

4000 Series Automatic Switchover Manifold

Elements

- Fully automatic shifting to reserve bank without fluctuating line pressure to the system
- High flow capacity for hospitals or any other medical gas installation
- Easy-to-read LED lights to indicate the status of the manifold
- Gas continues to flow if primary power is interrupted; manifold returns to its previous stage when power is restored
- Accepts 115 or 220 VAC
- Complies with NFPA 99 requirements



Description

The Chemetron® Series 4000 Medical Gas Manifold is fully automatic, including self-shifting to the reserve bank upon exhaustion of the service bank without interruption of gas delivery to the system. The unit complies with the requirements of NFPA99 “Health Care Facilities.”

The 4000 Series Manifold control unit includes dual line regulators, gas-specific cylinder connections, and a single-point power connection. Nitrous oxide and carbon dioxide units include pre-wired integral heaters. The control unit shall automatically switch to the reserve bank when the primary bank is depleted. When the depleted cylinders are replaced with full cylinders, the system shall automatically reset itself in preparation for the next bank change. The Primary side is the bank in use; the remaining side is the Reserve bank. This designation will automatically change from left to right and right to left as each bank is depleted and, in turn, refitted with full gas cylinders.

LED indicators shall display the status of each bank. Yellow indicates the Reserve bank, green indicates the Primary (in use) bank, and red indicates an empty cylinder bank. Replacing the depleted cylinders shall automatically reset the system, turning the LED

indicator yellow. Dry contacts shall be included for connecting the “Reserve in Use” alarm to the facility’s master alarm panel/s.

The only manual activity required by the 4000 Series Manifold is the changing of the depleted cylinders.

The 4000 Series Manifold shall not require electrical power to operate (other than the heaters for nitrous oxide and carbon dioxide units). Electrical power is used only to light the LEDs, operate the changeover alarms, and operate the solenoids to ensure a smooth changeover. In the event of a power failure, the system shall continue to function, including changeover and reset.

Under normal operating conditions, the gas shall leave the high pressure cylinders through the pigtails into the header bars. The pigtails shall include check valves to allow the replacement of depleted cylinders without gas pressure back-flow into the remaining depleted cylinders on that bank. In the event a safety relief device on an individual cylinder should activate or a pigtail should leak excessively, the local check valve will also prevent loss of gas from the rest of the cylinders on that bank.

The gas flows through the header bar to the control unit. A manually-operated shutoff valve is installed downstream of each header bar. These valves are located outside the control cabinet, accessible at all times. The valves are normally left fully open to allow unrestricted flow of gas from the two cylinder banks. In case of an emergency, or for maintenance, they can be closed to isolate one or both banks.

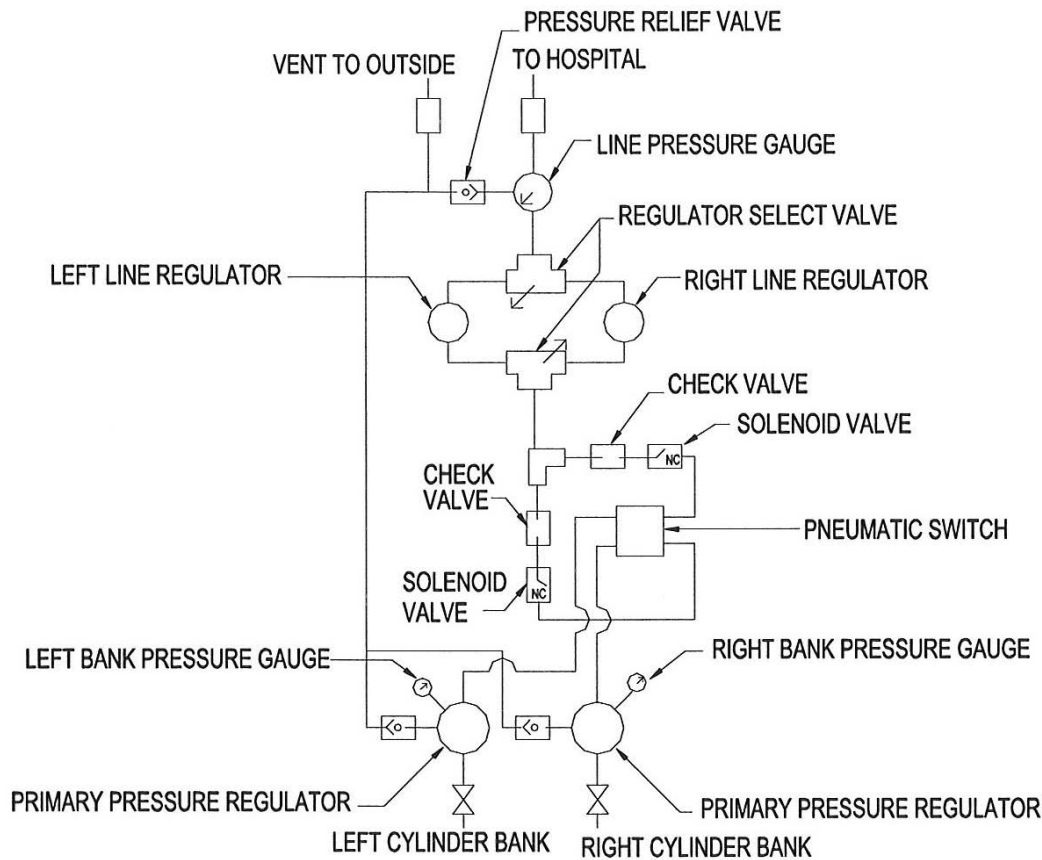
The gas flows through the manually-operated shutoff valve into the primary regulator. This regulator reduces the high cylinder pressure to an intermediate pressure. The intermediate pressure gas flows through the changeover mechanism to the line regulator for its final (line) pressure reduction for use in the health care facility. Two line pressure regulators are installed in parallel, and each is capable of maintaining a

