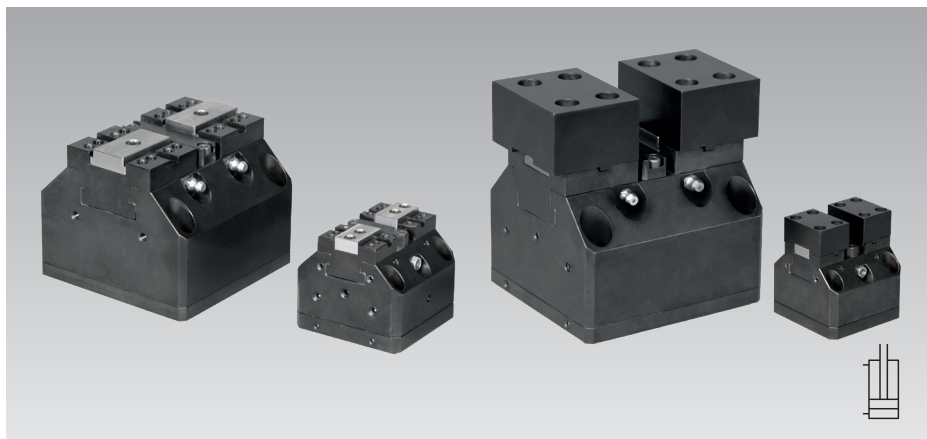




Concentric Vise - Power Clamp Centric

Block-type, hydraulically or pneumatically operated, double acting, size 64 and 100 mm, max. clamping force: 4.0 – 20.3 kN



Advantages

- Space-saving thanks to compact design
- Very high rigidity
- Low-wear due to hardened surfaces
- Repetitive clamping accuracy 0.005 mm
- Suitable for interior or exterior clamping
- Manifold mounting and pipe thread as standard
- Connection for positive air pressure protection as standard

Application

These pneumatically or hydraulically operated concentric vices can position and clamp workpieces with an accuracy of ± 0.005 mm.

They are ideally suited for the series production of precision workpieces on single or multiple-clamping fixtures. The double-acting cylinder function enables both interior and exterior clamping of workpieces.

Description

The housings of the centric vices have a square-shaped design. Therefore, a clamping piston with a large diameter can be installed, which enables an exceptionally high clamping force in the pneumatic concentric vice. The piston force is transmitted backlash-free to the two base jaws synchronously and concentrically.

All concentric vices have an internal flow rate limitation.

Positive air pressure connection

The most reliable protection against the penetration of liquids and dirt particles is the application of oil- and water-free positive air pressure with a slight overpressure of max. 1 bar.

Versions

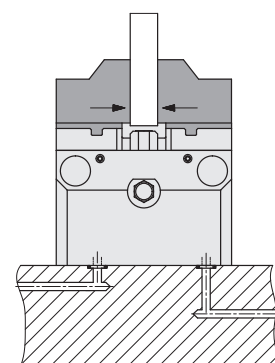
- 2 sizes: 64 and 100 mm
- Hydraulically or pneumatically operated
- Max. clamping force:
 - BG 64 – hydraulic: 4.8 kN
 - BG100 – hydraulic: 20.3 kN
 - BG 64 – pneumatic: 4.0 kN
 - BG100 – pneumatic: 14.0 kN

Options on request

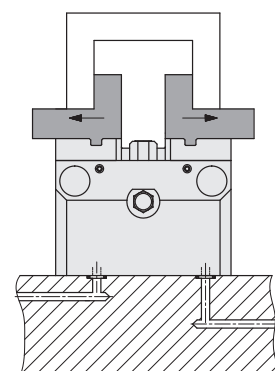
- Pneumatic workpiece contact control
- Port for central lubrication
- Electrical stroke end control
- Rapid-clamping jaw system

Delivery

- Concentric vice
- Clamping sleeves for precise alignment of the concentric vice
- Locking screws for concentric vice
- Blind plugs to close the fixing screw bore holes



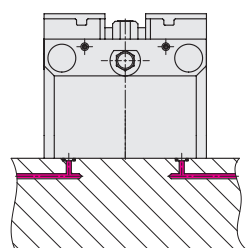
Exterior clamping application



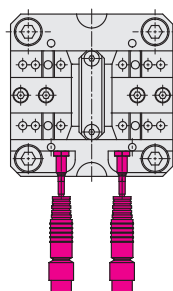
Interior clamping application

Options on request

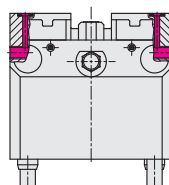
Port for central lubrication
see page 6



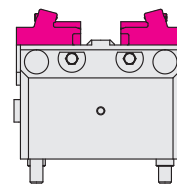
Electrical stroke end control
see page 6



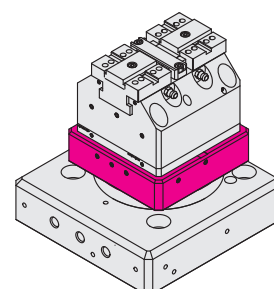
Pneumatic workpiece contact control
see page 7



Rapid-clamping jaw system
see page 7



Zero point adaptation
on request



Operating conditions, tolerances and other data see data sheet A0.100.

