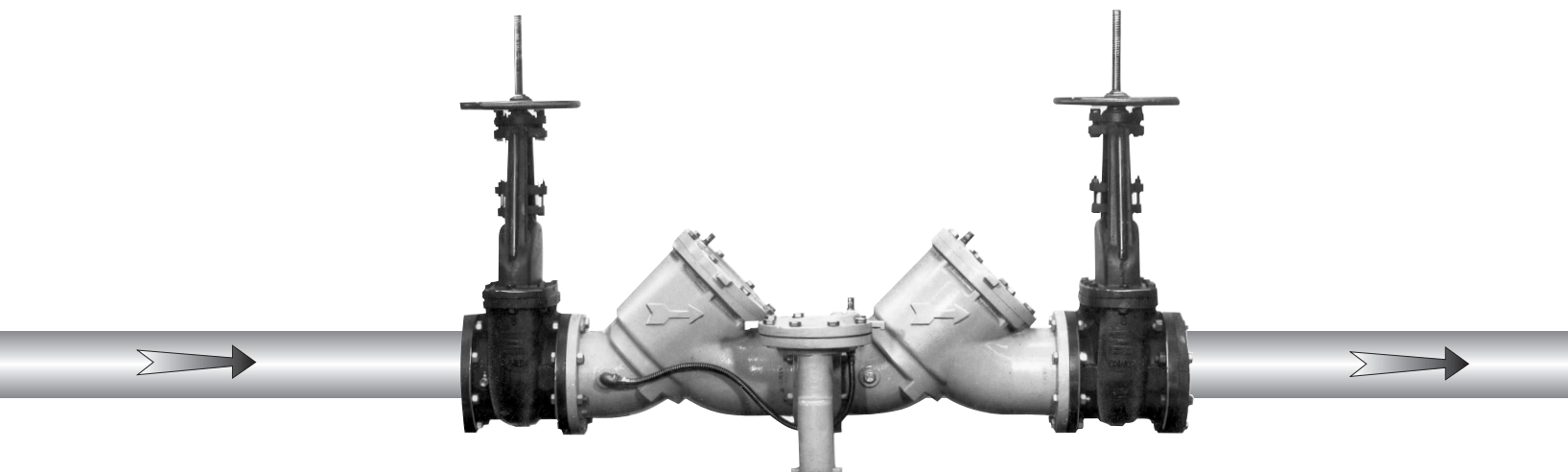


# Series 909/909RPDA

Reduced Pressure Zone Assemblies  
Reduced Pressure Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)



Watts 909 OSY shown  
Designed for inline servicing

- Installation
- Service
- Repair Kits
- Maintenance

For field testing procedure, send for IS-TK-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.

**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 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 and backflow preventers, should be flow tested and inspected internally in accordance with NFPA 13 and NFPA 25.

#### 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. (California law requires this warning to be given to customers in the State of California.)

For more information: [www.watts.com/prop65](http://www.watts.com/prop65)

**Limited Warranty:** Watts Regulator Co. (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.**

**WATTS®**

# Basic Installation Instructions

**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.

## Series 909

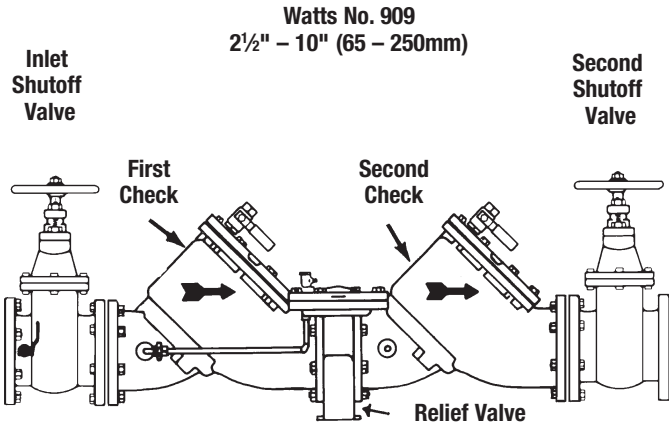
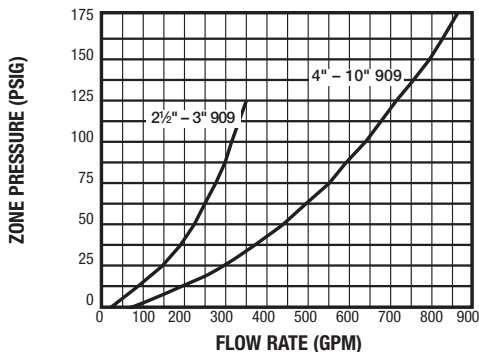
**Sizes: 2½" – 10" (65 – 250mm) 909**

