

Burst Control & Pressure Reducing Valve

Excessive Flow

- “Older” burst susceptible networks
- Vulnerable network infrastructure facilities
- Networks at risk of mechanical damage
- Flow and leakage reduction
- System maintenance savings

The Model 792-U Burst Control & Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve with two independent functions. When flow is below setting, it reduces higher upstream pressure to lower pre-set downstream pressure, regardless of varying demand or upstream pressure. Upon sensing flow in excess of setting, it shuts off drip tight and locks (until it is manually reset).



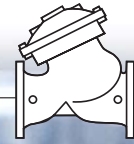
Features and Benefits

- **Line pressure driven** – Independent operation
- **Hydraulic flow sensor (upstream installation)**
 - No moving parts
 - No electronic components
 - No need for flow straighten
- **Sensitive hydraulic pilot** – Tight setting window
- **In line serviceable** – Easy maintenance
- **Double chamber design**
 - Moderated valve reaction
 - Protected diaphragm
- **"Y" or angle, wide body** – Minimized pressure loss
- **Obstacle free, full bore** – Uncompromising reliability
- **Stainless Steel raised seat** – Cavitation damage resistant
- **Semi-straight flow** – Non-turbulent flow
- **V-Port Throttling Plug** – Low flow stability

Major Additional Features

- Solenoid control – **792-55-U**
- Electric override – **792-59-U**
- Downstream over-pressure guard – **792-48-U**
- Electronic multi-level setting, Type 4T – **792-4T-U**

See relevant BERMAD publications.

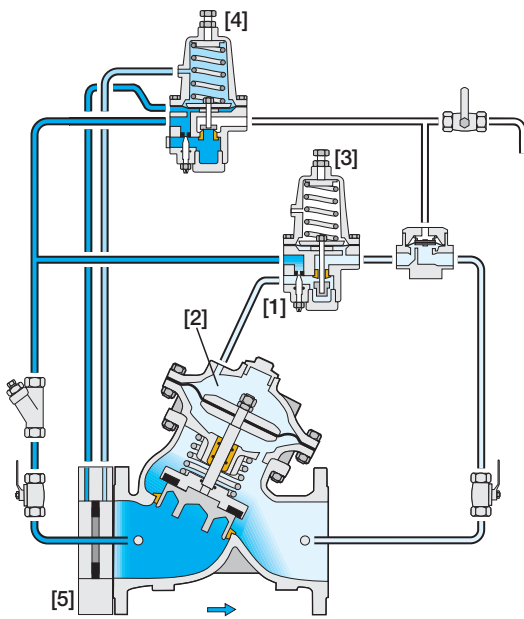


Operation

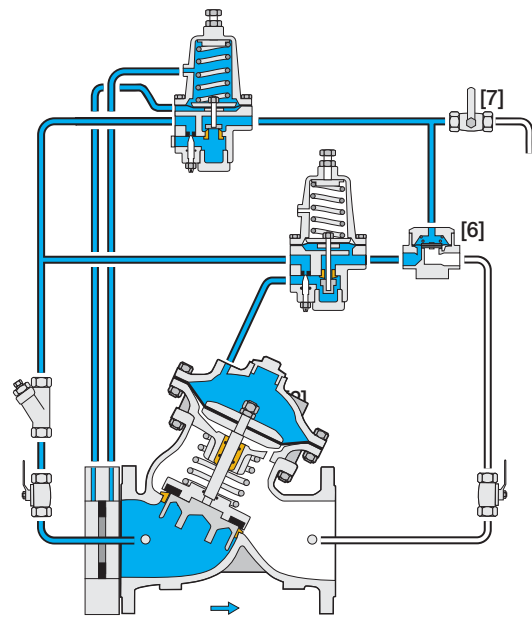
The Model 792-U is a pilot controlled valve equipped with an Orifice assembly, a Hydraulic Relay Valve (HRV) and two adjustable 2-Way pilots.

The needle valve [1] continuously allows flow from the valve inlet into the upper control chamber [2]. The Pressure Reducing Pilot [3] senses downstream pressure. Should this pressure rise above pilot setting, the pilot throttles and causes the pressure in the upper control chamber to accumulate. This causes the main valve to throttle closed decreasing downstream pressure to pilot setting.

The Differential Pressure Sustaining Pilot [4] senses the differential pressure across the orifice plate [5]. Should this differential pressure rise above pilot setting the pilot opens closing the HRV [6]. Thus causing the main valve to begin an irreversible "close & lock" process. Opening and resetting the main valve requires manual intervention by means of the manual reset valve [7].



