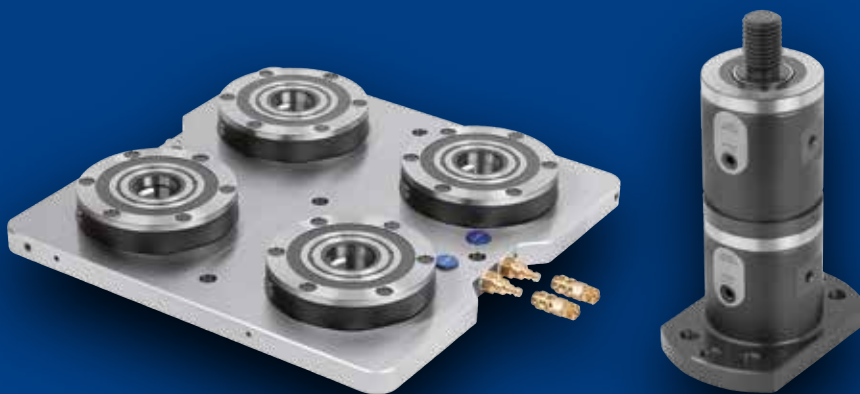




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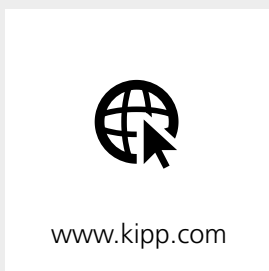
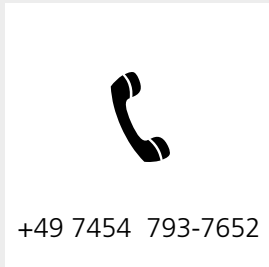


**KIPP UNILOCK**  
**ZERO-POINT** clamping technology

Edition 09 2023



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Reg. Nr. 002081 QM



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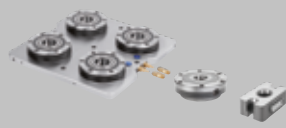
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7.00 AM - 5.30 PM

FRIDAY

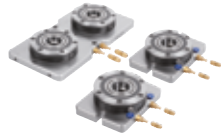
7.00 AM - 3.30 PM

## Zero-point clamping system



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**K1009**  
UNILOCK clamping station



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**K1009**  
UNILOCK clamping station



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**K1971** ★  
UNILOCK clamping module  
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UNILOCK clamping module  
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**K2046** ★  
Pallet coupler  
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**K1123**  
UNILOCK manual clamping module



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**K1218**  
UNILOCK interchangeable subplates  
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**K0967**  
UNILOCK clamping pin  
size 80 mm



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**K1471**  
UNILOCK clamping pin  
with through hole, system size 80 mm



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**K1974** ★  
UNILOCK compensation clamping bolt  
system size 80 mm



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**K1975** ★  
UNILOCK dovetail clamping bolts  
system size 80 mm



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**K1010**  
UNILOCK protective bolt  
for clamping module



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**K1010**  
UNILOCK protective plug  
for clamping module



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**K1869** ★  
UNILOCK clamping bracket  
for UNILOCK clamping station



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# Product overview



## 5-axis module clamping system 80



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### K0960

UNILOCK 5-axis basic module system size 80 mm



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### K0961

UNILOCK 5-axis basic module double clamp size 80 mm



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### K1868

UNILOCK 5-axis basic module VARIO system size 80 mm



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### K1867

UNILOCK 5-axis basic module DUO system size 80 mm



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### K0962

UNILOCK 5-axis base plate for general clamping, system size 80 mm



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### K0963

UNILOCK 5-axis add-on clamping module size 80 mm



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### K0965

UNILOCK 5-axis face-grip adapter size 80 mm



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### K0966

UNILOCK 5-axis reducer adapter size 80 mm



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### K0966

UNILOCK 5-axis reducer adapter size 80 mm



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### K0969

UNILOCK T-slot centring clamp bolt size 80 mm



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### K0967

UNILOCK clamping pin with threaded pin size 80 mm



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### K0968

UNILOCK 5-axis clamping bolts for fastening to workpieces size 80 mm



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### K0970

UNILOCK 5-axis shoulder screws size 80 mm



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### K0971

UNILOCK 5-axis shoulder screws for fastening to workpieces, size 80 mm



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### K1012

UNILOCK centring clamping bolt size 80 mm



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### K1488

Torque wrench for 5-axis module clamping system



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# Product overview



## 5-axis module clamping system 50



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### K1117

UNILOCK 5-axis basic module system size 50 mm



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### K1118

UNILOCK 5-axis basic module double clamp system size 50 mm



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### K1119

UNILOCK 5-axis add-on module system size 50 mm



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### K1120

UNILOCK 5-axis reducer adapter system size 50 mm



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### K1121

UNILOCK clamping pin system size 50 mm



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## 5-axis module clamping system 138



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### K1419

UNILOCK 5-axis basic module system size 138 mm



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### K1420

UNILOCK 5-axis baseplate for general clamping, size 138 mm



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### K1422

UNILOCK 5-axis reducer adapter system size 138 mm



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### K1423

UNILOCK 5-axis reducer adapter system size 138 mm



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### K1424

UNILOCK clamping pin system size 138 mm



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## Zero-point clamping system



## Application

The modular structured flexible zero-point clamping system was specifically developed for the machining and non-machining fields. This system enables a quick and accurate clamping and referencing of fixtures and workpieces on all production machines, machining centres, EDM's and inspection equipment. Whether subplate, fixture, vice or workpiece, this system allows an exchange with a defined reference point in a matter of seconds and repeat accuracy of less than 0.005 mm.

## The advantages

- Modular system
- Compact flat design
- Workpiece or fixture change within seconds
- Pneumatic system
- Positive locking
- Holding forces up to 75 kN and pull-in forces up to 25 kN
- Turbo function
- Positioning via short conical locator
- Works reliably in every mounting position
- Sealing air function

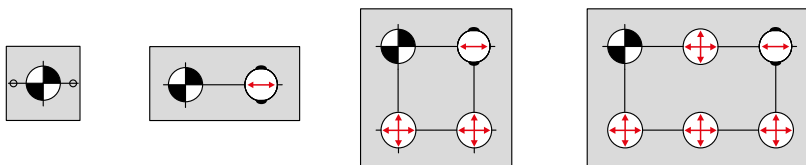
## Your benefit

- Can be combined with our modular clamping system
- Better machine room utilisation
- Increased productive machine running times, significantly reduced set-up times
- Reliable system
- Very high cutting forces possible
- High operating and process safety
- Increased pull-in forces are standard
- Very high repeat accuracy
- Clamping cylinder installation in both vertical and horizontal positions
- Blow out function can be activated when changing pallets

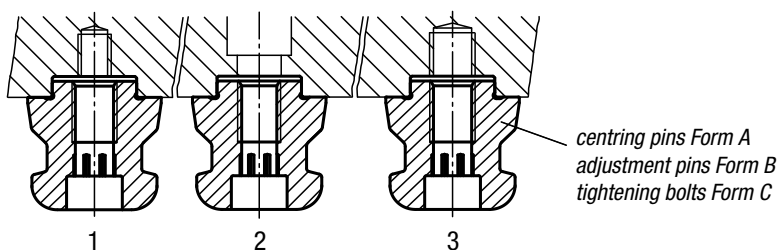
## Spigot arrangement/set-up

The workpieces, fixtures or subplates are positioned and clamped using spigots. There are three different spigot types.

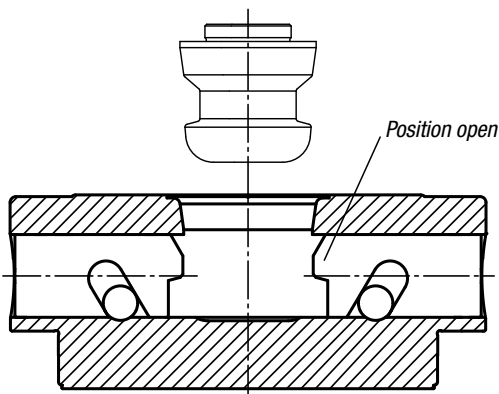
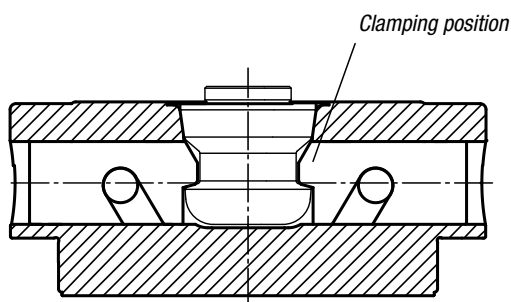
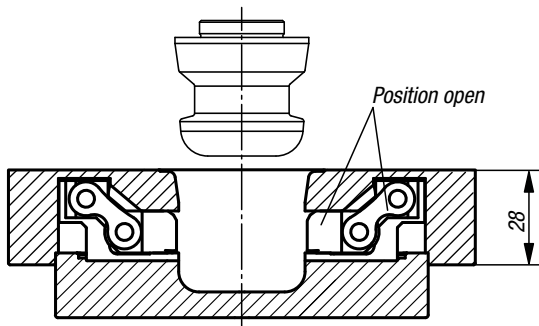
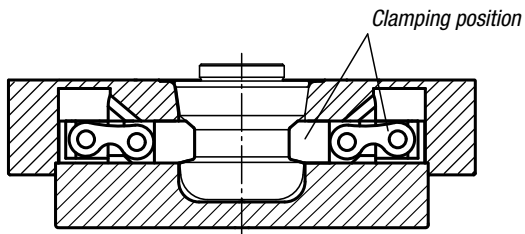
- Centring spigot fixed in x and y direction (reference point)
- Compensating pin fixes the free axis (studs)
- Clamping spigot Spigot with undersize (no centring function only clamping function)
- Cylindrical pin For individual clamping, positioning is done with centring spigot + 2 cylindrical pins



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



## Function



**UNILOCK clamping module ERGO 138**

- UNILOCK clamping module ASM 99**
- UNILOCK clamping module ESM 138-C**
- UNILOCK clamping module ESA 138**
- UNILOCK clamping module EFM 138**
- UNILOCK clamping module ESM 176**
- UNILOCK clamping module EGM 110-75**



## UNILOCK clamping station



**Material:**

Clamping module high-carbon steel.  
Baseplate steel 1.1730.

**Version:**

Clamping module contact faces hardened and ground.  
Baseplate ground on both sides.

**Sample order:**

K1009.1000149199

**Note:**

Pre-assembled multi-clamping stations with integrated UNILOCK clamping modules ERGO 138. The clamping stations can be screwed directly onto machine tables or secured using claw clamps.

Standard hole patterns on the back for fastening are pre-centred.

The clamping stations can be aligned using the 14H7 reference holes.

The clamping modules are actuated using a central pneumatic connection.

The high clamping forces are generated by the integrated spring package. (the unit clamps in while not under pressure).

Clamping is released pneumatically.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N/module
  - Clamping force (M12) 50,000 N/module
  - Clamping force (M16) 75,000 N/module
- Clamping force with DIN EN ISO 4762 -12.9 cap screws

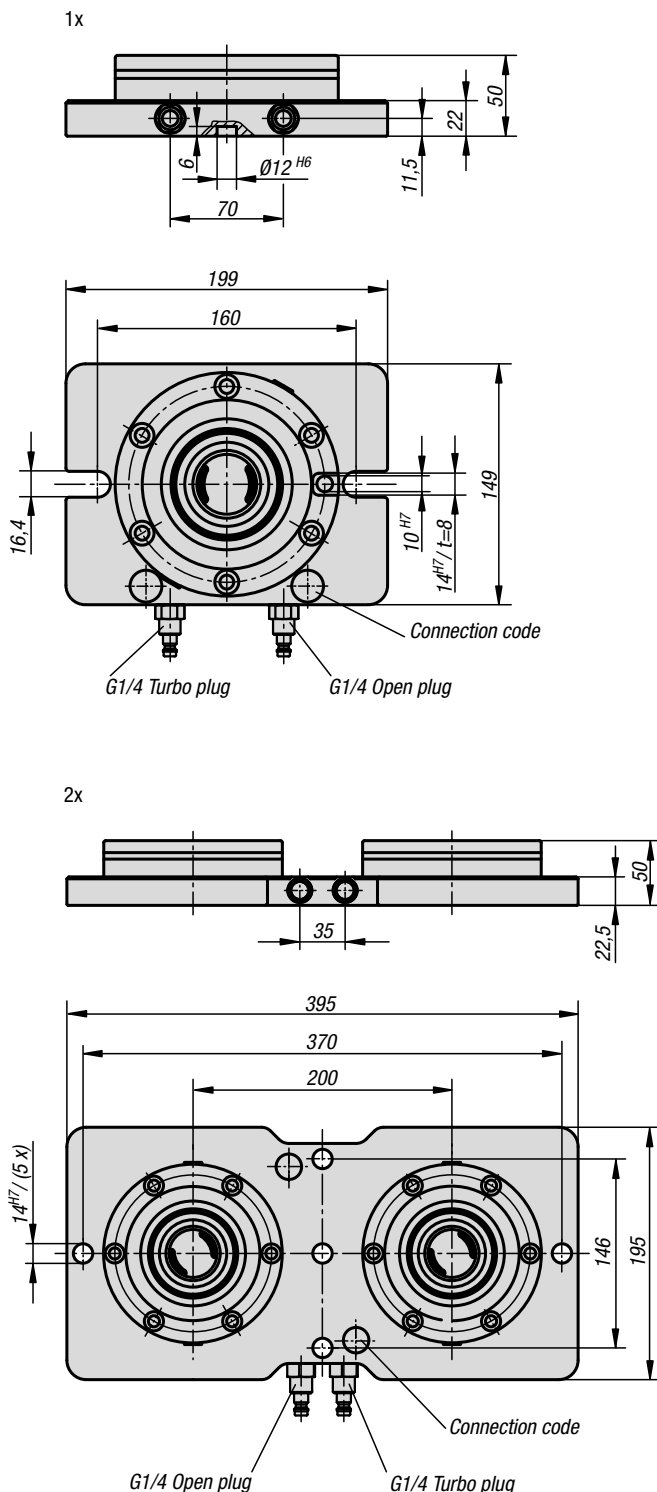
Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

**On request:**

Clamping station in special dimensions.

**Technical data:**

- Retraction force with turbo from 18 kN/module
- Opening pressure: 6 bar, lubricated air.
- Turbo pressure: 6 bar.
- Air connection: G1/4
- Repeat accuracy  $\leq 0.005$  mm
- Reference holes 14H7 to align the clamping plate.



### KIPP UNILOCK clamping station

Order No.	Version 2	Form	Form definition	weight kg
K1009.1000149199	1x	A	without rotation lock	7,08
K1009.10001491991	1x	B	with rotation lock	7,2
K1009.2200395195	2x	A	without rotation lock	17,62

## UNILOCK clamping station



**Material:**

Clamping module high-carbon steel.  
Baseplate steel 1.1730.

**Version:**

Clamping module contact faces hardened and ground.  
Baseplate ground on both sides.

**Sample order:**

K1009.4200395395

**Note:**

Pre-assembled multi-clamping stations with integrated UNILOCK clamping modules ERGO 138. The clamping stations can be screwed directly onto machine tables or secured using claw clamps.

Standard hole patterns on the back for fastening are pre-centred.

The clamping stations can be aligned using the 14H7 reference holes.

The clamping modules are actuated using a central pneumatic connection.

The high clamping forces are generated by the integrated spring package. (the unit clamps in while not under pressure).

Clamping is released pneumatically.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N/module
- Clamping force (M12) 50,000 N/module
- Clamping force (M16) 75,000 N/module

Clamping force with DIN EN ISO 4762 -12.9 cap screws

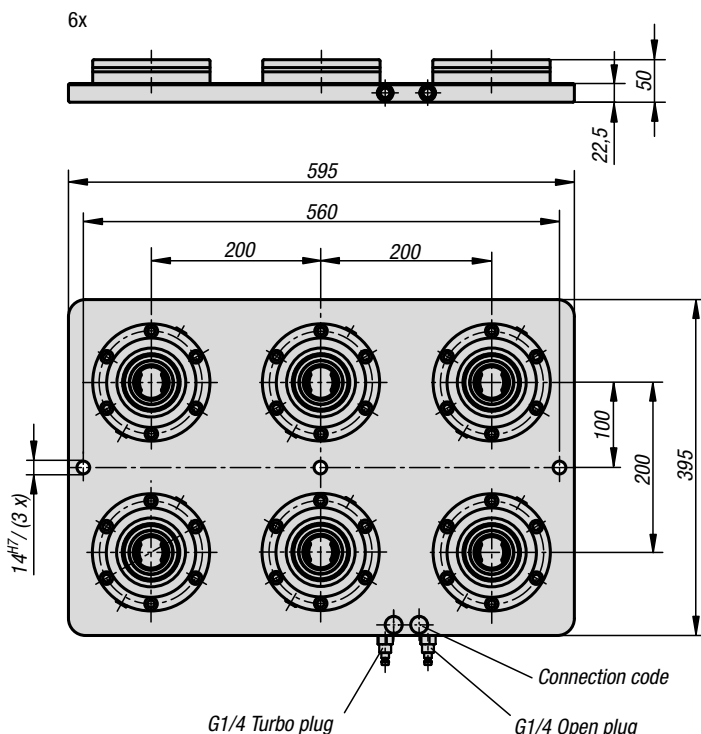
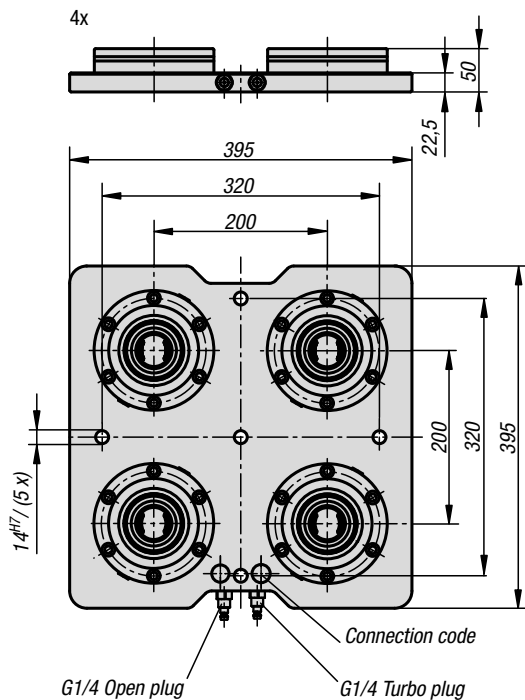
Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

**On request:**

Clamping station in special dimensions.

**Technical data:**

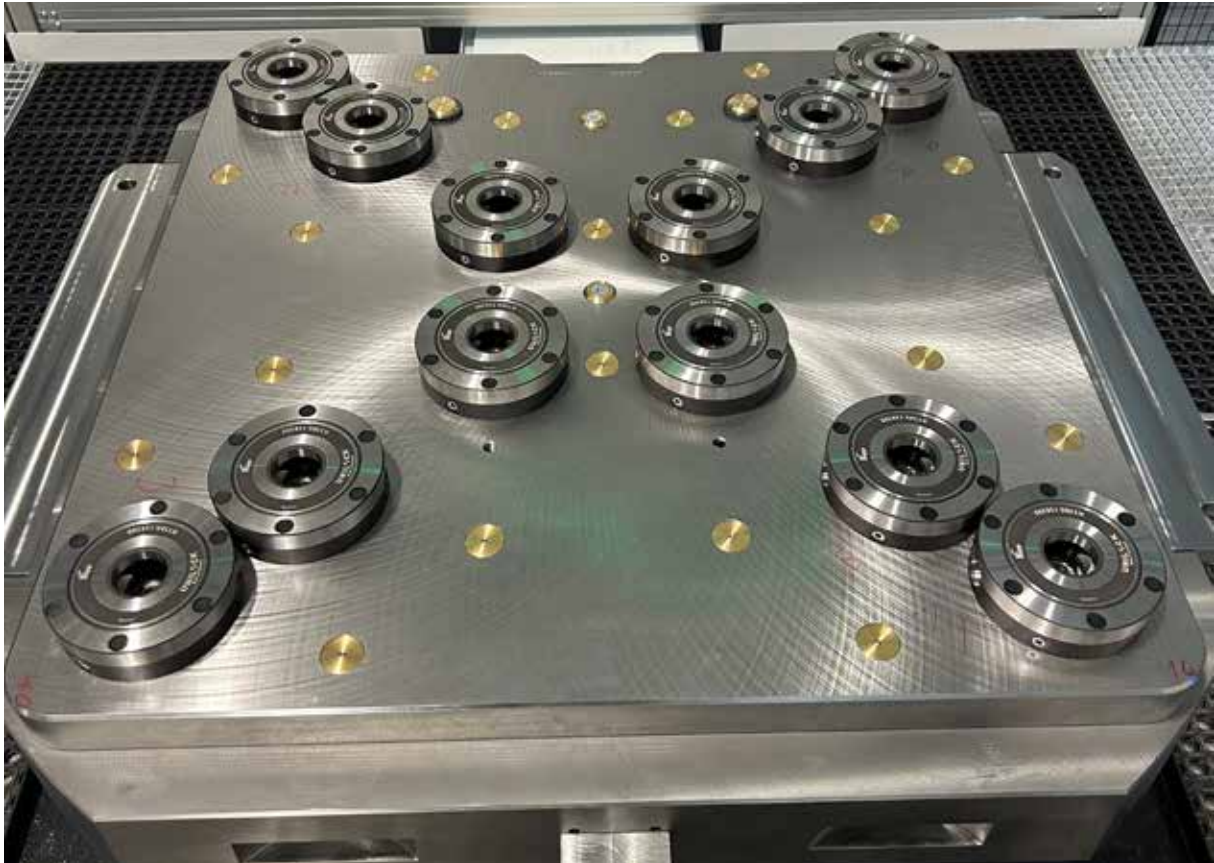
- Retraction force with turbo from 18 kN/module
- Opening pressure: 6 bar, lubricated air.
- Turbo pressure: 6 bar.
- Air connection: G1/4
- Repeat accuracy  $\leq 0.005$  mm
- Reference holes 14H7 to align the clamping plate.



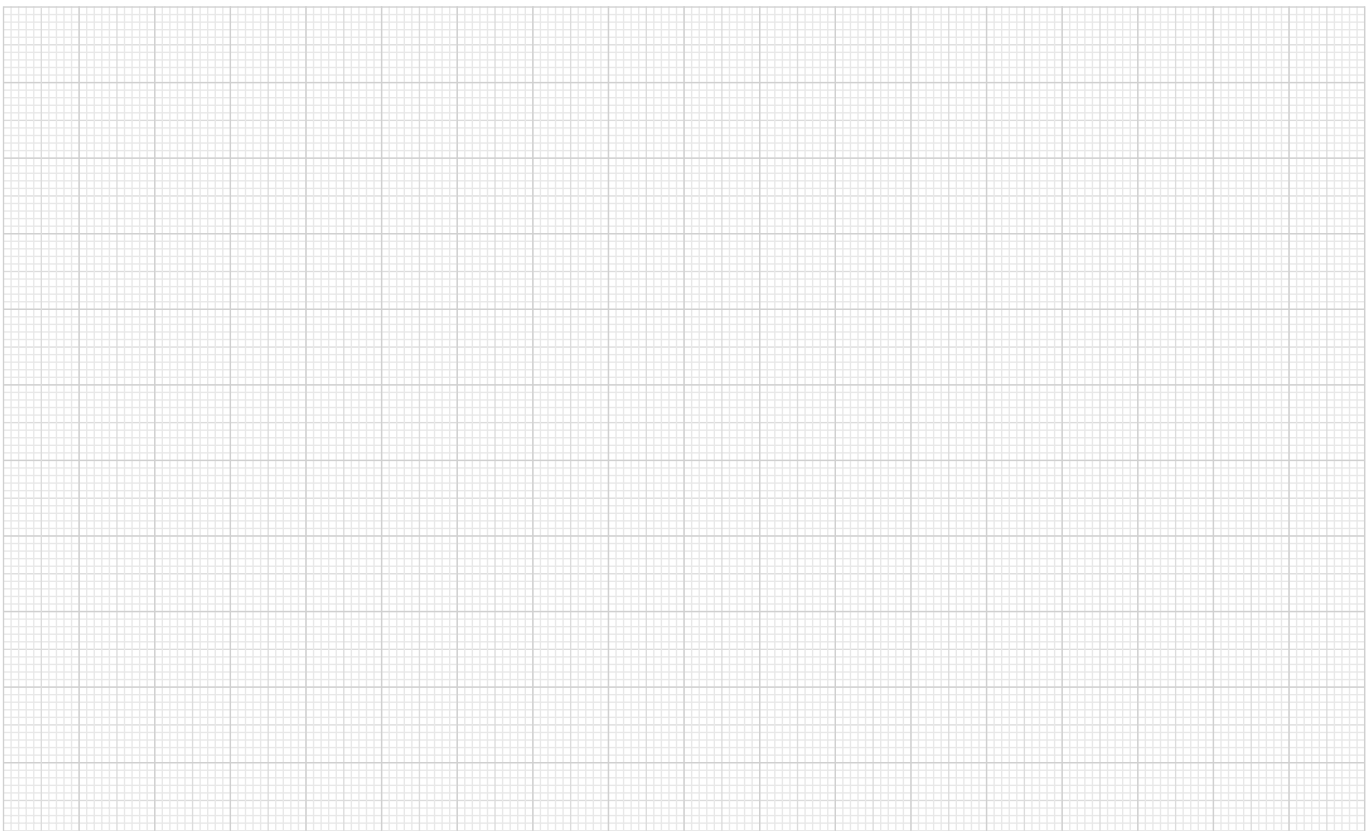
## KIPP UNILOCK clamping station

Order No.	Version 2	Form	Form definition	weight kg
K1009.4200395395	4x	A	without rotation lock	35
K1009.6200595395	6x	A	without rotation lock	52,2



