Series 995

Reduced Pressure Zone Backflow Preventers

Sizes: ½" through 2"

- 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.

Watts 995

1-800-336-6530

Water Specialties Company
BackflowPreventer.com

WATTS® REGULATOR

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.

A LEADER IN VALVE TECHNOLOGY

WATTS® REGULATOR

Since 1874 — Watts Industries, Inc.

Water Products Division • Safety & Control Valves

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 ½" - 2"

Indoor Installation

For indoor installations, it is important that the assembly be easily accessible to facilitate testing and servicing. If it is located in a line close to wall, be sure the test cocks are easily accessible. A drain line and air gap should be piped from the relief valve connection as shown, where evidence of discharge will be clearly visible and so that water damage will not occur. Therefore, never install in concealed locations.

Outside, Above Ground Installation

In areas where freezing conditions do not occur, Series 995 can be installed outside. The most satisfactory installation is above ground.

In areas where freezing conditions can occur, Series 995 should be installed above ground in an insulated enclosure.

Series 995 must be installed in an accessible location to facilitate testing and servicing. A discharge line should be piped from the air gap at the relief valve connection making sure that there is adequate drainage. Never pipe the discharge line directly into a drainage ditch, sewer or sump. Series 995 should never be installed where any part of the unit could become submerged in standing water.

It is generally recommended that backflow preventers never be placed in pits unless absolutely necessary and then only when approved by local codes. In such cases, a modified pit installation is preferred.

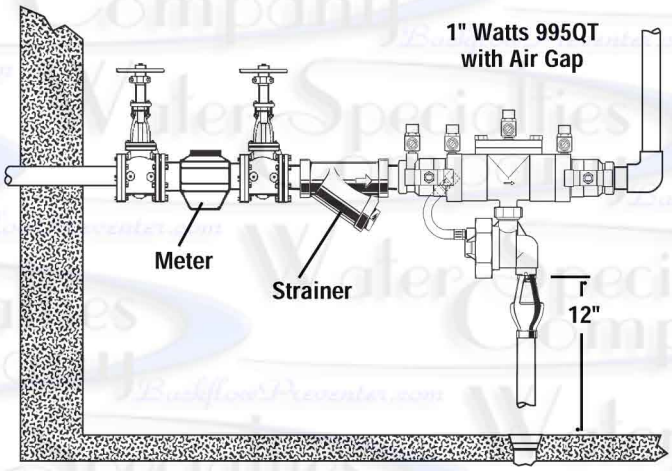
Parallel Installation

Two or more smaller size assemblies can be piped in parallel (when approved) to serve a large 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 line completely.

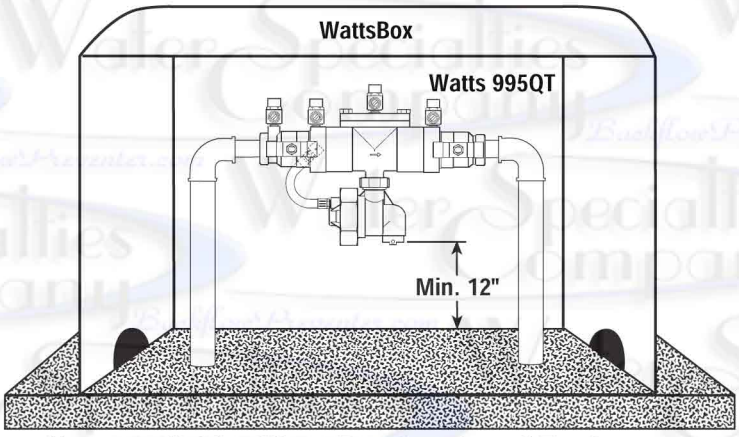
The number of assemblies used in parallel should be determined by the engineer's judgement based on the operating conditions of a specific installation.

For parallel valve installations, the total capacity of the assemblies should equal or exceed that required by the system.

