



RP-500 PN 10



BACK FLOW PREVENTER

Description

Designed to supply the best protection and durability against back flow caused by negative or opposite pressure. Back flow that may cause infiltration of chemicals, fertilizers and/or other pollutants to drinking water systems.

The RP-500 is reliable and easily maintained, without special tools. The RP-500 has two independent, easily replaceable, spring loaded check valves in capsules.

A revolutionary, internal Reduced Pressure Zone ensures protection and reliable performance of the relief valve.

Operation

At normal flow, the two check valves are open, supplying water down stream. The relief valve is kept closed by a diaphragm, activated by upstream pressure, through the internal control system. The pressure in the area between the two check valves is about 0.43 bar lower than the water supply pressure.

When negative pressure or sub-atmospheric pressure conditions occur, the check valve is closed, preventing back flow.

If the second check valve fails, the pressure between the two check valves rises, causing the opening of the relief valve, and releasing the water to the atmosphere.

Main Features

- Working Pressure: 10 bar.
- Sizes: 3/4" , 1".
- Temp: Up to 45° C.
- Made of composite plastic material, resistant to corrosion, scaling, fertilizers, herbicides, insecticides, etc.
- Internal control system ensures reliability and safety.

Advantages and Benefits

- Easy and quick installation.
- Economical.
- Light Weight.
- UV resistant.
- Low Head-Loss.
- Variety of installation options.
- Long working life with easy maintenance.

The ARI RP-500 is approved by the following Standards

authorities: CSA, ASSE 1013, UPC, AWWA, NSF 61, Water Mark (Australia), AS2845.1., ACS (France), Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California (USC), Listed to Uniform Plumbing Code.



Installation

- (a) The RPZ device must be installed in an accessible location for periodic field-testing and maintenance.
- (b) The location selected should have adequate drainage for relief valve discharge. Drainage may be piped away, a funnel for the RPZ is provided (See figure). The RPZ should never be placed where it may become submerged in standing water.
- (c) Flush all upstream piping thoroughly to remove foreign matter prior to installing the RPZ.
- (d) Install the RPZ in a horizontal position with adequate clearance from walls and/or obstructions, for testing and maintenance. A12" to 33" clearance between the lowest part of the RPZ and floor should be provided.
- (e) A "Y" strainer can be installed just upstream of the RPZ assembly to eliminate any debris from entering the device and fouling the check and/or relief valve.
- (f) After installing the device and with downstream shut-off valve #2 closed, pressurize the RPZ device and bleed air through test cock # 4 Then open shut-off valve #2.

Note

If water continues to drain from the relief valve, check the Trouble Shooting section for probable causes and solutions.

Installation Tips

- (a) Recommendation: Do not install in areas subjected to frost for a long period of time.
- (b) The device must be protected from sudden excessive pressure increases. These can be caused by water hammer and thermal expansion and will damage the valve.
- (c) Do not use any pipe glue, oil grease or solvent on any parts unless instructed to do so.
- (d) Do not force parts. Parts should fit together freely.

Maintenance Instructions

A. Disassembly - RP 500.

1. Close shut-off valve #2, then close shut-off valve #1.
2. Bleed pressure from the assembly by opening test cocks #2, 3,4.

Caution

The cover is spring-loaded and should be removed carefully to avoid personal injury.

1. Remove the relief valve cover bolts while holding the cover down.
2. Lift the cover straight up.
3. Remove the relief valve kit.
4. Remove the spring.
5. Remove the retainer.
6. Extract the check valves.

All the disassembled parts may now be cleaned and reassembled or, depending on their condition, may be discarded and replaced with a new assembly from the repair kit. O-rings should be cleaned or replaced as necessary and lightly greased with the NSF approved silicon based grease.

B. Assembly - RP 500.

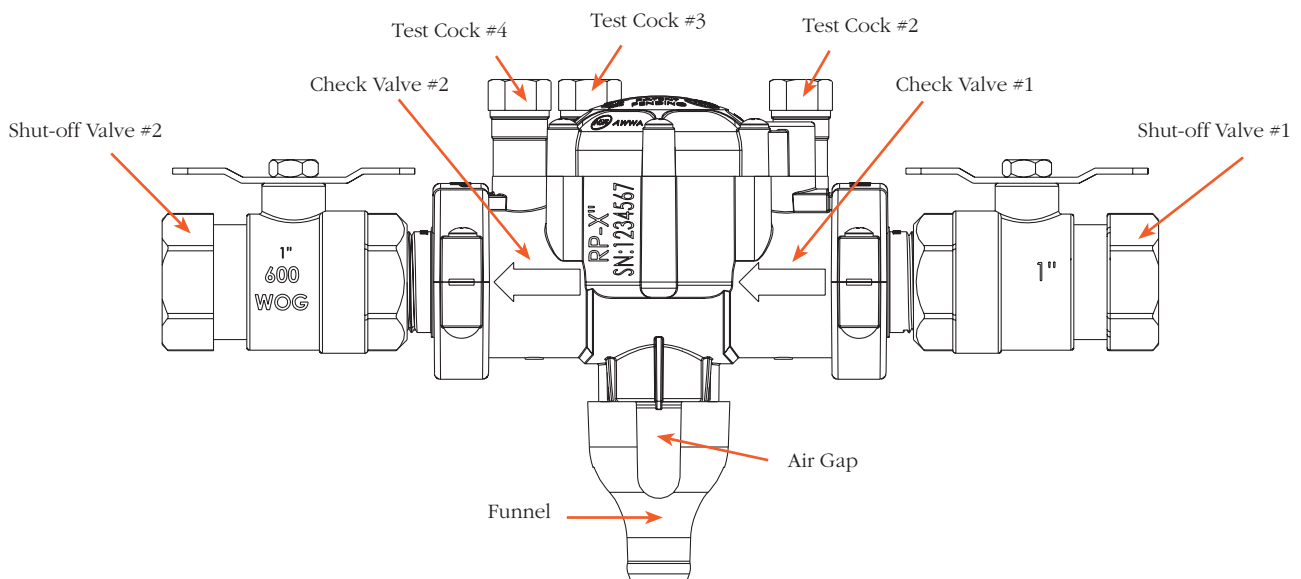
1. Install the check valves securely in place.
2. Install the retainer.
3. Put the spring to its place.
4. Install the relief valve kit.
5. Put on the cover, hold it down and close the bolts.

