

Water Pressure Reducing Valves

Controlling Water Pressure in Residential, Commercial, and OEM Applications





The One-stop Shop for Pressure Regulators

Watts is the manufacturer of choice for Water Pressure Reducing Valves (WPRVs). Here's why:

- Durability in design with high-grade Lead Free* material suited for even the most challenging application
- High performance and exceptional flow characteristics
- Breadth & depth of offerings means you get the right product for the right application, all from a single vendor
- Industry leader for 140 years with the largest installed base

Common Applications for WPRVs

Residential

homes, apartments, and dormitories



Commercial

businesses, hospitals, schools, and hotels, as well as irrigation and agricultural applications



Specialty/OEM

original equipment applications for example, beverage dispensers



Water Pressure Reducing Valves

LF25AUB

Standard Capacity Pressure Reducing Valves

- Size(s): 1/2" – 2"
- Industry-trusted design with proven track record for longevity, reliability, and flow performance
- Lead free copper silicon alloy with stainless steel strainer and high-temperature diaphragm to ensure success in any installation
- Available in options such as high or low-pressure settings, gauge ports, etc.
- End Connection options such as PEX, CPVC, Press, CEF, and Quick-Connect
- Tested and certified by NSF to NSF 61-G
- Certified by ASSE to ASSE 1003



LF25AUB

LFN55B

Standard Capacity Pressure Reducing Valves

- Size(s): 1/2" – 2"
- Durable brass spring cage
- Integral strainer
- Ideal for new residential construction
- Available with threaded, solder, PEX, CPVC, CEF, or Press End Connections
- Tested and certified by NSF to NSF 61-G
- Certified by ASSE to ASSE 1003



LFN55B

LFN45B

Standard Capacity Pressure Reducing Valves

- Size(s): 1/2" – 2"
- Engineered composite spring cage
- EZ set option for the 3/4" & 1" sizes
- Integral strainer
- Ideal for new residential construction
- Available with threaded, solder, PEX, CPVC, CEF, Quick-Connect, or Press End Connections
- Tested and certified by NSF to NSF 61-G
- Certified by ASSE to ASSE 1003



LFN45B

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Water Pressure Reducing Valves

LFU5B

Standard Capacity Pressure Reducing Valves

- Size(s): 1/2" – 2"
- Heavy, rugged design suited for high-flow performance and easy serviceability for potable-water applications
- Corrosion-resistant, cast iron spring cage
- Available in a range of end connection and pressure setting options
- Tested and certified by NSF to NSF 61-G
- Certified by ASSE to ASSE 1003



LFU5B

LF223

High-Capacity Pressure Reducing Valves

- Size(s): 1/2" – 2"
- Heavy construction with enlarged diaphragm, spring cage, and seat support for exceptional performance
- Suited for demanding applications requiring high flow capacity – max pressure – 300psi
- Available in options such as strainer, bypass, flanged ends, high-pressure or low-pressure settings
- Tested and certified by NSF to NSF 61-G
- Certified by ASSE to ASSE 1003



LF223

LF115

Pressure Reducing Automatic Control Valves

- Size(s): 1 1/4" – 16"
- Reduce high inlet pressure to constant, lower outlet pressure across a broad range of flow rates
- Valves can be installed in parallel or series configurations for extended flow range or staged pressure reduction
- Field-adjustable downstream pressure set point
- Common feature combinations include pressure reducing with hydraulic check, solenoid (on-off), downstream surge protection, or upstream pressure sustaining
- Tested and certified by NSF to NSF 61-G



LF115

LF26A and LF263A Specialty Pressure Reducing Valves

- Size(s): 1/8" – 1/2"
- Compact design with aluminum spring cage ideal for OEM and small-flow applications
- Over-sized openings geared towards dispenser equipment – max pressure – 300psi
- Flexible options and configurations (i.e. gauge connection, pressure ratings, etc.)
- LF263A is a 3-way port model
- SS263AP constructed of all stainless steel
- Tested and certified by NSF to NSF 61-G



LF26A

P60 Miniature Pressure Reducing Valves

- Size(s): 1/4"
- Miniature footprint with thermoplastic construction suitable for food-grade applications
- Flexibility in configuring flow passage to be straight-through inlet to outlet or 90° flow inlet to outlet
- Available with a range of options including hose connections and gauge ports – max pressure – 300psi
- Manufactured using FDA approved material
- Tested and certified by NSF to NSF 61-G