### High Capacity Relief Series:

#### Location and Installation Considerations

1. Backflow preventers must be installed in high-visibility locations in order to allow for immediate notice of telltale discharge or other malfunction. This location should also facilitate testing and servicing, and protect against freezing and vandalism.
2. Installing a backflow preventer in a pit or vault is not recommended. However, if this becomes necessary, Watts highly recommends that a licensed journeyman tradesperson, who is recognized by the authority having jurisdiction, be consulted to ensure that **all local codes and required safety provisions are met**. An air gap below the relief port must be maintained so as to avoid flooding and submersion of the assembly, which may lead to a cross connection. \*Please refer to Figure No. 1 for further information.
3. A strainer should be installed ahead of the backflow preventer to protect all internal components from unnecessary fouling.  
**Caution:** Do not install a strainer ahead of the backflow preventer on seldom-used, emergency water lines (i.e. fire sprinkler lines). The strainer mesh could potentially become clogged with debris present in the water and cause water blockage during an emergency.
4. Normal discharge and nuisance spitting are accommodated by the use of a Watts air gap fitting and a fabricated indirect waste line. Floor drains of the same size **MUST** be provided in case of excessive discharge. \*Please refer to Figure No. 1 and Figure No. 2 for further information.
5. When a 909 Series backflow preventer is installed for dead-end service applications. (i.e. boiler feed lines, cooling tower makeup or other equipment with periodic flow requirements), discharge from the relief vent may occur due to water supply pressure fluctuation during static no-flow conditions. A check valve may be required ahead of the backflow preventer. \*Please see "Troubleshooting", Page 7, prior to installation.

**Figure 1** Series 909 RELIEF VALVE DISCHARGE RATES



6. The relief valve module on 2½" – 10" (65 – 250mm) 909 Series assemblies may be turned to discharge to the opposite side. To do so, unbolt the relief valve and turn the relief valve discharge port to the opposite side. Mount the high pressure hose on the opposite. This should be done by a licensed journeyman tradesperson, who is recognized by the authority having jurisdiction and only when space is critical for testing or repair.
7. **ASSEMBLY:** If the backflow preventer is disassembled during installation, it **MUST** be reassembled in its **proper order**. The gate valve with the test cock is to be mounted on the inlet side of the backflow preventer. The test cock must be on the inlet side of the wedge. Please see above. Failure to reassemble correctly will result in possible water damage due to excessive discharge from the relief port/vent and possible malfunction of the backflow preventer.
8. Installation procedures must comply with all state and local codes and must be completed by a licensed journeyman tradesperson who is recognized by the authority having jurisdiction. Please see Page 3 for specific installation procedures.
9. Prior to installation, thoroughly flush all pipe lines to remove any foreign matter.
10. **START UP at Initial Installation and After Servicing:** The downstream shutoff should be closed. Slowly open upstream shutoff and allow the backflow preventer to fill slowly. Bleed air at each test cock. When backflow preventer is filled, slowly open the downstream shutoff and fill the water supply system. This is necessary to avoid dislodging O-rings or causing damage to internal components.
11. **TEST:** The 909 Series backflow preventer may be tested by a certified tester at the time of installation in order to ascertain that the assembly is in full working order and may be relied upon to protect the safe drinking water as per applicable standard.

**Figure 2**

| VALVE SIZE  |             | TYPICAL FLOW RATES<br>AS SIZED BY FLOOR<br>DRAIN MANUFACTURERS | DRAIN SIZE |     |
|-------------|-------------|----------------------------------------------------------------|------------|-----|
| in.         | mm          |                                                                | in.        | mm  |
| 2½"         | 65          | 55 gpm                                                         | 2          | 50  |
| 3"          | 80          | 112 gpm                                                        | 3          | 65  |
| 4"          | 100         | 170 gpm                                                        | 4          | 100 |
| 6", 8", 10" | 150,200,250 | 350 gpm                                                        | 5          | 125 |

# Basic Installation Instructions Series 909

**Sizes: 2½" – 10" (65 – 250mm)**

## Installation

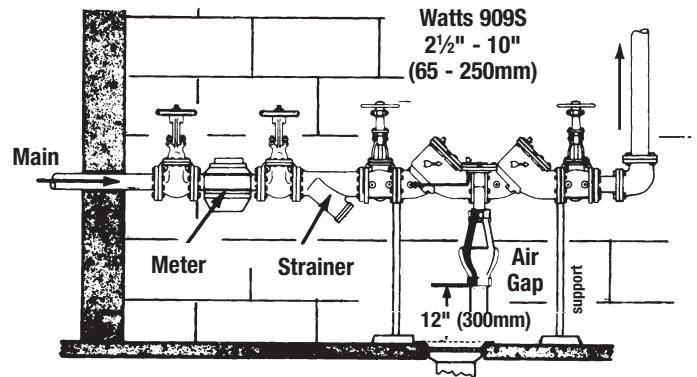
- A. Series 909 should be installed in a horizontal and upright position. This positions the relief valve below the first check valve, enabling the zone to drain through the relief valve outlet. The shutoff valve with the test cock is to be mounted on the inlet side of the backflow preventer. The test cock is on the inlet side of the shutoff valve.
- B. The 909 should always be installed in an accessible location to facilitate testing and servicing. Check the state and local codes to insure that the backflow preventer is installed in compliance, such as the proper height above the ground.
- C. Water discharge from the relief valve should be vented in accordance with code requirements. The relief valve should never be solidly piped into a drainage ditch, sewer or sump. The discharge should be funneled through a Watts air gap fitting piped to a floor drain.
- D. Watts recommends a strainer be installed ahead of Watts 909 Series assemblies to protect the discs from unnecessary fouling.
- E. 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

