

# ANDERSON GREENWOOD

Before installation these instructions must  
be fully read and understood.

## Safety Precautions

When the safety valve is under pressure never place any part of your body near the outlet of the valve.

The valve outlet and any separate drains should be piped or vented to a safe location.

Always wear proper safety gear to protect hands, head, eyes, ears, etc. anytime you are near pressurized valves.

Never attempt to remove the safety valve from a system that is pressurized.

Never make adjustments to or perform maintenance on the safety valve while in service unless the valve is isolated from the system pressure. If not properly isolated from the system pressure, the safety valve may inadvertently open resulting in serious injury.

Remove the safety valve prior to performing any pressure testing of the system.

The safety of lives and property often depends on the proper operation of the safety valve. The valve must be maintained according to appropriate instructions and must be periodically tested and reconditioned to ensure correct function.

## Warning

The protection and safety of equipment, property and personnel depends on the proper operation of the safety valves described in this manual. All Tyco Valves and Controls safety valves should be kept in proper working condition in accordance with the manufacturer's written instructions. Periodic testing and maintenance by the user of this equipment is essential for reliable and safe valve operation.

All installation, maintenance, adjustment, repair and testing performed on safety valves should be done by qualified technicians having the necessary skills and training adequate to perform such work. All applicable Codes and Standards, governing regulations and authorities should be adhered to when performing safety valve repair. No repair, assembly, adjustment or testing performed by other than Tyco Valves and Controls or its authorized assemblers and representatives shall be covered by the warranty extended by Tyco Valves and Controls to its customers. The user should use only original, factory supplied OEM parts in any maintenance or repair activity involving this product.

This Maintenance Manual is provided as a general guide for the repair and maintenance of the safety valves described herein. It is not possible to describe all configurations or variations with such equipment. The user is advised to contact Tyco Valves and Controls or its authorized assemblers and representatives for assistance in situations that are not adequately covered or described in this manual.

Before removing a safety valve for maintenance, ensure that the system pressure has been fully depressurized. If an isolation block valve is used ensure that any trapped fluid between the block valve and the safety valve is safely vented.

Before disassembling the safety valve ensure that the valve has been decontaminated from any harmful gasses or fluids and that it is at a safe temperature range for handling. Fluids can be trapped in the dome space of pilot operated safety valves.

Before installation, the Installation and Operational Safety Instructions should be fully read and understood. These Instructions may be requested from the factory or are available at [www.tycovalves.com](http://www.tycovalves.com).

## 1.0 Scope

The purpose of this document is to describe those features that are unique to the 727 POSRV for air/gas service and specify the maintenance procedures required for those features.

All other maintenance procedures not addressed in this report are identical to the steam service 727's and should be performed as described in report 05.9040.192 "Maintenance Instructions for POSRV Type 727".

## 2.0 Air/Gas Valve Special Features and Service

### 2.1 2" Through 6" Valves

#### 2.1.1 Unloader

No unloader is installed on 2" through 6" 727 air/gas valves, and an NPT plug (24) is installed in the unloader discharge port in the main valve outlet. (See Figure 1)

#### 2.1.2 Main Valve Piston Assembly

The following modification has been performed on the 2" through 6" main valve piston assembly. The radial hole in the side of the main valve piston body is either eliminated or permanently plugged for air/gas service. This modified piston requires no special servicing unless an attempt has been made by an untrained service technician to either remove the installed port plug or to add a drain port to the piston.

**WARNING:** *A piston body with a fill/drain port in the piston must only be used on valves with an unloader or the main valve will not open in response to the pilot.*

### 2.2 8" Valves Only

#### 2.2.1 Volume Bottle Assembly

All 8" air / gas valves are identical to their steam service counterparts, i.e. equipped with unloader and fill drain port in main valve piston, except that a volume bottle assembly has been added. The volume bottle is required in order to obtain proper pilot valve function. No routine servicing of this component is required. (See Figures 1 & 1A)

### 2.3 Inlet Pressure Spike Snubber (See Figure 3)

A pressure spike snubber has been added between the dipper tube connection in the main valve cap and the pilot valve inlet to protect the pilot from valve inlet pressure spikes during main valve opening and closing. The snubber is mounted on two extended main valve cap studs as shown in Figure 2. Service the snubber as follows:

#### 2.3.1 Snubber Internal Spool (2)

- A. Grip the snubber body in a vise and unscrew and remove the snubber body cap (1).
- B. Using pliers grip the center projection on the internal spool and pull it out of the snubber body.
- C. Inspect the series of small flow restricting ports on the spool discs for blockage and clean, if necessary. The spool disc o-rings (5) should not require replacement.
- D. Lubricate the spool disc o-rings with silicone lubricant and reinsert the spool with the center projection up.
- E. Replace the cap o-ring seal (4), lubricate the cap threads and o-ring seal, and install and tighten the snubber cap to a fully metal to metal contact with the snubber body.

