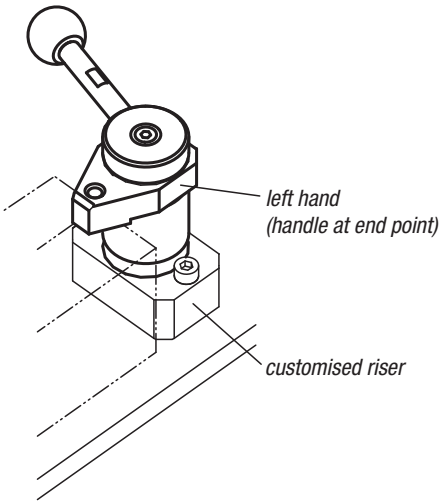


KIPP Swing clamps

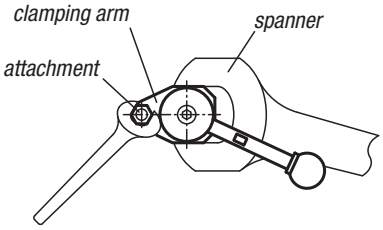
Order No. left	Order No. right	Grip	A min.	A max.	B	C	D	E	F	G	J	K	L	M	N	P	R	S	T	U	V	Clamping force N	Hand force FH N
K0912.003232	**K0912.103232**	without grip	31,4	32,6	30	46	18	30	10	32	14	25	M6	15	17	51	57,5	M4x8	M5	-	-	800	150*
K0912.004540	**K0912.104540**	without grip	44,1	45,9	40	63	25	38	13	40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





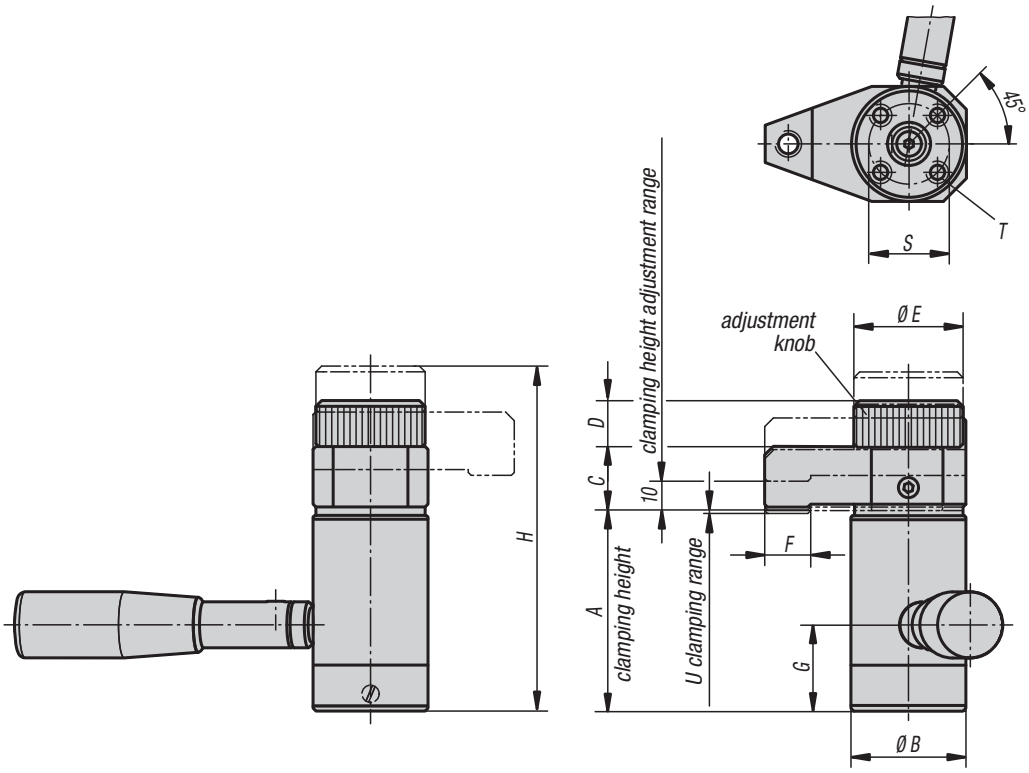
Mounting an attachment



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

Notes

Swing clamps (high force)



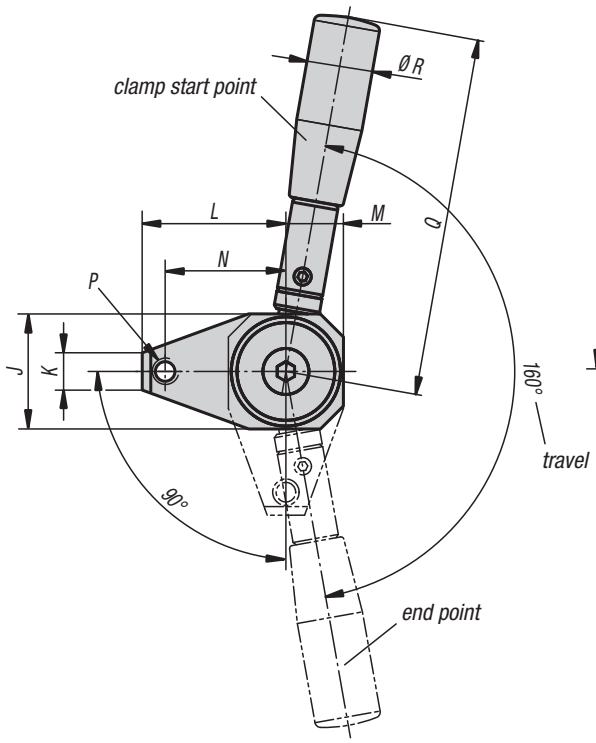
Material:
Carbon steel.
Grip plastic.

Version:
Tempered and black oxidised.
Grip black Duroplast PF 31.

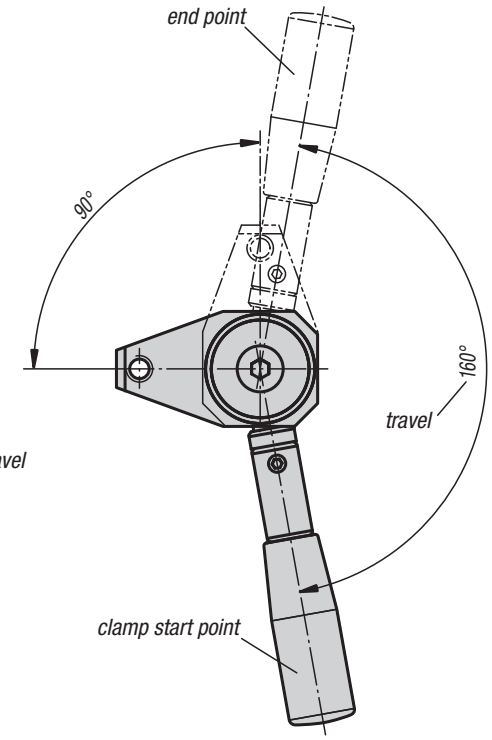
Sample order:
K0913.017030

Note:
* Admissible hand force for the handle.

Right hand



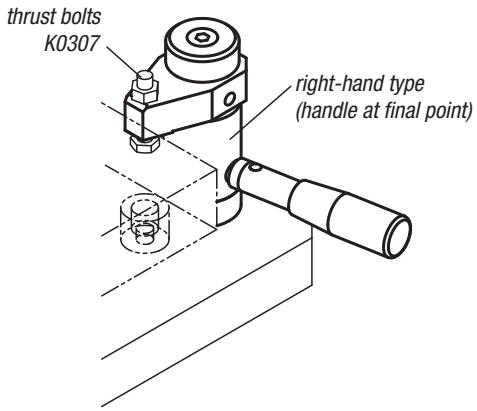
Left hand

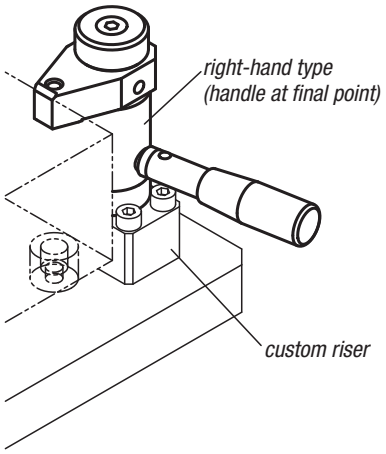


KIPP Swing clamps (high force)

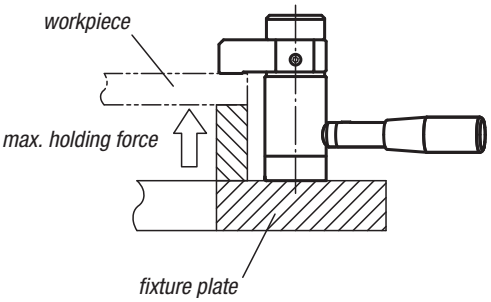
Order No. left	Order No. right	A min.	A max.	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	Clamping force N	Hand force FH N	Holding force N
K0913.017030	**K0913.117030**	70	80	40	22	16	38	16	30	120	40	13	50	20	42	M8	125	23	28	M6x12	1,2	3500	600*	8000
K0913.018038	**K0913.118038**	80	90	50	25	20	48	24	38	137	50	18	60	25	48	M12	160	28	35	M8x16	1,6	6000	600*	14000

Technical information for swing clamps (high force)

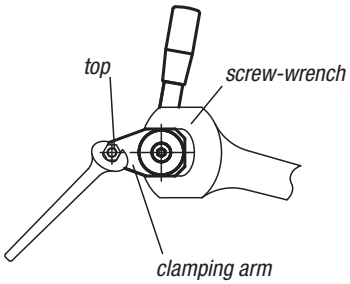




Holding forces for workpiece processing

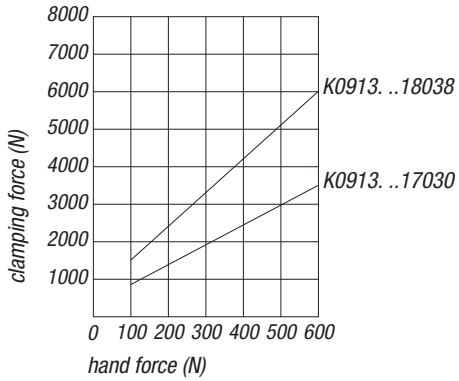


Top Installation



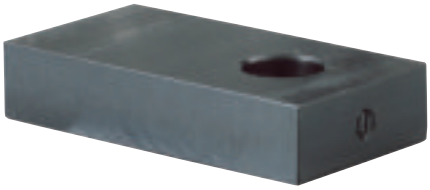
When mounting an attachment on the clamping arm, use a spanner to lock the arm and prevent it from turning.

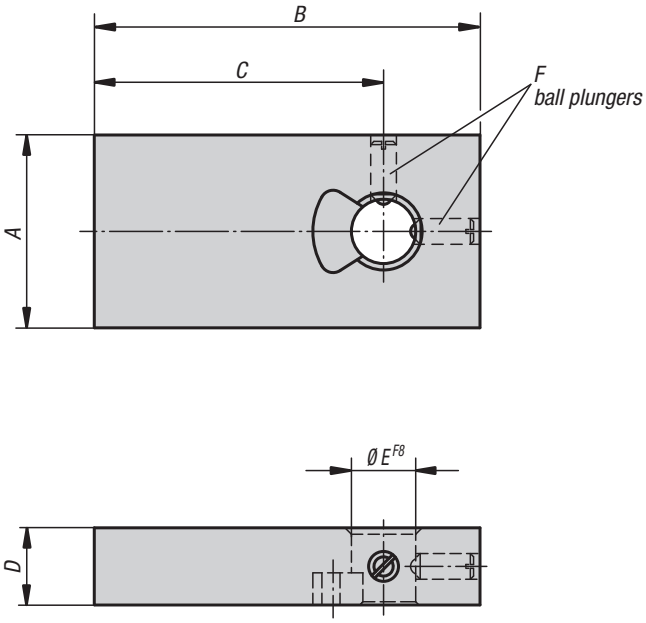
K0913. performance curve



Clamping arms

for swing clamp



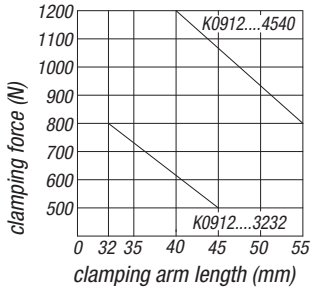


Material:
Carbon steel.

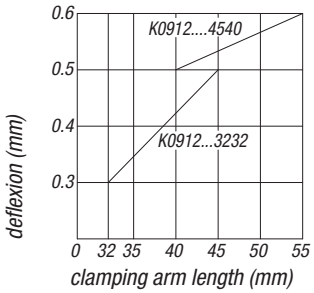
Version:
Black oxidised.

Sample order:
K0912.03006010

clamping arm length C vs. clamping force



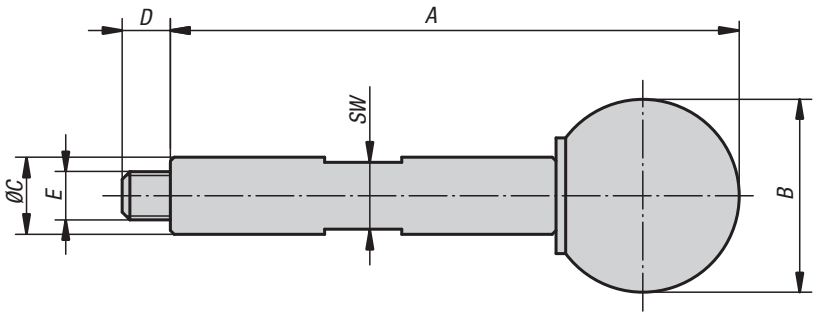
clamping arm length C vs. deflexion during clamping



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 Duroplast PF 31.

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

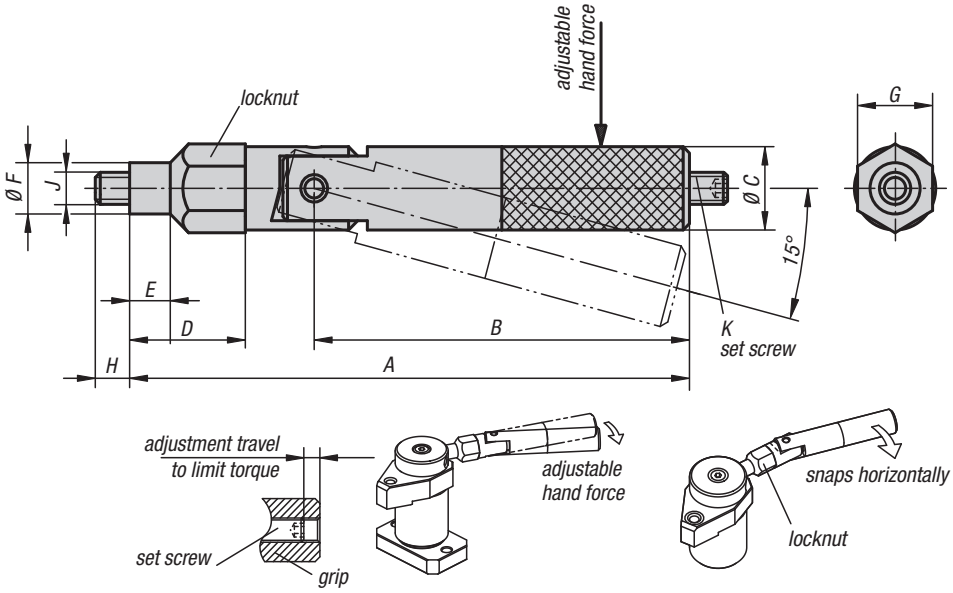
Sample order:
K0915.5059

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

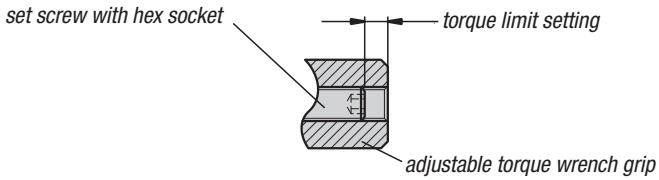
Note:
The desired clamping force can be set by using the set screw to alter the torque. The handle snaps 15° when the set torque is achieved.

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

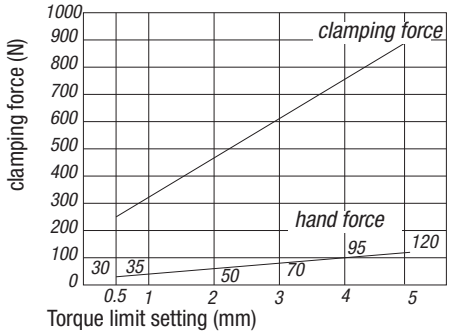
KIPP Handles, screw-in, with torque limit

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



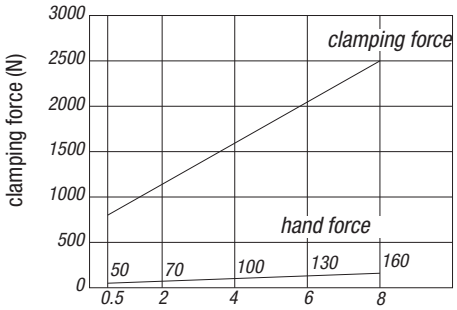
Pull Clamps K0910.3240...



Torque limit setting (mm)

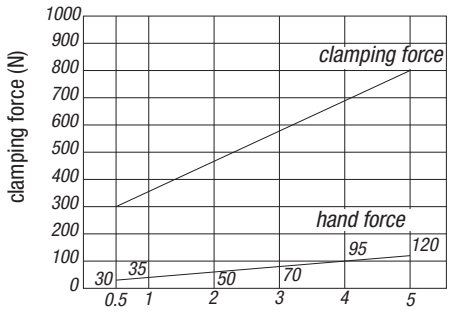
If clamping force is 900 N, Load-Setting Distance will be 5 mm. Hand force will be 120 N.

Pull Clamps K0910.4050...



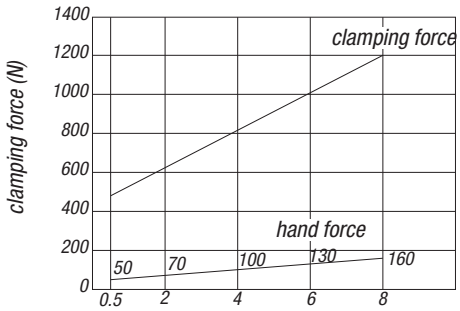
Torque limit setting (mm)

Swing Clamps K0912....3232



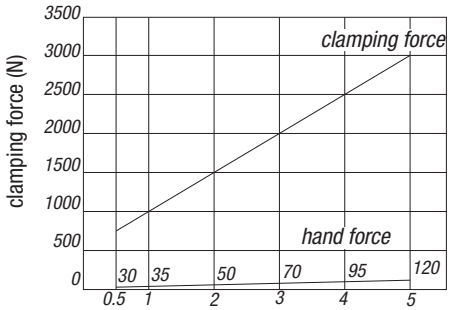
Torque limit setting (mm)

Swing Clamps K0912....4540



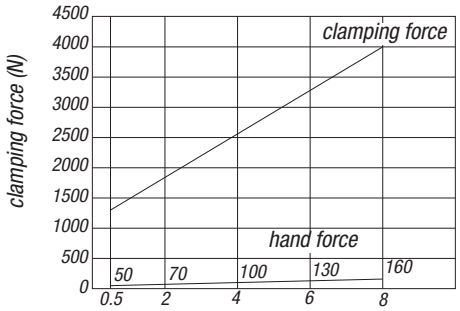
Torque limit setting (mm)

Side Clamps K0928.0500
Side Clamps K0928.0501



Torque limit setting (mm)

Side Clamps K0928.0800
Side Clamps K0928.0801

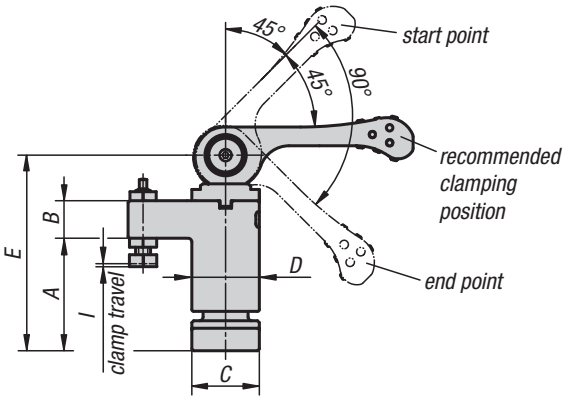


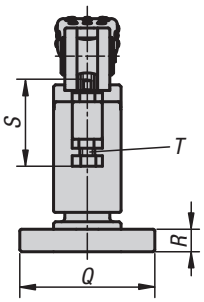
Torque limit setting (mm)

Note:
The above performance curves apply to degreased clamps

Swing clamps

mini, with cam lever





Material:
Carbon steel.

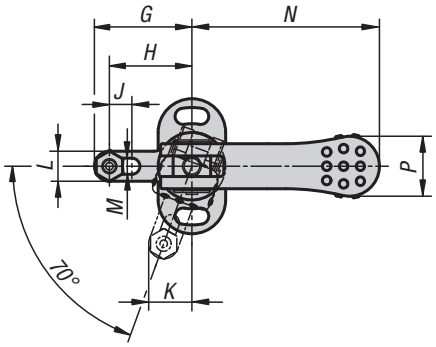
Version:
Tempered and black oxidised.

Sample order:
K0925.0100

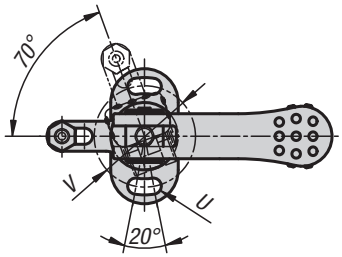
Note:
Swing clamps are used where the clamping points must be free when the workpiece is loaded or removed.

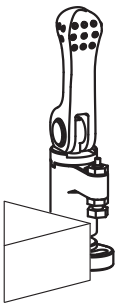
* Admissible hand force for the handle.

Right hand

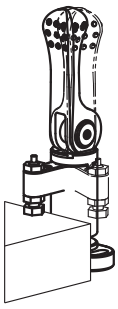


Left hand

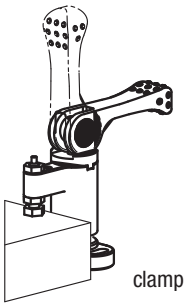




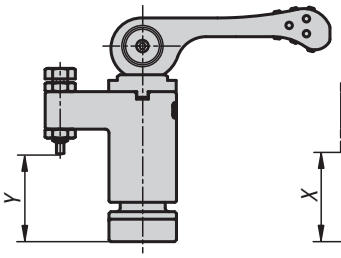
unclamped



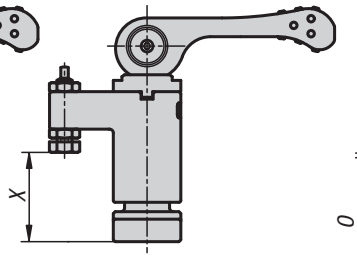
swivel



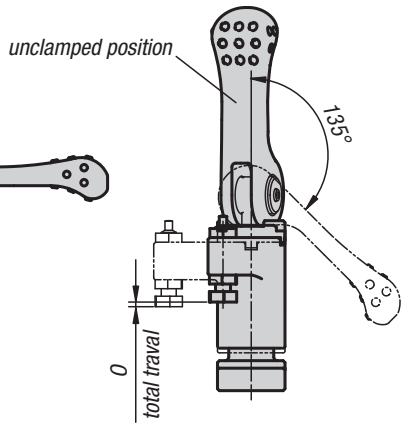
clamp



clamping
rough surfaces



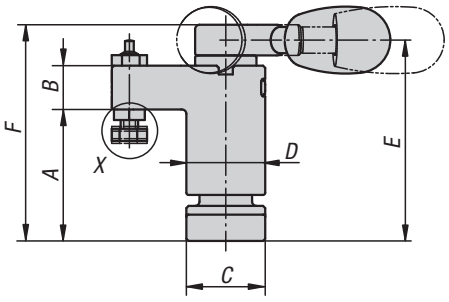
clamping
machined surfaces



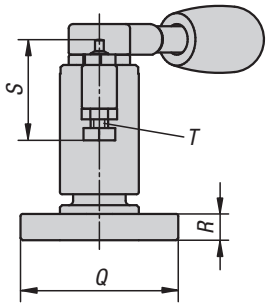
KIPP Swing clamps, mini, with cam lever

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.	Clamping 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*

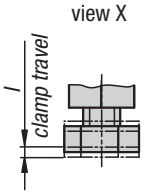
Swing clamps mini



Right hand



Left hand



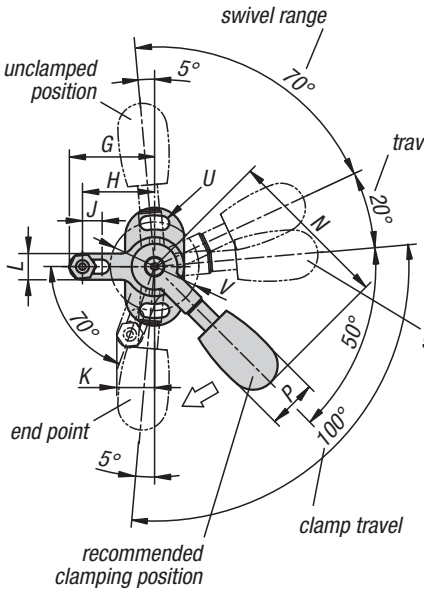
Material:
Carbon steel.
Grip plastic.

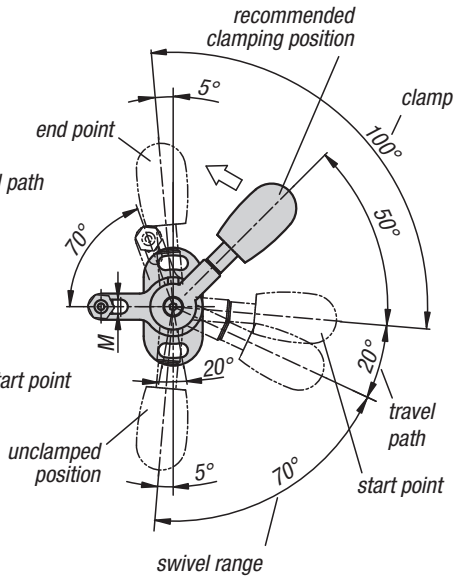
Version:
Tempered, black oxidised.
Grip black.

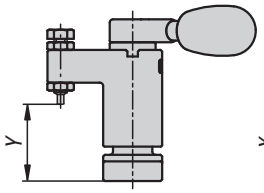
Sample order:
K0926.0100

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

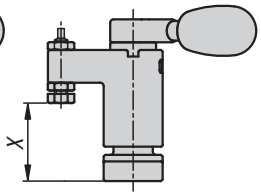
* Admissible hand force for the handle.



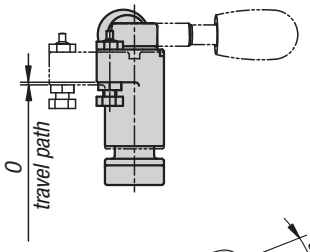


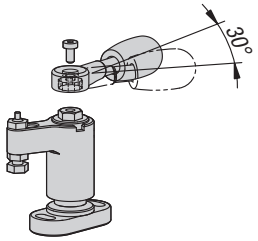


clamping
rough faces

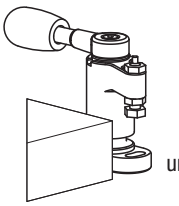


clamping
machined faces

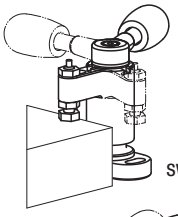




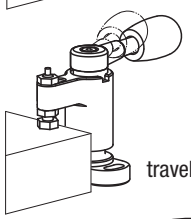
The position of the grip can
be adjusted in 30° increments



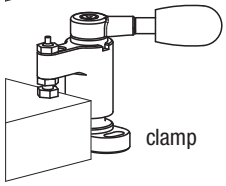
unclamped



swivel



travel path



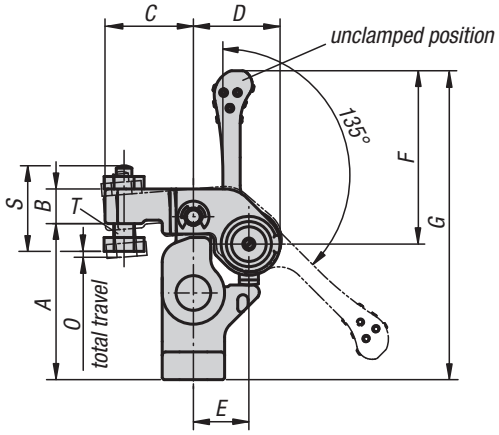
clamp

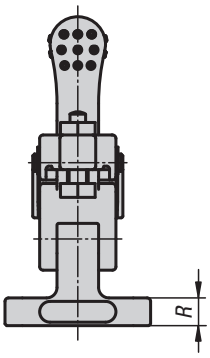
KIPP Swing clamps mini

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.	Clamping 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*

Swivel hold-down clamp

mini, with cam lever



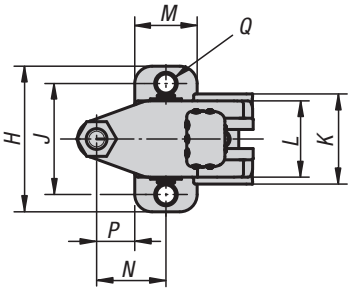


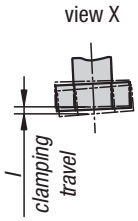
Material:
Carbon steel.

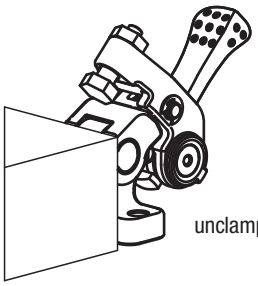
Sample order:
K0927.100

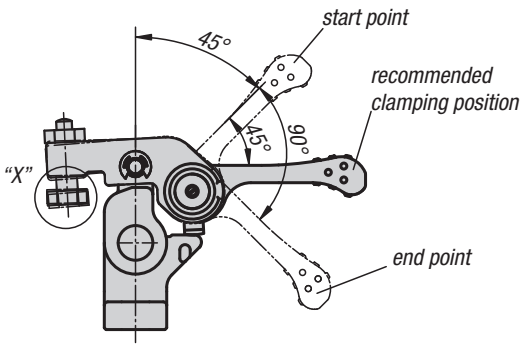
Note:
Swing clamps are used where the clamping points must be free when the workpiece is loaded or removed.

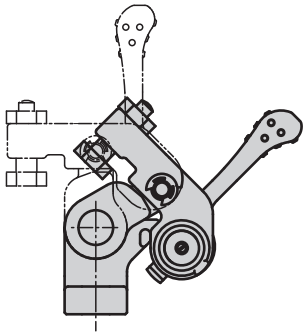
* Admissible hand force for the handle.

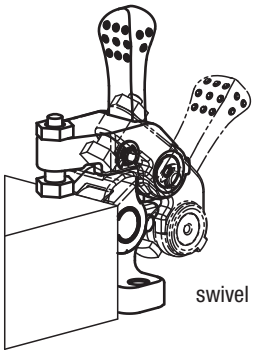


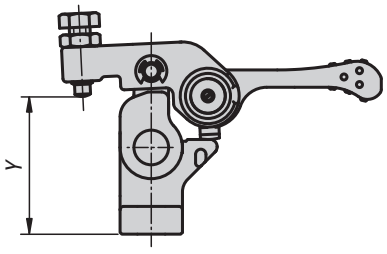


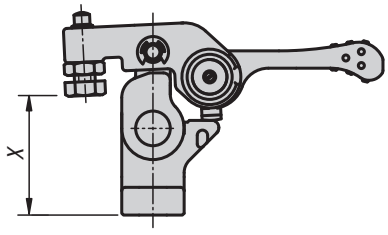


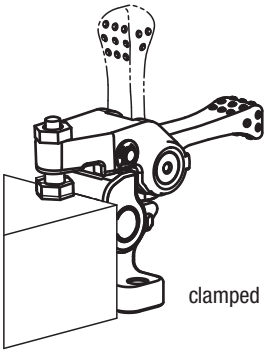








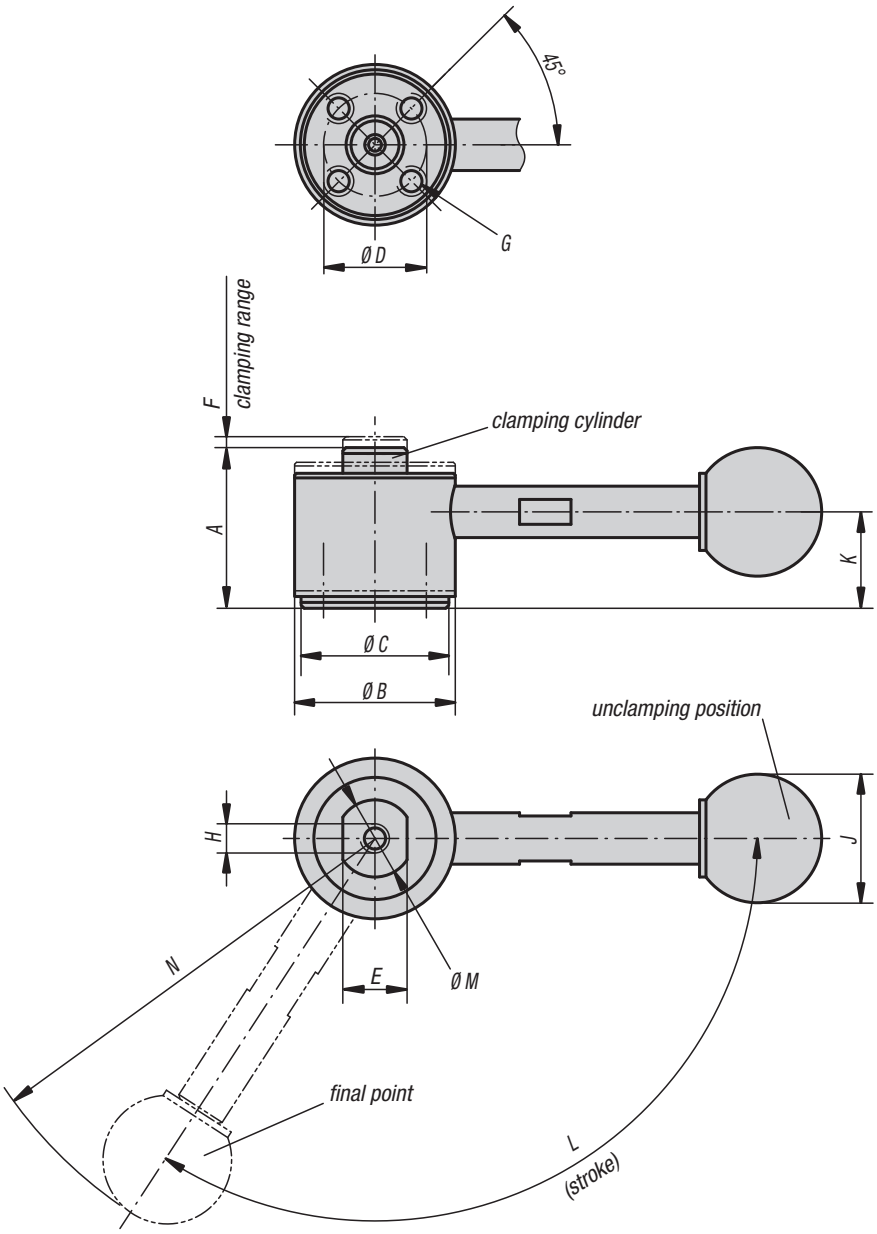




KIPP Swivel hold-down clamp, mini, with cam lever

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.	Clamping 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*

Thrust clamps



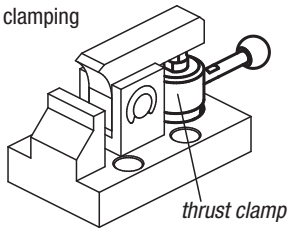
Material, version:
Cam tool steel, hardened and black oxidised.
Shaft carbon steel, hardened and black oxidised.
Grip carbon steel, black oxidised.
Ball knob black Duroplast PF 31.

Sample order:
K0914.252501

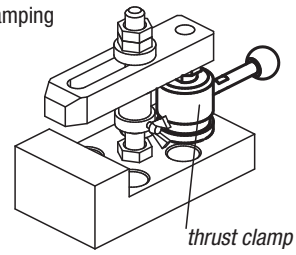
Note:
* Admissible hand force for the handle.

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

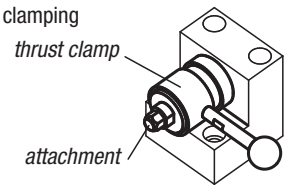
downthrust clamping



vertical clamping



horizontal clamping

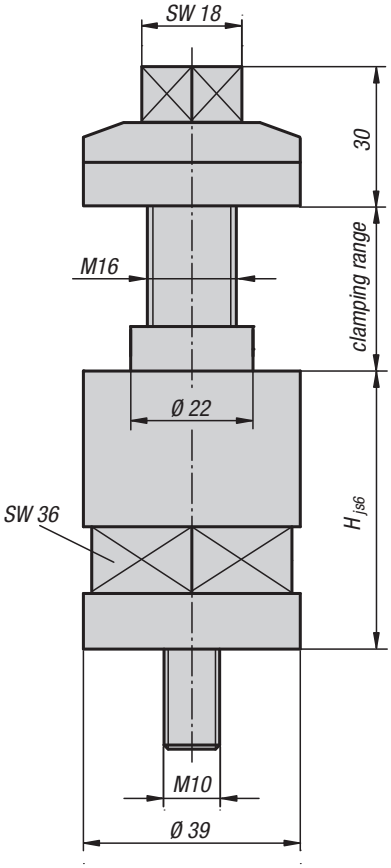


When mounting an attachment on the clamping cylinder, hold the shaft using a spanner to prevent turning.

KIPP Thrust clamps

Order No.	Version	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	M4x6	M4x6	-	15	123°	12	-	3000	150*
K0914.252501	with grip	25	26,7	25	23	16	10	1,7	M4x6	M4x6	20	15	123°	12	69,5	3000	150*
K0914.323200	without grip	32	34,5	32	30	20	13	2,5	M6x9	M6x9	-	19,5	135°	15	-	4000	200*
K0914.323201	with grip	32	34,5	32	30	20	13	2,5	M6x9	M6x9	25	19,5	135°	15	103	4000	200*

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

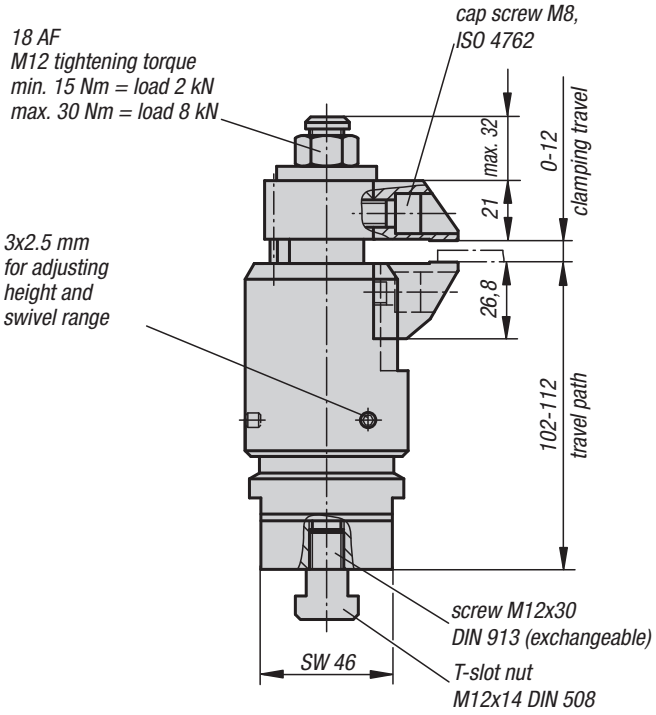
Order No.	H	Clamp range
K1232.100	100	8 - 40
K1232.050	50	8 - 40

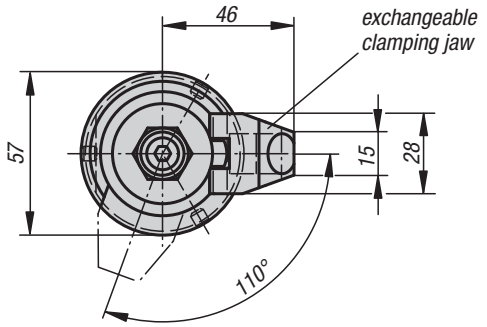
KIPP Clamping screws

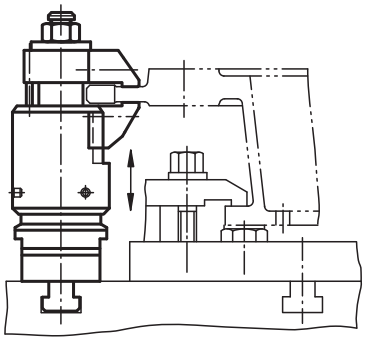
Order No.	Clamp range
K1232.6587	65 - 87
K1232.4067	40 - 67

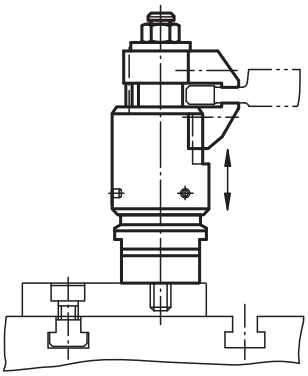
Notes

Floating clamp









Material:
Base body and jaws steel.
Housing aluminium.

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

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.

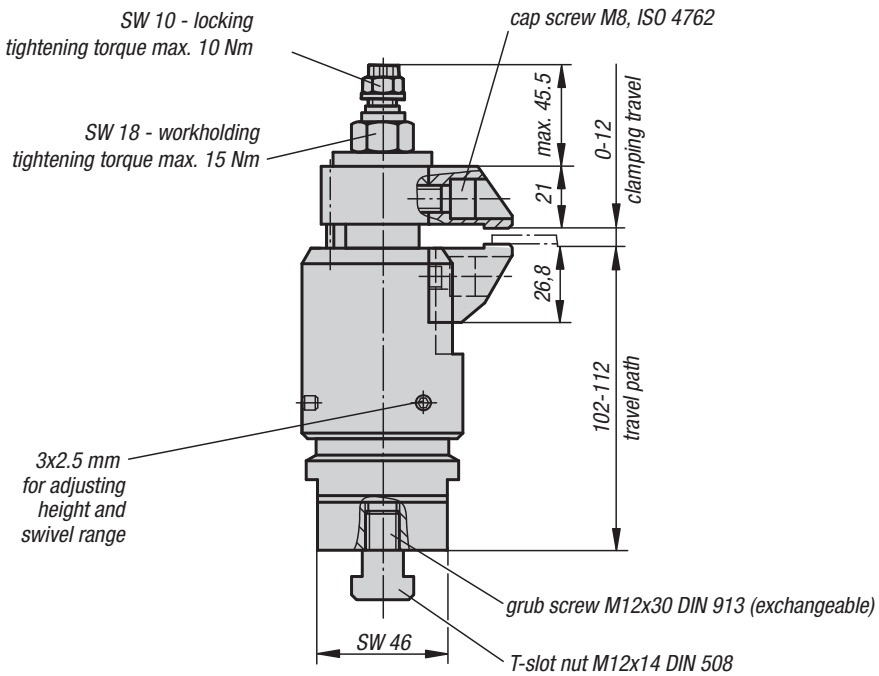
Assembly:
Fasten the floating clamp to the fixture with the M12 screw.
Adjust the height stop and swivel range using the red sleeve and lock with the 3x2.5 mm grub screws. When setting the height leave generous clearance above.
For safe operation the M12 tapped hole must always be closed.
For specific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

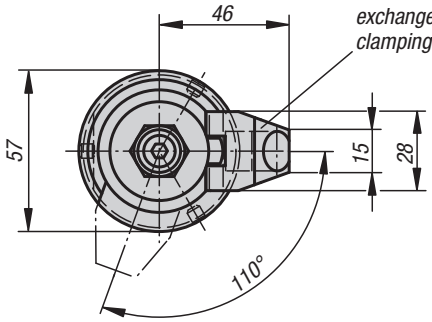
KIPP Floating clamp

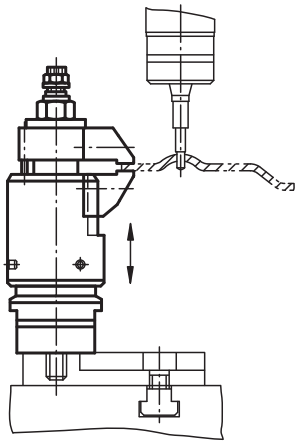
Order No.	Travel path	max. clamping stroke	Load capacity N	Clamping force N
K1228.100812	10	12	8000	8000

Floating clamp

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 anodized.

Sample order:
K1227.100812

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

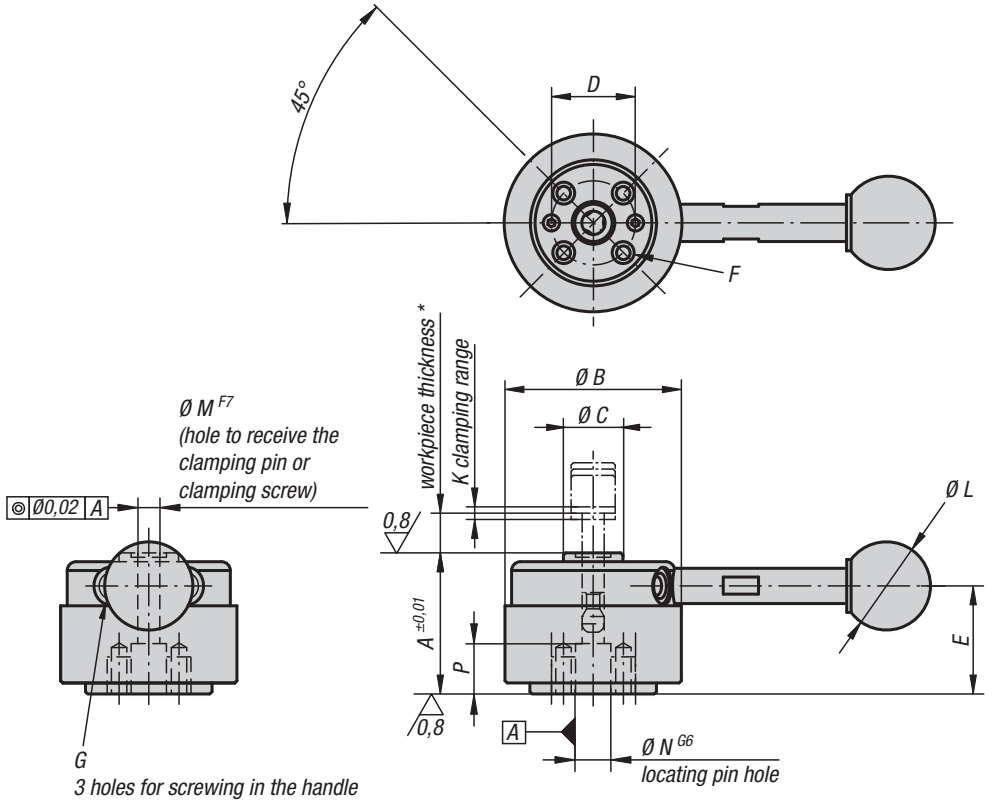
Method of operation:
1. Push the floating clamp down.
2. Pivot the jaws. The lower jaw contacts the workpiece with a light spring force.
3. Tighten the SW 18 hexagon nut. The jaws clamp the workpiece, the clamp is still floating.
4. Tighten the SW 10 hexagon nut. The clamping process is completed.
5.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

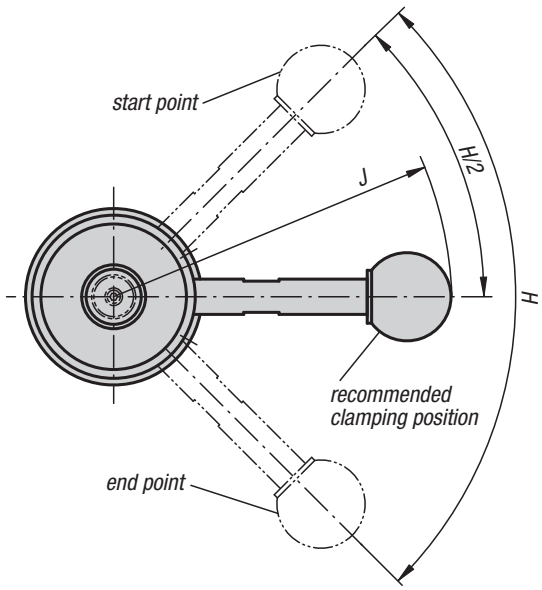
Assembly:
Fasten the floating clamp to the fixture with the M12 screw.
Adjust the height stop and the swivel range using the blue sleeve and lock with the 3x2.5 mm grub screws. When setting the height leave generous clearance above.
For safe operation the M12 tapped hole must always be closed.
For specific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

KIPP Floating clamp with separate workpiece clamp and interlock

Order No.	Travel path	max. clamping stroke	Load capacity N	Clamping force N
K1227.100812	10	12	8000	8000

Pull clamps





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

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

Sample order:
K0910.324001

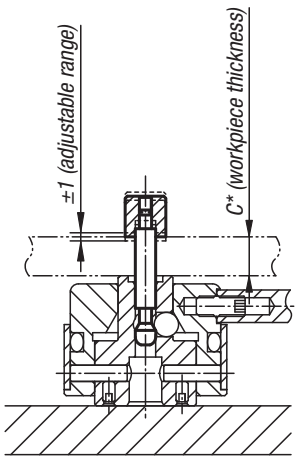
Note:
* Max. workpiece thickness see clamping pin K0910 (dimension C).
** Admissible hand force for the handle.

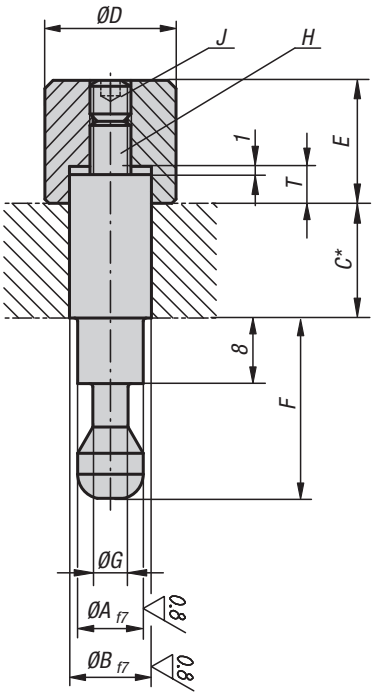
Accessories:
Standard handles K0915.
Screw-in handles with adjustable torque K0916.

KIPP Pull clamps

Order No.	Version	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.

