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RELIABLE PROTECTION FOR A WIDE RANGE OF RESIDENTIAL, COMMERCIAL AND INDUSTRIAL APPLICATIONS



water pressure reducing valves

#### **Table of Contents**

| ProductPage                        |
|------------------------------------|
| How Pressure Reducing Valves Work3 |
| 36 Series 4                        |
| 36C Series 6                       |
| 36H Series 8                       |
| Installation Configurations10      |
| Thermal Expansion and By-Pass10    |
| Low Pressure Models11              |
| Flow/Performance Curves11          |
| Gauges11                           |
| Repair Kits11                      |

#### Solving Overpressure Problems

Conbraco 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 while minimizing hammer shock.

# Automatic Pressure Reduction

Pressure reducing valves are designed to automatically reduce a high inlet pressure to a lower outlet pressure. In most plumbing code jurisdictions, pressure reducing valves are mandated whenever 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 Cost Of Economizing

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

Once installed, Conbraco pressure reducing valves should 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.



#### How Pressure Reducing Valves Work

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

Compression is applied to the pressure spring by an adjusting screw working on a spring button. The factory setting is 50 psig.

During static (no-flow) conditions, the valve is closed because the diaphragm

force is greater than the valve spring force.

The amount of force on the diaphragm by the valve spring determines the outlet — the reduced pressure downstream of the regulating valve.

Outlet pressure drops once flow begins. The diaphragm senses the pressure drop and

force from the spring begins opening the valve.

Conbraco's internal design enables the regulating valve to react smoothly and quickly to changing flow demands, while protecting against inlet pressure change. As water enters the valve at pressures

of 100 psig or more, it flows into the regulator past the open seat, under the diaphragm and through to the outlet pipe, stopping at the closed faucet.

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 slightly below the "set" pressure.

# Reduced Pressure Fall-Off

Fall-off is the reduced pressure change that occurs when a valve opens: the difference between the static pressure and residual or 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 faucets (on toilets, tubs, showers, sinks) 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 dur-

ing flow conditions, the valve or line size is too small for the job.



### Series 36

#### For Residential & Light To Medium Commercial Applications



Conbraco Series 36 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.

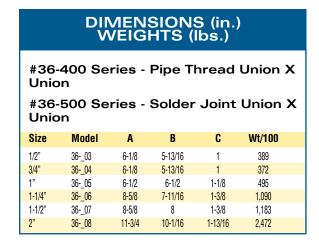
Factory set at 50 PSI, they adjust with a turn of a screw. They feature a built-in by-pass and strainer, and comply with ASSE 1003, ANSI A112.26.2, CSA B356 and IAPMO standards.

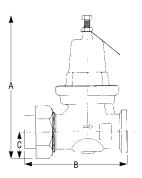
Series 36 valves are built for long, reliable service with an all-bronze body and high-capacity stainless steel strainer. Available with or without gauge tapping.

#### **Features**

- Adjustable pressure setting (standard: 50 PSI)
- Replaceable cartridge assembly
- Stainless steel strainer
- Easy maintenance
- Hot or cold water (temperature range: 33-180°F)
- Pipe union, female NPT or solder-joint connections

