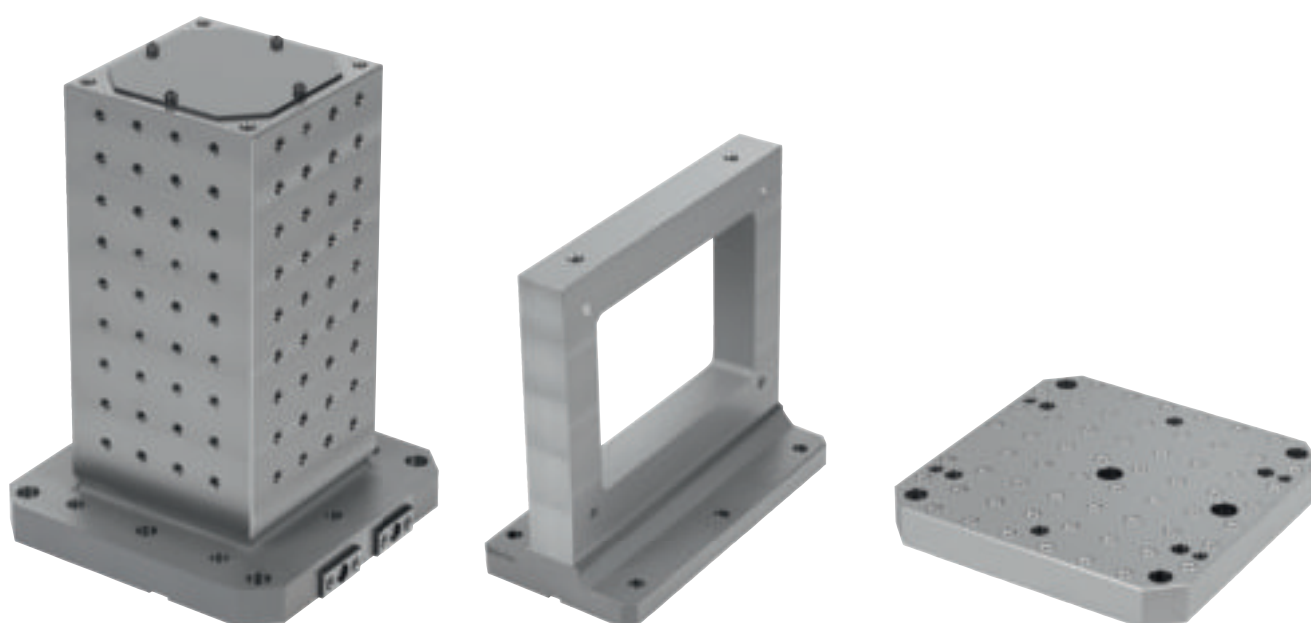
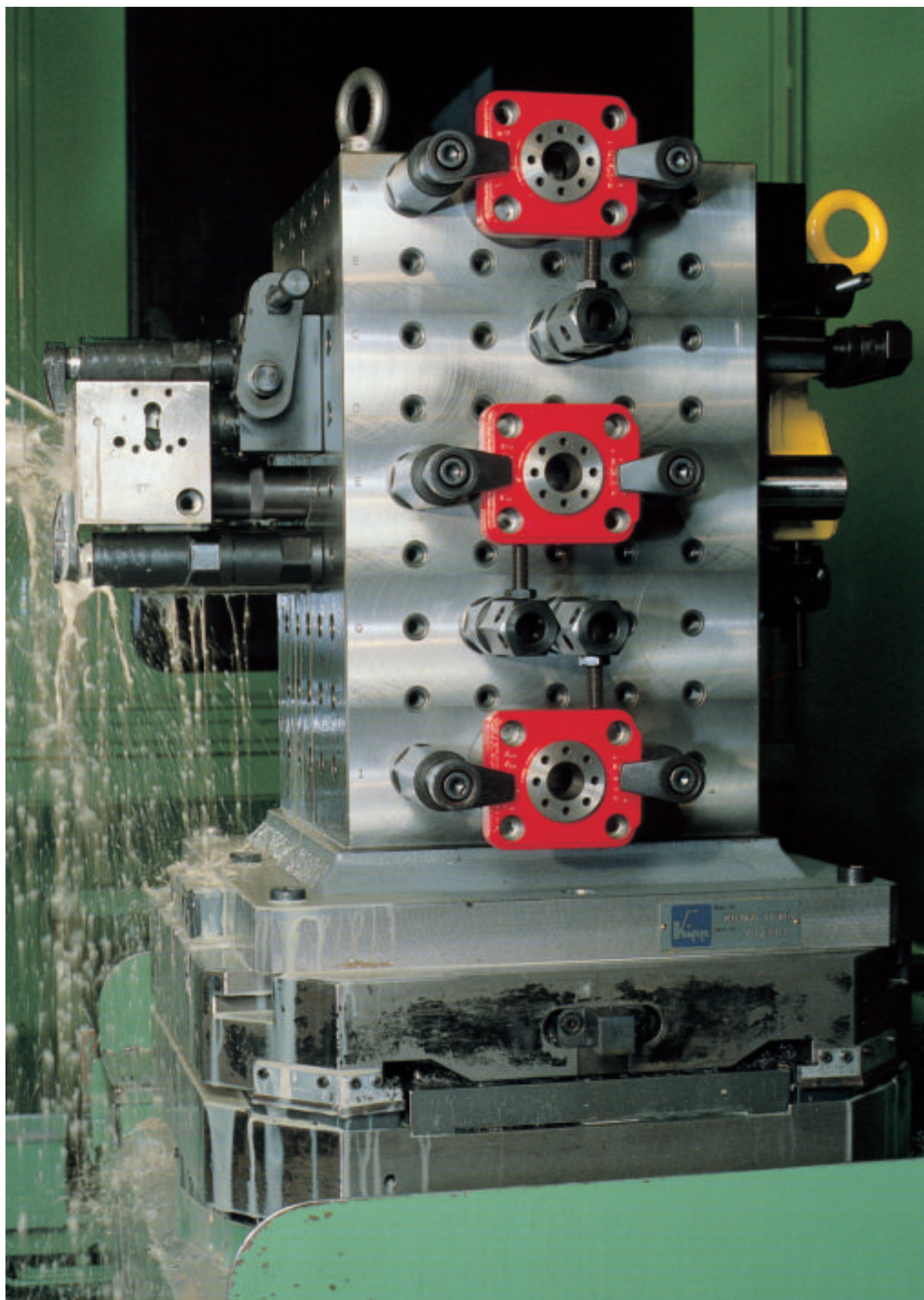
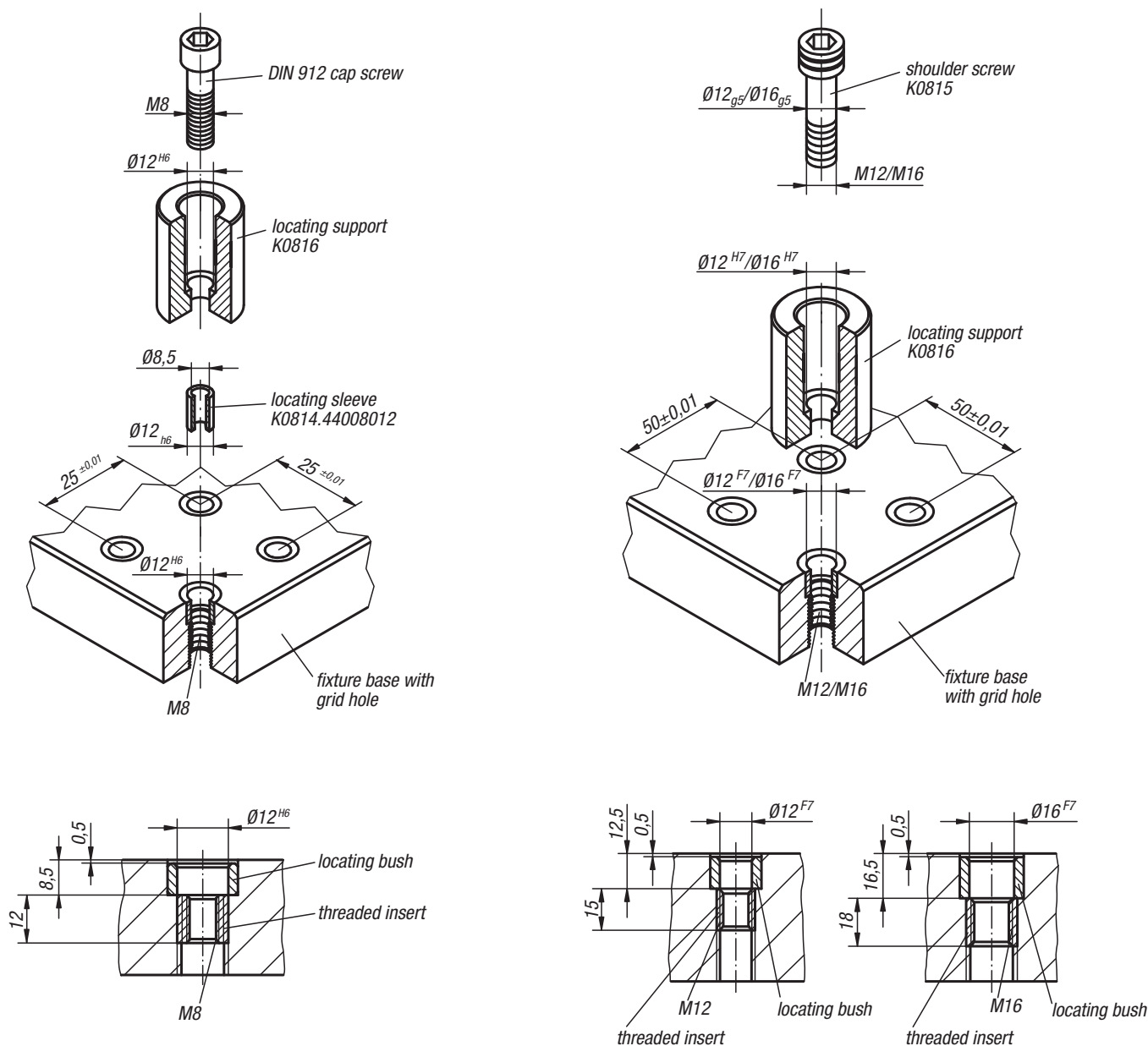


Basic elements





Grid holes and pitches



Grid hole:

The characteristic feature of the grid hole is its dual function: the coaxial arrangement of the locating and the threaded parts allows positioning and fastening at the same time with one grid hole (see illustrations). As a result, the size of the fixture elements can be reduced to a minimum and their flexibility increased accordingly.

Each grid hole consists of two parts:

- reamed bush. Material: hardened tool steel.
- threaded insert. Material: carbon steel, tempered to ca. 1100-1300 N/mm².

Since the reamed bushes are recessed 0.5 mm from the surface of the fixture bases, the mounting surfaces can be re-machined in the event of wear.

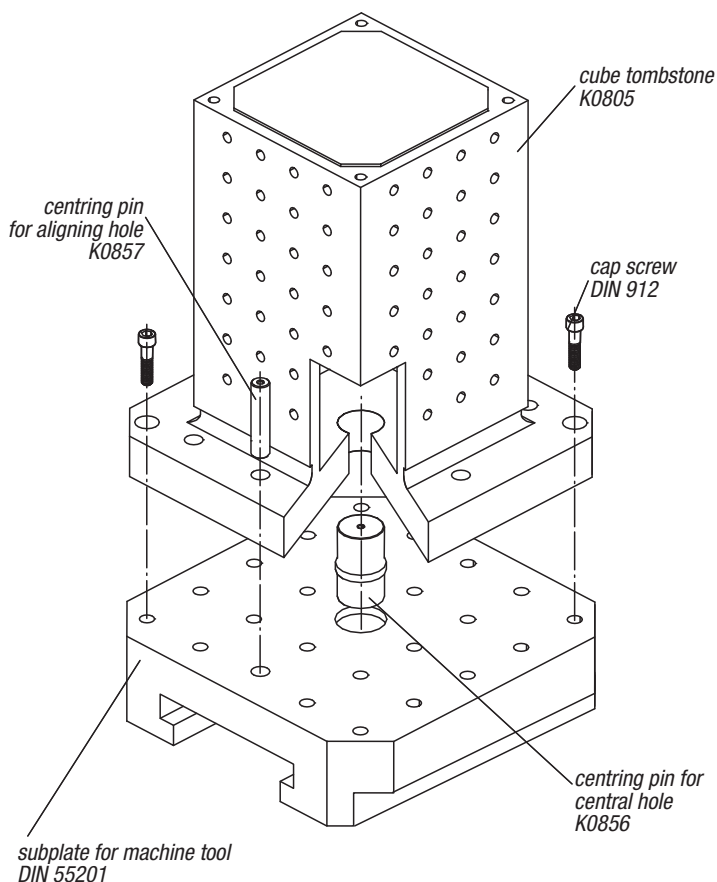
Positioning the base elements

Single side tombstone K0802, double side tombstone K0803, cube tombstone K0805 and subplates K0806 have two positioning options:

a) Positioning on subplates for machine-tools acc. to DIN 55 201.

Positioning procedure:

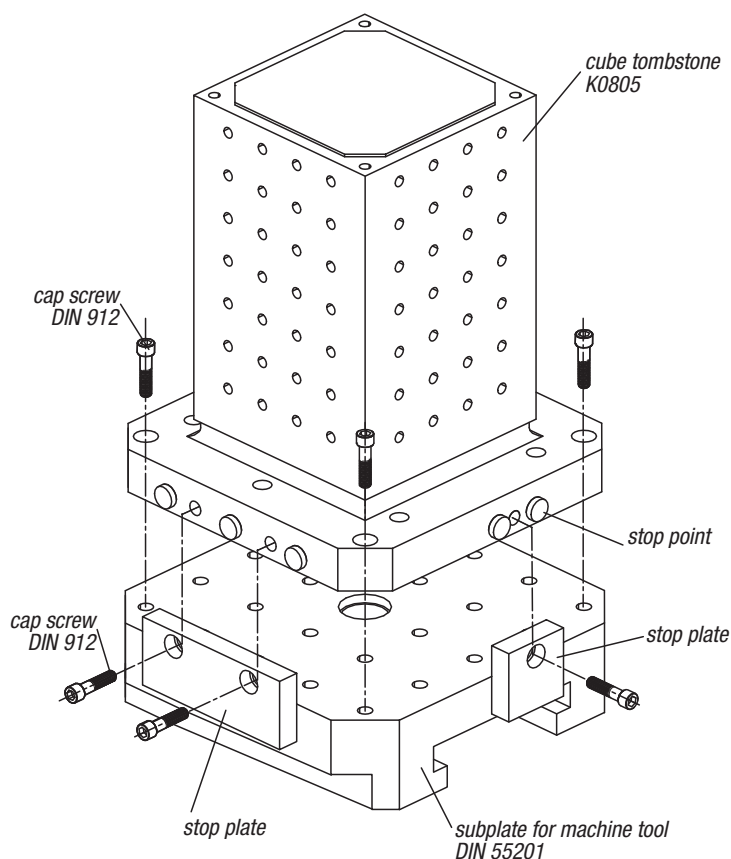
1. Insert locating pin in the centre bore of the subplate.
2. Position the tombstones, cube tombstones and subplates over the central hole.
3. Use the locating pin for the aligning hole to align the basic elements.



b) Positioning on subplates for machine tools acc. to JIS 6337-1980.

Positioning procedure:

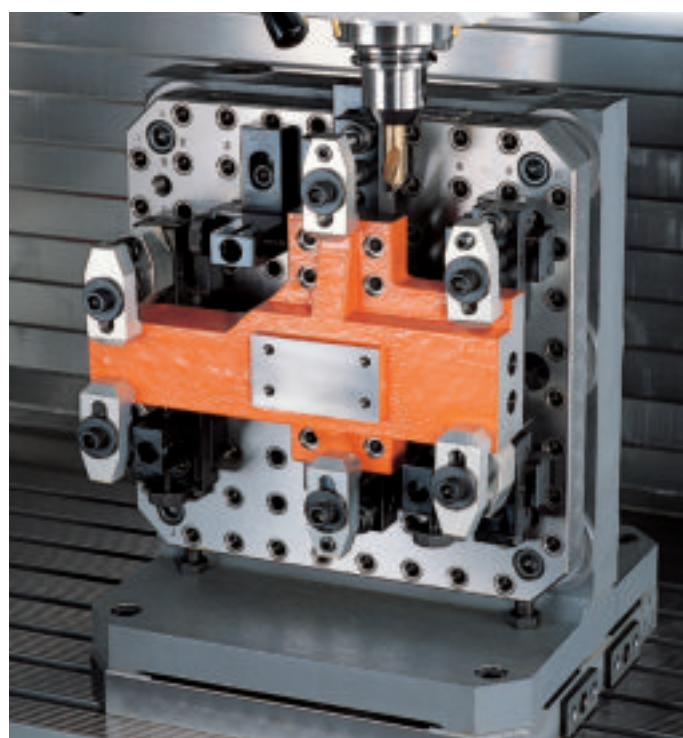
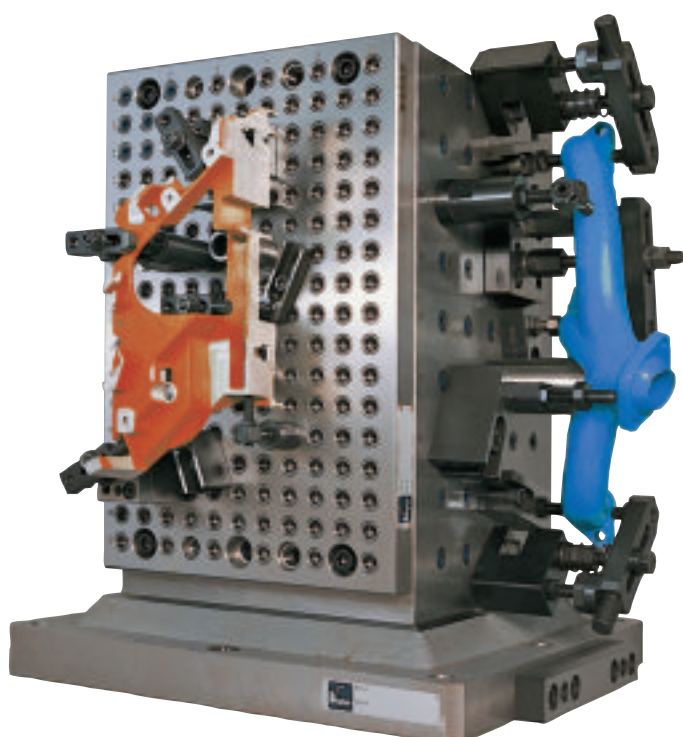
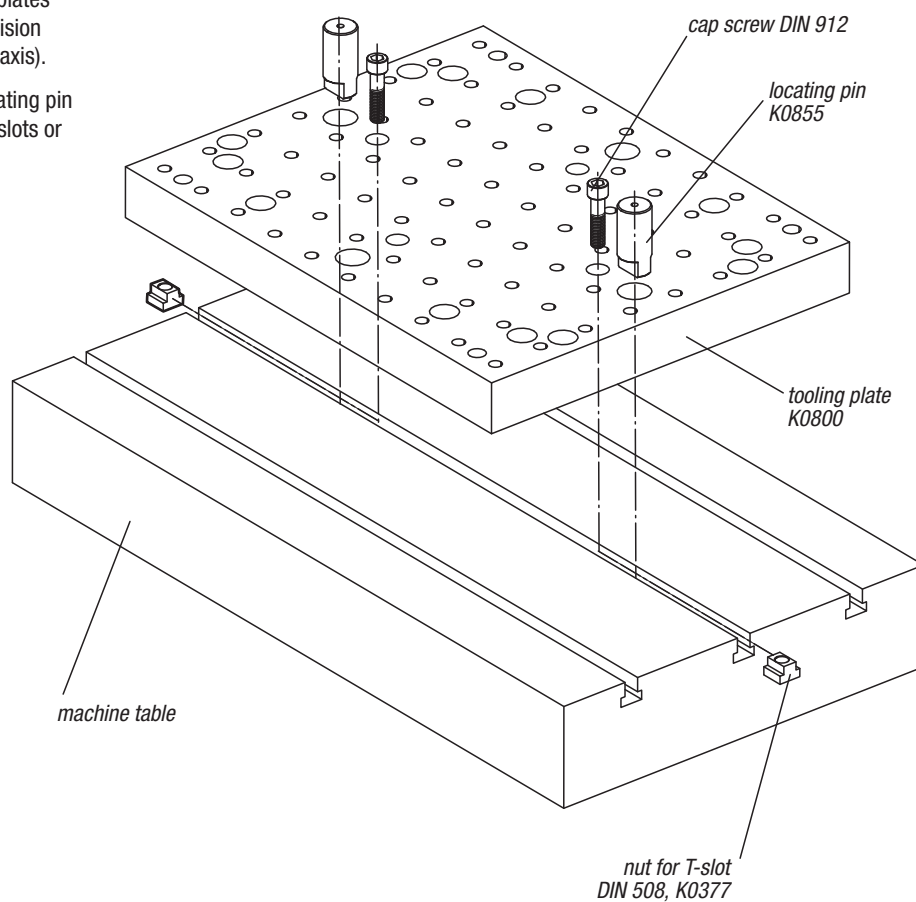
1. Mount stop plates on the machine table.
2. Attach stop points to the reference faces (stop plates) using socket head screws.



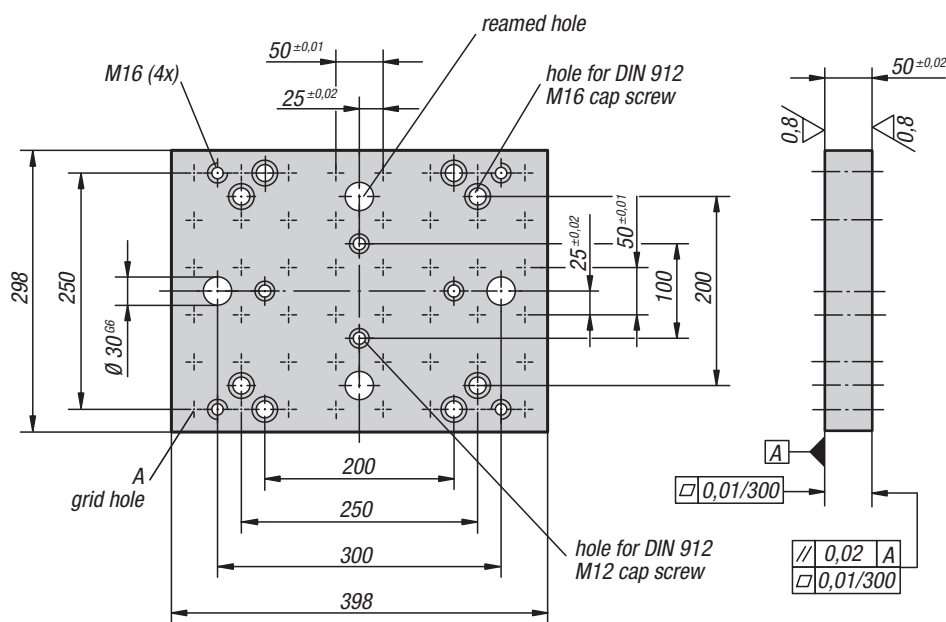
on machine tables

Locating pins are used for positioning tooling plates K0800. The tooling plates each have four precision holes for the locating pins (two holes on each axis).

