WILKINS
a ZURN company

Model 70
Water Pressure Reducing Valve

SPECIFICATION SUBMITTAL SHEET

FEATURES

Sizes: ❑ 1/2" ❑ 3/4" ❑ 1"

Maximum working water pressure	300 psi
Maximum working water temperature	180°F
Reduced pressure range	25 psi to 75 psi
Factory preset	50 psi
Threaded connections (FNPT)	ANSI B1.20.1
Copper connections (FC)	ANSI B16.22
CPVC tailpiece: Max. hot water temp.	180°F @ 100 psi
Cold water rated temp.	73.4°F @ 400 psi

OPTIONS (Suffixes can be combined)

- ❑ - standard with single union FNPT connection and 20 mesh strainer screen
- ❑ C - with FC (copper sweat) union connection
- ❑ CH - chrome plated cartridge (3/4" & 1")
- ❑ DM - double male meter thread connection, 1" National Hose Thread fits 5/8" x 3/4" and 3/4" water meters (less union; #34-70DM)
- ❑ DU - with double union FNPT connection
- ❑ DUCM - with double union male copper sweat (3/4" - 1")
- ❑ LU - less union assembly, female x female NPT
- ❑ P - tapped & plugged for gauge
- ❑ SC - sealed cage bell housing and stainless steel adjusting screw
- ❑ SS - sealed cage bell housing with stainless steel adjusting screw and spring
- ❑ CPVC - CPVC tailpiece connection (3/4"-1")
- ❑ LP - low pressure outlet 10-35 psi available in 1/2" & 3/4" single union, & 3/4" double union

ACCESSORIES

- ❑ Repair kit
- ❑ Water thermal expansion tank (Model WXTP)
- ❑ Special in-line spacer nipple (34-70DUSPC & 1-70DUSPC)
- ❑ In-line strainer screen for DUSPC (SCR)
- ❑ Water hammer arrester (Model 1250)
- ❑ Tailpiece kit (TPK)

APPLICATION

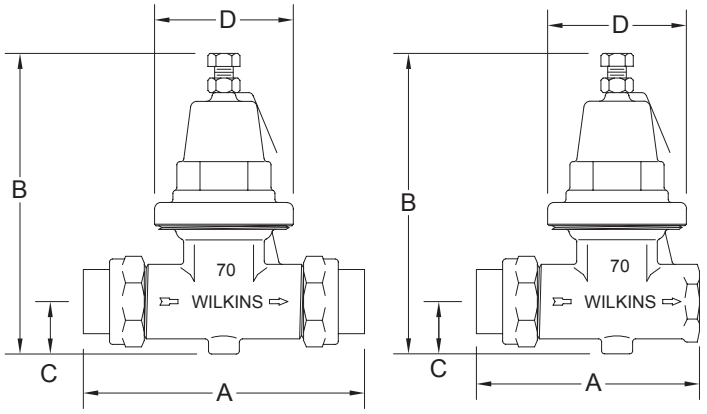
Designed for installation on potable water lines to reduce high inlet pressure to a lower outlet pressure. The unitized replaceable cartridge reduces time involved with cleaning and maintenance. The direct acting integral bypass design prevents buildup of excessive system pressure caused by thermal expansion. The balanced piston design enables the regulator to react in a smooth and responsive manner to changes in system flow demand, while at the same time, providing protection from inlet pressure changes.

STANDARDS COMPLIANCE

- ASSE® Listed 1003
- IAPMO® Listed
- CSA® Certified
- City of Los Angeles Approved

MATERIALS

Body and bell	Cast bronze, ASTM B 584
Seat	Stainless Steel, 300 series
Stem & sleeve	Brass ASTM B 16
Elastomers	Buna nitrile, FDA (CFR) 21, 177.2600
	EPDM, FDA (CFR) 21, 177.2600
Strainer screen	Stainless Steel, 300 series



DIMENSIONS & WEIGHTS (do not include pkg.)

