

M Series Basic Valves

LEAD FREE*

Reduced Port Ductile Iron Dual Chamber Basic Valve

This Watts ACV is a reduced port, dual chamber basic valve that incorporates a one-piece disc and diaphragm assembly. This assembly is the only moving part within the valve allowing it to open, close, or modulate as commanded by the pilot control system. The reduced port design offers improved low-flow performance as compared to the full port valve on the same service.

When pressure is applied to the upper diaphragm chamber and released from the lower diaphragm chamber, the valve travels to a closed position. When pressure is applied to the lower diaphragm chamber and released from the upper diaphragm chamber the valve travels to a full open position. When pressure is balanced between the upper and lower diaphragm chambers, the valve will hold an intermediate position until commanded to modulate open or closed by the pilot control system.

Watts ACV Main Valves are Lead Free. The Watts ACV piloting system contains Lead Free* components, ensuring all of our configurations are Lead Free compliant.

Globe Pattern Dual Chamber Basic Valve (M6500)

Angle Pattern Dual Chamber Basic Valve (M61500)



Globe Flanged



Angle Flanged

Standard Materials

Body & Cover: Ductile Iron ASTM A536

Coating: NSF Listed Fusion Bonded Epoxy Lined and Coated

Trim: 316 Stainless Steel

Elastomers: Buna-N (standard)
EPDM (optional)
Viton® (optional)

Nut, Spring & Stem: Stainless Steel

Anti-Scale (Optional): Xylan Coated Stem and Seat



Operating Pressure

150# Flanged = 250psi (17.2 bar)

300# Flanged = 400psi (27.6 bar)

Operating Temperature

Buna-N: 160°F (71°C) Maximum

EPDM: 300°F (140°C) Maximum

Viton®: 250°F (121°C) Maximum

Epoxy Coating**: 225°F (107°C) Maximum

** Valves can be provided without internal epoxy coating consult factory

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

Viton® is a registered trademark of DuPont Dow Elastomers.

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.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. 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.

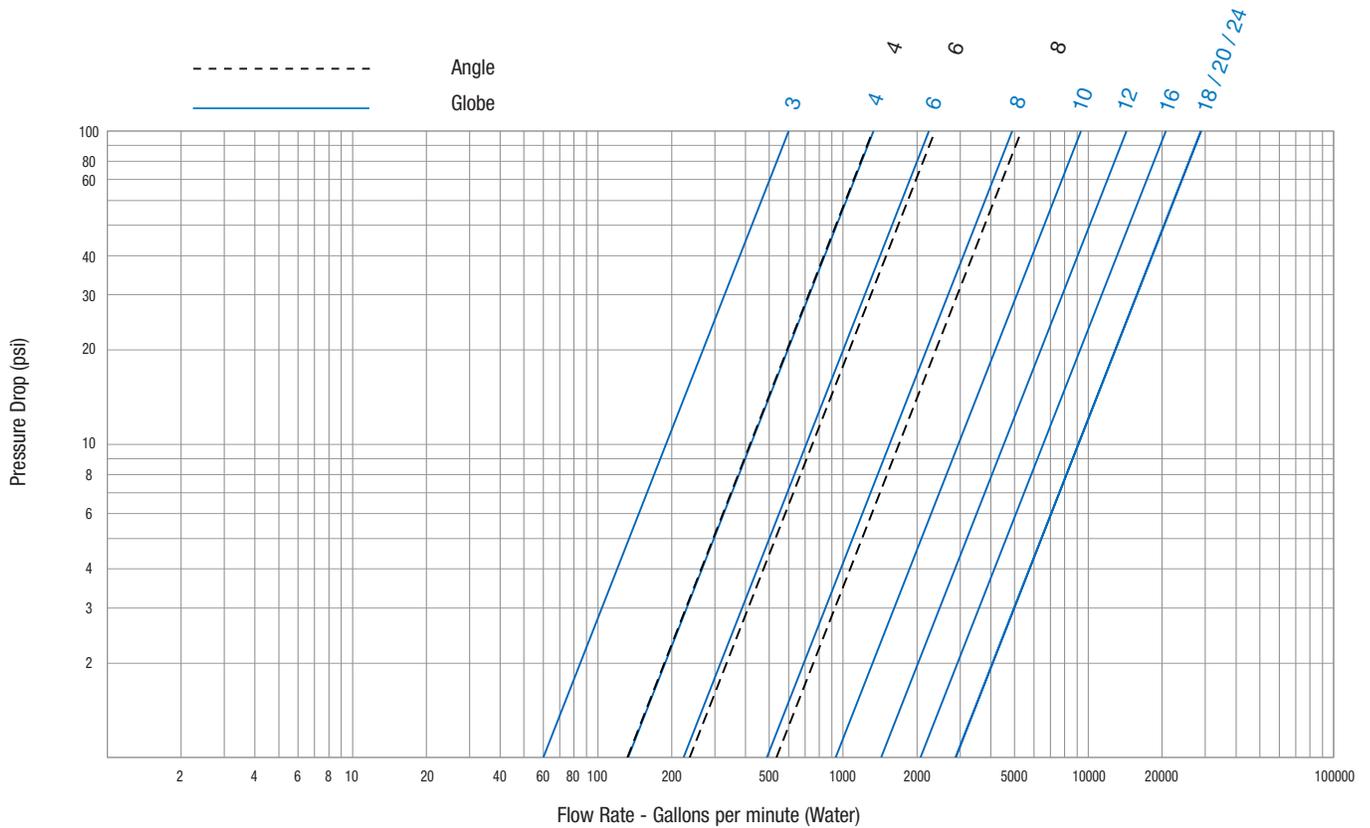
Reduced Port Ductile Iron Dual Chamber Basic Valve