P60

LF560 Compact Pressure Reducing Valves

- Size(s): 1/4" – 1/2"
- Compact design suited to OEM equipment or industrial processes requiring low flow capacity
- Available with standard threaded inlet and outlet or with hose-connection ports (H560 model)
- Stainless steel stem and spring with heavy slotted and knurled adjusting screw
- Offered with standard 3mm gauge port
- Tested and certified by NSF to NSF 372



LF560

LF215 Water and No. 2 Fuel Oil Pressure Reducing Valves

- Size(s): 1/4" – 3/8"
- Designed for specialty applications requiring high-sensitivity regulation
- Stainless steel strainer with high-mesh screen
- Large diaphragm design suited for high response at low flow
- Tested and certified by NSF to NSF 372



LF215

Watts WPRV Selection Guide

Use our guide to WPRVs and accessories to find the right Watts model for your application.

Series	Standard Capacity (Residential, Light Commercial)			
	LFU5B	LF25AUB	LFN55B	LFN45B
				
Sizes	1/2" - 2"	1/2" - 2"	1/2" - 2"	1/2" - 2"
Max working pressure	300psi	300psi (std) 400psi (Z7 model)	400psi (1/2"-1") 300psi (1 1/4"-2")	400psi (1/2"-1") 300psi (1 1/4"-2")
Max working temperature	160°F (71°C)	160°F (71°C)	180°F (82°C)	180°F (82°C)
Standard adjustable pressure range	25-75psi	25-75psi	25-75psi	25-75psi
Low pressure range	●	●	○	○
High pressure range	●	●	○	○
Thermal bypass	●	●	●	●
Gauge port	●	●	●	●
Strainer	●	●	●	●
EZ-Set indicated pressure adjustment	○	○	○	●
Water meter connection compatibility	●	●	○	○
Agency Approvals				
NSF 61-G/372	61-G	61-G	61-G	61-G
ASSE 1003	●	●	●	●
CSA B356	●	●	○	●
UPC	●	●	●	●
MIL-V-1814B Type 1	○	●	○	○
End Connections Options				
Threaded	●	●	●	●
Solder	●	●	●	●
PEX	○	●	●	●
CEF (ASTM F1960)	○	●	●	●
CPVC	○	○	●	●
Quick-Connect	●	●	●	●
Flanged	○	○	○	○
Hose connections	○	○	○	○
Press	○	●	●	●
Accessories				
Repair kit	●	●	●	●
Unions/Nuts/Tailpiece kit	●	●	●	●

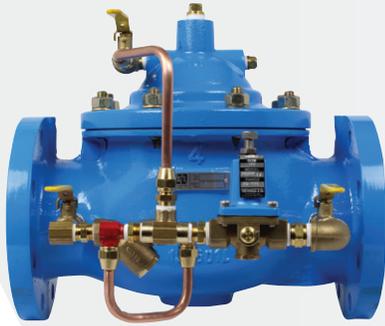
● Available standard ● Available as option ○ Not available

Overview

There are two types of water pressure reducing valves: pilot-operated and direct-acting.

