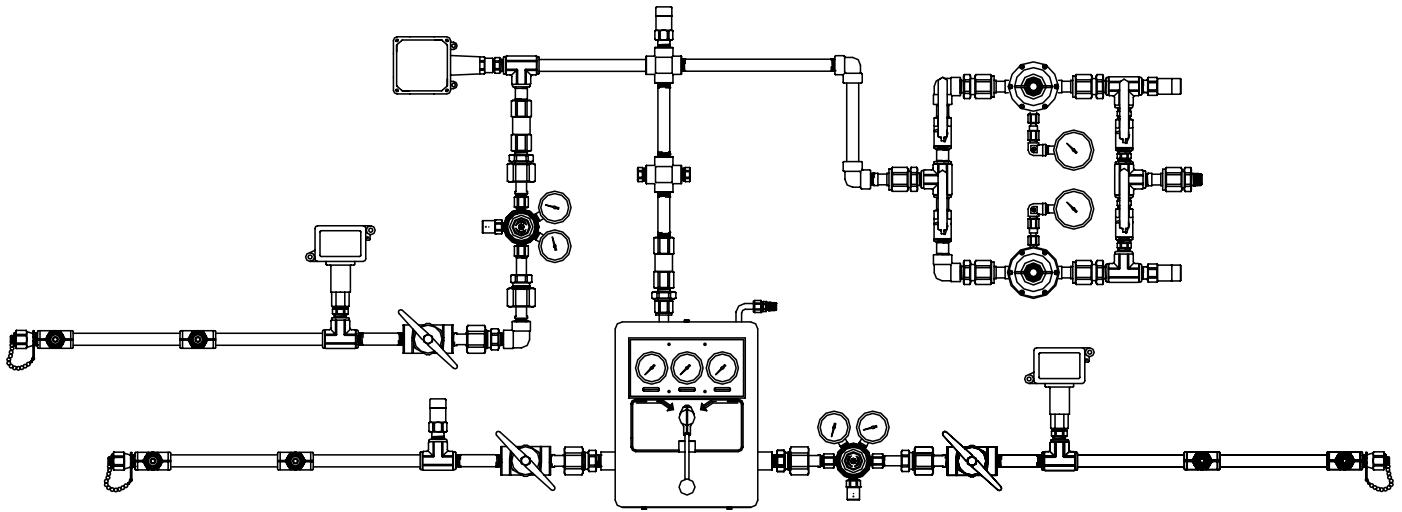




Liquid x High-Pressure Product Specifications



Automatic Changeover Medical Gas Manifold

The automatic changeover manifold is designed to provide a reliable uninterrupted supply of gas to a hospital or clinic's medical gas pipeline system. It is designed to meet NFPA 99 type 1 facility requirements.

Manifold Design

The automatic changeover manifold system consists of a manifold control with two supply bank headers, one service (left side) and one secondary (right side) high-pressure supply to provide an uninterrupted supply of gas for the specific gas application. The manifold control includes the following components and features: inlet safety relief valves, green "system normal" and red "replace depleted cylinders" indicator lights, inlet pressure gauges, an economizer bypass check valve, and line pressure gauge. The control unit shall automatically switch to the secondary bank when the service bank is depleted. When the liquid containers are replenished the manifold will automatically switch back to the primary (left) supply bank. Manual resetting of the control panel is not necessary. If the primary and secondary supply bank of containers / cylinders are both depleted, the manifold system will automatically switch to the external high-pressure reserve header assembly. A pressure switch is provided to signal the master gas alarm system just before changeover from the secondary (right) supply bank to the high-pressure reserve.

Service bank (left side) consists of a header with 72" copper pigtail connections, individual spud check valve bushings, master shut-off valve, pressure relief valves and union connects for attachment to the control unit. Under normal operating conditions, the gas shall leave the liquid containers through the pigtail connections into the header bars.

The spud check valve bushings shall include check valves to allow the replacement of depleted cylinders without gas pressure back-flow into the remaining depleted cylinders on that bank.

