

S Series Basic Valves

LEAD FREE*

Reduced Port Stainless Steel Single Chamber Basic Valve with Mechanical Check Feature

This Watts ACV is a reduced port, single chamber basic valve that incorporates a two-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 lower portion of this two-piece assembly is a mechanical check feature, which acts independent of diaphragm position or pilot control system, and provides immediate check action when flow ceases. The reduced port design offers improved low-flow performance as compared to a full port valve in the same service.

The Stainless Steel design offers superior corrosion resistance. The large fabricated valves provide a lightweight alternative to ductile iron. Stainless Steel construction reduces corrosion, reducing diaphragm wear and the frequency and labor costs associated with traditional maintenance repairs.

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 Single Chamber Basic Valve with Mechanical Check Feature (S6400)

Angle Pattern Single Chamber Basic Valve with Mechanical Check Feature (S61400)



Flanged Globe



Flanged Angle

Standard Materials

Body, Cover & Flanges:	4" Cast CF8M (316 Stainless Steel)
	6" - 24" Fabricated 304L Stainless Steel 316L Stainless Steel (optional)
Trim:	316L Stainless Steel
Elastomers:	Buna-N (standard) EPDM (optional) Viton® (optional)
Nut & Spring, Stem:	Stainless Steel
Anti-Scale (Optional):	Xylan Coated Stem and Seat



Certified to NSF/ANSI 61-G

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

***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.

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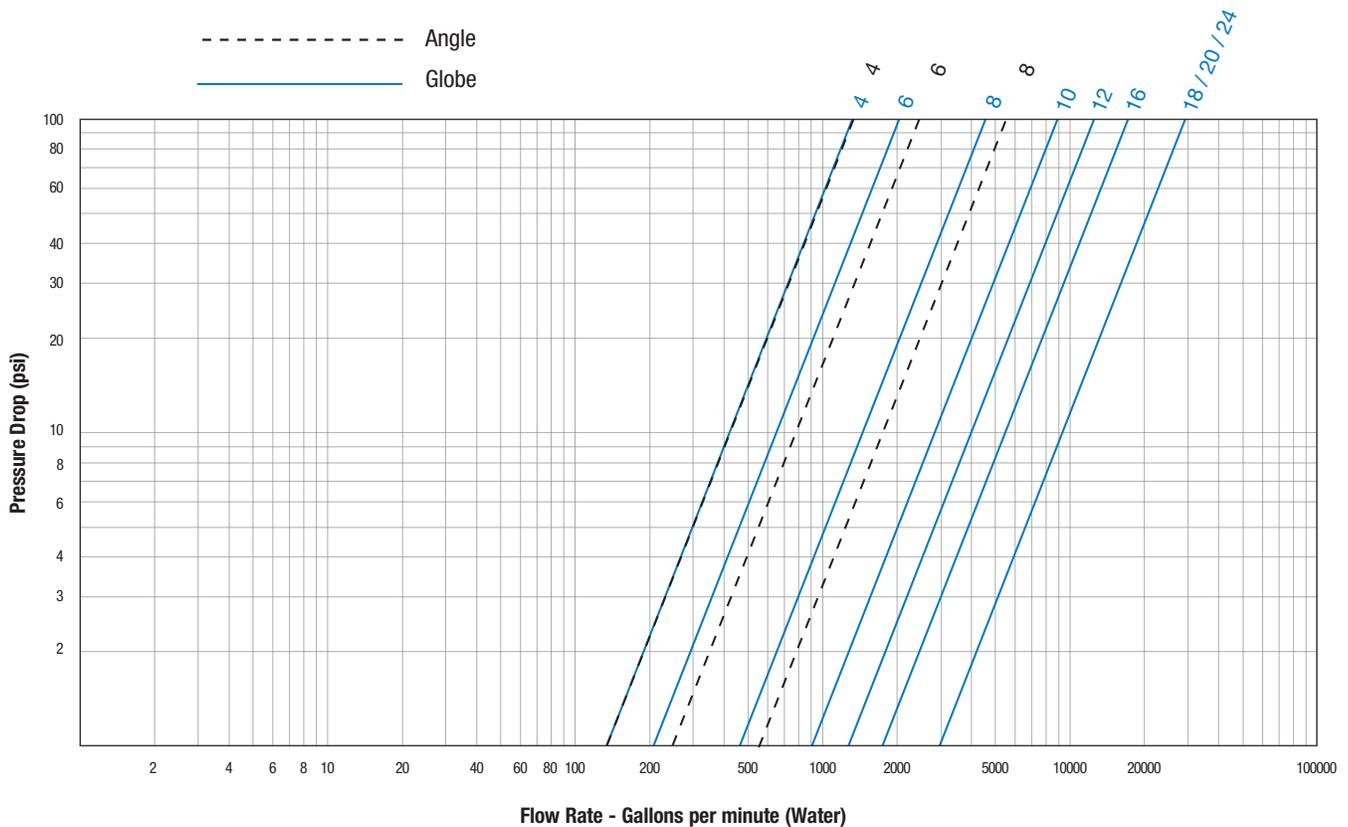
Flow Data