Caution

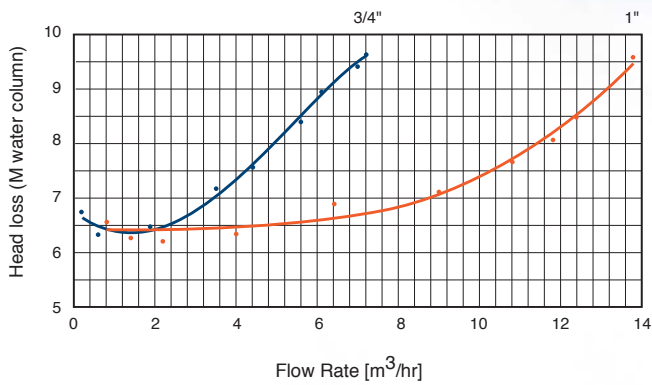
The bolts must to be secured by a recommended torque of 2.5 Kg/m.

Trouble Shooting Guide

Symptom	Cause	Corrective Action
1. Relief valve continuously discharges during no-flow conditions.	<ul style="list-style-type: none"> a. Check valve #1 clogged with debris. b. Check valve #2 fouled with debris accompanied by a backpressure condition. 	<ul style="list-style-type: none"> a. Inspect and clean the seat and seal. b. Inspect and clean the seat and seal.
2. Relief valves discharge continuously during flow and no-flow conditions.	<ul style="list-style-type: none"> a. Relief valve fouled with debris. b. Damaged diaphragm (allowing water to pass through, from inlet to zone). c. Sensing passage to inlet side of diaphragm plugged. 	<ul style="list-style-type: none"> a. Inspect and clean relief valve seat disk and seat. b. Replace the relief valve kit. c. Inspect and clean passage in cover and body.
3. Relief valve discharges intermittently in a "spitting" action during no-flow condition.	Pressure fluctuations (water hammer) from supply.	Eliminate or reduce pressure fluctuations.
4. Relief valve does not open during field test no.1	<ul style="list-style-type: none"> a. Shut-off valve #2 not closed completely. b. Test equipment improperly installed. 	<ul style="list-style-type: none"> a. Close shut-off valve #2 or inspect for possible through leakage. b. Recheck test procedure.
5. Check valve #2 fails to hold backpressure.	<ul style="list-style-type: none"> a. Shut-off valve #2 not closed completely. b. Check valve #2 clogged with debris. 	<ul style="list-style-type: none"> a. Close shut-off valve #2 or inspect for possible through leakage. b. Inspect and clean the seat and seal.
6. Pressure differential across check valve #1 is low during field test no.3 a (does not meet 0.2 bar minimum)	<ul style="list-style-type: none"> a. Check valve #2 clogged with debris. b. Upstream pressure fluctuations causing inaccurate gauge reading. 	<ul style="list-style-type: none"> a. Inspect and clean the seat and seal. b. Eliminate pressure fluctuation.

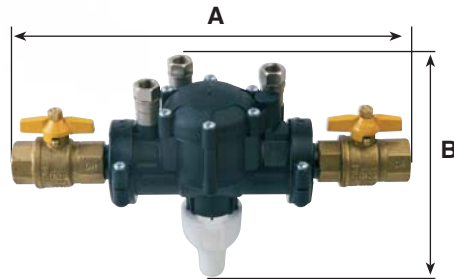


HEAD LOSS



DIMENSIONS AND WEIGHT

Dimensions mm			Weight Kg
A	B	Width	
317.5	155	89	700



PARTS LIST AND SPECIFICATION

- | No. | Part |
|-----|----------------------------|
| 1. | Cover Kit. |
| 2. | Relief Valve Kit |
| 3. | Relief Valve Spring |
| 4. | Retainer |
| 5. | Inlet Check v. Kit |
| 6. | Outlet Check v. Kit |
| 7. | Body Kit |
| 8. | Test Cock |
| 9. | Band Kit |
| 10. | Adaptor Kit |
| 11. | Up stream Shut-Off Valve |
| 12. | Down stream Shut-Off Valve |
| 13. | Drainage |

