

MV/ES 12 & 60 Series

0–12,000 psig & 0–6000 psig DYNAFLOW® Globe & Angle Shutoff Valve



Features

- Zero leakage
- Throttling control without wire drawing
- Spindle threads external to packing
- Positive spindle retention
- Metal-to-metal bonnet seal
- Extended stem for extreme temperatures\
- Bi-directional
- Field tested at 1×10^{-7} torr to 12,000 psi with zero leakage

Technical Data

Body Construction Materials	303 or 316 stainless steel
Seat & Packing Material	PTFE
Operating Pressures	<ul style="list-style-type: none"> • MV12 & ES12: 0 to 12,000 psi (827 bar) • MV60 & ES60: 0 to 6000 psi (414 bar)
Proof Pressures	<ul style="list-style-type: none"> • MV12 & ES12: 18,000 psi (1,241 bar) • MV60 & ES60: 9000 psi (621 bar)
Burst Pressures	<ul style="list-style-type: none"> • MV12 & ES12: 48,000 psi (3,310 bar) minimum • MV60 & ES60: 24,000 psi (1,655 bar) minimum
Operating Temperatures	<ul style="list-style-type: none"> • MV12 & MV60: -65° F to +250° F (-54° C to +121° C) • ES12 & ES60: -452° F to +450° F (-269° C to +232° C)
Connection Sizes	½"–1"
Leakage	All series and actuators: bubble-tight

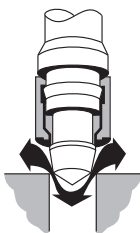
Note: Proper filtration is recommended to prevent damage to sealing surface.

How it Works



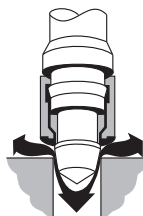
Full Open

The relaxed PTFE is fully contained. With no obstructions, the stem develops full hole diameter for high Cv. The body can be in-line welded without being disassembled or requiring weld-neck extensions.



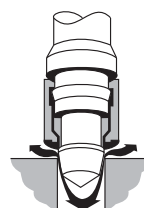
Throttling

By advancing the stem inward, the valve takes a configuration identical to a needle or tapered plug-type valve and offers comparable control. Soft seat valves are not usually capable of enduring high pressure drop in this mode of operation as their seat faces wire-draw, erodes, or reverse pressure drop blows the seal out. DYNAFLOW® valves give you trouble-free throttling.



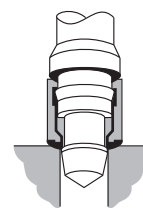
Metering

By advancing the throttling configuration inwardly, the valve now offers a type of metering not common to either hard or soft seat valves. Precision fitted internal diameters give you this excellent metering control. The seat is fully contained and is protected from the effects of erosion, washout, nibbling or surge.



Ultra-fine Metering

As the inward motion continues, the clearance between the tapered end of the spindle and the body seat is further reduced; the space between the seat housing and the flat body seat may be infinitely restricted to provide ultra-fine metering.



Final Absolute Shutoff

During final closing, the PTFE seat is mechanically compressed by relative motion between the spindle and the seat housing. The seat becomes elastic and conforms to the sealing area regardless of the line pressure. Since the seat is pressurized independent of line pressure, it remains absolute under all conditions. The process is reversible, since the seat is elastic under pressure and returns into its encapsulated state as mechanical compression is relaxed.

