

Thrust Bolts

METRIC
Parts

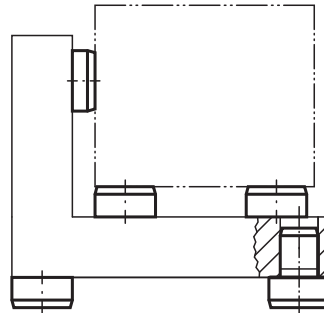
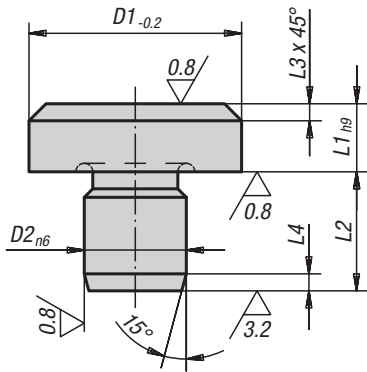


Material:
Tool steel.

Type:
Hardened and ground,
support surface without centering

Part Number Example:
K0292.041

Note:
If more than one thrust bolt is used, the support
height can be reground. Thrust bolts can also
be used as feet for jigs and fixtures.



KIPP Thrust Bolts, metric

Item No.	D1	L1	D2	L2	L3	L4
K0292.041	6	2,5	4	6,5	0,7	1,2
K0292.042	6	4,5	4	8,5	0,7	1,2
K0292.04	6	5	4	6	0,7	1,2
K0292.061	10	4,5	6	8,5	0,9	1,5
K0292.06	10	8	6	8,5	0,9	1,5
K0292.08	16	5	8	10	2	2
K0292.081	16	13	8	10	2	2
K0292.10	20	6	10	12	2	2
K0292.101	20	12	10	12	2	2
K0292.12	25	8	12	14	2	2
K0292.122	25	20	12	14	2	2
K0292.123	25	30	12	14	2	2
K0292.16	30	25	16	20	2,5	2,5
K0292.164	30	40	16	20	2,5	2,5
K0292.165	30	50	16	20	2,5	2,5
K0292.166	30	65	16	20	2,5	2,5
K0292.20	30	80	20	20	2,5	2,5
K0292.201	30	100	20	20	2,5	2,5
K0292.202	40	13	20	20	3,2	3,2
K0292.203	40	32	20	20	3,2	3,2

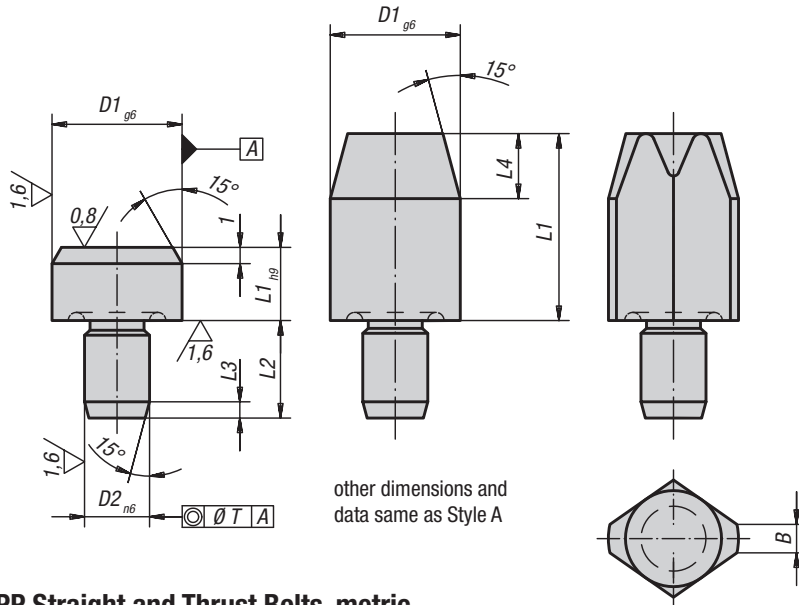
Straight and Thrust Bolts

DIN 6321 (Edition 1973)

METRIC Parts
Style A
thrust bolt

Style B
cylindrical
straight bolt

Style C
flattened
straight bolt



Material:
Tool steel.

