

20K OPERATING INSTRUCTIONS OF OVER-PRESSURISATION SKID



Over-Pressurisation Skid (OPS) designed as an additional pressure control technique against unplanned over-pressurisation of a system.

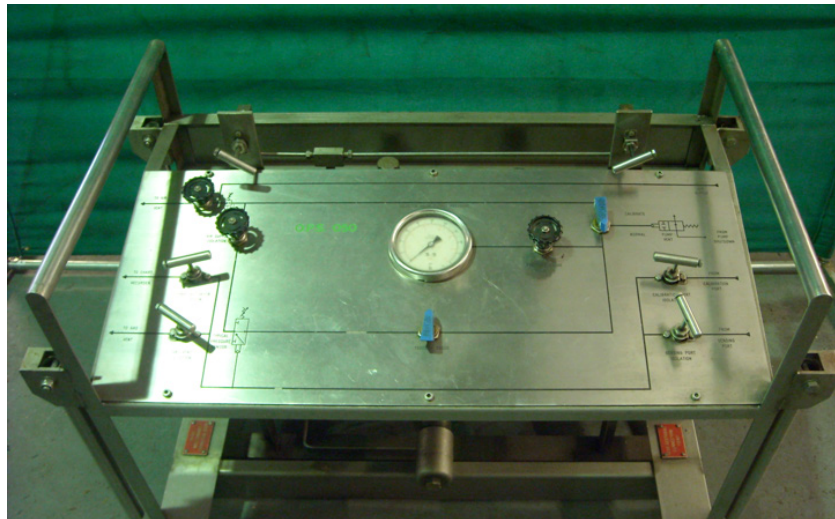
Numerous options for installation:

- i) Installed in-line with test pump and air operated valve (AOV) during pumping / pressurisation operations. Sensors set and any over pressure detected results in air supply being cut via the AOV.
- ii) Tied into the shutdown system of a diesel/electric driven pump, Sensor is set and any over pressure detected shuts down the pump whilst safely venting excess pressure.

Skid incorporates one Adjustable Pressure Switch which operates from 10,000psi to 20,000psi and one internal high pressure relief valves panel protection only (set @ 20,600psi).

