

5-axis module clamping system 80



Function



UNI lock was developed specifically for 5-side machining. Ideal for clamping complex workpiece's. They can then be machined completely in a single clamping operation. Even machining from the 6th side is possible. The workpiece's are connected to the 5-axis module system by a screw connection.

System size 80 mm

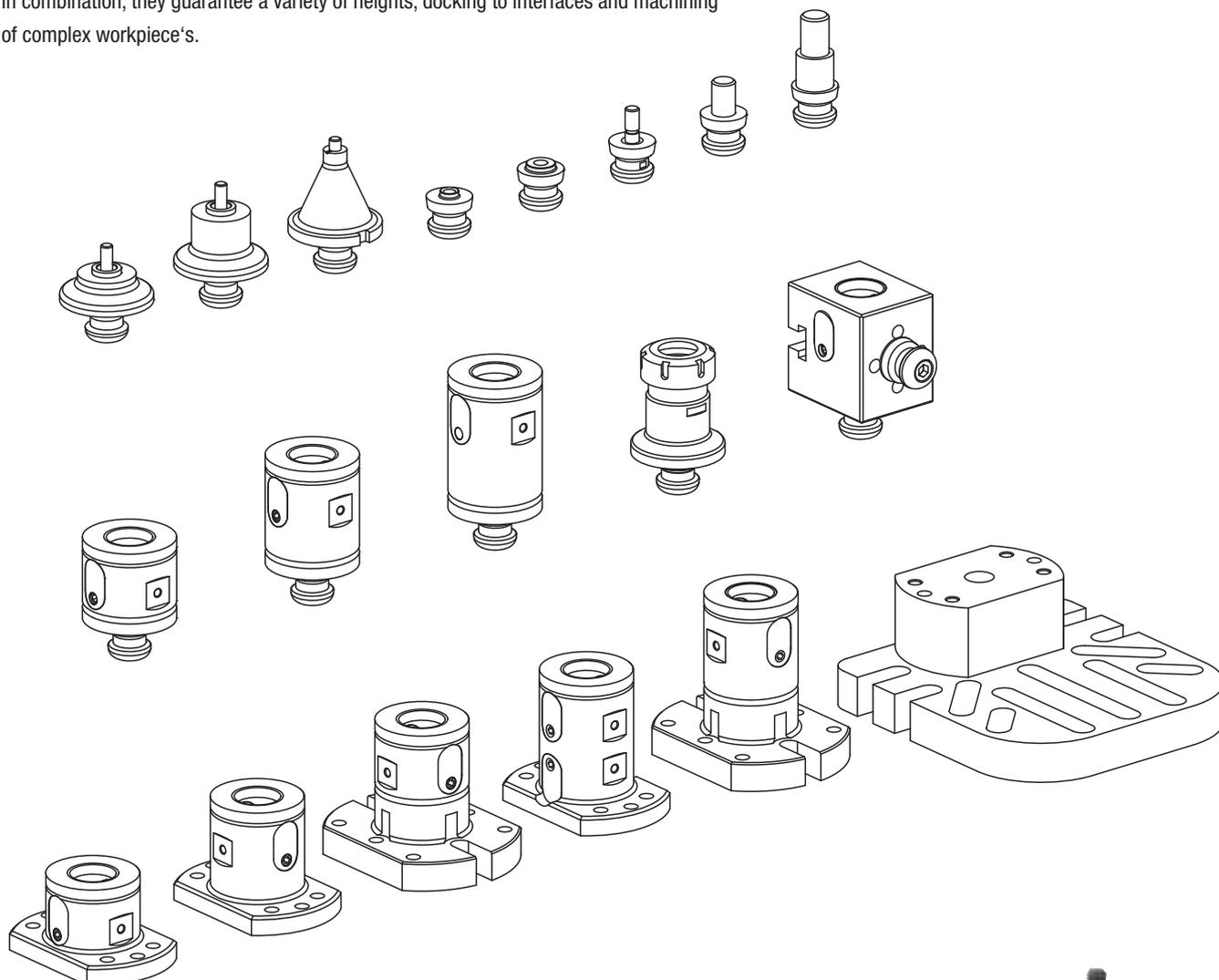


ADVANTAGES:

- 5-side machining with no protruding edges
- Modular construction guarantees maximum flexibility
- Interfaces with commonly used systems
- Variable workpiece fastening
- The workpiece is positively joined to the clamping system
- The workpiece is simply positioned with screws or seating's
- The zero point is transferred to the workpiece
- High module clamping force
- Very high repeat accuracy

Thanks to the modular construction and the variety of modules, the system can be configured individually and recombined for many applications.

More than 70 elements are available: basic modules, add-on modules and accessories.
In combination, they guarantee a variety of heights, docking to interfaces and machining
of complex workpiece's.



Flexible stack heights through a wide variety of basic and add-on clamp modules



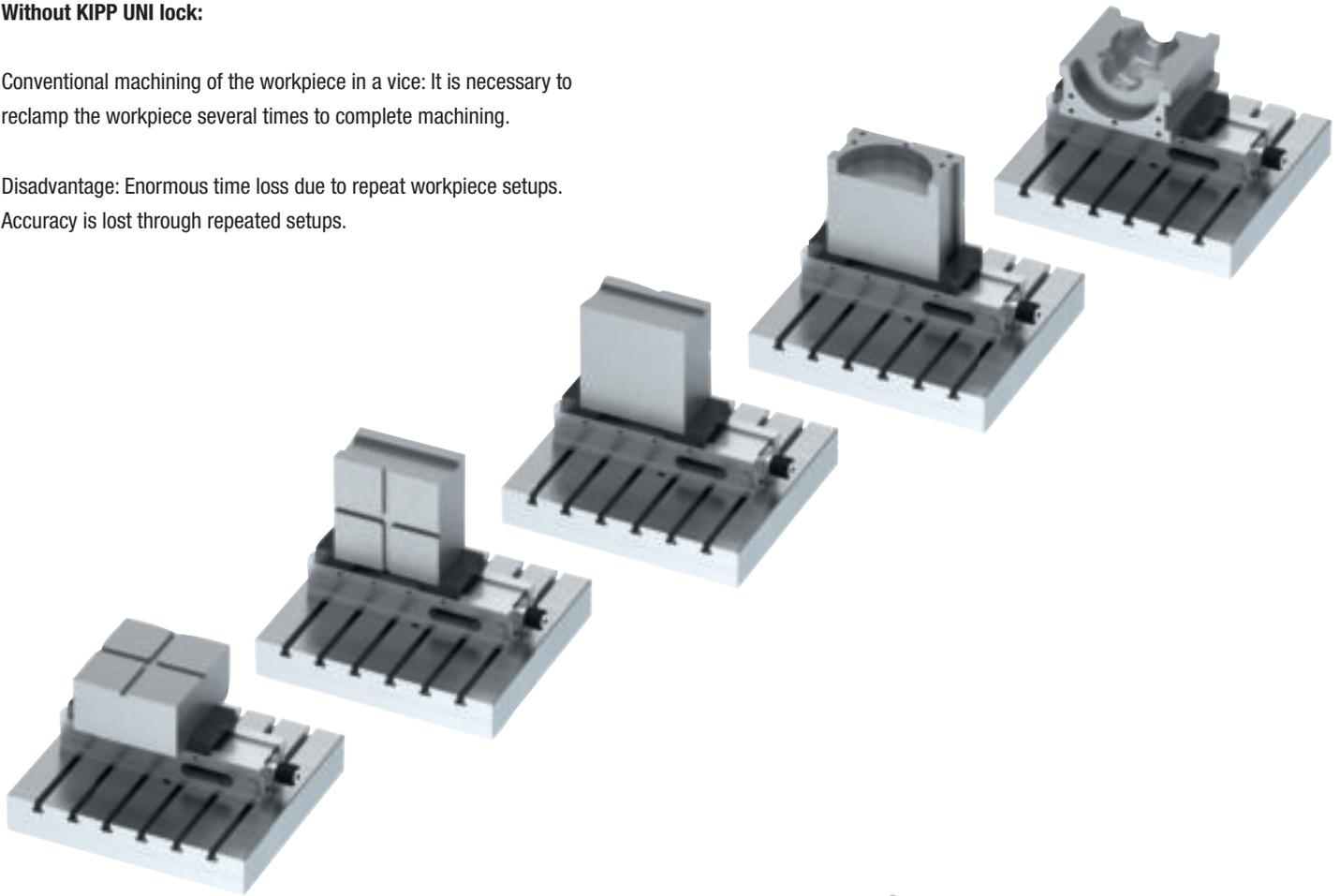
Setup times



Without KIPP UNI lock:

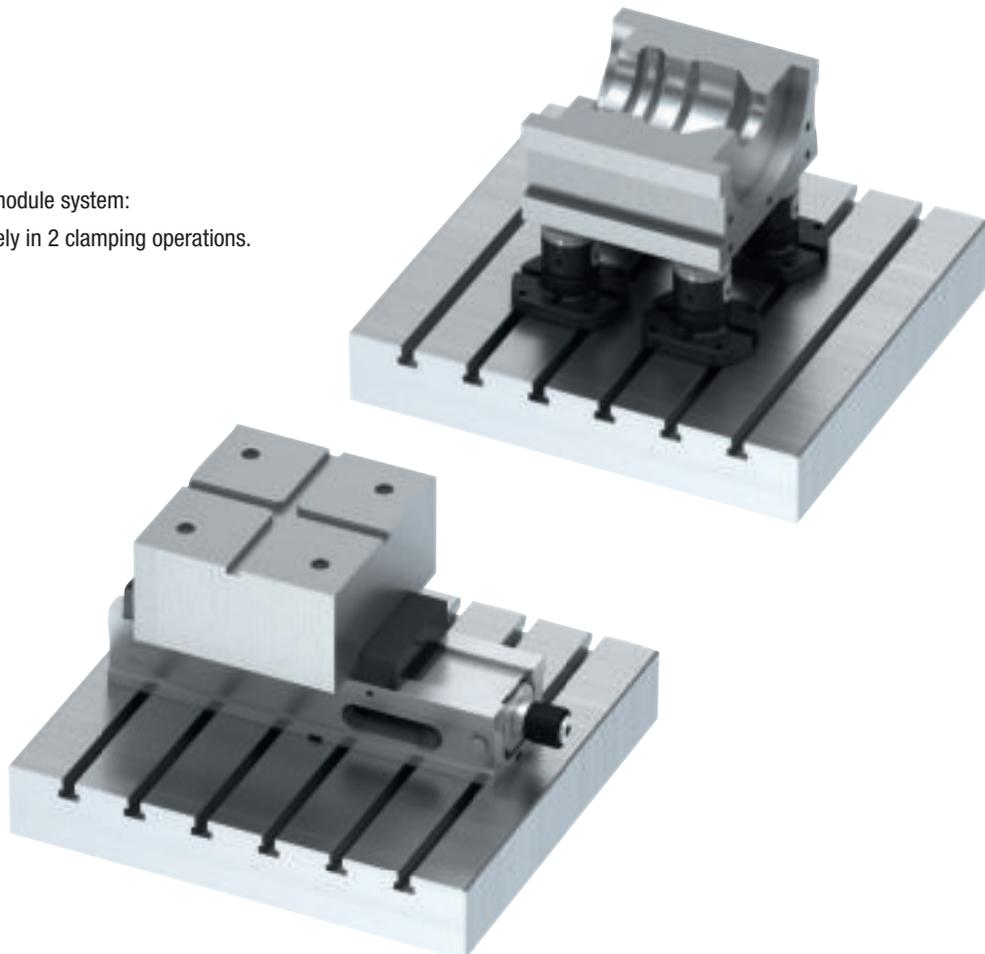
Conventional machining of the workpiece in a vice: It is necessary to reclamp the workpiece several times to complete machining.

Disadvantage: Enormous time loss due to repeat workpiece setups. Accuracy is lost through repeated setups.



With KIPP UNI lock:

Machining with the UNI lock 5-axis module system:
The workpiece is machined completely in 2 clamping operations.



Interfaces



The 5-axis module system can be mounted on T slot tables, grid systems or directly to machine tables. Moreover, the basic modules can be adapted to most common zero-point clamping systems.

T-slot tables



Grid systems



Machine tables



Zero-point clamping systems



Forces system size 80 mm



- Fr** Permissible transverse force
- Fa** Permissible clamping force
- Fd** Permissible contact force
- Fe** Clamping bolt pull-in force

Permissible load with full contact:

		Fr	Fa	Fd	Fe
Clamping pin screw M10	kN	25	35	50	25
Clamping pin screw M12	kN	25	50	50	25
Clamping pin screw M16	kN	25	75	50	25



Max. tightening torque 15 Nm (system size 80 mm)

Example



The workpiece is secured on one, two or more stable module columns. Additional columns can be added easily for large parts. The clamping system is actuated manually without the need for power sources and can be converted very quickly for other workpiece's or fixtures.

Assembling the modules is remarkably simple: position basic module (bolt on from above or below), place add-on clamp modules, position reducer adaptors with bolted-on workpiece and then use a torque wrench to tighten manually. The system is now stable and ready for 5-axis machining.



4 basic modules H=100 positioned directly on the machine table. The 4 reducers H=50 on top facilitate optimum access to workpieces. **Clamping height 150 mm**



Example



KIPP basic module with collet adaptor mounted directly on a machine table with T-slots.

Clamping height 220 mm



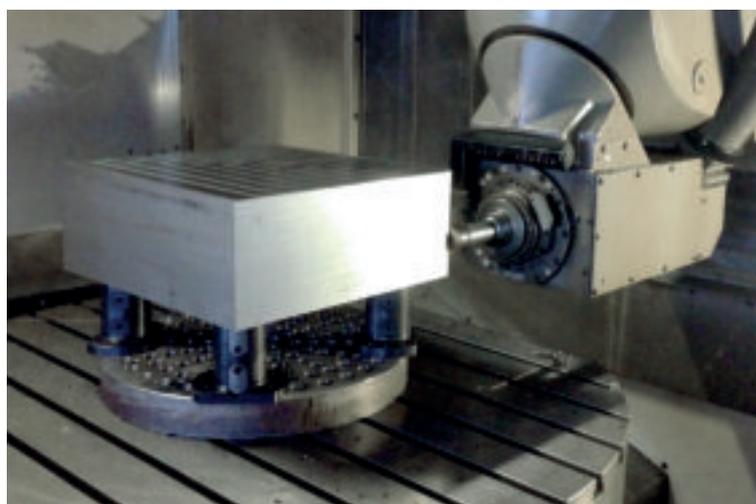
Gearbox housing mounted on 3 basic modules, 3 add-on modules and 3 reducer adaptors. The cast housing is secured to the reducer adaptors by means of socket-head screws.

Clamping height 250 mm



4 double clamp basic modules positioned on a tooling plate. Optimum 5-side machining is possible.

Clamping height 125 mm



Solid workpiece mounted on 4 basic modules and 4 add-on modules.

Clamping height 150 mm



2 basic modules with a centring clamp adapted directly to a zero-point clamping system.

