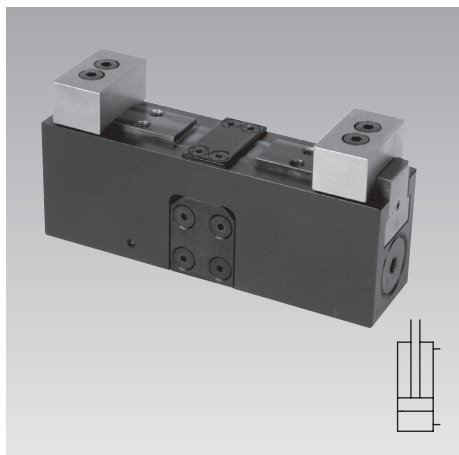




## Hydraulic Vises, Concentric Clamping

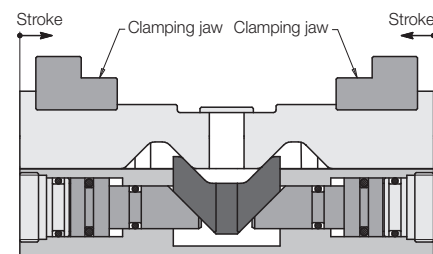
max. clamping force 6.5 and 9 kN, jaw width 40 and 65 mm,  
double acting, max. operating pressure 250 bar



### Advantages

- Very compact design
- High rigidity
- Retention force – high clamping force
- Repetitive clamping accuracy  $\pm 0.02$  mm
- 2 sizes
- Length of the stroke 2 x 5 and 2 x 8 mm
- Double-acting function
- Fixtures without pipes possible
- Exchangeable jaws
- Good swarf protection
- Port for central lubrication
- Mounting position: any

### Functional principle



### Application

Hydraulic vises, also called fixture clamps, are used for machining of dimensionally stable workpieces in single or multiple clamping fixtures.

Due to their compact design they can be arranged in a very limited space.

Hydraulic vises are especially suitable for series manufacturing in automated mode.

The double-acting cylinder function combined with central lubrication and good swarf protection guarantees high process safety.

### Description

The hydraulic vise with a concentric clamping function consists of a very slim basic body with 2 integrated hydraulic cylinders. The piston forces are transferred via a guided connecting link to the two clamping slides so that a centric synchronism is obtained.

All threads and ports are at the bottom to enable a space-saving arrangement of several clamping points in a very limited space. If fixing from below is not possible, an adaptor plate for manifold mounting or tube connection is available. Blanks of clamping jaws that can be adapted to the workpiece contour are also available as an accessory.

### Important notes

The concentric clamping vise is only suitable for exterior clamping.

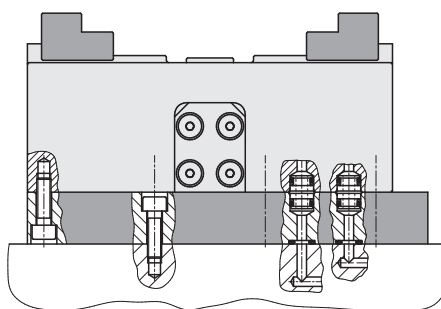
Lubricate at the latest after 500 clamping cycles the clamping slide via the central lubrication.

Never use the complete clamping stroke to guarantee safe clamping of the workpiece. Max. operating temperature 80 °C.

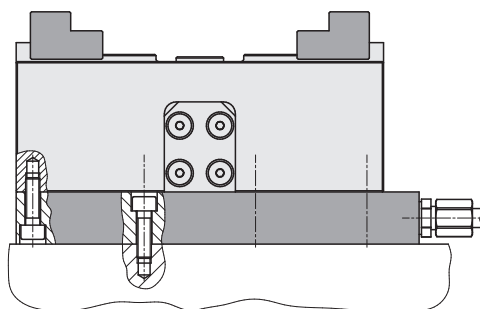
### Fixing from above

with accessory adaptor plate

#### Drilled channels

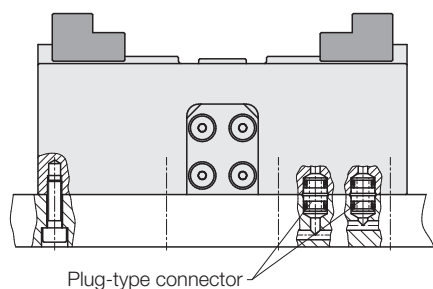


#### Pipe thread



### Fixing from below

#### Drilled channels

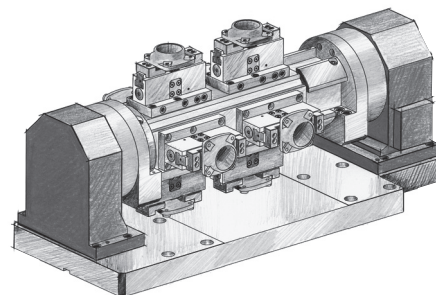


### Accessories

Clamping jaws and adaptor plate are not included in the delivery of the clamping vise and have to be ordered separately as accessory.