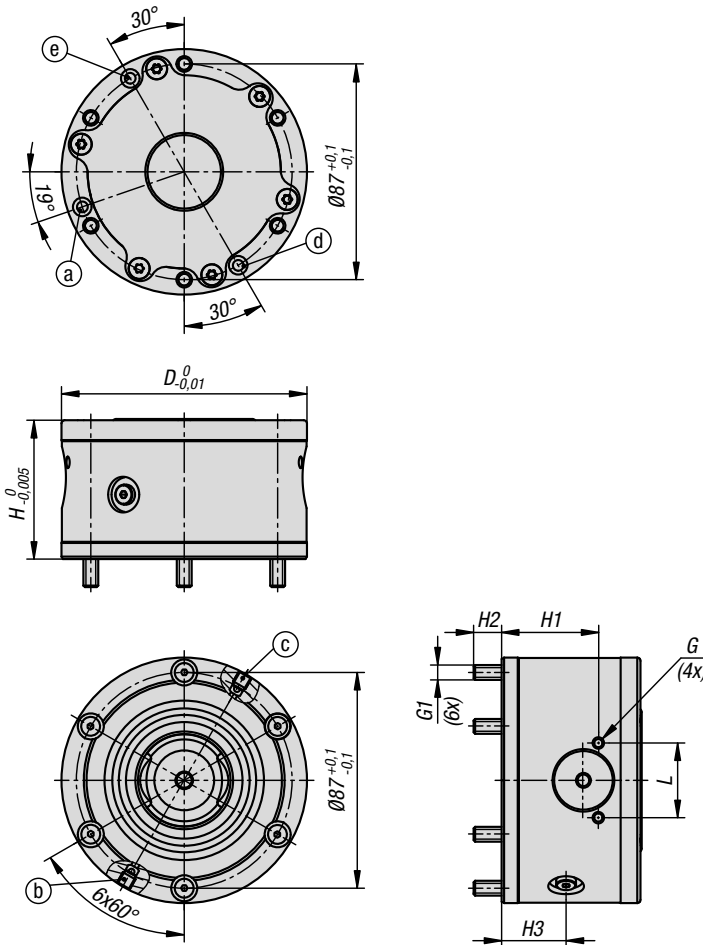
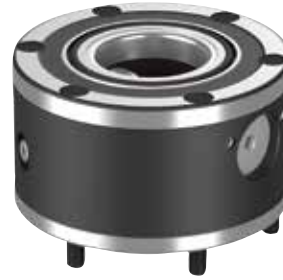


## Notes



## UNILOCK clamping module

ASM 99



**Material:**  
Steel.

**Version:**  
Contact faces case-hardened and ground.

**Sample order:**  
K1971.99560

**Note:**  
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc).  
The UNILOCK clamping modules ASM 99 are particularly suitable for narrow gauge sizes. As the UNILOCK clamping module ASM 99 is an expansion module, a mounting height of 56 mm is achieved with the module. The clamping modules can also be completely recessed and installed into a fixture plate or machine table. The „open“ position of the clamp slider can be monitored with the integrated feedback function.  
The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated.  
The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).  
Clamping is released pneumatically.  
Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping bolt in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N

- Clamping force (M12) 50,000 N

- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 - 12.9 cap screws

Clamping bolts may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

**Drawing reference:**

- 1) Mounting contour:  
Clamping module as expansion module
- 2) Mounting contour:  
Clamping module as built-in module
- a) Underside hose-less port (feedback function on clamp slider position open)  
O-ring Ø4.5x1.5
- b) Lateral connection M5 (turbo)
- c) Lateral connection M5 (actuator open)
- d) Underside hose-less port (open)  
O-ring Ø4.5x1.5
- e) Underside hose-less port (turbo)  
O-ring Ø4.5x1.5
- f) Vent

### KIPP UNILOCK clamping module ASM 99

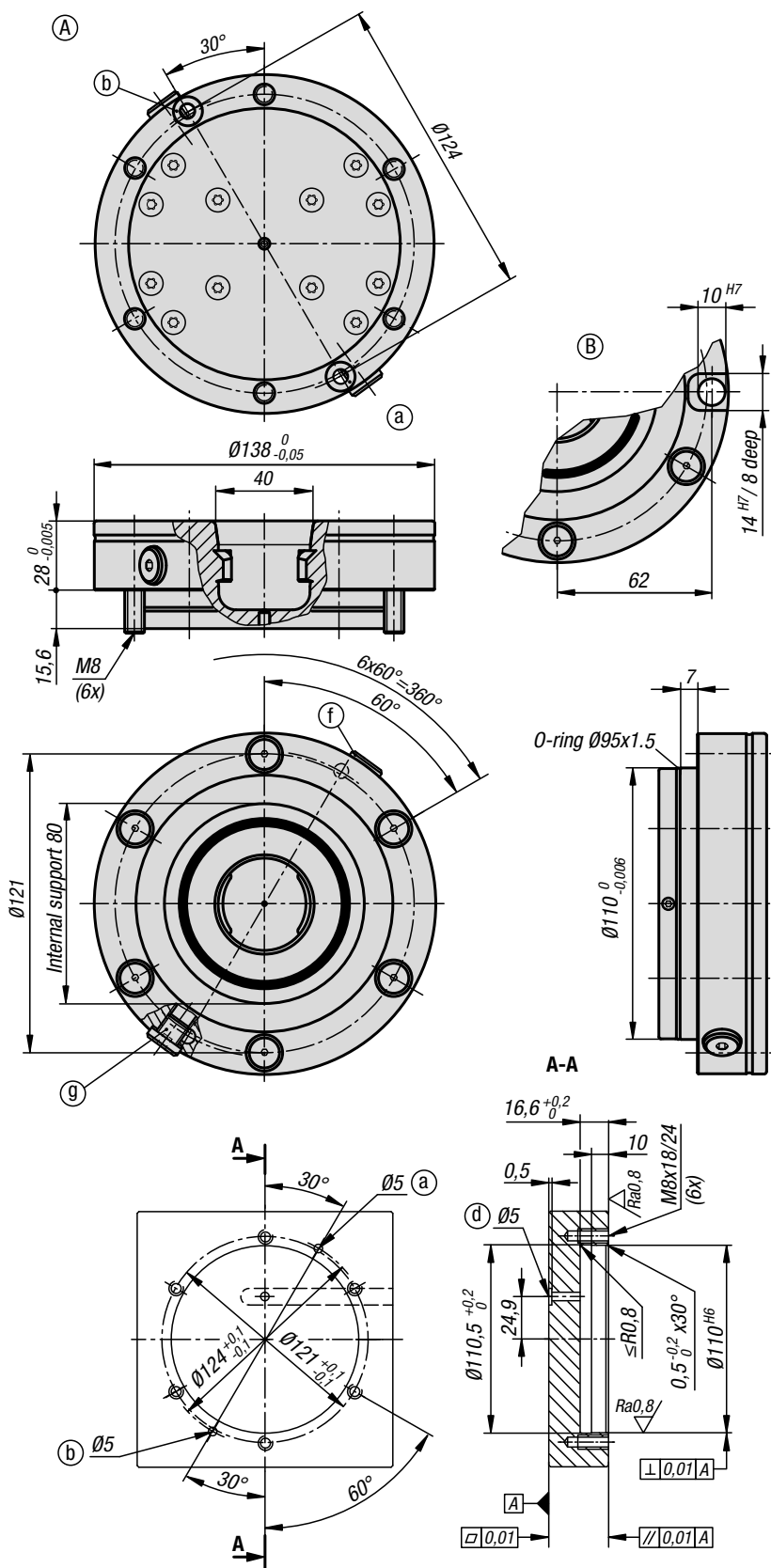
Order No.	D	G	G1	H	H1	H2	H3	L	Operating pressure bar	Retraction force with turbo kN
K1971.99560	99	M4x10,5	M6	56	39	11,3	26	30	6	18





## UNILOCK clamping module

ERGO 138



**Material:**  
Carbon steel.

**Version:**  
Contact faces hardened and ground.

**Sample order:**  
K1003.138280

**Note:**  
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated. The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

A very low installation height of the clamping modules is achieved by the compact design of the flat clamping slides.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).

The release process is pneumatic. Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
  - Clamping force (M12) 50,000 N
  - Clamping force (M16) 75,000 N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

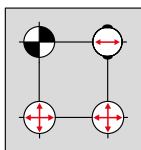
The ERGO clamping modules are available with and without rotation lock.




### KIPP UNILOCK clamping module ERGO 138

Order No.	Form	Form definition	Operating pressure bar	Retraction force with turbo kN	weight kg
K1003.138280	A	without rotation lock	6	18	3,56
K1003.138281	B	with rotation lock	6	18	3,52

## UNILOCK clamping module

ERGO 138



-  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)

### Advantages:

- Compact flat design through flat slides.
- Turbo-function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

### Supplied with:

- 1x clamping module.
- 1x O-ring  $\varnothing 95 \times 1,5$ .
- 2x O-rings  $\varnothing 8 \times 2$  for media feed.
- 6x fastening screws.
- 6x cover caps for fastening screws.

### Accessories:

- Clamping pin K0967.
- Protective bolt for clamping module K1010.
- Protective plug for clamping module K1010.

### Attention:

- Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
  - From five clamping modules, hose size 8 mm.

### Functional principle:

The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:

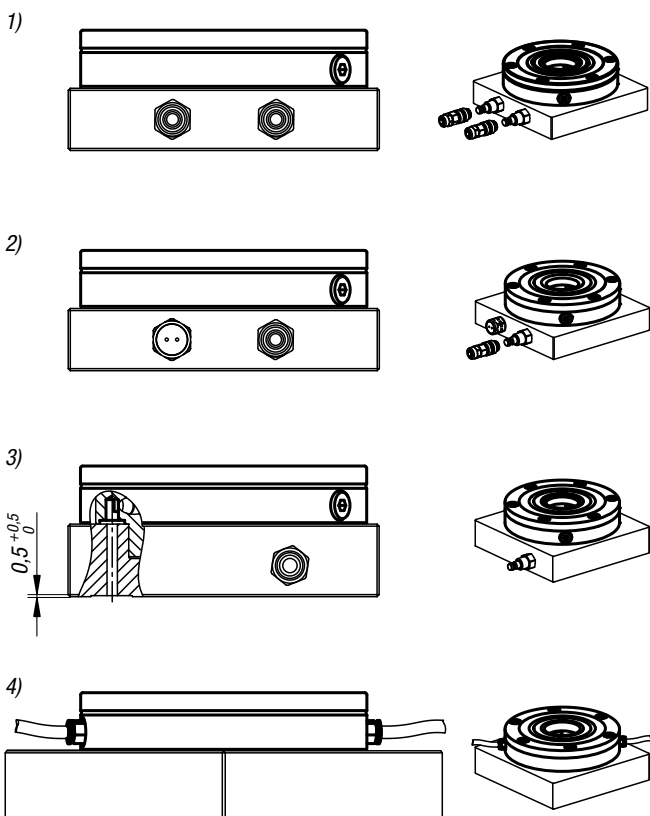
- 1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
- 3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
- 4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

### Technical data:

- Traction force with turbo from 18 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range  $5^\circ$  to  $60^\circ$  C.
- Optional port for blow-out air.

### Drawing reference:

- a) Underside hose-less port (open)  
O-ring  $\varnothing 8 \times 2$
- b) Underside hose-less port (turbo)  
O-ring  $\varnothing 8 \times 2$
- c) Centring rim
- d) Vent
- f) Lateral connection G1/8 (actuator open)
- g) Lateral connection G1/8 (turbo)



## UNILOCK clamping module

ESM 138-C



**Material:**  
Steel.

**Version:**  
Contact faces case-hardened and ground.

**Sample order:**  
K1385.138390

**Note:**  
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated. The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure). The release process is pneumatic. Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

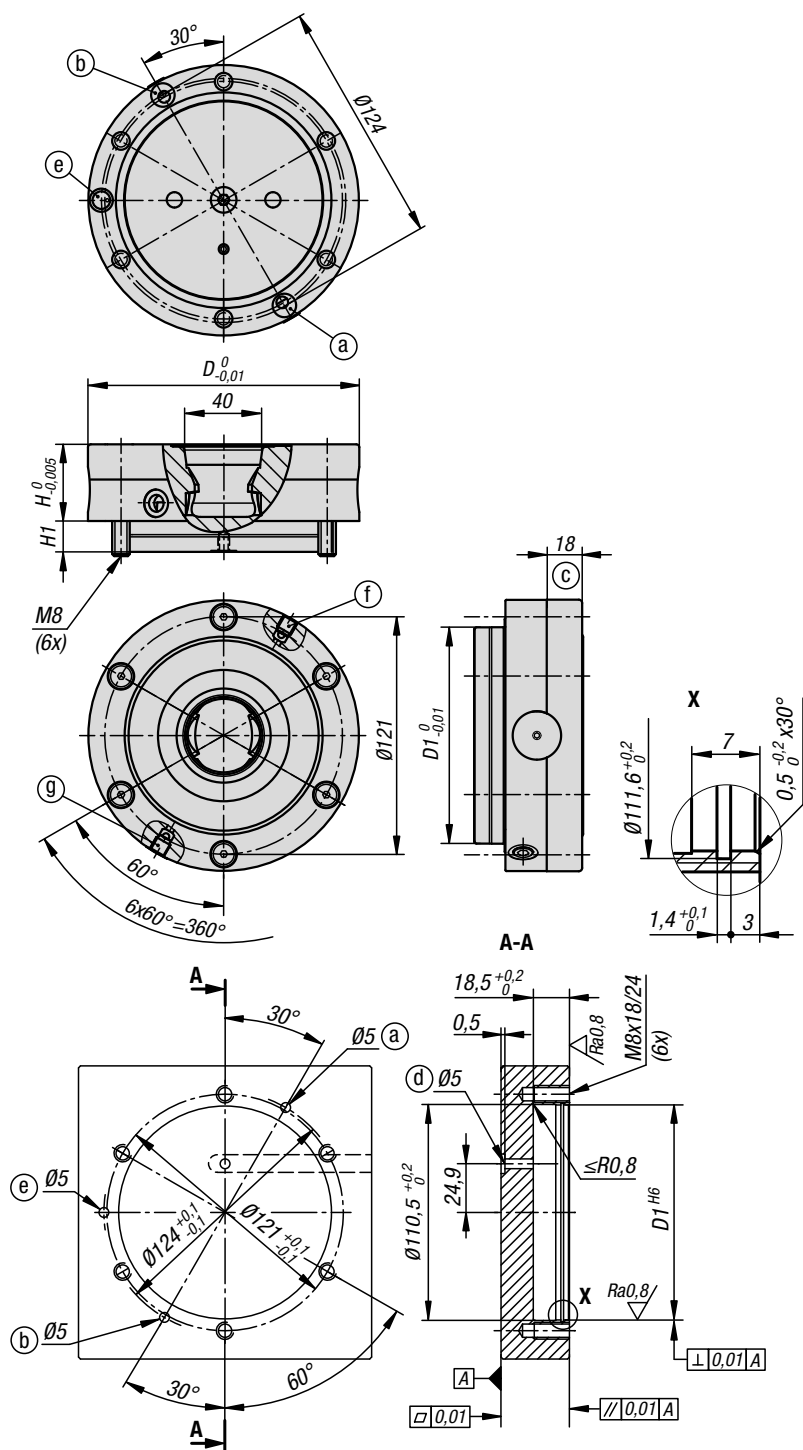
- Clamping force (M10) 35,000 N
  - Clamping force (M12) 50,000 N
  - Clamping force (M16) 75,000 N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

**Advantages:**

- Automation-capable through various query options.
- Turbo-function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

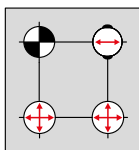





### KIPP UNILOCK clamping module ESM 138-C

Order No.	Form	Form definition	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1385.138390	A	without rotation lock	138	110	39	16,7	6	25

## UNILOCK clamping module

ESM 138-C



-  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)

### Supplied with:

- 1x clamping module.
- 1x O-ring Ø110x1.
- 3x O-rings Ø9x1.5 for media feed.
- 6x fastening screws.
- 6x cover caps for fastening screws.

### Accessories:

- Clamping pin K0967.
- Protective bolt for clamping module K1010.
- Protective plug for clamping module K1010.

### Attention:

- Recommended nominal hose size:
  - Up to four clamping modules, hose size 6 mm.
  - From five clamping modules, hose size 8 mm.

### Functional principle:

The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:

- 1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
- 3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
- 4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

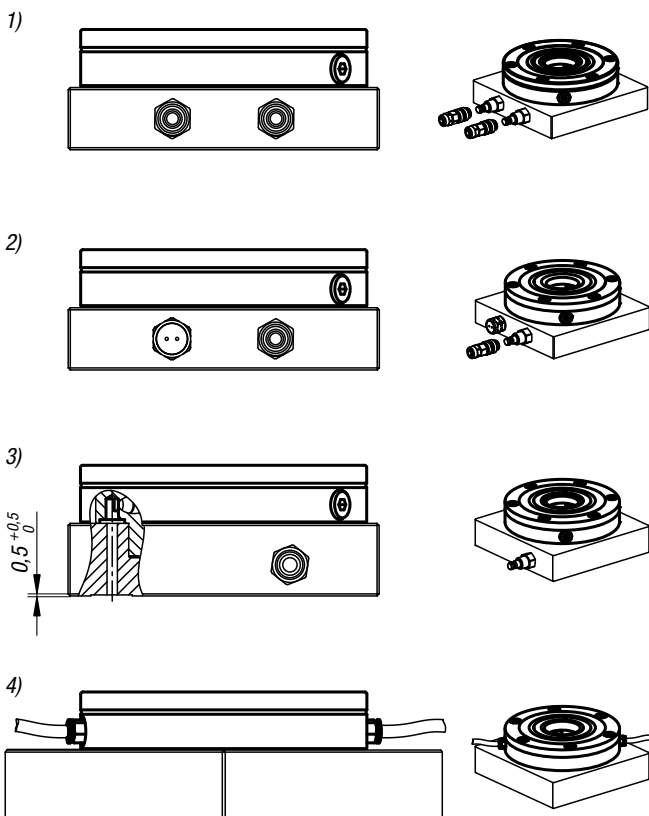


### Technical data:

- Traction force with turbo from 25 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.
- The third air port can be used as a query function to report if clamping slides are open or closed.

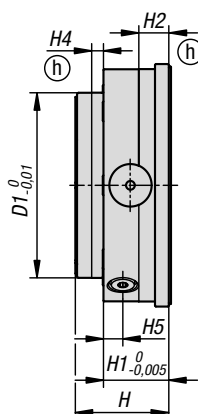
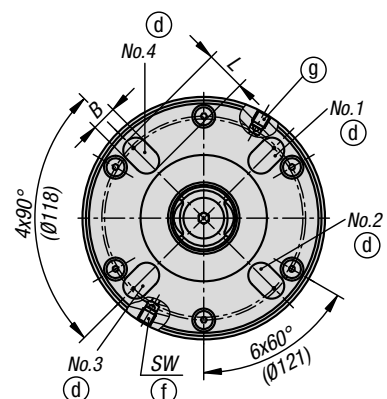
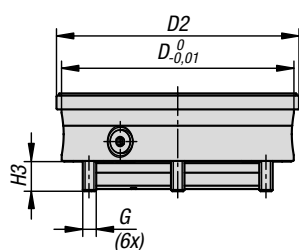
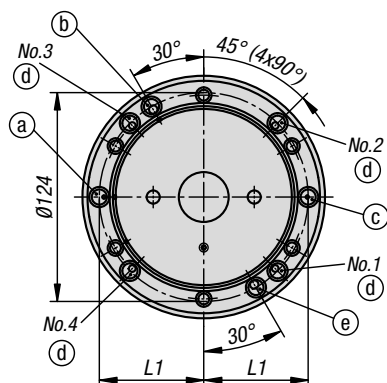
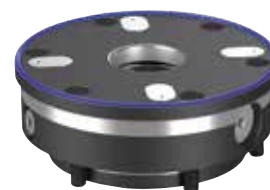
### Drawing reference:

- a) Underside hose-less port (open)  
O-ring Ø9x1.5
- b) Underside hose-less port (turbo)  
O-ring Ø9x1.5
- c) Centring rim
- d) Vent
- e) Underside hose-less port (dynamic pressure detection / clamp slider position)  
O-ring Ø9x1.5
- f) Lateral connection G1/8 (actuator open)
- g) Lateral connection G1/8 (turbo)



# UNILOCK Spannmodul

ESA 138



**Drawing reference:**

1) Mounting contour

- a) Underside hose-less port (feedback function clamp slider position open)  
O-ring Ø9x1.5
- b) Underside hose-less port (turbo)  
O-ring Ø9x1.5
- c) Underside hose-less port (feedback function clamp slider position closed)  
O-ring Ø9x1.5
- d) Underside hose-less port (system control) O-ring Ø9x1.5
- e) Underside hose-less port (open)  
O-ring Ø9x1.5
- f) Lateral connection G1/8 (turbo)
- g) Lateral connection G1/8 (actuator open)
- h) Centring rim
- i) Vent

**Material:**

Steel.

**Version:**

Contact faces case-hardened and ground.

**Sample order:**

K1972.138390

**Note:**

The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc).

The UNILOCK clamping module ESA 138 is especially suitable for automated clamping fixtures. The integrated feedback function together with the four offset support faces with air system control can ensure process reliability with automated clamping fixtures. Thus, the clamp slider position „open/closed“ and the support control of the clamping pallet can be monitored on the clamping module. The dirt wiper prevents dirt from being deposited on the surface of the clamping module.

The pneumatic control of the clamping modules can be carried out independently or together. Thus an individual zero-point clamping system can be fabricated.

The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).

Clamping is released pneumatically.

Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping bolt in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

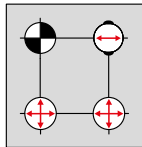
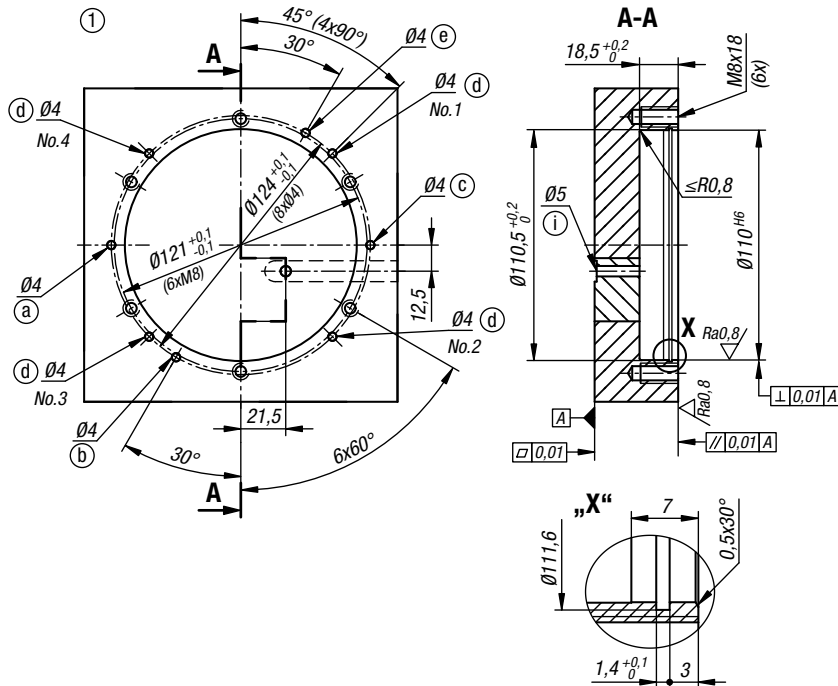
Clamping force with DIN EN ISO 4762 -12.9 cap screws




**KIPP UNILOCK clamping module ESA 138**

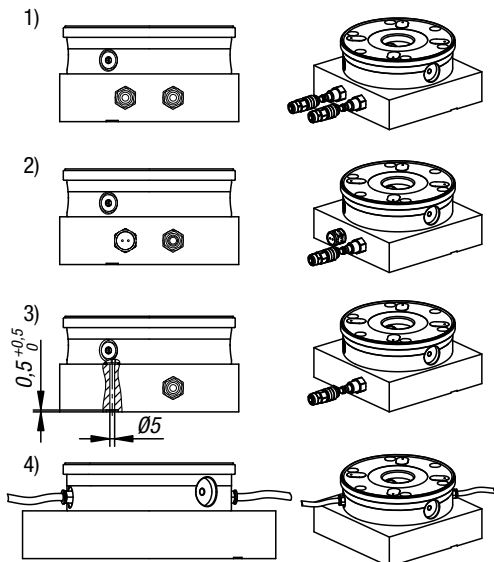
Order No.	B	D	D1	D2	G	H	H1	H2	H3	H4	H5	L	L1	SW	Operating pressure bar	Retraction force with turbo kN
K1972.138390	15	138	110	144	M8	55,7	39	18,1	16	7	11,5	24	62	6	6	28

## UNILOCK Spannmodul

ESA 138



-  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)



Clamping bolts may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

### Advantages:

- Automation compatible.
- Feedback function for clamp slider position „open“/ „closed“.
- Offset support faces with air system control.
- Dirt wiper.
- Turbo function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

### Supplied with:

- 1x clamping module.
- 2x O-rings Ø9x1.5 for media feed.
- 6x O-rings Ø9x1.5 for feedback function.
- 6x fastening screws.
- 6x cover caps for fastening screws.

### Accessories:

- UNILOCK clamping pin K0967, K1471, K1974, K1975.
- UNILOCK protective bolt for clamping module K1010.

### Attention:

- Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
  - From five clamping modules, hose size 8 mm.