Indoor Installation

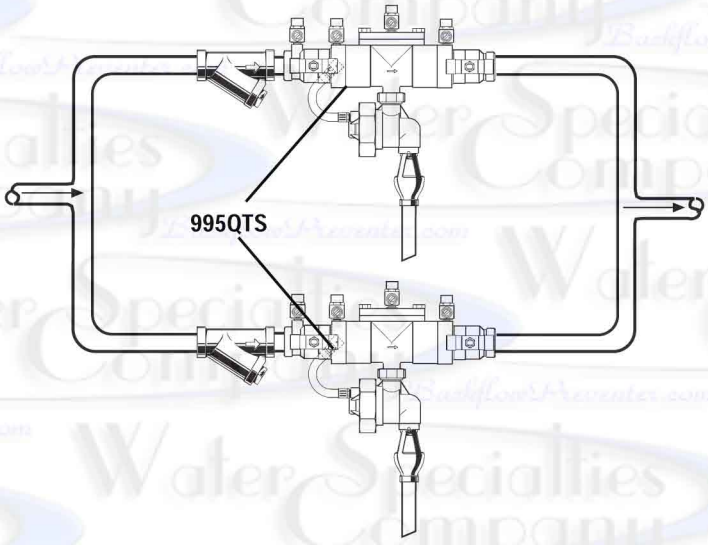


Outdoor Installation



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

Indoor Installation



Basic Installation Instructions ½" - 2"

A. Series 995 must be installed in a horizontal position.

B. The 995 should always be installed in an accessible location to facilitate testing and servicing (See page 2). **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. We recommend a strainer be installed ahead of 995 series assemblies to protect the internal components from unnecessary fouling.

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

Start Up: The downstream shutoff should be closed. Open upstream slowly and fill valve. 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.

D. 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 terminated approximately 12" above the ground or through an air gap piped to a floor drain.

NOTE: Relief Valve Discharge Rates

The installation of an 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. Please refer to Figure No. 1 for maximum relief valve discharge rates, size and capacity of typical floor drains.

NOTE: Do not reduce the size of the drain line from the air gap fitting. Pipe full line size.

E. After initial installation, a discharge from the relief valve opening may occur due to inadequate initial flushing of pipe lines to eliminate dirt and pipe compounds. If flushing will not clear, remove the first check valve and clean thoroughly.

NOTE: Periodic relief valve discharge may occur on dead end service applications, such as boiler feed lines or cooling tower makeup lines due to fluctuating supply pressure during a static or no flow condition. To avoid this discharge, install a spring-loaded check valve ahead of the backflow assembly to "lock-in" the downstream pressure.

F. Backflow preventers should never be placed in pits unless absolutely necessary and then only when approved by local codes. In such cases, provision should be made to always vent above flood level or for a pit drain to insure an adequate air gap below the relief port.

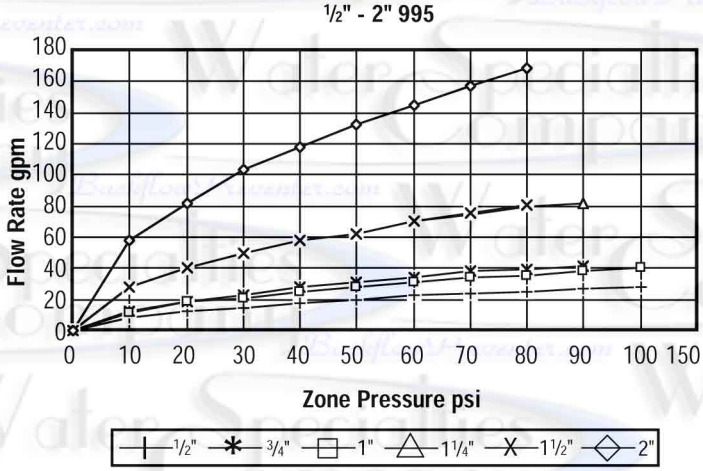
G. It is important that Series 995 backflow preventers be inspected periodically for any discharge from the relief valve which will provide a visual indication of need for cleaning or repair of check valves. Also testing for proper operation of the device should be made periodically in compliance with local codes, but at least once a year or more often, depending upon system conditions. Send for IS-TK-9A, IS-TK-DP/DL, S-TK-99E and IS-TK-99D instruction manuals for test procedures.