### Application example

Concentric clamping of 8 flanges on a rotary indexing fixture.



## Technical Data • Accessory • Dimensions

**Part no. 4413051**

## Technical data

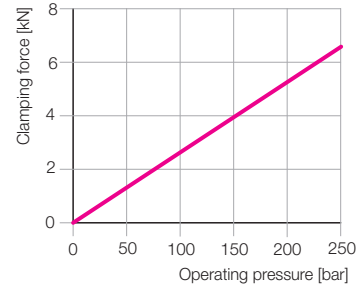
Clamping force / jaw	[kN]	6.5
Retention force	[kN]	8
Release force	[kN]	0.5
Min. pressure	[bar]	10
Clamping stroke	[mm]	2 x 5
Repetitive clamping accuracy	[mm]	±0.02
Jaw width	[mm]	40
Max. flow rate	[cm <sup>3</sup> /s]	25
Stroke volume	Clamping	[cm <sup>3</sup> ] 6.4
	Unclamping	[cm <sup>3</sup> ] 3.2
Weight	[kg]	approx. 2.4

**Adaptor plate (accessory)**

Weight	[kg]	approx. 1.9
<b>Part no.</b>		<b>0441 305</b>

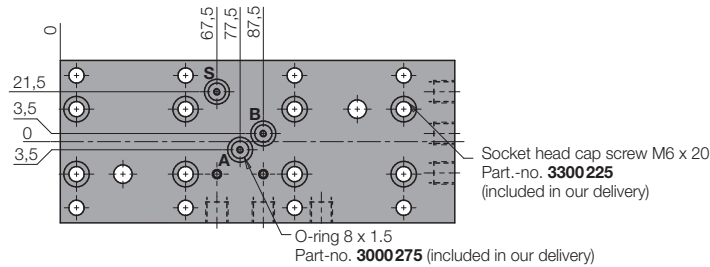
### Clamping force diagram

(Height of the clamping jaw 15 mm)

