

ACV: Pressure Reducing Valve Specification & Installation Series W-M115

ACV: Pressure Reducing Valve

Size: DN32 - DN200

The Watts W-M115 Non-Watermarked Pressure Reducing Valve is designed to automatically reduce a fluctuating or high inlet pressure to a stable lower outlet pressure. The outlet pressure is adjustable over a broad range and remains stable from maximum to minimum rated flows.

Features

- Stainless steel trim as standard, for greater reliability & service life
- Dual pressure gauges as standard, for ease of setting and confidence in performance
- Factory tested and downstream pressure preset to 500 kPa as standard

Pressure - Temperature

- Operating Pressure: up to 1600kPa Standard, higher pressures on request
- Working Temperature: 0-80 C for NBR Diaphragm & Seals
- Set Pressure Range: Standard: 70 to 860 kPa(set at 500 kPa)
Optional: 140 to 120 kPa(set at 500 kPa)

Test Pressures

- Body Test Pressure: 2400 kPa
- Seat Test Pressure: 1760 kPa
- Based on Table E Flange

Material

Component	Material
Body/bonnet	Ductile Iron with Epoxy Resin, NSF Certified Coating
Stem/seat	Stainless Steel
Diaphragm	Nylon Reinforced NBR
Main valve seal	NBR
Pressure reducing pilot	Brass
Pilot strainer, needle valve & fittings	Brass
Pilot tubing	Copper

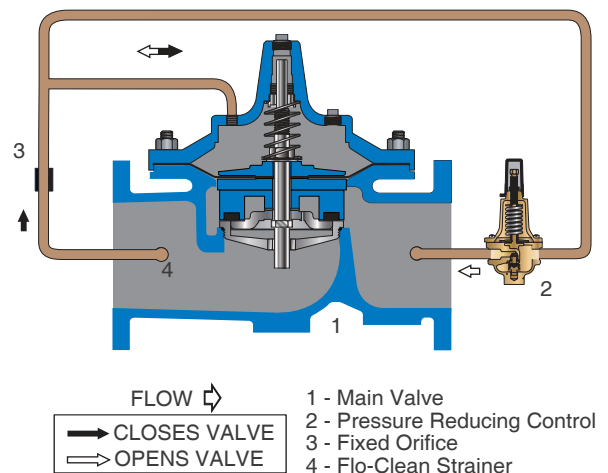
Operating Principle

The main valve is controlled by the action of the pressure reducing pilot valve. If the downstream pressure is below the set pressure then the pilot valve opens, releasing water from the top chamber of the main valve, causing the main valve to open and downstream pressure to rise. As the downstream pressure nears the set point the pilot valve begins to close a little, resulting in more water accumulating in the top chamber of main valve, causing main valve to modulate and maintain the downstream pressure. If the downstream pressure increases above the set point, the pilot valve closes completely, resulting in full line pressure gently closing the main valve and creating a drip tight seal. In this way the main valve responds precisely to accurately maintain the downstream pressure.



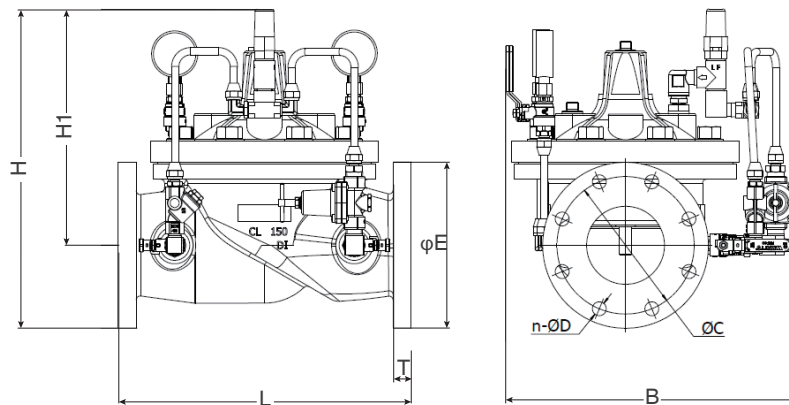
Specification

- Connection Type:
Flanged to AS 2129 Table E as Standard: DN65-DN200
Threaded BSPT: DN32- DN50
- Working Medium: Non corrosive liquids