An M6 screw inserted into the head of the locating pin is used to insert this pin accurately into the T-slots or to remove it.



Tooling plates



Material:
Grey cast iron GJL 250

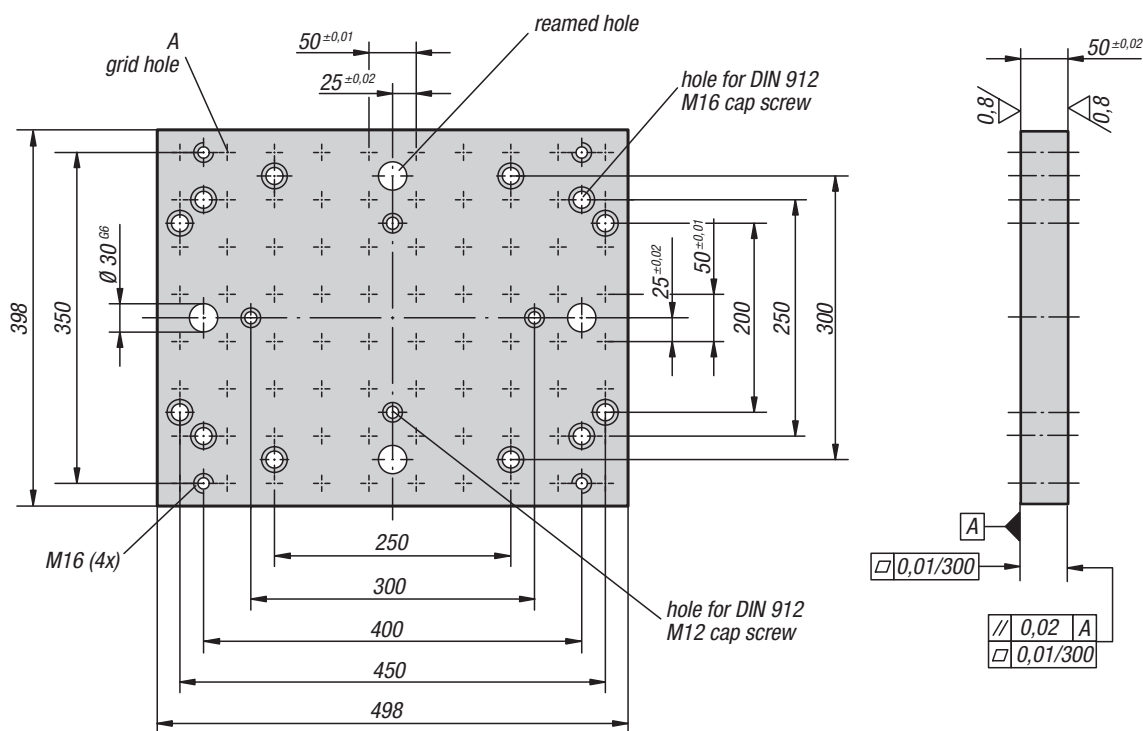
Version:
Mounting surfaces ground

Sample order:
K0800.003040

Note:
Grid hole pitch 50 ± 0.01 mm.
Grid hole plugs and ring bolts for lifting are supplied.
For large workpieces the tooling plates can be joined together using connecting pieces K0854.400.

KIPP Tooling plates

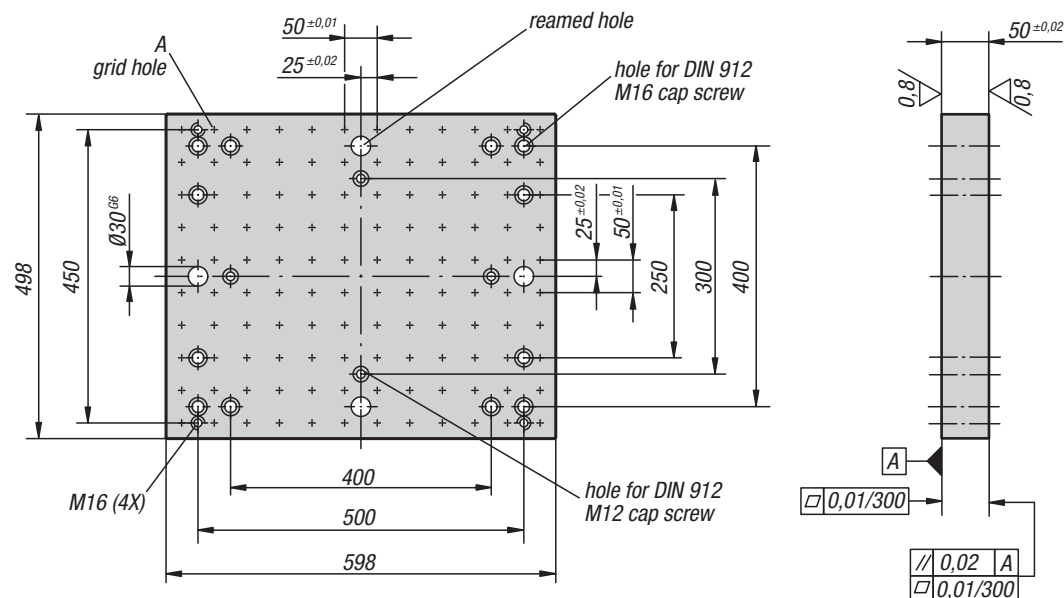
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.003040	without grid holes	-	-	-	42
K0800.123040	with grid holes	12 F7	M12	48	39



KIPP Tooling plates

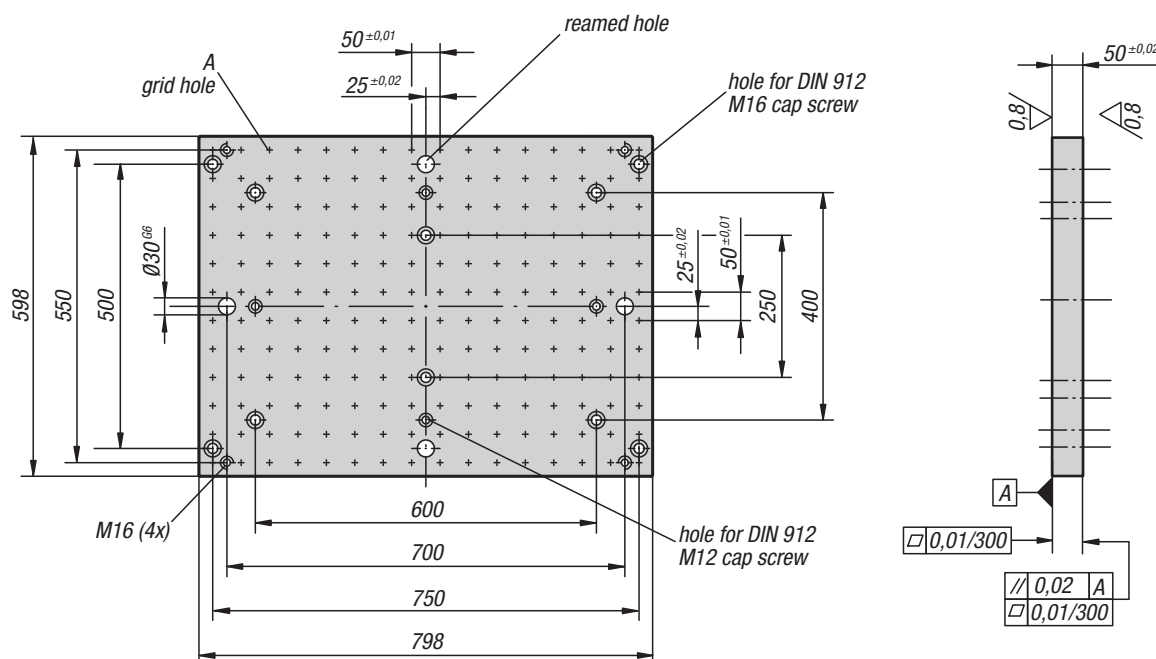
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.004050	without grid holes	-	-	-	70
K0800.124050	with grid holes	12 F7	M12	80	65

Tooling plates



KIPP Tooling plates

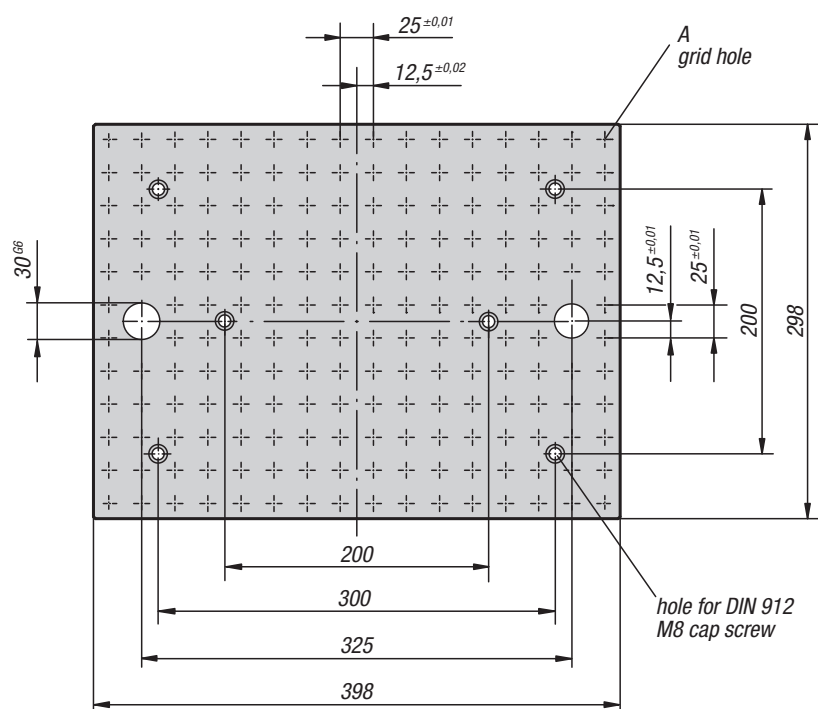
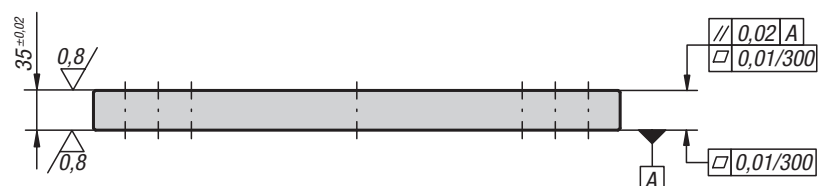
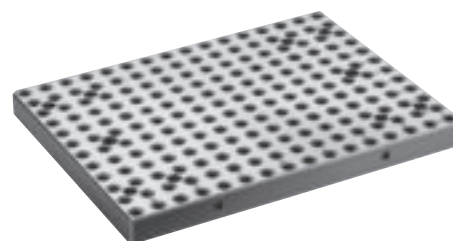
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.005060	without grid holes	-	-	-	115
K0800.125060	with grid holes	12 F7	M12	120	110
K0800.165060	with grid holes	16 F7	M16	120	105



KIPP Tooling plates

Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.006080	without grid holes	-	-	-	184
K0800.126080	with grid holes	12 F7	M12	192	175
K0800.166080	with grid holes	16 F7	M16	192	157

Tooling plates

**Material:**

Grey cast iron GJL 250

Version:

Mounting surfaces ground

Sample order:

K0800.083040

Note:Grid hole pitch $25 \pm 0,01$ mm.

Grid hole plugs and ring bolts for lifting are supplied.

KIPP Tooling plates

Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.083040	with grid holes	12 H6	M8	188	26

Tooling plates

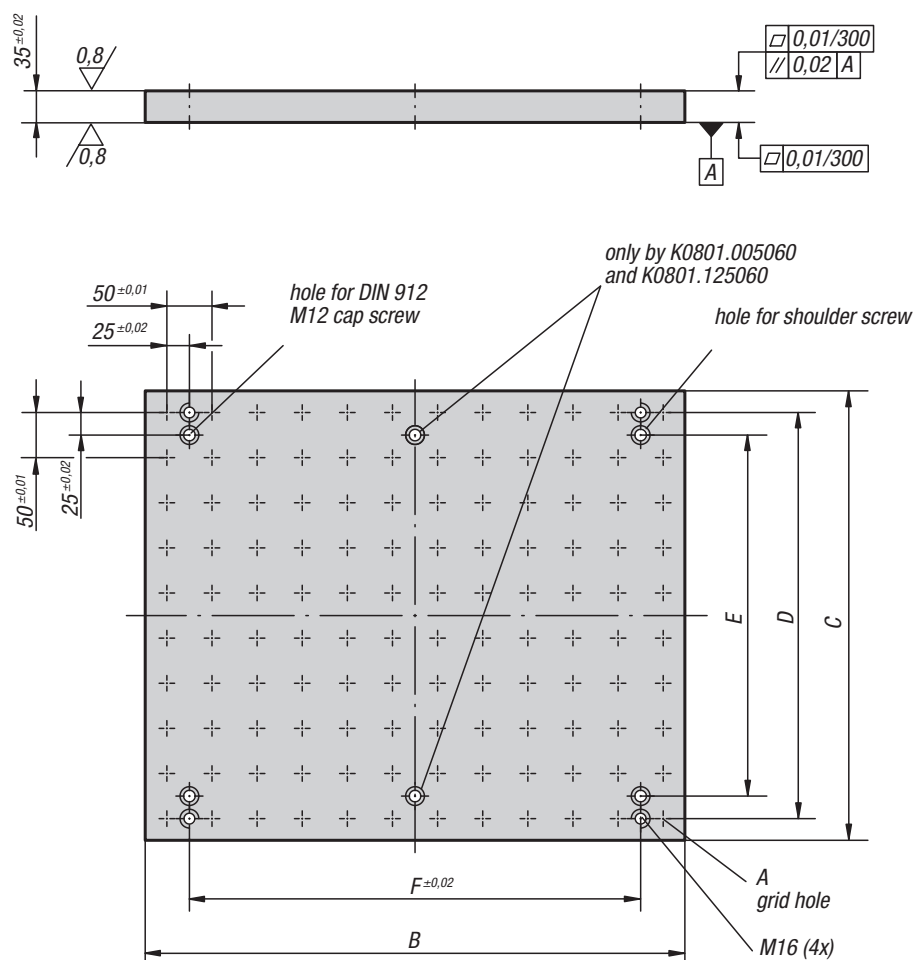


Fig. 1

Material:

Grey cast iron GJL 250

Version:

Mounting surfaces ground

Sample order:

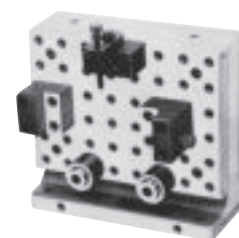
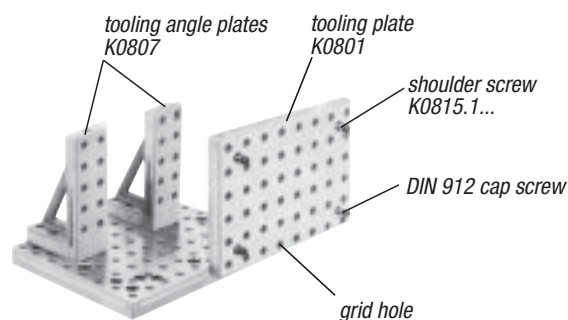
K0801.003040

Note:

Grid hole pitch 50 ± 0.01 mm. Grid hole plugs and ring bolts for lifting are supplied.

The tooling plates can be used with tooling angle plates K0807 (see Fig. 1). The tooling plates are positioned using shoulder screws K0815.1..., which are inserted into the fastening holes. The DIN 912 socket head screws are only used for additional fastening. Fig. 2 shows a further application variant. The double sided tombstones K0804 are dimensionally matched to the tooling plates.

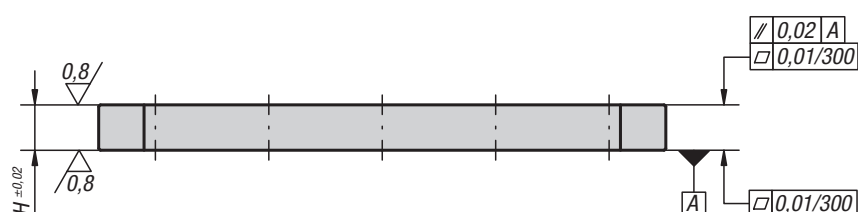
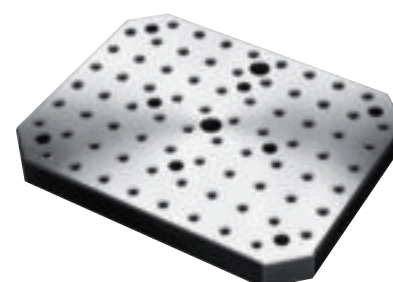
Fig. 2

**KIPP Tooling plates**

Order No.	Version	A locating hole	A thread	B	C	D	E	F	No. of grid holes	Suitable shoulder screw	weight kg
K0801.003040	without grid holes	-	-	398	298	250	200	300	-	K0815.112055	34.78
K0801.004050	without grid holes	-	-	498	398	350	300	400	-	K0815.112055	61
K0801.005060	without grid holes	-	-	598	498	450	400	500	-	K0815.112055	77
K0801.123040	with grid holes	12F7	M12	398	298	250	200	300	48	K0815.112055	35
K0801.124050	with grid holes	12F7	M12	498	398	350	300	400	80	K0815.112055	57
K0801.125060	with grid holes	12F7	M12	598	498	450	400	500	120	K0815.112055	73

K0806

Subplates

**Material:**

Grey cast iron GJL 250

Version:

Mounting surfaces ground

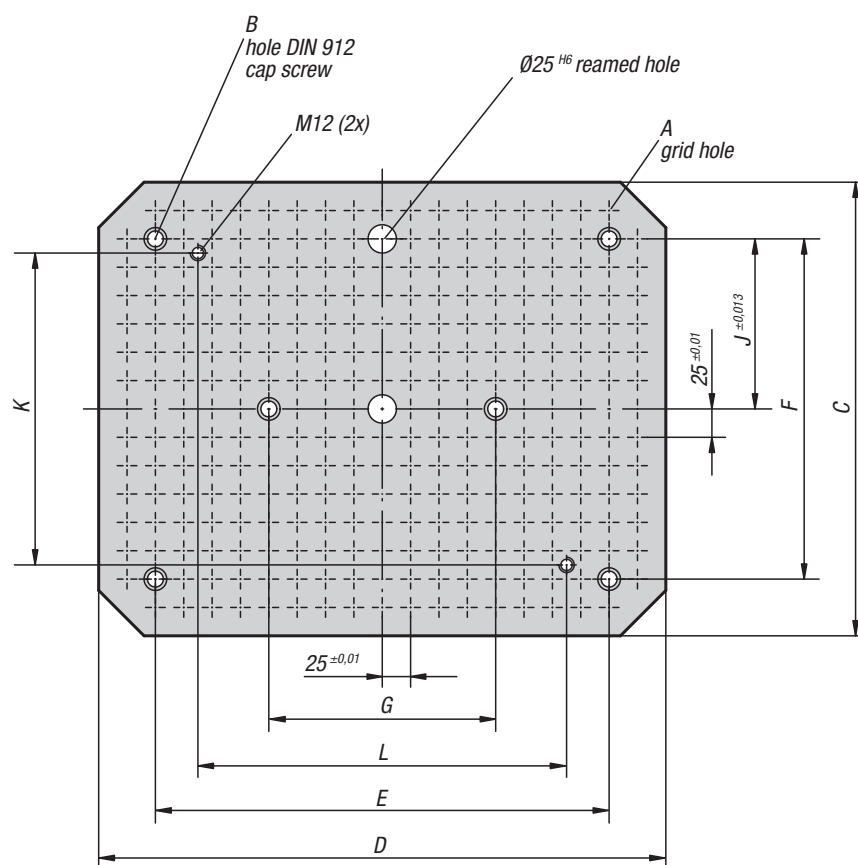
Sample order:

K0806.084050

Note:Grid hole pitch $25 \pm 0,01$ mm.

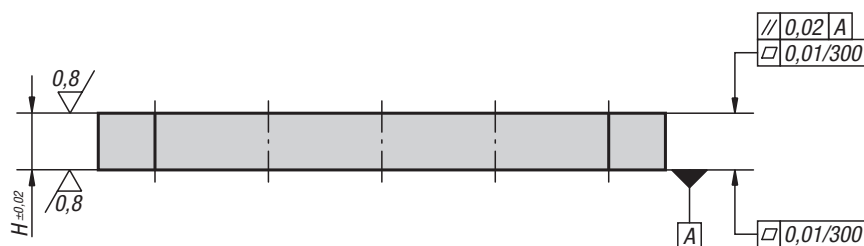
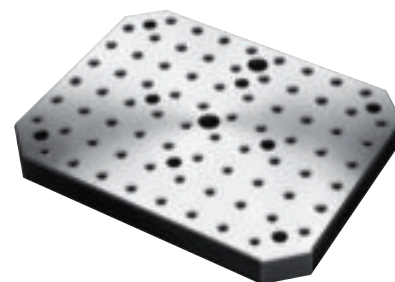
Grid hole plugs and ring bolts for lifting are supplied.

The subplates conform to subplates for machine tools acc. to DIN 55201.

