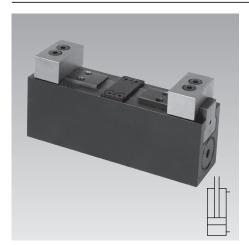


Fixture Clamp, Position Flexible

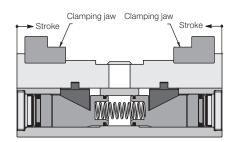
max. clamping force 8 kN, jaw width 40 mm double acting, max. operating pressure 250 bar



Advantages

- Very compact design
- High stiffness
- High clamping force with low contact forces
- Position flexible within the clamping range
- Double-acting function
- Fixtures without pipes possible
- Exchangeable jaws
- Good swarf protection
- Port for central lubrication
- Mounting position: any

Function



Application

Position-flexible fixture clamps can additionally clamp and support a workpiece, which is already positioned and clamped in fixed stops, at unstable workpiece sections.

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

Fixture clamps are especially suitable for series manufacturing in automated mode.

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

Description

The fixture clamp with position-flexible clamping function consists of a very slim basic body with 2 integrated hydraulic cylinders.

The piston forces are transmitted by two channels to the two clamping slides that can be moved independently from each other. During clamping both clamping slides contact the workpiece nearly without force (see page 3).

Only after that the clamping pressure and thereby the clamping force increases. Due to wedging of the clamping slides these are protected against displacement. Thereby the workpiece is floatingly held without deformation

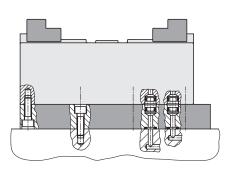
All threads and ports are at the bottom to allow a space-saving arrangement of several clamping points in a very limited space. If fixing from below is not possible an adaptor plate for manifold mounting or tube connection is available.

As accessory also blanks of clamping jaws are available for adaptation to the workpiece contour.

Fixing from above

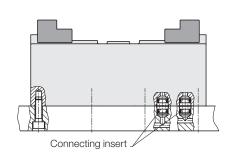
with accessory adaptor plate

Drilled channels

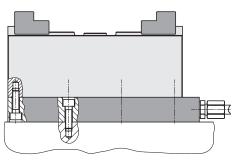


Fixing from below

Drilled channels

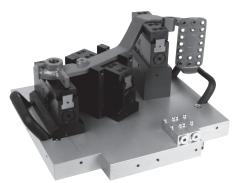


Pipe thread



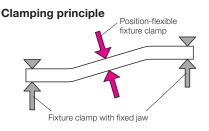
Application example

Clamping fixture for a pedal of a freight vehicle.



Accessories

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



Part no. 4413080 Clamping force diagram (Height of the clamping jaw 15 mm) Clamping force [kN] **Technical data** Adaptor plate (accessory Clamping force at 250 bar [kN] 8 Weight approx. 1,9 6 Retention force at 250 bar [kN] 10 Part no. 0441305 Min. operating pressure [bar] 25 4 0,5 x clamping Min. unclamping pressure pressure 2 Clamping stroke [mm] 2 x 8 Jaw width [mm] 40 0 Max. flow rate* [cm³/s] 17 50 0 100 150 200 Stroke volume Clamping [cm³] 8.4 [cm³] Unclamping Operating pressure [bar] Weight [kg] approx 2.5 * See page 3 "Position-flexible clamping" **Accessory: Adaptor plate** 3,5 ❿ View from below 3,5 Socket head cap screw M6 x 20 Part no. **3300225** (included in the delivery) -0 O-ring 8 x 1.5 1 port B is blind (without set screw) Part no. 3000275 (included in the delivery) ±0,02 ±0,02 59 ±0,02 59 ±0,02 70,5 45,5 39±C M6 x 8 deep (8x) Clamping and unclamping each Ø10 H7 x 7 deep for 4 x connecting insert 9210 132 39 14.5 (included in the delivery), see also page F 9.300 **A** = Clamping **O** Φ 12 ±0.02 12 ±0,02 **B** = Unclamping **Central lubrication** 12 ±0,02 12 ±0.02 **S** = Central lubrication 2 x with O-ring **3000876** (3.68x1.78 mm) (included in the delivery) Φ 14 ±0,02 14.5 50.5 ±0.02 50.5 ±0.02 Ø10 H7x7 deep (4x) 3 set screws M3 with throttle Ø 0.7 Important note If the fixture clamp is manifold-Stroke Stroke mounted without adaptor plate, all 5 ports (2xA, 1xB, 2xS) have to be 143 = |0,03 | A individually connected. ±0,03 58 Ra = 0,8 Ø8 H7 (2x) G1/8 (3x) G1/8 (3x) Accessory: Adaptor plate Ra = 0.8Side views 155 ±0,5 M6 x 8 deep (8x) 0 0 Φ 0 0 for socket head cap screw M6 DIN EN ISO 4762 28,5 **Accessory: Adaptor plate** 20 View from above Important notes The fixture clamp is only suitable for exterior 170 clamping. Lubricate the clamping slide via the central lubrication at the latest after 500 clamping cycles. (Recommended: slide way oil ISO 69) Never use the complete clamping stroke to guarantee safe clamping of the workpiece.

