

Automatic Switchover Medical Gas Manifold with Automatic Reset (LifeLine)

SPECIFICATION

Automatic Switchover Medical Gas Manifold

The **BeaconMedæS** Lifeline automatic switchover manifold accommodates multiple cylinders equally divided into two banks for a specific gas service. The cylinder banks are arranged in a staggered configuration and provide an uninterrupted supply of gas for the specific gas application. The manifold is cleaned, tested, and prepared for the indicated gas service and constructed in accordance with requirements of the latest edition of NFPA 99 and CGA.

Manifold Design

A bank regulator (one for each cylinder bank) is used to initially reduce the cylinder pressure to the two line regulators which control the final line pressure. Both line pressure regulators are in service at all times to maximize flow rates. The manifold automatically changes from the depleted primary supply bank to the secondary supply bank without fluctuation in line pressure utilizing dome-bias loading and unloading of the bank regulators. After replacement of the depleted cylinders, the manifold automatically indicates the cylinder bank recently replaced as the secondary supply. Manual resetting of the control panel is not necessary. The manifold includes a line pressure gauge, two cylinder bank pressure gauges (left-bank and right-bank), and color-coded indicator LED visual indicators for "IN USE" (green), "READY" (yellow), and "EMPTY" (red) for each cylinder bank. The manifold has intermediate and line pressure relief valves that are internally connected to a common vent port, terminating into a 1/2" FNPT O-ring sealed "zero clearance" union. Master shutoff valves (one for each cylinder bank) are located within the manifold cabinet and both valves are fabricated with metallic seating surfaces. The manifold is designed for placement of four "H" cylinders directly underneath the manifold cabinet. The cabinet enclosure is easily removable by releasing draw latches for component accessibility and the enclosure may be secured from unauthorized access by locking the draw latches (locks provided by others).

The manifold includes high-pressure modular header assemblies with gas specific pigtail-to-header check valves to permit changing of cylinders without gas leakage. Stainless steel flexible pigtails are provided for each cylinder gas connection, except for oxygen, helium, and mixed gas applications which are provided with rigid copper pigtails. A separate power supply is furnished with the manifold to convert 120 VAC to 24 VAC output power and includes dry contacts for (2) separate, electrically isolated, remote alarm connections. The power supply is housed in a NEMA 3R enclosure with electrical requirements of (1) amp at 120 VAC, 60Hz, single phase. The manifold is supplied with a 3/4" FNPT O-ring sealed "zero clearance" union outlet. The system also includes a 3/4" full port, three piece, ball-type source shut-off valve with a 1/8" FNPT port. The source valve has a 3/4" NPT attachment to the union outlet and a 3/4" nominal copper (type k) tube for brazing to main supply line.

NOTE:

The flow capacity of a nitrous oxide and carbon dioxide manifolds depends upon environmental conditions at the installation site and the number of cylinders in service. Installing a nitrous oxide or a carbon dioxide manifold in a location that exposes it to an ambient temperature below 32° F (0° C) is not recommended.

Environmental Considerations

Manifolds are to be installed in accordance with requirements stated by NFPA 99, CGA, and all applicable local codes. Manifold components are designed to work best over a temperature range of 32° F through 130° F. Wider temperature variations may cause manifold malfunctions to occur. **BeaconMedæS** recommends the control cabinet be located with its power supply at an installation site protected from moisture, continuous exposure to direct sun rays, and ice & snow.

Flow Characteristics at Minimum Cylinder (Switchover) Pressure			
Delivery Line Pressure (psig)	Inlet Cylinder Pressure (psig)	Minimum Delivery Line Flow (scfh)	Delivery Pressure Drop (psig) @ Delivery Line Flow
55	150	2,220	5
55	150	3,240	10
100	300	3,660	5
180	300	5,100	10
180	300	6,420	15

ORDERING INFORMATION

The Lifeline automatic switchover medical gas manifold may be configured with no cylinder (0 x 0) through 14 cylinder (14 x 14) arrangements.

Lifeline Automatic Medical Gas Manifold		
Gas Service	Service Pressure	Part Number ¹
Oxygen	55 psig	6-107010-
	100 psig	6-107110-
Nitrous Oxide	55 psig	6-107011-
Air	55 psig	6-107012-
	100 psig	6-107112-
Air (Int'l)	55 psig	6-107016-
Instrument Air	180 psig	6-107018-
Nitrogen	180 psig	6-107014-
Carbon Dioxide	55 psig	6-107020-
	100 psig	6-107120-
CO ₂ -O ₂ (CO ₂ > 7%)	55 psig	6-107021-
O ₂ -CO ₂ (CO ₂ < 7%)	55 psig	6-107022-
He-O ₂ (He > 80%)	55 psig	6-107023-
O ₂ -He (He < 80%)	55 psig	6-107024-
Helium	55 psig	6-107025-
Argon	55 psig	6-107026-

Note:

¹ Enter the number of cylinders required for each bank, 00 through 14.

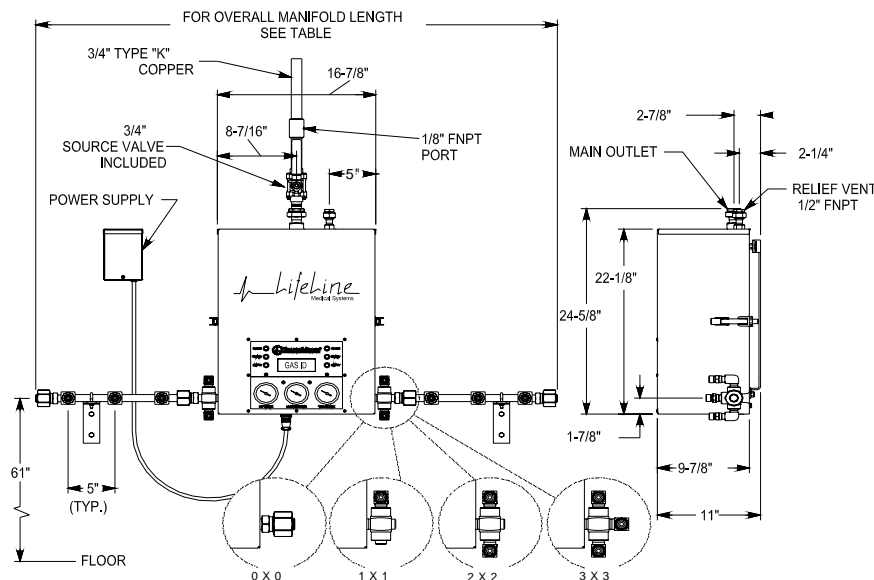
Example: Oxygen manifold for 55 psig service with 3 x 3 arrangement (6-107010-03).

For a control unit only, enter 00 at the end of the part number (6-107010-00).

Accessories:

6-135000-KT
 6-135001-KT
 6-290657-01
 6-515725-00
 6-136000-10
 6-136000-12
 6-136000-16
 6-425564-KT

Control Panel Stand Kit
 Header Stand Kit (each kit contains a pair of header stands)
 90 Degree Expansion Elbow, 3.75" long
 90 Degree Fitting (turn source valve from vertical to horizontal orientation)
 10" Header Extension
 12" Header Extension
 16" Header Extension
 Header Bracket Kit



Manifold Length															
No. of Cylinders Per Bank	0	1	2	3*	4	5	6	7	8	9	10	11	12	13	14
Overall Length (inches)	21-1/2	21	21	24	47	57	67	77	87	97	107	117	127	137	147

*36" recommended for cylinder placement