# OPERATING INSTRUCTIONS

## Universal Pump & Pressure Indicating Panel

## 26-1880

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## Contents


| Section | | Page |
|---|---|---|
| 1 | Introduction | 3 |
| 2 | Priming the Panels | 3 |
| 3 | Pressure Testing the Panels Prior to Installation | 3 |
| 4 | Installation | 6 |
| 5 | General Maintenance | 6 |
| 6 | Spares | 6 |

## 1 Introduction

1.1 Universal Pump and Pressure Indicating Panel

This is the main gauge unit in the system and can be used for monitoring pore pressure. It also provides fine control of pressure within the system using the rotary hand pump. The unit is fitted with a dual calibrated 250 mm diameter pressure gauge, five inlet/outlet no volume change valves, screw controlled rotary hand pump, water reservoir and isolating valves, all mounted in a case for wall mounting.

**WARNING: the maximum pressure is rated at 1700 kPa and must not be exceeded under any circumstances. Other items in the system may be rated at a lower pressure and this should not be exceeded.**

## 2 Priming the Panels

**Note:** when first priming the system it is advantageous to add a small quantity of liquid detergent to the water. This will assist in dispersing air bubbles adhering to pipework etc. This liquid should be flushed through and replaced by clean de-aired water before bringing the system into use.

2.1 Universal Pump and Pressure Indicating Panel (figure 1)

2.1.1 With the valves open, screw the pump fully clockwise, then close all valves.

2.1.2 Connect a de-aired water supply line to (9). A tee connector will be required if the low pressure manometer is to be used at (9).

2.1.3 Open valve (2) and prime the pump by unscrewing anti-clockwise. When the pump is fully charged, close valve (2).

**Note:** to re-prime the pump, close all valves except valve (2) and screw the pump anti-clockwise, thus drawing in water from the reservoir. Close valve (2).

2.1.4 Open valve (10), partly unscrew the bleed valve below the gauge unit and flush through using the pump until the line is free of air bubbles. Close the gauge bleed valve and valve (10).

2.1.5 Open valves (3), (4) and (5) and flush through the pump until the line is free of air bubbles and water emerges at the outlets (4) and (5). Close valves (3), (4) and (5).

2.1.6 Open valves (6), (7) and (8) and flush through using the pump until the line is free of air bubbles and water emerges at the outlets (7) and (8). Close valves (6), (7) and (8).

2.1.7 Continue the above procedures until all air is removed from the system.

## 3 Pressure Testing the Panels Prior to Installation

3.1 Universal Pump and Pressure Indicating Panel (figure 1)

3.1.1 Connect a pressure line to valve (5).

3.1.2 Open the water supply valve and the pressure line valve and allow water to flush through the pressure line until the line is free of air bubbles. Close the water supply valve.

3.1.3 Open valves (10), (3) and (6) and gradually increase the pressure to the panel until the maximum pressure available is recorded on the pressure gauge or the maximum reading available on the gauge is reached.

3.1.4 Should the application of pressure release trapped air bubbles, release the pressure slightly through the water supply valve and repeat the priming procedure for the relevant line.

3.1.5 Check that no leakage is evident under pressure at the various connections and valves. Any leakage should be rectified by carefully tightening the connection.

3.1.6 Re-pressurise the panel to the maximum allowed on the gauge.

3.1.7 Maintain maximum pressure for a period of 24 hours. Any leakage will be indicated by a fall in pressure on the gauge. Leakages should be rectified and pressure testing continued.

**Note:** there will be a certain amount of expansion and ‘settling down’ of a new panel when first commissioned. Maintain pressure by ‘topping up’ as necessary.