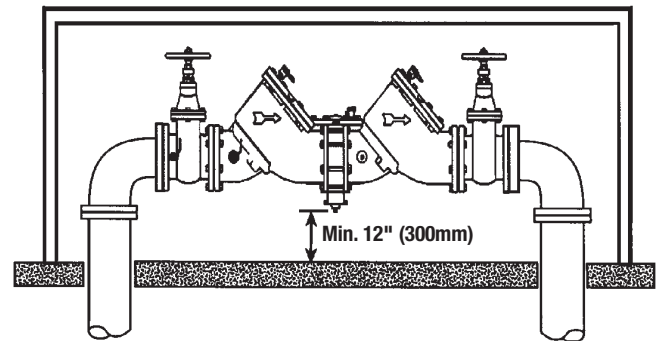
- F. The downstream shutoff should be closed. Open upstream slowly, fill the valve and bleed the air through Test cock 2, 3 and 4. When valve is filled, open the downstream shutoff slowly and fill the water supply system. This is necessary to avoid water hammer or shock damage.
- G. The installation of a Watts air gap with the drain line terminating above a floor drain will handle any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. Do not reduce the size of the drain line from the air gap fitting.
- H. Two or more smaller size valves can be piped in parallel (when approved) to serve a larger supply pipe main. This type of installation is employed where increased 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.

## Indoors

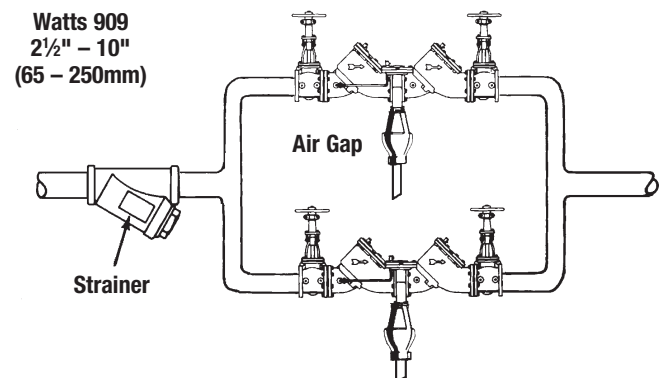


## Above Ground



Now available, WattsBox Insulated Enclosures, for more information, send for ES-WB.

## Parallel



**TABLE ONE - CAPACITY REQUIRED FOR SYSTEM**

| 50 gpm         | 100 gpm        | 150 gpm         | 200 gpm         | 250 gpm         | 350 gpm        | 450 gpm         | 640 gpm        | 1000 gpm       | 2000 gpm       | 3000 gpm       | 5000 gpm        |
|----------------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|-----------------|
| Two ¾" Devices | Two 1" Devices | Two 1¼" Devices | Two 1½" Devices | Two 1½" Devices | Two 2" Devices | Two 2½" Devices | Two 3" Devices | Two 4" Devices | Two 6" Devices | Two 8" Devices | Two 10" Devices |

Table shows total capacity provided with dual valve installations of various sizes.

# Test Procedure for Reduced Pressure Zone Backflow Preventers

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. Open TC #4 and flush test cocks Nos. 1, 2, and 3 on BF assembly, then close TC #4.
- B. Turn tester on (before connecting hoses). Tester must read all zeros. Close VA and VB.

## Test No. 1 - Relief 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 VB then TC #3. Now open VA then TC #2 slowly. Close VA then VB.
- 4. Close #2 shutoff valve.
- 5. Observe the apparent first check valve differential pressure (A - B).
- 6. Install bypass hose between VA and VB. Open VB and bleed air by loosening hose connection at VA. Tighten hose connection and close VB.
- Push - Print Head (wait) then Push - Start Test
- 7. Open VA, then slowly open VB (no more than 1/4 turn). When relief valve drips, push the "hold" button for 2 seconds. Record reading (must be 2 psid or more).
- Push - Stop Test
- 8. Close VA and VB.

## Test No. 2 - Test No. 2 Check Valve

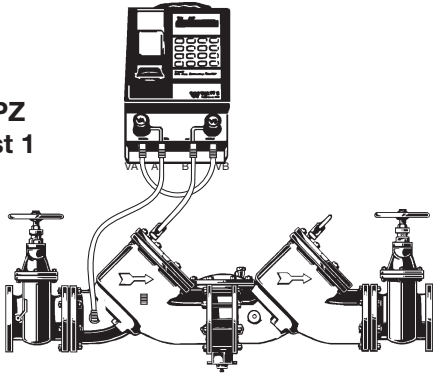
- 9. Install bypass hose between VA and TC #4. Open VA, then bleed air by loosening hose connection at TC #4. Tighten hose connection. Close VA.
- Push - Start Test
- 10. Open VB to reestablish pressure within the "zone". Close VB.
- 11. Open VA then TC #4. If relief valve does not drip, record second check valve as "closed tight".

