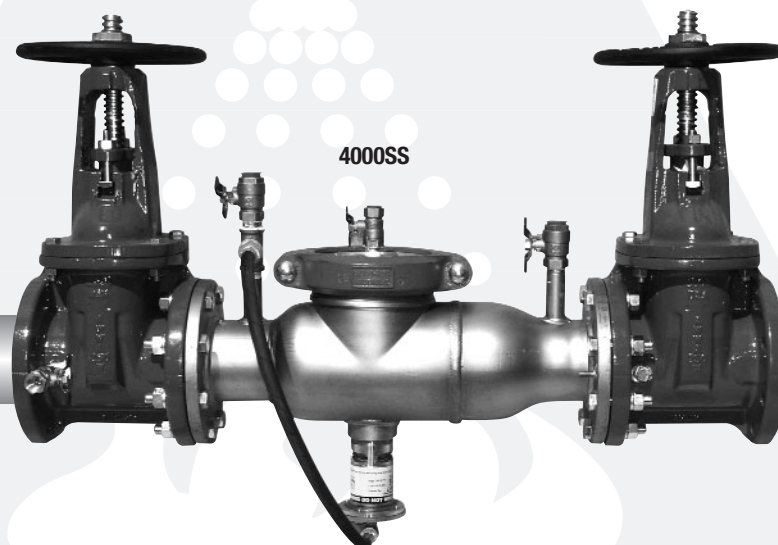


Series 4000SS



Reduced Pressure Zone Assemblies

Sizes: 8" – 10" (200 – 250mm)

- Installation
- Service
- Repair Kits
- Maintenance

For other repair kits and service parts, send for Ames Repair Parts Price List, PL-A-RP-BPD.

For technical assistance, contact your local Ames representative.

IMPORTANT: Inquire with governing authorities for local installation requirements.

NOTE: For Australia and New Zealand, line strainers should be installed between the upstream shutoff valve and the inlet of the backflow preventer.

It's important that this assembly be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. If installed on a fire sprinkler system, all mechanical checks, such as alarm checks and backflow preventers, should be flow tested and inspected internally in accordance with NFPA 13 and NFPA 25.

Limited Warranty: Ames Fire & Waterworks (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

SILVER BULLET

Installation Instructions

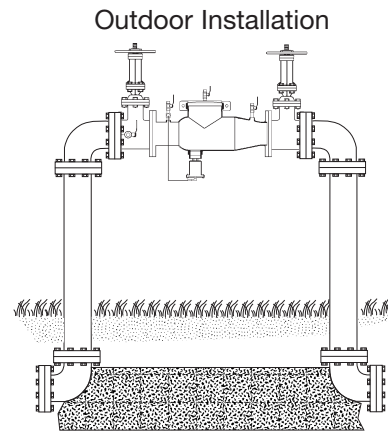
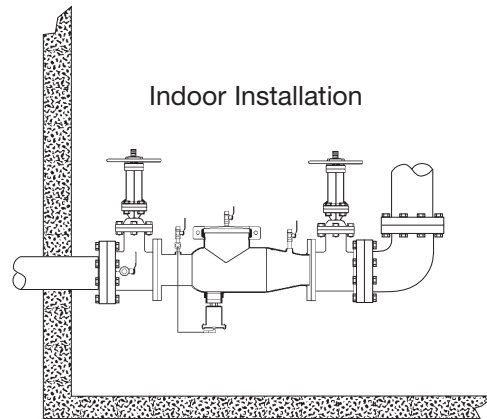
Please Read Prior to Installation:

1. Before installing any Ames assembly, **Flush the Line thoroughly** to remove all debris, chips and other foreign objects. Failure to do so may make the assembly inoperable.
2. The Ames 4000SS Reduced Pressure Backflow Preventers are approved by ASSE (American Society of Sanitation Engineers) to be installed in horizontal positions. **Local water authorities must approve all installation configurations.**
3. **Allow sufficient clearance around the installed assembly to conduct testing,** servicing, and inspection. Allow a minimum of 12" from the flood level to the bottom of the assembly.
4. The 4000SS is not recommended for pit installations. Where necessary, an Air Gap drain may be connected to the relief valve to minimize flooding of the surrounding area. Flooding may cause a cross-connection. **Be sure to contact local code authorities for proper installations.**
5. If installing on fire protection system, be sure to purge air from fire system. Fill system slowly with all inspectors test valves open.

Installation note: The flange gasket bolts for the gate valves should be retightened during installation as the bolts may have loosened due to storage and shipping.

Attention Installer: After installation, please leave this Instruction Sheet for occupant's information.

NOTE: Assembly body should not be painted.



