Zero-point clamping system
Technical information 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 15 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.
Technical information zero-point clamping system

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

The function
The proven UNI lock clamping module was made even flatter due to a new mechanism. The built-in toggle system together with guided clamping slides ensures high process reliability of the system.

Toggle lever mechanism
K1009

UNI lock clamping station

Material:
Clamping module mild steel.  
Base plate steel 1.1730.

Version:
Clamping module contact surfaces case-hardened and ground.  
Base plate ground on both sides.

Sample order:
K1009.1000149199

Note:
Completely mounted multi-clamping stations with integrated UNI lock Ø138 mm mounting clamps. The clamping stations are secured to the machine table directly or with clamps.  
Common bore patterns are pre-centred on the rear side for mounting. 
Clamping stations can be aligned via the 14H7 reference holes. 
The clamping stations are actuated via a central pneumatic connection. 
The high clamping forces are generated by the integrated spring package (the unit clamps in the de-pressurized state).  
The release process occurs pneumatically.

The following retaining forces are possible with the UNI lock clamping bolt in conjunction with mounting screws M10, M12, M16. 
- Retaining force (M10) 35,000N/module 
- Retaining force (M12) 50,000N/module 
- Retaining force (M16) 75,000N/module

On request:
Clamping station in special dimensions.

Technical data:
- Opening pressure: 6bar, lubricated air 
- Turbo pressure: 6bar 
- Air connection: G1/4 
- Repeat accuracy ≤ 0.005 mm 
- Reference holes 14H7 to align the clamping plate. 
- Pneumatic connectors for 6 mm pneumatic hose.

KIPP UNI lock clamping station

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Type</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>K1009.2200395195</td>
<td>2x</td>
<td>17.681</td>
</tr>
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</table>
**UNI lock clamping station**

Material:
Clamping module mild steel.
Base plate steel 1.1730.

Version:
Clamping module contact surfaces case-hardened and ground.
Base plate ground on both sides.

Sample order:
K1009.4200395395

Note:
Completely mounted multi-clamping stations with integrated UNI lock Ø138 mm mounting clamps. The clamping stations are secured to the machine table directly or with clamps.

Common bore patterns are pre-centred on the rear side for mounting.

Clamping stations can be aligned via the 14H7 reference holes.

The clamping stations are actuated via a central pneumatic connection.

The high clamping forces are generated by the integrated spring package (the unit clamps in the de-pressurized state).

The release process occurs pneumatically.

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- Retaining force (M16) 75,000N/module

On request:
Clamping station in special dimensions.

Technical data:
- Opening pressure: 6bar, lubricated air
- Turbo pressure: 6bar
- Air connection: G1/4
- Repeat accuracy ≤ 0.005 mm
- Reference holes 14H7 to align the clamping plate.
- Pneumatic connectors for 6 mm pneumatic hose.

### Technical data:

<table>
<thead>
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<td>K1009.6200395395</td>
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UNI lock installation clamp

**Without rotation lock**

![Diagram of UNI lock installation without rotation lock]

**With rotation lock**

![Diagram of UNI lock installation with rotation lock]

**Material:**
Steel.

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

**Sample order:**
K1003.138280

**Note:**
The UNI lock mounting clamps can be mounted in any position, with or without projection on machine tables, in fixtures (tooling plates, cubes, tombstones, etc.). The modular design lets the number of clamps and distance between the clamps to be ideally adjusted to suit your clamping task. The clamps can be supplied with or without rotation lock.
The high clamping forces are generated by the integrated spring package (the unit clamps in the de-pressurized state). The release process occurs pneumatically.
The following retaining forces are possible with the UNI lock clamping bolt in conjunction with mounting screws M10, M12, M16:
- Retaining force (M10) 35,000N
- Retaining force (M12) 50,000N
- Retaining force (M16) 75,000N

Supplied with:
1x clamping module incl. 6x mounting bolts.
6x screw caps.
2x air connection O-rings.
1x installation O-ring.

