

# OPERATION AND MAINTENANCE

## MODEL 443 FLOW FUSE & MODEL 796 RESTRICTOR

Both the model 443 flow fuse and restrictor model 796 are intended to serve as safety devices that prevent high flow rates in the event high pressure lines break or become disconnected.

With the flow fuse, normal flow rates pass unrestricted. When flow substantially exceeds the normal rate an active element in the fuse closes. A slight leakage in the shut position permits equalizing of charging lines and automatic reopening of the fuse in the event an excessive surge shuts the valve.

The model 796 flow restrictor uses a small orifice but no active element to limit flow. It's advantages are: simplicity, and the insurance that the flow will not be shut off due to unusual surges. It's disadvantages are: some restriction in normal flow, and some continuing flow in the event of line breakage. In some cases the flow restriction can be an advantage. For example it will slow fill times of small tanks preventing "hot" fills. In the event of line breakage some noise and line whip could still occur, However flow rate and whip will be reduced to about 1/10 (10%) that of an unrestricted line.

### TECHNICAL SPECIFICATIONS

#### MODEL 443 FLOW FUSE

- Maximum rated pressure -- 6000 PSI (40 MPa)
- Nominal flow rate to shut -- 80 SCFM at 5000 PSI
- PSI 55 SCFM at 2500
- (can be adjusted)
- Size ----- 7/8" hex by 2.1" long
- Ports ----- 1/4" female NPT in, 1/4" male NPT out

#### MODEL 796 RESTRICTOR

- Maximum rated pressure -- 6000 PSI (40 MPa)
- Nominal orifice size ----- .047" diameter (other sizes available)
- Maximum flow (with 5000 PSI across restrictor) ----- 100 SCFM
- Time to fill 50 ft<sup>3</sup>, 2250 PSI tank with 2250 PSI upstream of restrictor ----- about 3 minutes
- Size ----- 7/8" hex by 1.5" long
- Ports ----- one 1/4" male NPT one 1/4" female NPT

### INSTALLATION

Observe the flow direction noted on the label. The female thread is the inlet and male thread is the outlet on the 443 flow fuse. The model 796 restrictor can flow in either direction. Install the fuse or restrictor between storage tanks and flexible hoses to prevent violent whipping in the event the hose end becomes disconnected or breaks. Use a suitable pipe thread sealant on the inlet and outlet pipe threads.

### MAINTANENCE, ADJUSTMENT

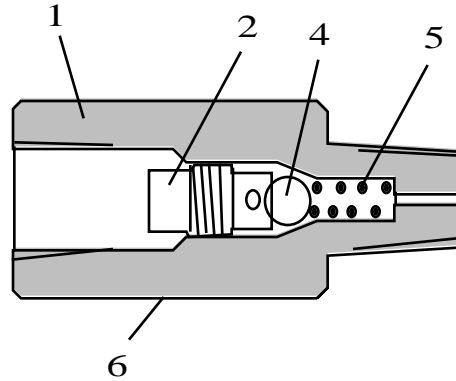
No routine maintenance is required. The flow fuse comes adjusted for the flow rates noted above under technical specs. To readjust the flow fuse, turn the adjusting screw in until the ball valve bottoms against the seat. Check for full closure by blowing through the flow fuse. Backing off on the adjusting screw 1.7 to 1.9 turns will provide the above standard shut-off flow rates. Backing off more will proportionately increase the shut-off flow rate and less will decrease it.

A more accurate check of shut off flow can be done by an actual flow test. Attach the inlet of the flow fuse to a high pressure air source with a pressure gauge to monitor pressure upstream of the flow fuse. Leave the outlet of the flow fuse open to atmosphere. Flow through the fuse increasing upstream pressure until the it shuts off. Shut off with an upstream pressure of 1000 PSI corresponds to the nominal flow rate settings. Suitable ear and eye protection should be used when flowing high pressure air.

The body of the flow fuse is notched in the ball seating area to permit a small leakage when it is shut. This permits bleed down and reopening. Bleed down of an upstream volume of about 1 cubic inch should take 3 to 10 seconds.

**PARTS LIST MODEL 443 FLOW FUSE**

ITEM	QTY	PART NO.	DISC.
1	1	432	body
2	1	444-1	adj. screw (retainer)
3	0	delete	retainer ring
4	1	445-4	ball valve
5	1	445-5	spring
6	1	445-6	label
7	1	443-7	repair kit item 2,4,5



**NOTES;**

1. Technical bulletin - 650
2. To assemble, install spring 5, then ball 4. Screw in item 2 with screwdriver slot outward until ball seats gently against body. Check for full closure by trying to blow through flow fuse. Then back off adjusting screw to desired setting. See adjustment instructions above.

**MODEL 796 FLOW RESTRICTOR**