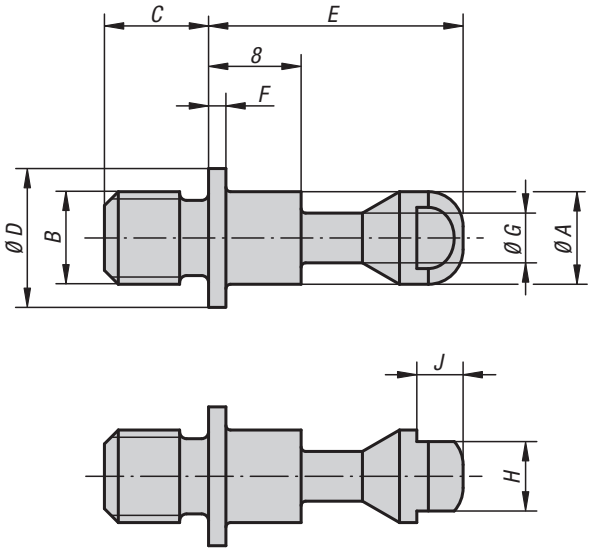
Accessories:
to:
K0910.3240... (K0910.005050 and K0910.006050),
K0910.4050... (K0910.008080 and K0910.010080)

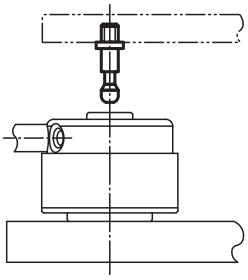
KIPP Clamping pins

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

K0910

Clamping screws





Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0910.105060

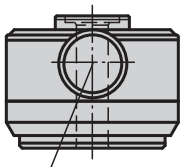
Accessories:
To:
K0910.3240 for K0910.105060 and K0910.106070,
K0910.4050 for K0910.108090 and K0910.110110

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

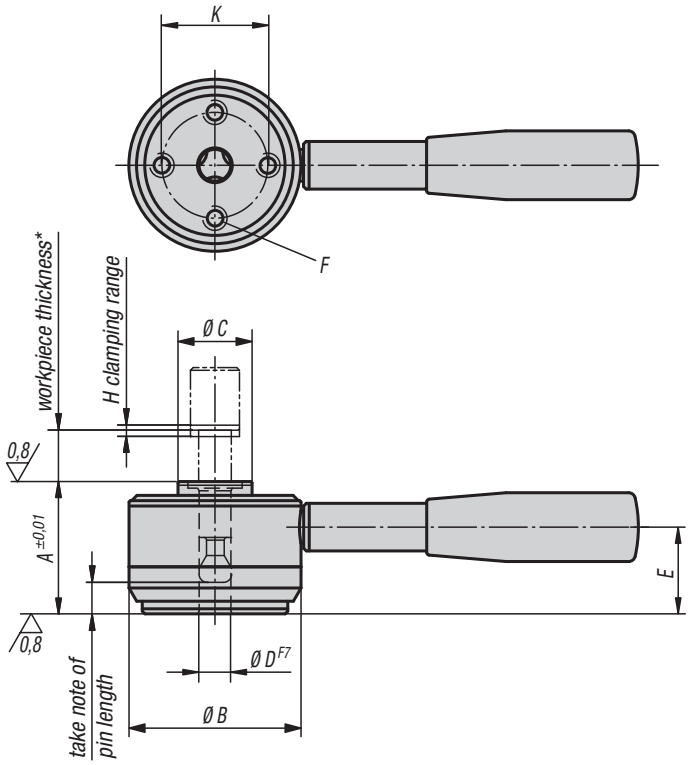
Pull clamps

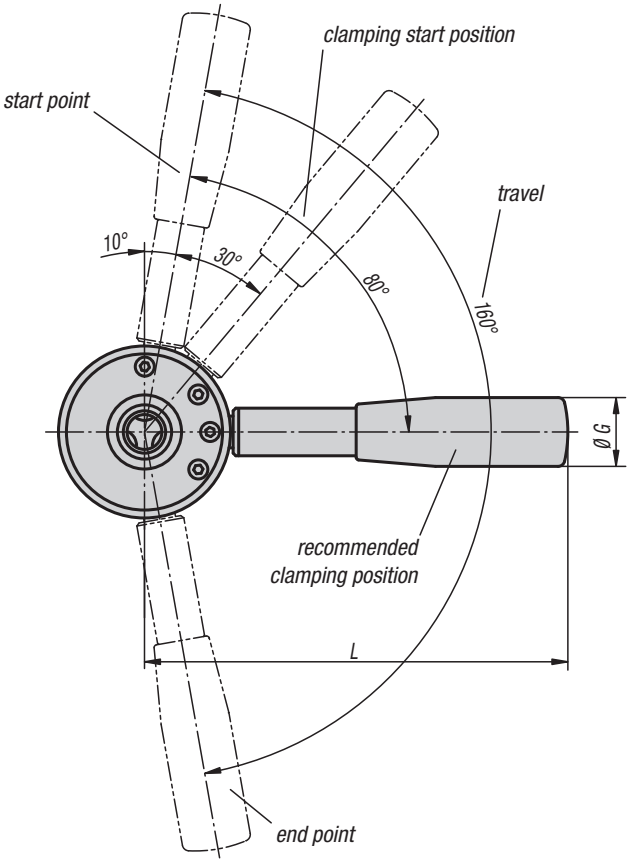
(high force)



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 Duroplast 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.

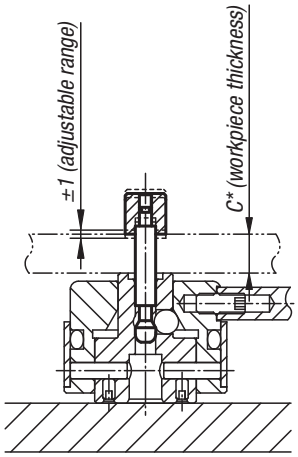
* Max. workpiece thickness, see clamping pin K0911 (dimension C).
** Admissible hand force for the handle.

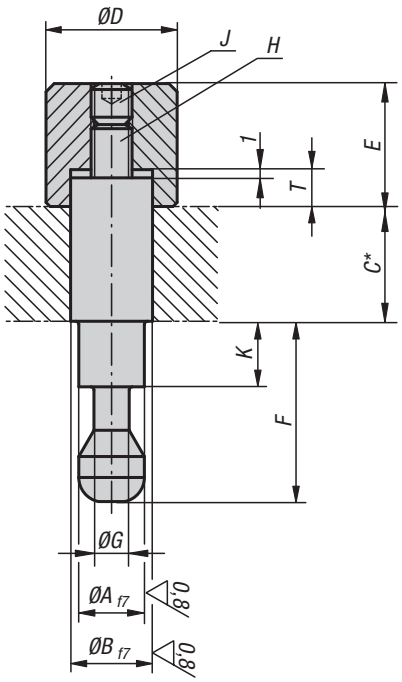
KIPP Pull clamps (high force)

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.

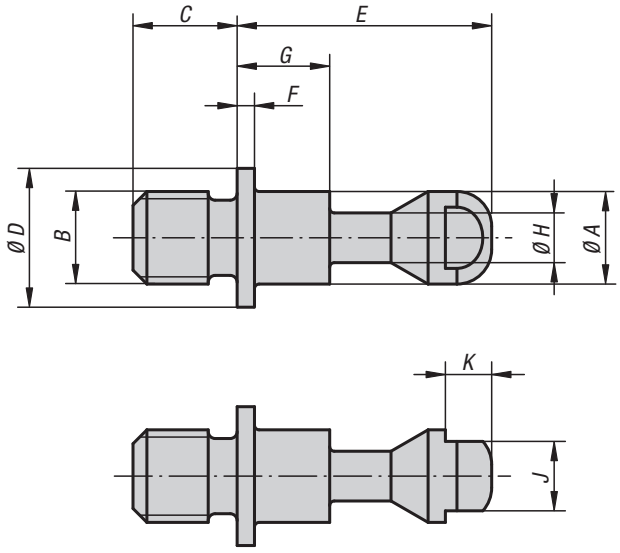
KIPP Clamping pins (high force)

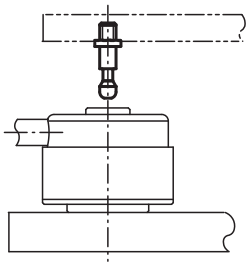
Order No.	A	B	C	D	E	F	G	H	J	K	T	Suitable for
K0911.412100	12	12	100	18	23	38	6,5	M8	M8x8	21,5	7	K0911.506501
K0911.416100	12	16	100	24	23	38	6,5	M8	M8x8	21,5	7	K0911.506501
K0911.516120	16	16	120	24	29	48	9,5	M10	M10x10	28	9	K0911.638001
K0911.520120	16	20	120	30	29	48	9,5	M10	M10x10	28	9	K0911.638001

K0911

Clamping screws

(high force)





Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0911.1412013

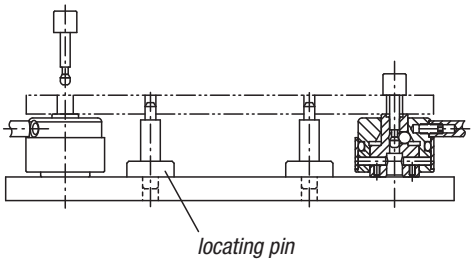
KIPP Clamping screws (high force)

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

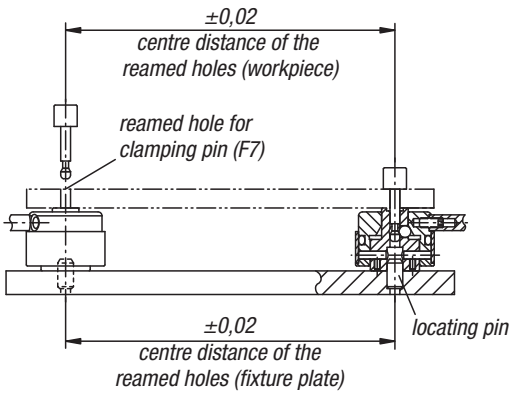
How to locate workpiece

Workpiece positioning

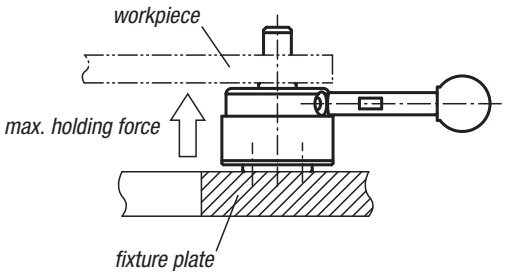
Clamping by means of pull clamp and clamping pin



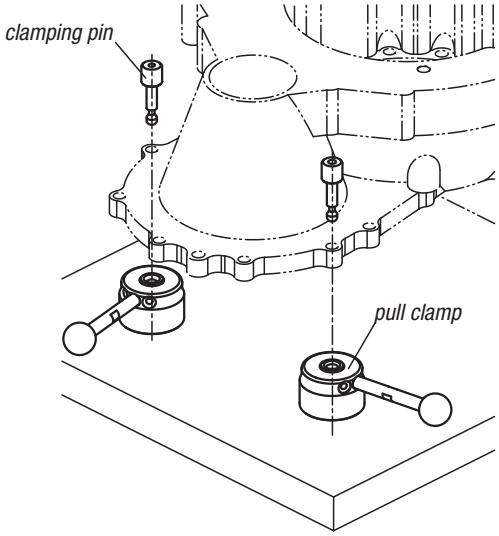
Simultaneous clamping and positioning of a workpiece



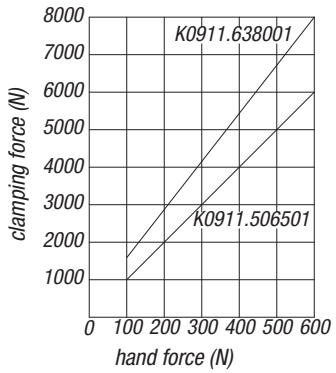
Holding forces for workpiece processing

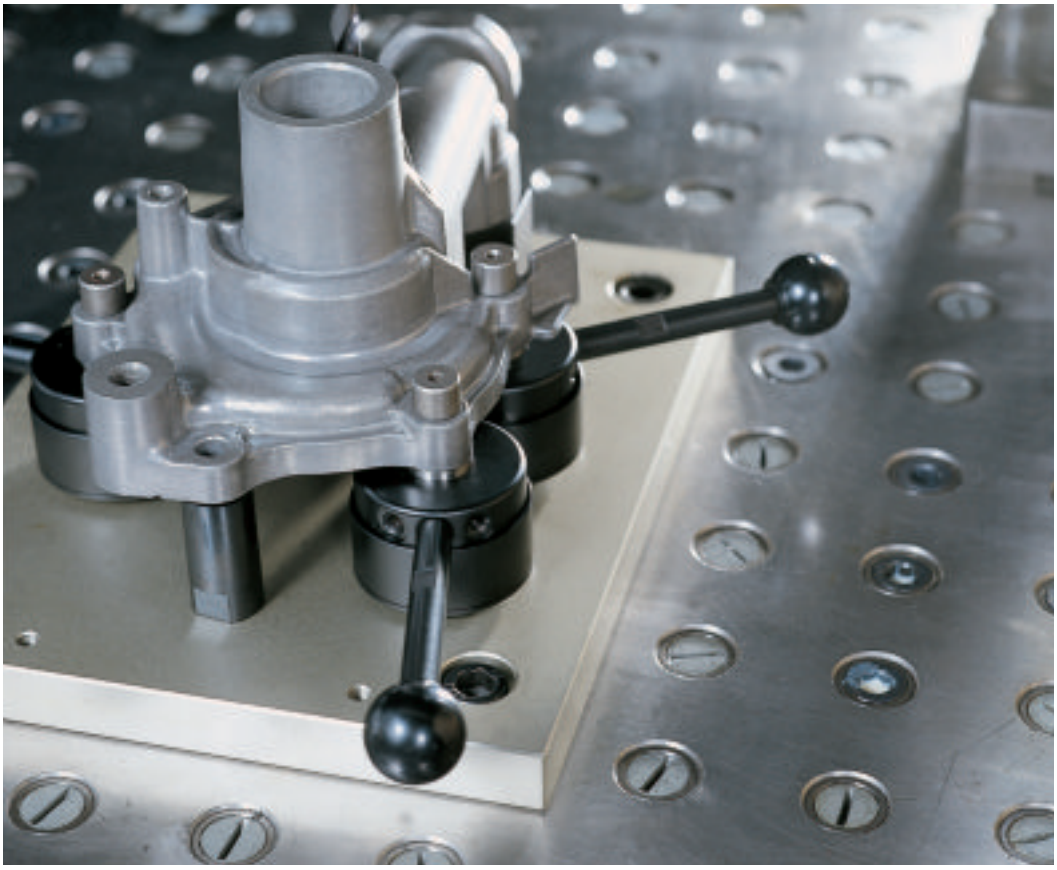


Make sure that no force exceeding the values
in the table is affecting the bottom of the workpiece.

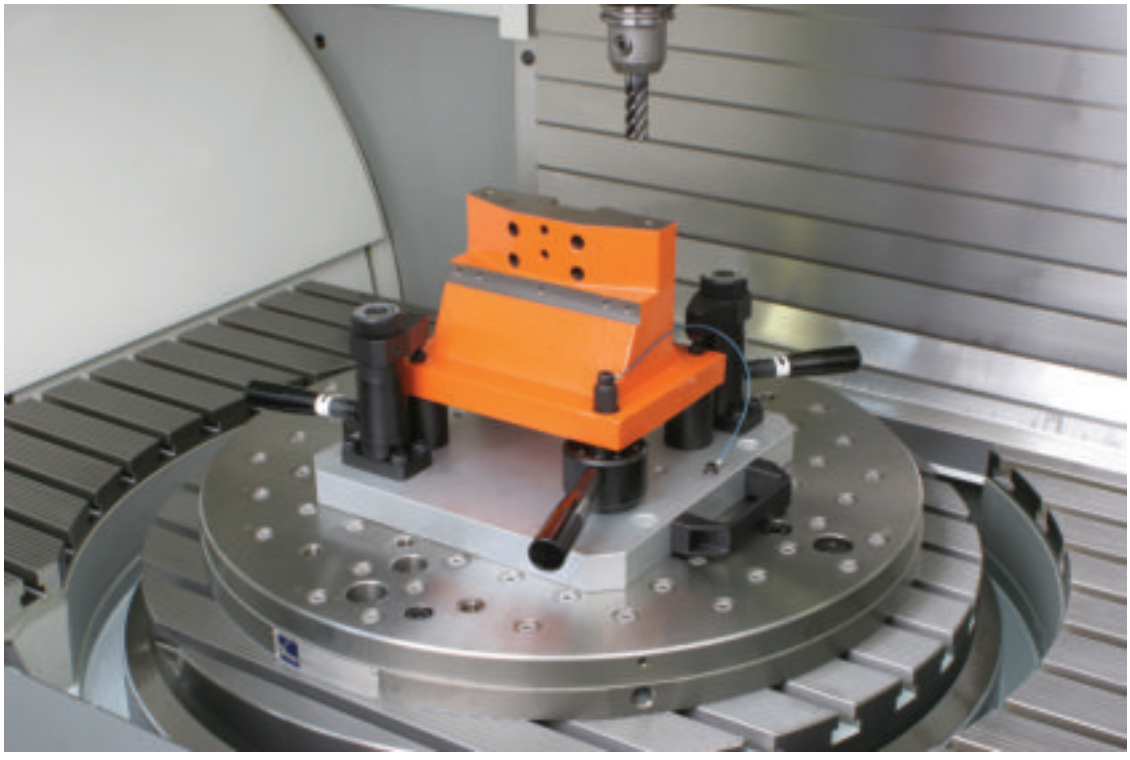


performance curve

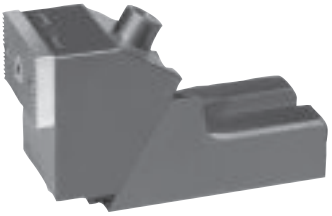


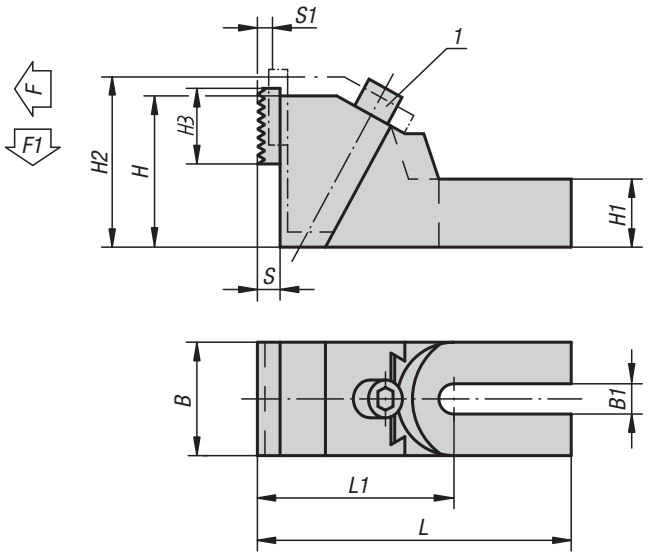


Pull clamps + Swing clamps (high force)



Robust side clamps





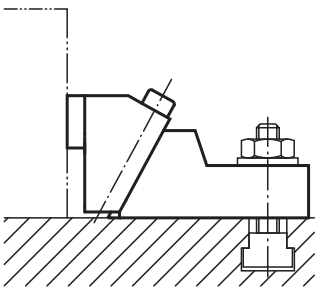
Material:
Body malleable iron.
Jaws mild steel.

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!

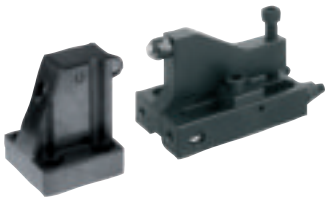
Drawing reference:
1) tightening torque max. 50 Nm



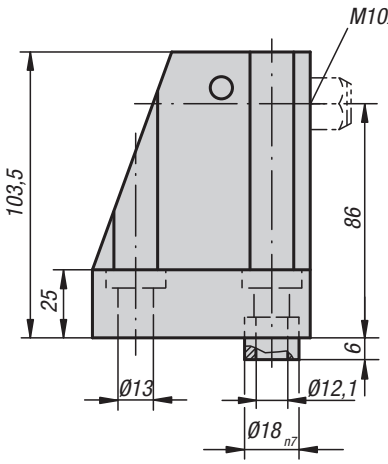
KIPP Robust side clamps

Order No.	suitable for slot width	L	L1	B	B1	H	H1	H2	H3	S	S1	F kN	F1 kN
K0891.19	12, 14, 16, 18	177,5	112,5	65	19	85	37	99	40	12	8	18,8	2,26
K0891.26	20, 22, 24, 28, 30	226,5	136,5	75	26	100	45	118	40	12	11	23,05	2,77
K0891.38	32, 36, 42	262,5	157,5	90	38	120	55	145	40	12	15	29,4	3,33

Side clamps

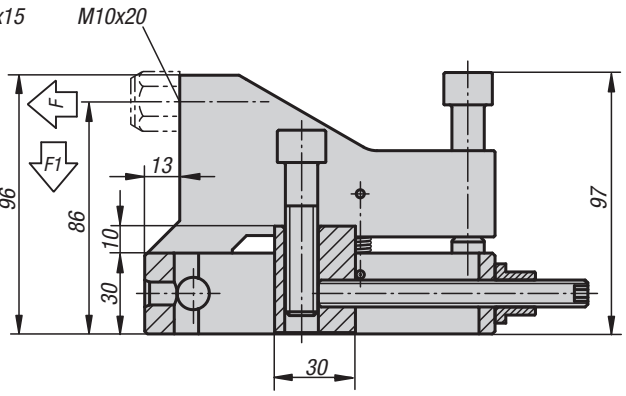


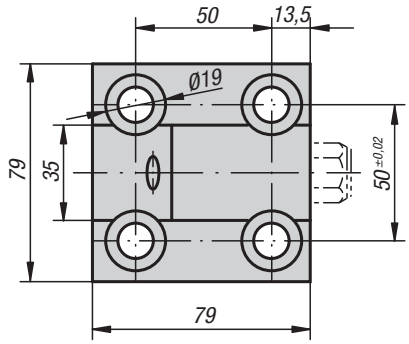
K0830.212

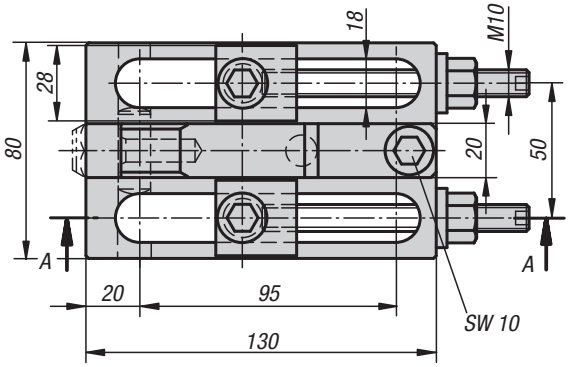


K0830.112

A-A







Material:
Body steel 1.1191.

Version:
Black oxidised.
Centring bush hardened.

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

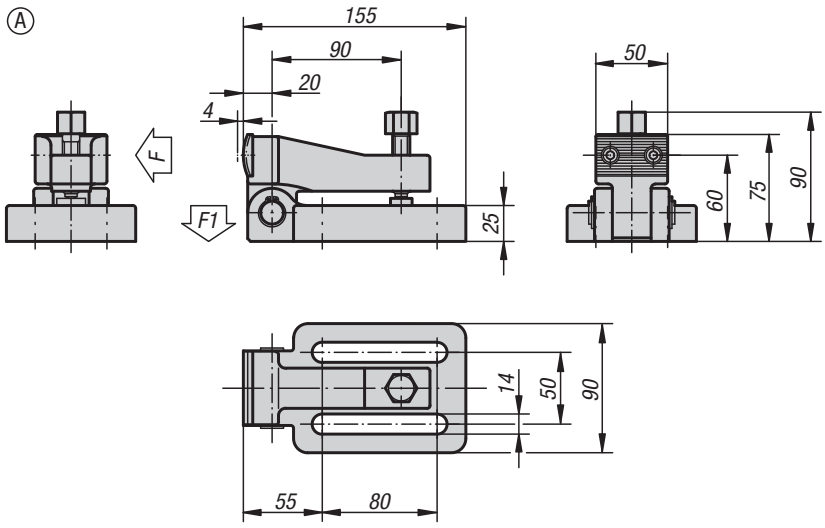
Note:
The unit comprises of an adjustable side clamp and a side stop and are used to clamp workpieces with a simultaneous positive down force. The side clamp has two DIN 913 grub screws which can be set to prevent backward slippage during clamping.

KIPP Side clamps

Order No.	F kN	F1 kN
K0830.112	25	5
K0830.212	22,5	4,5

Side clamps

Ⓐ



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

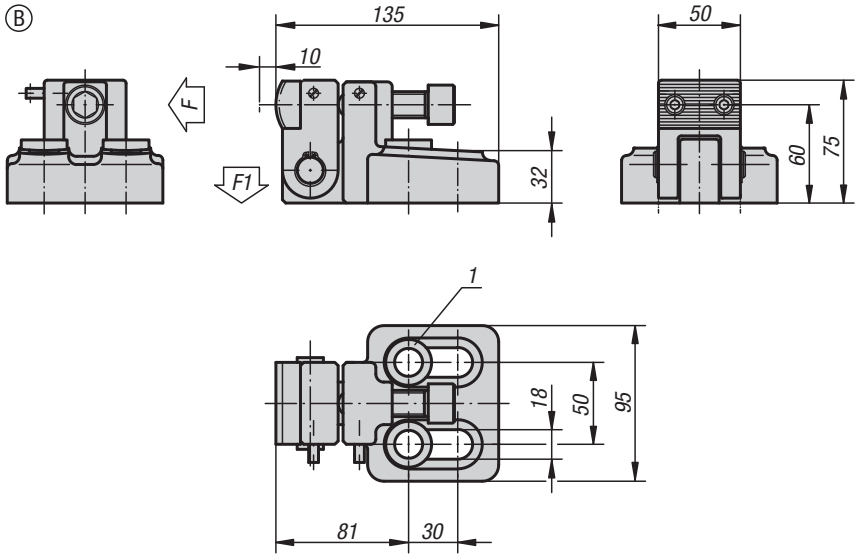
Version:
Painted black.
Jaw bright.

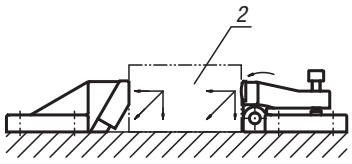
Sample order:
K0831.03

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.

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

Ⓑ



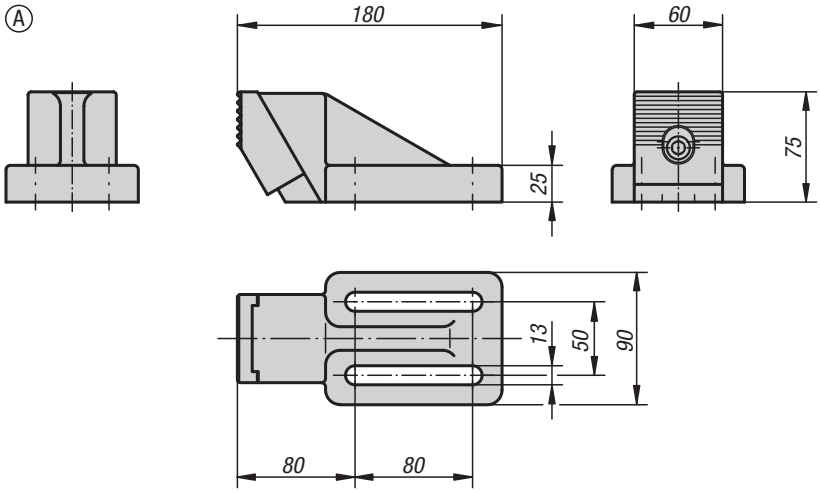


KIPP Side clamps

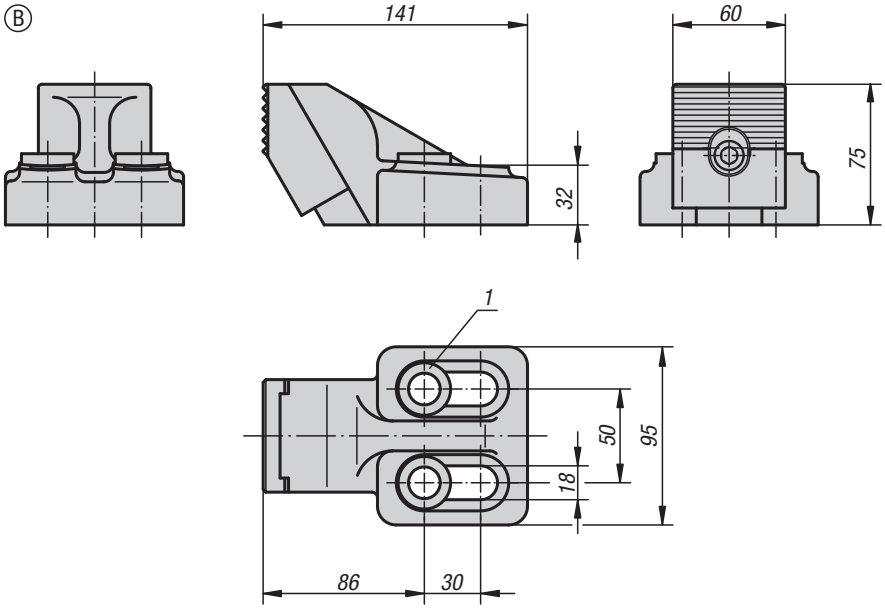
Order No.	Form	F kN	F1 kN	Tightening torque Nm
K0831.01	A	29	1,3	38
K0831.03	B	58	2,4	150

Side stops

Ⓐ



Ⓑ



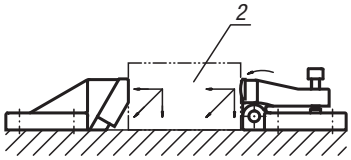
Material:
Body ductile iron (SG iron).
Jaw hardened carbon steel.

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.

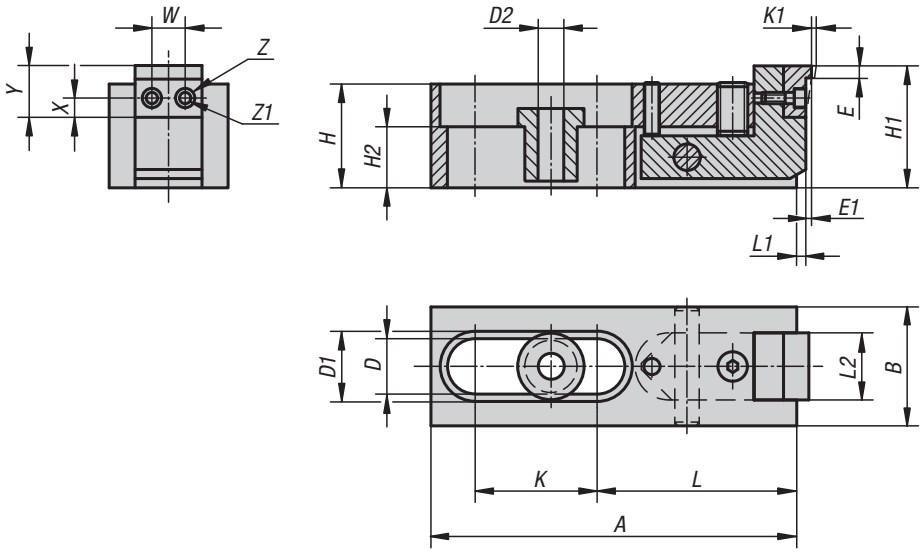
Drawing reference:
1) spherical washer set for M12 and M16
2) workpiece



KIPP Side stops

Order No.	Form
K0832.01	A
K0832.02	B

Side clamps



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

Version:
Black oxidised.
Jaws case-hardened.

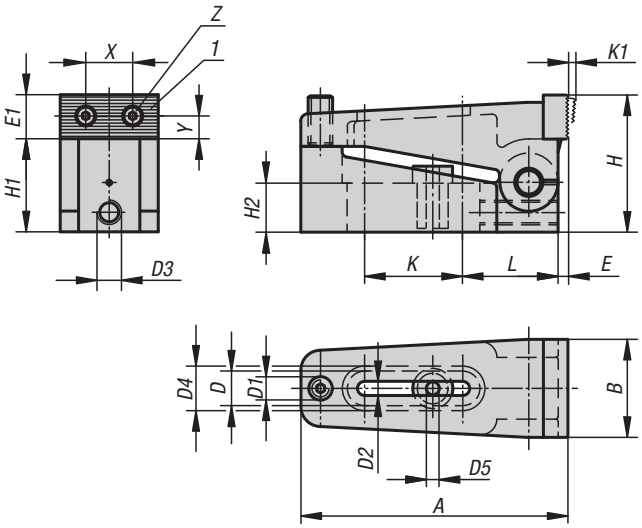
Sample order:
K0890.006

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	Clamping force kN
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	3
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	16
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	31

Side clamps



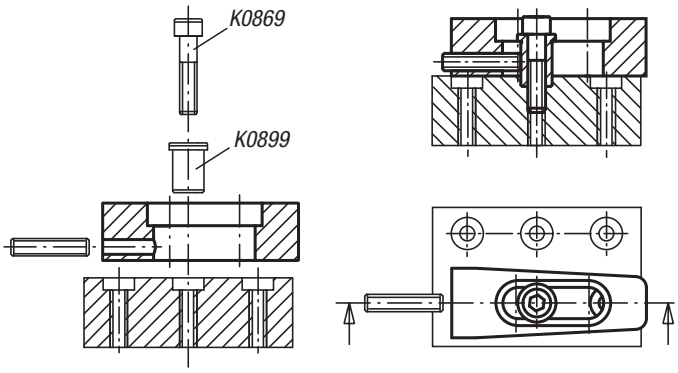
Material:
Body steel.
Jaw mild steel.
Centring bush carbon steel

Version:
Black oxidised.
Jaws 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.

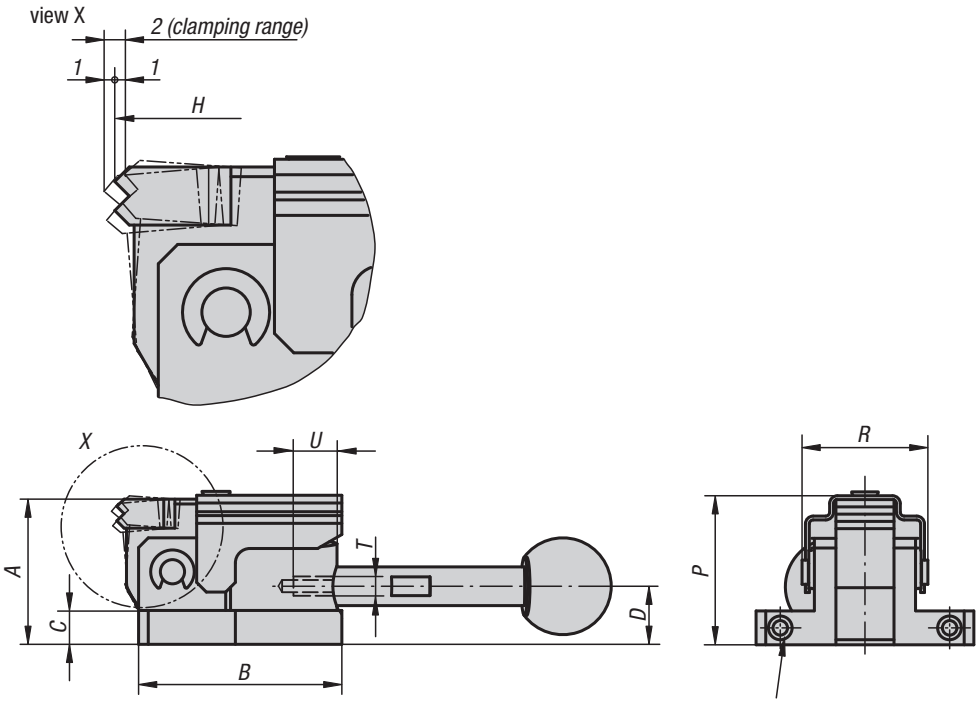
Drawing reference:
1) reversible jaw



KIPP Side clamps

Order No.	A	B	D	D1	D2	D3	D4	D5	E	E1	H	H1	H2	K	K1	L	X	Y	Z	Clamping force kN
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	10
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	40
K0033.016	170	58	26,2	M16	17	M10	35	17	7	27	85	60	30	60,5	7	61	32	13	M8	100

Side clamps



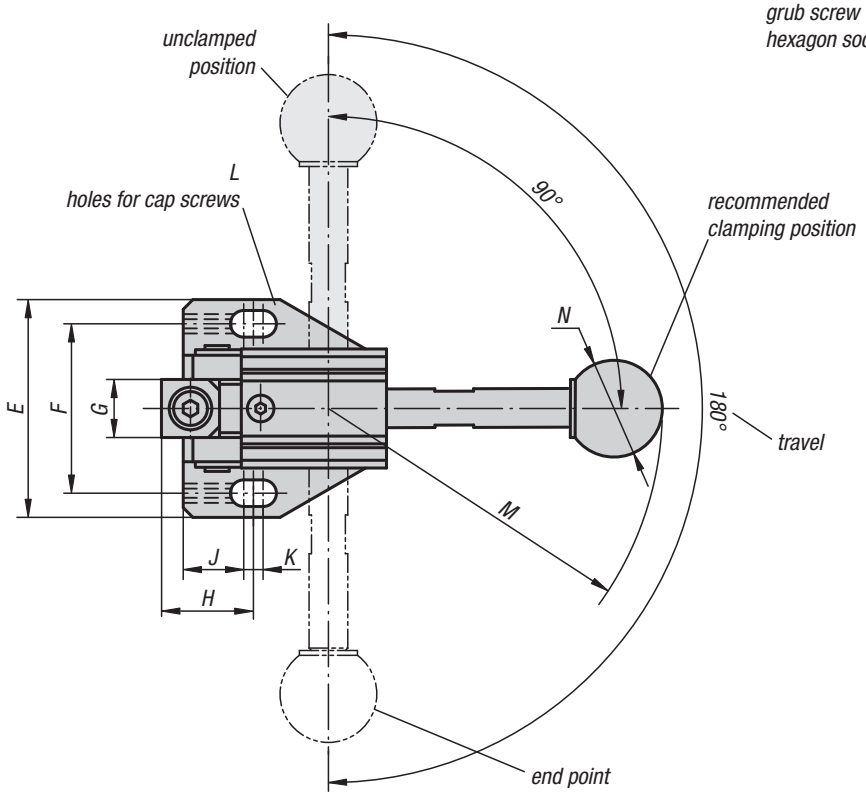
Material:
Body and grip carbon steel.
Jaw and cam tool steel.
Ball knob Duroplast PF 31.

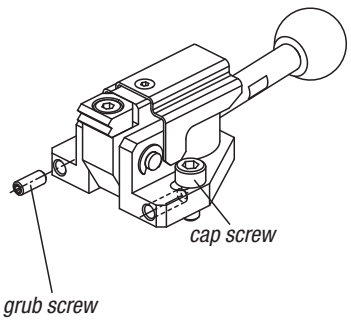
Version:
Body, jaw and cam hardened and black oxidised.
Grip black oxidised.
Ball knob black.

Sample order:
K0928.0501

Note:
* Permitted hand force for grip.

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





The slots enable final adjustment of the clamping range. Tightening the grub screws in the base front prevents the clamp sliding back during clamping.

KIPP Side clamps

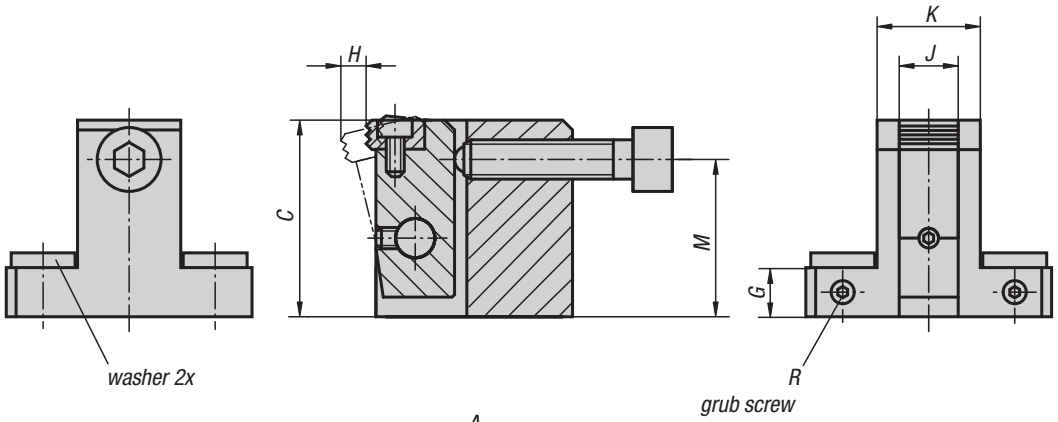
Order No.	Version	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	Clamping force N	Hand force FH N
K0928.0500	without grip	30	42	7	12	45	35	12	19	12,5	4	M5	69	20	31	26	M4x10	M5	7	3000	150*
K0928.0501	with handle	30	42	7	12	45	35	12	19	12,5	4	M5	69	20	31	26	M4x10	M5	7	3000	150*
K0928.0800	without grip	40	62	10	16	65	50	16	28	18,5	5	M8	104	25	41	38	M4x15	M6	9,5	4000	200*
K0928.0801	with handle	40	62	10	16	65	50	16	28	18,5	5	M8	104	25	41	38	M4x15	M6	9,5	4000	200*

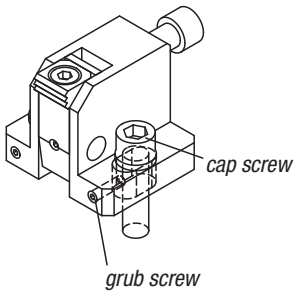
Side clamps

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

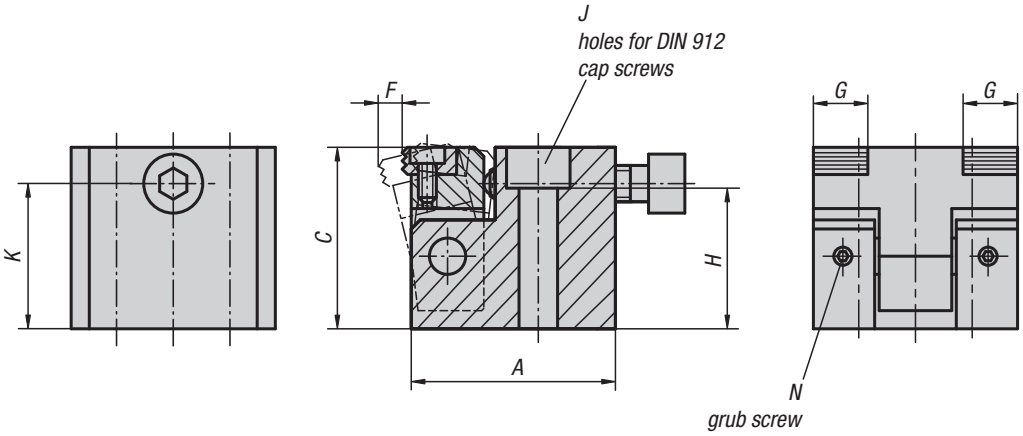
Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	Clamping force N	Tightening torque Nm
K0929.080400	40	50	40	20	6	35	10	5,3	12	21	8,5	32	62,5	M8x35	M4x10	15000	25
K0929.100500	50	65	50	25	8	45	12	7,1	16	27	11	40	74	M10x40	M4x12	27000	50
K0929.120600	60	70	60	30	10	50	15	8	20	31	13	48	91	M12x50	M5x15	38000	90
K0929.160800	80	90	80	40	15	65	20	10,2	25	39	17	64	115	M16x60	M6x20	46000	130

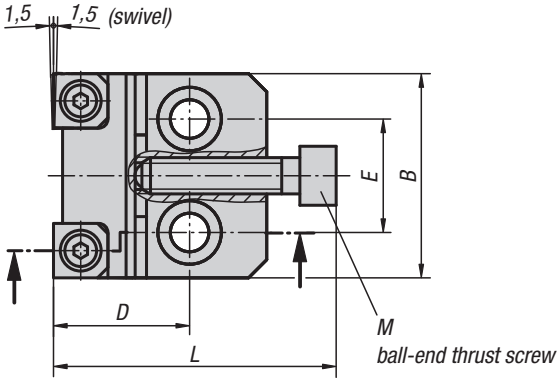
Side clamps

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

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

Sample order:
K0930.080400



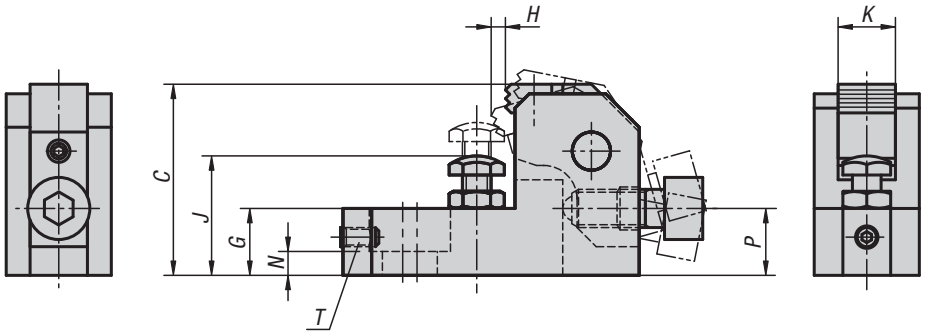


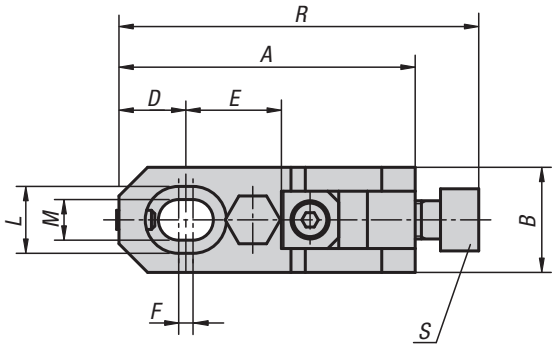
KIPP Side clamps

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	Clamping 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



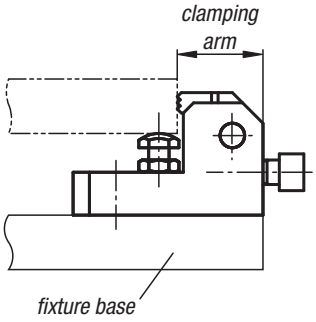


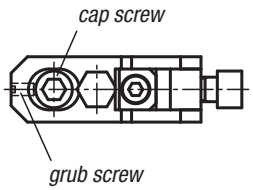
Material:
Housing and arm carbon steel.
Jaw tool steel.

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

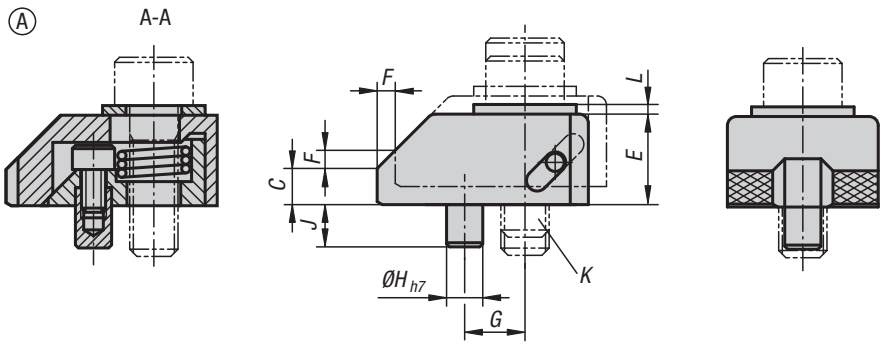


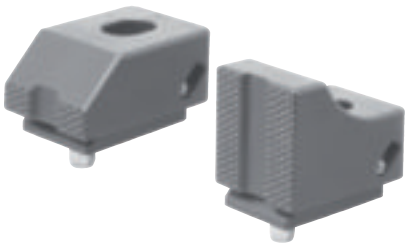


KIPP Side clamps with rest pad

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Clamping 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

Toe clamps

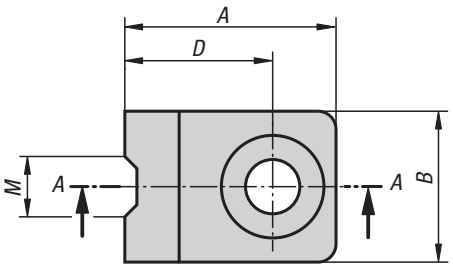


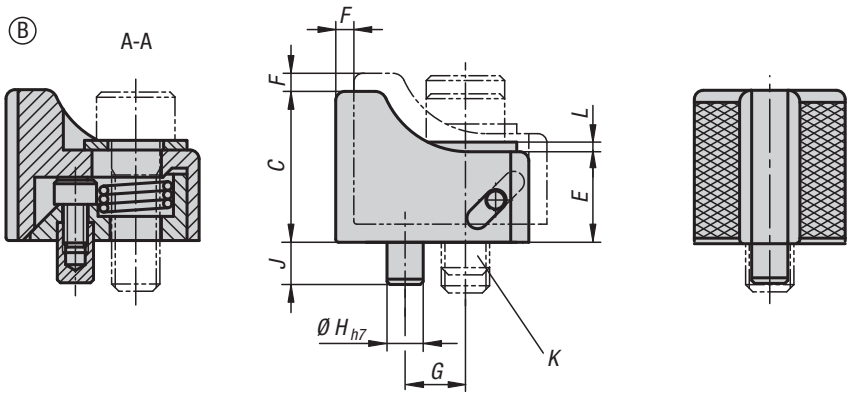


Material:
Carbon steel.

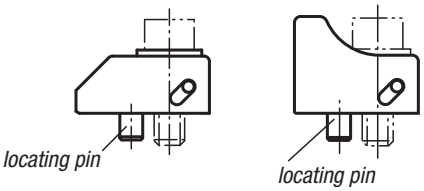
Version:
Tempered and black oxidised.

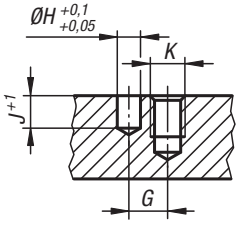
Sample order:
K0932.0806

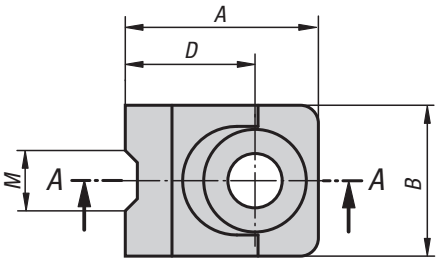


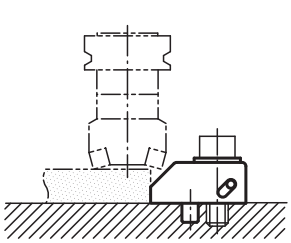


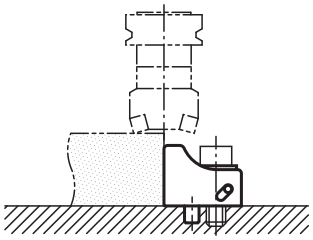
mounting instructions:









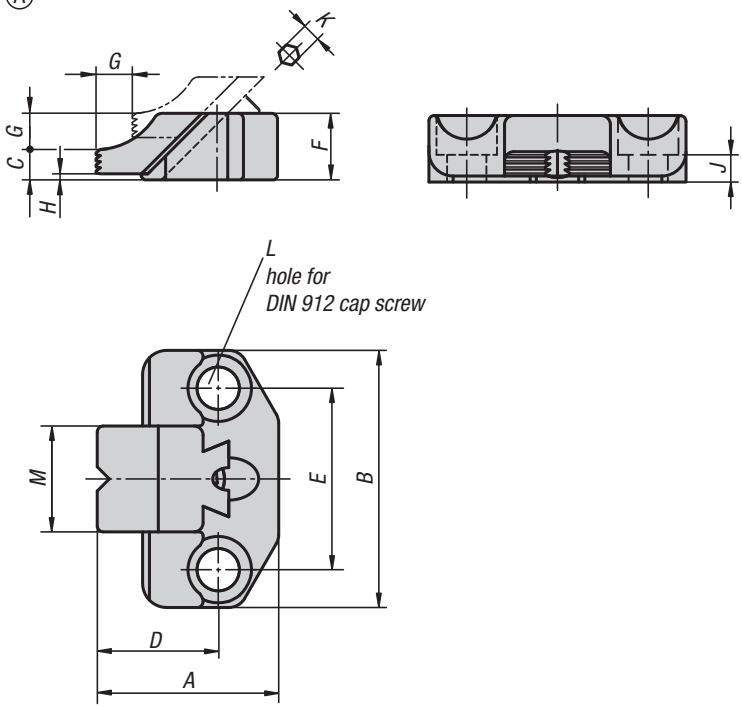


KIPP Toe clamps

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

Toe clamps

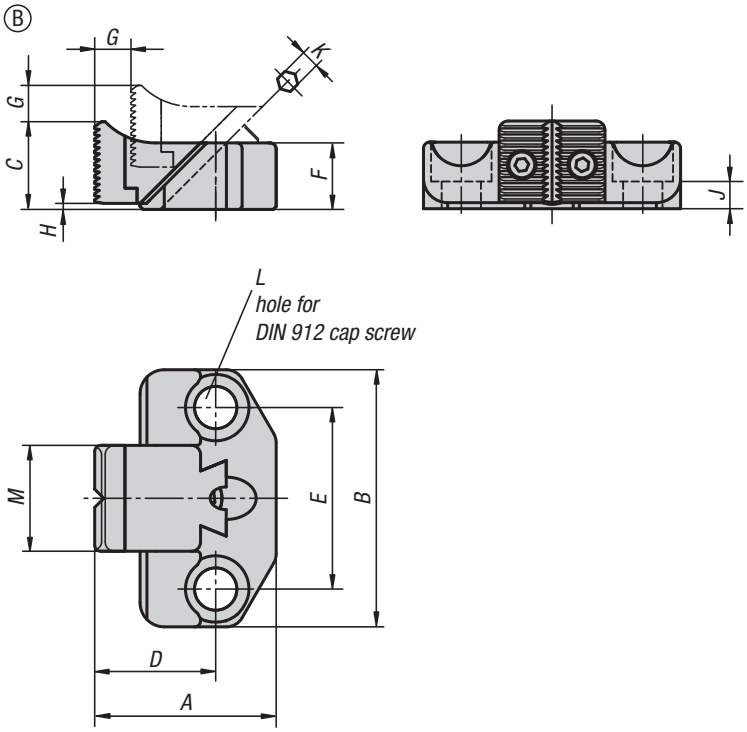
Ⓐ



Material, version:
Body carbon steel, tempered and black oxidised.
Jaw carbon steel, black oxidised, corners tempered.

Sample order:
K0933.0808

Ⓑ

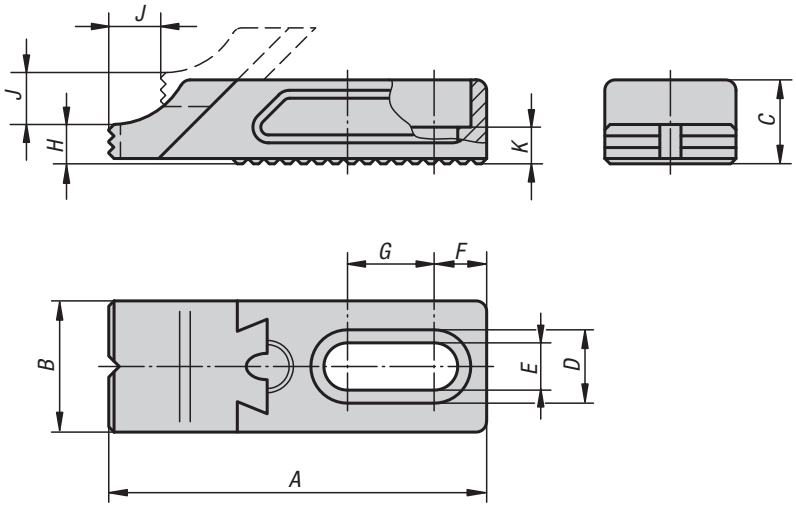


KIPP Toe clamps

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

Toe clamps

stepped



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered, black oxidised.