Types of WPRVs

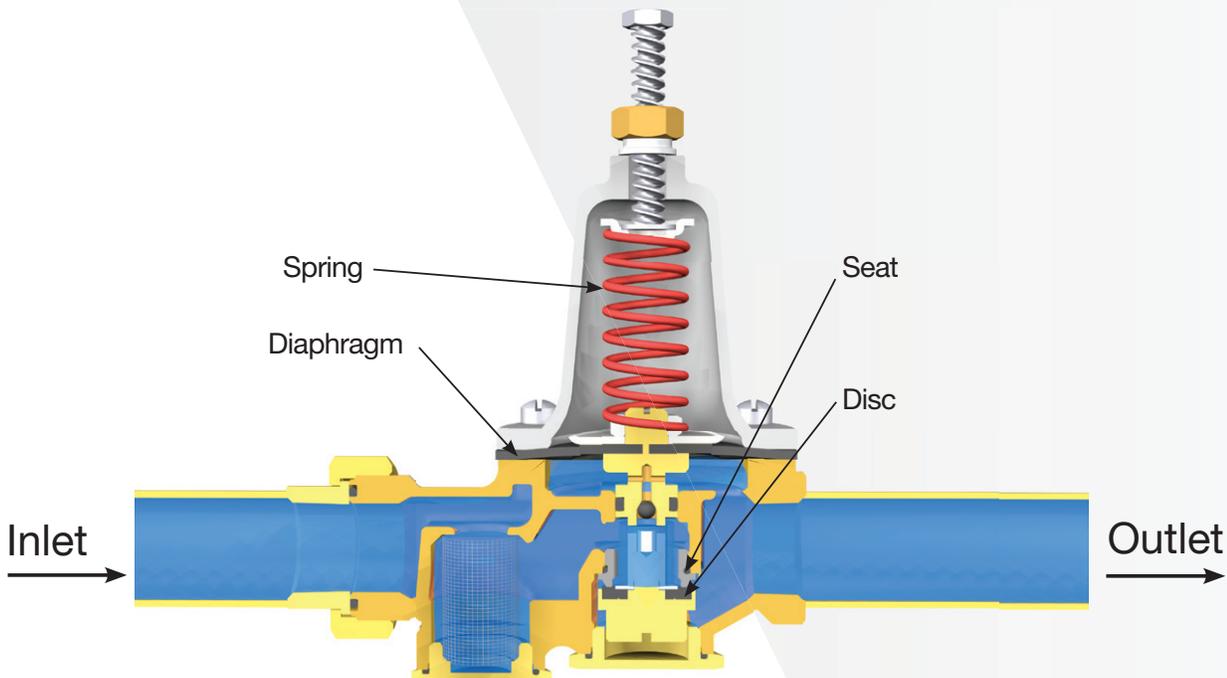
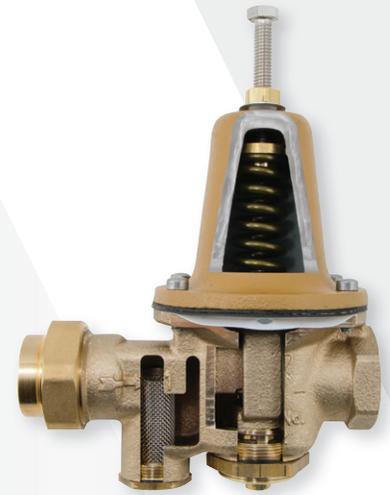
Pilot-operated valves have a sensing control pilot and main valve in one unit. These valves are typically used in commercial applications such as schools, hotels and hospitals, as well as in industrial and municipal applications and installations that require more consistent pressure control over wide flow ranges. Those applications typically demand valves with larger diameters, ranging from 1¼" to 16".



Direct-acting valves, on the other hand, have a spring-loaded diaphragm that connects to a disc, which modulates the outlet flow controlling pressure. They are the most commonly used WPRVs and are found in a range of applications, including residential, OEM, and commercial, where diameters smaller than 3 inches are acceptable.

How WPRVs work

- 1) WPRVs are installed to reduce the pressure from the water supply main to a lower, user-desired level. Water entering the valve is constricted within the valve body. This action is controlled by an adjustable spring-loaded diaphragm and disc. Even if the supply water pressure fluctuates, the WPRV ensures a constant flow of water at a functional pressure as long as the supply pressure does not drop below the valve's set pressure. Watts WPRVs are adjustable and typically preset at 50psi.
- 2) The WPRV operates utilizing the balance outlet pressure and spring compression. The setpoint is the desired outlet pressure when the regulator is flowing. It can be adjusted by loading or unloading the spring. If the downstream pressure is below the setpoint, the spring pushes the valve open. This action increases the flow through the regulator, which in turn raises downstream pressure. If the downstream pressure is above the set pressure, the diaphragm compresses the spring, pulling the valve closed. This action will close the regulator, decreasing flow and ultimately shutting off the regulator at the static or lock-up pressure until there is demand.



