

A division of CIRCOR International, Inc.

MV/ES12 & MV/ES60 Series

0 to 12,000 PSIG & 0 to 6,000 PSIG

Dynaflow Globe & Angle Shutoff Valves

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 and Packing Material: | • Teflon® |
| Operating Pressures: | • ES12 & MV12 – 0 to 12,000 PSI (827 BAR)
• ES60 & MV60 – 0 to 6,000 PSI (414 BAR) |
| Proof Pressures: | • ES12 & MV12 – 18,000 PSI (1241 BAR)
• ES60 & MV60 – 9,000 PSI (621 BAR) |
| Burst Pressures: | • ES12 & MV12 – 48,000 PSI MIN (3310 BAR)
• ES60 & MV60 – 24,000 PSI MIN (1655 BAR) |
| Temperature Ranges: | • ES12 & ES60 – -452° F to +450° F
(-269° C to +232° C)
• MV12 & MV60 – -65° F to +250° F
(-54° C to +121° C) |
| Connection Sizes: | • 1/8 inch to 1 inch |
| Leakage: | • All series – bubble tight |

NOTE: Proper filtration is recommended to prevent damage to sealing surfaces.

How It Works

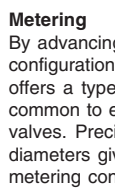
Full Open

The relaxed Teflon® is fully contained. With no obstructions, the stem develops full hole diameter for high C_v . 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.

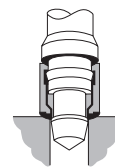


Ultra Fine Metering

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 Teflon® seat is mechanically compressed by relative motion between the spindle and the seal 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.

