



# Model ZW209

## Pressure Reducing Valve

### Application

The Zurn Wilkins Model ZW209 Pilot Operated Pressure Reducing Valve is designed for many applications where the reduction of high inlet pressures to safe and stable outlet pressure is required. The pilot assembly reacts to changes in downstream pressure allowing the main valve to modulate between the closed and open position ensuring a constant downstream set pressure. Once the downstream pressure reaches the pilot setting, the main valve will seal shut preventing damage downstream. Pressure regulation is not dependent upon flow rate, resulting in minimal pressure loss through the valve. In addition the Model ZW209 comes standard with epoxy coating internally and externally for corrosion protection, as well as isolation valves and pressure gauges for quick and easy maintenance or repair.

### Standards Compliance:

- ANSI/AWWA C530
  - Meets the requirements of NSF/ANSI 61\*
- \*(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

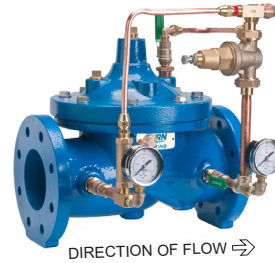
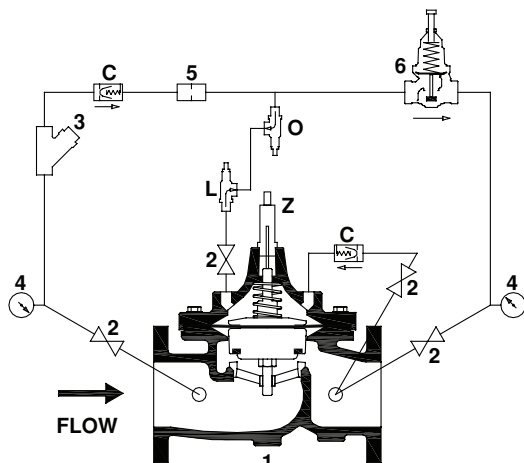
### Materials

|                   |                         |
|-------------------|-------------------------|
| Main Valve Body   | Ductile Iron ASTM A536  |
| Main Valve Bonnet | Ductile Iron ASTM A536  |
| Disc Guide        | Stainless Steel         |
| Seat              | Stainless Steel         |
| Disc              | Buna-N Rubber           |
| Diaphragm         | Nylon Reinforced Buna-N |
| Stem              | Stainless Steel         |
| Spring            | Stainless Steel         |

\*The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.

### Schematic Diagram

| Item | Description of Standard Features |
|------|----------------------------------|
| 1    | Main Valve                       |
| 2    | 850XL Isolation Valve            |
| 3    | SXL "Wye" Type Strainer          |
| 4    | Pressure Gauge                   |
| 5    | Restriction Fitting              |
| 6    | PRXL Pressure Reducing Control   |



| BODY CONFIGURATIONS |                              | GLOBE STYLE BODY |              | ANGLE STYLE BODY |
|---------------------|------------------------------|------------------|--------------|------------------|
| END CONNECTION      | PRESSURE RATING              | FULL PORT        | REDUCED PORT |                  |
| Threaded            | 400 psi max.                 | 1 1/4"-3"        | n/a          | 1 1/4"-3"        |
| Flanged             | ANSI Class 150, 250 psi max. | 1 1/2"-16"       | 3"-10"       | 1 1/2"-10"       |
|                     | ANSI Class 300, 400 psi max. |                  |              |                  |
| Grooved             | 300 psi max.                 | 1 1/2"-10"       | n/a          | 1 1/2"-10"       |

MINIMUM INLET PRESSURE 10 PSI

TEMPERATURE RATING:  Water 33°F to 140°F  
 PILOT SPRING RANGE:  15-150 psi

### Standard Features

- Epoxy Coated, FDA Approved
- Pilot Assembly
  - "Wye" Type Strainer
  - Opening Speed Control (sizes 1 1/4" - 4")
  - Isolation Valves
- Inlet and Outlet Pressure Gauges
- ANSI Class 150 Flanges
- Copper Tubing and Brass Fittings

