

OPERATION AND MAINTENANCE MODEL 816-1 AND 816-3 AIR OPERATED VALVES

The Model 816 valve is an open or shut valve for air or gas lines up to 6000 PSI. In the normal position with no control pressure applied the valve is shut. Providing control pressure to the upper control port opens the valve. One typical application is to open a cylinder charging line only when a protective door is shut. A one inch thread section is provided permitting a variety of ways to mount the valve.

The 816-3 valve is similar to the 816-1 valve except the -3 valve uses a larger control piston permitting the use of lower control pressure. The valve, when used with an inexpensive low pressure solenoid, can be used in place of expensive high pressure solenoids.

TECHNICAL SPECIFICATIONS

Maximum pressure, inlet	6000 PSI
differential	6000 PSI
outlet	6000 PSI
Ports, inlet	1/4" MNPT
outlet	1/4" FMPT
Flow coefficient (Cv)	.05 (.07" orifice)
Materials, body	anodized aluminum
internals	brass & stainless
seals	Viton(TM) & KEL-F
Mod 816-1 actuating pressure	120 PSI at 5000 PSI in and out 65 PSI at 5000 PSI in and 0 PSI out
Mod 816-3 actuating pressure	45 PSI at 5000 PSI in and out 25 PSI at 5000 PSI in and 0 PSI out
Maximum allowable actuating pressure	
for 816-1	5000 PSI
for 816-3	1200 PSI

INSTALLATION

Use pipe thread sealant Teflon tape on inlet and outlet threads. Do not over torque.

Moderate torque applied with a 6 or 8 inch wrench is ample. Use ample Teflon tape - 3 or 4 turns not 1 or 2

turns on pipe threads. The inlet is the male thread and outlet is the female thread at the side of the valve. The one inch thread at the bottom of the valve can be used to mount the valve through a one inch hole in a panel or mounting plate provided by the user. Actuating pressure for the valve can be any non-corrosive gas or liquid at any pressure between the minimum and maximum given above under specifications. Pressure must be relieved for the valve to shut. If an electric solenoid is used, use the three way type to relieve control pressure. The regulator is NOT shipped oxygen clean and should NOT be used for oxygen service as provided. Consult the factory for details on oxygen service.

MAINTENANCE & REPAIR

CAUTION As with any regulator or valve, particulates or moisture can plug or freeze the internal filter or valve seat. This can occur when upstream dryers are not changed or remain unused for long periods allowing corrosion materials to accumulate. In critical applications where it is important not to lose flow, a larger particulate filter should be used upstream. Also an orifice such as the Aqua model 796 should be used downstream. This reduces the tendency to freeze when moisture is present. Consult factory for details. The user should establish time intervals for changing the valve cartridge, filter and upstream dryers based on experience and service conditions. Back-up systems should be used in very critical applications since field maintenance is hard to insure. The poppet cartridge 832 is a factory assembled item and should be replaced if required and not disassembled unless absolutely necessary. Spare cartridges are available at a nominal cost and should be kept on hand if rapid repairs are required. Under severe conditions repacking of seals items 12, 14, and 15 with Cristo-Lube per the drawing may periodically be required. IN ALL CASES THE UNIT CAN BE RETURNED TO THE FACTORY OR DEALER FOR REPAIR UNDER WARRANTY OR AT A NOMINAL CHARGE. Maintenance or repairs can be done by qualified personnel in a clean environment by following the drawings and parts lists herein.

TOGGLE VALVE MODEL 816-1 & 816-3, ASSEMBLY & DISASSEMBLY

PARTS LIST

ITEM	QTY	PART NO.	DESCRIPTION
1	1	832	poppet cartridge assy
2	1	811	body
3	1	812	cap
4	1	815	stem
5	1	850	cylinder cap (816-1 only)
	1	1461	cylinder (816-3 only)
6	1	851	piston (816-1 only)
	1	1463	piston (816-3 only)
7	1	1462	plug (816-3 only)
8	1	816-8-3	2-130 viton, 90 seal
9	1	816-9	1" x 14, jam nut, plt stl
10	1	816-10	2-018 viton, 90 duro seal
11	1	816-11	2-014 viton, 90 duro seal
12	1	816-12	2-006 viton, 90 duro seal
13	1	816-13	spring C0300 038 0690S
14	1	816-14	2-115 viton 90 (816-1 only)
	1	816-14-3	2-124 viton 90 (816-3 only)
15	1	816-15	2-113 viton 75 (816-1 only)
	1	816-15-3	2-122 viton 75 (816-3 only)
16	1	816-16	REPAIR KIT - includes items 1, 4, 10, 11, 12, 13, 14 & 15

NOTES

1. Use Cristo-Lube MCG 121 or 111 or equivalent grease on O rings. Fully pack 12, 14 & 15.
- 2 & 3 delete
4. Technical bulletin - 818
5. Cut through one side of O ring item 15 to insure it acts only as an expander and not as a seal.