Type:
Hardened and ground

Part Number Example:
K0293.212

Note:
Thrust Bolts Style A are supports for workpieces and fixtures.
Straight Bolts Style B are for positioning workpieces and fixture components in reamed holes.
The flattened Style C can be used to bridge tolerances in hole spacing or to secure the part to be positioned in one direction only.
Styles A and B can also be used as hardened stops and as fixture feet.
For similar bolts see K0352, K0353, K0354 and K0355.

KIPP Straight and Thrust Bolts, metric

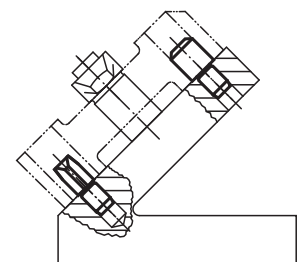
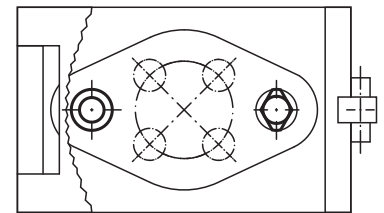
Item No.	Style	Version	D1	L1	D2	L2	L3	T
K0293.106	A	without centrebore	6	5	4	6	1,2	0,02
K0293.110	A	without centrebore	10	6	6	9	1,6	0,02
K0293.116	A	without centrebore	16	8	8	12	2	0,04
K0293.125	A	without centrebore	25	10	12	18	2,5	0,04

KIPP Straight Bolts, short, metric

Item No. Style B	Item No. Style C	Version	D1	L1	D2	L2	L3	L4	B	T
K0293.206	K0293.406	short	6	7	4	6	1,2	4	-/1	0,02
K0293.208	K0293.408	short	8	10	6	9	1,6	6	-/1,6	0,02
K0293.210	K0293.410	short	10	10	6	9	1,6	6	-/2,5	0,02
K0293.212	K0293.412	short	12	10	6	9	1,6	6	-/2,5	0,02
K0293.216	K0293.416	short	16	13	8	12	2	8	-/3,5	0,04
K0293.220	K0293.420	short	20	15	12	18	2,5	9	-/5	0,04
K0293.225	K0293.425	short	25	15	12	18	2,5	9	-/5	0,04

KIPP Straight Bolts, long, metric

Item No. Style B	Item No. Style C	Version	D1	L1	D2	L2	L3	L4	B	T
K0293.306	K0293.506	long	6	12	4	6	1,2	4	-/1	0,02
K0293.308	K0293.508	long	8	16	6	9	1,6	6	-/1,6	0,02
K0293.310	K0293.510	long	10	18	6	9	1,6	6	-/2,5	0,02
K0293.312	K0293.512	long	12	18	6	9	1,6	6	-/2,5	0,02
K0293.316	K0293.516	long	16	22	8	12	2	8	-/3,5	0,04
K0293.320	K0293.520	long	20	25	12	18	2,5	9	-/5	0,04
K0293.325	K0293.525	long	25	25	12	18	2,5	9	-/5	0,04

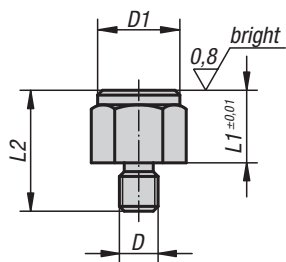


Positioning Feet

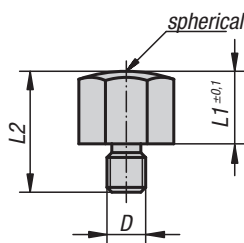


METRIC
Parts

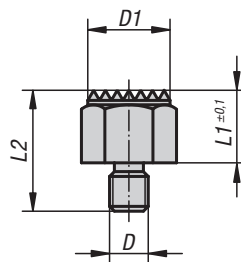
Style A
with external thread
and smooth face



