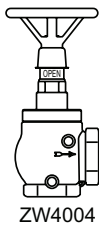


# Model Series ZW4000 & ZW4004

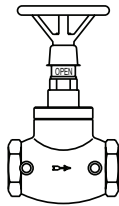
For Pressure-Tru® 2 1/2" Pressure Reducing Valve



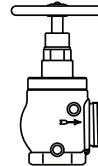
## □ Installation □ Testing □ Maintenance Instructions



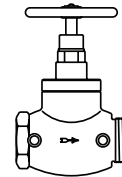
ZW4004



ZW4004IL



ZW4000



ZW4000IL

**APPLICATION: Model ZW4004, ZW4004IL, ZW4004CAP & ZW4004ILCAP**  
The ZW4004 Series Pressure Reducing Valve is UL® Listed and C-UL® Listed as a floor control valve in automatic sprinkler systems as well as a standpipe valve for CLASS I and CLASS III systems.

### SPECIFICATIONS:

- Maximum rated pressures from 200 to 400 psi (see chart page 2)
- Factory set only
- Open-Close indicating feature (Not on CAP Model)
- Built-in automatic checking device
- Regulates pressure under both flow and no-flow conditions
- Available with monitor switch adapter bracket
- 2 1/2" female NPT inlet and outlet connections
- Tapped and plugged inlet and outlet for pressure gauge

### INSTRUCTIONS

1. Flush pipe thoroughly to remove any debris, rust or scale that could damage seal ring or seat.
2. Install valve with arrow pointing in direction of flow. Only use hex on body connections as wrench surface. Wet systems: Valves may be installed in any position. Dry Systems: Install valve within 45 degrees of vertical, hand wheel up, slope inlet piping minimum 1/4 inch per foot to drain excess water to riser after testing.
3. After Installation, the valve shall be full flow tested in accordance with NFPA 13 and/or NFPA 14 and then tested periodically thereafter in accordance with NFPA 25; flow enough water annually to completely flush rust and debris, full flow test every five years. Initial testing must be done with design inlet pressure and flow rate so the proper outlet pressure can be verified.
4. Valves installed in sprinkler systems shall have:
  - a) Unions or rubber gasket fittings installed immediately upstream or downstream to permit replacement.
  - b) A relief valve of at least 1/2" size and 175 psi max. installed on the downstream side and plumbed to a safe drainage.
  - c) Pressure gauges installed on the inlet and outlet.
  - d) Shall not be set for less than 50 psi.
5. It is suggested that a line size Tee connection be installed downstream of sprinkler system valves to allow full flow testing as required every five years by NFPA 25.
6. Bleed all trapped air from supply riser and at remote points of sprinkler piping when filling. Trapped air may cause outlet pressure fluctuations at low flows.
7. On dry systems, it is recommended to use Pressure Reducing Valves (PRV's) only in semiautomatic dry systems. If used in automatic dry systems, the system must be designed in such a manner that all excess water properly drains to the riser and the valve must be installed vertically to reduce the amount of pipe corrosion near the valve seat due to standing water (reference step #2 above). Hand wheel operation does not force the internal pressure reducing stem to open on all PRV's, and excess pipe corrosion near the valve seat can cause the PRV stem not to operate freely and potentially prevent the automatic dry system from triggering. Ensure system design conforms to all requirements of AHJ. Nitrogen fill systems are recommended with all dry systems to reduce the amount of corrosion in all system components.

### VALVE CARE AND MAINTENANCE

Since the Pressure-Tru® Valve is an automatic valve, it is imperative to make sure that the system is free of rocks and debris. This can be ensured by flushing the system. Upon completion of valve installation and testing, it is important that it be filled *slowly* to prevent water hammer. It is recommended that a flow test be run periodically to allow the Pressure-Tru® Valve to open and reset itself. If valve repair is required, the system should be drained. Access to internal components can be achieved by removing the wheel handle assembly, bell housing and flange. The body need not be removed from the system. Contact the factory for repair parts.

#### NOTE

**Installation:** Proper installation of these valves shall be in accordance with NFPA 13 and/or NFPA 14, whichever is applicable. **Inspection, Testing & Maintenance:** Proper inspection, testing and maintenance of these valves shall be in accordance with NFPA 25.