SIZE		CONNECTIONS	DIMENSIONS (approximate)								WEIGHT	
			A		B		C		D			
in.	mm		in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
1/2	15	SINGLE UNION	4 1/2	114	5 1/4	133	3/4	19	2 3/4	70	2.5	1.1
1/2	15	LESS UNION	3 3/8	86	5 1/4	133	3/4	19	2 3/4	70	2.3	1.0
1/2	15	DOUBLE UNION	5 7/8	149	6	152	1	25	2 3/4	70	3.0	1.4
3/4	20	SINGLE UNION	4 5/8	117	6	152	1	25	2 3/4	70	2.9	1.3
3/4	20	DOUBLE UNION	6	152	6	152	1 1/8	29	2 3/4	70	3.0	1.4
1	25	SINGLE UNION	5	127	6 11/16	170	1	25	3 3/8	86	4.1	1.9
1	25	DOUBLE UNION	5 7/8	149	6 11/16	170	1 1/8	29	3 3/8	86	4.5	2.0

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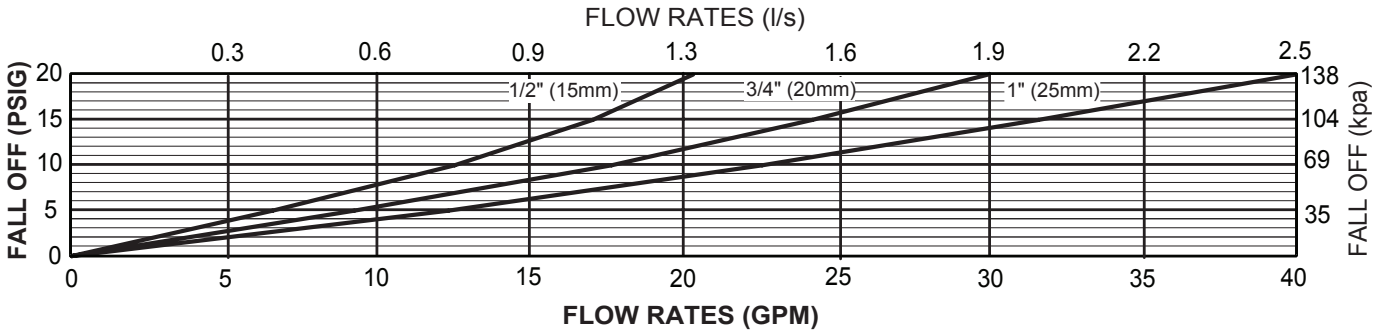
In Canada: ZURN INDUSTRIES LIMITED, 3544 Nashua Dr., Mississauga, Ontario L4V 1L2 Phone:**905/405-8272** Fax:**905/405-1292**
Product Support Help Line: 1-877-BACKFLOW **(1-877-222-5356)** • **Website: http://www.zurn.com**