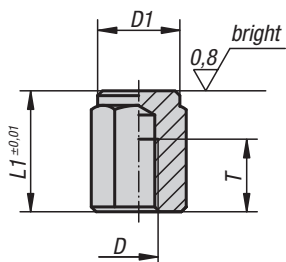
Style B
with external thread
and spherical surface



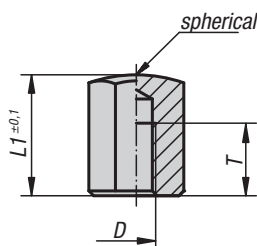
Style C
with external thread
and serrated surface



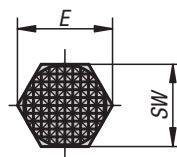
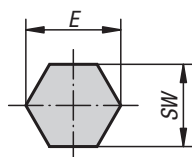
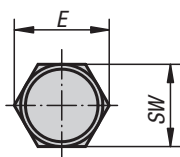
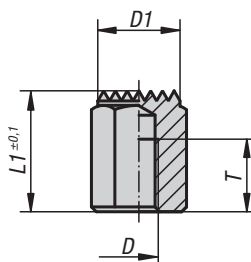
Style D
with internal thread
and smooth face



Style E
with internal thread
and spherical surface



Style F
with internal thread
and serrated surface

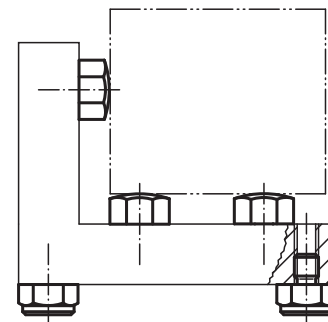


Material:
Free-cutting steel.

Type:
Case-hardened with black oxide finish.

Part Number Example:
K0298.215

Note:
Positioning Feet are used as supports, stops and thrust pads for fixtures and general machine and appliance construction.



KIPP Positioning Feet with external thread, metric

Item No. Style A	Item No. Style B	Item No. Style C	D	L1	D1	L2	E	SW	Tightening torque max. Nm
K0298.1101	K0298.2101	K0298.3101	M8	10	17/-/17	20	19,4	17	18
K0298.110	K0298.210	K0298.310	M12	10	22/-/22	24	25,2	22	60
K0298.115	K0298.215	K0298.315	M12	15	22/-/22	29	25,2	22	60
K0298.1151	K0298.2151	K0298.3151	M16	15	30/-/30	34	33	30	140
K0298.1201	K0298.2201	K0298.3201	M16	20	30/-/30	39	33	30	140

KIPP Positioning Feet with internal thread, metric

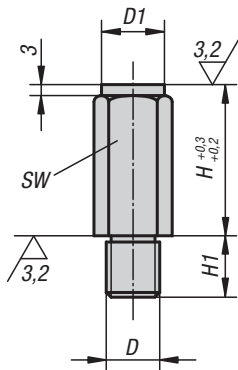
Item No. Style D	Item No. Style E	Item No. Style F	D	L1	D1	T	E	SW
K0298.415	K0298.515	K0298.615	M8	15	17/-/17	6	19,4	17
K0298.4251	K0298.5251	K0298.6251	M8	25	17/-/17	16	19,4	17
K0298.420	K0298.520	K0298.620	M12	20	22/-/22	10	25,2	22
K0298.425	K0298.525	K0298.625	M12	25	22/-/22	15	25,2	22
K0298.430	K0298.530	K0298.630	M12	30	22/-/22	20	25,2	22
K0298.440	K0298.540	K0298.640	M12	40	22/-/22	25	25,2	22
K0298.450	K0298.550	K0298.650	M12	50	22/-/22	25	25,2	22
K0298.4301	K0298.5301	K0298.6301	M16	30	30/-/30	20	33	30
K0298.4501	K0298.5501	K0298.6501	M16	50	30/-/30	25	33	30

