

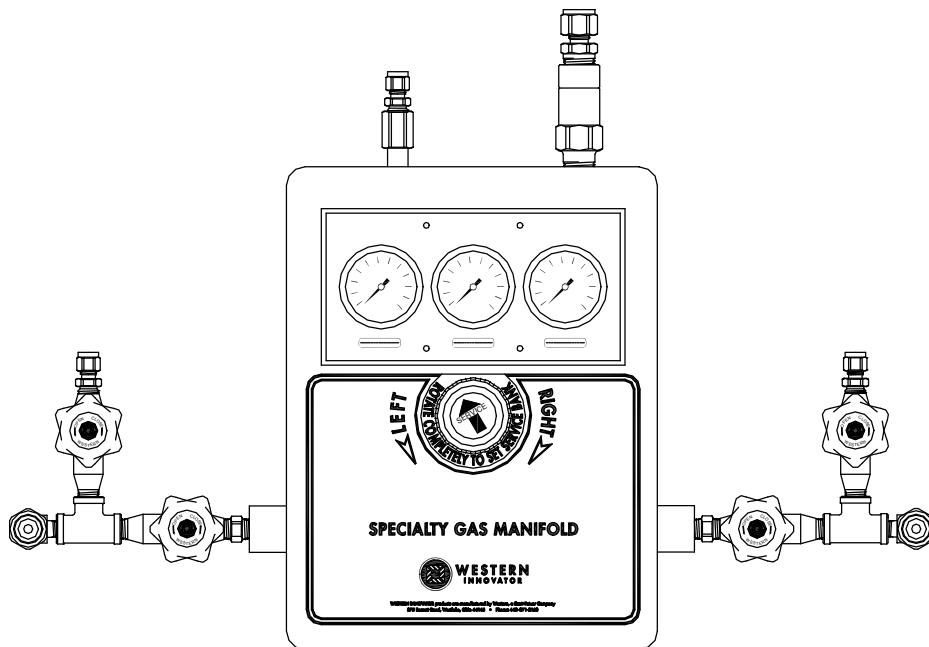
**LAB1 - Series**  
**High Purity Brass Cabinet Style Auto-Changeover Manifold**



The LAB1 series manifold systems are cleaned, tested and prepared for the indicated gas service and are built in accordance with National Fire Protection Association and Compressed Gas Association guidelines. The manifold consists of a manifold control, one service and one reserve supply, to provide an uninterrupted supply of gas for the specific application. The control is designed and built with features providing automatic changeover from the depleted “Service” supply bank to the “Reserve” supply with no loss or drop in delivery pressure. Pressure gauges show the system status and alert the need to replace depleted cylinders. Features of the LAB1 system include an integral adjustable line regulator, rigid pigtailed with check valves, master valves, vent valves and complete mounting hardware.

**Note:** The LAB1 does not include a visual alarm, power supply or any electrical components. Acetylene flashback arrestor will not pass helium leak test.

The LAB1 - series manifold should be installed in accordance with guidelines stated by the National Fire Protection Association, the Compressed Gas Association, OSHA 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 manifold for all 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 including direct rain, snow and heavy moisture. During winter, protect the manifold from ice and snow. In summer, shade the manifold and cylinders from continuous exposure to direct rays of the sun. All safety relief valves including those of flash arrestors (for fuel gas manifolds) shall be piped/vented outside.