**Technical data:**
- Opening pressure: 6bar, lubricated air
- Turbo pressure: 6bar
- Air connection: G1/8
- Repeat accuracy ≤ 0.005 mm

**KIPP UNI lock installation clamp**

<table>
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</tr>
<tr>
<td>K1003.138281</td>
<td>With rotation lock</td>
<td>3.52</td>
</tr>
</tbody>
</table>
Material:
Steel.

Version:
Contact surfaces case-hardened and ground.

Sample order:
K1122.1381500

Note:
UNI lock double clamp modules are particularly suitable for the direct clamping of workpieces. Workpieces with complex geometry can be completely machined on 4 and 5 sides. UNI lock double clamp modules can be mounted in any position. The high clamping forces are generated by the integrated spring package. (the unit clamps while not pressurised). Clamping is released pneumatically. The following clamping forces are possible with the UNI lock 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

Supplied with:
1 double clamp module incl. 3x pneumatic connections.

Technical data:
- Opening pressure: 6 bar, lubricated air
- Turbo pressure: 6 bar
- Air connection: G 1/8
- Repeat accuracy ≤ 0.005 mm

<table>
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<th>Order No.</th>
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</table>
UNI lock manual clamping module

Material:
Steel.

Version:
Contact surfaces case-hardened and ground.

Sample order:
K1123.1605050

Note:
UNI lock 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 M10/M12/M16. The UNI lock manual clamping module H 50 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 UNI lock manual clamping module H 50 can be mounted in any position.

Supplied with:
1 manual clamping module incl. fastening accessories.

Technical data:
Repeat accuracy ≤ 0.005 mm

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</table>
Interchangeable subplates
for UNI lock 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.

<table>
<thead>
<tr>
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**UNI lock clamping pin**

*Size 80 mm*

**Material:**
Steel.

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

**Sample order:**
K0967.140160512

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

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**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)

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1 = fastening with grub screw DIN 913
2 = fastening with DIN 912 screw through the tightening bolt
3 = fastening with DIN 912 screw through the fixture or workpiece
KIPP UNI lock clamping bolt

<table>
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</tbody>
</table>
**K1010**

**Protection bolts**

- **Material:** Aluminium.
- **Version:** Black anodized
- **Sample order:** K1010.040
- **Note:** Protection bolts to cover the hole.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Dimensions</th>
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</thead>
<tbody>
<tr>
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<td>see drawing</td>
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</tbody>
</table>

**K1010**

**Protective plug**

- **Material:** Aluminium.
- **Version:** Black anodized
- **Sample order:** K1010.138
- **Note:** Protective cap for clamping module D = 138.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td>K1010.138</td>
<td>see drawing</td>
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</table>
Quick-fit couplings

Material:
Steel.

Version:
galvanized.

Sample order:
K1011.0014

Note:
Quick-fit couplings suitable for UNI lock clamping stations.

KIPP Quick-fit couplings

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>SW</th>
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<td>K1011.1018</td>
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</table>

Notes
Example
Example
5-axis module clamping system 80
Function

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

System size 80 mm

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

Thanks to the modular construction and the variety of modules, the system can be configured individually and recombined for many applications.
More than 70 elements are available: basic modules, add-on modules and accessories. In combination, they guarantee a variety of heights, docking to interfaces and machining of complex workpiece's.

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

Without KIPP UNI lock:

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

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

With KIPP UNI lock:

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

The 5-axis module system can be mounted on T slot tables, grid systems or directly to machine tables. Moreover, the basic modules can be adapted to most common zero-point clamping systems.
Forces
system size 80 mm

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

<table>
<thead>
<tr>
<th></th>
<th>Fr</th>
<th>Fa</th>
<th>Fd</th>
<th>Fe</th>
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<tbody>
<tr>
<td>Clamping pin screw M10</td>
<td>kN</td>
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<td>50</td>
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<td>Clamping pin screw M12</td>
<td>kN</td>
<td>25</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Clamping pin screw M16</td>
<td>kN</td>
<td>25</td>
<td>75</td>
<td>50</td>
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</tbody>
</table>

Permissible load with full contact:

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

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

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

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

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

**Clamping height 220 mm**

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

**Clamping height 250 mm**

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

**Clamping height 125 mm**
Solid workpiece mounted on 4 basic modules and 4 add-on modules.

Clamping height 150 mm

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

Clamping height 125 mm

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

Clamping height 100 mm
UNI lock 5-axis basic module
system size 80 mm

Material:
Steel.

