

## 1. Safety instructions



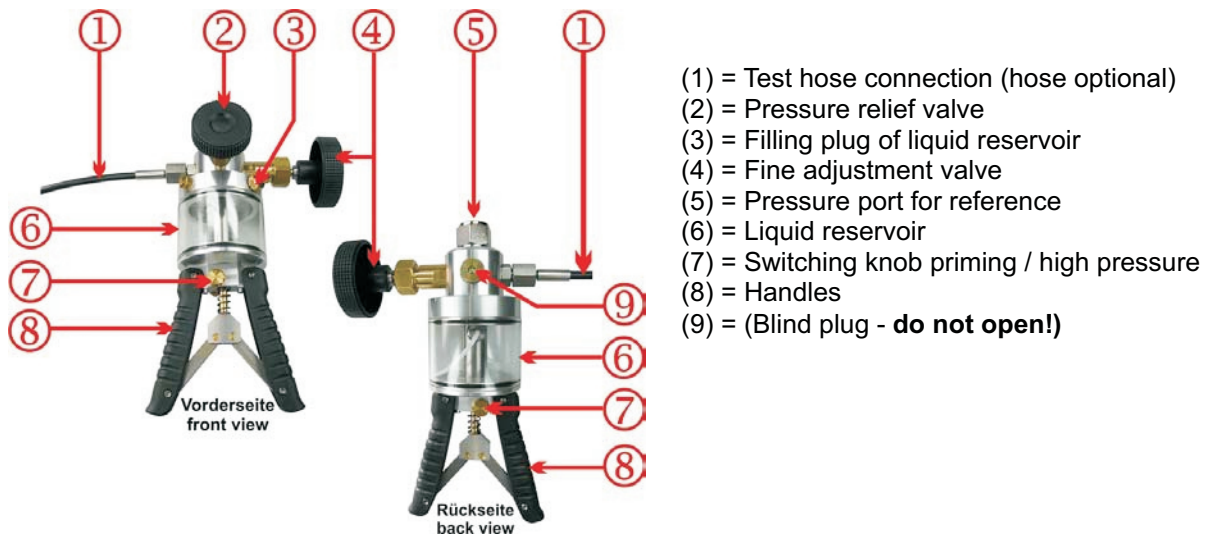
**Read these operating instructions carefully prior to operating the hydraulic calibration test pump PGS 700 / PGS 1000. The pressure inside the pump can be extremely high. Ensure that all pressure connections have been established correctly.**

## 2. Product description

The PGS 700 and PGS 1000 calibration test pumps are used to generate pressure for checking, adjusting and calibrating mechanical and electronic pressure measuring instruments by comparative measurements. These pressure tests may be carried out in laboratories, workshops or on site at the measuring point..

If the instrument to be tested and a sufficiently accurate reference measuring instrument are connected up to the test pump, the same pressure is applied to the two measuring instruments when the pump is operated. By comparing the two measure valves at random pressure values, the accuracy can be verified or the instrument under test can be adjusted.

Despite their compact dimensions, the calibration test pumps PGS 700 and PGS 1000 are easy to operate and allow for exact generation of the required test pressures. The pumps are fitted with a fine adjustment valve for the precise adjustment of pressures. The reference instrument is screwed directly on the top of the pump and the unit under test is connected by means of the optional HTH 1000 flexible hose.



## 3. Mounting instructions

- The reference instrument is fitted to the upper side of the calibration test pump PGS 700 or PGS 1000. The reference instrument is sealed by the integral O-ring sealing gasket. The maximum torque is 15 Nm.
- The unit under test is mounted to the end of the flexible test hose. Tighten to the connector to prevent any leaks to a maximum torque of 15 Nm.



**Never apply external pressure to the PGS 700 and PGS 1000. Do not connect to external pressure sources.**

As an accessory, a stainless steel set of adapters is available to cover several thread dimensions of your test specimen.



Tighten the optional adapters to a maximum torque of 15 Nm.

Tip: It is possible to connect the test specimen directly to the pump. After dismantling of the hose connector, there is a 1/4" BSP female thread at the side of the pump body.

- Open the filling plug (3) of the liquid reservoir (6) and fill with a suitable fluid: **mineral oil based hydraulic fluid (not water based!) or clean water, free of calciumcarbonate / scale (no distilled water!)**. (Optional: PGS 1000 Execution "S" to be used with brake fluid or Skydrol).
- Fill the liquid reservoir (6) up to the lower edge of the aluminum label (type label, placed around the liquid reservoir).

#### 4. Operation (pressure)

- Make sure, the PGS 700 or PGS 1000 is in priming position. If necessary, press the switching knob (7).

Switching knob (7) ←



handles in position.....

