

S Series Basic Valves

LEAD FREE*

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

This Watts ACV is full port, single chamber basic valve that incorporates a two-piece telescoping 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 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 (S400)

Angle Pattern Single Chamber Basic Valve with Mechanical Check Feature (S1400)



Flanged Globe



Flanged Angle

Standard Materials

Body, Cover & Flanges:

3" - 4" Cast CF8M (316 Stainless Steel)
4" - 16" 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



***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.

Operating Pressure

150# Flanged = 250psi (17.2 bar)
300# Flanged = 400psi (27.5 bar)

Operating Temperature

Buna-N: 160°F (71°C) Maximum
EPDM: 300°F (140°C) Maximum
Viton®: 250°F (121°C) Maximum

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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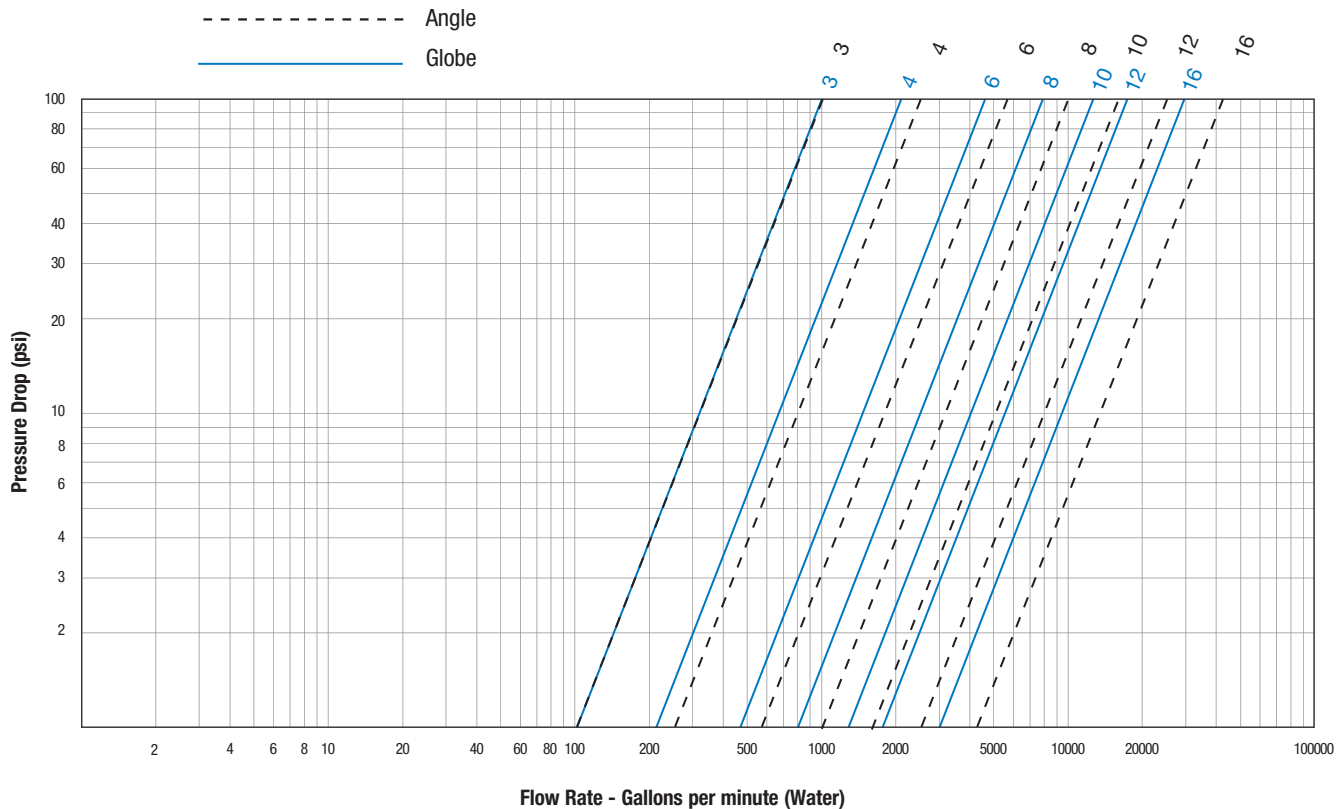
Flow Data

Valve Size - Inches	3	4	6	8	10	12	16	
Suggested	Maximum Continuous Flow Rate Gpm (Water)	485	800	1850	3100	5000	7000	11100
	Maximum Intermittent Flow Rate Gpm (Water)	590	1000	2300	4000	6250	8900	14100
C_v	Minimum Flow Rate Gpm (Water)	15	16	17	25	55	70	400
	CV Factor GPM (Globe)	112	161	342	591	1060	1404	2581
	CV Factor GPM (Angle)	125	177	561	860	1590	1645	4200