Important: Inquire with governing authorities for local installation requirements.

Detailed Parts Listing

Parts Table #1			Ames Part No.	
Item #	Part Description	Qty	8" (200mm)	10" (250mm)
1.	#1 Cam-Check	1	7015570	7015570
2.	#2 Cam-Check	1	7016088	7016088
3.	#1 Cam-Check O-ring	1	7011610	7011610
4.	#2 Cam-Check O-ring	1	7011610	7011610
5.	Cover Plate	1	7013495	7013495
6.	Ball Valve	3	A000449	A000449
7.	Groove Coupler	1	A605530	A605530
8.	Groove Coupler Gasket (not shown)	1	7014806	7014806
9.	Relief Valve (complete assembly)	1	7013354	7013354
10.	Relief Valve Hose	1	7013522	7013522
11.	Relief Valve Body O-ring	1	A400084	A400084
12.	Washer, Shutoff	1	7013499	7013499

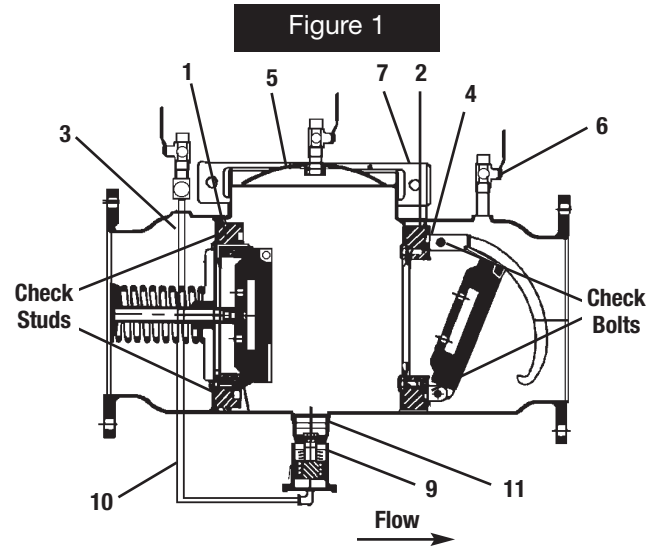


Figure 2

#1 Cam-Check RP

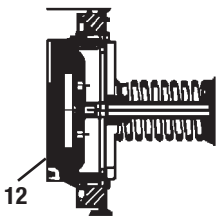


Figure 3

#2 Cam-Check DC & RP

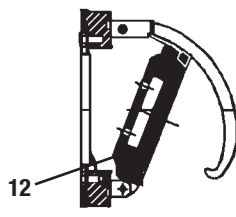
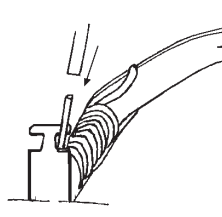


Figure 4



Maintenance Instructions

NOTE: Ames assemblies require minimum maintenance. All assemblies must be retested once maintenance has been performed. Before servicing be certain shutoff valves are closed.

Removing Cam-Checks

- Shut down water system and lock out system if possible. Slowly open all ball valves to relieve air and water pressure. Loosen bolts on groove coupler and remove groove coupler and cover plate from valve body.
- #1 Check**
Using a $\frac{9}{16}$ " socket wrench or nut driver, remove the four nuts from the #1 check studs (See fig. 1). Using two hands, place them at 12 o'clock and 6 o'clock, wiggle the check assembly free. Remove through access port with back of clapper first with spring end down. Pull check assembly out of main body. To inspect 1st check gear or to free 1st check of debris, see page 4.
#2 Check
After loosening bolts with a $\frac{9}{16}$ " socket, remove bolts com-

pletely. Using the centerline access bar, spin the cam assembly from the 9 o'clock position to the 12 o'clock position, then (without letting go of the access bar) push the cam assembly slightly downstream so that the clapper is now parallel to the valve body. Now bring the cam assembly through the check retaining wall. Leave the cam assembly clapper parallel to the valve body. Pull the cam assembly through the access port.

- Using a $\frac{3}{8}$ " nut driver or a piece of small diameter pipe, place on the cam arm torsion spring and move away from and around the torsion spring retaining bracket so as to relieve the torsion spring tension. This will allow the cam arm to move freely, enabling you to inspect the clapper face and cam seat. Thoroughly clean the seat area and clapper sealing surfaces, cam arms, and O-rings for damage, nicks, and debris. If damaged, install a new check assembly and or O-ring.
- Before reinstallation of check assembly, thoroughly clean O-ring groove and lubricate with F.D.A. approved lubricant.

Maintenance Instructions to Inspect Seat & Clapper on 1st Check

Please be advised, you must use extreme caution when servicing the first check.