The secondary (right bank) consists of a high-pressure header with regulator, pressure with 36" stainless steel flexible pigtail connections with check valves, except oxygen which include rigid copper pigtail connections with check valves, individual spud check valve bushings, master shut-off valves, and union connections for attachment to the control unit. Under normal operating conditions, the gas shall leave the high pressure cylinders through the pigtail connections into the header bars. The pigtail connections shall include check valves to allow the replacement of depleted cylinders without gas pressure back-flow into the remaining depleted cylinders on that bank.

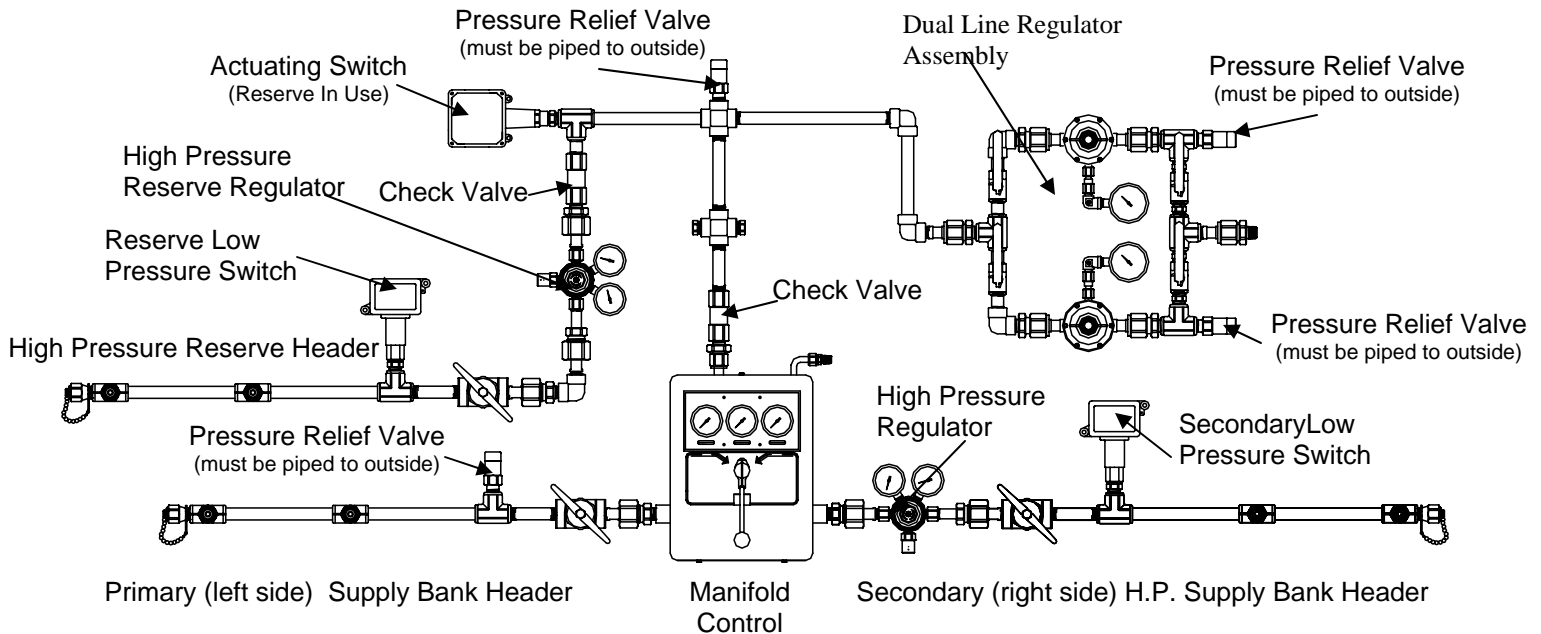
A separate power supply is furnished with the manifold to convert 120 VAC to 24 VAC output power and includes dry contacts for connecting the "Reserve in Use" alarm to the facility's master alarm panel(s). A circuit board in the power supply box provides remote alarm terminals for hookup to all remote alarms regardless of voltage (up to 3 amps 30 VDC or 2 amps 250 VAC). The power supply is housed in a NEMA 3R, enclosure with electrical requirements of 1.5 amp at 120 VAC, 1Ph, 60 Hz. The power supply is CSA approved.

