



**Over Pressurisation Protection Unit
OPPU**

SCOTIA

INSTRUMENTATION

1.0 INTRODUCTION

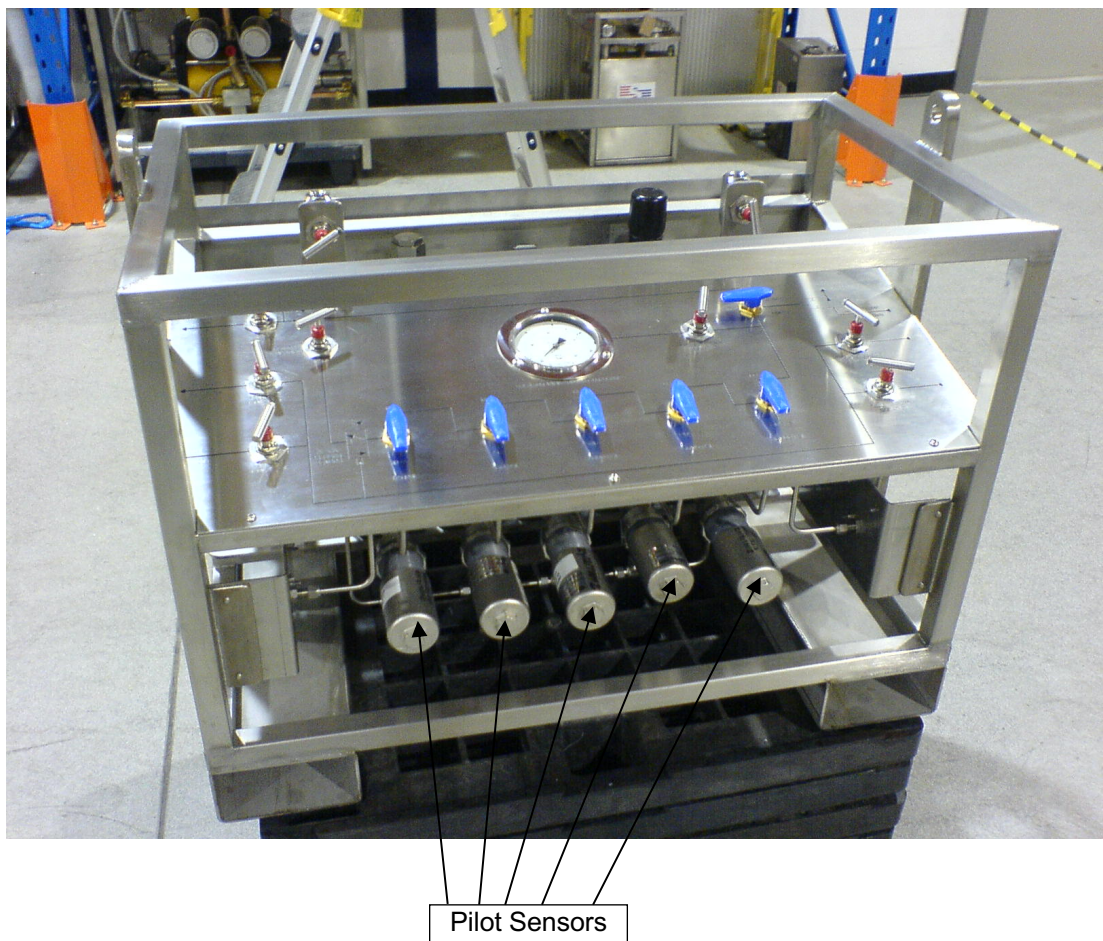
The Over Pressurisation Protection Unit has been designed to halt pumping or further rise in testing pressure at a pre-determined value in order to protect plant and equipment which can be remote from the pump unit or source of pressure.

The pressure can be directly monitored by the operator via a 10" test gauge which is able to be fitted to the unit.

Five pilot operated, three port, two-position valves with manual adjustment are fitted to sense the system pressure and control the shutdown. They are configured normally open and mounted so that they are adjustable from the front of the panel.

These valves have overlapping ranges meaning the OPPU can be set to operate between 10 and 10,000 psi. A higher pressure, 75 to 15,000 psi model is also available.

Stainless steel construction throughout, the dimensions are 890 mm wide, 510 mm deep and 700 mm high. Approximate weight is 95 kg.