Valve Reduces Pressure (normal flow)



Valve Closed & Locked

Engineer Specifications

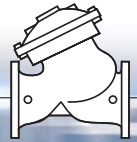
The Burst Control & Pressure Reducing Valve shall reduce higher upstream pressure to lower pre-set downstream pressure. Upon sensing flow in excess of setting, it shall shut off drip tight and lock (until it is manually reset).

Main Valve: The main valve shall be a center guided, diaphragm actuated globe valve of either oblique (Y) or angle pattern design. The body shall have a replaceable, raised, stainless steel seat ring. The valve shall have an unobstructed flow path, with no stem guides, bearings, or supporting ribs. The body and cover shall be ductile iron. All external bolts, nuts, and studs shall be Duplex® coated. All valve components shall be accessible and serviceable without removing the valve from the pipeline.

Actuator: The actuator assembly shall be double chambered with an inherent separating partition between the lower surface of the diaphragm and the main valve. The entire actuator assembly (seal disk to top cover) shall be removable from the valve as an integral unit. The stainless steel valve shaft shall be center guided by a bearing in the separating partition. The replaceable radial seal disk shall include a resilient seal and shall be capable of accepting a V-Port Throttling Plug by bolting.

Control System: The control system shall consist of two 2-Way adjustable, direct acting pilots (Pressure Reducing and Differential Pressure Sustaining), an Orifice assembly, a Hydraulic Relay Valve, Manual Reset Valve, cock valves, and a filter. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested and factory adjusted to customer requirements.

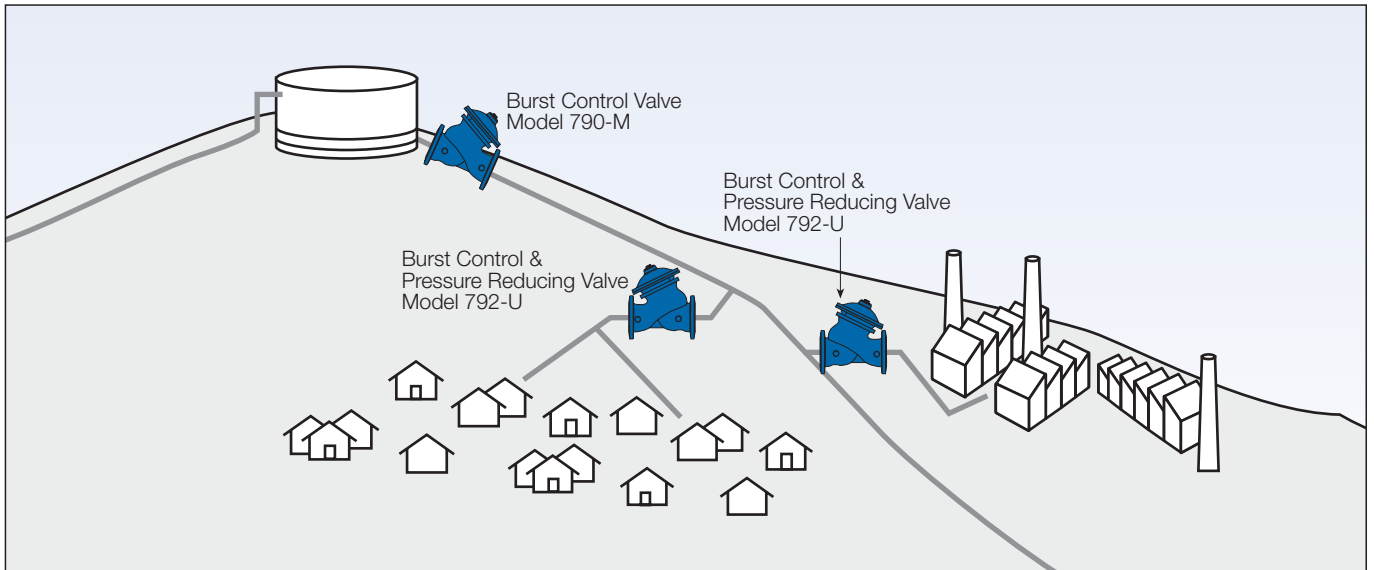
Quality Assurance: The valve manufacturer shall be certified according to the ISO 9001 Quality Assurance Standard. The main valve shall be certified as a complete drinking water valve according to NSF, WRAS, and other recognized standards.



