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# **MAINTENANCE MANUAL FOR PNEUMATIC SLIDING VALVE**

**Section 1: Parts Breakdown**

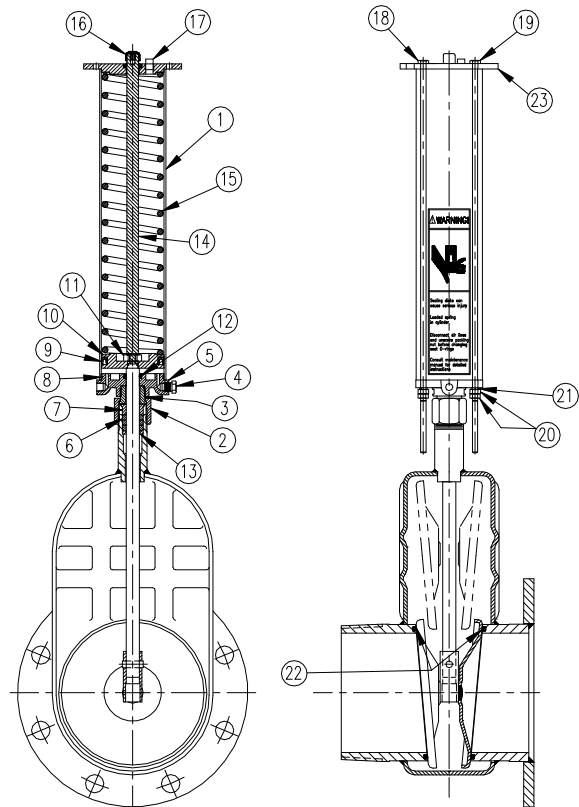
**Section 2: Installation and Maintenance**

## SECTION 1: PARTS BREAKDOWN

The Betts Pneumatic sliding valve is standard with 316 stainless steel gates and stem, and replaceable Teflon® encapsulated O-ring seats to provide a positive seal for pressure or vacuum service. A fusible plug is installed in air cylinder to dump air pressure in case of a fire.

The aluminum air cylinder has a working temperature range of -40° F to 250° F. The fusible plug is set to melt at 212° F. The valve body has a working temperature range of -40° F to 400° F. 90 PSI line pressure is required to fully open valve.

No.	Description	Req.	Material	Part No.
1	CYLINDER TUBE	1	ALUM-HARDCOAT ID	75202AL
2	PACKING NUT	1	303 SS	75192SL
3	SWIVEL INSERT	1	303 SS	75193SL
4	FUSIBLE PLUG	1	BRASS	FP15003BR
5	CYLINDER ENDPLATE	1	ALUMINUM	75191AL
6	PACKING SET OF 3 PCS.	SET	NON-ASB/TEF	15227NT
7	TOP GLANK	1	316 SS	C15220SS
8	ENDPLATE O-RING	1	BUNA-N	17666BN
9	PISTON SEAL	1	BUNA-N	17669BN
10	PISTON	1	ALUMINUM	75201AL
11	PISTON NUT	1	STEEL Z.P.	9Q5910
12	SHAFT SEAL	1	BUNA-N	18066BN
13	BOTTOM GLAND	1	316 SS	C15076SS
14	INDICATOR ROD	1	ALUMINUM	75249AL
15	MAIN SPRING	1	STEEL E-COAT	75197EY
16	INDICATOR CAP	1	VINYL	9Z6180
17	VENT PLUG	1	BRASS	9Z4895
18	SHORT TIE BOLT	2	304 SS	75230SL
19	LONG TIE BOLT	2	304 SS	75230SL
20	HEX NUT	8	BRASS	9Q5038
21	LOCK WASHER	4	304 SS	9Q5844
22	SEAT O-RING 4" VALVE SEAT O-RING 6" VALVE	2	TEF. ENCAP. SILICONE	19430TS 19428TS
23	CYLINDER ENDPLATE	1	ALUM. E COAT	75200ALEY



## SECTION 2: INSTALLATION AND MAINTENANCE

**CAUTION: AIR CYLINDER CONTAINS A LOADED SPRING. DO NOT ATTEMPT TO CHANGE SEAT O-RINGS WITHOUT DETACHING AIR CYLINDER FROM VALVE BODY**

### **INSTALLATION NOTES:**

To prevent fatigue in the air cylinder neck or rotation of the air cylinder, the air cylinder must be properly supported by bolting the air cylinder endplate (#23) to a rigid bracket directly connected to the same support member as the valve. When mounting valve make sure there is sufficient clearance to allow the indicator pin to project beyond the air cylinder endplate and clearance for the air cylinder to be slid outward to change the valve seat O-rings.

### **PROCEDURE TO CHANGE SEAT O-RINGS:**

Disconnect air line. Unscrew packing nut #2. Open valve by pulling air cylinder away from valve. It may be necessary to use a small rubber hammer to tap lower air cylinder endplate (#5) to free the disks. CAUTION: Air cylinder must be completely detached prior to replacing O-rings or severe injury could result. Remove old O-rings and snap new O-rings into the grooves. Heating the new O-rings in hot water will ease installation. Close valve by pushing air cylinder back onto the body. It may be necessary to use a rubber hammer to tap upper cylinder endplate (#23) to seat the disks. Screw packing nut unto valve body.

### **PROCEDURE TO ADJUST STEM PACKING:**

Valve stem packing should be checked on a weekly basis. Using a wrench or pliers tighten packing nut #2 to 25 ft-lbs. Do not over tighten. Check valve for proper functioning. If valve sticks or does not operate, loosen packing nut slightly and check operation again. Replace packing if necessary

### **PROCEDURE TO MANUALLY OPEN VALVE:**

Disconnect air line. Remove indicator cap #16 and unscrew indicator pin #14. Thread a piece of 5/16-18 allthread rod at least 15" long through endplate #23 and into valve stem. Put a flat washer over the allthread rod against the endplate then screw a nut unto the rod. Tighten nut to open valve. CAUTION: This technique to be used only for emergency. Do not use this technique to service valve

### **PROCEDURE TO DISASSEMBLE AIR CYLINDER:**

CAUTION: AIR CYLINDER CONTAINS A LOADED SPRING. DO NOT ATTEMPT TO DISASSEMBLE AIR CYLINDER IF TIE ROD BOLTS (19) HAVE BEEN DAMAGED OR MODIFIED. TIE ROD BOLTS SHOULD PROJECT 3" BEYOND FLANGE (5).

Disconnect air line. Remove short tie rod bolts (18) and outer double nuts (20) from long tie rod bolts. Loosen remaining nut of one long tie rod (19) two full turns, then loosen remaining nut on other tie rod 2 full turns. Repeat this procedure loosening alternating tie rods nuts 2 turns each until main spring is fully unloaded. After main spring is unloaded remove tie rod bolts (19). Reassembly is reverse of disassembly. Be sure to place the long tie rod bolts (19) in diagonally opposite corners of air cylinder.

**WARNING** Use only genuine BETTS INDUSTRIES INC. replacement parts. Use of substitute parts can impair the proper function of this product and void all warranties.