sheet A 0.100.

Max. operating temperature 80 °C.

Operating conditions and other data see data

Accessories Position-flexible clamping

Max. height of the clamping jaws X

Fixing screws

for clamping jaws

Important note

X [mm] with 2 screws

X [mm] with 4 screws

at max. operating pressure of 250 bar

M6x16 - 12.9

15

36

Self-made clamping jaws

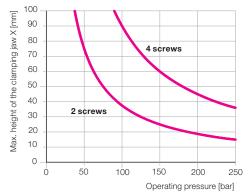
Clamping jaws are manufactured according to the contour of the workpiece to be clamped. The max. height of the clamping jaw X at 250 bar operating pressure is indicated in the opposite chart.

If the operating pressure is lower, the clamping jaws can be designed higher as per the opposite diagram.

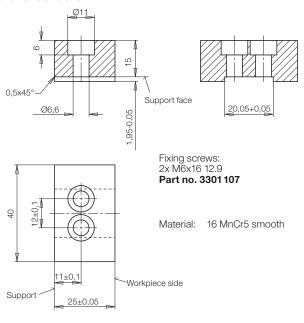
ted by the

The clamping jaws must always be supported by the provided support, since the fixing screws are not in the position to compensate the generated clamping forces.

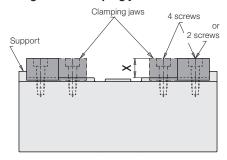
Max. height of the clamping jaw X as a function of the operating pressure



Clamping jaw blank 40 mm Part no. 3548070

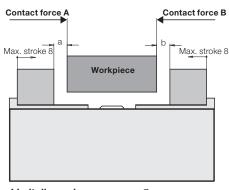


Fixing of the clamping jaws



Position-flexible clamping

1. Position of the workpiece within the clamping range



Limit dimensions: a max. = 7 mm b max. = 7 mm

Recommendation:

Place the position-flexible fixture clamp as symmetrically as possible to the workpiece, so that the clamping jaws realise approximately the same stroke and also the smallest possible stroke.

2. Possible contact forces during clamping

Due to the slightly different factors of friction and an internal bracing spring the two clamping jaws do not uniformly contact the workpiece. One clamping jaw always hurries on ahead. This can already lead in case of very unstable sections to a deformation.

The possible contact force can be taken from the diagram.

3. Max. flow rate

With a max. flow rate of 17 cm³/s the clamping time is approx. 0.5 seconds. For unstable workpieces and / or heavy clamping jaws the flow rate in the supply line should be throttled so that the clamping jaws contact the workpiece as "smoothly" as possible.

If required, the two set screws M3 (\emptyset 0.7) in the ports A can be replaced.

Contact force as a function of the

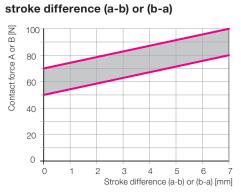


Diagram valid for horizontal mounting position. For vertical arrangement the weight of the clamping jaws has to be considered.

Römheld GmbH