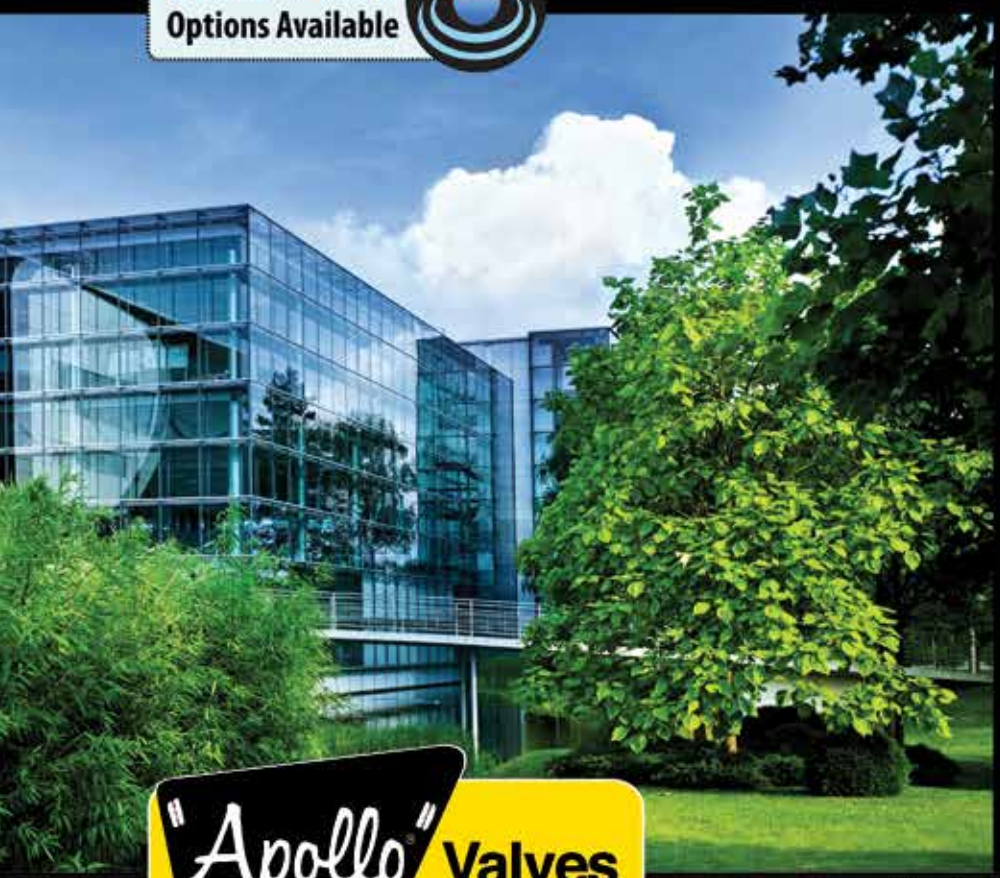
WATER PRESSURE REDUCING VALVES



LEAD FREE Options Available

"Apollo" Valves
manufactured in the USA
by CONBRACO Industries

American Made Quality since 1928

APOLLO VALVES 5 YEAR WARRANTY MADE IN USA

"Apollo" Valves
manufactured in the USA
by CONBRACO Industries

A history of **Quality, Service** and **Innovation**

Now in its ninth decade, Conbraco Industries, Inc. is a leading manufacturer of flow control products for U.S. and international markets. The company's headquarters is based in Matthews, North Carolina with manufacturing plants and foundries located in Pageland and Conway, South Carolina.

Conbraco has a history of new product development and innovation that dates back to the company's inception in 1928. Today, the Conbraco line of products is marketed under the "Apollo Valves" brand and includes: ball valves, butterfly valves, backflow prevention devices, water pressure reducing valves, mixing valves, safety relief valves, water gauges, strainers, actuation and ApolloXpress products.

Conbraco's vertically integrated manufacturing ensures a consistency of production, testing, quality and availability. You can be assured that Conbraco flow control products will deliver long term reliability. All manufacturing facilities are ISO 9001:2008 certified.

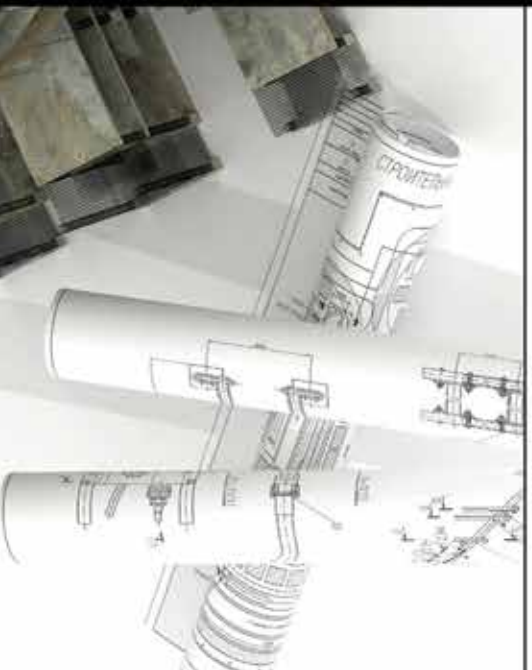
The Conbraco line continues to expand with new products, designs and advanced materials to better serve the needs of our customers. Markets served include: chemical processing, pulp and paper, petroleum, residential and commercial plumbing and heating, OEM, irrigation, water works, and fire protection.

PAGELAND, SC
Bronze Foundry and Manufacturing Plant

PAGELAND, SC
Final Assembly and Distribution Center

CONWAY, SC
Steel Foundry and Manufacturing Plant

MATTHEWS, NC
Corporate Headquarters



Throughout this catalog, products that have a Lead Free* option will be identified with this logo.

* LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471 and Federal Public Law 111-380.

LEAD FREE OPTION AVAILABLE

**Any imported products are clearly identified as "Apollo International™".

WATER PRESSURE REDUCING VALVES

TABLE OF CONTENTS

AUTOMATIC PRESSURE REDUCTION

Pressure reducing valves are designed to automatically reduce a high inlet supply pressure to a lower outlet pressure. In most plumbing code jurisdictions, pressure reducing valves are mandated whenever the supply water pressure exceeds 80 PSI.

Excessive pressure can waste as much as 40,000 gallons of water in an average home every year. Ideally, water systems can meet required pressure and capacity needs with a water velocity of 10 feet per second or less.

THE VALUE OF ECONOMIZING

Cutting costs by specifying undersized piping often results in water hammer and other undesirable pipe noises. When correctly designed into an entire supply system, Apollo pressure reducing valves will efficiently control overpressure conditions.

Once installed, Apollo pressure reducing valves are engineered to provide years of reliable service. Installing a shut-off valve upstream from the pressure reducing valve makes maintenance and repair easier. In commercial applications, a second shut-off valve and gauge or tapping downstream from the regulator is also suggested.

SOLVING OVERPRESSURE PROBLEMS

Apollo water pressure reducing valves provide reliable protection from excessive pressure for a wide range of residential, commercial and industrial applications.

By eliminating wasteful overpressure, water pressure reducing valves conserve water, reduce related energy costs — including the costs of waste water treatment, and extend the life of piping and fixtures while minimizing water hammer shock.

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance buildings. The Apollo pressure reducing valves can be accepted and used to acquire LEED certification. Common practice and analysis shows that 50 psi or lower is sufficient pressure for most homes and commercial buildings. Apollo water pressure reducing valves can help limit the incoming pressure to 50 psi or less to reduce the water being used and to reduce the amount of wastewater returned to the environment.

WATER PRESSURE REDUCING VALVES

How Pressure Reducing Valves Work

OPERATION

Apollo pressure reducing valves are shipped in the OPEN position. Their internal seat is held open by a compression spring.

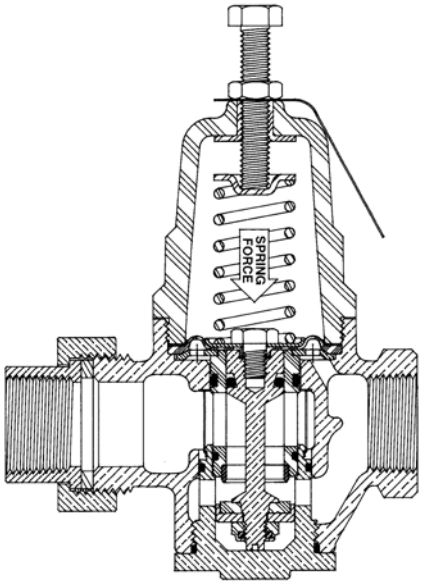
Compression is applied to the spring by an adjusting screw working on a spring button. The amount of force on the diaphragm by the valve spring determines the reduced pressure downstream of the regulating valve. The standard setting is 50 psig.