Hydraulic version size 64

Technical data • Dimensions

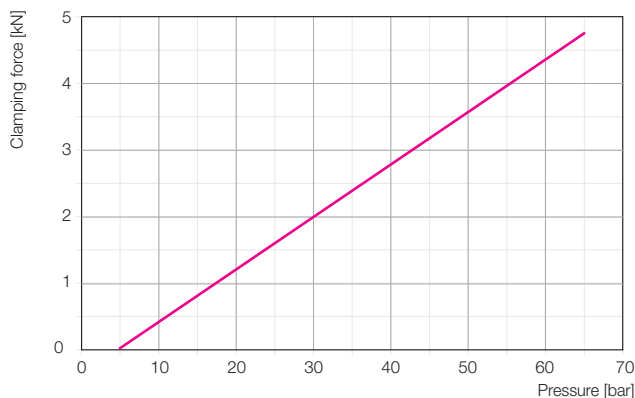
Technical data

Max. clamping force	[kN]	4.8
Max. operating pressure	[bar]	65
Min. operating pressure	[bar]	5
Stroke per clamping jaw	[mm]	2.5
Clamping range	[mm]	0 – 55
Weight	[kg]	1.4
Temperature range	[°C]	5 – 60

Part no.

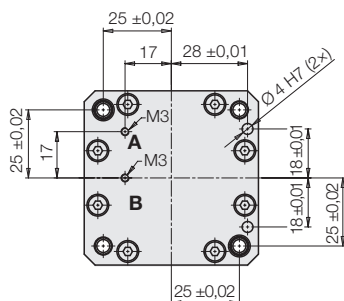
4ZBA AAA000 00

Clamping force diagram

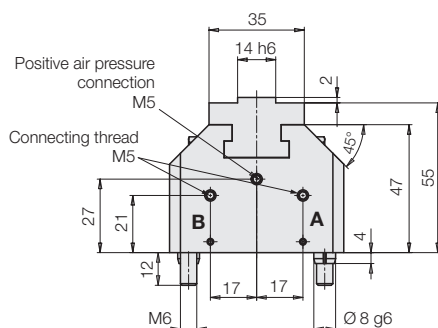
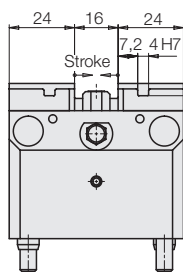


The specified clamping force acts at maximum pressure and is used to calculate side loads that can be transferred. Only half of the specified clamping force may be used to determine the transferable machining forces that can be transferred across a clamping jaw.

Dimensions



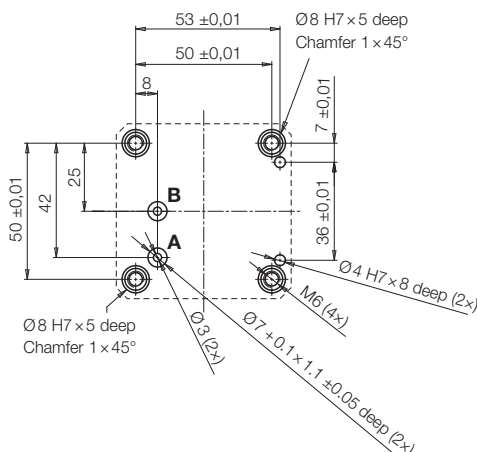
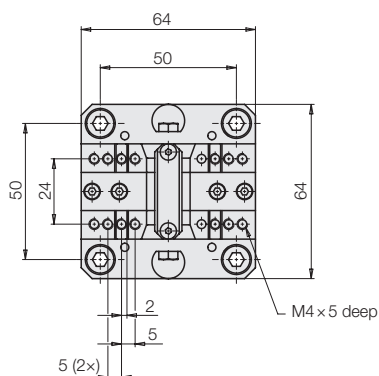
Exterior clamping:
A = Clamping / **B** = Unclamping
 Interior clamping:
B = Clamping / **A** = Unclamping



4x socket head cap screw
 DIN 912 – M6 x 40
 (included in our delivery)

2x dowel pin
 DIN 13337 – 8 x 18
 (included in our delivery)

Connecting scheme



Alternatively, the concentric vise can also be aligned with 2 x Ø 4 mm dowel pins.

Required accessories for manifold connection with O-ring (see accessories page 10): 2 x O-rings 4 x 1.5

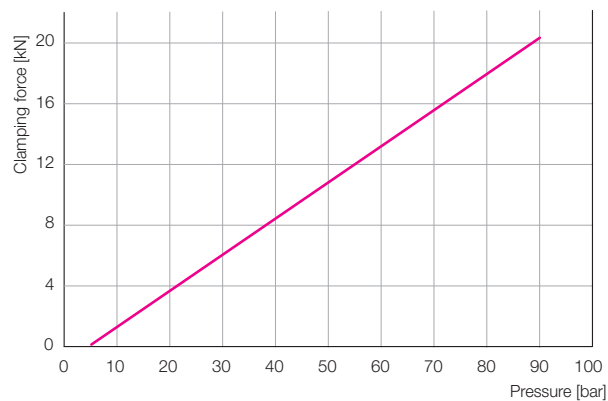
Technical data

Max. clamping force	[kN]	20.25
Max. operating pressure	[bar]	90
Min. operating pressure	[bar]	5
Stroke per clamping jaw	[mm]	3
Clamping range	[mm]	0 – 90
Weight	[kg]	5
Temperature range	[°C]	5 – 60

Part no.