|        | DIMENSIONS (in.)<br>WEIGHTS (lbs.) |                 |                 |         |                |  |  |
|--------|------------------------------------|-----------------|-----------------|---------|----------------|--|--|
|        | -100 Se<br>nale NP                 |                 | Pipe T          | hread   | Union X        |  |  |
|        | -300 Se<br>nale NP                 |                 | Solder          | Joint   | Union X        |  |  |
| Size   | Model                              | Α               | В               | C       | Wt/100         |  |  |
| 1/2"   | 36- 03                             | 6 1/8           | 4 5/8           | 1       | 350            |  |  |
| 3/4"   | 36- 04                             | 6 1/8           | 4 5/8           | 1       | 340            |  |  |
| 1"     | 3605                               | 6 1/2           | 5 1/8           | 1 1/8   | 450            |  |  |
| 11/4"  | 3606                               | 8 5/8           | 6 3/8           | 1 3/8   | 1,020          |  |  |
| 11/2"  | 3607<br>36- 08                     | 8 5/8<br>11 3/4 | 6 5/8<br>8 7/16 | 1 3/8   | 1,045<br>2,250 |  |  |
|        | -200 Se<br>nale NP                 |                 | Femal           | e NPT   | x              |  |  |
| Size   | Model                              | Α               | В               | C       | Wt/100         |  |  |
| 1/2"   | 36-203                             | 6-1/8           | 3-11/16         | 1       | 311            |  |  |
| 3/4"   | 36-204                             | 6-1/8           | 3-11/16         | 1       | 305            |  |  |
| 1"     | 36-205                             | 6-1/2           | 4-1/16          | 1-1/8   | 415            |  |  |
| 1-1/4" | 36-206                             | 8-5/8           | 5-3/16          | 1-3/8   | 910            |  |  |
| 1-1/2" | 36-207                             | 8-5/8           | 5-5/16          | 1-3/8   | 909            |  |  |
| 2"     |                                    | 11-3/4          | 7-1/8           | 1-13/16 | 1.880          |  |  |







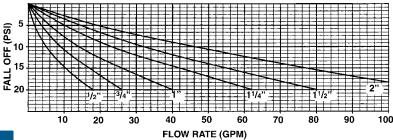
#### 36 Series PRV Flow Rate vs. Pressure Fall - Off

NOTE: Flow curves are based on static conditions of: Inlet pressure = 100 psig:

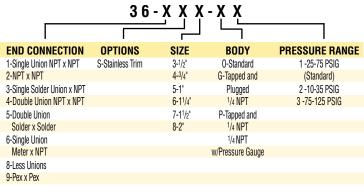
Outlet pressure = 50 psig. All curves are for female NPT versions only.

Pressure fall-off is the pressure by which the outlet pressure drops as flow demand is needed.

| 36 SERIES WATER CAPACITY (GPM) |          |                             |       |       |  |  |  |
|--------------------------------|----------|-----------------------------|-------|-------|--|--|--|
|                                |          | PRESSURE DIFFERENTIAL (PSI) |       |       |  |  |  |
| PIPE SIZE                      | FALL OFF |                             |       |       |  |  |  |
|                                | (PSI)    | 25                          | 50    | 75    |  |  |  |
| 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 |  |  |  |

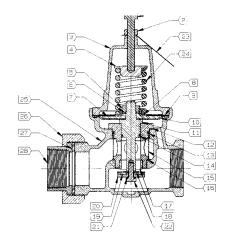


#### **ORDERING NUMBERS**



NOTE: Not all variations are available in each size. Check with customer service.

#### **Materials**



| Item | Description                        | Item | Description                     |
|------|------------------------------------|------|---------------------------------|
| 1    | Adj. Screw (Zinc Plated Stl.)      | 15   | Screen (300 Series SS)          |
| 2    | Hex Nut (Zinc Plated Stl.)         | 16   | Seal, Cartridge (Polypropylene) |
| 3    | Cap (Cast Bronze)                  | 17   | Seat Ring (300 Series SS)       |
| 4    | Spring Disc (Zinc Plated Steel)    | 18   | Washer (Brass)                  |
| 5    | Hex Nut (Zinc Plated Steel)        | 19   | Seat Disc (FDA Nitrile)         |
| 6    | Lock Washer (Zinc Plated Steel)    | 20   | Seat Holder (Brass)             |
| 7    | Pressure Plate (Zinc Plated Steel) | 21   | Washer (Polypropylene)          |
| 8    | Bushing (Brass)                    | 22   | Seat Screw (300 Series SS)      |
| 9    | Friction Ring (Zinc Plated Steel)  | 23   | Nameplate (Aluminum)            |
| 10   | Diaphragm (FDA Nitrile)            | 24   | Spring (Zinc Plated Music Wire) |
| 11   | Stem (Brass)                       | 25   | Body, Machined (Cast Bronze)    |
| 12   | Cart. Housing (Brass)              | 26   | Union Nut (Cast Bronze)         |
| 13   | O-ring (FDA Nitrile)               | 27   | Union Washer (FDA Nitrile)      |
| 14   | O-ring (FDA Nitrile)               | 28   | Union Tail Piece (Brass)        |