During static (no-flow) conditions, the valve is closed because the diaphragm force is greater than the valve spring force. Outlet pressure drops once flow downstream begins and force from the spring begins opening the valve.

Apollo's integral design enables the valve to react smoothly and quickly to changing flow demands, while protecting against inlet pressure change. As water enters the valve it flows past the open seat, under the diaphragm and through to the outlet pipe, stopping at the closed fixtures until diaphragm force overcomes spring force to close the valve.

Under flow conditions (when the faucet is opened), the captive 50 psig water begins to flow out. Once flow starts, pressure under the diaphragm starts to fall off to below 50 PSI, causing the compression spring to open the seat and allowing more water to enter. Our regulating valve opens, passing only the amount of water flowing out through the faucet at a pressure below the "set" pressure.

REDUCED PRESSURE FALL-OFF



Fall-off is the reduced pressure change that results when a valve opens: the difference between the static (closed) pressure and residual (flowing) pressure downstream of the regulating valve. Inherent in the direct-acting design, fall-off is an important factor when choosing a valve size and type.

Most often, the regulating valve supplies many fixtures (i.e. toilets, tubs, showers, sinks, etc.) or many industrial applications. Intermittent water demands will vary the flow requirements to the regulating valve widely, from a small trickle to a large volume under peak load. So outlet or downstream pressure from the regulator also varies. Which reducing valve you need depends on the flow rate — or capacity — required.

Pressure reducing valve sizing and selection are important to a successful application. Remember to find out what the MINIMUM inlet pressure is AT THE VALVE.

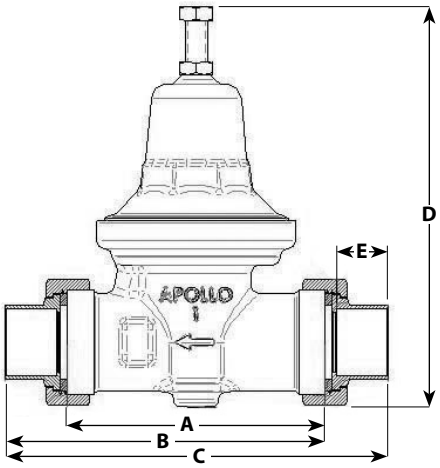
When the reduced pressure on the outlet of a regulator drops too low during flow conditions, the valve or line size is too small for the job.

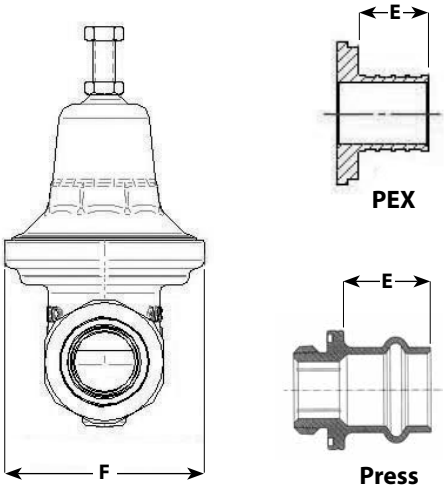
See pages 17-18 for sizing, selection, and installation guidelines.

WATER PRESSURE REDUCING VALVES

For General Purpose Residential & Light to Medium Commercial Applications

PR SERIES (36)





Apollo PR Series pressure reducing valves provide automatic control of excessive water pressure and problem supply fluctuations. These models are designed to reduce pressures of up to 300 PSI to a more manageable range.

Factory set at 50 PSI, they adjust with a turn of a screw. They feature a built-in by-pass and strainer, and comply with ASSE 1003 and CSA B356 standards. They are listed with IAPMO and the City of Los Angeles.

PR Series valves are built for long, reliable service with an all-bronze body and high-capacity stainless steel strainer. Available with or without optional pressure gauge tapping.

FEATURES

- All bronze body and cover
- Suitable for supply pressures to 300 psi
- Every valve is 100% factory set and tested
- Standard factory setting is 50 psi
- High & low pressure model options
- Diaphragm suitable for 33-180°F
- Solder, Thread, PEX, CPVC, Press and Push connection options
- Integral thermal expansion bypass
- Integral stainless steel strainer
- Single and double union options
- In-line repairable
- **USA materials and manufacture**
- **Lead-Free** option (36LF)

APPROVALS

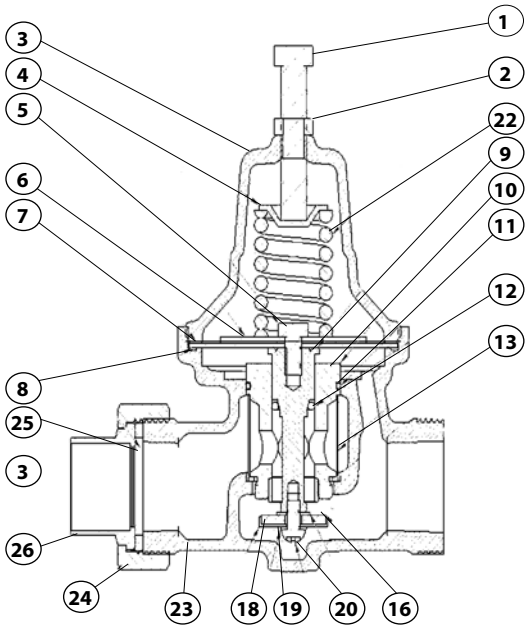
- ASSE 1003
- CSA B356

Size	Connection	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	WT. (Union) (lbs)
1/2	Thread	4.00	4.88	5.63	5.88	0.63	2.75	3.5
	Solder	4.00	4.88	5.63	5.88	0.50	2.75	3.4
	PEX	4.00	5.00	5.75	5.88	0.63	2.75	3.3
	CPVC	4.00	4.63	5.25	5.88	0.50	2.75	3.1
	Press	N/A	N/A	5.78	5.88	0.75	2.75	3.1
3/4	Thread	3.88	4.88	5.63	5.88	0.63	2.75	3.4
	Solder	3.88	4.88	5.63	5.88	0.75	2.75	3.3
	PEX	3.88	5.00	5.75	5.88	0.63	2.75	3.2
	CPVC	3.88	4.88	5.63	5.88	0.63	2.75	3.0
	Press	N/A	N/A	6.09	5.88	0.88	2.75	3.1
1	Thread	4.38	5.50	6.38	6.88	0.63	3.38	4.5
	Solder	4.38	5.50	6.38	6.88	0.63	3.38	4.4
	PEX	4.38	5.50	6.63	6.88	0.88	3.38	4.3
	CPVC	4.38	5.75	7.00	6.88	0.75	3.38	4.0
	Press	N/A	N/A	6.65	6.88	0.88	3.38	4.1
1-1/4	Thread	5.38	6.50	7.50	8.88	0.88	4.00	10.2
	Solder	5.38	6.63	7.75	8.88	1.00	4.00	10.1
	Press	N/A	N/A	7.87	8.88	1.00	4.00	9.0
1 -1/2	Thread	5.38	6.63	7.88	8.88	0.75	4.00	10.4
	Solder	5.38	6.75	8.00	8.88	1.13	4.00	10.3
	Press	N/A	N/A	8.61	8.88	1.44	4.00	9.0
2	Thread	7.13	8.50	9.88	8.88	1.00	5.75	22.5
	Solder	7.18	8.88	10.50	11.50	1.38	5.75	22.4
	Press	N/A	N/A	10.78	11.50	1.57	5.75	21.0

WATER PRESSURE REDUCING VALVES

For General Purpose Residential & Light to Medium Commercial Applications

PR SERIES (36)