Relief vent will discharge water when, during no-flow periods, (1) the first check valve is fouled or (2) the inlet pressure to the device drops sufficiently due to upstream pressure fluctuations. Otherwise, such relief (spitting) can occur when the second check is fouled during emergency backflow or resulting from a water hammer condition. For trouble shooting guide send for S-TSG.

NOTE: Special considerations are necessary when testing assemblies installed on Fire Prevention Systems.

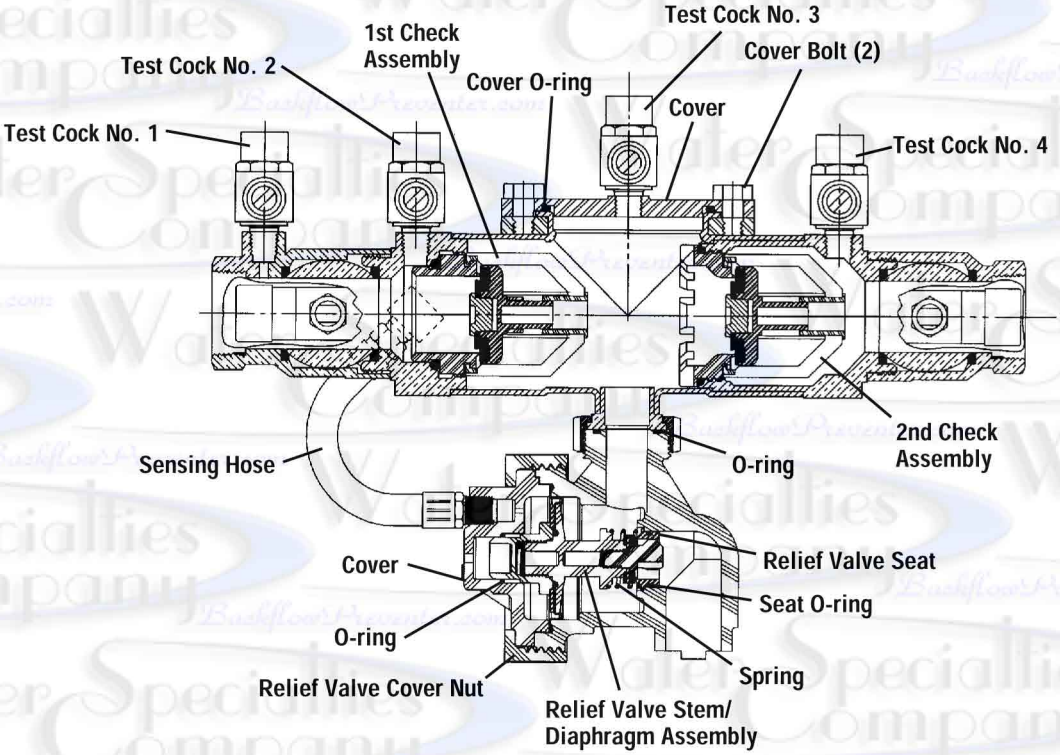
Fire Protection System Installations: The National Fire protection Agency (NFPA) Guidelines require a confirming flow test be conducted whenever a "main line" valve such as the shutoff valves or a backflow assembly have been operated. Certified testers of backflow assemblies must conduct this confirming test.

Figure 1
Relief Valve Discharge Rates



Typical Flow Rates as sized by floor drain manufacturers:
2" 55 gpm
3" 112 gpm
4" 170 gpm

Servicing the Relief Valve ½" - 2"



1. Remove the relief valve cover nut by turning the nut counterclockwise
2. Remove the relief valve cover, stem/diaphragm assembly, and relief valve spring.
3. Inspect the relief valve diaphragm for wear and replace as needed.
4. The relief valve seat is located inside of the body and can be removed, if necessary, for cleaning/inspection. The seat is pressed into the body cavity and can be removed by inserting a finger in the center of the seat and pulling outwards. Inspect seat for nicks and replace as needed.
5. Inspect the disc rubber and clean or replace if required. The disc can be removed by screwing the white washer counterclockwise.
6. To reassemble the relief valve, press the seat firmly into place in the body, snap the spring onto the relief valve stem, center the spring on the seat, and insert the cover and stem/diaphragm assembly as a unit, into the body bore. The locating pin in the relief valve cover should be aligned with the corresponding locating notch in the top of the relief valve body.
7. Install relief valve cover nut and tighten.