#### Jump Kit - 36 Series

Same rough end dimensions as a PRV but used as a spacer to flush system.

| No.       | Size(in.) | Description                  |
|-----------|-----------|------------------------------|
| 36-406-JK | 1-1/4     | for 36-406 Series (threaded) |
| 36-506-JK | 1-1/4     | for 36-506 Series (solder)   |



# Series 36C For Residential & Light Commercial Applications



Versatile, all-purpose Conbraco Series 36C pressure reducing valves handle pressures up to 400 PSI. Compact and with a built-in 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, 36C valves offer an all-bronze body, stainless steel strainer and seat. They comply with ASSE 1003 (ANSI A112.26.2), CSA B356 and IAPMO standards.

Designed for easy in-line servicing, 36C 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**

- Working temperature to 180°F
- Standard factory setting: 50 PSI
- Adjusts from 25 to 75 PSI (standard)
- Designed to meet local plumbing codes
- Balanced piston design
- Extended control of high pressure conditions using brass adjusting screw
- Pipe union, meter union, female NPT or solder-joint connection options

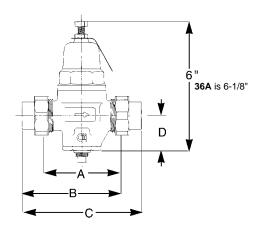


#### Compact 36A Series Pressure Reducing Valve

The series 36A pressure reducing valves features are the same as the series 36C, but designed for easy in-line servicing via the thermoplastic cage.

| 36C DIMENSIONS (in.) |                   |                               |                                   |                               |                                     |                   |  |
|----------------------|-------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------------|-------------------|--|
| Dimensions (inches)  | Non-ur<br>(npt x  |                               | Inlet-ur<br>(npt, solo<br>meter x | der or                        | Double-u<br>(npt x nj<br>solder x s | ot or             |  |
| Size                 | 1/2" & 3/4"       | 1"                            | 1/2" & 3/4"                       | 1"                            | 1/2" <b>&amp;</b> 3/4"              | 1"                |  |
| Α                    | 3 1/2             | 3 3/4                         | N/A                               | N/A                           | N/A                                 | N/A               |  |
| В                    | N/A               | N/A                           | 4 13/32                           | 4 3/4                         | N/A                                 | N/A               |  |
| С                    | N/A               | N/A                           | N/A                               | N/A                           | 5 <sup>3</sup> /8                   | 5 <sup>7</sup> /8 |  |
| D                    | 1 <sup>5</sup> /8 | 1 <sup>1</sup> / <sub>2</sub> | 1 <sup>5</sup> /8                 | 1 <sup>1</sup> / <sub>2</sub> | 1 <sup>5</sup> /8                   | 1 <sup>1</sup> /2 |  |

| 36A DIMENSIONS (in.) |                     |                   |  |                   |   |                   |  |
|----------------------|---------------------|-------------------|--|-------------------|---|-------------------|--|
| Dimensions (inches)  | Non-ur<br>(npt x    |                   | Inlet-union<br>(npt, solder or<br>meter x npt) |                   | Double-union<br>(npt x npt or<br>solder x solder) |                   |  |
| Size                 | 1/2" & 3/4"         | 1"                | 1/2" & 3/4"                                    | 1"                | 1/2" <b>&amp;</b> 3/4"                            | 1"                |  |
| Α                    | 2 1/2               | 3 3/4             | N/A  | N/A               | N/A   | N/A               |  |
| В                    | N/A                 | N/A               | 4 <sup>13</sup> / <sub>32</sub>                | 4 3/4             | N/A   | N/A               |  |
| С                    | N/A                 | N/A               | N/A  | N/A               | 5 <sup>3</sup> /8                                 | 5 <sup>3</sup> /8 |  |
| D                    | 1 <sup>11</sup> /16 | 1 <sup>5</sup> /8 | 1 <sup>11</sup> / <sub>16</sub>                | 1 <sup>5</sup> /8 | 1 <sup>11</sup> /16                               | 1 <sup>5</sup> /8 |  |