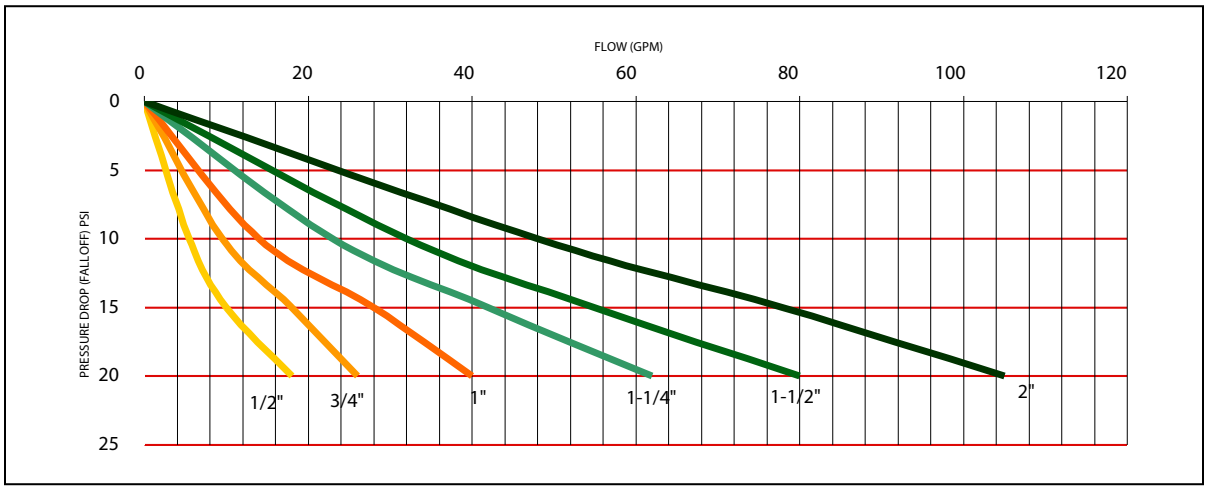


MATERIALS

Item	Description
1	Adj. Screw (Zinc Plated Stl.)
2	Hex Nut (Zinc Plated Stl.)
3	Cap (Cast Bronze)
4	Spring Disc (Zinc Plated Steel)
5	Cartridge Bolt
6	Pressure Plate (Zinc Plated Steel)
7	Friction Ring (Zinc Plated Steel)
8	Diaphragm (FDA Nitrile)
9	Stem (Brass)
10	Cartridge Housing (Brass)
11	O-ring (FDA Nitrile)
12	O-ring (FDA Nitrile)
13	Screen (300 Series SS)

Item	Description
14	Seal, Cartridge (Polypropylene)
15	Seat Ring (300 Series SS)
16	Washer (Brass)
17	Seat Disc (FDA EPDM)
18	Seat Holder (Brass)
19	Washer (Polypropylene)
20	Seat Screw (300 Series SS)
21	Nameplate (Aluminum)
22	Spring (ASTM 228 Music Wire)
23	Body, Machined (Cast Bronze)
24	Union Nut (Cast Bronze)
25	Union Washer (FDA Nitrile)
26	Union Tail Piece (Brass)

FLOW CHART



NOTE: Flow curves are based on static conditions of: Inlet pressure = 100 psig: Outlet pressure = 50 psig. All curves are for female NPT versions only. Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.

JUMP KIT - PR SERIES

Part Number	Size (in.)	Description
36-404-JK	3/4	Thread
36-405-JK	1	
36-406-JK	1-1/4	
36-504-JK	3/4	Solder
36-505-JK	1	
36-506-JK	1-1/4	
36-504-JKC	3/4	CPVC

Note: Jump kits available for 3/4" - 1-1/4" ONLY. Jump kits 1" and larger include a strainer for use during system flush.

WATER PRESSURE REDUCING VALVES

For General Purpose Residential & Light to Medium Commercial Applications

PR SERIES (36)

		PRESSURE DIFFERENTIAL (PSI)		
		25	50	75
PIPE SIZE	*FALL OFF (PSI)	Water Capacity (GPM)		
1/2″	5	1.7	2.0	2.3
	10	4.3	5.0	5.8
	15	8.5	10.0	11.5
	20	15.3	18.0	20.7
3/4″	5	3.4	4.0	4.6
	10	7.7	9.0	10.4
	15	14.5	17.0	19.6
	20	22.1	26.0	29.9
1″	5	5.1	6.0	6.9
	10	11.9	14.0	16.1
	15	22.1	26.0	29.9
	20	34.0	40.0	46.0
1 1/4″	5	8.5	10.0	11.5
	10	19.6	23.0	26.5
	15	35.7	42.0	48.3
	20	52.7	62.0	71.3
1 1/2″	5	11.9	14.0	16.1
	10	27.2	32.0	36.8
	15	47.6	56.0	64.4
	20	68.0	80.0	92.0
2″	5	15.3	18.0	20.7
	10	39.1	46.0	52.9
	15	66.3	78.0	89.7
	20	93.5	110.0	126.5

* *Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.*

MODEL NUMBER MATRIX

PR X	X	X	X	X	X	
UNION	GAUGE	PRESSURE SETTING	MISCELLANEOUS	SIZE	CONNECTION	LEAD FREE
Blank - Single Union	Blank - No Gauge	Blank - 25-75 psig	Blank - No Option	12 - 1/2″	Blank - FNPT x FNPT	Blank - Non-Lead Free
D - Double Union	P - With Gauge Port	L - 10-35 psig	A - Stainless Steel Trim*	34 - 3/4″	**SINGLE UNION ONLY**	LF - Lead Free
T - No Union	G - With Gauge	H - 75-125 psig		1 - 1″	Blank - FNPT x FNPT	
				114 - 1-1/4″	S - Solder x FNPT	
				112 - 1-1/2″	C - CPVC x FNPT	
				2 - 2″	X - PEX x FNPT	
					PR - Press x FNPT	
					DOUBLE UNION ONLY	
					S - Solder x Solder	
					C - CPVC x CPVC	
					X - PEX x PEX	
					B - BSPT x BSPT	
					SC - Solder x CPVC	
					SX - Solder x PEX	
					CX - CPVC x PEX	
					PR - Press x Press	

* *Sealed cage with stainless steel adjusting screw for vault installation.*

PART NUMBER MATRIX

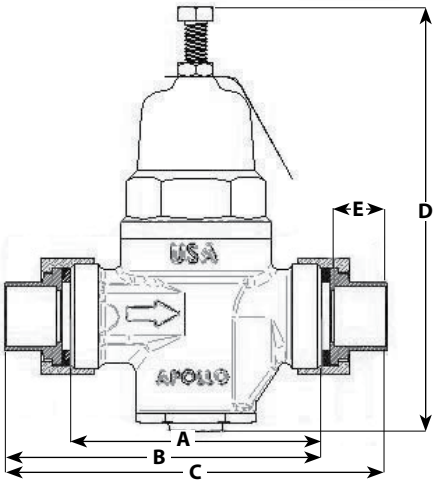
36 36LF X	X	X	X	X	X
CONNECTION	OPTION	SIZE	GAUGE	PRESSURE (ADJUSTABLE)	OPTION
1 - Single Union NPT	0 - No Option	03 - 1/2″	0 - No Gauge	1 - 25-75 psig	PR - Press
2 - No Union NPT	C - CPVC Tailpiece	04 - 3/4″	P - With Gauge Port	2 - 10-35 psig	(applies to models 36-20x
3 - Single Union Solder x NPT	S - Sealed Cage*	05 - 1″	G - With Gauge	3 - 75-125 psig	and 36LF20x only)
4 - Double Union NPT	X - Pex Tailpiece	06 - 1-1/4″			
5 - Double Union Solder		07 - 1-1/2″			
6 - Single Union Meter x NPT		08 - 2″			
8 - Double Union CPVC					
9 - Double Union Pex					

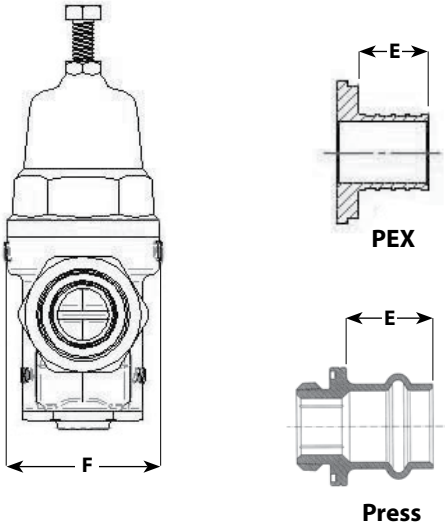
* *S option = Sealed cage with stainless steel adjusting screw for vault installation.*

WATER PRESSURE REDUCING VALVES

Compact Design for Residential & Light Commercial Applications

PRC SERIES (36C)





Versatile, all-purpose Apollo PRC Series pressure reducing valves handle pressures up to 400 PSI. Compact and with a built-in thermal expansion by-pass, they're designed to protect residential and commercial water distribution systems from excessive pressures.