**KIPP Subplates**

Order No.	A locating hole	A thread	B	C	D	E	F	G	H	J	K	L	No. of grid holes	weight ca. kg
K0806.084050	12 H6	M8	M12	400	500	400	300	200	40	150	275	325	273	55

Subplates



Material:

Grey cast iron GJL 250

Version:

Mounting surfaces ground

Sample order:

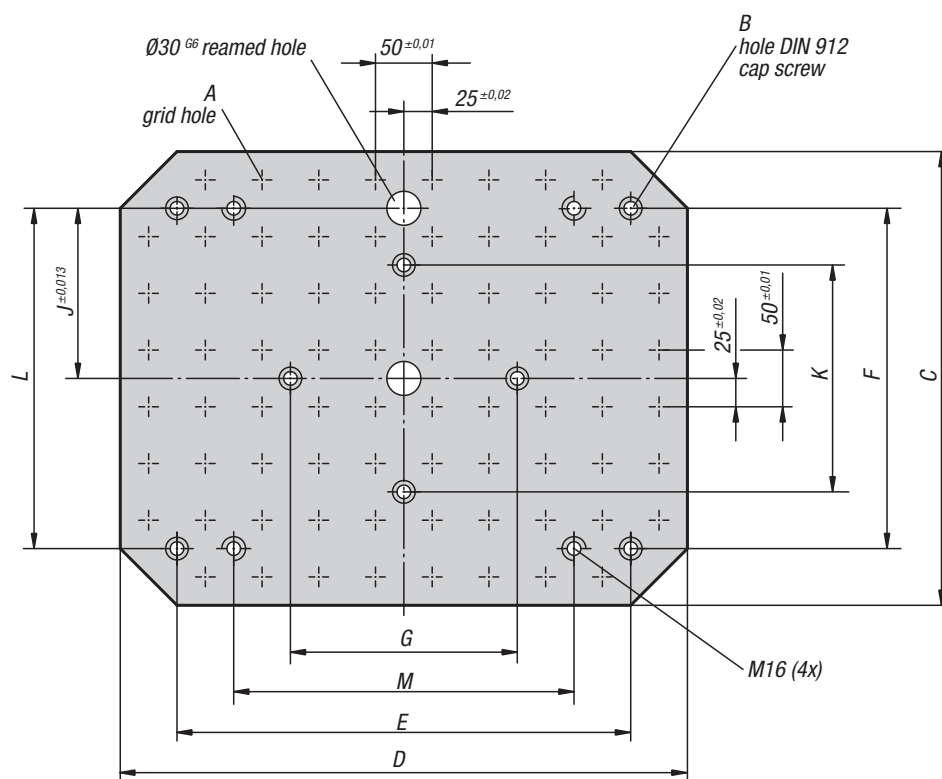
K0806.124050

Note:

Grid hole pitch 50 ± 0.01 mm.

Grid hole plugs and ring bolts for lifting are supplied.

The subplates conform to subplates for machine tools acc. to DIN 55201.



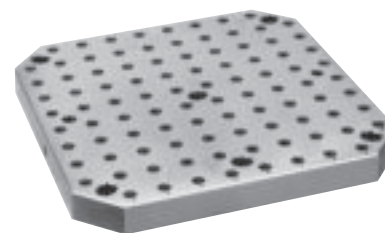
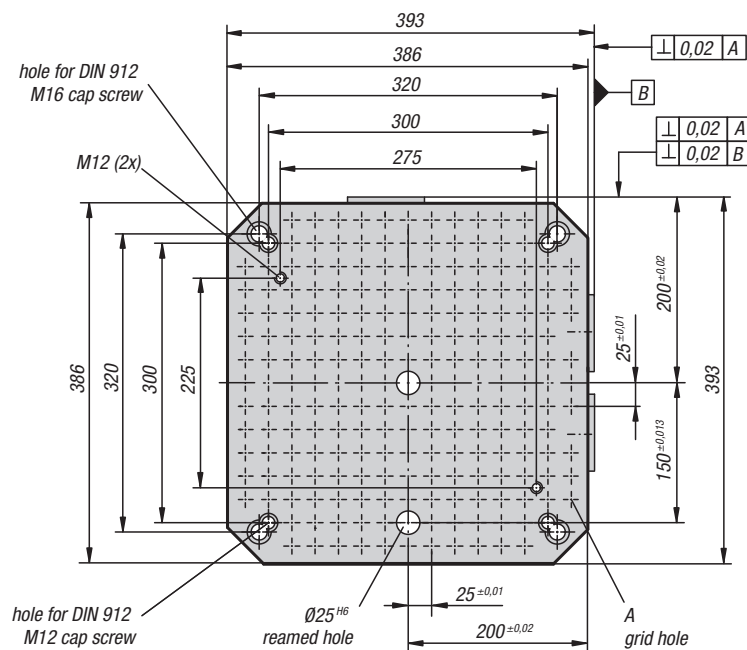
KIPP Subplates

Order No.	A locating hole	A thread	B hole for DIN 912 screw	C	D	E	F	G	H	J	K	L	M	No. of grid holes	weight ca. kg
K0806.124050	12F7	M12	M12	400	500	400	300	200	50	150	200	300	300	76	67
K0806.125063	12F7	M12	M12	500	630	400	400	400	50	200	200	400	500	116	122
K0806.165063	16F7	M16	M12	500	630	400	400	400	50	200	200	400	500	116	113
K0806.166380	16F7	M16	M16	630	800	600	400	400	50	200	200	500	700	188	174

Subplates



K0806.084040



Material:

Grey cast iron GJL 250

Version:

Mounting surfaces ground

Sample order:

K0806.005050

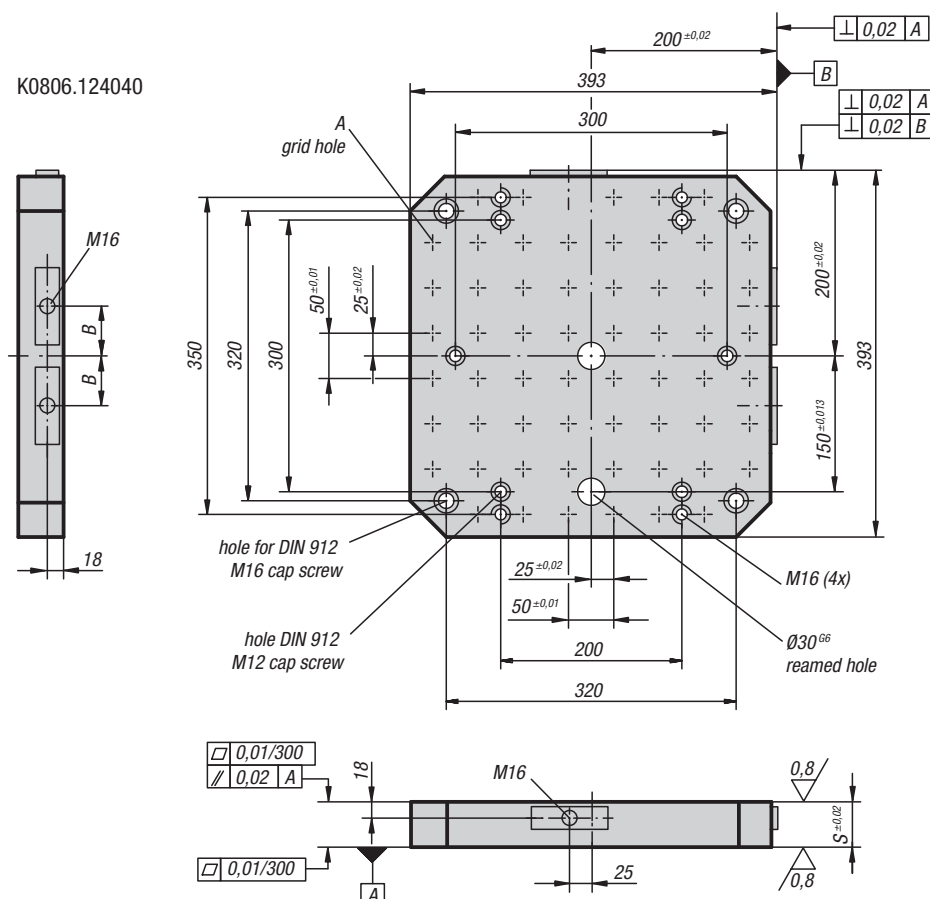
Note:

Grid hole pitch 25 ± 0.01 mm or 50 ± 0.01 mm.
Grid hole plugs and ring bolts for lifting are supplied.

These subplates conform to subplates for machine tools according to DIN 55201 and JIS 6337-1980.

The subplates are also available without grid holes. See plates without a value for "A" (xxx/-). Other dimensions on request.

K0806.124040



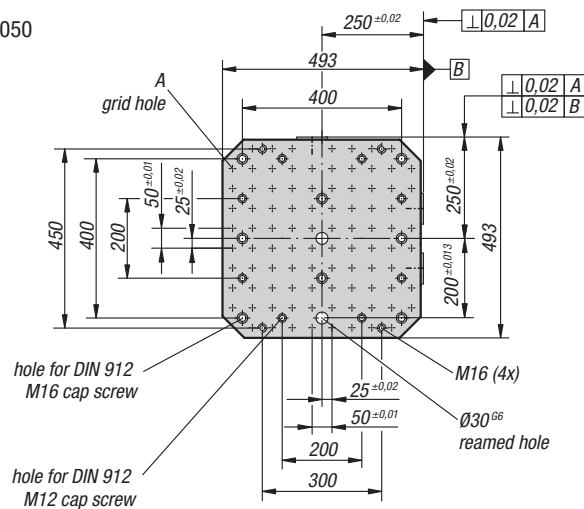
KIPP Subplates

Order No. with grid holes	Order No. without grid holes	A locating hole	A thread	B	S	No. of grid holes	weight ca. kg
K0806.084040	-	12F7	M8	55	40	204	36
K0806.124040	K0806.004040	12F7/-	M12/-	55	50	59/-	61/117
K0806.125050	K0806.005050	12F7/-	M12/-	75	50	93/-	82/92
K0806.126363	K0806.006363	12F7/-	M12/-	100	50	139/-	132/140
K0806.168080	K0806.008080	12F7/-	M16/-	135	60	237/-	245/260

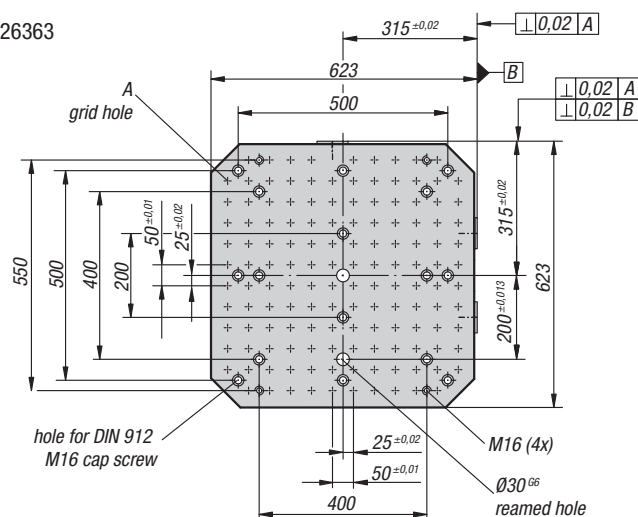
Subplates



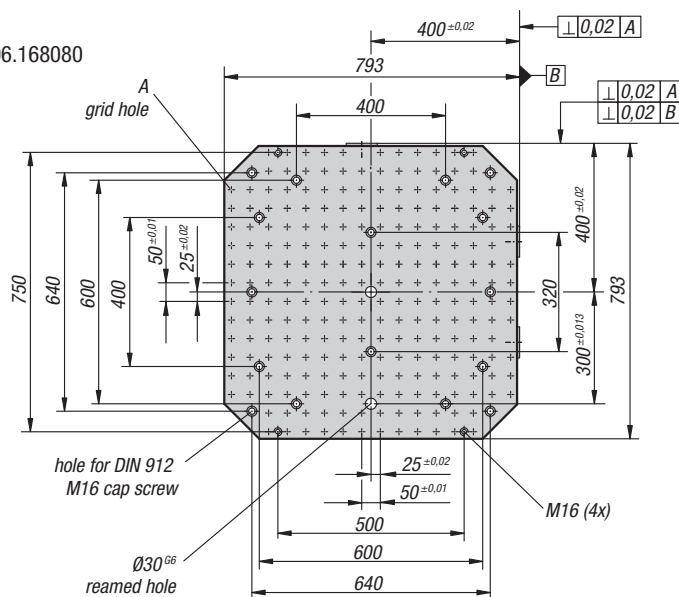
K0806.125050



K0806.126363

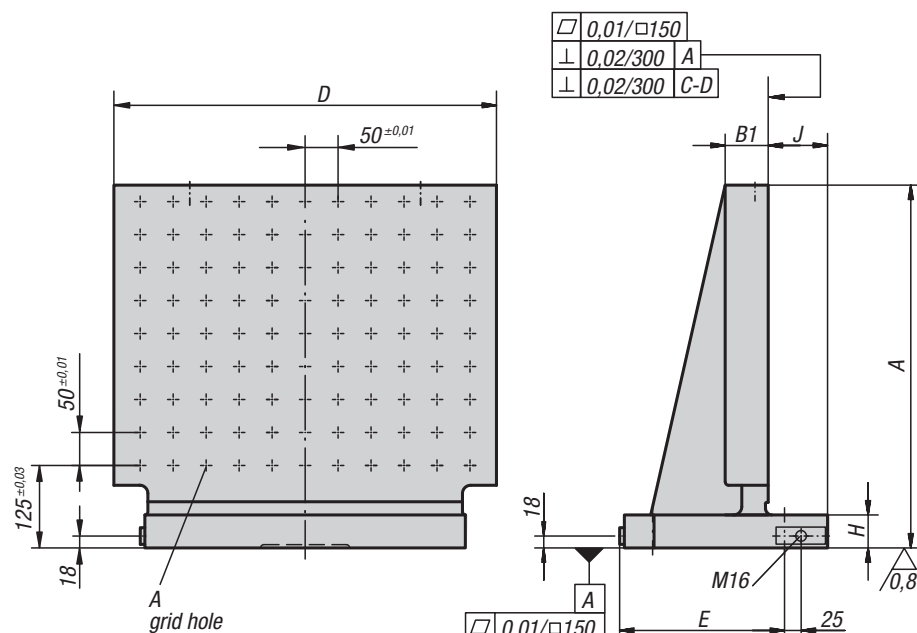
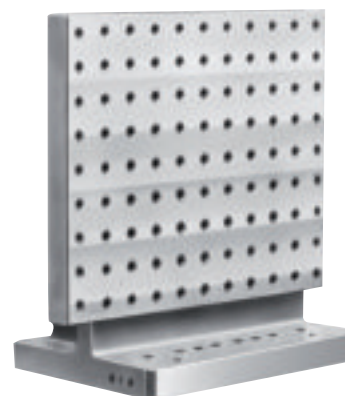


K0806.168080



Tombstones single-sided

with grid holes

**Material:**

GJL 300

Version:

Reference surfaces precision machined

Sample order:

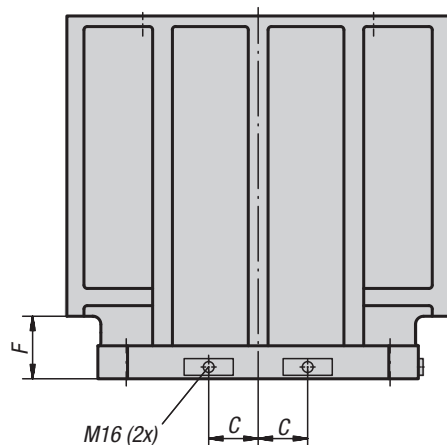
K0802.124047

Note:Grid hole pitch 50 ± 0.01 mm.

Grid hole plugs and ring bolts for lifting are supplied.

The tombstones are matched to pallets for machine tools acc. to DIN 55201 and JIS 6337-1980.

Other dimensions on request.

**KIPP Tombstones with grid holes.**

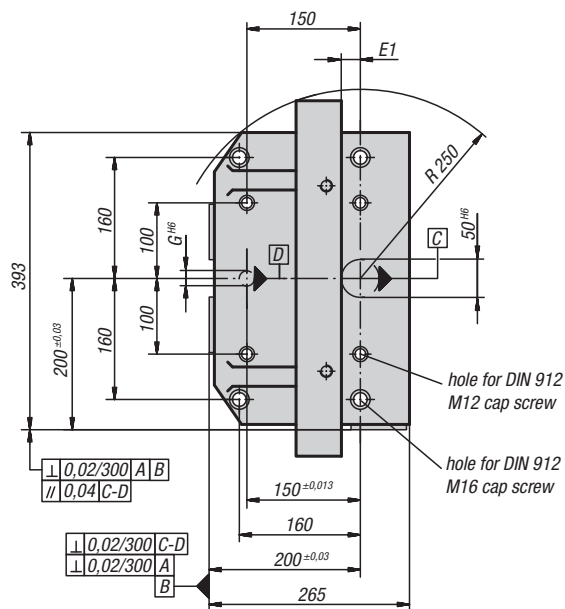
Order No.	A	B1	C	D	E	E1	F	G	H	J	A locating hole	A thread	No. of grid holes	weight ca. kg
K0802.124047	450	60	55	470	200	$25 \pm 0,03$	85	20	45	90	12F7	M12	63	95
K0802.125058	550	65	75	580	250	$25 \pm 0,03$	95	20	50	90	12F7	M12	99	181
K0802.165058	550	65	75	580	250	$25 \pm 0,03$	95	20	50	90	16F7	M16	99	156
K0802.166376	700	75	100	760	315	$50 \pm 0,03$	100	25	55	115	16F7	M16	180	298

Tombstones single-sided

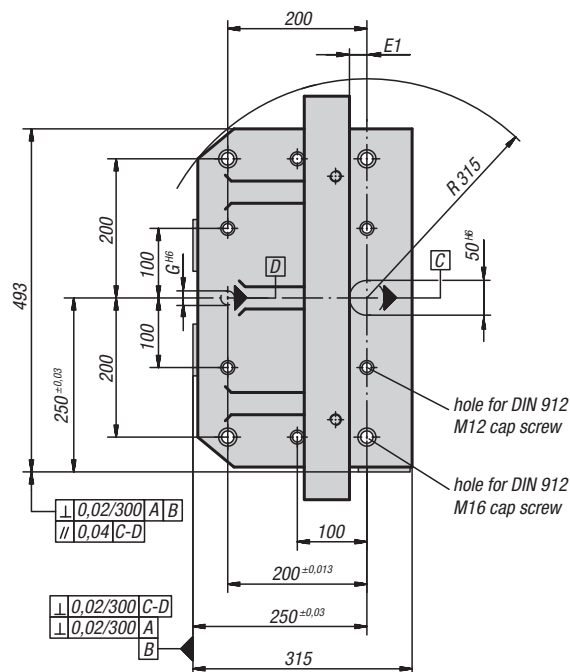
with grid holes



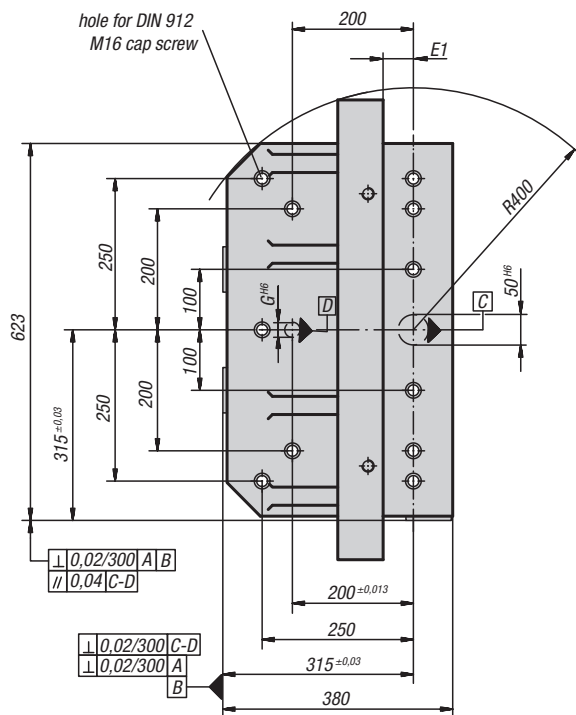
K0802.124047



K0802.125058
K0802.165058



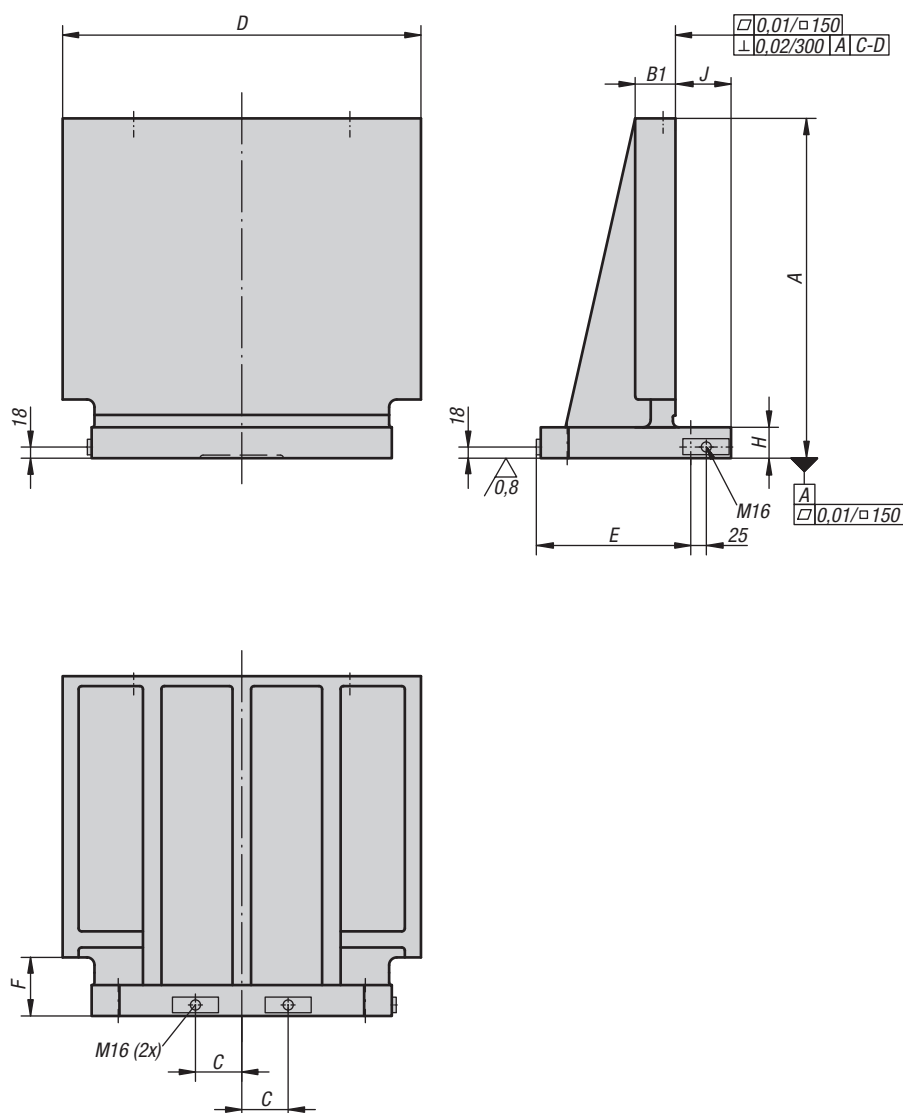
K0802.166376



K0802

Tombstones single-sided

without grid holes



Material:

GJL 300

Version:

Reference surfaces precision machined.
The clamping surface has 1 mm allowance.