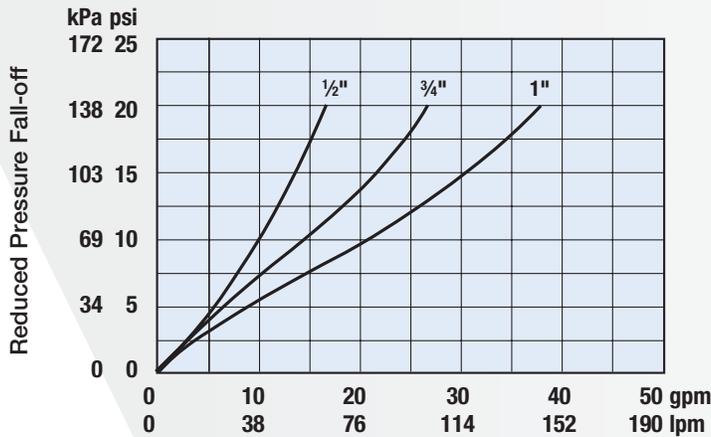


Direct Acting Performance Curves

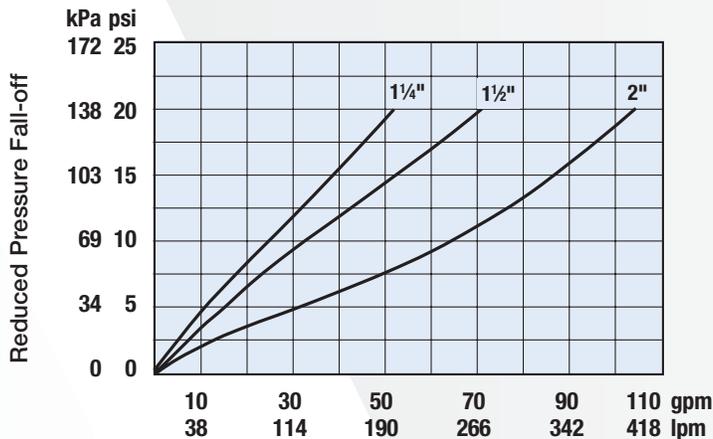
To help you match WPRV characteristics to your system requirements, Watts provides performance curves for each type and size of WPRV the company offers. The curves are based on and tested to the ASSE 1003 standard and compare the capacities of each valve with reduced pressure fall-off levels.

Use Watts performance curves to select the WPRV that best suits your job requirements and budget.

Sizes 1/2", 3/4", 1"



Sizes 1 1/4", 1 1/2", 2"



With Watts water pressure reducing valve, the difference between the initial and reduced lock-up (no-flow) pressures has a minor effect upon the valve capacity except when it is less than 50psi. When this difference is less than 50psi; the capacity of the valve is reduced and some minor compensation must be made in the sizing procedure. Therefore, either deduct 20% from capacity shown or add 20% to capacity required.

End Connections

To facilitate installation and servicing of a WPRV, Watts offers a variety of end fitting configurations, including union fittings (female threaded, solder, CPVC, PEX, Quick-Connect, and press end connections), flanged valves, water meter threads and special lay lengths for water meter installations. Please refer to valve models for specific availability of end connection options.