The valves' integral thermoplastic cage helps protect the inner adjusting spring from galvanic corrosion. Built for reliable, long-term service, PRC valves offer an all-bronze body, stainless steel strainer and seat. They comply with ASSE 1003 and CSA B356 standards. They are listed with IAPMO and City of Los Angeles.

Designed for easy in-line servicing, PRC models come standard with a clean-out plug on the housing's bottom. Both seat disc and strainer can be maintained via the clean-out plug using a 1 1/2" hex socket. Available with or without gauge tapping and gauge.

FEATURES

- Dependable cast bronze body
- Suitable for supply pressures to 400 psi
- Every valve is 100% factory set and tested
- Standard factory setting is 50 psi
- High and low pressure model options
- Diaphragm suitable for 33 - 180°F
- Solder, Thread, PEX, CPVC, and Press connection options
- Sealed cage with ss adjusting screw for vault installation
- Integral thermal expansion by-pass
- Integral stainless steel strainer
- Single and double union options
- In-line repairable, bottom access
- **USA materials and manufacture**
- **Lead Free** option (36CLF)

APPROVALS:

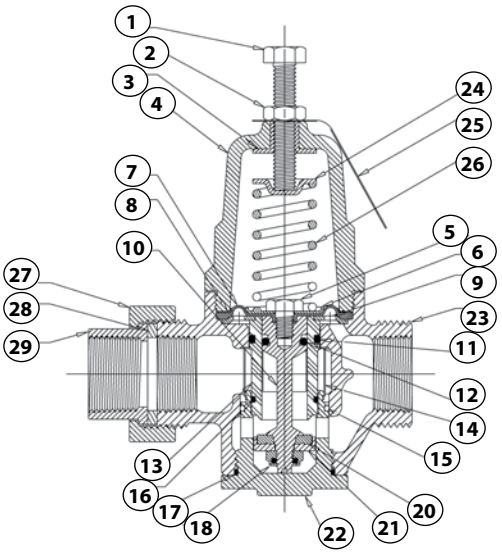
- ASSE 1003
- CSA B356

Size	Connection	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	WT. (Union) (lbs)
1/2	Thread	3.63	4.50	5.38	6.00	0.63	2.75	3.5
	Solder	3.63	4.50	5.38	6.00	0.50	2.75	3.4
	PEX	3.63	4.50	5.50	6.00	0.63	2.75	3.3
	CPVC	3.63	4.50	5.00	6.00	0.50	2.75	3.1
	Press	N/A	N/A	5.48	6.00	0.75	2.75	2.8
3/4	Thread	3.63	4.50	5.50	6.00	0.63	2.75	3.4
	Solder	3.63	4.50	5.50	6.00	0.75	2.75	3.3
	PEX	3.63	4.63	5.63	6.00	0.63	2.75	3.2
	CPVC	3.63	4.50	5.50	6.00	0.63	2.75	3.0
	Press	N/A	N/A	5.79	6.00	0.88	2.75	2.8
1	Thread	3.75	4.63	5.75	6.00	0.63	3.38	4.5
	Solder	3.75	4.63	5.75	6.00	0.88	3.38	4.4
	PEX	3.75	4.75	6.00	6.00	0.75	3.38	4.3
	CPVC	3.75	4.75	6.00	6.00	0.94	3.38	4.0
	Press	N/A	N/A	6.16	6.00	0.88	3.38	3.1

WATER PRESSURE REDUCING VALVES

Compact Design for Residential & Light Commercial Applications

PRC SERIES (36C)

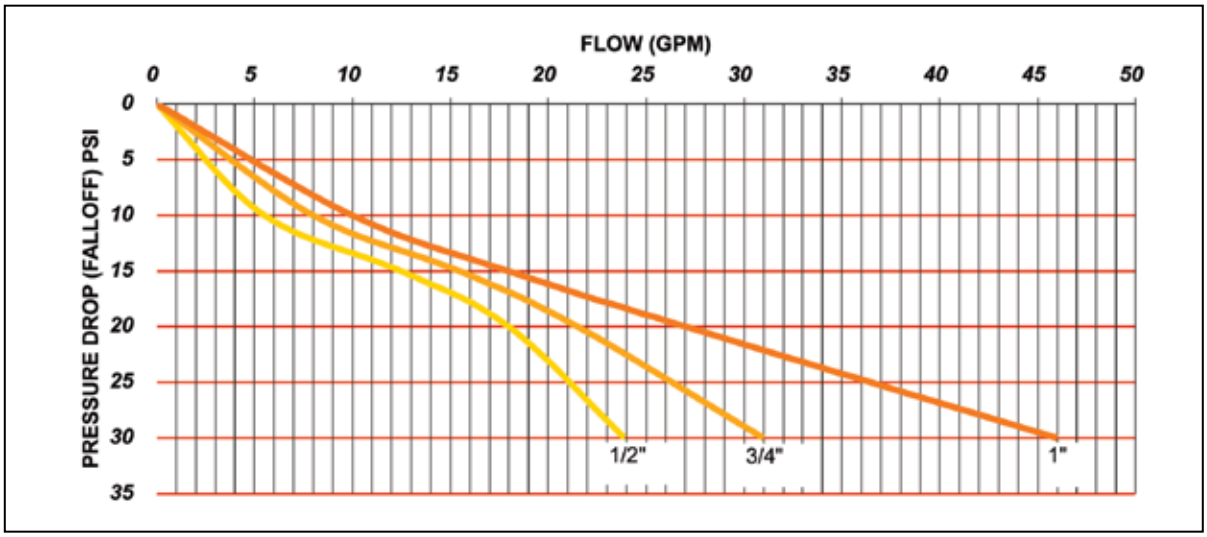


MATERIALS

Item	Description
1	Adjusting Bolt (Stainless Steel)
2	Nut (Stainless Steel)
3	Tee Nut (Zinc Plated Steel)
4	Cap (G.F. Celcon)
5	Hex Bolt (300 Series SS)
6	Pressure Plate (Brass)
7	Diaphragm (FDA EPDM W/Polyester)
8	Friction Ring (Brass)
9	Cartridge Ret. Washer (Brass)
10	Stem (Brass)
11	O'Ring (FDA Nitrile)
12	O'Ring (FDA Nitrile)
13	Cartridge Housing (G.F. Noryl)
14	Screen (300 Series SS)
15	O'Ring (FDA Nitrile)

Item	Description
16	O'Ring (FDA Nitrile)
17	O'Ring (FDA Nitrile)
18	Lock Nut (300 Series SS)
19	Seat Ring (300 Series SS)
20	Seat Disc (FDA EPDM)
21	Disc Holder (Brass)
22	Clean-Out Plug (Brass)
23	Body, Machined (Cast Bronze)
24	Spring Disc (Zinc Plated Steel)
25	Nameplate (Aluminum)
26	Spring (Zinc Plated Music Wire)
27	Union Nut (Brass)
28	Union Washer (FDA Nitrile)
29	Union Tail Piece (Brass)

FLOW CHART



NOTE: Flow curves are based on static conditions of: Inlet pressure = 100 psig: Outlet pressure = 50 psig. All curves are for female NPT versions only. Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.

