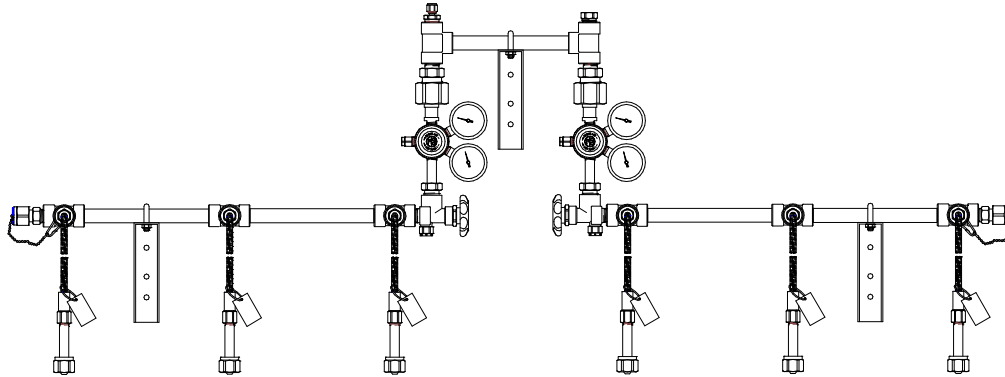


HBAD2 - Series

High Purity Brass Open Style Automatic Changeover Manifold for High Pressure Cylinders (3,000 psig)



The HBAD2 series manifold systems are cleaned, tested and prepared for the indicated gas service and are built accordance with the National Fire Protection Association and Compressed Gas Association. The HBAD2 manifold consists of a manifold control and two supply bank headers, one service and one reserve supply, to provide an uninterrupted supply of gas for the specific gas application. The HBAD2 control is designed and built with features providing automatic changeover from the depleted "Service" supply bank to the "Reserve" supply with a predetermined drop in delivery pressure. Pressure gauges show system status and alert the need to replace depleted cylinders. Features of the HBAD2 system include brass regulators with stainless steel diaphragms, stainless steel inner core braided flexible pigtails with check valves, headers and complete mounting hardware.



The HBAD2 series manifold should be installed in accordance with guidelines stated by the National Fire Protection Association, the Compressed Gas Association, the Occupational and Health Administration, 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. 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.