### Functional principle:

The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

For this there are four options:

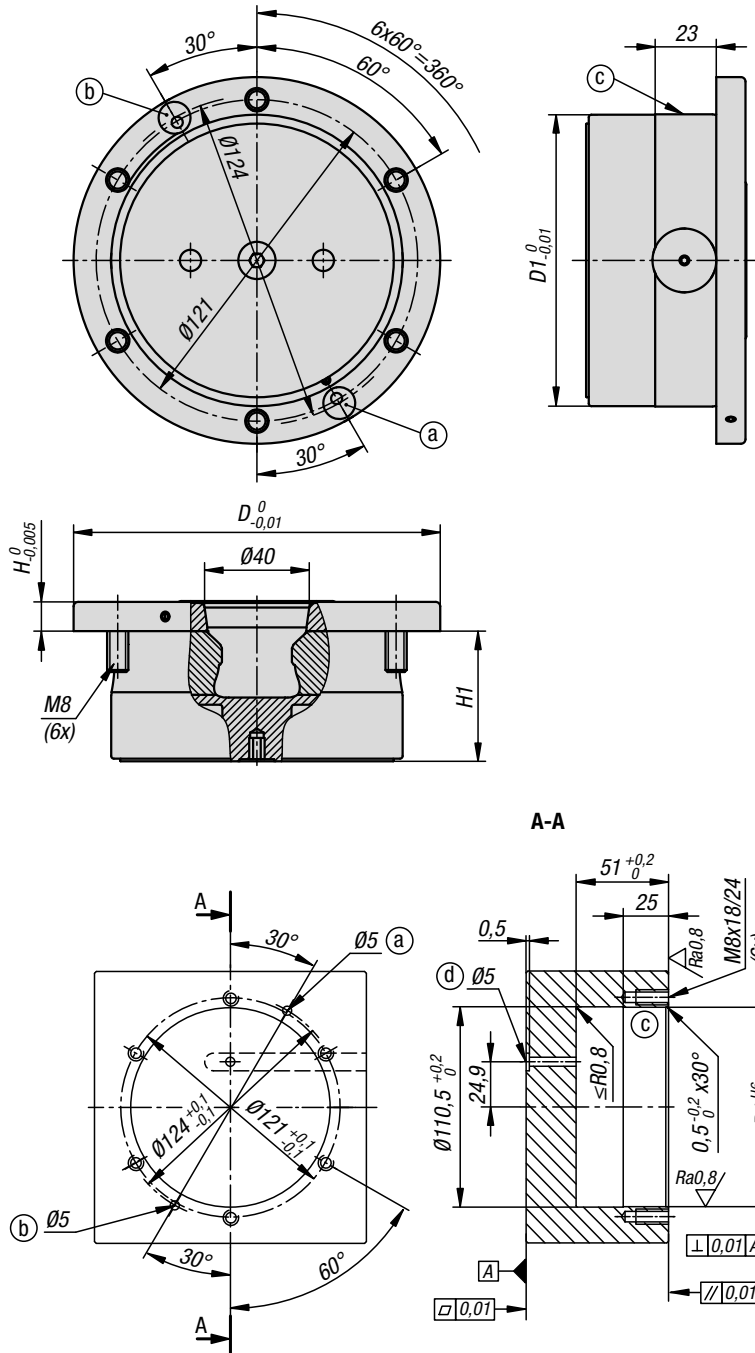
- 1) Connection and use of the turbo function in the base plate next to the „Open“ port. This enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) Simple hole in the baseplate connected to the turbo port to permit air to escape. Do not use a connection with a shut-off function to seal the hole against dirt, instead a venting screw should be used.
- 3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
- 4) If the clamping module is controlled from the side, the one vent screw must be inserted at this point.

### Technical data:

- Traction force with Turbo from 28 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.

# UNILOCK clamping module

EFM 138



**Material:**  
Steel.

**Version:**  
Contact faces hardened and ground.

**Sample order:**  
K1866.138110

**Note:**  
The UNILOCK clamp modules EFM 138 can be installed in machine tables, in fixtures (plates, cubes, towers etc) with or without overhang in any position. The UNILOCK clamping module EFM 138 is particularly suitable for installation in workholding towers by machining a deep recess for the module. With a maximum protrusion of 11 mm above the installation surface, only minor interference contours occur, thus permitting optimum horizontal machining on the workpiece.

The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated. The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure). The release process is pneumatic. Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port additionally increases the normal traction force achieved by the springs significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
  - Clamping force (M12) 50,000 N
  - Clamping force (M16) 75,000 N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

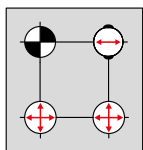
## KIPP UNILOCK clamping module EFM 138




Order No.	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1866.138110	138	110	11	49	6	20



# UNILOCK clamping module

EFM 138



-  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)

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse applications.

### Advantages:

- Optimal for mounting on workholding towers due to the low mounting height of 11 mm.
- Turbo function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

### Supplied with:

- 1x clamping module.
- 6x fastening screws.
- 6x screw protection caps.
- 2x air connection O-rings  $\varnothing 9 \times 1,5$ .

### Accessories:

- Clamping pin K0967.
- Protective bolt for clamping module K1010.
- Protective plug for clamping module K1010.

### Attention:

- Recommended nominal hose size:
- Up to four clamping modules, hose size 6 mm.
  - From five clamping modules, hose size 8 mm.

### Functional principle:

The clamping modules are controlled via the connections on the base plate.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented by one of the following three options:

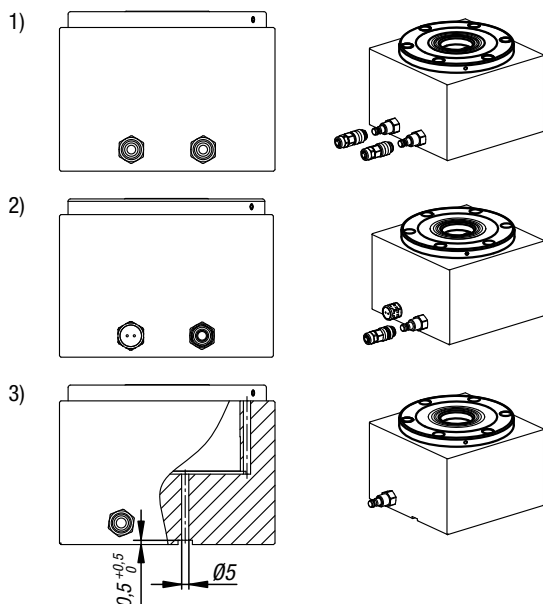
- 1) Connection and use of the turbo function in the base plate, or in the workholding tower next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) A single hole for the air to escape in the baseplate/workholding tower which is connected to the turbo port. Do not use a connection with a shut-off function to seal the hole against dirt, instead a venting screw should be used.
- 3) In the third case, the piston chamber can be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.

### Technical data:

- Traction force with turbo 20 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range  $5^\circ$  to  $60^\circ$  C.
- Optional port for blow-out air.

### Drawing reference:

- a) Underside hose-less port (open)  
O-ring  $\varnothing 9 \times 1,5$
- b) Underside hose-less port (turbo)  
O-ring  $\varnothing 9 \times 1,5$
- c) Centring rim
- d) Vent



# UNILOCK clamping module

ESM 176



**Material:**  
Steel.

**Version:**  
Contact faces case-hardened and ground.

**Sample order:**  
K1389.176390

**Note:**  
The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The pneumatic control of the clamping modules can be carried out independently or together, thus an individual zero-point clamping system can be fabricated. The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure). The release process is pneumatic. Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

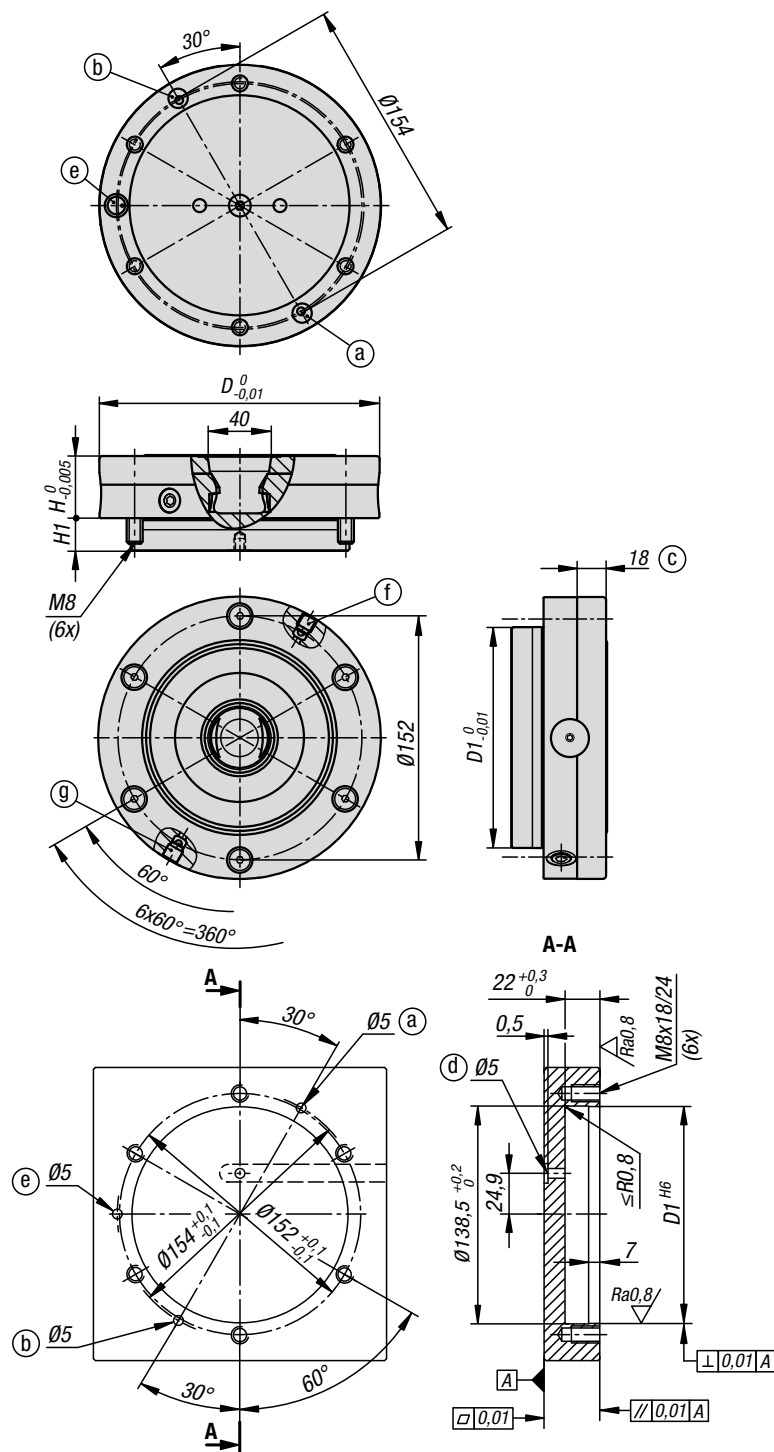
- Clamping force (M10) 35,000 N
  - Clamping force (M12) 50,000 N
  - Clamping force (M16) 75,000 N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

**Advantages:**

- Automation-capable through various query options.
- Turbo-function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

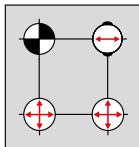





**KIPP UNILOCK clamping module ESM 176**

Order No.	Form	Form definition	D	D1	H	H1	Operating pressure bar	Retraction force with turbo kN
K1389.176390	A	without rotation lock	176	138	39	20,8	6	40

# UNILOCK clamping module

ESM 176



-  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)

### On request:

Installation clamp with rotation lock.

### Supplied with:

1x clamping module.  
3x O-rings Ø9x1.5 for media feed.  
6x fastening screws.  
6x cover caps for fastening screws.

### Accessories:

Clamping pin K0967.  
Protective bolt for clamping module K1010.  
Protective plug for clamping module K1010.

### Attention:

Recommended nominal hose size:  
- Up to four clamping modules, hose size 6 mm.  
- From five clamping modules, hose size 8 mm.

### Functional principle:

The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

This can be implemented through one of four options:

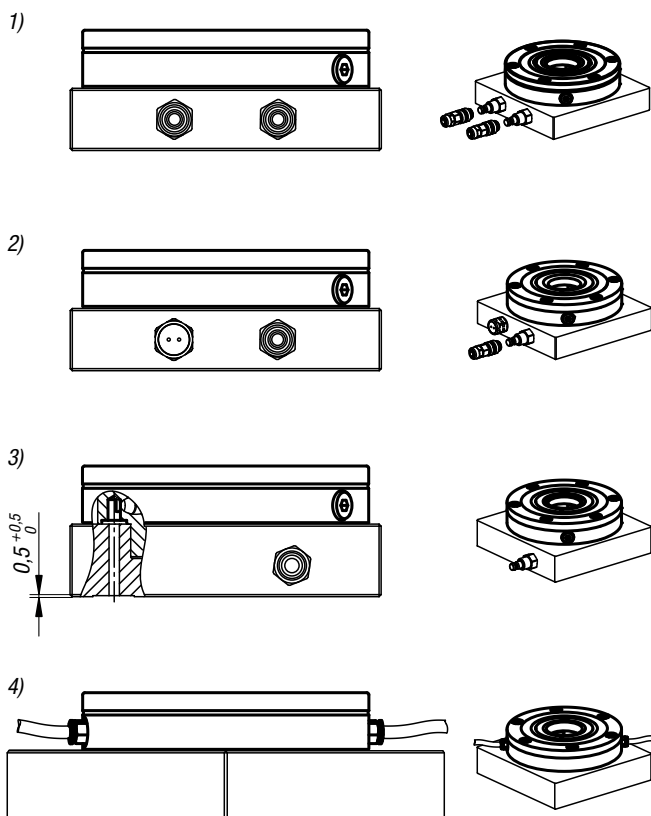
- 1) Connection and use of the turbo function in the base plate next to the „Open“ port. This also enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) Simple hole in the baseplate connected to the turbo port to permit air to escape. To seal the bore against dirt, use a vent screw instead of a connection with a shut-off function.
- 3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
- 4) If the clamping module is controlled from the side, the one vent screw must also be inserted at this point.

### Technical data:

- Traction force with turbo from 25 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range 5° to 60° C.
- Optional port for blow-out air.
- The third air port can be used as a query function to report if clamping slides are open or closed.

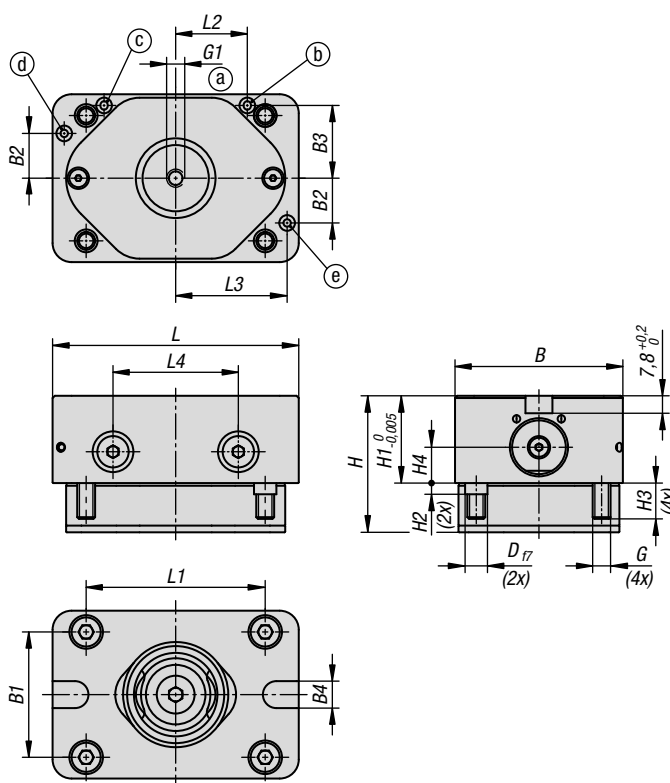
### Drawing reference:

- a) Underside hose-less port (open)  
O-ring Ø9x1.5
- b) Underside hose-less port (turbo)  
O-ring Ø9x1.5
- c) Centring rim
- d) Vent
- e) Underside hose-less port (dynamic pressure detection / clamp slider position)  
O-ring Ø9x1.5
- f) Lateral connection G1/8 (actuator open)
- g) Lateral connection G1/8 (turbo)



## UNILOCK clamping module

EGM 110-75



**Material:**

Steel.

**Version:**

Contact faces case-hardened and ground.

**Sample order:**

K1973.11075391

**Note:**

The UNILOCK clamp modules can be mounted in any position, with or without projection on machine tables or as part of fixtures (plates, cubes, towers etc). The UNILOCK clamping module EGM 110-75 can be used by narrow gauge sizes on machine tables or fixtures. Furthermore, this clamping module in combination with the pallet coupling can be installed in robot automation systems. Thus, clamping pallets in the UNILOCK zero-point clamping system can be automatically exchanged using robot automated systems. The „open/ closed“ position of the clamp slider can be monitored with the integrated feedback function.

The pneumatic control of the clamping modules can be carried out independently or together. thus an individual zero-point clamping system can be fabricated. The modular design allows the number of and distance between the clamp modules to be ideally adjusted to suit the clamping task. The set-up times are significantly reduced and so the running times of the machines are extended.

The high clamping forces are generated by the integrated spring package (the unit is clamped without constant air pressure).

Clamping is released pneumatically.

Even in the event of a pressure drop or fluctuations in the compressed air supply, the full traction force is maintained.

All clamping modules have a turbo function included as standard. A short air impulse at the „Turbo“ air port increases the normal traction force, achieved by the springs, significantly. Consequently, the clamping modules can also be used for heavy-feed machining.

Use of the turbo function for maximum traction force is recommended.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N

- Clamping force (M12) 50,000 N

- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

If the clamping module is used in a robot automated system, the clamping module is controlled via the base or lateral screw connections.

**Technical data:**

- Traction force with Turbo from 14 kN.
- System pressure: 6 bar, lubricated air.
- Repeat accuracy  $\leq 0.005$  mm.
- Temperature range 5° to 60° C.
- Rotation lock.

**Drawing reference:**

- 1) Mounting contour:  
Clamping module as expansion module
- 2) Mounting contour:  
Clamping module as built-in module

- a) Underside hose-less port (air barrier port)
- b) Underside hose-less port (turbo)  
O-ring  $\varnothing 4 \times 1.5$
- c) Underside hose-less port (open)  
O-ring  $\varnothing 4 \times 1.5$
- d) Underside hose-less port (feedback function clamp slider open)  
O-ring  $\varnothing 4 \times 1.5$
- e) Underside hose-less port (feedback function clamp slider closed)  
O-ring  $\varnothing 4 \times 1.5$
- f) Vent

### KIPP UNILOCK clamping module EGM 110-75

Order No.	B	B1	B2	B3	B4	D	G	G1	H	H1	H2	H3	H4	L	L1	L2	L3	L4	Operating pressure bar	Retraction force with turbo kN
K1973.11075391	75	56	20	32,5	12,05	10	M8	M7	61	39	5	16	14	110	80	32	49,8	56	6	14

## UNILOCK clamping module

EGM 110-75



A consistent clamping bolt size for all clamping modules and compatibility with the 5-axis module clamping system 80 guarantees diverse combinations of application possibilities.

### Assembly:

See mounting contour.

### Advantages:

- Suitable for narrow gauge sizes.
- Clamping module for robot automate systems
- Feedback function for clamp slider position „open/closed“.
- Turbo function as standard.
- Repeat accuracy  $\leq 0.005$  mm.
- Positioning via short taper..
- High traction force.
- Setup time optimisation.

### Supplied with:

- 1x clamping module.
- 2x O-rings  $\varnothing 4 \times 1.5$  for media feed.
- 2x O-rings  $\varnothing 4 \times 1.5$  for feedback function.
- 4x fastening screws.
- 4x cover caps for fastening screws.

### Accessories:

- UNILOCK clamping bolts K0967, K1471, K1974, K1975.
- UNILOCK protective bolts for clamping module K1010.
- Pallet couplers for UNILOCK clamping module K2046

### Attention:

Recommended nominal hose size:

- Up to four clamping modules, hose size 6 mm.
- From five clamping modules, hose size 8 mm.

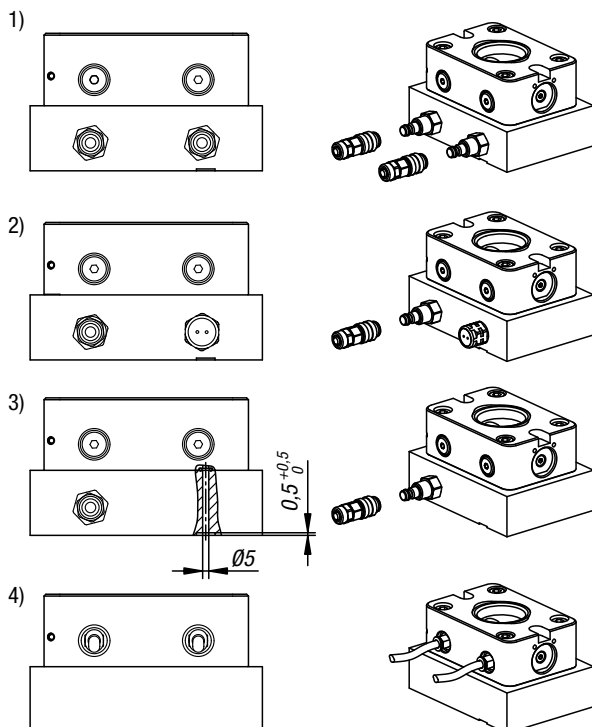
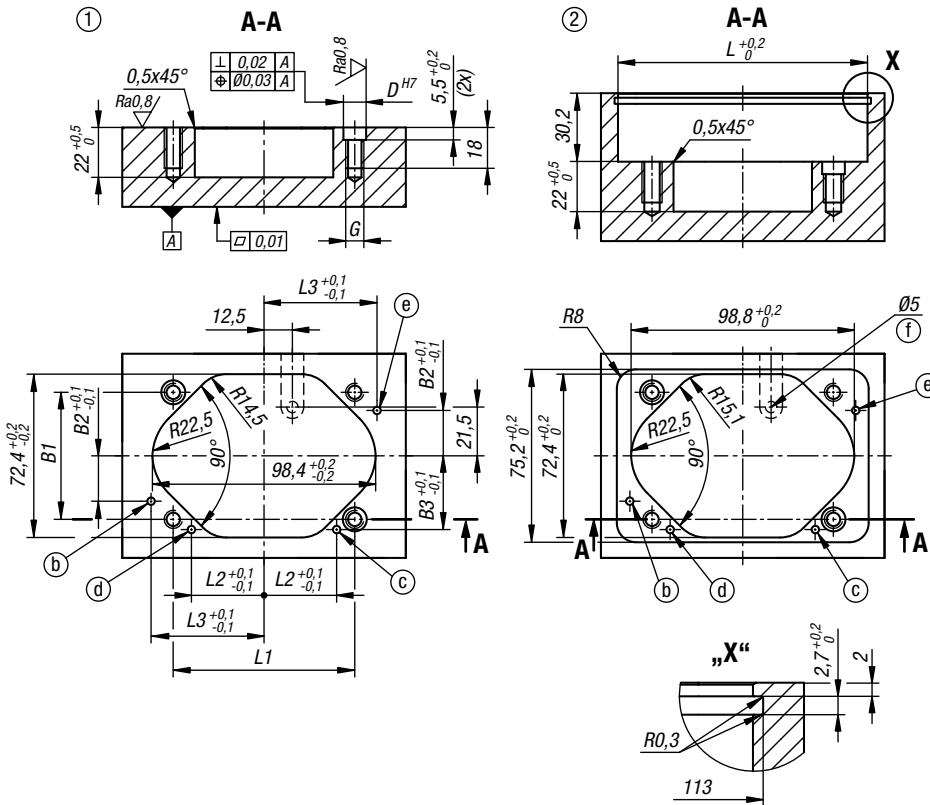
### Functional principle:

The clamping modules can be connected either via the connections on the base plate or directly on the clamping module via the threaded port.

In order to guarantee the function of the clamping slides, the venting of the upper piston chamber must be carried out via the „Turbo“ air port.

For this there are four options:

- 1) Connection and use of the turbo function in the base plate next to the „Open“ port. This enables the clamping module to be additionally tensioned with a short air pulse if required. (recommended)
- 2) Simple hole in the baseplate connected to the turbo port to permit air to escape. Do not use a connection with a shut-off function to seal the hole against dirt, instead a venting screw should be used.
- 3) In the third case, the piston chamber must be vented via a bore that is connected below the baseplate via a transverse slot. This bore must join with the turbo port so that venting can take place.
- 4) If the clamping module is controlled from the side, the one vent screw must be inserted at this point.



## Pallet coupler for UNILOCK clamping module

EGM 110-75



**Material:**

Aluminium.

**Sample order:**

K2046.1590600431

**Note:**

The pallet coupler for the UNILOCK clamping module EGM 110-75 serves as an interface between clamping pallet and clamping module in a robot automated system. The compact design of the pallet coupler permits pallets to be loaded extremely close to the machine table.

The pallet coupler is drawn in by the clamping module on the robot via the UNILOCK clamping bolt. The rotation lock around the central longitudinal axis is provided by a cylindrical pin on the front side of the pallet coupler.

**Assembly:**

The maximum torque of the fastening screws must be observed when mounting the pallet coupler on the pallet.

Tightening torque for DIN EN ISO 4762 M12 10.9 fastening screw: 92 Nm.

**Advantages:**

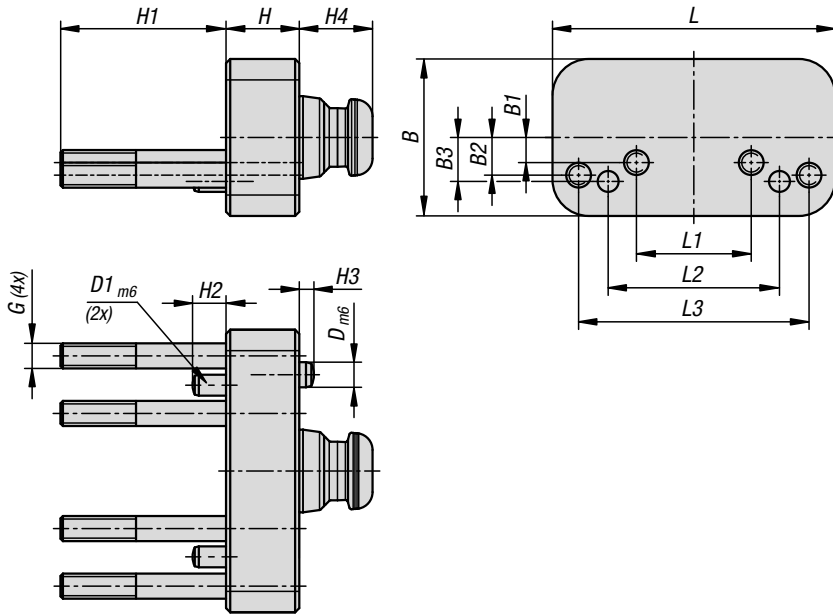
- Compact design
- Low weight.
- Positioning via short taper.

**Supplied with:**

- 1x pallet coupler with clamping bolt.
- 4x DIN EN ISO 4762 M12 10.9 fastening screws.