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

Sample order:
K0960.1207550400

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

<table>
<thead>
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<td>24</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>4.601</td>
</tr>
<tr>
<td>K0960.12125500</td>
<td>B</td>
<td>without rotation lock</td>
<td>125</td>
<td>68.5</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>6.8</td>
</tr>
<tr>
<td>K0960.12150500</td>
<td>B</td>
<td>without rotation lock</td>
<td>150</td>
<td>74</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>7.5</td>
</tr>
</tbody>
</table>
UNI lock 5-axis basic module double clamp
size 80 mm

Material:
Steel.

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

Sample order:
K0961.1212550400

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

KIPP UNI lock 5-axis basic module double clamp

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
<th>H</th>
<th>SW</th>
<th>Holding force F kN</th>
<th>Tightening torque max. Nm</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0961.1212550400</td>
<td>without rotation lock</td>
<td>125</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>4.96</td>
</tr>
<tr>
<td>K0961.1212550401</td>
<td>with rotation lock</td>
<td>125</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>5.2</td>
</tr>
</tbody>
</table>
UNI lock 5-axis mounting base
for general clamping size 80 mm

Material:
Steel.

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

Sample order:
K0962.25027005021

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>H</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0962.25027005021</td>
<td>A</td>
<td>50</td>
<td>14</td>
</tr>
<tr>
<td>K0962.25027010021</td>
<td>A</td>
<td>100</td>
<td>19</td>
</tr>
<tr>
<td>K0962.25027012521</td>
<td>A</td>
<td>125</td>
<td>23</td>
</tr>
<tr>
<td>K0962.19818502516</td>
<td>B</td>
<td>25</td>
<td>6.5</td>
</tr>
</tbody>
</table>
UNI lock 5-axis add-on clamping module

Material:
Steel.

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

Sample order:
K0963.120750

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
<th>H</th>
<th>SW</th>
<th>Holding force F kN</th>
<th>Tightening torque max. Nm</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0963.120750</td>
<td>without rotation lock</td>
<td>75</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>2.64</td>
</tr>
<tr>
<td>K0963.120751</td>
<td>with rotation lock</td>
<td>75</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>2.85</td>
</tr>
<tr>
<td>K0963.121000</td>
<td>without rotation lock</td>
<td>100</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>3.78</td>
</tr>
<tr>
<td>K0963.121250</td>
<td>without rotation lock</td>
<td>125</td>
<td>6</td>
<td>50</td>
<td>15</td>
<td>4.625</td>
</tr>
</tbody>
</table>
UNI lock 5-axis collet adapter

Material:
Steel.

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

Sample order:
K0964.25080

Note:
The UNI lock 5-axis collet adapter is suitable for clamping round workpieces. Standard collets with the ER 40 designation can be used. Clamping up to D=26 mm. Supplied with adjustable length stop but without collets. The collet adapters can be directly mounted on the basic module with rotation lock or on the add-on module H 75 mm with rotation lock.
UNI lock 5-axis face-grip adapter
size 80 mm

Material:
Steel.

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

Sample order:
K0965.2007510

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0965.2007510</td>
<td>see drawing</td>
</tr>
</tbody>
</table>
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:
Steel.