- 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

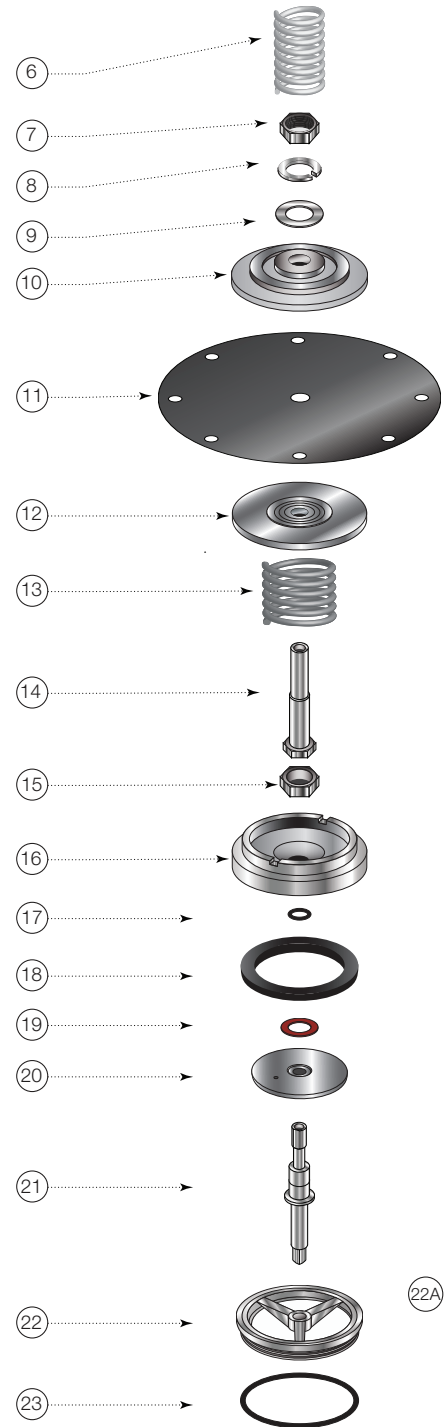
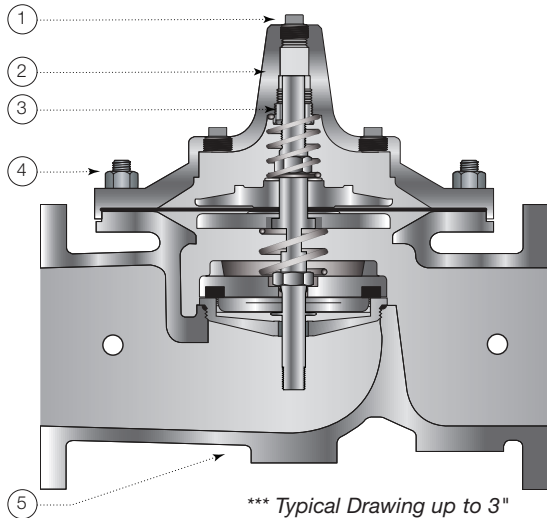
Valve Size (in)	3	4	6	8	10	12	16
fl.oz.	16	22	70				
U.S. Gal				1¼	2½	4	9½

Valve Travel

Valve Size (in)	3	4	6	8	10	12	16
Travel (in)	¾	1	1½	2	2½	3	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** (8" and Larger)	ASTM A276 304 Stainless Steel
23	Seat Gasket*	Buna-N (Nitrile)

* Contained in Main Valve Repair Kit

**Note: 6 inch and smaller valves, Seat Ring is threaded

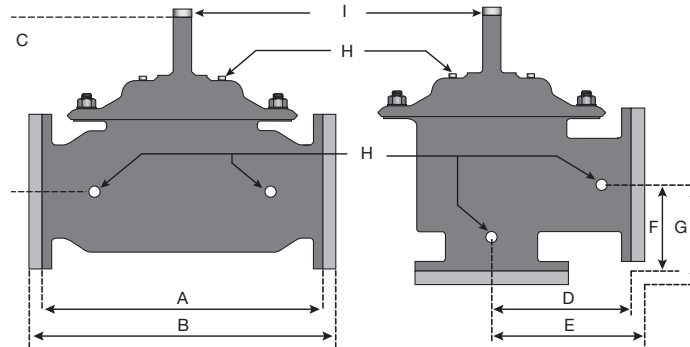
*** Consult Factory for 4" and Larger Drawings

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.		
3	12	305			8¼	210	6	152			4	102			½	½	95	43
4	15	381	15½	397	10¾	270	7½	191	7¾	200	5	127	5⅞	135	½	¾	77	35
6	20	508	21	533	13¾	340	10	254	10½	267	6	152	6½	165	½	¾	168	76
8	25¾	645	26¾	670	16	406	12¾	324	13¼	337	8	203	8½	216	1	1	225	102
10	29¾	756	31½	791	17¾	435	14¾	378	15⅞	395	8¾	219	9⅞	237	1	1¼	376	171
12	34	864	35½	902	20¾	530	17	432	17¾	451	13¾	349	14½	368	1	1¼	450	204
16	41¾	1051	43½	1105	25	635	20⅜	529	21⅞	549	15⅞	398	16½	419	1	1½	850	386



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