**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
**Fixing from below**
Drilled channels

**Pipe thread**

**Connecting insert**

**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.

**Clamping principle**

Römheld GmbH · Postfach 1253 · 35317 Laubach, Germany · Tel.: +49 (0) 6405 / 89-0 · Fax: +49 (0) 6405 / 89-211 · info@roemheld.de

Actual issue see www.roemheld-group.com
**Technical data**

- **Part no.** 4413 080

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping force at 250 bar [kN]</td>
<td>8</td>
</tr>
<tr>
<td>Retention force at 250 bar [kN]</td>
<td>10</td>
</tr>
<tr>
<td>Min. operating pressure [bar]</td>
<td>25</td>
</tr>
<tr>
<td>Min. unclamping pressure</td>
<td>0.5 x clamping pressure</td>
</tr>
<tr>
<td>Clamping stroke [mm]</td>
<td>2 x 8</td>
</tr>
<tr>
<td>Jaw width [mm]</td>
<td>40</td>
</tr>
<tr>
<td>Max. flowrate [cm³/s]</td>
<td>17</td>
</tr>
<tr>
<td>Stroke volume Clamping [cm³]</td>
<td>8.4</td>
</tr>
<tr>
<td>Stroke volume Unclamping [cm³]</td>
<td>7</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>approx. 2.5</td>
</tr>
</tbody>
</table>

* See page 3 “Position-flexible clamping”

**Adaptor plate (accessory)**

- **Part no.** 0441 305
- **Weight [kg]** approx. 1.9

**Accessory: Adaptor plate**

- **View from below**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket head cap screw M6 x 20</td>
<td>Part no. 3300 225</td>
</tr>
<tr>
<td>O-ring 8 x 1.5</td>
<td>Part no. 3000 275</td>
</tr>
<tr>
<td>Stroke</td>
<td>M6 x 8 deep (8x)</td>
</tr>
<tr>
<td>Clamping and unclamping each O10 H7 x 7 deep for 4 x connecting insert</td>
<td>(3.68x1.78 mm)</td>
</tr>
<tr>
<td>Central lubrication</td>
<td>G1/8 (3x)</td>
</tr>
<tr>
<td>Important note!</td>
<td>G1/8 (3x)</td>
</tr>
</tbody>
</table>

**Important notes!**

- The fixture clamp is only suitable for exterior 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.
- Max. operating temperature 80 °C.
- Operating conditions and other data see data sheet A 0.100.

**Accessory: Adaptor plate**

- **View from above**

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**Accessories**

- **Adaptor plate (accessory)**
- **Dimensions**

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**Clamping force diagram**

(Height of the clamping jaw 15 mm)

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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.

Clamping jaw blank 40 mm
Part no. 3548070

Max. height of the clamping jaws X at max. operating pressure of 250 bar
Fixing screws: M6x16 - 12.9
for clamping jaws
X [mm] with 2 screws 15
X [mm] with 4 screws 36

Important note
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.

Position-flexible clamping

1. Position of the workpiece within the clamping range

Contact force A
Max. stroke b
Workpiece

Contact force B
Max. stroke 8

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 (Ø 0.7) in the ports A can be replaced.

Contact force as a function of the stroke difference (a-b) or (b-a)

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