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

Sample order:
K0966.501120

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

KIPP UNI lock 5-axis reducer adapter

<table>
<thead>
<tr>
<th>Order No. soft</th>
<th>Order No. hard</th>
<th>Form</th>
<th>D</th>
<th>H</th>
<th>H1</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0966.251100</td>
<td>K0966.251101</td>
<td>A</td>
<td>M10 x 75</td>
<td>25</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.252100</td>
<td>K0966.252101</td>
<td>B</td>
<td>M10 x 75</td>
<td>25</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.253100</td>
<td>K0966.253101</td>
<td>C</td>
<td>M10 x 75</td>
<td>25</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.501100</td>
<td>K0966.501101</td>
<td>A</td>
<td>M10 x 100</td>
<td>50</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.502100</td>
<td>K0966.502101</td>
<td>B</td>
<td>M10 x 100</td>
<td>50</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.503100</td>
<td>K0966.503101</td>
<td>C</td>
<td>M10 x 100</td>
<td>50</td>
<td>25.5</td>
</tr>
<tr>
<td>K0966.251120</td>
<td>K0966.251121</td>
<td>A</td>
<td>M12 x 75</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>K0966.252120</td>
<td>K0966.252121</td>
<td>B</td>
<td>M12 x 75</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>K0966.253120</td>
<td>K0966.253121</td>
<td>C</td>
<td>M12 x 75</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>K0966.501120</td>
<td>K0966.501121</td>
<td>A</td>
<td>M12 x 100</td>
<td>50</td>
<td>27.5</td>
</tr>
<tr>
<td>K0966.502120</td>
<td>K0966.502121</td>
<td>B</td>
<td>M12 x 100</td>
<td>50</td>
<td>27.5</td>
</tr>
<tr>
<td>K0966.503120</td>
<td>K0966.503121</td>
<td>C</td>
<td>M12 x 100</td>
<td>50</td>
<td>27.5</td>
</tr>
</tbody>
</table>
UNI lock 5-axis reducer adapter
size 80 mm

Material:
Steel.

Version:
Body oxidised.
Contact surfaces case-hardened and ground.

Sample order:
K0966.5011611

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>D1</th>
<th>D2</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0966.5011211</td>
<td>12</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>K0966.5011611</td>
<td>16</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>
Angle clamp adapters
size 80 mm

Material:
Steel.

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

Sample order:
K1013.100100080

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

KIPP Angle clamping adapter

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Dimensions</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1013.100100080</td>
<td>see drawing</td>
<td>7.2</td>
</tr>
</tbody>
</table>
**UNI lock T-slot centring clamp bolt**

_size 80 mm_

---

**Material:**
Steel.

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

**Sample order:**
K0969.114

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

---

**KIPP UNI lock T-slot centring clamp bolt**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D</th>
<th>D1</th>
<th>B</th>
<th>H min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0969.114</td>
<td>A</td>
<td>M12</td>
<td>M10</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>K0969.118</td>
<td>A</td>
<td>M16</td>
<td>M12</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>K0969.122</td>
<td>A</td>
<td>M16</td>
<td>M12</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>K0969.314</td>
<td>C</td>
<td>M12</td>
<td>M10</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>K0969.318</td>
<td>C</td>
<td>M16</td>
<td>M12</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>K0969.322</td>
<td>C</td>
<td>M16</td>
<td>M12</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>
UNI lock clamping pin
size 80 mm

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

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

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

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

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K0967.140160512

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>H</th>
<th>T</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0967.140160512</td>
<td>A</td>
<td>16</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.140180512</td>
<td>A</td>
<td>18</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.140200512</td>
<td>A</td>
<td>20</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.140220516</td>
<td>A</td>
<td>22</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.140240516</td>
<td>A</td>
<td>24</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.140250512</td>
<td>A</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.140250516</td>
<td>A</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.140251012</td>
<td>A</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>10</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.140251016</td>
<td>A</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>10</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.240220516</td>
<td>B</td>
<td>22</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.240240516</td>
<td>B</td>
<td>24</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.240250512</td>
<td>B</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.240250516</td>
<td>B</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.240251012</td>
<td>B</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>10</td>
<td>10,5</td>
<td>10</td>
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<tr>
<td>K0967.240251016</td>
<td>B</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>10</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.340220516</td>
<td>C</td>
<td>22</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.340240516</td>
<td>C</td>
<td>24</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.340250512</td>
<td>C</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>5</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.340250516</td>
<td>C</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>5</td>
<td>12,5</td>
<td>17</td>
</tr>
<tr>
<td>K0967.340251012</td>
<td>C</td>
<td>25</td>
<td>M12</td>
<td>16,5</td>
<td>10,3</td>
<td>10</td>
<td>10,5</td>
<td>10</td>
</tr>
<tr>
<td>K0967.340251016</td>
<td>C</td>
<td>25</td>
<td>M16</td>
<td>18,5</td>
<td>14,2</td>
<td>10</td>
<td>12,5</td>
<td>17</td>
</tr>
</tbody>
</table>
Centring pins = Form A  
- fixes in x and y axis (reference point)