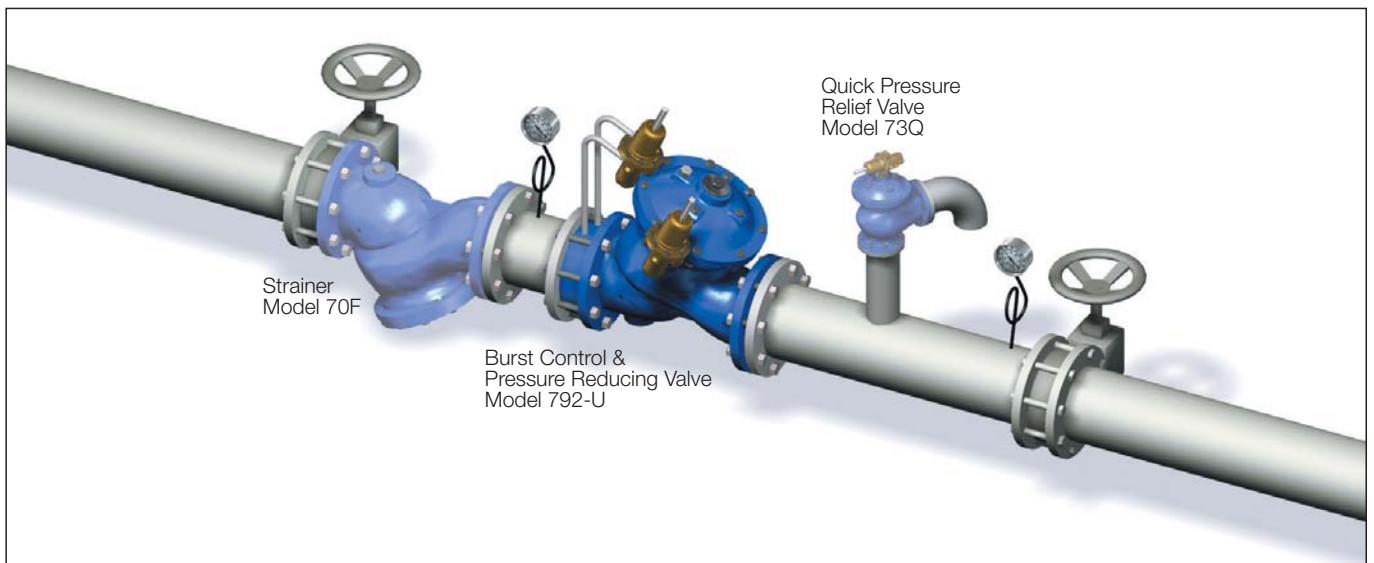
Typical Applications

Burst Control Valves in a Network

Every water system is vulnerable to bursts, whether due to system problems or external mechanical damage. This illustration shows a reservoir feeding a downhill line with lower elevation consumers. Each Model 792-U protects the lower elevation consumers. It reduces their supply pressure and, in case of burst, "closes & locks", preventing flooding. The Model 790-M, installed at the reservoir outlet, also protects against reservoir emptying.



