

Series 775/775DCDA

Double Check Backflow Preventer
Double Check Detector Assemblies
Sizes: 3" - 8"

Insert lid bolts in holes
provided to remove 1st check

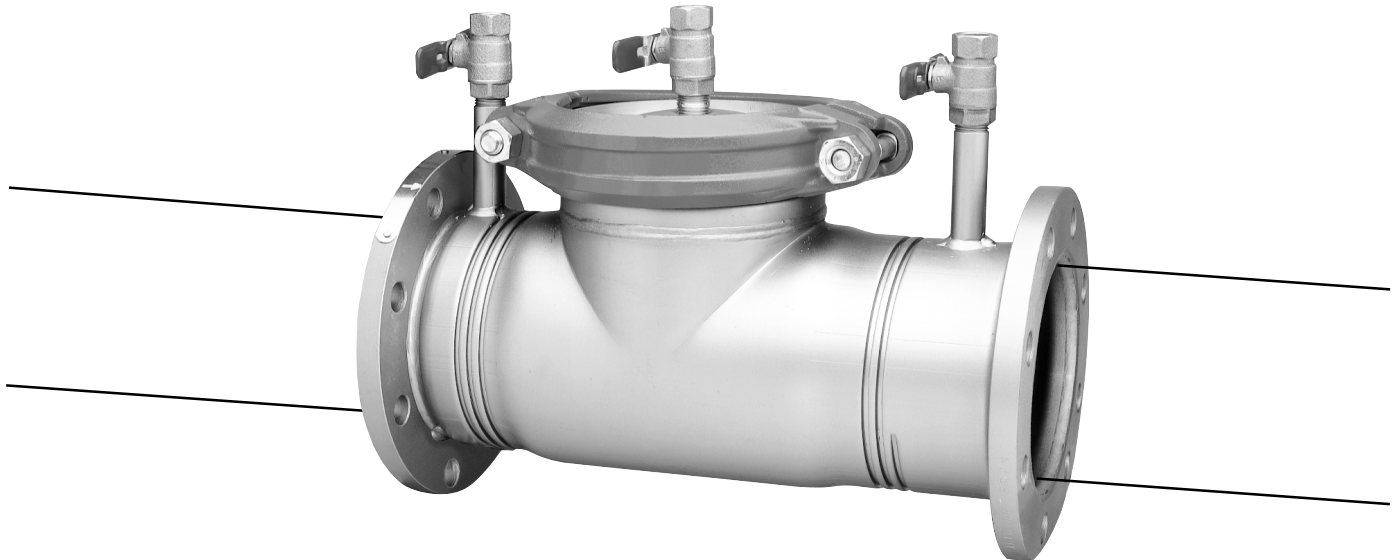
- Installation
- Service
- Repair Kits
- Maintenance

For field testing procedure, send for IS-TK-DP/DL, IS-TK-9A, IS-TK-99E and IS-TK-99D.

For other repair kits and service parts, send for PL-RP-BPD.

For technical assistance, contact your local Watts representative on back page.

N775/N775DCDA Backflow Preventers are identical in construction to 775/775DCDA Series except include short radius elbows between backflow preventer flange and gate valve flange.



CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
(Installer: California law requires that this warning be given to the consumer.)

IMPORTANT: Inquire with governing authorities for local installation requirements.

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

LIMITED WARRANTY: Watts Regulator Company warrants each product against defects in material and workmanship 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. This shall constitute the exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental or consequential damages, including without limitation, damages or other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemicals, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. THE COMPANY MAKES NO OTHER WARRANTIES EXPRESS OR IMPLIED EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY.

