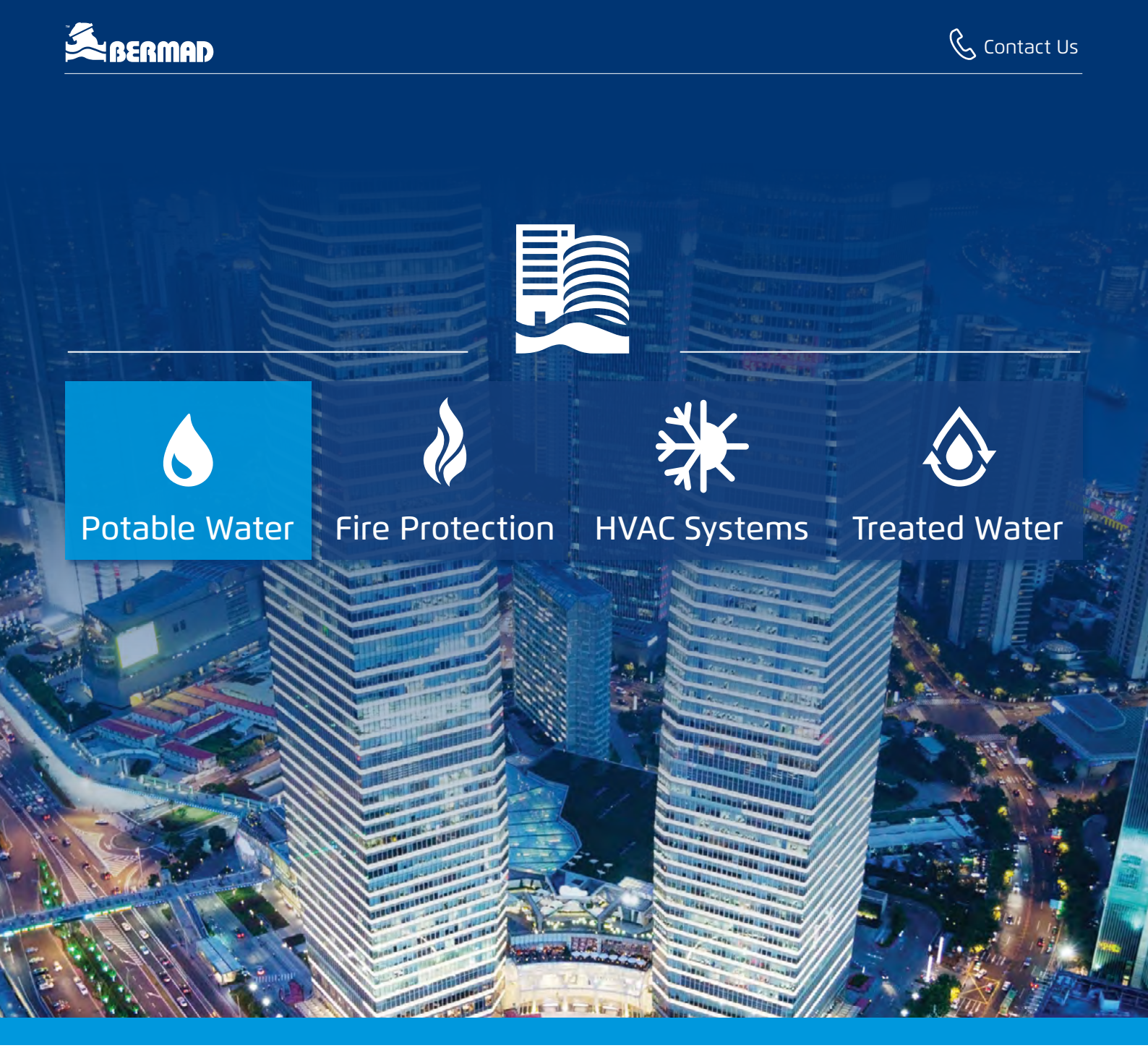
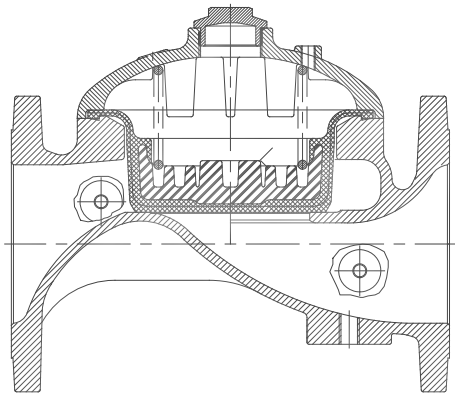