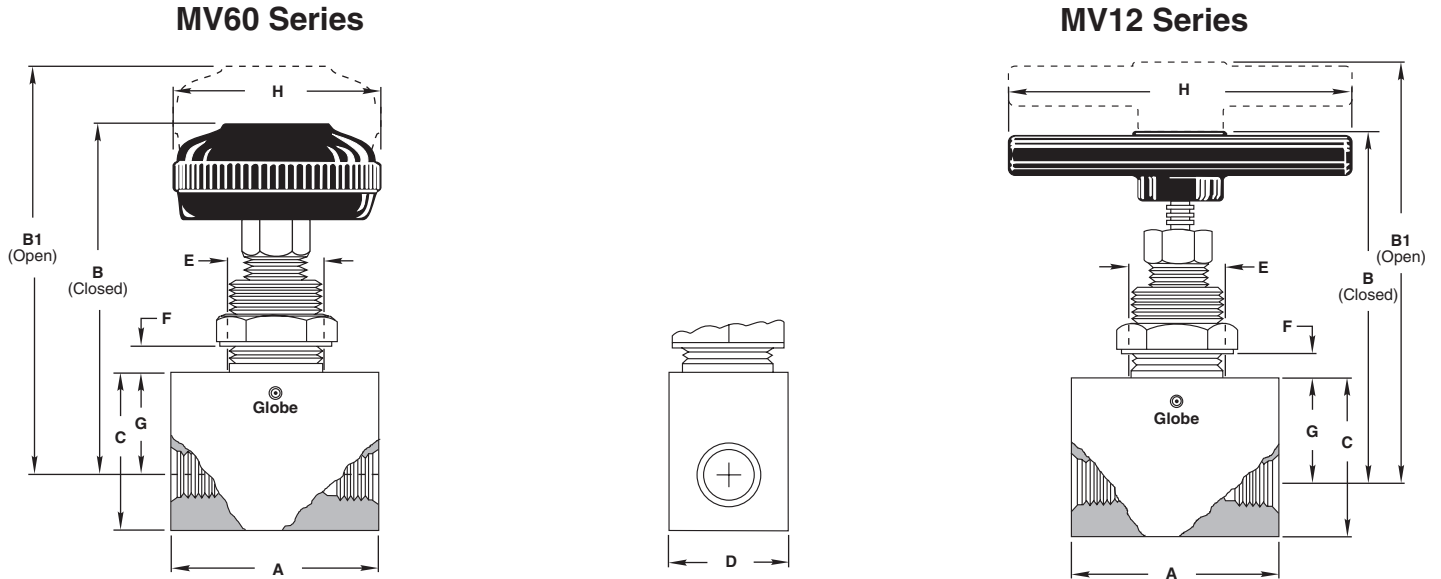


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MV/ES12 & MV/ES60 Series

0 to 12,000 PSI & 0 to 6000 PSI

MV Series Dynaflo Valves—Globe Pattern



Globe Dimensions (inches)—MV60 & MV12

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	MV60	MV12	
1/8"	2.50	3.41	3.41	3.75	3.75	1.75	1.75	1.00	1.25	.88	.25	1.05	1.05	2.00	2.00	.22	
1/4"	2.50	3.41	3.41	3.75	3.75	1.75	1.75	1.00	1.25	.88	.25	1.05	1.05	2.00	2.00	.34	
3/8"	3.00	4.50	4.24	4.80	4.54	2.00	2.25	1.25	1.75	1.00	.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	.38	1.20	1.20	3.00	4.20	1.7	
9/16" *	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.

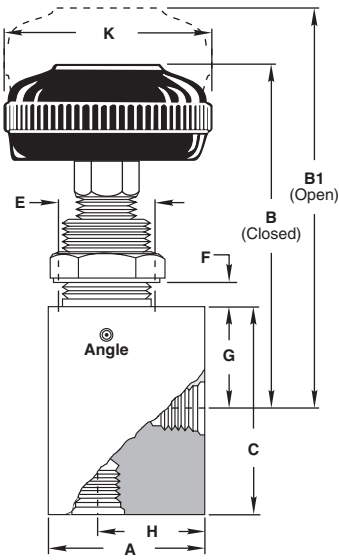
** Cv based on female pipe ends

MV/ES12 & MV/ES60 Series

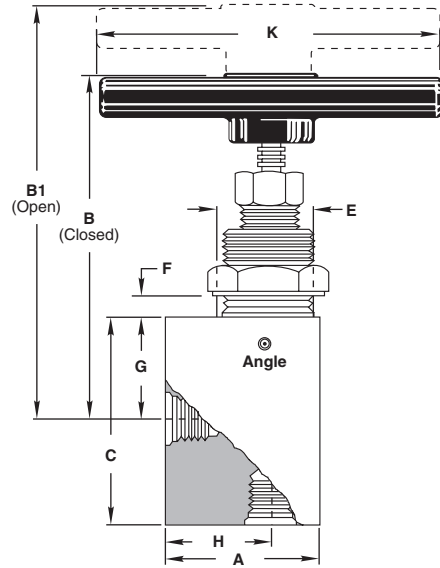
0 to 12,000 PSI & 0 to 6000 PSI

MV Series Dynaflo Valves—Right Angle Pattern

RMV60 Series



RMV12 Series



Angle Dimensions (inches)—RMV60 & RMV12

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	.88	.25	1.05	1.21	2.00	2.00	.22
1/4"	1.75	1.75	3.41	3.41	3.75	3.75	2.50	1.00	1.25	.88	.25	1.05	1.21	2.00	2.00	.34
3/8"	2.00	2.25	4.50	4.54	4.80	4.54	3.00	1.25	1.75	1.00	.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	.38	1.20	1.50	3.00	4.20	1.7
9/16" *	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