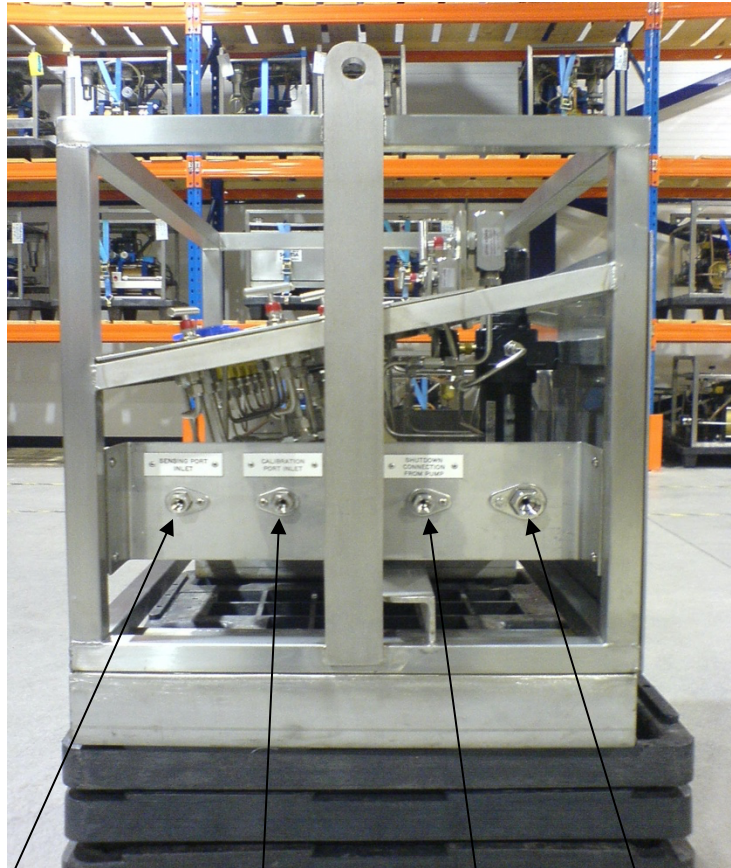


SCOTIA

INSTRUMENTATION

2.0 CONNECTIONS

2.1 INLET



SENSING PORT INLET
Pressure from system being protected

CALIBRATION PORT INLET
To supply external pressure for calibrating switching points