JUMP KIT - PRC SERIES

Part Number	Size (in.)	Description
36C-404-JK	3/4	Thread
36C-405-JK	1	
36C-504-JK	3/4	Solder
36C-505-JK	1	
36C-504-JKC	3/4	CPVC
36C-505-JKC	1	
36C-904-JK	3/4	Pex

WATER PRESSURE REDUCING VALVES

Compact Design for Residential & Light Commercial Applications

PRC SERIES (36C)

		PRESSURE DIFFERENTIAL (PSI)		
		25	50	75
PIPE SIZE	*FALL OFF (PSI)	Water Capacity (GPM)		
1/2"	5	1.3	1.5	1.7
	10	4.7	5.5	6.3
	15	10.6	12.5	14.4
	20	15.3	18.0	20.7
	30	20	24	27
3/4"	5	2.1	2.5	2.9
	10	6.8	8.0	9.2
	15	13.2	15.5	17.8
	20	18.3	21.5	24.7
	30	27	31	35
1"	5	2.8	3.3	3.7
	10	8.5	10.0	11.5
	15	15.3	18.0	20.7
	20	21.3	25.0	28.8
	30	40	46	51

* *Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.*

MODEL NUMBER MATRIX

PRC X	X	X	X	X	X	
UNION	GAUGE	PRESSURE SETTING (ADJ)	MISCELLANEOUS	SIZE	CONNECTION	LEAD FREE
Blank - Single Union	Blank - No Gauge	Blank - 25-75 psig	Blank - No Option	12 - 1/2"	Blank - FNPT x FNPT	Blank - Non-Lead Free
D - Double Union	P - With Gauge Port	L - 10-35 psig		34 - 3/4"	**SINGLE UNION ONLY**	LF - Lead Free
T - No Union	G - With Gauge	H - 75-125 psig		1 - 1"	Blank - FNPT x FNPT	
					S - Solder x FNPT	
					C - CPVC x FNPT	
					X - PEX x FNPT	
					E - 90° Elbow x FNPT	
					M - Meter x FNPT	
					PR - Press x FNPT	
					DOUBLE UNION ONLY	
					S - Solder x Solder	
					C - CPVC x CPVC	
					X - PEX x PEX	
					B - BSPT x BSPT	
					SC - Solder x CPVC	
					SX - Solder x PEX	
					CX - CPVC x PEX	
					CE - CPVC x 90° Elbow	
					SE - Solder x 90° Elbow	
					PR - Press x Press	

Note: Two letter union type offered in double union connection only. Union connections are shipped loose.

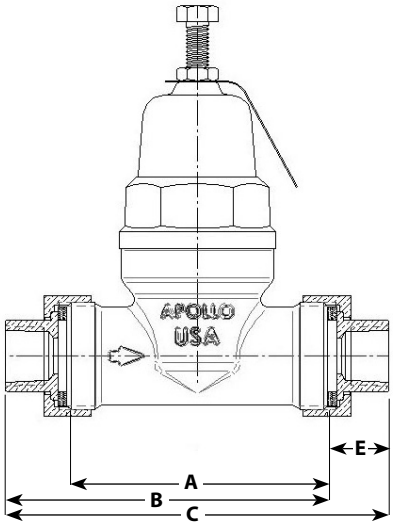
PART NUMBER MATRIX

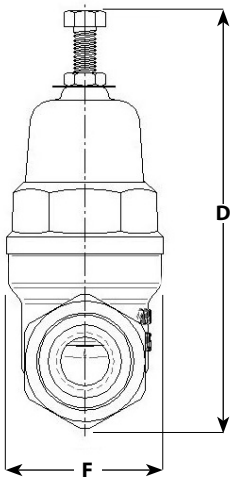
36C 36CLF X	X	X	X	X
CONNECTION	SIZE	GAUGE	PRESSURE (ADJUSTABLE)	OPTION
1 - Single Union NPT	03 - 1/2"	0 - No Gauge	1 - 25-75 psig	C - CPVC Tailpiece
2 - No Union NPT	04 - 3/4"	P - With Gauge Port Plugged	2 - 10-35 psig	X - Extended Union
3 - Single Union Solder x NPT	05 - 1"	G - With Gauge	3 - 75-125 psig	PR - Press
4 - Double Union NPT				
5 - Double Union Solder				
6 - Single Union Meter				
7 - Single Union 90° Elbow Meter				
9 - Double Union Pex				

WATER PRESSURE REDUCING VALVES

Light Duty Residential & Commercial Application

PRE SERIES (36E)



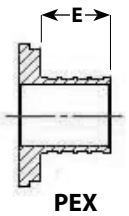


Designed for light duty residential and commercial applications to protect water supplies from excessive pressure. Excellent flow performance at low pressure drop. The dezincification resistant bronze body and dielectric polymer cage provide maximum corrosion resistance. Designed for easy in-line servicing with simple cartridge removal. They meet ASSE 1003 and CSA B356 standards. They are listed with IAPMO and the city of Los Angeles.

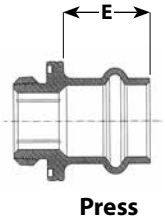
FEATURES

- Balanced piston design
- Sealed cage for vault installations
- Built-in thermal expansion by-pass
- Integral stainless steel strainer
- Modular seat disc and strainer cartridge
- Control pressure ranges: 15-75 psi and 75-150 psi
- NPT, Solder, PEX, CPVC and Press and Push connections
- Maximum supply pressure: 400 psig
- Working temperature range: 33°F-180°F
- **100% manufactured in USA**
- **Lead Free** option (36ELF)

Size	Connection	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	WT. (Union) (lbs)
1/2	Thread	3.63	4.50	5.38	6.00	0.63	2.75	2.4
	Solder	3.63	4.50	5.50	6.00	0.50	2.75	2.4
	PEX	3.63	4.50	5.50	6.00	0.63	2.75	2.4
	CPVC	3.63	4.25	5.00	6.00	0.50	2.75	2.4
	Press	N/A	N/A	5.48	6.00	0.74	2.75	2.4
3/4	Thread	3.63	4.50	5.50	6.00	0.63	2.75	2.4
	Solder	3.63	4.50	5.50	6.00	0.75	2.75	2.4
	PEX	3.63	4.63	5.63	6.00	0.63	2.75	2.4
	CPVC	3.63	4.50	5.50	6.00	0.63	2.75	2.4
	Press	N/A	N/A	5.79	6.00	0.88	2.75	2.4
1	Thread	3.63	4.63	5.75	6.00	0.63	3.38	2.7
	Solder	3.63	4.63	5.75	6.00	0.88	3.38	2.7
	PEX	3.63	4.75	6.00	6.00	0.75	3.38	2.7
	CPVC	3.63	4.75	6.00	6.00	0.94	3.38	2.7
	Press	N/A	N/A	5.91	6.00	0.88	3.38	2.7



PEX

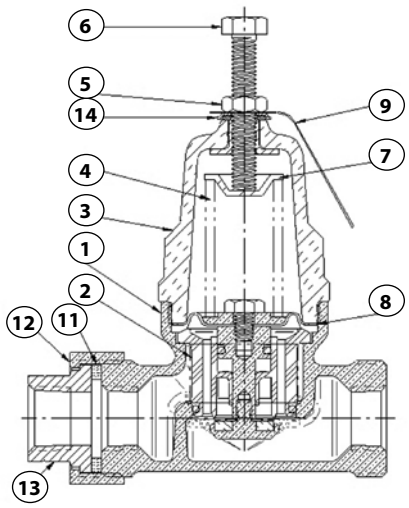


Press

WATER PRESSURE REDUCING VALVES

Light Duty Residential & Commercial Application

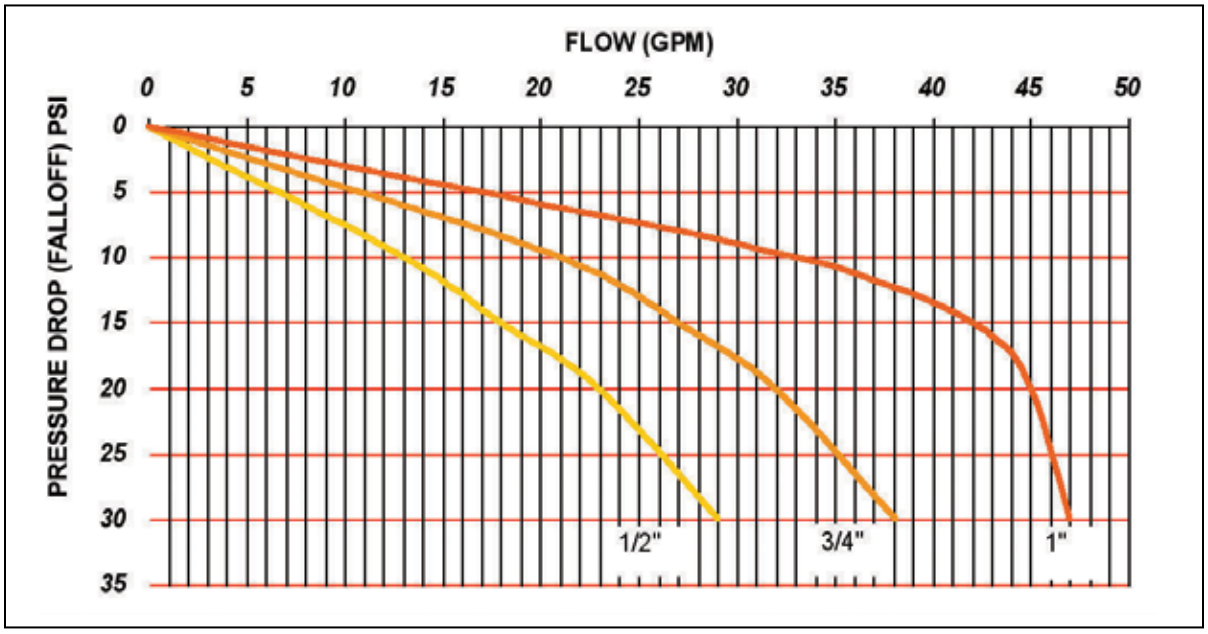
PRE SERIES (36E)