#### 2.3.2 Snubber Inlet Filter Screen (3)

- A. Remove the 1/2" NPT x 3/8 tubing fitting in the snubber inlet port. This will expose a filter screen in the back of the port.
- B. Inspect the screen for clogging deposits or corrosion and, if necessary, remove and clean or replace the screen.
- C. Wrap the inlet port NPT thread with SST thread sealing tape (Anderson Greenwood Part No. 05.1124.011); and re-install the inlet fitting.

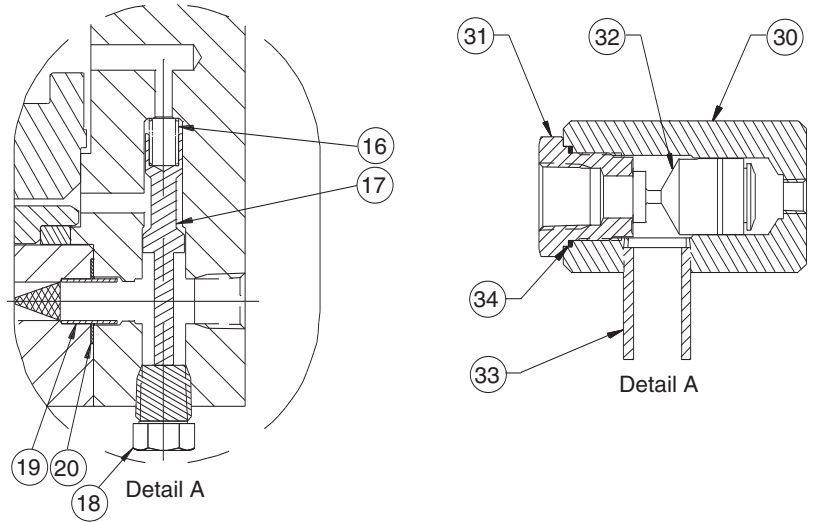
Note: This filter screen is a backup to the standard 727 dipper tube filter and will rarely require cleaning or replacement but should be checked whenever a 727 snubber assembly is serviced.

### 2.4 Pilot

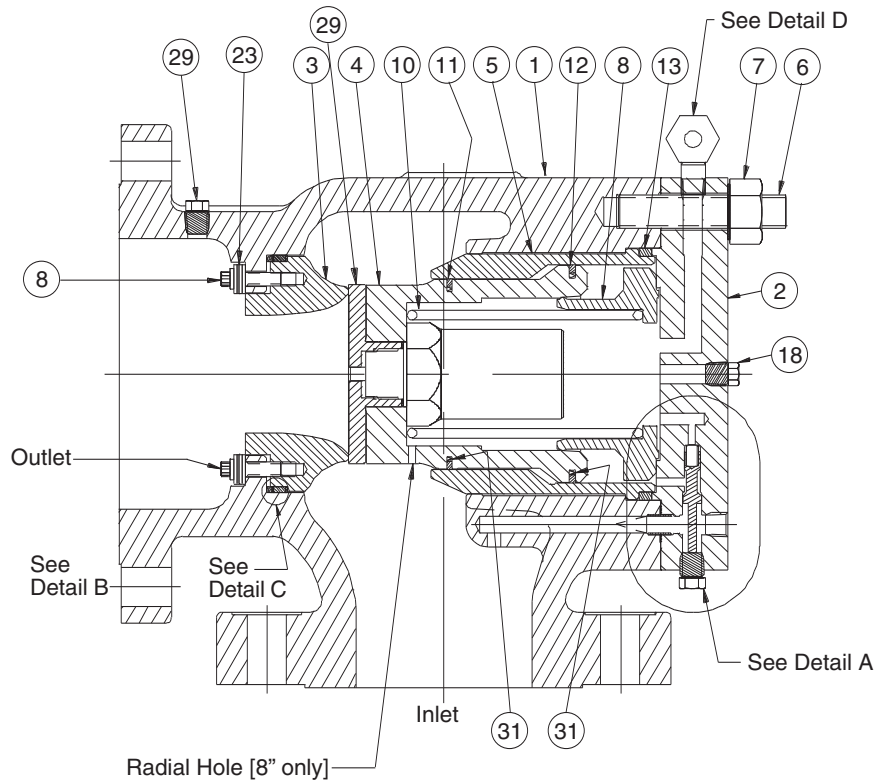
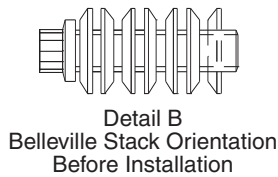
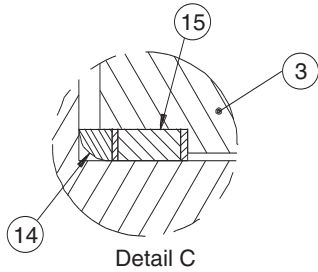
The air/gas service pilot assembly and setting is the same as the steam pilot with two exceptions in the blowdown adjustment settings.

