

Cryogenic Liquid Cylinder Manifold 5600 Series

Operation Manual



Introduction

The 5600 Series manifolds are designed for Cryogenic Liquid Cylinders. When the primary liquid cylinder pressure drops below a set point, the reserved cylinder starts to supply gas. Switchover is achieved by way of a Switching Valve built into the system.

Specifications

Gas Service: Oxygen, CO₂, Ar, He and Nitrogen
Maximum Inlet Pressure: 500PSI (3.5MPa)
Delivery Pressure Range: 5PSI~125PSI (0.03-0.85 MPa)
Maximum Flowrate: 350 CFH (10 m³/h)

Description

Liquid Gas in the Dewar Cylinder is evaporated into a gaseous state with the built-in Vaporizer. Due to the limitation of the vaporizer, the flowrate is less than 350 CFH (10m³/h), meaning the flowrate cannot be higher than 350 CFH. Otherwise the Liquid Gas will flow into the compressed gas regulator and cause freezing.



System Installation and Testing

1. The system should be installed in a well ventilated area. No Fire and No Oil signs should be posted in the area.
2. The system should be purged clean with Nitrogen and tested for leaking before use. No oil is allowed.
3. Ideally, because of weight, the system should be put on unistruts with brackets for support. Products can be sourced at a local hardware store.

Operation

After the system is installed, the outlet pressure of both regulators needs to be adjusted with all valves closed.

1. Slowly open both Cryogenic Liquid Cylinders.
2. Slowly open the Master Valves (GENTEC GMV-180) on both sides, if provided, prior to the pigtail inlet.
3. Slowly adjust the left and right side of the pressure regulators. Pick the left side or right side bank as primary bank. The other side will be reserve bank. Set the pressure (working pressure) of the primary bank regulator 25% higher than reserved bank. The primary bank will deliver the gas to outlet of the system.
4. When the pressure of the primary bank drops to lower than the reserve bank, the reserve bank will start to supply gas.
5. Raise the pressure of the reserved bank to the same as primary bank (working pressure).
6. Replace the empty cylinder of the primary bank with full cylinder and drop the pressure to 25% lower than reserved bank.
7. Now the previous primary becomes the new reserve bank and the previous reserve bank becomes primary bank. The following is an example:

If the working pressure is 80psi. Pressure of primary bank will be set at 80PSI. The reserve bank will be set at 60PSI (25% lower than working pressure, 80PSI). When the pressure of the primary bank drops to lower than 60PSI, the reserve bank will start to supply gas. Raise the pressure of the reserve bank to the 80PSI (working pressure). Replace the empty cylinder of the primary bank with full cylinder and drop the pressure to 60PSI (25% lower than working pressure 80PSI). Now the previous primary becomes the new reserve bank and the previous reserve bank becomes primary bank.