Hand-pumps for Pressure Generation
Suitable for use with digital Keller-manometers*

- Simple, portable pressure generation
- Pressure generation: from vacuum (negative pressure) up to 700 bar
- Connection for reference pressure meter
  (pump is supplied without reference pressure meter)

### Hand-pump K/P
**Pressure generation:** -0,85…25 bar  **Medium:** Air
Negative pressures/vacuums and pressures of up to 25 bar (max. 40 bar) can be generated with this pneumatic hand-pump. Thanks to the fine adjustment valve (which is integrated in the pump) and the relief valve, a calibration pressure can be set accurately and quickly. This hand-pump is therefore highly suitable for testing manometers and pressure transmitters. The pump is supplied without the carrying case, which is available as an option.

**Weight:** ≈ 1,1 kg  **Dimensions:** 240 mm x 170 mm x 50 mm

### Hand-pump HTP1
**Pressure generation:** 0…700 bar  **Medium:** Oil or Water
Pressures of up to 700 bar can be generated with this hydraulic hand-pump. Hydraulic oil or distilled water can be used as pressure medium (the pump is supplied without fluid). The reservoir has a capacity of approx. 1 dl (100 ccm), thus allowing the pump to be used with larger dead volumes. The hand-pump with its integrated fine adjustment and relief valve is highly suitable for testing manometers and pressure transmitters. The pump is supplied complete with accessories (hose, adaptor, etc.) in a stable carrying case.

**Weight:** ≈ 1,7 kg  **Dimensions:** 255 mm x 176 mm x 70 mm

Reference devices
The reference device for accurate measurement of the actual pressure is screwed directly onto the hand-pump and is available as an option. The matching reference devices for the pumps are listed below. Please note the pressure range required for the pump:
- **K/P hand-pump = -1…30 bar**
- **HTP1 hand-pump = 0…700 bar**

Carrying Case
Solid carrying case with interior foam cutout to fit one pump with manometer attached. Additional compartments for tools, adapters etc. are provided.

- **For pump K/P:**  **Weight:** ≈ 900 g  **Dimensions:** 400 mm x 365 mm x 110 mm (optional)
- **For pump HTP1:**  **Weight:** ≈ 1,1 kg  **Dimensions:** 370 mm x 330 mm x 130 mm (inclusive)

* Matching reference devices for use with the K/P or HTP1 hand-pump (available as options):

<table>
<thead>
<tr>
<th>Reference device</th>
<th>LEX 1</th>
<th>LEO 1</th>
<th>LEO 2</th>
<th>dV-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>0,05 %FS</td>
<td>0,2 %FS</td>
<td>0,1 %FS</td>
<td>0,1…0,5 %FS</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>1…30 bar</td>
<td>1 mbar</td>
<td>10 mbar</td>
<td>10 mbar</td>
</tr>
<tr>
<td><strong>LCD</strong></td>
<td>0…700 bar</td>
<td>50 mbar</td>
<td>200 mbar</td>
<td>200 mbar</td>
</tr>
</tbody>
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