1. The blowdown assembly allowable minimum lift range is .005/.015 inches.
2. The reseal pressure setting for the pilot assembly is 90% + 1% of specified cold differential set pressure.

Item	Description
1	Body
2	Cap
3	Nozzle
4	Piston
5	Liner
6	Stud
7	Nut
8	Piston Damper
9	Retainer Screw
10	Dome Spring
11	Damper Ring
12	Piston Seal Ring
13	Liner Seal
14	Seal Extrusion Ring
15	Nozzle Seal
16	Drain Spring
17	Drain Plunger
18	Pipe Plug
19	Filter Assembly
20	Seal
21	Centralizer Spring
22	Centralizer Spring
23	Belleville Washer
24	Pipe Plug, 2" - 6" Only
30	Unloader Body
31	Unloader Bushing
32	Unloader Piston
33	Unloader Nipple
34	Unloader Seal



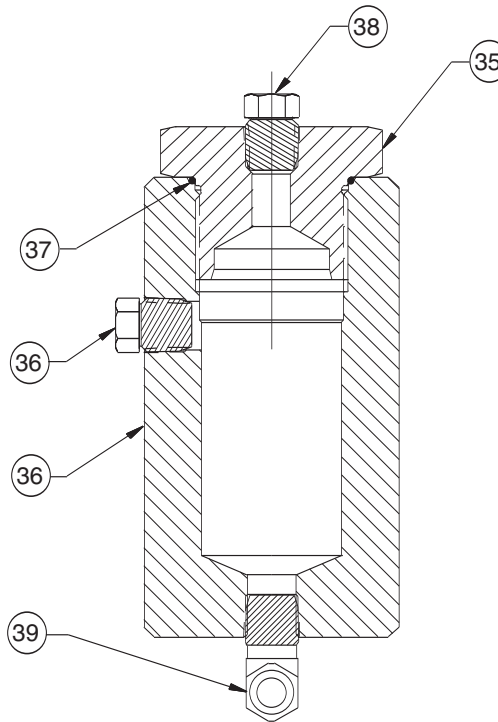
NOTE: Valve may not be equipped with drain plunger assembly depending on date of production



