

Honeywell

VR2, VR3, VR4, VR5 Resilient Seat Butterfly Valves with Lugged Connections

PRODUCT DATA



Two-Way Valves (VR2)

- Sizes from 2 to 24 inches with ANSI Class 125/150 lug pipe connections
- Modified equal percentage flow characteristic
- Spring fail safe available on 2 and 2.5 inch models, Electronic fail safe available on 3 to 12 inch models
- NEMA 2 and NEMA 4X actuators available on valves 5 inch and smaller, NEMA 4X actuators available on valves 5 inch to 24 inch

Three-Way Valve Assemblies (VR3,4,5)

- Sizes from 2 to 18 inches with ANSI Class 125/150 lug pipe connections
- Mixing or diverting control
- Modified linear flow characteristic
- Standard cast-iron pipe T included
- Multiple port configurations available to fit different applications
- Spring fail safe available on 2 inch models, Electronic fail safe available on 2.5 to 12 inch models
- NEMA 2 and NEMA 4X actuators available on valves 3 inch and smaller, NEMA 4X available on valves 3 inch to 18 inch

FEATURES

All Models

- Bi-directional flow
- 304 stainless steel disks
- Ductile iron valve body for increased strength and durability
- Stainless steel valve stem
- EPDM resilient valve seat doubles as flange gasket
- Bubble-tight seat leakage at rated close-off
- Close-off rating of 200 psid in sizes 2 in. to 12 in.
- Close-off rating of 150 psid in sizes 14 in. to 24 in.
- ISO 5211 actuator mounting flange
- Available with factory-installed electric actuation interfaces in 2-position, Floating (“tri-state”), or Modulating (2-10 Vdc) Control
- Manual override on all models
- Fail-safe actuators available on valves up to 12 inches
- For use with hot, chilled or condensing water with up to 60% glycol in HVAC systems

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SPECIFICATIONS

NOTE: All specifications were accurate at time of publication. Honeywell reserves the right to improve or discontinue products without prior notification. To obtain the latest technical literature, please consult the website at <http://customer.honeywell.com>.

Models:

See Table 1

Dimensions:

See Fig. 1–21

Mounting:

for ASME/ANSI class 125/150 flanges

Body Style:

Two-way or Three-way lugged butterfly valve

Body Size:

2-way: 2 in. to 24 in.

3-way: 2 in. to 18 in.

Flow Characteristics:

2-way: modified equal percentage

3-way: modified linear

Body Static Pressure Rating (maximum):

Consistent with ASME/ANSI Class 125

Cold Working Pressure:

232 psi

Close-Off Pressure Rating (maximum differential):

2 in. to 12 in. valves: 200 psi

14 in. to 24 in. valves: 150 psi

Controlled Media:

Chilled or hot water up to 60% glycol

Media Temperature range:

-22 °F to 250 °F (-30 °C to 121 °C)

Maximum velocity:

12 fps (3.7 m/s)

Materials:

Body:

2 in. to 6 in. and 14 in. to 24 in.: epoxy powder coated ductile iron ASTM A536.

8 in. to 12 in.: polyester powder coated ductile iron ASTM A536

Disk: 304 stainless steel

Shaft:

2 in. to 6 in. and 14 in. to 24 in.: 416 stainless steel

8 in. to 12 in.: 420 stainless steel

Seat: EPDM

O-rings: EPDM

Bushings:

2 in. to 6 in. and 14 in. to 24 in.: RPTFE

8 in. to 12 in.: bronze, steel, PTFE

Approvals/Standards:

Close-off: Bubble-tight design up to rated close-off pressure.

Actuators on valves 12 inch and smaller: cULus, CE

Actuators on valves 14 inch and larger: cCSAus, CE

Actuator Ambient Temperature Ratings:

See Table

Accessories:

MB-IND-1

Position Indicator Small

MB-IND-2

Position Indicator Large

MB-NSR-SWITCH

NSR DCA Aux Switch

MB-NSR-N4HEAT

NSR NEMA4 DCA Heater Kit

(Must be ordered with valve, factory installed)

MB-SR-N4HEAT

SR NEMA4 DCA Heater Kit

(Must be ordered with valve, factory installed)