Installation Dimensions

Connection Dimension: Threaded and AS 2129 Table E



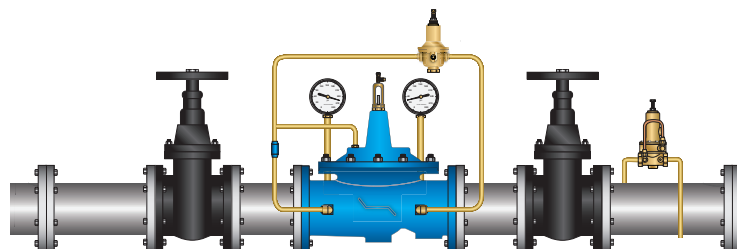
Size DN	Dimensions(mm)				Flange Dimensions(mm)				Weight(Kg)
	L	H	H1	B	ϕC	$n-\phi D$	ϕE	T	
32 BSPT	184	305	271	235	/	/	/	/	17.5
40 BSPT	184	305	271	235	/	/	/	/	17.5
50 BSPT	238	315	268	250	/	/	/	/	18.2
65	280	341	258	272	127	4-18	165	22.4	19.2
80	305	330	238	295	146	4-18	185	23.9	36.5
100	381	415	308	372	178	8-18	215	23.9	52.3
150	508	471	331	470	235	8-22	280	25.4	112
200	645	570	405	525	292	8-22	335	28.4	198

*Please contact the local salesmen if the size \geq DN200 are needed.

Flow Rates

Size DN (mm)	32	40	50	65	80	100		200
Maximum Continuous (l/s)	6	8	13	19	31	50	117	196
Maximum Intermittent (l/s)	8	10	17	25	37	63	145	252
Minimum Continuous (l/s)	0.2	0.3	0.4	0.6	0.9	1.0	1.1	1.6

General Application



Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



Installation Instructions

- Prior to installation, flush line to remove debris.
- Install valve horizontally “in line” (cover facing UP), so flow arrow matches flow through the line. Avoid installing valves 6” and larger vertically. Consult factory prior to ordering if installation is other than described.
- Install inlet and outlet isolation valves. NOTE: When using butterfly valves, insure disc does not contact control valve. Damage or improper valve seating may occur.
- Provide adequate clearance for valve servicing and maintenance.
- Install pressure gauges to monitor valve inlet and outlet pressure.
- If installation is subjected to very low flow or potentially static conditions, it is recommended a pressure relief valve (1/2” minimum) be installed downstream of the Pressure Reducing Valve for additional system protection.

Start-Up

Proper Automatic Control Valve start-up requires bringing the valve into service in a controlled manner. All adjustments to control pilots and speed controls should be made slowly, allowing the valve to respond and the system to stabilize. NOTE: Control Valves should be set-up in a dynamic (flowing) condition for proper startup. Provisions for flow must be made to insure proper settings.

1. Close upstream and downstream valves to isolate the valve from line pressure. Release spring tension on Pressure Reducing Control by turning adjustment screw out (counterclockwise), decreasing setpoint. Open all Isolation Ball Valves, if so equipped. If valve is fitted with adjustable speed controls, turn needle(s) in (clockwise) until seated, and return out (counterclockwise) 1-1/2 to 2-1/2 turns. These are approximate settings, and should be fine tuned to suit system requirements after pressure adjustments have been made.
2. Slowly open upstream isolation valve to allow controlled filling of the valve. Vent entrapped air by carefully loosening control tubing or pipe plug at the highest point possible. If valve is equipped with a Position Indicator, open Air Bleed Petcock to vent air. Water will be milky in appearance and will begin to clear as air is vented. Carefully loosen enough cover screws on control pilot(s) to vent entrapped air. Re-tighten when water vents clearly.
3. Setting Reducing Control: Slowly open downstream isolation valve. Gradually turn adjustment screw on the Pressure Reducing Control in (clockwise) to raise downstream pressure. Allow valve and system to stabilize. Observe inlet and outlet pressure gauges. Continue to adjust as needed, pausing approximately every 1-1/2 turns, allowing valve and system to stabilize. Turning adjustment screw clockwise raises outlet pressure. Turning adjustment screw counterclockwise lowers outlet pressure. When desired downstream pressure is reached, tighten locknut on adjustment screw.
4. Fine tune Speed Controls to suit system requirements. Adjust Closing Speed Control (if equipped) clockwise for slower closure, and counterclockwise for faster closure. Adjust Opening Speed Control (if equipped) clockwise for slower opening, and counterclockwise for faster opening.

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