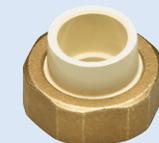
Solder



Threaded



Press



CPVC



PEX



Quick-Connect

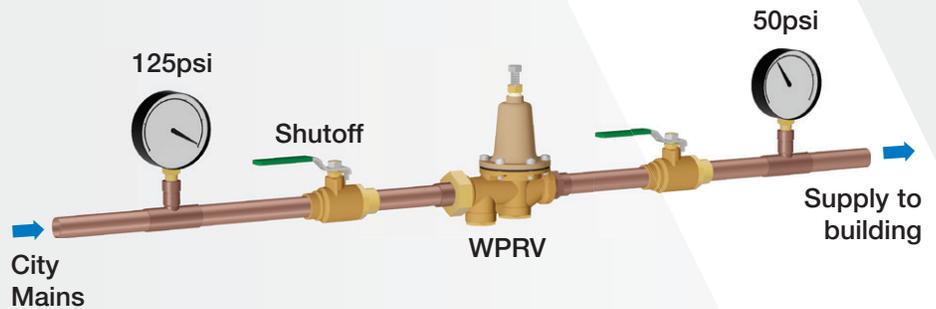


CEF

Choosing the Correct Installation Configuration

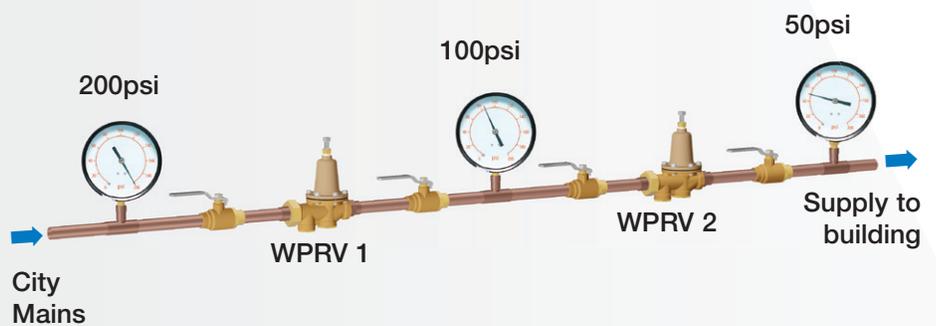
Single Regulator Installation

Single regulator installation is the most typical installation configuration. It is recommended where incoming pressure is less than 150psi and when the reduction ratio is less than 3:1.



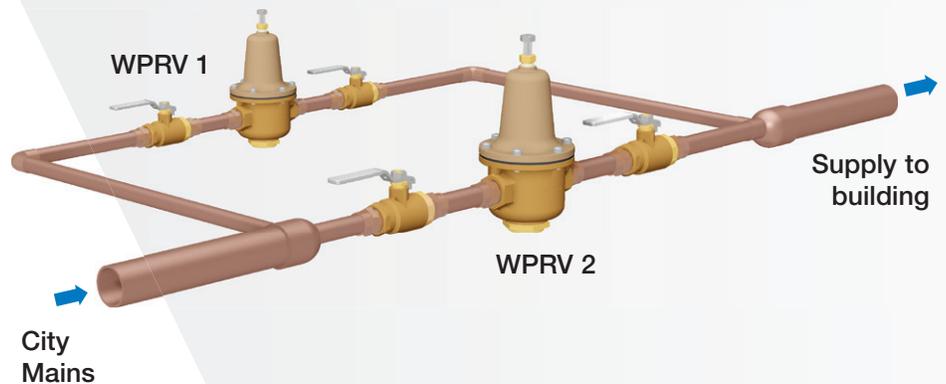
Two-Stage Serial Reduction Installation

Two-stage reduction is recommended when the initial pressure is 150psi or greater, or when the desired pressure reduction ratio is greater than 3:1 (e.g. from 150psi to 50psi), or when the inflow pressure fluctuates greatly. This approach helps prolong valve life and provide more precise pressure regulation.



Parallel Installation

Parallel installation is recommended for applications with a wide variation of reduced pressure requirements and where a continuous water supply must be maintained. Parallel installations offer the advantage of providing increased capacity beyond that provided by a single valve and improve valve performance for widely variable demands.



NOTICE

We recommend restricting installations to two valves for most applications to avoid excessive pressure drop and to ensure more precise control of reduced pressure. The number of regulators used should be based on the engineer's judgment, based on operating conditions for a specific installation.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

WPRVs Promote Conservation and Sustainability

Water Savings



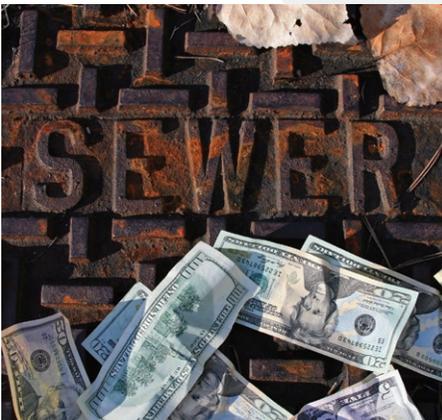
Twice as much water flows through a system at 150psi than at 50psi. At the higher pressure, much of the water flowing through the system is wasted.

Energy Savings



The less water that flows through a system, the less energy is needed to heat it, resulting in lower energy costs. Calculations demonstrate that a WPRV installed in a residential setting can produce as much as 30% savings on water heating costs.

Wastewater Savings



Many municipalities prorate sewer usage fees based on meter readings. When a community's wastewater treatment load is reduced, the environment benefits and property owners realize savings.

LEAD FREE*

We Are Lead Free

The Reduction of Lead in Drinking Water Act, requires that every pipe, fixture, and fitting used to convey water for potable use contain less than 0.25% lead by weight. Today, all Watts WPRVs are lead free and compliant with the Lead Free mandate.



*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