Clamping height 125 mm



Loading procedure for mounting a long and heavy workpiece on 3 basic modules. Clamp spigots are mounted directly on the workpiece. The workpiece is positioned during clamping.

Clamping height 100 mm



UNI lock 5-axis basic module

system size 80 mm

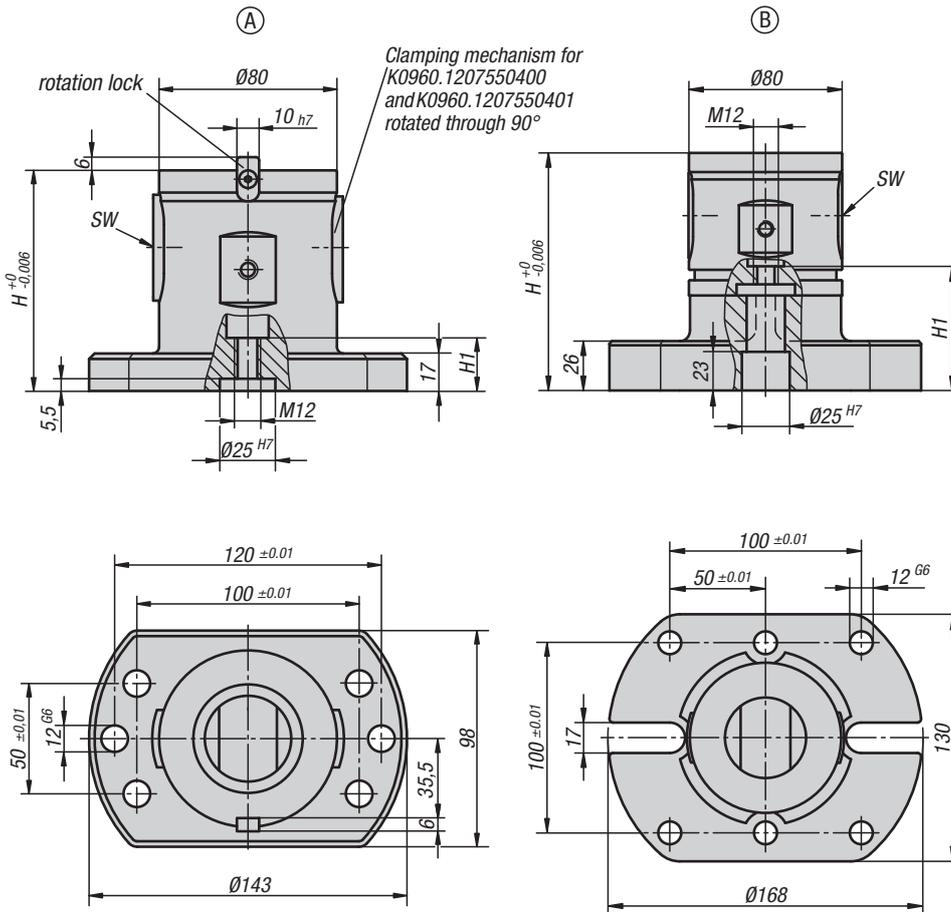


Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K0960.1207550400

Note:
The UNI lock 5-axis basic module can be adapted directly to subplates with grid holes or T-slots or to tooling plates with hole pitch of 40/50 mm system size M12. Suitable for UNI lock zero point clamping system with UNI lock clamping bolts. Can also be used on the conventional zero point clamping systems by mounting an appropriate adapter clamping bolt.



KIPP UNI lock 5-axis basic module

Order No.	Form	Version	H	H1	SW	Holding force F kN	Tightening torque max. Nm	weight kg
K0960.1207550400	A	without rotation lock	75	18,5	6	50	15	3.64
K0960.1207550401	A	with rotation lock	75	18,5	6	50	15	3.65
K0960.1210050400	A	without rotation lock	100	24	6	50	15	4.59
K0960.1210050401	A	with rotation lock	100	24	6	50	15	4.601
K0960.12125500	B	without rotation lock	125	68,5	6	50	15	6.8
K0960.12150500	B	without rotation lock	150	74	6	50	15	7.5

UNI lock 5-axis basic module double clamp

size 80 mm



Material:

Steel.

Version:

Main body oxidised.

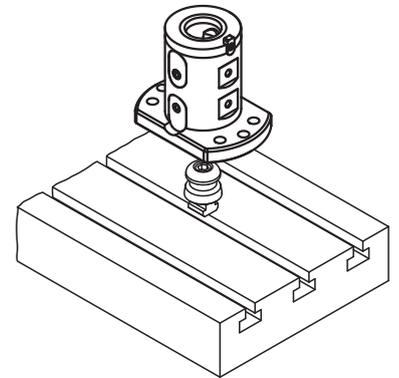
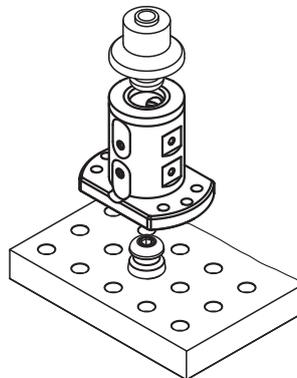
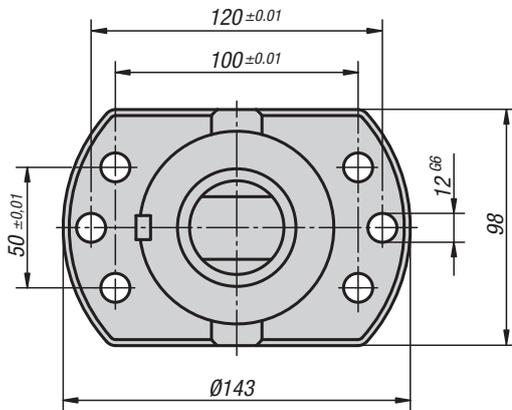
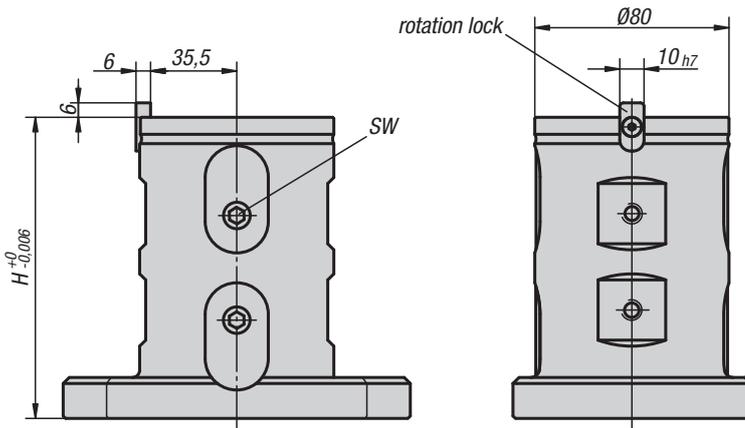
Contact faces case-hardened and ground.

Sample order:

K0961.1212550400

Note:

The UNI lock 5-axis basic module can be adapted directly to subplates with grid holes or T-slots or to tooling plates with hole pitch of 40/50 mm system size M12. Suitable for UNI lock zero point clamping system with UNI lock clamping bolts. Can also be used on the conventional zero point clamping systems by mounting an appropriate adapter clamping bolt.