Adjustment pins = Form B  
- fixes the free axis (bayonet pin)

Tightening bolts = Form C  
- Pins with undersize (no centring function, clamping only)

Material:  
Steel.

Version:  
Hardened and black oxidised. Contact faces ground.

Sample order:  
K0967.140323024

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

### KIPP UNI lock clamping pin, one-piece

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D1</th>
<th>D</th>
<th>H</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0967.140323024</td>
<td>A</td>
<td>M24</td>
<td>32</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>K0967.240323024</td>
<td>B</td>
<td>M24</td>
<td>32</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>K0967.340323024</td>
<td>C</td>
<td>M24</td>
<td>32</td>
<td>30</td>
<td>17</td>
</tr>
</tbody>
</table>
UNI lock clamping pin
with threaded pin size 80 mm

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

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

Material:
Steel.

Version:
Hardened and black oxidised.
Contact faces ground.

Sample order:
K0967.140003020

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D1</th>
<th>H</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0967.140003020</td>
<td>A</td>
<td>M20</td>
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<td>17</td>
</tr>
<tr>
<td>K0967.140003624</td>
<td>A</td>
<td>M24</td>
<td>36</td>
<td>17</td>
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</tbody>
</table>
**K0968**

UNI lock clamping bolts

for fastening to workpieces size 80 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>D1</th>
<th>D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0968.12</td>
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<td>18.4</td>
</tr>
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<td>K0968.16</td>
<td>16</td>
<td>21.1</td>
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</tbody>
</table>

**K0970**

UNI lock 5-axis shoulder screws

size 80 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>D</th>
<th>D1</th>
<th>D2</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0970.12050</td>
<td>12</td>
<td>M12</td>
<td>18</td>
<td>62</td>
<td>50</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>K0970.16055</td>
<td>16</td>
<td>M16</td>
<td>24</td>
<td>71</td>
<td>55</td>
<td>25</td>
<td>14</td>
</tr>
</tbody>
</table>
UNI lock 5-axis shoulder screws
for fastening to workpieces size 80 mm

Material:
Carbon steel.

Version:
Hardened surface, ground locating seat.

Sample order:
K0971.1210040

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

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

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

size 80 mm

Material:
Steel.

Version:
Hardened and black oxidised. Contact faces ground.

Sample order:
K1012.1240

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

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1012.1240</td>
<td>see drawing</td>
</tr>
</tbody>
</table>
Application example

Notes
5-axis module clamping system 50
Forces
System size 50 mm

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

Permissible load with full contact:

<table>
<thead>
<tr>
<th></th>
<th>Fr</th>
<th>Fa</th>
<th>Fd</th>
<th>Fe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping pin screw M6 kN</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Clamping pin screw M8 kN</td>
<td>15</td>
<td>25</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Clamping pin screw M10 kN</td>
<td>15</td>
<td>30</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: Forces apply at a max. tightening torque of 10 Nm.
Function

The UNI lock 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 UNI lock 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
UNI lock 5-axis basic module
system size 50 mm

Material:
Steel.

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

Sample order:
K1117.12050601

Note:
The UNI lock 5-axis basic module, system size 50 can be adapted to mount on machine tables with grid holes or T-slots, or on grid hole subplates. The system size 50 basic module can also be combined with the system size 80 modules, allowing smaller workpieces to be easily clamped with the module clamping system.