### Options (Add suffix letters to ZW209)

#### Function

- C - 40XL2 Hydraulic Check with Isolation Valve
- L - SC1 Closing Speed Control\*
- O - SC1 Opening Speed Control (Standard 1 1/4" -4")

#### Body

- A - Angle Style Body
- R - Reduced Port Body

#### Connections

- G - IPS Grooved
- TH - NPT Threaded
- Y - ANSI Class 300 Flanges

#### Main Valve Options

- V - Viton Rubber Internals, rated 180°F (1-1/4"-6", only available with "LP" or "HP" Option)
- Z - ZPI Visual Position Indicator

#### Pilot System

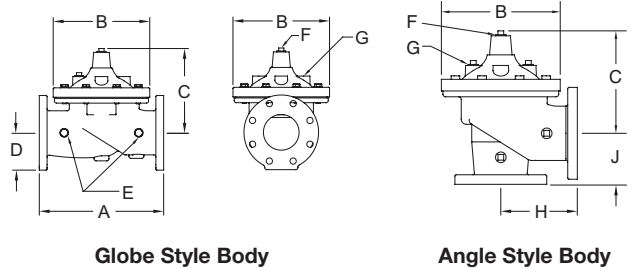
- LP - 5-25 psi Low Pressure Range PV-PRD Pilot (replaces PRXL)
- HP - 30-300 psi High Pressure Range PV-PRD Pilot (replaces PRXL)
- SP - All Stainless Steel Pilotry (replaces all brass fittings, pilot valve and copper tubing. "GL" Option included)
- SH - Stainless Steel Braided Hoses (only replaces Copper Tubing)
- RV - Pilot on Reverse Side
- GL - Liquid Filled Gauge
- SO - Limit Switch Open Trip
- SC - Limit Switch Closed Trip
- SD - Limit Switch Dual Trip