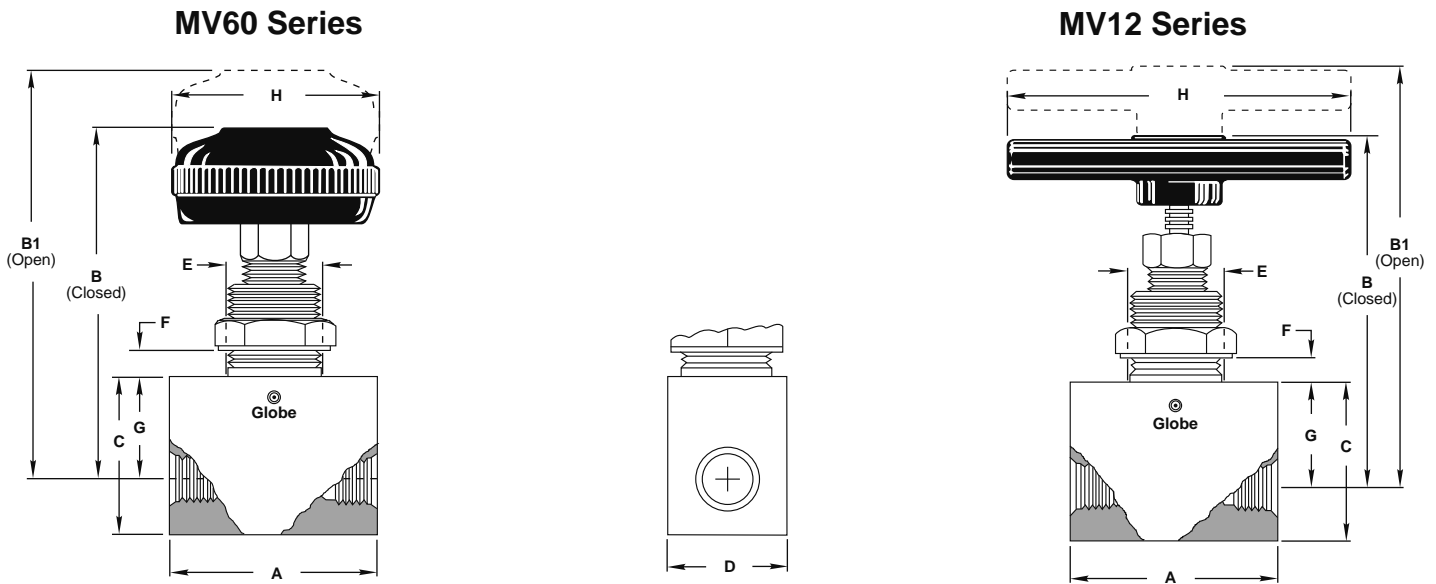
Shutoff valves

Circle Seal Controls

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MV/ES 12 & 60 Series

MV Series DYNAFLOW® Valves : Globe Pattern



Globe Dimensions (inches): MV60 & MV12 Series

Port	A	B		B1		C		D		E Dia.	F Max.	G		H		Cv**
		MV60	MV12	MV60	MV12	MV60	MV12	MV60	MV12			MV60	MV12	MV60	MV12	
1/8"	2.50	3.41	3.41	3.75	3.75	1.75	1.75	1.00	1.25	0.88	0.25	1.05	1.05	2.00	2.00	0.22
1/4"	2.50	3.41	3.41	3.75	3.75	1.75	1.75	1.00	1.25	0.88	0.25	1.05	1.05	2.00	2.00	0.34
3/8"	3.00	4.50	4.24	4.80	4.54	2.00	2.25	1.25	1.75	1.00	0.38	1.20	1.20	3.00	4.20	1.7
1/2"	3.00	4.50	4.24	4.80	4.54	2.00	2.25	1.25	1.75	1.00	0.38	1.20	1.20	3.00	4.20	1.7
5/8"	4.00	5.67	5.35	6.12	5.75	2.75	3.00	1.75	2.75	1.25	1.00	1.65	1.65	3.00	4.20	1.7
3/4"	4.00	5.58	5.20	6.03	5.66	2.75	3.00	1.75	2.75	1.25	1.00	1.50	1.50	3.00	4.20	5.6
1"	4.00	5.58	5.20	6.03	5.66	2.75	3.00	1.75	2.75	1.25	1.00	1.50	1.50	3.00	4.20	5.6