Matches UNI lock zero point clamping system with UNI lock D=18 mm clamping bolts. Can also be mounted directly onto commonly available zero point clamping systems using suitable clamping bolts.

KIPP UNI lock 5-axis basic module, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1117.12050601</td>
<td>rotation lock</td>
</tr>
</tbody>
</table>
UNI lock 5-axis basic module adjustable
system size 50 mm

Material:
Steel.

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

Sample order:
K1117.12072600

Note:
The UNI lock 5-axis basic module, system size 50 can be adapted to mount on machine tables with grid holes or T-slots, or on grid hole subplates. The system size 50 basic module can also be combined with the system size 80 modules, allowing smaller workpieces to be easily clamped with the module clamping system.

Matches UNI lock zero point clamping system with UNI lock D=18 mm clamping pins. Can also be mounted directly onto commonly available zero point clamping systems if a suitable clamping pin is used.

Height adjustment with brass ring. Locking with a lateral lock screw. Workpieces with varying support face heights can be optimally supported and clamped.

KIPP UNI lock 5-axis basic module adjustable, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1117.12072600</td>
<td>adjustable</td>
</tr>
</tbody>
</table>
UNI lock 5-axis basic module double clamp

system size 50 mm

Material:
Steel.

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

Sample order:
K1118.000750

Note:
The UNI lock 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.

KIPP UNI lock 5-axis basic module, double clamp, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>H</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1118.000750</td>
<td>75</td>
<td>4</td>
</tr>
</tbody>
</table>
UNI lock 5-axis add-on module
system size 50 mm

Material:
Steel.

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

Note:
The UNI lock 5-axis add-on modules serve to raise the height of the basic modules and other add-on modules. Depending on the clamping situation, a combination of the basic modules and the add-on modules can be used to achieve the optimum clamping height. The system size 50 add-on module can also be combined with the system size 80.

Sample order:
K1119.0501

KIPP UNI lock 5-axis add-on module, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1119.0501</td>
<td>rotation lock</td>
</tr>
</tbody>
</table>
K1119

UNI lock 5-axis add-on module adjustable
system size 50 mm

Material:
Steel.

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

Sample order:
K1119.0720

Note:
UNI lock 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 system size 50 add-on module can also be combined with the system size 80.

Height adjustment with brass ring. Locking with a lateral lock screw. Workpieces with varying support face heights can be optimally supported and clamped.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1119.0720</td>
<td>adjustable</td>
</tr>
</tbody>
</table>
K1120

UNI lock 5-axis reducer adapter

system size 50 mm

Material:
Steel.

Version:
Body oxidised.
Contact surfaces case-hardened and ground.

Sample order:
K1120.251081

Note:
The UNI lock 5-axis reducer adapter is suitable for clamping and positioning workpieces.
Reducer adapters can be screwed onto the workpiece and mounted on the basic module or add-on clamp module.
The system size 50 add-on module can also be combined with the system size 80.

KIPP UNI lock 5-axis reducer adapter, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1120.251081</td>
<td>A</td>
<td>M8</td>
<td>25</td>
</tr>
</tbody>
</table>
K1121

UNI lock clamping pin
system size 50 mm

Material:
Steel.

Version:

Sample order:
K1121.125180510

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

Material:
Steel.

Version:

Sample order:
K1121.125180510

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

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

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

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

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

KIPP UNI lock clamping pin, system size 50 mm

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Form</th>
<th>D1</th>
<th>D</th>
<th>D2</th>
<th>D3</th>
<th>H</th>
<th>T</th>
<th>SW</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1121.125180510</td>
<td>A</td>
<td>M10</td>
<td>18</td>
<td>16.5</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>K1121.225180510</td>
<td>B</td>
<td>M10</td>
<td>18</td>
<td>16.5</td>
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<td>5</td>
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</tr>
<tr>
<td>K1121.325180510</td>
<td>C</td>
<td>M10</td>
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<td>16.5</td>
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<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

KIPP UNI lock clamping pin, system size 50 mm
Application example

Notes
Locating and clamping systems
Locating and clamping system, mechanical

1. With the mechanical locating and clamping system, base and tooling plates can be precisely positioned and fastening in a couple of seconds. The system consists of a locating cylinder, a centring bush and a receiver bush.