The MLC - Hybrid system includes the high pressure reserve manifold, dual line regulator assembly, reserve in use pressure switch, (2) reserve low pressure switch, (2) high flow check valves and piping required to comply with NFPA-99 2005 installation requirements

Engineering Specifications

Automatic Changeover Medical Gas Manifold For Liquid Containers (Gas Withdrawal)

Liquid X High-Pressure with high pressure reserve manifold



Flow Characteristics

Manifold system flow is limited by maximum flow capacity of liquid containers. Approximate maximum continuous flows of one liquid container are shown in chart one. For a 2 liquid container system the approximate maximum continuous flows of two liquid containers are shown in chart two. For a 3 liquid container system the approximate maximum continuous flows of three containers are shown in chart 3.

Installation Information

The MLC manifold shall be installed in accordance with guidelines stated by the NFPA, CGA, and all applicable local codes. The carbon dioxide and nitrous oxide manifolds should not be placed in a location where the temperature will exceed 120°F (49°C) or fall below 20°F (-7°C). The manifolds for all the other gases should not be placed in a location where the temperature will exceed 120°F (49°C) or fall below 0°F (-18°C). A manifold placed in an open location should be protected against weather conditions. During the winter, protect the manifold from ice and snow. In summer, shade the manifold and cylinders from continuous exposure to direct rays of the sun.

Chart 1 for 1 Liquid Container System

| Gas Type | Flow per Side |
|----------------|----------------------|
| Oxygen | 380 SCFH (179.4 LPM) |
| Nitrous Oxide | 80 SCFH (37.8 LPM) |
| Carbon Dioxide | 110 SCFH (51.9 LPM) |
| Nitrogen | 380 SCFH (179.4 LPM) |
| Argon | 380 SCFH (179.4 LPM) |

Chart 2 for 2 Liquid Container System

| Gas Type | Flow per Side |
|----------------|----------------------|
| Oxygen | 570 SCFH (269.1 LPM) |
| Nitrous Oxide | 120 SCFH (56.6 LPM) |
| Carbon Dioxide | 165 SCFH (77.9 LPM) |
| Nitrogen | 570 SCFH (269.1 LPM) |
| Argon | 570 SCFH (269.1 LPM) |

Chart 3 for 2 Liquid Container System

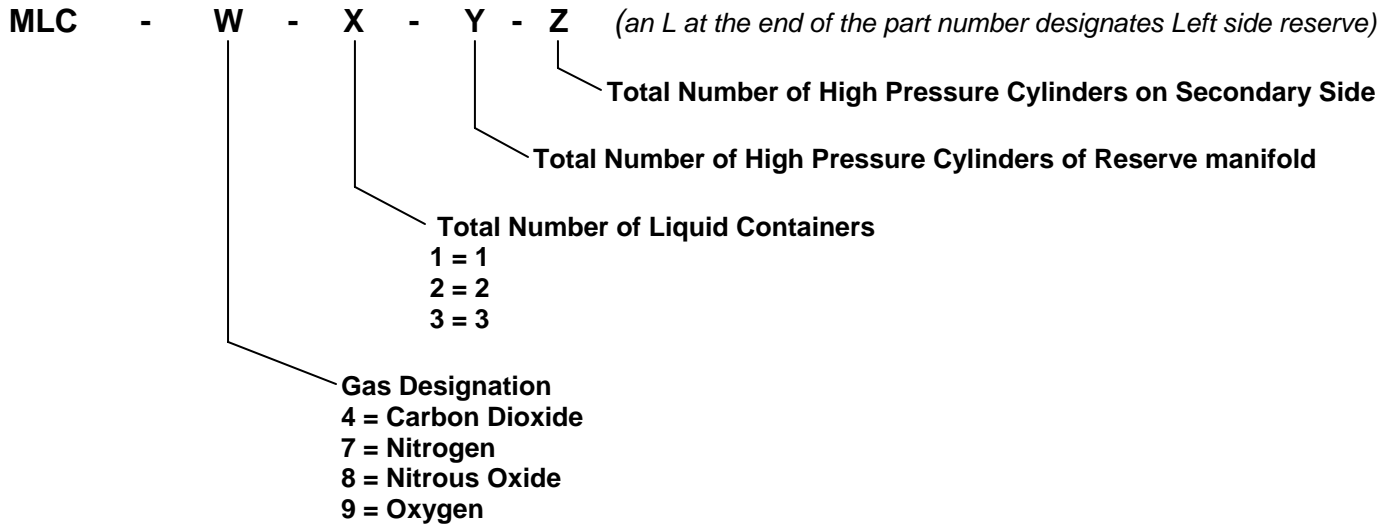
| Gas Type | Flow per Side |
|----------------|----------------------|
| Oxygen | 665 SCFH (313.9 LPM) |
| Nitrous Oxide | 220 SCFH (103.8 LPM) |
| Carbon Dioxide | 192 SCFH (90.6 LPM) |
| Nitrogen | 665 SCFH (313.9 LPM) |
| Argon | 665 SCFH (313.9 LPM) |