Flow Data

Valve Size - Inches	3	4	6	8	10	12	16	18	20	24	
Suggested	Maximum Continuous Flow Rate Gpm (Water)	210	485	800	1850	3100	5000	7000	11100	11100	11100
	Maximum Intermittent Flow Rate Gpm (Water)	265	590	1000	2300	4000	6250	8900	14100	14100	14100
	Minimum Flow Rate Gpm (Water)	6	15	16	17	25	55	70	400	400	400
C_v	Factor GPM (Globe)	60	120	224	402	932	1314	2067	2881	2881	2881
	Factor GPM (Angle)		132	237	534						

- Maximum continuous flow based on velocity of 20 ft. per second.
- Maximum intermittent flow based on velocity of 25 ft. per second.
- Minimum flow rates based on a 20-40 psi pressure drop.
- The C_v Factor of a valve is the flow rate in US GPM at 60°F that will cause a 1psi drop in pressure.
- C_v factor can be used in the following equations to determine Flow (Q) and Pressure Drop (ΔP):

$$Q \text{ (Flow)} = C_v \sqrt{\Delta P} \quad \Delta P \text{ (Pressure Drop)} = (Q/C_v)^2$$



Valve Cover Chamber Capacity

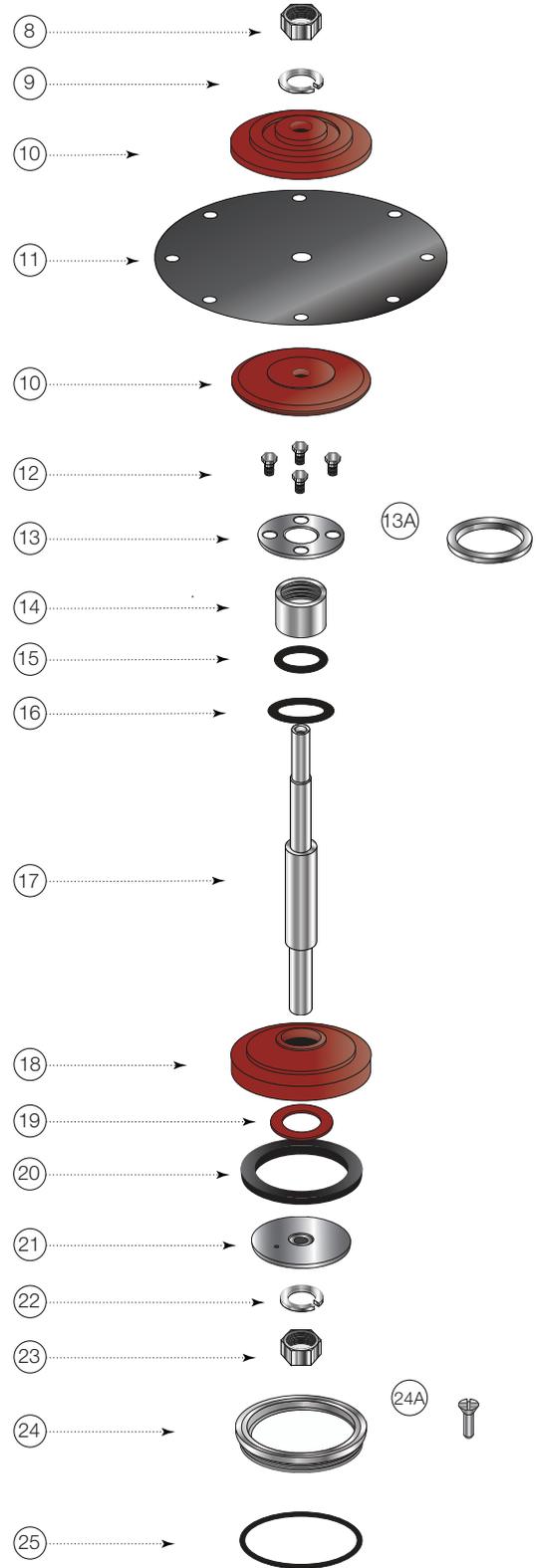
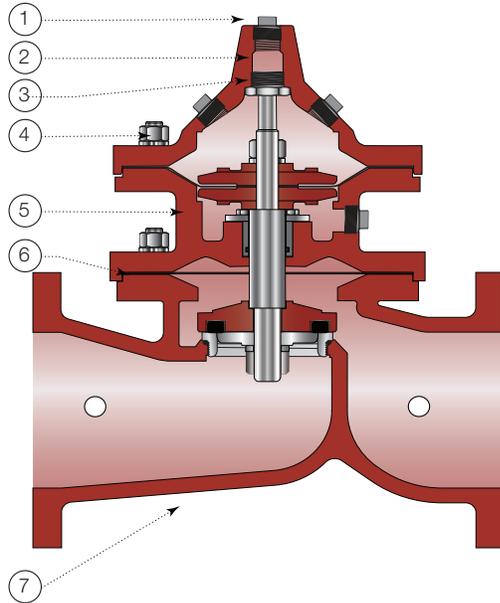
Valve Size (in)	3	4	6	8	10	12	16	18	20	24
fl.oz.	4	10	22	70						
U.S. Gal					1¼	2½	4	9½	9½	9½