Table 1. Butterfly valve assembly model selection

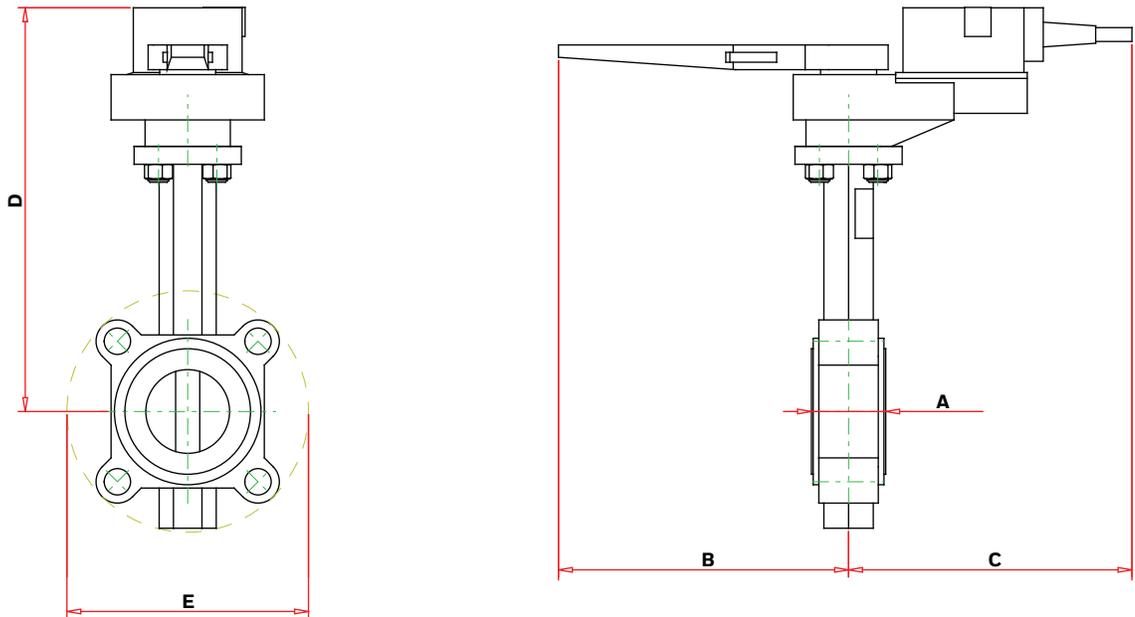
Butterfly Valve	Connection Type	Body Pattern	Valve Size	Actuator Control Signal	Actuator Voltage	Fail Safe Function	Voltage / Switch Feedback	Nema Rating	Description	
V	Valve, Lugged (butterfly)									
	R	Resilient Seat ANSI 125/150 (Standard)								
		2	2-way							
		3	3-way configurations (see Fig. 20)							
		4								
		5								
		5								
		F	2 inch (DN 50)							
		G	2.5 inch (DN 65)							
		H	3 inch (DN 80)							
		J	4 inch (DN 100)							
		K	5 inch (DN 125)							
		L	6 inch (DN 150)							
		M	8 inch (DN 200)							
		N	10 inch (DN 250)							
		P	12 inch (DN 300)							
		R	14 inch (DN 350)							
	S	16 inch (DN 400)								
	T	18 inch (DN 450)								
	U	20 inch (DN 500) 2-way only								
	V	24 inch (DN 600) 2-way only								
		6	Floating / Two-Position (SPDT)							
		7	Analog Modulating (0)2-10 Vdc							
		8	Two-Position (SPST)							
		L	24 Vac/Vdc							
		H	120 Vac							
		U	24-240 Vac / 24-125 Vdc							
		P	Fail in place							
		S	Spring Return A-port (Master) fail safe open							
		T	Spring Return A-port (Master) fail safe closed							
		E	Electronic Fail Safe (default fail closed, field adjustable)							
		N	No Feedback							
	F	Analog Feedback								
	S	Built in Aux Switches								
	B	Both Analog Feedback and Aux Switches								
	2	NEMA 2								
	4	NEMA 4X								
	H	NEMA 4X (with Heater)								
V	R	2	H	7	L	P	F	2	Example: 2-WAY, 3 INCH, RESILIENT SEAT BUTTERFLY VALVE, CV302, CLOSE-OFF 200PSI, 24VAC, 2-10VDC, 150S, FAIL-SAFE IN PLACE, FEEDBACK, NEMA2, (INCLUDES MBP7L4F2/U ACTUATOR)	