Sample order:

K0802.004047

Note:

The single-sided tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.

Ring bolts for lifting are supplied.

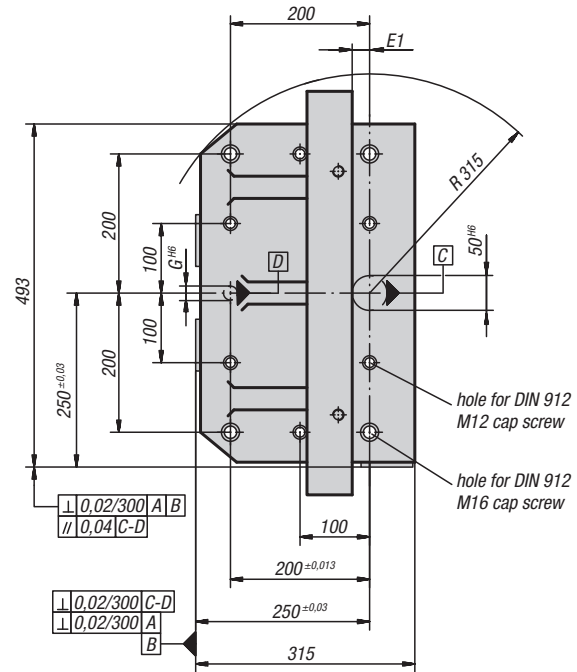
KIPP Tombstones without grid holes

Order No.	A	B1	C	D	E	E1	F	G	H	J	weight ca. kg
K0802.004047	450	61	55	470	200	24 ±0,2	85	20	45	89	98
K0802.005058	550	66	75	580	250	24 ±0,2	95	20	50	89	161
K0802.006376	700	76	100	760	315	49 ±0,2	100	25	55	114	341
K0802.008090	800	81	135	900	400	49 ±0,2	100	25	60	114	434

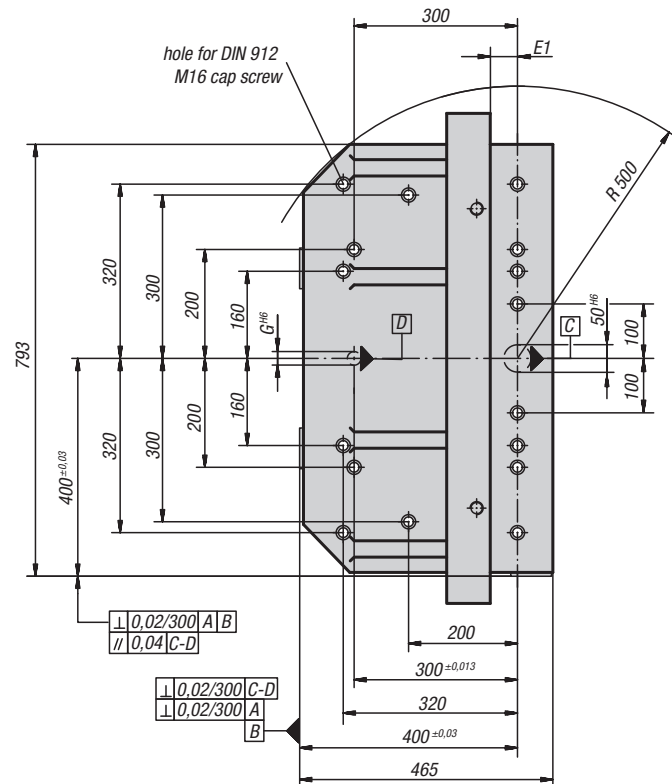
without grid holes



K0802.005058

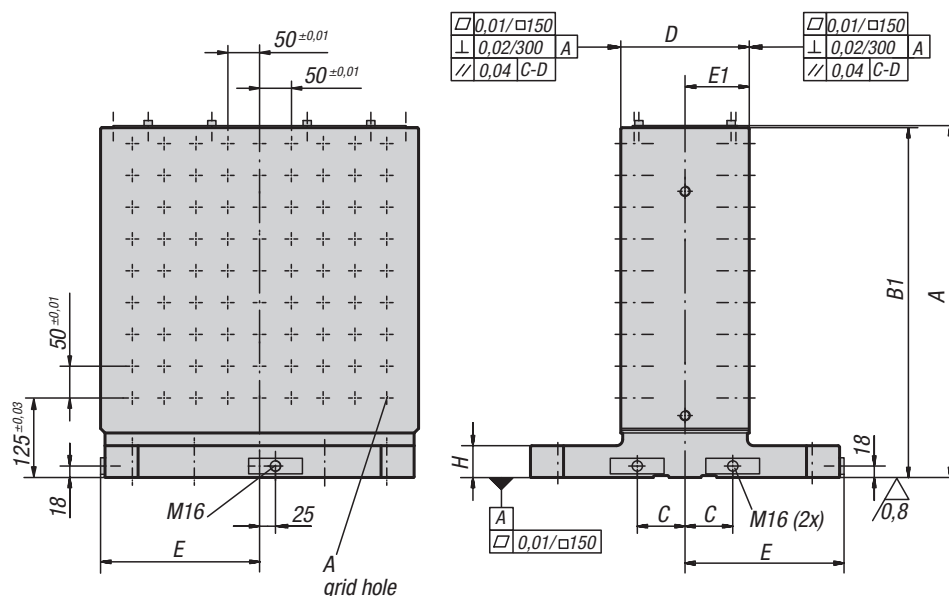


K0802.008090



Tombstones double-sided

with grid holes

**Material:**

GJL 300

Version:

Reference surfaces precision machined.

Sample order:

K0803.1240151

Note:

Grid hole pitch 50 ± 0.01 mm. Grid hole plugs and ring bolts for lifting are supplied. A cover prevents the cavities filling up with swarf. Workpieces can be mounted on clamping surfaces directly or using fixtures. Code numbers on the clamping surfaces prevent mounting the wrong part on the wrong side when machining different workpieces. The double-sided tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980. Other dimensions on request.

KIPP Tombstones double-sided with grid holes

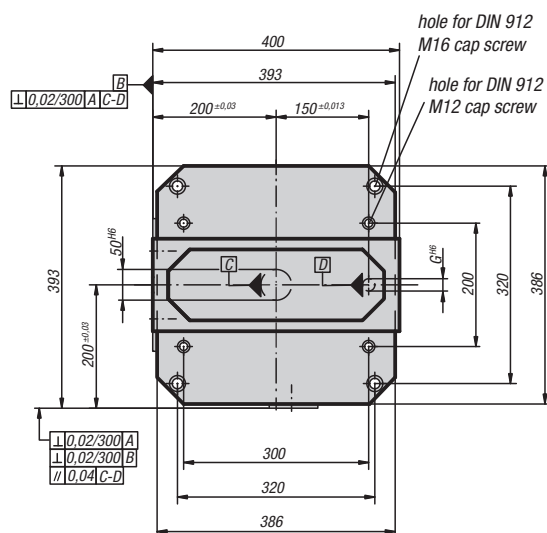
Order No.	A	B1	C	D	E	E1	G	H	A locating hole	A thread	No. of grid holes	weight ca. kg
K0803.1240151	553	550	55	$150 \pm 0,03$	200	$75 \pm 0,03$	20	50	12F7	M12	126	198
K0803.1250201	653	650	75	$200 \pm 0,03$	250	$100 \pm 0,03$	20	50	12F7	M12	198	287
K0803.1650201	653	650	75	$200 \pm 0,03$	250	$100 \pm 0,03$	20	50	16F7	M16	198	285
K0803.126325	703	700	100	$250 \pm 0,03$	315	$125 \pm 0,03$	25	55	12F7	M12	264	473
K0803.166325	703	700	100	$250 \pm 0,03$	315	$125 \pm 0,03$	25	55	16F7	M16	264	473
K0803.168030	803	800	135	$300 \pm 0,03$	400	$150 \pm 0,03$	25	60	16F7	M16	420	633

Tombstones double-sided

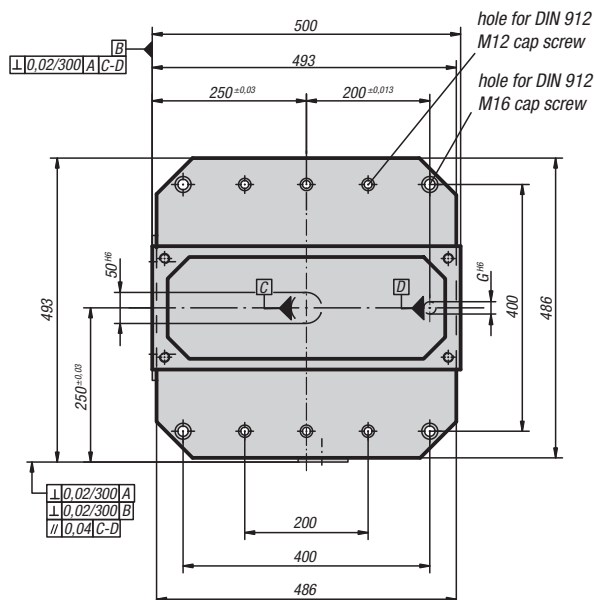
with grid holes



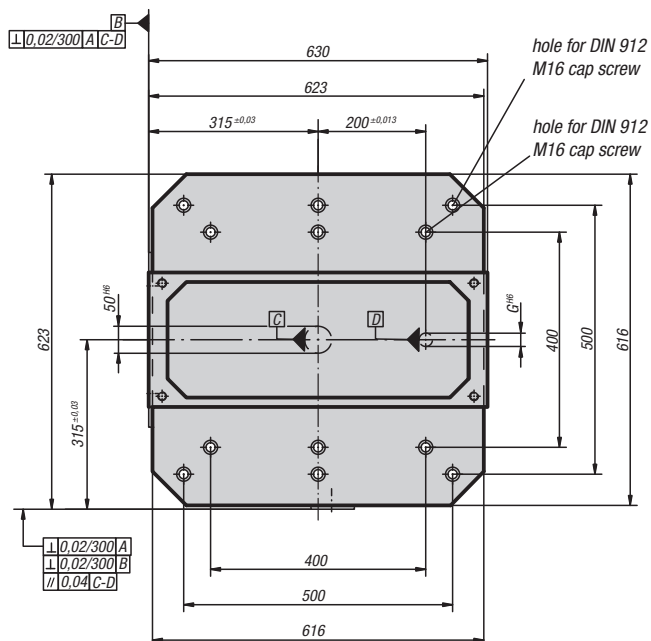
K0803.1240151



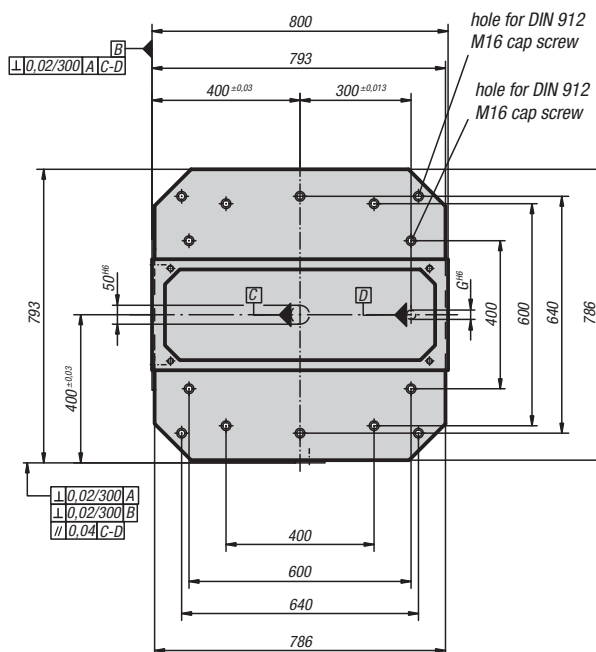
K0803.1250201
K0803.1650201



K0803.126325
K0803.166325

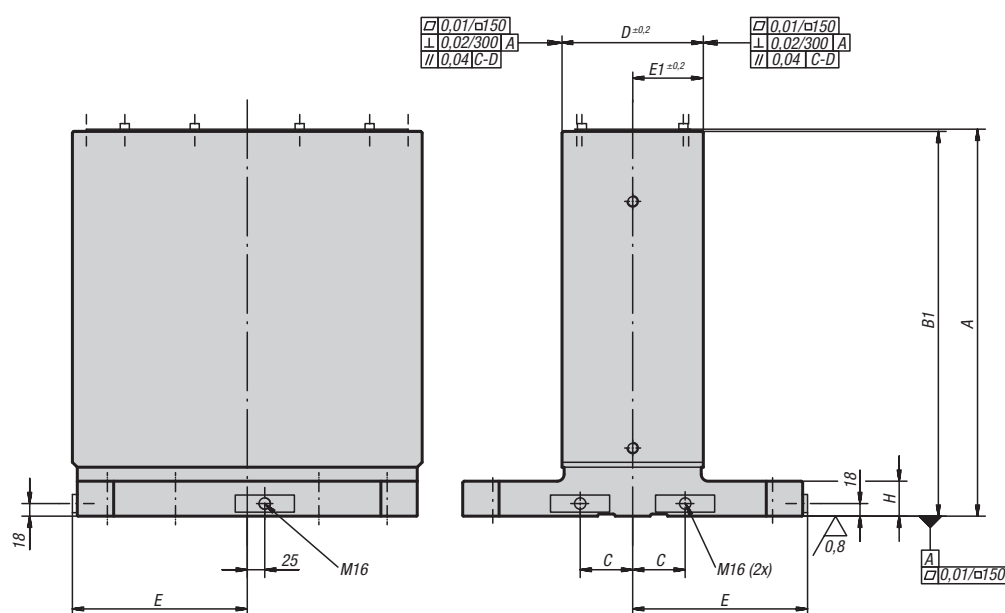


K0803.168030



Tombstones double-sided

without grid holes



Material:

GJL 300

Version:

Reference surfaces precision machined.
The clamping surfaces have 0.5 mm allowance.

Sample order:

Sample Origin:
K0803.0040151

Note:

The double-sided tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.

Ring bolts for lifting are supplied. A cover prevents the cavity of the tombstone filling up with swarf.

KIPP Tombstones double-sided without grid holes

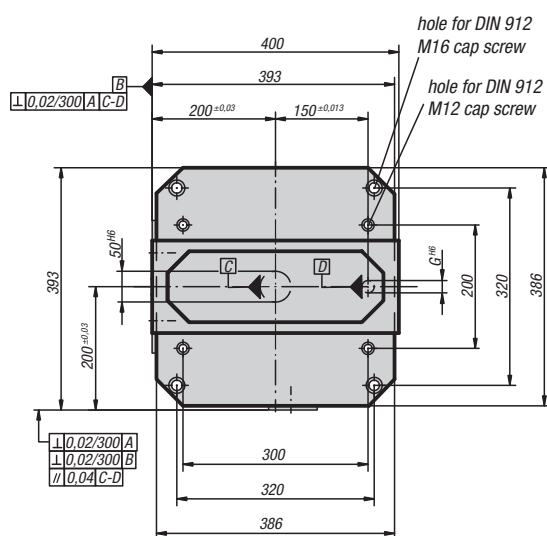
Order No.	A	B1	C	D	E	E1	G	H	weight ca. kg
K0803.0040151	553	550	55	151±0,2	200	75,5 ±0,2	20	50	202
K0803.005020	553	550	75	201±0,2	250	101,5 ±0,2	20	50	257
K0803.0050201	653	650	75	201±0,2	250	101,5±0,2	20	50	317
K0803.006325	703	700	100	251±0,2	315	125,5±0,2	25	55	471
K0803.0063251	803	800	100	251±0,2	315	125,5±0,2	25	55	537
K0803.008030	803	800	135	301±0,2	400	150,5±0,2	25	60	726

Tombstones double-sided

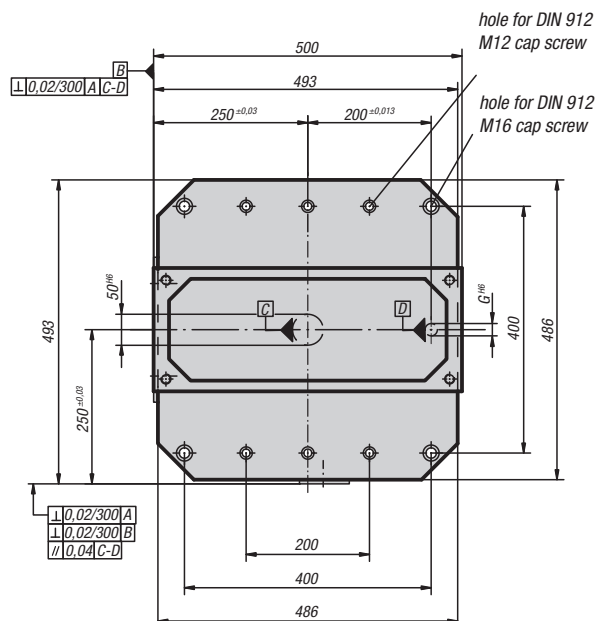
without grid holes



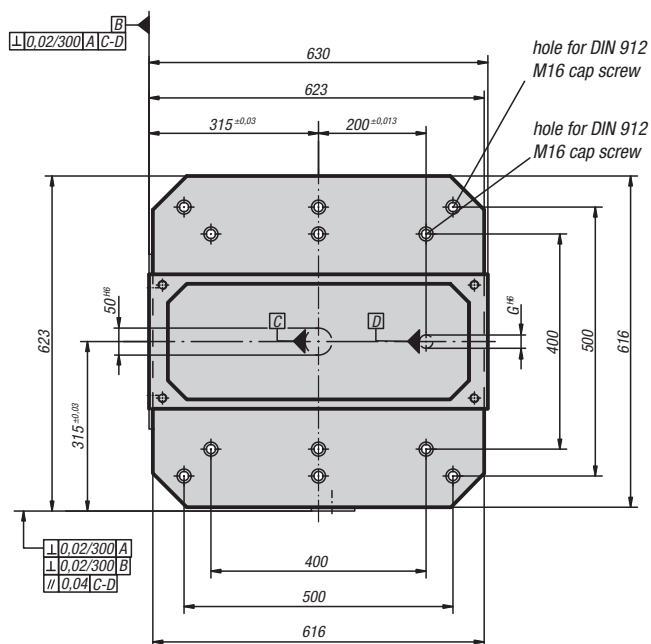
K0803.0040151



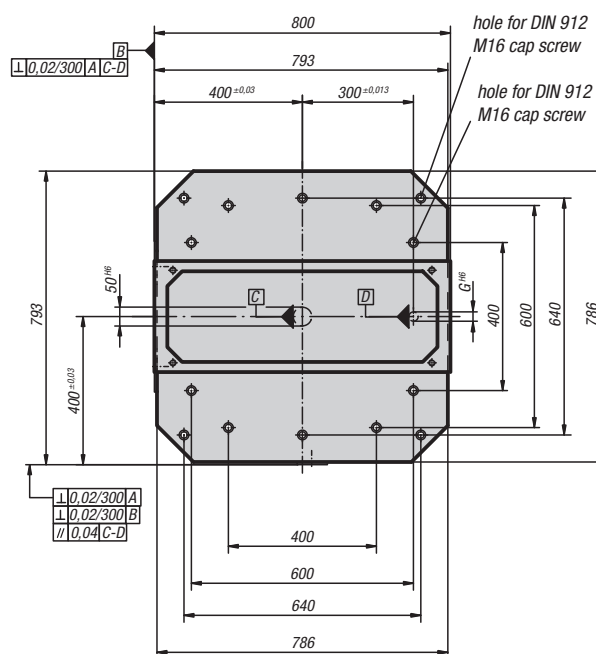
K0803.005020
K0803.0050201



K0803.006325
K0803.0063251



K0803.008030



Tombstones double-sided

grey cast iron

**Material:**

GJL 250

Version:

Reference surfaces precision machined.

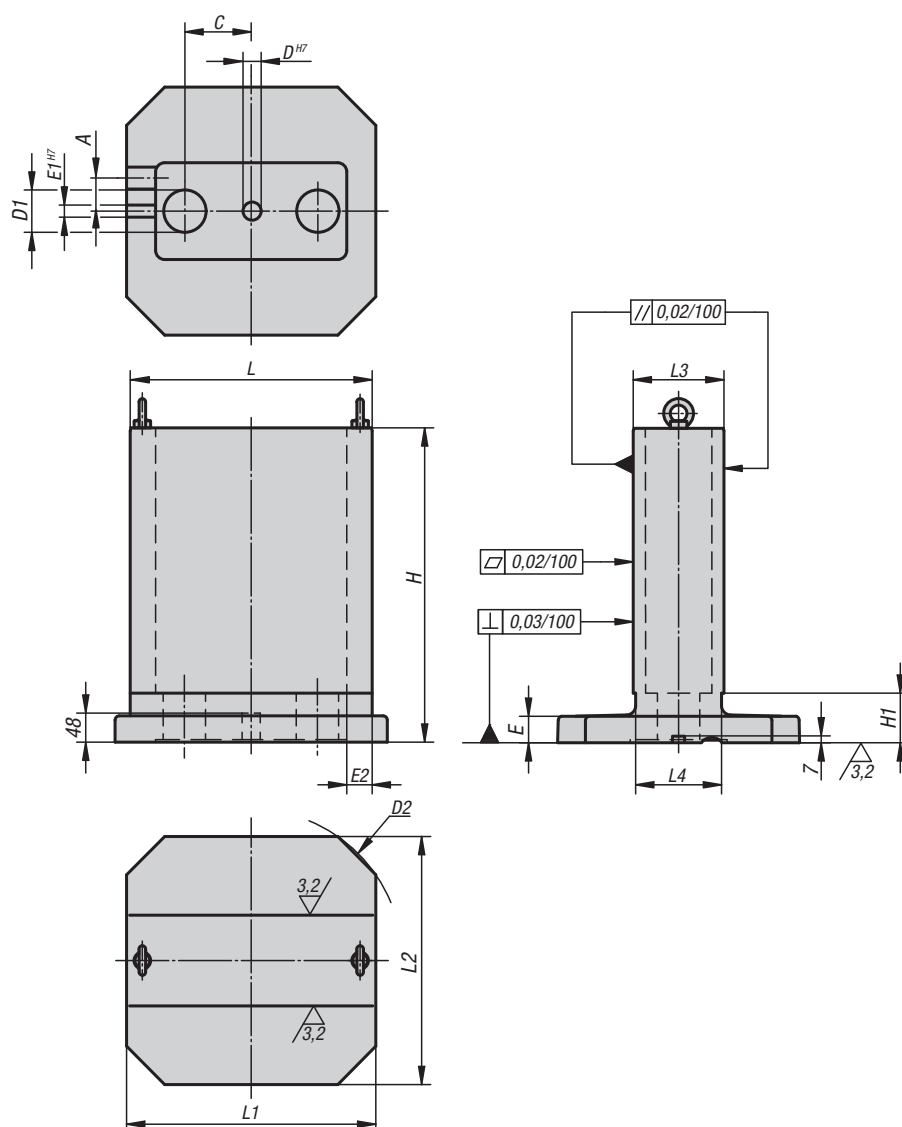
Note:

Ring bolts for lifting are supplied. A cover prevents the cavities filling up with swarf.