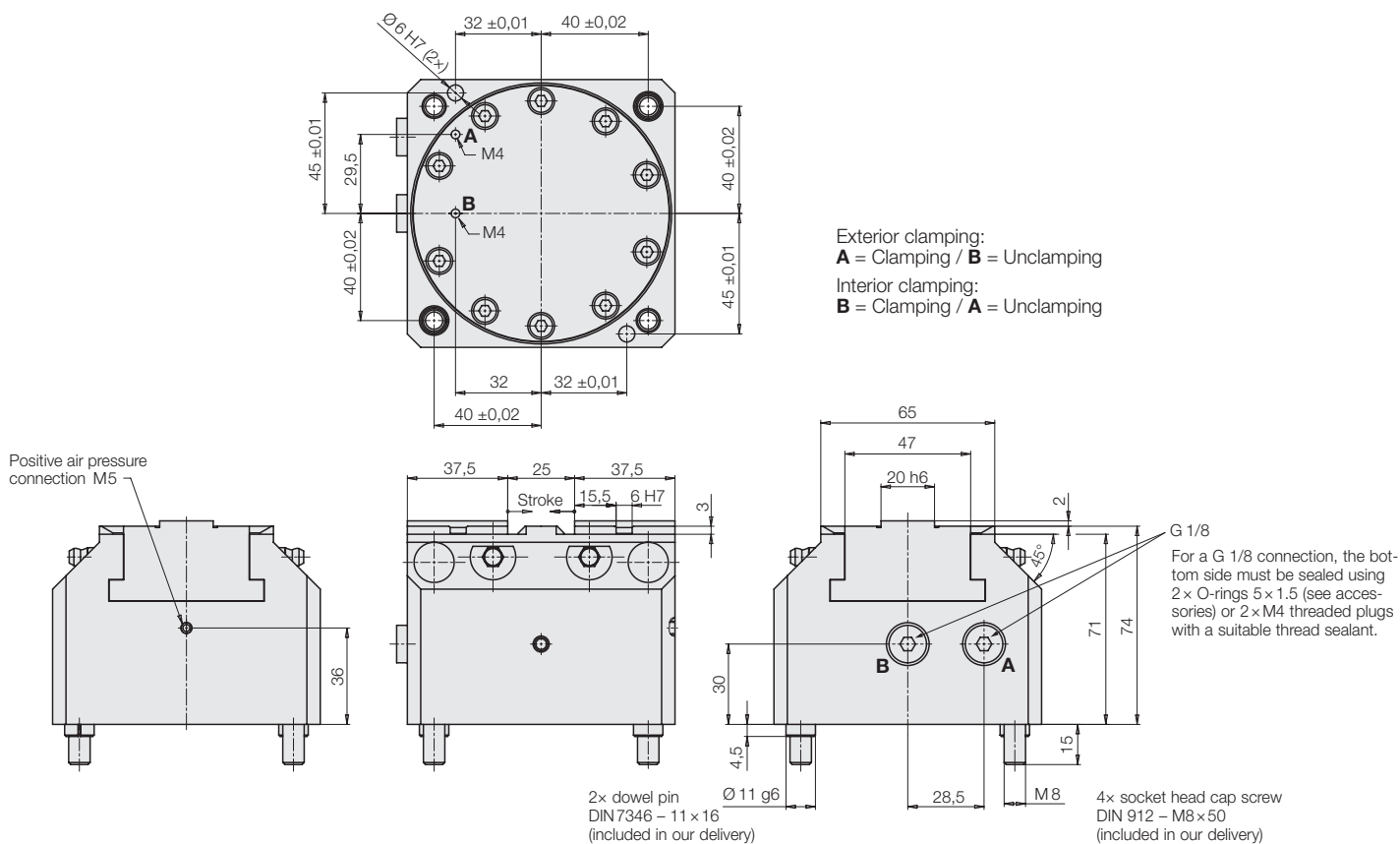
4ZBA AAB000 00

Clamping force diagram



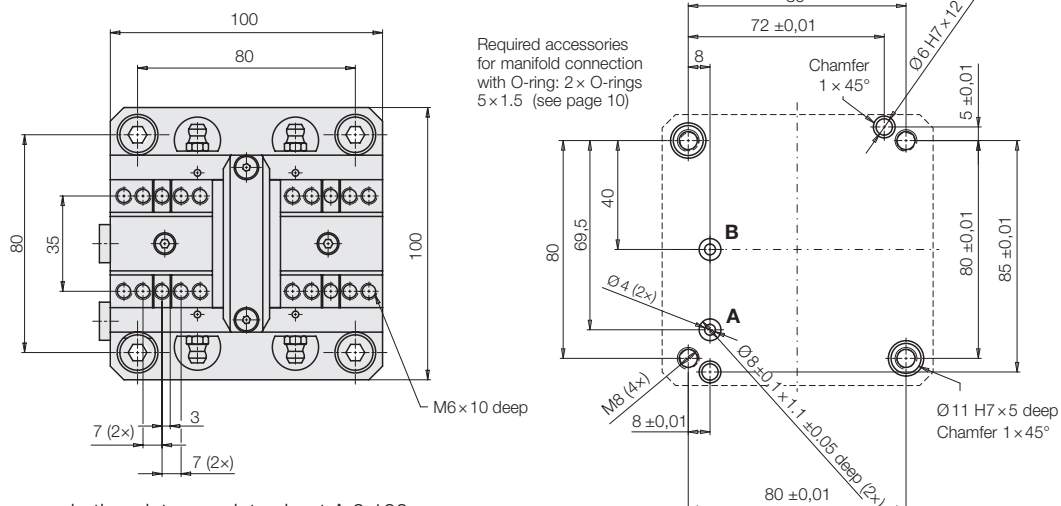
The specified clamping force acts at maximum pressure and is used to calculate side loads that can be transferred. Only half of the specified clamping force may be used to determine the transferable machining forces that can be transferred across a clamping jaw.

Dimensions



Alternatively, the concentric vise can also be aligned with 2 × Ø 6 mm dowel pins.

Connecting scheme



Operating conditions, tolerances and other data see data sheet A 0.100.