Replacement Parts ½" - 2"

When ordering, specify Ordering Code Number, Kit number and Valve Size.

Relief Valve Kits

Ordering No.	Kit No.	Size
888589	RK 995 VT	½" - 1"
888060	RK 995 VT	1¼" - 1½"
888061	RK 995 VT	2"

Kit consists of: Seat, Seat o-ring, Stem and diaphragm assembly, Stem o-ring, Cover o-ring and Relief valve spring.

Relief Valve Rubber Parts Kits

888588	RK 995 RV	½" - 1"
888058	RK 995 RV	1¼" - 1½"
888059	RK 995 RV	2"

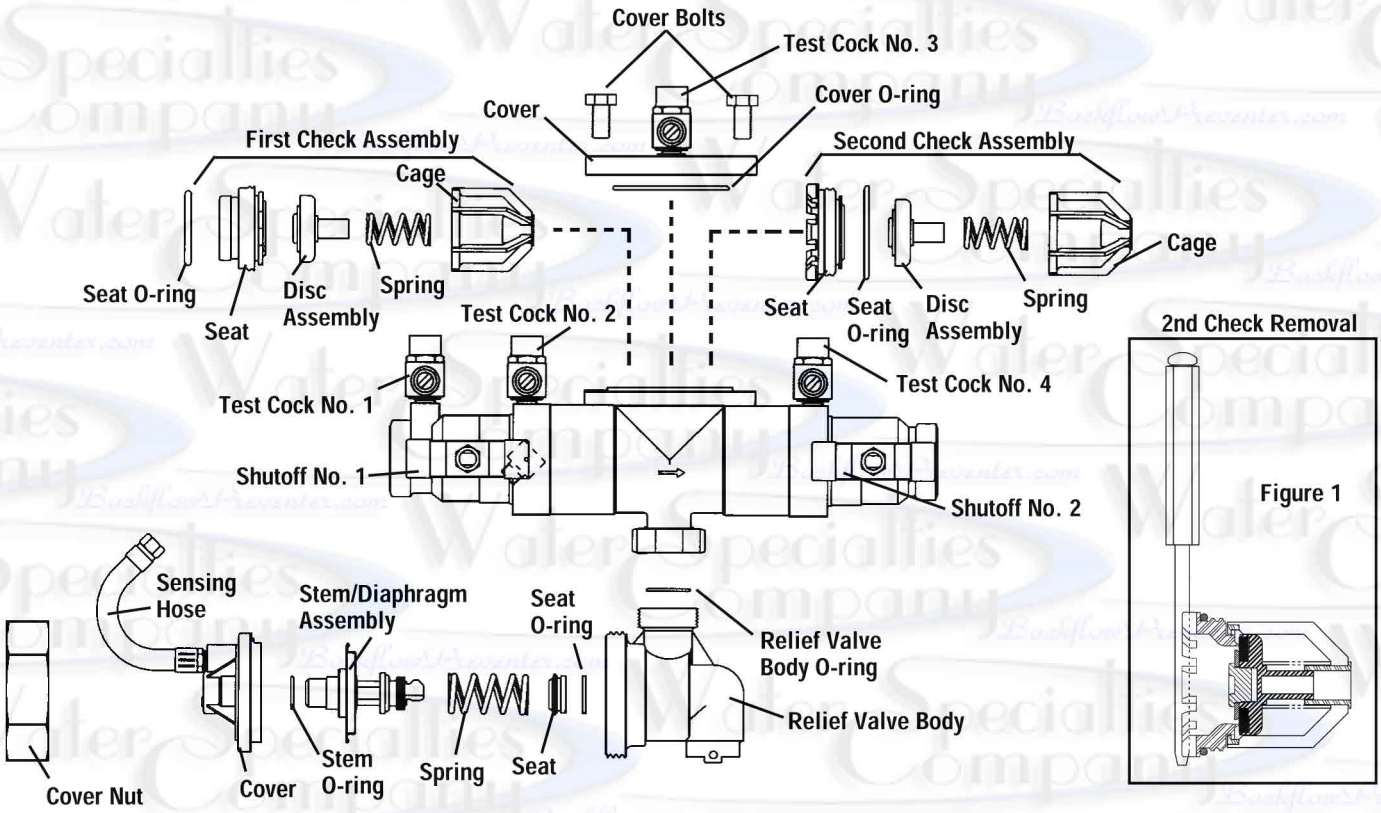
Kit consists of: Diaphragm, Disc, Stem o-ring, Seat o-ring and Cover o-ring.