Table 2. Butterfly valve replacement actuator model selection

Type	Fail safe	Control	Power	Actuator type	Feedback	Nema	Description
MB	Motor Butterfly						
	S	Spring fail-safe					
	E	Electronic fail-safe					
	P	Fail-in-place					
	6	Floating / Two-Position (SPST)					
	7	Analog Modulating (0)2-10 VDC					
	8	Two-Position (SPST)					
	L	24 Vac/Vdc					
	H	120 Vac					
	U	24-240 Vac / 24-125 Vdc					
	1	SR 180 in-lb					
	2	NSR 180 in-lb					
	3	SR 180 in-lb					
	A	NSR 180 in-lb					
	4	EFS/FIP 360 in-lb (2-way VR)					
	R	EFS/FIP 360 in-lb (VH and 3-way VR)					
	5	EFS/FIP 800 in-lb					
	6	EFS/FIP 1400 in-lb (3, 4, 5, 6, 12 inch valves)					
	7	EFS/FIP 1400 in-lb (8 inch valves)					
	8	EFS/FIP 1400 in-lb (10 inch valves)					
	9	FIP 3540 in-lb					
	B	FIP 4425 in-lb					
	C	FIP 5755 in-lb					
	D	FIP 8850 in-lb					
	E	FIP 13275 in-lb					
	F	FIP 17700 in-lb					
	G	FIP 22125 in-lb					
	H	FIP 26550 in-lb					
N	No feedback						
F	Analog feedback						
S	Built in Aux Switches						
B	Both Analog Feedback and Aux Switches						
2	NEMA 2						
4	NEMA 4X						
H	NEMA 4X (with HEATER)						
MB	S	8	U	1	N	2	Example: BUTTERFLY VALVE ACTUATOR FOR VR AND VH SERIES, SPRING RETURN, 2-POSITION, 24-240VAC, 180 LB-IN, NEMA2

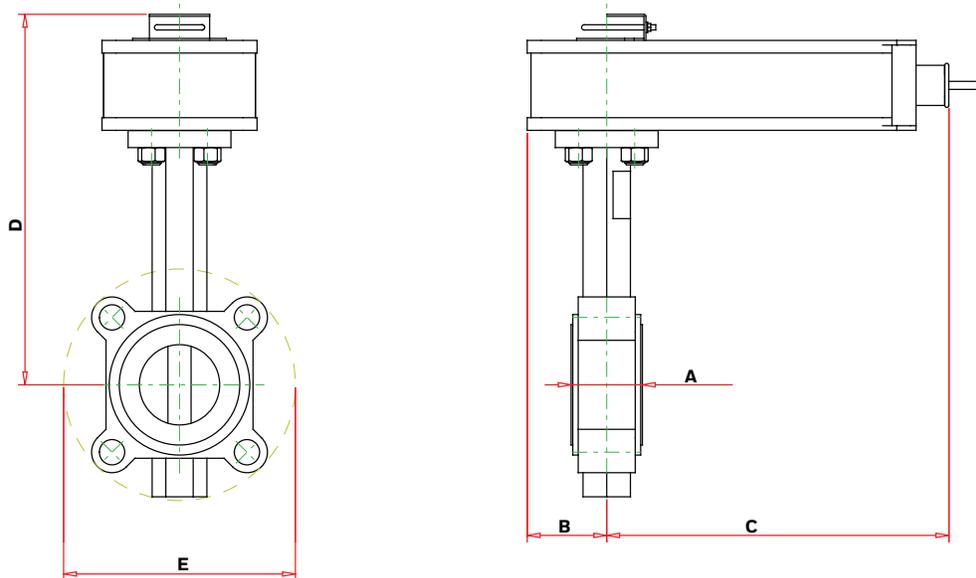
NOTE: The tables above are intended to explain the significance of the butterfly valve and actuator part numbering system, and is not a product configuration tool. Only part numbers printed in Honeywell price books may be ordered. Please refer to cpq.honeywell.com for available configurations.

DIMENSIONAL DRAWINGS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	1.77 (45)	6.93 (176)	6.77 (172)	9.65 (245)	5.77 (147)
2.5	65	1.90 (48)	6.93 (176)	6.77 (172)	10.20 (259)	6.52 (166)