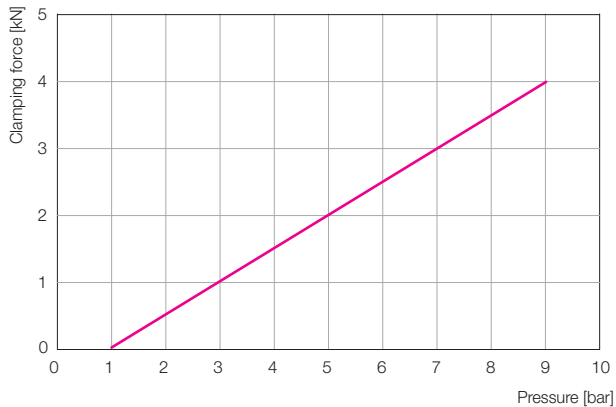
Technical data • Dimensions

Technical data

Max. clamping force	[kN]	4
Max. operating pressure	[bar]	9
Min. operating pressure	[bar]	1
Stroke per clamping jaw	[mm]	2.5
Clamping range	[mm]	0 – 55
Weight	[kg]	1.2
Temperature range	[°C]	5 – 60

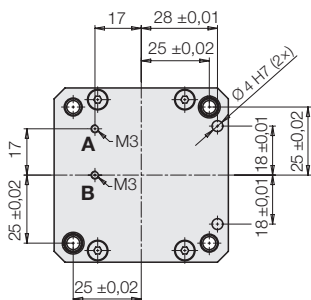
Part no.	4ZBA CAA000 00
----------	----------------

Clamping force diagram



The specified clamping force acts at maximum pressure and is used to calculate side loads that can be transferred. Only half of the specified clamping force may be used to determine the transferable machining forces that can be transferred across a clamping jaw.

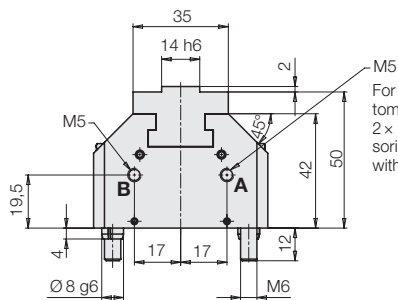
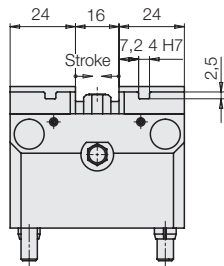
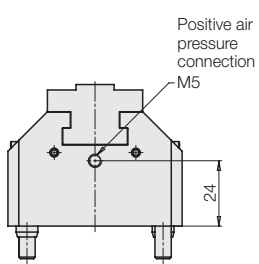
Dimensions



A = Clamping / **B** = Unclamping

Interior clamping:

B = Clamping / **A** = Unclamping

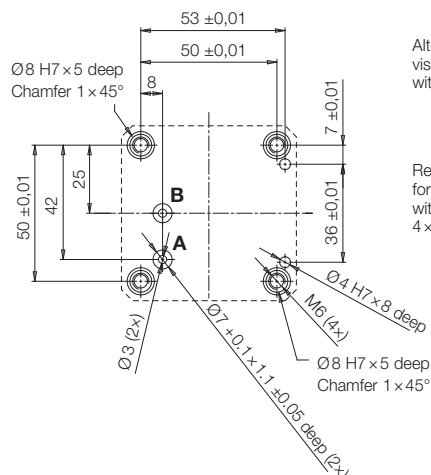
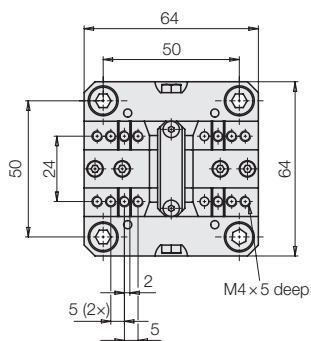


For an M5 connection, the bottom side can be sealed using 2 × O-rings 4 × 1.5 (see accessories) or 2 × M3 threaded plugs with a suitable thread sealant.

2 x dowel pin
DIN 13337 – 8 x 18
(included in our delivery)

4 x socket head cap screw
DIN 912 – M6 x 35
(included in our delivery)

Connecting scheme



Alternatively, the concentric vise can also be aligned with 2 x Ø4 mm dowel pins.

Required accessories
for manifold connection
with O-ring: 2 x O-rings
4 x 1.5 (see page 10)

Operating conditions, tolerances and other data see data sheet A 0.100.

Pneumatic version size 100

Technical data • Dimensions

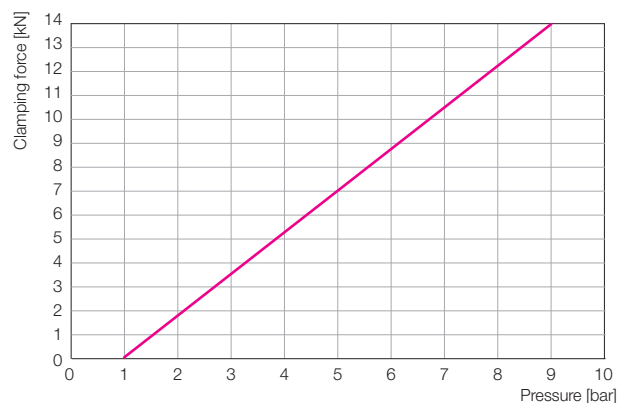
Technical data

Max. clamping force	[kN]	14
Max. operating pressure	[bar]	9
Min. operating pressure	[bar]	1
Stroke per clamping jaw	[mm]	2.5
Clamping range	[mm]	0 – 90
Weight	[kg]	4
Temperature range	[°C]	5 – 60

Part no.