Drawing reference:

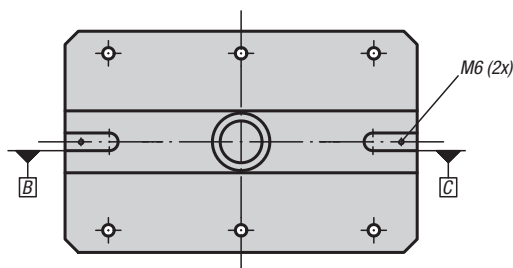
machined faces: +0.2 mm/ +0.5 mm

unmachined faces: ±2 mm

**KIPP Tombstones double-sided, grey cast iron**

Order No.	A	C	D	D1	D2	E	E1	E2	H	H1	L	L1	L2	L3	L4	weight ca. kg
K1225.320125	32,5	75	30	50	400	40	20	40	378	65	320	332	330	125	115	79
K1225.400150	50	120	30	70	500	40	20	42	485	80	400	412	410	150	142	139
K1225.500200	55	150	30	100	630	40	20	53	603	90	500	512	510	200	190	225

Tombstones window frame

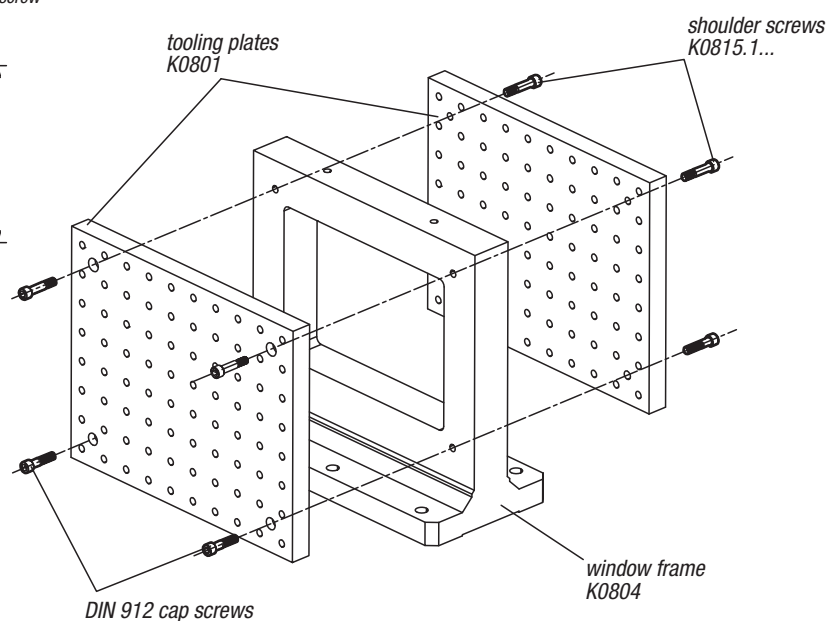
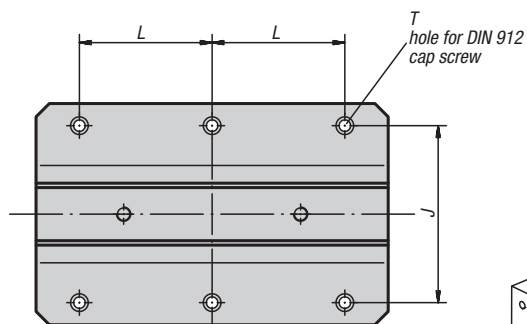
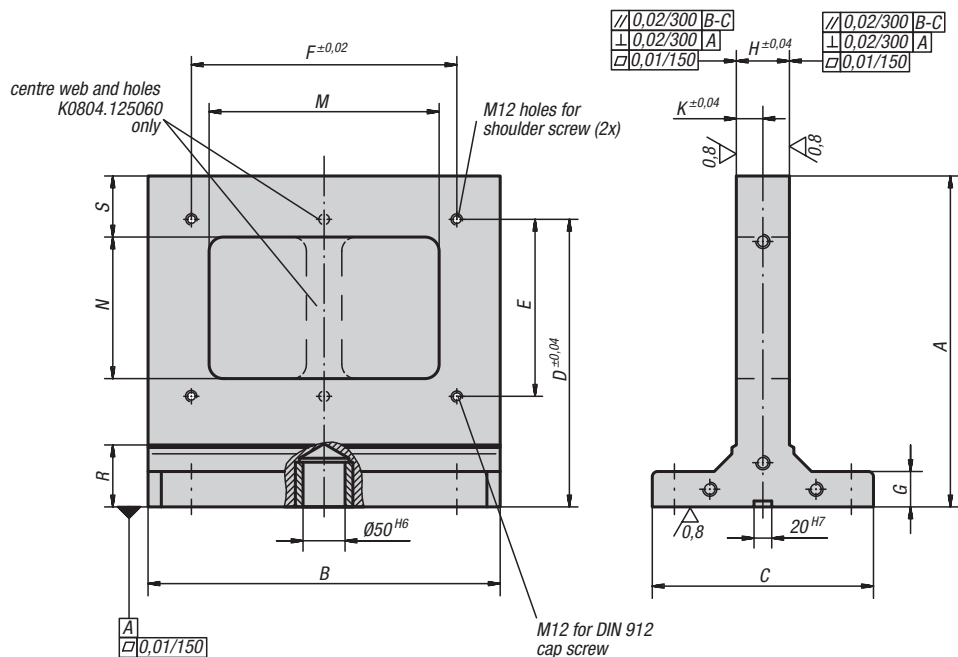


Material:
GJL 300

Version:
Reference surfaces precision machined

Sample order:
K0804.123040

Note:
Tooling plates K0801 can be positioned and mounted on both sides of the window frame, permitting economical fixture changes. The window frames are positioned using centring pins K0856 and slot guide nuts.

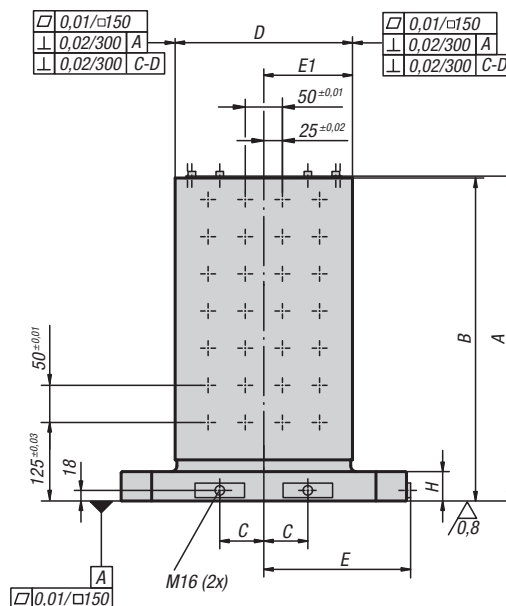
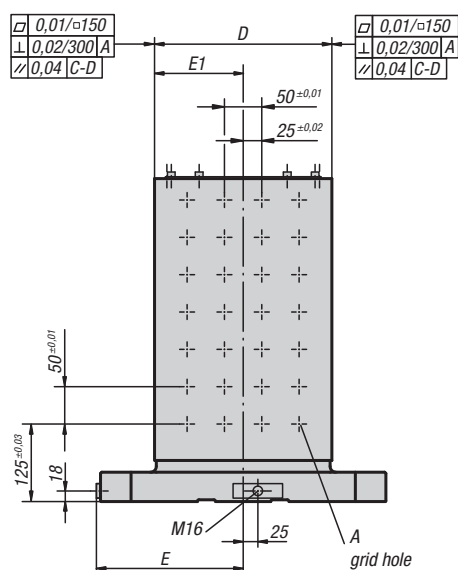


KIPP Tombstone window frame

Order No.	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	weight ca. kg
K0804.123040	374	398	250	325	200	300	40	60	200	30	150	260	160	70	69	M12	62
K0804.124050	474	498	250	425	300	400	40	70	200	35	200	360	260	70	69	M12	112.6
K0804.125060	574	598	300	525	400	500	50	70	200	35	200	458	360	75	70	M16	153

Tombstones cube

with grid holes

**Material:**

GJL 300

Version:

Reference surfaces precision machined.
The clamping surfaces have 0.5 mm allowance.

Sample order:

K0805.1240251

Note:

Grid hole pitch 50 ± 0.01 mm.
Grid hole plugs and ring bolts for lifting are supplied.
A cover prevents the cavities of the tombstones filling with swarf. Workpieces can be mounted on all four clamping surfaces directly or using fixtures. Code numbers on the clamping surfaces prevent mounting the wrong part on the wrong face when different workpieces are being machined. The cube tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.
Other dimensions on request.

KIPP Cube tombstones with grid holes

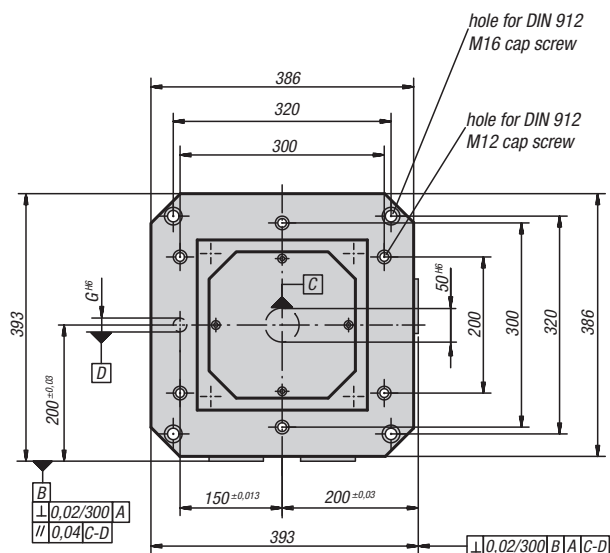
Order No.	A	B	C	D	E	E1	G	H	A locating hole	A thread	No. of grid holes	weight ca. kg
K0805.1240251	553	550	55	250±0,03	200	125 ±0,03	20	50	12F7	M12	144	172
K0805.1250301	653	650	75	300±0,03	250	150 ±0,03	20	50	12F7	M12	220	259
K0805.1650301	653	650	75	300±0,03	250	150 ±0,03	20	50	16F7	M16	220	258
K0805.126335	703	700	100	350±0,03	315	175 ±0,03	25	55	12F7	M12	288	341
K0805.166335	703	700	100	350±0,03	315	175 ±0,03	25	55	16F7	M16	288	334
K0805.168050	803	800	135	500±0,03	400	250 ±0,03	25	60	16F7	M16	504	640

Tombstones cube

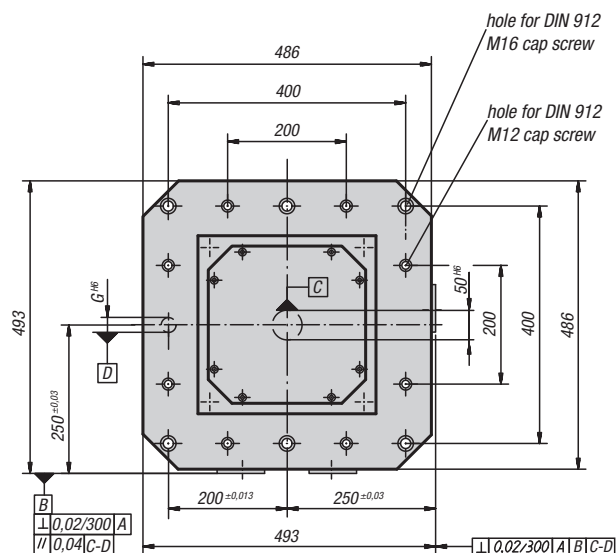
with grid holes



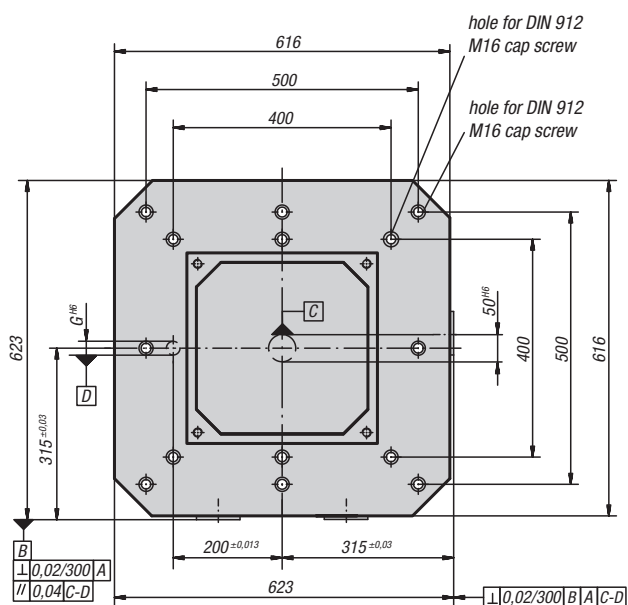
K0805.1240251



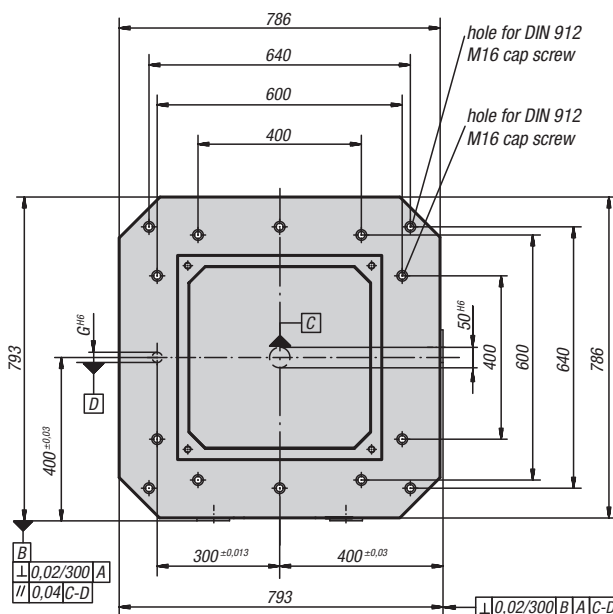
K0805.1250301
K0805.1650301



K0805.126335
K0805.166335

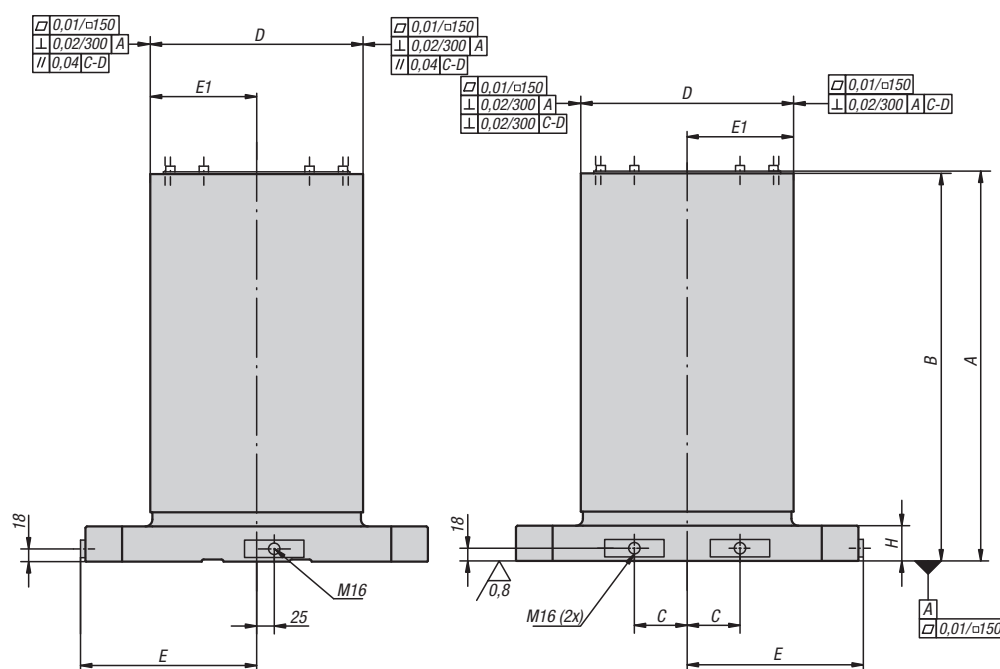


K0805.168050



Tombstones cube

without grid holes

**Material:**

GJL 300

Version:

Reference surfaces precision machined.
The clamping surfaces have 0.5 mm allowance.

Sample order:**Note:**

The cube tombstones are matched to subplates for machine tools acc. to DIN 55201 and JIS 6337-1980.
Ring bolts for lifting are supplied. A cover prevents the cavities filling with swarf.

KIPP Cube tombstones without grid holes

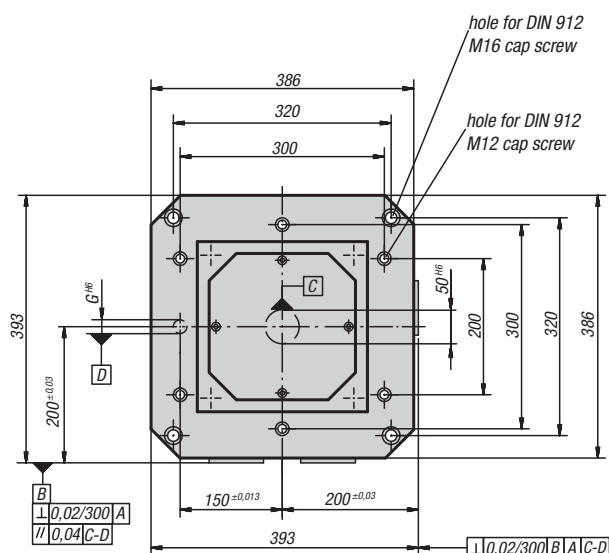
Order No.	A	B	C	D	E	E1	G	H	weight ca. kg
K0805.0040251	553	550	55	251 ±0,2	200	125,5 ±0,2	20	50	183
K0805.005030	553	550	75	301 ±0,2	250	150,5 ±0,2	20	50	231
K0805.0050301	653	650	75	301 ±0,2	250	150,5 ±0,2	20	50	268
K0805.006335	703	700	100	351 ±0,2	315	175,5 ±0,2	25	55	389
K0805.0063351	803	800	100	351 ±0,2	315	175,5 ±0,2	25	55	425
K0805.008050	803	800	135	501 ±0,2	400	250,5 ±0,2	25	60	671

Tombstones cube

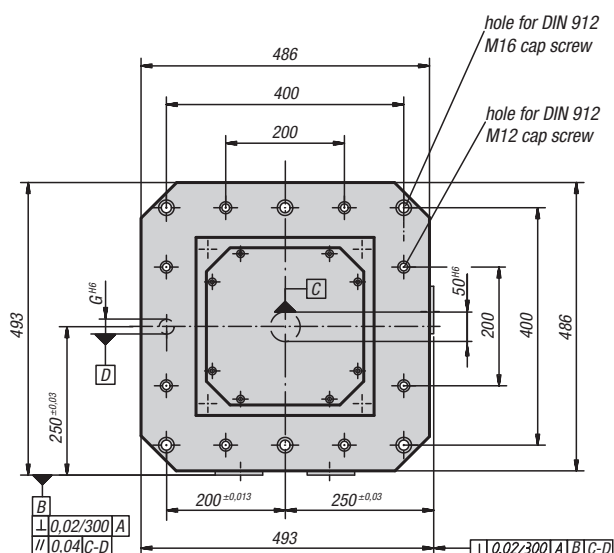
without grid holes



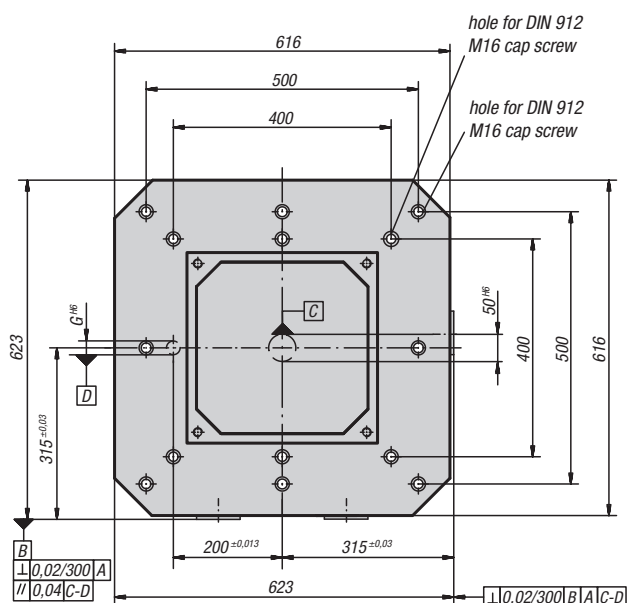
K0805.0040251



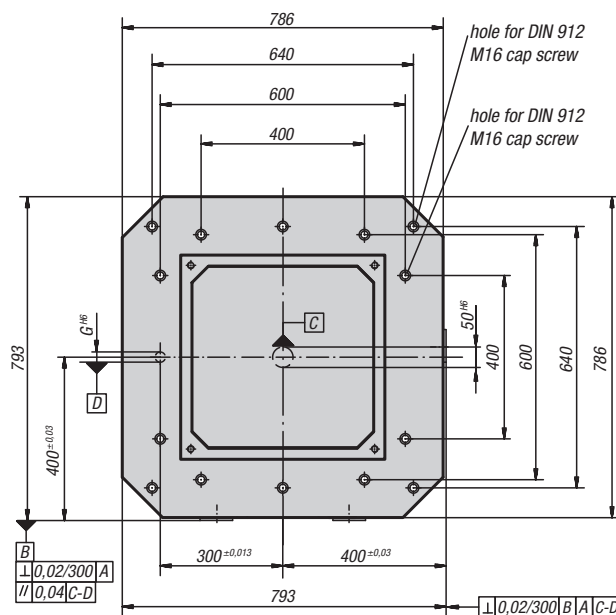
K0805.005030
K0805.0050301



K0805.006335
K0805.0063351



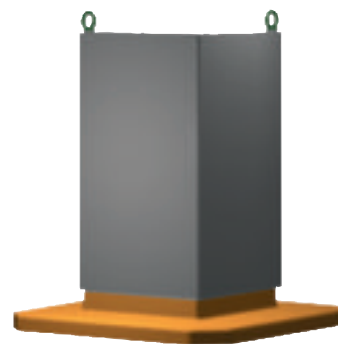
K0805.008050



K1226

Tombstones cube

grey cast iron

**Material:**

GJL 250

Version:

Reference surfaces precision machined

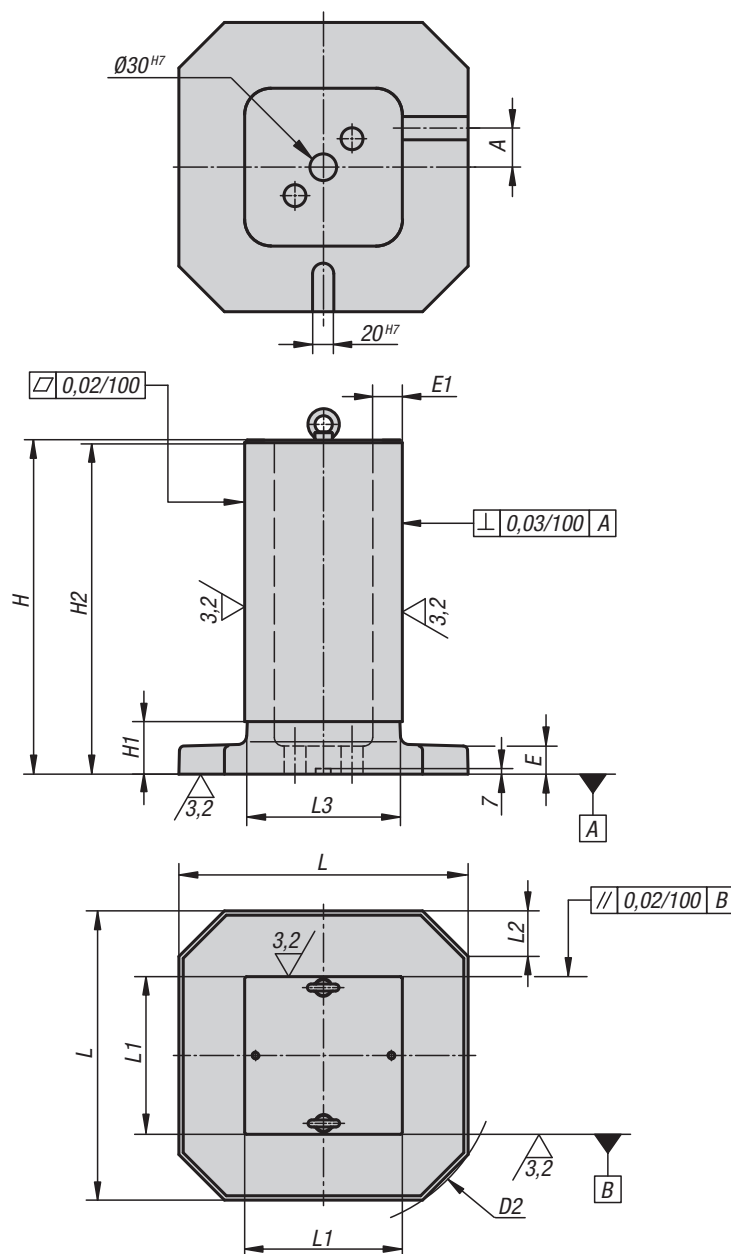
Note:

Ring bolts for lifting are supplied.

A cover prevents the cavities filling with swarf.

Drawing reference:

machined faces: +0.2 mm/ +0.5 mm

unmachined faces: ± 2 mm**KIPP Cube tombstone, grey cast iron**

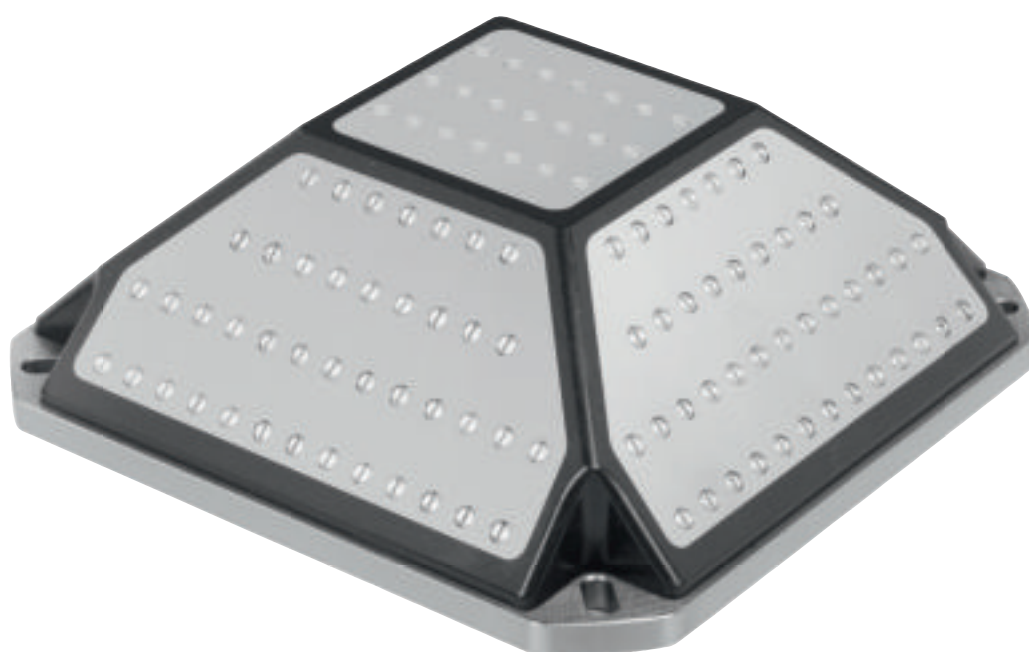
Order No.	A	D2	E	E1	H	H1	H2	L	L1	L2	L3	weight ca. kg
K1226.320180	32,5	400	32	25	381	80	378	330	180	52	174	62
K1226.400270	50	500	32	32	485	60	482	410	270	62	262	153
K1226.500320	55	630	40	40	603	100	600	510	320	70	312	270

Example





Mineral cast



Mineral cast

KIPPblock



“KIPP block” workholding towers are used as an alternative to cast or steel tooling columns. Due to its low specific weight (lighter than aluminium), mineral cast towers are suitable for keeping the loading on 4 and 5-axis machines as low as possible. Ideal for use on machines with high accelerations and rapid traverse speeds.

The flexibility of design is highly convincing. Steel jacketed versions are also available in a wide range of shapes and sizes.

ADVANTAGES:

- Outstanding absorption properties, 6-10 times better than grey cast iron
- Very low specific weight, lighter than aluminium
- Low heat conductivity
- Flexible planning regarding design
- Up to 30% increased service life of cutting tools

For many years mineral cast has been used as an alternative to iron castings and steel constructions. Today it is the leading technology for many applications. It is thanks to mineral cast that new innovations in electronics and medical technology were made possible.

MINERAL CAST TECHNOLOGY

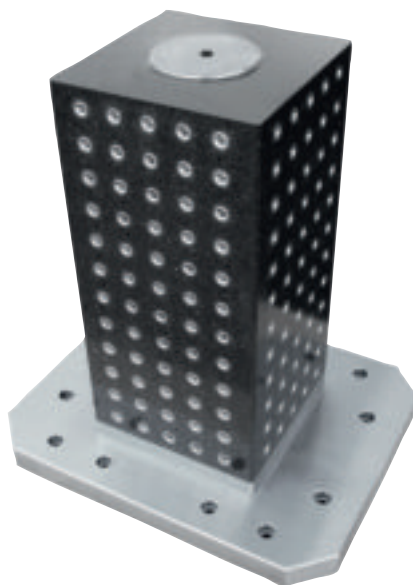
1. Mineral cast is a dual component system consisting of a mineral filler and an epoxy resin bonding agent.
2. The mineral filler makes up roughly 90% of the total weight.
3. Mineral cast is produced using a cold casting method injected into precision negative moulds at room temperature.
4. Due to the true form and high precision casting method, added elements such as plates, thread inserts, guides or tubes can be precisely placed in the casting mould.



KIPPblock



Mineral cast workholding tower



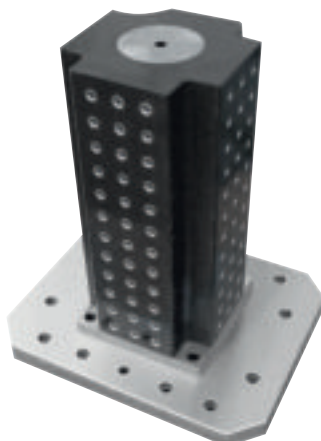
Mineral cast workholding tower with steel jacket



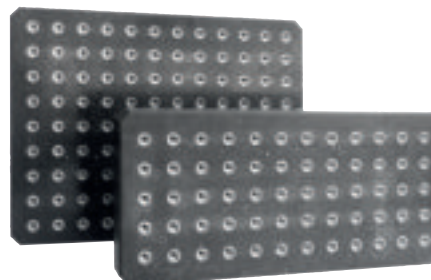
Mineral cast workholding tower with zero-point clamping system



Mineral cast cross tower



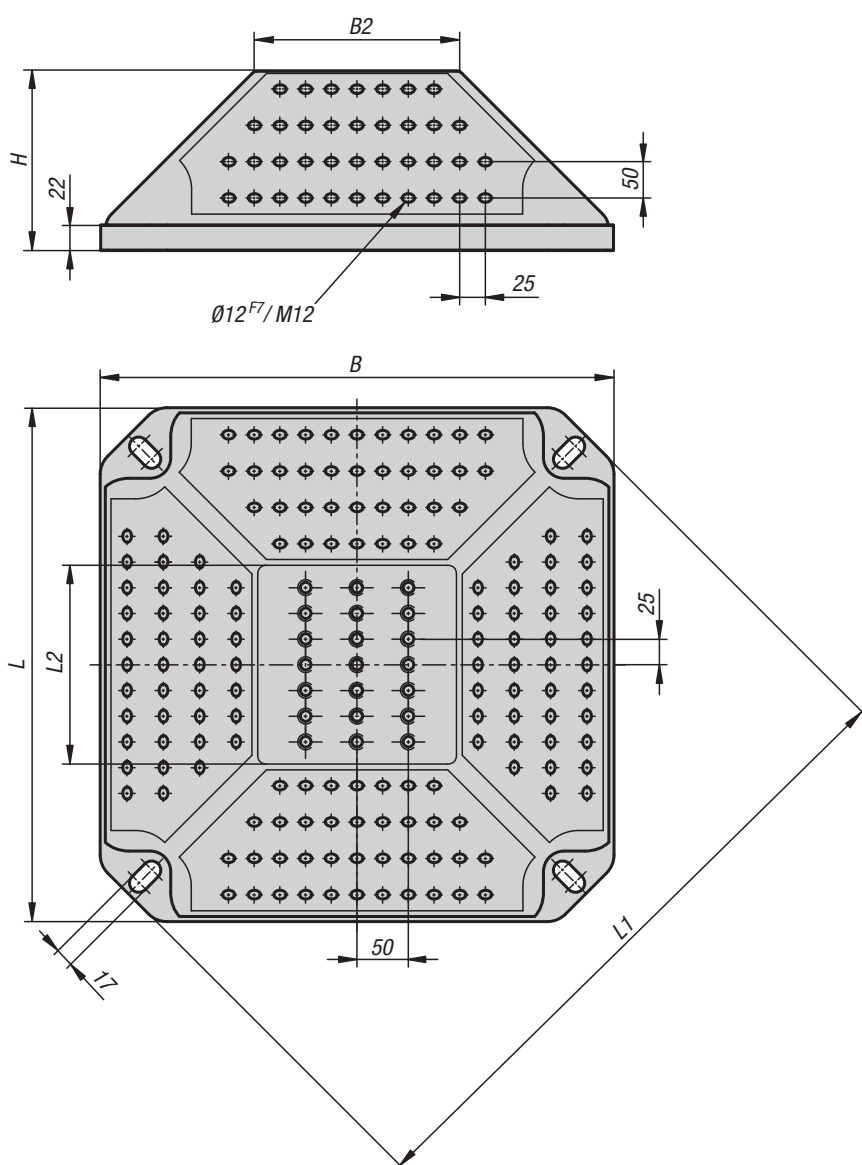
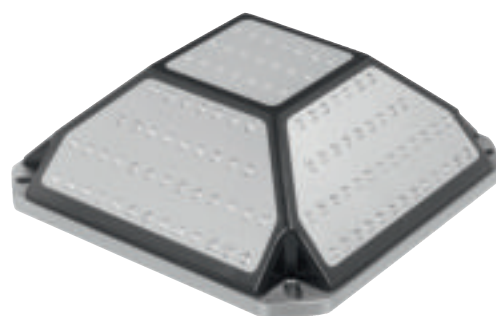
Mineral cast plates



K1235

Workholding pyramid

mineral cast

**Material:**

Mineral cast is a two-component system comprising mineral fillers and an epoxy resin as the binding agent.

Version:

Mineral cast is cold-cast using precision negative moulds at room temperature and subsequently hardened.

Sample order:

K1235.12400400140

Note:

The mineral cast workholding pyramid was specifically developed for use on 5-axis machines. The pyramid form enables 5 different clamping systems or setups can be mounted on the clamping surfaces. The low net weight of the clamping pyramid means that the overall loading on the machine table is only slightly increased.

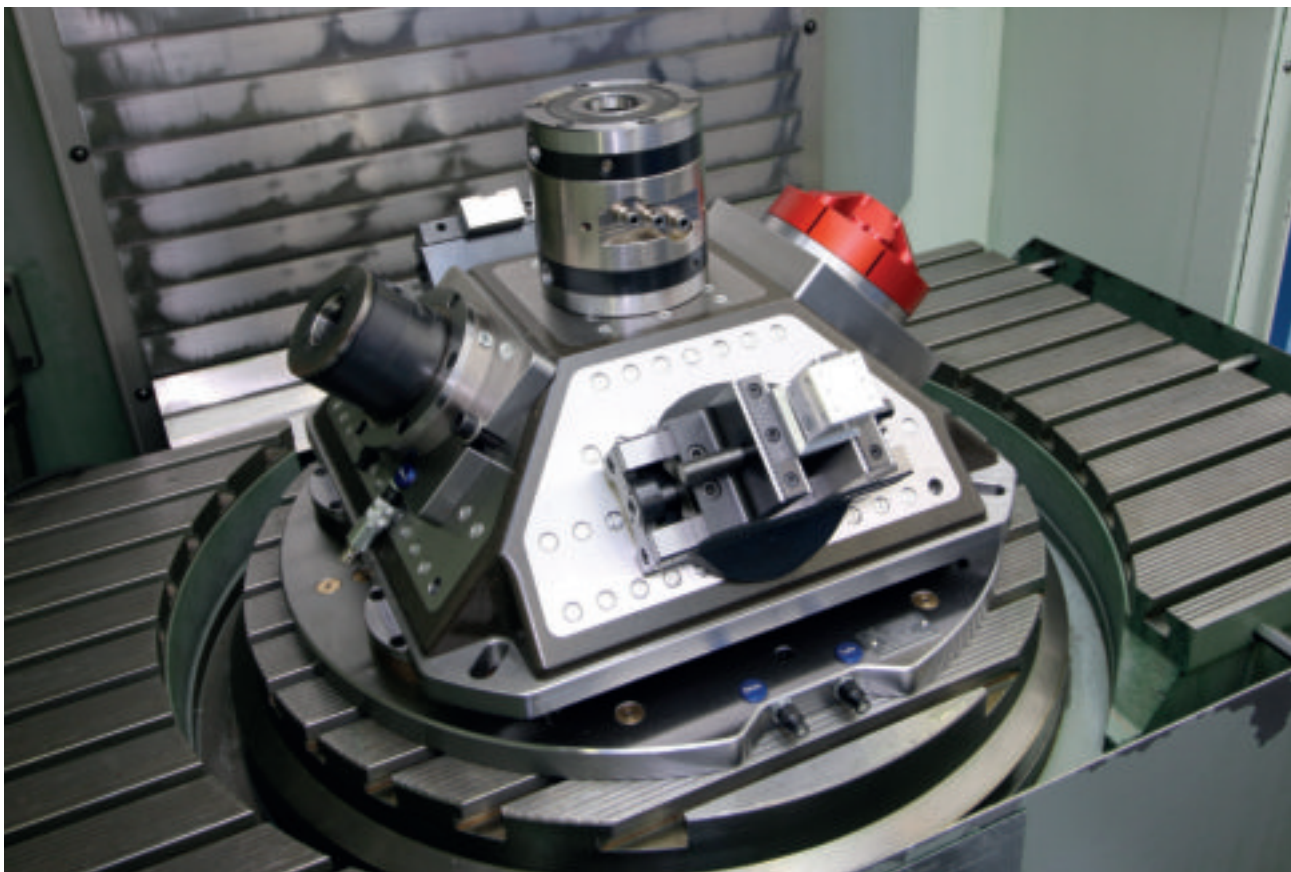
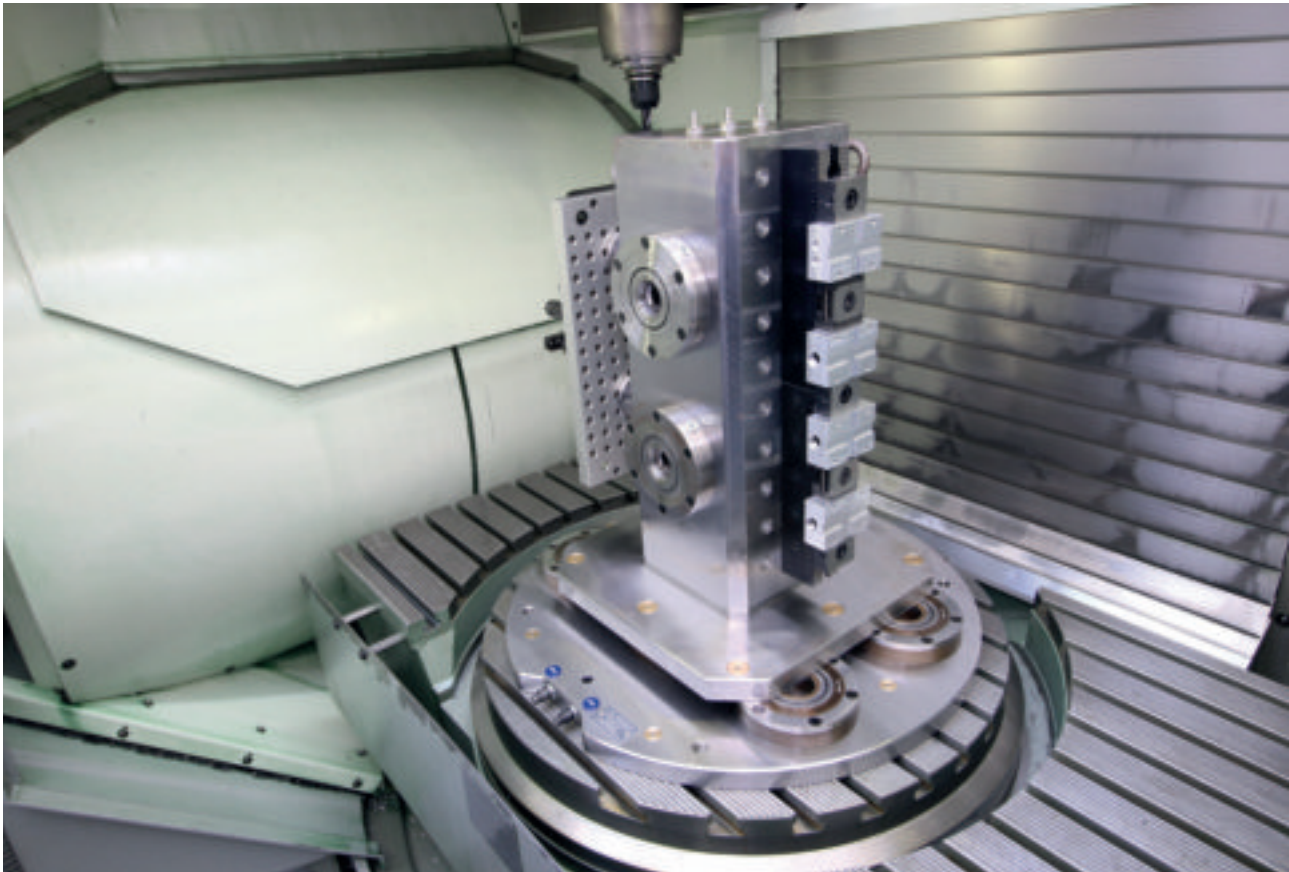
Advantages:

- Low specific weight, lighter than aluminium
- Outstanding vibration absorbing properties, 6–10 times better than grey cast iron
- Increased service life
- Low heat conductivity
- Flexible design options

KIPP Workholding pyramid, mineral cast

Order No.	B	B2	H	L	L1	L2	weight ca. kg
K1235.12400400140	400	160	140	400	470	160	52
K1235.12500500175	500	200	175	500	630	200	97

Example

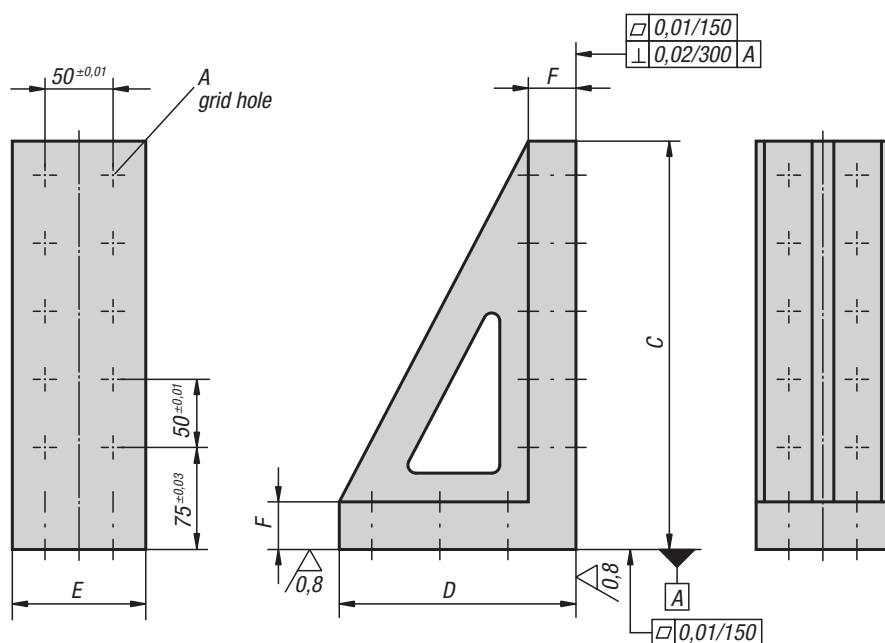




Add-on elements



Tooling angle plates

**Material:**

GJL 300

Version:

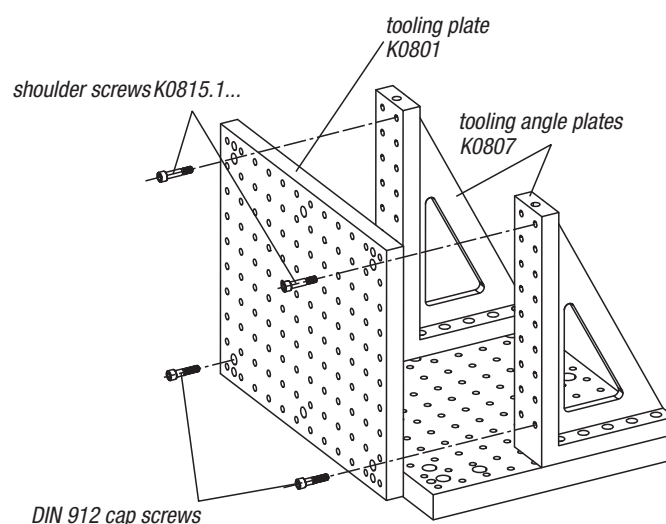
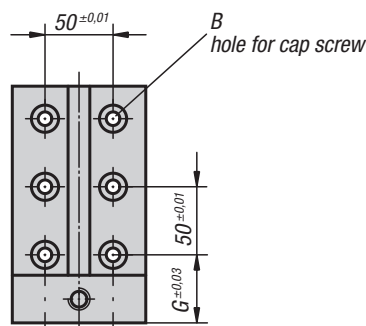
Support and mounting surfaces precision machined

Sample order:

K0807.121030

Note:Grid hole pitch $50 \pm 0,01$ mm.