Potable Water

Fire Protection

HVAC Systems

Treated Water



CONTENTS

Main Valve Features

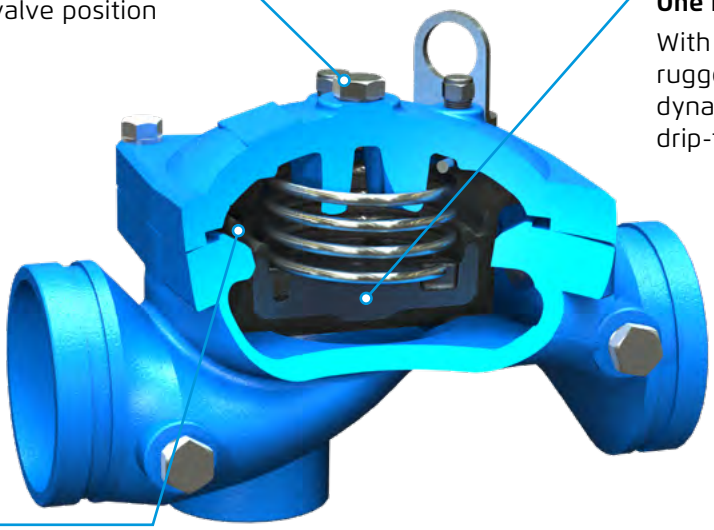
CUTTING-EDGE DESIGN

Multi Purpose Cover Plug

For optional indicator, electric limit switch or valve position transmitter

One Piece Elastomeric Assembly

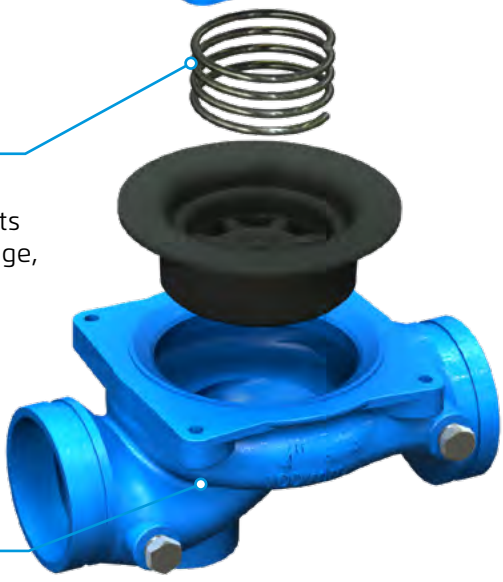
With embedded vulcanized rugged radial seal disk for dynamic regulation and rigid drip-tight seal



Unique Rolling Seal Diaphragm

Supported by conical seat allowing friction free operation

SIMPLE ASSEMBLY



One Single Spring

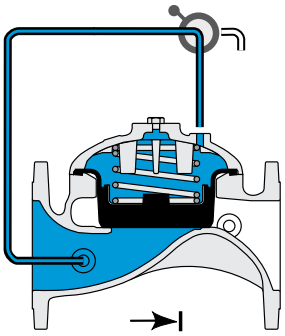
Fully meets valve requirements for full operating pressure range, ensuring both low pressure opening and secure closing