MATERIALS

Item	Description
1	Body (Bronze, ASTM B584-C84400)
2	Assy, Cartridge (Noryl/Brass/EPDM)
3	Assy, Cap (Acetal)
4	Spring (Music Wire ASTM A228)
5	Nut 5/16-18 (Stainless Steel)
6	Bolt, 5/16-18 x 2 (Stainless Steel)
7	Washer, Spring (Steel Plated)
8	Friction Ring (Brass)
9	Nameplate (Aluminum)
11	Washer (BUNA-N)
12	Nut, Union (Brass, ASTM B16-C36000)
13	Tailpiece (Brass, ASTM B16-C36000)

FLOW CHART



Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.

WATER PRESSURE REDUCING VALVES

Light Duty Residential & Commercial Application

PRE SERIES (36E)

ASSE 1003 UPC CSA

		PRESSURE DIFFERENTIAL (PSI)		
		25	50	75
PIPE SIZE	*FALL OFF (PSI)	Water Capacity (GPM)		
1/2"	10	10	13	16
	15	13	18	22
	20	17	23	29
	30	22	29	36
3/4"	10	16	21	26
	15	20	27	32
	20	24	32	40
	30	29	38	48
1"	10	25	33	41
	15	30	42	52
	20	34	45	56
	30	35	47	59

* *Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.*

MODEL NUMBER MATRIX

PRE X	X	X	X	
UNION	PRESSURE SETTING (ADJ)	SIZE	CONNECTION	LEAD FREE
Blank - Single Union x NPT	Blank - 15-75 psig	12 - 1/2"	Blank - FNPT	LF - Lead Free
D - Double Union	H - 75-125 psig	34 - 3/4"	S - Solder	
T - No Union		1 - 1"	C - CPVC	
			P - PUSH	
			X - PEX	
			PR - Press	

PART NUMBER MATRIX

36E 36ELF -	1	X	X		X	X
	STYLE	UNION	SIZE	OPTION	PRESSURE	CONNECTION
36E - Standard		0 - No Union NPT	3 - 1/2"	B - Bronze	1 - 15-75 psig	T - FNPT Thread
36ELF - Lead Free		1 - Single Union	4 - 3/4"	Cap	3 - 75-150 psig	S - Solder
		2 - Double Union	5 - 1"			C - CPVC
						P - Push
						X - PEX
						PR - Press

WATER PRESSURE REDUCING VALVES

Super Capacity for Commercial, Institutional & Industrial Applications

PRH SERIES (36H)

Apollo PRH Series pressure reducing valves offer high performance in heavy-duty applications. They're designed with a larger diaphragm and orifice area to yield the highest water flow water capacities in the industry.

PRH pressure reducing valves' integral by-pass protects against thermal expansion. Built for extended service, these models include bronze body construction and stainless steel replaceable seat. They meet ASSE 1003 and CSA B356 standards. They are listed with IAMPO and city of Los Angeles.

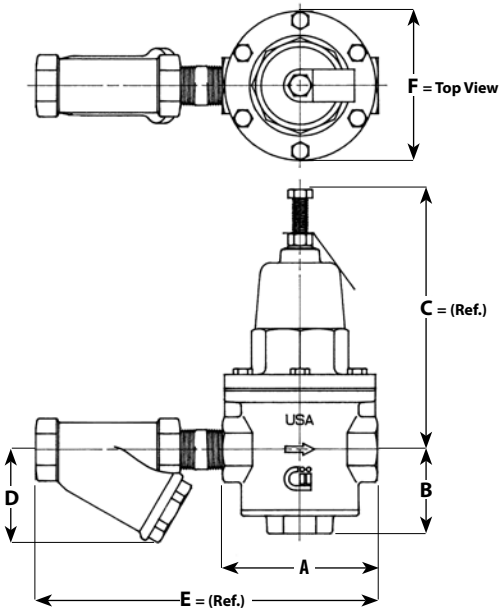
These heavy-duty valves are available with optional in-line strainer and 150 lb. ANSI B16.24 integral bronze flange connections. (2-1/2" and 3" only)

FEATURES

- Bronze body and spring cage for superior corrosion resistance and dependability
- SS fasteners, spring, seat, and adjustment screw
- Suitable for supply pressures to 400 psi
- Every valve is 100% factory set and tested
- Standard factory setting is 50 psi
- Operating temp: 33 - 180°F
- Integral thermal expansion by-pass
- In-line repairable, bottom access
- **USA materials and manufacture**
- **Lead Free** option (36HLF)

APPROVALS:

- ASSE 1003
- CSA B356

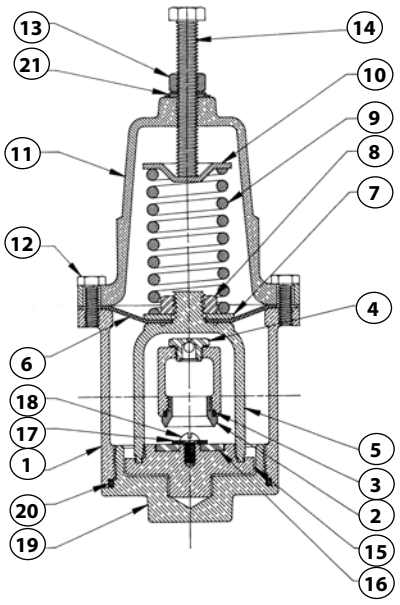


Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Wt. w Strainer	Wt. w/o Strainer
NPT								
1/2"	4.13	2.25	7.00	1.88	8.38	4.00	7.0	6.00
3/4"	4.13	2.25	7.00	2.44	9.00	4.00	8.0	6.00
1"	4.81	2.31	7.50	4.00	10.25	4.69	12.0	8.00
1-1/4"	6.75	3.81	10.00	3.38	12.50	6.50	29.0	24.00
1-1/2"	6.75	3.19	10.00	3.88	13.13	6.50	29.0	23.00
2"	8.13	3.50	12.50	4.63	16.00	7.63	47.0	38.00
2-1/2"	8.13	3.50	12.50	5.94	16.69	7.63	49.0	37.00
3"	10.38	3.94	15.13	6.94	20.50	9.75	87.0	70.00
Flanged								
2-1/2"	10.38	3.50	12.50	7.13	21.69	7.63	105.0	55.00
3"	12.50	3.94	15.13	8.13	24.50	9.75	136.0	92.00

WATER PRESSURE REDUCING VALVES

Super Capacity for Commercial, Institutional & Industrial Applications

PRH SERIES (36H)