constant dynamic delivery pressure at the maximum designed flow rate of the system. When the operating bank pressure falls to a predetermined level, the switchover mechanism shall automatically change to the reserve cylinder bank and activate the "Reserve in Use" alarm.

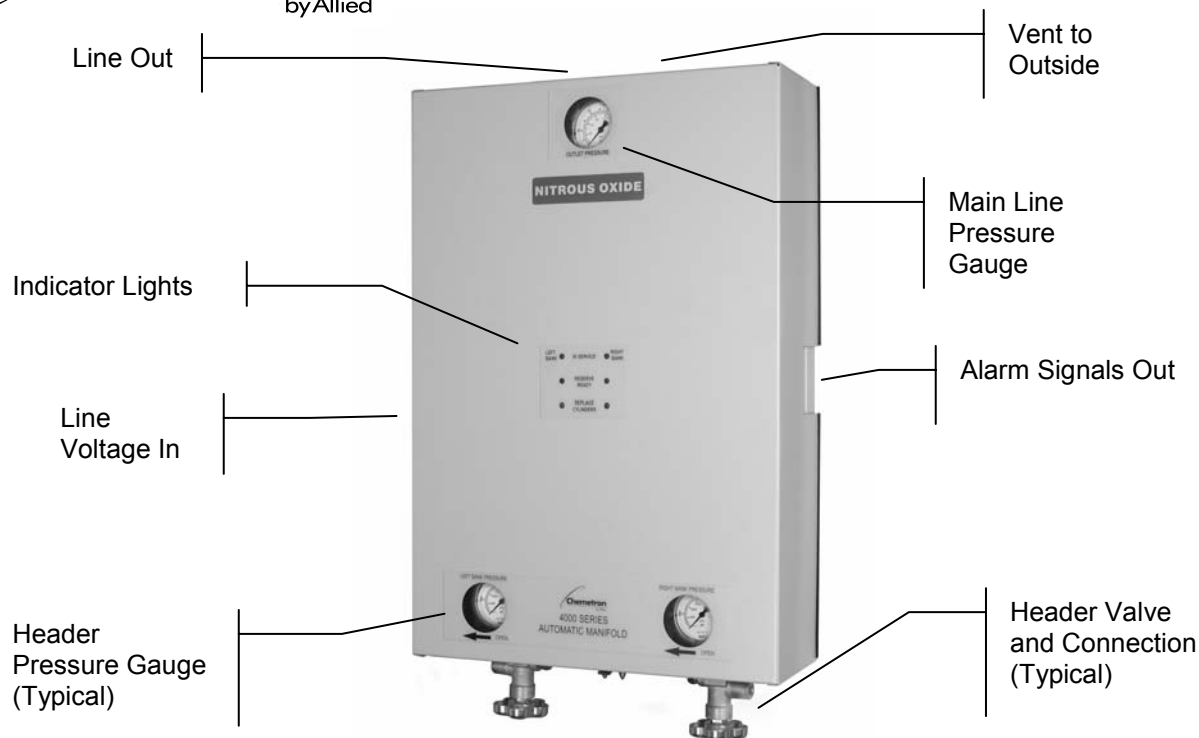
Replenishing the cylinders shall clear the alarms and reset the LEDs to indicate the current condition.

The changeover mechanism shall work without the need for electrical power, and shall be designed for a minimum of 10,000 cycles.

Each manifold shall be tested for proper operation prior to shipment.