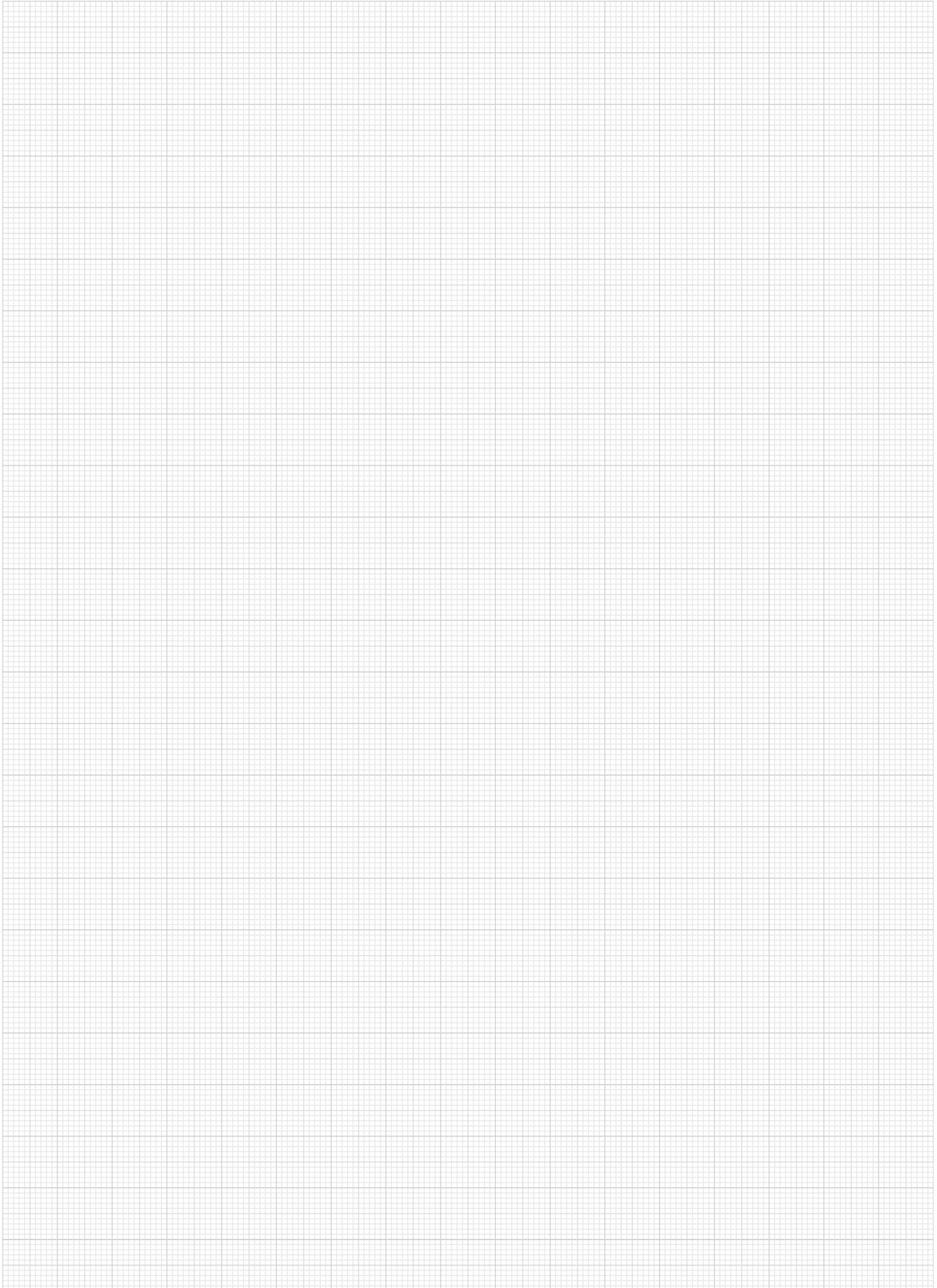
**Accessories:**

UNILOCK clamping module EGM 110-75 (K1973).



### KIPP Pallet coupler for UNILOCK clamping module EGM 110-75

Order No.	Form definition	B	B1	B2	B3	D	D1	G	H	H1	H2	H3	H4	L	L1	L2	L3
K2046.1350750351	with rotation lock	75	12	18	21	12	10	M12	35	79	16	7	35	135	55	82	110



# UNILOCK manual clamping module



**Material:**

Carbon steel.

**Version:**

Contact faces hardened and ground.

**Sample order:**

K1123.1605050

**Note:**

UNILOCK manual clamping modules can be adapted directly to machine tables with grid holes or T-slots, and to grid hole subplates with 50 mm grid spacing system size M12/M16.

The UNILOCK manual clamping module H50 is particularly suitable for machines with reduced Z travel. The low installation height of the manual clamping module facilitates full utilisation of the Z travel. The UNILOCK manual clamping module H50 can be mounted in any position.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
  - Clamping force (M12) 50,000 N
  - Clamping force (M16) 75,000 N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

The UNILOCK manual clamping module can be fastened using DIN EN ISO 4762 -10.9 M12 or M16 cap screws.

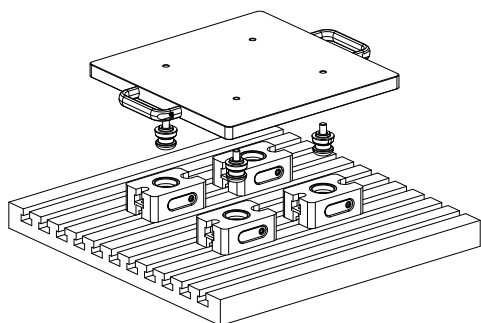
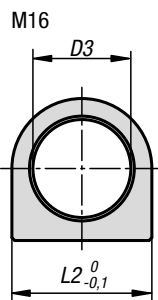
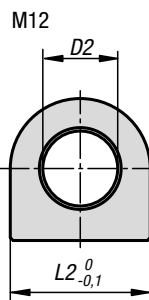
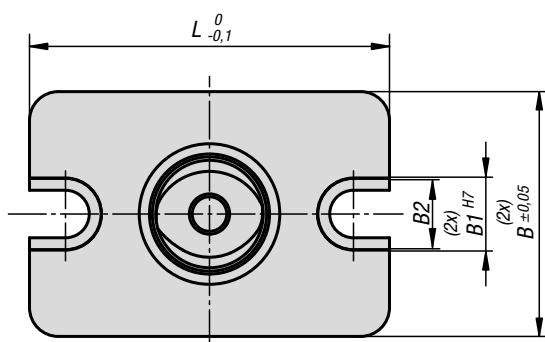
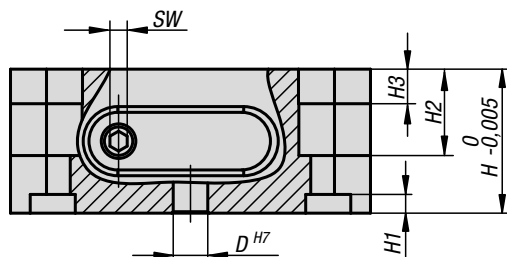
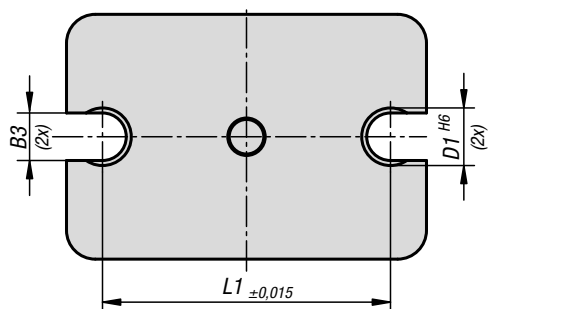
The positioning of the UNILOCK manual clamping modules can be carried out using the two alignment holes D1 or the central alignment hole D. In addition, there are two positioning holes B1 in the UNILOCK manual clamping modules for aligning interchangeable fixtures on the support surface.

**Supplied with:**

1 manual clamping module incl. fastening accessories.

**Technical data:**

Max. operating torque: 15 Nm.  
 Max. retraction force: 15 Nm.  
 Repeat accuracy  $\leq 0.005$  mm



## KIPP UNILOCK manual clamping module

Order No.	B	B1	B2	B3	D	D1	D2	D3	H	H1	H2	H3	L	L1	L2	SW	weight kg
K1123.1605050	85	25	24,75	16,5	12	20	13	17	50	6,5	30	12	125	100	24,3	6	3,52



## UNILOCK interchangeable subplates

for zero-point clamping system

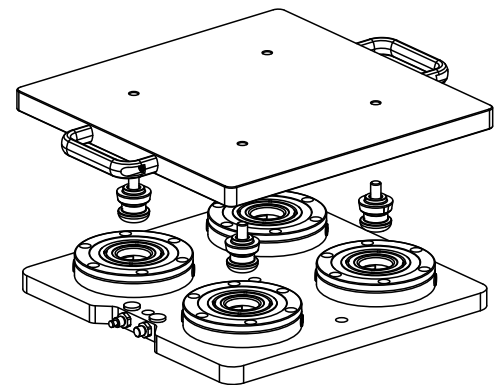
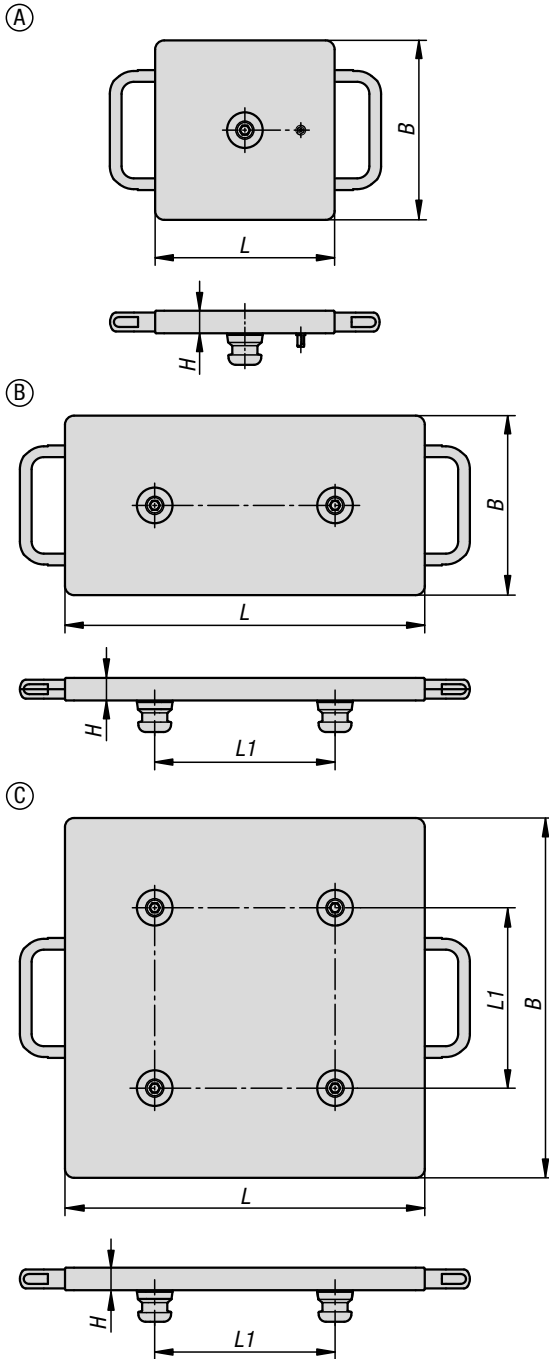


**Material:**  
High-strength aluminium.

**Sample order:**  
K1218.1000200200

**Note:**  
Interchangeable subplates are particularly suitable for quickly exchanging fixtures on zero point clamping plates. Ground on both sides, standard clamping pin gauge of 200 mm. Complete with clamping pins and handles.

**On request:**  
Further gauges and special sizes.



### KIPP UNILOCK interchangeable subplates for zero-point clamping system

Order No.	Form	B	H	L	L1	weight ca. kg
K1218.1000200200	A	199	25	199	-	2,95
K1218.2200200200	B	199	25	399	200	6,02
K1218.4200400400	C	399	25	399	200	11,88

## UNILOCK clamping pin

size 80 mm



**Material:**  
Steel.

**Version:**  
Hardened and black oxidised.  
Contact faces ground.

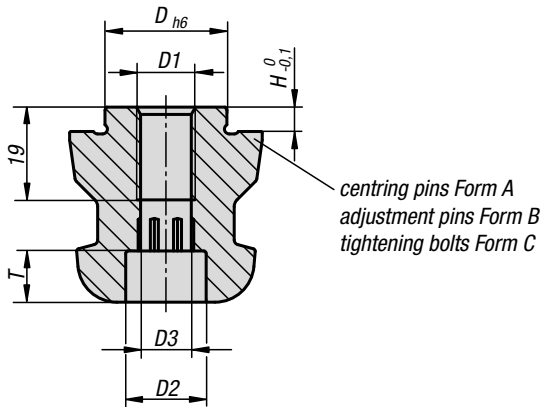
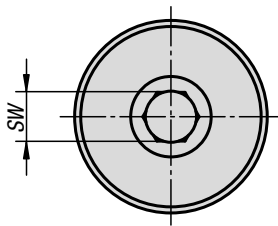
**Sample order:**  
K0967.140160512

**Note:**  
The UNILock clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

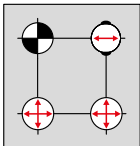
The following retaining forces are possible when the UNILock clamping pins are used together with M10, M12 or M16 fastening screws:

- Retaining force (M10) 35,000N
  - Retaining force (M12) 50,000N
  - Retaining force (M16) 75,000N
- Clamping force with DIN EN ISO 4762 -12.9 cap screws.

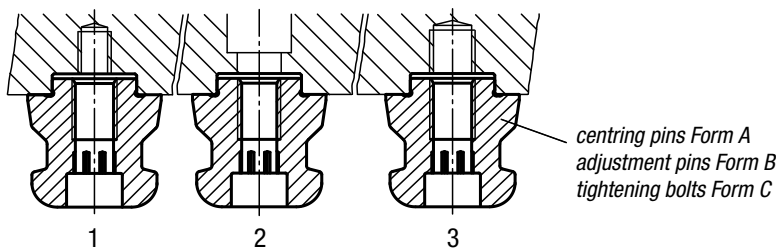
Other clamping pins in the same system size are available under K1471, K0968 and K0967 with threaded pin.



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



### KIPP UNILOCK clamping pin

Order No. Form A	Order No. Form B	Order No. Form C	D	D1	D2	D3	H	T	SW
K0967.140160512	K0967.240160512	K0967.340160512	16	M12	16,5	10,3	5	10,5	10
K0967.140180512	K0967.240180512	K0967.340180512	18	M12	16,5	10,3	5	10,5	10
K0967.140220516	K0967.240220516	K0967.340220516	22	M16	18,5	14,2	5	12,5	17
K0967.140250512	K0967.240250512	K0967.340250512	25	M12	16,5	10,3	5	10,5	10
K0967.140250516	K0967.240250516	K0967.340250516	25	M16	18,5	14,2	5	12,5	17

## UNILOCK clamping pin

with through hole, system size 80 mm



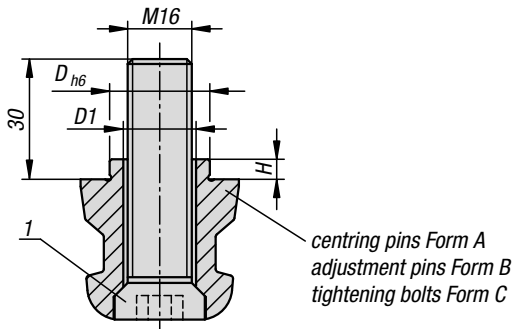
**Material:**  
Steel.

**Version:**  
Hardened and black oxidised.  
Contact faces ground.  
Swivel fastening screw M16x65, tempered and black oxidised.

**Sample order:**  
K1471.140250516

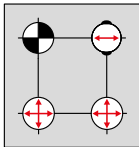
**Note:**  
The UNILOCK clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

**Drawing reference:**  
1) Swivel fastening screw M16x65.  
Grade 10.9.



*centring pins Form A*  
*adjustment pins Form B*  
*tightening bolts Form C*

- 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)

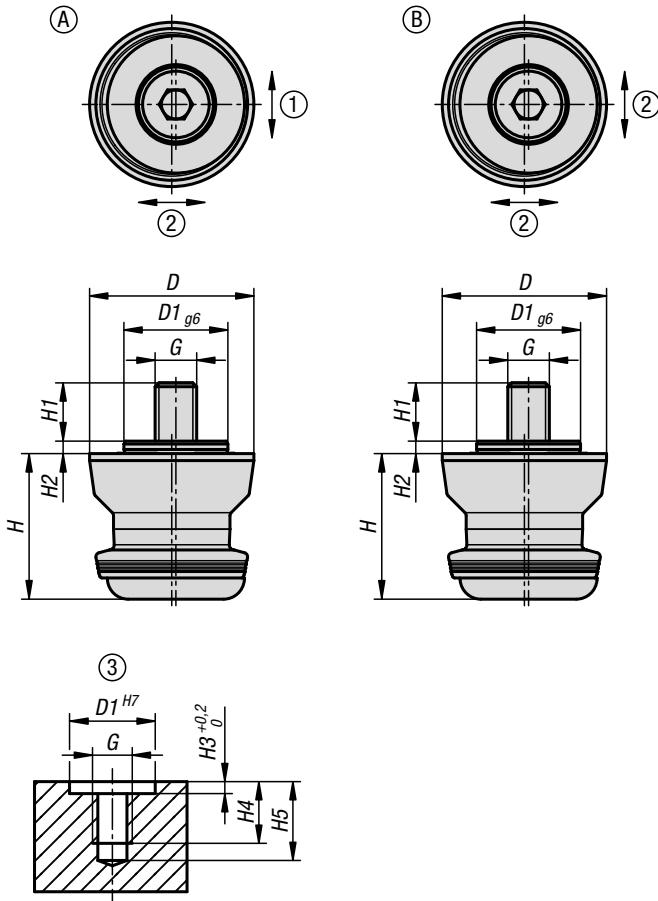


### KIPP UNILOCK clamping pin with through hole

Order No.	Form	D	D1	H	Tightening torque max. Nm
K1471.140250516	A	25	16,5	5	120
K1471.240250516	B	25	16,5	5	120
K1471.340250516	C	25	16,5	5	120

## UNILOCK compensation clamping bolt

system size 80 mm



**Material:**

Non-rusting steel.

**Version:**

Contact faces ground.

**Sample order:**

K1974.1402503101

**Note:**

The UNILOCK compensation 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.

With Form A, a gauge size compensation of  $\pm 1$  mm can be made in one direction.

With Form B, a gauge size compensation of  $\pm 1$  mm can be made in all directions.

Retaining forces of up to 35,000 N can be achieved with the UNILOCK compensation clamping bolts in conjunction with the M10 fastening screws.

Further clamping bolts in the same system size can be found by K0967, K1471, K0968 and K0967 with threaded bolt.

**Assembly:**

See mounting contour.

**Advantages:**

Gauge size compensation of  $\pm 1$  mm in one/all directions possible.

**Supplied with:**

1x UNILOCK compensation clamping bolt with fastening screw.

**Drawing reference:**

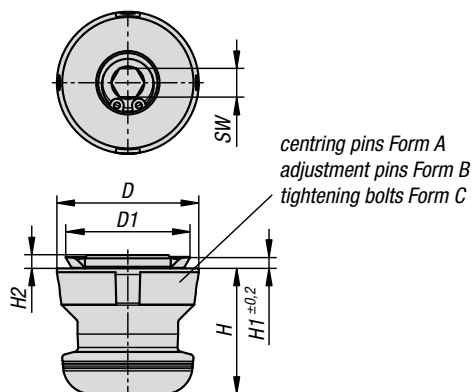
- 1) Repeat accuracy  $<0.05$  mm
- 2)  $\pm 1$  mm gauge size compensation
- 3) Installation instructions

### KIPP UNILOCK compensation clamping bolt system size 80 mm

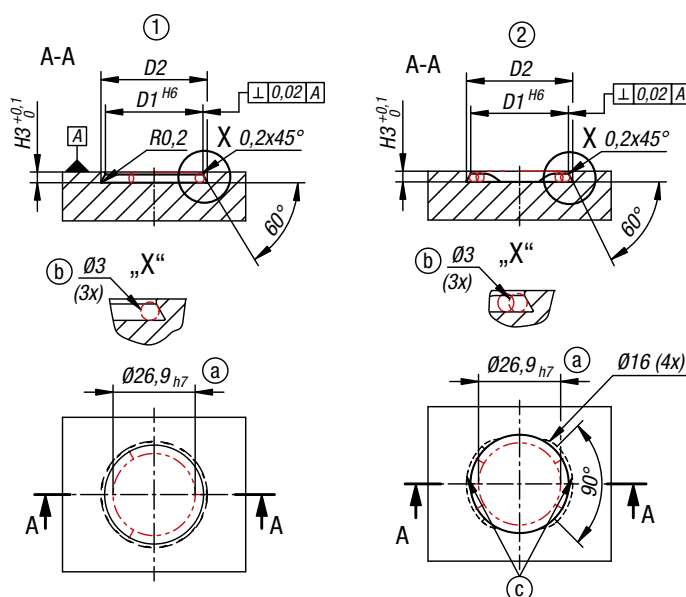
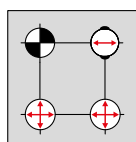
Order No.	Form definition	Form	D	D1	G	H	H1	H2	H3	H4	H5
K1974.1402503101	X-direction	A	39,5	25	M10	35,1	14	2,9	3,5	18	23
K1974.1402503102	XY-direction	A	39,5	25	M10	35,1	14	2,9	3,5	18	23

## UNILOCK dovetail clamping bolts

system 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)



### Drawing reference:

- 1) Screw in once, lost interface
- 2) Screw-in several times, accurately centred interface

- a) Test shaft. Testing with balls
- b) Balls
- d) For slider face

**Material:**  
Non-rusting steel.

**Version:**  
Contact faces ground.

**Sample order:**  
K1975.140320308

**Note:**  
The UNILOCK dovetail 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. No threads are needed to fasten the clamping bolt, as this is done by the dovetail in a clamping edge on the workpiece.

Retaining forces of up to 15,000 N can be achieved. The following tightening torques must be observed when mounting the clamping bolt:

- Mounting in steel: 55 Nm.
- Mounting in aluminium: 17 Nm.

The turbo function of the clamping modules must not be utilised when the UNILOCK dovetail clamping bolts are used.

The alignment of the slider faces must be observed when screwing in the dovetail clamping bolts several times (accurately centred interface). By the dovetail clamping bolt Form B, the bayonet must be aligned 90° to the slide face.

**Assembly:**  
See mounting contour.

**Advantages:**

- No fastening thread required in the workpiece.
- Dovetail results in low installation depths.

**Supplied with:**  
1x UNILOCK dovetail clamping bolt with fastening screw.

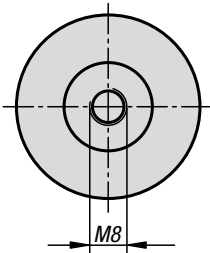
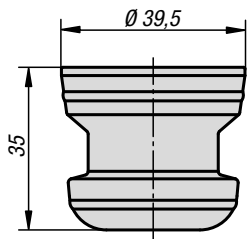
### KIPP UNILOCK dovetail clamping bolts system size 80 mm

Order No.	Form	D	D1	D2	H	H1	H2	H3	SW
K1975.140320308	A	39,5	32	35,1	35	3,2	3,3	3,5	8
K1975.240320308	B	39,5	32	35,1	35	3,2	3,3	3,5	8
K1975.340320308	C	39,5	32	35,1	35	3,2	3,3	3,5	8

# K1010

## UNILOCK protective bolt

for clamping module



**Material:**  
Aluminium.

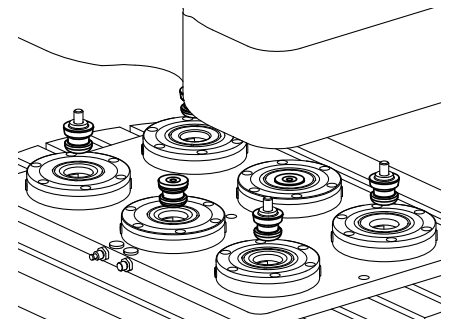
**Version:**  
anodised.

**Sample order:**  
K1010.040

**Note:**  
Protection bolt to cover the hole.

### KIPP UNILOCK protective bolt for clamping module

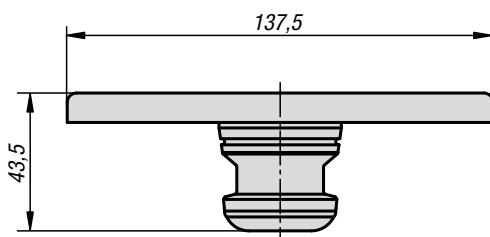
Order No.	Dimensions
K1010.040	see drawing



# K1010

## UNILOCK protective plug

for clamping module



**Material:**  
Aluminium.

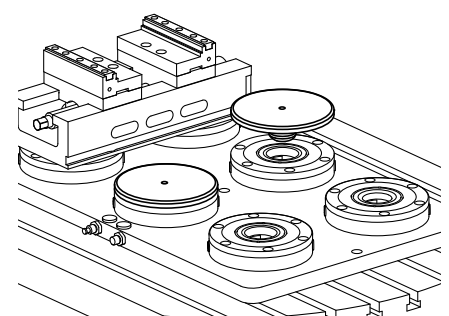
**Version:**  
anodised.

**Sample order:**  
K1010.138

**Note:**  
Protective plug for clamping module D = 138.

### KIPP UNILOCK protective plug for clamping module

Order No.	Dimensions
K1010.138	see drawing



# UNILOCK clamping bracket

for UNILOCK clamping station



**Material:**

Carbon steel.

**Version:**

Body black oxidised.

**Sample order:**

K1869.482212

**Note:**

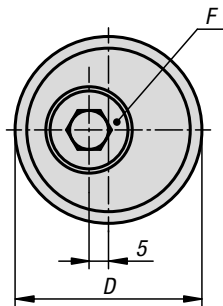
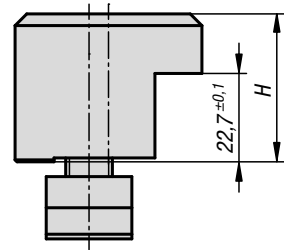
The UNILOCK clamping brackets are used for rapid fastening of the clamping stations on all conventional machine tables. The clamping brackets can be attached to the sides of the clamping stations or to the four rounded corners.

**Advantages:**

Rapid fastening of the UNILOCK clamping stations via adapted clamping brackets.  
 No fastening holes drilled through the clamping stations required.  
 Low, flat design eliminates protruding edges.  
 No swarf deposits due to the enclosed form of the clamping bracket.  
 The supplied screw head caps prevent the accumulation of swarf and coolants.