#### For Standpipe Systems:

- A. The outlet pressures indicated in the illustrations on page 2 are at the outlet of the valve. To determine the pressure at a specific hose nozzle, the hydraulic calculation information provided in NFPA 13 and the NFPA Fire Protection Handbook, should be followed. In any case, the design flow demand required from the hose nozzle shall not exceed the flow range specified in the illustrations on page 2-3.
- B. The valve shall be specified to flow 100 gpm at a minimum of 65 psig (448 kpa) to a maximum of 100 psig (689 kpa) unless permitted otherwise by the authority having jurisdiction.

WARNING: This product is NOT Lead Free in accordance with U.S. Federal Law and is illegal in the U.S. for use in potable services or to install in water systems anticipated for human consumption.

⚠ **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

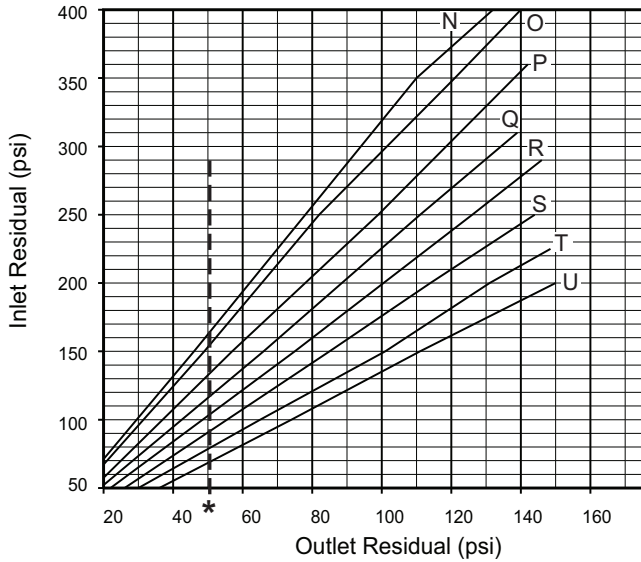
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

⚠ **AVERTISSEMENT:** Cancer et néfastes sur la reproduction - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