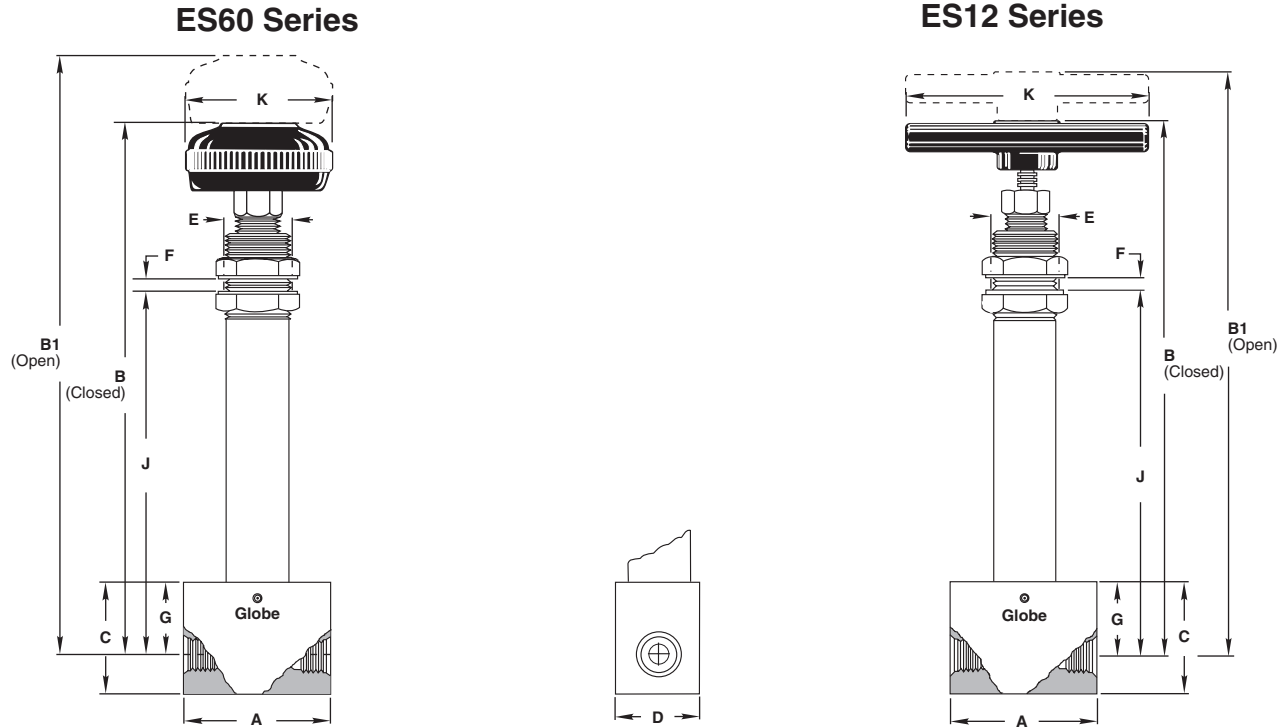
MV/ES12 & MV/ES60 Series

0 to 12,000 PSI & 0 to 6000 PSI

ES Series Dynaflo 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

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	MV60	MV12	
1/8"	2.50	9.05	9.05	9.35	9.35	1.75	1.75	1.00	1.25	.88	.38	1.05	6.48	2.00	2.00	.22	
1/4"	2.50	9.05	9.05	9.35	9.35	1.75	1.75	1.00	1.25	.88	.38	1.05	6.48	2.00	2.00	.34	
3/8"	3.00	10.28	9.95	10.64	10.31	2.00	2.25	1.25	1.75	1.00	.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	.38	1.20	7.05	3.00	4.20	1.7	
9/16" *	4.00	10.76	10.49	11.26	10.99	2.75	3.00	1.75	2.75	1.25	.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	.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	.75	1.56	7.21	3.00	4.20	5.6	

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** Cv based on female pipe ends