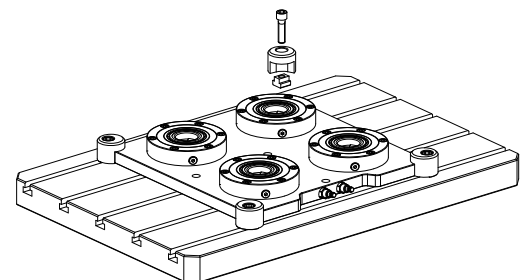
**Supplied with:**

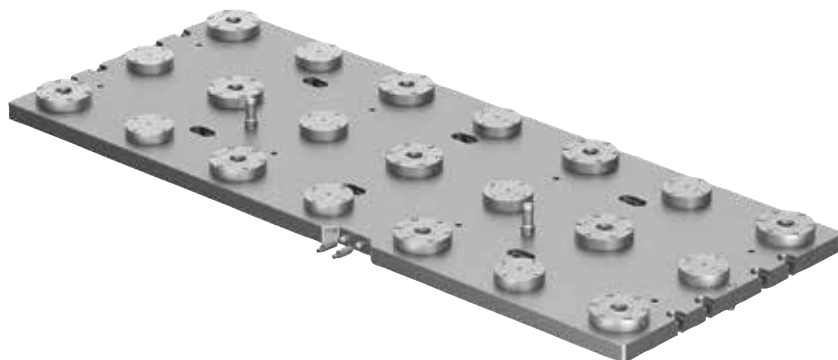
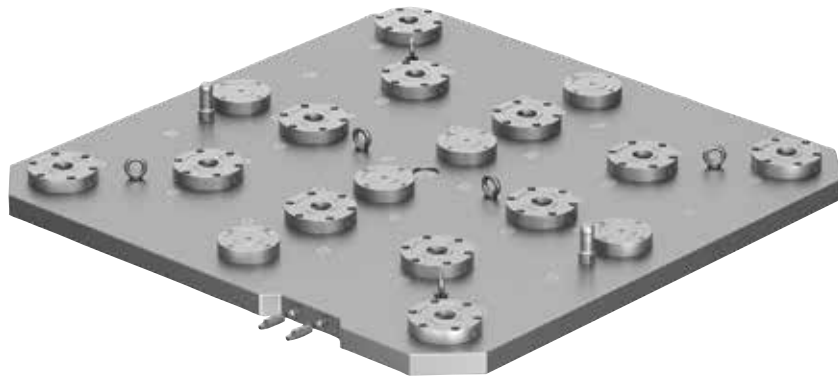
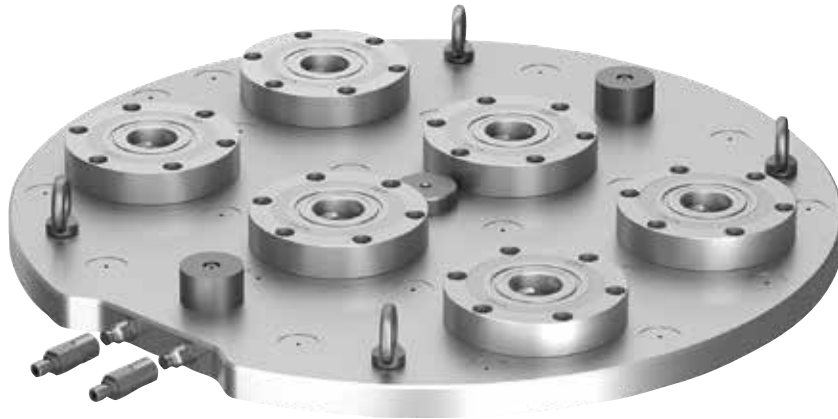
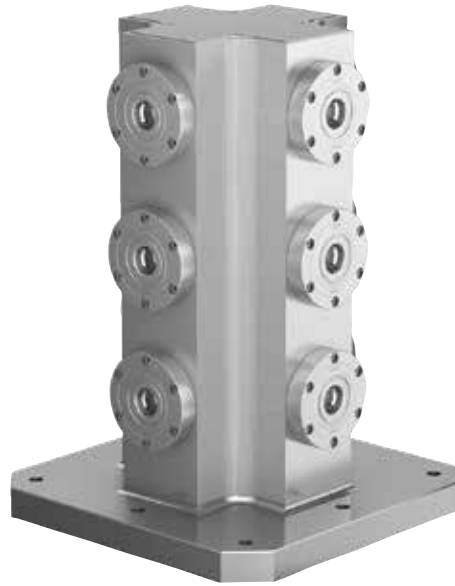
Clamping bracket  
 Cap for cap screw heads  
 Cap screw  
 T-slot nut (M12 = slot width 14 mm, M16 = slot width 18 mm)



## KIPP UNILOCK clamping bracket for UNILOCK clamping station

Order No.	D	H	F hole for ISO 4762 cap screw
K1869.482212	48	38	M12
K1869.482216	48	38	M16











## 5-axis module clamping system 80



# Function



UNILOCK 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

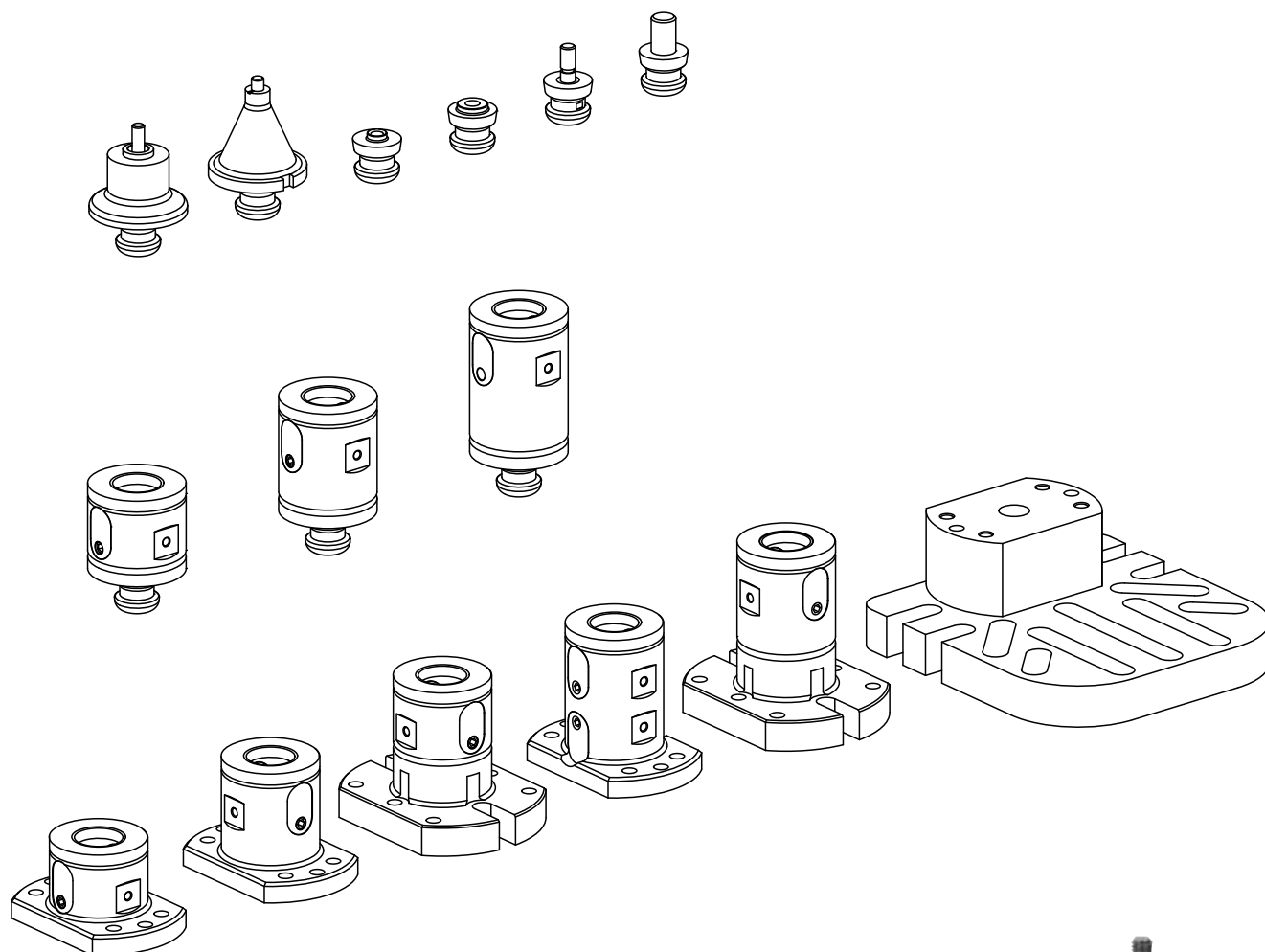


### ADVANTAGES:

- 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



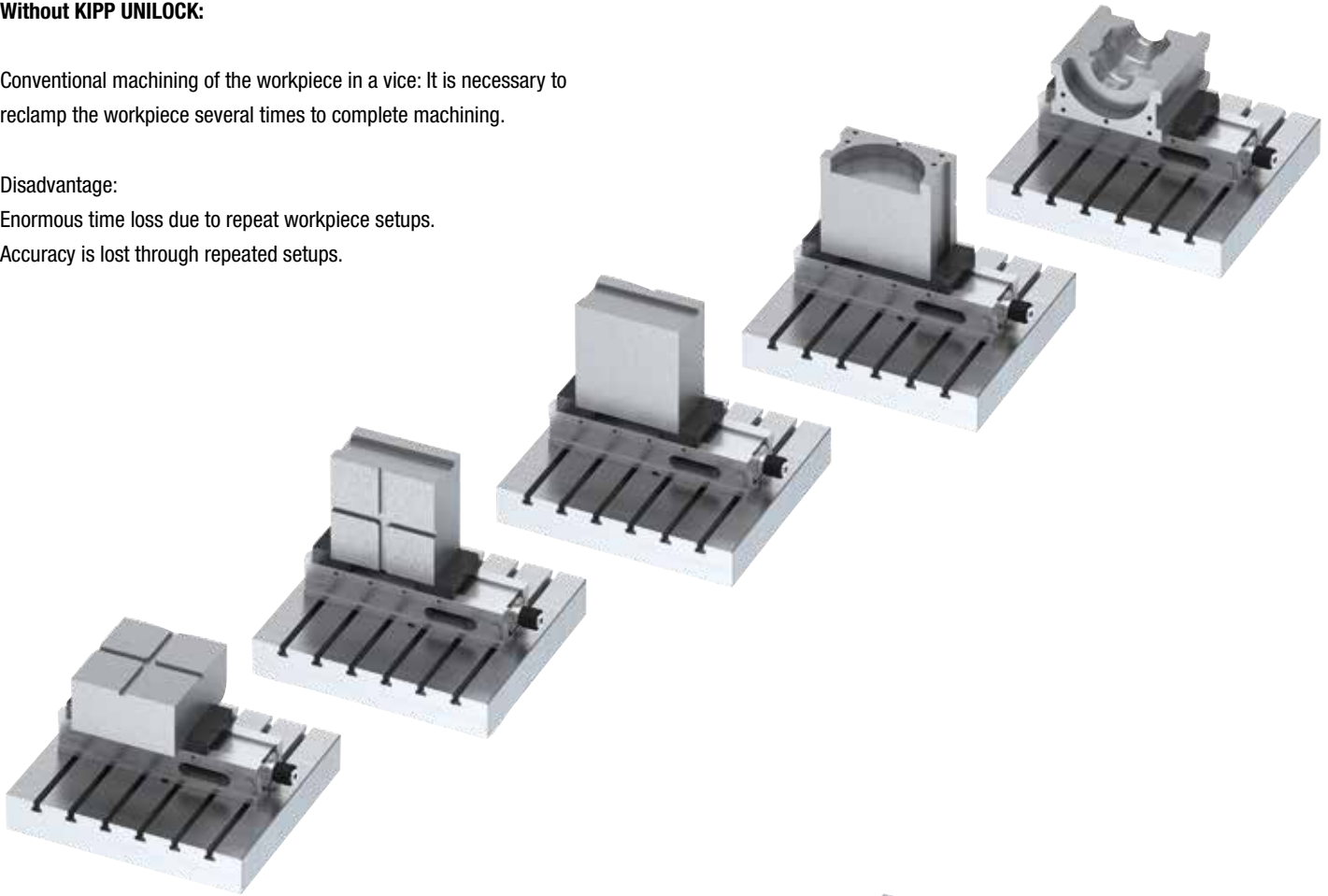
## Without KIPP UNILOCK:

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.

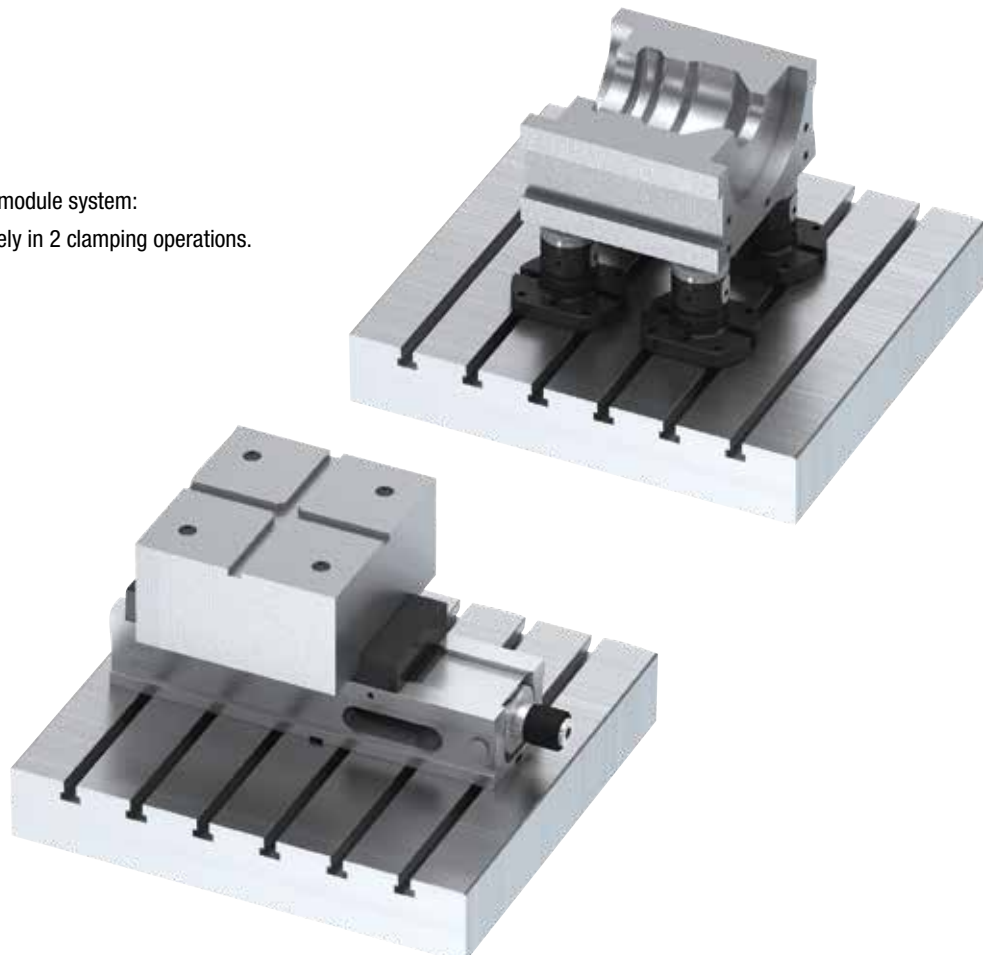
Accuracy is lost through repeated setups.



## With KIPP UNILOCK:

Machining with the UNILOCK 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



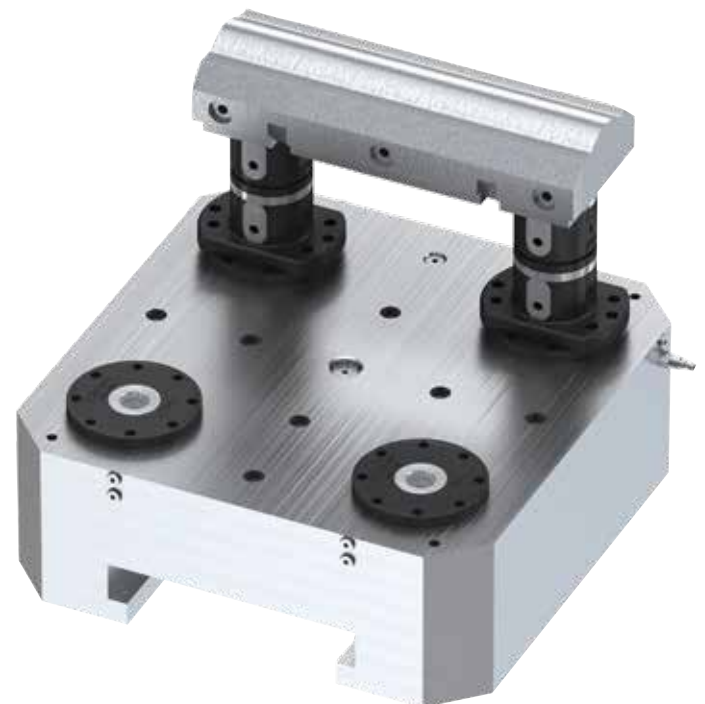
Grid systems



Machine tables



Zero-point clamping systems



# Technical information for 5-axis module clamping system 80



Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/ LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	15 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

## Retraction force in axial direction

Retraction force by 15 Nm actuation torque = 15,000 N



## Axial load and retraction path

Axial load  $F_{Axial} = 30,000 \text{ N (3 t)}$

Retraction travel = 0.5 mm

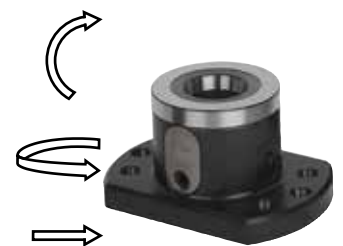


## Tilt/torque single module

$M_{\text{tilt module}} = 400 \text{ Nm (empirically determined)}$

$M_{\text{rotation module}} = 60 \text{ Nm}$

$F_{\text{lateral force}} = 1,500 \text{ N [lateral force without relative movement]*}$



\* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 1,500 N. The failsafe and personal safety of the clamping modules is assured up to a critical lateral force of 14,000 N.



# Applications



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.



# Applications



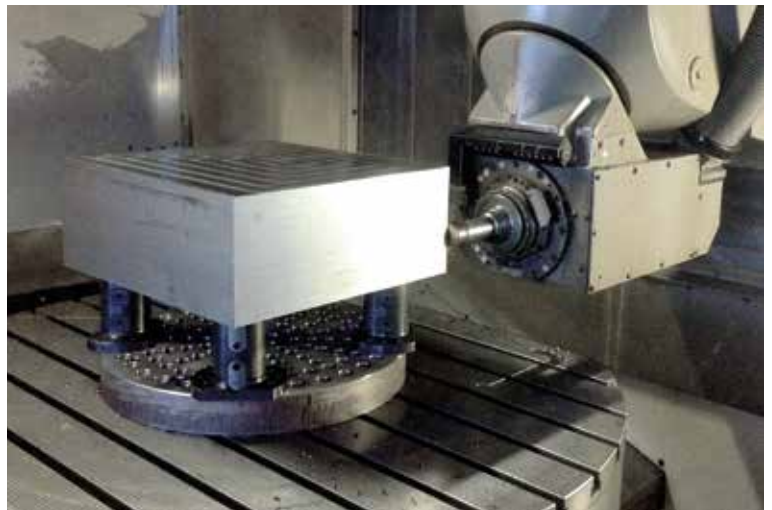
4 basic modules H=100 positioned directly on the machine table. The 4 reducers H=50 on top facilitate optimum access to workpieces.

**Clamping height 150 mm**



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

**Clamping height 125 mm**



# Applications



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**



## UNILOCK 5-axis basic module

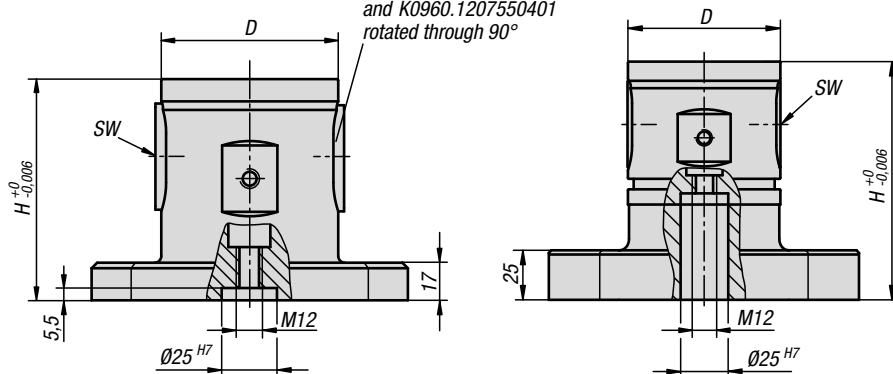
system size 80 mm



foot without elongated hole

foot with elongated hole

Clamping mechanism for K0960.1207550400 and K0960.1207550401 rotated through 90°



**Material:**  
Carbon steel.

**Version:**  
Main body oxidised.  
Contact faces hardened and ground.

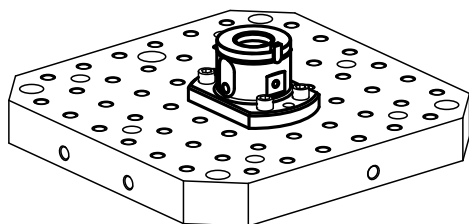
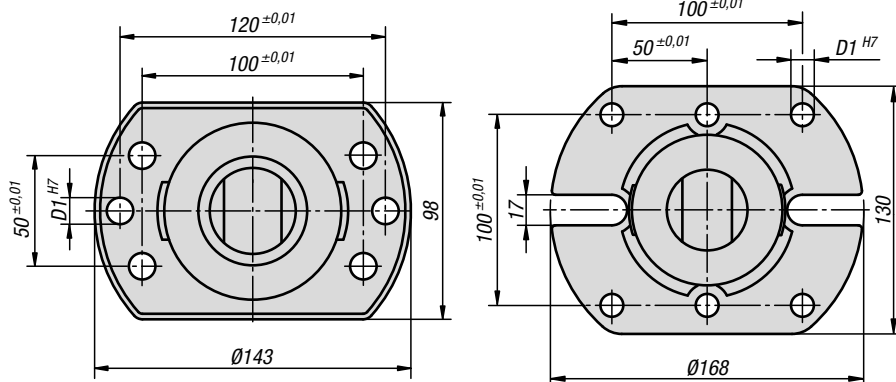
**Sample order:**  
K0960.1207550400

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

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:  
 - Clamping force (M10) 35,000 N  
 - Clamping force (M12) 50,000 N  
 - Clamping force (M16) 75,000 N  
 Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

**On request:**  
With rotation lock



### KIPP UNILOCK 5-axis basic module

Order No.	Version 2	Form	Form definition	H	D	D1	SW	Tightening torque max. Nm	weight kg
K0960.1207550400	foot without elongated hole	A	without rotation lock	75	80	12	6	15	3,64
K0960.1210050400	foot without elongated hole	A	without rotation lock	100	80	12	6	15	4,6
K0960.12125500	foot with elongated hole	A	without rotation lock	125	80	12	6	15	6,8
K0960.12150500	foot with elongated hole	A	without rotation lock	150	80	12	6	15	7,8
K0960.12175500	foot with elongated hole	A	without rotation lock	175	80	12	6	15	9,26
K0960.16125500	foot with elongated hole	A	without rotation lock	125	80	16	6	15	6,55
K0960.16150500	foot with elongated hole	A	without rotation lock	150	80	16	6	15	7,6
K0960.16175500	foot with elongated hole	A	without rotation lock	175	80	16	6	15	8,45

## UNILOCK 5-axis basic module double clamp

size 80 mm



**Material:**  
Carbon steel.

**Version:**  
Main body oxidised.  
Contact faces hardened and ground.

**Sample order:**  
K0961.1212550400

**Note:**  
The UNILOCK 5-axis basic module can be adapted directly to subplates with grid holes or T-slots or to tooling plates with a hole pitch of 40/50 mm system size M12. Suitable for UNILOCK zero point clamping system with UNILOCK clamping bolts. Can also be used on the conventional zero point clamping systems by mounting an appropriate adapter clamping bolt. The basic module without base is particularly suitable for space-saving set-ups.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

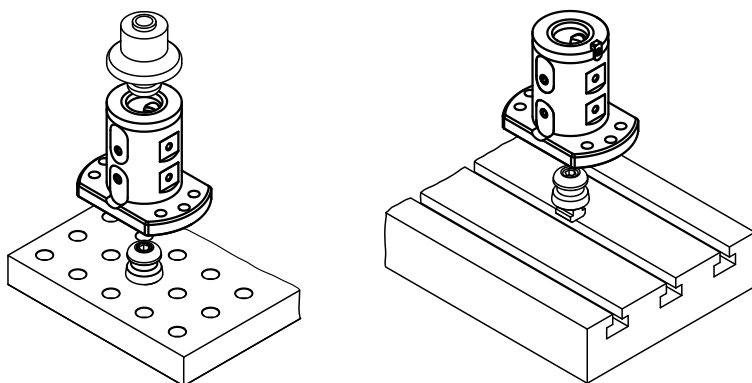
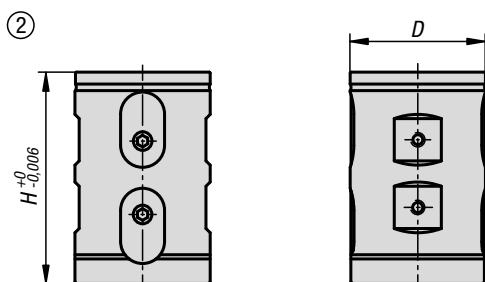
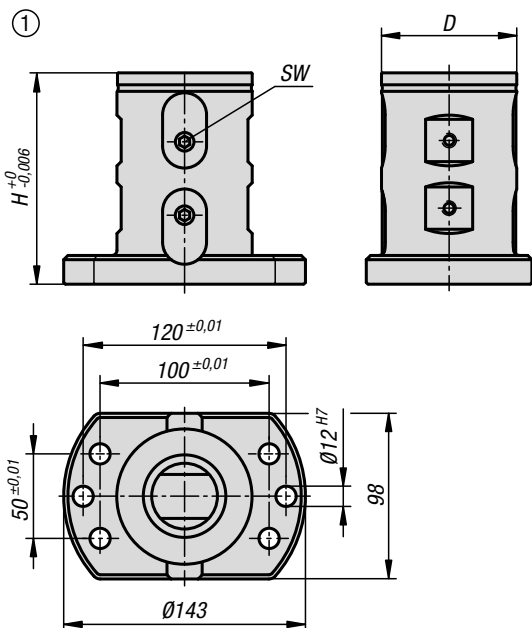
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

**On request:**  
With rotation lock

**Drawing reference:**

- 1) with foot
- 2) without foot

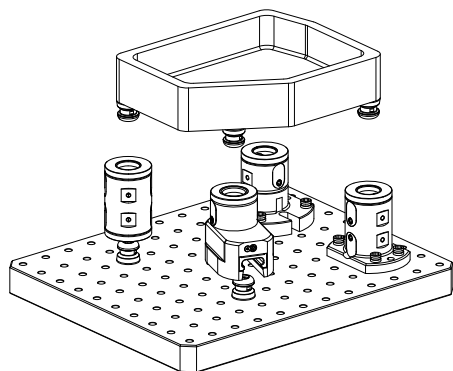
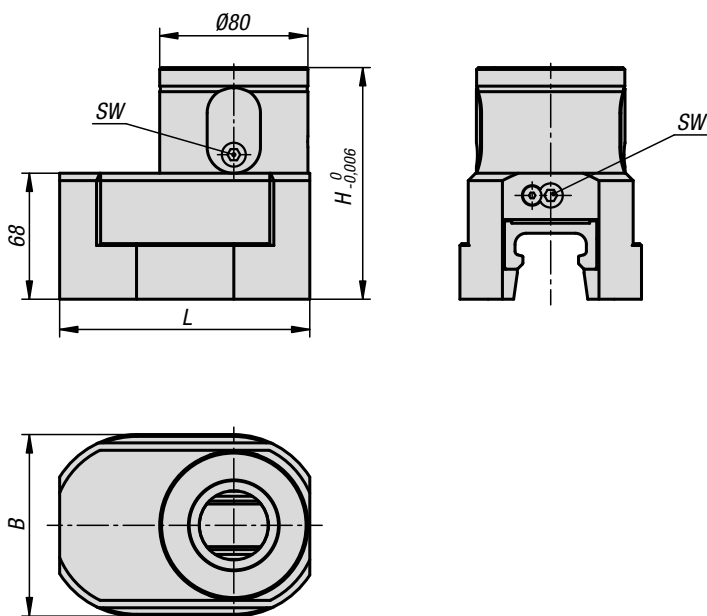


### KIPP UNILOCK 5-axis basic module double clamp

Order No.	Product type	Form	Form definition	D	H	SW	Tightening torque max. Nm	weight kg
K0961.1212550400	with foot	A	without rotation lock	80	125	6	15	4,96
K0961.12500	without foot	A	without rotation lock	80	125	6	15	4,31

# UNILOCK 5-axis basic module VARIO

system size 80 mm



**Material:**

Carbon steel.

