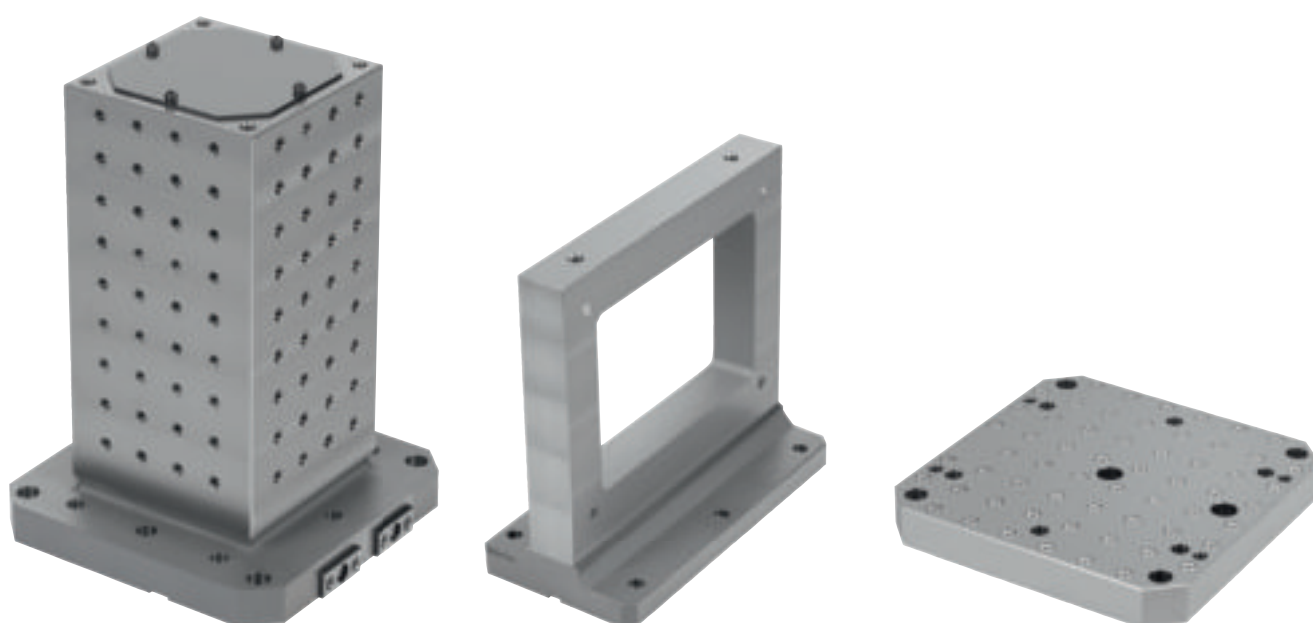
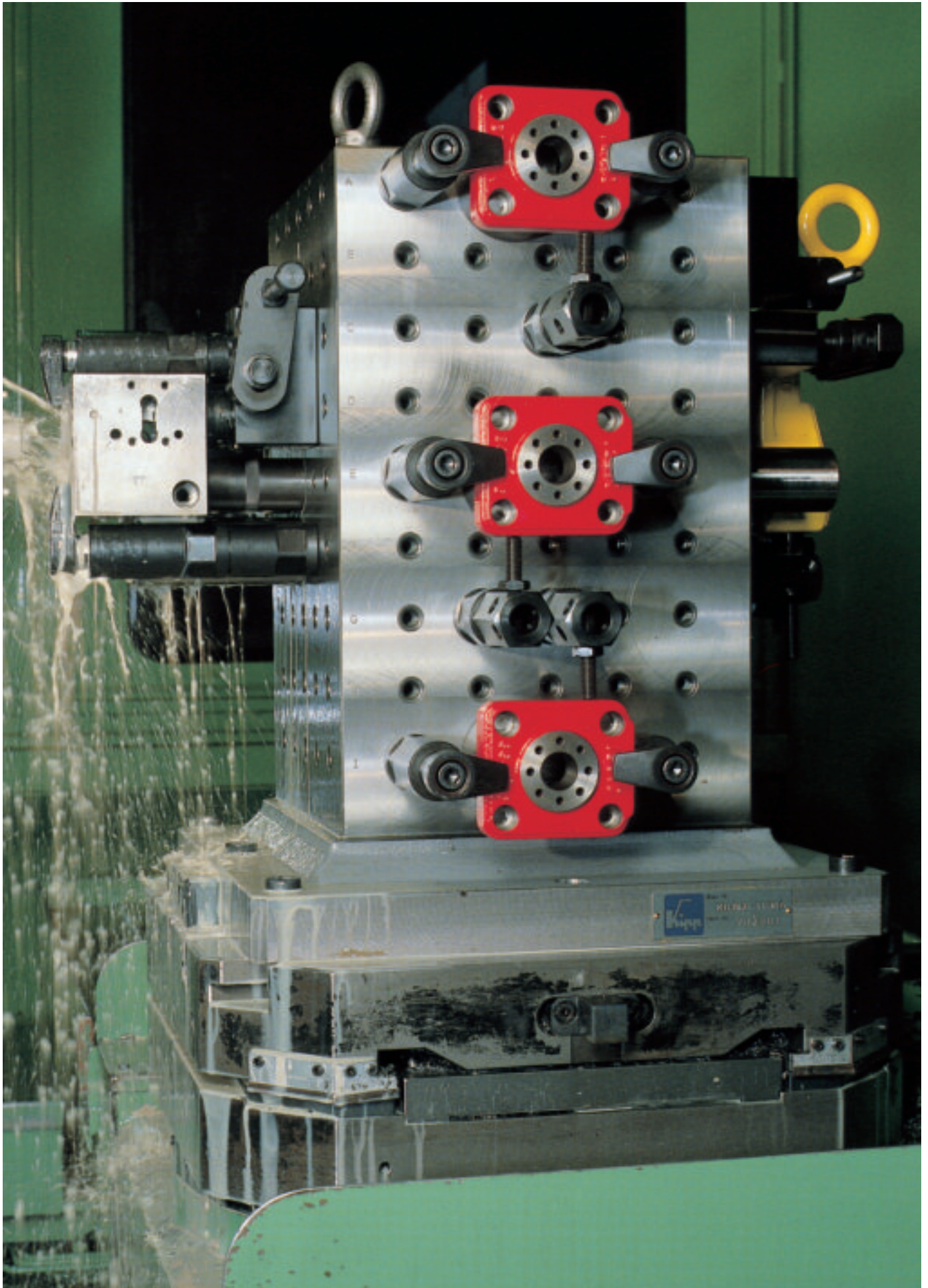
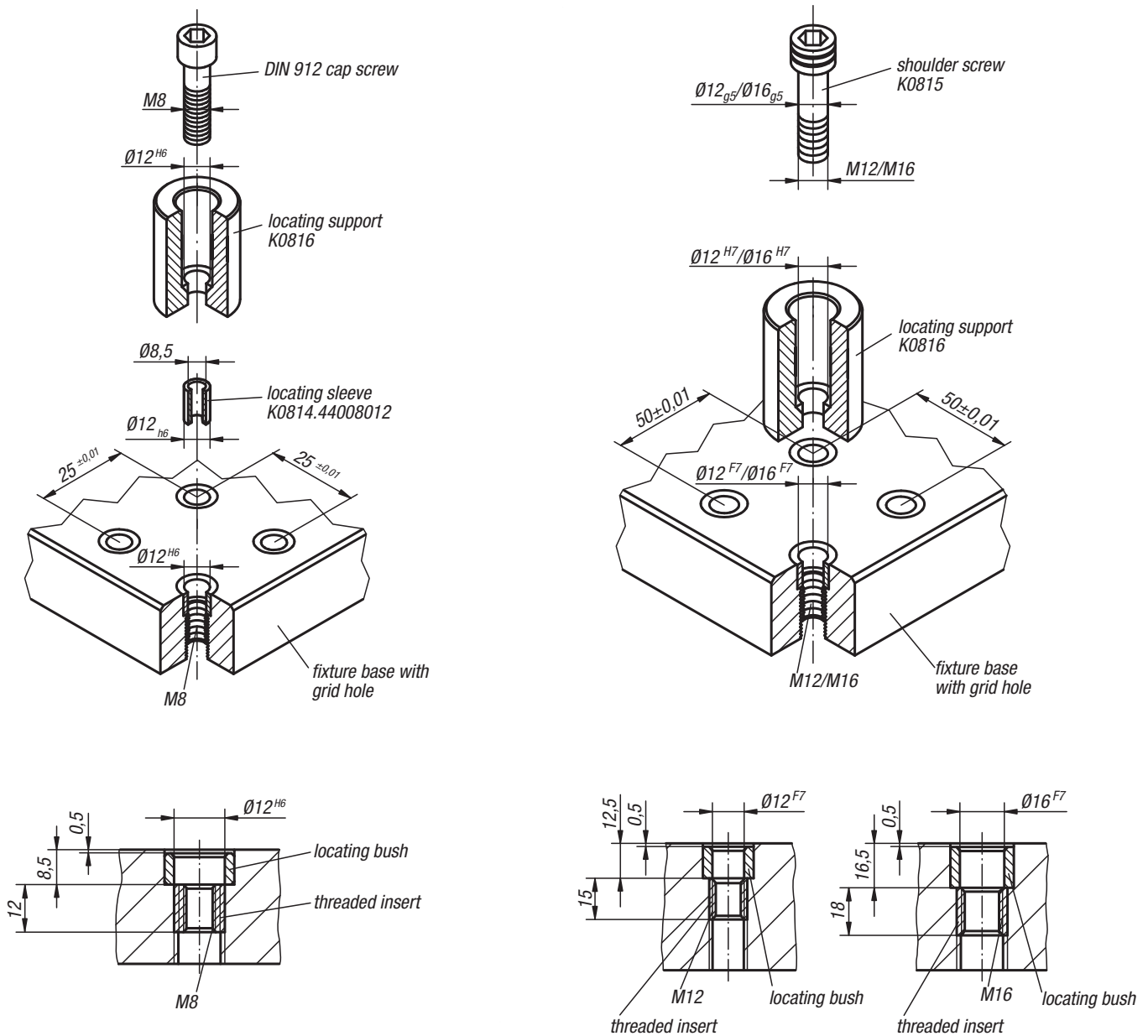


Basic elements







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

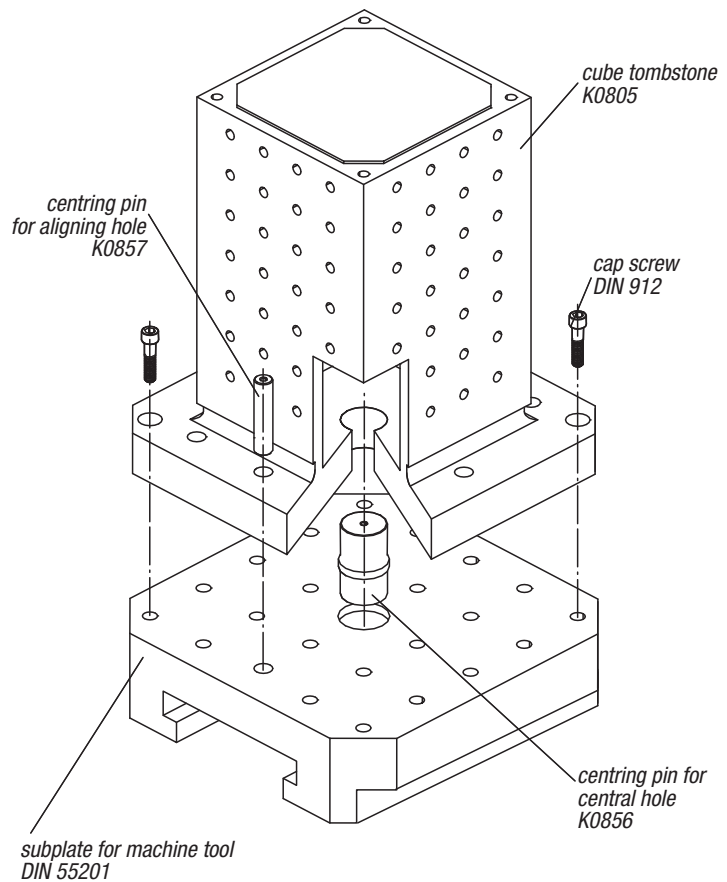


Single side tombstone K0802, double side tombstone K0803, cube tombstone K0805 and subplates K0806 have two positioning options:

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

Positioning procedure:

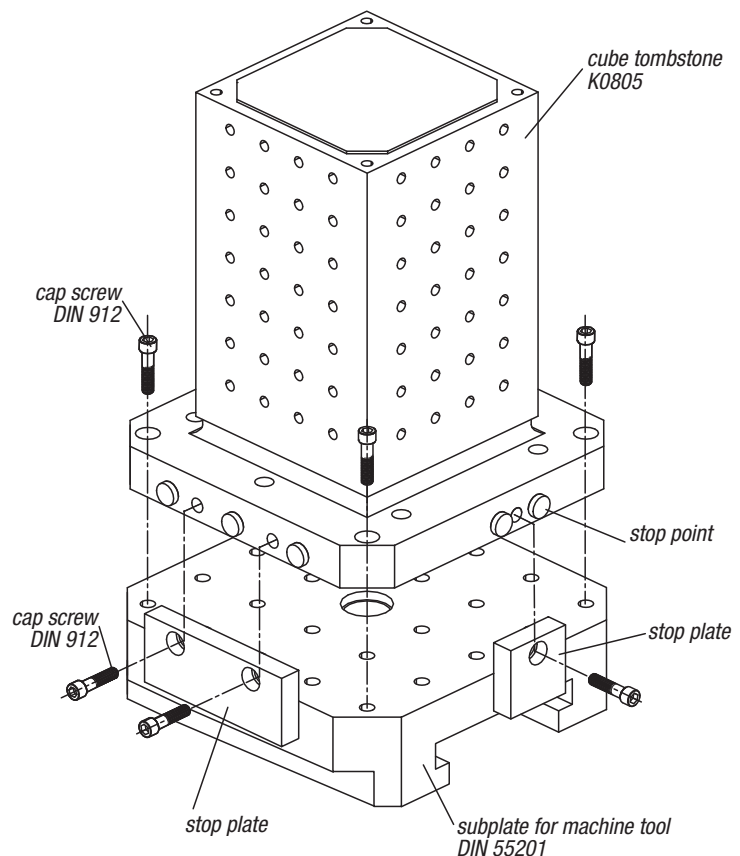
1. Insert locating pin in the centre bore of the subplate.
2. Position the tombstones, cube tombstones and subplates over the central hole.
3. Use the locating pin for the aligning hole to align the basic elements.