Hydro-Dynamic Globe

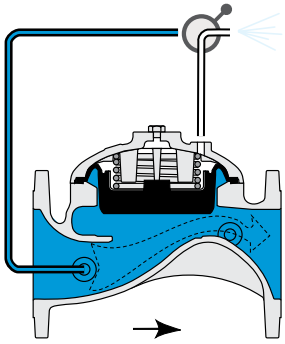
Designed for efficient unobstructed flow with minimal pressure loss and excellent resistance to cavitation

Principle of Operation

On-Off Modes

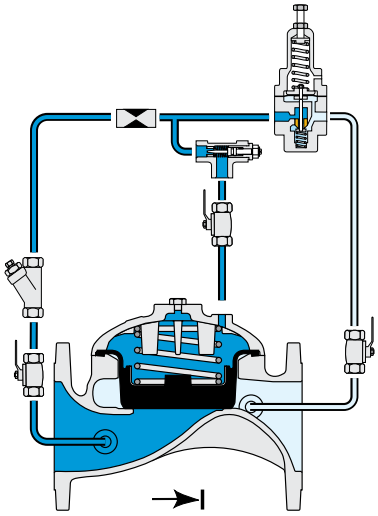


Closed Position
Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing.

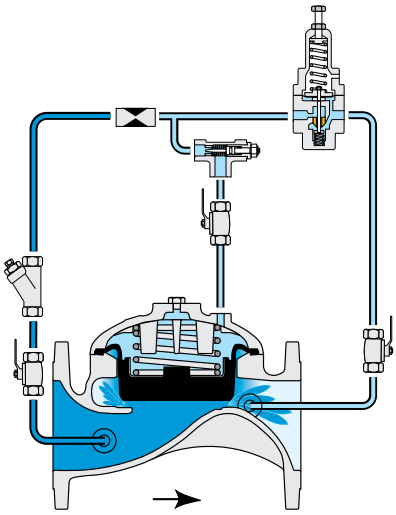


Closed Position
Discharging the pressure from the control chamber to atmosphere or some other lower pressure zone, causes the line pressure acting on the plug to open the valve.

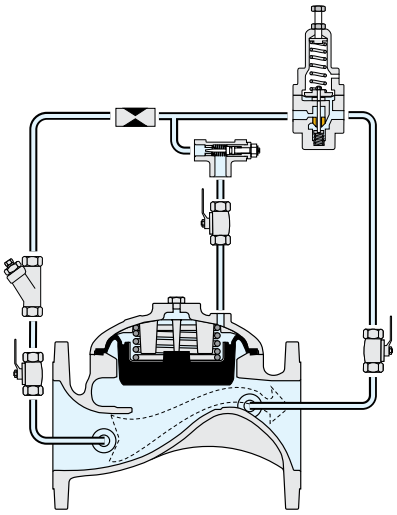
2-Way Modulating Modes



Closed Position
The closed adjustable pilot valve traps line pressure in the upper control chamber. The resulting superior force moves the valve to the fully closed position and provides drip-tight sealing.



Modulating Position
The pilot valve senses line pressure changes and opens or closes accordingly. It controls the accumulated pressure in the valve upper control chamber, causing main valve to modulate to an intermediate position and maintain the preset pressure value.



Open Position
The open pilot valve releases line pressure from the upper control chamber. The line pressure acting on both the lower control chamber and the seal-disk, moves the valve to the open position.