Valve Size - Inches		4	6	8	10	12	16	18	20	24
Suggested	Maximum Continuous Flow Rate Gpm (Water)	485	800	1850	3100	5000	7000	11100	11100	11100
	Maximum Intermittent Flow Rate Gpm (Water)	590	1000	2300	4000	6250	8900	14100	14100	14100
	Minimum Flow Rate Gpm (Water)	15	16	17	25	55	70	400	400	400
C_v	Factor GPM (Globe)	133	224	376	932	1043	2067	2881	2881	2881
	Factor GPM (Angle)		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):

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

- The C_v factors stated are based upon a fully open valve.
- Many factors should be considered in sizing control valves including inlet pressure, outlet pressure and flow rates.
- For sizing questions including cavitation analysis consult Watts with system details.



Valve Cover Chamber Capacity

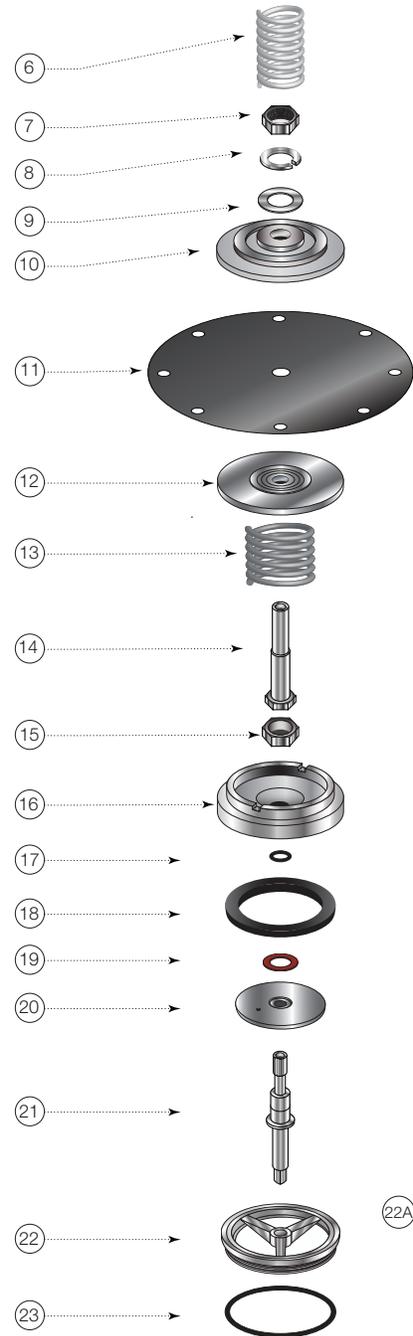
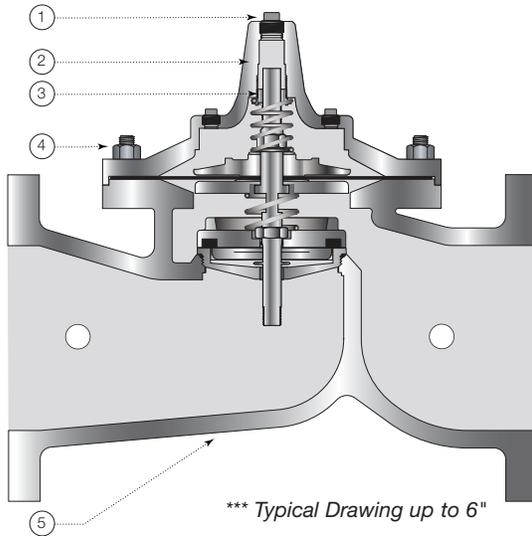
Valve Size (in)	4	6	8	10	12	16	18	20	24
fl.oz.	10	22	70						
U.S. Gal				1¼	2½	4	9½	9½	9½