Manifold Piping Schematic

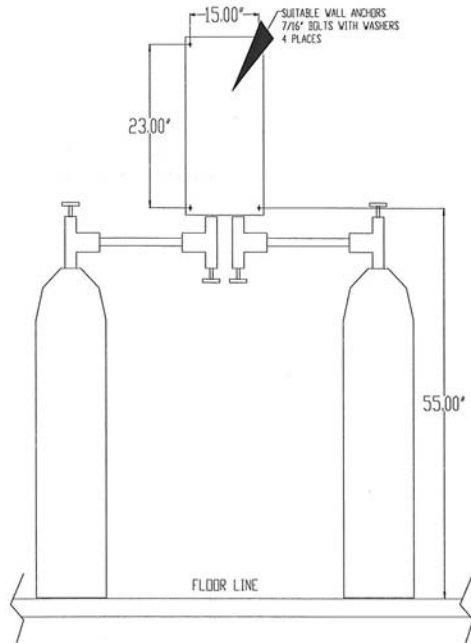


Series 4000 Manifold Control Unit with Integral Power Supply.

ORDER HEADER SETS (INCLUDES PIGTAILS) SEPARATELY AS NOTED BELOW.

Ordering Information					
	Oxygen	Nitrous Oxide	Medical Air	Carbon Dioxide	Nitrogen
Control Unit	86-71-2100	86-73-2100	86-74-2100	86-75-2100	86-76-2100
2 X 2 Header Assembly	86-71-0104	86-73-0104	86-74-0104	86-75-0104	86-76-0104
3 X 3 Header Assembly	86-71-0106	86-73-0106	86-74-0106	86-75-0106	86-76-0106
4 X 4 Header Assembly	86-71-0108	86-73-0108	86-74-0108	86-75-0108	86-76-0108
5 X 5 Header Assembly	86-71-0110	86-73-0110	86-74-0110	86-75-0110	86-76-0110
6 X 6 Header Assembly	86-71-0112	86-73-0112	86-74-0112	86-75-0112	86-76-0112
7 X 7 Header Assembly	86-71-0114	86-73-0114	86-74-0114	86-75-0114	86-76-0114

Please contact your Chemetron® Sales Representative for assistance when ordering header configurations greater than 7x7.



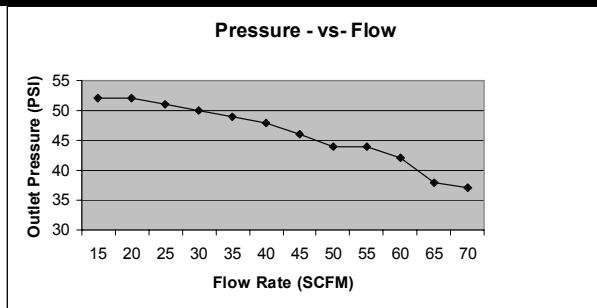
Cylinders	Header Width*
1 X 1	17"
2 X 2	22"
3 X 3	22"
4 X 4	42.5"
5 X 5	42.5"
6 X 6	63"
7 X 7	63"
8 X 8	73.5"
9 X 9	73.5"
10 X 10	94"
11 X 11	94"
12 X 12	114.5"
13 X 13	114.5"
14 X 14	125"
15 X 15	125"

*Header width is the distance from the furthest connection point on one side to the furthest connection point on the other side.

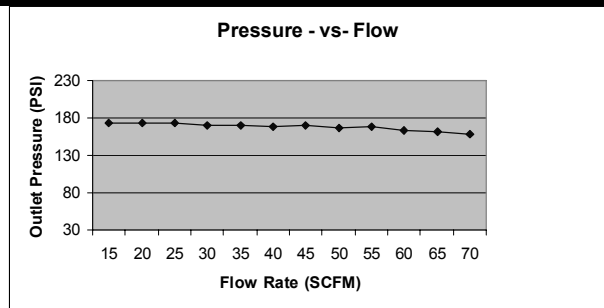
Rough-in Information for Manifold

- Wall anchors for control unit and support brackets are furnished and installed by others.
- Support brackets for header bars are included for 4x4 and larger manifolds -- one bracket for each 4x4 and larger header bar section.
- Installer shall ensure that adequate supporting material is provided within the wall.
- Ensure adequate open space at each end of header to attach pigtail.

MANIFOLD FLOW RATES



Oxygen, Medical Air, Nitrous Oxide, Carbon Dioxide



Nitrogen

All specifications are nominal and subject to change without notice.

Warranty:
See Allied Statement of Warranties for details.

Customer Service:
USA: (800) 444-3960
FAX: (314) 771-7537
Canada/ Mexico: (800) 446-0552
FAX: (800) 246-6201
International: (314) 268-1683
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