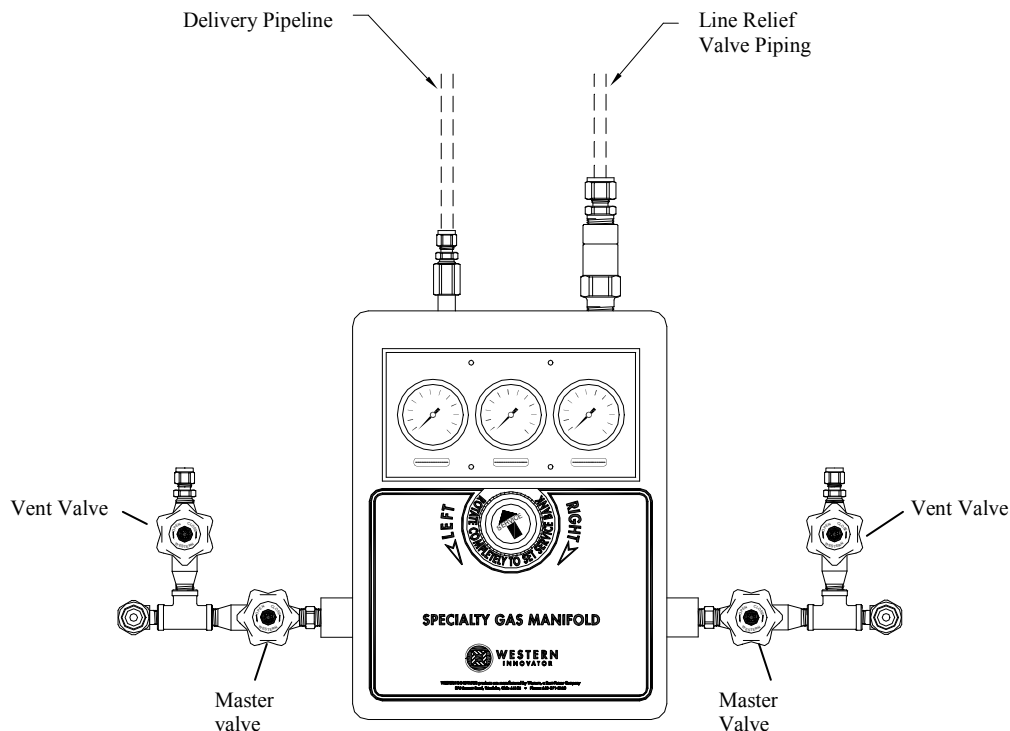


**Features and Benefits**

- Eliminates costly downtime by providing a constant uninterrupted gas flow.
- Enhances safety by consolidating cylinders into a centralized location.
- Ensures system purity with compatible component selection
- Check valves in the pigtailed provide added safety.
- Vent valves at each inlet allows flushing of impurities between cylinder change-outs.
- Integral line regulator.
- Rigid copper pigtailed with check valves at cylinder end allows easy cylinder hook up and maintain gas purity (flexible stainless steel inner core pigtailed optional).
- All components are housed in a tamper resistant cabinet, ensuring factory calibrations will be preserved.

**Specifications**

Maximum Inlet Pressure:	3000 psig.
Delivery Pressure Range:	2000 psig for CO <sub>2</sub> & N <sub>2</sub> O 30-100 psig Standard Model 50-200 psig HP Model 0-15 psig Acetylene
Inlet (pigtail) Connection:	CGA specific
Manifold Inlets:	CGA specific
Outlet Connection:	1/4" compression
Relief pipe away outlet:	1/2" compression
Maximum Flow Rate:	250 scfh Nitrogen 20 scfh Acetylene 35 scfh CO <sub>2</sub> & N <sub>2</sub> O
Helium Leak Rate:	2 x 10 <sup>-6</sup> scc/sec (test and certification optional)
Manifold C <sub>v</sub> :	0.015
Pressure Relief C <sub>v</sub> :	0.9



## Material of Construction

### Brass Fittings and Pipe Materials

UNS C36000  
UNS C37700

### Pigtail Materials

CGA Connections: Brass  
Copper Tubing: 5/16" x .065 Wall Annealed  
Check Valve Seat: Viton™ (EPDM for CO<sub>2</sub> & N<sub>2</sub>O)

### Master and Vent Valve Materials

Diaphragm: Elgiloy™  
Seat: Kel-F™  
Body: Brass

### Internal Check Valves

Body: Brass  
Seat: Viton™ (EPDM for CO<sub>2</sub> & N<sub>2</sub>O)  
Spring: 302 Stainless Steel

### Pipe Thread Seal: Teflon™ Tape

### Inlet Filter: 10 Micron Sintered Porous Bronze

### Intermediate Relief Valve

Body: UNS C36000  
Seat: Viton™ (EPDM for CO<sub>2</sub> & N<sub>2</sub>O)

### Line Regulator

Body: Brass  
Diaphragm: 316L Stainless Steel  
Seat: Teflon™  
Filter: 10 Micron Sintered Bronze  
Seals: PTFE Teflon™