Sensor Range

10,000psi to 20,000psi

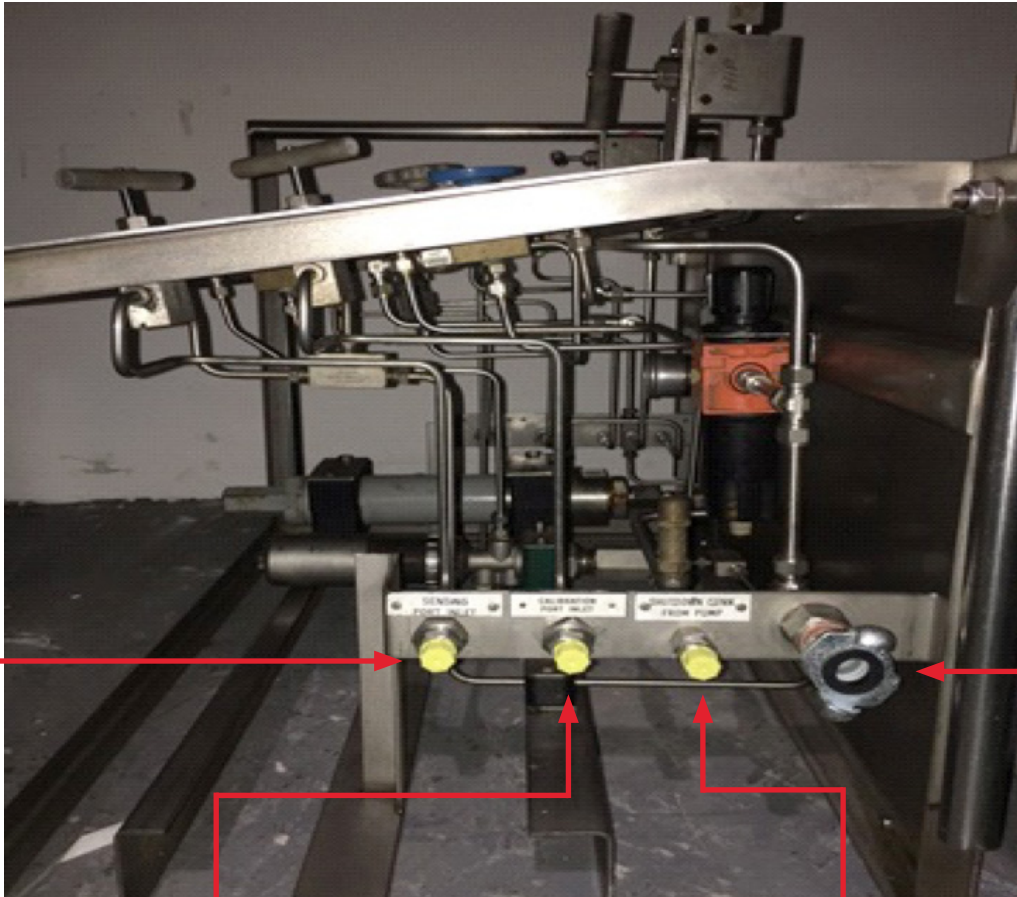


Front View

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Connections

1. Inlet Side



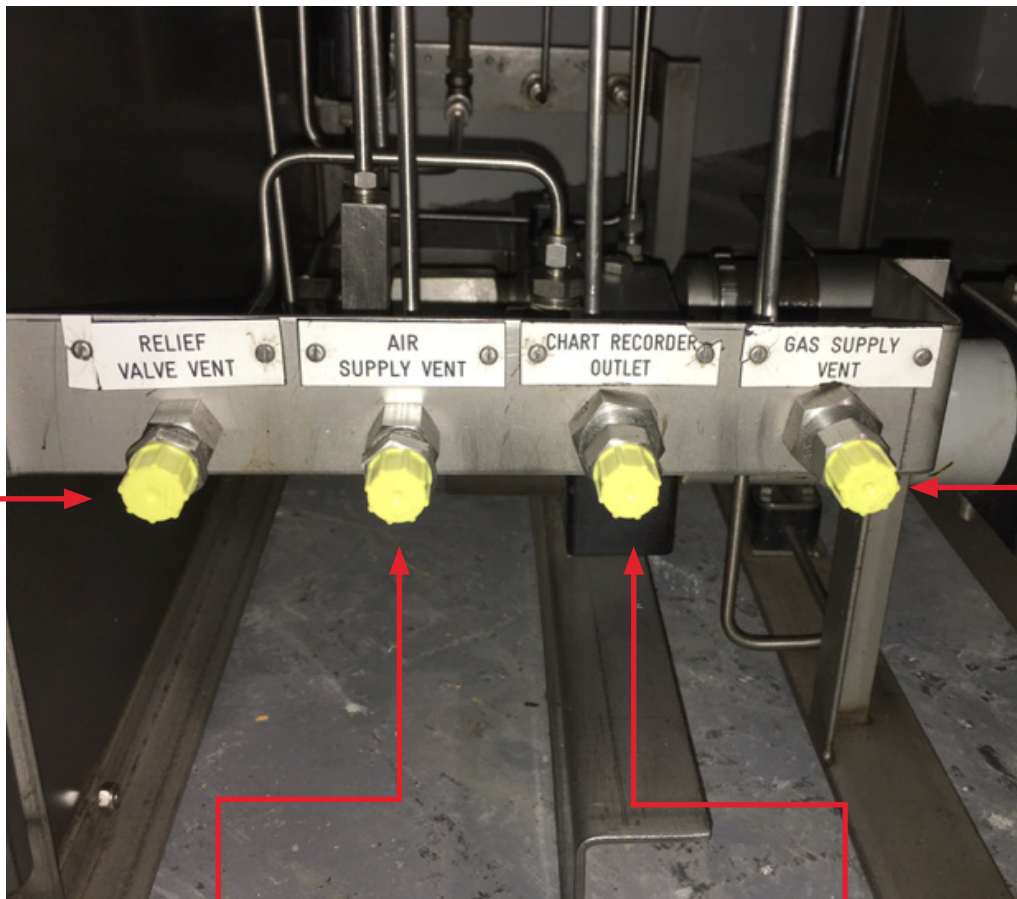
Right Hand Side View (Inlet Side)

Sensing Port Inlet	Calibration Port Inlet	Shut Down Connection From Pump	Air Inlet
To supply pressure from the system being pressurised that the skid is protecting when in normal mode.	To supply pressure from an external source to set up the skid to its desired switching pressure when in calibration mode.	To tie into the shutdown system on a diesel driven unit or from a Metnor air driven pump shut down valve.	100 psi air supply from a compressor to operate the skids own system.