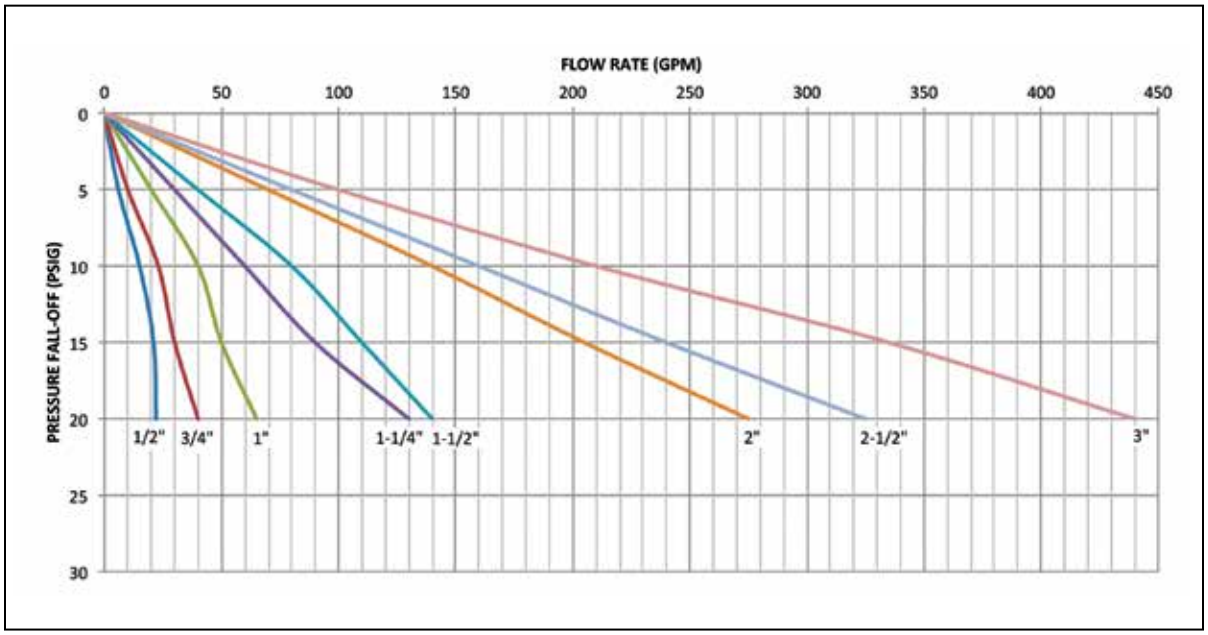


MATERIALS

Item	Description
1	Body (Bronze)
2	Seat (SS)
3	Seat O-Ring (Nitrile)
4	By-Pass Assembly
5	Yoke (Bronze)
6	Diaphragm (Nitrile W/Nylon
	Reinforcement)
7	Diaphragm Washer (SS)
8	Diaphragm Nut (SS)
9	Spring (SS)
10	Spring Retainer (SS)

Item	Description
11	Cap (Bronze)
12	Cap Bolts (SS)
13	Lock Nut (SS)
14	Adjustment Screw (SS)
15	Seat Disc Holder (Bronze)
16	Seat Disc (EPDM)
17	Seat Disc Washer (SS)
18	Seat Screw (SS)
19	Bottom Cover (Bronze)
20	Bottom Cover O-Ring (Nitrile)
21	Cage-Sealing Washer (SS)

FLOW CHART



NOTE: Flow curves are based on static conditions of: Inlet pressure = 100 psig: Outlet pressure = 50 psig. All curves are for female NPT versions only. Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.

WATER PRESSURE REDUCING VALVES

Super Capacity for Commercial, Institutional & Industrial Applications

PRH SERIES (36H)

		PRESSURE DIFFERENTIAL (PSI)		
		25	50	75
PIPE SIZE	*FALL OFF (PSI)	Water Capacity (GPM)		
1/2"	5	8.5	10.0	11.5
	10	13.6	16.0	18.4
	15	17.9	21.0	24.2
	20	21.3	25.0	28.8
3/4"	5	10.6	12.5	14.4
	10	20.4	24.0	27.6
	15	28.1	33.0	38.0
	20	34.0	40.0	46.0
1"	5	17.0	20.0	23.0
	10	29.8	35.0	40.3
	15	40.8	48.0	55.2
	20	51.0	60.0	69.0
1-1/4"	5	21.3	25.0	28.8
	10	51.9	61.0	70.2
	15	80.8	95.0	109.3
	20	113.1	125.0	143.8
1-1/2"	5	29.8	35.0	40.3
	10	61.5	72.3	83.1
	15	90.1	106.0	121.0
	20	113.1	133.0	153.0
2"	5	55.3	65.0	74.8
	10	126.7	149.0	171.4
	15	174.3	205.0	235.8
	20	231.20	272.0	312.80
2-1/2"	5	58.7	69.0	79.4
	10	132.6	156.0	179.4
	15	200.6	236.0	271.40
	20	271.20	319.0	366.9
3"	5	80.8	95.0	109.3
	10	176	207	238.1
	15	282.5	332.4	382.3
	20	365.5	430.0	494.5

* *Fall Off is the difference between the PRV's set pressure and the flowing pressure at any given demand.*

MODEL NUMBER MATRIX

PRH - X	X	X	X	
CONNECTIONS	MISCELLANEOUS	PRESSURE SETTING	SIZE	LEAD FREE
T - FNPT x FNPT	Blank - No Strainer	Blank - 25-75 psig	12 - 1/2"	Blank - Non-Lead Free
F - Flanged	Y - With Strainer	L - 10-35 psig	34 - 3/4"	LF - Lead Free
		H - 75-125 psig	1 - 1"	
			114 - 1-1/4"	
			112 - 1-1/2"	
			2 - 2"	
			212 - 2-1/2"	
			3 - 3"	

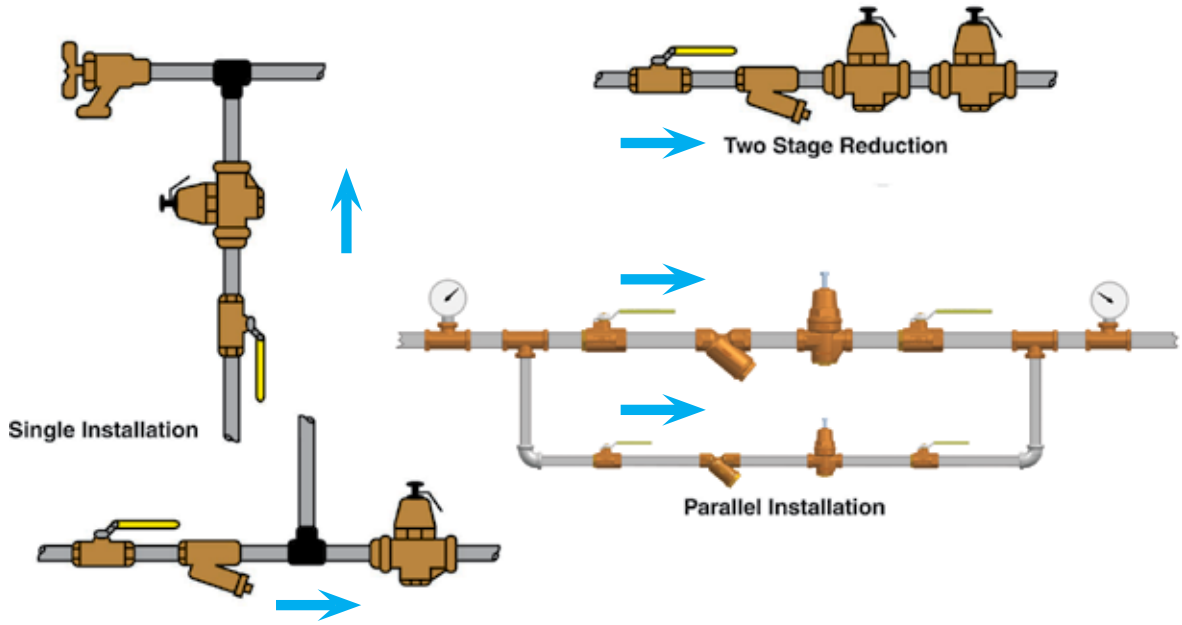
Note: ANSI 150 lb. flange connection for 2-1/2" and 3"only. Not all variations are available in each size. Check with customer service.