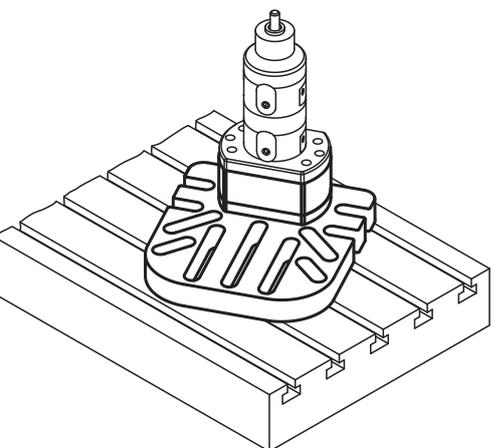
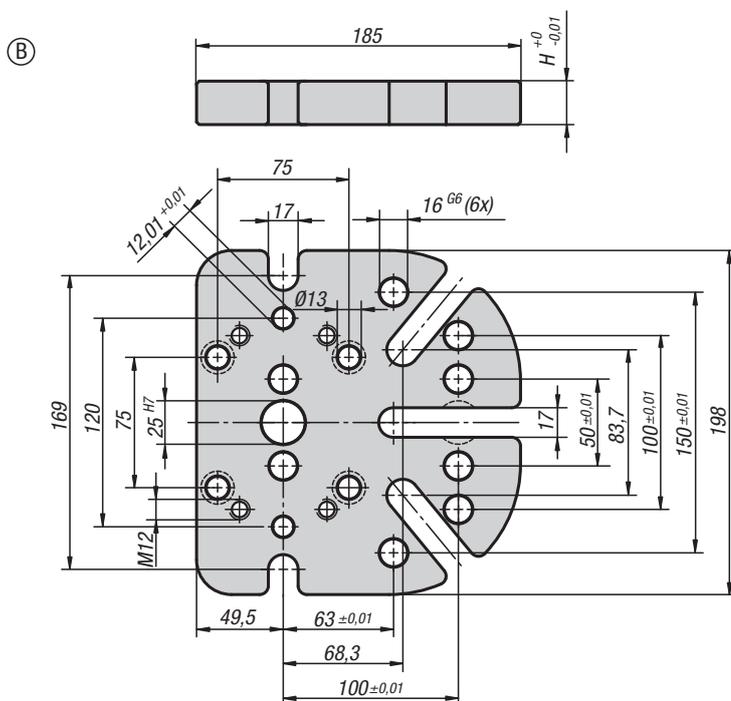
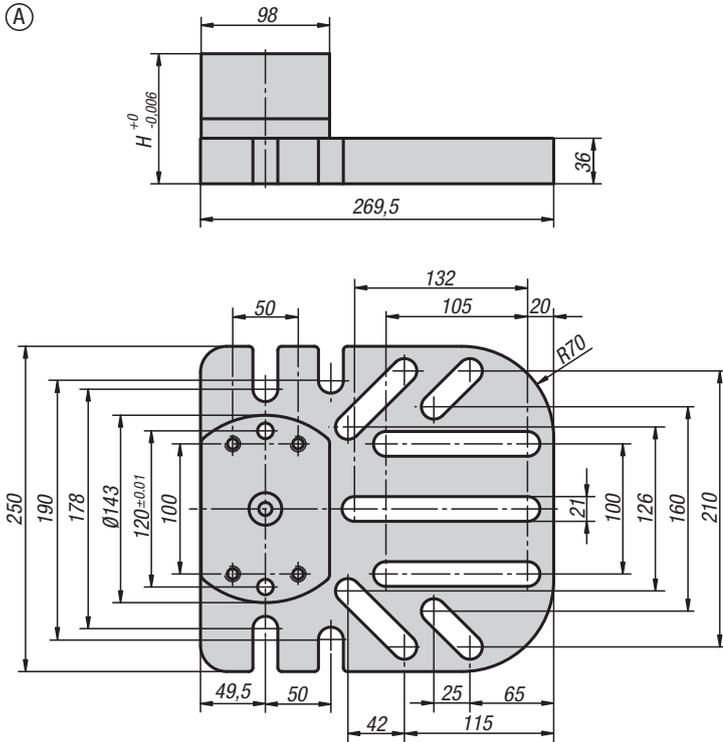


KIPP UNI lock 5-axis basic module double clamp

Order No.	Version	H	SW	Holding force F kN	Tightening torque max. Nm	weight kg
K0961.1212550400	without rotation lock	125	6	50	15	4.96
K0961.1212550401	with rotation lock	125	6	50	15	5.2

UNI lock 5-axis mounting base

for general clamping size 80 mm



Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K0962.25027005021

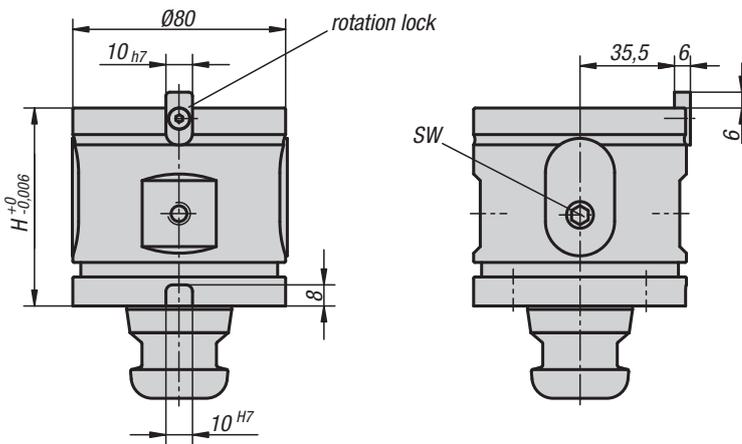
Note:
The UNI lock 5-axis mounting base for general clamping are adapted directly to subplates with grid holes or T-slots or tooling plates. Due to their sturdy construction, these risers are ideal as base elements for large and heavy workpieces. The layout of the fastening keyways allows for a flexible adjustment to the workpiece.

KIPP UNI lock 5-axis mounting base for general clamping

Order No.	Form	H	weight kg
K0962.25027005021	A	50	14
K0962.25027010021	A	100	19
K0962.25027012521	A	125	23
K0962.19818502516	B	25	6.5

UNI lock 5-axis add-on clamping module

size 80 mm



Material:

Steel.

Version:

Main body oxidised.

Contact faces case-hardened and ground.

Sample order:

K0963.120750

Note:

The UNI lock 5-axis add-on modules are used for raising basic modules and mounting base. Depending on the clamping situation, optimum assembly height can be achieved using a combination of the basic module and add-on module.



KIPP UNI lock 5-axis add-on clamping module

Order No.	Version	H	SW	Holding force F kN	Tightening torque max. Nm	weight kg
K0963.120750	without rotation lock	75	6	50	15	2.64
K0963.120751	with rotation lock	75	6	50	15	2.85
K0963.121000	without rotation lock	100	6	50	15	3.78
K0963.121250	without rotation lock	125	6	50	15	4.625