**Version:**

Main body oxidised.  
Contact faces hardened and ground.

**Sample order:**

K1868.135981250

**Note:**

The UNILOCK 5-axis basic module VARIO enables flexible positioning when clamping workpieces and fixtures. The basic module VARIO can be mounted via one or two UNILOCK clamping pins located in the rail in the base. If two clamping pins are used, the rail is guided between the clamping pins and can only be moved forwards or backwards along the direction of the clamping pins. When using only one UNILOCK clamping pin, the VARIO basic module can be freely rotated. The position is secured using the hex head screw at the rear. Variable gauge sizes can thus be achieved. This basic module is often used as a third or fourth clamping point.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:

- Clamping force (M10) 35,000 N
- Clamping force (M12) 50,000 N
- Clamping force (M16) 75,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size by the 5-axis module clamping system 80 and compatibility to pneumatic zero-point clamping systems guarantee diverse combinations of application possibilities.

**Advantages:**

- Adjustable, flexible basic module.
- Mechanical actuation.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

**Accessories:**

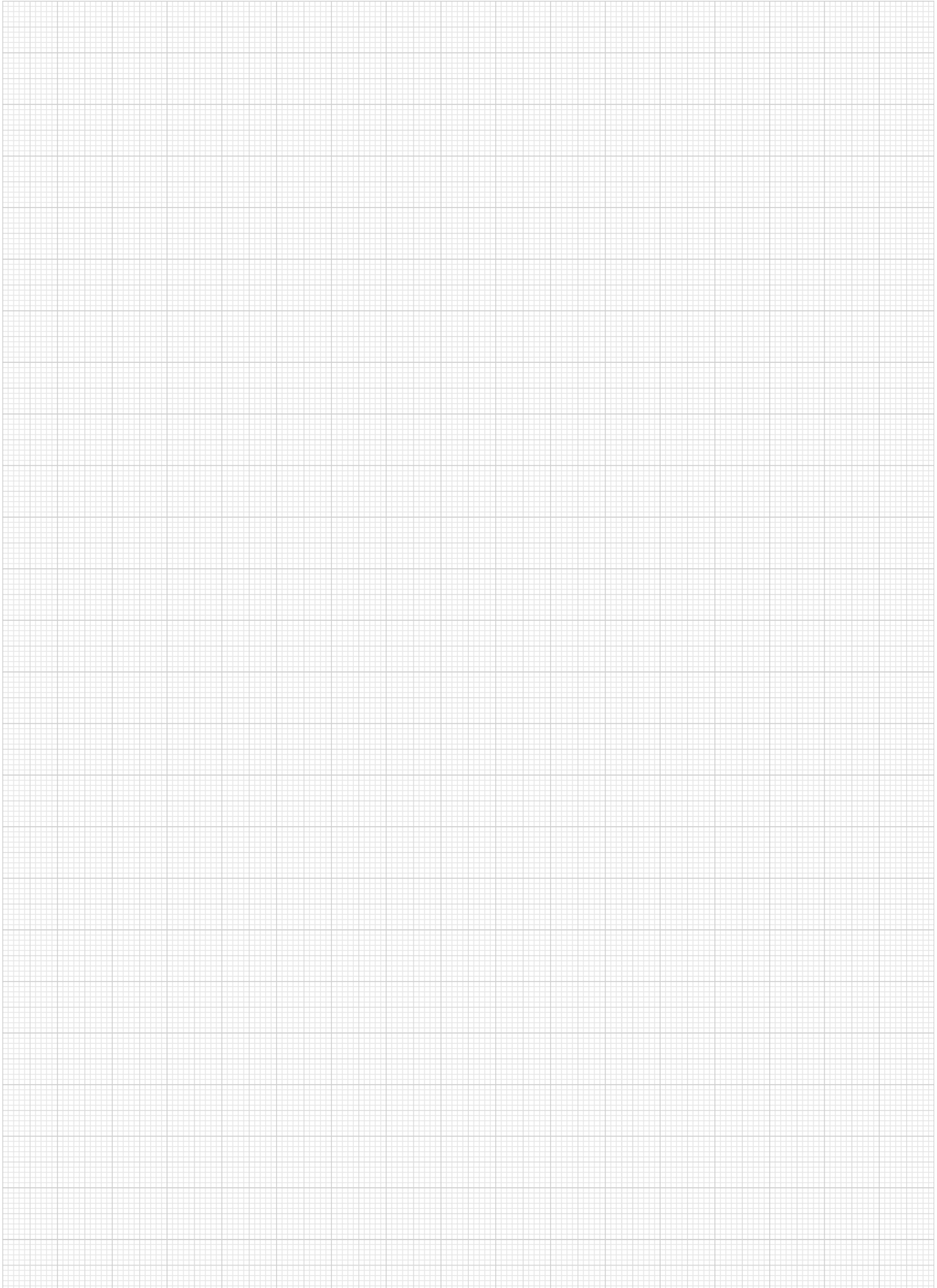
Clamping pins K0967, K0968, K0969, K1471.

**Technical data:**

- Traction force 15 kN.
- Tightening torque 15 Nm.
- Repeat accuracy ≤ 0.005 mm.

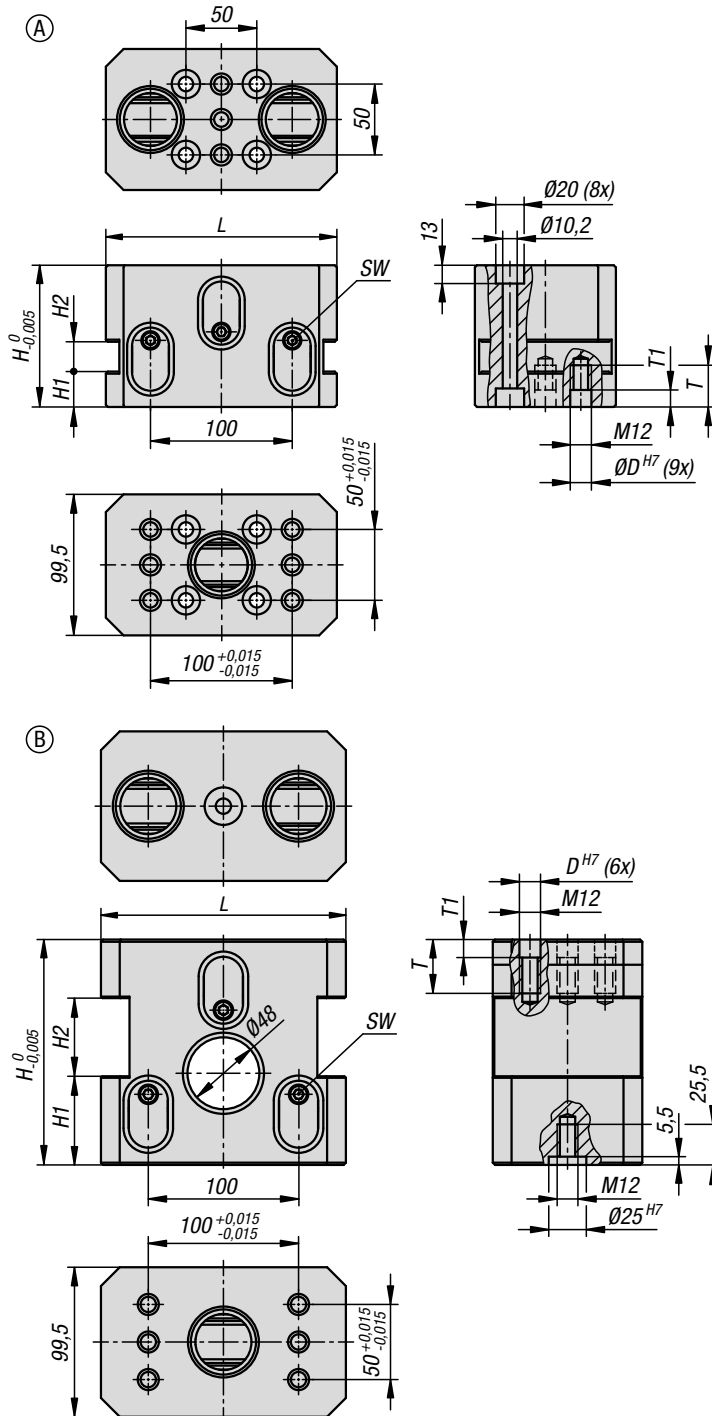
**KIPP UNILOCK 5-axis basic module VARIO system size 80 mm**

Order No.	L	B	H	SW	Tightening torque max. Nm	Retraction force kN
K1868.135981250	135	98	125	6	15	15



## UNILOCK 5-axis basic module DUO

system size 80 mm



**Material:**  
Carbon steel.

**Version:**  
Main body oxidised.  
Contact faces hardened and ground.

**Sample order:**  
K1867.12100500

**Note:**  
The UNILOCK 5-axis basic modules DUO with their three interfaces for clamping pins are used for robust, elevated set-ups with heavy workpieces. Compared to round basic modules, the larger sizes provide a larger contact surface. The DUO basic modules can be used with the double interface positioned downwards or upwards. The through holes on both sides of Form A enable additional fastening with cap screws. The Form B version can also be fastened downwards via a clamping bolt on the double interface side. Clamping claws can be used on the lateral clamping edge. The reamed bores enable additional positioning.

For stable vice elevation, two UNILOCK 5-axis basic modules DUO are mounted on the machine table with the double interface facing downwards. The vices are attached to the upwards facing single interface.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M10, M12, M16 fastening screws:  
- Clamping force (M10) 35,000 N  
- Clamping force (M12) 50,000 N  
- Clamping force (M16) 75,000 N  
Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

A consistent clamping bolt size by the 5-axis module clamping system 80 and compatibility to pneumatic zero-point clamping systems guarantee diverse application possibilities.

### KIPP UNILOCK 5-axis basic module DUO system size 80 mm

Order No.	Form	L	H	D	H1	H2	SW	T	T1	Tightening torque max. Nm	Retraction force kN
K1867.12075500	A	149,5	75	12	25	25	6	16,5	5,5	15	15
K1867.12100500	A	162,5	100	12	25	21	6	30	12	15	15
K1867.12150500	B	162,5	150	12	59	52	6	35	12	15	15



# UNILOCK 5-axis basic module DUO

system size 80 mm



### Advantages:

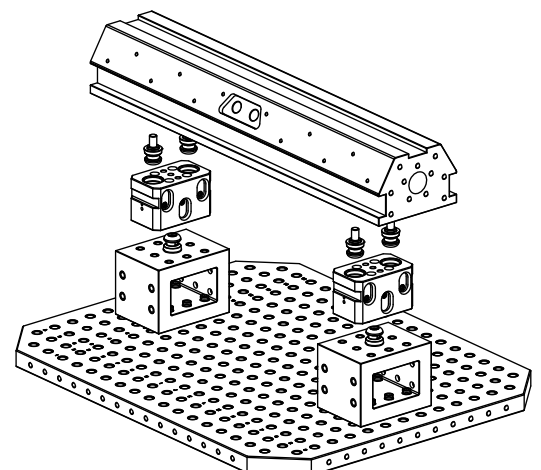
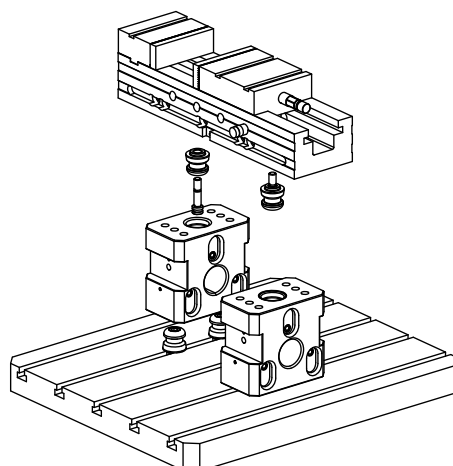
- Robust basic module.
- Three interfaces for clamping pins.
- Flexible fastening possibilities.
- Mechanical actuation.
- Positioning via short taper.
- High traction force.
- Setup time optimisation.

### Accessories:

Clamping pins K0967, K0968, K0969, K1471.

### Technical data:

- Traction force 15 kN.
- Tightening torque 15 Nm.
- Repeat accuracy  $\leq 0.005$  mm.



## UNILOCK 5-axis base plate

for general clamping, system size 80 mm



**Material:**  
Steel.

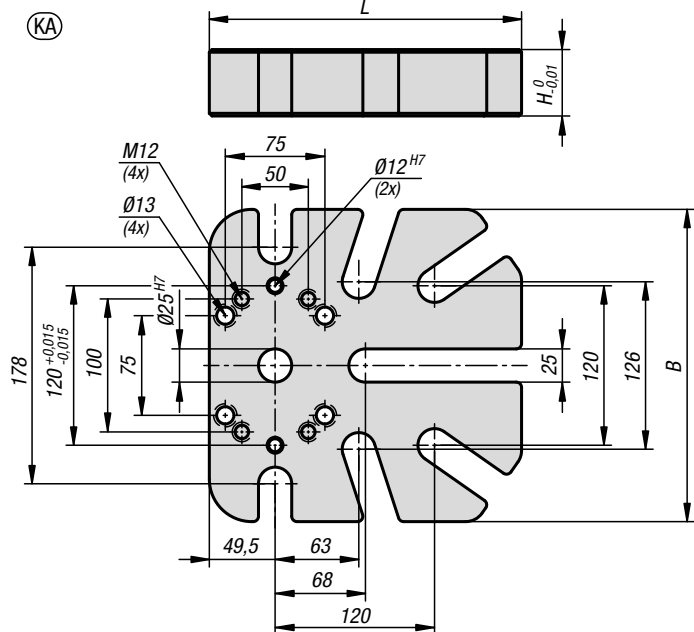
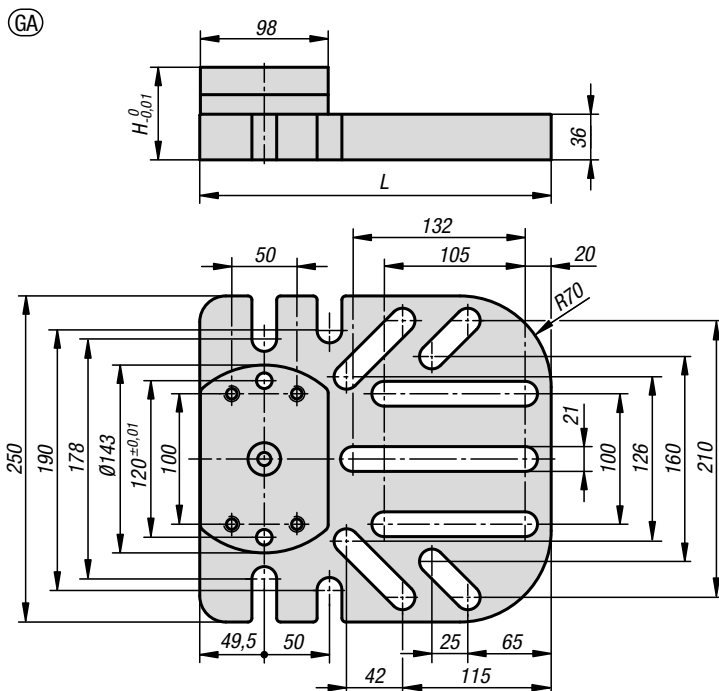
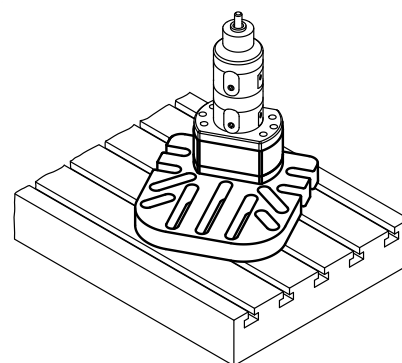
**Version:**  
Main body oxidised.  
Contact faces case-hardened and ground.

**Sample order:**  
K0962.25027005021

**Note:**  
The UNILOCK 5-axis baseplates for general clamping fit onto machine tables with grid hole systems or in T-slots, or onto grid hole tooling plates. Due to their robust construction, these elevated devices are ideal as a base supports for large and heavy workpieces. The arrangement of the fastening slots facilitates flexible adaptation to the workpiece and the machine table. Wider T-slot spacings can be achieved with the larger version.  
In the small version, the fastening slots are open for improved chip evacuation.

**Advantages:**  
Stable base structure for mounting the 5-axis basic modules for clamping large and heavy workpieces. Rapid fastening of the base plates onto a machine table due to a large number of fastening slots. Flexible positioning of the workpieces on the machine table.

**Drawing reference:**  
Form GA: large version  
Form KA: small version

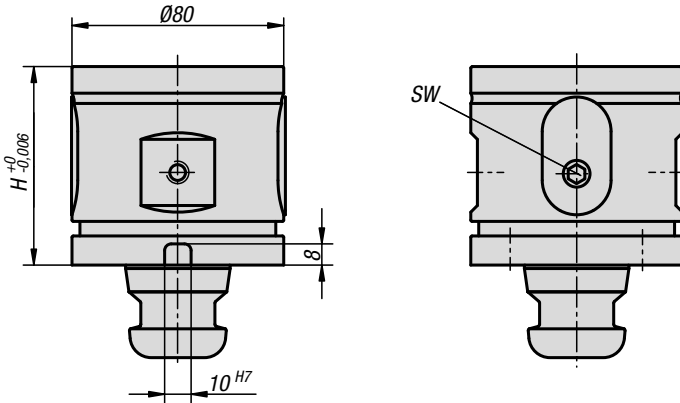


### KIPP UNILOCK 5-axis base plate for general clamping

Order No.	Version 2	L	B	H	Fastening hole	weight kg
K0962.25027005021	large version	269,5	250	50	max. M20	14,7
K0962.23523505025	small version	235	235	50	max. M24	15,3

## UNILOCK 5-axis add-on clamping module

size 80 mm



**Material:**

Body Q&T steel.  
Clamping pin mild steel.

**Version:**

Body and clamping pin oxidised.  
Contact faces hardened and ground.

**Sample order:**

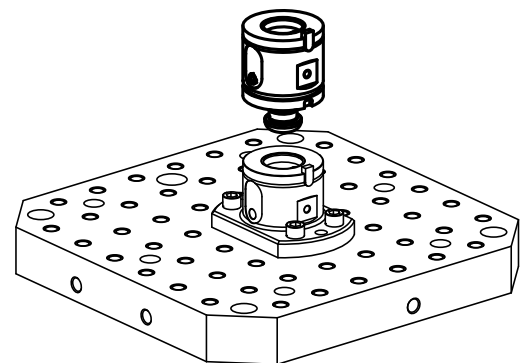
K0963.120750

**Note:**

The UNILOCK 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.

**On request:**

With rotation lock



### KIPP UNILOCK 5-axis add-on clamping module

Order No.	Form definition	H	SW	Tightening torque max. Nm	weight kg
K0963.120750	without rotation lock	75	6	15	2,64
K0963.121000	without rotation lock	100	6	15	3,78
K0963.121250	without rotation lock	125	6	15	4,625

# UNILOCK 5-axis face-grip adapter

size 80 mm



### Material:

Body rust-free tool steel.  
Clamping pin low carbon steel.

### Version:

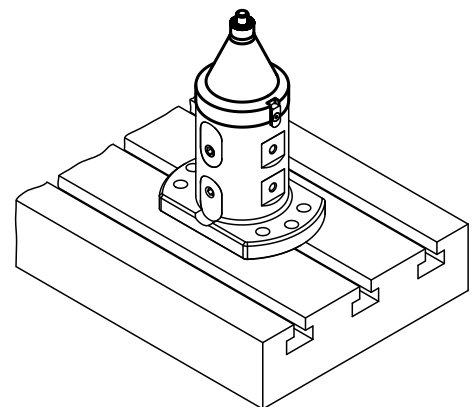
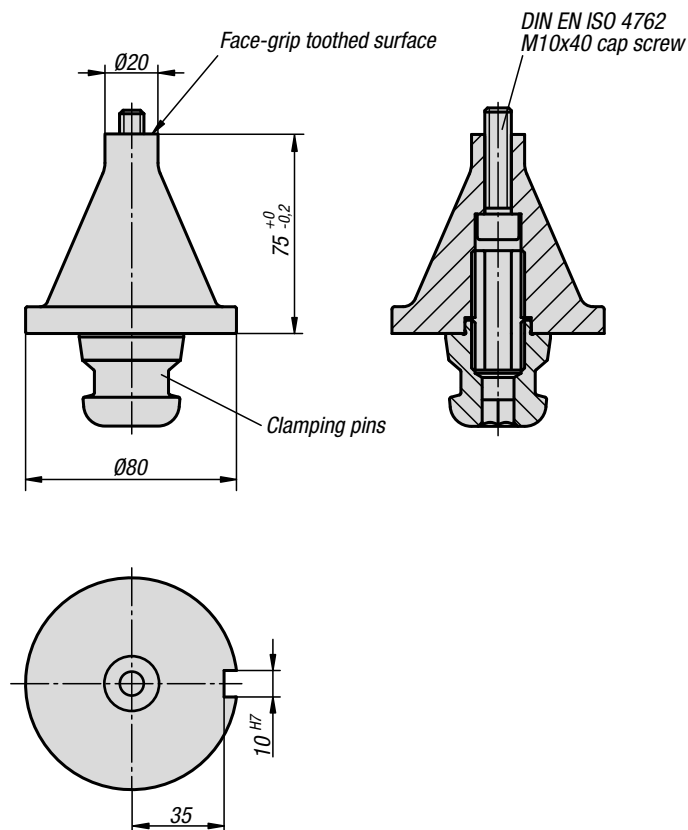
Contact faces on the body hardened and ground.  
Clamping pin oxidised. Contact faces hardened and ground.

### Sample order:

K0965.2007510

### Note:

The UNILOCK 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.

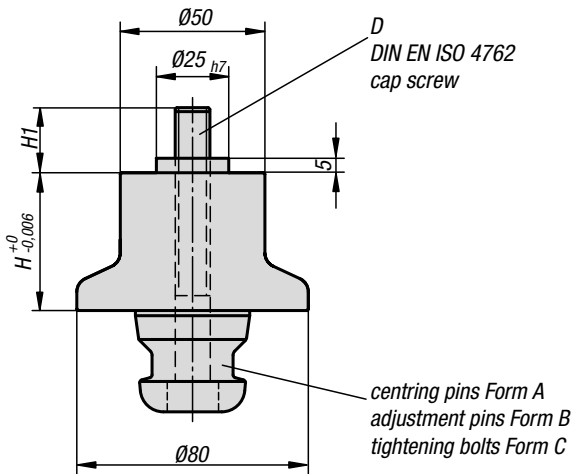


## KIPP UNILOCK 5-axis face-grip adapter

Order No.	Dimensions
K0965.2007510	see drawing

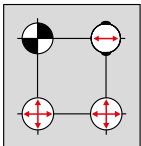
## UNILOCK 5-axis reducer adapter

size 80 mm



- Centring pins = Form A
- Adjustment pins = Form B
- Tightening bolts = Form C

fixes in x and y axis (reference point)  
 fixes the free axis (bayonet pin)  
 Pins with undersize (no centring function, clamping only)



**Material:**

Body rust-free tool steel.  
 Clamping pin low carbon steel.

**Version:**

Contact faces on the body hardened and ground.  
 Clamping pin oxidised. Contact faces hardened and ground.

**Sample order:**

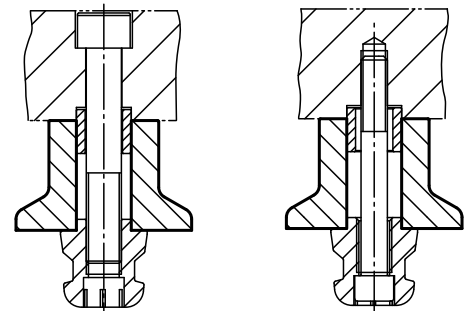
K0966.501120

**Note:**

The UNILOCK 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 hardened versions.

