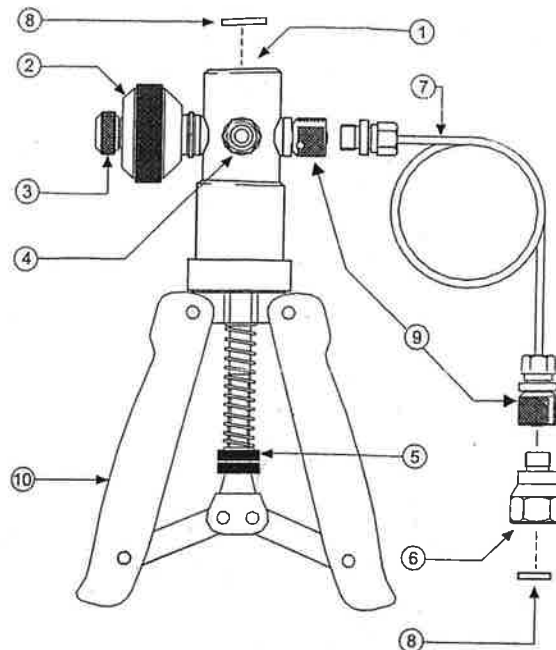


OPERATING INSTRUCTIONS FOR THE HAND HELD PRESSURE TEST SYSTEM - TP1-40

Key:

1. Pressure port - 3/8" BSP Parallel female connection to take master instruments e.g. digital or analogue gauge, PC6 Calibrator.
2. Fine adjustment valve.
3. Pressure release valve.
4. Pressure / Vacuum selector
5. Adjustable stroke for varying maximum pressure output (over pressure protection).
6. BSP or NPT adaptor set
7. Flexible hose to item under test.
8. Nylon seals for BSP adaptors (see seal kit provided) **DO NOT use 'PTFE' tape for sealing with parallel threads**
9. Knurled 'quick-fit' connectors
10. Pump Handles



Specification:

Output pressure: 0 to 40 bar / 0 to 600 psi (Adjustable)
 Output Vacuum: 0 to -960 mbar / 0 to -29 inHg
 Materials: Bright nickel plated brass, clear anodised aluminium, Nylon.
 Adjustment: Fine volumetric pressure / vacuum adjuster
 Dimensions: 220mm (L) x 105mm (W) X 63mm (D)
 Weight: 650 grams.

The system is a portable dual source of vacuum and pressure. Each system incorporates a vacuum / pressure selector, a volume control for fine adjustment and adjustable stroke to provide over pressure protection.

TEST INSTRUMENTS AVAILABLE

TPG1 - TPG6 range of Analogue gauges - 1.0% accuracy
 Digital Indicator (DTG2K) - 0.2% accuracy
 PC6, PC6-PRO, PC6-IS Pressure Calibrators - up to 0.025% accuracy
 DPM Digital Pressure Module - up to 0.025% accuracy

HOSE / ADAPTORS

The hoses (7) and adaptors (6) are fitted by simply screwing them into the connectors (9) by turning the knurled knut on the connector fully anti-clockwise.

RELEASE VALVE (3)

This can be used to reduce or release the pressure in the system. The rate of pressure reduction is dependent upon the degree of rotation when opening the valve. Minimal force is required to seal the system.

VOLUME CONTROL (2)

The pressure generated can be finely adjusted by turning the fine adjustment valve (2) either clockwise or anticlockwise to increase or decrease pressure accordingly.

OVER PRESSURE PROTECTION (5)

To adjust the maximum output pressure of the system turn the nuts (5) to increase or decrease the stroke length.

IMPORTANT

Under no circumstances should the fine adjustment valve (2) be wound back beyond the red line indicator on the body. Should this occur, then the pressure must be released from the system before attempting to re-engage the fine adjustment valve.

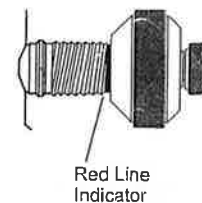
PRESSURE/VACUUM SELECTION (4)

Press the selector (4) as indicated on the label to engage the desired mode. Ensure that the release valve (3) is open before changing mode.