UNI lock 5-axis collet adapter

size 80 mm

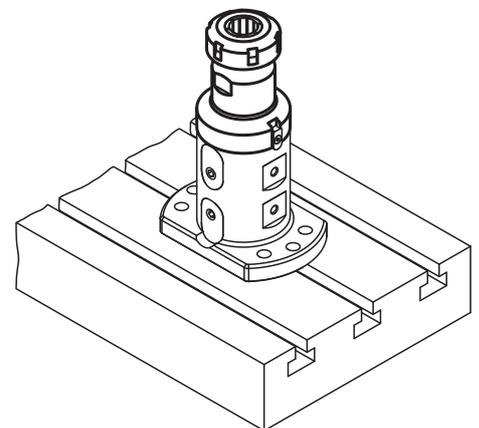
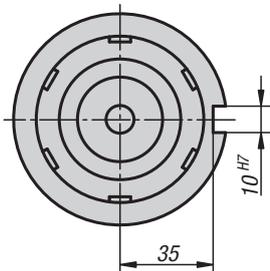
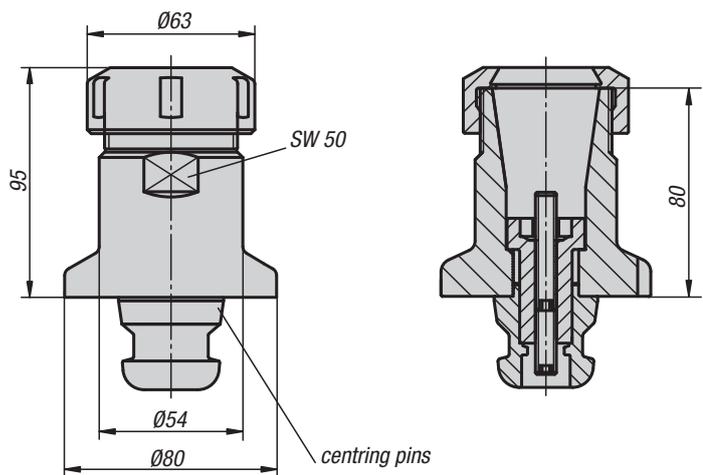


Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K0964.25080

Note:
The UNI lock 5-axis collet adapter is suitable for clamping round workpieces. Standard collets with the ER 40 designation can be used. Clamping up to $D=26$ mm. Supplied with adjustable length stop but without collets. The collet adapters can be directly mounted on the basic module with rotation lock or on the add-on module H 75 mm with rotation lock.



KIPP UNI lock 5-axis collet adapter

Order No.

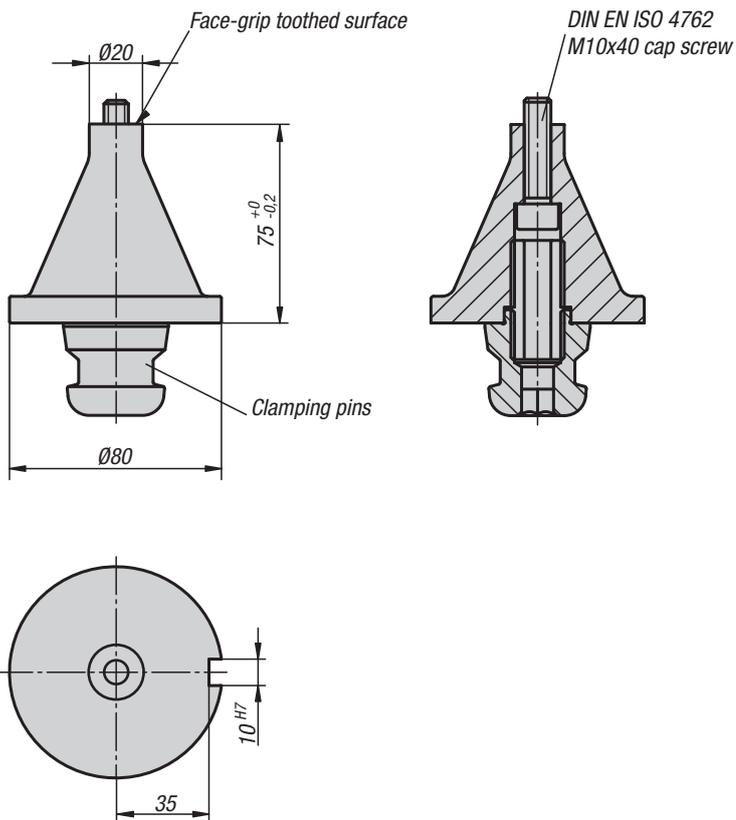
Dimensions

K0964.25080

see drawing

UNI lock 5-axis face-grip adapter

size 80 mm

**Material:**

Steel.

Version:

Main body oxidised.

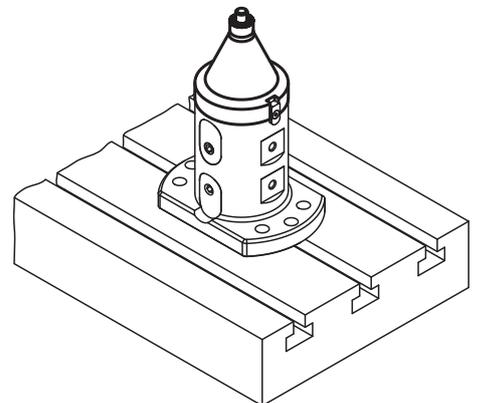
Contact faces case-hardened and ground.

Sample order:

K0965.2007510

Note:

The UNI lock 5-axis face-grip adapters are suitable for clamping workpieces, which must be machined on all sides. The workpieces are freely accessible without interfering edges from the clamping elements. The workpieces are attached from below using a socket head screw to pull them onto the face-grip toothed surface. The face-grip adapters can be directly mounted on the basic module with rotation lock or on the add-on module H 75 mm with rotation lock.



KIPP UNI lock 5-axis face-grip adapter

Order No.

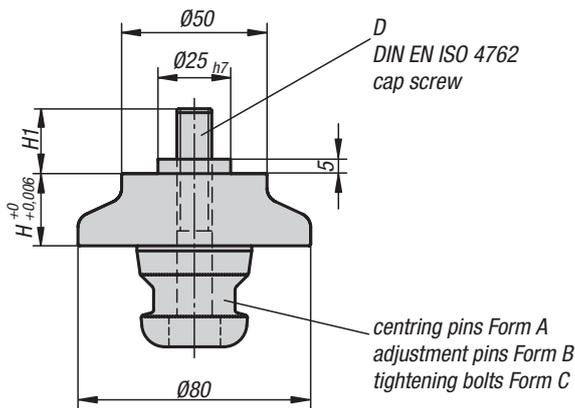
Dimensions

K0965.2007510

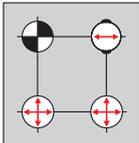
see drawing

UNI lock 5-axis reducer adapter

size 80 mm



-  Centring pins = Form A fixes in x and y axis (reference point)
-  Adjustment pins = Form B fixes the free axis (bayonet pin)
-  Tightening bolts = Form C Pins with undersize (no centring function, clamping only)



Material:

Steel.

Version:

Main body oxidised.

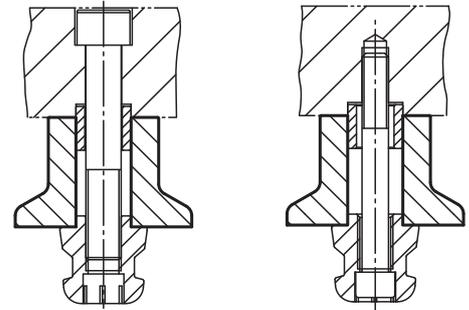
Contact faces case-hardened and ground.

Sample order:

K0966.501120

Note:

The UNI lock 5-axis reducer adapter is suitable for clamping and positioning workpieces. Reducer adapters can be screwed onto the workpiece and mounted on the basic module or add-on module. Reducer adapters are available as hard and soft versions. With the soft version any interfering edges on the adapter that project over the workpiece can be milled off.



KIPP UNI lock 5-axis reducer adapter

Order No. soft	Order No. hard	Form	D	H	H1
K0966.251100	K0966.251101	A	M10 x 75	25	25,5
K0966.252100	K0966.252101	B	M10 x 75	25	25,5
K0966.253100	K0966.253101	C	M10 x 75	25	25,5
K0966.501100	K0966.501101	A	M10 x 100	50	25,5
K0966.502100	K0966.502101	B	M10 x 100	50	25,5
K0966.503100	K0966.503101	C	M10 x 100	50	25,5
K0966.251120	K0966.251121	A	M12 x 75	25	27,5
K0966.252120	K0966.252121	B	M12 x 75	25	27,5
K0966.253120	K0966.253121	C	M12 x 75	25	27,5
K0966.501120	K0966.501121	A	M12 x 100	50	27,5
K0966.502120	K0966.502121	B	M12 x 100	50	27,5
K0966.503120	K0966.503121	C	M12 x 100	50	27,5

UNI lock 5-axis reducer adapter

size 80 mm



Material:

Steel.