MV/ES12 & MV/ES60 Series

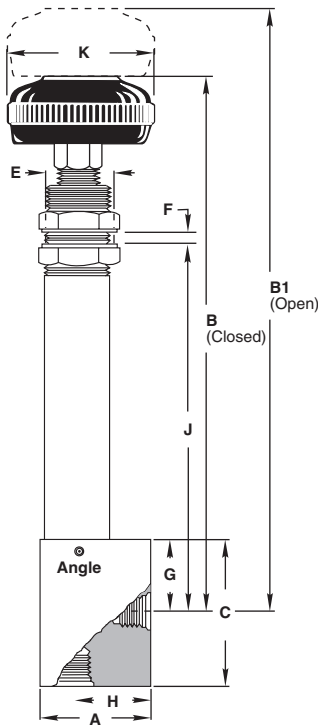
0 to 12,000 PSI & 0 to 6000 PSI

ES Series Dynaflo Valves—Right Angle Pattern

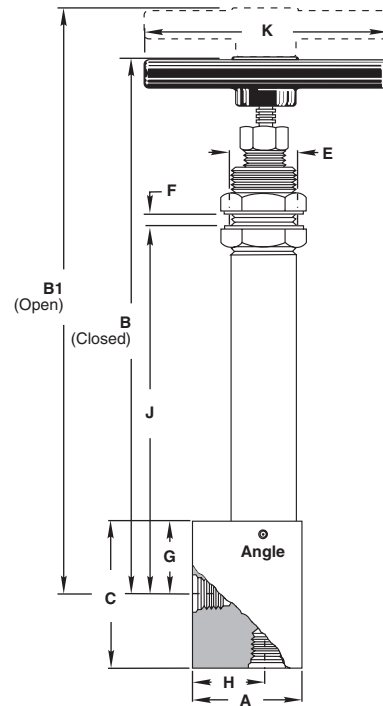
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The basic valve body, seating configuration, stem packing and body parts are identical to the MV Series. However, the ES Series utilizes a long cylindrical barrel and stem to insulate the handle and the stem packing area from the line fluid. The extended 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

Port	A		B		B1		C	D		E Dia	F Max	G	H	J	K		Cv**
	RMV60	RMV12	RMV60	RMV12	RMV60	RMV12		RMV60	RMV12						RMV60	RMV12	
1/8"	1.75	1.75	9.05	9.05	9.35	9.35	2.50	1.00	1.25	.88	.38	1.05	1.21	6.48	2.00	2.00	.22
1/4"	1.75	1.75	9.05	9.05	9.35	9.35	2.50	1.00	1.25	.88	.38	1.05	1.21	6.48	2.00	2.00	.34
3/8"	2.00	2.25	10.28	9.95	10.64	10.31	3.00	1.25	1.75	1.00	.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	.38	1.20	1.43	7.05	3.00	4.20	1.7
9/16" *	2.75	3.00	10.21	9.94	10.71	10.44	4.00	1.75	2.75	1.25	.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	.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	.75	1.50	1.87	7.15	3.00	4.20	5.6

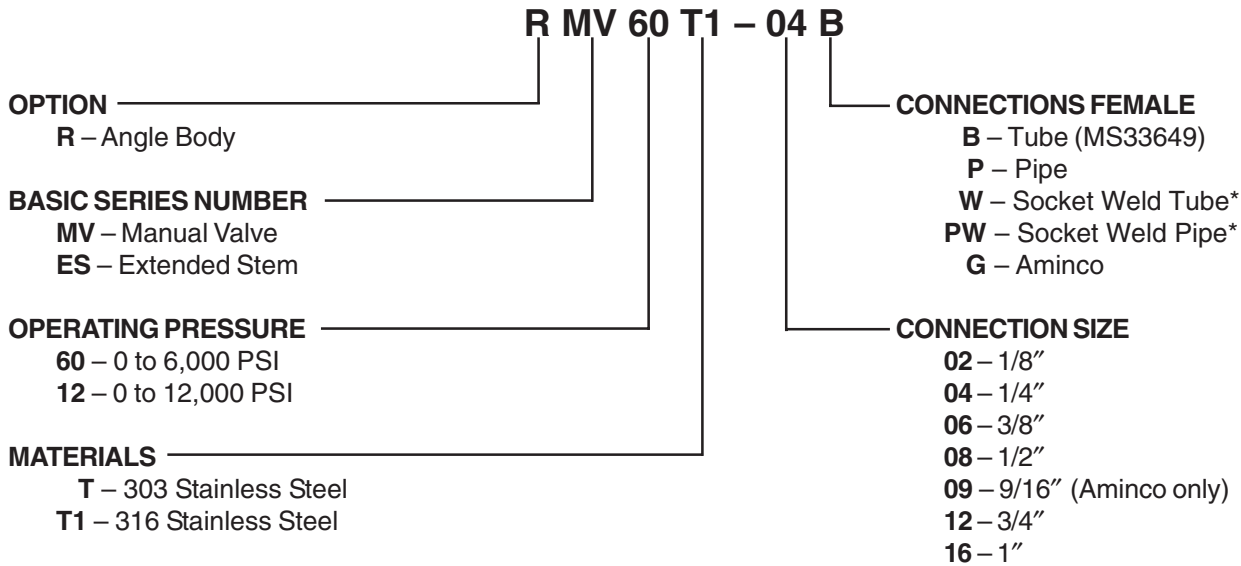
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MV/ES12 & MV/ES60 Series