## Test No. 3 - Test No. 1 Check Valve

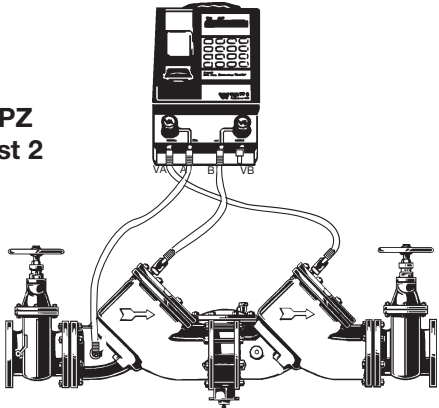
- 12. Open VB to reestablish first check valve differential pressure. Close VB. Record pressure differential.
- Stop Test (Push Stop Test twice)
- 13. Close test cocks and remove tester, return assembly to normal operating condition.

### Watts TK-DP

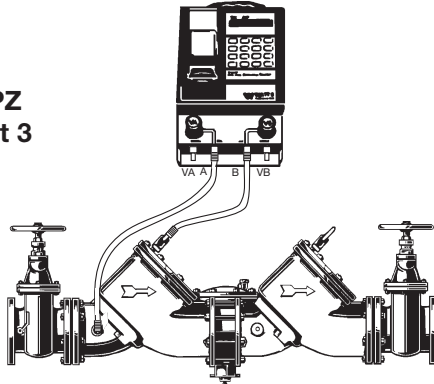
RPZ  
Test 1



RPZ  
Test 2



RPZ  
Test 3



For complete testing information, send for IS-TK-9A or IS-TK-DP/DL.

### Replacement Water Meters for 2 1/2" - 10" Series 909RPDA, 990RPDA and 992RPDA.

| ORDERING CODE | VALVE SERIES            | SIZE         | DESCRIPTION                               |
|---------------|-------------------------|--------------|-------------------------------------------|
| 0835561       | 909RPDA/990RPDA/992RPDA | 2 1/2" - 10" | D709BA203-GPM-B (registers in gallons)    |
| 1203010       | 909RPDA/990RPDA/992RPDA | 2 1/2" - 10" | D709BB203-CFM-B (registers in cubic feet) |

### CFM AND GPM Outside Reader Kit

|         |                         |              |                 |
|---------|-------------------------|--------------|-----------------|
| 0899022 | 909RPDA/990RPDA/992RPDA | 2 1/2" - 10" | ROM DC/RP CFM-B |
| 0899023 | 909RPDA/990RPDA/992RPDA | 2 1/2" - 10" | ROM DC/RP GPM-B |

Water  
Meter

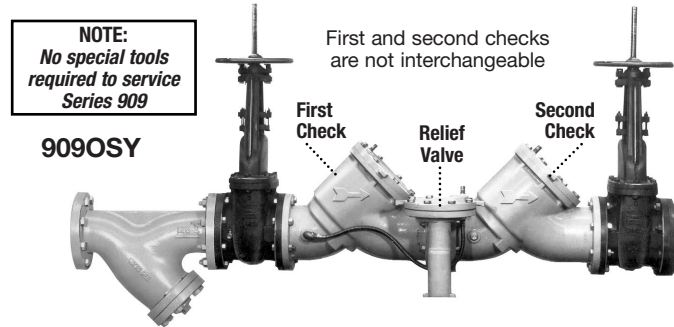


Outside  
Reader



# Servicing First and Second Checks

Sizes: 2½" – 10" (65-250mm)



## 909 Repair Kits 2½" – 10" (65 – 250mm)

| ORDERING CODE     | KIT NO.    | SIZE   |       |
|-------------------|------------|--------|-------|
| First Check Kits: |            | in.    | mm    |
| 0887210           | RK 909 CK1 | 2½ – 3 | 65-80 |
| 0887212           | RK 909 CK1 | 4      | 100   |
| 0887213           | RK 909 CK1 | 6      | 150   |
| 0887214           | RK 909 CK1 | 8      | 200   |
| 0887215           | RK 909 CK1 | 10     | 250   |

| Second Check Kits: |            | in.    | mm    |
|--------------------|------------|--------|-------|
| 0887211            | RK 909 CK2 | 2½ – 3 | 65-80 |
| 0887216            | RK 909 CK2 | 4      | 100   |
| 0887217            | RK 909 CK2 | 6      | 150   |
| 0887218            | RK 909 CK2 | 8      | 200   |
| 0887219            | RK 909 CK2 | 10     | 250   |