Version:

Body oxidised.

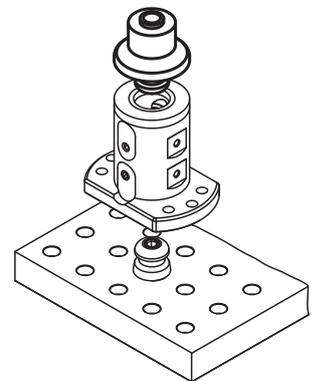
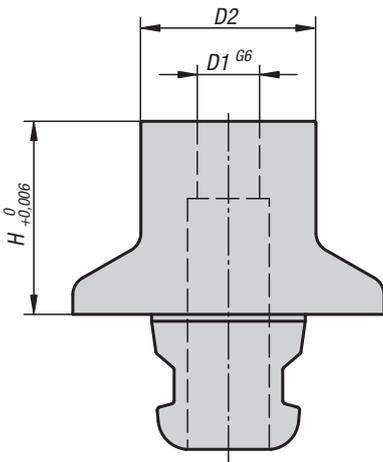
Contact surfaces case-hardened and ground.

Sample order:

K0966.5011611

Note:

The UNI lock 5-axis reducer adapters are suitable for clamping and positioning workpieces. The workpiece is positioned and screwed to the reducer adapter using the UNI lock shoulder screw for workpiece fastening.

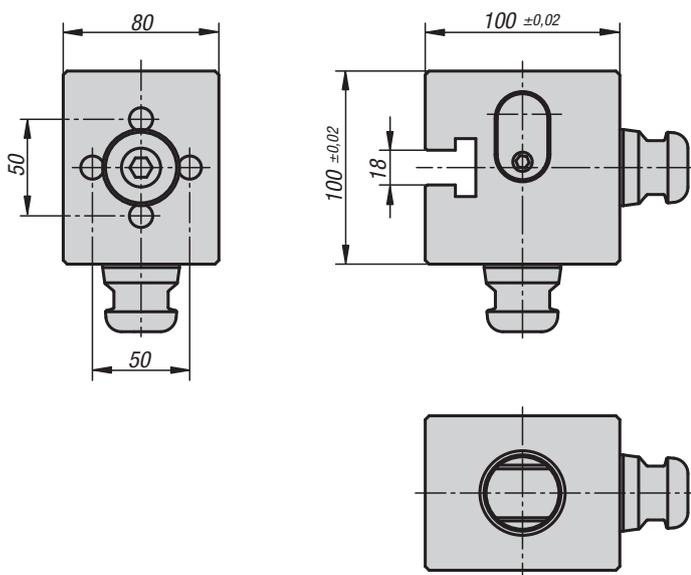


KIPP UNI lock 5-axis reducer adapter

Order No.	D1	D2	H
K0966.5011211	12	40	50
K0966.5011611	16	40	50

Angle clamp adapters

size 80 mm

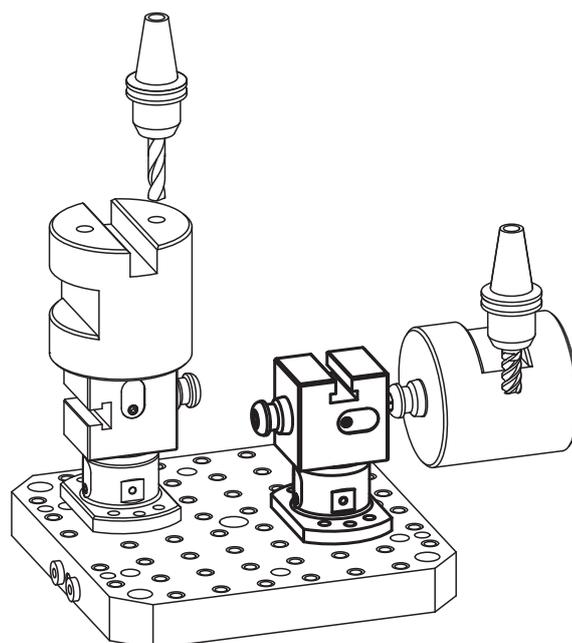


Material:
Steel.

Version:
Main body oxidised.
Contact faces case-hardened and ground.

Sample order:
K1013.100100080

Note:
The angle clamp adapter can be used to process workpieces in different processing levels. In doing so, the workpiece stays mounted on the angle clamping adapter.



KIPP Angle clamping adapter

Order No.	Dimensions	weight kg
K1013.100100080	see drawing	7.2

UNI lock T-slot centring clamp bolt

size 80 mm



Material:

Steel.

Version:

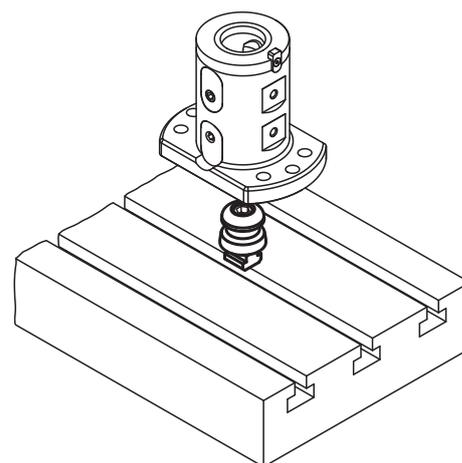
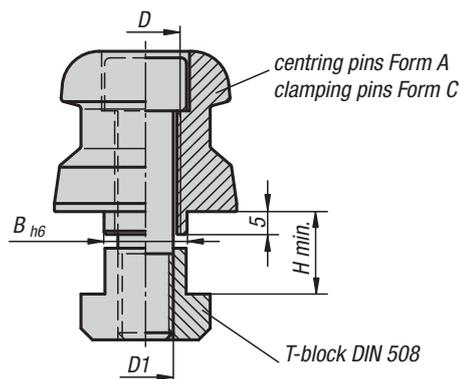
Hardened and black oxidised.
Contact faces ground.

Sample order:

K0969.114

Note:

The UNI lock T-slot centring clamp bolt is suitable for clamping and positioning the basic module with double manual clamping. T-slot centring clamp bolts are positioned and fastened on the T-slot machine table.



KIPP UNI lock T-slot centring clamp bolt

Order No.	Form	D	D1	B	H min.
K0969.114	A	M12	M10	14	14
K0969.118	A	M16	M12	18	18
K0969.122	A	M16	M12	22	22
K0969.314	C	M12	M10	14	14
K0969.318	C	M16	M12	18	18
K0969.322	C	M16	M12	22	22

UNI lock clamping pin

size 80 mm

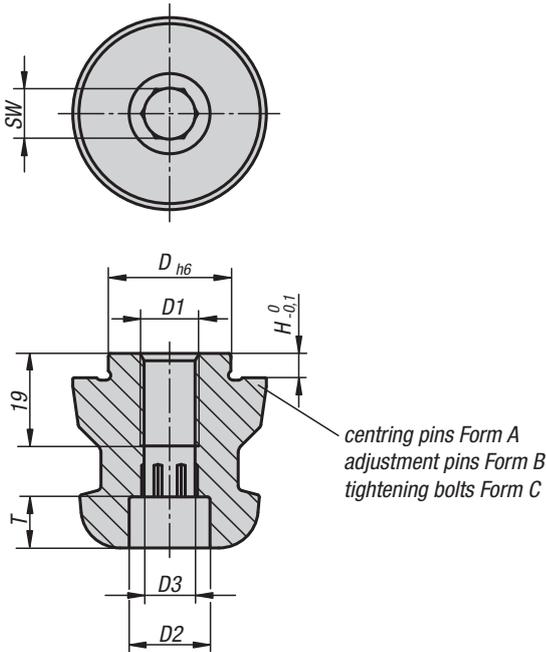


Material:
Steel.