MLC Series - Hybrid

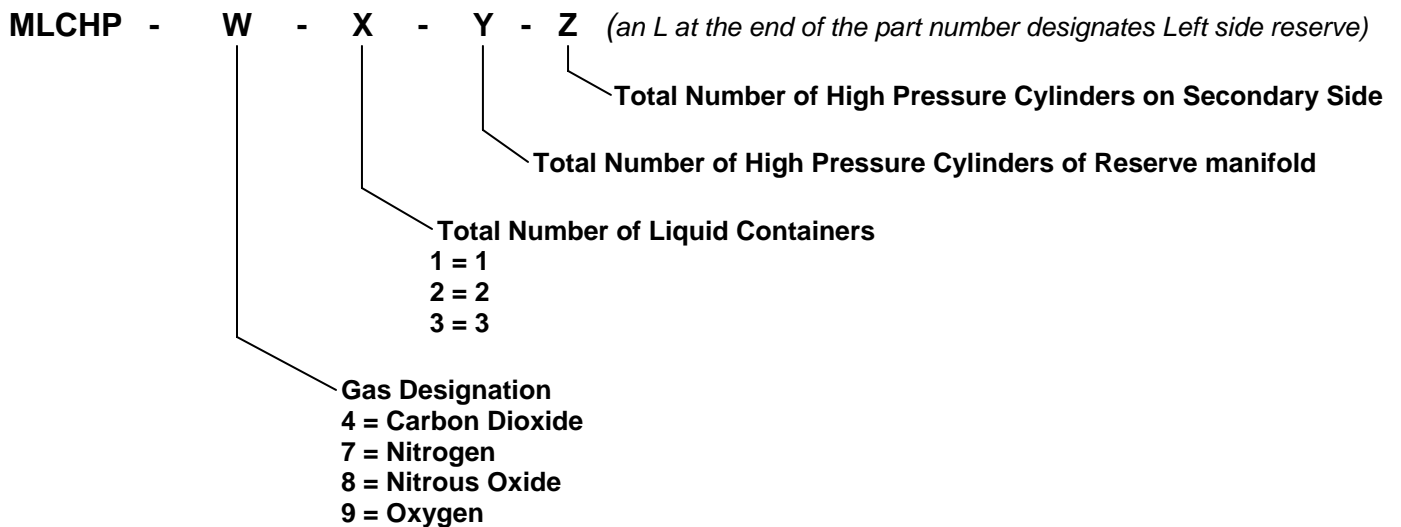
Automatic Changeover Medical Gas Manifold
For Liquid Containers (Gas Withdrawal)

Liquid x High-Pressure with High Pressure Reserve Ordering Information

Part Number Assembly for 55 psi service pressure



Part Number Assembly for 180 psi service pressure



Warranty

All Western manifolds are warranted against defects in materials and workmanship for the period of two years from the date of shipment. For complete information on the warranty please see the back cover of the Installation and Operations manual.

Typical Set-up For all gases except Nitrogen

Automatic Changeover Medical Gas Manifold For Liquid Containers (Gas Withdrawal) Liquid X High-Pressure with high pressure reserve manifold