Technical Data

Available Sizes & Patterns
Globe: DN40-DN400; 11/2"-16"
Angle: DN50-DN100; 2"-4"

Connection Standard
Flanged: All Standards
Threaded: BSP (Rp ISO 7/1) or NPT
Grooved: ANSI C606 or BS 1387

Operating pressure Range
0.8-16 bar; 10 - 250 psi

Pressure Rating
PN16; 250 psi

Water Temperature
Up to 50°C; 122°F

Standard Materials
- Main valve body and cover
  - Globe: Ductile Iron to ASTM A536 65-45-12 (coated)
  - Angle: Cast Iron (coated)
- Diaphragm Assembly
  - DN40-DN100; 11/2"-4": Reinforced NR with Plastic Vulcanized Radial Seal Disk
  - DN150-DN400; 6"-16": Reinforced NR with Cast-Iron Vulcanized Radial Seal Disk
- **Coating:** Dark blue fusion bonded epoxy
- **Spring:** Stainless Steel 302
- Control Trim
  Brass Fittings & Copper Tubings or Stainless Steel 316 fittings & tubing

Optional Materials
- Main valve body and cover
  - Cast Iron (coated)
  - Cast Steel ASTM A216 Grade WCB (coated)
  - Nickel Aluminum Bronze ASTM B148 C95800
  - Stainless Steel 316 ASTM A351 Grade CF8M
  - Hastelloy C-276

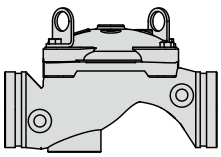
Other materials on request

- Control Trim
  - Nickel Aluminum Bronze,
  - Hastalloy C-276 accessories
  - Monel fittings & tubing
- Elastomers
  - EPDM, (Nylon fabric reinforced, EPDM)

End Connection and Pattern Availability:

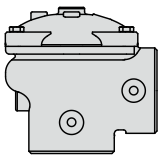
Globe Pattern:

	1½"	2"	2½"	3"	4"	6"	8"	10"	12"	14"	16"
Grooved		•		•	•	•	•				
Threaded	•	•	•	•							
Flanged	•	•	•	•	•	•	•	•	•	•	•



Angle Pattern:

	1½"	2"	2½"	3"	4"
Grooved				•	•
Threaded		•	•	•	
Flanged		•		•	•



Globe Pattern

Flanged

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
	mm	40	50	65	80	100	150	200	250	300	350	400
L	mm	205	205	205	257	320	415	500	605	731	742	742
W	mm	127	152	185	200	232	298	373	408	610	610	610
h*	mm	75	78	93	100	115	144	172	204	252	267	300
H*	mm	153	155	180	210	252	345	430	460	618	638	694
Weight	kg	8	9	10.5	19	28	68	125	140	290	358	377
a	inch	4x¼" NPT					4x⅜" NPT			4x½" NPT		
b	inch	2x¼" NPT					1x¼" NPT+1x⅜" NPT			3x⅜" NPT		
G	inch	¾" G					2" G			2" G		

Grooved

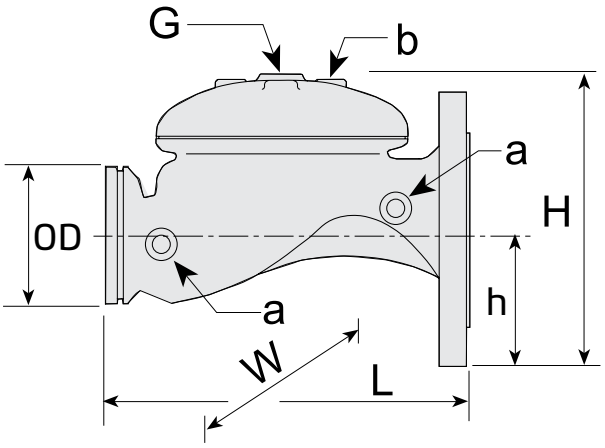
Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"
	mm	40	50	65	80	100	150	200
OD	mm	-	60.3	-	88.9	114.3	168.3	219.1
	mm	-	-	-	-	-	165.1	-
L	mm	-	205	-	250	320	415	500
W	mm	-	118	-	172	204	306	379
h*	mm	-	36	-	57	64	99	122
H*	mm	-	115	-	165	198	301	409
Weight	kg	-	5	-	10.6	16.2	49	108
a	inch	4x¼" NPT					4x⅜" NPT	
b	inch	2x¼" NPT					1x¼" NPT+1x⅜" NPT	
G	inch	¾" G					2" G	