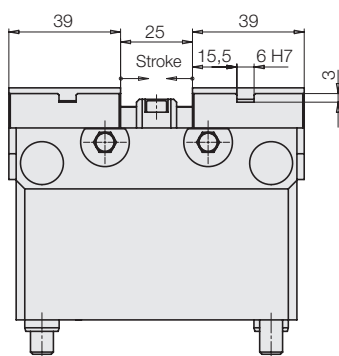
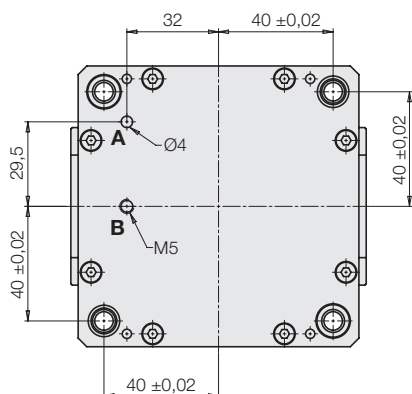
4ZBACAB00000

Clamping force diagram



The specified clamping force acts at maximum pressure and is used to calculate side loads that can be transferred. Only half of the specified clamping force may be used to determine the transferable machining forces that can be transferred across a clamping jaw.

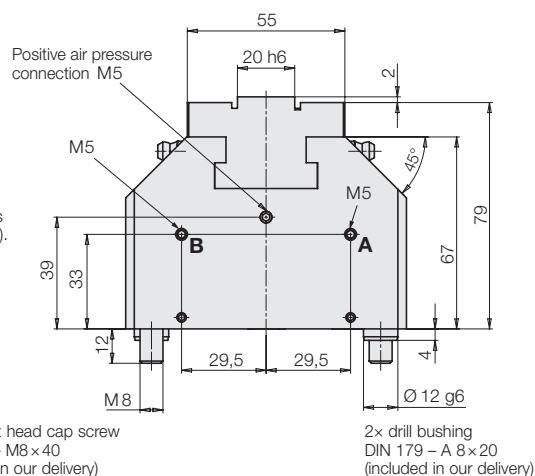
Dimensions



For an M5 connection, the bottom side can be sealed using 2 x O-rings 5 x 1.5 (see accessories).

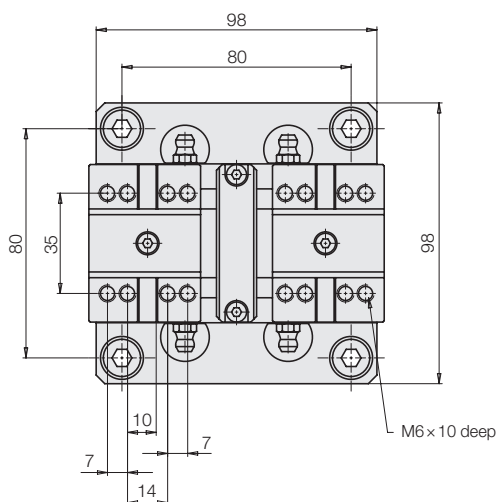
Exterior clamping:
A = Clamping / B = Unclamping

Interior clamping:
B = Clamping / A = Unclamping



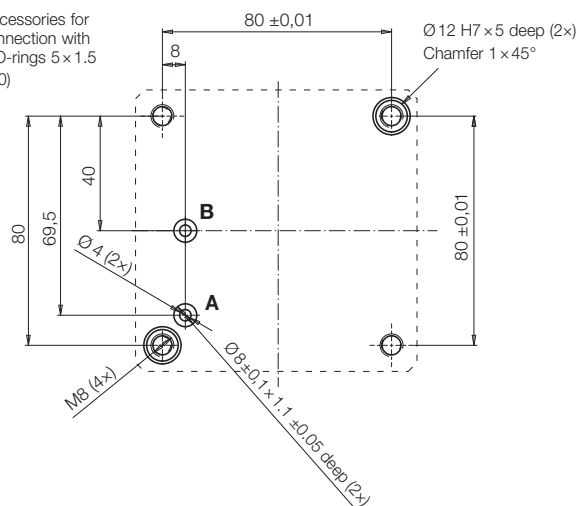
4 x socket head cap screw
DIN 912 - M8 x 40
(included in our delivery)

2 x drill bushing
DIN 179 - A 8 x 20
(included in our delivery)



Connecting scheme

Required accessories for manifold connection with O-ring: 2 x O-rings 5 x 1.5 (see page 10)

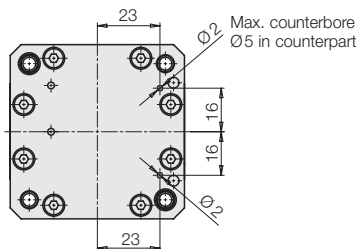


Operating conditions, tolerances and other data see data sheet A 0.100.

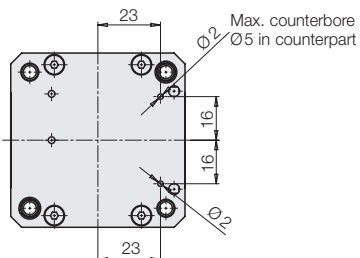
Options on request
Port for central lubrication • Electrical stroke end control

Port for central lubrication

Size 64

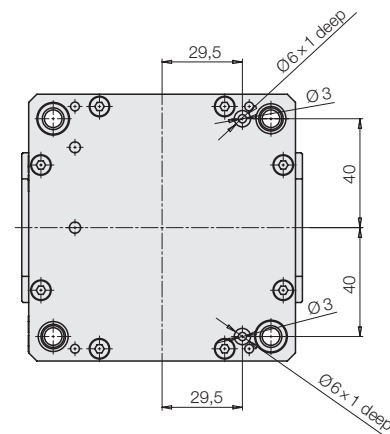
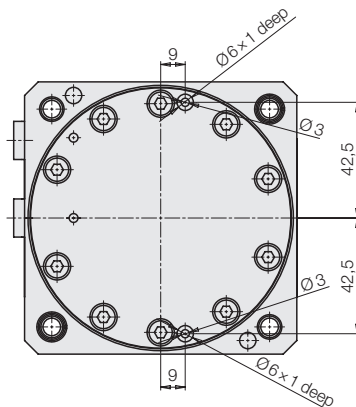