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Connections

2. Outlet Side

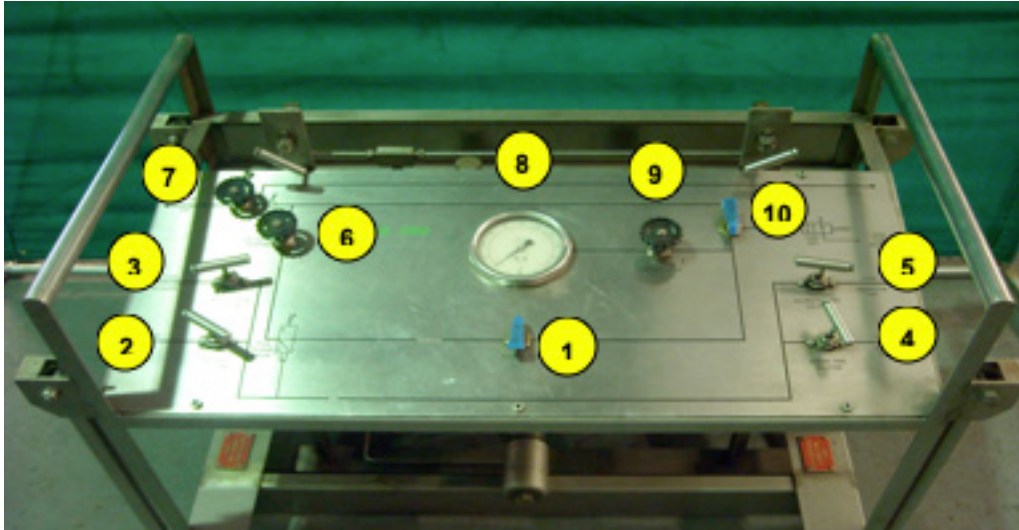


Right Hand Side View (Inlet Side)

Relief Valve Outlet	Air Supply Vent	Chart Recorder Outlet	Gas Vent
<p>The main skid protecting valve. Prevents the skid from being over-pressurised. The outlet is designed so if a noxious substance is being pressured it can be piped out to a safe location.</p>	<p>Can be used to vent the skid and any associated supply air lines from a compressor.</p>	<p>If the pressurising being undertaken requires a permanent record this can be used to supply pressure to the recorder.</p>	<p>Used to vent the system being pressurised.</p>

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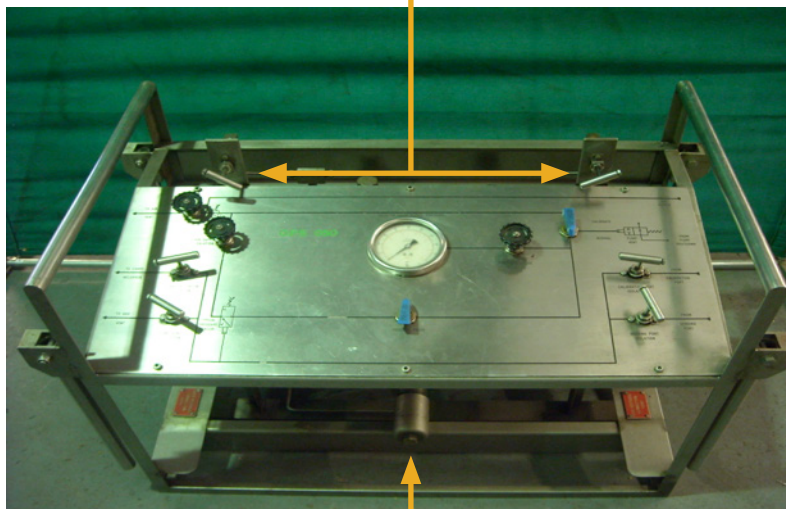
Controls



