

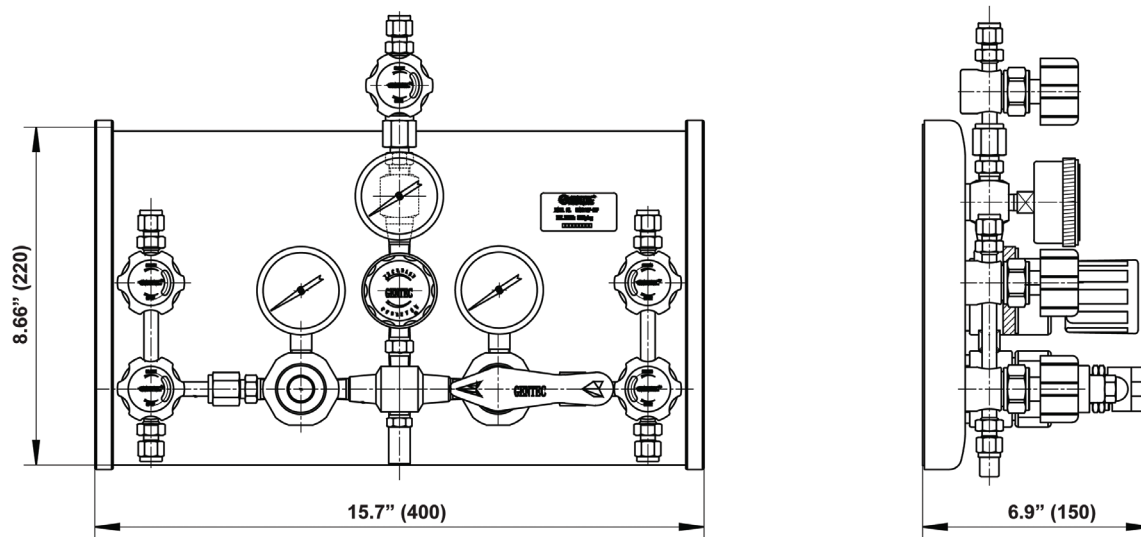
Semi-Automatic Switchover System PD3400 Series

Operation Manual



Introduction

The GENTEC PD3400 Series Semi-Automatic Switchover System is used for adjusting or controlling, low flow, compressed gas systems without interruption. The switchover occurs automatically, once the primary bank (in use) gas supply runs low, then the reserve bank becomes the primary bank. The arrow on the handle bar on the right end bank regulator indicates the designed primary bank, which the operator may change. See Figure 1.



Installation

Measure the position at which the switchover system is to be assembled, ensure that it is at a location convenient for both the operator and maintenance personnel. The switchover system shall be placed in a well-ventilated facility, and must be away from flammable materials and open fire. There are four assembly holes on the mount, which are intended to be used with expansion screws or bolts to mount the switchover system against the wall or assembly rack. **There are two holes on the panel at the bottom lower left and right of the panel to secure the panel. Please remove them prior to install with the 2mm Allen wrench supplied with the panel. Reinsert screws when the unit has been mounted.**

Features:

Dual Bank gas supply and semi-automatic changeover.
Dual Stage Pressure Reduction minimizes pressure and flow fluctuation.
All components mounted on a single panel for easy maintenance.
High Pressure Inlet (HPI), High Pressure Vent (HPV) Valves and Low Pressure Isolation (LPI) Valves included. HPV used for line purge.
Diaphragm valves used to minimize contamination and leakage.

System Components

Specifications:

Maximum Inlet Pressure: 3000 psig
Maximum Outlet Pressure available: 250 psig
Operating Temperature Range: -40°F to 165°F
Leak Rate: 2×10^{-8} atm.cc/sec He
Cv: 0.08

Materials of Construction:

System Panel: Stainless Steel
Regulator Body: Ni Plated Brass
Regulator Seat: PCTFE
Inlet Pressure Gauge: Brass or Stainless Steel
Delivery Pressure Gauge: Brass or Stainless Steel
Diaphragm Valves: Brass or Stainless Steel
Relief Valve: Brass or Stainless Steel
Pigtails: 3ft. Flexible 316SS with check valve
Panel Inlet/Outlet Connections: 1/4" FNPT or MNPT 1/4" Tube OD, Genlok std.

Manifold Options:

Manifold Headers
Particulate Filters
Electric Contact Gauges
Relief Valves

Principle of Operation

1. Primary bank and reserve bank setup:

While both cylinders are full, the operator can designate either side to become the primary bank. For example, when the arrow is pointing to the left, the left bank is designated as the primary bank and the right bank as the reserve bank. If the operator chooses to turn the arrow to the right first, then the right bank would be designated as the primary bank and left bank becomes the reserve bank.

2. Replacing cylinders and operation:

When the primary bank gas supply is almost depleted, the switchover will occur automatically, meaning the reserve bank is now in use. The operator may verify which bank is depleted by reading the inlet pressure gauge. When the switchover occurs, the operator must replace the cylinders on the depleted bank immediately.

Note: before replacing the cylinders, remember to turn the arrow 180° to designate the other bank as the primary bank. If the knob is not rotated before the empty cylinder is changed, two things can happen. First, gas may flow from the changed cylinder to the existing cylinder. This is because the pressure setting of the regulator on the primary side allows the regulator main valve to remain open. Second, when the cylinder is changed, gas will begin to flow from the new cylinder, stopping flow from the existing cylinder. This means the existing cylinder may be partially empty. After several cycles, it is possible that the reserve cylinder may be empty shortly after a switchover occurs. Always remember to rotate the knob on the priority valve regulator before changing a depleted cylinder.