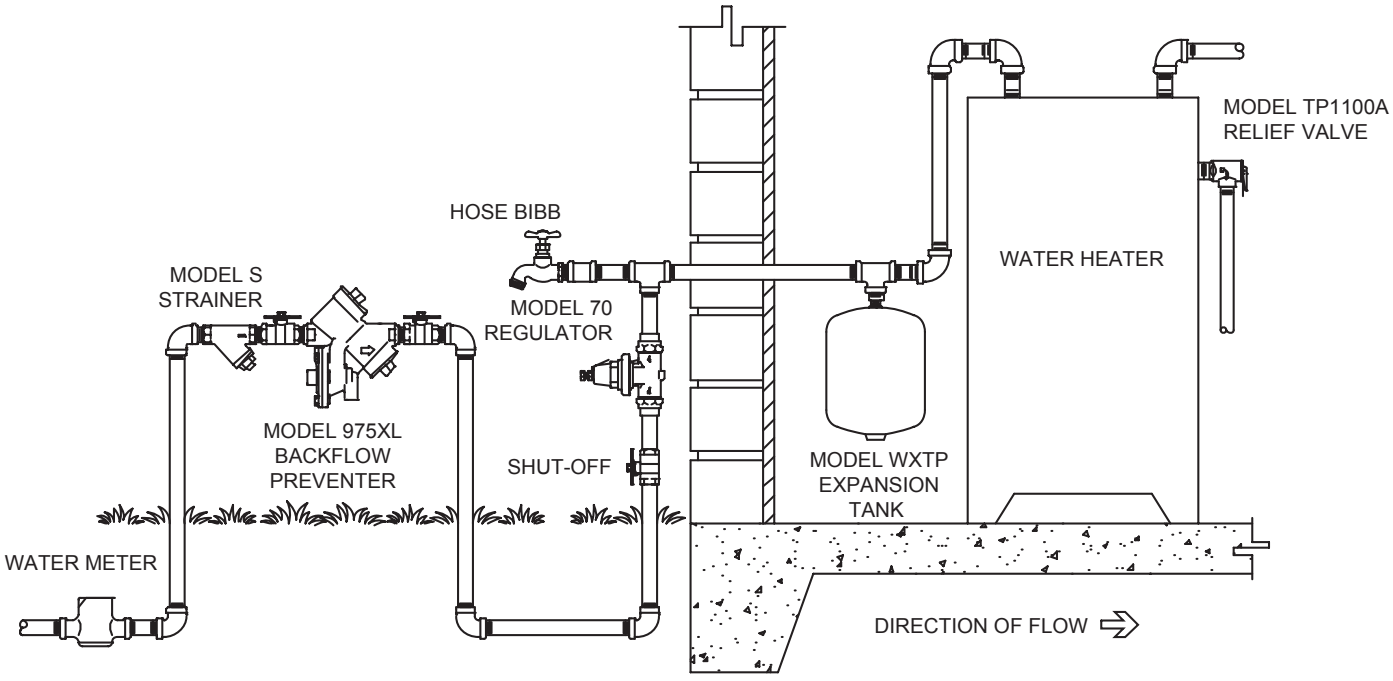
FLOW CHARACTERISTICS

MODEL 70 1/2" THRU 1" (STANDARD & METRIC)



TYPICAL INSTALLATION

Local codes shall govern installation requirements. Unless otherwise specified, the assembly shall be mounted in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code. The assembly shall be installed with sufficient side clearance for testing and maintenance. The Model 70 may be installed in any position. If installed in a pit, vault or indoors, specify the "SC" sealed cage option. Multiple installations are recommended for wide demand variations or where the desired pressure reduction is more than 4 to 1 (i.e.: 200 psi inlet reduced to 50 psi outlet). CAUTION: Anytime a reducing valve is adjusted, a pressure gauge must be used downstream to verify correct pressure setting. Do not bottom adjustment bolt on bell housing.



TYPICAL INSTALLATION

SPECIFICATIONS

The Pressure Reducing Valve shall be, of the direct-acting type and ASSE® 1003 Listed. The integral bypass check valve main body and bell housing shall be cast bronze (ASTM B 584). The pressure reducing valve shall be of the balanced piston design and shall reduce pressure in both flow and no-flow conditions using an adjusting bolt. All internal parts shall be corrosion resistant and included in a replaceable cartridge. The bronze bell housing shall be threaded to the body and shall not require the use of ferrous screws. The Pressure Reducing Valve shall be a WILKINS Model 70.

Model 70

Pressure Reducing Valve with Integral By-pass
(1/2", 3/4" & 1")

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❑ Installation ❑ Maintenance Instructions

REPAIR KIT INSTRUCTIONS

HOW TO MAKE REPAIRS:
(Shut off service before starting disassembly)

1. Open faucet on dwelling to remove line pressure.
2. Note distance that adjustment bolt protrudes from bell housing. Loosen locknut on adjustment bolt, then turn adjustment bolt out of bell housing to remove spring tension.
3. Unscrew bell housing counterclockwise and remove spring, spring disc and friction ring.
4. While holding diaphragm, unscrew diaphragm bolt counterclockwise and remove bolt, diaphragm disc and diaphragm.
5. Remove cartridge counterclockwise; Use a 1-1/8" socket for the 1/2" & 3/4" and a 1-3/8" socket for the 1". Make sure cartridge gasket is removed from the body.