Kits include: Disc & Spring assembly, Cover O-ring and lubricant.

| First Check Rubber Parts Kits: |            | in.    | mm    |
|--------------------------------|------------|--------|-------|
| 0887220                        | RK 909 RC1 | 2½ – 3 | 65-80 |
| 0887221                        | RK 909 RC1 | 4      | 100   |
| 0887223                        | RK 909 RC1 | 6      | 150   |
| 0887224                        | RK 909 RC1 | 8      | 200   |
| 0887225                        | RK 909 RC1 | 10     | 250   |

| Second Check Rubber Parts Kits: |            | in.    | mm    |
|---------------------------------|------------|--------|-------|
| 0887226                         | RK 909 RC2 | 2½ – 3 | 65-80 |
| 0887227                         | RK 909 RC2 | 4      | 100   |
| 0887228                         | RK 909 RC2 | 6      | 150   |
| 0887229                         | RK 909 RC2 | 8      | 200   |
| 0887230                         | RK 909 RC2 | 10     | 250   |

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, and lubricant.

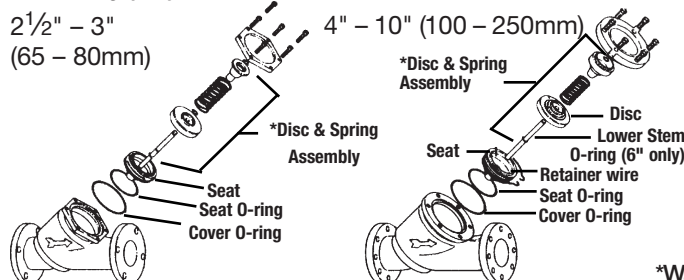
| Seat Kits for Checks: |          | in.    | mm    |
|-----------------------|----------|--------|-------|
| 0887730               | RK 909 S | 2½ – 3 | 65-80 |
| 0887731               | RK 909 S | 4      | 100   |
| 0887732               | RK 909 S | 6      | 150   |
| 0887733               | RK 909 S | 8      | 200   |
| 0887734               | RK 909 S | 10     | 250   |

Kits include: Seat, Seat O-ring, Cover O-ring, Retainer wire and lubricant.

| Total Rubber Parts Kits: |             | in.    | mm    |
|--------------------------|-------------|--------|-------|
| 0887750                  | RK 909 RT   | 2½ – 3 | 65-80 |
| 0887751                  | RK 909 RT   | 4      | 100   |
| 0887752                  | RK 909 RT   | 6      | 150   |
| 0887753                  | RK 909 RT   | 8      | 200   |
| 0887754                  | RK 909 RT   | 10     | 250   |
| 0887761                  | RK 909M1 RT | 8      | 200   |
| 0887762                  | RK 909M1 RT | 10     | 250   |

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, Sleeve O-ring, Piston O-ring, RV disc assembly, Diaphragm, Piston seal and Lubricant.

When ordering specify EDP number, Kit Number and Valve Size.



1. Remove the hatch cover bolts. NOTE: The 909 is designed so that when the bolts are backed off ½", all the spring load is released from the cover and retained by the check module. CAUTION: Be sure to verify this before removing all the bolts.
2. Lift the check valve module straight out taking care not to hit and damage the seating.
3. The seat ring may be removed and replaced by pulling out the two wire retainers on sizes 4" – 10" (100 – 250) while on sizes 2½" – 3" (65 – 80mm), one quarter turn twist removes seat. The wire retainers are 10" long. One is drawn out clockwise and the other is drawn out counterclockwise.
4. With the retainer wires removed, the seat ring can be lifted straight up and removed.
5. **CAUTION:** The check valve spring is in compression. The spring load is captured by the two spring retainers and the stem. The spring retainers are not to be removed for servicing. If there is a need to replace the spring, spring retainer or stem, an assembled module must be obtained from the factory. These modules are not interchangeable, be sure to replace the first check with a first check module and the second check with a second check module.
6. To replace the disc on sizes 2½" – 4" (65 – 100mm) simply remove the retaining nut or for sizes 6" – 10" (150 – 250mm) remove the allen head socket screws. Reverse this procedure to install the new disc.

## 909RPDA Repair Kits 2½" – 10" (65 – 250mm)

| ORDERING CODE     | KIT NO.        | SIZE   |       |
|-------------------|----------------|--------|-------|
| First Check Kits: |                | in.    | mm    |
| 0887239           | RK 909RPDA CK1 | 2½ – 3 | 65-80 |
| 0887240           | RK 909RPDA CK1 | 4      | 100   |
| 0887241           | RK 909RPDA CK1 | 6      | 150   |
| 0887242           | RK 909RPDA CK1 | 8      | 200   |
| 0887243           | RK 909RPDA CK1 | 10     | 250   |

| Second Check Kits: |                | in.    | mm    |
|--------------------|----------------|--------|-------|
| 0887244            | RK 909RPDA CK2 | 2½ – 3 | 65-80 |
| 0887245            | RK 909RPDA CK2 | 4      | 100   |
| 0887246            | RK 909RPDA CK2 | 6      | 150   |
| 0887247            | RK 909RPDA CK2 | 8      | 200   |
| 0887248            | RK 909RPDA CK2 | 10     | 250   |