Total Rubber Parts Kits

Ordering No.	Kit No.	Size
888592	RK 995 RT	½" - ¾"
888593	RK 995 RT	1"
888062	RK 995 RT	1¼" - 1½"
888063	RK 995 RT	2"

Kit consists of: Diaphragm, Relief valve disc, Two check valve disc assemblies, Stem o-ring, Cover o-ring, Two check seat o-rings, Relief valve seat o-ring and relief valve body o-ring.

Servicing the First and Second Check Valves ½" - 2"



1. Close shutoff valves and open test cocks No. 2, 3 and 4 to relieve pressure from the body of the valve. Loosen cover bolts and remove cover. The check valve modules can now be removed from the valve by hand or with a screwdriver. Note: The first and second check assemblies are not interchangeable and the first check assembly must be removed prior to removing the second check assembly.
2. The check assemblies are threaded into the valve body. To remove the first check assembly, rotate the check module by hand counterclockwise.
3. The second check assembly is removed by inserting the blade of a screwdriver into two opposing slots of the seat as shown in Figure 1 and rotate the check assembly counterclockwise.
4. The check seats are attached to the cage with a bayonet type locking arrangement. Holding the cage in one hand, push the seat inward and rotate clockwise against the cage. The seat, cage, spring and disc assembly are now individual components. If the cage disengages prematurely, simply use the cage as a tool to screw the check valve seat from the valve body.
5. The disc assembly may now be cleaned and reassembled or, depending on its condition, it may be replaced with a new assembly from a repair kit. Seat o-ring should be inspected and replaced as necessary.
6. Reassemble the check module in the reverse order. Install the check modules into the valve body hand-tight. Replace the cover.

Replacement Parts ½" - 2"

When ordering, specify Ordering Code Number, Kit number and Valve Size.

First Check Kits

Ordering No.	Kit No.	Size
888580	RK 995 CK1	½" - ¾"
888581	RK 995 CK1	1"
888050	RK 995 CK1	1¼" - 1½"
888051	RK 995 CK1	2"

Kit consists of: Check assembly and Cover o-ring.

Second Check Kits

888582	RK 995 CK2	½" - ¾"
888583	RK 995 CK2	1"
888052	RK 995 CK2	1¼" - 1½"
888053	RK 995 CK2	2"

Kit consists of: Check assembly and Cover O-ring.

First Check Rubber Parts

888584	RK 995 RC1	½" - ¾"
888585	RK 995 RC1	1"
888054	RK 995 RC1	1¼" - 1½"
888055	RK 995 RC1	2"

Kit consists of: Seat o-ring, Disc assembly and Cover O-ring.

Second Check Rubber Parts

Ordering No.	Kit No.	Size
888586	RK 995 RC2	½" - ¾"
888587	RK 995 RC2	1"
888056	RK 995 RC2	1¼" - 1½"
888057	RK 995 RC2	2"

Kit consists of: Seat o-ring, Disc assembly and Cover o-ring.

Cover Kits

888590	RK 995 C	½" - ¾"
888591	RK 995 C	1"
888064	RK 995 C	1¼" - 1½"
888065	RK 995 C	2"

Kit consists of: Cover and Cover o-ring.