Sample order:
K0853.92008016

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

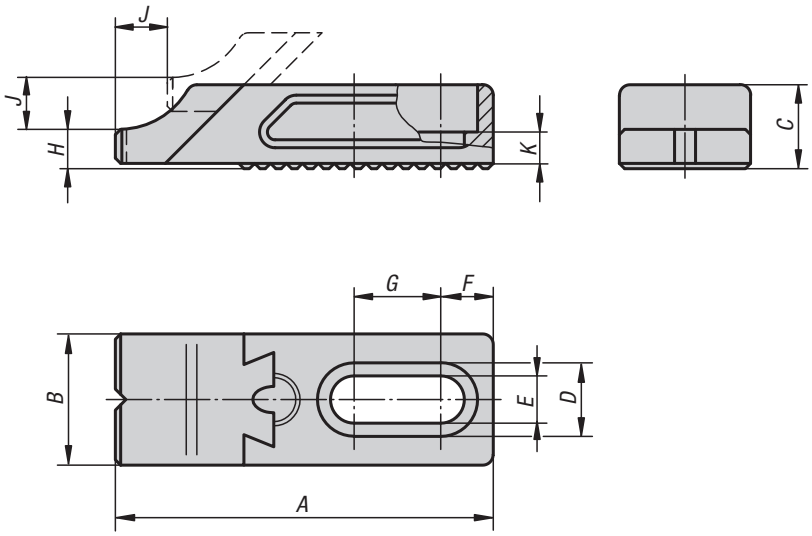
KIPP Toe clamps, stepped

Order No.	A	B	C	D	E	F	G	H	J	K	F1 kN	M1 Nm
K0853.92008016	72	25	16	14	8,5	10	16,5	7,5	7	7	3,6	6,5
K0853.92012022	105	35	22	20	13	13,5	26,5	10	12	9	7,4	19
K0853.92016030	137	40	30	26	17	17,5	30	14	14	13	11,7	32

K0853

Toe clamps

stepped



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered.
The jaw surface is ground.

Sample order:
K0853.92108016

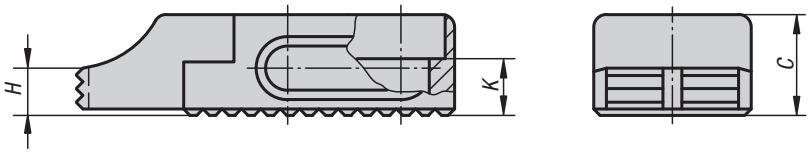
Note:
These toe clamps are used together with the rack plate CL.

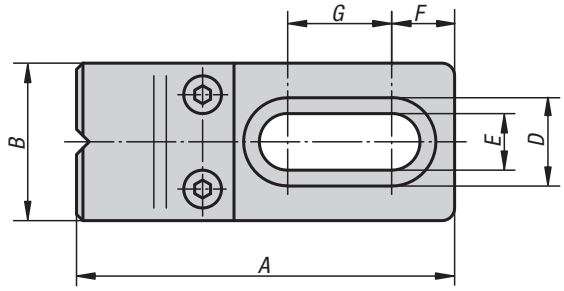
KIPP Toe clamps, stepped

Order No.	A	B	C	D	E	F	G	H	J	K	F1 kN	M1 Nm
K0853.92108016	72	25	16	14	8,5	10	16,5	7,5	7	7	3,6	6,5
K0853.92112022	105	35	22	20	13	13,5	26,5	10	12	9	7,4	19
K0853.92116030	137	40	30	26	17	17,5	30	14	14	13	11,7	32

Toe stops

stepped





Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.

Sample order:
K0853.96008016

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

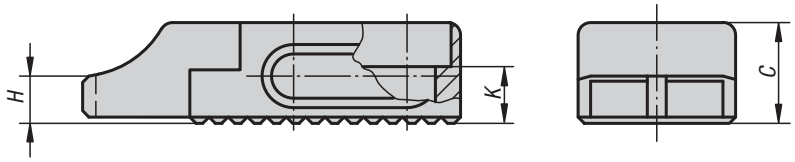
KIPP Toe stops, stepped

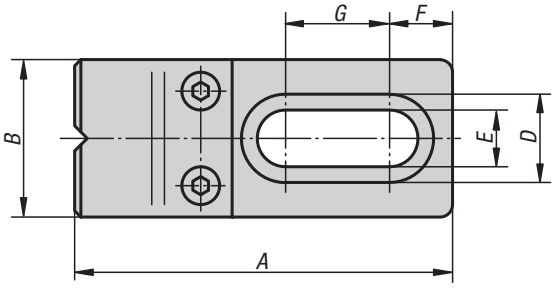
Order No.	A	B	C	D	E	F	G	H	K
K0853.96008016	60	25	16	14	8,5	10	16,5	7,5	7
K0853.96012022	90	35	22	20	13	13,5	26,5	10	10
K0853.96016030	115	40	30	26	17	17,5	30	14	13

K0853

Toe stops

stepped





Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.
The jaw surface is ground.

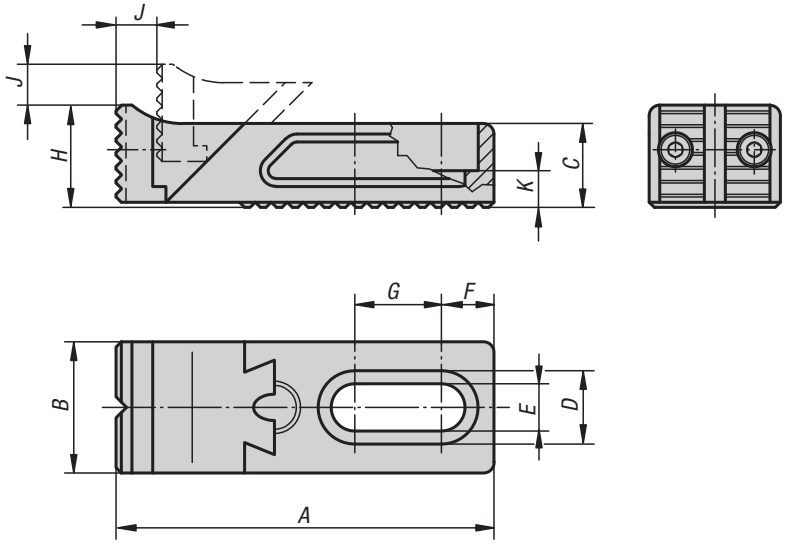
Sample order:
K0853.96108016

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

KIPP Toe stops, stepped

Order No.	A	B	C	D	E	F	G	H	K
K0853.96108016	60	25	16	14	8,5	10	16,5	7,5	7
K0853.96112022	90	35	22	20	13	13,5	26,5	10	10
K0853.96116030	115	40	30	26	17	17,5	30	14	13

Toe clamps



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.

Sample order:
K0853.93008016

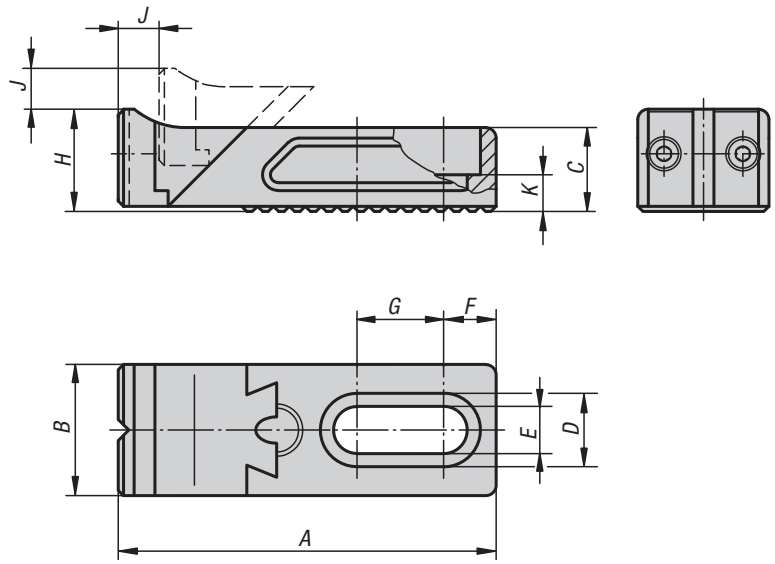
Note:
The adjustable toe clamp is used together with the rack plate CL.

KIPP Toe clamps

Order No.	A	B	C	D	E	F	G	H	J	K	F1 kN	M1 Nm
K0853.93008016	72	25	16	14	8,5	10	16,5	19,5	7	7	3,6	6,5
K0853.93012022	105	35	22	20	13	13,5	26,5	29	12	9	7,4	19
K0853.93016030	137	40	30	26	17	17,5	30	39	14	13	11,7	32

K0853

Toe clamps



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.
The jaw surface is ground.

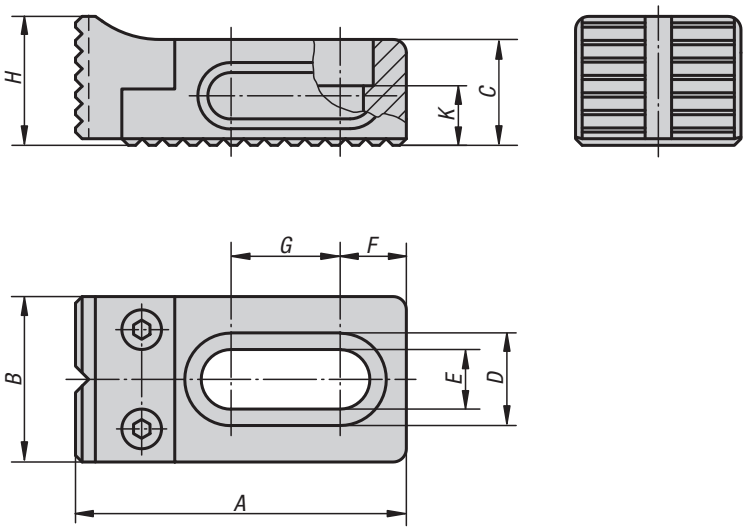
Sample order:
K0853.93108016

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

KIPP Toe clamps

Order No.	A	B	C	D	E	F	G	H	J	K	F1 kN	M1 Nm
K0853.93108016	72	25	16	14	8,5	10	16,5	19,5	7	7	3,6	6,5
K0853.93112022	105	35	22	20	13	13,5	26,5	29	12	9	7,4	19
K0853.93116030	137	40	30	26	17	17,5	30	39	14	13	11,7	32

Toe stops



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.

Sample order:
K0853.97008016

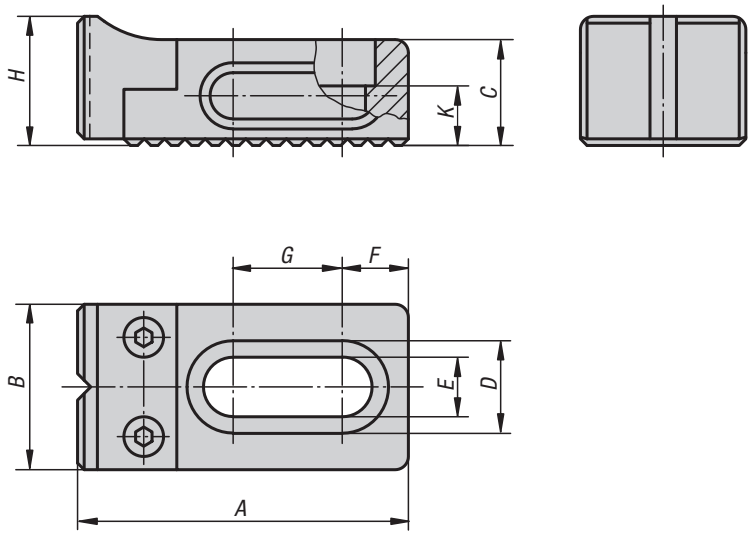
Note:
The adjustable stop is used together with the rack plate CL.

KIPP Toe stops

Order No.	A	B	C	D	E	F	G	H	K
K0853.97008016	50	25	16	14	8,5	16,5	10	19,5	7
K0853.97012022	75	35	22	20	13	20	13,5	29	10
K0853.97016030	95	40	30	26	17	30	17,5	39	13

K0853

Toe stops



Material, version:
Body carbon steel, black oxidised.
Jaw carbon steel, tempered and black oxidised.
The jaw surface is ground.

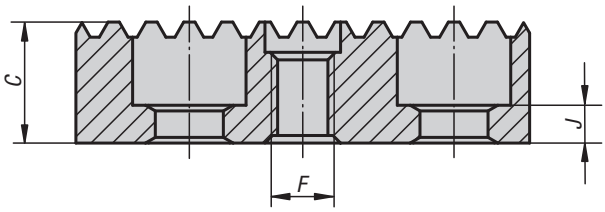
Sample order:
K0853.97108016

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

KIPP Toe stops

Order No.	A	B	C	D	E	F	G	H	K
K0853.97108016	50	25	16	14	8,5	10	16,5	19,5	7
K0853.97112022	75	35	22	20	13	13,5	26,5	29	10
K0853.97116030	95	40	30	26	17	17,5	30	39	13

Rack plates CL

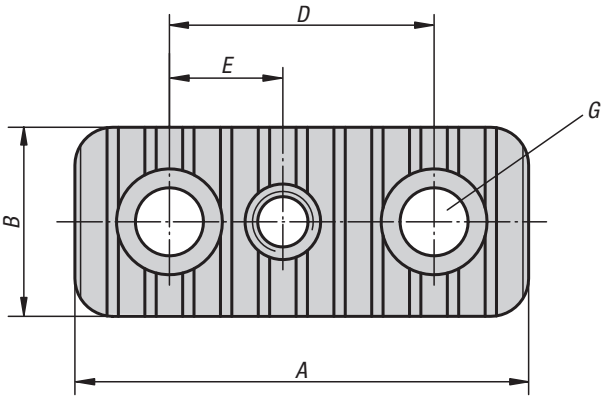


Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0853.94008116

Note:
Rack plates CL 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 CL to suitable base elements.
The tapped hole (F) is used to secure the toe clamps.

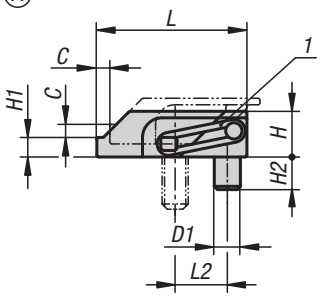


KIPP Rack plates CL

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

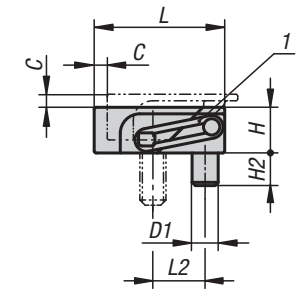
Flat clamps

Ⓐ



for socket head screw

Ⓑ



for socket head screw

Material:
Carbon steel.

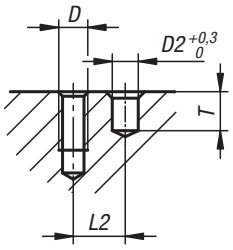
Version:
Hardened (33–39 HRC) and black oxidised.

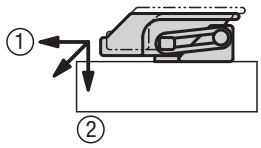
Sample order:
K1168.204

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



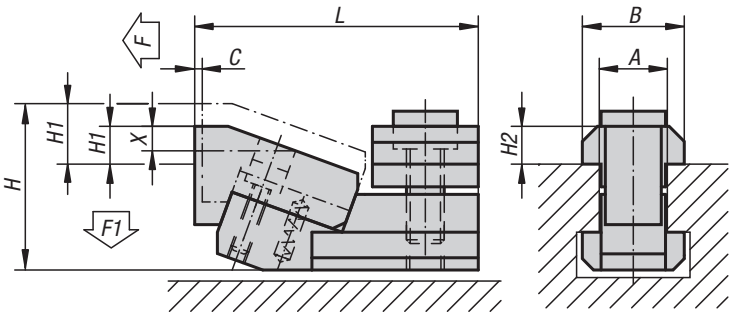


(Jaws exert positive down force)
① Horizontal thrust against workpiece
② Vertical thrust prevents the workpiece lifting

KIPP Flat clamps

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

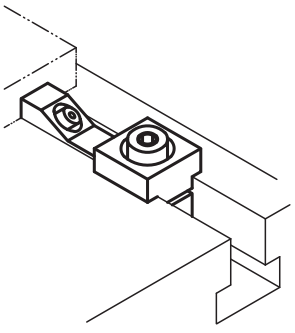
T-slot clamps



Material:
Steel.

Version:
Hardened, black oxidised.

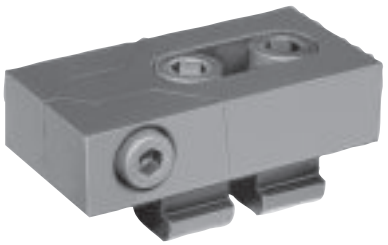
Note:
These T-slot clamps are especially useful for clamping low profile workpieces. The wedge operated jaws also provide positive down force.
Dimensions “H1” and “X” depend on the max. T-slot depth acc. to DIN 650.
To achieve the minimal clamping height by the minimal slot depth, the jaw can be ground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

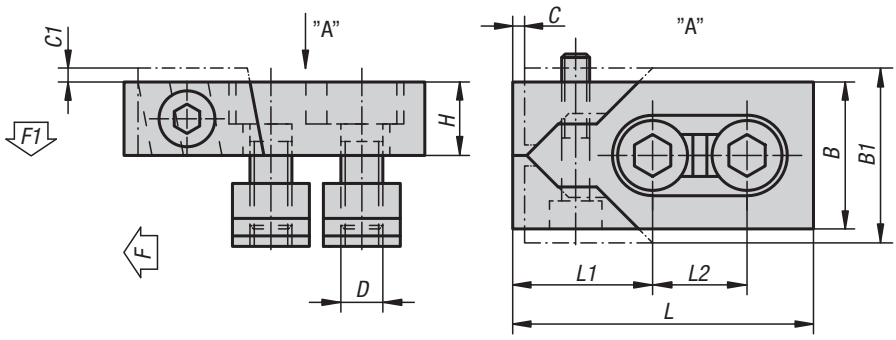


KIPP T-slot clamps

Order No.	A	C	L max.	B	H	H1 min.	H1 max.	X	H2	F (N)	F1 (N)
K1230.12	12	1,8	52	18	31	3,5	8,5	5	7	5000	600
K1230.14	14	1,8	55	22	34	2,5	7,5	5	8	5500	700
K1230.16	16	2,5	68	25	41	4	11	6	9	8000	900
K1230.18	18	2,5	71	28	43	2	9	6	10	9000	1000
K1230.22	22	3	89	35	53	5	14	9	14	16000	1900

Low-profile clamps





Material:
Steel.

Version:
Hardened, black oxidised.

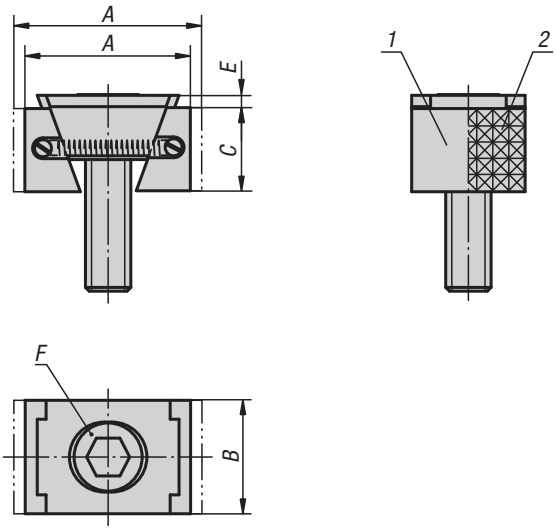
Note:
These handy low-profile clamp jaws are ideal for machining most workpiece sizes. The hardened wedge operated jaws also provide positive down force.

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

Wedge clamps

jaw face smooth or serrated



Material:
Wedge and jaw segments carbon steel.

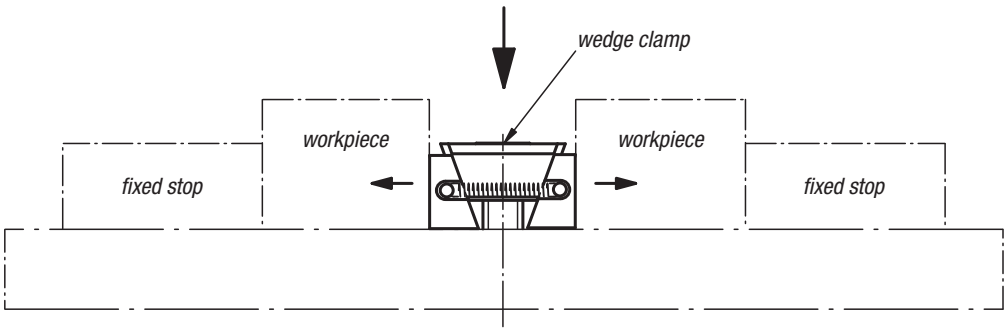
Version:
Wedge and jaw segments hardened, black.

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:
1) Jaw face smooth
2) Jaw face serrated



KIPP Wedge clamps, narrow version

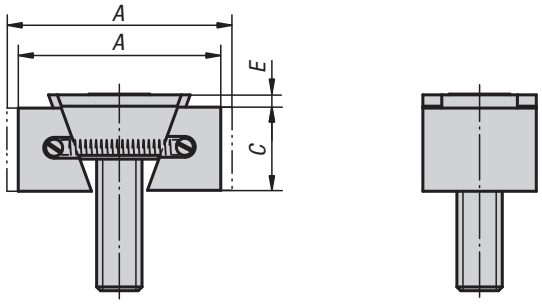
Order No. smooth version	Order No. serrated	A min.	A max.	B	C	E	F Socket head screw DIN 6912	Clamping force kN	Tightening torque Nm
K0039.1108	**K0039.2108**	30,5	33,5	24	15	2	M8x25	15	25
K0039.1110	**K0039.2110**	32	37	28	19	3,5	M10x25	20	49
K0039.1112	**K0039.2112**	44	49,5	30	22	3,5	M12x40	30	85
K0039.1116	**K0039.2116**	55	62	40	29	4	M16x60	50	210

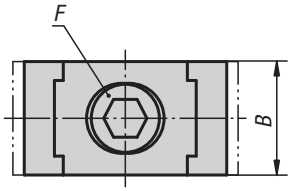
KIPP Wedge clamps, wide version

Order No. smooth version	Order No. serrated	A min.	A max.	B	C	E	F Socket head screw DIN 6912	Clamping force kN	Tightening torque Nm
K0039.1208	**K0039.2208**	30,5	33,5	30	15	2	M8x25	15	25
K0039.1210	**K0039.2210**	32	37	38	19	3,5	M10x25	20	49
K0039.1212	**K0039.2212**	44	49,5	48	22	3,5	M12x40	30	85
K0039.1216	**K0039.2216**	55	62	48	29	4	M16x60	50	210

Wedge clamps

machinable





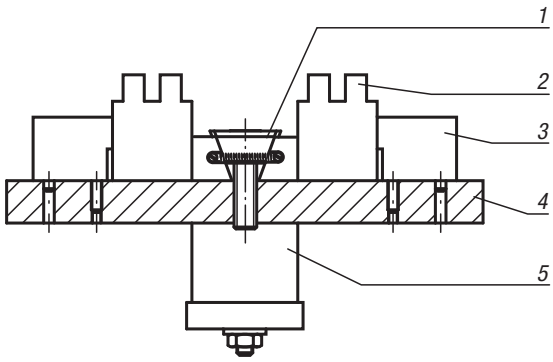
Material:
Wedge and jaw segments carbon steel.

Version:
Wedge and jaw segments hardened, black.

Sample order:
K0649.3110

Note:
These wedge clamps have extra long jaws. This extra material allows the jaws to machined to suit the form of the workpiece.
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



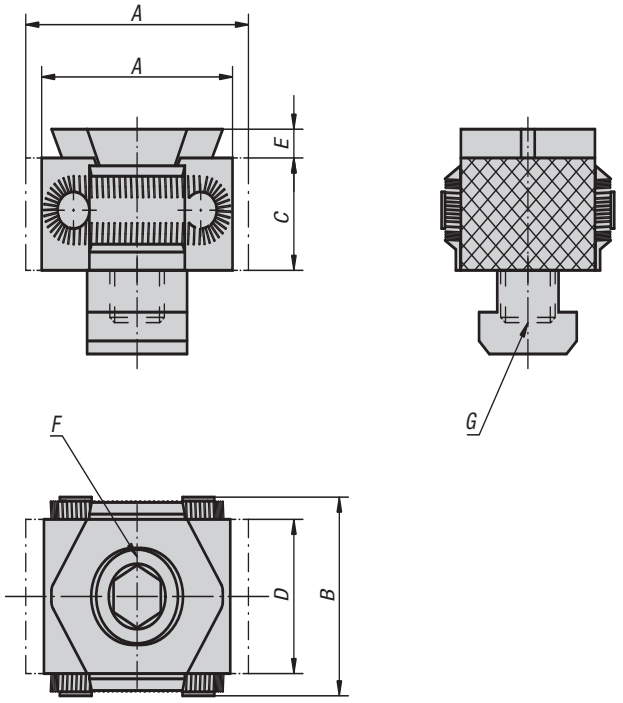
Drawing reference:
1) wedge clamps
2) workpiece
3) fixed stop
4) base plate
5) hydraulic/pneumatic cylinder

KIPP Wedge clamps machinable

Order No.	Version	A min.	A max.	B	C	E	F Socket head screw DIN 6912	Clamping force kN	Tightening torque Nm
K0649.3108	narrow	36,5	39,5	24	15	2	M8x25	11	19
K0649.3110	narrow	42	47	28	19	3,5	M10x25	15	37
K0649.3112	narrow	54	59,5	30	22	3,5	M12x40	23	65
K0649.3116	narrow	65	72	40	29	4	M16x60	38	160
K0649.3208	wide	36,5	39,5	30	15	2	M8x25	11	19
K0649.3210	wide	42	47	38	19	3,5	M10x25	15	37
K0649.3212	wide	54	59,5	48	22	3,5	M12x40	23	65
K0649.3216	wide	65	72	48	29	4	M16x60	38	160

Wedge clamps

jaw faces serrated

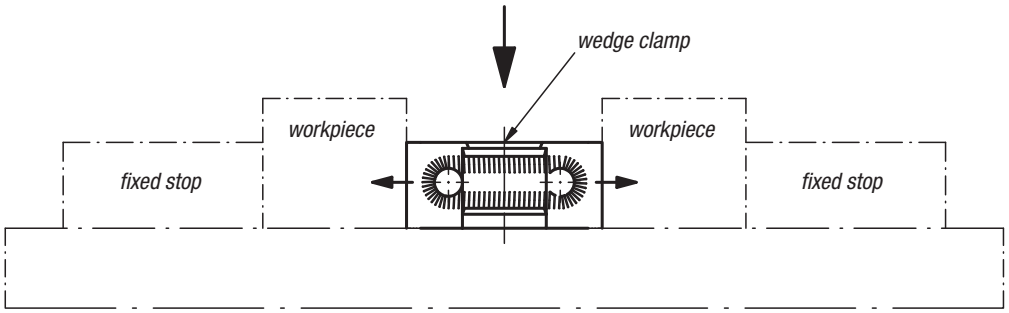


Material:
Body and clamping segments tool steel.

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.

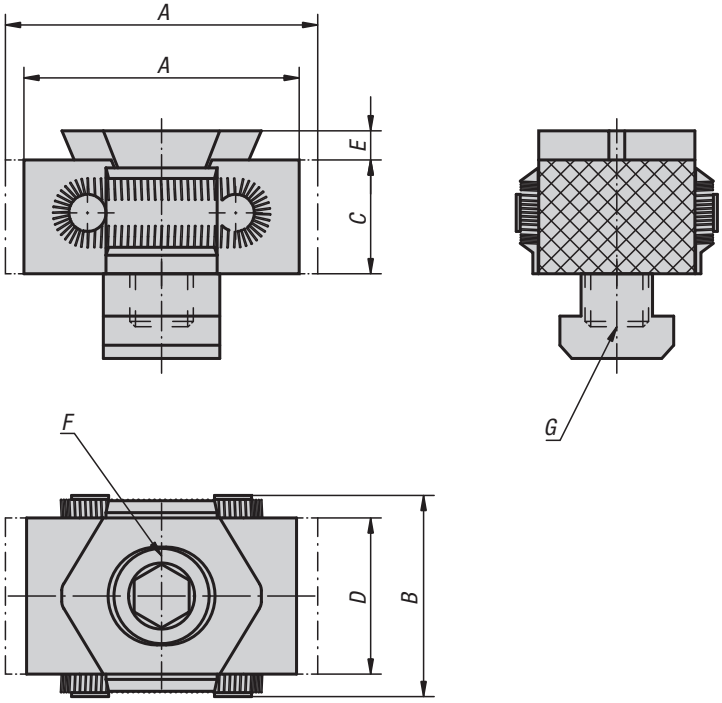


KIPP Wedge clamps, jaw faces serrated

Order No.	A min.	A max.	B	C	D	E	F Socket head screw DIN 912	G	Clamping force kN	Tightening torque Nm
K0040.08	27	31	29	15	21	2,5	M8x25	for tapped hole	15	25
K0040.0810	27	31	29	15	21	2,5	M8x25	for T-slot 10	15	25
K0040.12	42	49	41	22	30	4	M12x40	for tapped hole	30	85
K0040.1214	42	49	41	22	30	4	M12x30	for T-slot 14	30	85
K0040.16	57	66	56	29	42	5	M16x60	for tapped hole	50	210
K0040.1618	57	66	56	29	42	5	M16x50	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

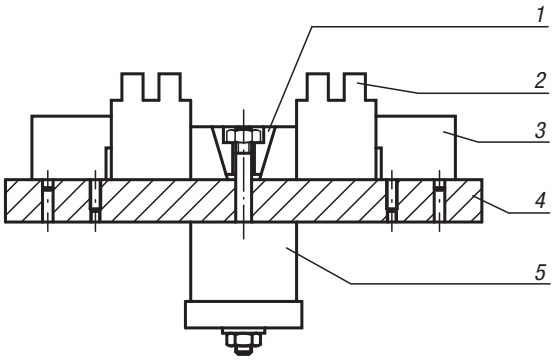
Note:
These wedge clamps have a machining allowance per jaw of 3 mm for version K0041.08 and 5 mm for versions K0041.12 and K0041.16.
This extra material allows the jaws to machined to suit the form of the workpiece.

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

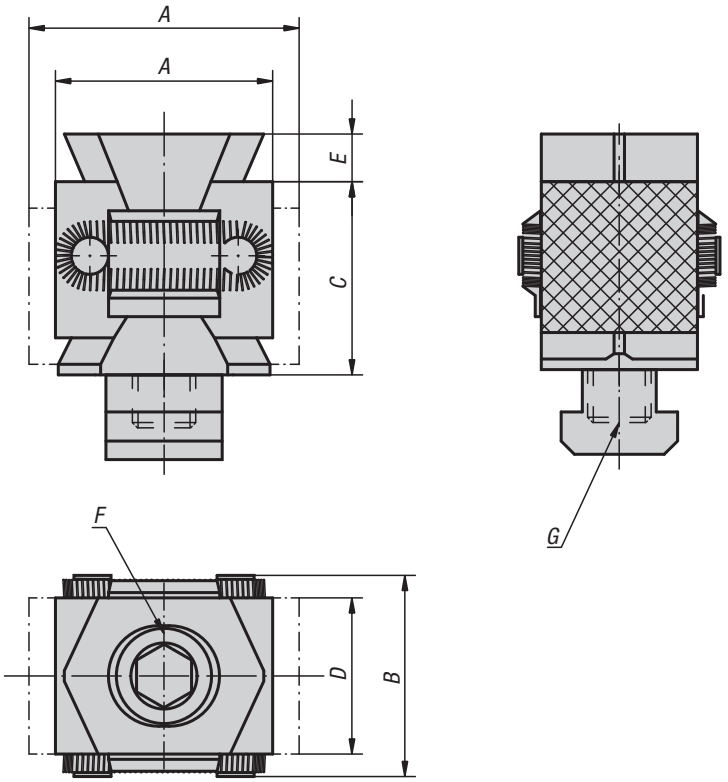


KIPP Wedge clamps machinable

Order No.	A min.	A max.	B	C	D	E	F Socket head screw DIN 912	G	Clamping force kN	Tightening torque Nm
K0041.08	33	37	29	15	21	2,5	M8x25	for tapped hole	15	25
K0041.0810	33	37	29	15	21	2,5	M8x25	for T-slot 10	15	25
K0041.12	52	59	41	22	30	4	M12x40	for tapped hole	30	85
K0041.1214	52	59	41	22	30	4	M12x30	for T-slot 14	30	85
K0041.16	67	76	56	29	42	5	M16x60	for tapped hole	50	210
K0041.1618	67	76	56	29	42	5	M16x50	for T-slot 18	50	210

Wedge clamps double

jaw faces serrated



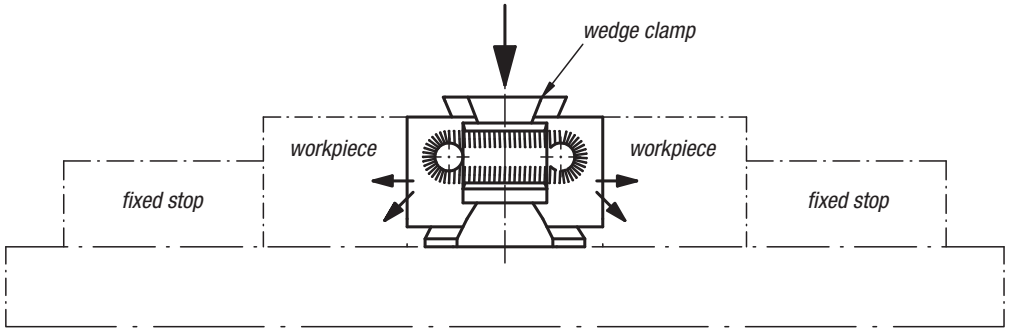
Material:
Body and jaw segments tool steel.

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

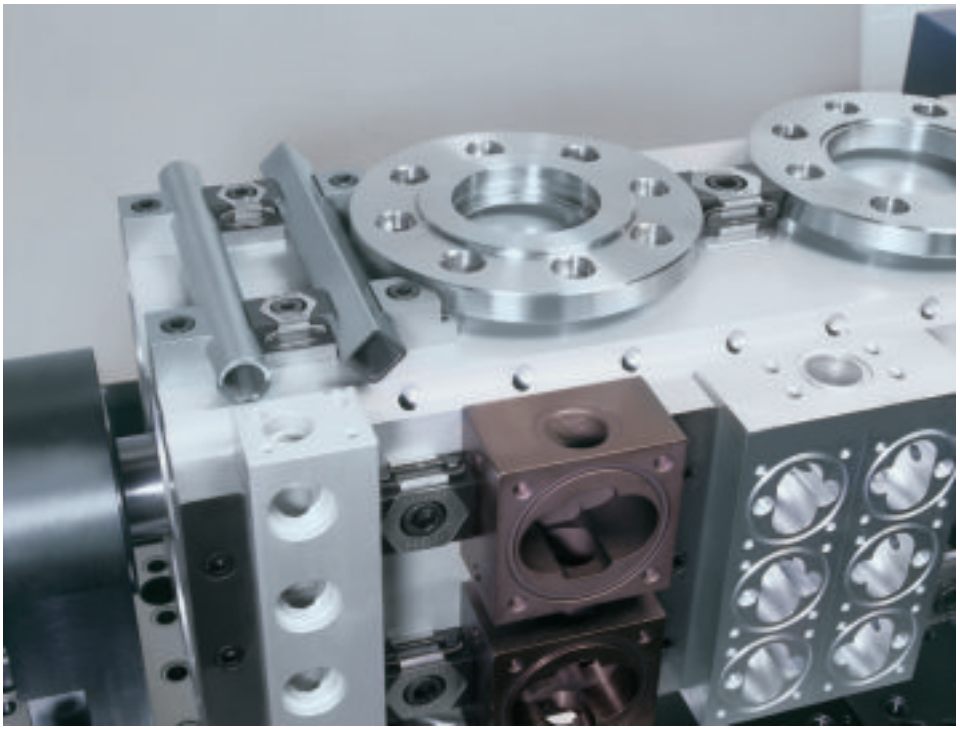


KIPP Wedge clamps double wedge, jaw faces serrated

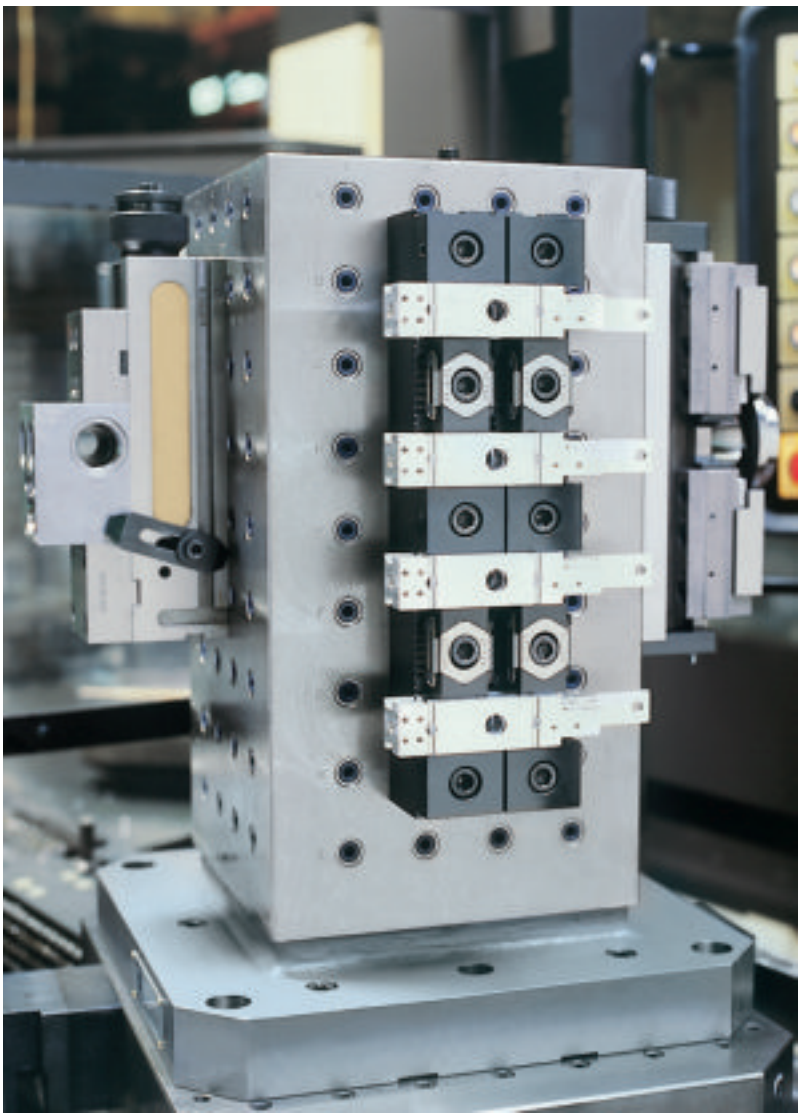
Order No.	A min.	A max.	B	C	D	E	F Socket head screw DIN 912	G	Clamping force kN	Tightening torque Nm
K0042.12	42	49	41	36	30	5	M12x60	for tapped hole	40	85
K0042.1214	42	49	41	36	30	5	M12x50	for T-slot 14	40	85
K0042.16	57	67	56	50	42	5	M16x80	for tapped hole	60	210
K0042.1618	57	67	56	50	42	5	M16x70	for T-slot 18	60	210

Example of wedge clamps in use

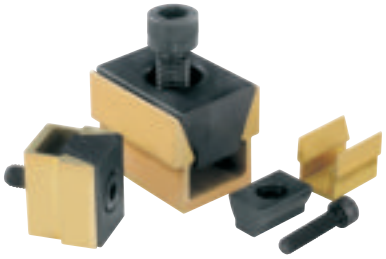
Wedge clamp

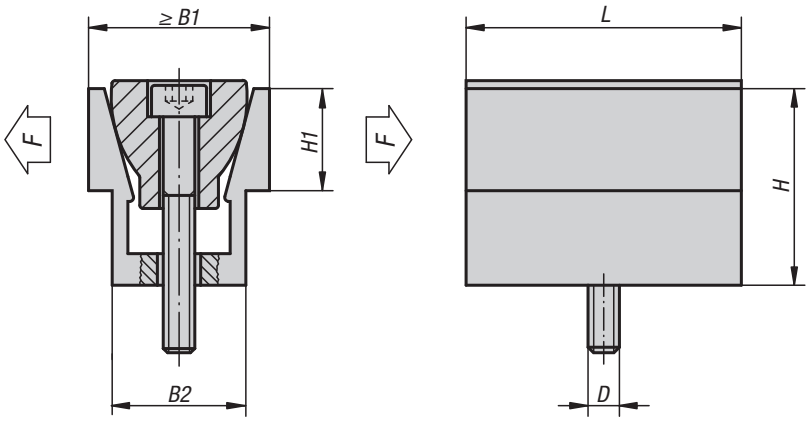


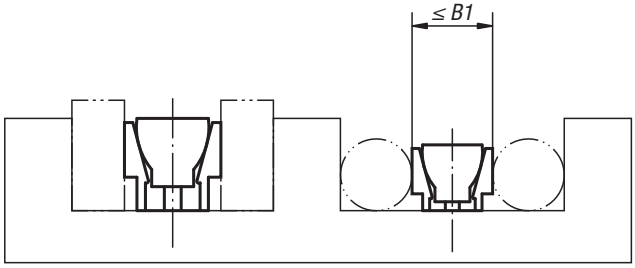
Double wedge clamps



Wedge clamps







Material:
Channel aluminium profile.
Wedge hardened steel.

Version:
Channel anodized.
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.

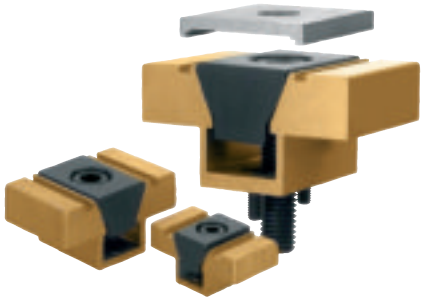
Drawing reference:
In clamped position dimension B1 max. given in the table should be achieved.

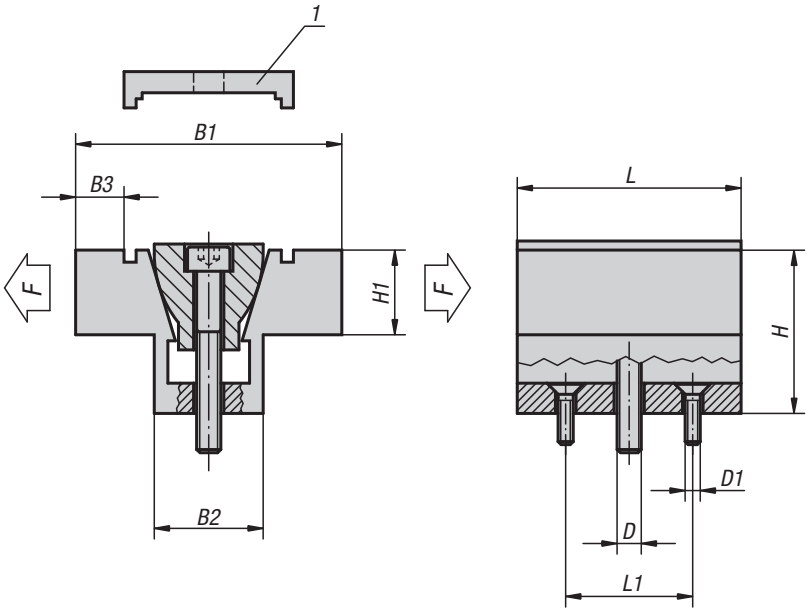
KIPP Wedge clamps

Order No.	D	L	B1 min. - max.	B2	H	H1	F 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





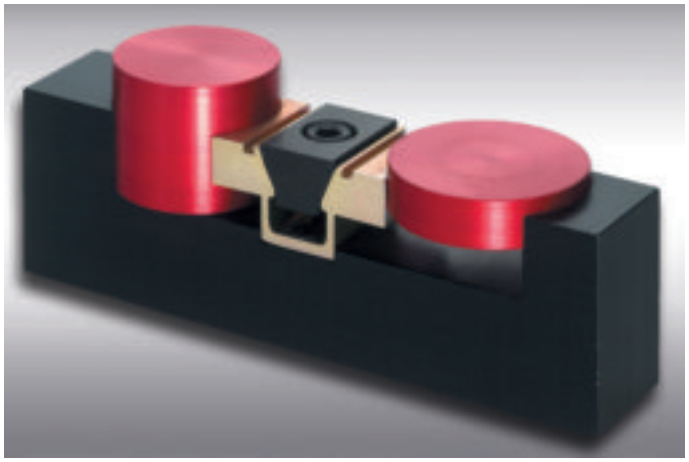
Material:
Channel aluminium profile.
Wedge hardened steel.

Version:
Channel anodized.
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.

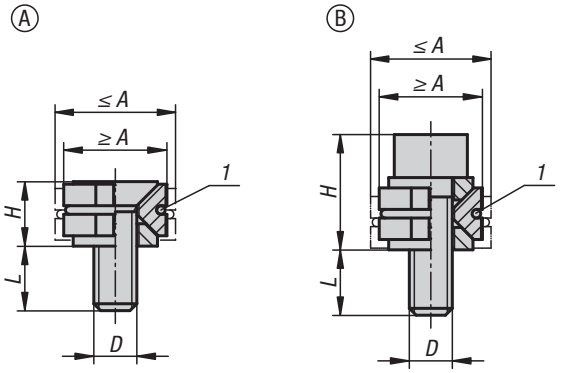
Drawing reference:
1) The locking plate is only used for machining the form, not for clamping the workpiece.

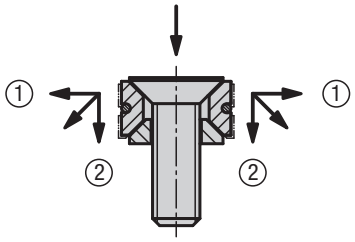


KIPP Wedge clamps machinable

Order No.	D	D1	L	L1	B1 min. - max.	B2	B3	H	H1	F 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





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

Material:
Carbon steel.

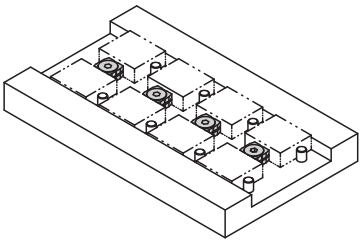
Version:
Jaw plate hardened (33–39 HRC) and black oxidised.

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.

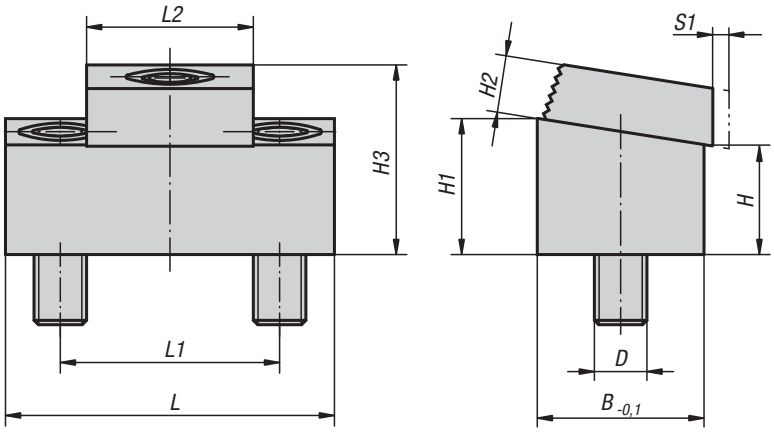
1) O-ring

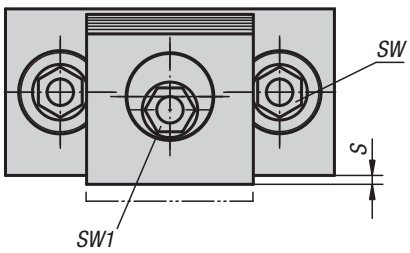


KIPP Wedge clamps

Order No.	Version	Form	A min.	A max.	B	D	H	L	SW	Clamping force kN	Tightening torque Nm
K1167.11205	with countersunk screw	A	12	14	12	M5	7,5	9,5	3	2	4,3
K1167.11506	with countersunk screw	A	15	17	14,8	M6	8,7	9,3	4	3,5	7,3
K1167.11808	with countersunk screw	A	18,5	21,5	18,4	M8	11,8	11,3	5	5	18
K1167.21205	with socket head screw	B	12	14	12	M5	13,4	9,6	4	3	5,4
K1167.21506	with socket head screw	B	15	17	14,8	M6	15,8	10,2	5	4,5	9,1
K1167.21808	with socket head screw	B	18,5	21,5	18,4	M8	21,2	14,9	6	9	22

Toe clamps compact





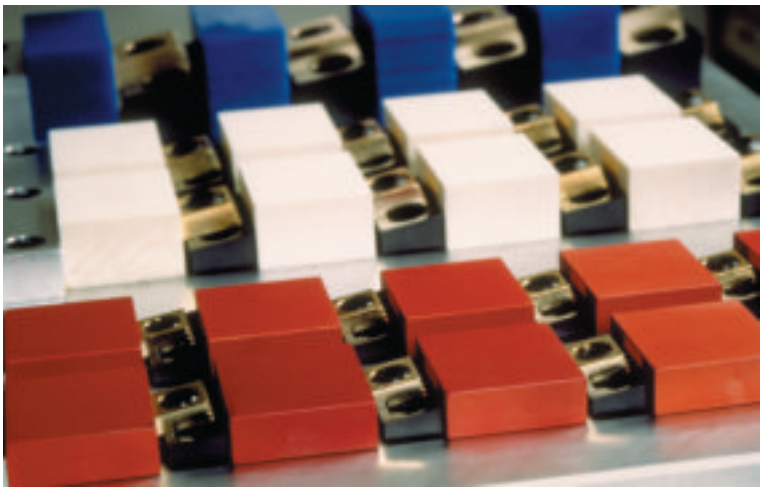
Material:
Steel.

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

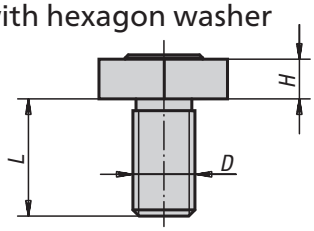


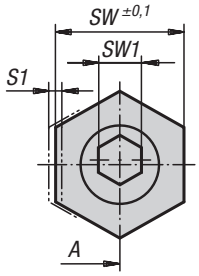
KIPP Toe clamps compact

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

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

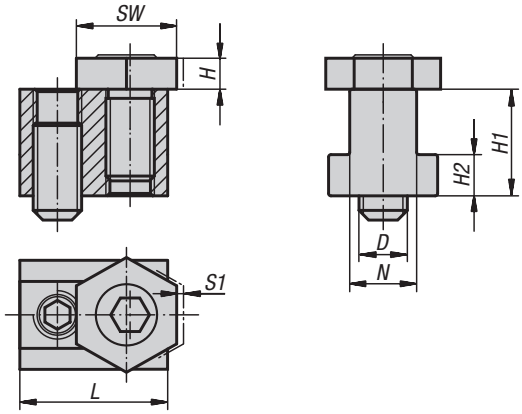
Order No.	A	D	H	L	SW	SW1	S1 (travel)	Clamping force kN	Tightening torque max. Nm
K0026.04	3,8	M4	2,8	10	8	3	0,8	0,9	2,2
K0026.06	7,8	M6	4,8	12	16	4	1	3,4	8,5
K0026.08	10,2	M8	4,8	15	20,6	5	1	3,6	11,3
K0026.10	10,2	M10	6,4	20	20,6	7	1,6	9,0	28,06
K0026.12	12,7	M12	9,5	25	25,4	8	2	18,0	88
K0026.16	15	M16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

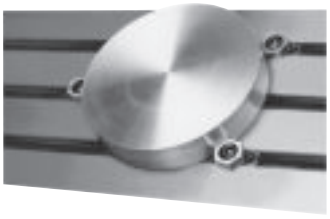
Application using fixture clamps

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.

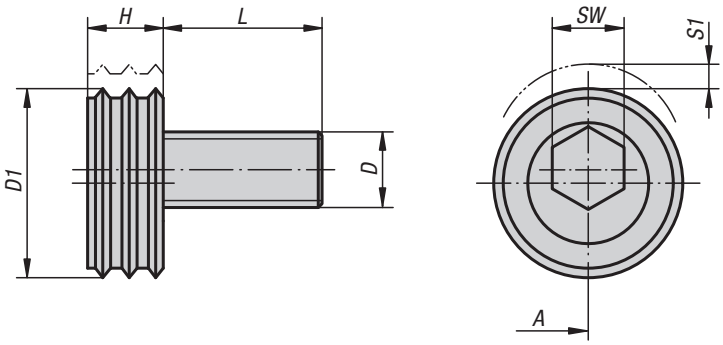
KIPP Cam screws with hexagon washer, for T-slots

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

K0025

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 anodized.