Kits include: Disc & Spring assembly, Cover O-ring and lubricant.

| First Check Rubber Parts Kits: |                | in.    | mm    |
|--------------------------------|----------------|--------|-------|
| 0887249                        | RK 909RPDA RC1 | 2½ – 3 | 65-80 |
| 0887250                        | RK 909RPDA RC1 | 4      | 100   |
| 0887251                        | RK 909RPDA RC1 | 6      | 150   |
| 0887252                        | RK 909RPDA RC1 | 8      | 200   |
| 0887253                        | RK 909RPDA RC1 | 10     | 250   |

| Second Check Rubber Parts Kits: |                | in.    | mm    |
|---------------------------------|----------------|--------|-------|
| 0887254                         | RK 909RPDA RC2 | 2½ – 3 | 65-80 |
| 0887255                         | RK 909RPDA RC2 | 4      | 100   |
| 0887256                         | RK 909RPDA RC2 | 6      | 150   |
| 0887257                         | RK 909RPDA RC2 | 8      | 200   |
| 0887258                         | RK 909RPDA RC2 | 10     | 250   |

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, and lubricant.

| Seat Kits for Checks: |              | in.    | mm    |
|-----------------------|--------------|--------|-------|
| 0887735               | RK 909RPDA S | 2½ – 3 | 65-80 |
| 0887736               | RK 909RPDA S | 4      | 100   |
| 0887737               | RK 909RPDA S | 6      | 150   |
| 0887738               | RK 909RPDA S | 8      | 200   |
| 0887739               | RK 909RPDA S | 10     | 250   |

Kits include: Seat, Seat O-ring, Cover O-ring, Retainer wire and lubricant.

| Total Rubber Parts Kits: |                 | in.    | mm    |
|--------------------------|-----------------|--------|-------|
| 0887756                  | RK 909RPDA RT   | 2½ – 3 | 65-80 |
| 0887757                  | RK 909RPDA RT   | 4      | 100   |
| 0887758                  | RK 909RPDA RT   | 6      | 150   |
| 0887759                  | RK 909RPDA RT   | 8      | 200   |
| 0887760                  | RK 909RPDA RT   | 10     | 250   |
| 0887764                  | RK 909RPDAM1 RT | 8      | 200   |
| 0887765                  | RK 909RPDAM1 RT | 10     | 250   |

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, Sleeve O-ring, Piston O-ring, RV disc assembly, Diaphragm, Piston seal and Lubricant.

For further details contact your technical sales representative, see back page.

**\*Warning: Spring assembly is factory assembled. DO NOT DISASSEMBLE**

# Servicing the Relief Valve

## Sizes: 2½" – 10" (65-250mm)

1. Remove the relief valve cover bolts. Note the 909 is designed so that when the bolts are backed off ½" all the relief valve spring load is retained by the bottom plug spring module.

**CAUTION:** Be sure to verify this before removing all the bolts.

2. Remove the cover and diaphragm. The relief valve piston assembly can be lifted straight up and out.
3. Replace the wiper seal and piston O-ring and apply grease to the O-ring.
4. To replace the relief valve disc, hold the upper guide fin and unscrew the diaphragm pressure plate. It may be necessary to lightly tap the cast webs and the pressure plate to loosen. Replace with a new disc holder assembly and O-ring. Note: the disc rubber is molded into the disc holder and is supplied as a disc holder assembly.
5. Removal of the bottom plug and spring assembly. During normal field service there is no need to remove the bottom plug spring assembly other than inspection. It can be removed by simply unscrewing with a large pipe wrench.

**CAUTION:** The spring as retained on the bottom plug is highly loaded. NO attempt should be made in the field to remove the spring. For replacement, a complete bottom plug assembly must be obtained from the factory.

For further details contact your technical sales representative, see back page.

## 909 Repair Kits 2½" – 10" (65 – 250mm)

| ORDERING CODE             | KIT NO.      | SIZE   |         |
|---------------------------|--------------|--------|---------|
| Relief Valve Rubber Parts |              | in.    | mm      |
| 0887231                   | RK 909 RV    | 2½ – 3 | 65-80   |
| 0887232                   | RK 909 RV    | 4 – 6  | 100-150 |
| 0887233                   | RK 909 RV    | 8 – 10 | 200-250 |
| 0887234                   | *RK 909M1 RV | 4 – 10 | 100-250 |

Kits include: Sleeve o-ring, Seat o-ring, Piston o-ring, Stem o-ring, RV disc assembly, Diaphragm, Piston seal, Bottom plug o-ring and lubricant

### Relief Valve Total

|         |              |        |         |
|---------|--------------|--------|---------|
| 0887235 | RK 909 VT    | 2½ – 3 | 65-80   |
| 0887236 | RK 909 VT    | 4 – 6  | 100-150 |
| 0887237 | RK 909 VT    | 8 – 10 | 200-250 |
| 0887238 | *RK 909M1 VT | 4 – 10 | 100-250 |

Kits include: Adapter o-ring, Diaphragm, Disc & piston assembly, Seat, Seat o-ring and lubricant. (4" – 10" M1 includes bottom plug & spring assembly.)