Tooling angle plates are versatile elements for vertical positioning of workpieces. These tooling angle plates can also be used as supports for tooling plates K0801. Shoulder screws K0815 are used to position and fasten the tooling angle plates to the tooling plates K0800.

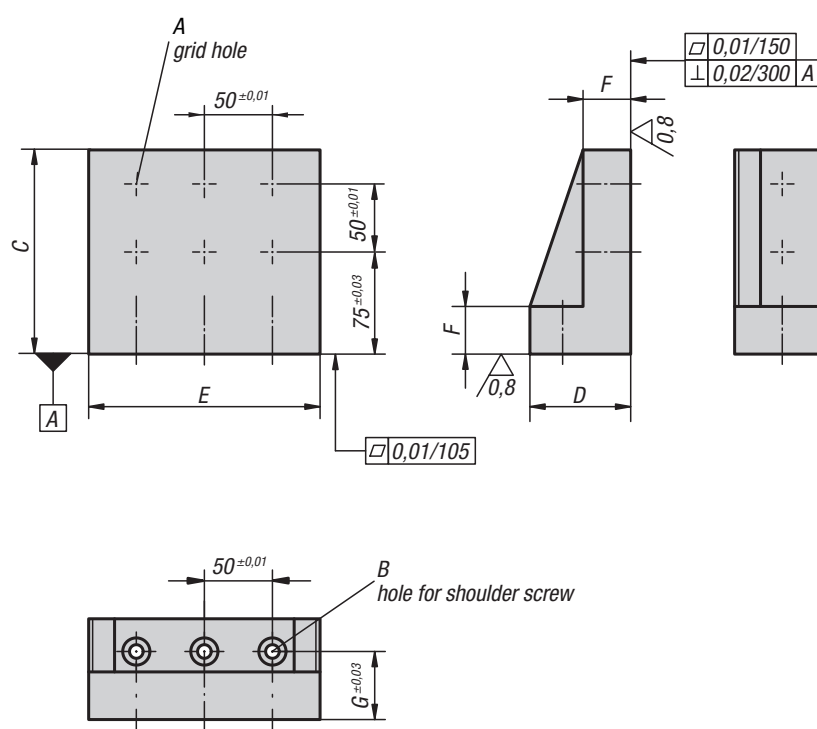


KIPP Tooling angle plates

Order No.	A locating hole	A thread	B Ø for shoulder screw	C	D	E	F	G	No. of grid holes	No. of mounting holes	weight kg
K0807.121030	12 F7	M12	12 F7	300	174	98	35	50	10	6	12.4
K0807.121040	12 F7	M12	12 F7	400	224	98	35	50	14	8	18.22
K0807.121050	12 F7	M12	12 F7	500	274	98	35	50	18	10	23.82
K0807.161030	16 F7	M16	16 F7	300	179	98	40	55	10	6	13.7
K0807.161040	16 F7	M16	16 F7	400	229	98	40	55	14	8	19
K0807.161050	16 F7	M16	16 F7	500	279	98	40	55	18	10	10

K0808

Tooling angle plates



Material:

GJL 300

Version:

Support and mounting surfaces precision machined

Sample order:

K0808.121715

Note:

Grid hole pitch 50 ± 0.01 mm.

Tooling angle plates are versatile elements for vertical positioning of workpieces.

Shoulder screws are used for fastening the angle plates:

Angle plates K0808.121715 to K0808.121760 - shoulder screws K0815.12055.

Angle plates K0808.161715 to K0808.161725 - shoulder screws K0815.16075.

KIPP Tooling angle plates

Order No.	A locating hole	A thread	B Ø for shoulder screw	C	D	E	F	G	No. of grid holes	No. of mounting holes	weight kg
K0808.121715	12 F7	M12	12 F7	150	74	170	35	50	6	3	8.54
K0808.121725	12 F7	M12	12 F7	250	124	170	35	50	12	4	17.3
K0808.121760	12 F7	M12	12 F7	600	324	170	35	50	33	12	66
K0808.161715	16 F7	M16	16 F7	150	79	170	40	55	6	3	9.42
K0808.161725	16 F7	M16	16 F7	250	129	170	40	55	12	4	18.7

Tooling blocks

**Material:**

GJL 300

Version:

Support and mounting surfaces ground

Sample order:

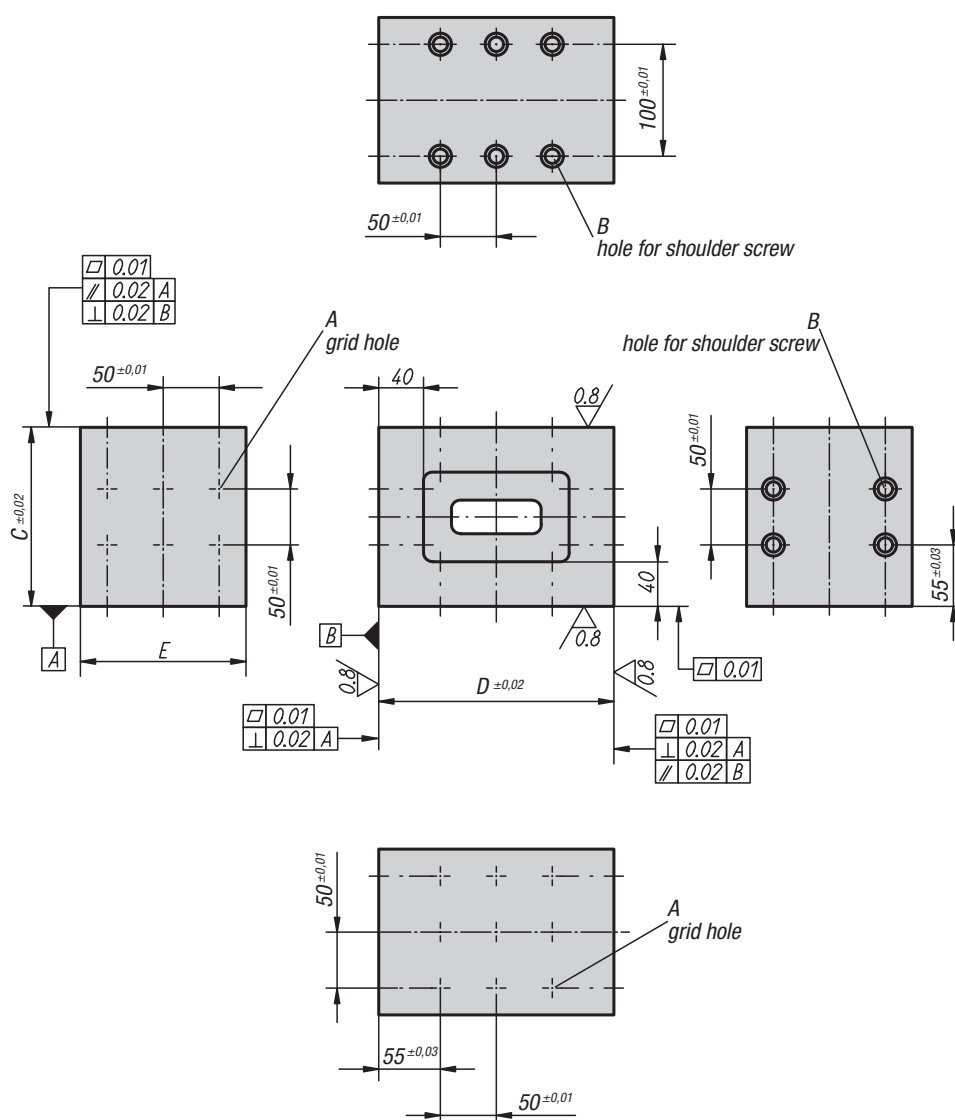
K0809.090121621

Note:Grid hole pitch $50 \pm 0,01$ mm.

Tooling blocks can be used for mounting low workpieces or as small bases. They can also be used as parallel gauge blocks for inspection work.

Tooling blocks K0809.090121621 and K0809.090122126 mounted with shoulder screws K0815.112065.

Tooling blocks K0809.090161621 and K0809.090162126 mounted with shoulder screws K0815.16075.



KIPP Tooling blocks

Order No.	A locating hole	A thread	B Ø for shoulder screw	C	D	E	No. of grid holes	No. of mounting holes	weight kg
K0809.090121621	12 F7	M12	12 F7	160	210	148	15	10	27.34
K0809.090122126	12 F7	M12	12 F7	210	260	148	21	14	37
K0809.090161621	16 F7	M16	16 F7	160	210	148	15	10	25
K0809.090162126	16 F7	M16	16 F7	210	260	148	21	14	36

Mini tooling blocks



Material:

GJL 300

Version:

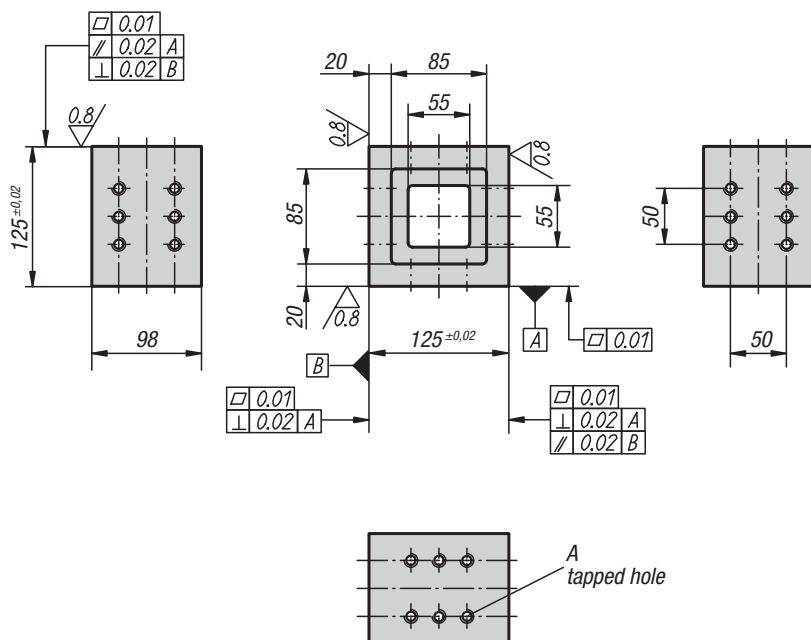
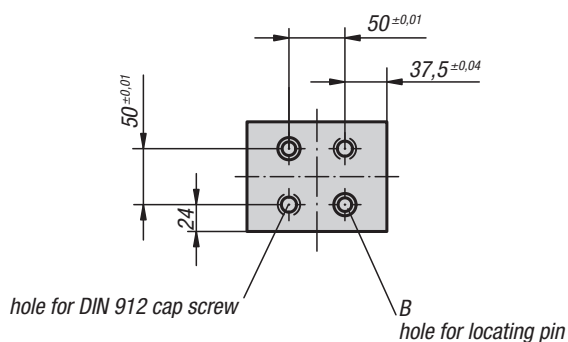
Support and mounting surfaces ground

Sample order:

K0809.09512125

Note:

Mini tooling blocks are positioned using 2 locating pins K0817 and secured with 2 DIN 912 cap screws. They can be used as stops or support and add-on elements.



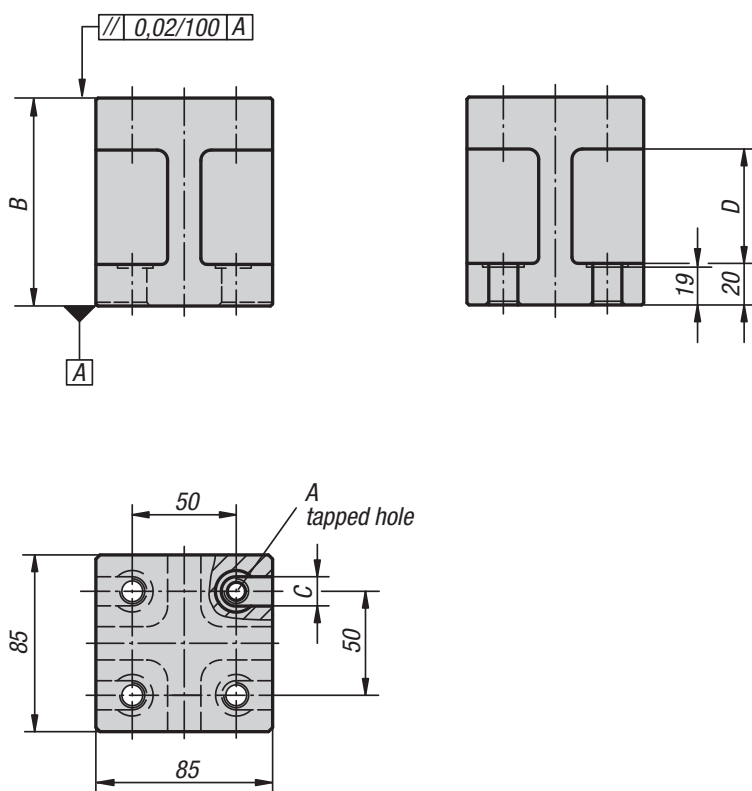
KIPP Mini tooling blocks

Order No.	A	B	C hole for DIN 912 cap screw	suitable locating pins	weight kg
K0809.09512125	M12	12 F7	M12	K0817.12	6.08
K0809.09516125	M16	16 F7	M16	K0817.16	6.081

K0811

Riser blocks

Form H



Material:
GJL 300

Version:
Black oxidised.

Sample order:
K0811.33012100

Note:
Form H riser blocks are mounted using DIN 912 socket head screws.

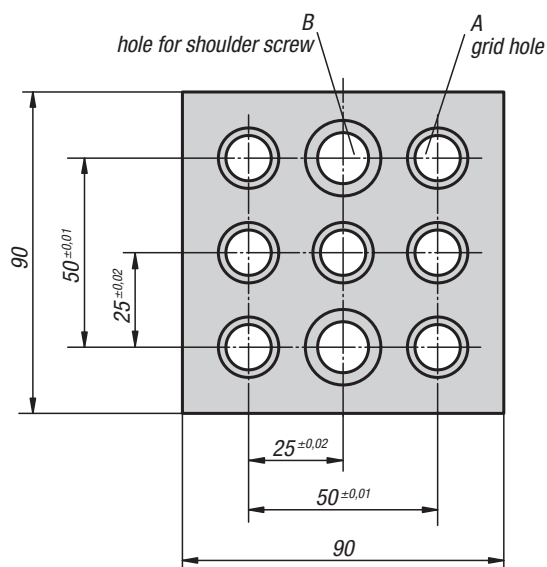
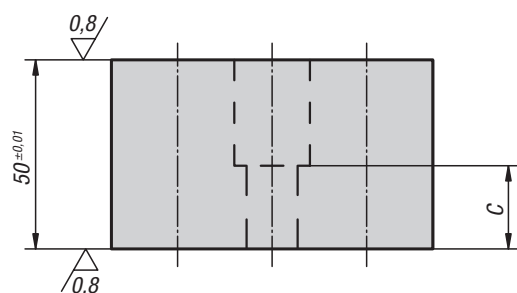
KIPP Riser blocks Form H

Order No.	A	B	C	D	weight kg
K0811.33012100	M12	100	14	55	3.52
K0811.33012125	M12	125	14	80	4
K0811.33016100	M16	100	18	55	3.36
K0811.33016125	M16	125	18	80	3.86

K0810

Fastening blocks

Form M

**Material:**

Carbon steel.

Version:

Black oxidised.

Contact faces ground.

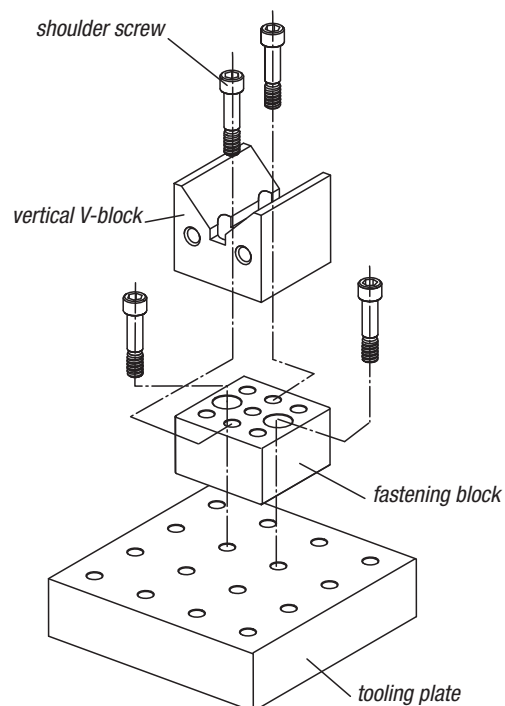
Sample order:

K0810.12112050

Note:

Fastening blocks are used as risers for all system elements which have no movable seating faces - these include locating supports K0816, vertical V-blocks K0819.600.

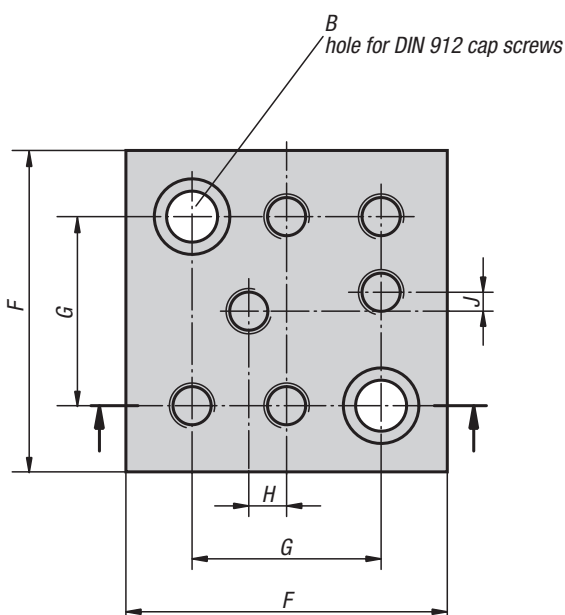
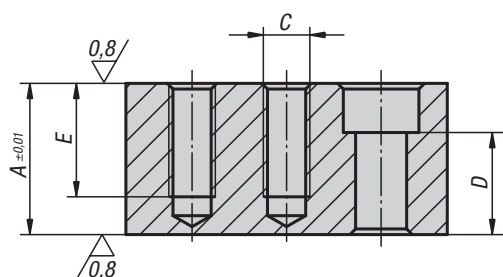
They also allow positioning and fastening elements within a 50 ± 0.01 mm pitch (see application example).

**KIPP Fastening blocks Form M**

Order No.	A locating hole	A thread	B Ø for shoulder screw	C	No. of grid holes	No. of mounting holes	Suitable shoulder screw	weight kg
K0810.12112050	12 F7	M12	12 F7	22	7	2	K0815.112055	2.693
K0810.12116050	16 F7	M16	16 F7	26	7	2	K0815.116055	2.355

Precision riser blocks

Form D

**Material:**

Carbon steel.

Version:

Black oxidised.

Contact faces ground.

Sample order:

K0811.14012025

Note:

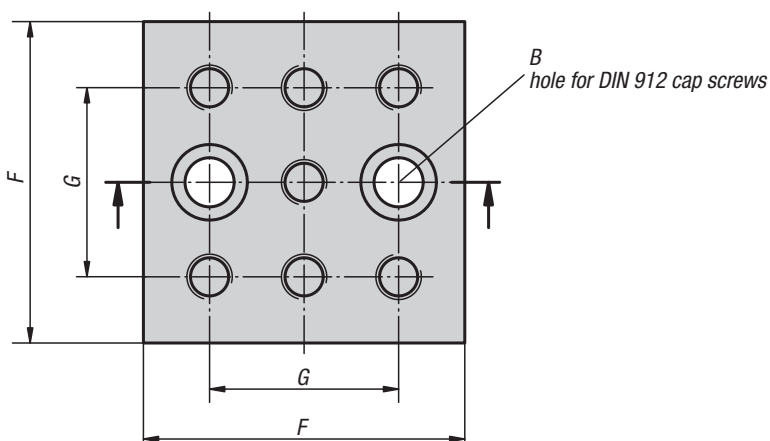
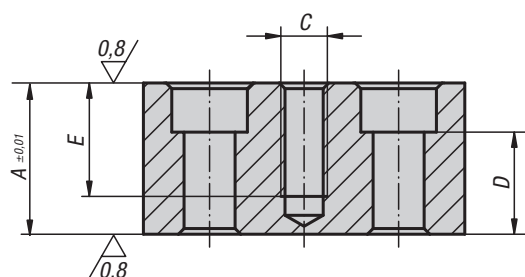
Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.