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).

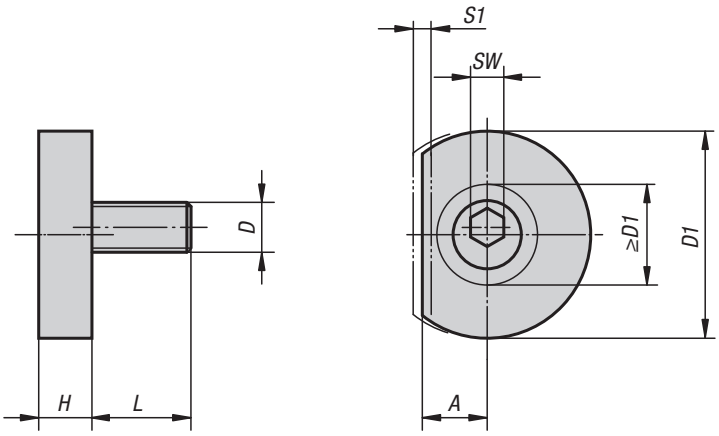
On request:
Replacement cam screws.

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

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.

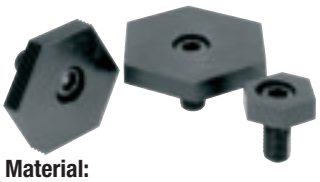
On request:
Replacement cam screws.

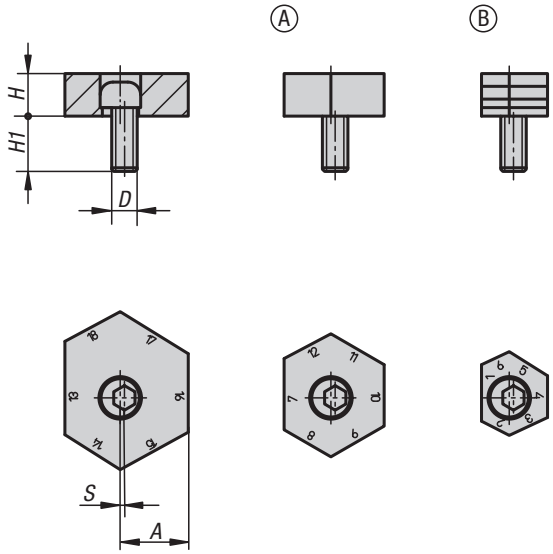
KIPP Fixture clamps machinable

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

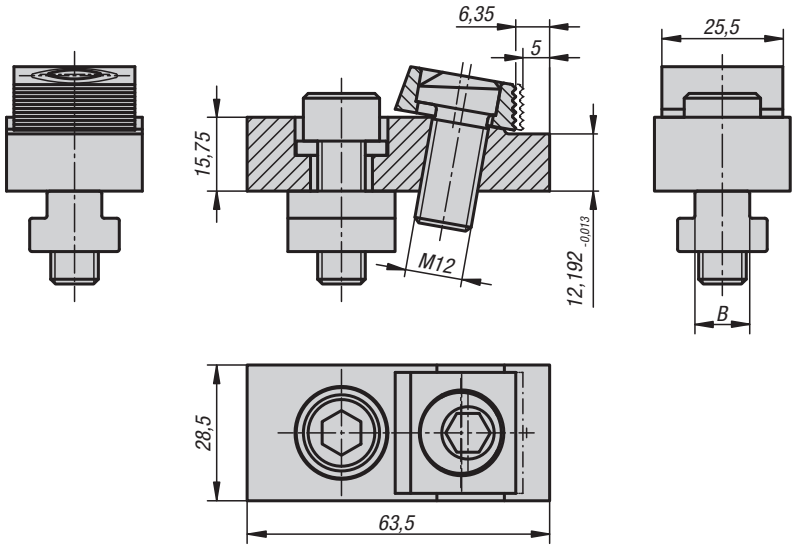
Note:
Theses unequal hexagon fixture clamps can minimise the cost of clamping in fixtures. The clamping range can be altered up to 17 mm from the same tapped hole. Simply rotate the hexagon washer.
The washers are available with smooth edges for machined faces or with serrated edges for rough faces.

On request:
Replacement cam screws.

KIPP Fixture clamps unequal hexagon

Order No. Form A smooth finish	Order No. Form B notched finish	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

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.

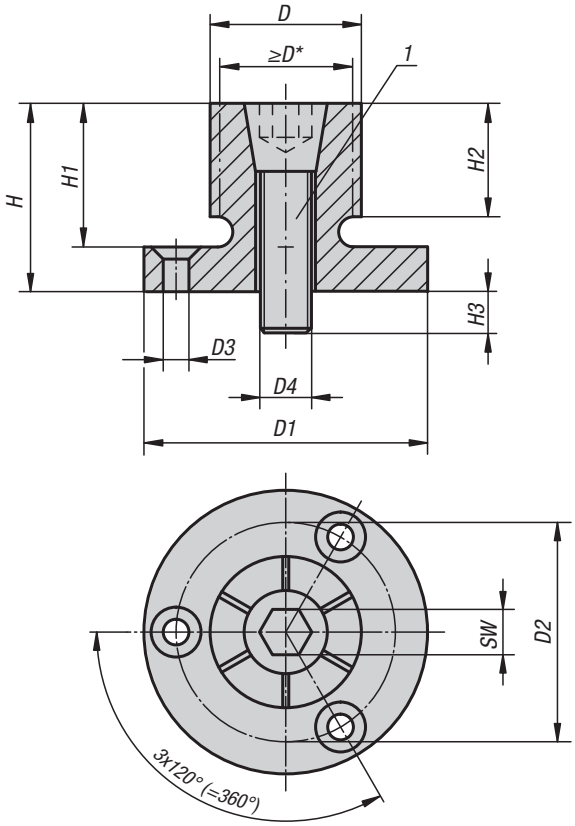
On request:
Replacement cam screws.

KIPP Cam clamps with riser

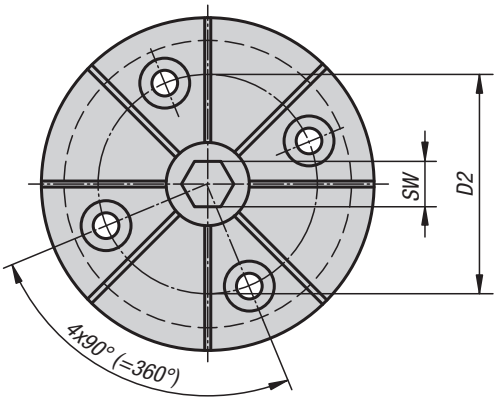
Order No.	B Slot width	Clamping force kN
K0028.12	12	12
K0028.14	14	12
K0028.16	16	12
K0028.18	18	12

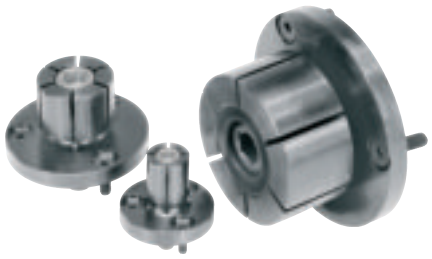
Notes

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.

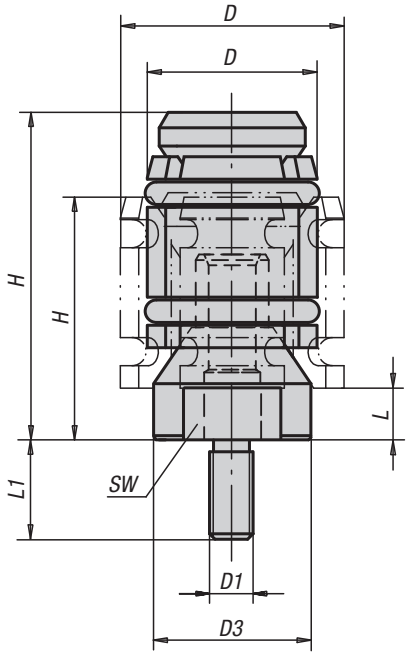
Assembly:
Expand the mandrel approx. 0.1 mm over the relaxed diameter. Turn or mill the mandrel to suit the internal diameter of the workpiece. The base flange can be centred in a pocket or using dowel pins.

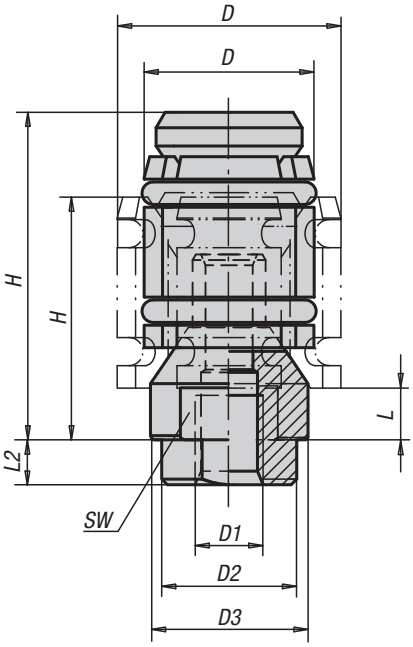
Drawing reference:
1) taper-head screw

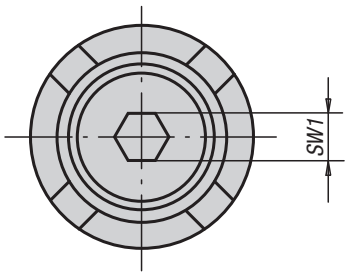
KIPP Mandrel collets

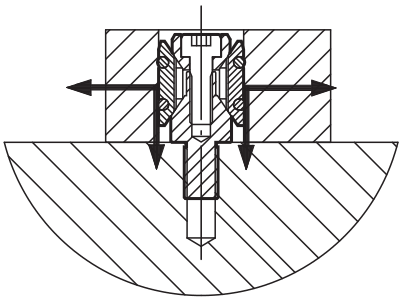
Order No.	D	D min.	D1	D2	D3 for screw ISO 10642	D4 Tapered-head bolt	H	H1	H2	H3	SW Tapered-head bolt	Tightening torque max. Nm	Clamping force max. kN
K0357.020407	7,4	4,1	20 h9	13,7	M2	M2	10,7	7,6	6,1	4,1	1,5	0,7	1,1
K0357.040812	12,4	8	29,72 h9	21	M3	M4	21,8	16	15	8	3	5	4,2
K0357.061214	14,2	12,2	31,5 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

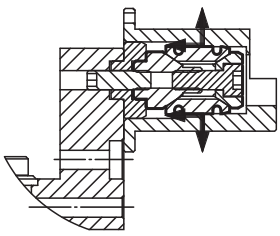
Centring clamps











Material:
Body steel.
Bushes carbon steel.

Version:
Black oxidised.

Sample order:
K0893.0615

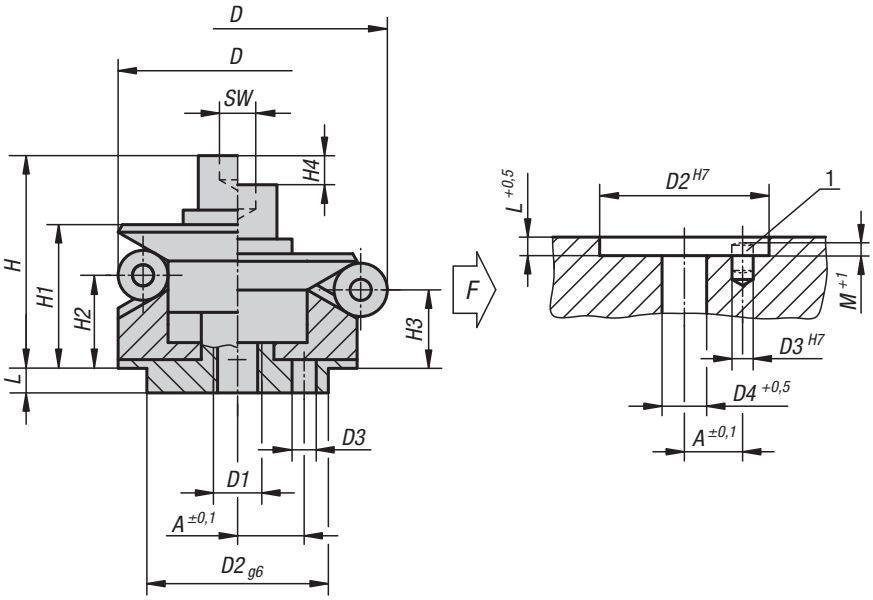
Note:
These centring clamps allow workpieces to be centred on and clamped in a bore. The clamps have a wide expansion range. The series covers a bore range of Ø12 to Ø30 mm. To increase the centring accuracy the clamps with internal thread have a centring spigot (D2) for a locating hole. These are also suitable for M6 grid systems (see application example).

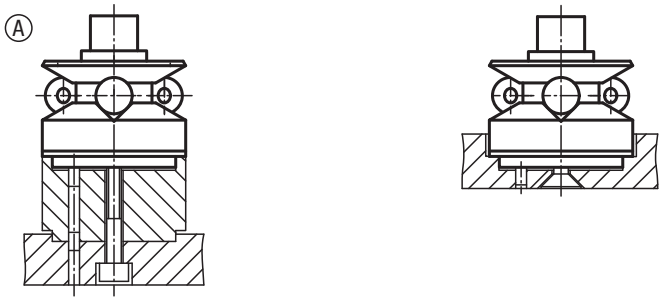
KIPP Centring clamps

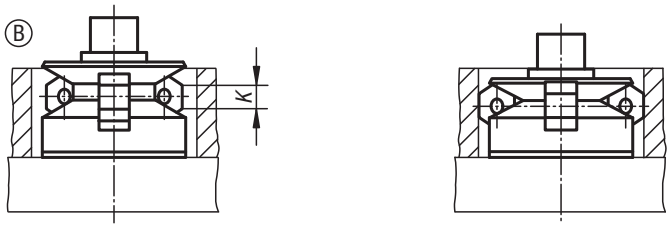
Order No.	Version	D1	L1	L2	D min.	D max.	D2	D3	H min.	H max.	L min.	SW	SW1
K0893.0615	internal thread	M6	-	4	12	15	12	11,4	22	27,5	4,8	9	2,5
K0893.0619	internal thread	M6	-	4	15	19	12	14	24,5	32	4,8	12	4
K0893.0624	internal thread	M6	-	4	19	24	12	17,8	26	35	4,5	15	5
K0893.0630	internal thread	M6	-	4	24	30	12	23	32	44,5	7	19	5
K0893.061215	external thread	M6	12	-	12	15	-	11,4	22	27,5	4,8	9	2,5
K0893.061219	external thread	M6	12	-	15	19	-	14	24,5	32	4,8	12	4
K0893.081624	external thread	M8	16	-	19	24	-	17,8	26	35	4,5	15	5
K0893.081630	external thread	M8	16	-	24	30	-	23	32	44,5	7	19	5

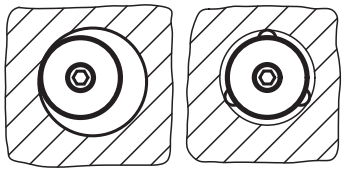
Centring clamps

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

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

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	F kN
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
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
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
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
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
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
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
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
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
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
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

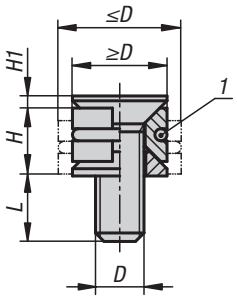
KIPP Centring clamps with hexagon segments

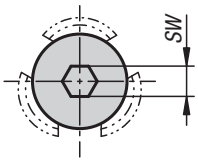
Order No.	Form	A	D min.	D max.	D1	D2	D3	D4	H	H1	H2	H3	H4	L	M	K	SW	No. of hex	F kN
K0358.201504	B	4,5	14,5	18,5	M4	12	2	4,3	19,5	14,5	9,8	8,6	2,3	5,5	3	4	3	3	3,5
K0358.201905	B	5,5	18,5	22,5	M5	15	2,5	5,3	23,5	16,5	11,6	10,4	2,3	7,5	3	4	4	3	4
K0358.202306	B	7	22,5	26,5	M6	20	3	6,4	28,8	19,8	14,2	13	2,3	6	4	4	5	3	4,5
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
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
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
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
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
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
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

Centring clamps

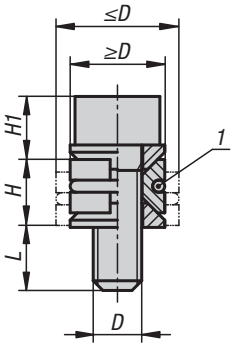
round

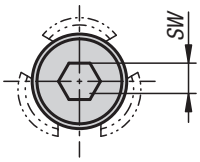
Ⓐ





Ⓑ





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.
1) O-ring

Dimension L refers to the length at ≤D

KIPP Centring clamp round

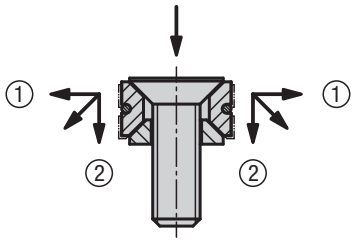
Order No.	Form	D	D min.	D max.	H	H1	L	SW	Clamping force kN	Tightening torque Nm
K1166.10804	A	M4	8	10,3	5,5	0,9	7,3	2,5	0,9	2,1
K1166.11005	A	M5	10	12,3	6,4	1,1	9,1	3	1,5	4,3
K1166.11206	A	M6	12	16,3	8,6	1,3	11,2	4	2,1	7,3
K1166.11608	A	M8	16	22	11,5	1,6	16,2	5	4	18
K1166.20804	B	M4	8	10,3	5,5	5,1	7,1	3	1,5	2,7
K1166.21005	B	M5	10	12,3	6,4	6,2	9	4	2,5	5,4
K1166.21206	B	M6	12	16,3	8,6	7,9	10,6	5	5	9,1
K1166.21608	B	M8	16	22	11,5	10,4	15,4	6	9	25

Centring clamps

round

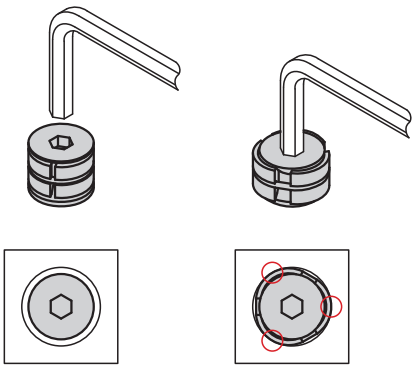
Technical information:

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



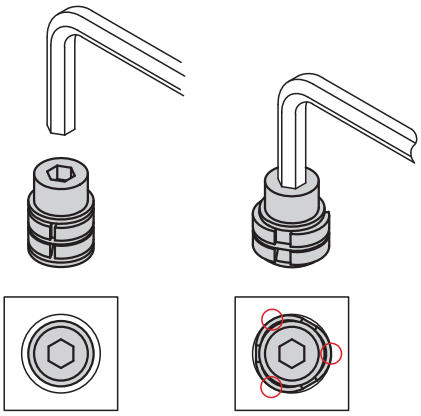
(Jaws exert positive down force)
① Horizontal thrust against workpiece
② Vertical thrust prevents the workpiece lifting

Form A:



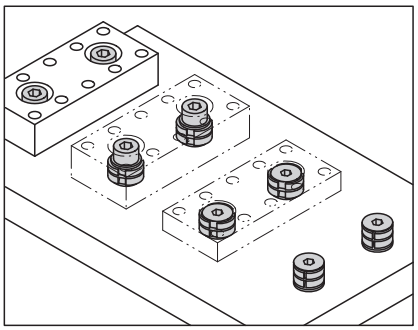
unclamped clamped

Form B:

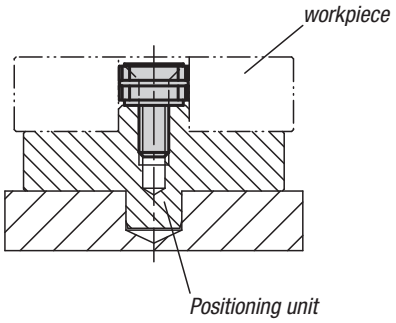


unclamped clamped

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



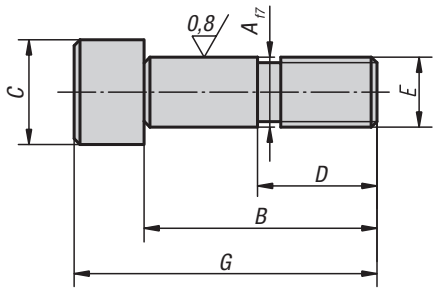
For accurate repeat positioning use these clamps together with a positioning unit.
Clamping is carried out with the centring clamp.

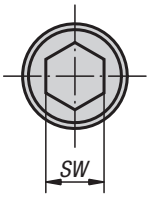


Locating elements

Shoulder screws

Form A





Material:
Carbon steel.

Version:
Tempered, black oxidised.
Precision diameters ground.

Sample order:
K0815.112045

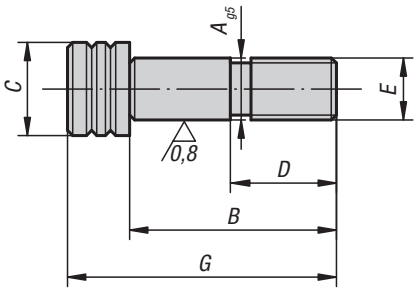
KIPP Shoulder screws Form A

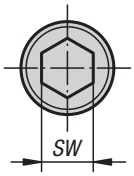
Order No.	A	B	C	D	E	G	SW
K0815.112045	12	45	18	22	M12	57	10
K0815.112055	12	55	18	22	M12	67	10
K0815.112065	12	65	18	22	M12	77	10
K0815.112075	12	75	18	22	M12	87	10
K0815.116055	16	55	24	25	M16	71	14
K0815.116065	16	65	24	25	M16	81	14
K0815.116075	16	75	24	25	M16	91	14

K0815

Shoulder screws

Form B





Material:
Carbon steel.

Version:
Tempered, black oxidised.
Precision diameters ground.

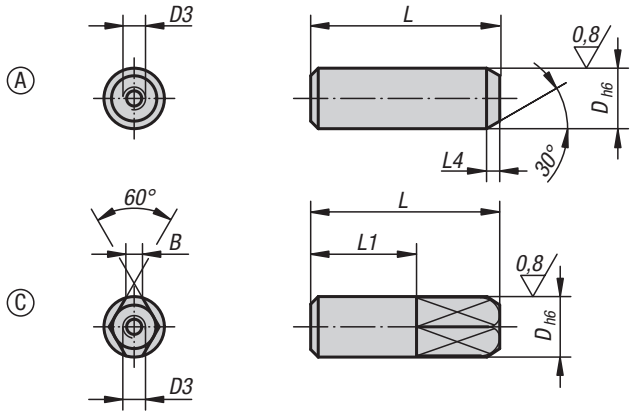
Sample order:
K0815.12065

KIPP Shoulder screws Form B

Order No.	A	B	C	D	E	G	SW
K0815.12045	12	45	18	22	M12	57	10
K0815.12055	12	55	18	22	M12	67	10
K0815.12065	12	65	18	22	M12	77	10
K0815.12075	12	75	18	22	M12	87	10
K0815.16055	16	55	24	25	M16	71	14
K0815.16065	16	65	24	25	M16	81	14
K0815.16075	16	75	24	25	M16	91	14

K0817

Removable locating pins Forms A and C



Material:
Tool steel.

Version:
Hardened and ground (HRC 56 +2).

Sample order:
K0817.12

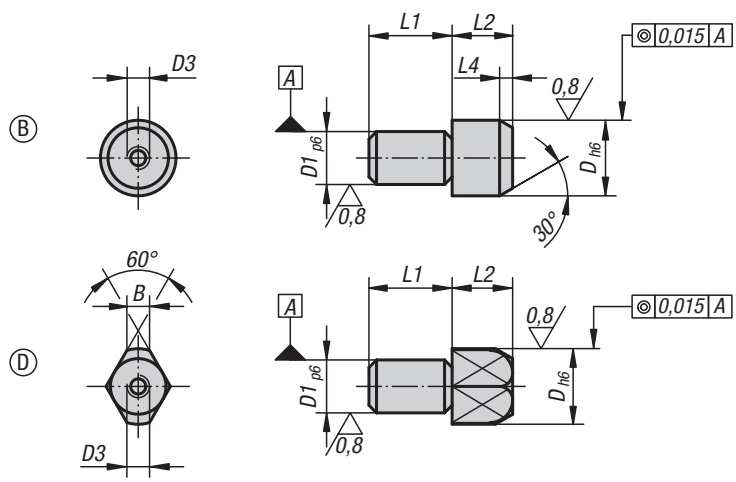
Note:
The locating pins can be easily removed with an extractor.

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

K0818

Removable locating pins Forms B and D



Material:
Tool steel.

Version:
Hardened and ground (HRC 55-60).

Sample order:
K0818.20

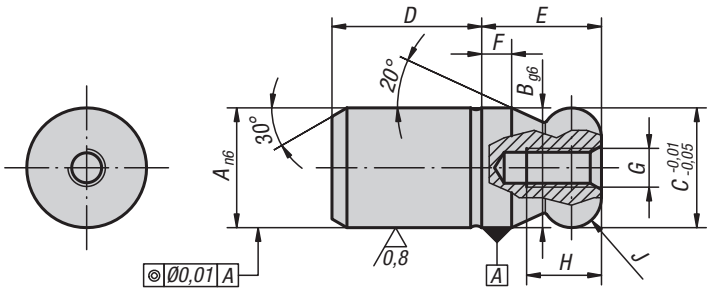
Note:
Locating pins can be easily removed with an extractor.

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 stainless steel 1.4305.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0350.12

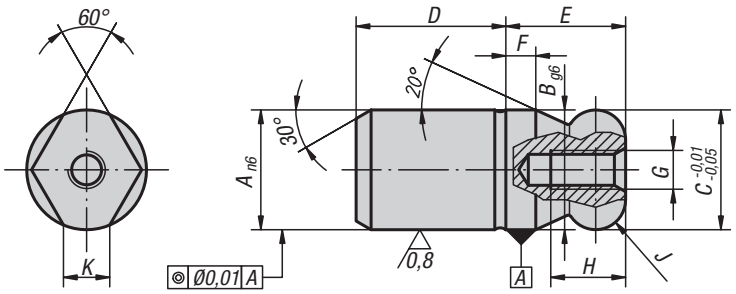
Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration 1 for K0351 Form B)

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 stainless steel 1.4305.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0350.162

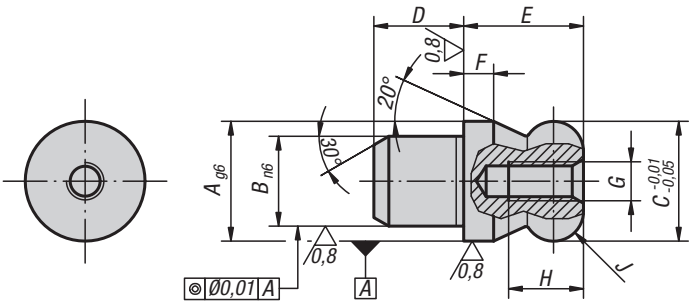
Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration 1 for K0351 Form B)

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

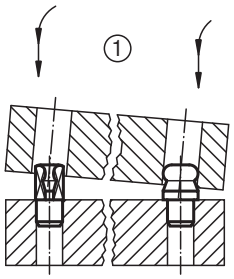


Material:
Tool steel or stainless steel 1.4305.

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 1).

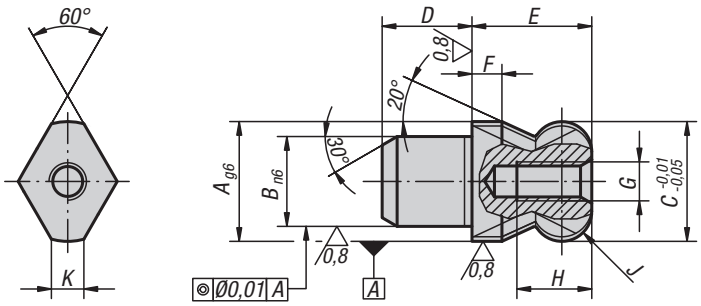


KIPP Locating pins with ball-end Form B

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 stainless steel 1.4305.

Version:
Steel hardened and ground.
Stainless steel ground and kolsterised.

Sample order:
K0351.162

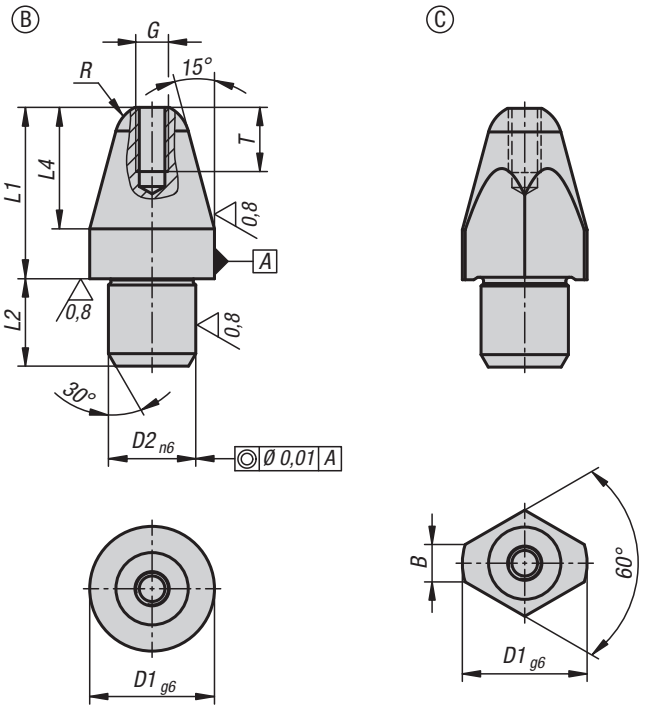
Note:
Ball end locating pins are specially designed to ease the locating process. The tendency to jam, caused by the locating hole not being at right angles to the pin or by the pushing force not being parallel to the pin axis, is minimized by the ball-end form (see illustration 1 for K0351 Form B)

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:
Locating pins are specially designed to ease the locating process. When used in conjunction with the hardened locating bushes K1095, they allow for a rapid, precise and low-wear workpiece exchange.

Drawing reference:
Form B: cylindrical pin
Form C: rhomboid pin

KIPP Locating pins, short

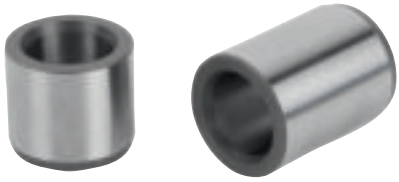
Order No. Form B	Order No. Form C	Version	D1	D2	G	L1	L2	L4	R	B	T
K1094.208	**K1094.408**	short	8	6	M2,5	11,4	6	7,4	2,5	-/2,5	5
K1094.210	**K1094.410**	short	10	7	M2,5	13,7	7	9,7	3	-/3,0	5
K1094.212	**K1094.412**	short	12	8	M3	16	8	12	3,5	-/3,5	6
K1094.216	**K1094.416**	short	16	12	M4	20	12	15	5	-/5	8
K1094.220	**K1094.420**	short	20	14	M5	25,5	14	19,5	6	-/6	10

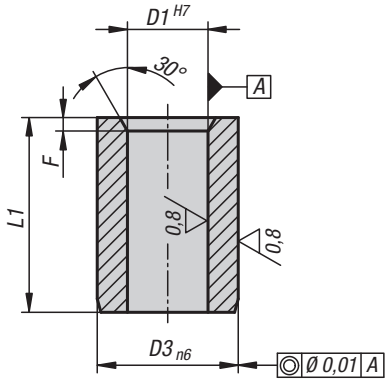
KIPP Locating pins, long

Order No. Form B	Order No. Form C	Version	D1	D2	G	L1	L2	L4	R	B	T
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.

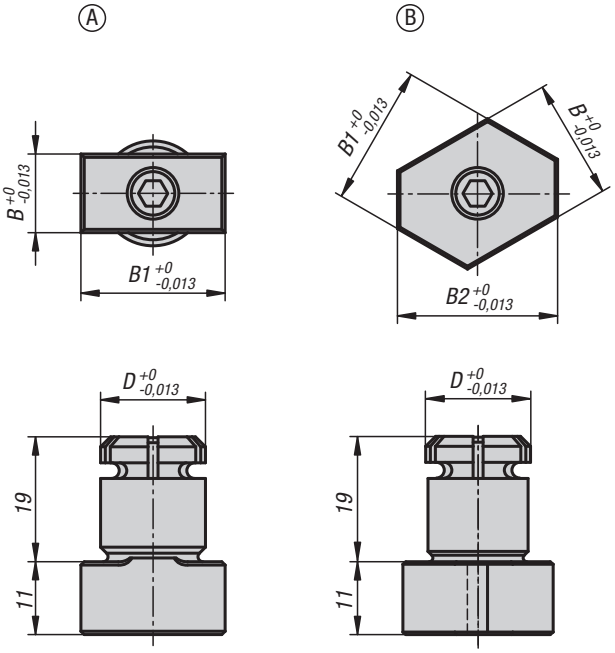
Version:
Hardened and ground (HRC 60 ±2).

Sample order:
K1095.0812

KIPP Locating bushes for locating pins

Order No.	Version	D1	D3	L1	F
K1095.0812	short	8	12	12	1,2
K1095.1014	short	10	15	14	1,5
K1095.1216	short	12	18	16	1,5
K1095.1620	short	16	26	20	1,5
K1095.2026	short	20	30	26	2,5
K1095.0818	long	8	12	18	1,2
K1095.1022	long	10	15	22	1,5
K1095.1224	long	12	18	24	1,5
K1095.1630	long	16	26	30	1,5
K1095.2036	long	20	30	36	2,5

Locating pins expanding



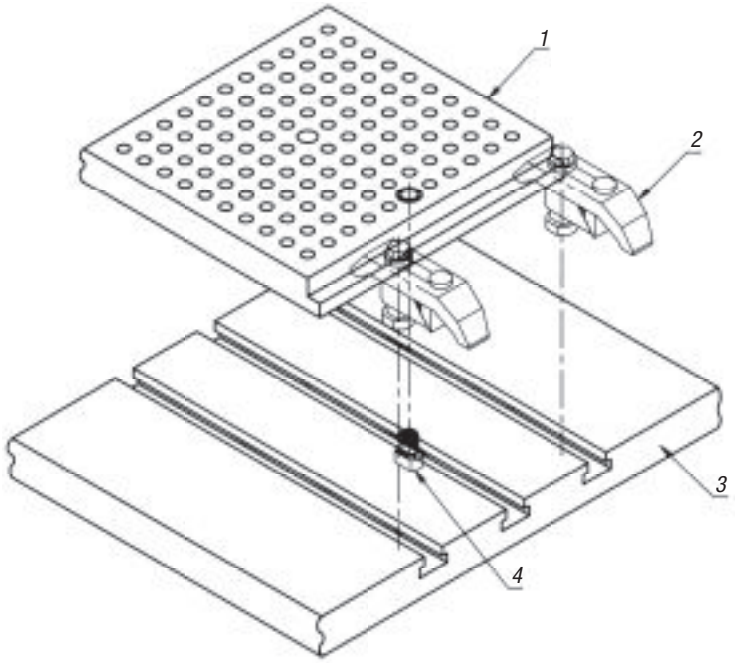
Material:
Carbon steel.

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.

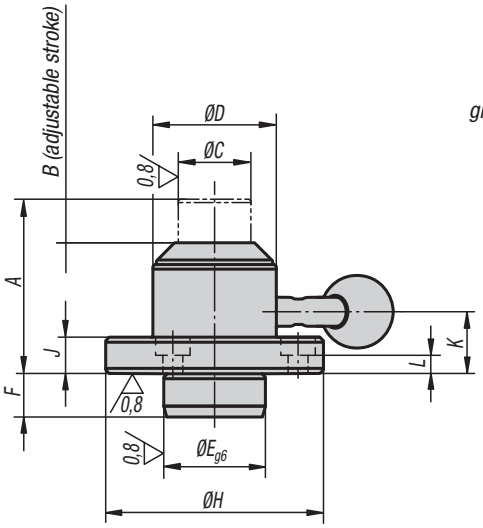
Drawing reference:
1) tooling plate
2) clamp straps
3) machine table
4) expanding locating pin

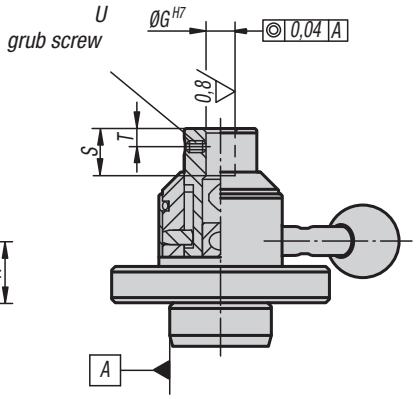


KIPP Locating pins, expanding

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

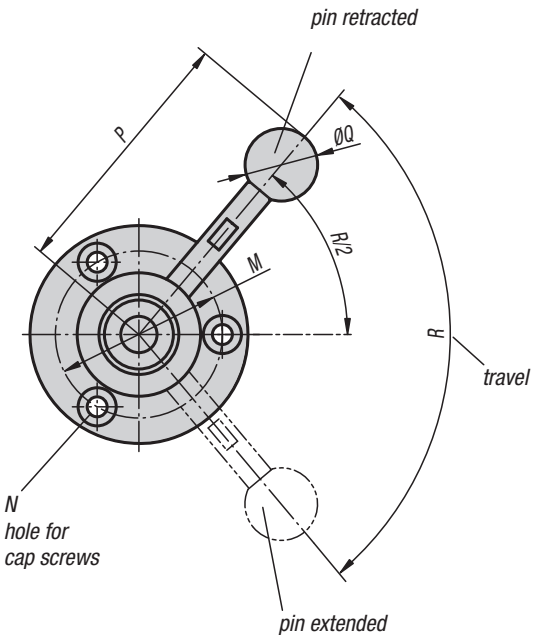


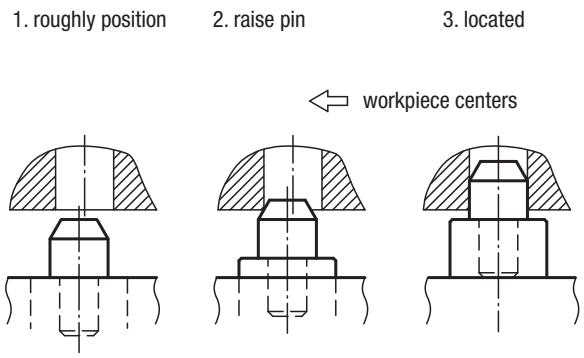


Material, version:
Body and locating pin carbon steel, tempered and black oxidised.
Handle carbon steel, tempered.
Ball knob black Duroplast PF 31.

Sample order:
K0918.2808

Note:
* Admissible hand force for the handle.
** Workpieces up to this weight can be located.

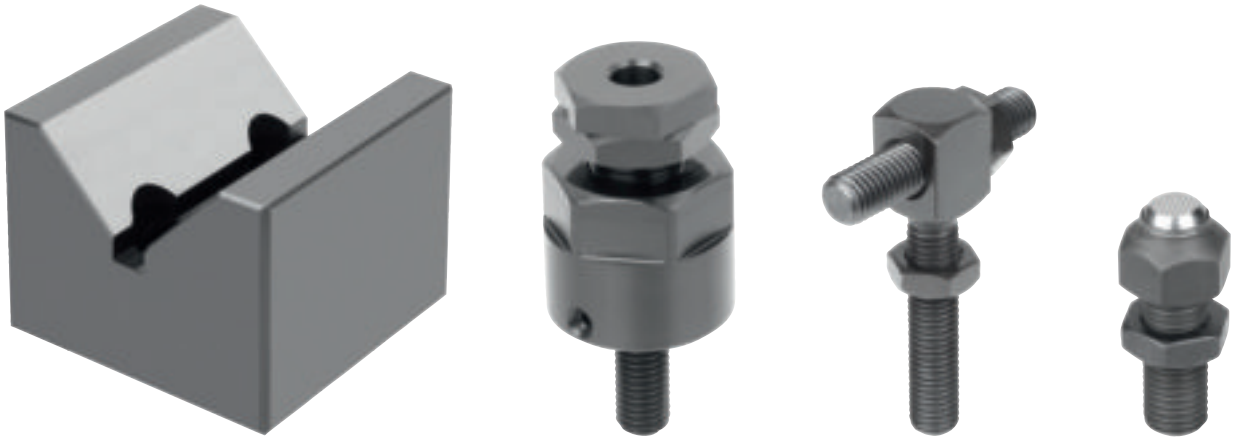




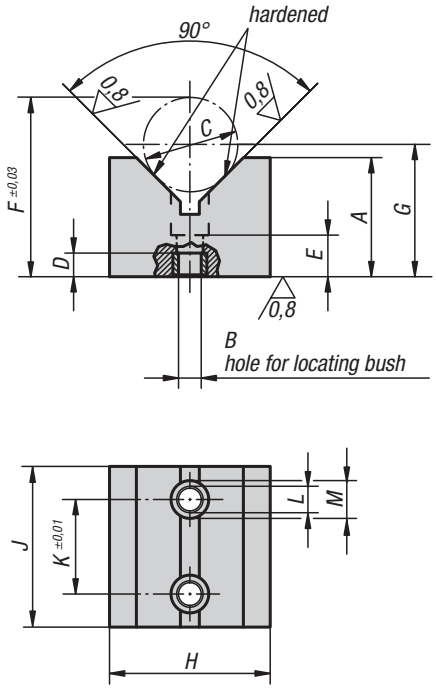
KIPP Positioning units

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.

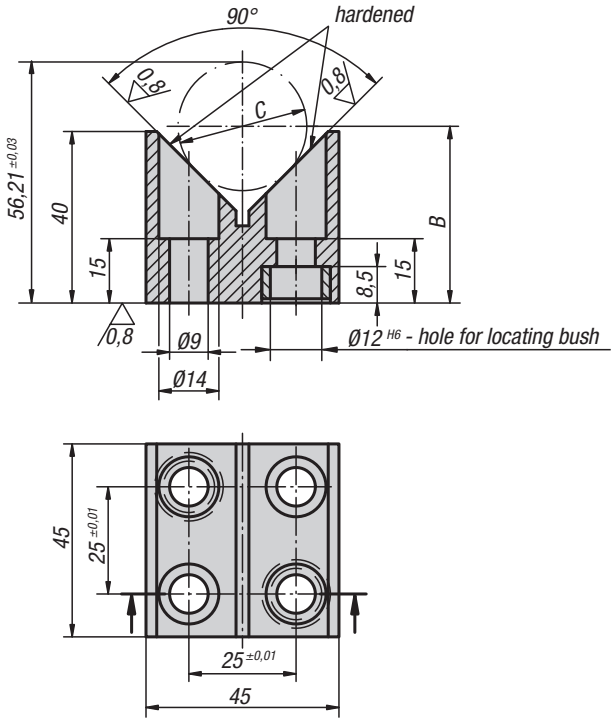
Sample order:
K0819.60008032

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.

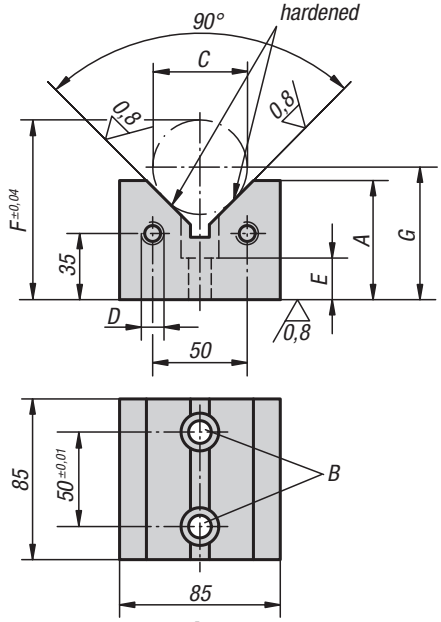
Sample order:
K0819.60008040

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

K0819

V-blocks, vertical



KIPP V-blocks vertical

Material:
Carbon steel.

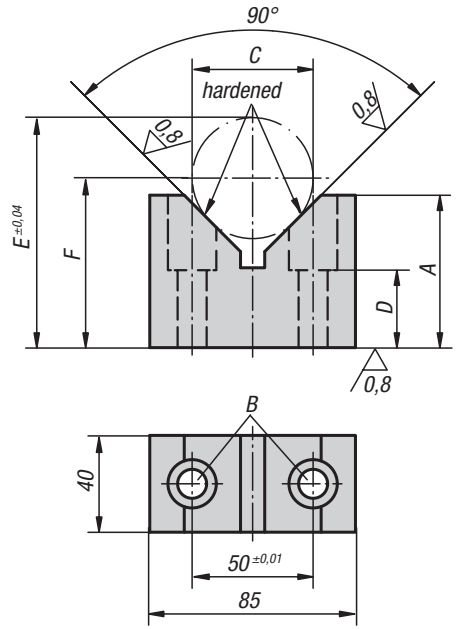
Version:
Black oxidised.
Prism and contact faces ground.

Sample order:
K0819.60012063

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



KIPP V-blocks, vertical

Material:
Carbon steel.

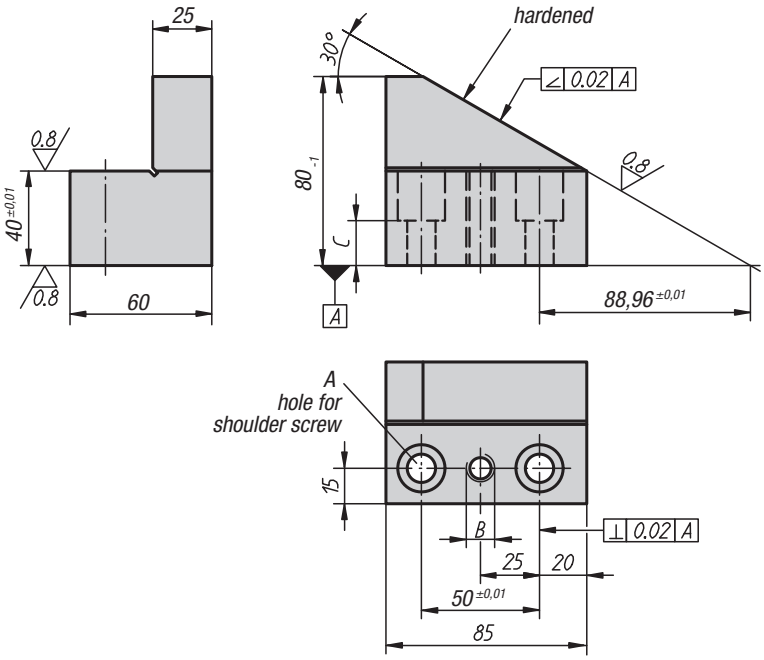
Version:
Black oxidised.
Prism and contact faces ground.

Sample order:
K0819.60512063

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

left hand



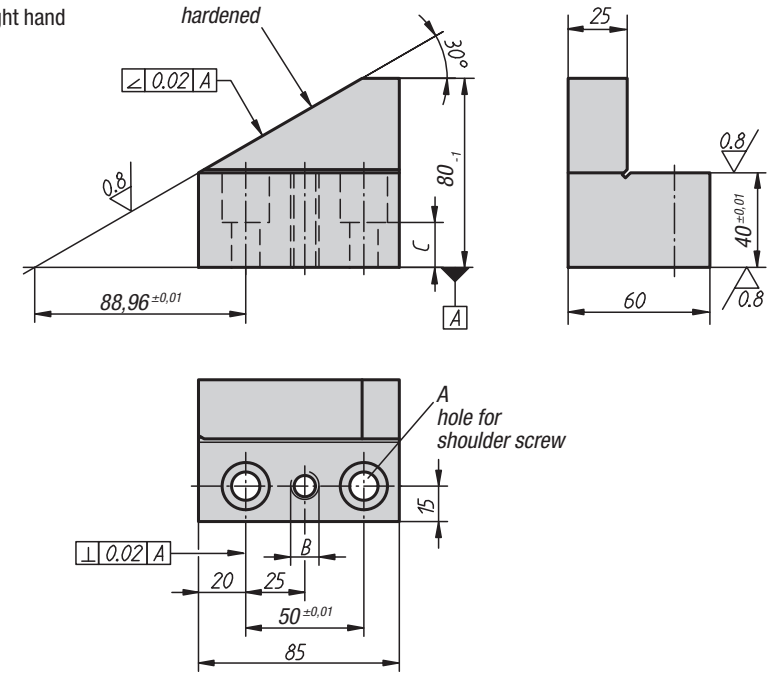
Material:
Carbon steel.

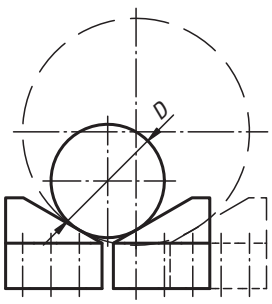
Version:
Black oxidised.
Half prism (30°) and contact faces ground.

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.

right hand

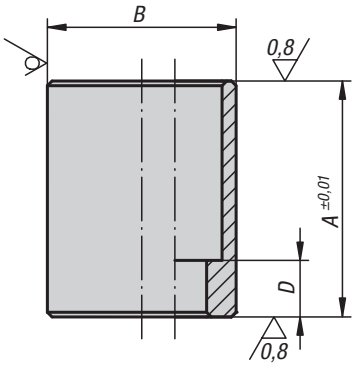


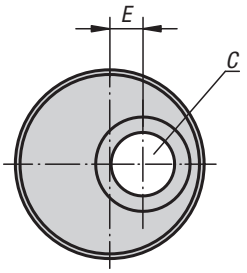


KIPP V-blocks split

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.

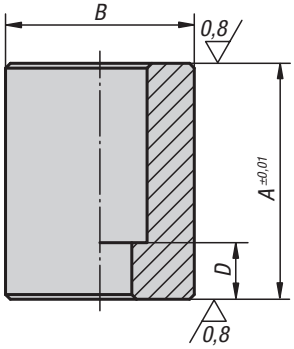
Version:
Tempered, black oxidised.
Contact faces ground.

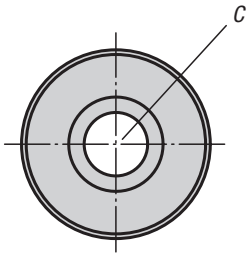
Sample order:
K0822.10040

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.

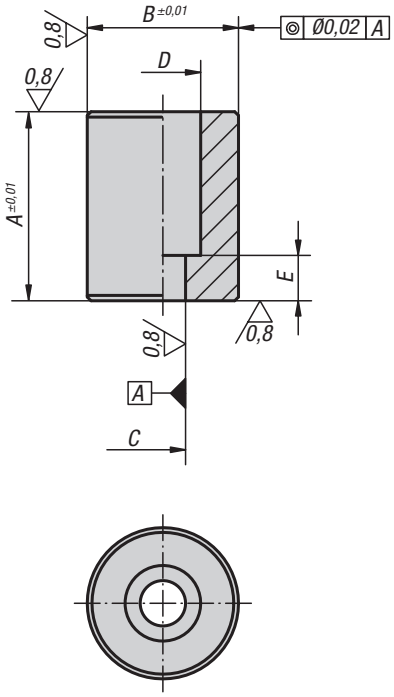
Version:
Tempered, black oxidised.
Contact faces ground.

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.

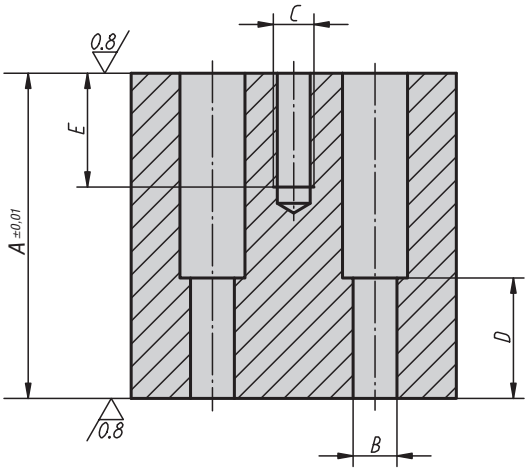
Sample order:
K0816.08020

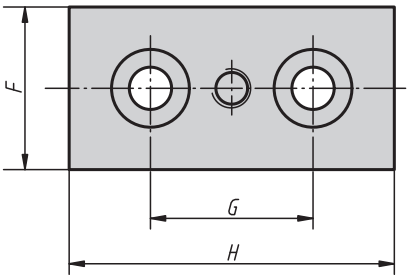
Note:
Depending on the system (M8, M12, M16), the locating supports are positioned and secured using shoulder screws or locating sleeves with socket head screw.

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
K0816.12100	100	50	12 H7	20	22	K0815.12055
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.