Positioning Feet

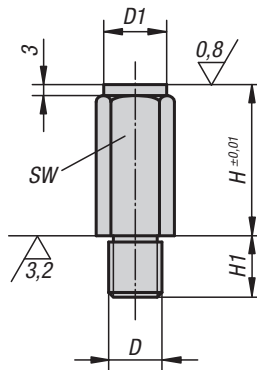


METRIC
Parts

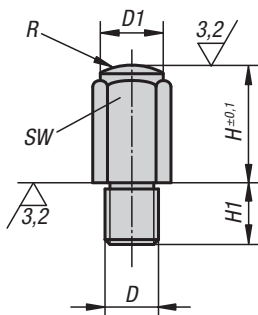
Style A
hardened face



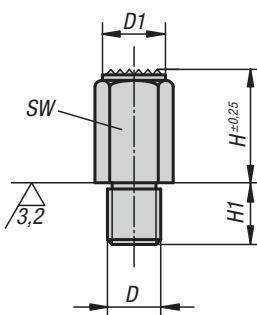
Style B
face hardened
and ground



Style C
hardened spherical surface



Style D
tempered serrated surface



Material:

Body in tempered steel.

Type:

Body heat-treated with black oxide finish.
Support surfaces case-hardened.

Part Number Example:

K0299.106010

Note:

The positioning feet act as supports for rough and machined parts and as stops. They can also be integrated into standard clamping or support elements.

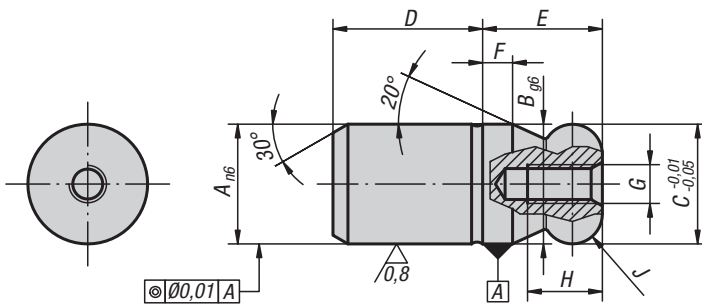
KIPP Positioning Feet, metric

Item No. Style A	Item No. Style B	Item No. Style C	Item No. Style D	D	D1	H	H1	R	SW
K0299.106010	K0299.206010	K0299.306010	K0299.406010	M6	10	10	11	-/-15/-	10
K0299.106020	K0299.206020	K0299.306020	K0299.406020	M6	10	20	11	-/-15/-	10
K0299.108010	K0299.208010	K0299.308010	-	M8	13	10	13	-/-20	13
K0299.108015	K0299.208015	K0299.308015	K0299.408015	M8	13	15	13	-/-20/-	13
K0299.108030	K0299.208030	K0299.308030	K0299.408030	M8	13	30	13	-/-20/-	13
K0299.110010	K0299.210010	K0299.310010	-	M10	17	10	16	-/-30	17
K0299.110020	K0299.210020	K0299.310020	K0299.410020	M10	17	20	16	-/-30/-	17
K0299.110040	K0299.210040	K0299.310040	K0299.410040	M10	17	40	16	-/-30/-	17
K0299.112010	K0299.212010	K0299.312010	-	M12	19	10	20	-/-40	19
K0299.112025	K0299.212025	K0299.312025	K0299.412025	M12	19	25	20	-/-35/-	19
K0299.112050	K0299.212050	K0299.312050	K0299.412050	M12	19	50	20	-/-35/-	19
K0299.116015	K0299.216015	K0299.316015	-	M16	27	15	24	-/-50	27
K0299.116030	K0299.216030	K0299.316030	K0299.416030	M16	27	30	24	-/-50/-	27
K0299.116060	K0299.216060	K0299.316060	K0299.416060	M16	27	60	24	-/-50/-	27
K0299.120040	K0299.220040	K0299.320040	K0299.420040	M20	32	40	29	-/-60/-	32
K0299.120080	K0299.220080	K0299.320080	K0299.420080	M20	32	80	29	-/-60/-	32

Locating Components

with ball end, Style A

METRIC
Parts



Material:

Tool steel or stainless steel 1.4305.

Type:

Steel hardened and ground.
Stainless steel ground and kolsterized.