**On request:**

- Soft version
- Height 25 mm

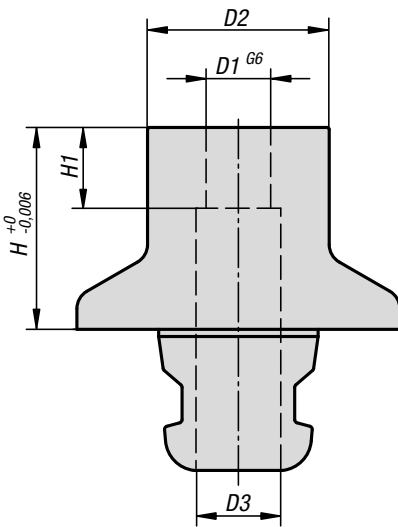


### KIPP UNILOCK 5-axis reducer adapter

Order No.	Form	Form definition	D	H	H1
K0966.501101	A	Centring Pin	M10 x 100	50	25,5
K0966.502101	B	Adjustment pin	M10 x 100	50	25,5
K0966.503101	C	Clamping Pin	M10 x 100	50	25,5
K0966.501121	A	Centring Pin	M12 x 100	50	27,5
K0966.502121	B	Adjustment pin	M12 x 100	50	27,5
K0966.503121	C	Clamping Pin	M12 x 100	50	27,5

# UNILOCK 5-axis reducer adapter

size 80 mm



**Material:**

Rust resistant tool steel.

**Version:**

One-piece.

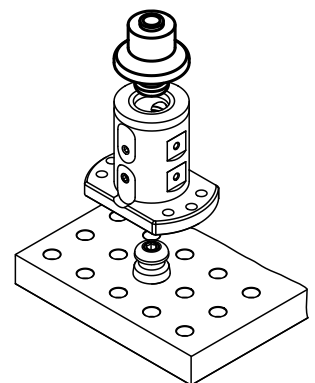
Contact faces hardened and ground.

**Sample order:**

K0966.5011611

**Note:**

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

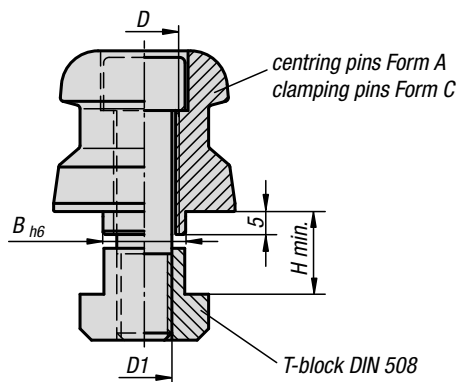


**KIPP UNILOCK 5-axis reducer adapter**

Order No.	D1	D2	D3	H	H1
K0966.5011611	16	40	21	50	20

## UNILOCK T-slot centring clamp bolt

size 80 mm

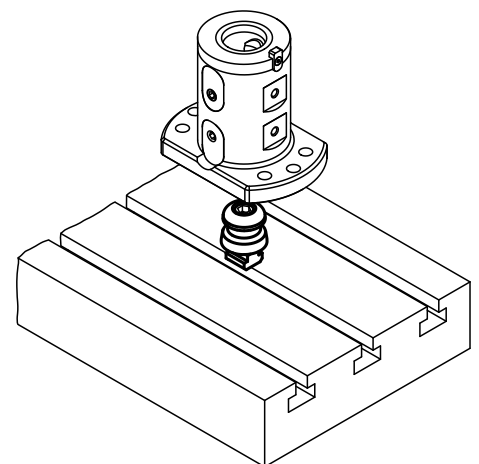


**Material:**  
Steel.

**Version:**  
Hardened and black oxidised.  
Contact faces ground.

**Sample order:**  
K0969.114

**Note:**  
The UNILOCK 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.

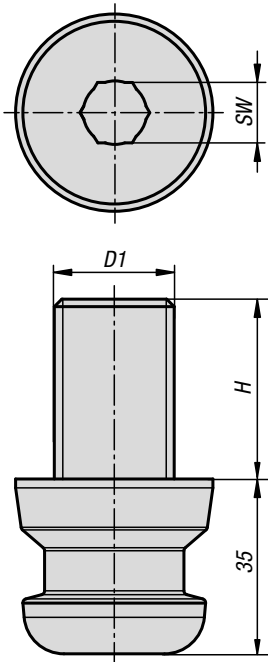


### KIPP UNILOCK T-slot centring clamp bolt

Order No.	Form	D	D1	B	H min.
K0969.114	A	M12	M10	14	14
K0969.118	A	M16	M12	18	18

# UNILOCK clamping pin

with threaded pin size 80 mm



**Material:**

Steel.

**Version:**

Hardened and black oxidised.  
Contact faces ground.

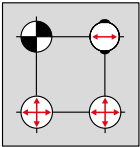
**Sample order:**

K0967.140003020

**Note:**

The UNILOCK clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins 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)



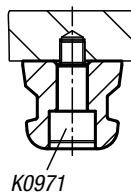
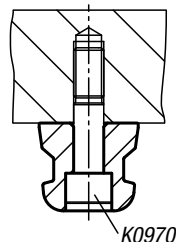
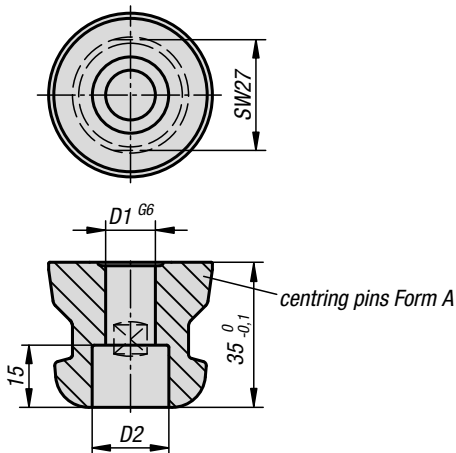
## KIPP UNILOCK clamping pin with threaded pin

Order No.	Form	D1	H	SW
K0967.140002416	A	M16	24	17
K0967.140003020	A	M20	30	17
K0967.140003624	A	M24	36	17



## UNILOCK 5-axis 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 UNILOCK 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.

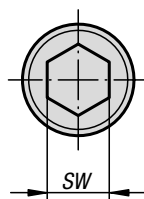
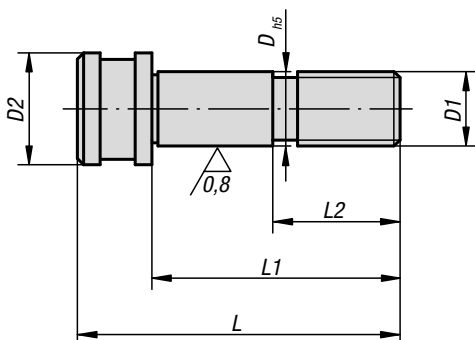
### KIPP UNILOCK 5-axis clamping bolts for fastening to workpieces

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

# K0970

## UNILOCK 5-axis shoulder screws

size 80 mm



**Material:**  
Carbon steel.

**Version:**  
Hardened surface.  
ground locating seat.

**Sample order:**  
K0970.12050

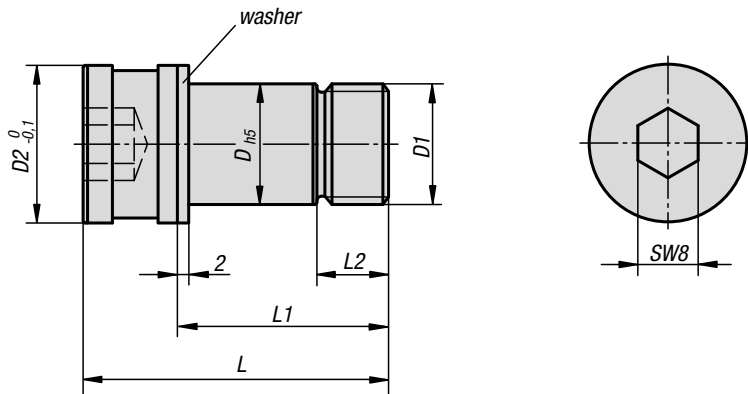
**Note:**  
The UNILOCK 5-axis locating bolts are suitable for clamping and positioning the clamping bolts for fastening to workpieces. They are also used for positioning and fastening the basic module.

### KIPP UNILOCK 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	20,9	71	55	25	14

# UNILOCK 5-axis shoulder screws

for fastening to workpieces, size 80 mm



**Material:**

Carbon steel.

**Version:**

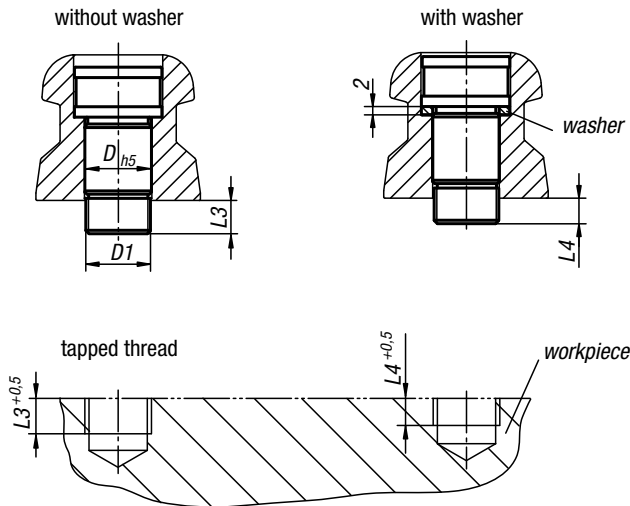
Hardened surface.  
ground locating seat.

**Sample order:**

K0971.16121040

**Note:**

The UNILOCK 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.

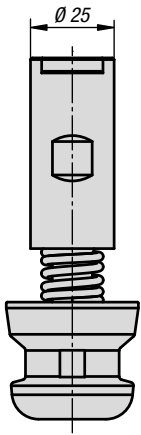


## KIPP UNILOCK 5-axis shoulder screws for screwing clamping bolt to workpiece

Order No.	Version	D	D1	D2	L	L1	L2	L3	L4	Tightening torque max. Nm
K0971.16101040	without washer	16	M10x1,5	20,9	40,5	28	9,5	8	6	47
K0971.16121040	with washer	16	M12x1,75	20,9	40,5	28	9,5	8	6	63
K0971.16121049	without washer	16	M12x1,75	20,9	50	37,5	18	17,5	15,5	80
K0971.16161055	without washer	16	M16x2	20,9	56	43,5	24	23,5	21,5	100

# UNILOCK centring clamping bolt

size 80 mm



**Material:**

Steel.

**Version:**

Hardened and black oxidised.  
Contact faces ground.

**Sample order:**

K1012.1240

**Note:**

The centring clamping bolts 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.

Can be used in Weldon, Whistle Notch and collet holders.

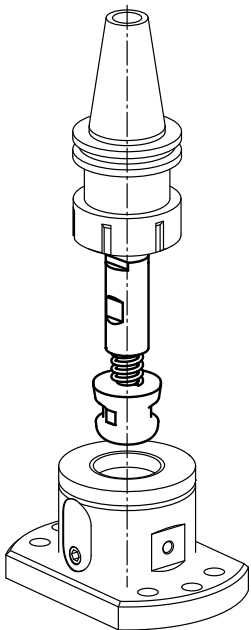
Repeat accuracy: < 0.021mm

Positioning accuracy: < 0.049mm

Shock absorber function to protect the machine spindle

Cushioning travel: 5.4mm

Caution: Exceeding the cushioning travel of 5.4mm may damage the machine.



## KIPP UNILOCK centring clamping bolt, size 80 mm

Order No.

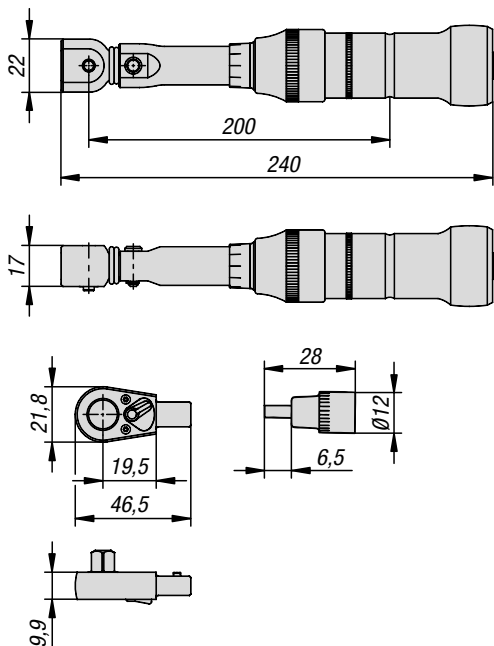
Dimensions

K1012.1240

see drawing

## Torque wrench

for 5-axis module clamping system



### Supplied with:

- Set comprising:
- Torque wrench
- Plug-in reversible ratchet
- Screwdriver insert SW4
- Screwdriver insert SW6
- Screwdriver insert SW8

### Functional principle:

Operating principle of torque wrench handles  
 To unlock, pull handle back approximately 8 mm.  
 Continue to turn handle up to the desired torque.  
 Then turn the handle back a bit to lock it.

### Suitable for:

- 5-axis module clamping system 80
- 5-axis module clamping system 50
- 5-axis module clamping system 138

### Material:

Steel.

### Version:

Surface: hard chromed

### Sample order:

K1488.01

### Note:

Torque wrench 4-40 set:  
 Release precision +/- 2% of the scale value (in direction of actuation)  
 High-precision premium metrology instrument – for highest demands  
 Robust and tough hard chrome-plated steel construction  
 in a slim model  
 Secure: - haptic (shortcut release)  
 - acoustic (buckling element)  
 User-friendly reversible ratchet. Service-friendly (ratchet repair sets  
 for customer-oriented self-assembly)  
 Integrated switch lever  
 Setting of the desired torque value fast and securely through turning  
 of the handle  
 Twist knob for additional locking of the setting  
 Ergonomically shaped handle with collar reduces danger of slipping  
 or injury  
 Exact, fine scale gradation  
 With serial number and calibration certificate  
 Hard chrome-plated surface  
 DIN EN ISO 6789-2:2017, square acc. to DIN 3120,  
 ISO 1174-1

### Details of plug-in reversible ratchet:

20 teeth, max. 40Nm  
 Output 6.3 = 1/4 inch  
 Square acc. to DIN 3120, ISO 1174-1  
 Drop forged  
 Chromed surface

### Note for plug-in reversible ratchet:

Through fast insertion of the plug-in reversible ratchet into the torque  
 wrench, the precision of 2% in both directions can be guaranteed.

### Screwdriver bit:

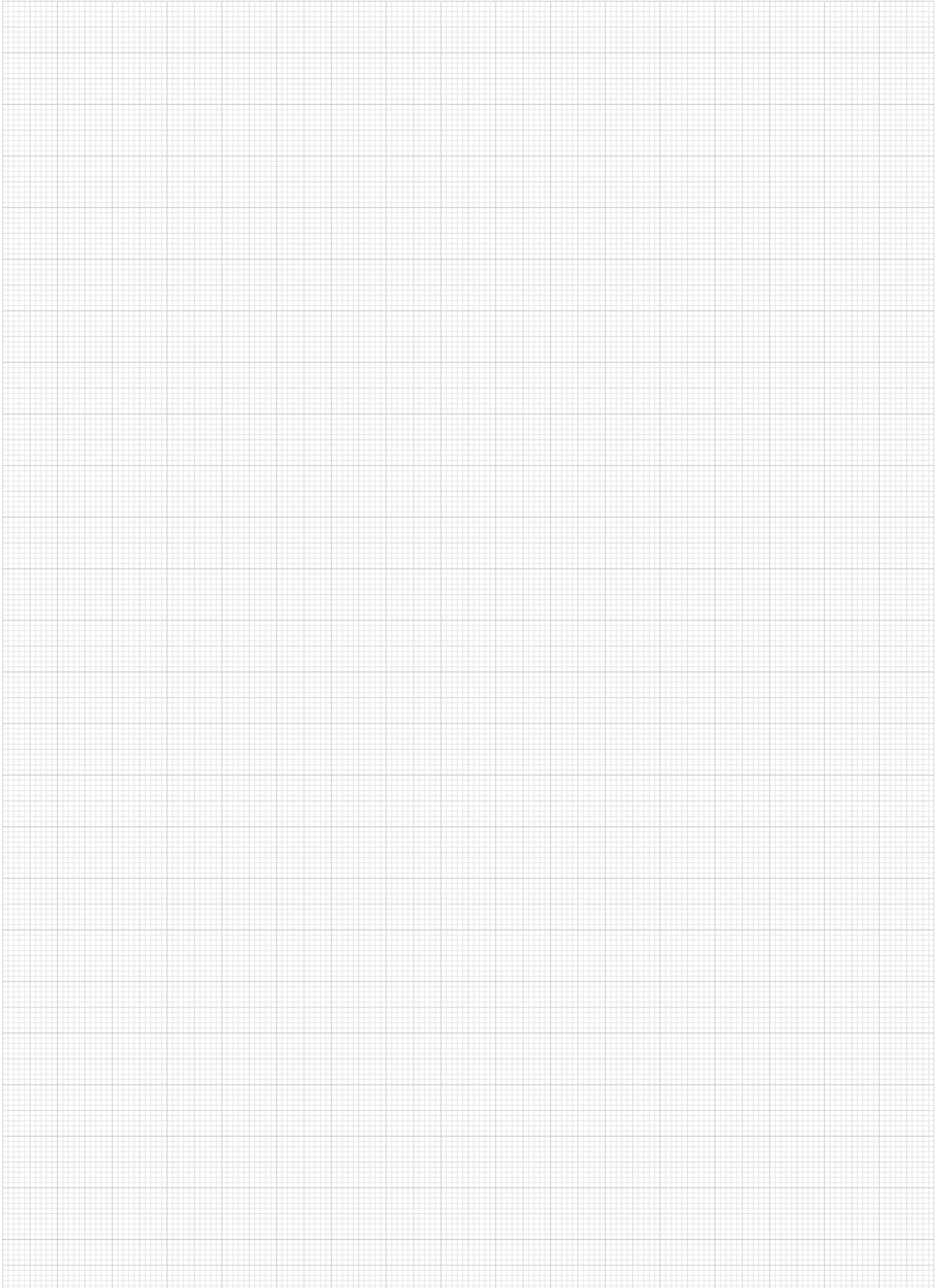
Surface TiN  
 DIN 7422  
 Square 1/4 inch  
 Suitable for reversible ratchet

### Recommendation:

Annual check interval for torque wrenches, in which the upper limit is  
 5,000 load cycles.

## KIPP Torque wrench for 5-axis module clamping system

Order No.	Item	Version 1	Product type	Torque Nm
K1488.01	Torque Wrench	set	revolving grip	4 - 40





## 5-axis module clamping system 50



# Technical information for 5-axis module clamping system 50



Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	10 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

## Retraction force in axial direction

Retraction force by 10 Nm actuation torque = 10,000 N



## Axial load and retraction path

Axial load  $F_{Axial} = 25,000 \text{ N (2.5 t)}$

Retraction travel = 0.3 mm

## Tilt/torque single module

$M_{\text{tilt module}} = 150 \text{ Nm (empirically determined)}$

$M_{\text{rotation module}} = 25 \text{ Nm}$

$F_{\text{lateral force}} = 1,000 \text{ N [lateral force without relative movement]*}$



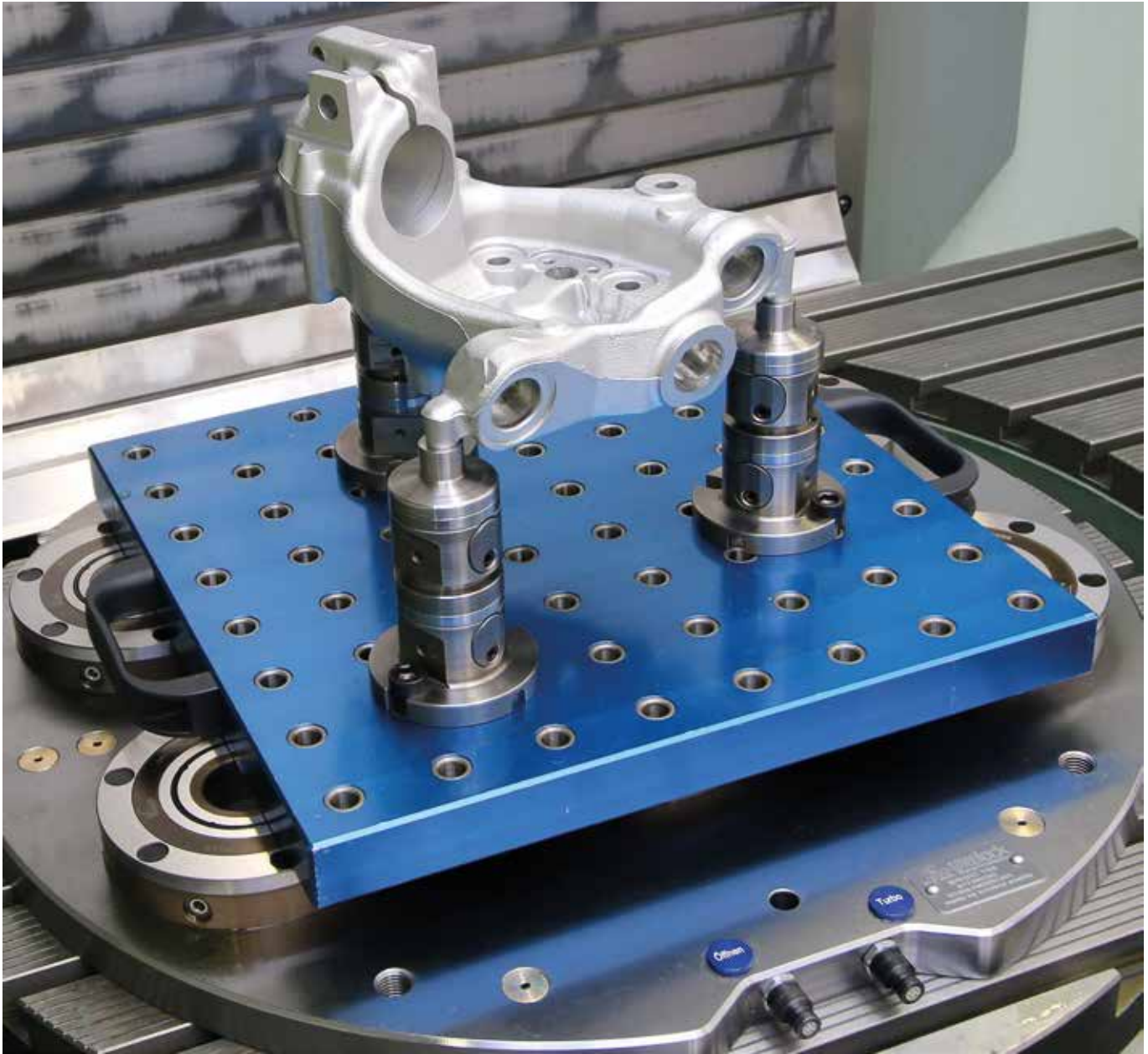
\* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 1,000 N. The false use and personal safety of the clamping modules is assured up to a critical lateral force of 7,000 N.



# Function



The UNILOCK clamping system 50 mm has been developed specifically for 5-side machining of small workpieces.



## Advantages:

- 5-side machining with no protruding edges
- Modular construction guarantees maximum flexibility
- Can be combined with the UNILOCK modular system 80 mm
- Small gauges for modules from 40 mm possible
- Small clamping pin, D 25 mm, for workpieces with smaller dimensions
- Variable workpiece fastening
- The workpiece is simply positioned and clamped with screws or seatings
- High module clamping force
- Very high repeat accuracy



# UNILOCK 5-axis basic module

system size 50 mm



**Material:**

Carbon steel.

**Version:**

Main body oxidised.

Contact faces hardened and ground.

**Sample order:**

K1117.12050601

**Note:**

UNILock 5-axis basic modules, system size 50, can be adapted directly to machine tables with grid holes or T-slots, as well as grid hole subplates. The basic module system size 50 can also be combined with system size 80, This enables smaller workpieces to be easily clamped using the module clamping system.

Fits onto UNILOCK zero-point clamping system with UNILOCK clamping pin D=18 mm.

Can also be mounted directly onto commonly available zero-point clamping systems if a suitable clamping pin is used.

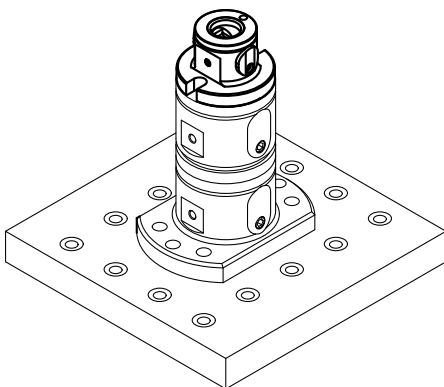
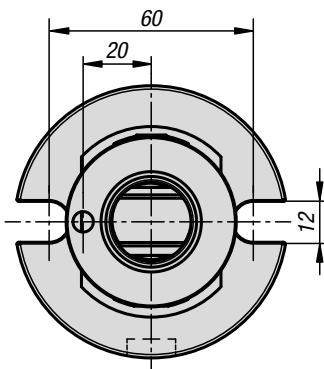
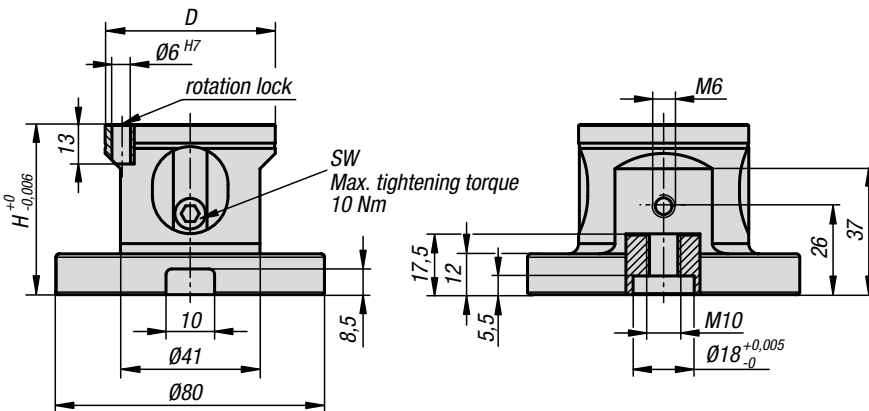
The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:

- Clamping force (M8) 15,000 N

- Clamping force (M10) 25,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws.