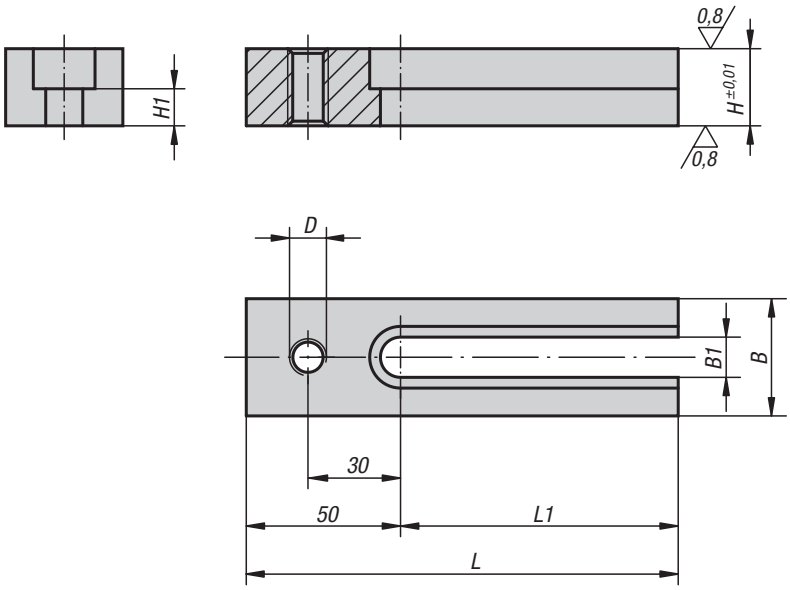
Sample order:
K0827.36012020

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

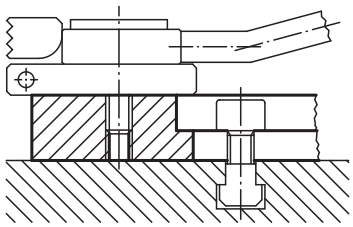


Material:
Carbon steel.

Version:
Tempered, black oxidised.
Contact faces ground.

Sample order:
K0824.12125

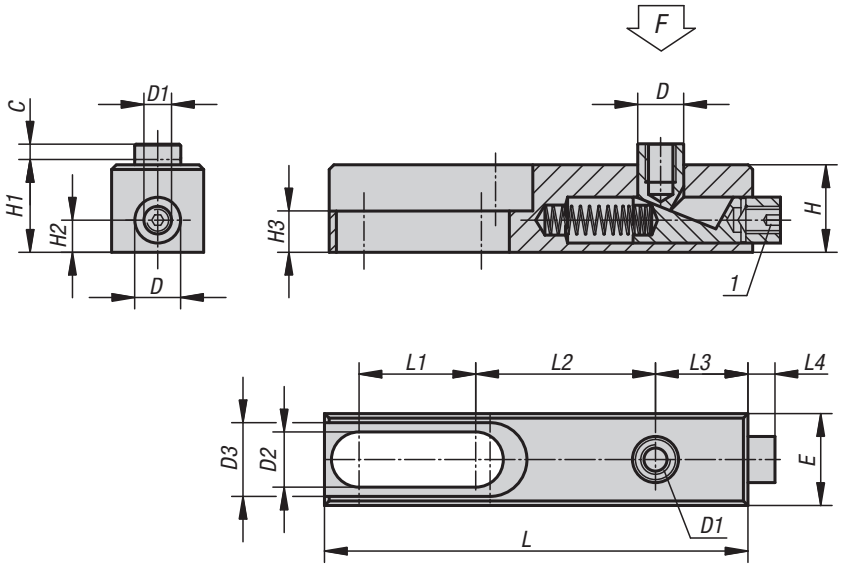
Note:
The tapped hole is for mounting fixture components. The slot allows the riser to be set in any desired position.



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

Workpiece supports



Material:
Steel.

Version:
Case-hardened, black oxidised and ground

Sample order:
K0889.006

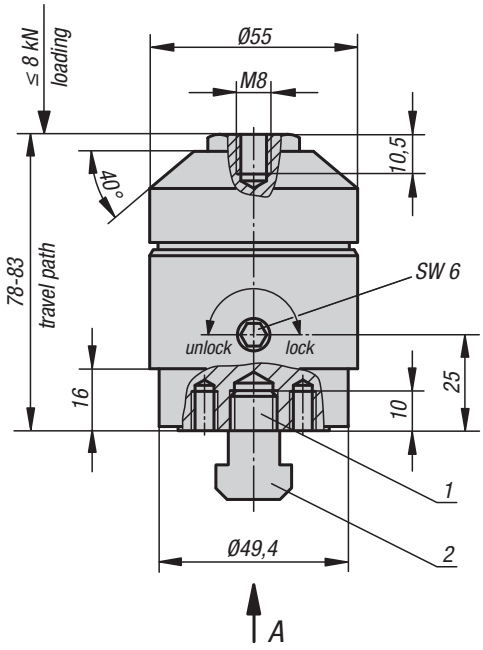
Note:
These supports are placed under long or thin workpieces to prevent vibration or bending during milling, drilling, grinding or shaping operations.

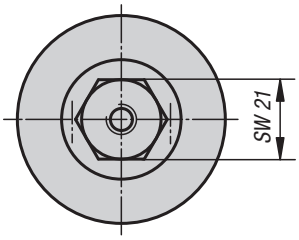
Drawing reference:
1) set screw

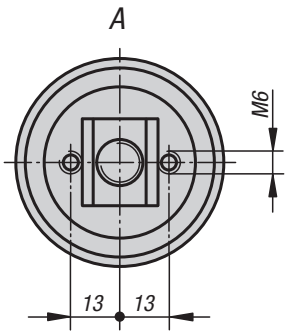
KIPP Workpiece supports

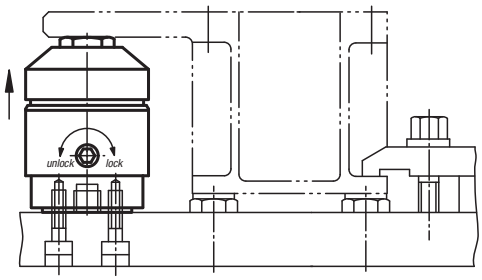
Order No.	C	D	D1	D2	D3	E	H	H1	H2	H3	L	L1	L2	L3	L4	F kN
K0889.006	4	10	M6	8,2	16,2	20	19	19,5	7	9	92	25,5	39	20	6	3
K0889.010	6	16	M10	12,5	24,4	30	30	31	10	10	149	44	61	32	11	15

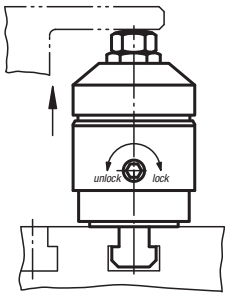
Support elements











Material:
Main body hardened steel.
Housing aluminium.

Version:
Main body nitrated, manganese phosphated and ground.
Housing red anodized.

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).

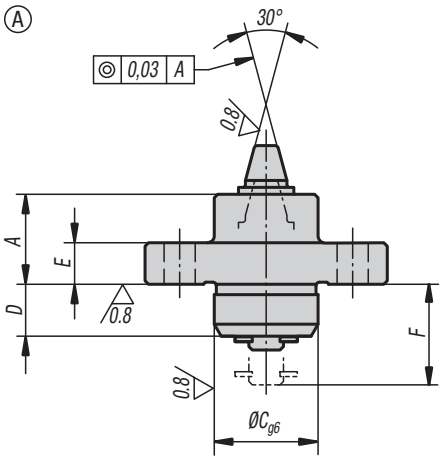
Drawing reference:
1) grub screw M12x30 DIN 913 (exchangeable)
2) nut for T-slots M12x14 DIN 508

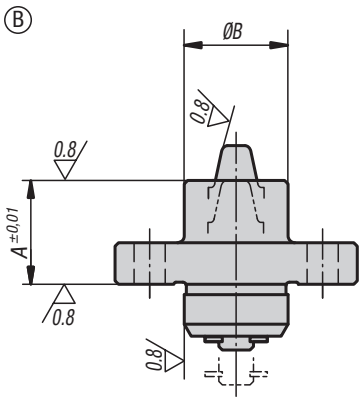
KIPP Support element

Order No.	Load capacity N	Travel path
K1224.0508	8000	5

Positioning units

spring-loaded

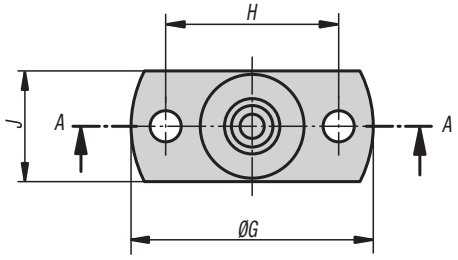


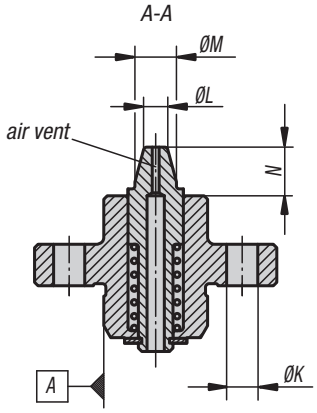


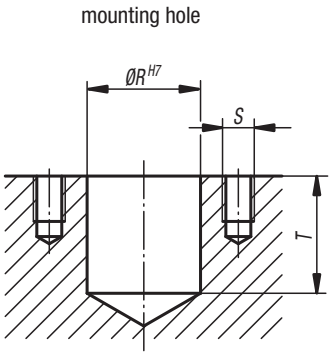
Material, version:
Body carbon steel, hardened and black oxidised.
Locating pin hardened tool steel.

Sample order:
K0917.15060

Note:
* The conical spigot can position holes within these limits.



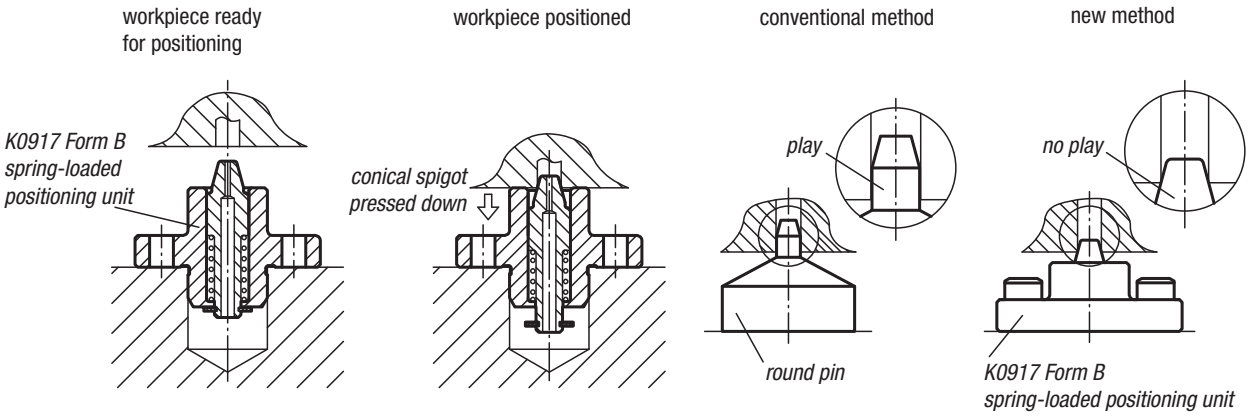




KIPP Positioning units, spring-loaded

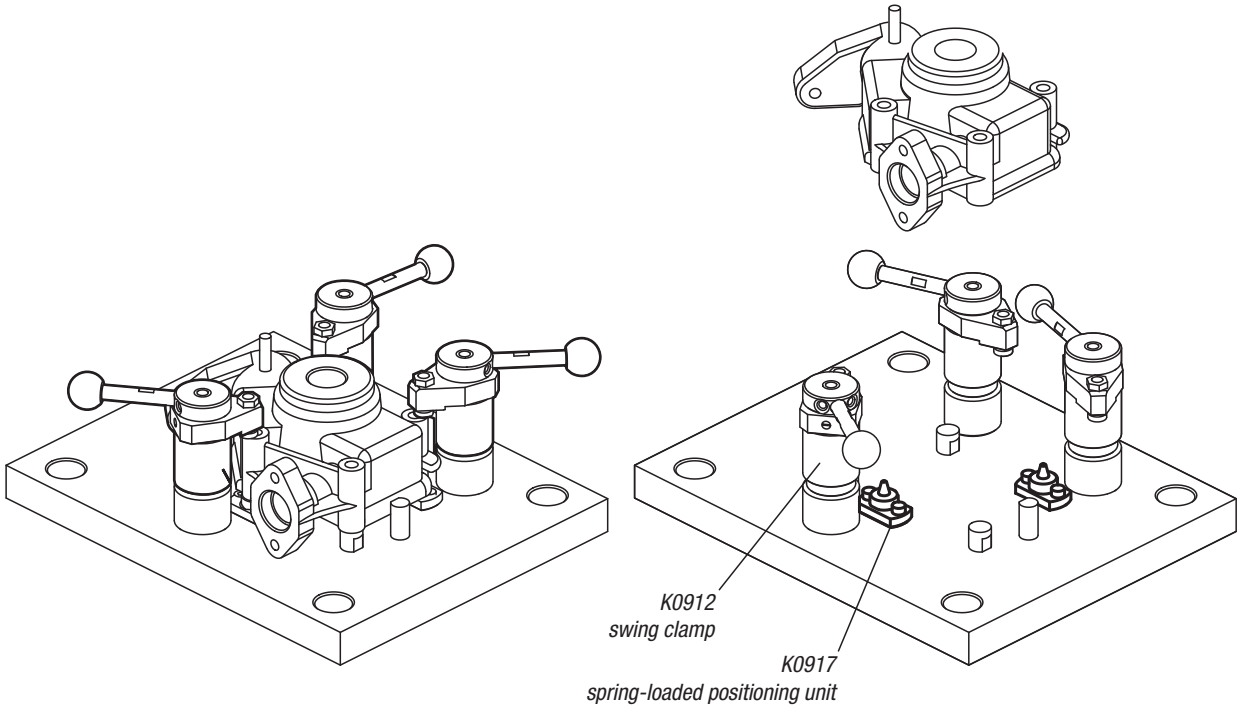
Order No.	Form	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	Receiving hole	Spring force cone N
K0917.15060	A	13	15	15	7,5	6	15	35	25	16	4,5	3,5	6	7,4	15	M4	16	ø3,8 - ø5,2*	6,4 - 19,3
K0917.15070	A	13	15	15	7,5	6	15	35	25	16	4,5	4,5	7	7,4	15	M4	16	ø4,8 - ø6,2*	6,4 - 19,3
K0917.20090	A	18	20	20	10	8	20	40	30	22	4,5	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



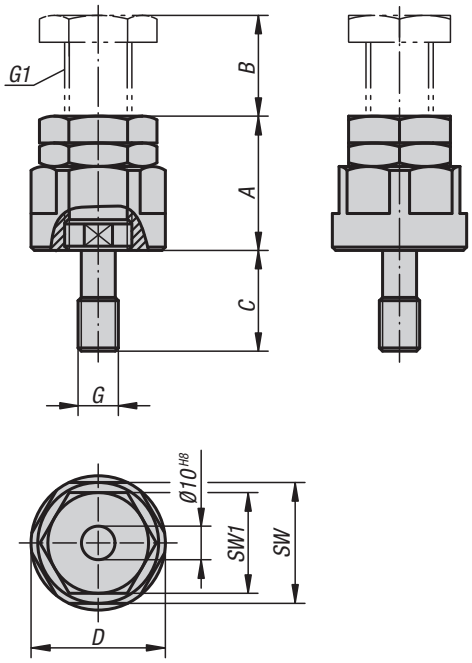
The conical spigot is pushed down when the workpiece is mounted on the positioning unit.

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.

Adjustable supports



Material:
Carbon steel.

Version:
Black oxidised.
Adjustment spindle tempered.

Sample order:
K0825.16100

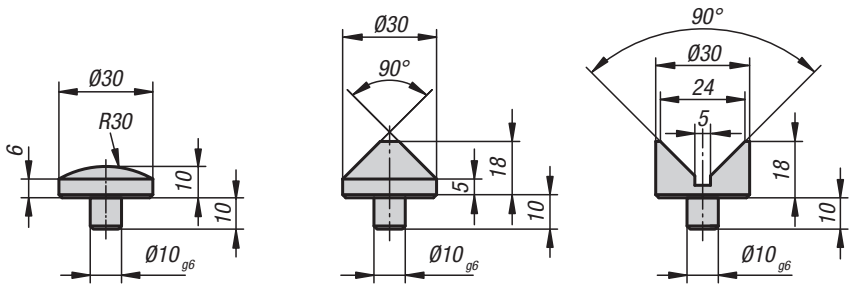
Note:
Inserts K0826 can be mounted in the top to suit the application.

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

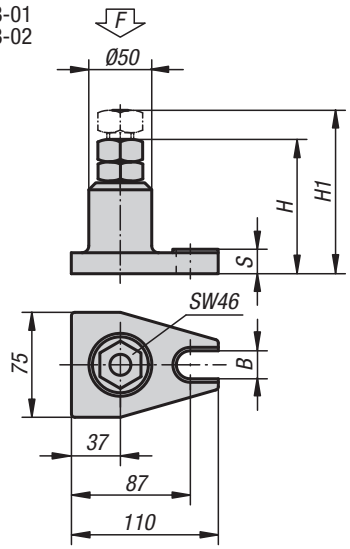
KIPP Inserts

Order No.	Version
K0826.01	rounded insert
K0826.02	cone insert
K0826.03	prism insert

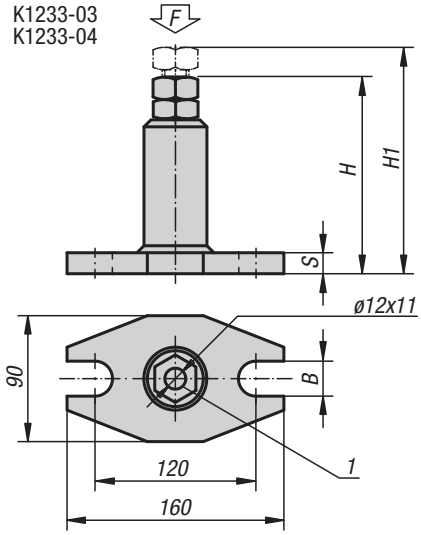
Atlas jack

with locknut

K1233-01
K1233-02

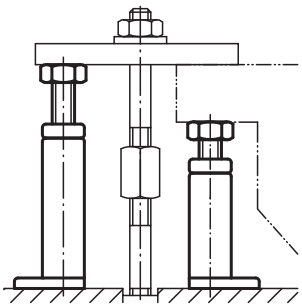


K1233-03
K1233-04



Material:
Carbon steel.

Version:
Hammertone, spindle with 30 x 6 trapezoidal thread.

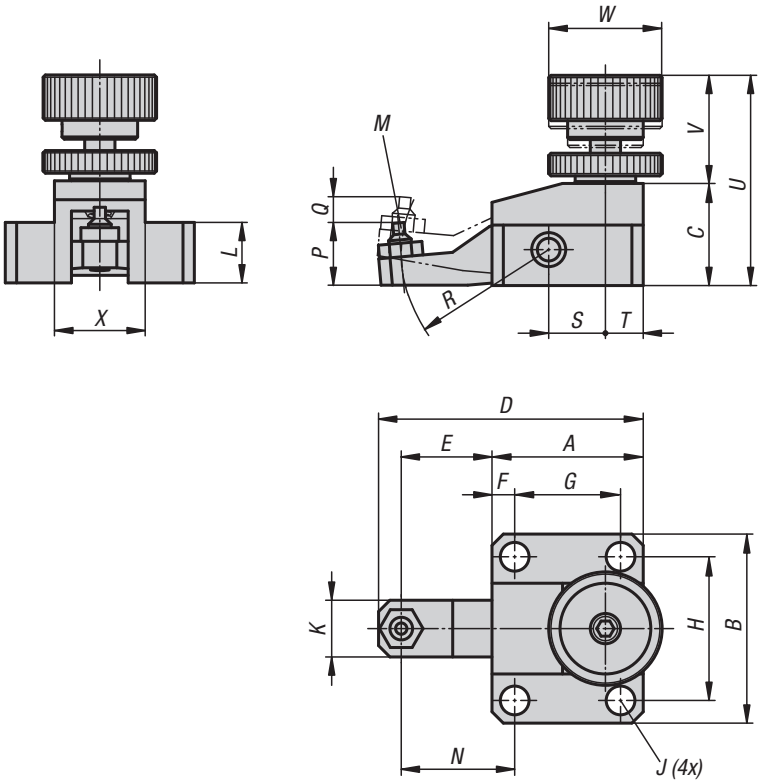


KIPP Atlas jack with locknut

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

Workpiece supports

adjustable

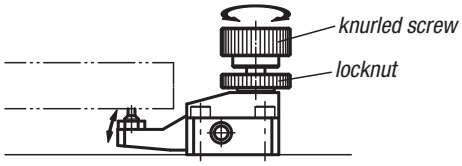


Material:
Carbon steel 1.0503.

Version:
Black oxidised.

Sample order:
K0919.08020

Note:
Workpiece supports are for supporting overhanging workpiece parts to prevent vibrations and bending during machining.
They should not be subjected to strong forces from a clamping element and are not intended as supports under a clamping point.



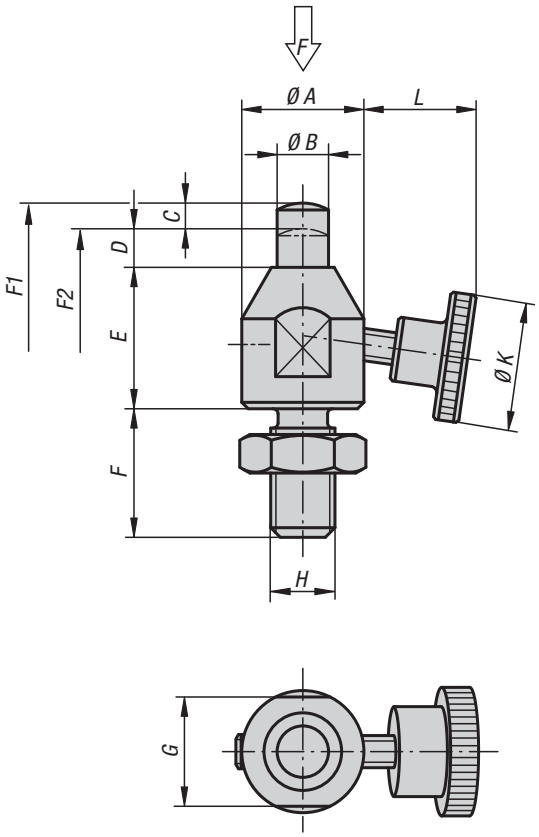
1.) Turning the knurled screw moves the support arm up or down.
2.) Once the rest is in contact with the worpiece, the screw can be locked with the locknut.

KIPP Workpiece supports, adjustable

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Clamping force N	Tightening torque max. Nm
K0919.08020	40	50	27	70	24	6	28	38	6,6	15	16	M6x16	30	17	6	39	15	10	56	29	30	24	300	1,5
K0919.10027	55	65	34	95	31,5	8,5	38	48	9	18	20	M8x22	40	23	8	51,5	20	15	68	34	36	29	350	2

Workpiece supports

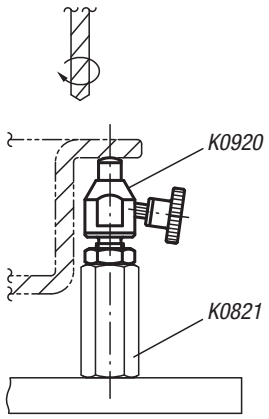
adjustable



Material:
Carbon steel.

Version:
Body black oxidised.
Rest pad hardened and black oxidised.

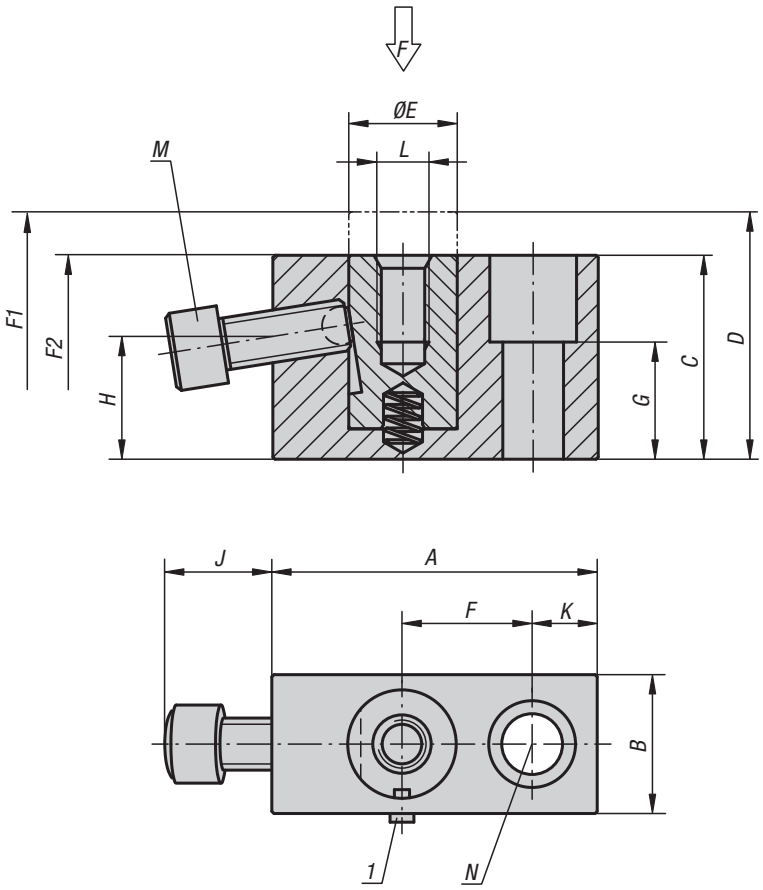
Sample order:
K0920.08023



KIPP Workpiece supports, adjustable

Order No.	A	B	C (travel)	D	E	F	G	H	K	L	F N	Spring force initial pressure F1 approx. N	Spring force final pressure F2 approx. N
K0920.08023	15	6	3	5	18	16	13	M8	20	13,2	200	1,5	3
K0920.10028	19	8	4	6	22	20	17	M10	25	16,3	300	1,8	3
K0920.12031	22	10	4	6	25	24	19	M12	28	22,3	400	1,8	3

Workpiece supports



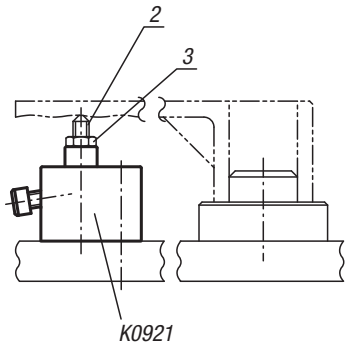
Material:
Carbon steel.

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

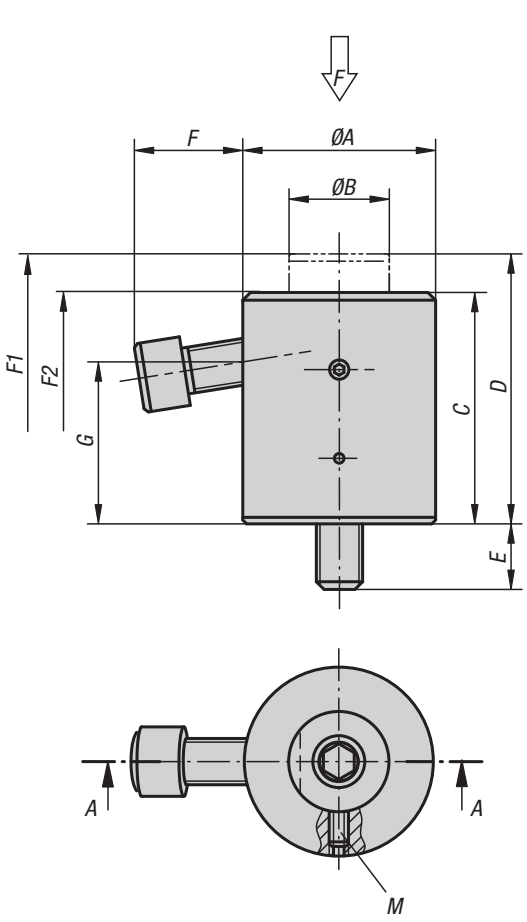
1) rotation lock
2) screw rest
3) hexagonal nut

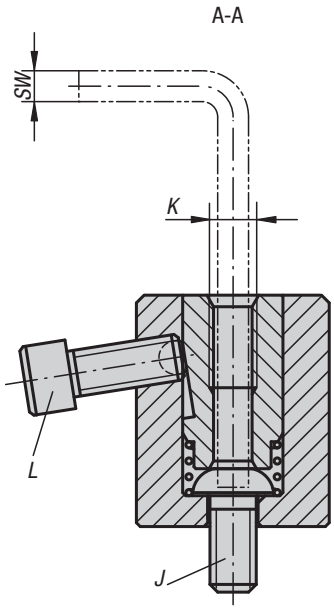


KIPP Workpiece supports

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	F N	Spring force initial pressure F1 approx. N	Spring force final pressure F2 approx. N
K0921.06029	38	19	29	35	12	15	15	17,6	13	8	M6x10	M6x16	M6	4000	0	6
K0921.08037	50	22	37	47	16	20	20	21,1	16	10	M8x15	M8x20	M8	6000	0	7
K0921.12047	75	32	47	57	25	30	27	28,3	25	15	M12x20	M12x30	M12	9000	1	11

Workpiece support cylinders





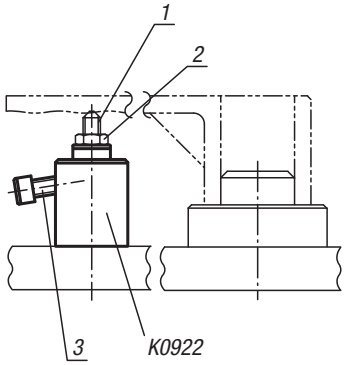
Material:
Carbon steel.

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

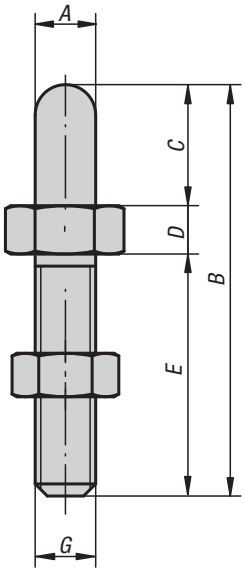
1) screw rest
2) hexagonal nut
3) ball-end thrust screw

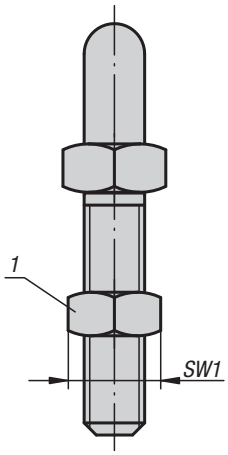


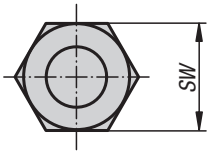
KIPP Workpiece support cylinders

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	13,1	22,2	M6	M6x12	M6x16	M4x8	4	4000	10	22
K0922.08052	35	19	42	52	14	17,2	27,5	M8	M8x16	M8x20	M4x8	5	6000	10	27
K0922.12070	50	26	60	70	16	28,1	42,1	M12	M12x24	M12x30	M5x12	8	9000	15	30
K0922.16080	60	33	70	80	22	26,6	47,4	M16	M16x32	M12x30	M5x15	10	9000	15	35

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.

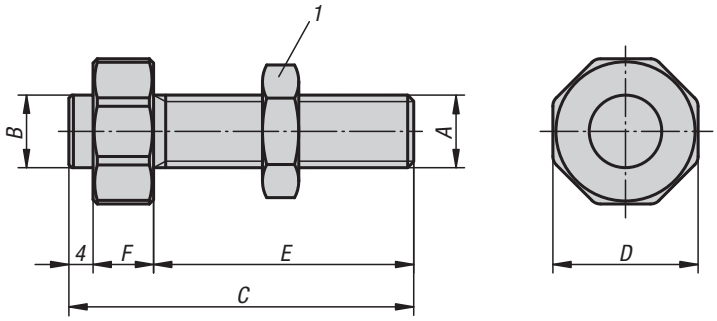
The versions K0297.08016 and K0297.20040 have a hex collar.

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.

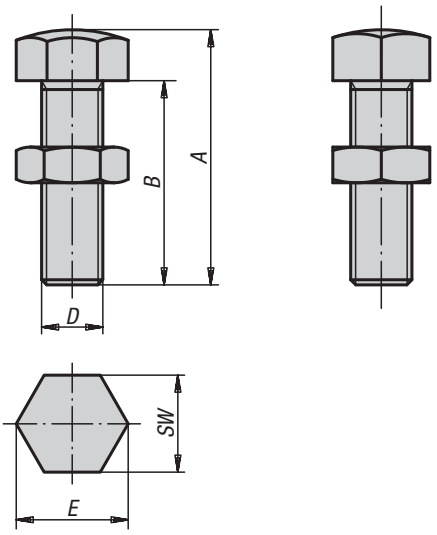
Sample order:
K0828.08041

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

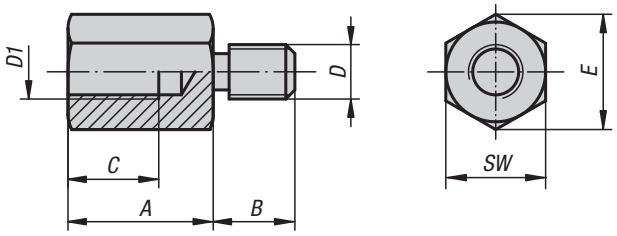
Version:
Tempered and black oxidised.

Sample order:
K0307.16055

KIPP Rest pads

Order No.	Material	A	B	D	E	SW
K0307.06030	carbon steel	30	25	M6	11,5	10
K0307.06040	carbon steel	40	35	M6	11,5	10
K0307.06050	carbon steel	50	45	M6	11,5	10
K0307.08036	carbon steel	36	30	M8	15	13
K0307.08046	carbon steel	46	40	M8	15	13
K0307.08056	carbon steel	56	50	M8	15	13
K0307.10042	carbon steel	42	35	M10	19,6	17
K0307.10048	carbon steel	48	40	M10	19,6	17
K0307.10058	carbon steel	58	50	M10	19,6	17
K0307.10068	carbon steel	68	60	M10	19,6	17
K0307.12048	carbon steel	50	42	M12	21,9	19
K0307.12070	carbon steel	70	60	M12	21,9	19
K0307.12080	carbon steel	80	70	M12	21,9	19
K0307.16055	carbon steel	55	45	M16	27,7	24
K0307.16075	carbon steel	75	65	M16	27,7	24
K0307.16085	carbon steel	85	75	M16	27,7	24
K0307.12148	brass	50	42	M12	21,9	19
K0307.16155	brass	55	45	M16	27,7	24

Extension pieces



Material:
Carbon steel.

Version:
Black oxidised.

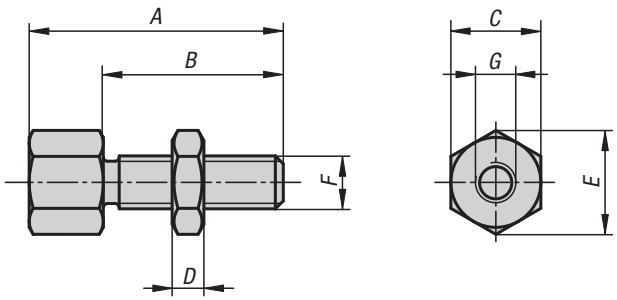
Sample order:
K0821.120750

Note:
Extension pieces are used to extend self-aligning pads, spring plungers, positioning feet, rest pads etc.

KIPP Extension pieces

Order No.	A	B	C	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



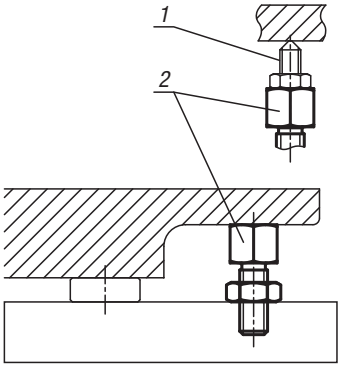
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0308.0803006

Drawing reference:
1) screw rest
2) jack screw

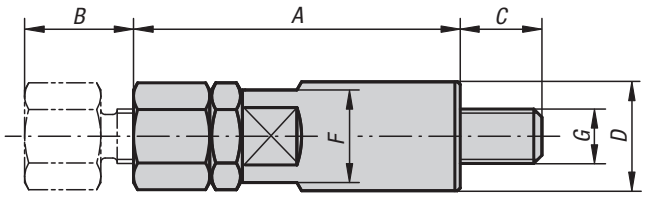
Jack screw for mounting various rests



KIPP Jack screws

Order No.	A	B	C	D	E	F	G
K0308.0803006	30	20	13	5	14,4	M8	M6x6
K0308.0804006	40	30	13	5	14,4	M8	M6x6
K0308.1003808	38	24	17	6	18,9	M10	M8x8
K0308.1004808	48	34	17	6	18,9	M10	M8x8
K0308.1205110	51	33	22	7	24,5	M12	M10x10
K0308.1206610	66	48	22	7	24,5	M12	M10x10
K0308.1606212	62	40	27	10	30,1	M16	M12x12
K0308.1607712	77	55	27	10	30,1	M16	M12x12

Jack screws extended



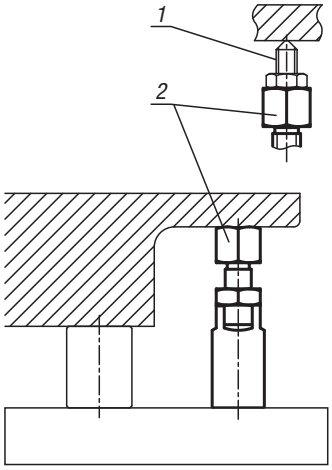
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
K0923.08040

Drawing reference:
1) screw rest
2) jack screw

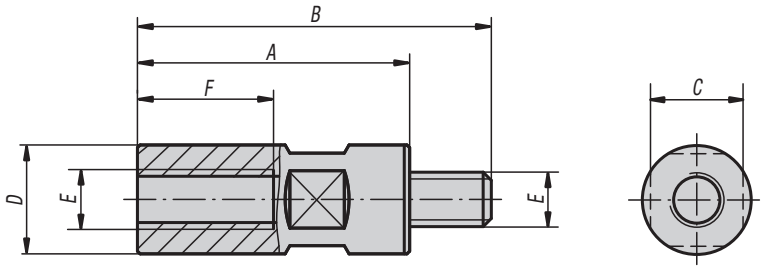
Jack screw for mounting various rests



KIPP Jack screws extended

Order No.	A	B	C	D	E	F	G	H
K0923.08040	40	10	12	16	13	13	M8	M6x6
K0923.08050	50	20	12	16	13	13	M8	M6x6
K0923.10050	50	10	14	20	17	17	M10	M8x8
K0923.10060	60	20	14	20	17	17	M10	M8x8
K0923.12065	65	15	19	24	22	22	M12	M10x10
K0923.12080	80	30	19	24	22	22	M12	M10x10
K0923.16080	80	15	24	32	27	27	M16	M12x12
K0923.16095	95	30	24	32	27	27	M16	M12x12

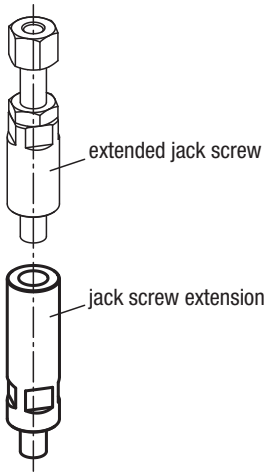
Extensions for jack screws



Material:
Carbon steel.

Version:
Black oxidised.

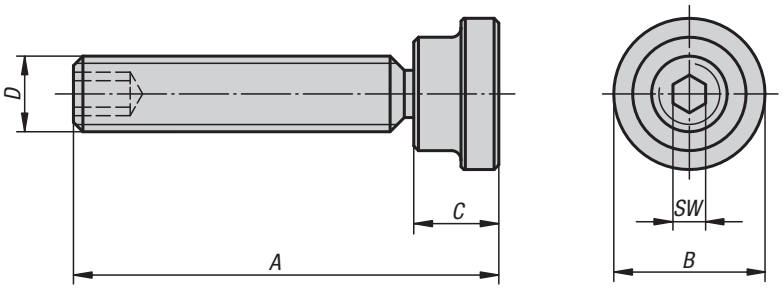
Sample order:
K0924.08032



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, version:
Thrust pad: carbon steel, tempered, black oxidised.
Grub screw: carbon steel, 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

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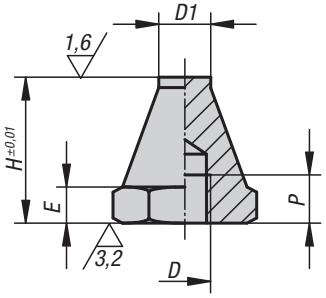

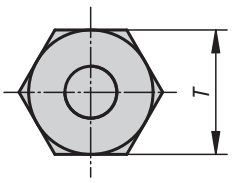

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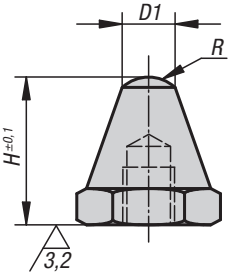

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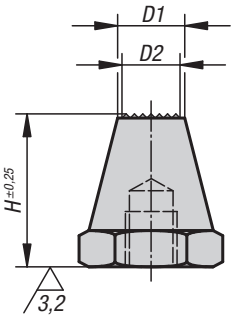

Material:
Body carbon steel.

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	T
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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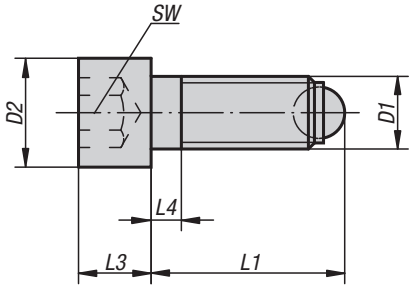

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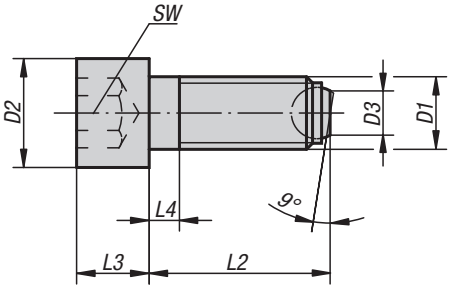


Material:
Screw carbon steel.
Ball ball-bearing steel.

Version:
Screw, grade 10.9, black.
Ball hardened, bright.

Sample order:
K0380.10820

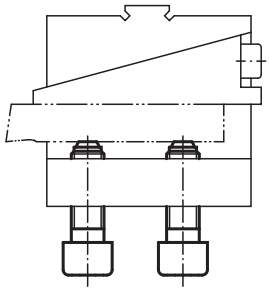
Note:
Form A with full ball is used when a clean, polished contact surface is required. Surfaces which are not flat and parallel can be firmly clamped or supported with Form B with flattened ball, the movable ball can adapt itself up to 9°.

Drawing reference:
Form A: full ball
Form B: flattened ball
Form BV: flattened ball non-rotating
Form F: flattened ball diamond grip
Form FV: flattened ball diamond grip non-rotating

KIPP Ball-end thrust screws with head

Order No.	Form	D1	L1	D2	L3	L4	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.10620	A	M6	20,8	10	6	3	4	5	9
K0380.10630	A	M6	30,8	10	6	3	4	5	9
K0380.10640	A	M6	40,8	10	6	16	4	5	9
K0380.10820	A	M8	21,2	13	8	3,5	5,5	6	15
K0380.10835	A	M8	36,2	13	8	3,5	5,5	6	15
K0380.10850	A	M8	51,2	13	8	22	5,5	6	15
K0380.11025	A	M10	26,7	16	10	4,5	7	8	20
K0380.11040	A	M10	41,7	16	10	4,5	7	8	20
K0380.11060	A	M10	61,7	16	10	28	7	8	20
K0380.11230	A	M12	32	18	12	5	8,5	10	30
K0380.11250	A	M12	52	18	12	5	8,5	10	30
K0380.11280	A	M12	82	18	12	44	8,5	10	30
K0380.11640	A	M16	43,3	24	16	6	12	14	60
K0380.11660	A	M16	63,3	24	16	6	12	14	60
K0380.11680	A	M16	83,3	24	16	36	12	14	60
K0380.12050	A	M20	54,2	30	20	7,5	15	17	90
K0380.12080	A	M20	84,2	30	20	28	15	17	90
K0380.120100	A	M20	104,2	30	20	48	15	17	90
K0380.12460	A	M24	64,7	36	24	9	18	19	120
K0380.12490	A	M24	94,7	36	24	30	18	19	120
K0380.124120	A	M24	124,7	36	24	60	18	19	120

Ball-end thrust screws with head



Order No. Form B	Order No. Form F	D1	D2	D3	L2	L3	L4	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.20620	-	M6	10	3,2	20	6	3	4	5	9
K0380.20630	-	M6	10	3,2	30	6	3	4	5	9
K0380.20640	-	M6	10	3,2	40	6	16	4	5	9
K0380.20820	-	M8	13	4,5	20	8	3,5	5,5	6	15
K0380.20835	-	M8	13	4,5	35	8	3,5	5,5	6	15
K0380.20850	-	M8	13	4,5	50	8	22	5,5	6	15
K0380.21025	K0380.31025	M10	16	6	25	10	4,5	7	8	20
K0380.21040	K0380.31040	M10	16	6	40	10	4,5	7	8	20
K0380.21060	K0380.31060	M10	16	6	60	10	28	7	8	20
K0380.21230	K0380.31230	M12	18	7,2	30	12	5	8,5	10	30
K0380.21250	K0380.31250	M12	18	7,2	50	12	5	8,5	10	30
K0380.21280	K0380.31280	M12	18	7,2	80	12	44	8,5	10	30
K0380.21640	K0380.31640	M16	24	10,7	40	16	6	12	14	60
K0380.21660	K0380.31660	M16	24	10,7	60	16	6	12	14	60
K0380.21680	K0380.31680	M16	24	10,7	80	16	36	12	14	60
K0380.22050	-	M20	30	13,5	50	20	7,5	15	17	90
K0380.22080	-	M20	30	13,5	80	20	28	15	17	90
K0380.220100	-	M20	30	13,5	100	20	48	15	17	90
K0380.22460	-	M24	36	15,8	60	24	9	18	19	120
K0380.22490	-	M24	36	15,8	90	24	30	18	19	120
K0380.224120	-	M24	36	15,8	120	24	60	18	19	120

Order No. Form BV	Order No. Form FV	D1	D2	D3	L2	L3	L4	Ball-Ø	SW	Load rating max. kN (static load only)
K0380.40820	-	M8	13	4,5	20	8	3,5	5,5	6	9
K0380.40835	-	M8	13	4,5	35	8	3,5	5,5	6	9
K0380.40850	-	M8	13	4,5	50	8	22	5,5	6	9
K0380.41025	K0380.51025	M10	16	6	25	10	4,5	7	8	12
K0380.41040	K0380.51040	M10	16	6	40	10	4,5	7	8	12
K0380.41060	K0380.51060	M10	16	6	60	10	28	7	8	12
K0380.41230	K0380.51230	M12	18	7,2	30	12	5	8,5	10	18
K0380.41250	K0380.51250	M12	18	7,2	50	12	5	8,5	10	18
K0380.41280	K0380.51280	M12	18	7,2	80	12	44	8,5	10	18
K0380.41640	K0380.51640	M16	24	10,7	40	16	6	12	14	36
K0380.41660	K0380.51660	M16	24	10,7	60	16	6	12	14	36
K0380.41680	K0380.51680	M16	24	10,7	80	16	36	12	14	36

Ball-end thrust screws without head

with full ball

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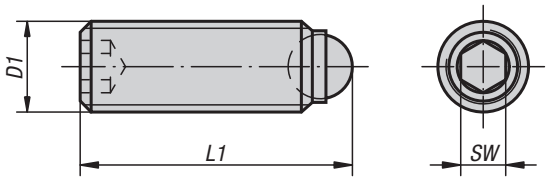


Material:
Screw carbon steel, grade 10.9
Ball, ball-bearing steel or POM.

Version:
Screw black.
Ball hardened bright or POM.

Sample order:
K0383.10810

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.

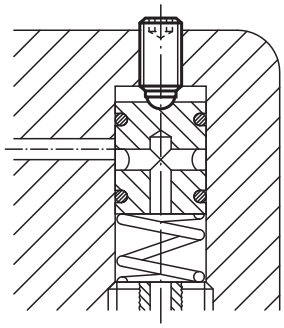
Drawing reference:
Form A: steel ball
Form D: POM ball

KIPP Ball-end thrust screws without head with full ball

Order No. Form A	Order No. Form D	D1	L1	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
K0383.10660	-	M6	60,8	4	3	9
K0383.10680	-	M6	80,8	4	3	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	D1	L1	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.10810	K0383.30810	M8	11,2	5,5	4	10/1,5
K0383.10812	K0383.30812	M8	13,2	5,5	4	10/1,5
K0383.10816	K0383.30816	M8	17,2	5,5	4	15/1,5
K0383.10820	K0383.30820	M8	21,2	5,5	4	15/1,5
K0383.10825	K0383.30825	M8	26,2	5,5	4	15/1,5
K0383.10830	K0383.30830	M8	31,2	5,5	4	15/1,5
K0383.10850	-	M8	51,2	5,5	4	15
K0383.10860	-	M8	61,2	5,5	4	15
K0383.10880	-	M8	81,2	5,5	4	15
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
K0383.11230	K0383.31230	M12	32	8,5	6	30/3
K0383.11232	-	M12	34	8,5	6	30
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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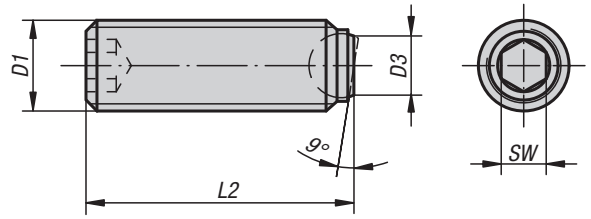


KIPP Ball-end thrust screws without head with flattened POM ball

Order No.	Form	D1	D3	L2	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
K0383.7058	C	M5	2,1	7,8	3	2,5	0,5
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
K0383.70525	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
K0383.70812	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
K0383.70830	C	M8	4,2	30,4	5,5	4	1,5

KIPP Ball-end thrust screws without head with flattened serrated steel ball

Order No.	Form	D1	D3	L2	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
K0383.41230	F	M12	7,2	30	8,5	6	30
K0383.41240	F	M12	7,2	40	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

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

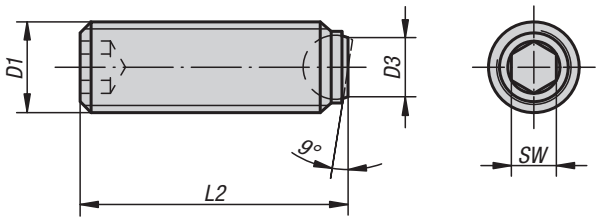
KIPP Ball-end thrust screws without head with flattened steel ball

Order No.	Form	D1	D3	L2	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
K0383.2058	B	M5	2	7,6	3	2,5	4,5
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
K0383.20520	B	M5	2	19,6	3	2,5	4,5
K0383.20525	B	M5	2	24,6	3	2,5	4,5
K0383.20610	B	M6	3	10,1	4	3	9
K0383.20612	B	M6	3	12,1	4	3	9
K0383.20616	B	M6	3	16,1	4	3	9
K0383.20620	B	M6	3	20,1	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
K0383.20680	B	M6	3	80,1	4	3	9
K0383.20810	B	M8	4,1	10,3	5,5	4	10
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
K0383.20825	B	M8	4,1	25,3	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
K0383.20880	B	M8	4,1	80,3	5,5	4	15
K0383.21012	B	M10	5,6	12,3	7	5	20
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
K0383.21035	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
K0383.21625	B	M16	10,7	25	12	8	60
K0383.21635	B	M16	10,7	35	12	8	60
K0383.21650	B	M16	10,7	50	12	8	60
K0383.22030	B	M20	13,5	30	15	10	90
K0383.22040	B	M20	13,5	40	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 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 with a flattened ball, the movable ball can adapt itself up to 9°.
Longer versions have been designed especially to be glued in. This allows mechanical connecting elements with external 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	D1	D3	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0383.50612	-	M6	3	12,1	4	3	6
K0383.50616	-	M6	3	16,1	4	3	6
K0383.50620	-	M6	3	20,1	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
K0383.51020	K0383.61020	M10	5,6	20,3	7	5	12
K0383.51025	K0383.61025	M10	5,6	25,3	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
K0383.52450	K0383.62450	M24	15,8	50	18	12	80
K0383.52480	K0383.62480	M24	15,8	80	18	12	80

Notes

Self-aligning pads

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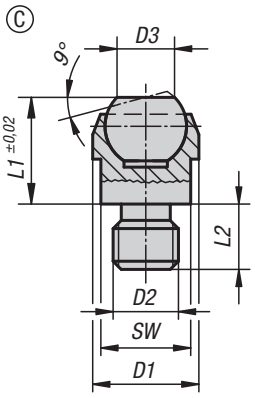

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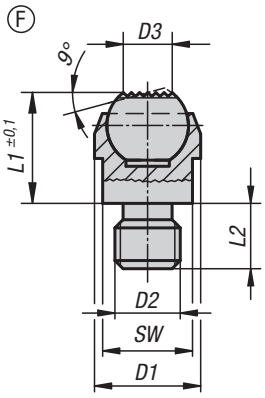

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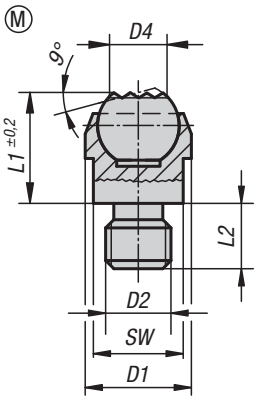

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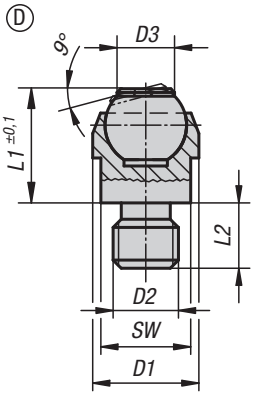

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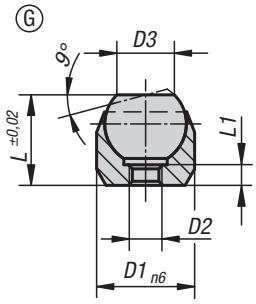

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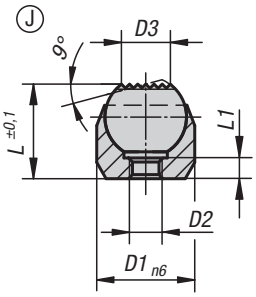

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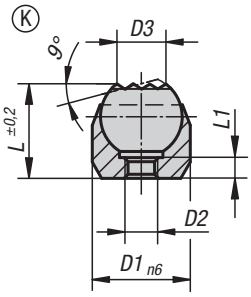

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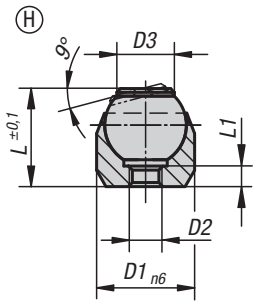
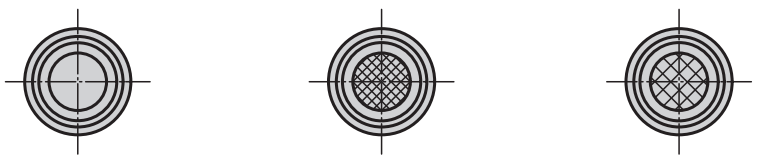




Material:
Body carbon steel.
Ball, ball bearing steel 1.2067.
Form D: Ball with POM insert.
Form H: Ball with POM insert.
Form K: Ball with carbide insert.
Form M has a carbide ball.