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.

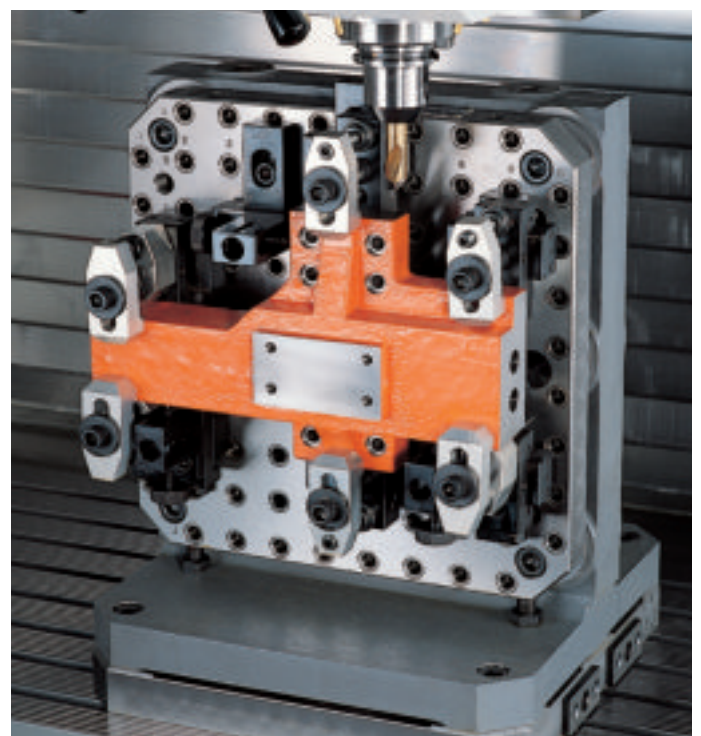
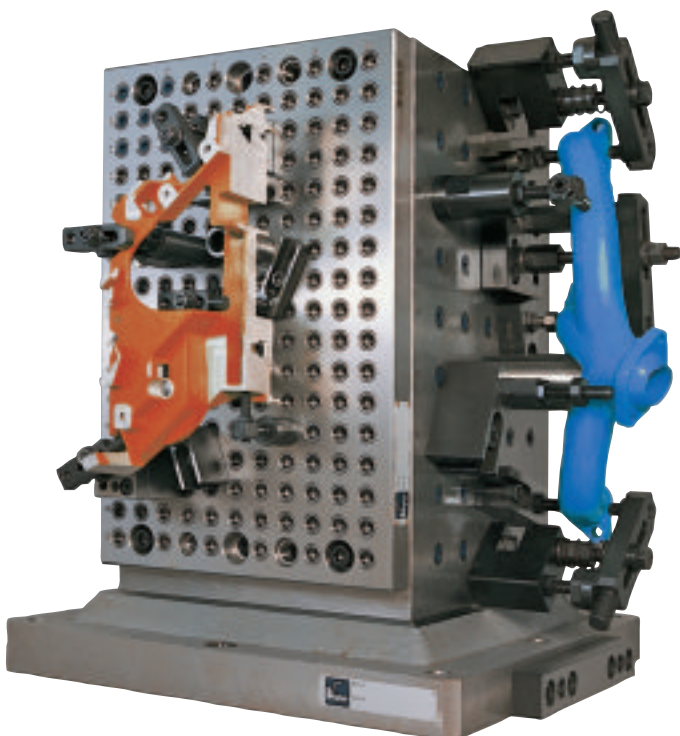
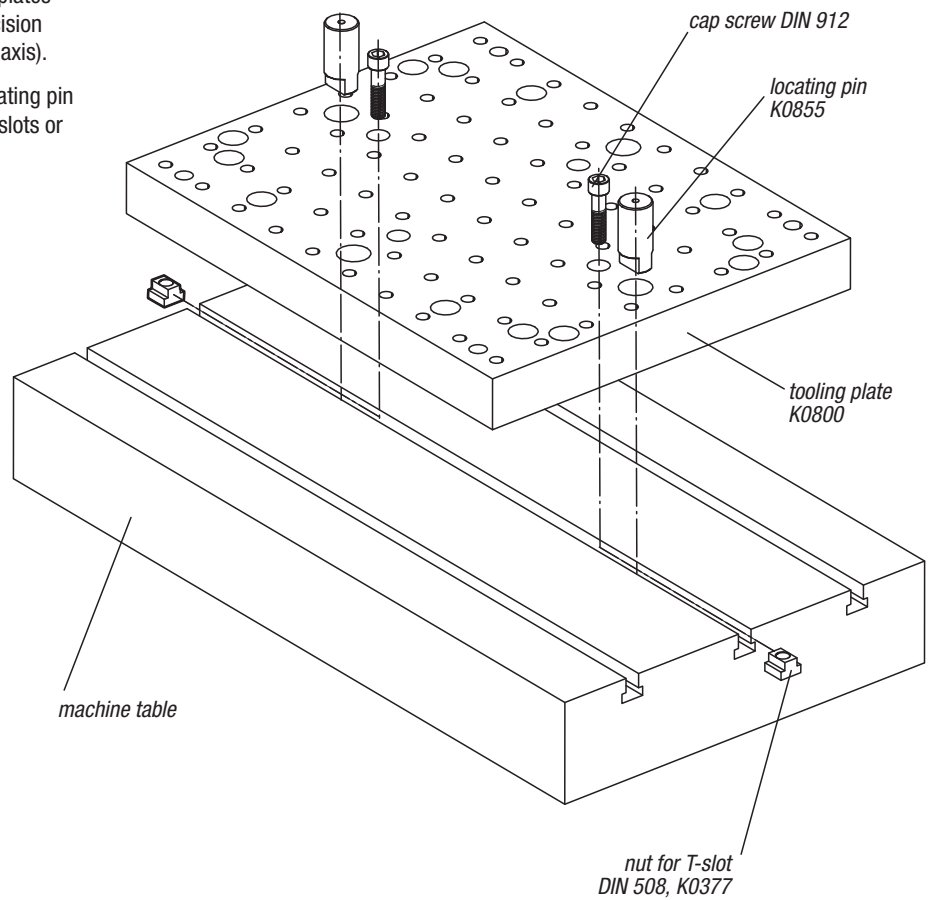


on machine tables

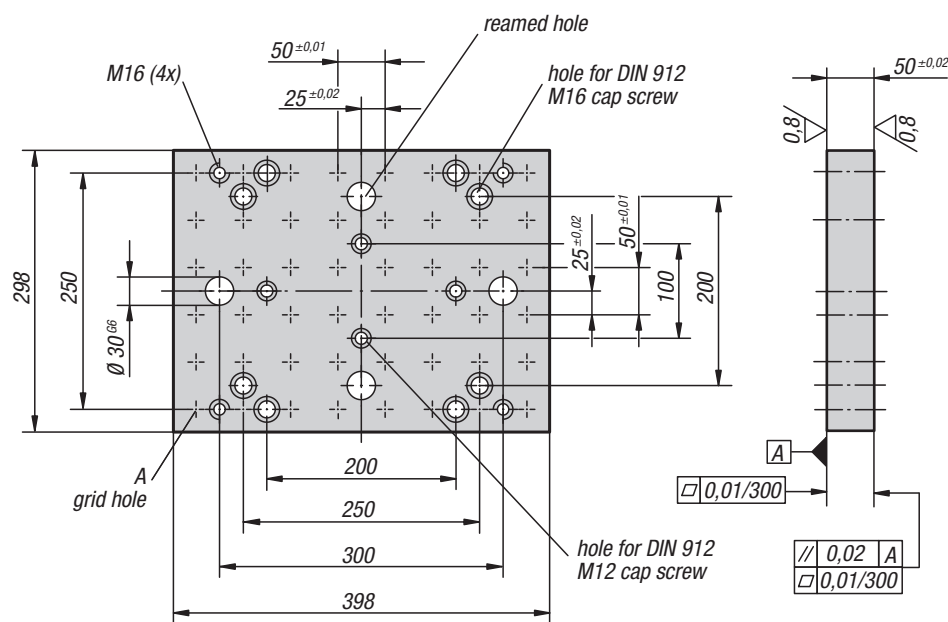


Locating pins are used for positioning tooling plates K0800. The tooling plates each have four precision holes for the locating pins (two holes on each axis).

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

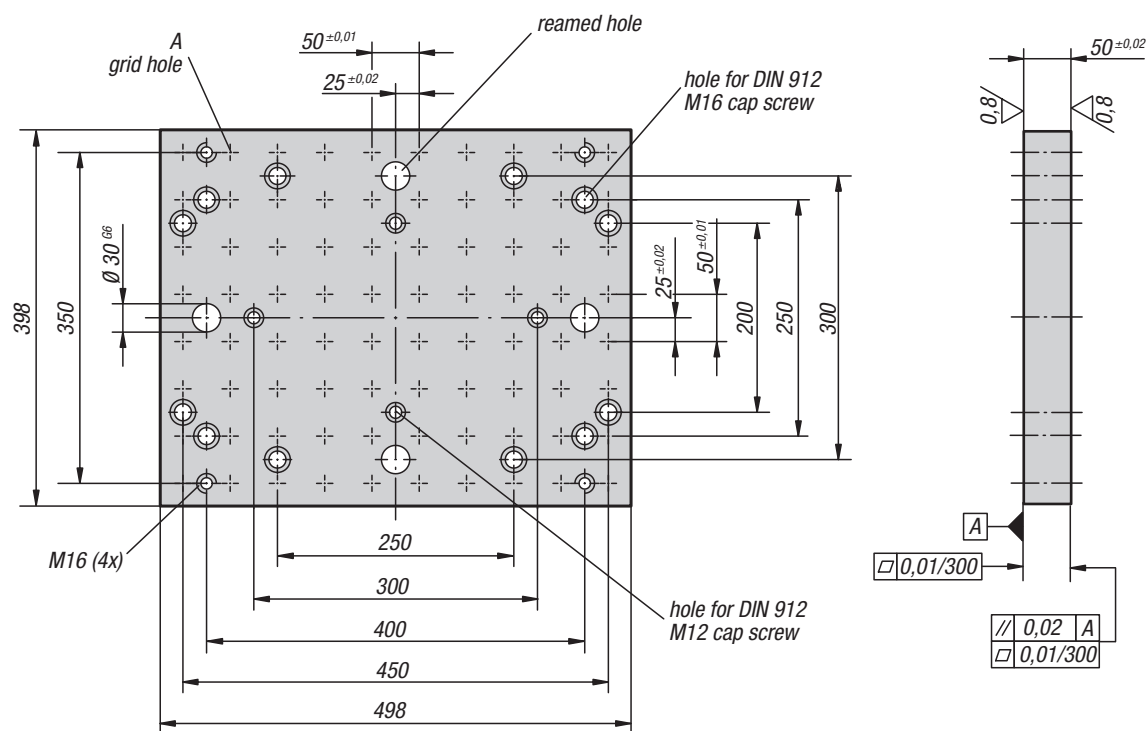
Version:
Mounting surfaces ground

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

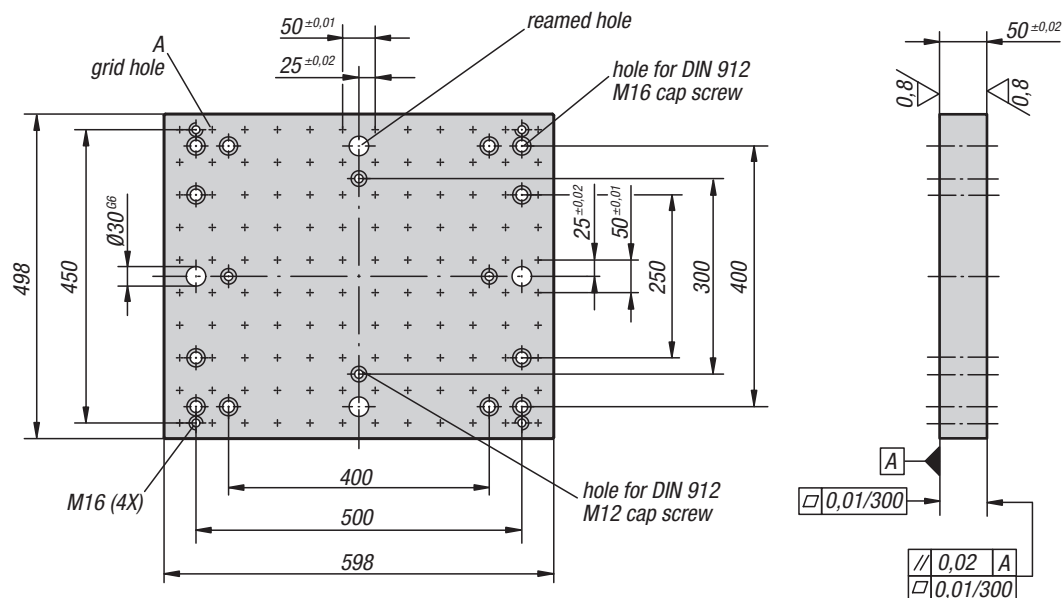
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.003040	without grid holes	-	-	-	42
K0800.123040	with grid holes	12 F7	M12	48	39