### Globe and Angle Main Valve Dimensions

| DIM                        | FULL PORT         | VALVE SIZE INCHES (mm) |           |        |            |        |          |         |          |          |          |          |          |
|----------------------------|-------------------|------------------------|-----------|--------|------------|--------|----------|---------|----------|----------|----------|----------|----------|
|                            |                   | 1 1/4 (32)             | 1 1/2(38) | 2 (50) | 2 1/2 (65) | 3 (80) | 4 (100)  | 6 (150) | 8 (200)  | 10 (250) | 12 (300) | 14 (350) | 16 (400) |
| A                          | Threaded          | 7 1/4                  | 7 1/4     | 9 7/16 | 11         | 12 1/2 |          |         |          |          |          |          |          |
|                            | Class 150 Flange  |                        | 8 1/2     | 9 3/8  | 11         | 12     | 15       | 20      | 25 3/8   | 29 3/4   | 34       | 39       | 41 3/8   |
|                            | Class 300 Flange  |                        | 9         | 10     | 11 5/8     | 13 1/4 | 15 5/8   | 21      | 26 7/16  | 31 1/8   | 35 1/2   | 40 1/2   | 43 1/2   |
|                            | Grooved           |                        | 8 1/2     | 9      | 11         | 12 1/2 | 15       | 20      | 25 3/8   | 29 3/4   |          |          |          |
| B                          | Diameter          | 5 5/8                  | 5 5/8     | 6 3/4  | 8          | 9 3/16 | 11 11/16 | 15 3/4  | 20 1/8   | 23 11/16 | 27 1/2   | 31 3/4   | 34 1/2   |
| C                          | Max.              | 5 3/4                  | 5 3/4     | 6 3/16 | 7 3/8      | 8      | 10 3/16  | 12 5/16 | 15 9/16  | 17 5/8   | 20 3/16  | 22 13/16 | 25 7/8   |
| D                          | Threaded/Grooved  | 1 3/8                  | 1 3/8     | 1 3/4  | 2 1/8      | 2 9/16 | 3 7/16   | 5       | 5        | 5 13/16  | 6 3/4    | 8 7/8    | 8 13/16  |
|                            | Class 150 Flange  |                        | 2 1/2     | 3      | 3 1/2      | 3 3/4  | 4 1/2    | 5 1/2   | 6 3/4    | 8        | 9 1/2    | 10 1/2   | 11 3/4   |
|                            | Class 300 Flange  |                        | 3         | 3 1/4  | 3 3/4      | 4 1/8  | 5        | 6 1/4   | 7 1/2    | 8 3/4    | 10 1/4   | 11 1/2   | 12 3/4   |
| E                          | NPT Body Tap      | 3/8                    | 3/8       | 3/8    | 1/2        | 1/2    | 3/4      | 3/4     | 1        | 1        | 1        | 1        | 1        |
| F                          | NPT Cvr. Plug Tap | 1/2                    | 1/2       | 1/2    | 1/2        | 1/2    | 3/4      | 3/4     | 1        | 1        | 1        | 1        | 1        |
| G                          | NPT Cover Tap     | 3/8                    | 3/8       | 3/8    | 1/2        | 1/2    | 3/4      | 3/4     | 1        | 1        | 1        | 1        | 1        |
| H                          | Threaded          | 3 1/4                  | 3 1/4     | 4 3/4  | 5 1/2      | 6 1/4  |          |         |          |          |          |          |          |
|                            | Class 150 Flange  |                        | 4         | 4 3/4  | 5 1/2      | 6      | 7 1/2    | 10      | 12 11/16 | 14 7/8   |          |          |          |
|                            | Class 300 Flange  |                        | 4 1/4     | 5      | 6          | 6 7/16 | 8        | 10 1/2  | 13 1/4   | 15 9/16  |          |          |          |
|                            | Grooved           |                        | 4 7/16    | 4 3/4  | 5 1/2      | 6      | 7 1/2    | 10      | 12 11/16 | 14 7/8   |          |          |          |
| J                          | Threaded          | 1 15/16                | 1 15/16   | 3 1/4  | 4          | 4 1/2  |          |         |          |          |          |          |          |
|                            | Class 150 Flange  |                        | 4         | 3 1/4  | 4          | 4      | 5        | 6       | 8        | 8 5/8    |          |          |          |
|                            | Class 300 Flange  |                        | 4 1/4     | 3 1/2  | 4 5/16     | 4 7/16 | 5 5/16   | 6 1/2   | 8 1/2    | 9 5/16   |          |          |          |
|                            | Grooved           |                        | 3 3/16    | 3 1/4  | 4          | 4 1/4  | 5        | 6       | 8        | 8 5/8    |          |          |          |
| Valve Stem Internal Thread |                   | 10-32                  | 10-32     | 10-32  | 10-32      | 1/4-20 | 1/4-20   | 1/4-20  | 3/8-16   | 3/8-16   | 3/8-16   | 3/8-16   | 3/8-16   |
| Stem Travel (in)           |                   | 7/16                   | 7/16      | 3/4    | 7/8        | 1      | 1 3/16   | 1 3/4   | 2 3/8    | 2 13/16  | 3 7/16   | 3 13/16  | 4 5/16   |
| Approx. Wt. (lbs)          |                   | 22                     | 26        | 36     | 55         | 70     | 130      | 240     | 440      | 720      | 820      | 1200     | 1550     |