#### 36C Series PRV Flow Rate vs. Pressure Fall - Off

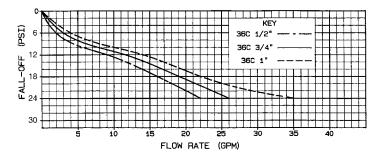
| 36C SERIES WATER CAPACITY (GPM) |                   |          |             |             |  |  |  |
|---------------------------------|-------------------|----------|-------------|-------------|--|--|--|
|                                 |                   | PRESS    | URE DIFFERE | NTIAL (PSI) |  |  |  |
| PIPE SIZE                       | FALL OFF<br>(PSI) | 25 50 75 |             |             |  |  |  |
| 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        |  |  |  |
| 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        |  |  |  |
| 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        |  |  |  |

Use flow chart and curves above for series 36A and 36B series.

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.

Pressure fall-off is the pressure by which the outlet pressure drops as flow demand is packed.



#### **Ordering Numbers**

36C-XOX-XX-X

| END CONNECTION                        | SIZE     | CLEANOUT                            | PRESSURE RANGE       | OPTIONS                |
|---------------------------------------|----------|-------------------------------------|----------------------|------------------------|
| 1-Single Union NPT x NPT (U)          | 3 - 1/2" | 0-Standard                          | 1 -25-75 PSIG        | S-Stainless Steel Trim |
| 2-NPT x NPT (Standard)                | 4 - 3/4" | G-Tapped and Plugged 1/4" NPT (-GT) | 2 -10-35 PSIG (-LP)  | X-Extended Union       |
| 3-Single Solder Union x NPT (-US)     | 5 - 1"   | P-Tapped and Plugged 1/4" NPT       | 3 -75-125 PSIG (-HP) |                        |
| 4-Double Union NPT x NPT (-U2T)       |          | w/Pressure Gauge (-GG)              |                      |                        |
| 5-Double Union Solder x Solder (-U2S) |          |                                     |                      |                        |

7-90° Elbow Meter Union x NPT (-EMT)

8-Less Unions

9-Pex x Pex

NOTE: Not all variations are available in each size. Check with customer service.

6-Single Union Meter x NPT (-UM)

# 

#### **Materials**

| 1 2 3 4 5 6 7 8 9 10 11 12 13 | Description Bolt (Brass) Nut (Brass) Tee Nut (Zinc Plated Steel) Cap (G.F. Celcon) Hex Bolt (300 Series SS) Pressure Plate (Brass) Diaphragm (FDA EPDM W/Polyester) Friction Ring (Brass) Cartridge Ret. Washer (Brass) Stem (Brass) O'Ring (FDA Nitrile) O'Ring (FDA Nitrile) Cartridge Housing (G.F. Noryl) | 15 16 17 18 19 20 21 22 23 24 25 26 27 28 | Description O'Ring (FDA Nitrile) O'Ring (FDA Nitrile) O'Ring (FDA Nitrile) Lock Nut (300 Series SS) Seat Ring (300 Series SS) Seat Disc (FDA EPDM) Disc Holder (Brass) Clean-Out Plug (Brass) Body, Machined (Cast Bronze) Spring Disc (Zinc Plated Steel) Nameplate (Aluminum) Spring (Zinc Plated Music Wire) Union Nut (Brass) Union Washer (FDA Nitrile) |
|-------------------------------|---|---|--|
|                               |   |   |  |
|                               | Cartridge Housing (G.F. Noryl)  | 28  | Union Washer (FDA Nitrile)   |
| 14                            | Screen (300 Series SS)  | 29  | Union Tail Piece (Brass)   |

#### Jump Kit - 36C Series

Same rough end dimensions as a PRV but used as a spacer to flush system.



| No.        | Size(in.) | Description            |
|------------|-----------|------------------------|
| 36C-404-JK | 3/4       | for 36C-404 (threaded) |
| 36C-504-JK | 3/4       | for 36C-504 (solder)   |
| 36C-405-JK | 1         | for 36C-405 (threaded) |
| 36C-505-JK | 1         | for 36C-505 (solder)   |

<sup>\*</sup> Specify 36B for Bronze Cap

#### Series 36H

#### **Super Capacity For Commercial & Industrial Applications**



Conbraco Series 36H pressure reducing valves offer high performance in heavy-duty applications. They're designed with a larger diaphragm and orifice area to accommodate higher water capacities.

