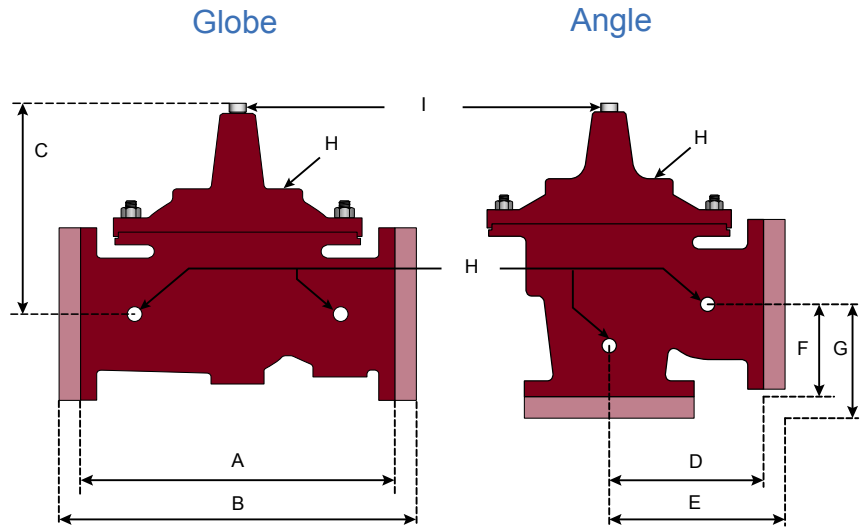## Standard Materials

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)
Stem, Nut & Spring:	Stainless Steel

Globe

Angle

Dimensions

VALVE SIZE	A GLOBE 150#	B GLOBE 300#	C COVER TO CENTER	D ANGLE 150#	E ANGLE 300#	F ANGLE 150#	G ANGLE 300#	H PORT SIZE	I PORT SIZE	SHIPPING WEIGHTS*
4	15	15-5/8	10-5/8	7-1/2	7-7/8	5	5-5/16	3/4	3/4	190
6	20	21	13-3/8	10	10-1/2	6	6-1/2	3/4	3/4	320
8	25-3/8	26-3/8	16	12-3/4	13-1/4	8	8-1/2	1	1	650
10	29-3/4	31-1/8	17-1/8	14-7/8	15-9/16	8-5/8	9-5/16	1	1	940
12	34	35-1/2	20-7/8	17	17-3/4	13-3/4	14-1/2	1	1-1/4	1500
14	39	40-1/2	24-1/4	19-1/2	20-1/4	14-7/8	15-5/8	1	1-1/2	1675
16	41-3/8	43-1/2	25	20-13/16	21-5/8	15-11/16	16-1/2	1	2	3100

*Estimated in lbs.

Description

The Watts ACV Models M400 and M1400 are full port, single chamber basic valves that incorporate 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.

Model M400:   Globe Pattern Single Chamber Basic Valve with Mechanical Check Feature
Model M1400: Angle Pattern Single Chamber Basic Valve with Mechanical Check Feature

Operating Pressure
150 Flanged = 250 psi / 300 Flanged = 400 psi

Operating Temperature
Buna-N: 160°F Maximum
EPDM: 300°F Maximum
Viton: 250°F Maximum

Flow Data - ACV M400 (Globe) / M1400 (Angle)

Valve Size - Inches	4	6	8	10	12	14	16
Maximum Continuous Flow Rate Gpm (Water)	800	1850	3100	5000	7000	8500	11100
Maximum Intermittent Flow Rate Gpm (Water)	1000	2300	4000	6250	8900	10800	14100
CV Factor GPM (Globe)	175	490	770	1200	1750	2125	2890
CV Factor GPM (Angle)	215	571	990	1530	2525	2885	3575