Version:
Body tempered and phosphated.
Ball hardened.
Form M ball nickel plated.

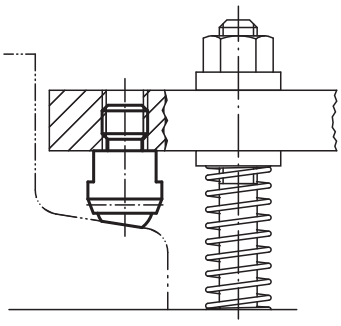
Sample order:
K0282.120

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 external thread, flattened ball, smooth.
Form D: with external thread, flattened ball, with POM insert.
Form F: with external thread, flattened ball, diamond grip.
Form M: with external thread, flattened ball, diamond grip.
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	D1	D2	D3	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.108	C	13	M8	7,2	13	8	10	11	10
K0282.110	C	20	M10	10,5	18	10	16	17	25
K0282.112	C	20	M12	10,5	18	12	16	17	25
K0282.116	C	30	M16	20	27	16	25	27	90
K0282.120	C	50	M20	34,5	35	20	40	41	165

Order No.	Form	D1	D2	D3	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.208	D	13	M8	7,9	13	8	10	11	10
K0282.210	D	20	M10	12,7	18	10	16	17	25
K0282.212	D	20	M12	12,7	18	12	16	17	25

Order No.	Form	D1	D2	D3	L1	L2	Ball-Ø	SW	Load rating max. kN (static load only)
K0282.308	F	13	M8	7,2	13	8	10	11	10
K0282.310	F	20	M10	10,5	18	10	16	17	25
K0282.312	F	20	M12	10,5	18	12	16	17	25
K0282.316	F	30	M16	20	27	16	25	27	90
K0282.320	F	50	M20	34,5	35	20	40	41	165

Order No.	Form	D1	D2	D4	L1	L2	SW	Ball-Ø	Load rating max. kN (static load only)
K0282.908	M	13	M8	7,7	13,3	8	11	10	10
K0282.910	M	20	M10	12	18	10	17	16	25
K0282.912	M	20	M12	12	18	12	17	16	25

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.403	G	12	M3	7,2	11	3,5	10	ø 12 H7 x 6 min.	10*
K0282.404	G	18	M4	10,5	17	4,4	16	ø 18 H7 x 8 min.	25*
K0282.405	G	28	M5	20	25	6,3	25	ø 28 H7 x 13 min.	90*

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.503	H	12	M3	7,9	11	3	10	ø 12 H7 x 6 min.	10*
K0282.504	H	18	M4	12,7	17	4	16	ø 18 H7 x 8 min.	25*
K0282.505	H	28	M5	19,05	25	6	25	ø 28 H7X13 min.	90*

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.603	J	12	M3	7,2	11	3,5	10	ø 12 H7 x 6 min.	10*
K0282.604	J	18	M4	10,5	17	4,4	16	ø 18 H7 x 8 min.	25*
K0282.605	J	28	M5	20	25	6,3	25	ø 28 H7 x 13 min.	90*

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Receiving hole	Load rating max. kN (static load only)
K0282.803	K	12	M3	7,9	11	3	10	ø 12 H7 x 6 min.	10*
K0282.804	K	18	M4	12,7	17	4	16	ø 18 H7 x 8 min.	25*
K0282.805	K	28	M5	19,05	25	6	25	ø 28 H7X13 min.	90*

Self-aligning pads

swivel angle 12°

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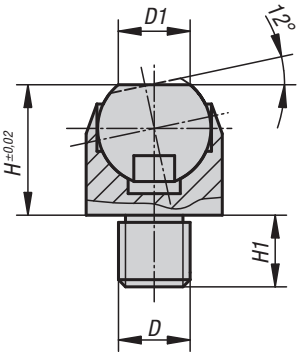

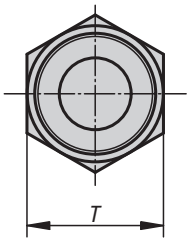

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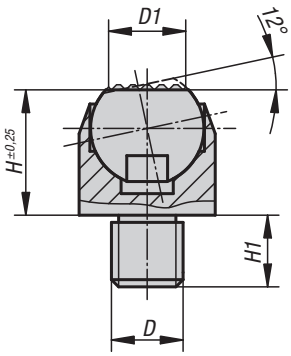

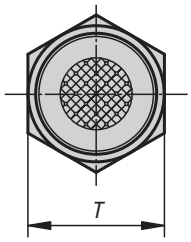

Material:
Body carbon steel.
Ball, ball-bearing steel 1.3505.

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	D	D1	H	H1	Ball-Ø	T	Load rating max. kN (static load only)
K0302.106	**K0302.306**	M6	6,7	13	7	10	13	10
K0302.108	**K0302.308**	M8	6,7	13	8	10	13	10
K0302.110	**K0302.310**	M10	10	18	10	16	19	25
K0302.112	**K0302.312**	M12	10	18	12	16	19	25
K0302.116	**K0302.316**	M16	20	27	16	24	30	90
K0302.120	**K0302.320**	M20	20	27	20	24	30	90

Notes

Self-aligning pads

swivel angle 14° and 20°

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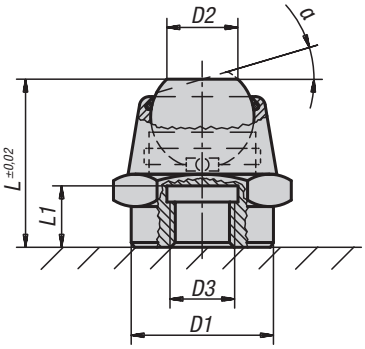

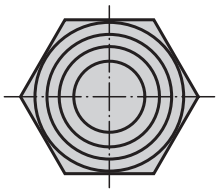

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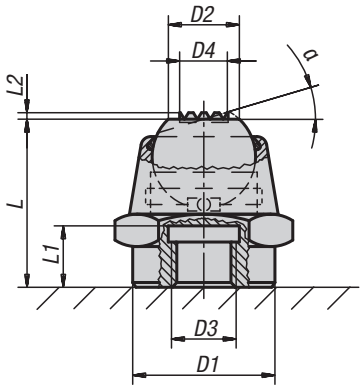

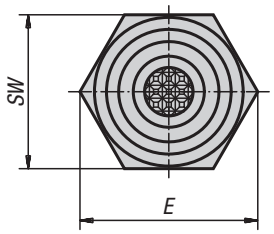

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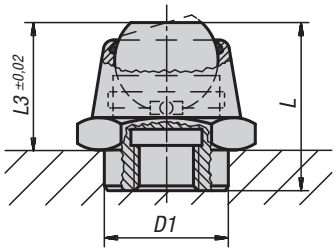
K0283.1161



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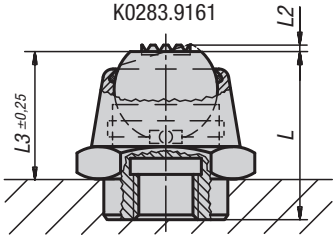


Material:
Body steel.
Ball rust and acid resistant steel.
Form M with carbide insert.

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 D3 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

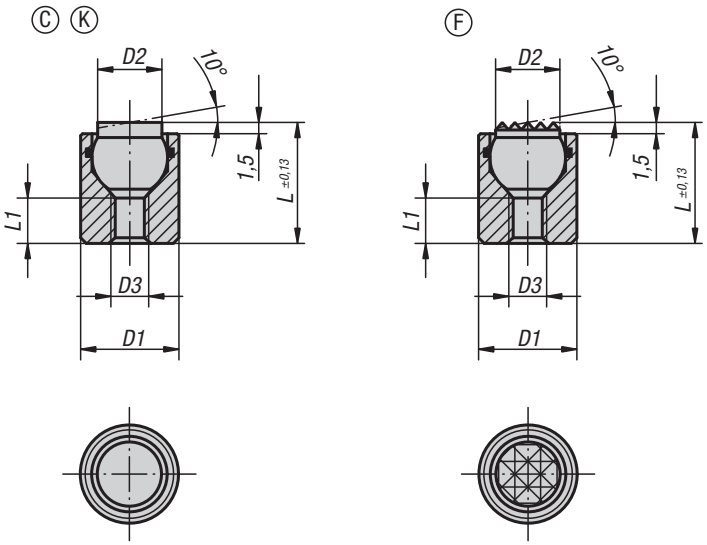
Order No.	Form	α	D1	D2	D3	L	L1	L3	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0283.1061	C	14°	12	7	M6	17,5	6	12,5	19,6	17	10	14
K0283.106	C	14°	16	7	M6	17,5	6	-	19,6	17	10	14
K0283.108	C	20°	22	11	M8	26	9	-	27,7	24	16	34
K0283.1101	C	20°	18	11	M10	26	9	20	27,7	24	16	34
K0283.110	C	20°	22	11	M10	26	9	-	27,7	24	16	34
K0283.112	C	20°	22	11	M12	26	9	-	27,7	24	16	34
K0283.1161	C	20°	26	18	M16	40	15	30	41,6	36	25	90
K0283.116	C	20°	34	18	M16	40	15	-	41,6	36	25	90
K0283.120	C	20°	34	18	M20	40	15	-	41,6	36	25	90

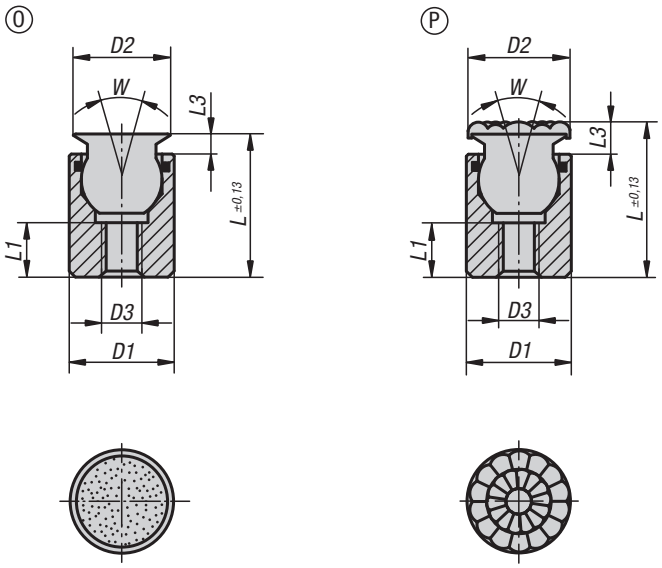
KIPP Form M, flattened ball, carbide steel diamond grip

Order No.	Form	α	D1	D2	D3	D4	L	L1	L2	L3	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0283.9061	M	14°	12	7	M6	5	17,5	6	0,6	12,5	19,6	17	10	14
K0283.906	M	14°	16	7	M6	5	17,5	6	0,6	-	19,6	17	10	14
K0283.908	M	20°	22	11	M8	7,5	26	9	0,8	-	27,7	24	16	34
K0283.9101	M	20°	18	11	M10	7,5	26	9	0,8	20	27,7	24	16	34
K0283.910	M	20°	22	11	M10	7,5	26	9	0,8	-	27,7	24	16	34
K0283.912	M	20°	22	11	M12	7,5	26	9	0,8	-	27,7	24	16	34
K0283.9161	M	20°	26	18	M16	13	40	15	0,9	30	41,6	36	25	90
K0283.916	M	20°	34	18	M16	13	40	15	0,9	-	41,6	36	25	90
K0283.920	M	20°	34	18	M20	13	40	15	0,9	-	41,6	36	25	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	L	L1	Ball-Ø	Load rating max. kN (static load only)
K0284.104X012	C	10	6	M4	12	4,5	7	12
K0284.104X025	C	10	6	M4	25	12	7	12
K0284.105X016	C	13	8,5	M5	16	5	10	20
K0284.105X025	C	13	8,5	M5	25	12	10	20

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Load rating max. kN (static load only)
K0284.304X012	F	10	6	M4	12	4,5	7	12
K0284.304X025	F	10	6	M4	25	12	7	12
K0284.305X016	F	13	8,5	M5	16	5	10	20
K0284.305X025	F	13	8,5	M5	25	12	10	20

KIPP Form K, flattened POM ball, smooth

Order No.	Form	D1	D2	D3	L	L1	Ball-Ø	Load rating max. kN (static load only)
K0284.704X012	K	10	6	M4	12	4,5	7	2
K0284.704X025	K	10	6	M4	25	12	7	2
K0284.705X016	K	13	8,5	M5	16	5	10	4
K0284.705X025	K	13	8,5	M5	25	12	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

Order No.	Form	D1	D2	D3	L	L1	L3	W	Ball-Ø	Load rating max. kN (static load only)
K0284.504X012	O	10	8	M4	12,5	3,5	2	28	7	11,5
K0284.504X025	O	10	8	M4	25,5	9	2	28	7	11,5
K0284.505X017	O	13	11	M5	17,5	6,5	3	28	10	19,8
K0284.505X026	O	13	11	M5	26,5	9	3	28	10	19,8
K0284.506X021	O	17	14	M6	21	7,5	3	28	13	27,4
K0284.508X024	O	19	19	M8	24	8,5	4	24	15	38,6
K0284.510X028	O	24	21	M10	28	9	4	24	20	58,3

KIPP Form P, stainless-steel ball with polyurethane face

Order No.	Form	D1	D2	D3	L	L1	L3	W	Ball-Ø
K0284.604X014	P	10	10	M4	14,5	3,5	4	28	7
K0284.604X027	P	10	10	M4	27,5	9	4	28	7
K0284.605X019	P	13	13	M5	19,5	6,5	5	28	10
K0284.605X028	P	13	13	M5	28,5	9	5	28	10
K0284.606X023	P	17	16	M6	23	7,5	5	28	13
K0284.608X026	P	19	21	M8	26	8,5	6	24	15
K0284.610X030	P	24	23	M10	30	9	6	24	20

Self-aligning pads

with O-ring and exchangeable inserts

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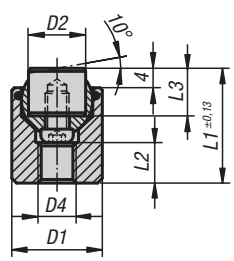

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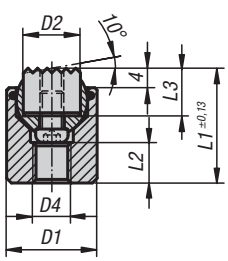

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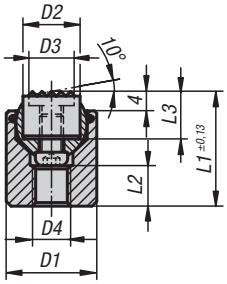

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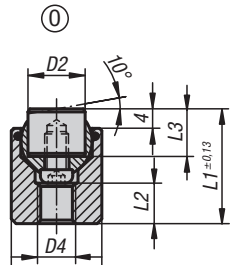

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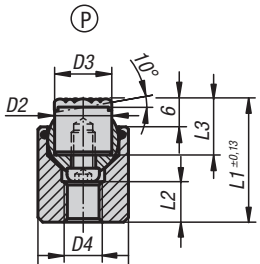


Material:
Body carbon steel.
Ball rust and acid resistant steel.
Inserts:
Form C, F, M tool steel
Form K POM
Form E stainless steel.
Form O stainless steel diamond impregnated.
Form P stainless steel with polyurethane surface.

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	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0285.117X022	C	17	10	M6	22	7	10	13	28	K0385.10108
K0285.119X024	C	19	12	M8	24	8	10	15	39	K0385.12108
K0285.124X028	C	24	16	M10	28	8	10	20	58	K0385.16108
K0285.130X030	C	30	20	M12	30	9	10	23	95	K0385.20108
K0285.136X036	C	36	25	M12	36	11	10	28	136	K0385.25108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	D1	D2	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0285.236X036	E	36	25	M12	36	11	10	28	136	K0385.25102
K0285.219X024	E	19	12	M8	24	8	10	15	39	K0385.12102
K0285.217X022	E	17	10	M6	22	7	10	13	28	K0385.10102
K0285.224X028	E	24	16	M10	28	8	10	20	58	K0385.16102
K0285.230X030	E	30	20	M12	30	9	10	23	95	K0385.20102

KIPP Form F, flattened, diamond grip

Order No.	Form	D1	D2	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0285.317X022	F	17	10	M6	22	7	10	13	28	K0385.1010
K0285.319X024	F	19	12	M8	24	8	10	15	39	K0385.1210
K0285.324X028	F	24	16	M10	28	8	10	20	58	K0385.1610
K0285.330X030	F	30	20	M12	30	9	10	23	95	K0385.2010
K0285.336X036	F	36	25	M12	36	11	10	28	136	K0385.2510

KIPP Form K, flattened POM insert, smooth

Order No.	Form	D1	D2	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0285.717X022	K	17	10	M6	22	7	10	13	4	K0385.10109
K0285.719X024	K	19	12	M8	24	8	10	15	7	K0385.12109
K0285.724X028	K	24	16	M10	28	8	10	20	14	K0385.16109
K0285.730X030	K	30	20	M12	30	9	10	23	27	K0385.20109
K0285.736X036	K	36	25	M12	36	11	10	28	47	K0385.25109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	D1	D2	D3	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0285.930X030	M	30	20	15,9	M12	30	9	10	23	95	K0385.20107
K0285.917X022	M	17	10	7,9	M6	22	7	10	13	28	K0385.10107
K0285.924X028	M	24	16	12,7	M10	28	8	10	20	58	K0385.16107
K0285.919X024	M	19	12	9,5	M8	24	8	10	15	39	K0385.12107
K0285.936X036	M	36	25	19	M12	36	11	10	28	136	K0385.25107

KIPP Form O, stainless-steel insert, diamond impregnated

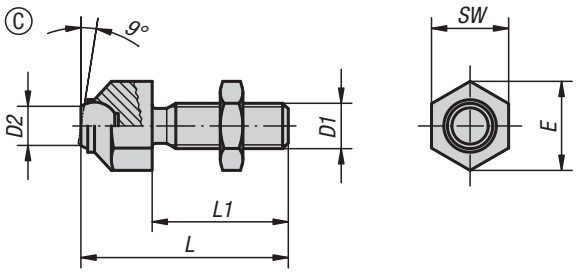
Order No.	Form	D1	D2	D4	L1	L2	L3	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0285.517X022	O	17	10	M6	22	7	10	13	28	K0385.10105
K0285.519X024	O	19	12	M8	24	8	10	15	39	K0385.12105
K0285.524X028	O	24	16	M10	28	8	10	20	58	K0385.16105
K0285.530X030	O	30	20	M12	30	9	10	23	95	K0385.20105
K0285.536X036	O	36	25	M12	36	11	10	28	136	K0385.25105

KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	D1	D2	D3	D4	L1	L2	L3	Ball-Ø	Order No. stainless steel insert, polyurethane surface
K0285.617X024	P	17	10	10	M6	24	7	12	13	K0385.10126
K0285.619X026	P	19	12	13	M8	26	8	12	15	K0385.12126
K0285.624X030	P	24	16	16	M10	30	8	12	20	K0385.16126
K0285.630X032	P	30	20	21	M12	32	9	12	23	K0385.20126
K0285.636X038	P	36	25	27	M12	38	11	12	28	K0385.25126

Self-aligning pads

adjustable

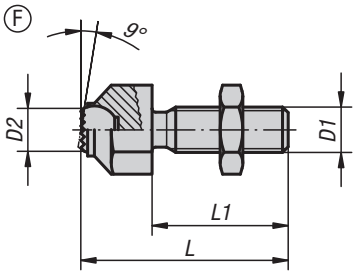


Material:
Steel.

Version:
Housing tempered and manganese phosphated.
Ball hardened, bright.
Nut black oxidised.

Sample order:
K0287.316

Note:
Ball secured against rotation.



KIPP Form C, flattened ball, flat face

Order No.	Form	D1	D2	L	L1	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0287.108	C	M8	5,8	36,6	25	14,5	13	8,5	8
K0287.110	C	M10	8,6	45,7	30	19	17	12	8
K0287.112	C	M12	8,6	50,7	35	19	17	12	15
K0287.116	C	M16	10,5	60,7	40	27	24	16	25
K0287.120	C	M20	20	77,3	50	33	30	25	90

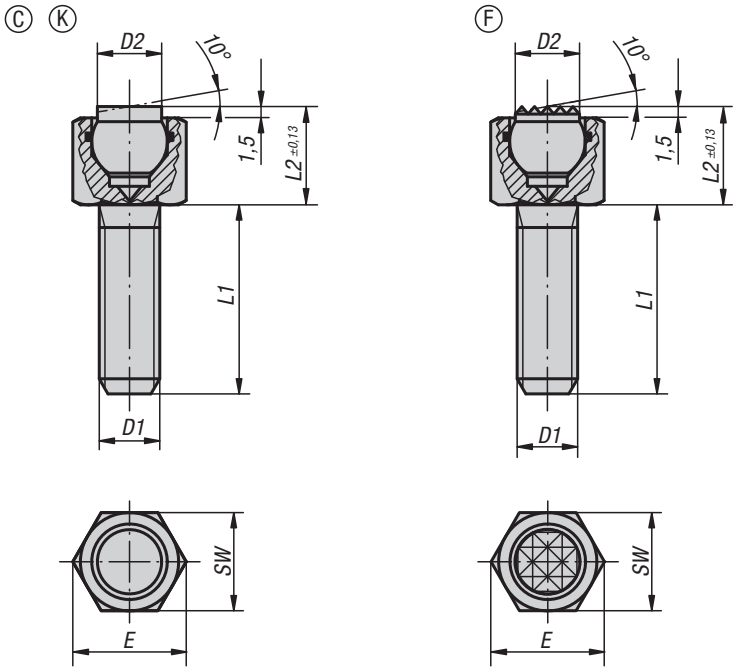
KIPP Form F, flattened ball, diamond grip

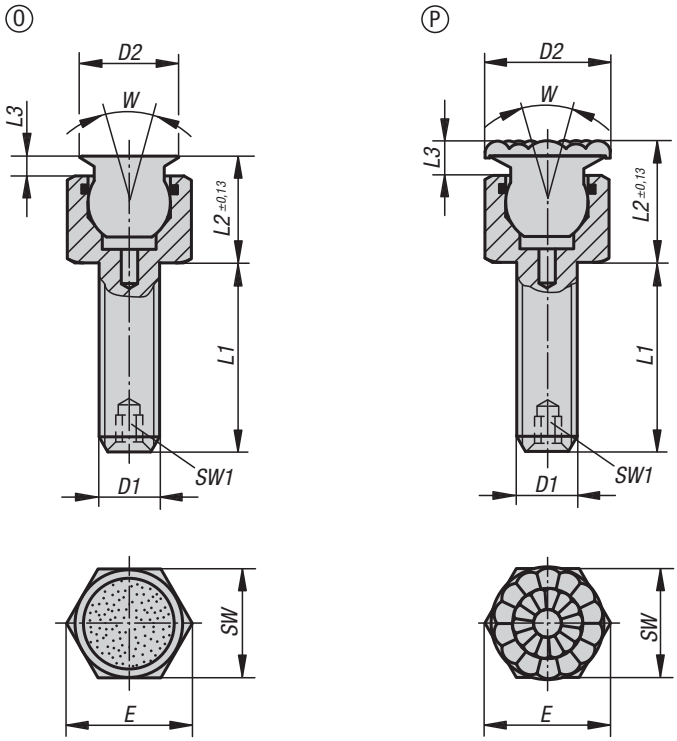
Order No.	Form	D1	D2	L	L1	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0287.308	F	M8	5,8	36,6	25	14,5	13	8,5	8
K0287.310	F	M10	8,6	45,7	30	19	17	12	8
K0287.312	F	M12	8,6	50,7	35	19	17	12	15
K0287.316	F	M16	10,5	60,7	40	27	24	16	25
K0287.320	F	M20	20	77,3	50	33	30	25	90

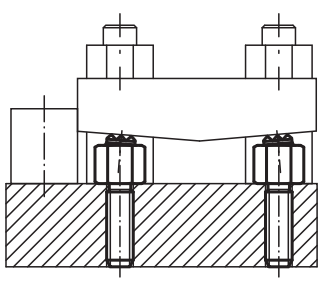
Notes

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 L1)

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	D1	D2	L1	L2	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.106X012	C	M6	6	12	9,5	11,5	10	7	9
K0288.106X025	C	M6	6	25	9,5	11,5	10	7	9
K0288.106X040	C	M6	6	40	9,5	11,5	10	7	9
K0288.108X012	C	M8	8,5	12	13	15	13	10	15
K0288.108X025	C	M8	8,5	25	13	15	13	10	15
K0288.108X040	C	M8	8,5	40	13	15	13	10	15

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	D1	D2	L1	L2	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.306X012	F	M6	6	12	9,5	11,5	10	7	9
K0288.306X025	F	M6	6	25	9,5	11,5	10	7	9
K0288.306X040	F	M6	6	40	9,5	11,5	10	7	9
K0288.308X012	F	M8	8,5	12	13	15	13	10	15
K0288.308X025	F	M8	8,5	25	13	15	13	10	15
K0288.308X040	F	M8	8,5	40	13	15	13	10	15

KIPP Form K, flattened POM ball, smooth

Order No.	Form	D1	D2	L1	L2	E	SW	Ball-Ø	Load rating max. kN (static load only)
K0288.706X012	K	M6	6	12	9,5	11,5	10	7	2
K0288.706X025	K	M6	6	25	9,5	11,5	10	7	2
K0288.706X040	K	M6	6	40	9,5	11,5	10	7	2
K0288.708X012	K	M8	8,5	12	13	15	13	10	4
K0288.708X025	K	M8	8,5	25	13	15	13	10	4
K0288.708X040	K	M8	8,5	40	13	15	13	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

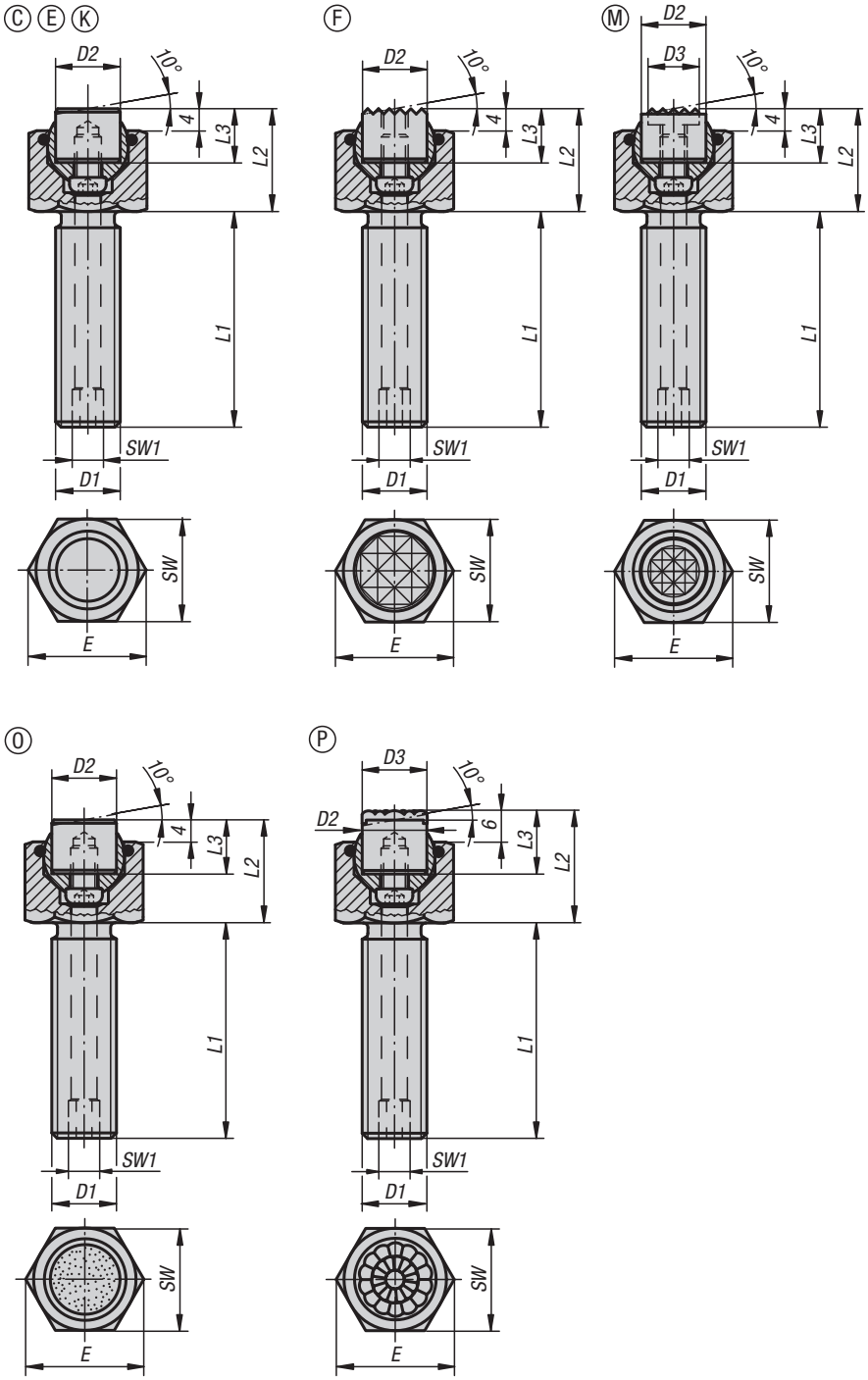
Order No.	Form	D1	D2	L1	L2	L3	E	SW	SW1	W	Ball-Ø	Load rating max. kN (static load only)
K0288.506X	O	M6	8	12/25/40	10	2	11,5	10	-	28	7	9,2
K0288.508X	O	M8	11	12/25/40	14,5	3	15	13	-	28	10	15,5
K0288.512X	O	M12	19	20/40/60	19	4	21,9	19	5	24	15	29,8
K0288.510X	O	M10	14	15/30/50	16	3	19,6	17	3	28	13	18,8
K0288.516X	O	M16	21	25/50/80	23	4	27,7	24	6	24	20	50,3

KIPP Form P, stainless-steel ball with polyurethane face

Order No.	Form	D1	D2	L1	L2	L3	E	SW	SW1	W	Ball-Ø
K0288.612X	P	M12	21	20/40/60	21	6	21,9	19	5	24	15
K0288.610X	P	M10	16	15/30/50	18	5	19,6	17	3	28	13
K0288.608X	P	M8	13	12/25/40	16,5	5	15	13	-	28	10
K0288.606X	P	M6	10	12/25/40	12	4	11,5	10	-	28	7
K0288.616X	P	M16	23	25/50/80	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	D1	D2	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0289.110X015	C	M10	10	15	17	10	19,6	17	3	13	19	K0385.10108
K0289.110X030	C	M10	10	30	17	10	19,6	17	3	13	19	K0385.10108
K0289.110X050	C	M10	10	50	17	10	19,6	17	3	13	19	K0385.10108
K0289.112X020	C	M12	12	20	19	10	21,9	19	5	15	30	K0385.12108
K0289.112X040	C	M12	12	40	19	10	21,9	19	5	15	30	K0385.12108
K0289.112X060	C	M12	12	60	19	10	21,9	19	5	15	30	K0385.12108
K0289.116X025	C	M16	16	25	23	10	27,7	24	6	20	50	K0385.16108
K0289.116X050	C	M16	16	50	23	10	27,7	24	6	20	50	K0385.16108
K0289.116X080	C	M16	16	80	23	10	27,7	24	6	20	50	K0385.16108
K0289.120X030	C	M20	20	30	24	10	34,6	30	8	23	85	K0385.20108
K0289.120X060	C	M20	20	60	24	10	34,6	30	8	23	85	K0385.20108
K0289.120X100	C	M20	20	100	24	10	34,6	30	8	23	85	K0385.20108
K0289.124X040	C	M24	25	40	30	10	41,6	36	10	28	121	K0385.25108
K0289.124X100	C	M24	25	100	30	10	41,6	36	10	28	121	K0385.25108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	D1	D2	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0289.210X015	E	M10	10	15	17	10	19,6	17	3	13	19	K0385.10102
K0289.210X030	E	M10	10	30	17	10	19,6	17	3	13	19	K0385.10102
K0289.210X050	E	M10	10	50	17	10	19,6	17	3	13	19	K0385.10102
K0289.212X020	E	M12	12	20	19	10	21,9	19	5	15	30	K0385.12102
K0289.212X040	E	M12	12	40	19	10	21,9	19	5	15	30	K0385.12102
K0289.212X060	E	M12	12	60	19	10	21,9	19	5	15	30	K0385.12102
K0289.216X025	E	M16	16	25	23	10	27,7	24	6	20	50	K0385.16102
K0289.216X050	E	M16	16	50	23	10	27,7	24	6	20	50	K0385.16102
K0289.216X080	E	M16	16	80	23	10	27,7	24	6	20	50	K0385.16102
K0289.220X030	E	M20	20	30	24	10	34,6	30	8	23	85	K0385.20102
K0289.220X060	E	M20	20	60	24	10	34,6	30	8	23	85	K0385.20102
K0289.220X100	E	M20	20	100	24	10	34,6	30	8	23	85	K0385.20102
K0289.224X040	E	M24	25	40	30	10	41,6	36	10	28	121	K0385.25102
K0289.224X100	E	M24	25	100	30	10	41,6	36	10	28	121	K0385.25102

KIPP Form F, flattened, diamond grip

Order No.	Form	D1	D2	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0289.310X015	F	M10	10	15	17	10	19,6	17	3	13	19	K0385.1010
K0289.310X030	F	M10	10	30	17	10	19,6	17	3	13	19	K0385.1010
K0289.310X050	F	M10	10	50	17	10	19,6	17	3	13	19	K0385.1010
K0289.312X020	F	M12	12	20	19	10	21,9	19	5	15	30	K0385.1210
K0289.312X040	F	M12	12	40	19	10	21,9	19	5	15	30	K0385.1210
K0289.312X060	F	M12	12	60	19	10	21,9	19	5	15	30	K0385.1210
K0289.316X025	F	M16	16	25	23	10	27,7	24	6	20	50	K0385.1610
K0289.316X050	F	M16	16	50	23	10	27,7	24	6	20	50	K0385.1610
K0289.316X080	F	M16	16	80	23	10	27,7	24	6	20	50	K0385.1610
K0289.320X030	F	M20	20	30	24	10	34,6	30	8	23	85	K0385.2010
K0289.320X060	F	M20	20	60	24	10	34,6	30	8	23	85	K0385.2010
K0289.320X100	F	M20	20	100	24	10	34,6	30	8	23	85	K0385.2010
K0289.324X040	F	M24	25	40	30	10	41,6	36	10	28	121	K0385.2510
K0289.324X100	F	M24	25	100	30	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	D1	D2	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0289.710X015	K	M10	10	15	17	10	19,6	17	3	13	4	K0385.10109
K0289.710X030	K	M10	10	30	17	10	19,6	17	3	13	4	K0385.10109
K0289.710X050	K	M10	10	50	17	10	19,6	17	3	13	4	K0385.10109
K0289.712X020	K	M12	12	20	19	10	21,9	19	5	15	7	K0385.12109
K0289.712X040	K	M12	12	40	19	10	21,9	19	5	15	7	K0385.12109
K0289.712X060	K	M12	12	60	19	10	21,9	19	5	15	7	K0385.12109
K0289.716X025	K	M16	16	25	23	10	27,7	24	6	20	14	K0385.16109
K0289.716X050	K	M16	16	50	23	10	27,7	24	6	20	14	K0385.16109
K0289.716X080	K	M16	16	80	23	10	27,7	24	6	20	14	K0385.16109
K0289.720X030	K	M20	20	30	24	10	34,6	30	8	23	27	K0385.20109
K0289.720X060	K	M20	20	60	24	10	34,6	30	8	23	27	K0385.20109
K0289.720X100	K	M20	20	100	24	10	34,6	30	8	23	27	K0385.20109
K0289.724X040	K	M24	25	40	30	10	41,6	36	10	28	47	K0385.25109
K0289.724X100	K	M24	25	100	30	10	41,6	36	10	28	47	K0385.25109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	D1	D2	D3	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0289.910X015	M	M10	10	7,9	15	17	10	19,6	17	3	13	19	K0385.10107
K0289.910X030	M	M10	10	7,9	30	17	10	19,6	17	3	13	19	K0385.10107
K0289.910X050	M	M10	10	7,9	50	17	10	19,6	17	3	13	19	K0385.10107
K0289.912X020	M	M12	12	9,5	20	19	10	21,9	19	5	15	30	K0385.12107
K0289.912X040	M	M12	12	9,5	40	19	10	21,9	19	5	15	30	K0385.12107
K0289.912X060	M	M12	12	9,5	60	19	10	21,9	19	5	15	30	K0385.12107
K0289.916X025	M	M16	16	12,7	25	23	10	27,7	24	6	20	50	K0385.16107
K0289.916X050	M	M16	16	12,7	50	23	10	27,7	24	6	20	50	K0385.16107
K0289.916X080	M	M16	16	12,7	80	23	10	27,7	24	6	20	50	K0385.16107
K0289.920X030	M	M20	20	15,9	30	24	10	34,6	30	8	23	85	K0385.20107
K0289.920X060	M	M20	20	15,9	60	24	10	34,6	30	8	23	85	K0385.20107
K0289.920X100	M	M20	20	15,9	100	24	10	34,6	30	8	23	85	K0385.20107
K0289.924X040	M	M24	25	19	40	30	10	41,6	36	10	28	121	K0385.25107
K0289.924X100	M	M24	25	19	100	30	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

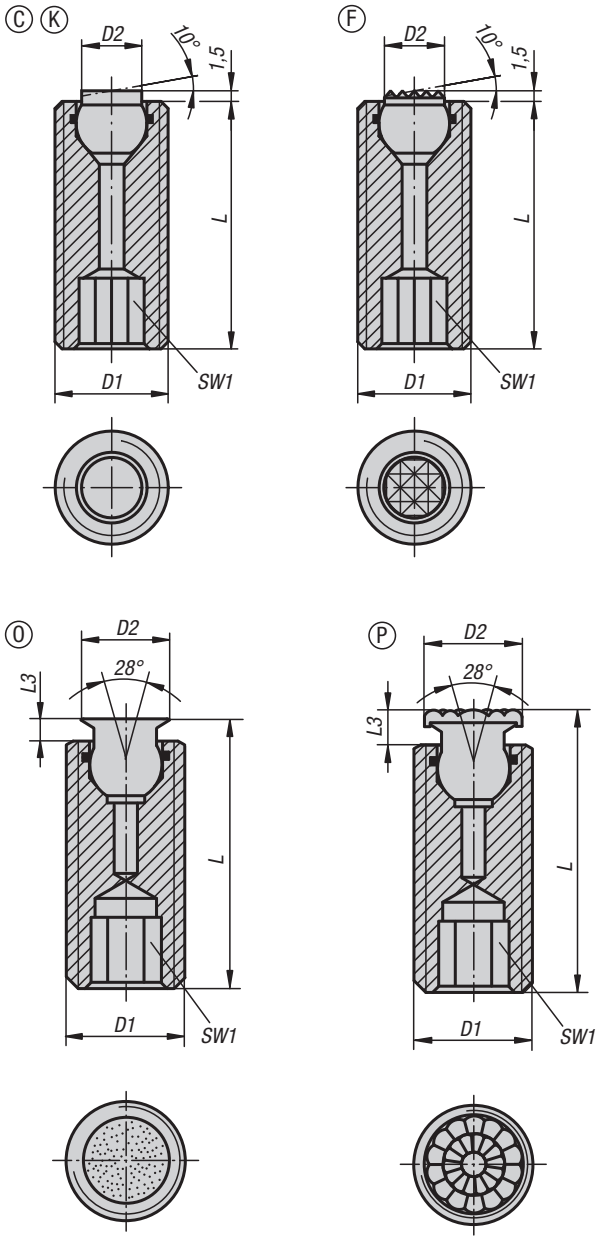
Order No.	Form	D1	D2	L1	L2	L3	E	SW	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0289.510X015	O	M10	10	15	17	10	19,6	17	3	13	19	K0385.10105
K0289.510X030	O	M10	10	30	17	10	19,6	17	3	13	19	K0385.10105
K0289.510X050	O	M10	10	50	17	10	19,6	17	3	13	19	K0385.10105
K0289.512X020	O	M12	12	20	19	10	21,9	19	5	15	30	K0385.12105
K0289.512X040	O	M12	12	40	19	10	21,9	19	5	15	30	K0385.12105
K0289.512X060	O	M12	12	60	19	10	21,9	19	5	15	30	K0385.12105
K0289.516X025	O	M16	16	25	23	10	27,7	24	6	20	50	K0385.16105
K0289.516X050	O	M16	16	50	23	10	27,7	24	6	20	50	K0385.16105
K0289.516X080	O	M16	16	80	23	10	27,7	24	6	20	50	K0385.16105
K0289.520X030	O	M20	20	30	24	10	34,6	30	8	23	85	K0385.20105
K0289.520X060	O	M20	20	60	24	10	34,6	30	8	23	85	K0385.20105
K0289.520X100	O	M20	20	100	24	10	34,6	30	8	23	85	K0385.20105
K0289.524X040	O	M24	25	40	30	10	41,6	36	10	28	121	K0385.25105
K0289.524X100	O	M24	25	100	30	10	41,6	36	10	28	121	K0385.25105

KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	D1	D2	D3	L1	L2	L3	E	SW	SW1	Ball-Ø	Order No. stainless steel insert, polyurethane surface
K0289.610X015	P	M10	10	10	15	19	12	19,6	17	3	13	K0385.10126
K0289.610X030	P	M10	10	10	30	19	12	19,6	17	3	13	K0385.10126
K0289.610X050	P	M10	10	10	50	19	12	19,6	17	3	13	K0385.10126
K0289.612X020	P	M12	12	13	20	21	12	21,9	19	5	15	K0385.12126
K0289.612X040	P	M12	12	13	40	21	12	21,9	19	5	15	K0385.12126
K0289.612X060	P	M12	12	13	60	21	12	21,9	19	5	15	K0385.12126
K0289.616X025	P	M16	16	16	25	25	12	27,7	24	6	20	K0385.16126
K0289.616X050	P	M16	16	16	50	25	12	27,7	24	6	20	K0385.16126
K0289.616X080	P	M16	16	16	80	25	12	27,7	24	6	20	K0385.16126
K0289.620X030	P	M20	20	21	30	26	12	34,6	30	8	23	K0385.20126
K0289.620X060	P	M20	20	21	60	26	12	34,6	30	8	23	K0385.20126
K0289.620X100	P	M20	20	21	100	26	12	34,6	30	8	23	K0385.20126
K0289.624X040	P	M24	25	27	40	32	12	41,6	36	10	28	K0385.25126
K0289.624X100	P	M24	25	27	100	32	12	41,6	36	10	28	K0385.25126

Self-aligning pads adjustable

with O-ring and hexagon socket



Material:
Body carbon steel.
Ball tool steel, Form K POM

Version:
Body tempered.
Ball hardened, black oxidised.
POM ball white.

Sample order:
K0290.510X026
(include length L)

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.

Ball secured against rotation.

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	D1	D2	L	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.112X025	C	M12	6	25	6	7	15
K0290.112X035	C	M12	6	35	6	7	15
K0290.112X050	C	M12	6	50	6	7	15
K0290.116X025	C	M16	8,5	25	8	10	23
K0290.116X035	C	M16	8,5	35	8	10	23
K0290.116X050	C	M16	8,5	50	8	10	23

KIPP Form F, flattened steel ball, diamond grip

Order No.	Form	D1	D2	L	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.312X025	F	M12	6	25	6	7	15
K0290.312X035	F	M12	6	35	6	7	15
K0290.312X050	F	M12	6	50	6	7	15
K0290.316X025	F	M16	8,5	25	8	10	23
K0290.316X035	F	M16	8,5	35	8	10	23
K0290.316X050	F	M16	8,5	50	8	10	23

KIPP Form K, flattened POM ball, smooth

Order No.	Form	D1	D2	L	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.712X025	K	M12	6	25	6	7	2
K0290.712X035	K	M12	6	35	6	7	2
K0290.712X050	K	M12	6	50	6	7	2
K0290.716X025	K	M16	8,5	25	8	10	4
K0290.716X035	K	M16	8,5	35	8	10	4
K0290.716X050	K	M16	8,5	50	8	10	4

KIPP Form O, stainless-steel ball, diamond impregnated

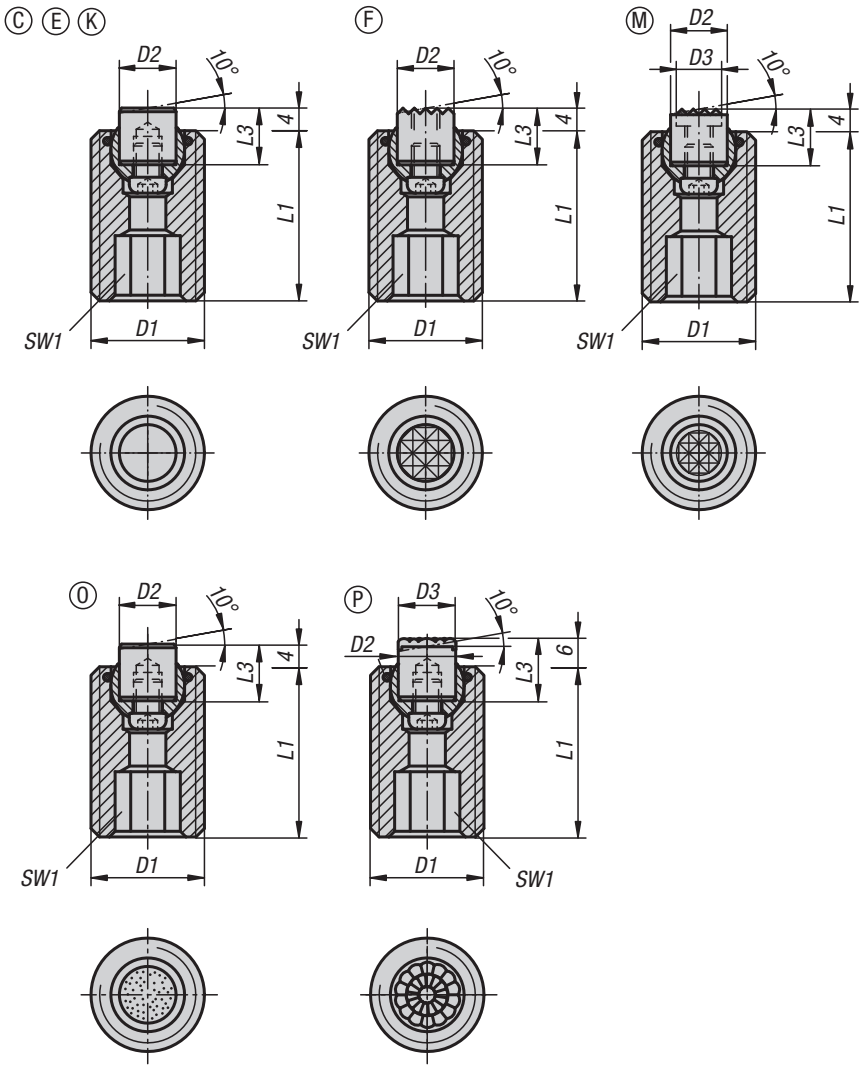
Order No.	Form	D1	D2	L	L3	SW1	Ball-Ø	Load rating max. kN (static load only)
K0290.510X	O	M10	6	26,5/36,5/51,5	1,5	5	5	-
K0290.512X	O	M12	8	27/37/52	2	6	7	15,4
K0290.516X	O	M16	11	28/38/53	3	8	10	23,3
K0290.520X	O	M20	14	33/53/73	3	10	13	37,7

KIPP Form P, stainless-steel ball with polyurethane face

Order No.	Form	D1	D2	L	L3	SW1	Ball-Ø
K0290.610X	P	M10	8	28,5/38,5/53,5	3,5	5	5
K0290.612X	P	M12	10	29/39/54	4	6	7
K0290.616X	P	M16	13	30/40/55	5	8	10
K0290.620X	P	M20	16	35/55/75	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	D1	D2	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. steel insert
K0291.120X030	C	M20	10	30	10	10	13	37	K0385.10108
K0291.120X050	C	M20	10	50	10	10	13	37	K0385.10108
K0291.120X070	C	M20	10	70	10	10	13	37	K0385.10108
K0291.124X040	C	M24	12	40	10	10	15	55	K0385.12108
K0291.124X080	C	M24	12	80	10	10	15	55	K0385.12108

KIPP Form E, flattened stainless steel insert, smooth

Order No.	Form	D1	D2	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert
K0291.220X030	E	M20	10	30	10	10	13	37	K0385.10102
K0291.220X050	E	M20	10	50	10	10	13	37	K0385.10102
K0291.220X070	E	M20	10	70	10	10	13	37	K0385.10102
K0291.224X040	E	M24	12	40	10	10	15	55	K0385.12102
K0291.224X080	E	M24	12	80	10	10	15	55	K0385.12102

KIPP Form F, flattened, diamond grip

Order No.	Form	D1	D2	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0291.320X030	F	M20	10	30	10	10	13	37	K0385.1010
K0291.320X050	F	M20	10	50	10	10	13	37	K0385.1010
K0291.320X070	F	M20	10	70	10	10	13	37	K0385.1010
K0291.324X040	F	M24	12	40	10	10	15	55	K0385.1210
K0291.324X080	F	M24	12	80	10	10	15	55	K0385.1210

KIPP Form K, flattened POM insert, smooth

Order No.	Form	D1	D2	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. POM insert
K0291.720X030	K	M20	10	30	10	10	13	4	K0385.10109
K0291.720X050	K	M20	10	50	10	10	13	4	K0385.10109
K0291.720X070	K	M20	10	70	10	10	13	4	K0385.10109
K0291.724X040	K	M24	12	40	10	10	15	7	K0385.12109
K0291.724X080	K	M24	12	80	10	10	15	7	K0385.12109

KIPP Form M, flattened, with carbide serrations

Order No.	Form	D1	D2	D3	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. gripper
K0291.920X030	M	M20	10	7,9	30	10	10	13	37	K0385.10107
K0291.920X050	M	M20	10	7,9	50	10	10	13	37	K0385.10107
K0291.920X070	M	M20	10	7,9	70	10	10	13	37	K0385.10107
K0291.924X040	M	M24	12	9,5	40	10	10	15	55	K0385.12107
K0291.924X080	M	M24	12	9,5	80	10	10	15	55	K0385.12107

KIPP Form O, stainless-steel insert, diamond impregnated

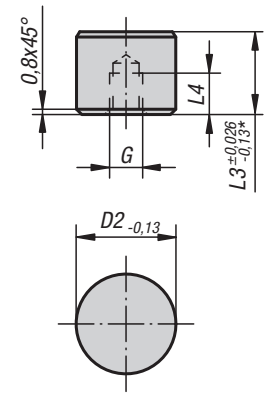
Order No.	Form	D1	D2	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, diamond surface
K0291.520X050	O	M20	10	50	10	10	13	37	K0385.10105
K0291.520X070	O	M20	10	70	10	10	13	37	K0385.10105
K0291.524X040	O	M24	12	40	10	10	15	55	K0385.12105
K0291.520X030	O	M20	10	30	10	10	13	37	K0385.10105
K0291.524X080	O	M24	12	80	10	10	15	55	K0385.12105

KIPP Form P, stainless-steel insert with polyurethane face

Order No.	Form	D1	D2	D3	L1	L3	SW1	Ball-Ø	Load rating max. kN (static load only)	Order No. stainless steel insert, polyurethane surface
K0291.620X030	P	M20	10	10	30	12	10	13	37	K0385.10126
K0291.620X050	P	M20	10	10	50	12	10	13	37	K0385.10126
K0291.620X070	P	M20	10	10	70	12	10	13	37	K0385.10126
K0291.624X040	P	M24	12	13	40	12	10	15	55	K0385.12126
K0291.624X080	P	M24	12	13	80	12	10	15	55	K0385.12126

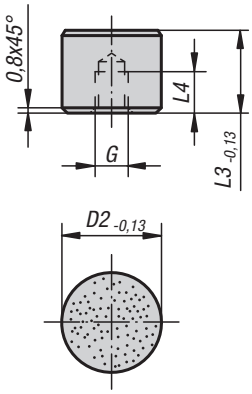
Grippers and inserts round

Form C, E, K

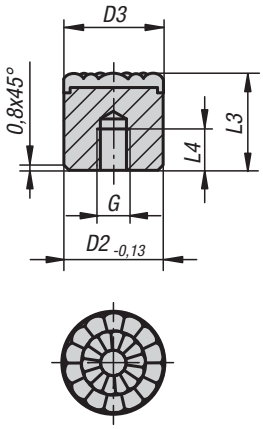


* Applies to Form K

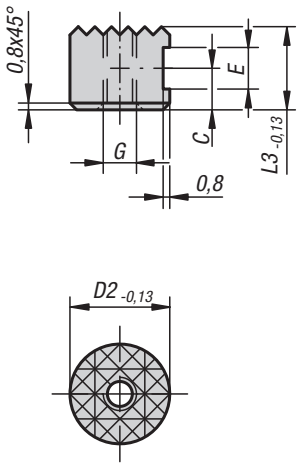
Form O
stainless steel insert
diamond impregnated



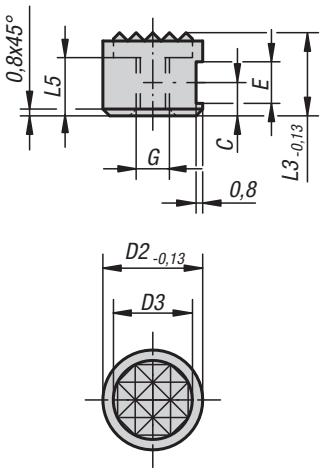
Form P
stainless steel insert,
PUR surface

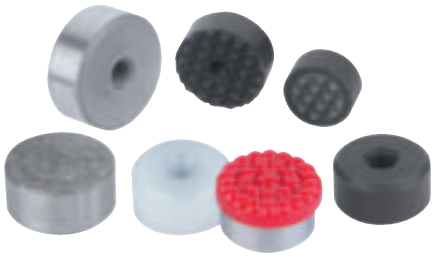


Form F
diamond grip insert



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 60 Shore.
Form F, hardened and black oxidised.
Form M with carbide serrations, black oxidised.