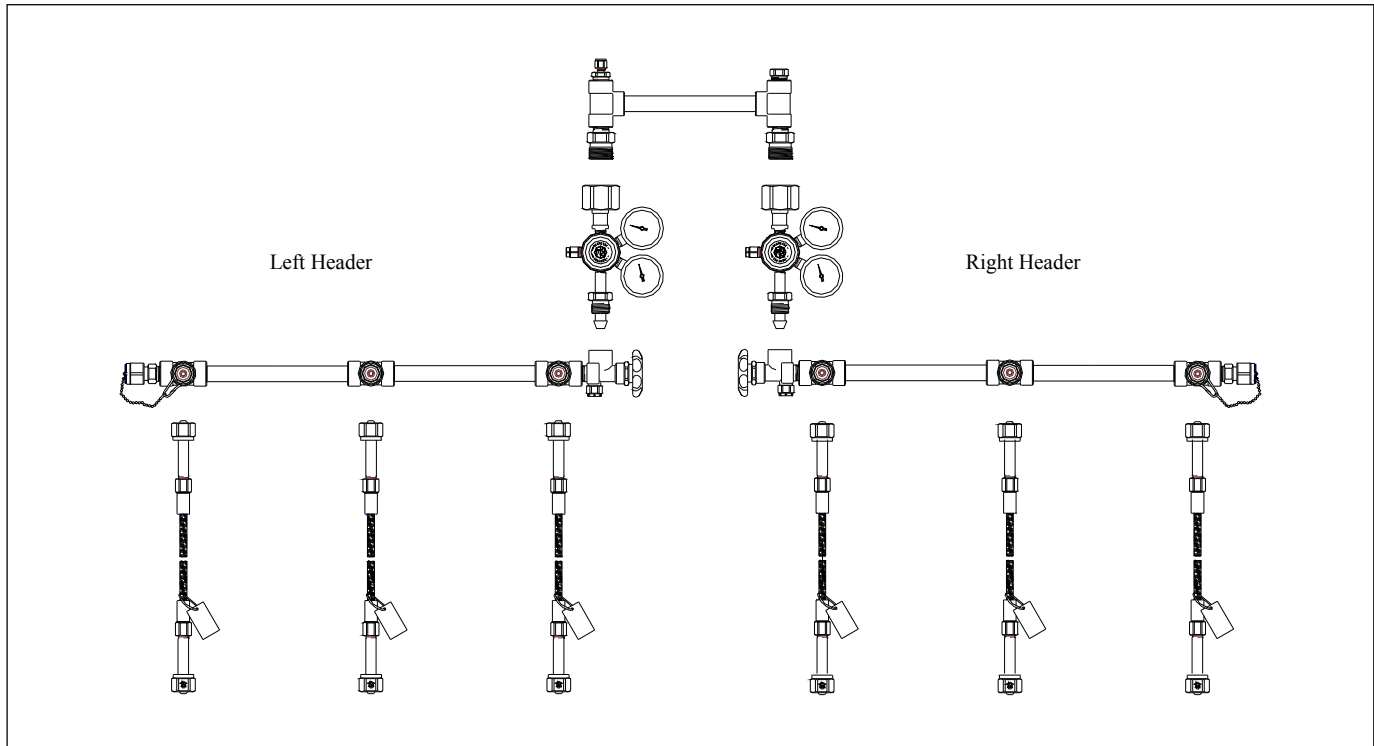
Specifications

- Maximum Inlet Pressure: 3,000 psig
- Delivery Pressure Range: 50 - 100 psig
- Inlet (Pigtails) Connections: CGA specific
- Cylinder Station Spacing: 10" or 5" center options
- Header Inlets: CGA Check valve outlets (for added safety) corresponding to gas use
- Outlet Connections: 1/4" Compression
- Flow: 94 l/min. or 200 SCFH with 10 psig pressure drop Nitrogen, 35 SCFH max flow for CO₂ and N₂O.

Please Note: Acetylene manifold are not available for the HBAD2 series manifold.

Features and Benefits

- The HBAD2 series 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 valve outlets and check valves provide added safety.
- 1/2" brass pipe and tee construction, silver brazed and Teflon taped.
- Modular design - allows field installation of additional stations without brazing.
- Flexible stainless steel lined pigtails with check valves at cylinder end allow easy hook up and maintain gas purity.



Material of Construction

Brass Fittings and Pipe Materials

UNS C36000
UNS C37700

Pigtail Materials

CGA Connections: Brass
Inner Core Material: 316L stainless (annular
Corrugated)
Check Valve Seat: Viton™ (EPDM for CO₂ and N₂O)

Master Valve Materials

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

Internal Check valves

Body: Brass
Seat: Viton™ (EPDM for CO₂ and N₂O)
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 CO₂ and N₂O)

Primary Regulator

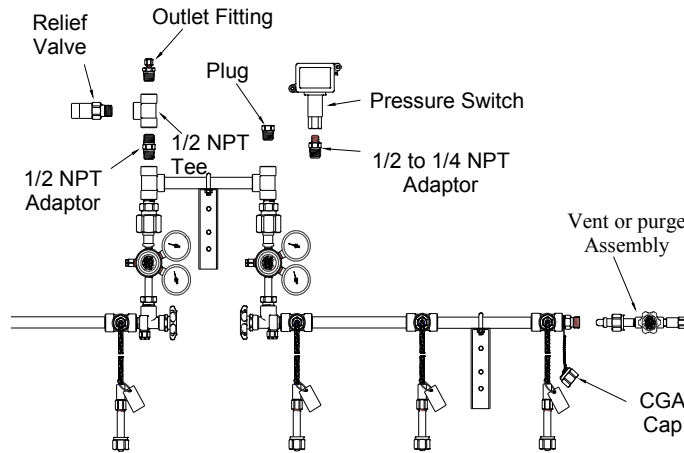
Body, Nozzle, and Retainer: Brass
Seat: Kel-F™
O-Rings: Viton™ (EPDM for CO₂ and N₂O)
Diaphragm: 316 Stainless Steel