- priming -

- high pressure generation -

- Make sure that the release valve (2) is open.
- Turn the adjustment valve (4) counter-clockwise fully out (smooth "stop" can be felt)
- Turn the release valve (2) clockwise until the vent is closed.
- Operate the handles (8) for priming, until the handles (8) are just before they cannot be pressed fully together anymore, due to the generated priming pressure. Depending on the volume of the calibration circuit, this can be at app. 200 to 400 bar / 3000 to 6000 psi.
- Keep the handles (8) pressed together and operate the switch knob (7). The handles (8) are now in "high pressure" position.



NOTE: if the generated priming pressure is too high and - as a result - it is no longer possible to press the handles (8) fully together, please open the release valve (2) (turn counter-clockwise) and try it again.



- Operate the handles (8) until the required pressure is nearly achieved, but max. to app. 600 bar / 9000 psi. Higher pressure is made by turning the adjustment valve (4) clockwise.  
NOTE: After increasing the pressure, the reading may slightly drop again for about 30 seconds, which is caused by thermodynamic effects, the tube connection and the sealing gaskets. If the pressure drop does not come to a standstill, check the measuring circuit for tightness.



- A pressure reduction is achieved by turning the fine adjustment valve (4) anticlockwise

**Remove the reference instrument or the test specimen only when the relief valve (2) is open and no pressure is in the test pump any more.**

## 5. Maintenance instructions

Prior to connecting the reference instrument and the test specimen, the sealing gasket in the two connectors should be checked for correct position and wear, and should be replaced, if and when necessary.

A service kit (Order-No. PGS700-SK) consisting of spare sealing gaskets and o-rings, is available as an accessory.

## 6. Cause of fault

- If the pressure cannot be generated correctly or if the set pressure does not stay stable, this is likely to be caused by the incorrectly positioned or selected sealing gaskets. Please also check whether any adapters used on the test specimen have been tightened sufficiently to eliminate leaks.
- Before assuming there is a leak in the calibration test pump: First of all, check if the relief valve (2) is closed.
- If the test pump has not been used for a longer period of time, the first lift may be somewhat sluggish. This effect will disappear again during further operation.
- By no means apply any force to the operating elements of the calibration test pump.
- **Never connect an external pressure supply system to the PGS 700 or PGS 1000 calibration test pump.**



## 7. Technical Data

Pressure	: PGS 700: 10 000 psi / 700 bar
PGS 1000	: 14 500 psi / 1000 bar
Medium	: mineral oil based hydraulic fluid or clean water, free of calcium-carbonate /scale (no distilled water!)
Pressure Port	: 3/8" BSP F for reference port c/w 1/2" BSP F adapter Test Point 1/4" BSP F
Fine adjustment	: Fine adjustment valve / volume control
Material	: Anodized aluminum, brass, plastic and Stainless steel
Dimension	: 280 x 170 x 120 mm (no test hose)

## 8. Order Data / accessories

<b>PGS-700-OEM</b>	Pump only, 0/700 bar, c/w 1/2" BSP F rotating Adapter
<b>PGS-1000-OEM</b>	Pump only, 0/1000 bar, c/w 1/2" BSP F rotating Adapter
<b>PGS700-TC</b>	Transit case
<b>PGS-BSP</b>	Set of BSP adapter, 1/4" BSP M to 1/8", 3/8", 1/2" BSPF and 1/2" BSP M
<b>PGS-NPT</b>	Set of NPT adapters, 1/4" BSP M to 1/8", 3/8", 1/4", 1/2" NPT F
<b>PGS-A-N14I-G38A</b>	3/8" BSP M to 1/4" NPT F - for reference port
<b>PGS-A-G14I-G38A</b>	3/8" BSP M to 1/4" BSP F - for reference port
<b>PGS-A-N14I-G14A</b>	1/4" BSP M to 1/4" NPT F - for test point
<b>PGS700-A-G14</b>	1/4" BSP M to 1/4" BSP M adapter for pressure hose fitting
<b>PGS700-SK</b>	Set of sealing and O'ring for PGS 700 / PGS 1000
<b>HTH-1000-1</b>	High pressure hose (1500 bar), 1 mt - 1/4" BSP F rotating
<b>HTH-1000-2</b>	High pressure hose (1500 bar), 2 mt - 1/4" BSP F rotating
<b>HTH-1000-3</b>	High pressure hose (1500 bar), 3 mt - 1/4" BSP F rotating

NOTE: HTH-1000 include PGS700-A-G14 adapter

**Hydraulic Hand Pump PGS 700 and PGS 1000**

**INSTRUCTION MANUAL**



**PGS-700, maximum pressure 700 bar**  
**PGS-1000, maximum pressure 1000 bar**

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**Tips**

This symbol provides you with tips, information and notes.



**Warning!**

**This symbol warns you against actions that can cause damage to persons or to the instrument.**