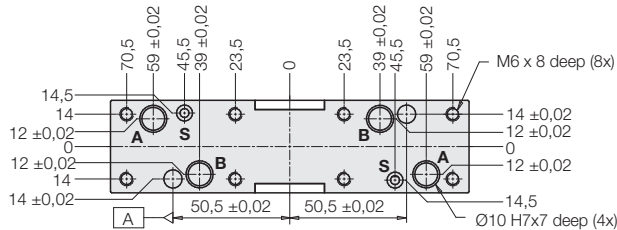


**Accessories: Adaptor plate**

View from below



**A** = Clamping  
**B** = Unclamping  
**S** = Central lubrication



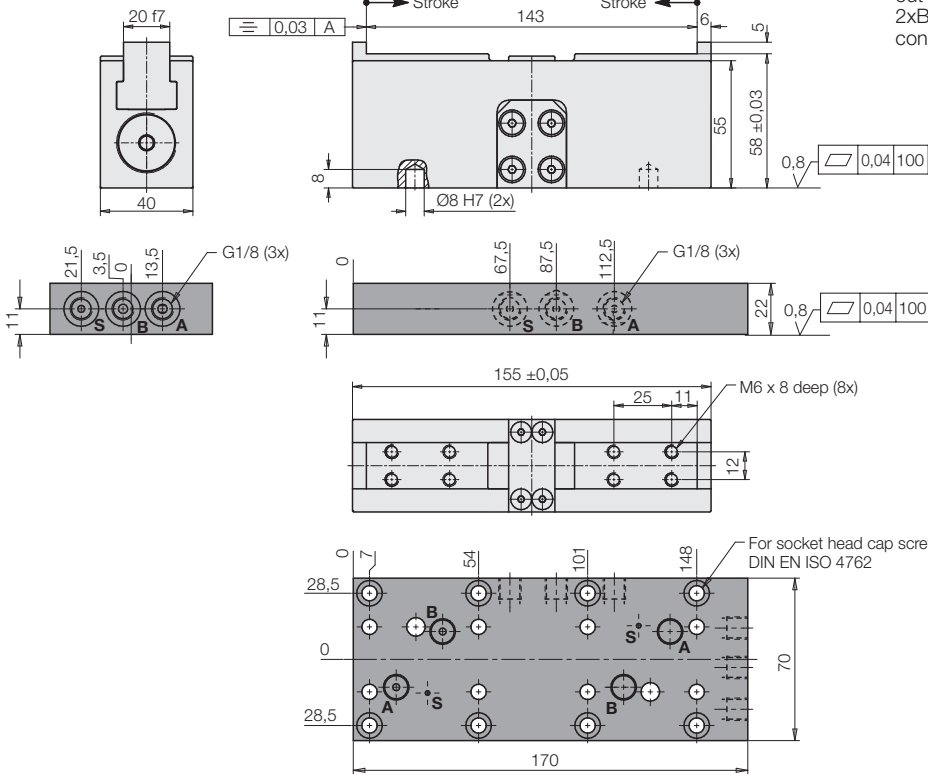
### Clamping and unclamping

each Ø10 H7 x 7 deep for  
4 x cable plug **9210132**  
(included in our delivery).  
See also data sheet F 9.300

**Central lubrication**  
2 x with O-ring **3001 842** (5x1 mm)  
(included in our delivery)

### Important note

**Important note**  
If the vise is manifold-mounted without adaptor plate, all 6 ports (2xA, 2xB, 2xS) have to be individually connected.



**Accessories: Adaptor plate**

Side views

**Accessories: Adaptor plate**

View from above

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

**Clamping Force 9 kN • Clamping Stroke 2 x 8 mm**  
**Technical Data • Accessory • Dimensions**

**Part no. 4413 151**

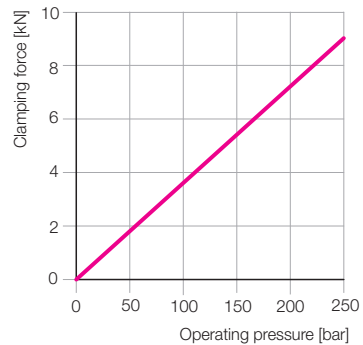
## Technical data

Clamping force / jaw	[kN]	9
Retention force	[kN]	15
Release force	[kN]	0.5
Min. pressure	[bar]	10
Clamping stroke	[mm]	2 × 8
Repetitive clamping accuracy	[mm]	±0.02
Jaw width	[mm]	65
Max. flow rate	[cm <sup>3</sup> /s]	50
Stroke volume	[cm <sup>3</sup> ]	14.2
Clamping	[cm <sup>3</sup> ]	6.0
Unclamping		
Weight	[kg]	approx. 6

### Adaptor plate (Accessory)

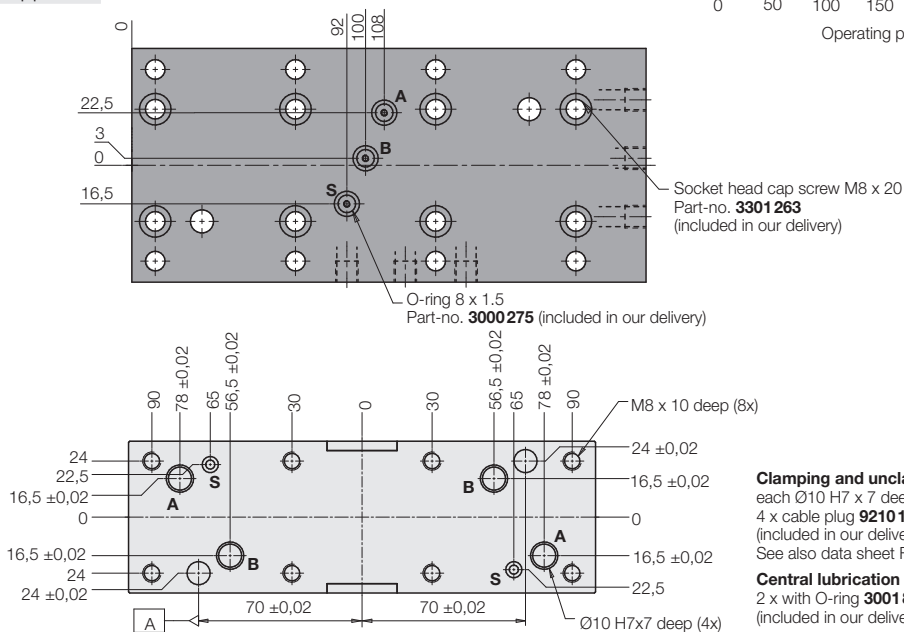
Weight	[kg]	approx. 3.5
<b>Part no.</b>		<b>0441315</b>