Inlet Pressure gauges

Body: Brass
Bourdon Tube: Phosphor Bronze
Solder: Silver

Outlet Pressure Gauge

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



HBAD2 MANIFOLD OPERATION

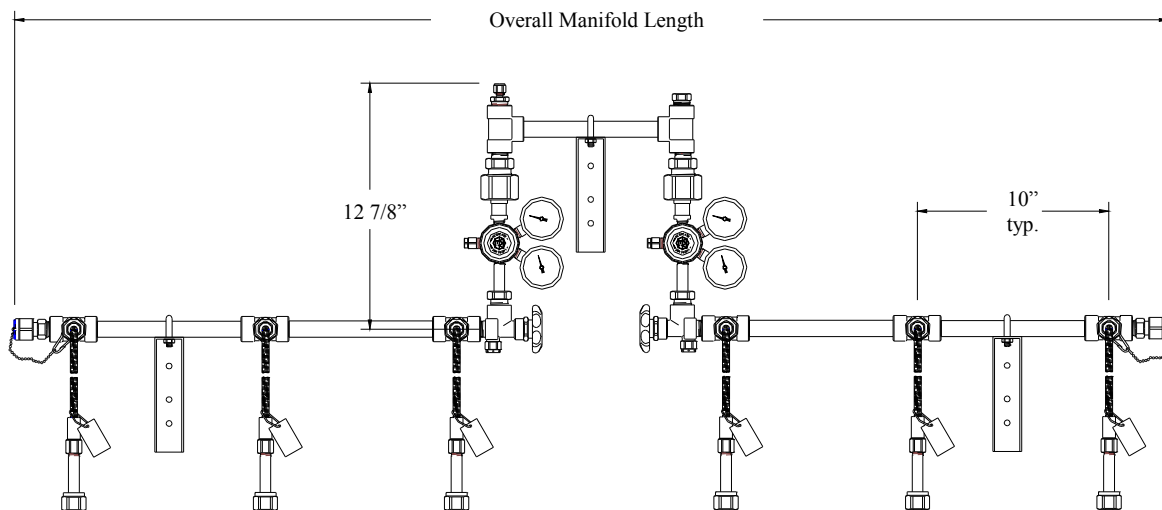
The HBAD2 manifold control includes the following components and features: brass regulator with stainless steel diaphragm, brass packless master valves, flexible stainless steel inner core pigtails with check valves, headers designed to be easily expanded, port for an optional pressure switch, header constructions allows installation of purge assemblies, and automatic bank switching. The manifold is designed to use a line regulator which can be mounted on the manifold outlet.

The cylinder bank that supplies the piping system is known as the “Service” supply, while the cylinders on stand-by are referred to as the “Reserve” supply. Gas flows through the manifold control to the first the service primary regulator and then through the line regulator. Final delivery pressure is controlled by the line regulator that must be installed on the manifold outlet. This line regulator is not provided with the manifold.

Changeover from the “Service” to “Reserve” side is accomplished when the “Service” side pressure falls below the set point of the reserve side regulator. When this pressure drops to the reserve regulator set point, the reserve side begins to flow, without any interruption of gas to the line regulator.

After changeover the high pressure gauges on the regulator will indicate which bank should be changed.

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Total Number of Cylinders	2	4	6	8	10	12	16
Standard (10" Centers) Overall Manifold Length	1'-6"	3'-2"	4'-10"	6'-6"	8'-2"	9'-10"	11'-6"
Staggered Design (5" Centers) Overall Manifold Length	1'-6"	2'-4"	3'-2"	4'-0"	4'-10"	5'-8"	7'-6"
Vertical Crossover (10" Centers) Overall Manifold Length	N/A	1'-6"	N/A	3'-2"	N/A	4'-10"	N/A

Optional Equipment

Pressure Switches

- WME-4-5.....Explosion Proof: 30 - 300 psig pressure setting range (800 psig maximum inlet)
- WME-4-16General Purpose: 20 - 200 psig pressure setting range (250 psig maximum inlet)
- WME-4-17General Purpose: 100 - 1700 psig pressure setting range (2500 psig maximum inlet)
- WME-4-18High / Low Switch: 0 - 200 psig pressure setting range (350 psig maximum inlet)

Power Supply

- WMS-9-25C..... 24VAC Power Supply

Remote Alarm Panels - 24 VAC service

- BIA-1..... Visual - 1 Gas
- BIA-2..... Audio/Visual - 2 Gases
- BIA-3..... Audio/Visual - 1 Gas

Warranty

All Western manifold 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