Valve Travel

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

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ITEM	DESCRIPTION	MATERIAL
1	Pipe Plug	Stainless Steel S30400
2	Cover	Cast ASTM A351 CF8M (316) Stainless Steel (4" and Smaller)
		Fabricated S304L (4" and Larger)
3	Cover Bearing	ASTM A276 304 Stainless Steel
4	Stud with Cover Nut and Washer	S31600 (B8M)
5	Body	Cast ASTM A351 CF8M (316) Stainless Steel (4" and Smaller)
		Fabricated S304L (4" and Larger)
6	Spring	ASTM A313 S30200 Stainless Steel
7	Stem Nut	ASTM A276 304 Stainless Steel
8	Lock Washer	ASTM A276 304 Stainless Steel
9	Stem Washer	ASTM A276 304 Stainless Steel
10	Diaphragm Washer	ASTM A743 CF8M (316) Stainless Steel
11	Diaphragm*	Buna-N (Nitrile)
12	Lower Diaphragm Washer	ASTM A743 CF8M (316) Stainless Steel
13	Lower Spring	ASTM A313 302 Stainless Steel
14	Upper Stem	ASTM A276 304 Stainless Steel
15	Stem Nut	ASTM A276 304 Stainless Steel
16	Disc Retainer	ASTM A276 304 Stainless Steel
17	O-Ring*	Buna-N (Nitrile)
18	Seat Disc	Buna-N (Nitrile)
19	Spacer Washer* x5	NY300 Fiber*
20	Disc Guide	ASTM A276 304 Stainless Steel
21	Lower Stem	PH 17-4 Stainless Steel
22	Seat Ring**	ASTM A743 CF8M (316) Stainless Steel
22A	Seat Screw** (10" and Larger)	ASTM A276 304 Stainless Steel
23	Seat Gasket*	Buna-N (Nitrile)

* Contained in Main Valve Repair Kit

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

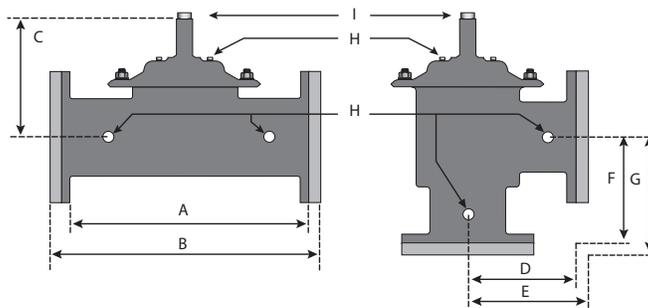
*** Consult Factory for 6" and Larger Drawings

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.

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Dimensions



Valve Size	Globe 150#		Globe 300#		Cover To Center		Angle 150#		Angle 300#		Angle 150#		Angle 300#		Port Size NPT	Port Size NPT	Shipping Weights*	
	A		B		C		D		E		F		G		H	I	lbs.	kgs.
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	in.		
4	13 ⁷ / ₈	352			8 ⁵ / ₈	219									1/2	1/2	39	18
6	17 ³ / ₄	451	18 ⁵ / ₈	473	11 ⁵ / ₈	295	8 ⁷ / ₈	225	9 ³ / ₈	238	6 ³ / ₄	171	7 ¹ / ₄	184	1/2	3/4	77	35
8	21 ³ / ₈	543	22 ³ / ₈	568	15	381	10 ¹¹ / ₁₆	271	11 ³ / ₁₆	284	7 ¹ / ₄	184	7 ³ / ₄	197	1/2	3/4	168	76
10	26	660	27 ³ / ₈	695	17 ⁷ / ₈	454									1	1	225	102
12	30	762	31 ¹ / ₂	800	21	533									1	1 ¹ / ₄	376	171
16	35	889	36 ⁵ / ₈	930	25 ³ / ₄	654									1	1 ¹ / ₂	450	204
18	48	1219	49 ⁵ / ₈	1260	31	787									1	1 ¹ / ₂	850	386
20	48	1219	49 ⁵ / ₈	1260	31	787									1	1 ¹ / ₂	860	390
24	48	1219	49 ³ / ₄	1264	31	787									1	1 ¹ / ₂	870	395



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