Ordering Code	Pipe
VI	IPS (AWWA C606-87)
VB	BS 1387 / EN 10255

Groove dimensions according to ISO-6182-12

Threaded

Nominal Diameter	inch	1.5"	2"	2.5"	3"
	mm	40	50	65	80
L	mm	150	180	210	255
W	mm	96	118	129	170
h*	mm	29	39	45	55
H*	mm	95	116	135	168
Weight	kg	2	4	5.7	13
a	inch	4x¼" NPT			
b	inch	2x¼" NPT			
G	inch	¾" G			



Flow Factors

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
	mm	40	50	65	80	100	150	200	250	300	350	400
Kv	m³/hr, bar	30	57	78	136	204	458	781	829	1932	1932	1932
K	-	4.5	3.0	4.6	3.5	3.8	3.8	4.1	8.9	3.4	6.3	10.8

Kv=Valve flow coefficient (flow in m³/h at ΔP=1bar)

Q=Flow rate (m³/h)

ΔP=Differential pressure (bar)

$$\Delta P=\left(\frac{Q}{Kv}\right)^2 \qquad Q=Kv*\sqrt{\Delta P} \qquad Kv=\frac{Q}{\sqrt{\Delta P}}$$

* Maximum Dimensions

Angle Pattern

Flanged

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
L	mm	-	121	-	153	160
R	mm	-	78	-	100	112
W	mm	-	158	-	207	223
h*	mm	-	83	-	101	112
H*	mm	-	158	-	207	223
Weight	kg	-	9	-	17	26
a	inch	4x¼" NPT				
b	inch	2x¼" NPT				
G	inch	¾" G				

Grooved

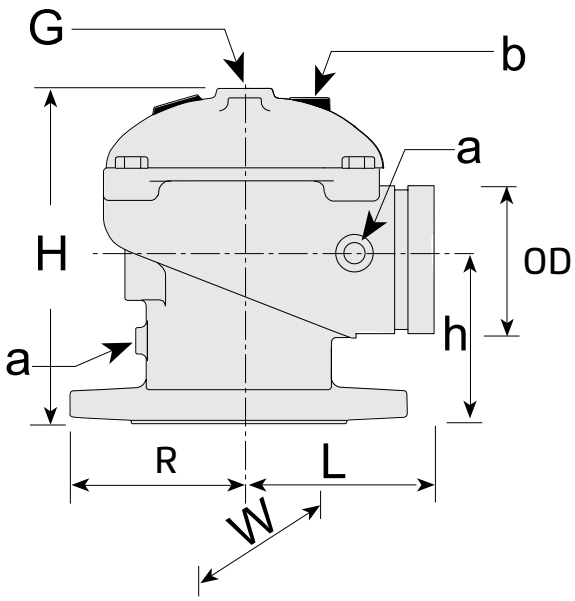
Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
OD	mm	-	-	-	88.9	114.3
L	mm	-	-	-	120	160
R	mm	-	-	-	85	102
W	mm	-	-	-	170	204
h*	mm	-	-	-	90	112
H*	mm	-	-	-	196	223
Weight	kg	-	-	-		
a	inch	4x¼" NPT				
b	inch	2x¼" NPT				
G	inch	¾" G				

Ordering Code	Pipe
VI	IPS (AWWA C606-87)

Groove dimensions according to ISO-6182-12

Threaded

Nominal Diameter	inch	1.5"	2"	2.5"	3"
	mm	40	50	65	80
L	mm	-	86	110	110
R	mm	-	59	66	85
W	mm	-	118	131	170
h*	mm	-	61	92	81
H*	mm	-	137	180	187
Weight	kg	-	4.4	5.8	11
a	inch	4x¼" NPT			
b	inch	2x¼" NPT			
G	inch	¾" G			