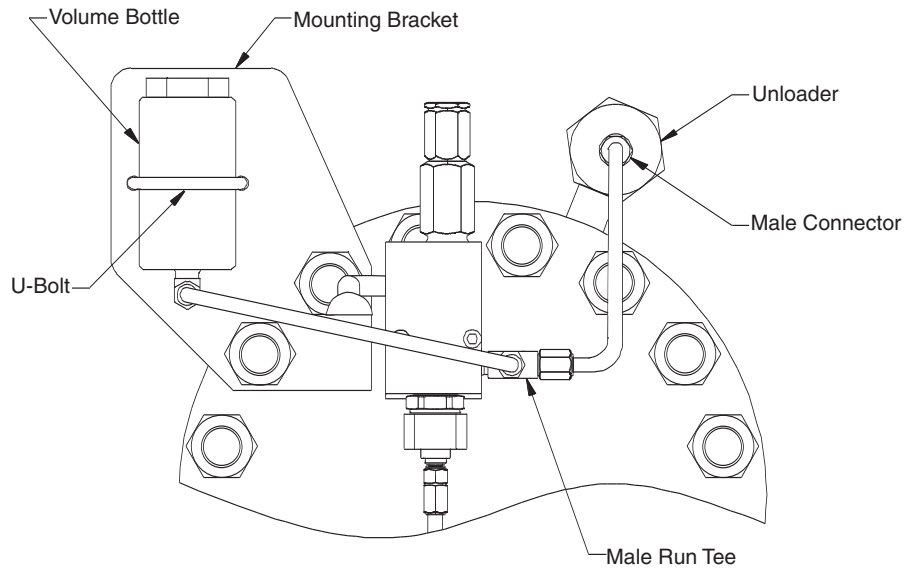
**Figure 1**  
**Main Valve Assembly**

Engineering Doc. #05.9040.238 Rev. C

Item	Description
35	Bushing
36	Body
37	O-ring
38	Pipe Plug
39	Tubing Elbow



Volume Bottle Assembly Detail



Unloader/Volume Bottle Installation  
8" Type 727 Only

Figure 1A