Sample order:
K0385.2510

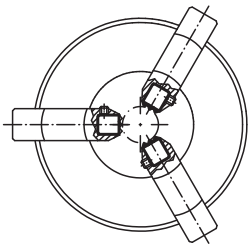
Note:
Grippers and inserts are ideal for use in clamping arms, gripping systems, clamping fixtures, clamping jaws and self-aligning pads. The use of grippers allows the transfer of very high torque values and above average grip, even with hard materials and surface irregularities.

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

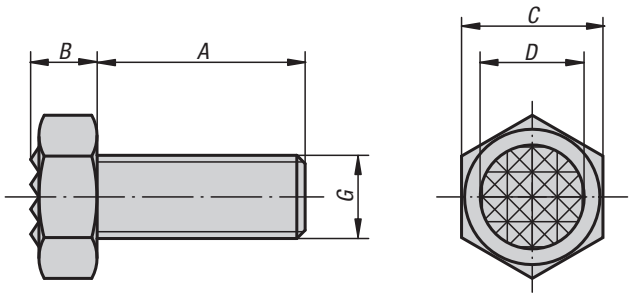
Order No.	Form	D2	D3	L3	L4	G
K0385.08126	P	8	8	12	6	M4
K0385.10126	P	10	10	12	6	M5
K0385.12126	P	12	13	12	6	M5
K0385.16126	P	16	16	12	6	M6
K0385.20126	P	20	21	12	6	M6
K0385.25126	P	25	27	12	6	M6

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

Gripper screws

hexagonal



Material:
Hex head screw, grade 10.9.
Serrations carbide, hardness 72-74 HRC.

Version:
Black oxidised.

Sample order:
K0386.1710

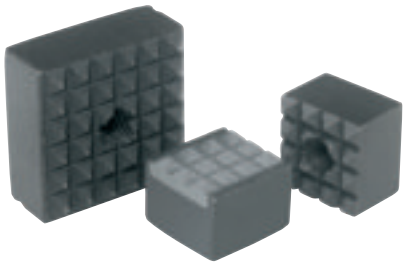
Note:
The serrated carbide tips are soldered in.

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	8,3	17	12,7	M10	fine
K0386.17102	40	8,3	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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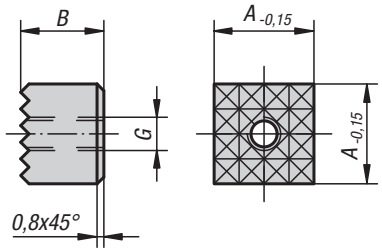

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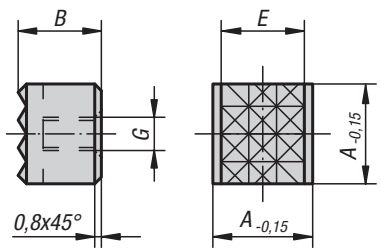

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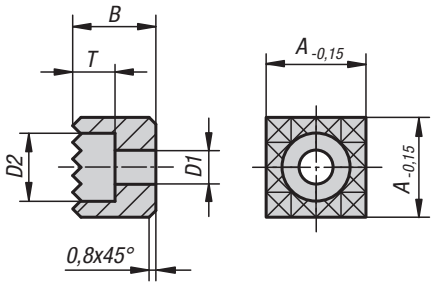


Material:
Hardened tool steel or carbide.

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.

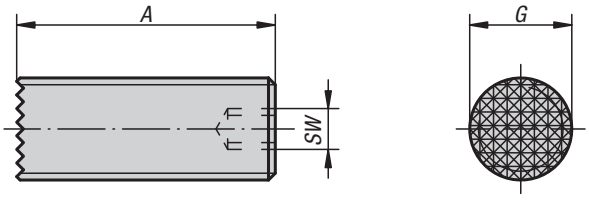
Drawing reference:
Form A: tool steel
Form B: tool steel, carbide diamond grip
Form C: tool steel

KIPP Grippers square

Order No.	Form	A	B	D1	D2	E	G	T	Serration
K0387.101205	A	10	12	-	-	-	M5	-	extra fine
K0387.121205	A	12	12	-	-	-	M5	-	fine
K0387.2005	A	20	10	-	-	-	M5	-	fine
K0387.2506	A	25	10	-	-	-	M6	-	fine
K0387.1005	A	10	10	-	-	-	M5	-	extra fine
K0387.1606	A	16	10	-	-	-	M6	-	fine
K0387.161206	A	16	12	-	-	-	M6	-	fine
K0387.251206	A	25	12	-	-	-	M6	-	fine
K0387.201205	A	20	12	-	-	-	M5	-	fine
K0387.1205	A	12	10	-	-	-	M5	-	fine
K0387.12057	B	12	10	-	-	10,3	M5	-	fine
K0387.2012058	C	20	12	5,5	10	-	-	6,6	fine
K0387.1210048	C	12	10	4,5	8	-	-	5,6	fine
K0387.1610048	C	16	10	4,5	8	-	-	5,6	fine
K0387.2010058	C	20	10	5,5	10	-	-	6,6	fine
K0387.1212048	C	12	12	4,5	8	-	-	5,6	fine
K0387.2510068	C	25	10	6,6	11	-	-	7,6	fine
K0387.2512068	C	25	12	6,6	11	-	-	7,6	fine
K0387.1612048	C	16	12	4,5	8	-	-	5,6	fine

Gripper studs

Ⓐ



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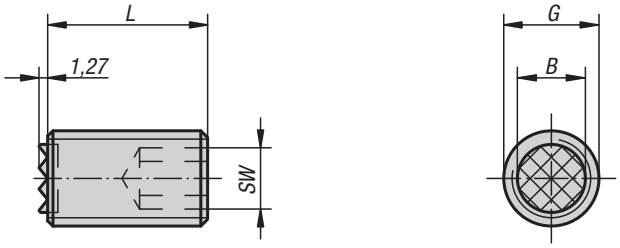

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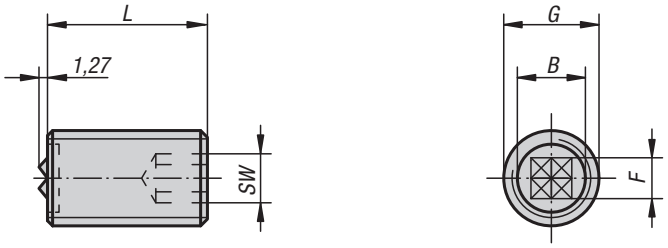


Material:
Hardened tool steel or carbide.

Version:
Black oxidised.

Sample order:
K0388.5012

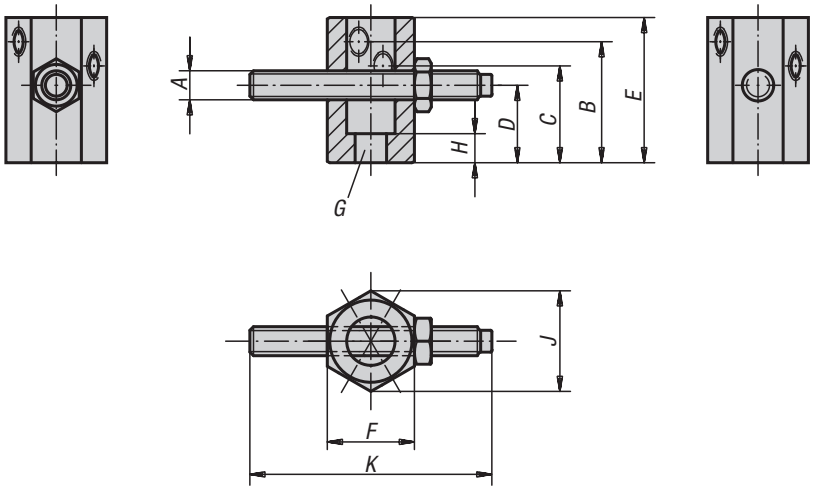
Note:
The full thread on the grippers allows exact adjustment to the clamping application.
The carbide tips are soldered in.

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

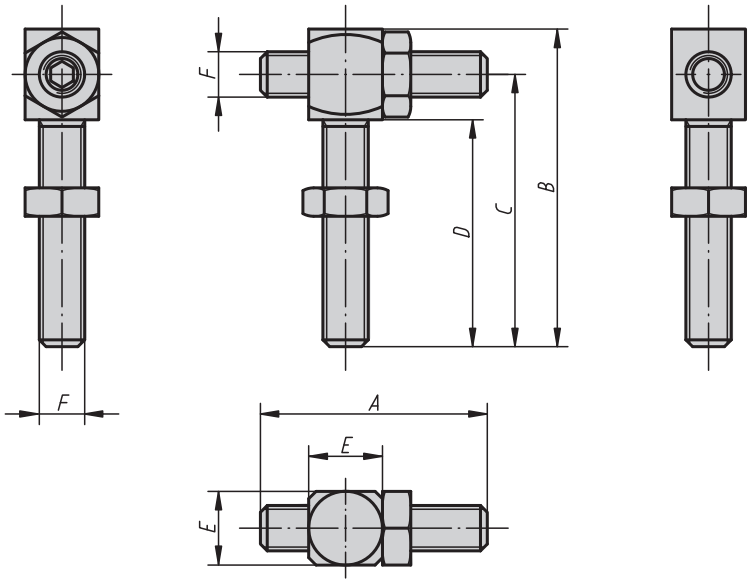
Note:
The adjustable stops have three tapped holes to accept the set screws.

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.

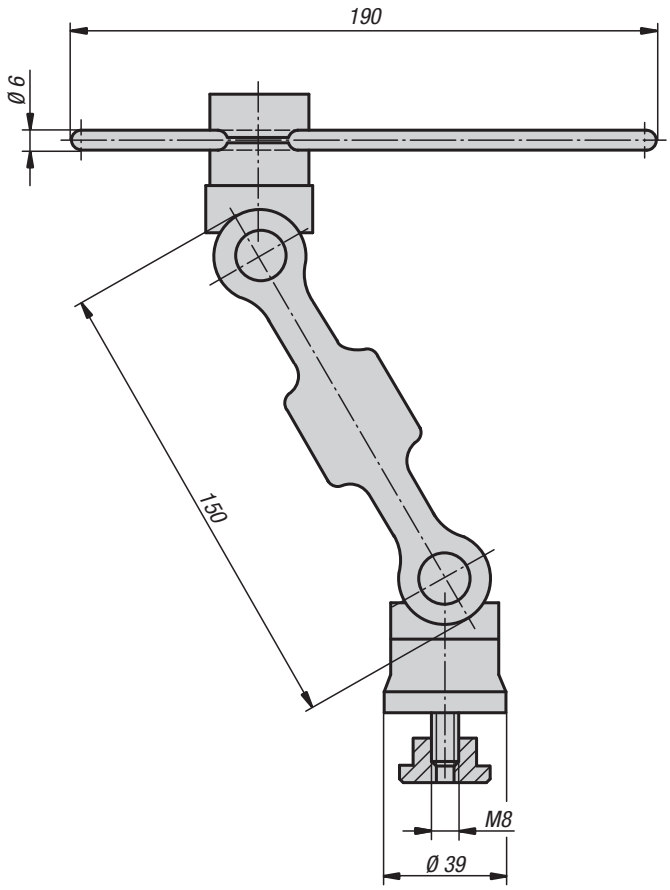
Version:
Black oxidised.

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

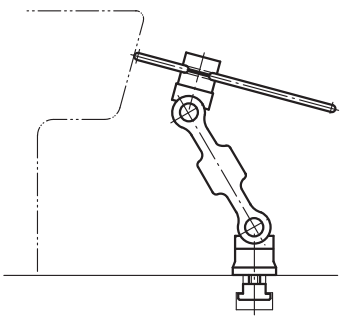


Material:
Clamping joint high-tensile aluminium.
Hinge pin, support plate and stop bar, steel.

Version:
Clamping joint anodized blue and black.
Hinge pins, support plate and stop bar black oxidised.

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.

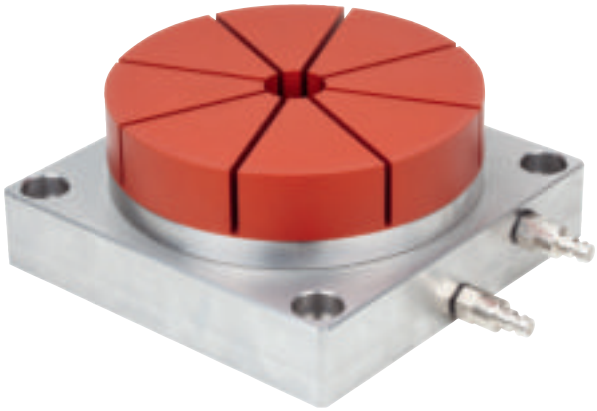
On request:
Connecting element for combining several 5D-swivelling stops.



KIPP 5D workpiece stops

Order No.	Size
K1234.15012	150

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

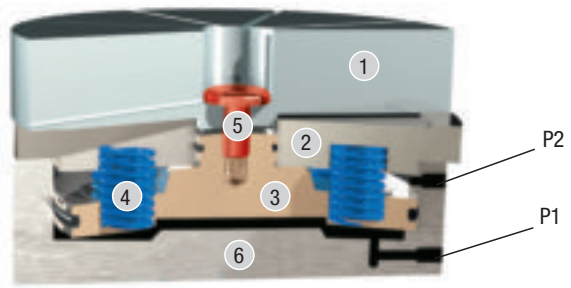
spring release pressure	spring clamping force	spring retaining force	post-clamping pressure	post-clamping force	post-clamping retaining force
6 bar	5.81 kN	2.8 kN	6 bar	13.39 kN	10.39 kN
6 bar	5.81 kN	2.8 kN	12 bar	20.93 kN	17.93 kN
6 bar	5.81 kN	2.8 kN	30 bar	43.55 kN	40.55 kN

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

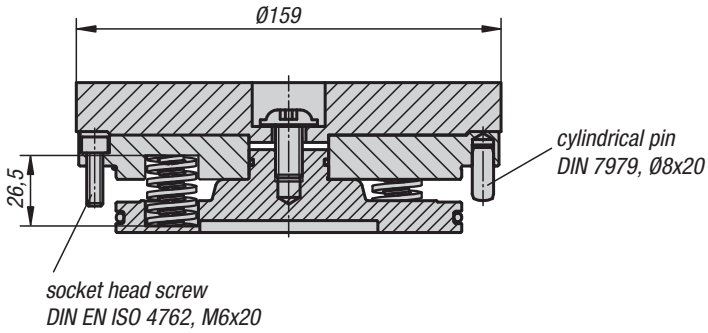
1



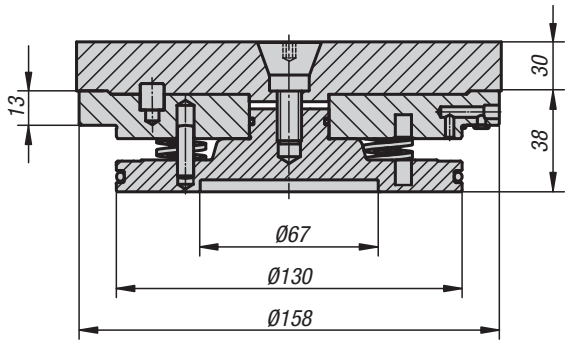
Machinable collet system

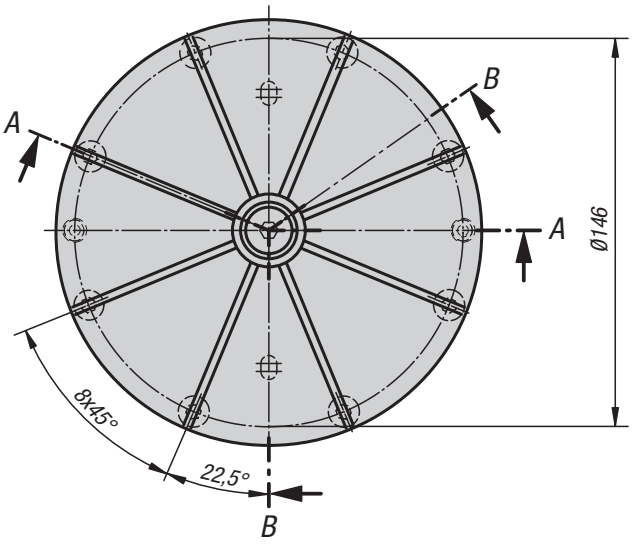
for self-installation

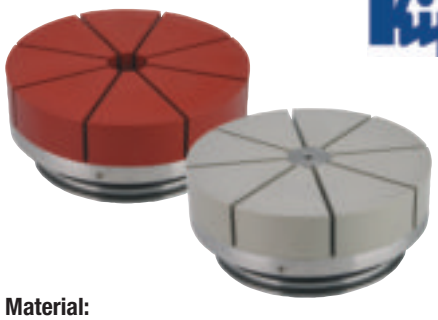
view A-A
external clamping



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 galvanized.
Collet red or clear anodized.

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

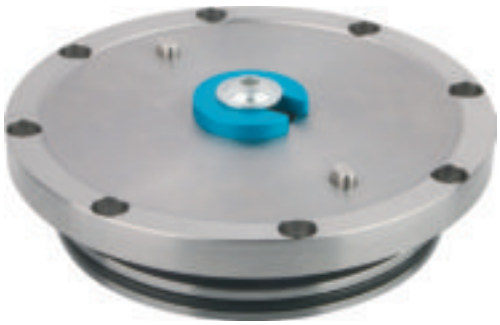


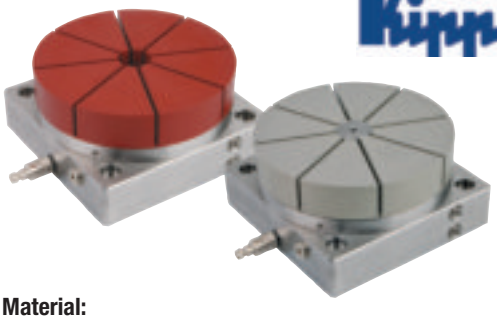
Illustration without collet with transport lock

KIPP Machinable collet system for self-installation

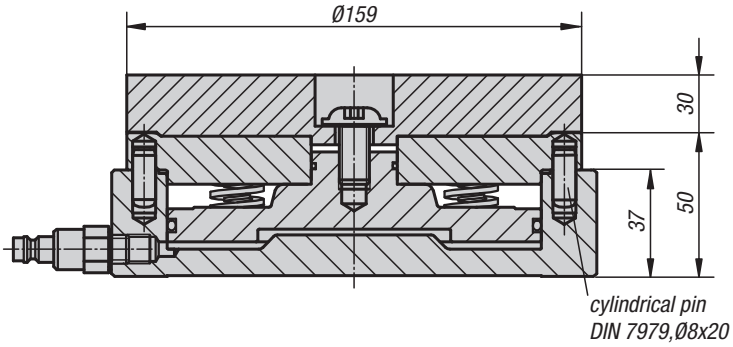
Order No.	Version	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)
K0500.116030	external clamping	Ø 30 - Ø 140	1-20	25
K0500.216030	internal clamping	Ø 30 - Ø 140	1-20	25

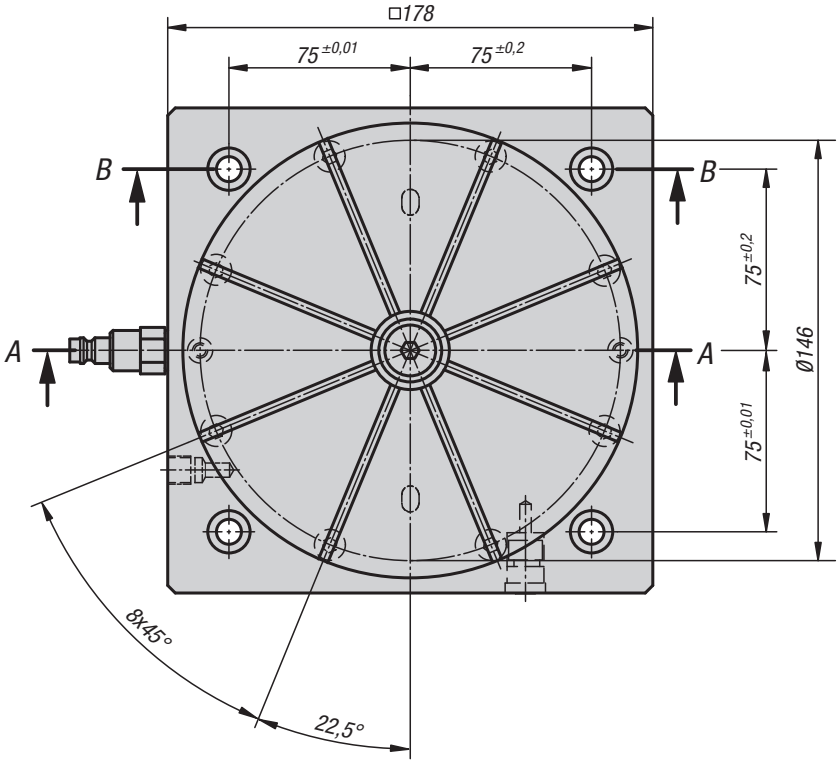
Machinable collet system

for grid plates

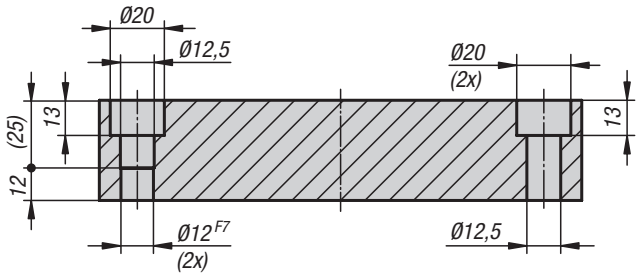


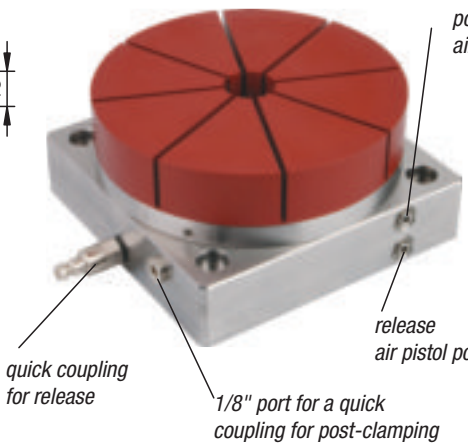
view A-A





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 galvanized.
Collet red or clear anodized.

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

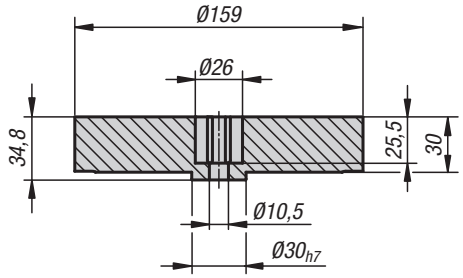
KIPP Machinable collet system for grid plates

Order No.	Version	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)	Suitable shoulder screw
K0501.11603050	external clamping	Ø 30 - Ø 140	1-20	25	K0815.12055
K0501.21603050	internal clamping	Ø 30 - Ø 140	1-20	25	K0815.12055

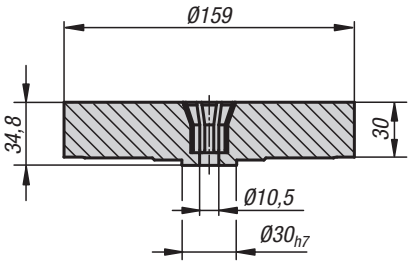
Collets

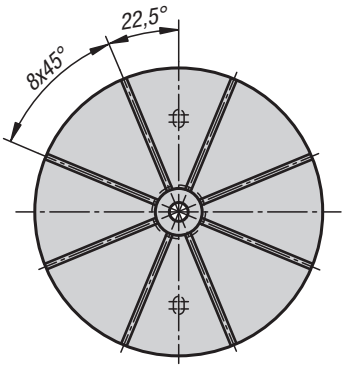
for external or internal clamping

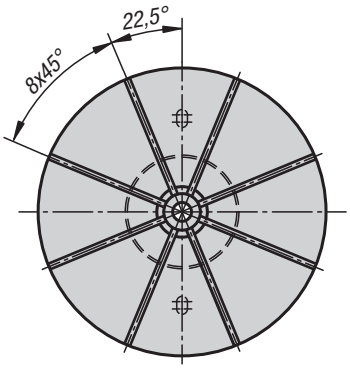
external clamping

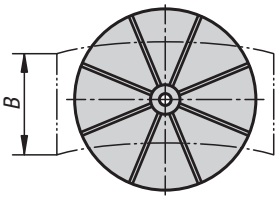


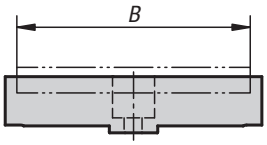
internal clamping











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), anodized.

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

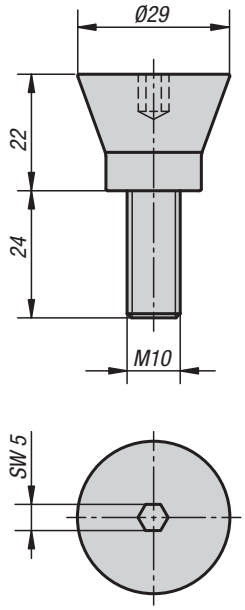
internal clamping

KIPP Collets for external or internal clamping

Order No.	Version	Clamping range min. - max.	Milling depth min./max.	Workpiece weight max. (kg)
K0502.116030	external clamping	Ø 30 - Ø 140	1-20	25
K0502.216030	internal clamping	Ø 30 - Ø 140	1-20	25

Tension cone

for internal clamping collet



Material:
Carbon steel.

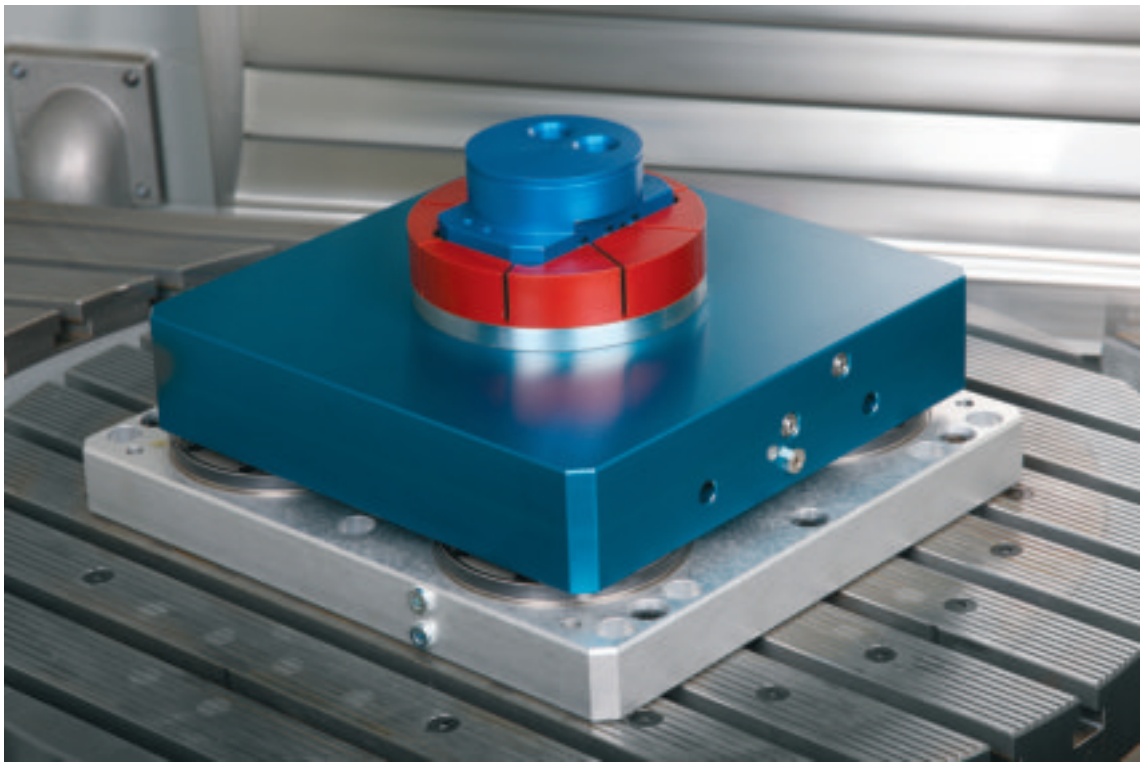
Version:
Bright.

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

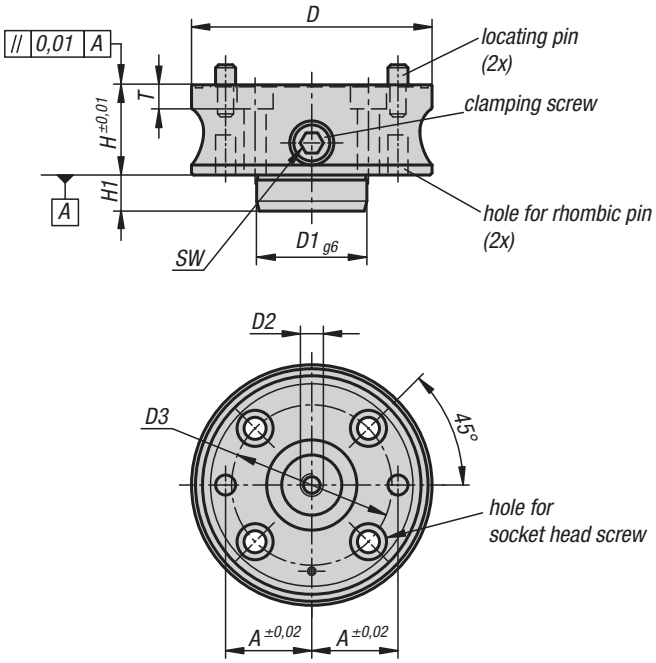


Application examples for collets

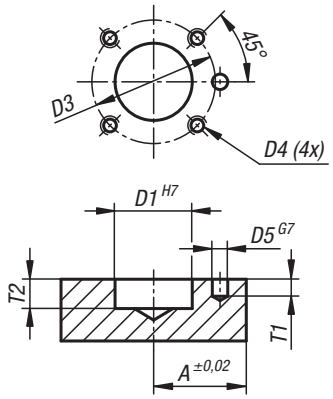
External clamping

Internal clamping

Adapter for collets



installation dimensions



Material:
Carbon steel.

Version:
nickel-plated.

Sample order:
K1183.065

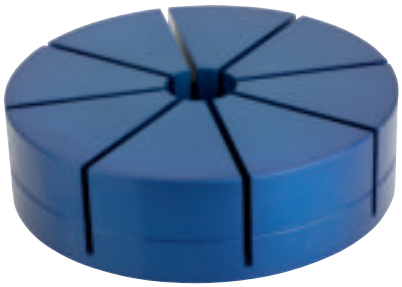
Note:
With this adaptor, collets for internal and external clamping can be mounted.
The workpiece is clamped by tightening the screw on the side.
A dowel pin is used to secure the adaptor against rotation.
The collet is positioned on the adaptor with 2 dowel pins.

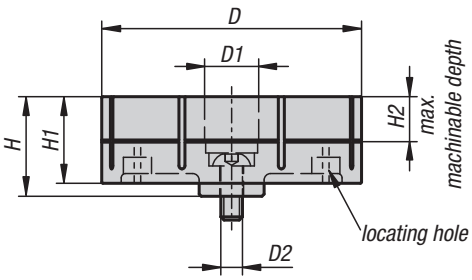
KIPP Adapter for collets

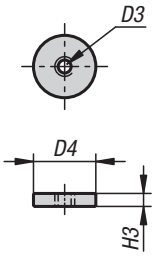
Order No.	D	A	D1	D2	D3	D4	D5	H	H1	SW	T	T1	T2	for screws	Tightening torque max. Nm	F1 kN	F2 kN
K1183.065	65	22	28	M8	42	M6x1	6	35	12	8	8	6	13	M6	15	4,5	4,5
K1183.090	90	30	42	M10	60	M8x1,25	8	40	14	8	10	8	15	M8	25	7	7
K1183.120	120	43	55	M10	80	M10x1,5	10	45	18	10	12	11	19	M10	40	10	10
K1183.160	160	60	63	M12	110	M12x1,75	12	50	24	10	14	13	25	M12	40	12	10

Collets

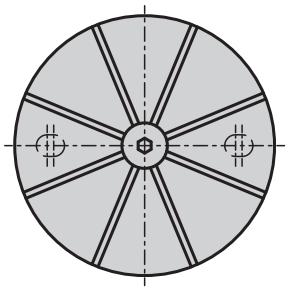
for external clamping







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

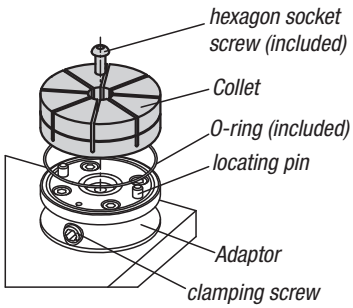
Order No.	D	D1	D2	D3	D4	H	H1	H2	H3
K1184.1065	65	21	M8	M5	20	29	25	10	4
K1184.1090	90	25	M10	M6	24	40	35	15	5
K1184.1120	120	25	M10	M6	24	46	40	20	5
K1184.1160	160	29	M12	M8	28	52	45	25	6

Collets

for external clamping

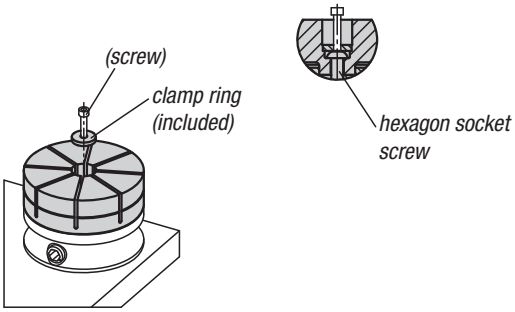
1. Mounting collet:
- Insert an O-ring into the groove on the top face of the clamp base.
- Set a collet on the base making sure the locating pins fit into the locating holes on the undeside of the collet. Secure the collet using a buttonhead hex socket screw.

Note:
Before mounting the collet, ensure the cam cylinder is fully loosened by turning the tightening screw clockwise until it stops.

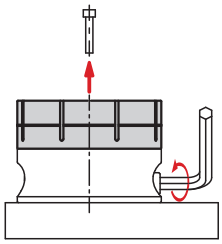


2. Machining collet:

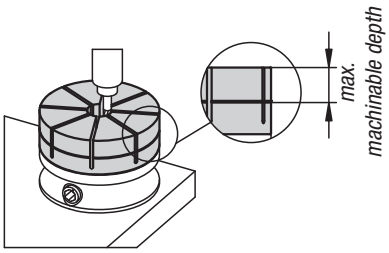
2.1
Place the clamp ring in the centre of the collet.
(Use a screw as an insertion aid)



2.2
Tighten the cam cylinder to clamp the clamp ring (recommended torque: 15Nm).
Remove the screw from the clamp ring before machining.

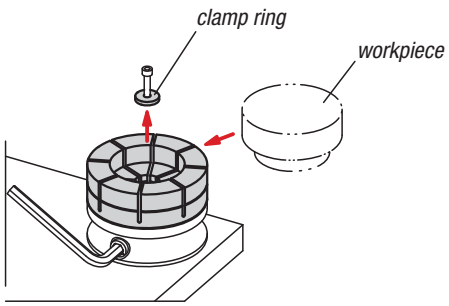


2.3
Machine the contour of the part that is to be held into the collet.

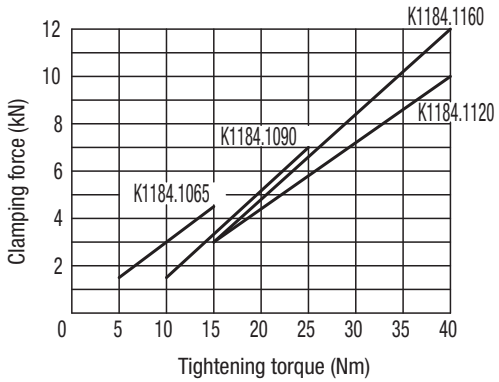


Note:
Do not machine the contour deeper than the permitted depth.

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

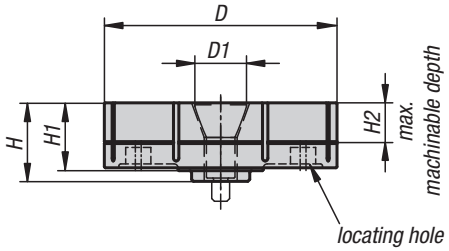


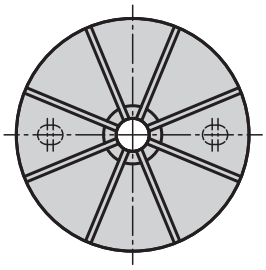
To avoid damaging the collet do not tighten the clamp without a workpiece or clamp ring.
Observe the maximum tightening torque in the table.

K1184

Collets

for internal clamping





Material:
High-strength aluminium alloy

Version:
natural colour anodized

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.

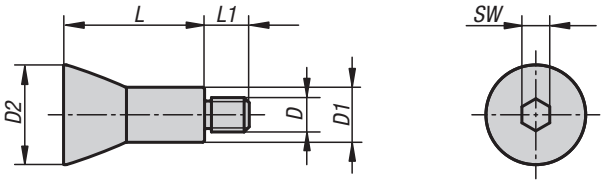
KIPP Collets for internal clamping

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

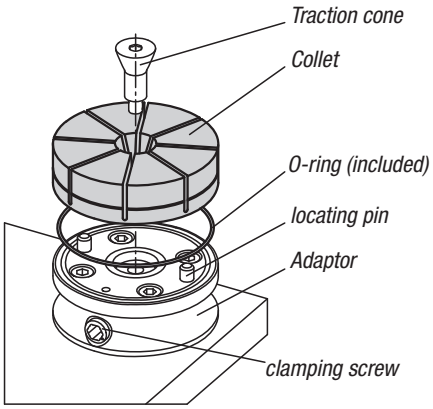
Order No.	D	D1	D2	L	L1	SW
K1185.0829	M8	13,2	22,5	29	10	6
K1185.1035	M10	16	27	35	11	8
K1185.1041	M10	16	29	41	13	8
K1185.1247	M12	18	33	47	14	10

Collets

for internal clamping

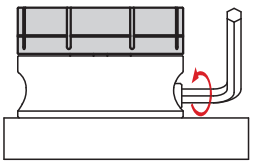
1. Mounting collet:
- Insert an O-ring into the groove on the top face of the clamp base.
- Set a collet on the base making sure the locating pins fit into the locating holes on the undeside of the collet. Secure the collet using a tapered screw.

Note:
Before mounting the collet, ensure the cam cylinder is fully loosened by turning the tightening screw clockwise until it stops.

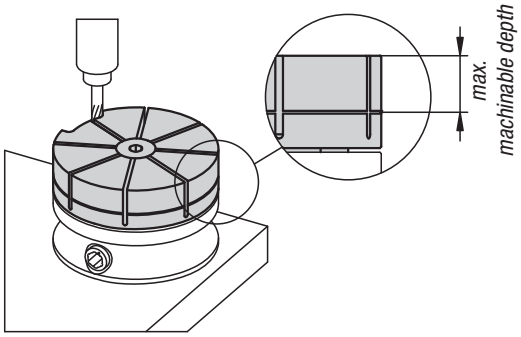


2. Machining collet:

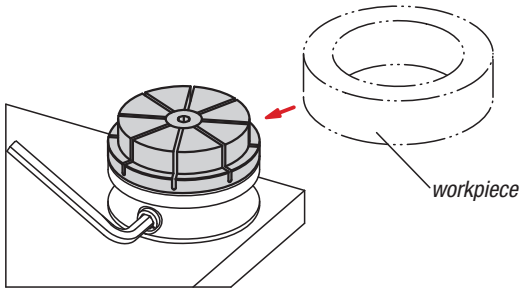
2.1
Fully loosen the cam cylinder and measure the OD of the collet. Tighten the cam cylinder until the collet OD has expanded by 0.15 mm.



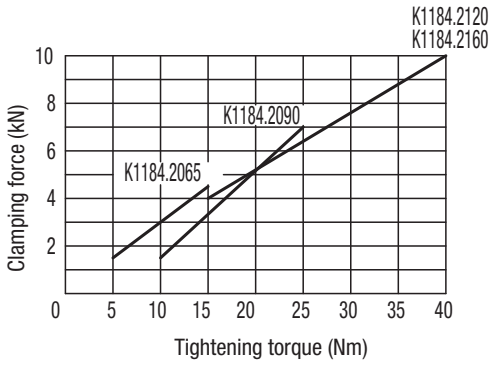
2.2
Machine the contour of the part that is to be held into the collet.



3. Mounting workpiece:
- Loosen the cam cylinder and remove the clamp ring.
- Place the workpiece in the contour and re-tighten the cam cylinder.

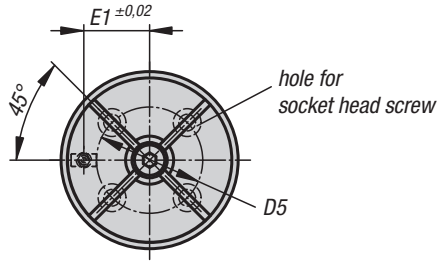


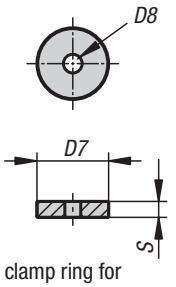
Performance curve



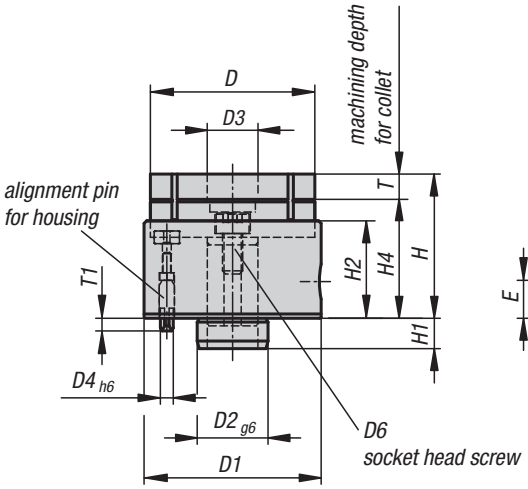
To avoid damaging the collet do not tighten the clamp without a workpiece or clamp ring.
Observe the maximum tightening torque in the table.

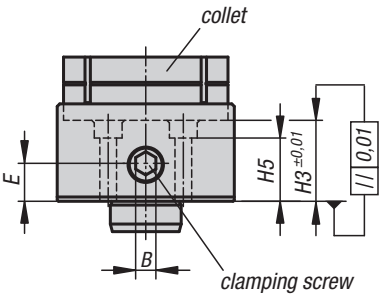
Clamping collets machinable





clamp ring for
machining, included





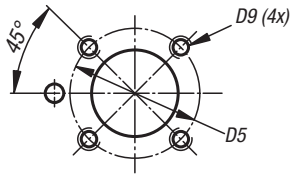
Material:
Housing and clamping ring carbon steel 1.0503.
Locating pins carbon steel 1.7220.
Collet aluminium 3.4365.

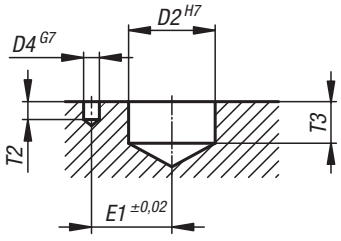
Version:
Housing, locating pins and clamping ring black oxidised.
Collet blue anodized.

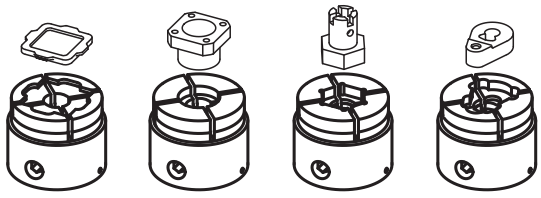
Sample order:
K0934.065057

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





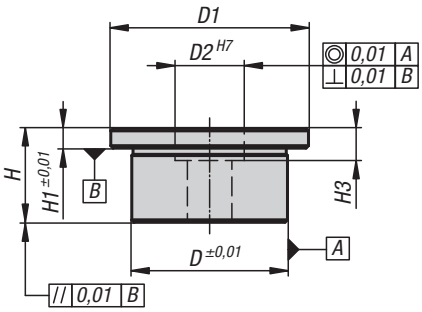


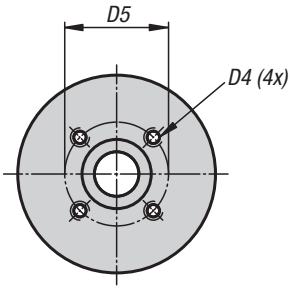
KIPP Clamping collets machinable

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



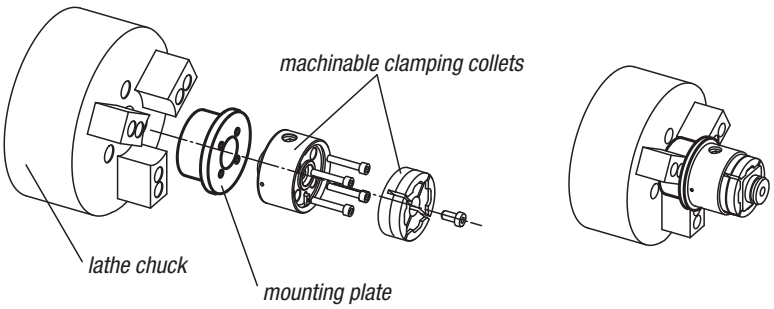


Material:
Carbon steel 1.7262.

Version:
Black oxidised and case-hardened.

Sample order:
K0934.065038

Note:
Suitable for clamping collets
K0934.065057 and K0934.090072.

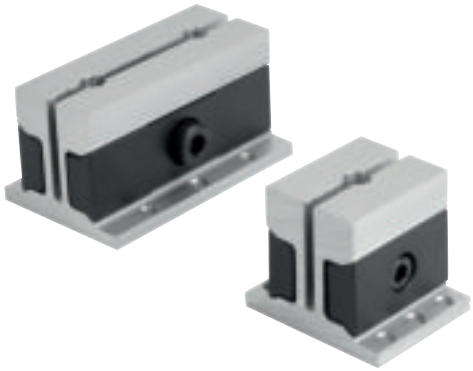


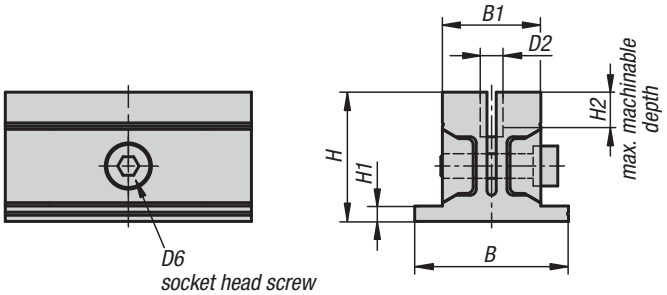
Mounting plate for holding the collet in a lathe chuck

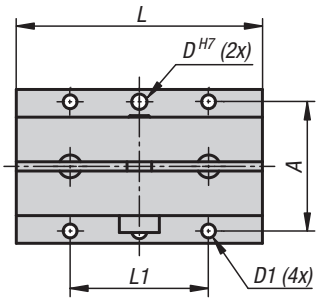
KIPP Mounting plates for clamping collets

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

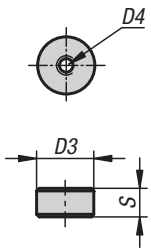
Machinable jaws rectangular



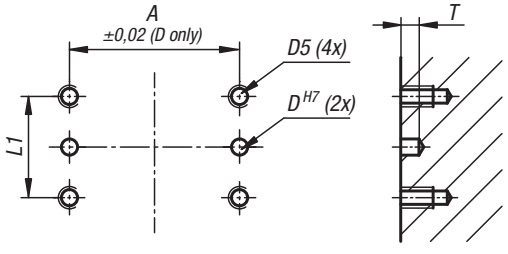




clamp ring for machining, included



installation dimensions



Material:
Body aluminium.
Wedges 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.

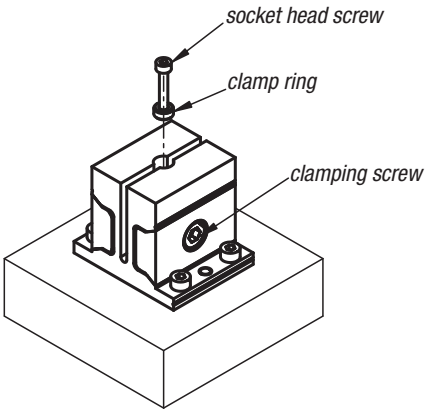
KIPP Machinable jaws, rectangular

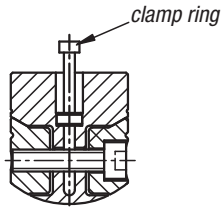
Order No.	A	B	B1	D	D1	D2	D3	D4	D5	D6	H	H1	H2	L	L1	S	T	Clamping force N	Tightening torque Nm
K1169.32040	42	50	32	5	4,5	7,4	7	M3x0,5	M4x0,7	M6	42	5	10	40	25	3,5	5	2500	7,5
K1169.32080	42	50	32	5	4,5	7,7	7	M3x0,5	M4x0,7	M8	42	5	10	80	45	3,5	5	2500	14
K1169.50050	62	72	50	6	5,5	11,4	11	M3x0,5	M5x0,8	M10	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:

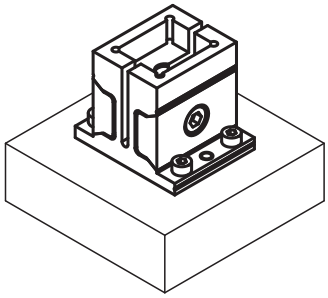
1. Inserting the clamp ring:
Insert the clamp ring into the bore in the centre of and between the jaws.
Tighten the clamp screw to hold the clamp ring in place.
(Use a cap screw to aid inserting the clamp ring)





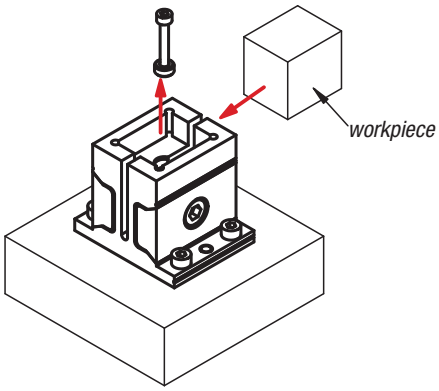
Note:
The clamp ring must be placed at the bottom of the bore.

2. Machine the jaws:
Remove the cap screw from the clamp ring.
Machine the contour of the workpiece to be held into the jaws.