### Cover Kits

|         |          |        |       |
|---------|----------|--------|-------|
| 0887740 | RK 909 C | 2½ – 3 | 65-80 |
| 0887741 | RK 909 C | 4      | 100   |
| 0887742 | RK 909 C | 6      | 150   |
| 0887743 | RK 909 C | 8      | 200   |
| 0887744 | RK 909 C | 10     | 250   |

Kits include: Cover, Cover o-ring and lubricant.

## 909RPDA Repair Kits 2½" – 10" (65 – 250mm)

| Relief Valve Rubber Parts |                  |        |         |
|---------------------------|------------------|--------|---------|
| 0887263                   | RK 909RPDA RV    | 2½ – 3 | 65-80   |
| 0887264                   | RK 909RPDA RV    | 4 – 6  | 100-150 |
| 0887265                   | RK 909RPDA RV    | 8 – 10 | 200-250 |
| 0887266                   | *RK 909RPDAM1 RV | 4 – 10 | 100-250 |

Kits include: Sleeve o-ring, Seat o-ring, Piston o-ring, Stem o-ring, RV disc assembly, Diaphragm, Piston seal, Bottom plug o-ring and lubricant

### Relief Valve Total

|         |                  |        |         |
|---------|------------------|--------|---------|
| 0887259 | RK 909RPDA VT    | 2½ – 3 | 65-80   |
| 0887260 | RK 909RPDA VT    | 4 – 6  | 100-150 |
| 0887261 | RK 909RPDA VT    | 8 – 10 | 200-250 |
| 0887262 | *RK 909RPDAM1 VT | 4 – 10 | 100-250 |

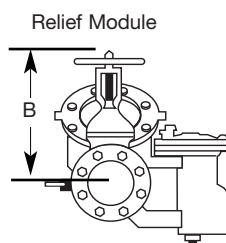
Kits include: Adapter o-ring, Diaphragm, Disc & piston assembly, Seat, Seat o-ring and lubricant. (4" – 10" M1 includes bottom plug & spring assembly.)

### Cover Kits

|         |              |        |       |
|---------|--------------|--------|-------|
| 0887745 | RK 909RPDA C | 2½ – 3 | 65-80 |
| 0887746 | RK 909RPDA C | 4      | 100   |
| 0887747 | RK 909RPDA C | 6      | 150   |
| 0887748 | RK 909RPDA C | 8      | 200   |
| 0887749 | RK 909RPDA C | 10     | 250   |

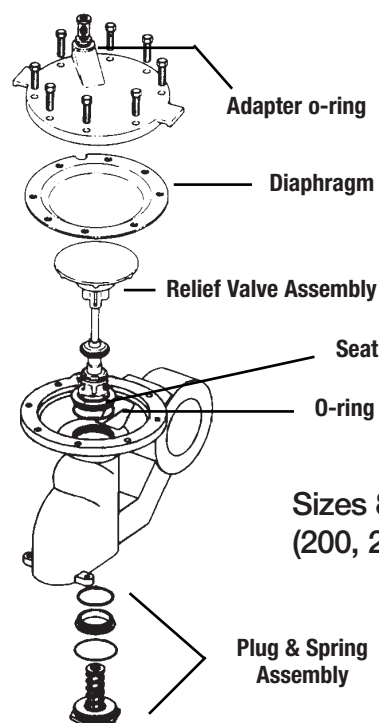
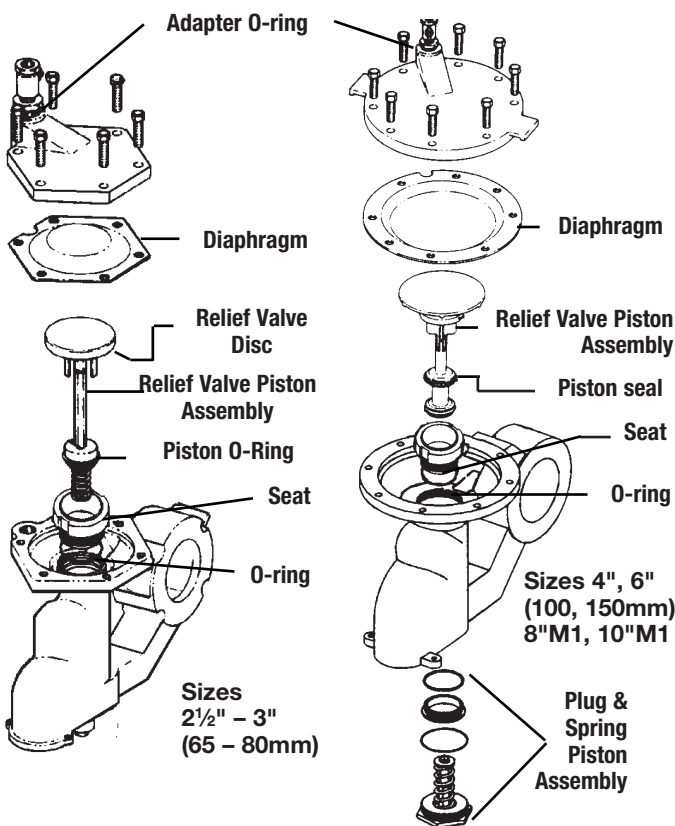
Kits include: Cover, Cover o-ring and lubricant.