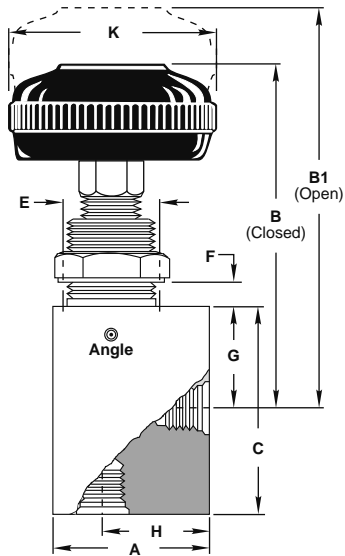
* In Aminco™ end fittings only

** Cv based on female pipe ends

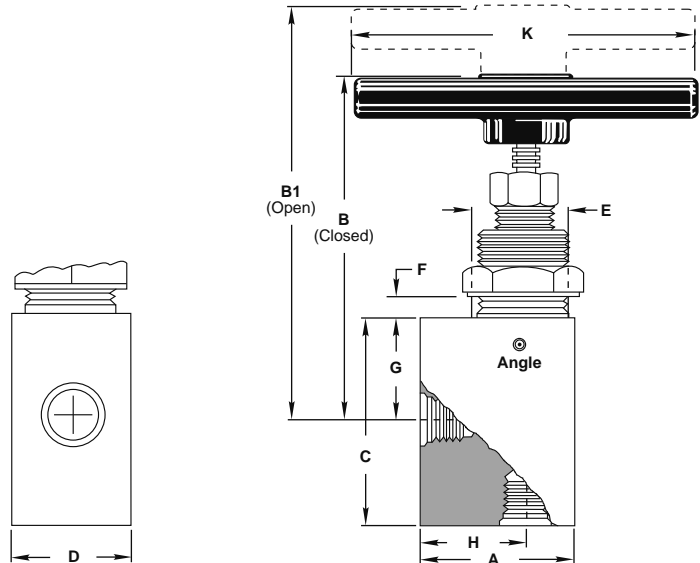
MV/ES 12 & 60 Series

MV Series DYNAFLOW® Valves : Angle Pattern

RMV60 Series



RMV12 Series



Angle Dimensions (inches): RMV60 & RMV12 Series

Port	A		B		B1		C	D		E Dia.	F Max.	G	H	K		Cv**
	RMV60	RMV12	RMV60	RMV12	RMV60	RMV12		RMV60	RMV12					RMV60	RMV12	
1/8"	1.75	1.75	3.41	3.41	3.75	3.75	2.50	1.00	1.25	0.88	0.25	1.05	1.21	2.00	2.00	0.22
1/4"	1.75	1.75	3.41	3.41	3.75	3.75	2.50	1.00	1.25	0.88	0.25	1.05	1.21	2.00	2.00	0.34
3/8"	2.00	2.25	4.50	4.54	4.80	4.54	3.00	1.25	1.75	1.00	0.38	1.20	1.50	3.00	4.20	1.7
1/2"	2.00	2.25	4.50	4.54	4.80	4.54	3.00	1.25	1.75	1.00	0.38	1.20	1.50	3.00	4.20	1.7
5/8"	2.75	3.00	5.12	4.80	5.57	5.20	4.00	1.75	2.75	1.25	1.00	1.10	1.87	3.00	4.20	1.7
3/4"	2.75	3.00	5.52	5.20	5.97	5.60	4.00	1.75	2.75	1.25	1.00	1.50	1.87	3.00	4.20	5.6
1"	2.75	3.00	5.52	5.20	5.97	5.60	4.00	1.75	2.75	1.25	1.00	1.50	1.87	3.00	4.20	5.6