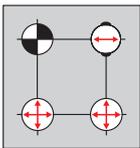
Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0967.140160512

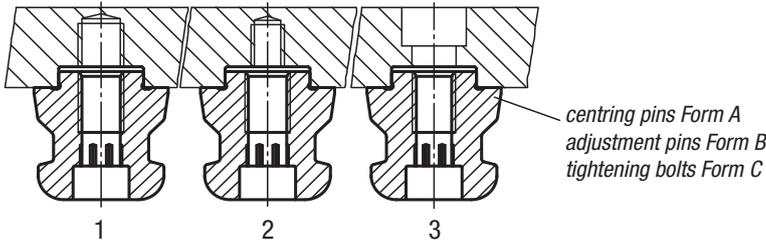
Note:
The UNI lock clamping bolt is suitable for clamping and positioning workpieces and fixtures. Clamping bolts are screwed onto the exchange element and adapted to the various basic modules.



- Centring pins = Form A fixes in x and y axis (reference point)
- Adjustment pins = Form B fixes the free axis (bayonet pin)
- Tightening bolts = Form C Pins with undersize (no centring function, clamping only)



- 1 = fastening with grub screw DIN 913
- 2 = fastening with DIN 912 screw through the tightening bolt
- 3 = fastening with DIN 912 screw through the fixture or workpiece



UNI lock clamping pin

size 80 mm



KIPP UNI lock clamping bolt

Order No.	Form	D	D1	D2	D3	H	T	SW
K0967.140160512	A	16	M12	16,5	10,3	5	10,5	10
K0967.140180512	A	18	M12	16,5	10,3	5	10,5	10
K0967.140200512	A	20	M12	16,5	10,3	5	10,5	10
K0967.140220516	A	22	M16	18,5	14,2	5	12,5	17
K0967.140240516	A	24	M16	18,5	14,2	5	12,5	17
K0967.140250512	A	25	M12	16,5	10,3	5	10,5	10
K0967.140250516	A	25	M16	18,5	14,2	5	12,5	17
K0967.140251012	A	25	M12	16,5	10,3	10	10,5	10
K0967.140251016	A	25	M16	18,5	14,2	10	12,5	17
K0967.240220516	B	22	M16	18,5	14,2	5	12,5	17
K0967.240240516	B	24	M16	18,5	14,2	5	12,5	17
K0967.240250512	B	25	M12	16,5	10,3	5	10,5	10
K0967.240250516	B	25	M16	18,5	14,2	5	12,5	17
K0967.240251012	B	25	M12	16,5	10,3	10	10,5	10
K0967.240251016	B	25	M16	18,5	14,2	10	12,5	17
K0967.340220516	C	22	M16	18,5	14,2	5	12,5	17
K0967.340240516	C	24	M16	18,5	14,2	5	12,5	17
K0967.340250512	C	25	M12	16,5	10,3	5	10,5	10
K0967.340250516	C	25	M16	18,5	14,2	5	12,5	17
K0967.340251012	C	25	M12	16,5	10,3	10	10,5	10
K0967.340251016	C	25	M16	18,5	14,2	10	12,5	17

UNI lock clamping pin

one-piece size 80 mm



Material:

Steel.

Version:

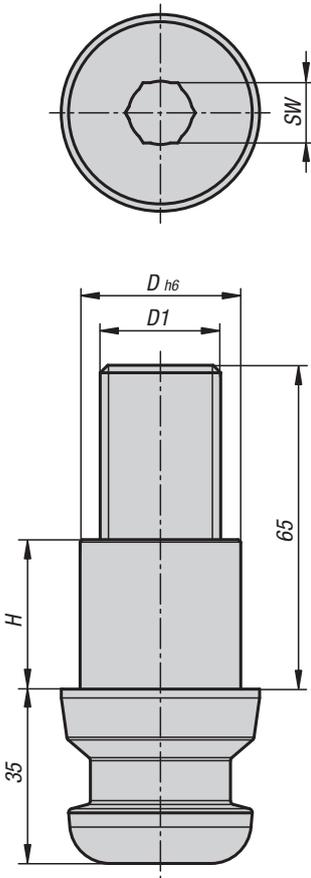
Hardened and black oxidised.
Contact faces ground.

Sample order:

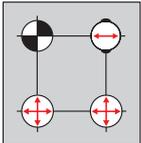
K0967.140323024

Note:

The UNI lock clamping bolt is suitable for clamping and positioning workpieces and fixtures. Clamping bolts are screwed onto the exchange element and adapted to the various basic modules.



- Centring pins = Form A fixes in x and y axis (reference point)
- Adjustment pins = Form B fixes the free axis (bayonet pin)
- Tightening bolts = Form C Pins with undersize (no centring function, clamping only)

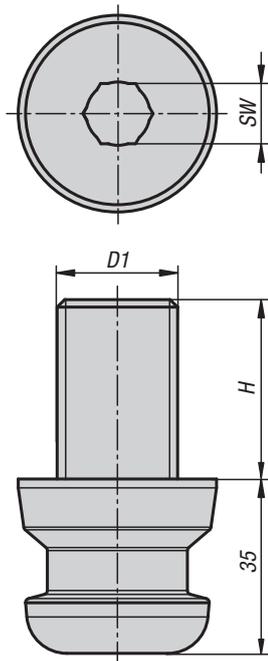


KIPP UNI lock clamping pin, one-piece

Order No.	Form	D1	D	H	SW
K0967.140323024	A	M24	32	30	17
K0967.240323024	B	M24	32	30	17
K0967.340323024	C	M24	32	30	17

UNI lock clamping pin

with threaded pin size 80 mm



Material:

Steel.

Version:

Hardened and black oxidised.
Contact faces ground.

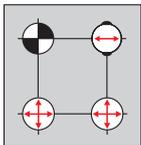
Sample order:

K0967.140003020

Note:

The UNI lock clamping bolt is suitable for clamping and positioning workpieces and fixtures. Clamping bolts are screwed onto the exchange element and adapted to the various basic modules.

-  Centring pins = Form A fixes in x and y axis (reference point)
-  Adjustment pins = Form B fixes the free axis (bayonet pin)
-  Tightening bolts = Form C Pins with undersize (no centring function, clamping only)

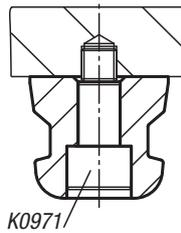
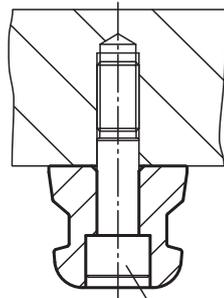
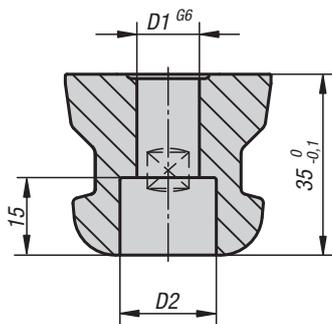
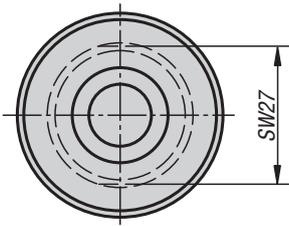


KIPP UNI lock clamping pin with threaded pin

Order No.	Form	D1	H	SW
K0967.140003020	A	M20	30	17
K0967.140003624	A	M24	36	17

UNI lock clamping bolts

for fastening to workpieces size 80 mm



Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0968.12

Note:
The UNI lock clamping bolt is suitable for clamping and positioning the workpiece. Clamping bolts are screwed onto the workpiece and positioned on the basic module or add-on module. Using the locating bolts (K0970, K0971), the clamping bolts are screwed onto the workpiece.