Part Number Example:

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 the illustration for K0351 Style B)

KIPP Locating Components with ball end Style A, metric

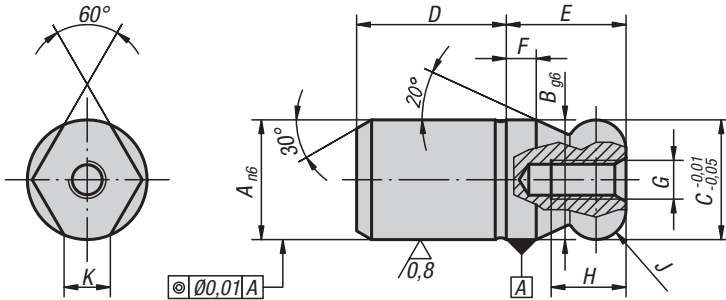
Item No. steel	Item No. stainless steel	A	B	C	D	E	F	G	H	J
K0350.08	K0350.508	8	8	8	10	8	2	M3	6	R 2
K0350.10	K0350.510	10	10	10	13	10	2,5	M3	6	R 2,5
K0350.12	K0350.512	12	12	12	15	12	3	M4	8	R 3
K0350.16	K0350.516	16	16	16	20	16	4	M5	10	R 4
K0350.20	K0350.520	20	20	20	25	20	5	M5	10	R 5
K0350.25	-	25	25	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 Components

with flattened ball end, Style C



METRIC
Parts



Material:

Tool steel or stainless steel 1.4305

Type:

Steel hardened and ground.
Stainless steel ground and kolsterized.

Part Number Example:

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 the illustration for K0351 Style B)

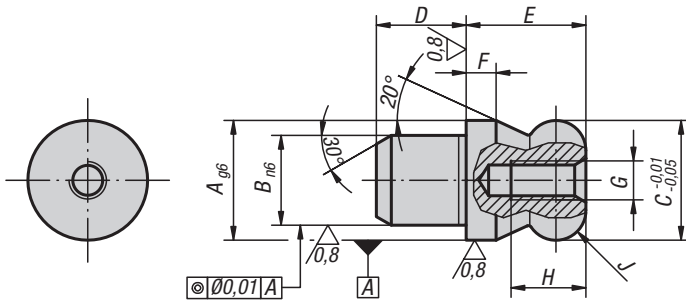
KIPP Locating Components with flattened ball end Style C, metric

Item No. steel	Item No. stainless steel	A	B	C	D	E	F	G	H	J	K
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
K0350.162	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 Components

with ball end, Style B

METRIC
Parts



Material:

Tool steel or stainless steel 1.4305.

Type:

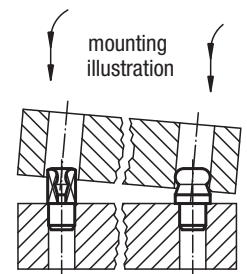
Steel hardened and ground.
Stainless steel ground and kolsterized.

Part Number Example:

K0351.20

Note:

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



KIPP Locating Components with ball end Style B, metric

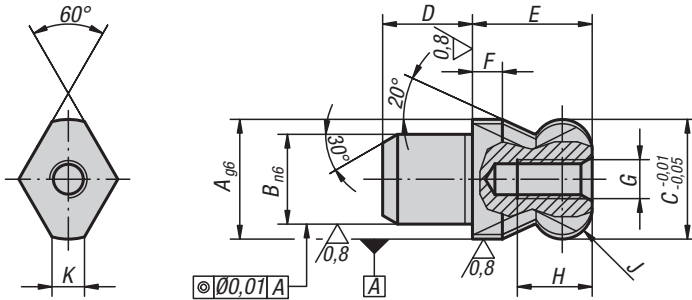
Item No. steel	Item No. stainless steel	A	B	C	D	E	F	G	H	J
K0351.10	K0351.510	10	7	10	7	10	2,5	M3	6	R 2,5
K0351.12	K0351.512	12	8	12	8	12	3	M4	8	R 3
K0351.16	K0351.516	16	12	16	12	16	4	M5	10	R 4
K0351.20	K0351.520	20	14	20	14	20	5	M5	10	R 5
K0351.22	-	22	16	22	16	22	5,5	M5	10	R 5,5
K0351.25	-	25	18	25	18	25	6	M5	10	R 6

Locating Components

with flattened ball end, Style D



METRIC
Parts



Material:

Tool steel or stainless steel 1.4305.