### Tubing: 316 Stainless steel and Copper (all models except following)

LAB1-1 and LAB1A: Brass and 316L Stainless Steel

### Primary Regulator and Changeover Regulator

Body: Brass  
Seat: Kel-F™  
Seals: Teflon™  
Diaphragm: 316 Stainless Steel

### Inlet Pressure Gauges

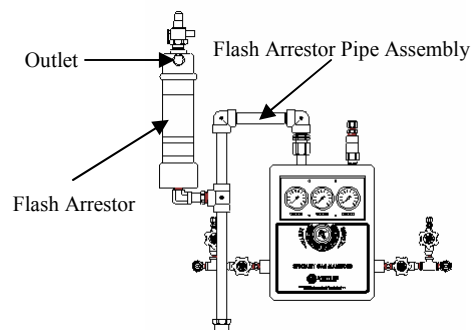
Body: Brass  
Bourdon Tube: Phosphor Bronze  
Solder: Silver

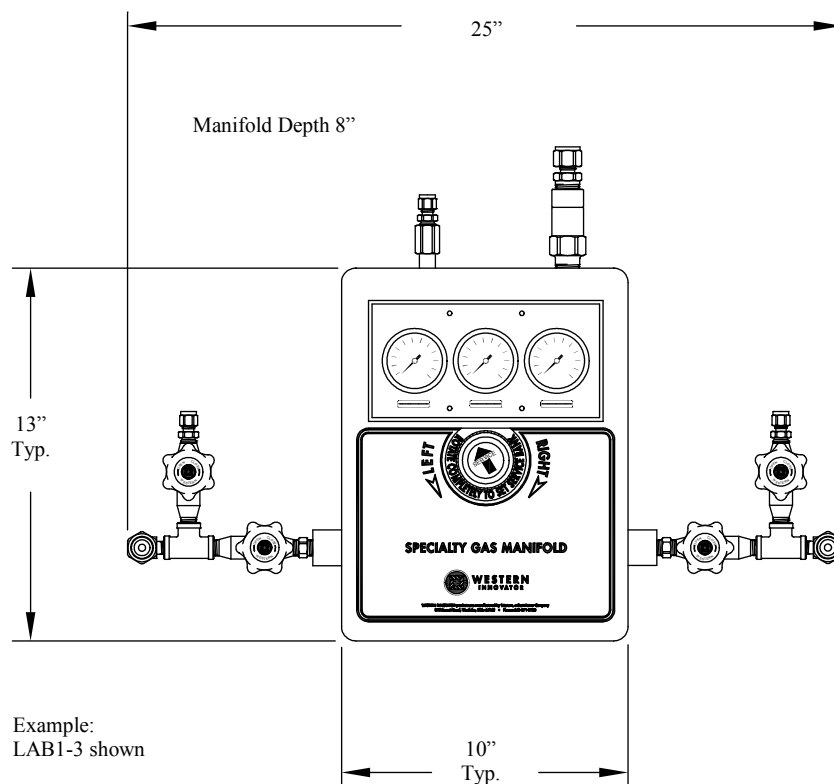
### Intermediate and Line Pressure Gauge

Body: Brass  
Bourdon Tube: Phosphor Bronze  
Solder: Soft Solder

## Fuel gas Manifolds - Flashback arrestors

A dry flash arrestor is provided with all Western acetylene manifolds. A flash arrestor shall also be used on all fuel gas manifolds (not provided with manifold) used in applications with an oxidizer. Installed in the main gas line, the arrestor protects the manifold and cylinders from the dangers of reverse flow and flashbacks. A safety relief valve is installed on the outlet side of the flash arrestor. Should excessive pressure occur, the gas is then vented out and away to a safe location.





**How to Order:** Specify; Control type (V) - Service (W) Mounting (Y) Pigtails Option (Z)  
 Example: LAB1-3F represents LAB1 with argon service, with floor stand

Control Type (V)	Gas Service (W)	Mounting (Y)	Pigtails Option (Z)
LAB1 (30 - 100 psig) Acetylene (0 - 15 psig)	(1) Acetylene (1A) Acetylene (2) Zero Air (2A) Zero Air (3) Argon	CGA 510 CGA 300 CGA 346 CGA 590 CGA 580	Blank = Rigid copper pigtails (Standard)
LAB1HP (50 - 200 psig)	(4) Carbon Dioxide (5) Helium (6) Hydrogen (7) Nitrogen (8) Nitrous Oxide (9) Oxygen	CGA 320 CGA 580 CGA 350 CGA 580 CGA 326 CGA 540	HPF = 24" stainless steel flexible pigtails

### Warranty

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