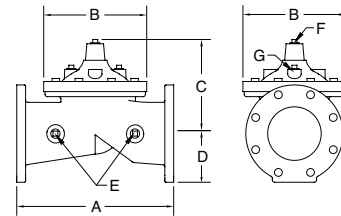
### Reduced Port Main Valve Dimensions

| DIM                        |                   | VALVE SIZE INCHES (mm) |          |          |          |           |
|----------------------------|-------------------|------------------------|----------|----------|----------|-----------|
|                            |                   | 3" (80)                | 4" (100) | 6" (150) | 8" (200) | 10" (250) |
| A                          | Class 150 Flange  | 10 1/4                 | 14       | 17 3/4   | 21 7/16  | 26        |
|                            | Class 300 Flange  | 11                     | 14 1/2   | 18 11/16 | 22 7/16  | 27 7/16   |
| B                          | Dia               | 6 3/4                  | 9 3/16   | 11 11/16 | 15 3/4   | 20 1/8    |
| C                          | Max               | 6 3/8                  | 8 7/16   | 12 5/16  | 13 1/4   | 16 3/4    |
| D                          | Class 150 Flange  | 3 3/4                  | 4 1/2    | 5 1/2    | 6 3/4    | 8         |
|                            | Class 300 Flange  | 4 1/8                  | 5        | 6 1/4    | 7 1/2    | 8 3/4     |
| E                          | NPT Body Tap      | 3/8                    | 1/2      | 3/4      | 3/4      | 1         |
| F                          | NPT Cvr. Plug Tap | 3/8                    | 1/2      | 3/4      | 3/4      | 1         |
| G                          | NPT Cvr. Tap      | 3/8                    | 1/2      | 3/4      | 3/4      | 1         |
| Valve Stem Internal Thread |                   | 10-32                  | 1/4-20   | 1/4-20   | 3/8-16   | 3/8-16    |
| Stem Travel (in)           |                   | 3/4                    | 1        | 1 1/5    | 1 3/4    | 2 3/8     |
| Approx. Wt. (Lbs)          |                   | 35                     | 80       | 140      | 275      | 480       |



Globe Style Body

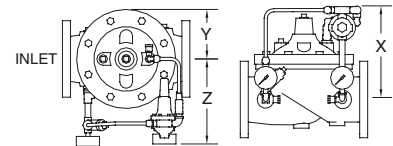
Angle Style Body



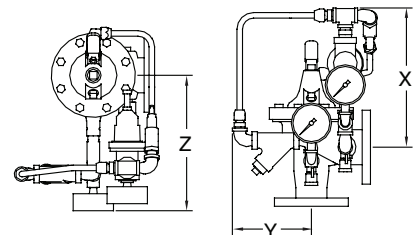
Reduced Port Body

### Pilot System Dimensions

| PILOT SYSTEM DIMENSIONS |       | VALVE SIZE INCHES (mm) |            |         |             |         |          |          |          |           |           |           |           |
|-------------------------|-------|------------------------|------------|---------|-------------|---------|----------|----------|----------|-----------|-----------|-----------|-----------|
| DIM                     |       | 1-1/4 (32)             | 1-1/2 (40) | 2" (50) | 2-1/2" (65) | 3" (80) | 4" (100) | 6" (150) | 8" (200) | 10" (250) | 12" (300) | 14" (350) | 16" (400) |
|                         |       | Full Port Body         | X          | 8 1/2   | 8 1/2       | 8 1/2   | 8 1/2    | 9 1/2    | 12       | 13        | 14        | 17 1/2    | 20        |
| Y                       | 4     |                        | 4          | 3 1/2   | 4           | 4 1/2   | 6        | 8        | 10       | 12        | 14        | 16        | 17 1/2    |
| Z                       | 8 1/2 |                        | 8 1/2      | 9       | 9           | 9 1/2   | 10       | 11 1/2   | 13       | 14 1/2    | 17        | 19        | 20 1/2    |
| Reduced Port Body       | X     |                        |            |         |             | 8 1/2   | 9 1/2    | 12       | 13       | 14        |           |           |           |
|                         | Y     |                        |            |         |             | 3 1/2   | 4 1/2    | 6        | 8        | 10        |           |           |           |
|                         | Z     |                        |            |         |             | 9       | 9 1/2    | 10       | 11 1/2   | 13        |           |           |           |
| Angle Body              | X     | 9                      | 9          | 9       | 9           | 10      | 12 1/2   | 13 1/2   | 14 1/2   | 18        |           |           |           |
|                         | Y     | 5                      | 5          | 5       | 5           | 5       | 6        | 8        | 10       | 12        |           |           |           |
|                         | Z     | 9                      | 9          | 9 1/2   | 9 1/2       | 10      | 10 1/2   | 12       | 13 1/2   | 15        |           |           |           |



Globe Pilot System Dimensions



Angle Pilot System Dimensions