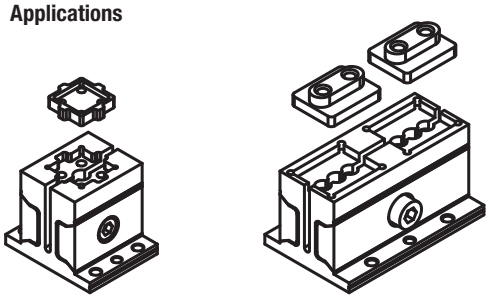


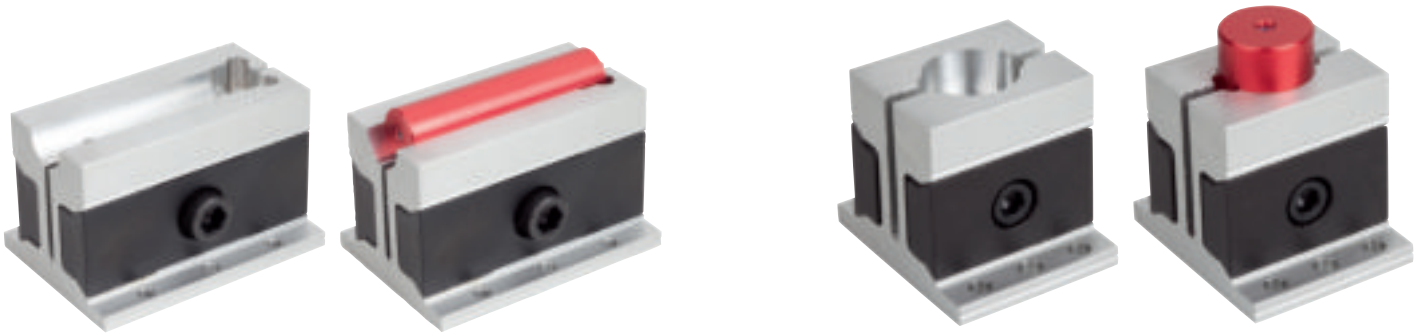
Note:
The contour should not be deeper than the max. permitted depth.

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



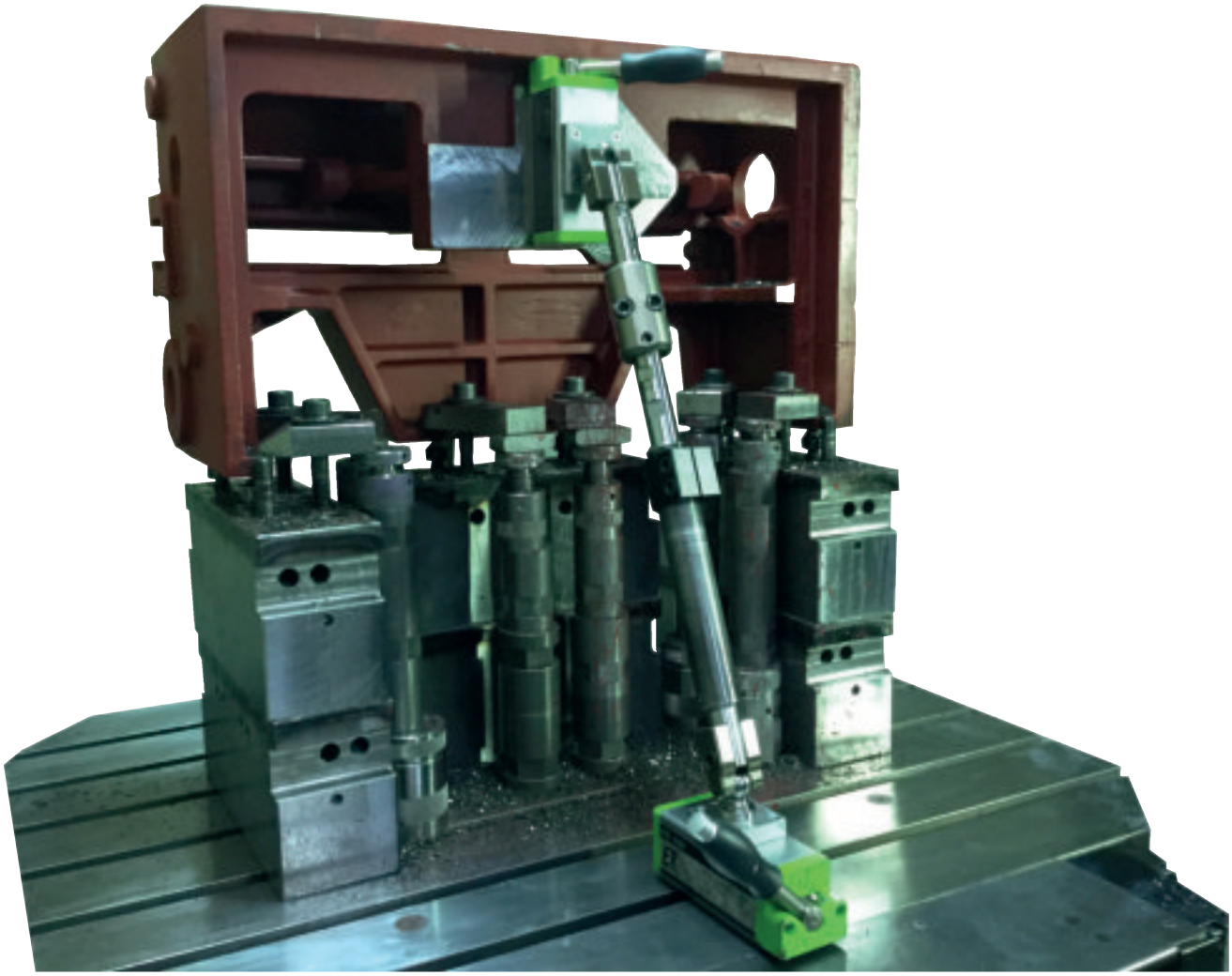


Workpiece stabiliser

Technical information for workpiece stabiliser

The workpiece stabiliser has been developed specifically for minimising vibrations and oscillations when machining sensitive and thin-walled workpieces.

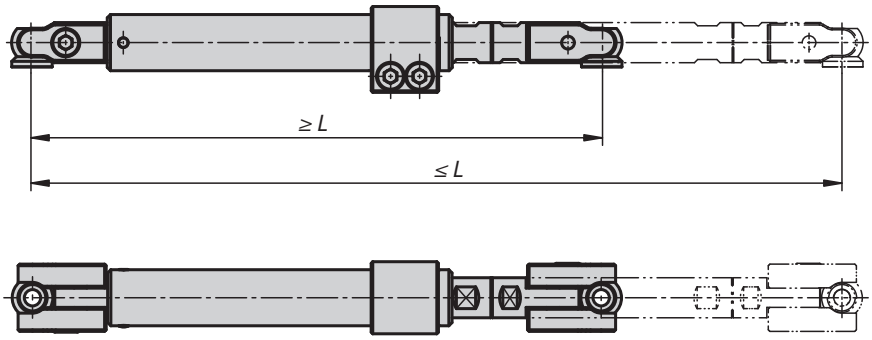
This system is extremely flexible thanks to its different methods of fixing to the workpiece and the machine table.



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

K1170

Workpiece stabiliser



Material:
Steel.

Version:
Black oxidised.

Sample order:
K1170.255305

Note:
The length of the stabiliser is infinitely adjustable. With the locking mechanism, the shaft can be securely locked against tension and compression.
Supplied with 2 fastening sets and clamping ball with seating cup.

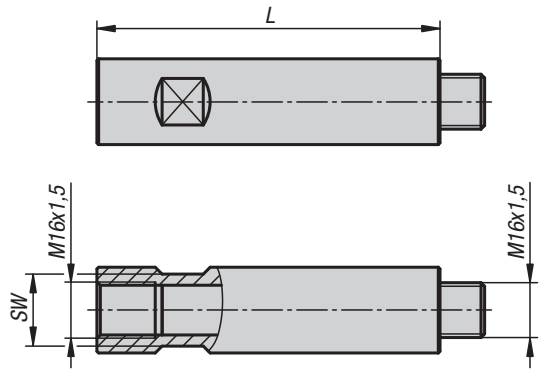
KIPP Workpiece stabiliser

Order No.	L min.	L max.	weight kg
K1170.255305	255	305	1.9
K1170.355505	355	505	2.5

K1186

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.

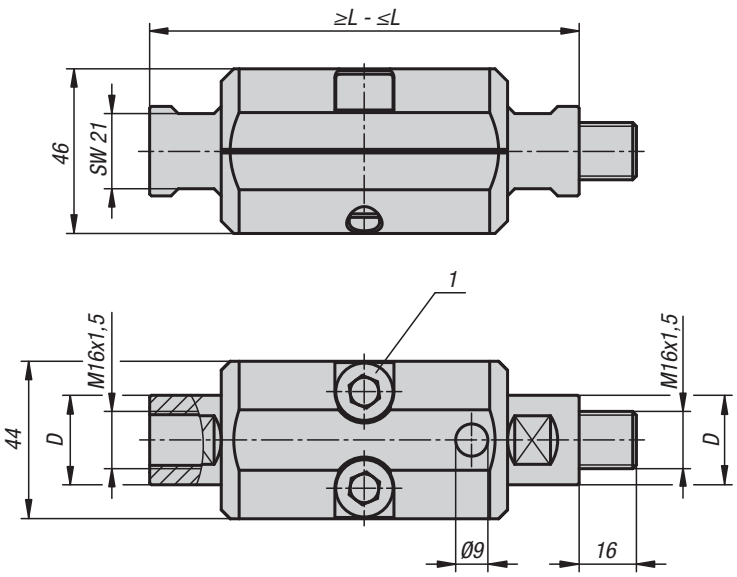
KIPP Extension shafts for workpiece stabiliser

Order No.	L	SW	weight kg
K1186.1625075	75	21	0.233
K1186.1625100	100	21	0.293
K1186.1625150	150	21	0.416
K1186.1625250	250	21	0.697
K1186.1625500	500	21	1.9

K1187

Fine adjustment

for workpiece stabiliser



Material:
Steel.

Sample order:
K1187.25120150

Note:
The fine adjuster enables the distance between the workpiece and the support surface to be precisely set. If required, the adjuster can be used to set the stabiliser under tensile or compressive load.

Drawing reference:
1) DIN EN ISO 4762 M10 cap screw

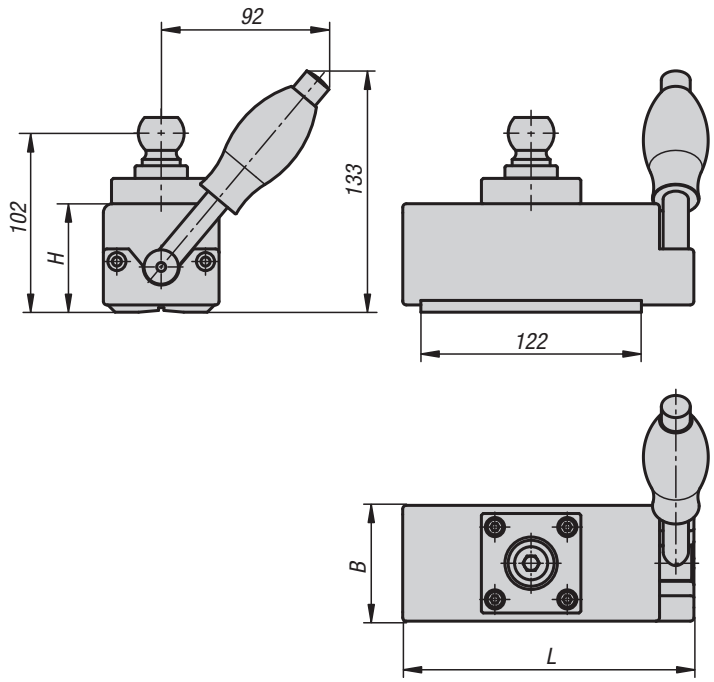
KIPP Fine adjustment for workpiece stabiliser

Order No.	D	L min.	L max.
K1187.25120150	25	120	150

K1188

Magnet

for workpiece stabiliser



Sample order:
K1188.25161064

Note:
The magnet is connected to the workpiece stabiliser. The magnet can be positioned anywhere enabling flexible placement on the machine table.

Attention:
- Retaining force 1470N.
- Max. retention from 8mm depending on material thickness.
- No lifting apparatus.

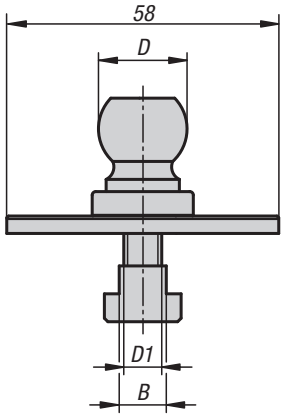
KIPP Magnet for workpiece stabiliser

Order No.	B	H	L	Magnetic force N	weight kg
K1188.25161064	64	60	161	1470	3.73

K1189

Fastening set

for T-slot tables



Material:
Steel.

Sample order:
K1189.2512

Note:
These fastening sets are for adapting to machine tables with T-slots.

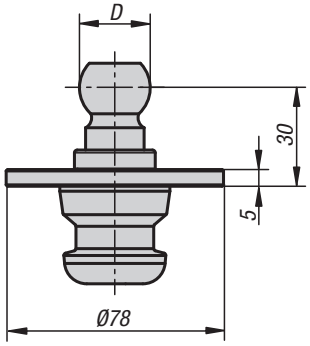
KIPP Fastening set for T-slot tables

Order No.	Version	B	D1	D
K1189.2512	for T-slot	12	M10	25,4
K1189.2514	for T-slot	14	M10	25,4
K1189.2518	for T-slot	18	M10	25,4
K1189.2520	for T-slot	20	M10	25,4
K1189.2522	for T-slot	22	M10	25,4
K1189.2524	for T-slot	24	M10	25,4

K1190

Fastening set

workpiece stabiliser



Material:
Steel.

Sample order:
K1190.2540

Note:
The fastening set is suitable for adaption to UNI lock clamping systems.

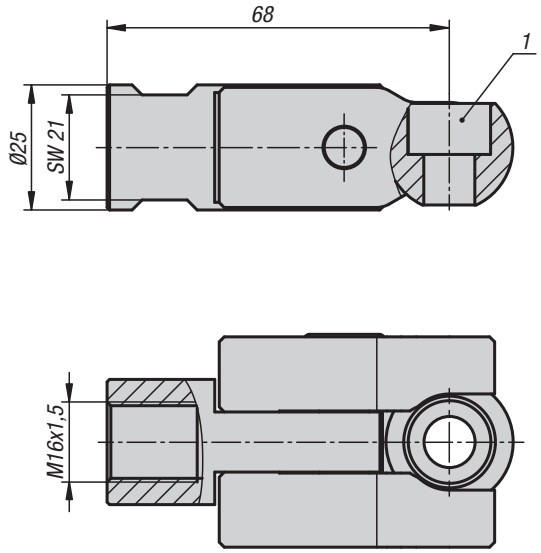
KIPP Fastening set for workpiece stabiliser

Order No.	D
K1190.2540	25,4

K1191

Fastening set with clamping ball

for workpiece stabiliser



Material:
Steel.

Sample order:
K1191.2525

Note:
This fastening set is used to connect the stabiliser to the workpiece. It is supplied with ball and seating cup.

Drawing reference:
1) for DIN 912 M10 cap screw

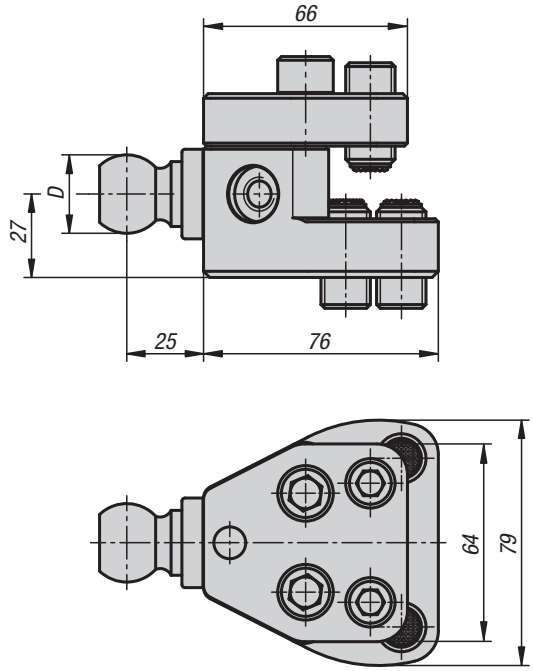
KIPP Fastening set with clamping ball for workpiece stabiliser

Order No.	Dimensions
K1191.2525	see drawing

K1192

Claw clamp

for workpiece stabiliser



Material:
Steel.

Sample order:
K1192.258076

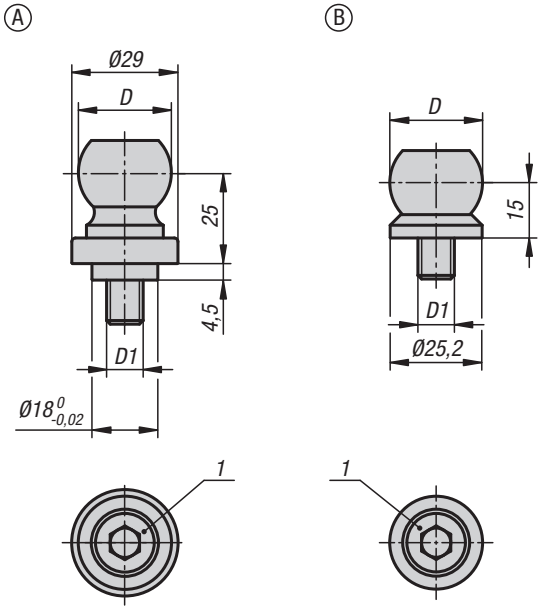
Note:
This claw clamp is used to connect the stabiliser to the workpiece. The clamping ball can be attached to several faces of the claw clamp enabling flexible adjustment.

KIPP Clamp strap for workpiece stabiliser

Order No.	D
K1192.258076	25,4

Clamping balls with cup

for workpiece stabiliser



Sample order:
K1193.125

Note:
The clamping balls with cup enable flexible connections between the workpiece and the workpiece stabiliser. The clamping balls provide a high degree of freedom on the workpiece.

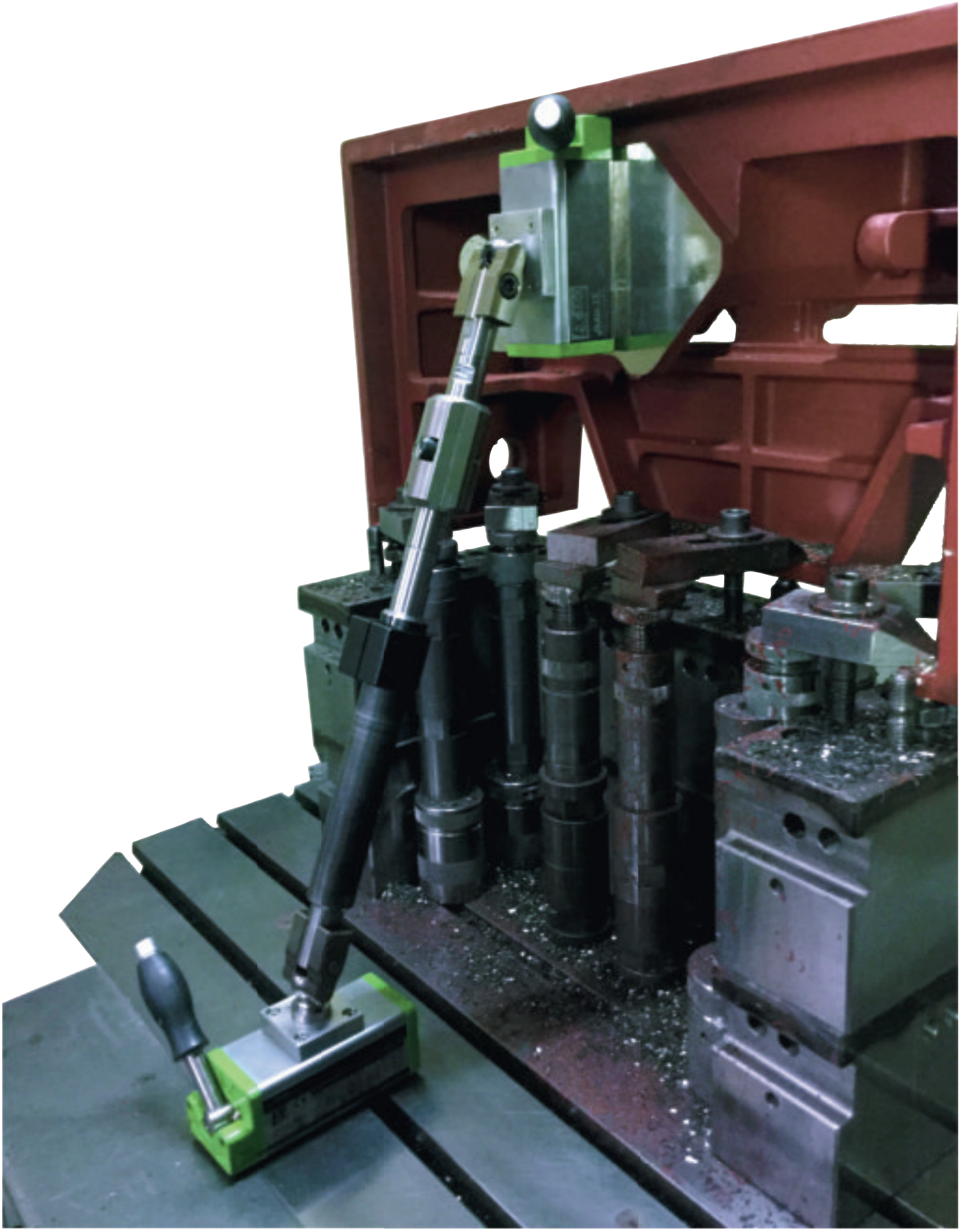
Drawing reference:
1) DIN EN ISO 4762 M10 cap screw

KIPP Clamping balls with cup for workpiece stabiliser

Order No.	Form	D	D1
K1193.125	A	25,4	M10
K1193.225	B	25,4	M10

Notes

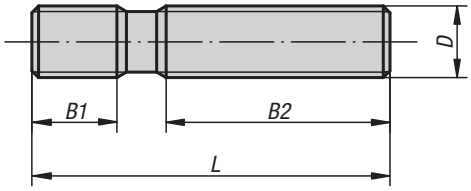
Application example



Fastener elements

Studs

DIN 6379



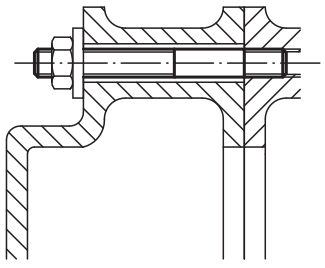
Material:
Carbon steel.

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

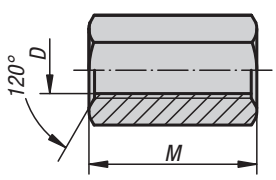
DIN 6379

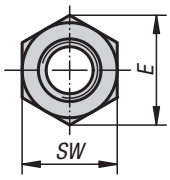
Order No.	D	L	B1	B2
K0697.1880	M18	80	23	50
K0697.18125	M18	125	23	75
K0697.18160	M18	160	23	100
K0697.18200	M18	200	23	125
K0697.18250	M18	250	23	150
K0697.18315	M18	315	23	180
K0697.2080	M20	80	27	32
K0697.20125	M20	125	27	70
K0697.20160	M20	160	27	100
K0697.20200	M20	200	27	125
K0697.20250	M20	250	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

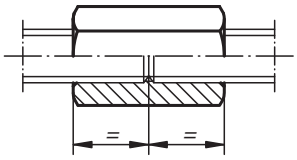
K0865

Extension nuts

height 3xD







Material:
Carbon steel.

Version:
Tempered to grade 10, black.

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.

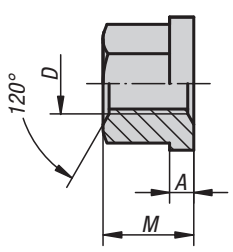
KIPP Extension nuts height 3xD

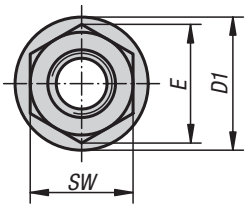
Order No.	D	M = 3 x D	SW	E
K0865.06	M6	18	10	11,5
K0865.08	M8	24	13	15
K0865.10	M10	30	17	19,6
K0865.12	M12	36	19	21,9
K0865.16	M16	48	24	27,7
K0865.20	M20	60	30	34,6

K0701

Hexagon nuts with collar

height 1.5xD, DIN 6331 enhanced





Material:
Carbon steel.

Version:
Steel grade 10, black.

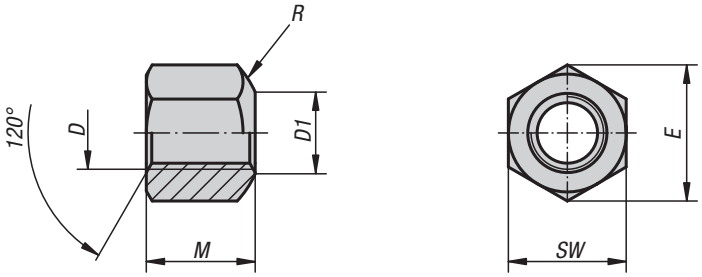
Sample order:
K0701.16

KIPP Hexagon nuts with collars, height 1.5xD, DIN 6331

Order No.	Base material	D	M = 1,5 x D	A	D1	SW	E
K0701.06	carbon steel	M6	9	3	14	10	11,5
K0701.08	carbon steel	M8	12	3,5	18	13	15
K0701.10	carbon steel	M10	15	4	22	16	18,5
K0701.12	carbon steel	M12	18	4	25	18	20,8
K0701.16	carbon steel	M16	24	5	31	24	27,7
K0701.20	carbon steel	M20	30	6	37	30	34,6

Hexagon nuts

height 1.5xD, DIN 6330 enhanced

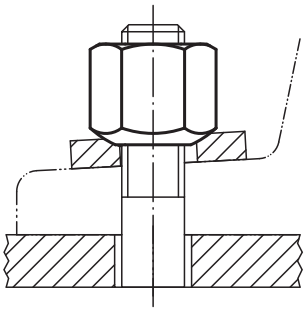


Material:
Carbon steel or stainless steel (A2).

Version:
Tempered to 10, black.
Stainless steel A 2-70, bright.

Sample order:
K0702.12

Note:
These hexagon nuts can be used with the conical seats K0729, Form D and G.

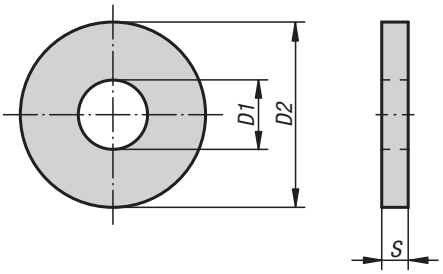


KIPP Hexagon nuts height 1.5xD, DIN 6330 enhanced

Order No.	Base material	D	M = 1,5 x D	D1	SW	E	R
K0702.05	carbon steel	M5	7,5	6,5	9	10,4	7
K0702.06	carbon steel	M6	9	7	10	11,5	9
K0702.08	carbon steel	M8	12	9	13	15	11
K0702.10	carbon steel	M10	15	11,5	16	18,4	15
K0702.101	carbon steel	M10	15	11,5	17	19,6	15
K0702.12	carbon steel	M12	18	14	18	20,7	17
K0702.121	carbon steel	M12	18	14	19	21,9	17
K0702.14	carbon steel	M14	21	16	22	25,4	20
K0702.16	carbon steel	M16	24	18	24	27,7	22
K0702.18	carbon steel	M18	27	20	27	31,2	24,5
K0702.20	carbon steel	M20	30	22	30	34,6	27
K0702.22	carbon steel	M22	33	24	32	36,9	29
K0702.24	carbon steel	M24	36	26	36	41,6	32
K0702.30	carbon steel	M30	45	32	46	53,1	41
K0702.36	carbon steel	M36	54	38	55	63,5	50
K0702.806	stainless steel	M6	9	7	10	11,5	9
K0702.808	stainless steel	M8	12	9	13	15	11
K0702.810	stainless steel	M10	15	11,5	16	18,4	15
K0702.811	stainless steel	M10	15	11,5	17	19,6	15
K0702.812	stainless steel	M12	18	14	18	20,7	17
K0702.816	stainless steel	M16	24	18	24	27,7	22
K0702.820	stainless steel	M20	30	22	30	34,6	27

Washers for clamps

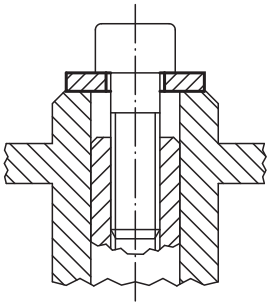
DIN 6340



Material:
Steel.

Version:
Stamped out, pressed flat and tempered to 1200-1400 N/mm², black.

Sample order:
K0867.16

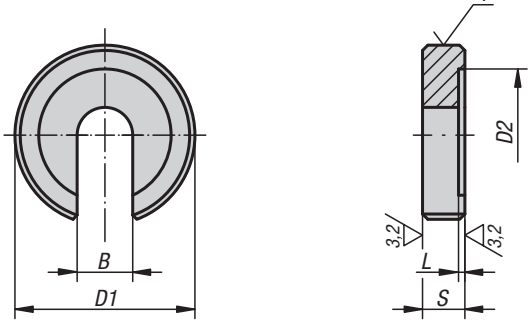


KIPP Heavy-duty washers DIN 6340

Order No. steel	D1	D2	S	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

C-washers

DIN 6372, enhanced

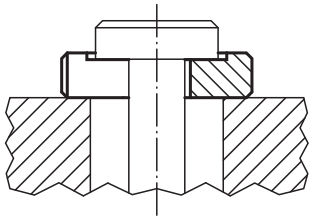


Material:
Carbon steel.

Version:
Tempered and black oxidised.

Sample order:
K0730.12

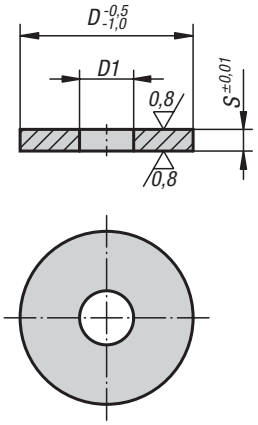
Drawing reference:
1) cross knurl



KIPP C-washers for fixtures DIN 6372, enhanced

Order No.	B	D1	D2	L	S
K0730.05	5,25	17	12	0,75	5
K0730.06	6,4	22	16	0,8	6
K0730.08	8,4	28	21	1	7
K0730.10	10,5	34	25	1,2	8
K0730.12	13	40	30	1,8	9
K0730.14	14,5	48	33	1,8	12
K0730.16	17	56	37	1,8	12
K0730.20	21	64	45	2	14
K0730.24	25	75	52	2	16
K0730.30	31	90	65	2	18
K0730.36	37	100	75	2,5	20

Spacing washers

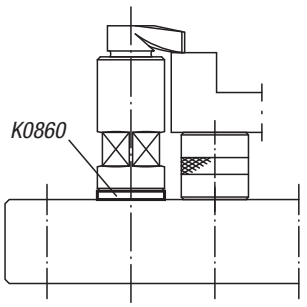


Material:
Carbon steel.

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.

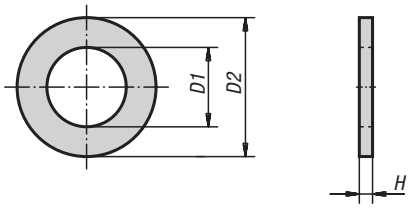


KIPP Spacer washers, ground

Order No.	D	D1	S
K0860.08003	24	9	3
K0860.08005	24	9	5
K0860.08008	24	9	8
K0860.12001	40	12,5	1
K0860.12003	40	12,5	3
K0860.12005	40	12,5	5
K0860.16001	50	16,5	1
K0860.16003	50	16,5	3
K0860.16005	50	16,5	5
K0860.16105	60	16,5	5

Washers

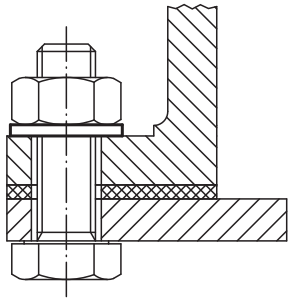
medium, DIN EN ISO 7089 A



Material:
Steel 140 HV or stainless steel (A 2-70)

Version:
Bright.

Sample order:
K0868.10

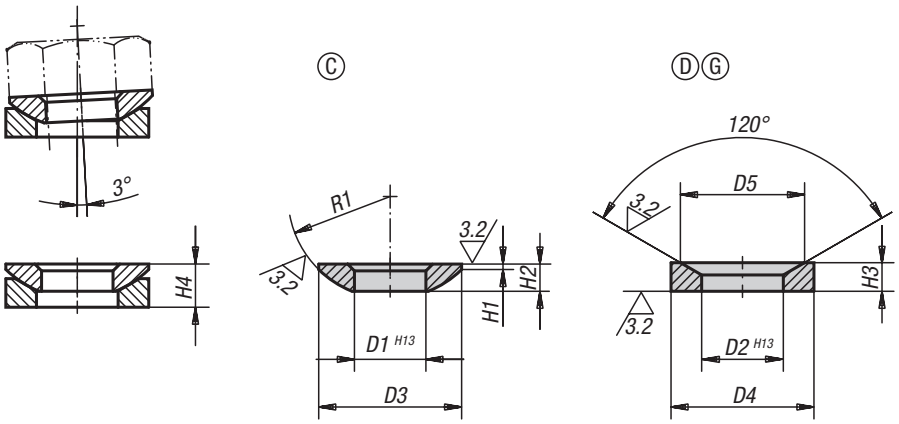


KIPP Medium washers DIN EN ISO 7089 A

Order No. Steel	Order No. Stainless steel	for screws	D1	D2	H
K0868.03	**K0868.103**	M3	3,2	7	0,5
K0868.04	**K0868.104**	M4	4,3	9	0,8
K0868.05	**K0868.105**	M5	5,3	10	1
K0868.06	**K0868.106**	M6	6,4	12	1,6
K0868.08	**K0868.108**	M8	8,4	16	1,6
K0868.10	**K0868.110**	M10	10,5	20	2
K0868.12	**K0868.112**	M12	13	24	2,5
K0868.14	**K0868.114**	M14	15	28	2,5
K0868.16	**K0868.116**	M16	17	30	3
K0868.20	**K0868.120**	M20	21	37	3
K0868.24	**K0868.124**	M24	25	44	4
K0868.30	**K0868.130**	M30	31	56	4
K0868.36	**K0868.136**	M36	37	66	5

Spherical washers

DIN 6319, 10/01



Material:
Mild steel or stainless steel.
Form G carbon steel tempered to HV 390 ±40.

Version:
Steel version case hardened.
Stainless steel version bright, not hardened.

Sample order:
K0729.216

Note:
Conical seat Form G should be used over slots.

Drawing reference:
Form C: spherical washer
Form D: conical seat D4 = D3
Form G: conical seat D4 > D3

KIPP Spherical washers Form C DIN 6319, edition 10/01

Order No. mild steel	Order No. stainless steel	Form	D1	D3	H1	H2	R1	for screw Ø	Load rating max. kN (static load only)
K0729.105	-	C	5,25	10,5	0,4	2	7,5	5	-
K0729.106	**K0729.0106**	C	6,4	12	0,7	2,3	9	6	9/6
K0729.108	**K0729.0108**	C	8,4	17	0,6	3,2	12	8	17/12
K0729.110	**K0729.0110**	C	10,5	21	0,8	4	15	10	26/16
K0729.112	**K0729.0112**	C	13	24	1,1	4,6	17	12	38/24
K0729.114	-	C	15	28	1,2	5	22	14	53
K0729.116	**K0729.0116**	C	17	30	1,3	5,3	22	16	73/45
K0729.120	**K0729.0120**	C	21	36	2	6,3	27	20	117/71
K0729.124	**K0729.0124**	C	25	44	2,4	8,2	32	24	168/105
K0729.130	**K0729.0130**	C	31	56	3,6	11,2	41	30	269/191
K0729.136	**K0729.0136**	C	37	68	4,6	14	50	36	394/-
K0729.142	**K0729.0142**	C	43	78	6,5	17	58	42	542/-
K0729.148	**K0729.0148**	C	50	92	8	21	67	48	714/-
K0729.156	-	C	58	103	9,5	23	79	56	960
K0729.164	-	C	66	120	12	27	93	64	1269

Spherical washers

DIN 6319, 10/01

KIPP Conical seats Form D DIN 6319, edition 10/01

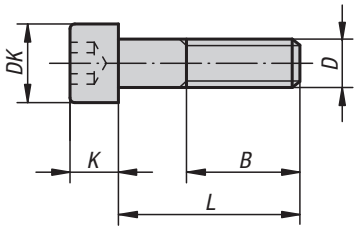
Order No. mild steel	Order No. stainless steel	Form	D2	D4	D5	H3	H4 with conical seat	for screw Ø	Load rating max. kN (static load only)
K0729.205	-	D	6	10,5	9,25	2,1	3,1	5	-
K0729.206	**K0729.0206**	D	7,1	12	11	2,8	4	6	9/6
K0729.208	**K0729.0208**	D	9,6	17	14,5	3,5	5,6	8	17/12
K0729.210	**K0729.0210**	D	12	21	18,5	4,2	6,3	10	26/16
K0729.212	**K0729.0212**	D	14,2	24	20	5	8	12	38/24
K0729.214	-	D	16,5	28	24,8	5,6	8,2	14	53
K0729.216	**K0729.0216**	D	19	30	26	6,2	9,3	16	73/45
K0729.220	**K0729.0220**	D	23,2	36	31	7,5	11,6	20	117/71
K0729.224	**K0729.0224**	D	28	44	37	9,5	15	24	168/105
K0729.230	**K0729.0230**	D	35	56	49	12	18,9	30	269/191
K0729.236	**K0729.0236**	D	42	68	60	15	23,3	36	394/-
K0729.242	**K0729.0242**	D	49	78	70	18	28,3	42	542/-
K0729.248	**K0729.0248**	D	56	92	82	22	35,2	48	714/-
K0729.256	-	D	65	103	92	25	39,7	56	960
K0729.264	-	D	75	120	110	30	46,5	64	1269

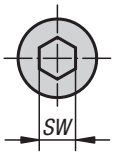
KIPP Conical seats Form G, DIN 6319 Edition 10/01

Order No. high carbon steel	Order No. stainless steel	Form	D2	D4	D5	H3	H4 with conical seat	for screw Ø	Load rating max. kN (static load only)
K0729.305	-	G	6	15	9,25	2,5	3,5	5	-
K0729.306	**K0729.0306**	G	7,1	17	11	4	5,2	6	9/6
K0729.308	**K0729.0308**	G	9,6	24	14,5	5	6,8	8	17/12
K0729.310	**K0729.0310**	G	12	30	18,5	5	7,1	10	26/16
K0729.312	**K0729.0312**	G	14,2	36	20	6	9	12	38/24
K0729.314	-	G	16,5	40	24,8	6	8,6	14	53
K0729.316	**K0729.0316**	G	19	44	26	7	10,1	16	73/45
K0729.320	**K0729.0320**	G	23,2	50	31	8	12	20	117/71
K0729.324	**K0729.0324**	G	28	60	37	10	15,5	24	168/105
K0729.330	**K0729.0330**	G	35	68	49	12	18,7	30	269/191
K0729.336	-	G	42	80	60	12	20,3	36	394

Socket head screws

DIN 912 / DIN EN ISO 4762

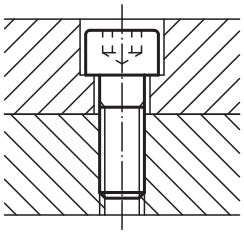




Material:
Steel or stainless steel (A 2)

Version:
Steel grade 8.8, black.
Stainless steel A 2-70, bright.

Sample order:
K0869.08X40 (include length L)



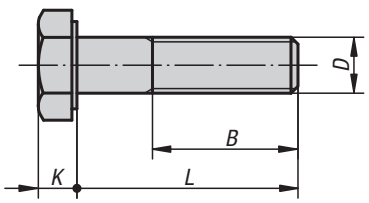
KIPP Socket head screws DIN 912 / DIN EN ISO 4762

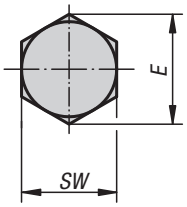
Order No. steel	Order No. stainless steel	D	L	B	DK	K	SW
K0869.04X	**K0869.104X**	M4	10/12/16/18/20/25	20	7	4	3
K0869.05X	**K0869.105X**	M5	10/12/16/18/20/25/30/40	22	8,5	5	4
K0869.06X	**K0869.106X**	M6	10/12/16/18/20/25/30/35/40/45/50/55/60	24	10	6	5
K0869.08X	**K0869.108X**	M8	16/18/20/25/30/35/40/45/50/60/70/80	28	13	8	6
K0869.10X	**K0869.110X**	M10	16/18/20/25/30/35/40/45/50/60/70/80/90/100	32	16	10	8
K0869.12X	**K0869.112X**	M12	20/25/30/35/40/45/50/60/70/80/90/100/110/120	36	18	12	10
K0869.14X	-	M14	50/80/120	40	21	14	12
K0869.16X	-	M16	30/35/40/45/50/60/70/80/90/100/110/120	44	24	16	14
K0869.20X	-	M20	40/45/50/60/70/80/90/100/110/120	52	30	20	17

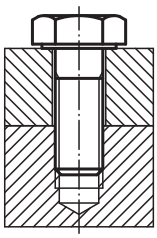
K0870

Hexagon head bolts

DIN EN ISO 4014 / DIN EN 24014







KIPP Hexagon head bolts with shaft DIN 931/DIN EN ISO 4014/DIN EN 24014

Order No. steel	Order No. stainless steel	D	L	B	SW	E	K
K0870.04X	-	M4	25/30/35/40/45/50	14	7	7,66	2,8
K0870.05X	K0870.105X	M5	25/30/35/40/45/50/60	16	8	8,79	3,5
K0870.06X	K0870.106X	M6	30/35/40/45/50/60/70	18	10	11,05	4
K0870.08X	K0870.108X	M8	35/40/45/50/60/70/80	22	13	14,38	5,3
K0870.10X	K0870.110X	M10	40/45/50/60/70/80/90/100	26	17	18,9	6,4
K0870.12X	K0870.112X	M12	45/50/60/70/80/90/100/110/120	30	19	21,1	7,5
K0870.16X	K0870.116X	M16	60/70/80/90/100/110/120	38	24	26,75	10
K0870.20X	-	M20	70/80/90/100/110/120	46	30	33,53	12,5

Material:
Steel or stainless steel (A 2)

Version:
Steel grade 8.8, black.
Stainless steel A 2-70, bright.

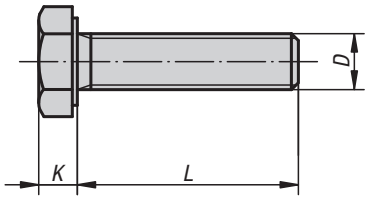
Sample order:
K0870.110X50 (include length L)

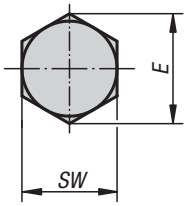
Note:
The versions K0870.105X25 and K0870.105X45 are not available in stainless steel.

K0871

Hexagon head bolts

full thread DIN 933





Material:
Steel.

Version:
Grade 8.8, black.

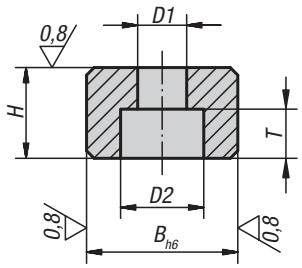
Sample order:
K0871.06X20 (include length L)

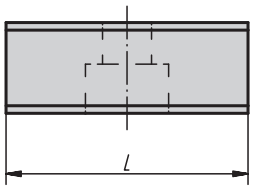
KIPP Hexagon head bolts DIN 933

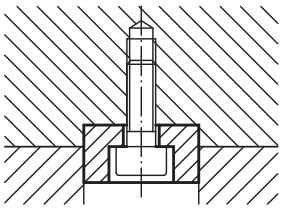
Order No.	D	L	K	SW	E
K0871.06X	M6	20/25/30/40/50/60	4	10	11,05
K0871.08X	M8	16/20/25/30/35/40	5,3	13	14,38
K0871.10X	M10	30/40/50/60/80/100	6,4	17	18,9
K0871.12X	M12	30/40	7,5	19	21,1
K0871.16X	M16	40/50	10	24	26,75

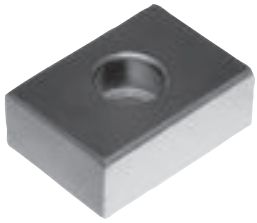
K0864

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.

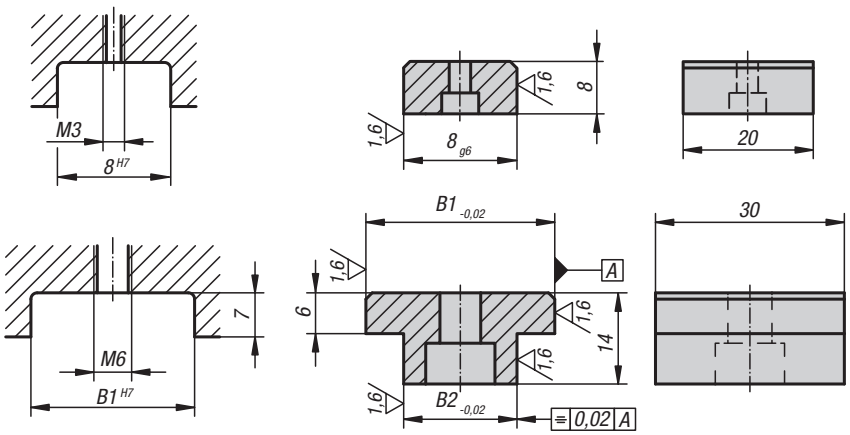
KIPP Slot keys

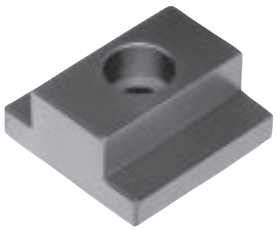
Order No.	B	H	L	D1	D2	T	for screws DIN 84 or 912
K0864.10	10	8	20	4,5	8	4,3	M4x10
K0864.12	12	8	20	5,5	10	5,3	M5x12
K0864.14	14	10	22	6,6	11	6,3	M6x16
K0864.16	16	10	22	6,6	11	6,3	M6x16
K0864.18	18	10	22	6,6	11	6,3	M6x16
K0864.20	20	10	22	6,6	11	6,3	M6x16
K0864.22	22	12	32	6,6	11	6,3	M6x16

K0954

T-slot keys

K0954.08x8





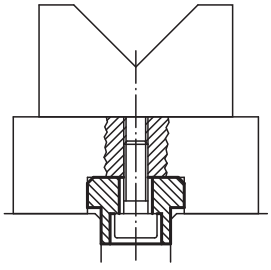
Material:
Carbon steel 1.1191

Version:
Black oxidised.

Sample order:
K0954.08X8 (include dimension B1)

KIPP T-slot keys

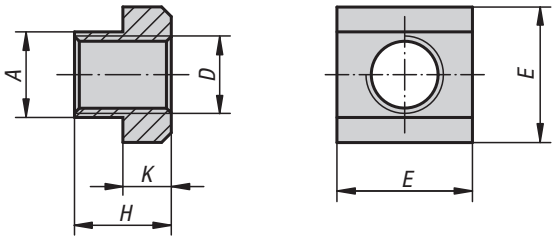
Order No.	B1	B2
K0954.08X	8	8
K0954.12X	20/22/30	12
K0954.14X	20/22/30	14
K0954.16X	20/22/30	16
K0954.18X	20/22/30	18
K0954.22X	20/22/30	22

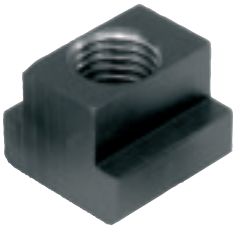


K0377

Nuts for T-slots

DIN 508 enhanced





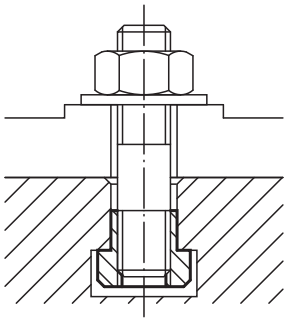
Material:
Carbon steel grade 10.

Version:
Steel black.

Sample order:
K0377.20

KIPP Nuts for T-slots to DIN 508 enhanced

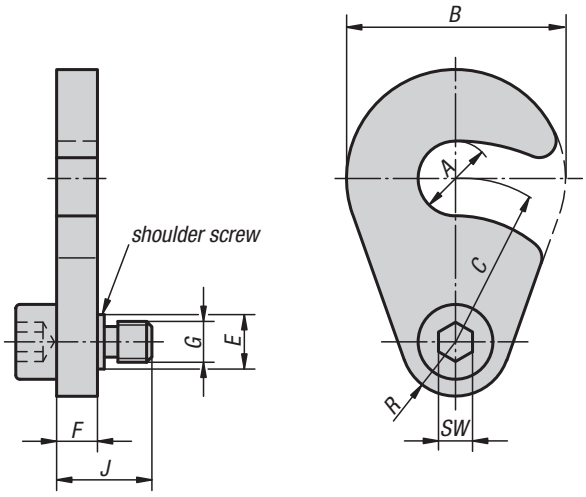
Order No.	Nominal slot size	D	A	E	H	K
K0377.06	8	M6	7,6	13	10	6
K0377.08	10	M8	9,6	15	12	6
K0377.10	12	M10	11,5	18	14	7
K0377.12	14	M12	13,5	22	16	8
K0377.16	18	M16	17,5	28	20	10
K0377.18	20	M18	19,6	32	24	12
K0377.20	22	M20	21,6	35	28	14
K0377.22	24	M22	23,6	40	32	16



K0872

C-washers

captive, with shoulder screw



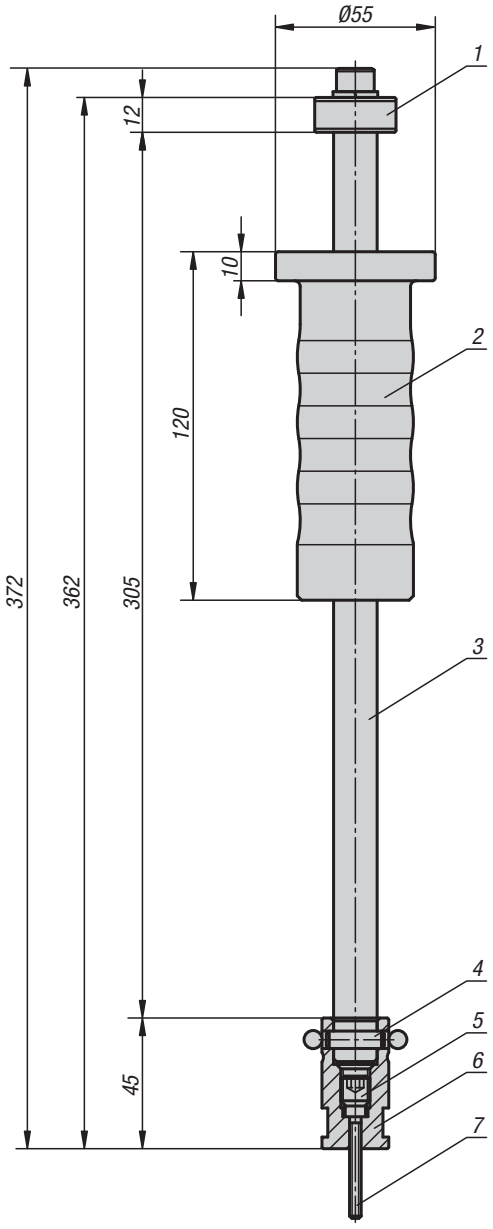
Material, version:
Swing C-washer case-hardened steel, black oxidised.
Shoulder screw tempered steel, black oxidised.

Sample order:
K0872.90010

KIPP C-washers, captive, with shoulder screw

Order No.	A	B	C	D	E	F	G	SW	J
K0872.90010	11	32	24	8	8	6	M6	5	14
K0872.90012	13,5	40	27	10	10	8	M8	6	19
K0872.90016	18	50	33	10	10	8	M8	6	19

Extractor



Material:
Hammer head carbon steel.
Shaft, stop and guide sleeves tool steel.

Version:
Hammer head tempered and chromed.
Shaft, stop and guide sleeve hardened and chromed.

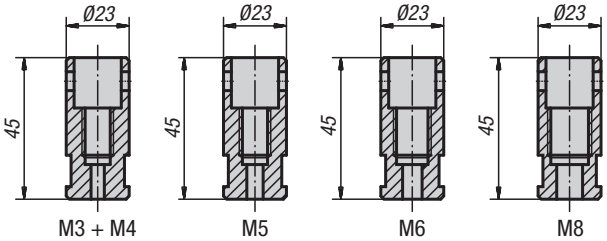
Sample order:
K0873.40

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) hammer head
3) shaft
4) cross pin
5) lock screw
6) guide sleeve
7) cap screw
8) 1 set guide sleeves

⑧



KIPP Extractor

Order No.	Dimensions
K0873.40	see drawing