NOTE

The system should only be used for pressurising small volumes due to its small displacement. If the system has not been used for a period of time, it could be difficult to operate on the first stroke. The cylinder has been lightly greased on assembly but, if additional lubrication should ever be required, then apply a minimal amount to the inside of the cylinder. Access is via the three retaining screws located under the black collar.

For seal replacement, refer to service kit TPK1-40 instructions.





WARNING: DO NOT CONNECT TP1-40 TO EXTERNAL PRESSURE SOURCE.

Guidelines for use:

1. Calibration / Comparison against Analogue gauge

- 1.1 Fit a SI Test Gauge to the top of the test system (1), for other makes, fit by using adaptor 18111 (not supplied) and correct seal. **Note:** The retaining nut should be screwed fully down but needs to be no more than finger tight as seal is achieved by 'o' ring.
- 1.2 Connect item under test using appropriate adaptor and sealing (6) at the end of the flexible hose (7) or directly to body.
Note: adaptors tightened to a maximum torque of 15 Nm.
- 1.3 Screw fine adjustment valve (2) fully clockwise.
- 1.4 Screw fine adjustment valve (2) 4 - 6 full turns anticlockwise.
- 1.5 Screw pressure release valve (3) fully clockwise, tightening to ensure good seal.
- 1.6 Operate handles (10) until the pressure is close to that finally required. **Ensure handles are fully squeezed together on each stroke to achieve maximum pressure output.**
- 1.7 Wind the fine adjustment valve (2) clockwise to increase pressure or anticlockwise to decrease pressure until required pressure is reached.
Note: The pressure may settle for up to 30 seconds after increasing pressure due to thermodynamic effects, settling of seals and expansion of the flexible hose.
Caution: NEVER screw the fine adjustment valve (2) beyond the red line indicator.
- 1.8 Reductions in pressure can also be achieved by careful use of the pressure release valve (3).
- 1.9 Vacuum is achieved using the above procedure and having the changeover valve (4) pushed completely towards the vacuum position. **Note: release pressure before changing mode.**

2. Use With High Resolution Pressure Calibrators

When used with instruments such as the PC6 Calibrator the connections and use are as for gauges above, however the higher resolution available will amplify the visibility of the thermodynamic effects as mentioned in paragraph 1.7. These will settle to useable values within one minute of pressurisation.

Note: On very high resolutions such as 1mbar or 0.1 inches of water, small movements of the pipe may result in noticeable pressure changes.

3. Fault Investigation.

In the event that the system appears to lose pressure then the procedure above should be repeated ensuring new seals are used, adaptors are tightened sufficiently and the pressure release valve (3) is tightened firmly.

Note: The connections to the hand held test system are sealed with 'o' ring or bonded seals and should not leak. The pipe to body connection can be checked but tightened no more than 2 Nm.

DO NOT attempt to tighten the other fittings to the test system as this could lead to damage of sealed joints.

When testing for leaks it may be noticed that air is drawn in or expelled from around the changeover valve. This is normal and should cause no concern.

Ordering Codes.

TP1-40	Hand held pressure test system in rigid carrying case with 1 metre flexible hose and adaptor set
PC6, PC6-PRO, PC6-AV, PC6-IS	A range of Pressure Calibrators available between -1 and 1000 bar (15,000 psi)
DTG-2K - range	5 ranges of Digital Indicator up to 1000 bar
DPM	A range of Digital Pressure Modules available between -1 and 1000 bar
TPG1, 2, 3, 4, 5, 6	6 ranges of Analogue Gauge between -1 and 40 bar
TPK1-40	Service kit containing a set of seals, 'O' rings, retaining screws and allen key
LTPA-BSP-QF	Set of 7 BSP Quick_fit adaptors
LTPA-NPT-QF	Set of 6 NPT Quick-fit adaptors
18111	3/8"BSP male to 1/4"BSP female swivel adaptor
HTP1	Hydraulic hand held test system for pressures up to 1000 bar
HTPG1, 2, 3, 4	4 ranges of Analogue Gauges 0.5% accuracy between 0 to 1000 bar
HTPK1	Service Kit containing a complete set of seals for HTP1