* In Aminco™ end fittings only

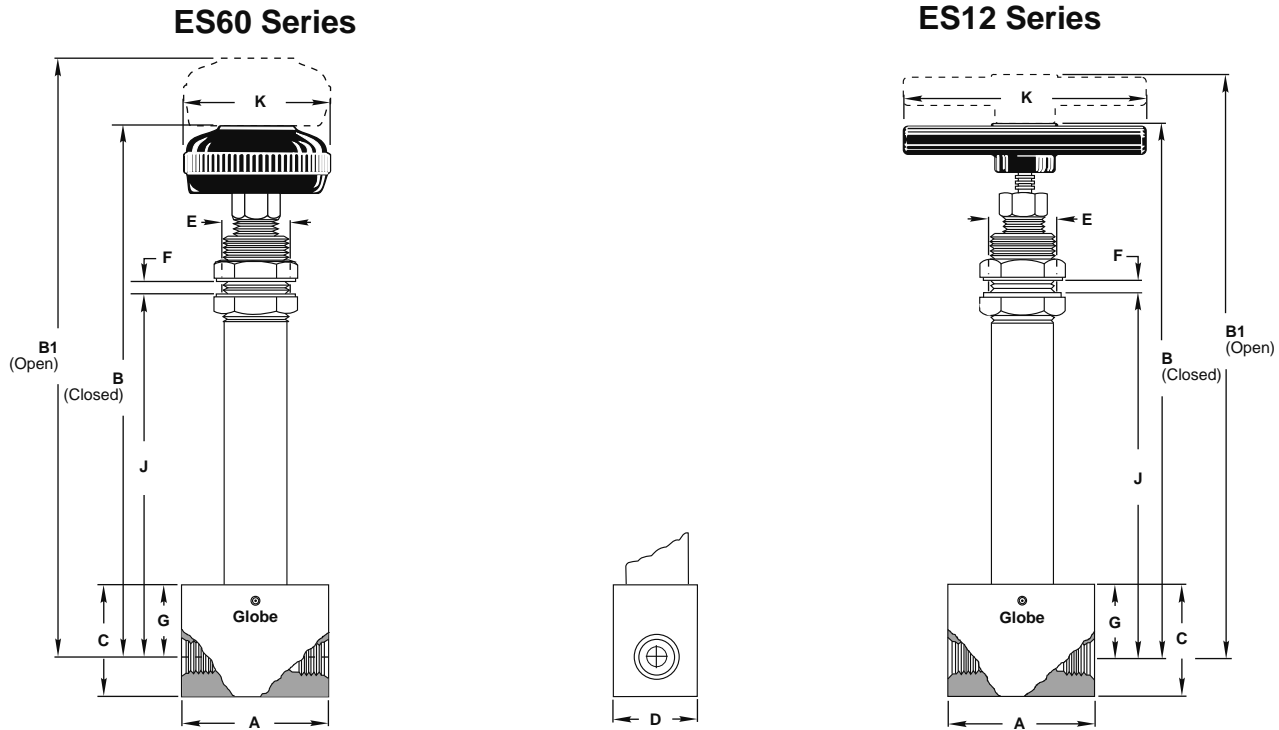
** Cv based on female pipe ends

MV/ES 12 & 60 Series

ES Series DYNAFLOW® Valves :Globe Pattern

Extended Stem for Extreme Service: -452° F to +450° F (-269° C to +232° C)

The basic valve body, seating configuration, stem packing and body parts are identical to the MV Series. However, the ES Series utilizes a long cylindrical barrel and stem to insulate the handle and the stem packing area from the line fluid. The extended barrel and stem provide ample heat dispersion so the valve can be operated even though the fluid passing through the main portion of the valve may be at extreme temperatures.



Globe Dimensions (inches): ES60 & ES12 Series

Port	A	B		B1		C		D		E Dia.	F Max.	G		H		Cv**
		ES60	ES12	ES60	ES12	ES60	ES12	ES60	ES12			ES60	ES12			
1/8"	2.50	9.05	9.05	9.35	9.35	1.75	1.75	1.00	1.25	0.88	0.38	1.05	6.48	2.00	2.00	0.22
1/4"	2.50	9.05	9.05	9.35	9.35	1.75	1.75	1.00	1.25	0.88	0.38	1.05	6.48	2.00	2.00	0.34
3/8"	3.00	10.28	9.95	10.64	10.31	2.00	2.25	1.25	1.75	1.00	0.38	1.20	7.05	3.00	4.20	1.7
1/2"	3.00	10.28	9.95	10.64	10.31	2.00	2.25	1.25	1.75	1.00	0.38	1.20	7.05	3.00	4.20	1.7
5/8"	4.00	10.76	10.49	11.26	10.99	2.75	3.00	1.75	2.75	1.25	0.75	1.65	7.30	3.00	4.20	1.7
3/4"	4.00	10.67	10.40	11.17	10.90	2.75	3.00	1.75	2.75	1.25	0.75	1.56	7.21	3.00	4.20	5.6
1"	4.00	10.67	10.40	11.17	10.90	2.75	3.00	1.75	2.75	1.25	0.75	1.56	7.21	3.00	4.20	5.6