Valve Travel

Valve Size (in)	3	4	6	8	10	12	16	18	20	24
(in)	½	¾	1	1½	2	2½	3	4	4	4

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ITEM	DESCRIPTION	MATERIAL
1	Pipe Plug	ASTM A570 Gr.33 Zinc Plated Steel
2	Cover	ASTM A536 65-45-12 Epoxy Coated Ductile Iron
3	Cover Bearing	ASTM A276 304 Stainless Steel
4	Stud with Cover Nut and Washer	ASTM A570 Gr.33 Zinc Plated Steel
5	Upper Body	ASTM A536 65-45-12 Epoxy Coated Ductile Iron
6	Gasket Seal	Buna-N (Nitrile)
7	Body	ASTM A536 65-45-12 Epoxy Coated Ductile Iron
8	Stem Nut	ASTM A276 304 Stainless Steel
9	Lock Washer	ASTM A276 302 Stainless Steel
10	Diaphragm Washer	ASTM A536 65-45-12 Epoxy Coated Ductile Iron
11	Diaphragm *	Buna-N (Nitrile)
12	Inner Bearing Bolts** (4" and Smaller)	ASTM A276 304 Stainless Steel
13	Inner Bearing Retainer** (4" and Smaller)	ASTM A276 302 Stainless Steel
13A	Bearing Retaining Ring** (6" and Larger)	ASTM A276 302 Stainless Steel
14	Inner Bearing	ASTM A276 304 Stainless Steel
15	O-ring *	Buna-N (Nitrile)
16	O-ring *	Buna-N (Nitrile)
17	Stem	ASTM A276 304 Stainless Steel
18	Disc Retainer	ASTM A536 65-45-12 Epoxy Coated Ductile Iron
19	Spacer Washer *	NY300 Fiber
20	Disc *	Buna-N (Nitrile)
21	Disc Guide	ASTM A743 CF8M (316) Stainless Steel
22	Lock Washer	ASTM A276 304 Stainless Steel
23	Stem Nut	ASTM A276 304 Stainless Steel
24	Seat Ring***	ASTM A743 CF8M (316) Stainless Steel
24A	Seat Screw*** (10" and Larger)	ASTM A276 304 Stainless Steel
25	Seat Gasket *	Buna-N (Nitrile)

* Contained in Main Valve Repair Kit

**6 inch and larger valves do not require Bearing Bolts

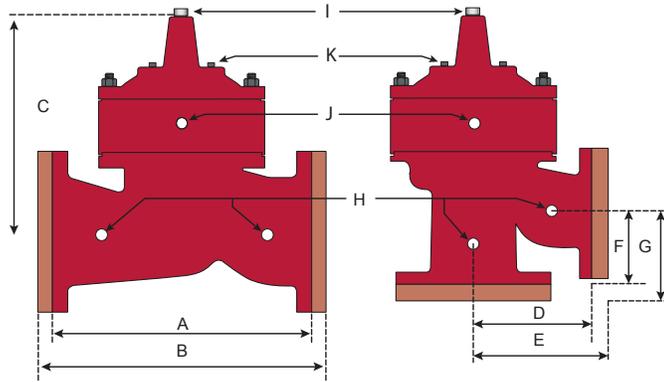
***8 inch and smaller valves, Seat Ring is threaded

NOTICE

Installation: If unit is installed in any orientation other than horizontal (cover up) OR extreme space constraints exist, consult customer service prior to or at the time of order.

Reduced Port Ductile Iron Dual Chamber Basic Valve

Dimensions



Valve Size	Globe 150#		Globe 300#		Cover To Center		Angle 150#		Angle 300#		Angle 150#		Angle 300#		Port Size	Port Size	Port Size	Shipping	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	NPT	NPT	NPT	lbs.	kgs.
3	10¼	260	11	279	9⅞	230									¾	½	½	31	14
4	13⅞	352	14½	368	11⅞	302	6⅞	176	7¼	184	5½	140	5⅞	148	½	½	½	50	23
6	17¾	451	18⅞	473	15¼	387	8⅞	225	9⅞	238	6¾	171	7¼	184	¾	¾	¾	130	59
8	21⅞	543	22⅞	568	20⅞	511	10⅞	271	11⅞	289	7¼	184	7¾	197	¾	¾	¾	210	95
10	26	660	27⅞	695	23⅞	598									1	1	1	363	165
12	30	762	31½	800	27	684									1	1	1	528	240
16	35	889			34¼	870									1	1¼	1	826	375
18	48	1219			40	1016									1	2	1	1365	620
20	48	1219			40	1016									1	2	1	1390	630
24	48	1219			40	1016									1	2	1	1485	674



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