Clamping force diagram  
(Height of the clamping jaw 25 mm)



**Accessories: Adaptor plate**

View from below



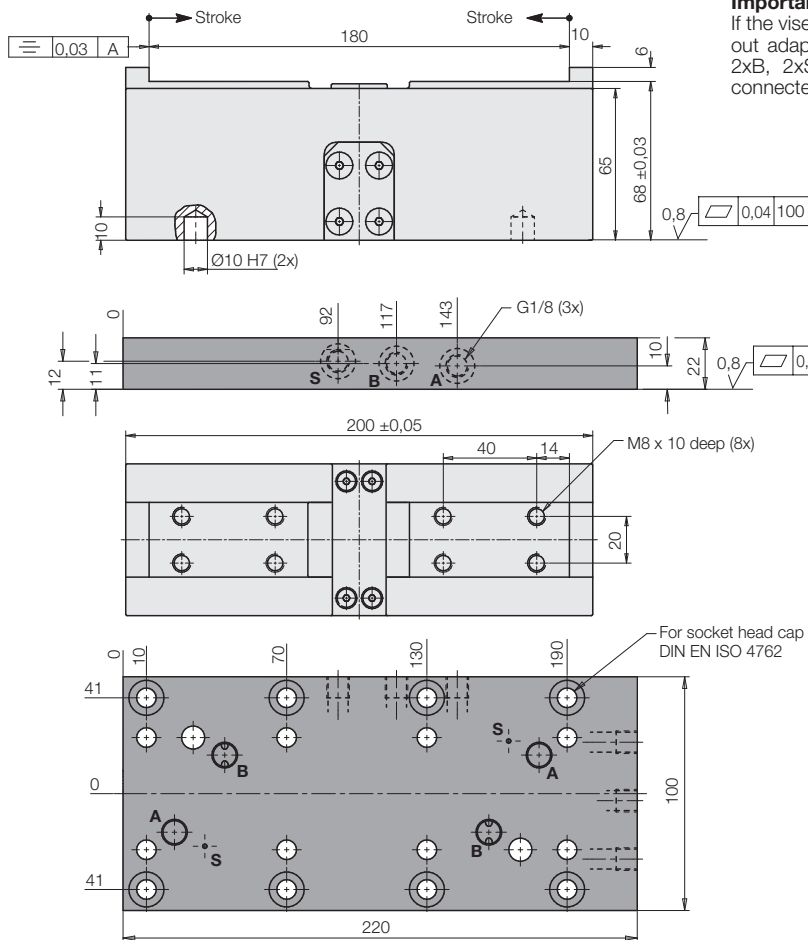
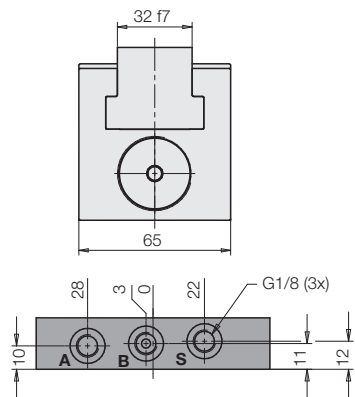
**A** = Clamping  
**B** = Unclamping  
**S** = Central lubrication

**Clamping and unclamping**  
each Ø10 H7 x 7 deep for  
4 x cable plug **9210132**  
(included in our delivery).  
See also data sheet F 9.300

**Central lubrication**  
2 x with O-ring **3001 842** (5x1 mm)  
(included in our delivery)

### Important note

If the vise is manifold-mounted without adaptor plate, all 6 ports (2xA, 2xB, 2xS) have to be individually connected.



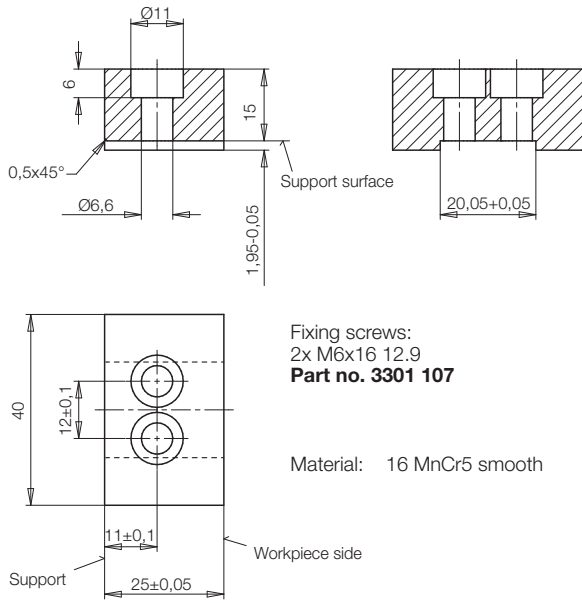
**Accessories:**  
**Adaptor plate**  
Side views