Type:

Steel hardened and ground.

Stainless steel ground and kolsterized.

Part Number Example:

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 the illustration for K0351 Style B)

KIPP Locating Components with flattened ball end Style D, metric

Item No. steel	Item No. stainless steel	A	B	C	D	E	F	G	H	J	K
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
K0351.162	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

Cylindrical Positioning Pins



METRIC
Parts

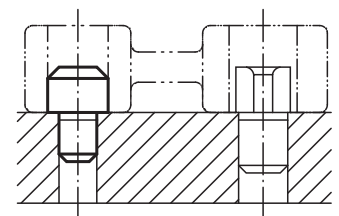
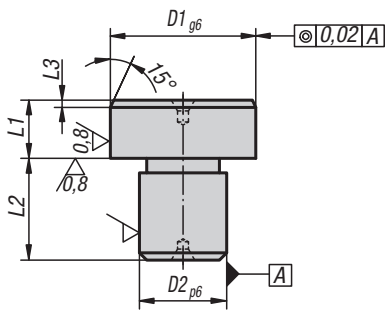


Material:
Tool steel.

Type:
Hardened and ground.

Part Number Example:
K0352.08

Note:
Face surfaces with center hole.



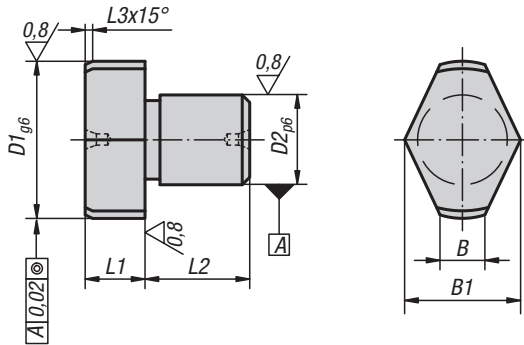
KIPP Cylindrical Positioning Pins, ground, metric

Item No.	Version	D1	D2	L1	L2	L3
K0352.05	D1 ground	8	5	8	8	2
K0352.07	D1 ground	10	7	8	8	2
K0352.08	D1 ground	12	8	8	10	2
K0352.081	D1 ground	14	8	8	10	3
K0352.09	D1 ground	16	9	8	12	3
K0352.12	D1 ground	18	12	8	12	3
K0352.121	D1 ground	20	12	8	14	3
K0352.14	D1 ground	22	14	8	14	3
K0352.16	D1 ground	25	16	8	16	3

Free-Milled Positioning Pins



METRIC
Parts

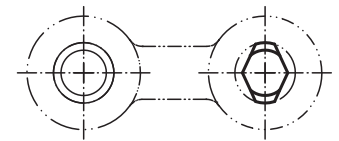


Material:
Tool steel.

Type:
Hardened and ground.

Part Number Example:
K0354.08

Note:
Face surfaces with center hole.



KIPP Free-Milled Positioning Pins, ground, metric

Item No.	Version	D1	D2	L1	L2	L3	B	B1
K0354.05	D1 ground	8	5	8	8	2	2	6,6
K0354.07	D1 ground	10	7	8	8	2	3	8,6
K0354.08	D1 ground	12	8	8	10	2	3	9,8
K0354.081	D1 ground	14	8	8	10	3	3,5	11,2
K0354.09	D1 ground	16	9	8	12	3	4	13,2
K0354.12	D1 ground	18	12	8	12	3	4,5	14,7
K0354.121	D1 ground	20	12	8	14	3	5	16,6
K0354.14	D1 ground	22	14	8	14	3	5,6	18
K0354.16	D1 ground	25	16	8	16	3	6	19,8