PART NUMBER MATRIX

36H 36HLF - X	X	X -	0X
END CONNECTIONS	OPTIONS	SIZE	PRESSURE RANGE
2 - FNPT x FNPT (Standard)	0 - Standard	3 - 1/2"	01 - 25-75 psig (Standard)
7 - Flanged (2-1/2" - 3" only)	1 - With Y-Strainer	4 - 3/4"	02 - 10-35 psig
		5 - 1"	03 - 75-125 psig**
		6 - 1-1/4"	
		7 - 1-1/2"	** *Can be adjusted to 75-165 psig*
		8 - 2"	
		9 - 2-1/2"	
		0 - 3"	

WATER PRESSURE REDUCING VALVES

Installation Configurations



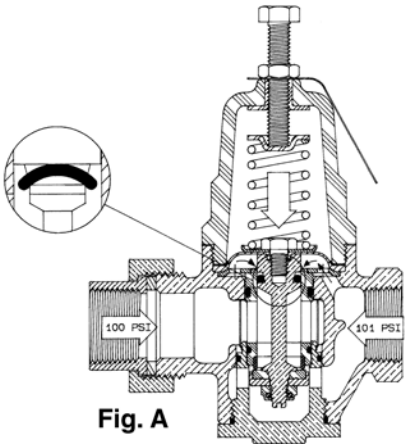


Fig. A

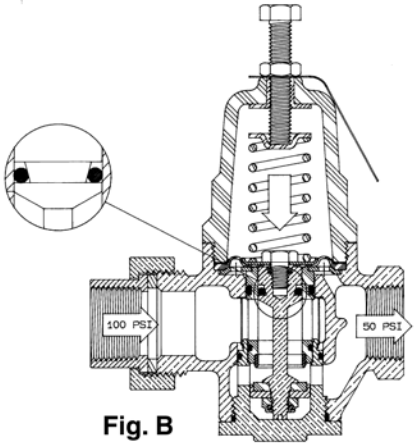


Fig. B

SIZING WPRV

1. **WHAT IS THE SUPPLY PRESSURE?**

2. **WHAT IS THE DESIRED REDUCED DOWNSTREAM PRESSURE?**

   The reduced pressure prevents damage to water fixtures and downstream piping. Optimal performance is achieved at a 2:1 ratio. Example: 100 psi supply pressure, 50 psi static downstream pressure. 50 psi is the default factory setting.

   Multiple valves should be used for large pressure drop requirements.

3. **WHAT IS THE CALCULATED FLOW REQUIREMENT MINIMUM & MAXIMUM?**

   Do not size for maximum flow requirement. An over sized valve will operate in a nearly closed position causing premature wear and undesirable noise.

   If normal flow requires a line size regulator, a smaller regulator, piped parallel to the main regulator should be considered. Adjusting the smaller bypass regulator at 5-10 psi higher than the main regulator will help prevent premature wear and noise.

4. **SIZE FOR 10-20 PSI FALL OFF (EXAMPLES CAN BE FOUND IN CHART)**

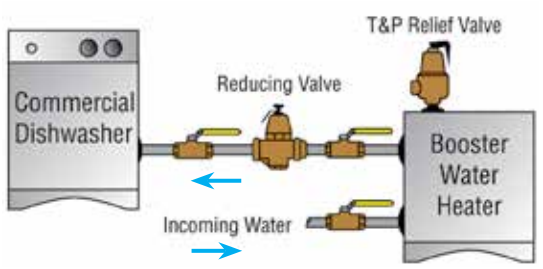
   Falloff is normal. As flow increases, pressure decreases. As flow decreases, pressure increases. Low flow at high pressure forces the valve to operate in a near closed position. Sizing at 10-15 psi falloff will allow the valve to operate nearer the middle of its operating range. Mid range improves performance and durability.

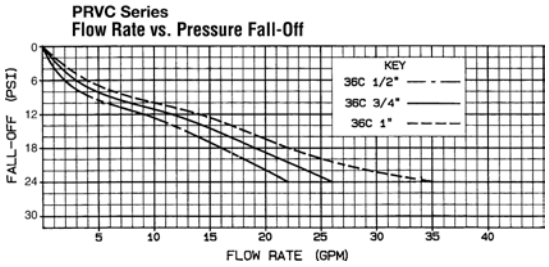
THERMAL EXPANSION CONSIDERATIONS

Installing a pressure reducing valve creates a closed water system. Thermal expansion occurs in a closed system when water is heated and pressure builds up. A thermal by-pass designed into the reducing valve can dissipate the expanded pressure back to the service main.

When the system pressure in a closed system increases to a pressure greater than the supply pressure by just one pound, the o-ring on the stem will flex (see Fig. A) and allow the excess pressure to be relieved to the supply side until pressures on both the system and supply sides are equal. When a faucet on the system side in used, thus lowering the pressure, the valve opens as soon as the system pressure falls below the set outlet pressure, typically 50 psi. The valve and the system then return to normal as shown in Fig. B above. The PRH features a ball and seat type of check valve as a thermal by-pass but the principle is similar.

WATER PRESSURE REDUCING VALVES





SPECIALLY DESIGNED LOW PRESSURE MODELS

Apollo's low pressure reducing valves are designed to provide optimal performance low pressure (10 to 35 PSI) for residential and commercial applications.

FLOW/PERFORMANCE CURVES

Apollo offers performance curves for every version of its PR Series pressure reducing valves. All curves plot the rate of flow against the reduced pressure fall-off.

In all charts, zero (0) indicates a no-flow condition. Figures below zero on the flow curve chart show the pressure change or fall-off needed to produce the flows indicated by the curves for valves of different sizes. It is important to allow for some fall-off from the set pressure downstream during flow conditions.

EXAMPLE:

A PRC 3/4" with an inlet pressure of 100 psi is set to an outlet pressure of 50 psi in the static, no-flow condition. The flow demand through the valve is expected to be 19 gpm. The chart below shows that the fall-off at that flow rate is 18 psi, so the pressure will drop from 50 psi to about 32 psi at 19 gpm.

Although this chart shows curves at a 50 psi differential, curves for other settings are similar. The curve shifts slightly to the left for a smaller differential and to the right for a greater differential.

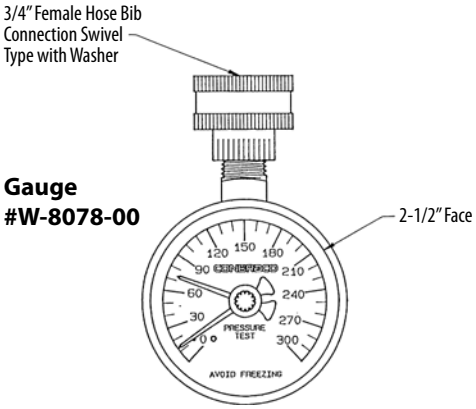
For every model and size, the amount of water passed through the valve depends on the difference between the inlet pressure and the outlet pressure. As the pressure differential increases, the volume of water increases.

Reduced pressures must drop off slightly from the setting of the valve as flow starts. As flow increases, the pressure must continue to fall.

Required capacity depends entirely on where and how the valve is used. In typical systems where water is supplied to lavatories, toilets, bath tubs and showers in homes, schools, apartments hospitals, a 25 to 30 percent pressure drop-off is satisfactory.

In laundries, car washes, commercial dishwashers and other industrial and commercial applications, a 10 to 15 percent pressure drop-off may be preferred.

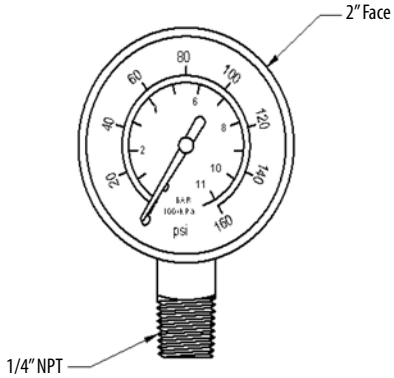
Generally, the greater the output variation, the higher the valve's capacity. A larger valve will offer more capacity with less pressure fall-off than a smaller valve of the same model. Also valve capacities can vary depending on the size of the piping. Apollo pressure reducing valves offer a wide range of performance; selecting the best valve for the application depends on more than pipe size alone. The Apollo technical staff is available to assist you.



Gauge #W-8078-00

Hose Bibb

Standard Brass Gauge #W-7793-00
Certified Lead Free #W-2799-00



Outlet Pressure Gauge

GAUGES

Apollo offers the gauges necessary for proper selection, use and maintenance of pressure reducing valves.

The hose bibb maximum pressure indicator gauge or pressure test gauge is used in determining the need for pressure reducing valves and the amount of reduction necessary. This gauge is attached to a hose bib or sill cock which is then turned to full open position. The gauge is left in place for a period of time, usually over night, to record the maximum pressure level at that location.

An outlet pressure gauge allows a quick visual check of outlet water pressure. These gauges are often installed permanently so that any unexpected increase or decrease in pressure can be detected and dealt with before it results in damage to the system. Apollo offers a 2" outlet pressure gauge as an option on the PRC. Both types of gauges are available from your Apollo distributor.

REPAIR KITS AVAILABLE

Repair parts are available for all Apollo pressure reducing valves. Convenient pre-packaged repair kits for each model are also available.