Estimated

Maximum continuous flow based on velocity of 20 ft. per second.
Maximum intermittent flow based on velocity of 25 ft. per second.
The C_V factor of a valve is the flow rate in US GPM at 60° F that will cause a 1 psi drop in pressure.
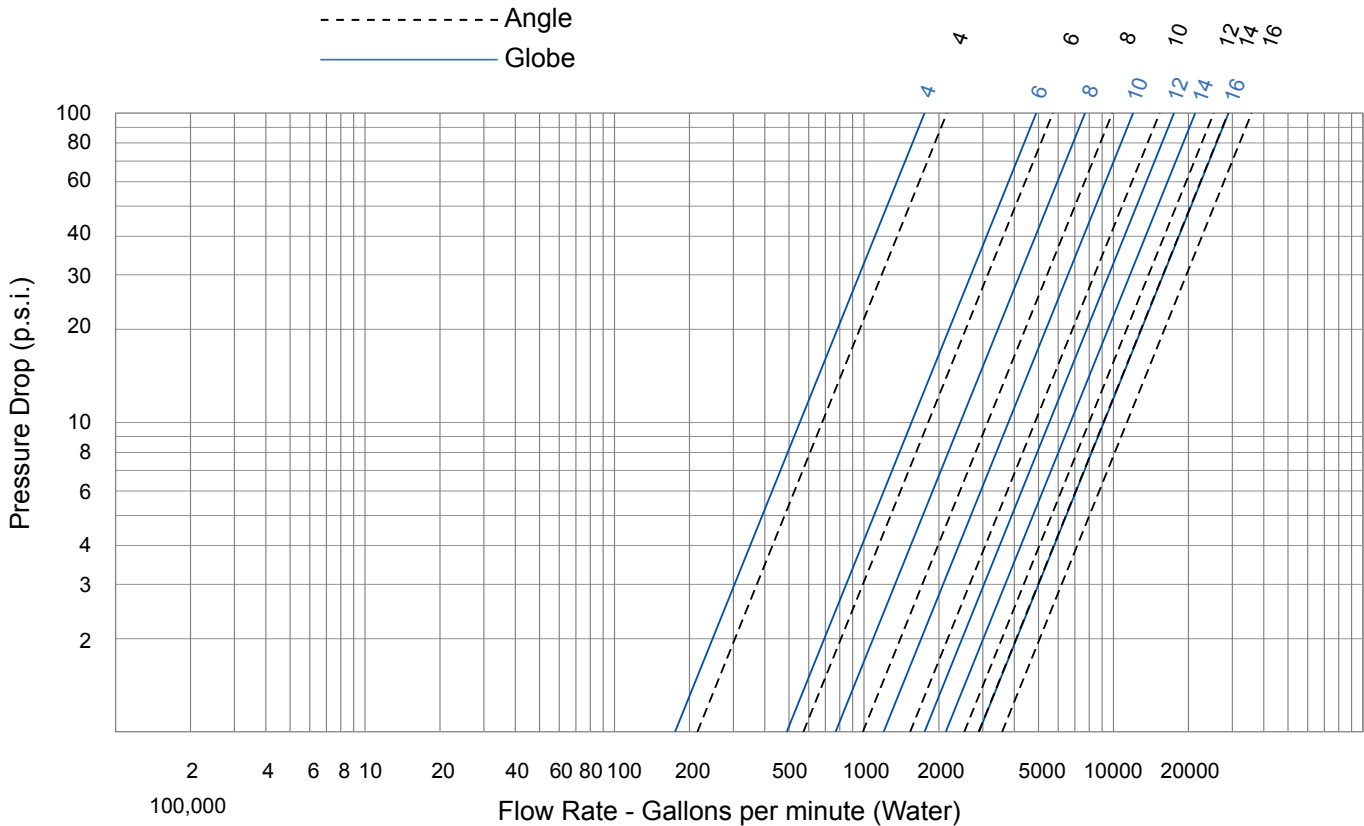The factors stated are based upon a fully open valve.
C_V factor can be used in the following equations to determine Flow (Q) and Pressure Drop ($\triangle$ P):

$$Q \text{ (Flow)} = C_V \sqrt{\triangle P} \qquad \triangle P \text{ (Pressure Drop)} = (Q/C_V)^2$$

Headloss

Valve Cover Chamber Capacity

Valve Size (in)	4	6	8	10	12	14	16
fl.oz.	22	70					
U.S. Gal			1-1/4	2-1/2	4	6-1/2	9-1/2

Valve Travel

Valve Size (in)	4	6	8	10	12	14	16
Travel (in)	1	1-1/2	2	2-1/2	3	3-1/2	4