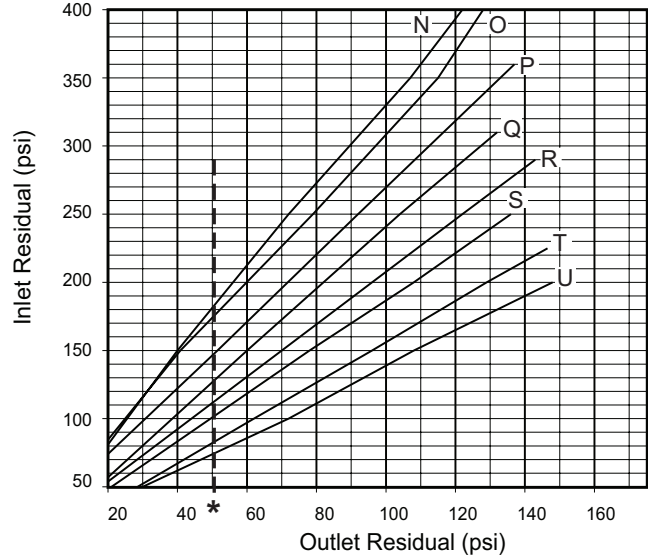
# Residual Pressure Charts

For Pressure-Tru® 2 1/2" Models: ZW4000 & ZW4004

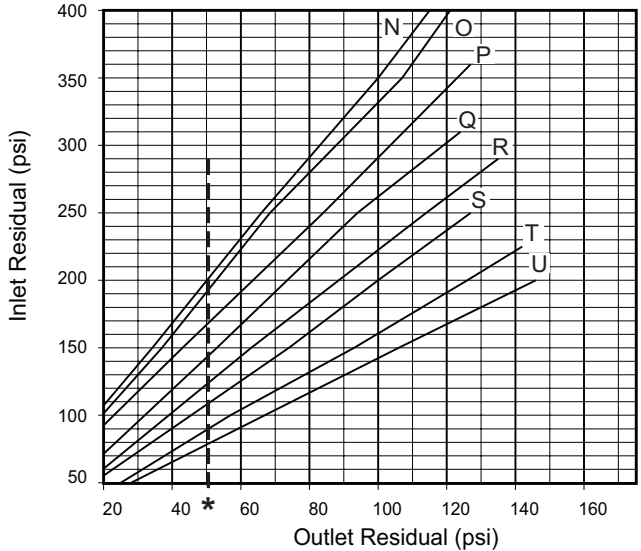
ANGLE BODY  
50-200 GPM



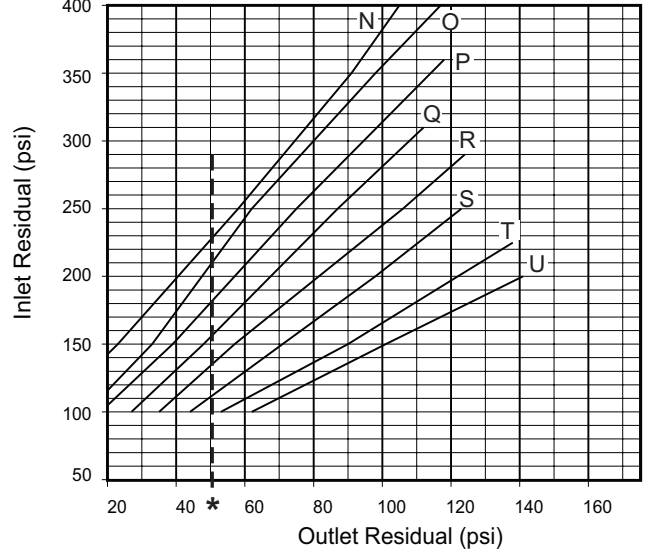
ANGLE BODY  
201-300 GPM



ANGLE BODY  
301-400 GPM



ANGLE BODY  
401-500 GPM



\*50 PSI Minimum setting for sprinkler systems

## CHOOSING THE CORRECT SETTINGS

In designing a sprinkler system, a minimum of 20 psi pressure differential (the difference between the inlet static pressure and the valve outlet set static pressure) is recommended to assure a well regulated and efficient system. In choosing the correct setting for the Pressure-Tru® valve, refer to the Residual Pressure Charts, Static Pressure Chart and the following procedures:

1. Determine the demand in gallons per minute required downstream of the valve.
2. Determine the standpipe residual or "flow pressure" at the valve inlet.
3. Locate the appropriate flow chart based on GPM required and body style.
4. Locate the inlet residual pressure on the vertical axis of the chart and draw a horizontal line from this pressure across the chart.
5. Locate the desired valve outlet residual pressure on the horizontal axis of the chart and draw a vertical line from this pressure.
6. The curve nearest the intersection of the two lines drawn is the appropriate type for the valve.
7. To determine the static outlet pressure, locate the static chart. Determine the valve inlet static pressure shown on the vertical axis and draw a horizontal line from that pressure to the appropriate curve determined above, then draw a vertical line down to the horizontal axis and read the static outlet pressure.