Hydraulic



Pneumatic

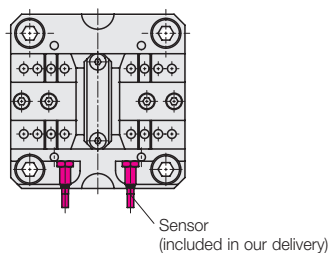
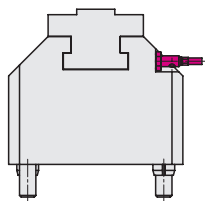
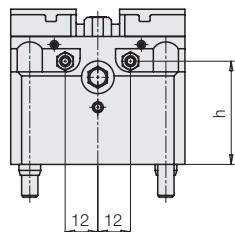
Size 100



Electrical stroke end control with proximity switch

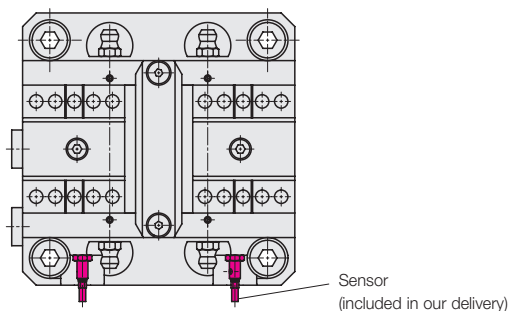
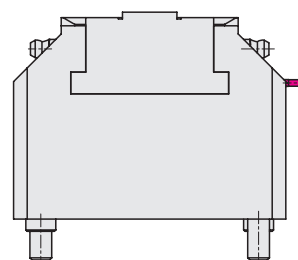
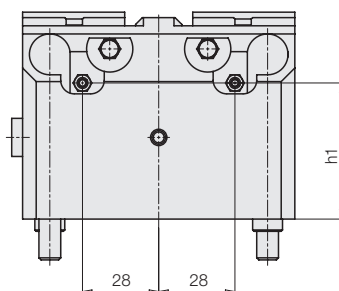
Size 64

Version		Hydraulic	Pneumatic
h	[mm]	37.9	32.9



Size 100

Version		Hydraulic	Pneumatic
h1	[mm]	50	53.5



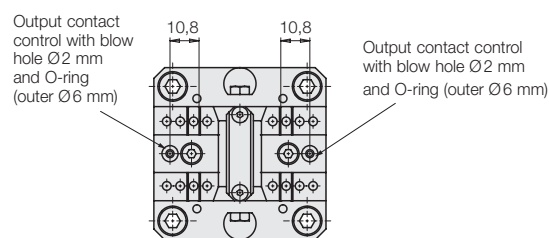
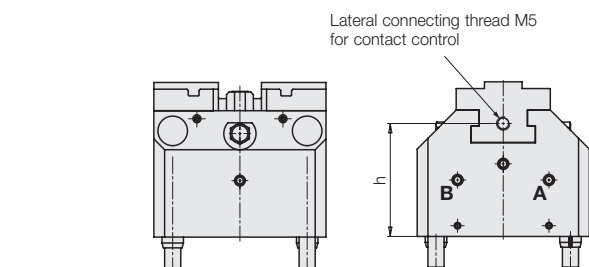
Operating conditions, tolerances and other data see data sheet A 0.100.

Option on request Pneumatic workpiece contact control

Pneumatic workpiece contact control

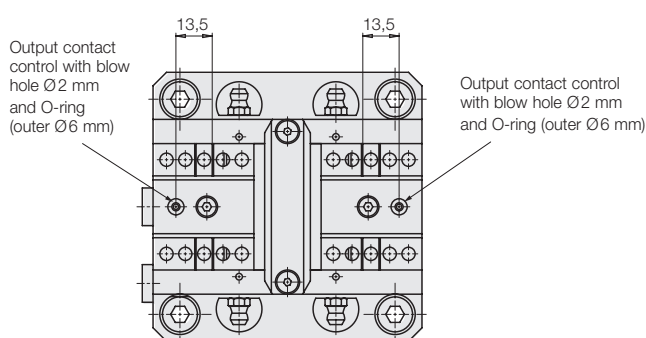
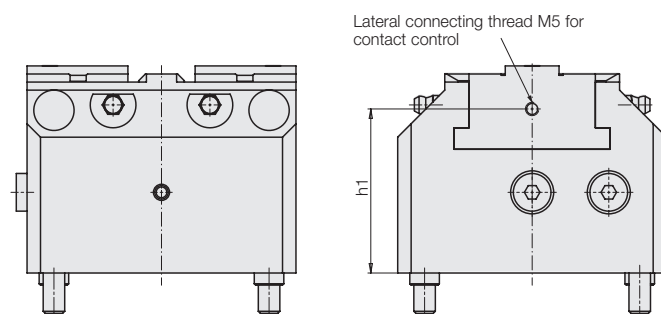
Size 64

Version		Hydraulic	Pneumatic
h	[mm]	42	37



Size 100

Version		Hydraulic	Pneumatic
h1	[mm]	61	64



In the version with pneumatic workpiece contact control, pneumatic pressure is fed into both base jaws via the M5 lateral connecting thread, which is then transferred to the clamping jaw by means of an O-ring sealing. The blow hole in the clamping jaw should not be larger than Ø2 mm.

Signal conversion: Pneumatic-electric

An electro-pneumatic measuring device can either signal the pressure increase or a drop of the air flow rate.

1. Pressure switches

The pressure switch signals the pressure increase when closing a blow hole.