Typical Installation

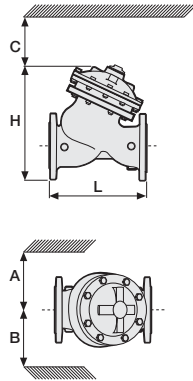




Technical Data

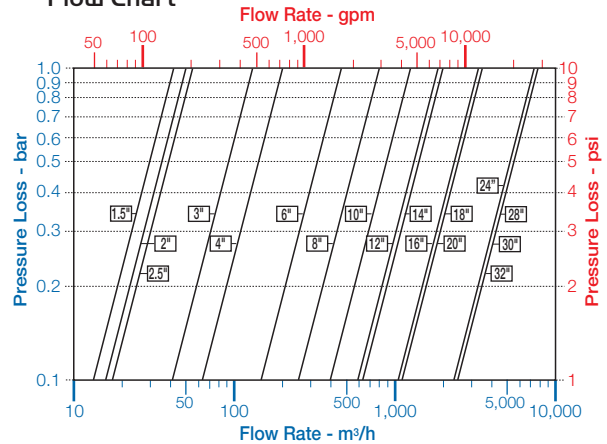
Dimensions and Weights

Size		A, B		C		L		H		Weight	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg	lbs
40	1 1/2"	350	14	180	7	205	8.1	239	9.4	9.1	20
50	2"	350	14	180	7	210	8.3	244	9.6	10.6	23
65	2 1/2"	350	14	180	7	222	8.7	257	10.1	13	29
80	3"	370	15	230	9	250	9.8	305	12.0	22	49
100	4"	395	16	275	11	320	12.6	366	14.4	37	82
150	6"	430	17	385	15	415	16.3	492	19.4	75	165
200	8"	475	19	460	18	500	19.7	584	23.0	125	276
250	10"	520	21	580	23	605	23.8	724	28.5	217	478
300	12"	545	22	685	27	725	28.5	840	33.1	370	816
350	14"	545	22	685	27	733	28.9	866	34.1	381	840
400	16"	645	26	965	38	990	39.0	1108	43.6	846	1865
450	18"	645	26	965	38	1000	39.4	1127	44.4	945	2083
500	20"	645	26	965	38	1100	43.3	1167	45.9	962	2121



Data is for Y-pattern, flanged, PN16 valves
 Weight is for PN16 basic valves
 "C" enables removing the actuator in one unit
 "L", ISO standard lengths available
 For more dimensions and weights tables, refer to Engineering Section

Flow Chart



Data is for Y-pattern, flat disk valves
 For more flow charts, refer to Engineering Section

Main Valve

Valve Patterns: "Y" (globe) & angle
Size Range: 1 1/2"-32" (40-800 mm)
End Connections (Pressure Ratings):
Flanged: ISO PN16, PN25 (ANSI Class 150, 300)
Threaded: BSP or NPT
Others: Available on request
Working Temperature:
 Water up to 80°C (180°F)
Standard Materials:
Body & Actuator: Ductile Iron
Internals:
 Stainless Steel, Bronze & coated Steel
Diaphragm:
 NBR Nylon fabric-reinforced
Seals: NBR
Coating:
 Fusion Bonded Epoxy, RAL 5005 (Blue)
 NSF & WRAS approved or Electrostatic Polyester Powder, RAL 6017 (Green)

Control System

Standard Materials:
Accessories:
 Bronze, Brass, Stainless Steel & NBR
Tubing: Copper or Stainless Steel
Fittings: Forged Brass or Stainless Steel
Pilot Standard Materials:
Body: Brass, Bronze or Stainless Steel
Diaphragm covers: Fusion bonded epoxy coated steel
Elastomers: NBR
Springs: Stainless Steel
Internals: Stainless Steel
Orifice Assembly Standard Materials:
Body: Fusion bonded epoxy Steel or Stainless Steel
Orifice Plate: Stainless Steel
Sensing Ports: 1/8" NPT

■ Standard (calculated) differential pressure: 0.4 bar (5.5 psi)

Pilot Valve Selection

Valve Size	Burst Control Pilot	Pressure Reducing Pilot		
	#3-DR	#2PB	#2	#2HC
1 1/2"-10" DN40-250	■	■		
6-14" DN150-350	■		■	
16-32" DN400-800	■			■

How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide)

Sector	Size	Primary Feature	Additional Feature	Pattern	Body Material	End Connections	Coating	Voltage & Position	Tubing & Fittings	Additional Attributes
WW	6"	792	00	Y	C	16	EB	-	CB	U
Waterworks	1 1/2" - 32"	Burst Control & PressureReducing		Oblique (up to 20°) Angle (up to 18°) Globe (24-32" only)	Y A G	Epoxy FB Blue Polyester Green Polyester Blue Uncoated	EB PG PB UC		Copper Tubing & Brass Fittings Plastic Tubing & Brass Fittings St. St. 316 Tubing & Fittings	CB PB NN
				Ductile Iron Standard Cast Steel St. Steel 316 Nickel Alumin. Bronze	C S N U					U j F S N T D R E
		No Additional Feature Closing and Opening Speed Control Check Valve Solenoid Controlled & Check Valve Hydraulic Remote Controlled Solenoid Controlled Electric Override	00 03 20 25 50 55 59	ISO-16 ISO-25 ANSI-150 ANSI-300 JIS-16 JIS-20	16 25 A5 A3 J6 J2	24VAC/50Hz - N.C. 24VAC/50Hz - N.O. 24VDC - N.C. 24VDC - N.O. 24VDC - L.P. 220VAC/50-60Hz N.C. 220VAC/50-60Hz N.O.	4AC 4AO 4DC 4DO 4DP 2AC 2AO		Orifice Assembly Pitot Tube Large Control Filter Electric Limit Switch St. St. 316 Control Accessories St. St. 316 Internal Trim (Closure & Seat) St. St. 316 Actuator Internal Assembly Delrin Bearing Viton Elastomers for Seals & Diaphragm	Multiple choices permitted

Use when additional electric control feature is selected