2. Three easy steps for using the positioning and clamping system:
   - Mount two receiver bushes on the machine table or base plate, and two centring bushes in the clamping plate.
   - Insert the locating cylinder through the centring bush into the receiver bush to attain precise positioning.
   - Turn the set screws in each locating cylinder roughly two rotations for tight clamping.

18 different locating cylinders, two centring bush types and two receiver bush forms are available.

3. A centring bush grade I (below left) and a centring bush grade I or II (above right) should be installed in each fastening plate as far apart from one another as possible. More than two positioning points bring no further advantages.

When more than two locating cylinders are used for additional holding force (dependent on application), holes in the fastening plate must be 0.4 mm to 0.8 mm bigger than the selected locating cylinder diameter.

4. If the centre distance between the two positioning holes in the e.g. machine table and the clamping plate is kept within a tolerance of ±0.005 mm and two centring bushings grade I are used, a repeat accuracy within ±0.013 mm can be achieved.

For a somewhat lower repeat accuracy within ±0.04 mm, one centring bushing grade I and one centring bushing grade II with a centre distance tolerance of ±0.03 mm are used.

5. The difference between the centring bush grade I and the centring bush grade II is that the centring bush grade II has a larger internal diameter in order to correspond to the greater centre distance tolerance in the machine table or the base plate.
Locating cylinders
Ball Lock

Material:
- Locating cylinder carbon steel.
- Balls roller bearing steel.

Version:
- Locating cylinder tempered, black oxidised.
- Balls hardened, bright.

Sample order:
K0935.16020

Note:
By tightening the thrust screw (D2) the centre ball is pressed downwards and in turn forces the three locking balls outwards, where they locked in the receiver bush.

With this easy to use system machine set-up times are up to twelve times shorter than when conventional methods are used.

KIPP Locating cylinders Ball lock

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Grid plate thickness ±0,05</th>
<th>D</th>
<th>D1</th>
<th>D2</th>
<th>L</th>
<th>L1</th>
<th>SW</th>
<th>Holding force F kN</th>
<th>Tightening torque max. Nm</th>
<th>Order No.</th>
<th>Repair Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0935.13013</td>
<td>13</td>
<td>13</td>
<td>22</td>
<td>M5</td>
<td>27,6</td>
<td>6</td>
<td>2,5</td>
<td>3,3</td>
<td>1</td>
<td>K0935.913013</td>
<td></td>
</tr>
<tr>
<td>K0935.13020</td>
<td>20</td>
<td>13</td>
<td>22</td>
<td>M5</td>
<td>34,6</td>
<td>6</td>
<td>2,5</td>
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<td></td>
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<tr>
<td>K0935.16020</td>
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<td>32</td>
<td>M6</td>
<td>36,5</td>
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<td>M6</td>
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<td>M6</td>
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Locating cylinder
with quick clamping system

Material:
Locating cylinder carbon steel.
Balls roller bearing steel.

Version:
Locating cylinder tempered, black oxidised.
Balls hardened, bright.

Sample order:
K0935.112013

Note:
Locating cylinder with quick-clamp system for extra timesaving during setups.

Insert the locating cylinder into the receiving hole and press the button. The three balls are pushed out and position the components. By tightening the set screw a 1/4 turn using an hexagonal key, the components are positively and securely held.

KIPP Locating cylinder with quick clamping system

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<th>Grid plate thickness ±0.05</th>
<th>D</th>
<th>D1</th>
<th>D2</th>
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<th>L1</th>
<th>SW</th>
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Centring bushes

Material:
Ball bearing steel

Version:
Hardened, black oxidised.

