

Operating Manual



PGS 10

Pressure Test Pump
-0.85 ... +10 bar


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Information

 This symbol provides you with information, notes and tips.

WARNING

 This symbol warns you against actions that can cause injury to people or damage to the pressure test pump or reference or test items.

1. Safety instructions



Read these operating instructions carefully prior to operating the pressure test pump.

Ensure that all pressure connections have been established correctly.

2. Product description

The pressure test pump **PGS 10** is used to generate pressure for checking, adjusting and calibrating mechanical and electronic pressure measuring instruments by comparative measurements in the low-pressure range. 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 pressure test pump **PGS 10**, the same pressure (or vacuum) is applied to the two measuring instruments when the pump is operated. By comparing the two measure values at random pressure values, the accuracy can be verified or the instrument under test can be adjusted.

The **PGS 10** is a pneumatic pressure test pump for low-pressure ranges up to 10 bar with change-over switch to vacuum generation down to -850 mbar. Despite its compact dimensions, the pressure test pump **PGS 10** is easy to operate and allows for exact generation of the required test pressures. The maximum pressure or vacuum achievable depends on the attached test volume. The smooth-running pressure generation and the integrated fine adjustment valve allows a safe and precise setting of very small positive respectively negative pressure values in the range of mbar. The test device and the reference instrument can be easily connected by means of a supplied T-connector with tube connections.

- (1) = Pressure connector for reference
- (2) = Hose for reference connection
- (3) = Pressure connector for test item
- (4) = Hose for test item connection
- (5) = T-piece/connector
- (6) = Pressure/vacuum switch-knob
- (7) = Drain valve
- (8) = Fine adjustment valve
- (9) = Pump handle

3. Mounting instructions

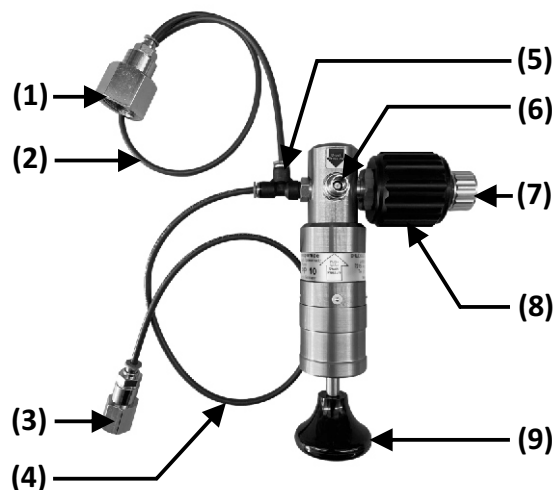
Mount the T-connector (5) to the 1/8" BSP female thread of the pump body. Sealing by means of o-ring. Max. torque is 15 Nm.

Plug both hoses (2) and (4) into the connectors of the T-piece (simply plug-in; release by operating the blue ring). To the open ends of the hoses, plug the both connectors with 1/8" BSP male thread at the other end (simply plug-in; release by operating the blue ring).

Mount the reference adapter (1) to your reference instrument (sealing by means of o-ring).

Mount the device under test adapter (3) to your instrument under test (sealing by means of o-ring). If necessary, use optional thread adapter (see accessories: PGS-BSP for set of BSP adapters, PGS-NPT for set of NPT adapters, PGS-M for set of metric and MINIMESS 1620 adapters).

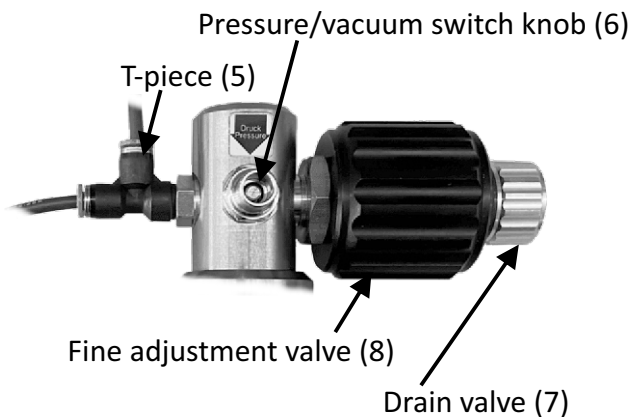
Connect reference instrument and device under test with mounted connectors to the both open ends of the hose (simply plug-in; release by operating the blue ring).



4. Operation: generation of pressure

The drain valve (7) must be open (approx. a half turn counterclockwise is sufficient).

Press the pressure/vacuum switch knob (6) fully into position „Pressure“.





Turn the fine adjustment valve (8) about halfway out by turning it counterclockwise (to have adjustment clearance in both directions).

Close the drain valve (7) hand-tight.

Operate the handle (9) of the pump until the approximate pressure has been achieved.

Turn the fine adjustment valve (8) clockwise to increase the pressure or anti-clockwise to decrease the pressure until the requested pressure has been reached precisely (to be read on the reference measuring instrument).

 After increasing the pressure, the reading may slightly drop again for about 30 seconds, which is caused by thermodynamic effects, the tube connections and the sealing gaskets. If the pressure drop does not come to a stillstand, check the measuring circuit for tightness.

 Due to the low volume of each compression stroke of the pressure test pump, only small volume test specimens should be tested.

A pressure reduction is achieved by turning the fine adjustment valve (8) counterclockwise first and then by carefully opening the drain valve (7) counterclockwise (half turn is sufficient).



Remove the reference instrument or the test specimen only, when the drain valve (7) is open (turned about half turn counterclockwise) and no pressure is in the test pump any more.

5. Operation: generation of vacuum

The drain valve (7) must be open (approx. a half turn counterclockwise is sufficient).

Press the pressure/vacuum switch knob (6) fully into position „Vacuum“.

Turn the fine adjustment valve (8) about halfway out by turning it counterclockwise (to have adjustment clearance in both directions).

Operate the handle (9) of the pump until the approximate vacuum has been achieved.

Turn the fine adjustment valve (8) counterclockwise to increase the vacuum or clockwise to decrease the vacuum until the requested vacuum has been reached precisely (to be read on the reference measuring instrument).



After increasing the vacuum, the reading may slightly increase again for about 30 seconds, which is caused by thermodynamic effects, the tube connection and the sealing gaskets. If the vacuum drop does not come to a stillstand, check the measuring circuit for tightness.



Due to the low volume of each decompression stroke of the pressure test pump, only small volume test specimens should be tested.

A vacuum reduction is achieved by turning the fine adjustment valve (8) clockwise first and then by carefully opening the drain valve (7) counterclockwise (half turn is sufficient).



Remove the reference instrument or the test specimen only, when the drain valve (7) is open (turned about half turn counterclockwise) and no pressure is in the test pump any more.

6. Maintenance

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.



The pressure test pump must not be soiled, and in particular it must not get into contact with fluid or aggressive media.

7. Cause of fault

If the pressure or vacuum cannot be generated correctly or if the set pressure or vacuum 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 connections have been tightened sufficiently to eliminate leaks.

Before you suspect a leak at the pressure test pump: Please first check whether the pressure/vacuum changeover switch knob (6) is fully depressed in the desired position (pressure or vacuum).

If the pressure 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 pressure test pump.



Never connect an external pressure supply system to the pressure test pump.