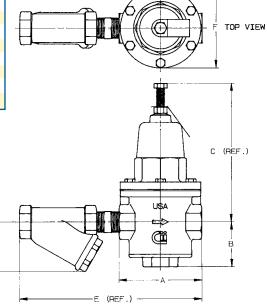
36H pressure reducing valves' integral by-pass protects against thermal expansion. Built for extended service, these models include bronze body construction and stainless steel replaceable seat. They are designed to meet ASSE, CSA and IAPMO standards.

These heavy-duty valves are available with or without a strainer and with or without a by-pass reducing valve (for 2 1/2" and 3" size).

| DIMENSIONS (in.)<br>WEIGHTS (lbs.) |                                |                                |                                |                     |                                  |           |                      |                         |
|------------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------|----------------------------------|-----------|----------------------|-------------------------|
| Size<br>(NPT)                      | A                              | В                              | С                              | D                   | E                                | F         | Wt. With<br>Strainer | Wt. Without<br>Strainer |
| 1/2"                               | 4 1/8                          | 2 1/4                          | 7                              | 1 <sup>7</sup> /8   | 8 3/8                            | 4         | 7                    | 6                       |
| 3/4"                               | 4 1/8                          | 2 1/4                          | 7                              | 2 7/16              | 9                                | 4         | 8                    | 6                       |
| 1"                                 | 4 1/8                          | 2 <sup>5</sup> /16             | 7 1/2                          | 4                   | 10 <sup>1</sup> / <sub>4</sub>   | 4 11/16   | 12                   | 8                       |
| <b>1</b> 1/4"                      | 6 3/4                          | 3 <sup>3</sup> / <sub>16</sub> | 10                             | 3 3/8               | 12 <sup>1</sup> / <sub>2</sub>   | $6^{1/2}$ | 29                   | 24                      |
| 11/2"                              | 6 3/4                          | 3 <sup>3</sup> / <sub>16</sub> | 10                             | 3 7/8               | 13 <sup>1</sup> /8               | $6^{1/2}$ | 29                   | 23                      |
| 2"                                 | 8 1/8                          | 3 1/2                          | 12 <sup>1</sup> / <sub>2</sub> | 4 5/8               | 16                               | 7 5/8     | 47                   | 38                      |
| 21/2"                              | 8 1/8                          | 3 1/2                          | 12 <sup>1</sup> / <sub>2</sub> | 5 <sup>15</sup> /16 | 16 <sup>11</sup> / <sub>16</sub> | 7 5/8     | 49                   | 37                      |
| 3"                                 | 10 <sup>3</sup> / <sub>8</sub> | 3 15/16                        | 15 <sup>1</sup> /8             | 6 15/16             | 20 1/2                           | 93/4      | 87                   | 70                      |
| Flanged                            |                                |                                |                                |                     |                                  |           |                      |                         |
| 2"                                 | 10 <sup>3</sup> / <sub>8</sub> | 3 1/2                          | 12 <sup>1</sup> / <sub>2</sub> | 6 1/4               | 20                               | 7 5/8     | 79                   | 49                      |
| 21/2"                              | 10 <sup>3</sup> /8             | 3 1/2                          | 12 <sup>1</sup> / <sub>2</sub> | 7 1/8               | 21 11/16                         | 7 5/8     | 105                  | 55                      |
| 3"                                 | 12 <sup>1</sup> / <sub>2</sub> | 3 15/16                        | 15 <sup>1</sup> / <sub>8</sub> | 8 1/8               | 24 1/2                           | 93/4      | 136                  | 92                      |