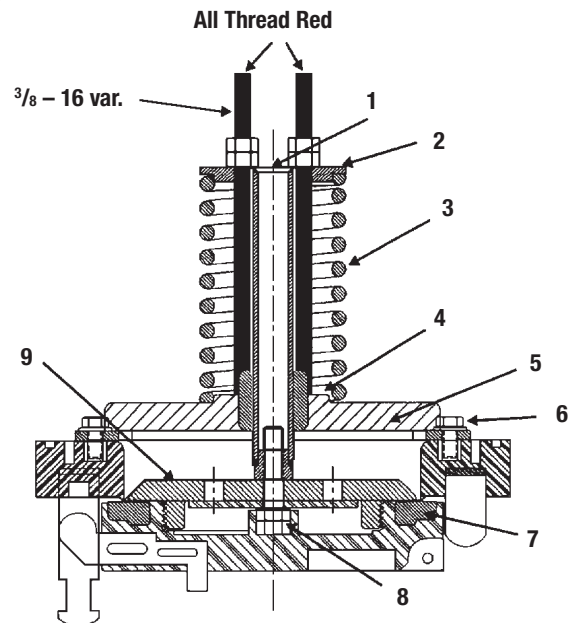
To inspect the seat and clean the seat and clapper washer:

1. After removing the first check from the backflow valve body, place on a flat surface with the coil spring facing up.
2. In order to gain access to the seat and clapper rubber ring, you must compress the spring (#3) that surrounds the clapper shaft (#1). To do so, you must place the $\frac{3}{8}$ " all thread rod through two holes of the spring retaining plate #2.
3. After placing the $\frac{3}{8}$ " all thread rod through the spring retaining plate, thread the all thread rod into the threaded holes (#4) at the base of spider (#5 next to shaft). Be sure to use two nuts on the all thread rod to tighten them into the thread holes. The depth of the threaded holes should be approximately $\frac{1}{2}$ ". This operation will require you to use two pieces of all thread rod (see drawing on the right.)
4. Compressing the spring. To do so you need to loosen the top $\frac{3}{8}$ " nut and back it off without unthreading the all thread rod from the spider. Place a box end wrench or crescent wrench on the $\frac{3}{8}$ " nut closest to the spring retaining plate and tighten (be sure to tighten both all thread and nut evenly; that is to say, put a few turns on one all thread rod nut and a few turns on the other.)
5. During compression, the clapper will slowly move up, away from the seat. To examine the seat, continue spring compression until the clapper has moved approximately 1" from the seat. This should allow debris to be removed and or the seat to be examined.
6. To unload the spring compression, loosen the all thread and then double nut the all thread and unscrew the all thread rod from the spider and shaft base.

To disassemble the first check, you will need the following:

- Two pieces of $\frac{3}{8}$ " all thread rod (approximately 14" long)
- Four $\frac{3}{8}$ " hex nuts
- Adjustable crescent wrench
- Pipe wrench or channel lock pliers

- | | |
|--|--------------------------|
| 1. Shaft | 6. Spider retaining bolt |
| 2. Spring retaining plate | 7. Seat ring |
| 3. Spring | 8. Clapper to shaft bolt |
| 4. $\frac{3}{8}$ " threaded hole (maintenance) | 9. Seat ring retainer |
| 5. Spider | |



Relief Valve Service Instructions

1. The relief valve may be serviced while on or off the backflow preventer valve.
2. **Note: Do not use a pipe wrench to remove the relief valve assembly from the backflow preventer.**
3. Shut down water system.