KIPP Tooling plates

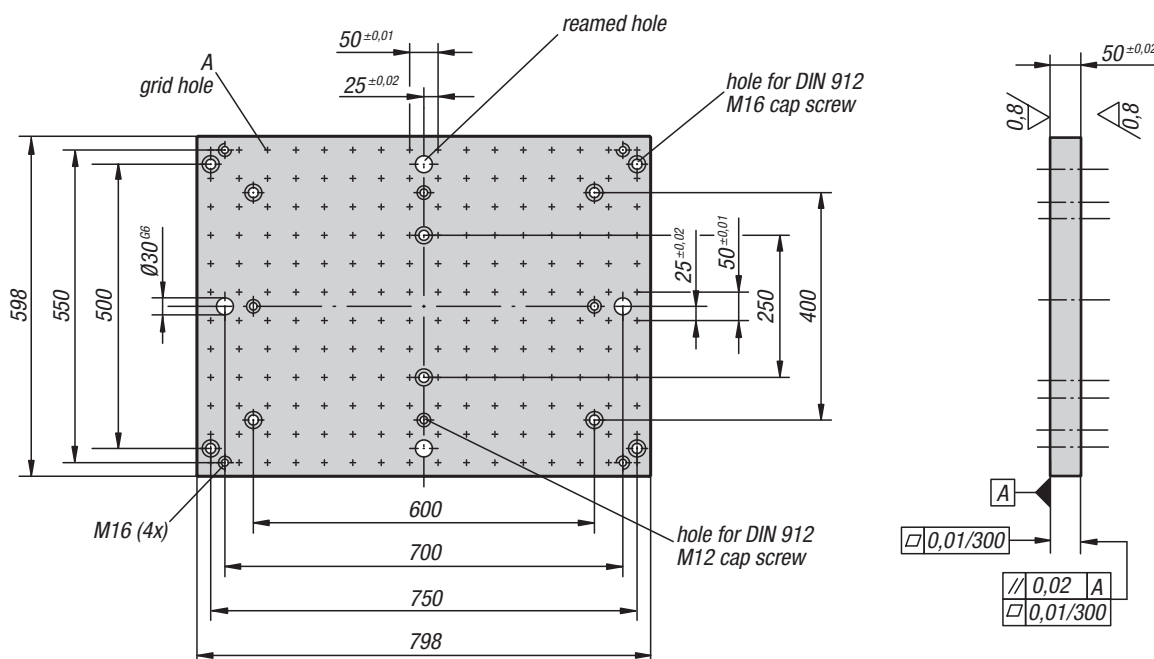
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.004050	without grid holes	-	-	-	70
K0800.124050	with grid holes	12 F7	M12	80	65

Tooling plates



KIPP Tooling plates

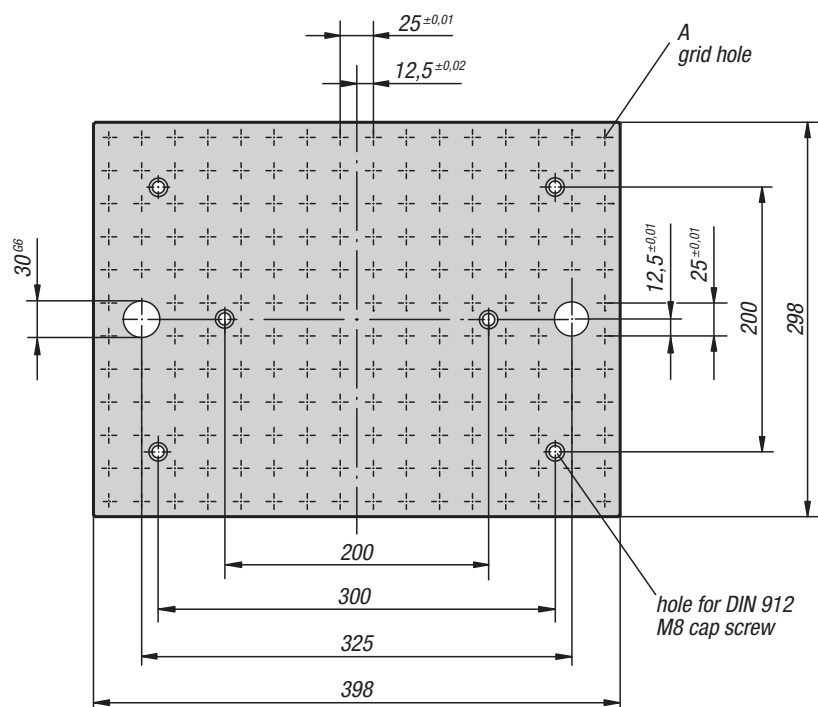
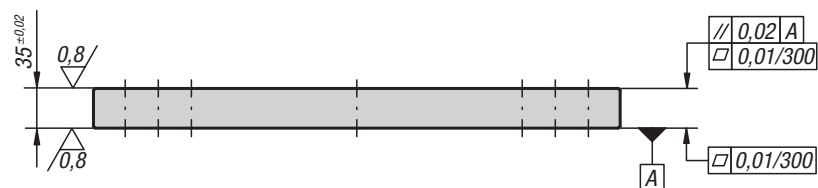
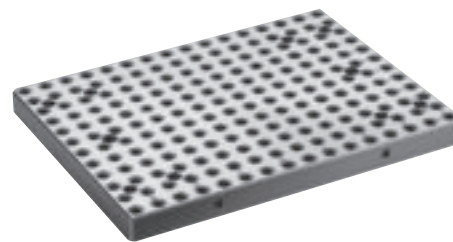
Order No.	Version	A locating hole	A thread	No. of grid holes	weight ca. kg
K0800.005060	without grid holes	-	-	-	115
K0800.125060	with grid holes	12 F7	M12	120	110
K0800.165060	with grid holes	16 F7	M16	120	105



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

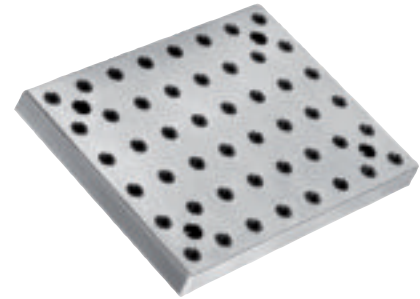
Note:Grid hole pitch 25 ± 0.01 mm.

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



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.

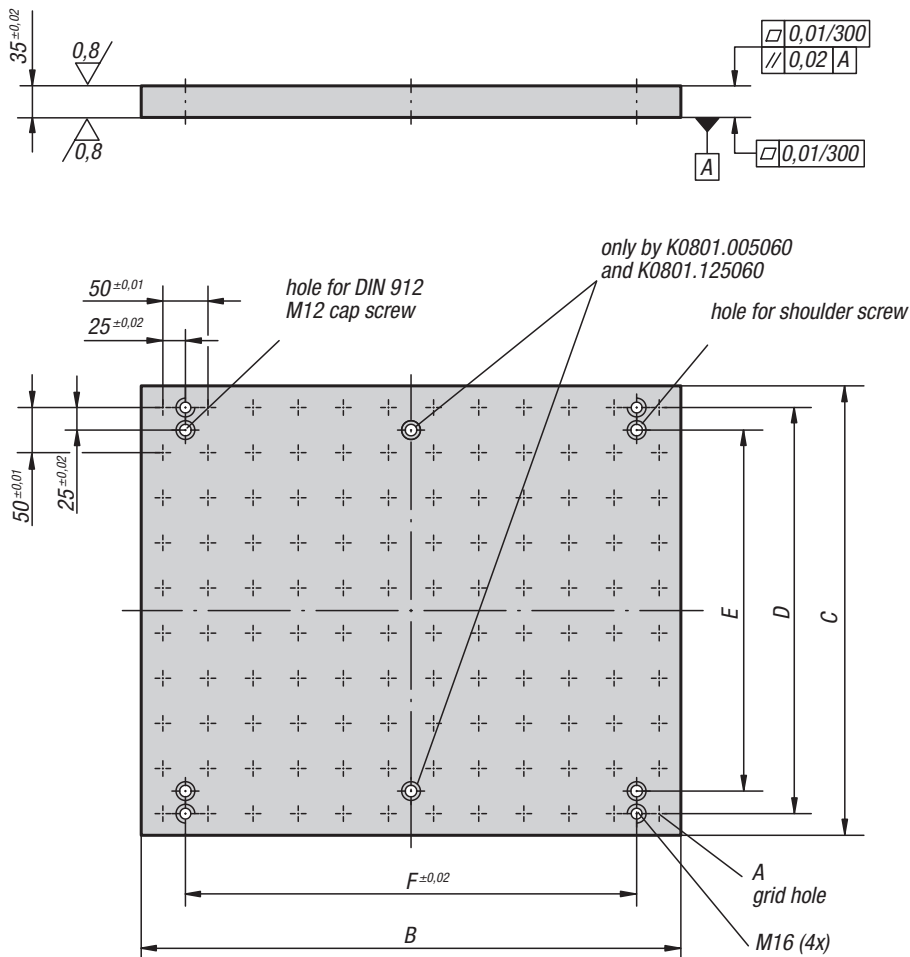
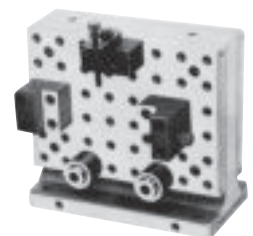
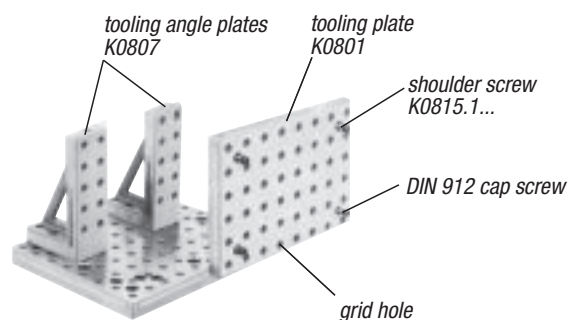


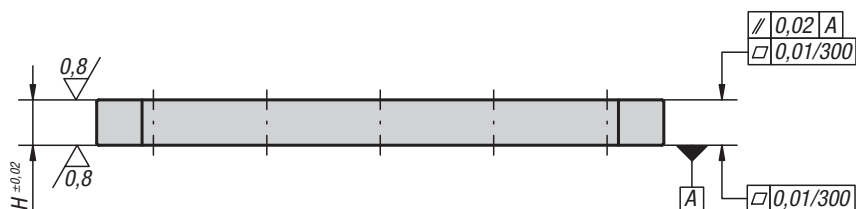
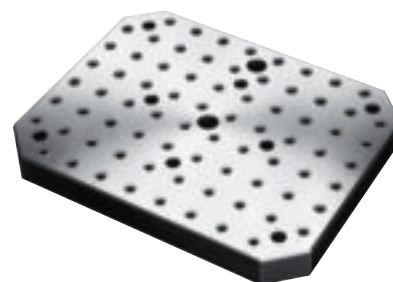
Fig. 1

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



Material:

Grey cast iron GJL 250

Version:

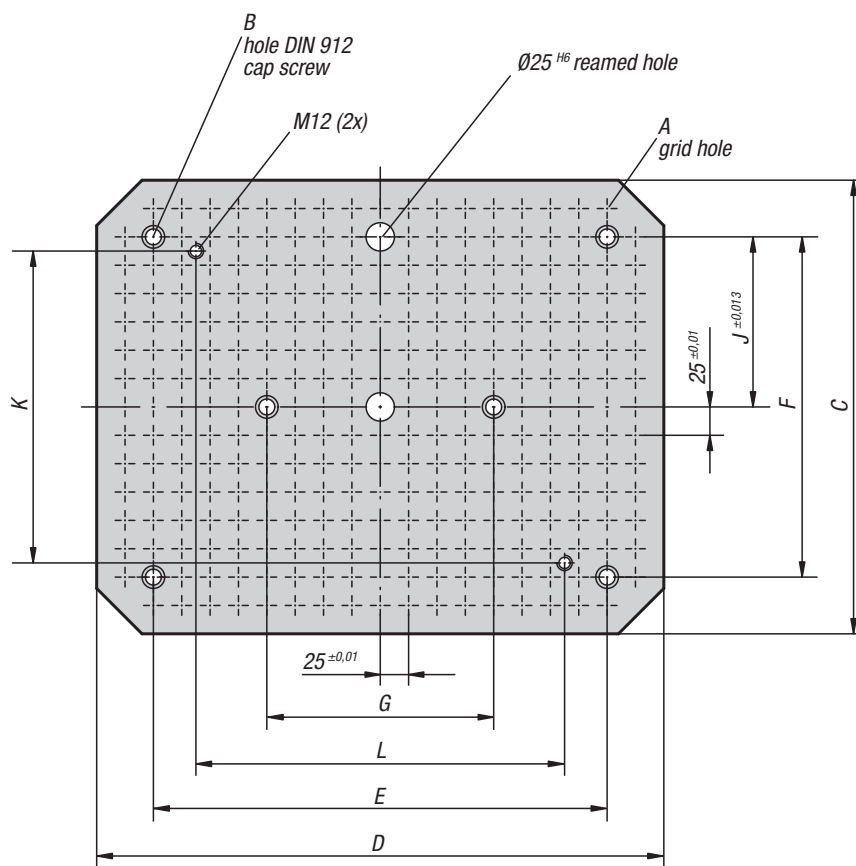
Mounting surfaces ground

Sample order:

K0806.084050

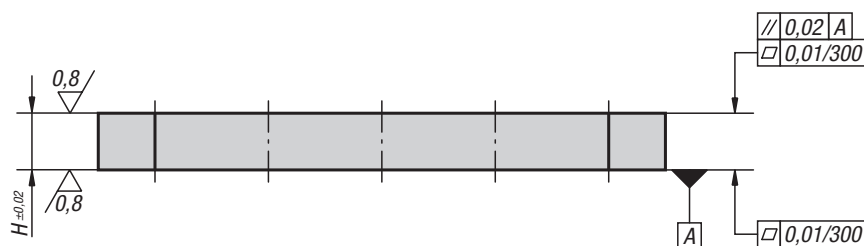
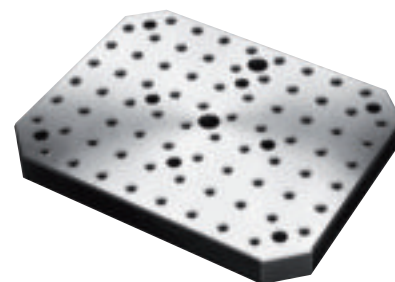
Note:

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



Material:

Grey cast iron GJL 250

Version:

Mounting surfaces ground

Sample order:

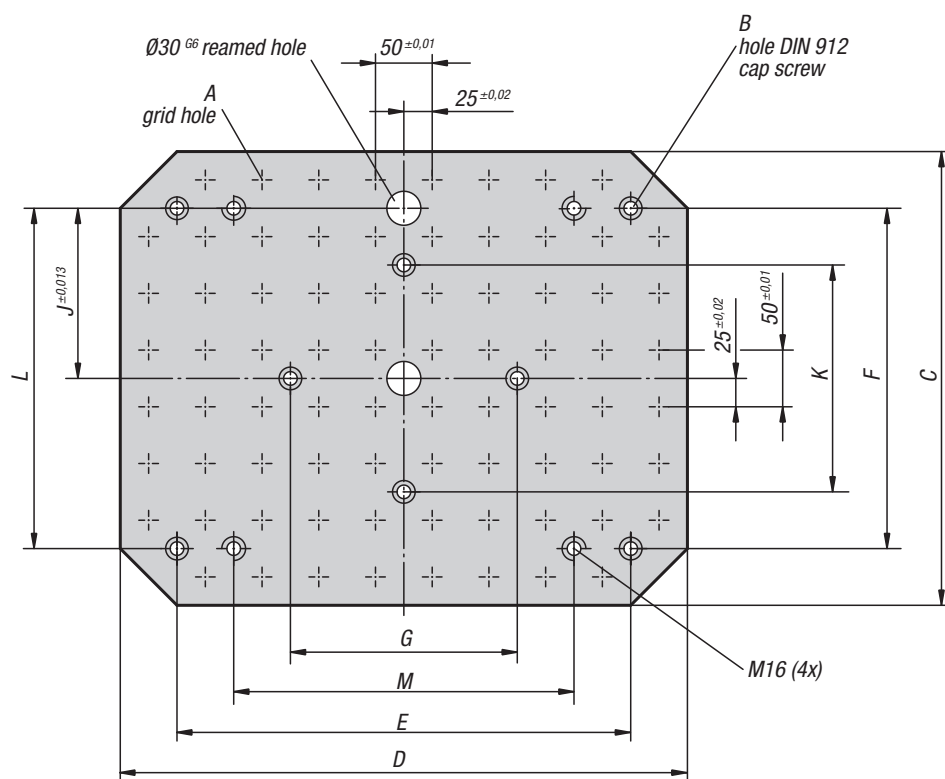
K0806.124050

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.



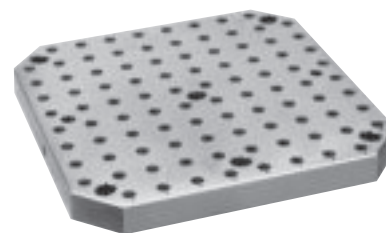
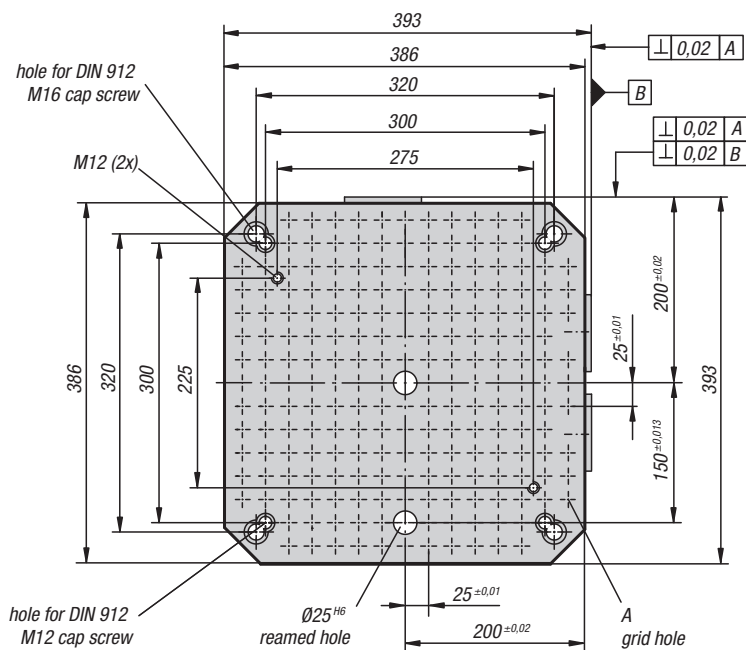
KIPP Subplates

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

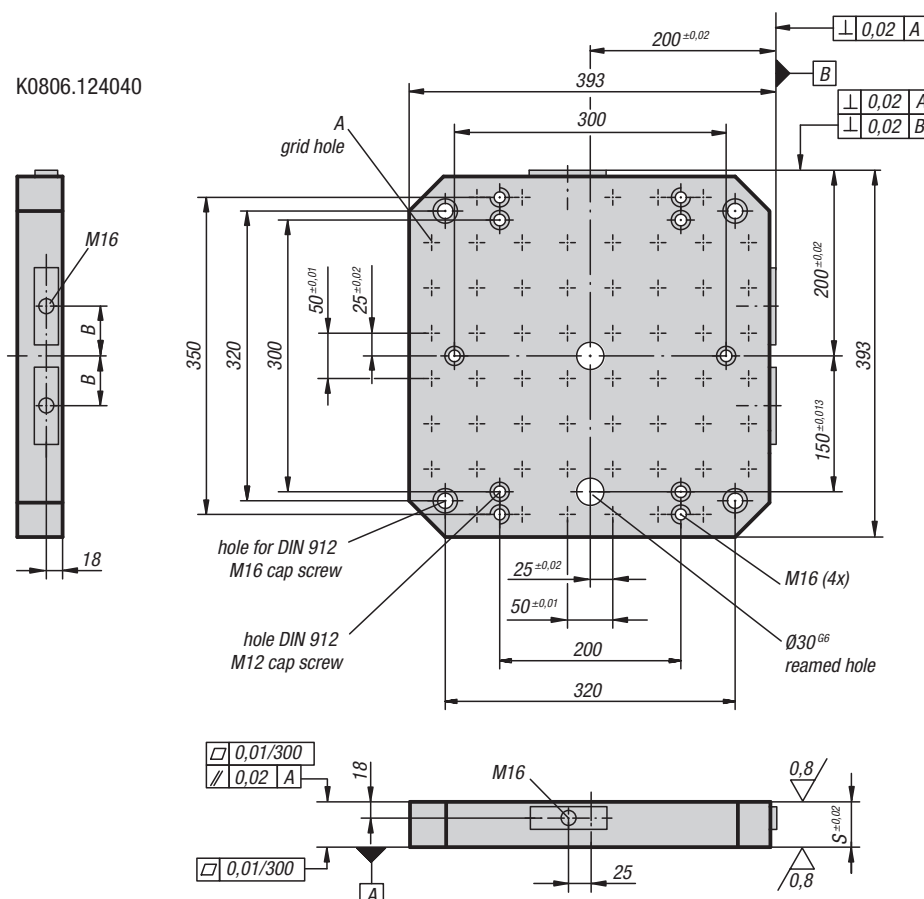
Note:

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.

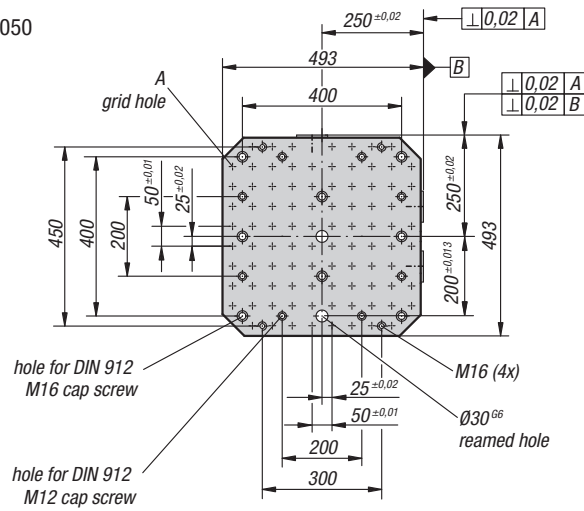
K0806.124040



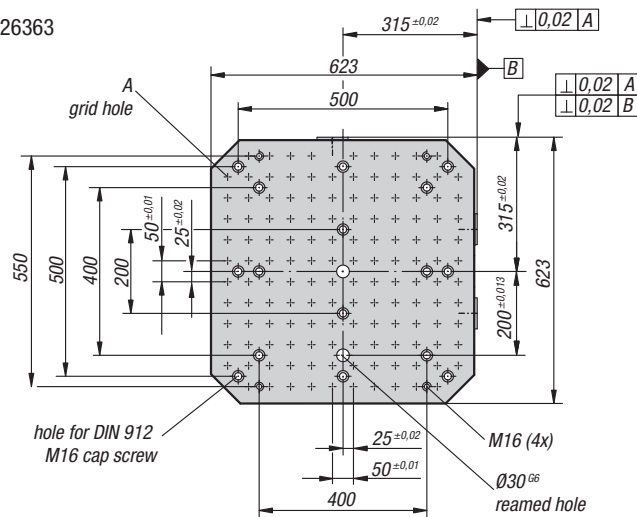
KIPP Subplates

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

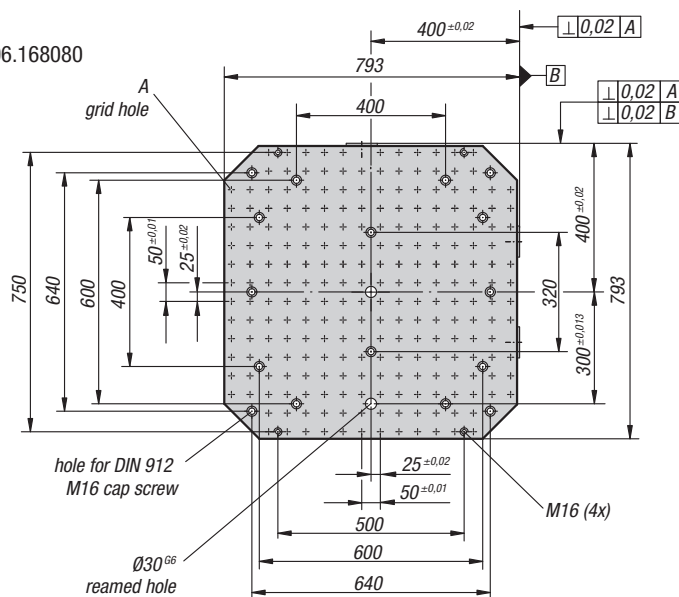
K0806.125050



K0806.126363

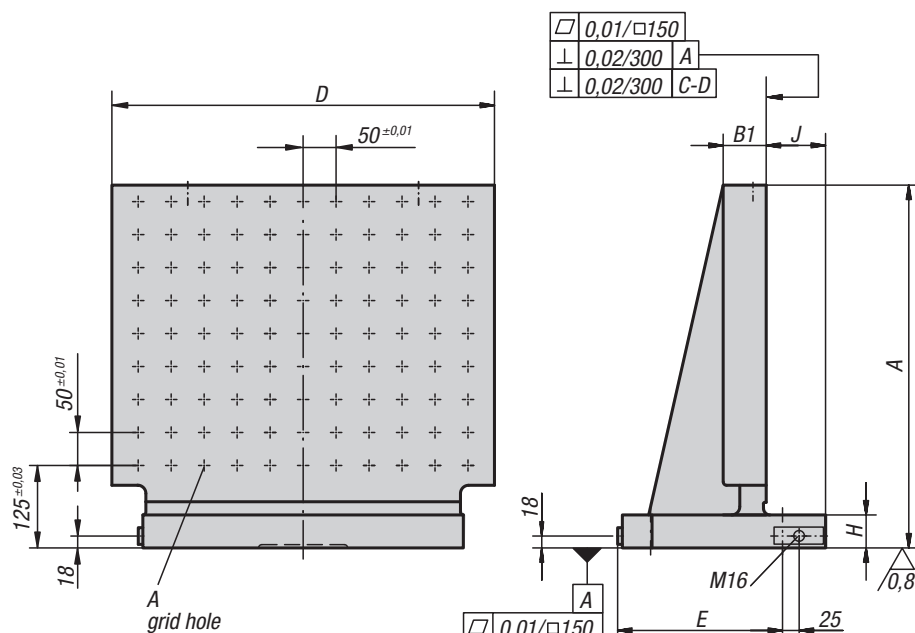


K0806.168080



Tombstones single-sided

with grid holes



Material:

GJL 300

Version:

Reference surfaces precision machined

Sample order:

K0802.124047

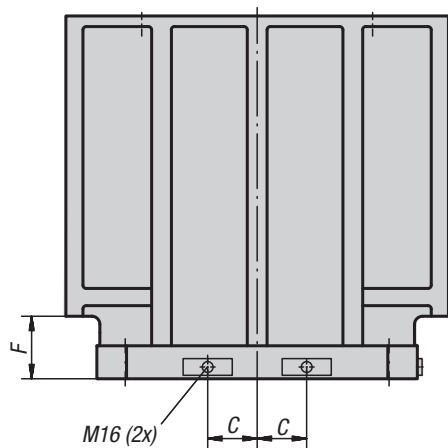
Note:

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.