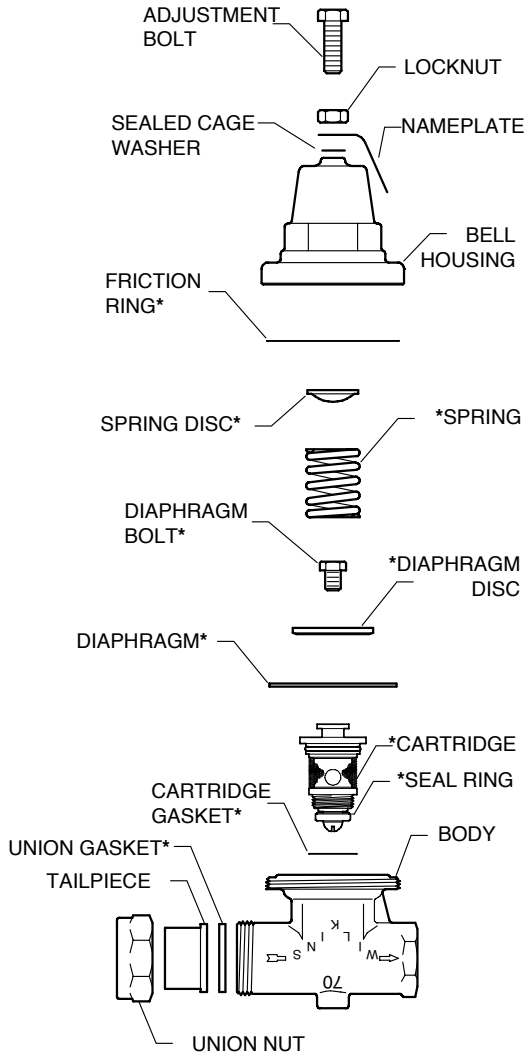
TO REASSEMBLE:

1. While disassembled, open inlet of water service to flush out valve body and service line of debris.
2. Lubricate o-ring on replacement cartridge then thread into body clockwise.
3. Replace diaphragm, diaphragm disc and diaphragm bolt (It is necessary to hold diaphragm while tightening diaphragm bolt.).
4. Replace friction ring, spring, spring disc and bell housing. Tighten bell housing onto body by threading clockwise.
5. Turn adjustment bolt into bell housing to old setting.
6. Enter dwelling and turn on several faucets.
7. Turn on water service. Let water run for several seconds then turn off faucets in dwelling.
8. Adjust regulator to desired pressure by turning adjustment bolt clockwise (into bell housing) to raise pressure or counterclockwise (out of bell housing) to lower pressure. **It is recommended a pressure gauge be installed downstream of the regulator to ensure pressure is reduced below 75 psi.** NOTE: When reducing pressure, open a downstream faucet to relieve pressure.
9. Tighten locknut when desired pressure is achieved.

INSTALLATION INSTRUCTIONS

Install valve in line with arrow on valve body pointing in direction of flow. Before installing reducing valve, flush out line to remove loose dirt and scale which might damage seal ring and seat. All valves will be furnished with stock settings to reduce to 50 psi. To readjust reduced pressure, loosen outer locknut and turn adjustment bolt clockwise (into bell housing) to raise reduced pressure, or counterclockwise (out of bell housing) to lower reduced pressure.

NOTICE: Annual inspection and maintenance is required of all plumbing system components. To ensure proper performance and maximum life, this product must be subject to regular inspection, testing and cleaning.