Flow Factors

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
Kv	m³/hr, bar	-	60	88	180	245
K	-	-	2.7	3.6	2.9	2.6

Kv=Valve flow coefficient (flow in m³/h at ΔP=1bar)

Q=Flow rate (m³/h)

ΔP=Differential pressure (bar)

$\Delta P=\left(\frac{Q}{Kv}\right)^2$ $Q=Kv*\sqrt{\Delta P}$ $Kv=\frac{Q}{\sqrt{\Delta P}}$

* Maximum Dimensions

Globe Pattern

Flanged

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
	mm	40	50	65	80	100	150	200	250	300	350	400
L	inch	8.07	8.07	8.07	10.12	12.60	16.34	19.69	23.82	28.78	29.21	29.21
W	inch	5.00	5.98	7.28	7.87	9.13	11.73	14.69	16.06	24.02	24.02	24.02
h*	inch	2.95	3.07	3.66	3.94	4.53	5.67	6.77	8.03	9.92	10.51	11.81
H*	inch	6.02	6.10	7.09	8.27	9.92	13.58	16.93	18.11	24.33	25.12	27.32
Weight	lbs	18	20	23	42	62	150	276	309	639	789	831
a	inch	4x¼" NPT					4x⅜" NPT			4x½" NPT		
b	inch	2x¼" NPT					1x¼" NPT+1x⅜" NPT			3x⅜" NPT		
G	inch	¾" G					2" G			2" G		

Grooved

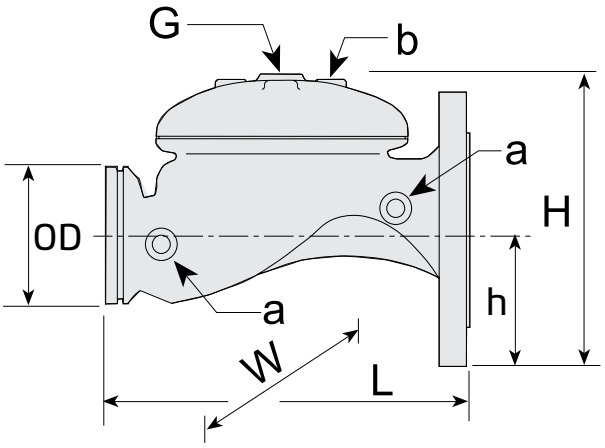
Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"
	mm	40	50	65	80	100	150	200
OD	inch	-	2.37	-	3.50	4.50	6.63	8.63
	inch	-	-	-	-	-	6.26	-
L	inch	-	8.07	-	9.84	12.60	16.34	19.69
W	inch	-	4.65	-	6.77	8.03	12.05	14.92
h*	inch	-	1.42	-	2.24	2.52	3.90	4.80
H*	inch	-	4.53	-	6.50	7.80	11.85	16.10
Weight	lbs	-	11	-	23	36	108	238
a	inch	4x¼" NPT					4x⅜" NPT	
b	inch	2x¼" NPT					1x¼" NPT+1x⅜" NPT	
G	inch	¾" G					2" G	

Ordering Code	Pipe
VI	IPS (AWWA C606-87)
VB	BS 1387 / EN 10255

Groove dimensions according to ISO-6182-12

Threaded

Nominal Diameter	inch	1.5"	2"	2.5"	3"
	mm	40	50	65	80
L	inch	5.91	7.09	8.27	10.04
W	inch	3.78	4.65	5.08	6.69
h*	inch	1.14	1.50	1.77	2.13
H*	inch	3.74	4.57	5.31	6.61
Weight	lbs	4	9	13	29
a	inch	4x¼" NPT			
b	inch	2x¼" NPT			
G	inch	¾" G			



Flow Factors

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
	mm	40	50	65	80	100	150	200	250	300	350	400
Cv	gpm, psi	35	66	90	157	236	529	902	957	2231	2231	2231
K	-	4.5	3.0	4.6	3.5	3.8	3.8	4.1	8.9	3.4	6.3	10.8