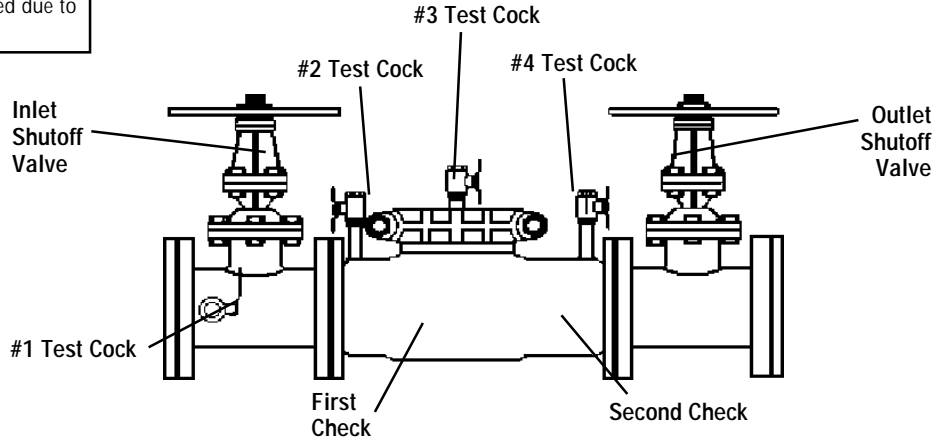


Basic Installation Instructions

Watts Series 775 Double Check Valve

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.



Check with local authorities for installation requirements. If installing on a fire protection system be sure to purge air from the system. Fill system slowly with all inspector test valves open.

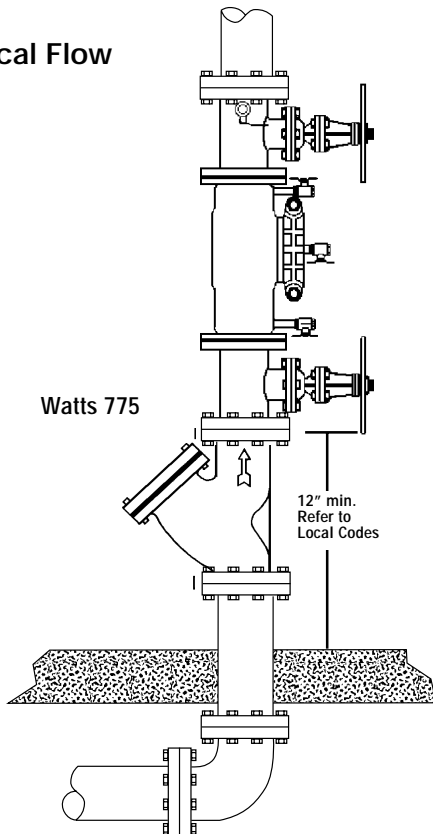
Pipe lines should be thoroughly flushed to remove foreign material before installing the unit. A strainer should be installed as shown, ahead of the backflow preventer to prevent discs from unnecessary fouling.

CAUTION: Do not install a strainer when backflow preventer is used on seldom-used water lines which are called upon during emergencies, such as fire sprinkler lines, etc.

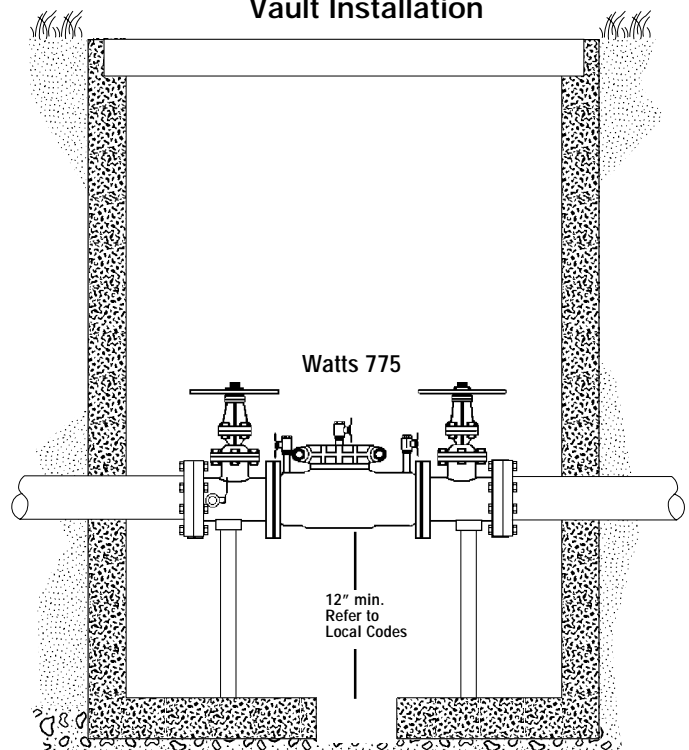
It is important that Series 775 be tested periodically in compliance with local codes, but at least once a year or more often, depending upon system conditions.