KIPP Precision riser blocks Form D

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	H	J	weight kg
K0811.14012025	25	M12	M12	12	25	85	50	10	5	1.218
K0811.14012032	32	M12	M12	19	32	85	50	10	5	1.56
K0811.14012040	40	M12	M12	27	30	85	50	10	5	1.97
K0811.14012050	50	M12	M12	37	30	85	50	10	5	2.5
K0811.14016025	25	M16	M16	8	25	85	50	10	5	1.039
K0811.14016032	32	M16	M16	15	32	85	50	10	5	1.33
K0811.14016040	40	M16	M16	23	35	85	50	10	5	1.7
K0811.14016050	50	M16	M16	33	35	85	50	10	5	2.123

Precision riser blocks

Form M

**Material:**

Carbon steel.

Version:

Black oxidised.

Contact faces ground.

Sample order:

K0811.14112025

Note:

Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.

KIPP Precision riser blocks Form M

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	weight kg
K0811.14112025	25	M12	M12	12	25	85	50	1.199
K0811.14112032	32	M12	M12	19	32	85	50	1.535
K0811.14112040	40	M12	M12	27	30	85	50	1.955
K0811.14112050	50	M12	M12	37	30	85	50	2.43
K0811.14116025	25	M16	M16	8	25	85	50	1.007
K0811.14116032	32	M16	M16	15	32	85	50	1.31
K0811.14116040	40	M16	M16	23	35	85	50	1.653
K0811.14116050	50	M16	M16	33	35	85	50	2.104

Precision riser blocks

Form E

**Material:**

Carbon steel.

Version:

Black oxidised.

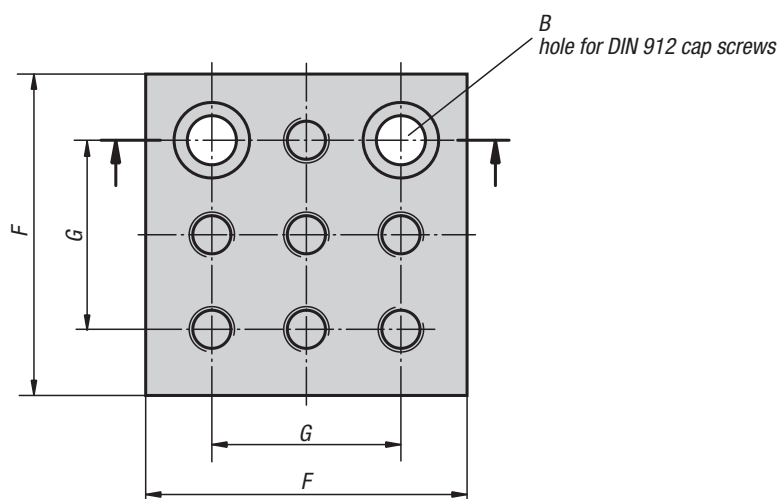
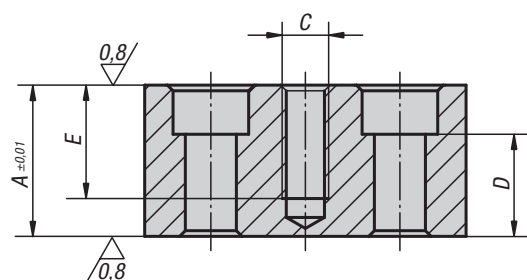
Contact faces ground.

Sample order:

K0811.14212025

Note:

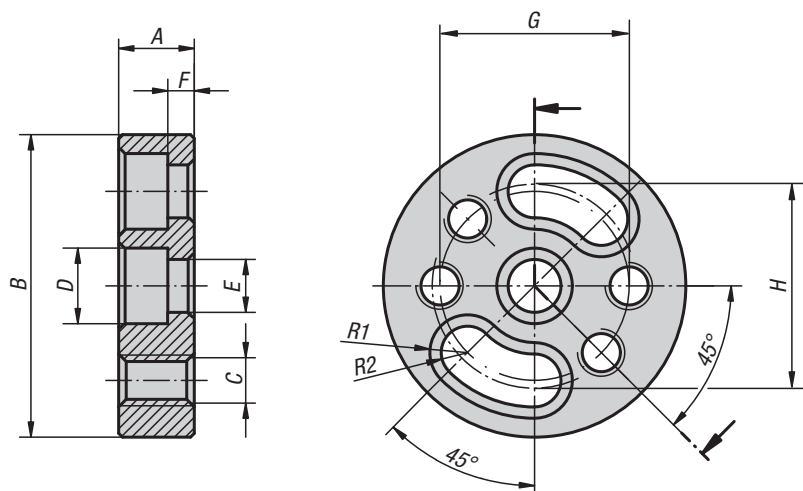
Riser blocks are used to achieve a certain support height. The additional tapped holes in the risers are for mounting further fixture elements.

**KIPP Precision riser blocks Form E**

Order No.	A	B hole for DIN 912 screw	C	D	E	F	G	weight kg
K0811.14212025	25	M12	M12	12	25	85	50	1.208
K0811.14212032	32	M12	M12	19	25	85	50	1.52
K0811.14212040	40	M12	M12	27	30	85	50	1.95
K0811.14212050	50	M12	M12	37	30	85	50	2.454
K0811.14216025	25	M16	M16	8	25	85	50	1.005
K0811.14216032	32	M16	M16	15	32	85	50	1.289
K0811.14216040	40	M16	M16	23	35	85	50	1.68
K0811.14216050	50	M16	M16	33	35	85	50	2.18

K0812

Round positioning plates



Material:

Carbon steel.

Version:

Black oxidised.

Sample order:

K0812.24212020

Note:

Round positioning plates allow clamps such as K0853.920 and K0853.930 to be positioned against the workpiece at an angle of e.g. 30°. The rack plates CL K0853.940 are mounted on the round positioning plate as intermediate adapters, the clamps are fitted and rotated to the correct position.

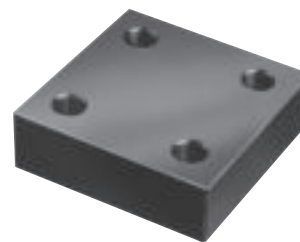
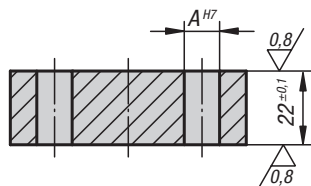
KIPP Round positioning plates

Order No.	A	B	C	D	E	F	G	H	R1	R2	weight kg
K0812.24212020	20	80	M12	20	14	7	50	50	10	7	0.49
K0812.24216025	25	100	M16	26	18	7	50	70,7	13	9	0.867



Accessories



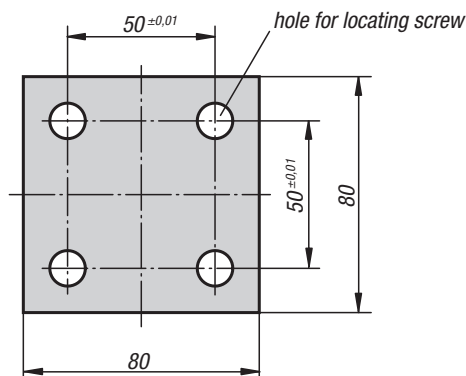
K0854**Connecting blocks**

Material:
Carbon steel.

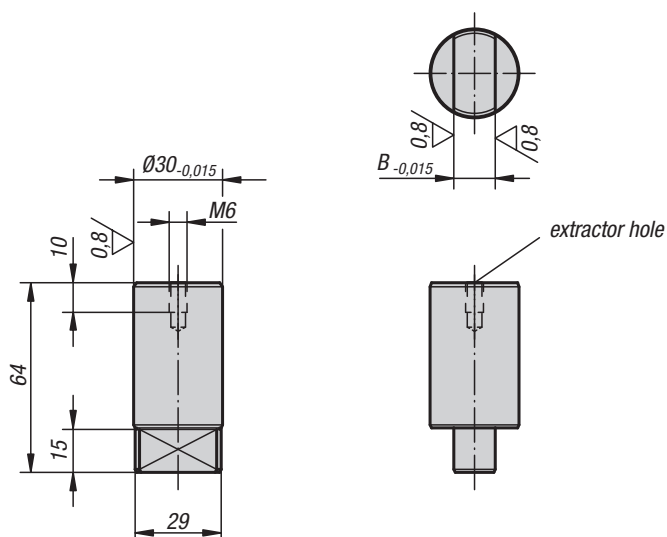
Version:
Black oxidised.
Contact faces ground.

Sample order:
K0854.40012050

Note:
When several tooling plates K0800 are used, connecting blocks are needed to maintain the correct grid hole pitch from one plate to the next. They are secured using 4 shoulder screws K0815.1....

**KIPP Connecting blocks**

Order No.	A	Suitable shoulder screw
K0854.40012050	12	K0815.112055
K0854.40016050	16	K0815.116065

K0855**Locating pins**

Material:
Carbon steel.

Version:
Tempered and black oxidised.
Precision diameters and guide faces ground.

Sample order:
K0855.12030

Note:
Locating pins are used for positioning grid plates K0800 on machine tables.

KIPP Locating pins

Order No.	B
K0855.12030	12
K0855.14030	14
K0855.18030	18
K0855.20030	20
K0855.22030	22

K0856

Centring pins

for central hole

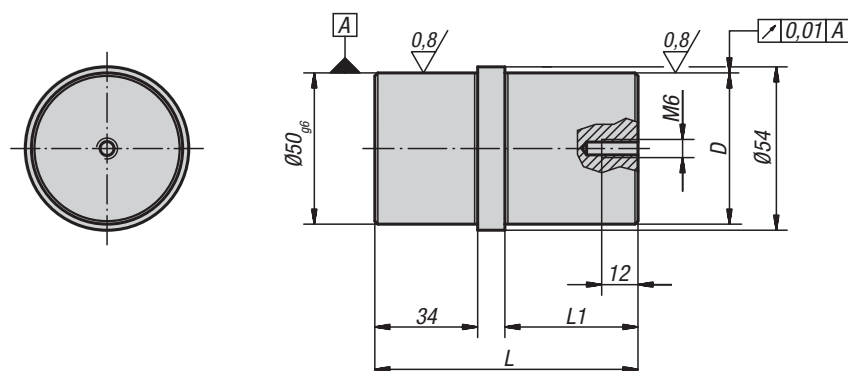


Material:
Steel.

Version:
Case-hardened.
Toleranced diameter ground.

Sample order:
K0856.5025

Note:
Centring pins for central holes are suitable for basic elements K0806, K0802, K0803, K0804 and K0805.



KIPP Centring pins for central hole

Order No.	D	L	L1
K0856.5025	25 g6	77	34
K0856.5030	30 h6	87	44
K0856.5050	50 g6	87	44

K0857

Centring pins

for aligning hole

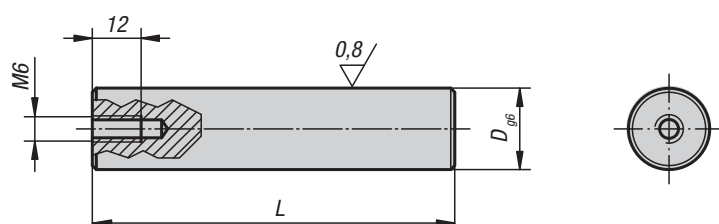


Material:
Steel.

Version:
Case-hardened.
Toleranced diameter ground.

Sample order:
K0857.25125

Note:
Centring pins for aligning holes are suitable for basic elements K0802, K0803 and K0805.

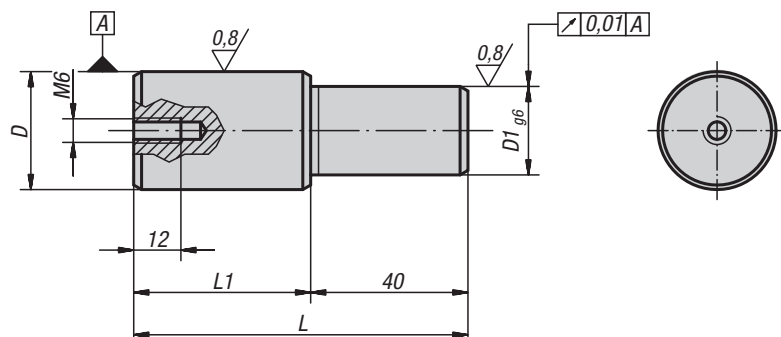


KIPP Centring pins for aligning hole

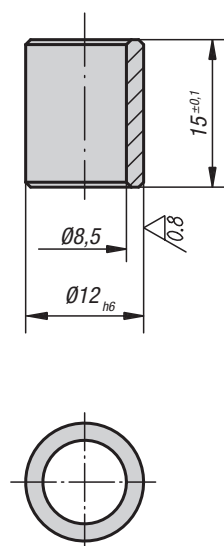
Order No.	D	L
K0857.20075	20	75
K0857.20089	20	89
K0857.25125	25	125

K0858**Centring pins**

for aligning hole

**Material:**
Steel.**Version:**
Case-hardened.
Toleranced diameter ground.**Sample order:**
K0858.2520**Note:**
Centring pins for aligning holes are suitable for subplates K0806.**KIPP Centring pins for aligning hole**

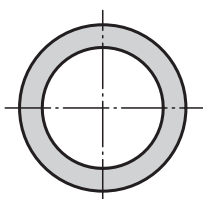
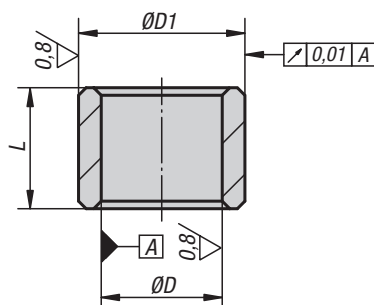
Order No.	D	D1	L	L1
K0858.2520	25 g6	20	75	35
K0858.3020	30 h6	20	85	45
K0858.3025	30 h6	25	85	45

K0814**Locating sleeve****Material:**
Tool steel.**Version:**
Hardened and black oxidised.
Toleranced diameter ground.**Sample order:**
K0814.44008012**KIPP Locating sleeve**

Order No.	Dimensions
K0814.44008012	see drawing

K0861**Locating bushings**

for grid systems

**KIPP Locating bushings for grid systems**

Order No.	D	D1	L
K0861.01508305002	12 H6	16 g5	8
K0861.01012304002	12 F7	18 g6	12
K0861.01016405002	16 F7	22 g6	16

**Material:**

Special case-hardened steel

Version:

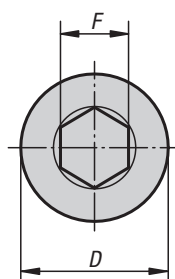
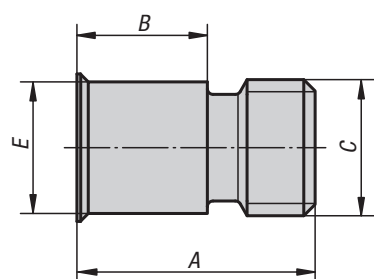
Hardened and ground.

Sample order:

K0861.01508305002

Note:

See next page for assembly instructions for changing locating bushings.

K0862**Aluminium protection plugs****Material:**

Aluminium.

Version:

Bright.

Sample order:

K0862.60108015

Note:

Use these plugs to seal grid holes and protect them from swarf and dirt.

Leave the protection plugs in holes not in use! Aluminium plugs are used when aggressive coolants are used or when cutting dry.

KIPP Aluminium protection plugs

Order No.	A	B	C	D	E	F
K0862.60108015	15	7,5	M8	12,6	11,8	5
K0862.60112021	21	11,5	M12	13	11,6	6
K0862.60116026	26	15	M16	17	15,6	8

Threaded bushings

for grid systems

**Material:**

Carbon steel.

Version:Tempered to 1100-1300 N/mm².**Sample order:**

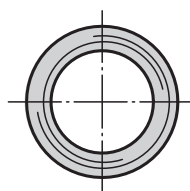
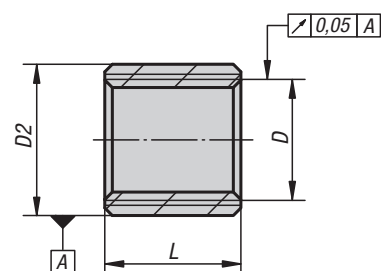
K0863.01508305003

Note:

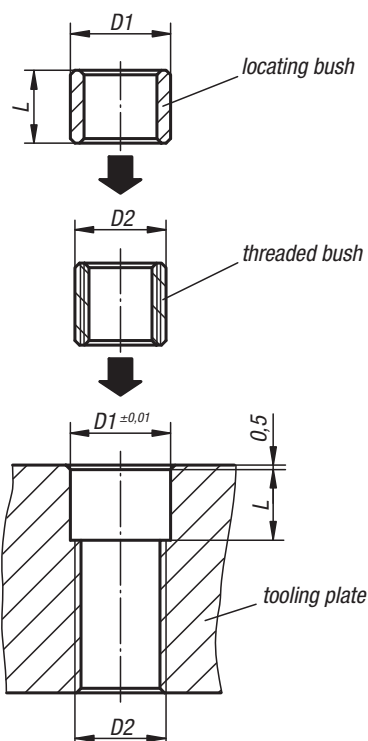
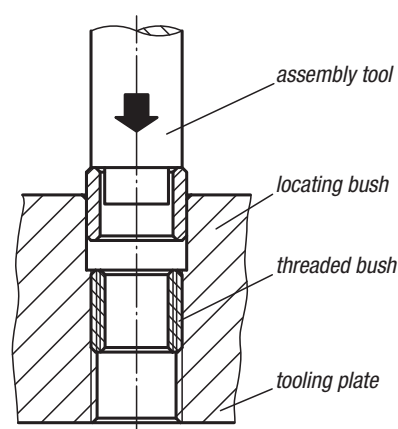
Assembly instructions for changing threaded bushing.

Inserting the locating and threaded bushing

1. Remove grease from the locating and threaded bushing.
2. Apply adhesive (Loctite 638) in the hole.
3. Apply adhesive (Loctite 638) on the threaded bushing and screw in.
4. Apply adhesive (Loctite 638) to the locating bushing and insert it. If the locating bushing cannot be inserted by hand, please use an assembly tool as shown application example:.
5. Remove any adhesive pressed out by insertion of the locating and threaded bushing before it hardens.

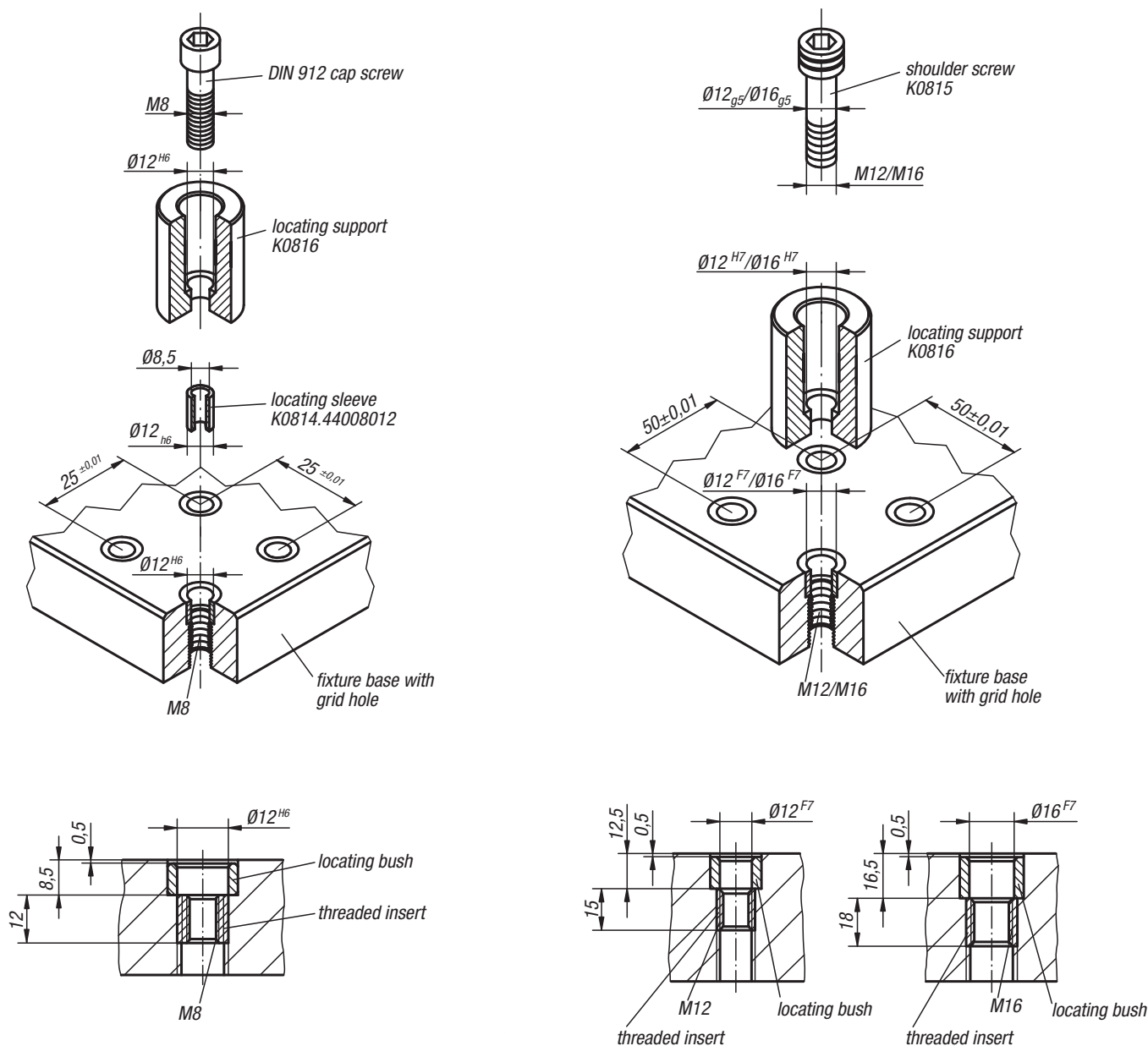


Assembly instructions for locating and threaded bushes

**KIPP Threaded bushings for grid systems**

Order No.	D	D2	L
K0863.01508305003	M8	M12x1,75	12
K0863.01012304003	M12	M16x1,5	15
K0863.01016405003	M16	M20x1,5	18

Grid holes and pitches



Grid hole:

The characteristic feature of the grid hole is its dual function: the coaxial arrangement of the locating and the threaded parts allows positioning and fastening at the same time with one grid hole (see illustrations). As a result, the size of the fixture elements can be reduced to a minimum and their flexibility increased accordingly.

Each grid hole consists of two parts:

- reamed bush. Material: hardened tool steel.
- threaded insert. Material: carbon steel, tempered to ca. 1100-1300 N/mm².

Since the reamed bushes are recessed 0.5 mm from the surface of the fixture bases, the mounting surfaces can be re-machined in the event of wear.