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** Cv based on female pipe ends

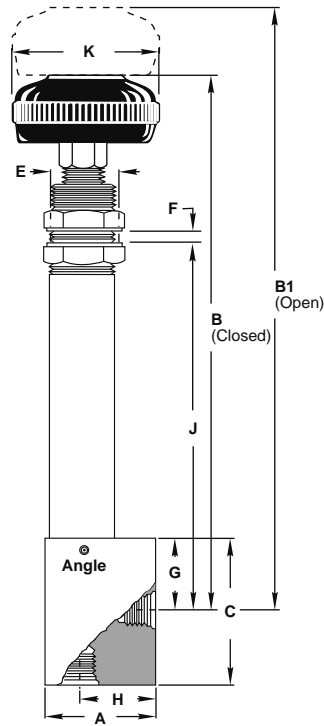
MV/ES 12 & 60 Series

ES Series DYNAFLOW® Valves : Angle Pattern

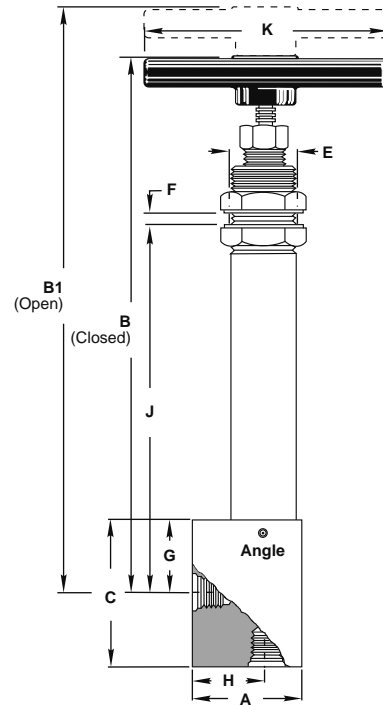
Extended Stem for Extreme Service: -452° F to +450° F (-269° C to +232° C)

The basic valve body, seating configuration, stem packing and body parts are identical to the MV Series. However, the ES Series utilizes a long cylindrical barrel and stem to insulate the handle and the stem packing area from the line fluid. The extended barrel and stem provide ample heat dispersion so the valve can be operated even though the fluid passing through the main portion of the valve may be at extreme temperatures.

RES60 Series



RES12 Series



Angle Dimensions (inches): RES60 & RES12 Series

Port	A		B		B1		C	D		E Dia.	F Max.	G	H	J	K		Cv**
	RES60	RES12	RES60	RES12	RES60	RES12		RES60	RES12						RES60	RES12	
1/8"	1.75	1.75	9.05	9.05	9.35	9.35	2.50	1.00	1.25	0.88	0.38	1.05	1.21	6.48	2.00	2.00	0.22
1/4"	1.75	1.75	9.05	9.05	9.35	9.35	2.50	1.00	1.25	0.88	0.38	1.05	1.21	6.48	2.00	2.00	0.34
3/8"	2.00	2.25	10.28	9.95	10.64	10.31	3.00	1.25	1.75	1.00	0.38	1.20	1.43	7.05	3.00	4.20	1.7
1/2"	2.00	2.25	10.28	9.95	10.64	10.31	3.00	1.25	1.75	1.00	0.38	1.20	1.43	7.05	3.00	4.20	1.7
5/8"	2.75	3.00	10.21	9.94	10.71	10.44	4.00	1.75	2.75	1.25	0.75	1.10	1.87	6.75	3.00	4.20	1.7
3/4"	2.75	3.00	10.61	10.34	11.11	10.84	4.00	1.75	2.75	1.25	0.75	1.50	1.87	7.15	3.00	4.20	5.6
1"	2.75	3.00	10.61	10.34	11.11	10.84	4.00	1.75	2.75	1.25	0.75	1.50	1.87	7.15	3.00	4.20	5.6