775 Series for Retrofit Installations

Vertical Flow Up



Vault Installation



Watts Series 775 Installation Instructions

Installation

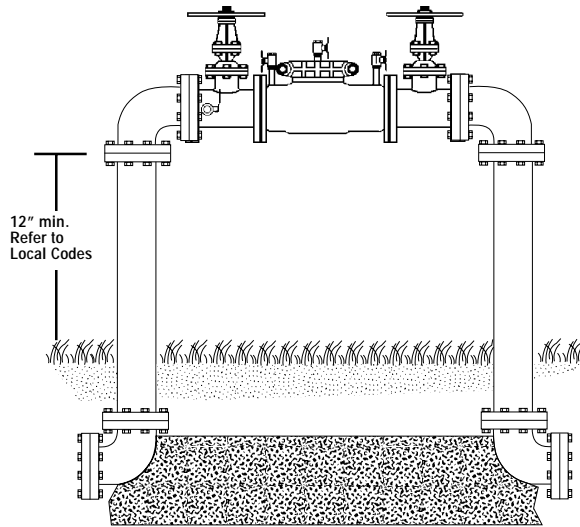
- A. Series 775 may be installed in a horizontal or vertical flow up position. The shutoff valve with the test cock is to be mounted on the inlet side of the backflow preventer. The test cock is on the inlet side of the shutoff valve.
- B. The 775 should always be installed in an accessible location to facilitate testing and servicing. Check state and local codes to insure that the backflow preventer is installed in compliance, such as the proper height above the ground. The backflow preventer must be supported and is not designed to carry full weight of the stand pipe.
- C. Backflow preventers should never be placed in pits unless absolutely necessary and then only when and as approved by local codes. Consult your local or state plumbing or health inspector. Watts recommends installation indoors or above ground in an insulated enclosure.

Start Up

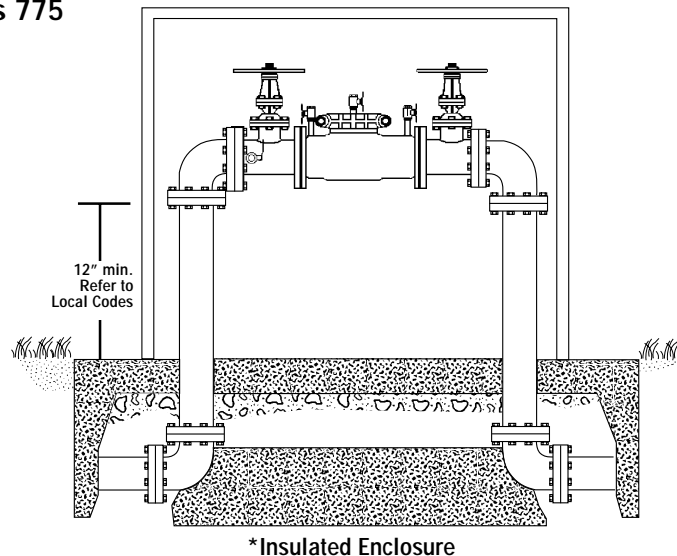
- D. The downstream shutoff should be closed. Open upstream slowly, fill the valve and bleed the air through Test cock 2, 3 and 4. When valve is filled, open the downstream shutoff slowly and fill the water supply system. This is necessary to avoid water hammer or shock damage.
- E. Two or more valves can be piped in parallel (when approved) to serve a large supply pipe main. This type of installation is employed where increase capacity is needed beyond that provided by a single valve and permits testing or servicing of an individual valve without shutting down the complete line.

The number of assemblies used in parallel should be determined by the engineer's judgement based on the operating conditions of a specific installation.