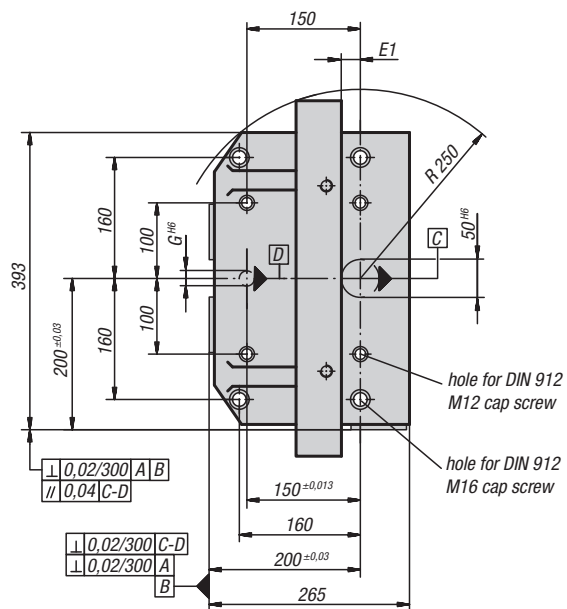
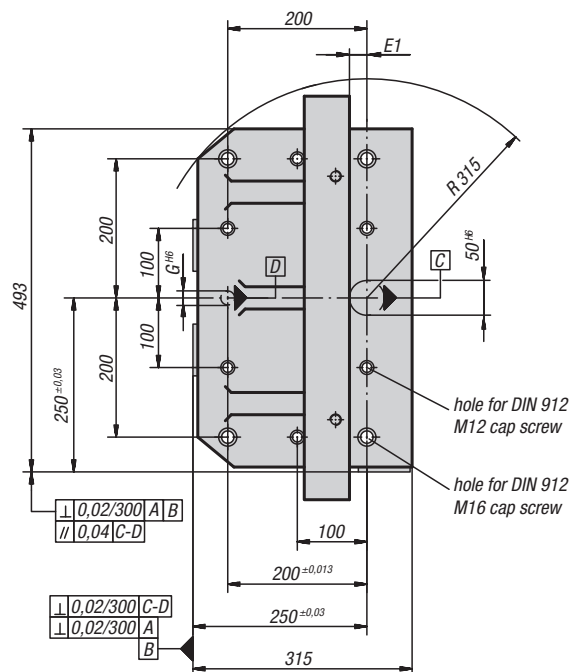
Order No.	A	B1	C	D	E	E1	F	G	H	J	A locating hole	A thread	No. of grid holes	weight ca. kg
K0802.124047	450	60	55	470	200	$25 \pm 0,03$	85	20	45	90	12F7	M12	63	95
K0802.125058	550	65	75	580	250	$25 \pm 0,03$	95	20	50	90	12F7	M12	99	181
K0802.165058	550	65	75	580	250	$25 \pm 0,03$	95	20	50	90	16F7	M16	99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

Tombstones single-sided

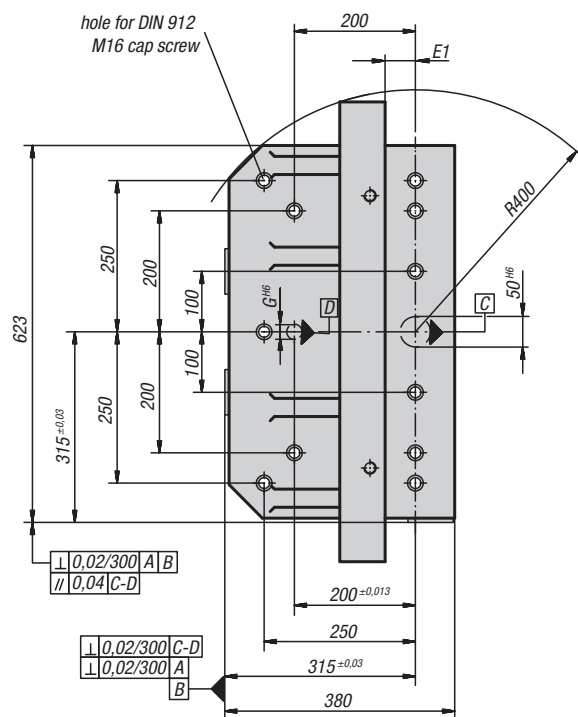
with grid holes



K0802.124047

K0802.125058
K0802.165058

K0802.166376



Tombstones single-sided

without grid holes



Material:

GJL 300

Version:

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

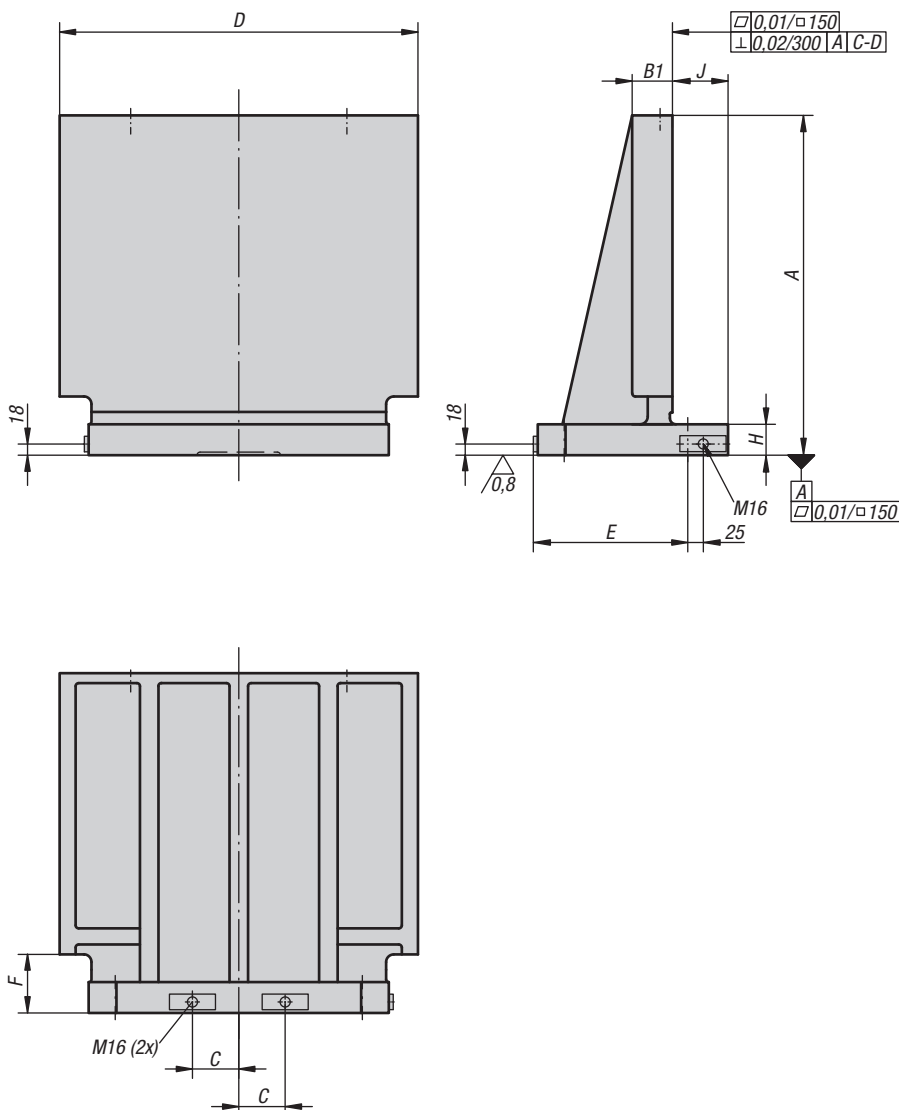
Sample order:

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

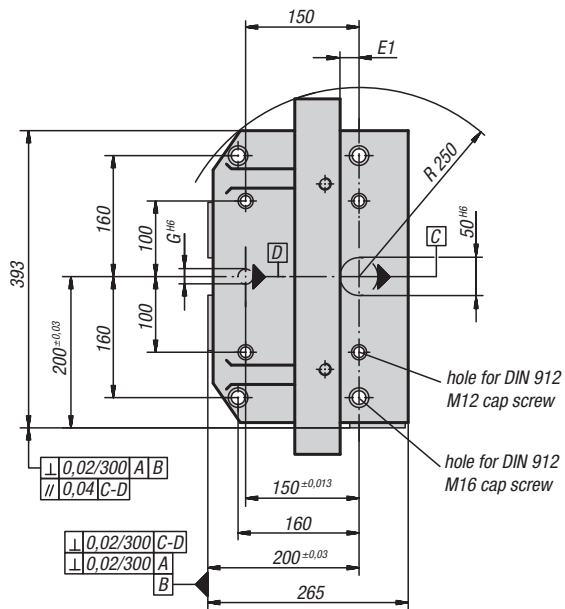
Order No.	A	B1	C	D	E	E1	F	G	H	J	weight ca. kg
K0802.004047	450	61	55	470	200	24 ±0,2	85	20	45	89	98
K0802.005058	550	66	75	580	250	24 ±0,2	95	20	50	89	161
K0802.006376	700	76	100	760	315	49 ±0,2	100	25	55	114	341
K0802.008090	800	81	135	900	400	49 ±0,2	100	25	60	114	434