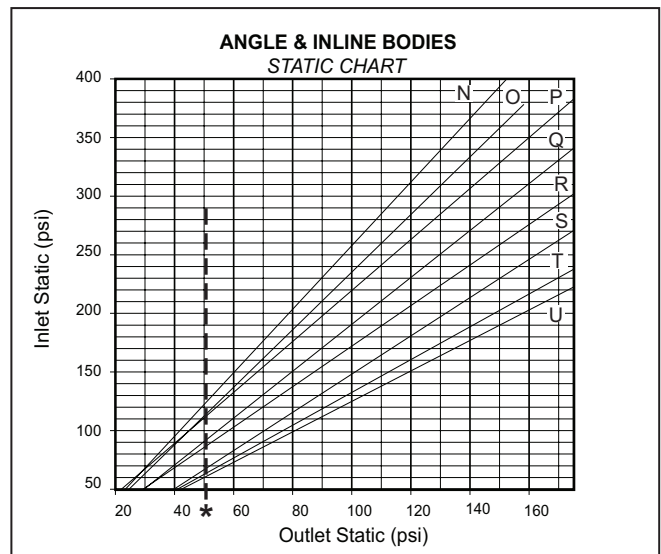
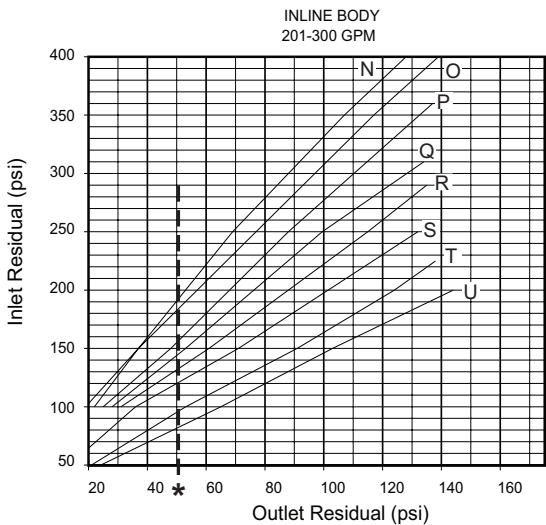
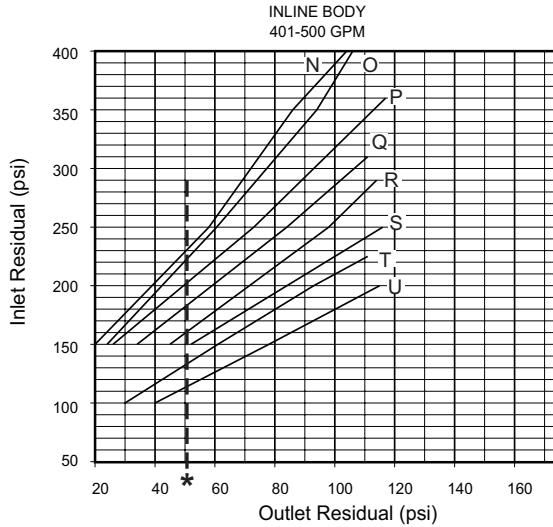
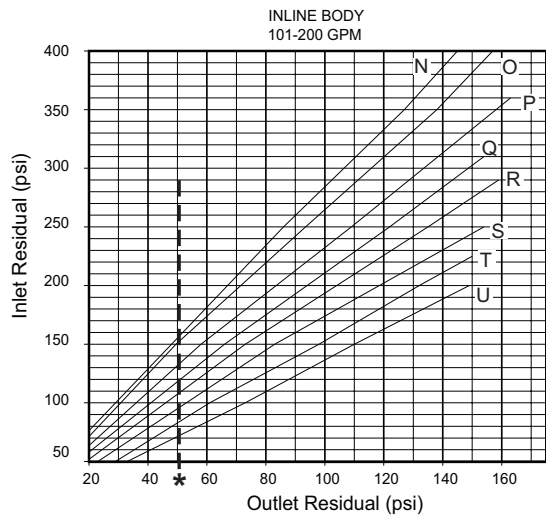
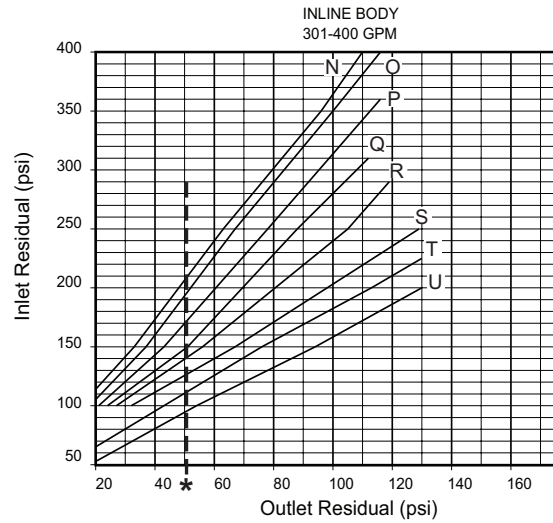
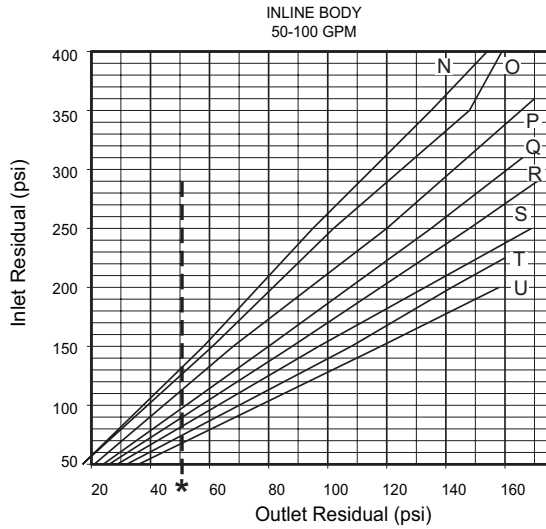
## MAXIMUM RATED INLET PRESSURE

Maximum inlet pressure, to assure a maximum outlet pressure of 175 psi. Inlet side of valves can be safely tested up to 400 PSI during system hydrostatic leak test.

Bonnet Type	Max Inlet Pressure psi (kPa)
N	400 (2750)
O	400 (2750)
P	360 (2475)
Q	310 (2125)
R	290 (2000)
S	250 (1725)
T	225 (1550)
U	200 (1375)

# Residual Pressure Charts

For Pressure-Tru® 2 1/2" Models: ZW4000IL & ZW4004IL



**\*50 PSI Minimum setting for sprinkler systems**

Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