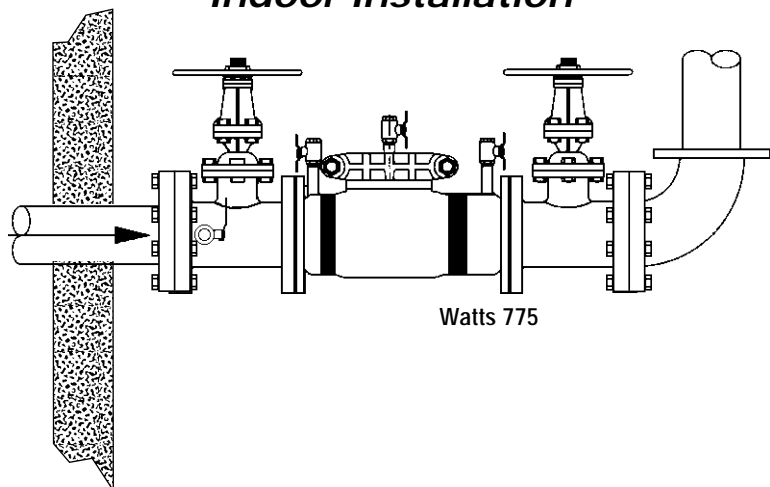
Above Ground



Watts 775



Indoor Installation



*For additional information on Watts insulated enclosures send for ES-WB or ES-WBT.

Removing Checks

Before Servicing Be Certain Shutoff Valves Are Closed

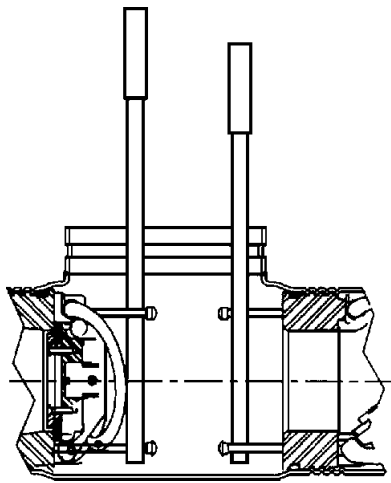


Figure 1
No. 1 Cam Check

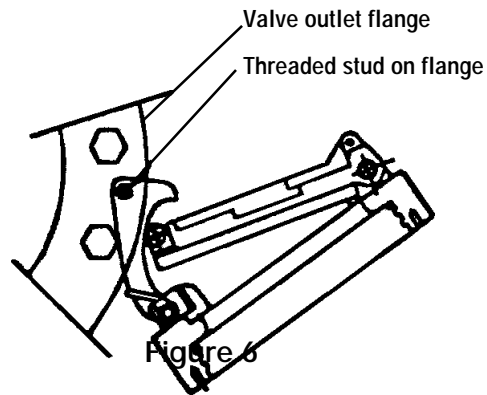


Figure 2
No. 2 Cam Check
(6" and 8" models only)

Place yourself so that the water flow through the valve is left to right.

1. Shut down water system and lock out system if possible. Slowly open all ball valves to relieve air and water pressure. After pressure is relieved, loosen bolts on groove coupler and remove groove coupler and cover plate from valve body.
2. Remove No. 1 check assembly by unscrewing (turn counterclockwise) check and remove through top access port. Do not use arm as a handle to unscrew check. Insert lid bolts in 1st check seat ring (see Fig. 1), insert a long screwdriver or pry bar between lid bolts. Gently apply pressure against the bolts and turn seat assembly counter clockwise moving bolts hole to hole to maintain turning leverage (two additional bolts will eliminate need to move lid bolts from hole to hole). Finish unscrewing by hand and remove from valve body. Unscrew No. 2 check (turn counterclockwise) by placing a long screwdriver across lid bolts inserted in holes located in the 2nd check seat ring, similar in method used to remove 1st check and applying pressure to loosen No. 2 check. Finish unscrewing by hand.
3. To clean check assemblies, locate the check arm opening stud on the outlet flange of the valve assembly, (6" and 8" only). Slide the arm over the stud with the check threads facing downward (Fig. 2). Tighten a $\frac{1}{4}$ " nut on stud to secure. Slowly pull the assembly outward to open check allowing exposure of the seat and clapper contact area for cleaning.

The assembly may be locked open by aligning the holes in the cam bar and hinge arms and inserting a rod (see Fig. 8, pg.6). If the clapper needs to be replaced or repaired, please refer to check disassembly instructions and figures 6 through 10 on page 6. Caution: If the seat is damaged, replace complete check module. If replacement is not required, please continue.

To clean No. 2 check, lift arm and hold in open position (see Fig. 9, pg. 6). Thoroughly clean the seat area and clapper sealing surfaces of both checks. Rinse checks and o-rings thoroughly.