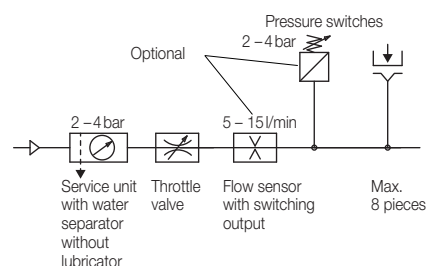
It is important that the pressure difference between the open and closed blow hole is big enough to receive a process-safe message.

2. Flow meter

The flow meter signals the drop of the air flow rate when closing a blow hole. The flow meter should have a digital display and one adjustable limit switch (e.g., type SFAB of FESTO).

The switching threshold is set to a mean value between the open and closed nozzle.

We recommend flow measurement if only one pneumatic line is available for several elements.



Operating conditions, tolerances and other data see data sheet A 0.100.

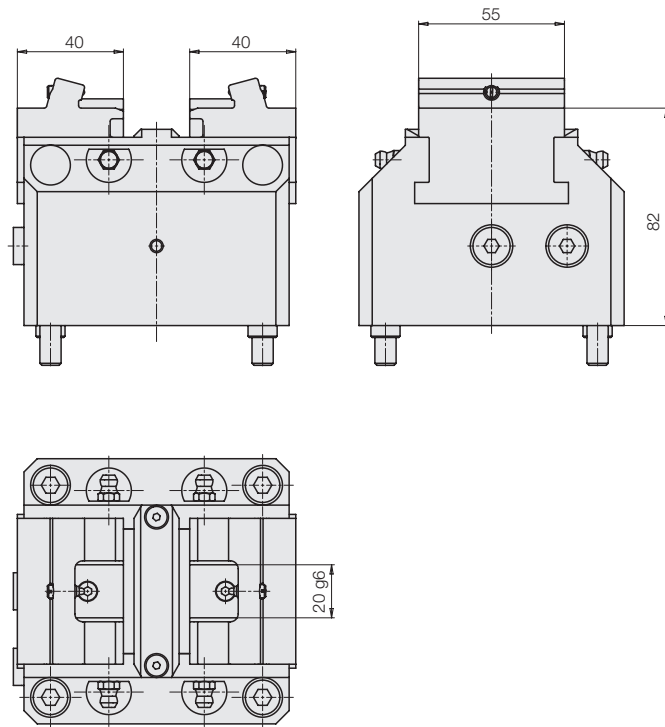
Option on request Rapid-clamping jaw system

Rapid-clamping jaw system

Size 100

Hydraulic version

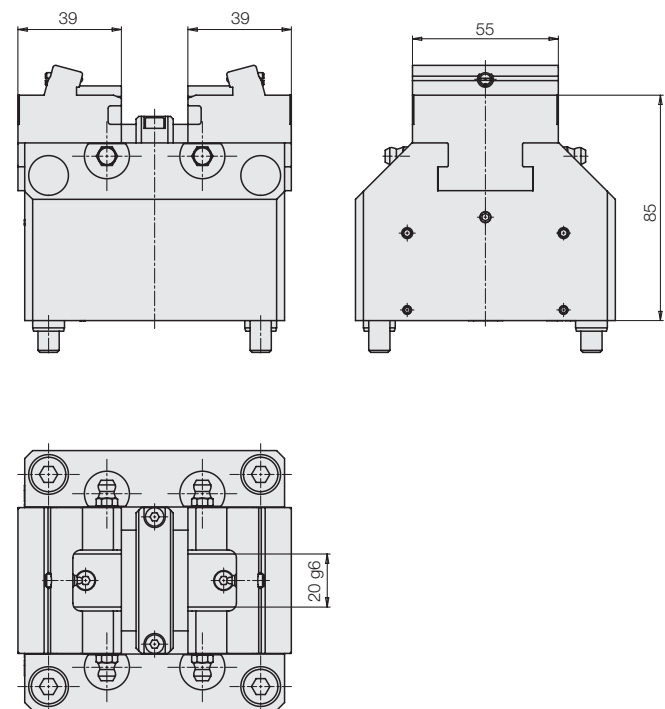
For additional dimensions and technical data on the hydraulic version, see page 3.



Size 100

Pneumatic version

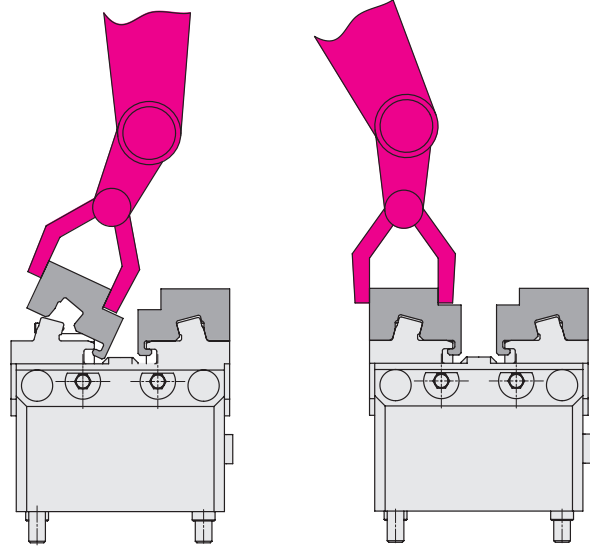
For additional dimensions and technical data on the pneumatic version, see page 5.



Automated change of clamping jaws

Description

The rapid-clamping jaw system is ideal for quick manual changeover of the clamping jaws and especially for automated clamping jaw changes by the robot, as shown in the example for exterior clamping. The interface must be designed differently for interior clamping.