*** INDICATES PARTS SUPPLIED IN REPAIR KITS**

SEALED CAGE WARNING: Loosen lock washer at adjustment bolt slowly. Look for any trapped water pressure under the sealed cage washer. Relieve pressure before removing bell.

CAUTION: Anytime a reducing valve is adjusted, a pressure gauge must be used downstream to verify correct pressure setting. Do not bottom out adjustment bolt on bell housing. Valve may be installed in any position.

WARRANTY: WILKINS Valves are guaranteed against defects of material or workmanship when used for the services recommended. If in any recommended service, a defect develops due to material or workmanship, and the device is returned, freight prepaid, to WILKINS within 12 months from date of purchase, it will be repaired or replaced free of charge. WILKINS' liability shall be limited to our agreement to repair or replace the valve only.

Proposition 65 Warning This product contains a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

Troubleshooting

Pipe lines in a water supply system must be of sufficient carrying capacity to maintain adequate pressure at the most remote or highest fixture. Under the maximum probable fixture use, minimum adequate pressure is generally 8 to 15 lbs. but may be more, depending on the equipment being supplied. Relatively high service pressures which can create high water velocities in pipe lines would allow use of smaller pipes to satisfy fixture use. However, high velocity tends to cause whistling and humming. Reduction of pressure by the use of a pressure reducing valve, in an attempt to eliminate such a condition, may reduce pipe line capacities below that which is adequate for maximum probable use. When high service pressures are in effect, either continuously or periodically, the application of a pressure reducing valve will be successful only when the installed pipe line is of adequate size to satisfy the system demand at the lower pressure. When actual water demands are unknown, the valve size should be no less then the existing pipe size.

PROBLEM

POSSIBLE CAUSE OR CAUSES

1. Pressure creeps or builds up in system above the setting of pressure reducing valve.

A. Thermal expansion of water as it is being heated.
B. Foreign matter on seating face of seal ring.
C. Cut, worn or chipped seal ring.
D. Cut or worn stem o-ring or worn o-ring groove.

SOLUTION
a. This is a natural consequence. It may happen each time that the heater runs. A pressure relief valve or expansion tank must be installed. This will not prevent pressure rise but should limit it to a safe level.
b. Flush the reducing valve by opening one or two fixture outlets wide. If this does not correct the problem, remove seal ring for cleaning.
c. Replace with new seal ring. Temporary repairs may be made by turning the seal ring over.
d. Replace with new stem o-ring and/or cartridge.

2. Pressure and fixture flow is unsteady.

A. Low water supply pressure in mains caused possibly by high area demand during certain periods of the day.
B. Heavy periodic demands by appliances in the house.

SOLUTION
a. This is a water department problem. It is due to the mains being inadequate for the demands made on them.
b. House service lines may at times be inadequate for the load. Size of some pipelines may need to be increased. Pressure setting of reducing valve may be too low.
c. Try increasing pressure before changing pipelines.

3. Small, inadequate flow from fixtures.

A. Pipelines to fixtures may be too small or house main supply may be inadequate for normal fixture demand.
B. Heavy periodic demands by appliances in the house.
C. Screen clogged with debris.

SOLUTION
a. It may be necessary to increase pipe sizes only in some sections of the system leading to the offending appliances or fixtures. Increasing the house service mains might be necessary if small supply is general at all fixtures.
b. Raise pressure gradually by readjusting valve until this point is determined.
c. Clean screen.

4. Valve appears to be noisy; hums, whistles or chatters.

A. Hum or whistle is usually caused by a high velocity of flow in pipelines causing vibration.
B. Chatter usually originates with worn seat washer or loosely installed seal ring.

SOLUTION
a. Pipelines could be small or too light. Reducing valves could be too small. Pipes and valves being small would accentuate this condition.
b. Inspect seal ring. If a deep channel appears on seal ring face, replace or use the opposite side.
c. Frequently noise appears in a faucet or appliance and seems to originate from the reducing valve. There is a general tendency to use streamline piping of a relatively small size. Velocity is naturally high and noise of fast moving water is not unusual.

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