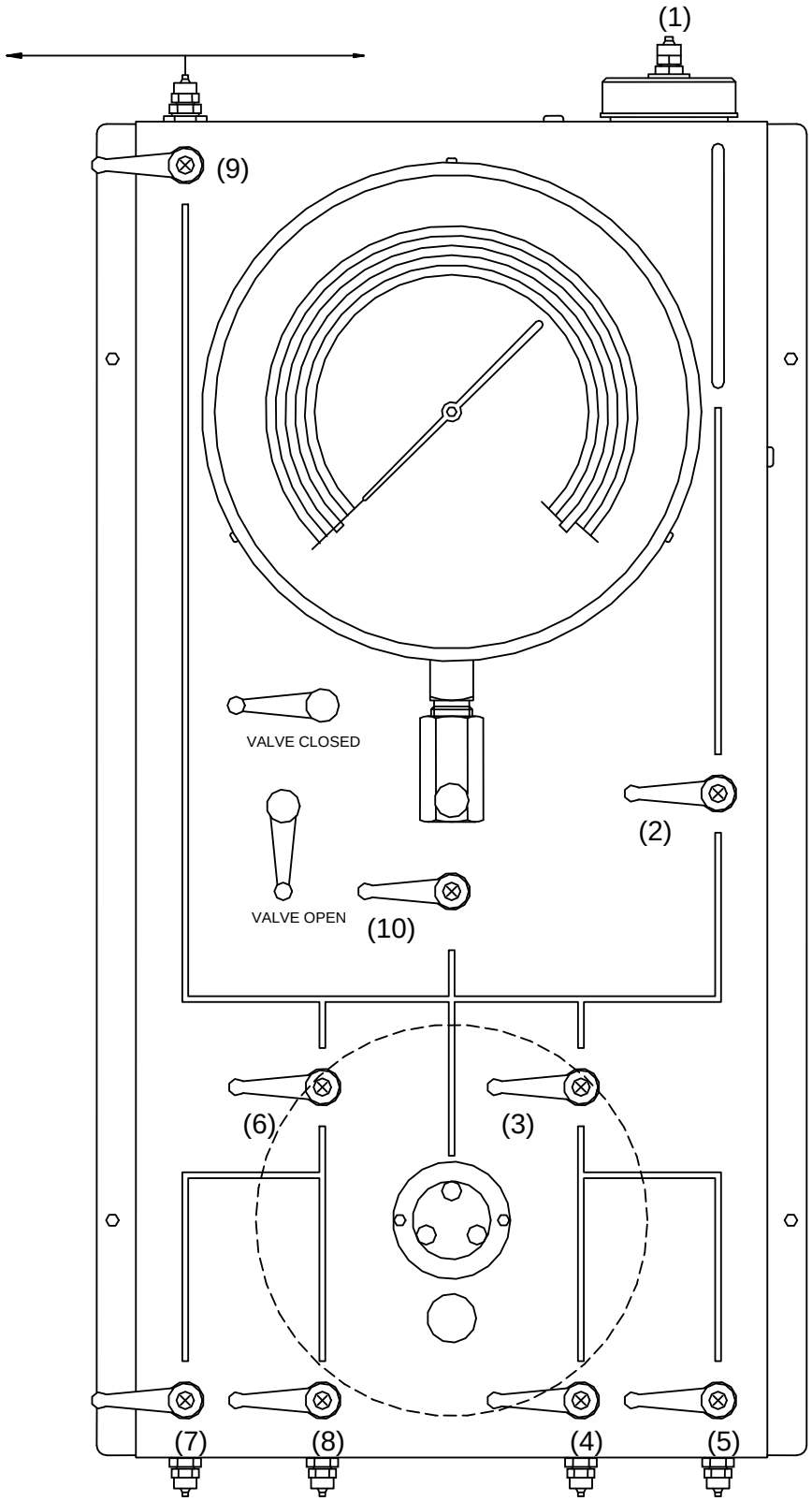



Figure 1. Universal Pump and Pressure Indicating Panel

## 4 Installation

4.1 Mark the position of the mounting holes required on the wall and drill the holes to accept the screws supplied.

## 5 General Maintenance

After initial settling down and pressure testing, the panel will require little or no attention for a considerable time other than general cleaning.

5.1 Universal Pump and Pressure Indicating Panel

5.1.1 If it is necessary to replace valve seals, bleed screws or tubing, drain the system. Replace the relevant parts, re-prime and pressure test as in sections 3 and 4.

5.1.2 To replace pressure gauge, drain the system and remove the two gauge securing screws from the rear of the panel. Carefully pull the gauge away from the panel and unscrew from its de-airing block.

5.1.3 Fit a new gauge to the de-airing block ensuring that a sealing washer is fitted to the gauge nipple housing. Secure the gauge to the panel, re-prime and pressure test as for sections 3 and 4.

5.1.4 To replace 'O' ring seal in the pump, drain the system. Unscrew the locating cap on the pump cylinder and carefully pull the pump and piston out of the cylinder. Fit a new 'O' ring seal and re-assemble the pump. Re-prime and pressure test as for sections 3 and 4.

5.1.5 To replace the pump unit, drain the system. Remove the tubing from the rear of the cylinder and unscrew the two securing bolts on the panel frame. Carefully withdraw the pump and its guide support through the front of the panel casing. Fit a new pump assembly in reverse order, re-prime and pressure test as for sections 3 and 4.

## 6 Spares

6.1 It is recommended that either the ELE Service Department or an authorised distributor be contacted for details of available spare parts.