Installation of Cam-Checks

Before installing checks, thoroughly clean o-ring grooves and lubricate o-rings with FDA approved lubricant. Insert and thread No. 2 check first and then No. 1 check. No. 2 check should be tightened by inserting a long screwdriver between lid bolts inserted in seat ring to tighten. Prior to filling the system, please ensure that lid bolts are tightened (50 ft.lbs.), cover plate is properly secured, and test cocks are open.

Start Up: The downstream shutoff should be closed. Open upstream slowly, fill the valve and bleed the air through test cocks 2, 3 and 4. When valve is filled, open the downstream shutoff slowly. This is necessary to avoid water hammer or shock damage to the water system.

Watts Series 775/775DCDA 3" - 8"

Figure 3

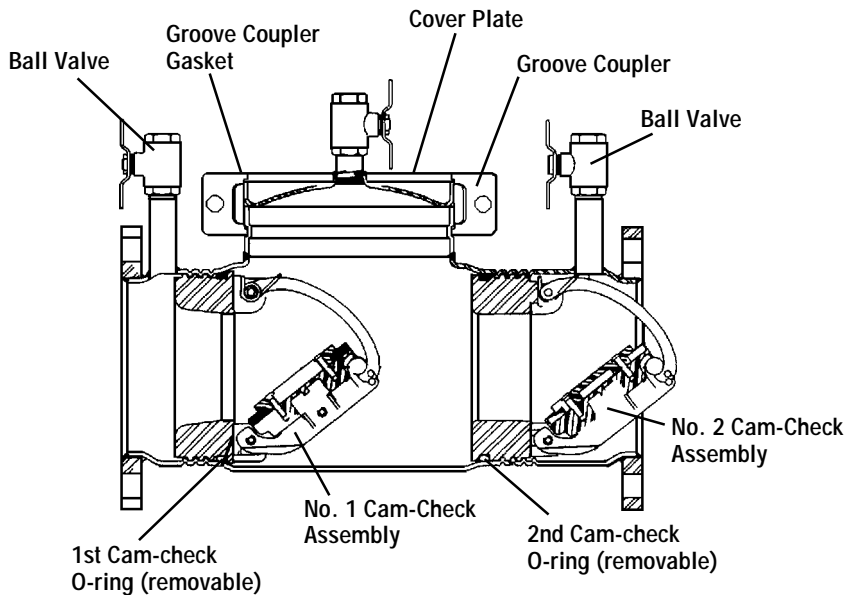
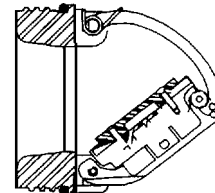
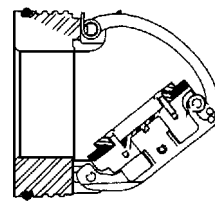


Figure 4



No. 1 Check Assembly

Figure 5



No. 2 Check Assembly

775/775DCDA Repair Kits

First Check Kit

EDP No.	Kit No.	Size	For use with /Model #'s
0888900	RK 775/775DCDA CK 1	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888901	RK 775/775DCDA CK 1	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kits include: Complete No. 1 Check Assembly with Check O-ring.

Second Check Kit

0888902	RK 775/775DCDA CK 2	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888903	RK 775/775DCDA CK 2	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kits include: Complete No. 2 Check Assembly with Check O-ring.

Cover Kit

0888904	RK 775/775DCDA C	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888905	RK 775/775DCDA C	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kit includes: Cover, Grooved Coupler & Gasket.

First Check Rubber Parts Kit

0888906	RK 775/775DCDA RC1	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888907	RK 775/775DCDA RC1	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kit includes: First Check Assembly O-ring and Check Disc

Second Check Rubber Parts Kit

0888908	RK 775/775DCDA RC2	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888909	RK 775/775DCDA RC2	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kit includes: Second Check Assembly O-ring and Check Disc