\*M1 = Cast iron relief valve.



Clearance Required for Servicing

| in.    | mm    | A   | B   |
|--------|-------|-----|-----|
| 2½ – 3 | 65-80 | 10" | 11" |
| 4      | 100   | 15" | 14" |
| 6      | 150   | 15" | 16" |
| 8      | 200   | 23" | 21" |
| 10     | 250   | 25" | 21" |



# Troubleshooting Guide - Backflow Preventers

| Problem                                                           | Cause                                                                                                                                                                                                                                                                                                                                                                   | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A.</b> Valve spits periodically from the vent                  | <b>A.1</b> Fluctuating supply pressure.<br><b>A.2</b> Fluctuating downstream pressure                                                                                                                                                                                                                                                                                   | <b>A.1</b> Install a soft seated check valve immediately upstream of the device.<br><b>A.2</b> Install a soft seated check valve downstream of the device close as possible to the shutoff valve.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>B.</b> Valve drips continually from the vent                   | <b>B.1</b> Fouled first check<br><br><b>B.2</b> Damage or fouled relief valve seat.<br><b>B.3</b> Relief valve piston O-ring not free to<br><br><b>B.4</b> Excessive back pressure, freezing, or water hammer has distorted the second check.<br><br><b>B.5</b> Electrolysis or relief valve seat or first check seats.<br><br><b>B.6</b> Valve improperly reassembled. | <b>B.1</b> Flush valve. If flushing does not resolve problem, disassemble valve and clean or replace the first check.<br><b>B.2</b> Clean or replace the relief valve seat.<br><b>B.3</b> Clean, grease or replace the piston O-ring. move due to pipe scale, dirt or build up of mineral deposits.<br><b>B.4</b> Eliminate source of excessive backpressure or water hammer in the system downstream of the device. Use Watts No. 15 to eliminate water hammer. Replace defective second check assembly. In case of freezing; thaw, disassemble and inspect internal components. Replace as necessary.<br><b>B.5</b> Replace relief valve seat or inlet cover. Electrically ground the piping system and/ or electrically isolate the device with plastic pipe immediately upstream and downstream of the device.<br><b>B.6</b> If valve is disassembled during installation, caution must be exercised to install check springs in their proper location. |
| <b>C.</b> Valve exhibits high pressure drop.                      | <b>C.1</b> Fouled strainer.<br><b>C.2</b> Valve too small for flows encountered.                                                                                                                                                                                                                                                                                        | <b>C.1</b> Clean strainer element or replace.<br><b>C.2</b> Install proper size device based upon flow requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>D.</b> No water flows downstream of valve.                     | <b>D.</b> Valve installed backwards.                                                                                                                                                                                                                                                                                                                                    | <b>D.</b> Install valve in accordance with flow direction arrow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>E.</b> Valve does not test properly                            | <b>E.1</b> Follow manufacturer's test procedure<br><br><b>E.2</b> Leaky downstream gate valve.                                                                                                                                                                                                                                                                          | <b>E.1, E.2</b> Clean or replace gate valve with full port ball valves or resilient wedge shutoff valves.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>F.</b> Valve quickly and repeatedly fouls following servicing. | <b>F.</b> Debris in pipe line is too fine to be trapped by strainer.                                                                                                                                                                                                                                                                                                    | <b>F.</b> Install finer mesh strainer element in the strainer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>G.</b> Winterization of backflow preventers.                   |                                                                                                                                                                                                                                                                                                                                                                         | <b>G.</b> Electric heat-tape wrap closely together around valve body. Build a small shelter around the valve with a large light bulb installed and left on at all times. If supply line is not used during the winter, removal of the complete body is the best. This would create an air gap to eliminate any possible backflow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

For additional information, visit our web site at: [www.watts.com](http://www.watts.com)



**Backflow Prevention Products**



**USA:** 815 Chestnut St., No. Andover, MA 01845-6098; [www.watts.com](http://www.watts.com)

**Canada:** 5435 North Service Rd., Burlington, ONT. L7L 5H7; [www.wattscanada.ca](http://www.wattscanada.ca)