#### **FEATURES**

- Working temperature range: 33 - 180° F
- Standard factory setting: 50 psi
- Initial pressure up to 400 psig
- Yoke design improves flow path and reduces resistance
- High-temperature and pressureresistant diaphragm with nylon reinforcement
- Standard water-sealed cap design
- Standard stainless steel adjusting screw, nut and cap bolts
- Standard cast bronze cap
- Bottom access: makes in-line repair and maintenance easy
- Servicing: no special tools required
- Female NPT connection is standard; 2" to 3" flanged option available









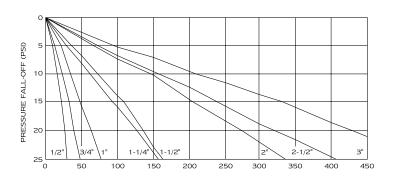
#### 36H Series PRV Flow Rate vs. Pressure Fall - Off

Note: Flow curves are based on static conditions of : Inlet pressure = 100 psig:

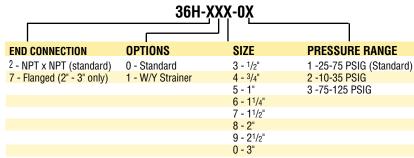
Outlet pressure = 50 psig. All curves are for female NPT versions only.

Pressure fall-off is the pressure by which the outlet pressure drops as flow demand is needed.

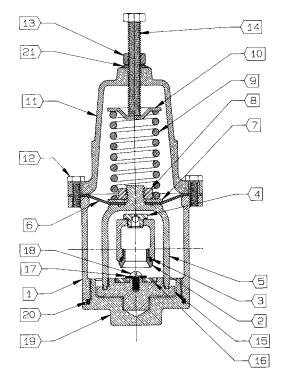
| 36H C     | EDIES W   | /ATER (                     |       | Y (GPM) |
|-----------|-----------|-----------------------------|-------|---------|
| 30113     | LITILO VI |                             |       |         |
|           |           | PRESSURE DIFFERENTIAL (PSI) |       |         |
| PIPE SIZE | FALL OFF  |                             |       |         |
|           | (PSI)     | 25                          | 50    | 75      |
| 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    |
| J. 1      | 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        | 106.3                       | 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 | 121.9   |
|           | 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        | 231.2                       | 272.0 | 312.8   |
| 2-1/2"    | 5         | 58.7                        | 69.0  | 79.4    |
|           | 10        | 132.6                       | 156.0 | 179.4   |
|           | 15        | 200.6                       | 236.0 | 271.4   |
|           | 20        | 271.2                       | 319.0 | 366.9   |
| 3"        | 5         | 80.8                        | 95.0  | 109.3   |
|           | 10        | 176.0                       | 207.0 | 238.1   |
|           | 15        | 282.5                       | 332.4 | 382.3   |
|           | 20        | 365.5                       | 430.0 | 494.5   |



#### **Ordering Numbers**



NOTE: Not all variations are available in each size. Check with customer service.