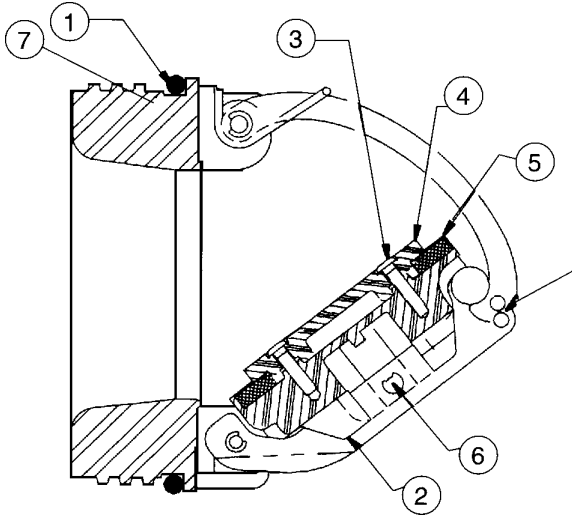
Rubber Total Parts Kit

0888910	RK 775/775DCDA RT	3" - 4"	3" - 4" 775/775DCDA/N775/N775DCDA
0888911	RK 775/775DCDA RT	6" - 8"	6" - 8" 775/775DCDA/N775/N775DCDA

Kit includes: First and Second Check Assembly O-ring, and First and Second Check Disc

Check Parts and Disassembly

Check Parts



Item No.	Part Description
1.	First Check O-ring (removable)
2.	Clapper Assembly (removable)
3.	Clapper Retaining Plate Screws (removable)
4.	Clapper Retainer Plate (removable)
5.	Clapper Disc (removable)
6.	Pivot Arm Pin (removable) Two c-clips
7.	Second Check O-ring (removable)

as and
call
fold in

Check Disassembly

Please use caution when disassembling check.

Figure 7

Using a thin rod or screwdriver, lift the bar up so that the clapper is free to swing upwards away from the seat.

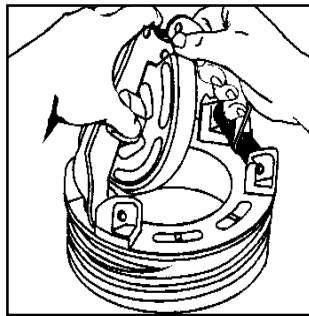


Figure 7

Figure 8

Using your free hand, swing the clapper open until the roller is almost to the free end of the bar. Align the maintenance lockout holes in the bar and the hinge arms. Secure the check assembly in the maintenance position by inserting a rod or thin screwdriver through the lockout holes.

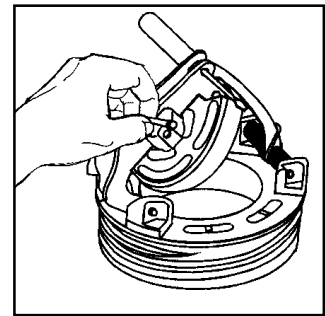


Figure 9

Figure 9

Remove one c-clip from the center pivot pin. Withdraw the center pivot pin from the clapper and the hinge arms. Remove the clapper assembly from the check assembly module. Remove the retainer screws. Note: You may replace this item as an assembly or you may continue and replace only the disc.

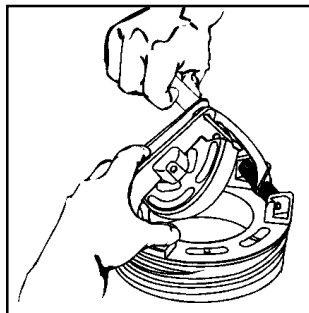


Figure 8

Figure 10

Disassemble the clapper by removing four screws, disc retainer and the sealing disc. Disc may be flipped if sealing surface is damaged.

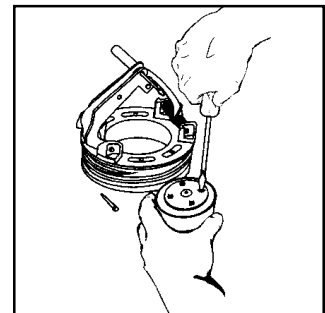


Figure 10

Before reinstallation of check assembly, thoroughly clean o-ring groove and lubricate o-ring with FDA approved lubricant.

Testing - Double Check Valve Assemblies

The following Test Procedure is one of several that is recognized throughout the United States for verification of the functioning of Backflow preventers.

The following procedure is not a specific recommendation. The Watts series of test kits are capable of performing any of the recognized Backflow test procedures.

- A. Flush all test cocks.
- B. Turn tester on (before connecting hoses). Tester must read all zeroes. Close VA and VB.