3. Adjusting the system outlet pressure:

The outlet pressure is displayed by the pressure gauge on the line regulator. The outlet pressure of the line regulator is adjusted by turning the pressure knob in line clockwise for higher pressure and vice versa. LPI can be used to shut down the line before gas enters the process.

4. Tee Purge Option for Inert Gases, (excludes flammable gases):

HPV Valves are used during cylinder changeover on both right and left side of the manifolds to remove residual impurities that may be trapped in line. HPI valves included on both sides to isolate in case of shut down before entry into the gas switchover panel.

When the right side switchover occurs, the user should turn and point the arrow in the direction of usage. The user should remove the depleted cylinder by disconnecting the cylinder hose assembly, and then reconnect the hose assembly to the new cylinder. Ensure that the hose assembly is tightened accordingly before opening the cylinder valve. When the cylinder is replaced and ready for operation, ensure both the HPI and HPV valves are closed. Then, Open the Cylinder valve, then HPI valve, then HPV valve as part of the tee purge for the purging out any residual impurities. Close the HPV valve and the HPI valve, and then repeat the cycle as needed. 5-10 purge cycles should be suitable for inert gases.

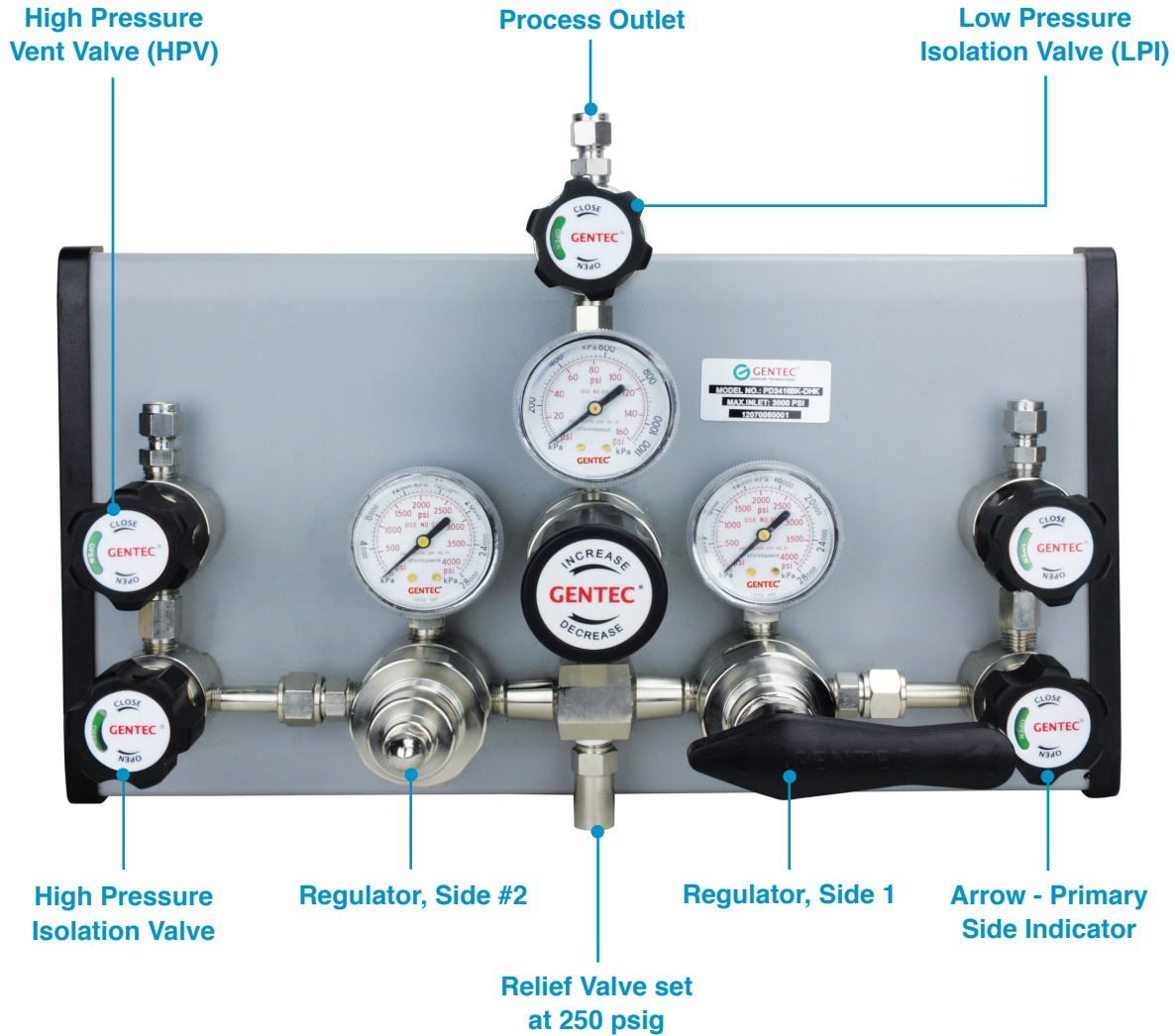


Figure 1

Maintenance

Daily maintenance should be done by a trained personnel only.

1. Record the outlet/piping pressure.
2. Verify the the regulator, header bar, pigtail connections do not have leakage.
3. Check the regulator for creep; must remove regulator immediately if creep is present.