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

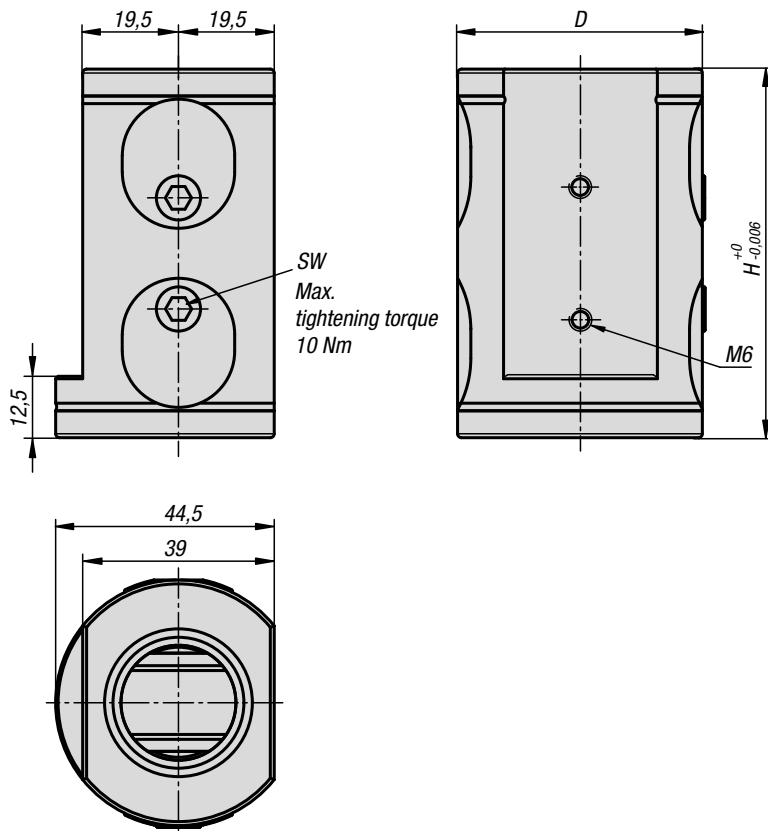


**KIPP UNILOCK 5-axis basic module, system size 50 mm**

Order No.	Form	Form definition	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1117.12050601	B	with rotation lock	50	50	4	10	10

# UNILOCK 5-axis basic module double clamp

system size 50 mm



**Material:**

Carbon steel.

**Version:**

Main body oxidised.

Contact faces hardened and ground.

**Sample order:**

K1118.000750

**Note:**

The UNILock 5-axis double clamp basic modules can be adapted directly to machine tables with grid holes or T-slots, as well as grid hole subplates.

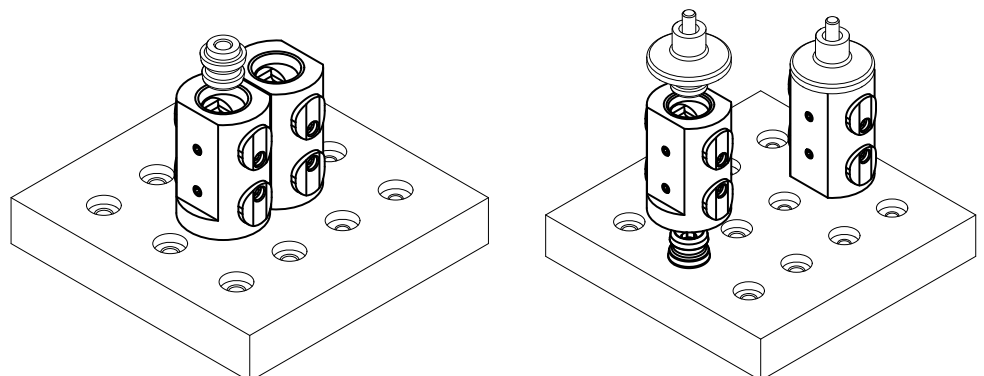
The narrow design of the basic module enables it to be used on grid spacings from 20 mm.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:

- Clamping force (M8) 15,000 N
- Clamping force (M10) 25,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.

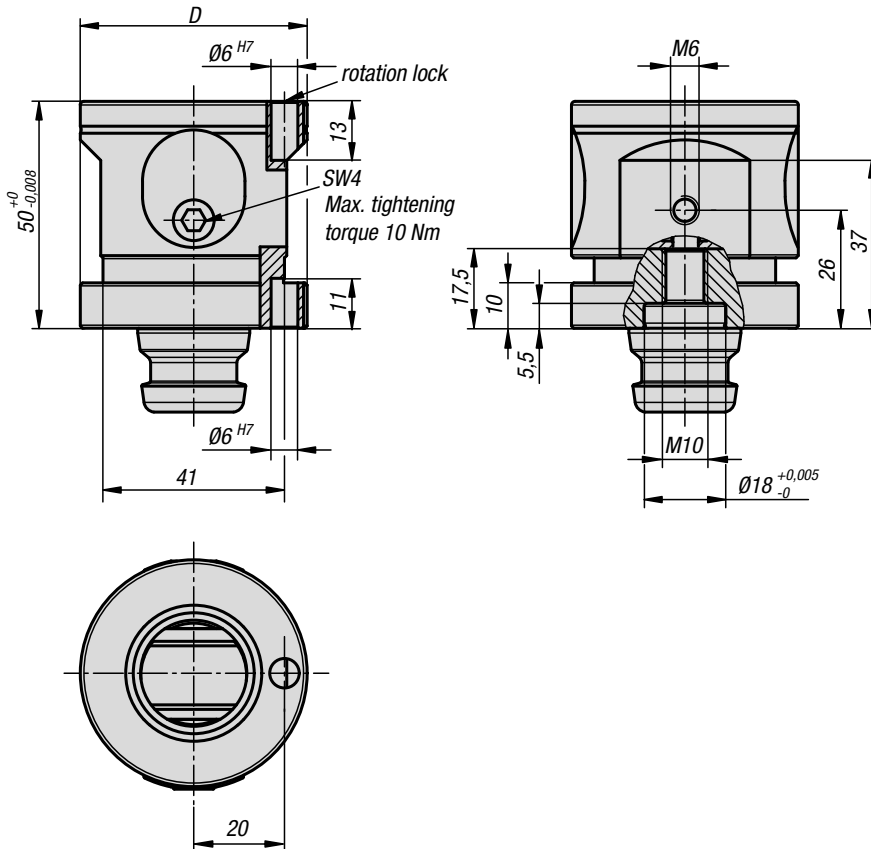


**KIPP UNILOCK 5-axis basic module, double clamp, system size 50 mm**

Order No.	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1118.000750	50	75	4	10	10

## UNILOCK 5-axis add-on module

system size 50 mm



**Material:**

Body Q&T steel.  
Clamping pin mild steel.

**Version:**

Main body oxidised.  
Contact faces hardened and ground.

**Sample order:**

K1119.0501

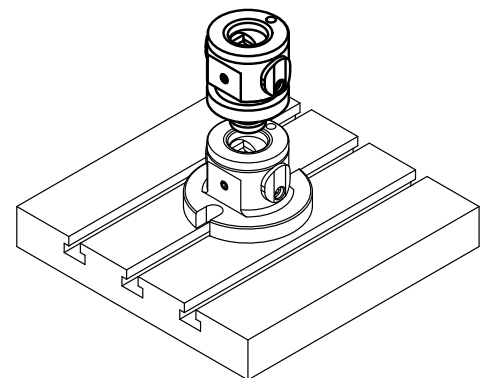
**Note:**

UNIlock 5-axis add-on clamp modules are used for raising basic modules and mounting bases. Depending on the clamping situation, optimum assembly height can be achieved using a combination of basic module and add-on module. The add-on clamping module system size 50 can also be combined with system size 80.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:

- Clamping force (M8) 15,000 kN
  - Clamping force (M10) 25,000 kN
- Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.



**KIPP UNILOCK 5-axis add-on module, system size 50 mm**

Order No.	Form	Form definition	D	H	SW	Retraction force kN	Tightening torque max. Nm
K1119.0501	B	with rotation lock	50	50	4	10	10

# UNILOCK 5-axis reducer adapter

system size 50 mm



**Material:**

Rust resistant tool steel.

**Version:**

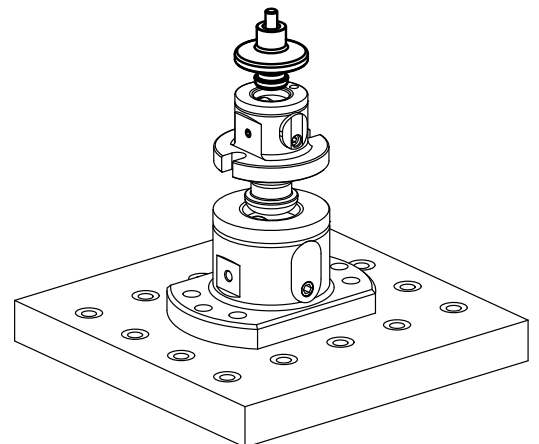
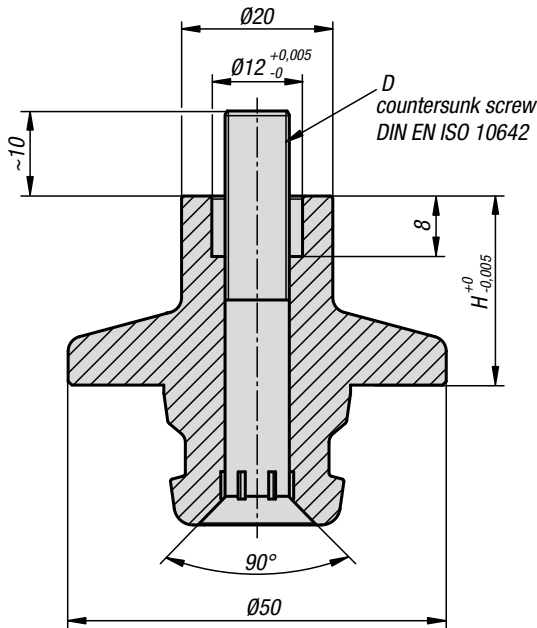
Contact faces hardened and ground.  
Body and clamping pin are one piece.

**Sample order:**

K1120.251081

**Note:**

The UNILOCK 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 clamp module.  
The system size 50 add-on module can also be combined with the system size 80.

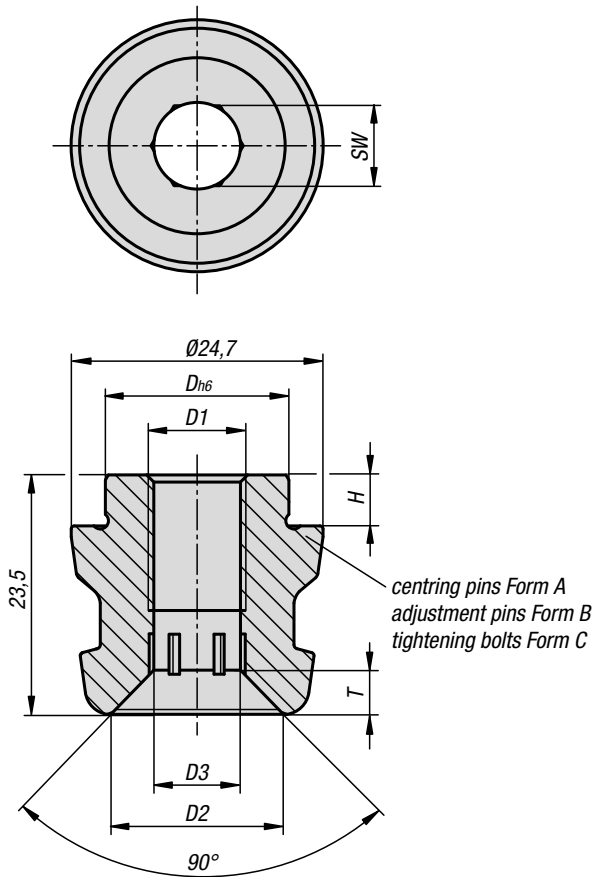


**KIPP UNILOCK 5-axis reducer adapter, system size 50 mm**

Order No.	Form	D	H
K1120.251081	A	M8	25
K1120.501081	A	M8	50

## UNILOCK clamping pin

system size 50 mm



**Material:**  
Steel.

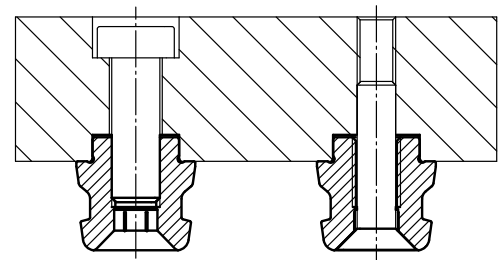
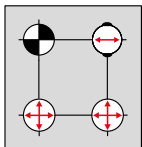
**Version:**  
Main body oxidised.  
Contact faces hardened and ground.

**Sample order:**  
K1121.125180510

**Note:**  
The UNILOCK clamping pin is suitable for clamping and positioning workpieces and fixtures. Clamping pins are screwed onto the exchange element and adapted to the various basic modules.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M8, M10 fastening screws:  
- Clamping force (M8) 15,000 N  
- Clamping force (M10) 25,000 N  
Clamping force with DIN EN ISO 4762 -12.9 cap screws.

- 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 UNILOCK clamping pin, system size 50 mm

Order No.	Form	D1	D	D2	D3	H	T	SW
K1121.125180510	A	M10	18	16,5	9	5	5	8
K1121.225180510	B	M10	18	16,5	9	5	5	8
K1121.325180510	C	M10	18	16,5	9	5	5	8







## 5-axis module clamping system 138



# Technical information for 5-axis module clamping system 138



Features	Description
Functionality	Functional slides are closed by the manual rotary movement of a threaded spindle with RH/LH threads and lock the clamping pin with frictional force.
Self-locking	After closing, the clamping pin remains in the tensioned clamping module, even if the external tensile force exceeds the retraction force.
Actuation torque	30 Nm
Repeat accuracy: with clamping pin Form A	< 0,005 mm
Short cone centring	Precise centring with radii to ease insertion
Milling application	The clamping modules are generally not approved for turning applications.
Temperature range	+5°C to +60°C

## Retraction force in axial direction

Retraction force by 30 Nm actuation torque = 30,000 N

## Axial load and retraction path

Axial load  $F_{Axial} = 45,000 \text{ N (4.5 t)}$

Retraction travel = 0.7 mm



## Tilt/torque single module

$M_{\text{tilt module}} = 1,000 \text{ Nm (empirically determined)}$

$M_{\text{rotation module}} = 200 \text{ Nm}$

$F_{\text{lateral force}} = 3,000 \text{ N [lateral force without relative movement]}^*$



\* The correct function of the clamping modules, in particular the repeat accuracy, is guaranteed up to a lateral force of 3,000 N. The failsafe and personal safety of the clamping modules is assured up to a critical lateral force of 20,000 N.

## UNILOCK 5-axis basic module

system size 138 mm



**Material:**

Carbon steel.

**Version:**

Main body oxidised.

Contact faces hardened and ground.

**Sample order:**

K1419.1380750

**Note:**

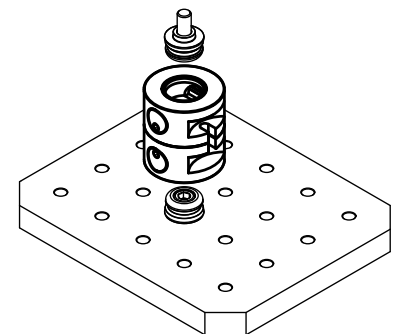
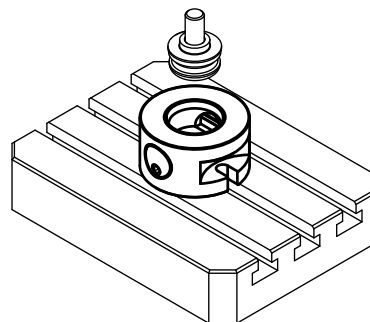
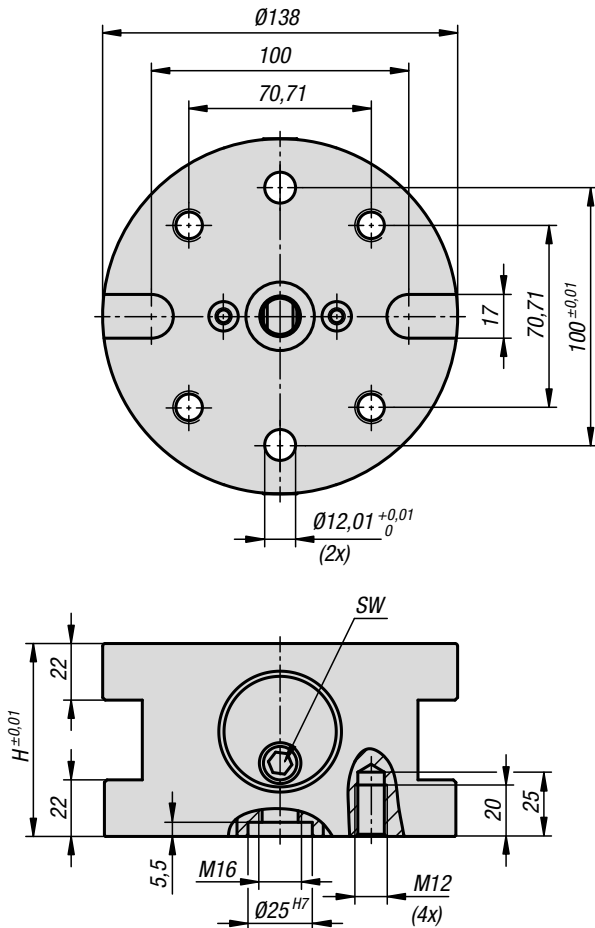
The UNILOCK 5-axis basic module with system size 138 is suitable for clamping large and heavy workpieces. The workpiece can be set directly in the basic module using the clamping bolt or reducer adapter. The basic modules are fastened via the corresponding baseplates or directly to the machine table. A flexible positioning is possible. A double clamping module can also be created by placing two modules together, underside to underside.

The following clamping forces are possible with the UNILOCK clamping pin in conjunction with M16, M20, M24 fastening screws:

- Clamping force (M16) 75,000 N
- Clamping force (M20) 160,000 N
- Clamping force (M24) 230,000 N

Clamping force with DIN EN ISO 4762 -12.9 cap screws

Clamping pins may only be clamped in conjunction with a mounted interchangeable unit in the clamping module.



### KIPP UNILOCK 5-axis basic module, system size 138 mm

Order No.	Form	Form definition	H	SW	Tightening torque max. Nm
K1419.1380750	A	without rotation lock	75	8	30

# UNILOCK 5-axis baseplate

for general clamping, size 138 mm



**Material:**

Steel.

**Version:**

Main body oxidised.

Contact faces hardened and ground.

**Sample order:**

K1420.23523505025

**Note:**

The UNILOCK baseplates can be easily mounted on T-slot or grid plate machine tables. Due to their variable designs, these baseplates can be positioned anywhere on the machine table enabling every part of the machine table to be used.

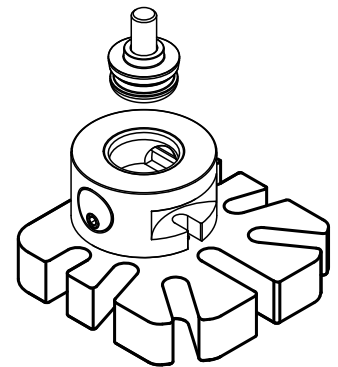
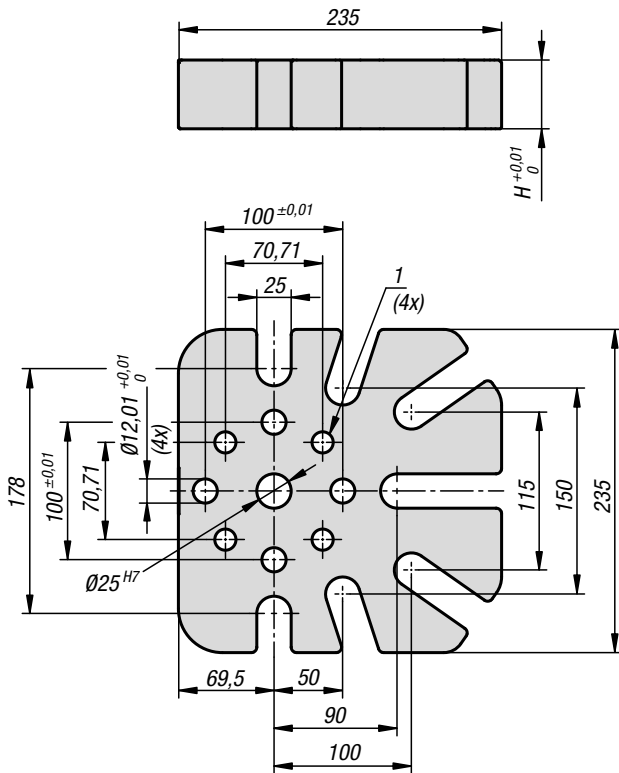
Due to their sturdy design, these baseplates are ideal for use as a basic element for large and heavy workpieces.

**On request:**

Other versions.

**Drawing reference:**

1) for DIN 912 M12 cap screw

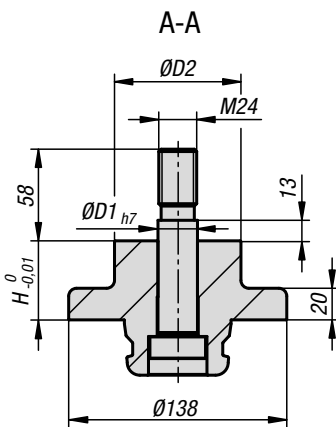
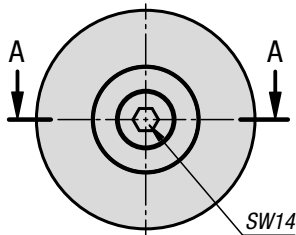


## KIPP UNILOCK 5-axis baseplate for general clamping, size 138 mm

Order No.	H
K1420.23523505025	50

## UNILOCK 5-axis reducer adapter

system size 138 mm



**Material:**

Steel.

**Version:**

Main body oxidised.

Contact faces case-hardened and ground.

**Sample order:**

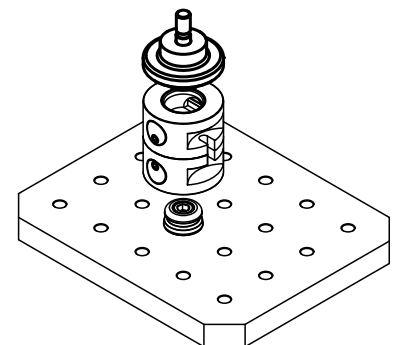
K1422.0501241080

**Note:**

The UNILOCK 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 clamp module.

**On request:**

Other versions.

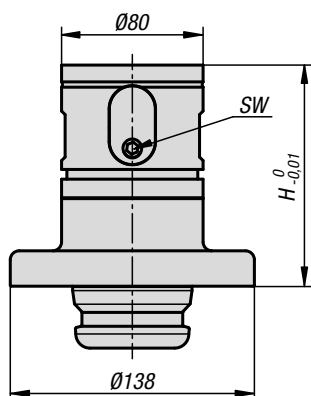


**KIPP UNILOCK 5-axis reducer adapter, system size 138 mm**

Order No.	D1	D2	H
K1422.0501241080	25	80	50

## UNILOCK 5-axis reducer adapter

system size 138 mm



**Material:**

Steel.

**Version:**

Main body oxidised.

Contact faces case-hardened and ground.

**Sample order:**

K1423.1251

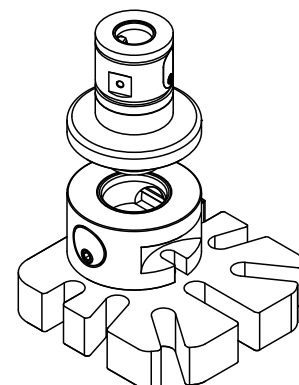
**Note:**

The UNILOCK 5-axis reducer adapters are used to convert from size 80 to size 138.

They therefore allow all size 80 elements to continue to be used.

**On request:**

Other versions.

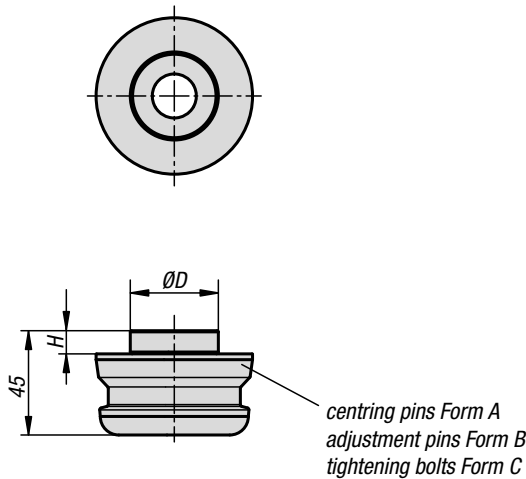


**KIPP UNILOCK 5-axis reducer adapter, system size 138 mm**

Order No.	H	SW	Holding force F kN	Tightening torque max. Nm
K1423.1251	125	6	50	15

## UNILOCK clamping pin

system size 138 mm



**Material:**  
Steel.

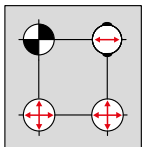
**Version:**  
Main body black oxide finish.  
Contact faces hardened and ground.

**Sample order:**  
K1424.168381025

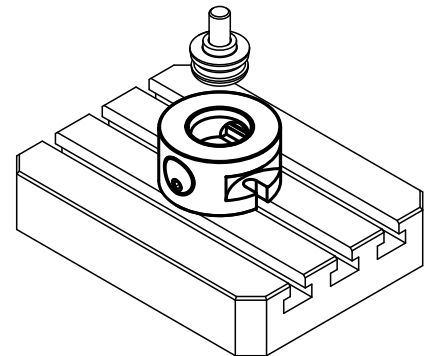
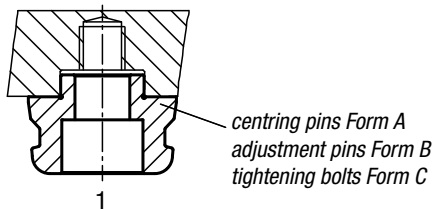
**Note:**  
The UNILOCK clamping pins are suitable for clamping and positioning workpieces and fixtures. The clamping pins are screwed onto the exchange element.

**On request:**  
Other versions.

- ⊙ 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 DIN 912 screw through the tightening bolt



### KIPP UNILOCK clamping pin, system size 138 mm

Order No.	Form	D	H
K1424.168381025	A	38	10
K1424.268381025	B	38	10
K1424.368381025	C	38	10







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