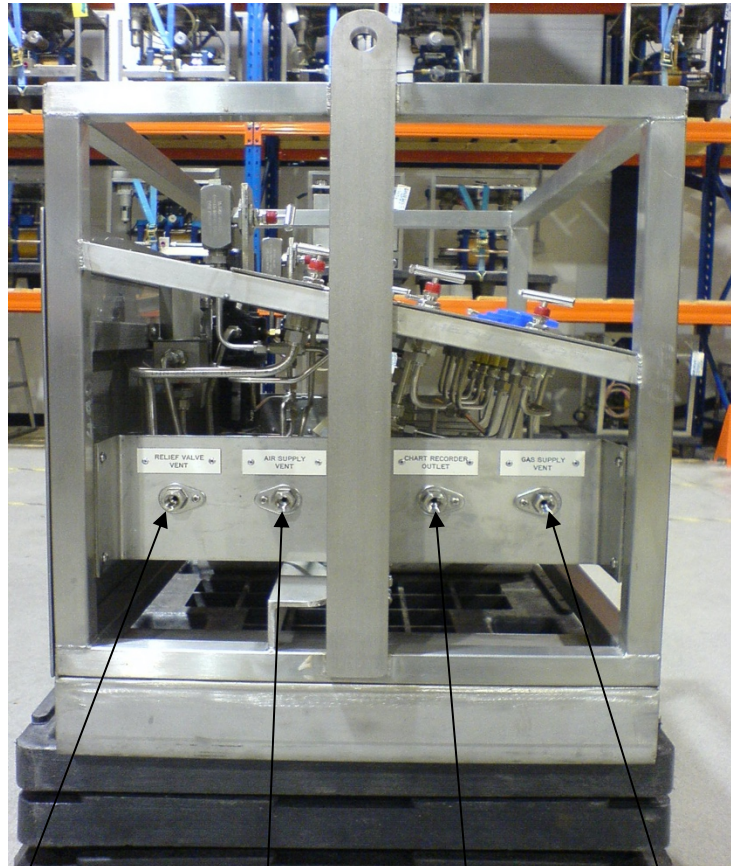
SHUTDOWN CONNECTION FROM PUMP

AIR SUPPLY
100 psi supply to operate OPPU system

SCOTIA

INSTRUMENTATION

2.2 OUTLET



**RELIEF VALVE
OUTLET**
Allows controlled venting
to safe area in case of noxious
substance being pumped

**CHART RECORDER
OUTLET**
Allows a permanent
record to be produced
via recording device

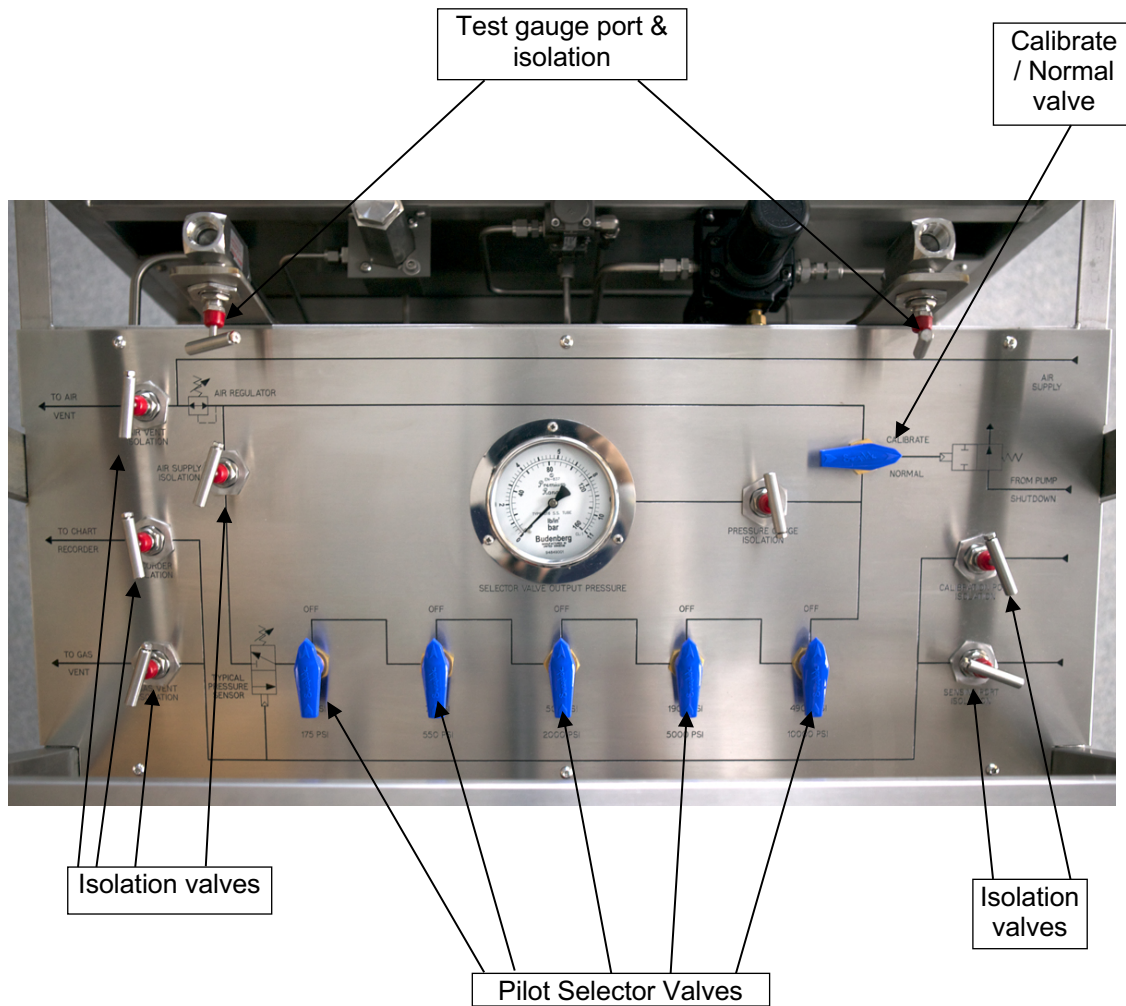
**AIR SUPPLY
VENT**
To vent OPPU and
supply lines from
compressor

VENT
Used to vent the
system
being pressurised

SCOTIA

INSTRUMENTATION

3.0 FRONT PANEL



SCOTIA

INSTRUMENTATION

4.0 SETTING PROCESS

- a) Close the isolation valves for the Sensing Port, Vent Ports and Chart Recorder port.
- b) Connect suitable clean dry 100psi air supply to Air Inlet connection.
- c) Connect a suitable Test Gauge to one of the vertical connection valves, and close the unused valve.
- d) Connect a suitable pressure source to the Calibration Port Inlet.
Note: if water is the testing medium, Test Gauge isolation valves should be opened, and any air trapped in the OPPU bled out.
- e) Turn "Calibrate / Normal" valve to 'Calibrate' position (handle points to back of unit).
- f) Select the Pilot Sensor appropriate for the Shut-Down Range and turn the Selector Valve to the 'ON' position. **Note: Only one Pilot sensor to be selected per test.**
- g) Rotate hex end cap of selector valve anticlockwise till loose feel is obtained then 1 full revolution clockwise to ensure engagement at lower end of valve range.
- h) Raise source calibration pressure slowly (rising pressure will be indicated on test gauge) and watch for Selector Valve Output Pressure Gauge on front panel to return to atmospheric pressure; this indicates the set point. Release the source pressure to zero and adjust using the hex end of the adjustment cap on the selector valve, rotate clockwise or anticlockwise to raise or lower the set point. Repeat, raising the pressure slowly until the required relief pressure set point has been achieved. Repeat at the required pressure to confirm setting is correct. The cap can be locked in place with the lock ring when the required relief pressure set point has been confirmed.
- i) Close valve to isolate the Calibration Inlet Port.
- j) Vent OPPU to atmospheric pressure by opening the Gas Vent Valve.
- k) Turn "Calibrate / Normal" valve to 'Normal' position (handle points to front of unit).
OPPU is now ready to use and be connected to the system requiring protection.
- l) Connect pump shutdown pressure line with suitable hose to the Shut Down Connection on the OPPU skid.
- m) Connect system to be pressurised to the OPPU skid using suitable hose to Sensing Port Inlet.
- n) Open the Sensing Port Isolation valve.