Test No. 1 - Test No. 1 Check Valve

1. Install high side hose between TC #2 and tester connection A.
2. Install low side hose between TC #3 and tester connection B.
3. Open TC #2 then VA, bleed hose, then close VA.
4. Open TC #3 then VB, bleed hose, then close VB.
5. Install a bypass hose between VB and TC #1. Open TC #1 and bleed by loosening hose connection at VB. Tighten hose connection, fully open VB.

Push - Print Head (wait) then Push - Star Test

6. Close shutoff valve #2 then #1.
7. Slowly open VA and lower high side pressure about -2 PSID below the low side pressure (differential reading about -2.0 PSID). Close VA. If reading is maintained, record as "tight". If reading returns to 0 and the pressure A increases to pressure B, the check is recorded as leaking. If the reading returns to + PSID, No. 2 shutoff valve is leaking excessively, and must be replaced to test the valve.
8. Close all test cocks, remove hoses from TC #2 and TC #3 and TC #1. reopen shutoff valve #1.

Proceed to Test No.2.

Push - Stop Test.

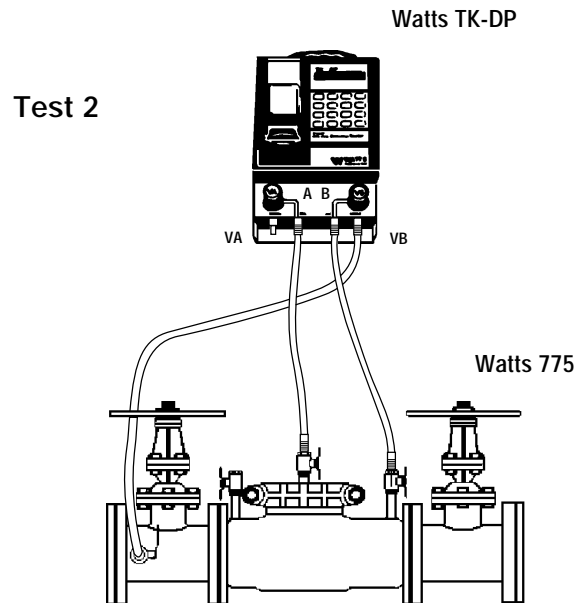
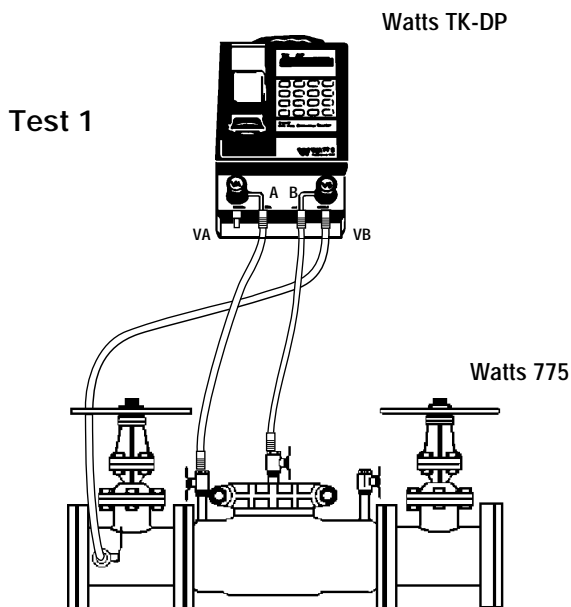
Test No. 2 - Test No. 2 Check Valve

1. Install high side hose between TC #3 and tester connection A.
2. Install low side hose between TC #4 and tester connection B.
3. Open TC #3 then VA, bleed hose, then close VA.
4. Open TC #4 then VB, bleed hose, then close VB.
5. Install a bypass hose between VB and TC #1. Open TC #1 and bleed by loosening hose connection at VB. Tighten hose connection, fully open VB.

Push - Start Test

6. Close shutoff valve #1.
7. Slowly open VA and lower high side pressure about -2 PSID below the low side pressure (differential reading about -2.0 PSID). Close VA. If reading is maintained, record as "tight". If reading returns to 0 and the pressure A increases to pressure B, the check is recorded as leaking. If the reading returns to + PSID, No. 2 shutoff valve is leaking excessively, and must be replaced to test the valve.

Push - Stop Test.



It is important that this device 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, single checks and backflow preventers should be inspected internally every one to five years in accordance with NFPA 13 A and NFPA 25