- | | |
|--|---------------------------------------|
| 1. Pressure sensors selection valve | 2. Gas isolation |
| 3. Chart recorder isolation | 4. Sensing port isolation |
| 5. Calibration isolation | 6. Air supply isolation to sensor |
| 7. Air vent isolation (connect an AOV) | 8. Air pressure gauge |
| 9. Air gauge isolation | 10. Calibrate / normal mode to sensor |

Sensor & Gauge Ports

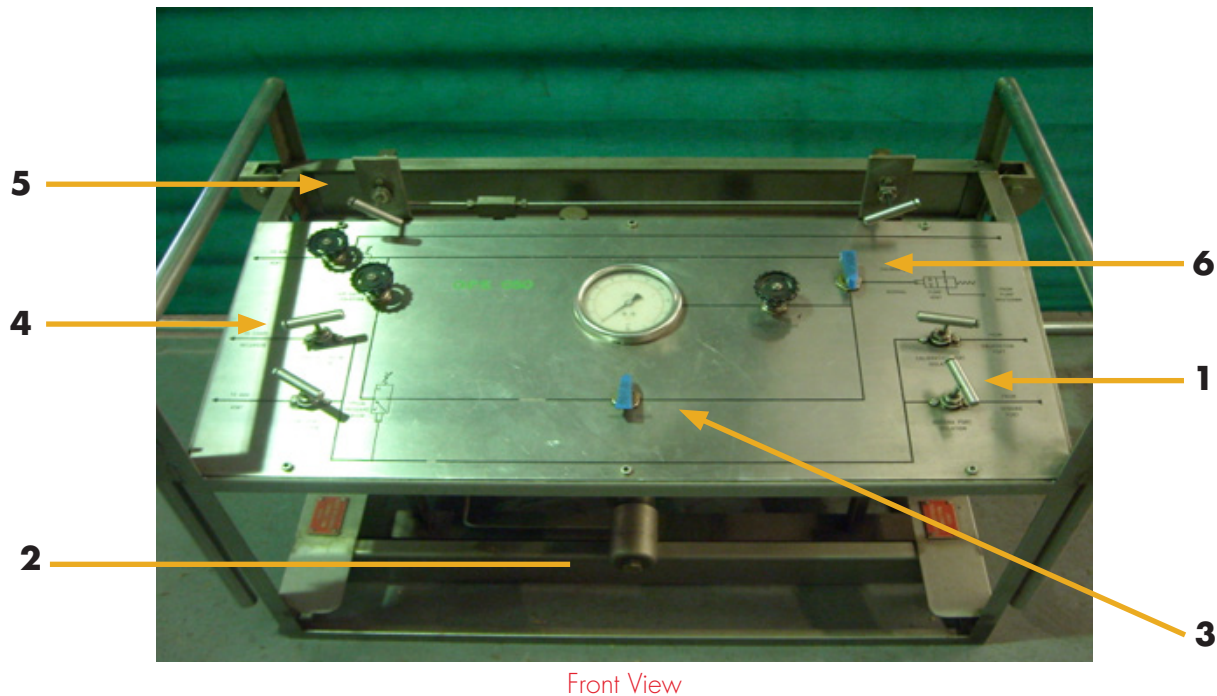
2. Pressure gauge connection



1. Pressure sensor

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To set the over-pressure control skid



1. Connect pressure line hose with valves open to bleed system.
Note: If water is the testing medium, BSP Gauge mounting isolation valves should be opened and any air trapped in the system bled out.
2. Once primed, all valves to be closed apart from calibration inlet port (two options) **1** which is to be left in open position. (If chart recorder is required leave port **4** in open position and bleed).
3. Connect suitable hose to crow'sfoot air inlet to supply clean dry air at 100psi.
4. Connect a suitable pressure gauge to gauge port **5**.
5. Turn "Normal / Calibrate" valve **6** to 'Calibrate'.
6. Select the pressure sensor **2** to be utilized for the Shut-Down Range and turn the Selector Valve **3** to the 'ON' position.
Note: Only one Pressure Sensor to be used (all the others are to be in closed position).
7. Introduce pressure and using the pressure gauge **5** verify the set pressure to find out what was the previous setting of the sensor **2**.
8. Release pressure and using the hex on the selected pressure, turn clockwise to increase or anti-clockwise to decrease sensor **2** pressure.
9. Re-introduce pressure to determine current sensor pressure setting.