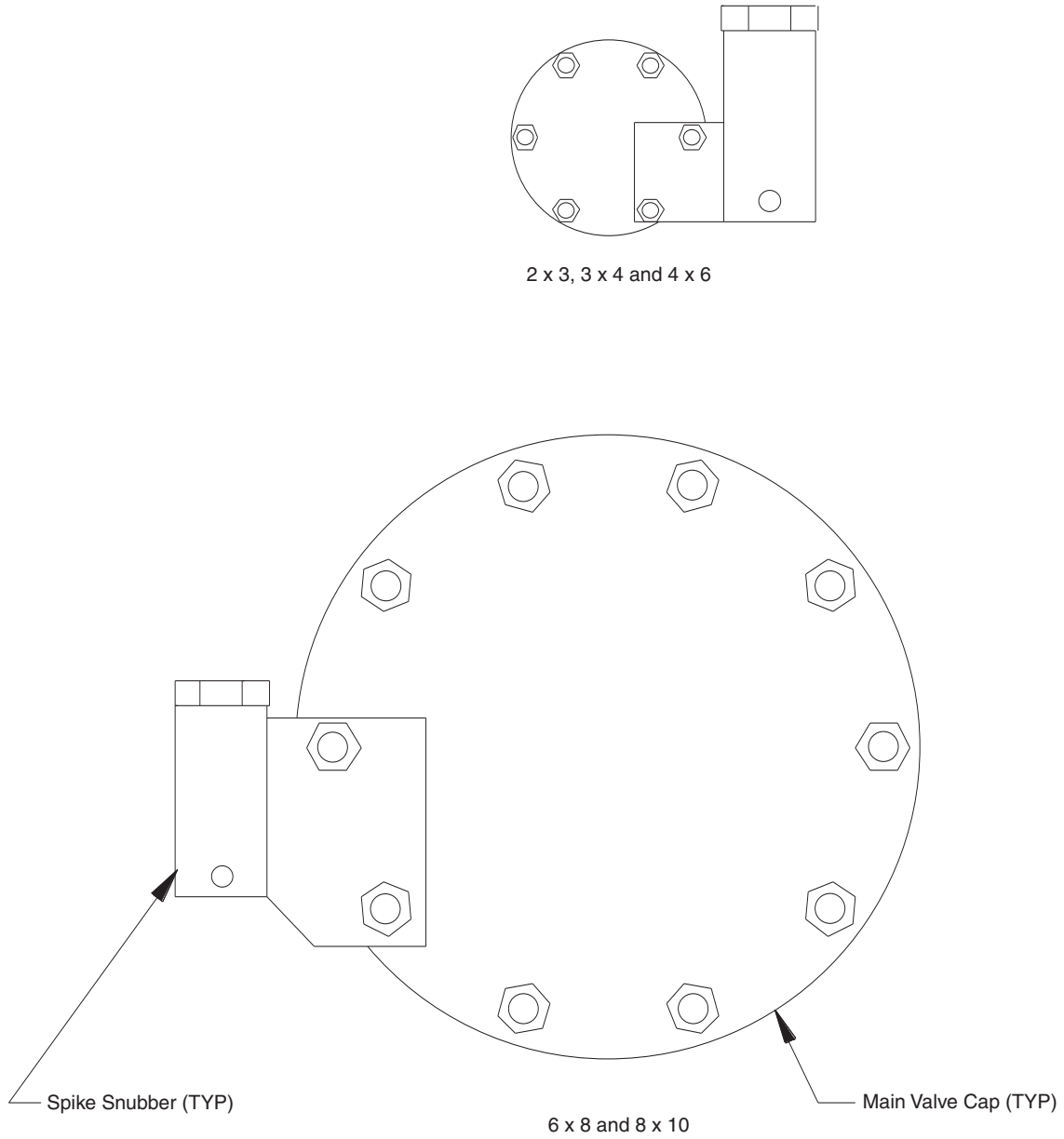


Figure 2

Item	Description
1	Cap
2	Spool
3	Screen-Inlet
4	O-ring

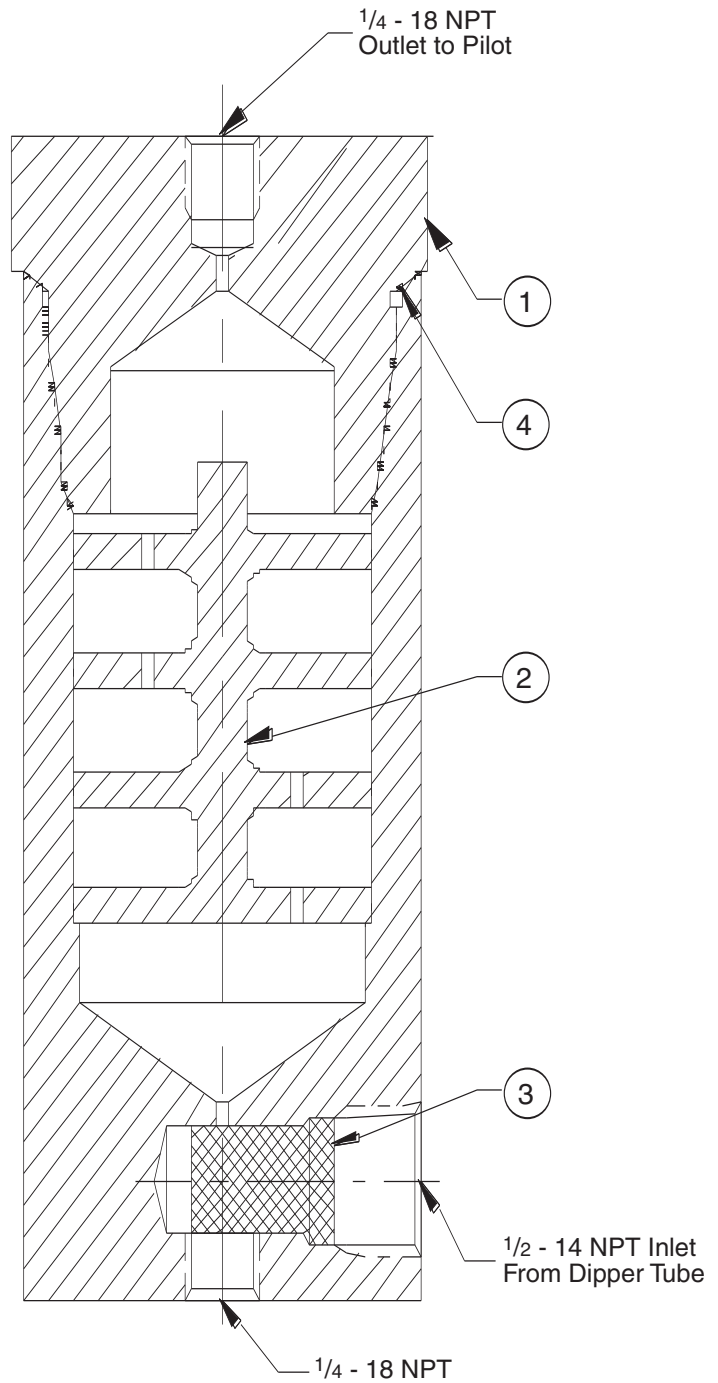


Figure 3

**Tyco Valves & Controls**

[www.tycovalves.com](http://www.tycovalves.com)

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