**Accessories:**  
**Adaptor plate**  
View from above

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

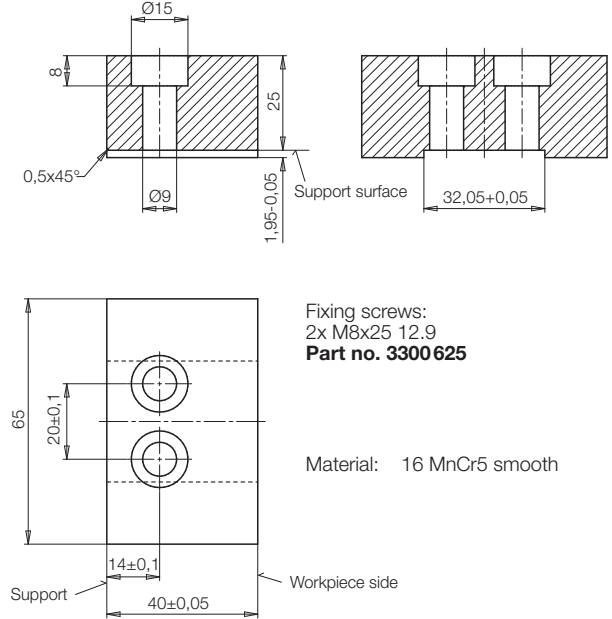
## For vise 4413051

**Clamping jaw blank 40 mm**  
Part-no. 3548070



## For vise 4413 151

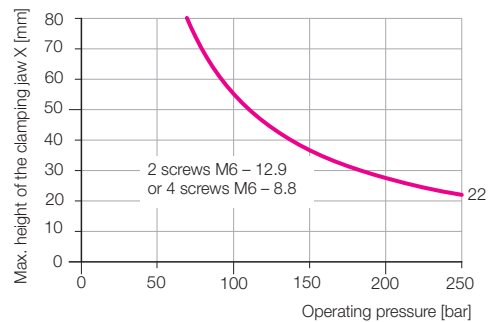
**Clamping jaw blank 65 mm**  
Part-no. 3548080



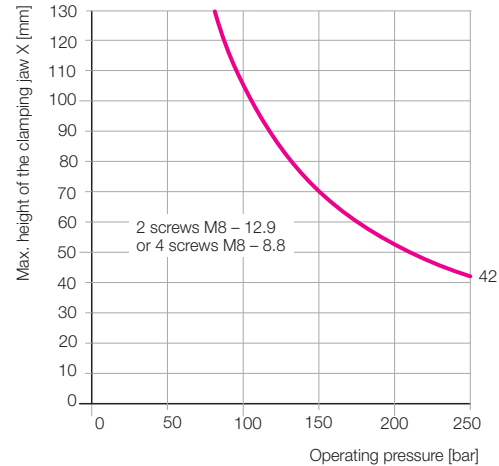
## Self-made clamping jaws

Clamping jaws are manufactured according to the contour of the workpiece to be clamped.  
The max. height of the clamping jaw X at 250 bar operating pressure is indicated in the charts below.

**Max. height of the clamping jaw X for 4413051 as a function of the operating pressure**

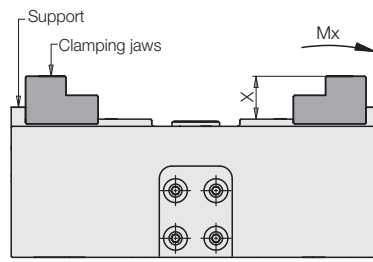
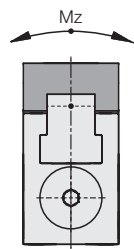


**Max. height of the clamping jaw X for 4413 151 as a function of the operating pressure**

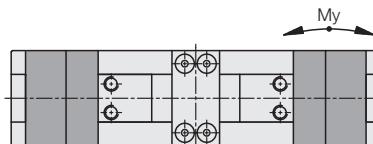


## Permissible torques on the clamping jaws

**Mx = 140 Nm**  
**My = 120 Nm**  
**Mz = 120 Nm**



**Mx = 375 Nm**  
**My = 200 Nm**  
**Mz = 200 Nm**



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