* In Aminco™ end fittings only

** Cv based on female pipe ends

MV/ES 12 & 60 Series

R MV 60 T1 - 04 B

OPTION

R Angle body

BASIC SERIES NUMBER

MV Manual valve

ES Extended stem

OPERATING PRESSURE

60 0-6000 psi

12 0-12,000 psi

BODY MATERIALS

T 303 stainless steel

T1 316 stainless steel

CONNECTIONS, FEMALE

B Tube (MS33649)

P Pipe

W Socket weld tube*

PW Socket weld pipe*

G Aminco™

CONNECTION SIZE

02 1/8"

04 1/4"

06 3/8"

08 1/2"

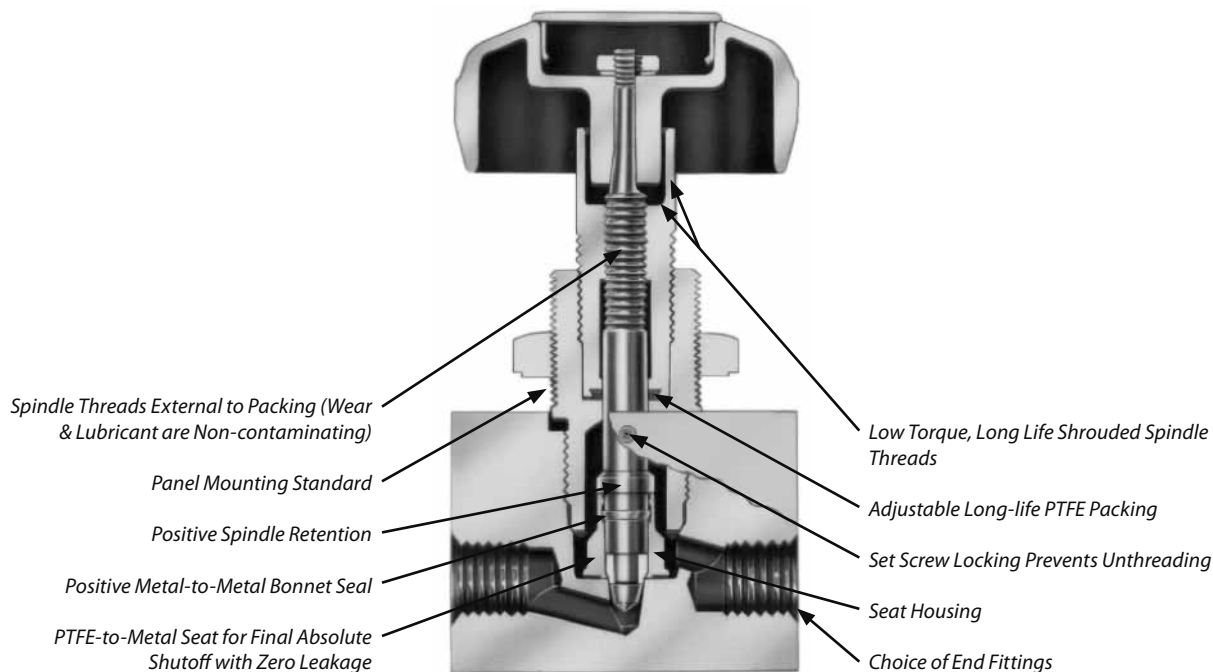
09 5/8" (Aminco™ only)

12 3/4"

16 1"

* Socket weld not available in 1/8" and 1/4".

Please consult your Circle Seal Controls representative or our factory for information on special connections, operating pressures and temperature ranges.



For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

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