Relief Valve Disassembly

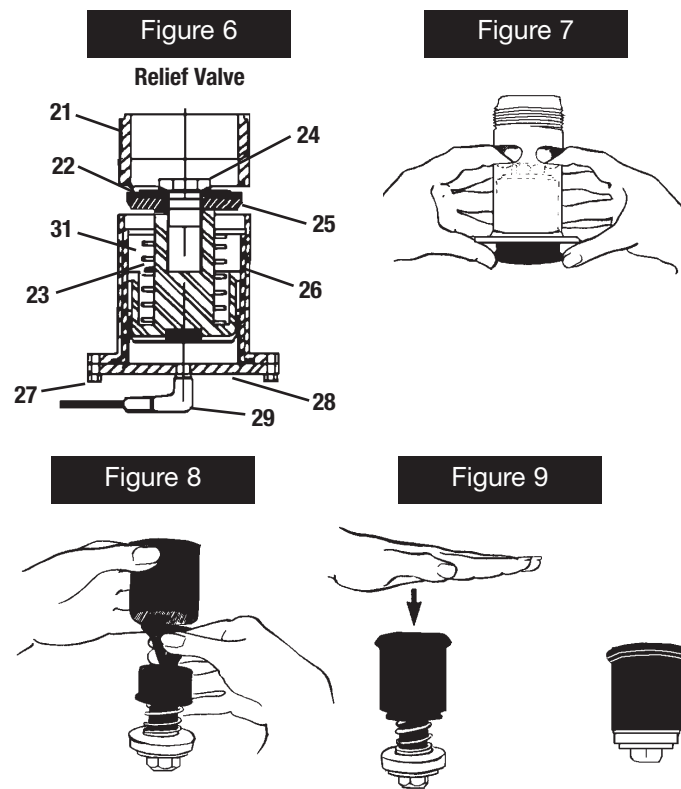
1. Disconnect the relief valve hose from the elbow in the bottom flange cover at the swivel hose connection. Do not remove the elbow.
2. If the valve is to be removed from the backflow preventer for service, place a screw driver blade or flat bar across the edges of (2) of the hex head screws in the bottom flange cover and turn counter-clockwise to loosen the relief valve assembly.
3. Remove the (4) bottom bolts from the bottom of the relief valve assembly with a $\frac{5}{16}$ " socket or open-end wrench. Remove the bottom flange cover.
4. Remove the piston assembly & sleeve from the relief valve body by placing your index fingers through the slots in the side of the body and pressing down on the top of the disc retainer in the top of the piston assembly. (See Figure 7.)
5. Pull the piston assembly free of the body by grasping the sleeve and pulling down.
6. Grip the sleeve and the piston assembly by the head of the hex head bolt. Pull up on the sleeve to extend the diaphragm. Slide the sleeve (Part #7013340) completely off of the diaphragm and inspect the diaphragm for tears, holes or excessive wrinkles. If the diaphragm is damaged, order a new piston/diaphragm assembly.

Relief Valve Reassembly

1. Thoroughly clean all inside surfaces of the relief valve body.
2. Inspect the relief valve body seat surface located at the top edge of the (3) discharge slots near the top of the body by rubbing the end of the index finger around the entire seat surface; access the seat surface through the slots or the bottom of the body. The seat must be free of nicks. If nicks are discovered, remove the body & install a new relief valve assembly.
3. Position the diaphragm on the piston assembly so that it is facing up as shown in Figure 8.
4. Now fold the top (ribbed) edge of the diaphragm inward, grasp the sleeve with the ribbed edge up and slide the sleeve down over the piston assembly as shown in Figure 8.
5. While still holding the sleeve, slide it up over the diaphragm and, using your thumb & index finger, position the bead of the diaphragm so that it wraps over the outside of the rib on the top of the sleeve so that the sleeve is held by the diaphragm. Now place the piston assembly on a flat, firm surface with diaphragm facing up as shown in Figure 9.
6. Cup your hand slightly to form an air trap and force the sleeve down over the piston assembly with a rapid slap (hard) on the open end of the diaphragm with your cupped

hand. The trapped air in the diaphragm will force the diaphragm between the inside of the sleeve and the outside of the piston. Ensure that the diaphragm is fully seated by running the end of a dull "butter" knife in the formed diaphragm. If diaphragm is wrinkled, repeat previous step.

7. Slide the piston assembly and sleeve into the relief valve body with the hex head bolt entering the flanged end of the body first. Slide the piston assembly in until the diaphragm lip is smoothly seated in the machined groove in the flanged end of the body. By running your index finger around the outside of the diaphragm bead, you will ensure it is seated smoothly.
8. Position the bottom flange cover on the bottom of the relief valve body and secure by hand tightening the (4) bottom bolts.
9. Now tighten the (4) bottom bolts to approximately 15 ft.-lbs. with a $\frac{5}{16}$ " socket or open-end wrench.
10. Reattach the relief valve hose to the elbow in the bottom flange cover.



Parts Table #2			
Item #	Part Description	Qty	Ames Part No.
21.	Relief Valve Body	1	7013337
22.*	Rubber ShutOff Disc	1	7013330
23.*	Piston Diaphragm Assembly	1	7013352
24.	Hex Head Bolt	1	7013326
25.	Disc Retainer	1	7013328
26.	Sleeve	1	7013340
27.	Bottom Bolt	1	7012545
28.	Bottom Flange (w st. elbow)	1	7013339
29.	Elbow St. 90 ³ / ₈	1	A403609
30.*	O-ring Disc	2	7013327
31.	RV Spring	1	7013360
Not Shown - RV Rubber Kit (Includes * Items & Body O-Ring)			7018897