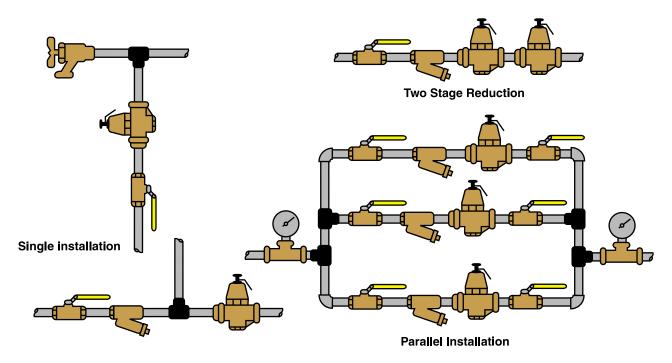
| Item | Description                | Item                               | Description               |  |
|------|----------------------------|------------------------------------|---------------------------|--|
| 1    | Body (Bronze)              | 13                                 | Lock Nut (SS)             |  |
| 2    | Seat (SS)                  | 14                                 | Adjustment Screw (SS)     |  |
| 3    | Seat O-Ring (Nitrile)      | 15                                 | Seat Disc Holder (Bronze) |  |
| 4    | By-Pass Assembly           | 16                                 | Seat Disc (EPDM)          |  |
| 5    | Yoke (Bronze)              | 17                                 | Seat Disc Washer (SS)     |  |
| 6    | Diaphragm (Nitrile W/Nylon | 18                                 | Seat Screw (SS)           |  |
|      | Reinforcement)             | 19                                 | Bottom Cover (Bronze)     |  |
| 7    | Diaphragm Washer (SS)      | 20                                 | Bottom Cover O-Ring       |  |
| 8    | Diaphragm Nut (SS)         |                                    | (Nitrile)                 |  |
| 9    | Spring (SS)                | 21                                 | Self-Sealing Washer (SS)  |  |
| 10   | Spring Retainer (SS)       |                                    | - , ,                     |  |
| 11   | Cap (Bronze)               | Note: Materials specified for 1/2" |                           |  |
| 12   | Cap Bolts (SS)             | thru 2" only.                      |                           |  |
|      | . , ,                      |                                    | -                         |  |

#### **Installation Configurations**

A single pressure reducing valve is used in typical residential and small commercial applications. This installation demands that the valve handle all flow demands, from zero to full capacity.

Using a series of pressure reducing valves is recommended in applications in which the inlet pressure fluctuates greatly or exceeds the desired reduced pressure by 4 times or more.

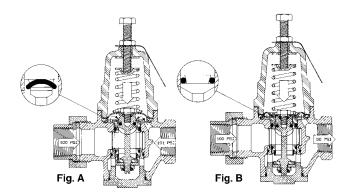
For closer regulation over extreme demand conditions, a battery of two or three pressure reducing valves is suggested. These parallel reducing valves receive water from a common supply line. A major benefit of this configuration: maintenance can be performed without shutting down the entire system.



# 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 lbs. The valve and the system then return to normal as shown in Fig. B above. The 36H features a ball and seat type of check valve as a thermal by-pass but the principle is similar.

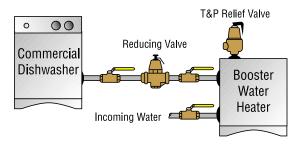






# Specially Designed Low Pressure Models

Conbraco's low pressure reducing valves are designed for low pressure (10 to 35 PSI) residential and commercial applications. They feature a heat-resistant diaphragm for extended-term performance in automatic dishwashers, booster heaters and similar applications.

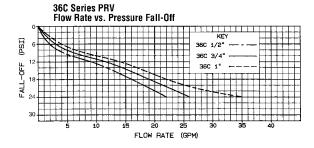


#### Flow/Performance Curves

Conbraco offers performance curves for every version of its 36 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 36C 3/4" PRV 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.



#### Water Pressure Reducing Valves

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

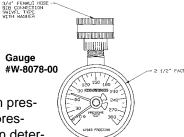
Required capacity depends entirely on where and how the valve is used. In typical systems where water is supplied to lavatories, toilets, bath tubs and showers in homes, schools, apartments hospitals, a 25 to 30 percent pressure drop-off is satisfactory.

In laundries, car washes and 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. Conbraco pressure reducing valves offer a wide range of performance; selecting the best valve for the application depends on more than pipe size alone. The Conbraco technical staff is available to assist you.

#### Gauges

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



The hose bib 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. Conbraco offers a 2" outlet pressure gauge as an option on the 36C. Both types of gauges are available from your Conbraco distributor.

#### Repair Kits Available

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

To learn more about Conbraco Series 36, 36A, 36B, 36C and 36H water pressure reducing valves, or to place an order, see your Conbraco distributor. Or contact the Conbraco Customer Service Department at (704) 841-6000; Fax: (704) 841-6020.



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Conbraco Industries, Inc. P.O. Box 247 Matthews, NC 28106 (704) 841-6000 Fax: (704) 841-6020 www.conbraco.com

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