Quick-release jaw is pre-positioned

Quick-release jaw in position

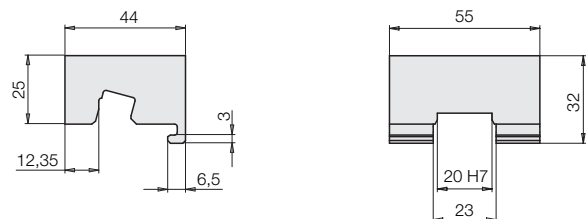
Functional principle

The clamping jaw is pre-fixed in the base jaw by a contact piece. When clamping a workpiece, both clamping jaws are pressed against the bevel of the base jaw. This ensures a secure hold when changing workpieces so additional fixing screws are not needed.

Quick-release jaws blank

Material: 16MnCr5 soft

Size 100



Max. jaw height 25 mm at max. operating pressure

Accessories

O-rings	Part no.
O-ring 4 × 1.5	3002167
O-ring 5 × 1.5	3001147

Spare parts	Part no.
Blind plugs, chamfered Ø 11.3 mm for size 64	35381481
Blind plugs, chamfered Ø 15.3 mm for size 100	35381480

Seal kits	Part no.
Size 64 hydraulic	01321161
Size 100 hydraulic	01321162
Size 64 pneumatic	01321159
Size 100 pneumatic	01321160

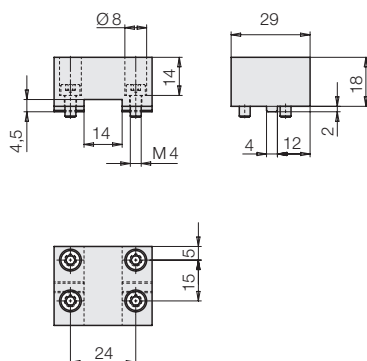
Clamping jaws blank

Material: 16MnCr5 soft
Fixing screws included in delivery

Size 64

Part no. 35381473

1 set (2 pieces) clamping jaw blanks



Max. jaw height 18 mm at max. operating pressure

Special lubricating grease 500g cartridge

The special lubricating grease is characterized by the following properties:

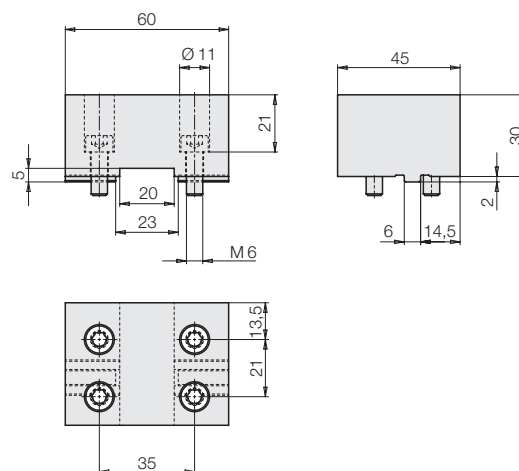
- Highest lubrication performance
- Very high pressure resistance
- Prevention of stick-slip
- Constant low coefficients of friction, especially with high surface pressure
- Imparts emergency running properties
- Good corrosion protection

Part no. 9001800

Size 100

Part no. 35381474

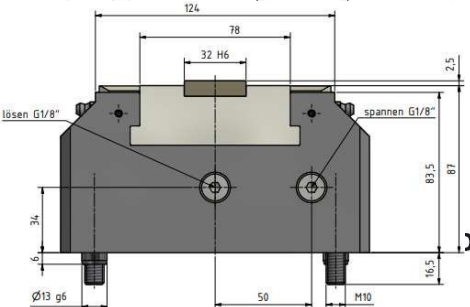
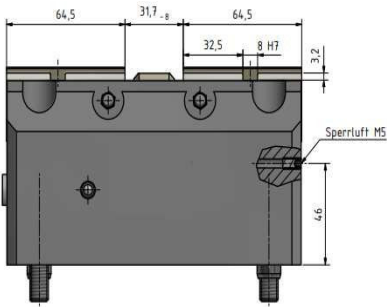
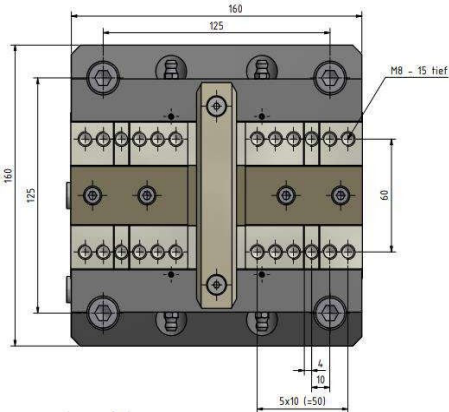
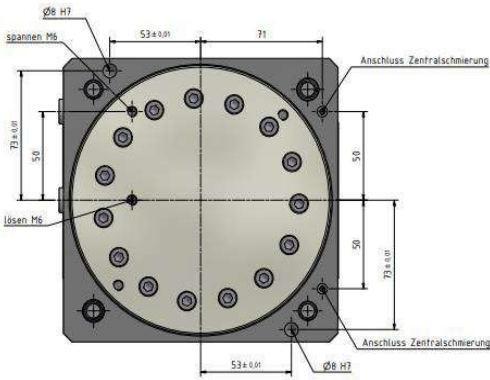
1 set (2 pieces) clamping jaw blanks



Max. jaw height 30 mm at max. operating pressure

ON REQUEST - Hydraulic Power Clamp 160, concentric clamping, Part no. 4ZBABAD00000

Dimensions (LxWxH):	160 x 160 x 87 mm
Weight:	16 kg
Clamping range:	0 - 150 mm
Stroke per jaw:	4 mm
Max. actuating pressure:	80 bar
Min. actuating pressure.:	5 bar
Max. clamping force:	47 kN at 80 bar
Stroke volume:	65 cm ³ per double stroke
Jaw connection:	Tongue and groove
Hydraulic connections:	On the side and underside



Clamping force diagram