20K OPERATING INSTRUCTIONS OF OVER-PRESSURISATION SKID



10. If not at required pressure, release and as per section eight, adjust sensor rotating in desired direction.
11. Follow steps 7 to 10 until required set pressure is achieved.
12. Vent system of any pressure.
13. Test engineer to confirm customer's system configuration prior to closing valves as the calibration inlet port can also be utilized as a secondary pressure inlet which results in no need to disconnect pressure inlet hose or bleed system again. If not required isolate calibration inlet valve and disconnect hose.
14. Turn "Calibrate / Normal" valve **6** to 'Normal' position.
15. Unit is now ready to be linked to 3rd party pumps / system as per customer requirements.
16. Connect pressure inlet hose and open sensing port isolation valve **UNLESS** as per section 13 the engineer has the intention of using the calibration inlet port.

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Troubleshooting

1. OPS will not operate.

- a) Check mains air supply (regulator to be 100psi).
- b) Check air gauge on system for air pressure – if pressure indicated go to f, if not go to c.
- c) Check air valves are in the “open” position.
- d) Check air regulator on system has been turned clockwise and air pressure gauge is reading pressure 100psi.
- e) Check correct sensing valve is turned to “on” position and air gauge is reading pressure 100psi.
- f) Check to see if sensing valve selected is fully retracted out, if so then rotate inwards and check air gauge.
- g) If OPS still not operating, please contact service support on details below.

2. OPS operates but there’s no hydraulic pressure building.

- a) Check inlet valves are in open position.
- b) Check all pressure hose connections are fitted correctly with no leaks.
- c) Check delivery pressure to OPS i.e pump.
- d) Check for any leaks on equipment being tested.
- e) If OPS still not operating, please contact service support on details below.

3. OPS has a loss of Hydraulic Pressure.

- a) Check hose connections are still fitted correctly and no leaks.
- b) Check delivery pressure to OPS i.e pump.
- c) Check for any leaks on equipment being tested.
- d) If OPS still not operating, please contact service support on details below.

If the above does not solve problem, do not dismantle OPS. Please contact Metnor for further assistance.

Phone: 01493 441480 or 07721535717
E-mail: sales@metnorgreatyarmouth.co.uk
Skype: karlb.metnor

Maintenance

1. When OPS is in use test pressure sensors = Every 30 days
2. Inspect and lubricate pressure sensor spring caps = Every 90 days
3. Inspect all inlet and outlet fittings = Yearly or as required.
4. Disassemble, inspect and lubricate pressure sensors = Yearly or as required.
5. Disassemble, inspect, lubricate and re-set pressure relief valves = Yearly or as required.
6. Disassemble, inspect and lubricate air pilot valve = Yearly or as required.
7. Carry out complete OPS test as per “in-house test procedure” = Yearly or as required.
8. Replace all pressure sensor seals = Every two years or as required.

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Important notes for safety

- Check to ensure OPS skid is suitable for application required.
- Check to ensure all hose assemblies being connected to the OPS skid are suitable for purpose, application pressure and have been regularly inspected and tested.
- Never tighten connections while they are under pressure.
- Along with the OPS skid, Metnor also recommends installing a suitable pressure relief valve at furthest point of test.
- The OPS skid has two internal relief valves, one set @ 20,600psi to protect the skid and the other is the air relief valve set @ 150psi.
- If at any stage during operation you are unsure of control turn air valve to closed position on equipment which is generating pressure and assess situation before proceeding.

Warnings and safety information



Important: Read these safety warnings and instructions to ensure safe use of ops. Failure to comply with the recommendations stated may damage the ops, cause safety issues, void conformity and result in possible costs for repair. If in doubt, contact service help desk.



Important: This ops is pressurized internally with air and test pressure during operation. End user must ensure ops is suitable for application required and correct supply and fitting of Inlet / Outlet connections for operation. Before operation inspect installation and once satisfied start calibration and set up instructions.



Important: If ops is not operating or running correctly refer to trouble shooting options on operating instructions. If this does not solve the problem, contact service help desk. Do not touch, strip or take apart ops assembly.



Warning: Wear ear and eye protection during operation and be aware of manual handling when moving the OPS.