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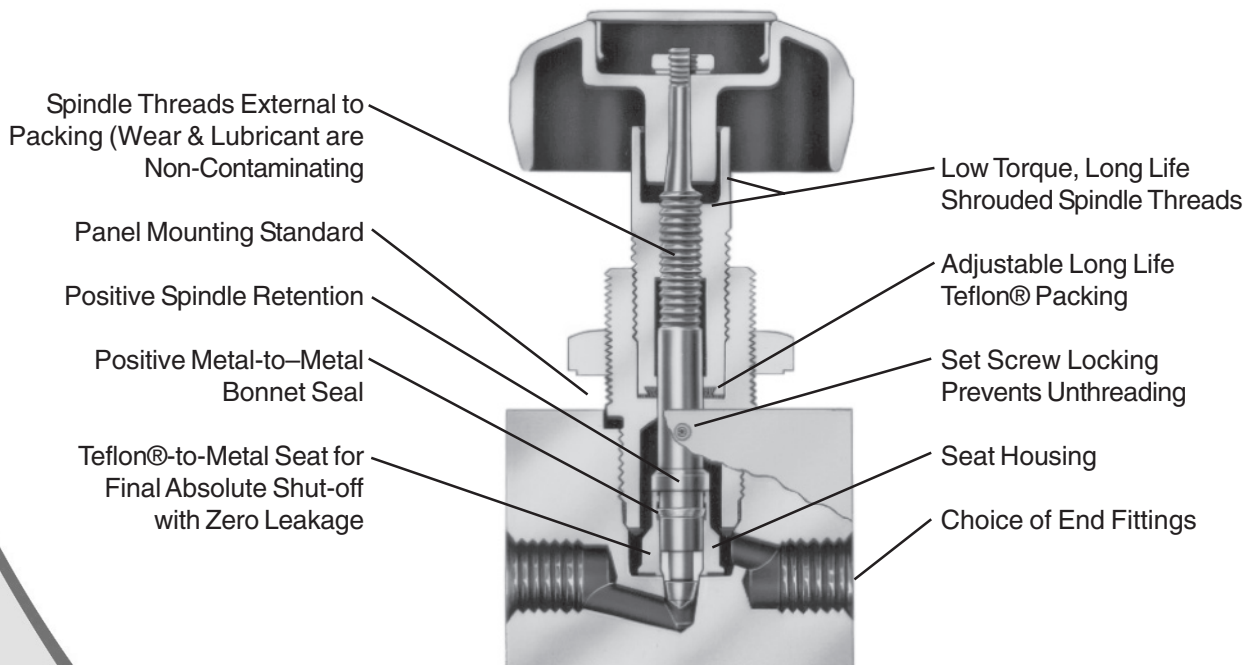
How to Order



*Socket weld not available in 1/8" & 1/4"

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

Teflon® is a registered trademark of DuPont.



For Your Safety

It is the sole 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.