Sample order:
K0936.113020

Note:
By a centre distance tolerance of ±0.005 mm and two grade I centring bushes a repeat accuracy of ±0.013 mm is possible.
By a centre distance tolerance of ±0.03 mm and one grade I centring bush and one grade II centring bush repeat accuracy of ±0.04 mm is possible.
The centring bush is pressed with light pressure into the receiver holes in tooling plates. For further details see „General information“.

* Tol. for grade I centring bushes +0.005 / +0.018
Tol. for grade II centring bushes +0.025 / +0.050

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<th>Order No. grade II</th>
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**K0937**

**Receiver bushes**

*Form A (pressed in from rear)*

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**KIPP Receiver bushes Form A (pressed in from rear)**

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<th>L2</th>
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**K0938**

**Receiver bushes**

*Form B (screwed down from front)*

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**KIPP Receiver bushes Form B (screwed down from front)**

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Pneumatic positioning and clamping system

General information

1. The pneumatic positioning and clamping system makes it possible to precisely fix and position grid plates and baseplates in seconds. The system consists of a locating cylinder and a locating bush.

2. The locating cylinder is actuated pneumatically.

3. To use the positioning and clamping system, follow these three simple steps: Install two locating cylinders in the machine table or baseplate. Also install the locating bushes with the interchangeable subplates in line with the specified dimensions. Feed in air to open the locating cylinder mechanism. This makes the clamping balls travel inwards. Insert the interchangeable subplate with the locating bushes and close the air valve again. The interchangeable subplate is now positioned and clamped.

4. The system is clamped without an air supply. Spring force is used for clamping in the locating cylinder. An air supply of 6 bar is required to open the mechanism.

5. 2 different installation variants are available.
Locating cylinders

pneumatic

Material:
Carbon steel.

Version:
nickel-plated.

Sample order:
K1219.112

Note:
The 3 clamping balls are pneumatically released. The 3 clamping balls retract and the fixture can be exchanged. If the air is stopped, the 3 clamping balls advance and the fixture is clamped. This easy-to-operate system significantly reduces the changeover times.

KIPP Pneumatic locating cylinder

| Order No.   | Form | D  | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | H  | H2 | H3 | H4 | H5 | H6 | H7 | Retaining force F1 N |
|-------------|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------|
| K1219.112   |      | 12 | 40 | 24 | 23,4 | 4,5 | 8 | 32 | -  | 23,8 | -  | 41 | M4 | 8 | 8 | 29,5 | 25 | 3,5 | 8,5 | -  | 8,5 | 250                |
| K1219.116   |      | 16 | 51 | 32 | 31,4 | 5,5 | 9,5 | 41 | -  | 31,8 | -  | 52 | M5 | 8,5 | 9,5 | 31,7 | 28,5 | 4 | 9 | -  | 10 | 350                |
| K1219.212   |      | 8  | 12 | 40 | 24 | 23,4 | 4,5 | 8 | 32 | M4 | 23,8 | 14 | 41 | M4 | 8 | 8 | 24,5 | 25 | 3,5 | 8,5 | 25,5 | 8,5 | 250                |
| K1219.216   |      | 8  | 16 | 51 | 32 | 31,4 | 5,5 | 9,5 | 41 | M5 | 31,8 | 20 | 52 | M5 | 8,5 | 9,5 | 25,5 | 28,5 | 4 | 9 | 26,5 | 10 | 350                |
Locating bushes
for pneumatic locating cylinder

mounting instructions:

| Material: | Carbon steel. |
| Sample order: | K1220.12 |
| Note: | Locating bushes are placed in fixture or interchangeable subplates and form the counterpart to the locating cylinder. The locating bushes are centred in a reamed hole and then fastened with 4 screws. The balls of the locating cylinder engage in the groove in the locating bush, thereby forming a fast, secure and highly accurate changeover unit, and reducing setup and changeover times. |

KIPP Locating bush for pneumatic locating cylinder

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<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>D7</th>
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<th>H2</th>
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