Tombstones single-sided

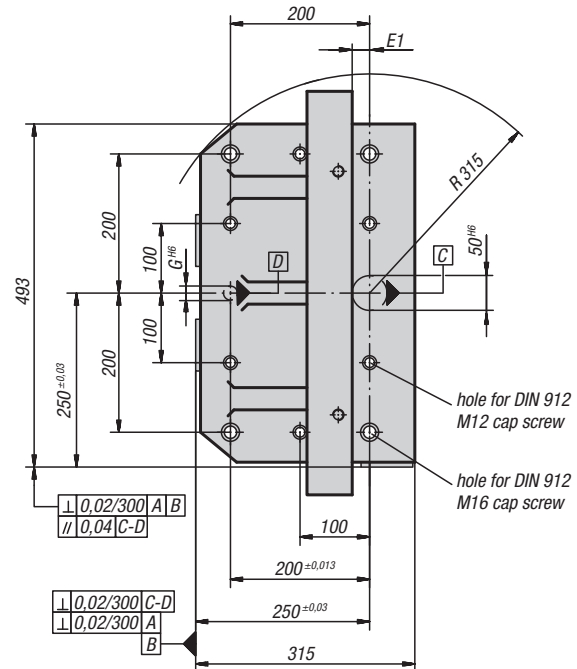
without grid holes



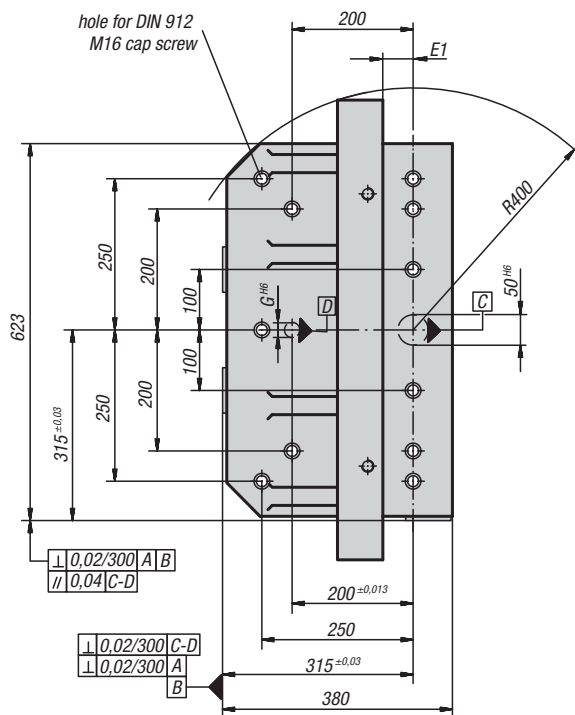
K0802.004047



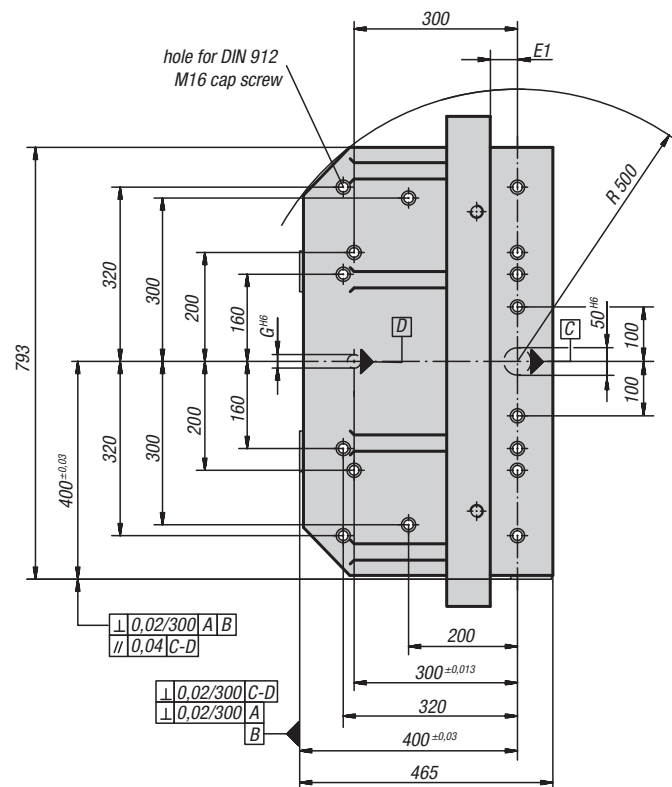
K0802.005058



K0802.006376

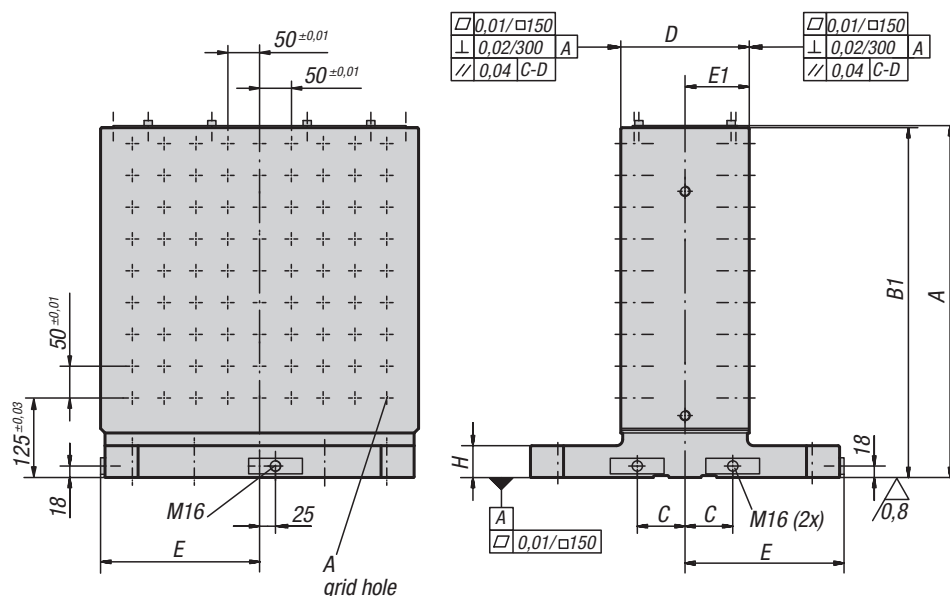


K0802.008090



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

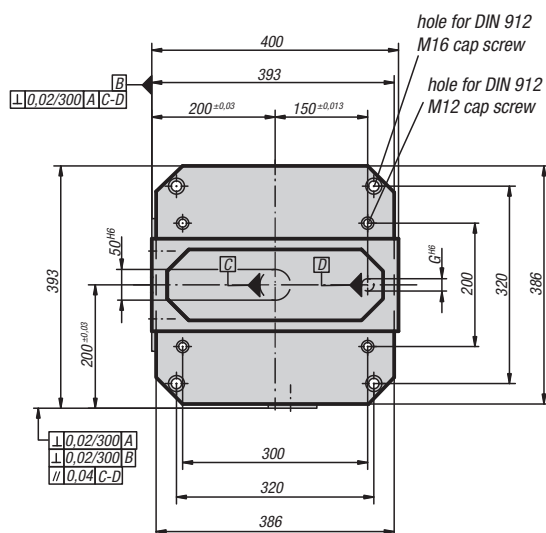
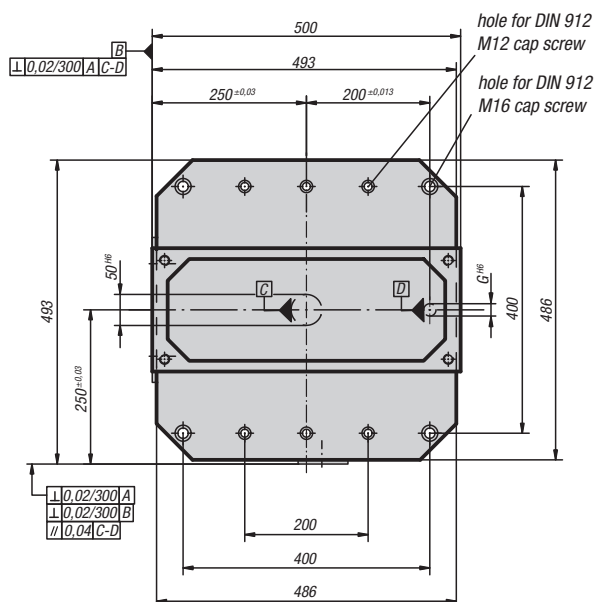
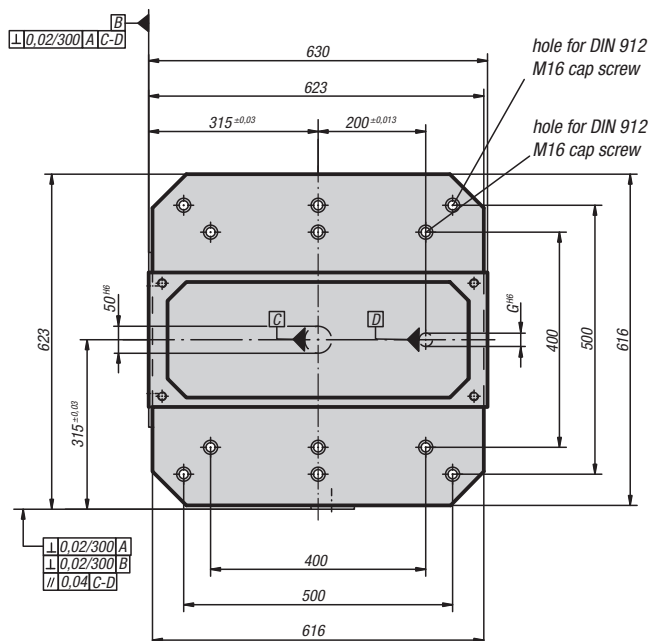
Order No.	A	B1	C	D	E	E1	G	H	A locating hole	A thread	No. of grid holes	weight ca. kg
K0803.1240151	553	550	55	$150 \pm 0,03$	200	$75 \pm 0,03$	20	50	12F7	M12	126	198
K0803.1250201	653	650	75	$200 \pm 0,03$	250	$100 \pm 0,03$	20	50	12F7	M12	198	287
K0803.1650201	653	650	75	$200 \pm 0,03$	250	$100 \pm 0,03$	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

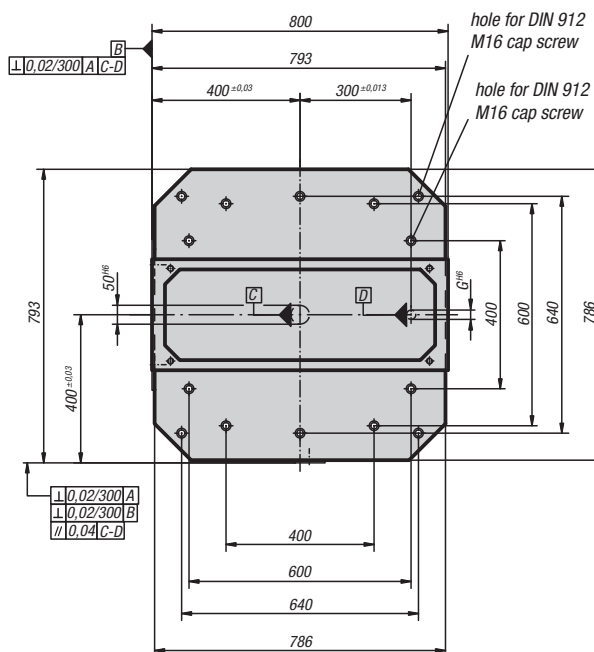
with grid holes



K0803.1240151

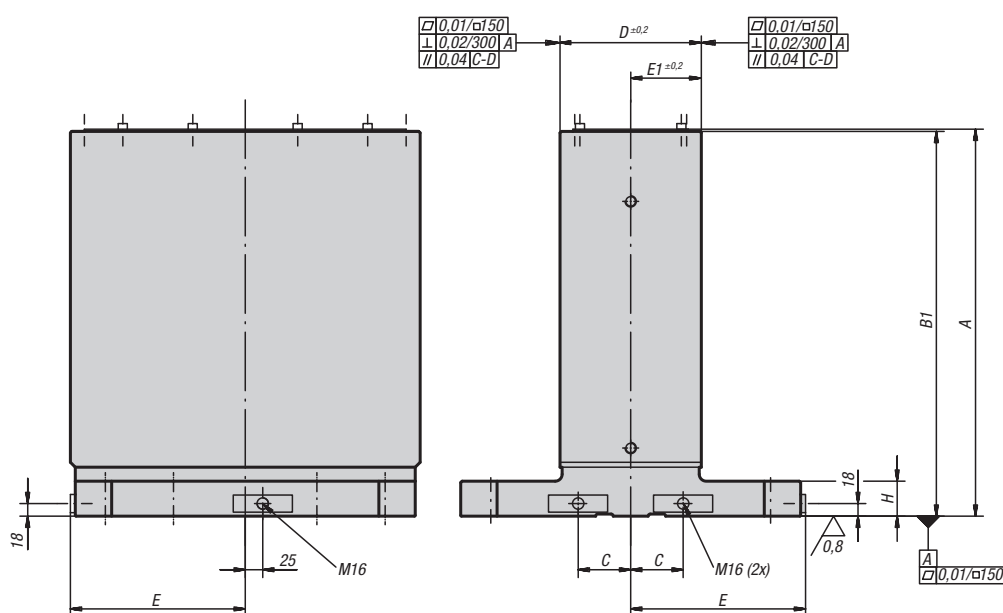
K0803.1250201
K0803.1650201K0803.126325
K0803.166325

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:

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

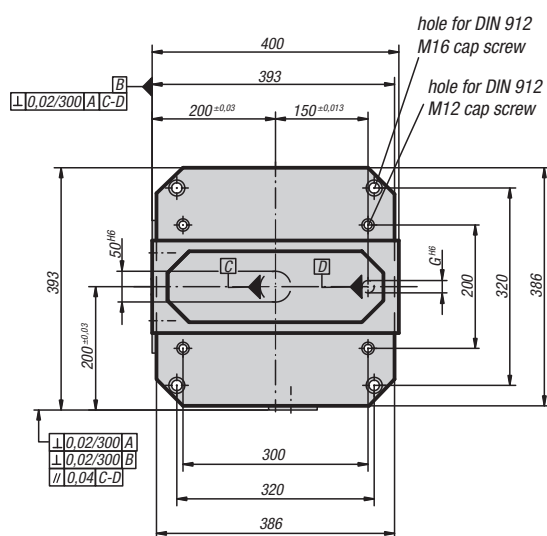
Order No.	A	B1	C	D	E	E1	G	H	weight ca. kg
K0803.0040151	553	550	55	151±0,2	200	75,5 ±0,2	20	50	202
K0803.005020	553	550	75	201±0,2	250	101,5 ±0,2	20	50	257
K0803.0050201	653	650	75	201±0,2	250	101,5±0,2	20	50	317
K0803.006325	703	700	100	251±0,2	315	125,5±0,2	25	55	471
K0803.0063251	803	800	100	251±0,2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

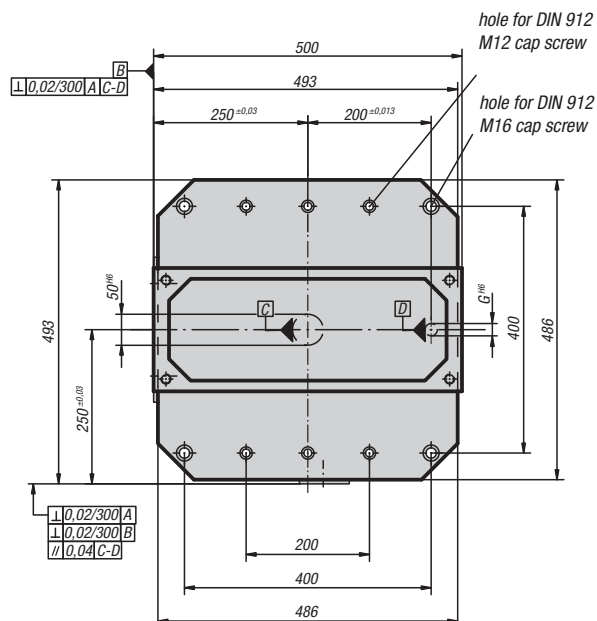
without grid holes



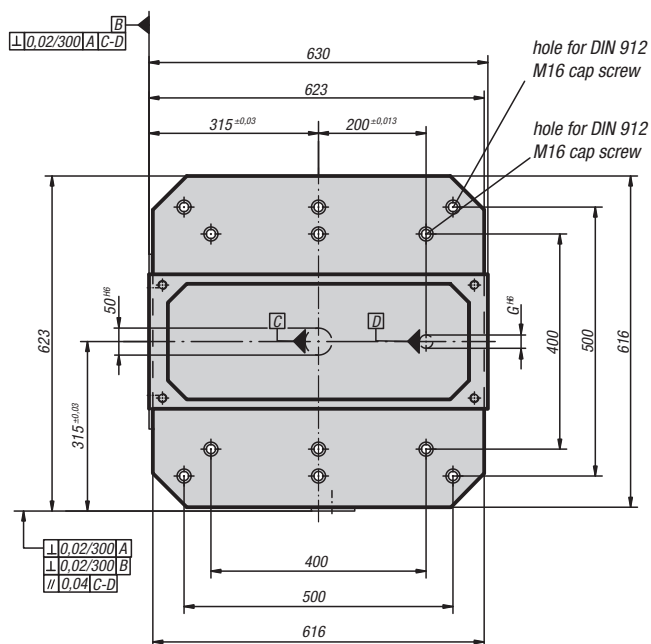
K0803.0040151



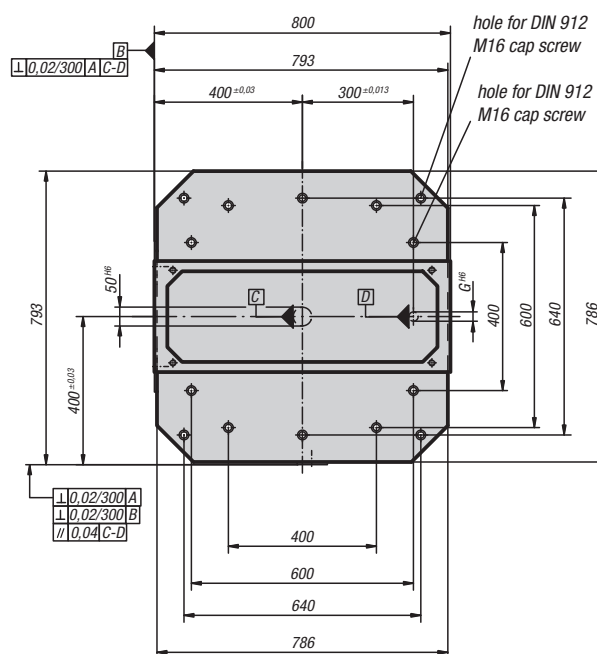
K0803.005020
K0803.0050201



K0803.006325
K0803.0063251



K0803.008030



Tombstones double-sided

grey cast iron



Material:

GJL 250

Version:

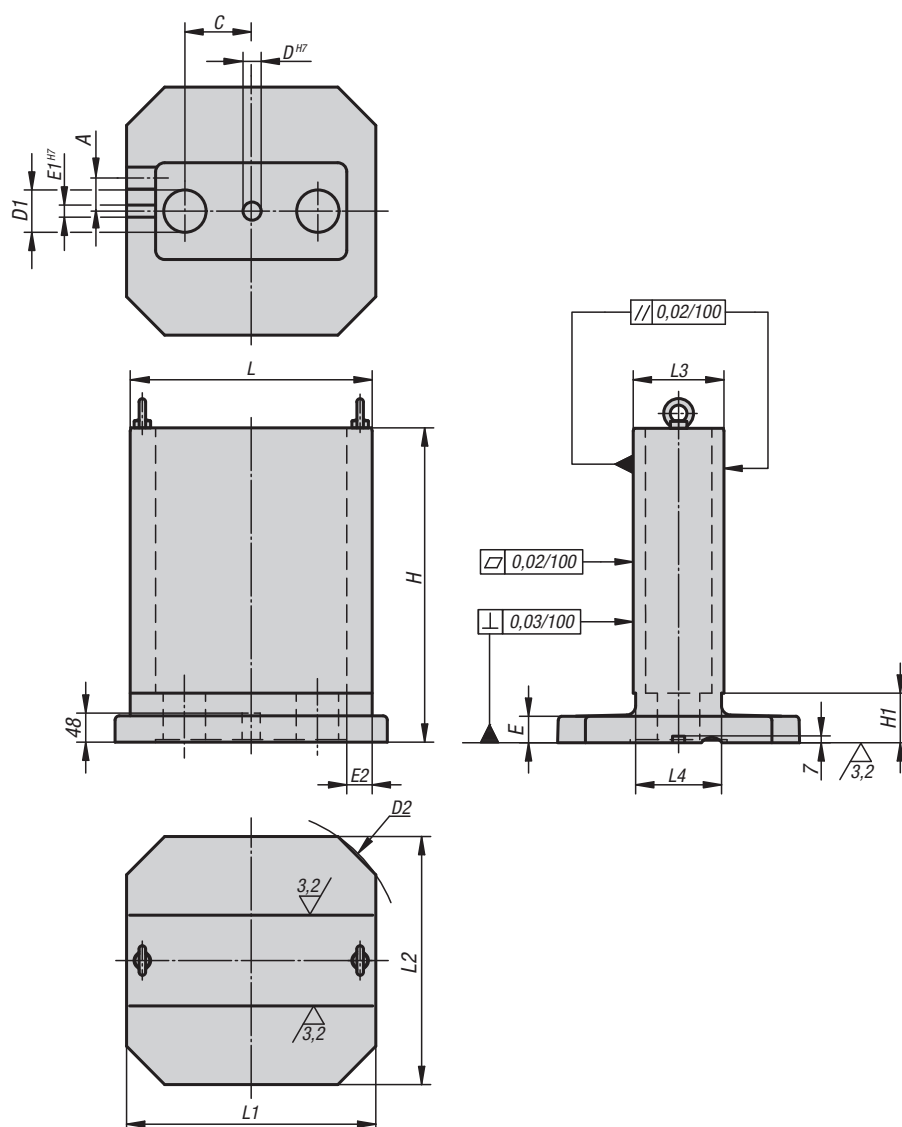
Reference surfaces precision machined.

Note:

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

Drawing reference:

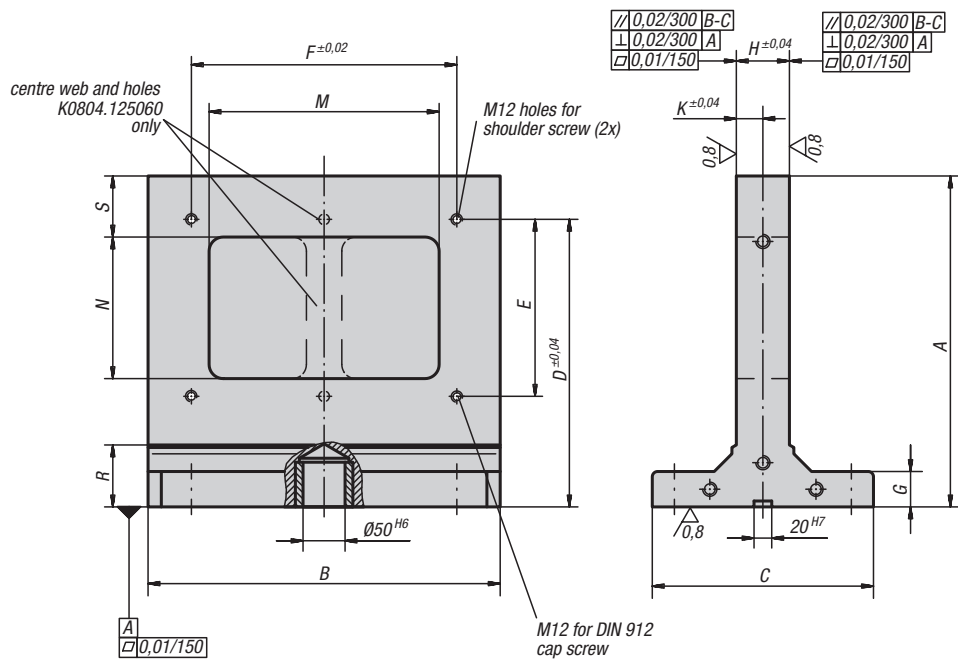
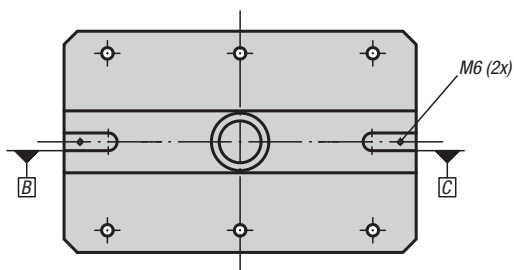
machined faces: +0.2 mm/ +0.5 mm
unmachined faces: ±2 mm



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

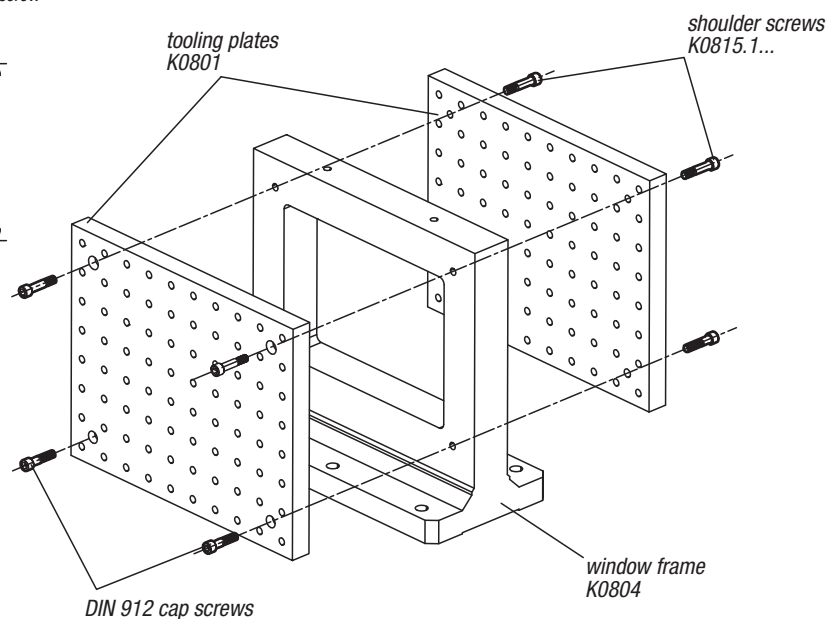
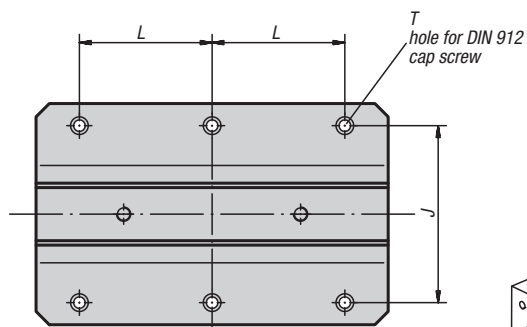


Material:
GJL 300

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.

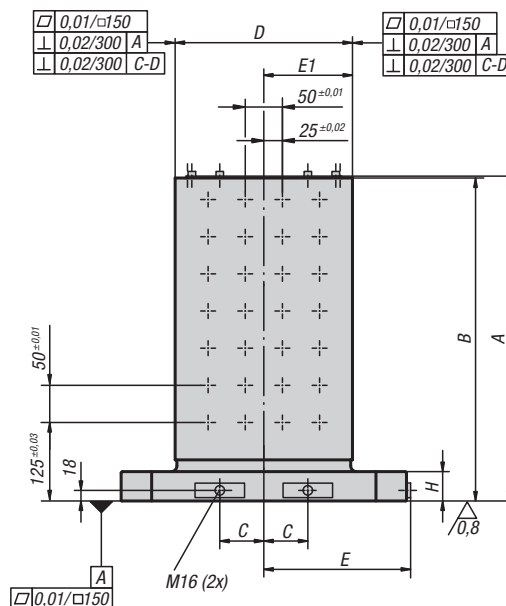
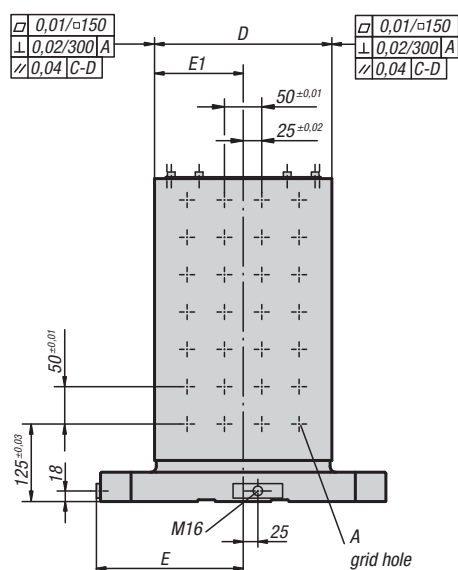


KIPP Tombstone window frame

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

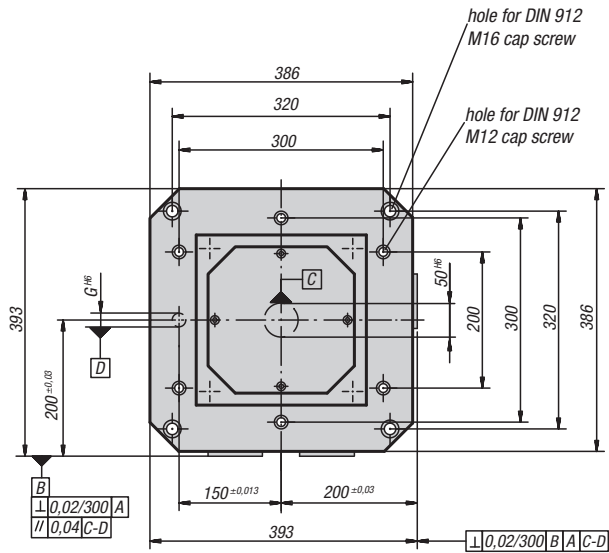
Note:

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.