Cv=Valve flow coefficient (flow in gpm at ΔP=1 psi)

Q=Flow rate (gpm)

ΔP=Differential pressure (psi)

$$\Delta P=\left(\frac{Q}{Cv}\right)^2 \qquad Q=Cv*\sqrt{\Delta P} \qquad Cv=\frac{Q}{\sqrt{\Delta P}}$$

* Maximum Dimensions

Angle Pattern

Flanged

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
L	inch	-	4.76	-	6.02	6.30
R	inch	-	3.07	-	3.94	4.41
W	inch	-	6.10	-	7.87	8.78
h*	inch	-	3.27	-	3.98	4.41
H*	inch	-	6.22	-	8.15	8.78
Weight	lbs	-	20	-	37	57
a	inch	4x¼" NPT				
b	inch	2x¼" NPT				
G	inch	¾" G				

Grooved

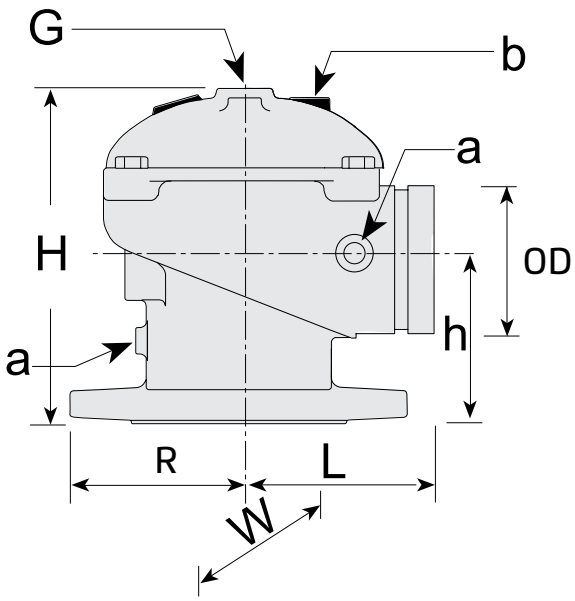
Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
OD	inch	-	-	-	3.50	4.50
L	inch	-	-	-	4.72	6.30
R	inch	-	-	-	3.35	4.02
W	inch	-	-	-	6.69	8.03
h*	inch	-	-	-	3.54	4.41
H*	inch	-	-	-	7.72	8.78
Weight	lbs	-	-	-	22	35
a	inch	4x¼" NPT				
b	inch	2x¼" NPT				
G	inch	¾" G				

Ordering Code	Pipe
VI	IPS (AWWA C606-87)

Groove dimensions according to ISO-6182-12

Threaded

Nominal Diameter	inch	1.5"	2"	2.5"	3"
	mm	40	50	65	80
L	inch	-	3.39	4.33	4.33
R	inch	-	2.32	2.60	3.35
W	inch	-	4.65	5.16	6.69
h*	inch	-	2.40	3.62	3.19
H*	inch	-	5.39	7.09	7.36
Weight	lbs	-	10	13	24
a	inch	4x¼" NPT			
b	inch	2x¼" NPT			
G	inch	¾" G			



Flow Factors

Nominal Diameter	inch	1.5"	2"	2.5"	3"	4"
	mm	40	50	65	80	100
Cv	gpm, psi	-	69	102	173	283
K	-	-	2.7	3.6	2.9	2.6

Cv=Valve flow coefficient (flow in gpm at ΔP=1 psi)

Q=Flow rate (gpm)

ΔP=Differential pressure (psi)

$$\Delta P=\left(\frac{Q}{Cv}\right)^2 \qquad Q=Cv*\sqrt{\Delta P} \qquad Cv=\frac{Q}{\sqrt{\Delta P}}$$

* Maximum Dimensions