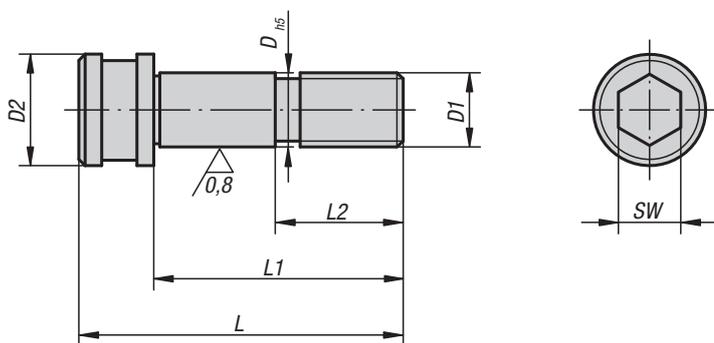
KIPP UNI lock clamping bolts for fastening to workpieces

Order No.	D1	D2
K0968.12	12	18,4
K0968.16	16	21,1

K0970

UNI lock 5-axis shoulder screws

size 80 mm



Material:
Carbon steel.

Version:
Hardened surface.
ground locating seat.

Sample order:
K0970.12050

Note:
The UNI lock 5-axis locating bolts are suitable for clamping and positioning the clamping bolts for fastening to workpieces. They are also used for positioning and fastening the basic module.

KIPP UNI lock 5-axis shoulder screws

Order No.	D	D1	D2	L	L1	L2	SW
K0970.12050	12	M12	18	62	50	22	10
K0970.16055	16	M16	24	71	55	25	14

UNI lock 5-axis shoulder screws

for fastening to workpieces size 80 mm

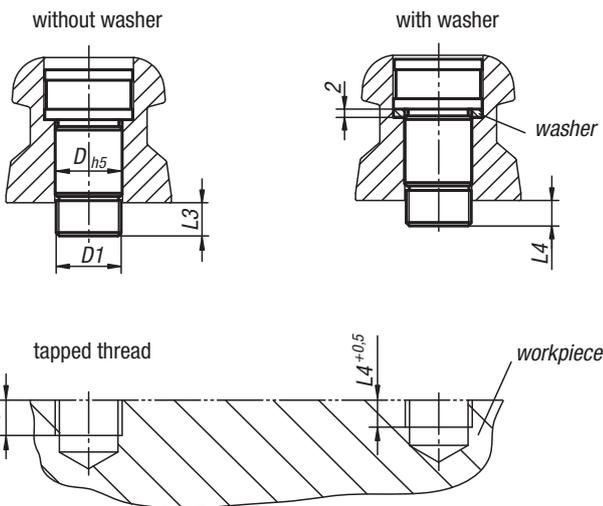
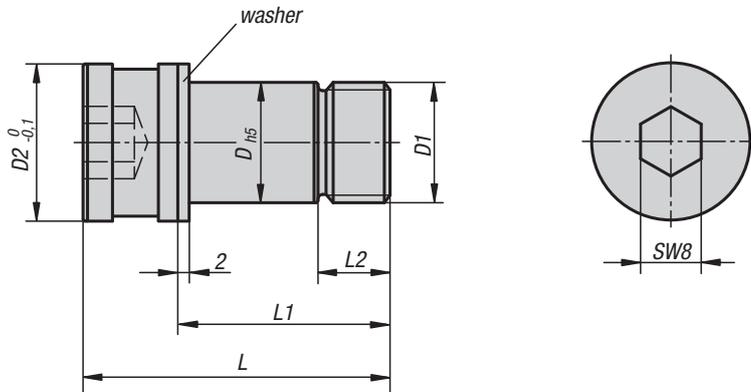


Material:
Carbon steel.

Version:
Hardened surface.
ground locating seat.

Sample order:
K0971.1210040

Note:
The UNI lock 5-axis locating bolts for fastening to workpieces are suitable for clamping and positioning workpieces. These locating bolts are passed through the clamping bolts for fastening to workpieces, screwed directly into the workpiece and positioned on the basic module or add-on module. The thread is used for fastening and positioning the workpiece.



KIPP UNI lock 5-axis shoulder screws for screwing clamping bolt to workpiece

Order No.	Version	D	D1	D2	L	L1	L2	L3	L4
K0971.1210040	with washer	12	M10x1,25	18	40,5	28	9,5	8	6
K0971.12101040	with washer	12	M10x1,5	18	40,5	28	9,5	8	6
K0971.1212040	with washer	12	M12x1,25	18	40,5	28	9,5	8	6
K0971.12121040	with washer	12	M12x1,75	18	40,5	28	9,5	8	6
K0971.1612040	with washer	16	M12x1,25	20,9	40,5	28	9,5	8	6
K0971.16121040	with washer	16	M12x1,75	20,9	40,5	28	9,5	8	6
K0971.16121049	without washer	16	M12x1,75	20,9	50	37,5	18	17,5	15,5
K0971.1616040	with washer	16	M16x1,25	20,9	40,5	28	9,5	8	6
K0971.16161040	with washer	16	M16x2	20,9	40,5	28	9,5	8	6
K0971.16161055	without washer	16	M16x2	20,9	56	43,5	24	23,5	21,5
K0971.16161067	without washer	16	M16x2	20,9	67,5	55	25	35	33

Centring clamping bolts

size 80 mm



Material:

Steel.

Version:

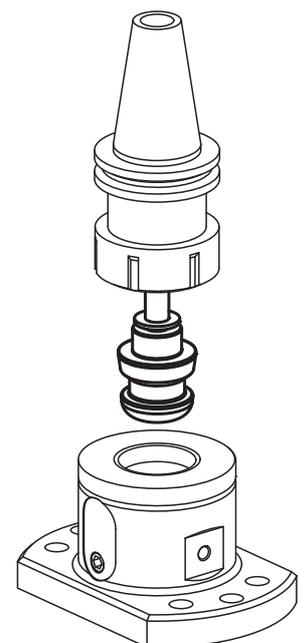
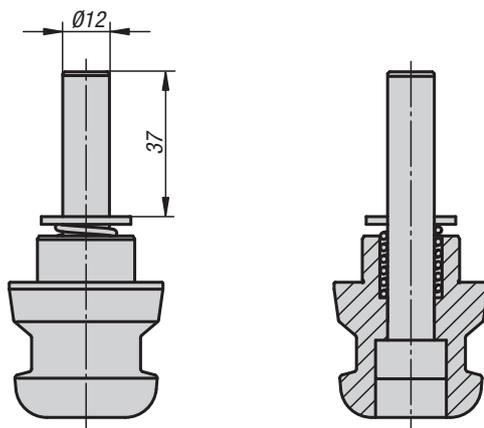
Hardened and black oxidised.
Contact faces ground.

Sample order:

K1012.1240

Note:

The centering clamping bolt can be used to position basic modules on machine tables. Centring clamping bolts can be clamped in collet holders. The position of the module is defined via the machine's spindle/control unit.



KIPP Centring clamping bolt

Order No.	Dimensions
K1012.1240	see drawing