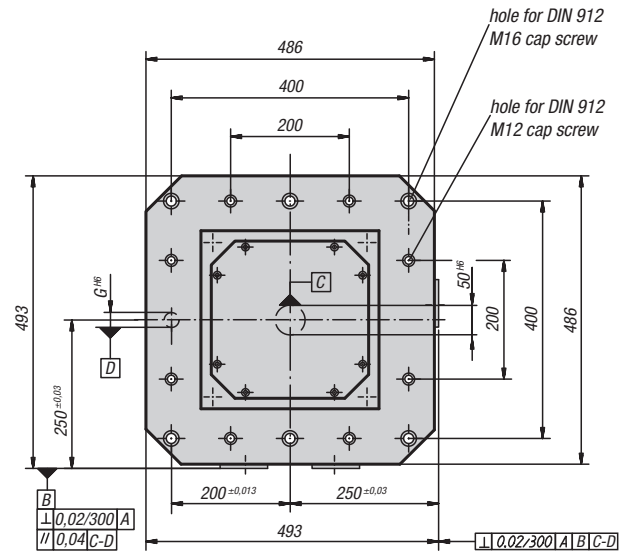
KIPP Cube tombstones with grid holes

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

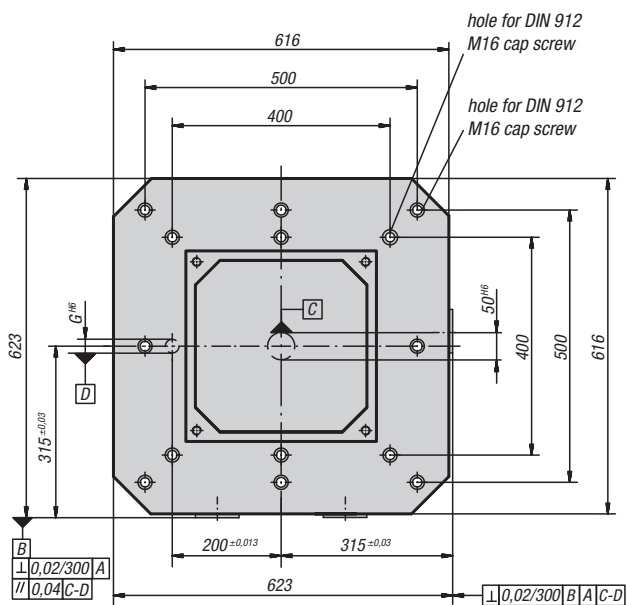
K0805.1240251



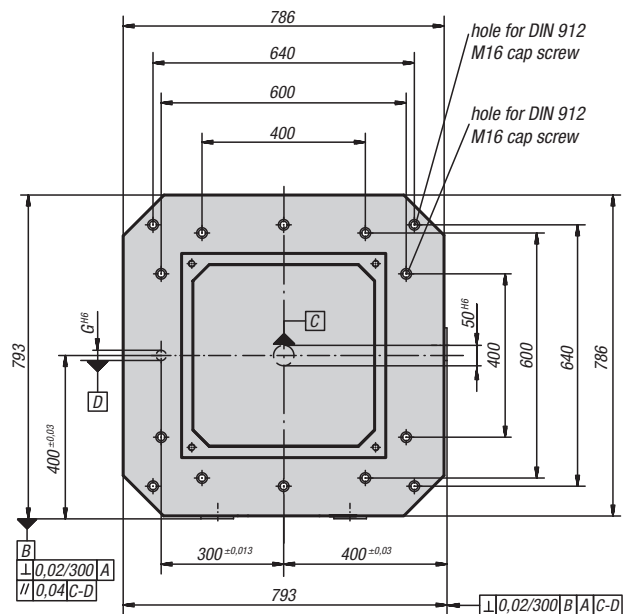
K0805.1250301
K0805.1650301



K0805.126335
K0805.166335

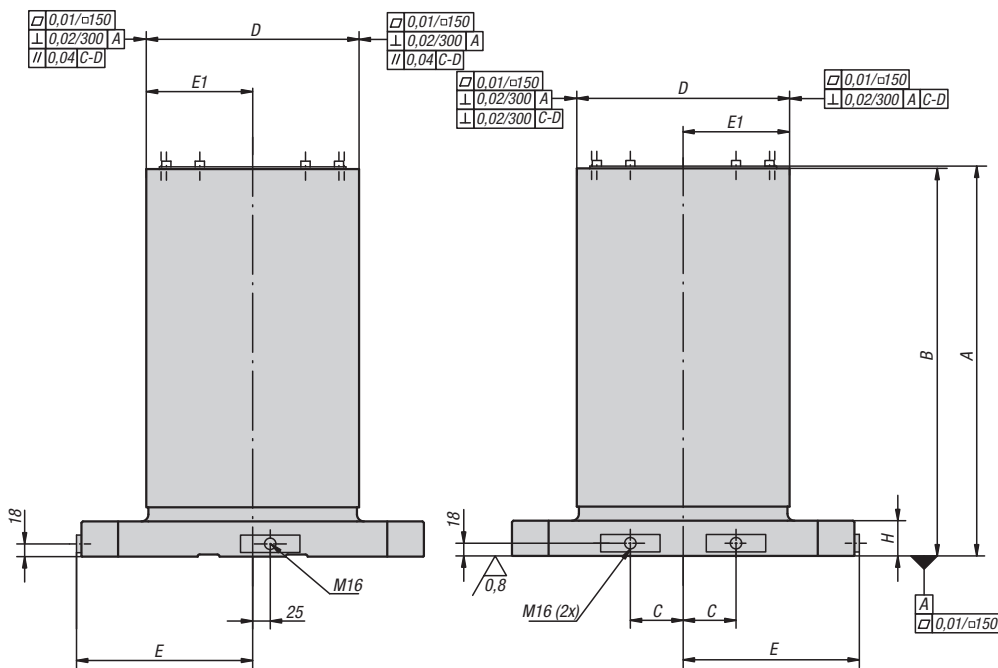


K0805.168050



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

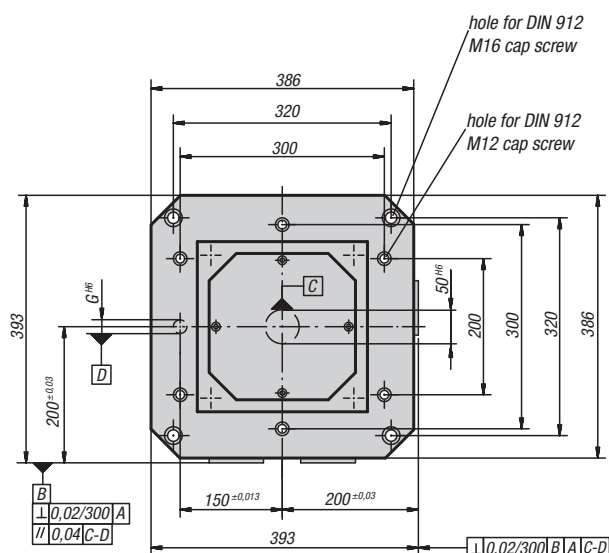
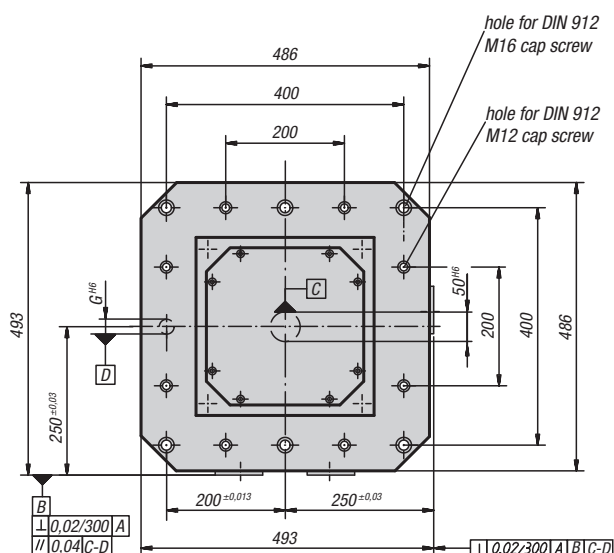
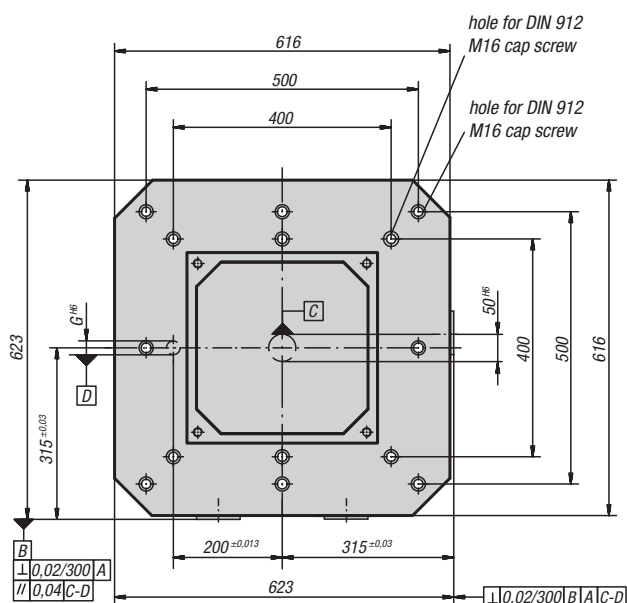
Order No.	A	B	C	D	E	E1	G	H	weight ca. kg
K0805.0040251	553	550	55	251 ±0,2	200	125,5 ±0,2	20	50	183
K0805.005030	553	550	75	301 ±0,2	250	150,5 ±0,2	20	50	231
K0805.0050301	653	650	75	301 ±0,2	250	150,5 ±0,2	20	50	268
K0805.006335	703	700	100	351 ±0,2	315	175,5 ±0,2	25	55	389
K0805.0063351	803	800	100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

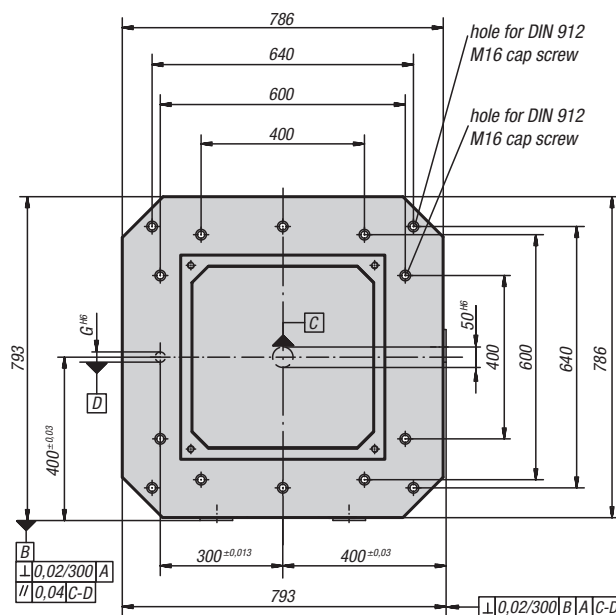
without grid holes



K0805.0040251

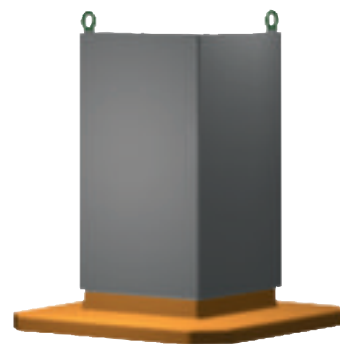
K0805.005030
K0805.0050301K0805.006335
K0805.0063351

K0805.008050



Tombstones cube

grey cast iron



Material:

GJL 250

Version:

Reference surfaces precision machined

Note:

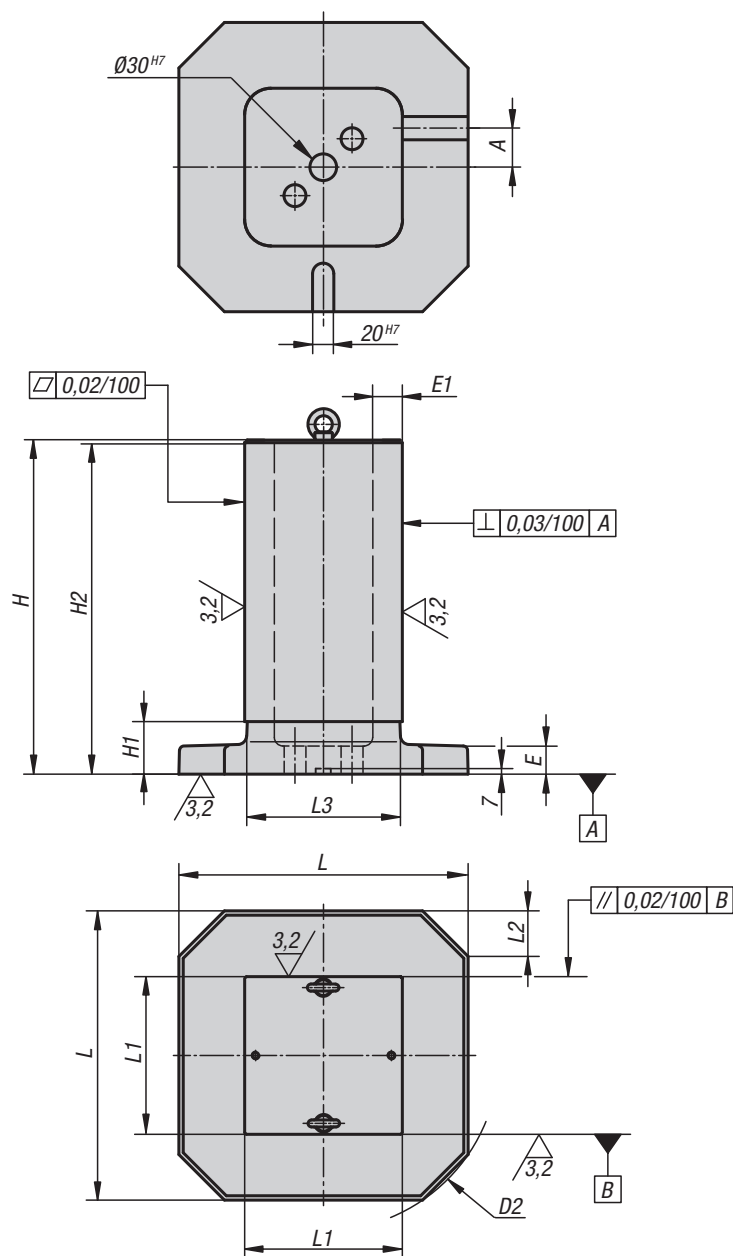
Ring bolts for lifting are supplied.

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