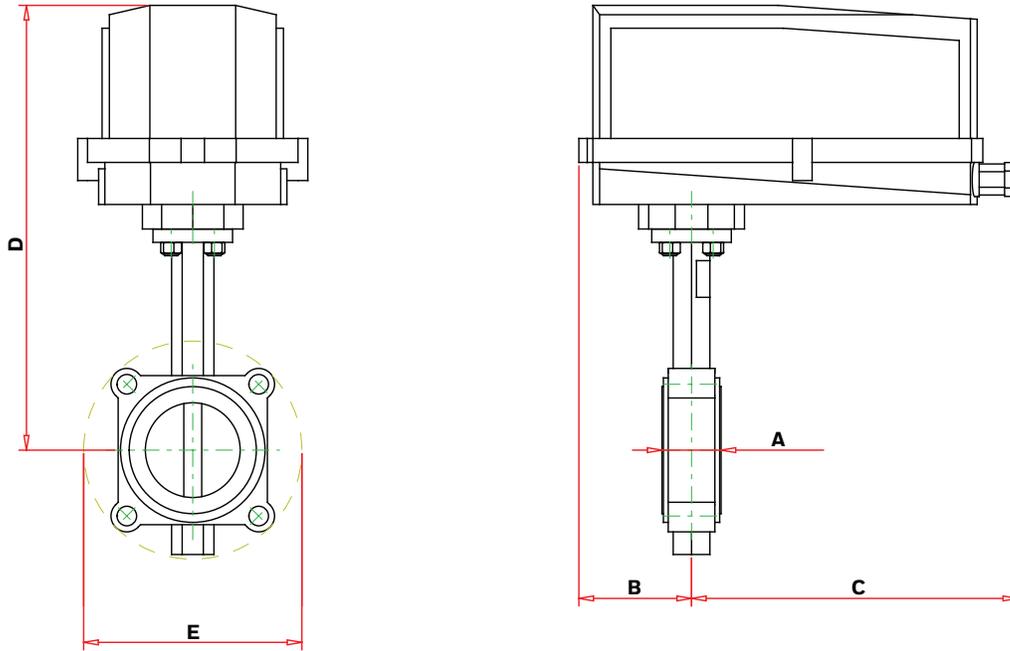
Fig. 1. 2-way valves with NEMA 2 MBP... 2,3 actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	1.77 (45)	1.98 (50)	8.52 (216)	9.23 (234)	5.77 (147)
2.5	65	1.90 (48)	1.98 (50)	8.52 (216)	9.78 (248)	6.52 (166)

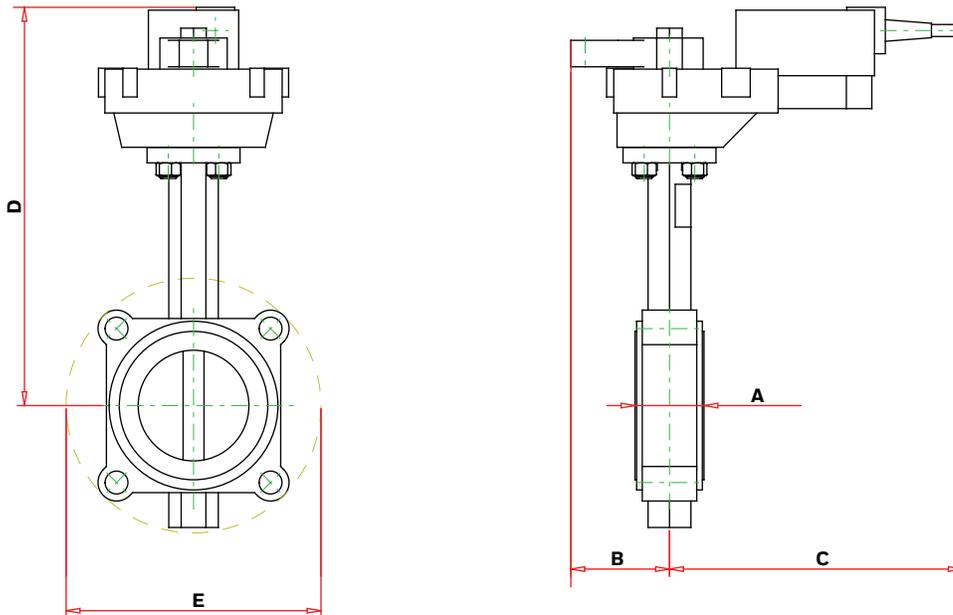
Fig. 2. 2-way valves with NEMA 2 MBS...3 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	1.77 (45)	3.62 (92)	10.49 (266)	13.54 (344)	5.77 (147)
2.5	65	1.90 (48)	3.62 (92)	10.49 (266)	14.09 (358)	6.52 (166)
3	80	1.90 (48)	3.62 (92)	10.49 (266)	14.32 (364)	7.02 (178)

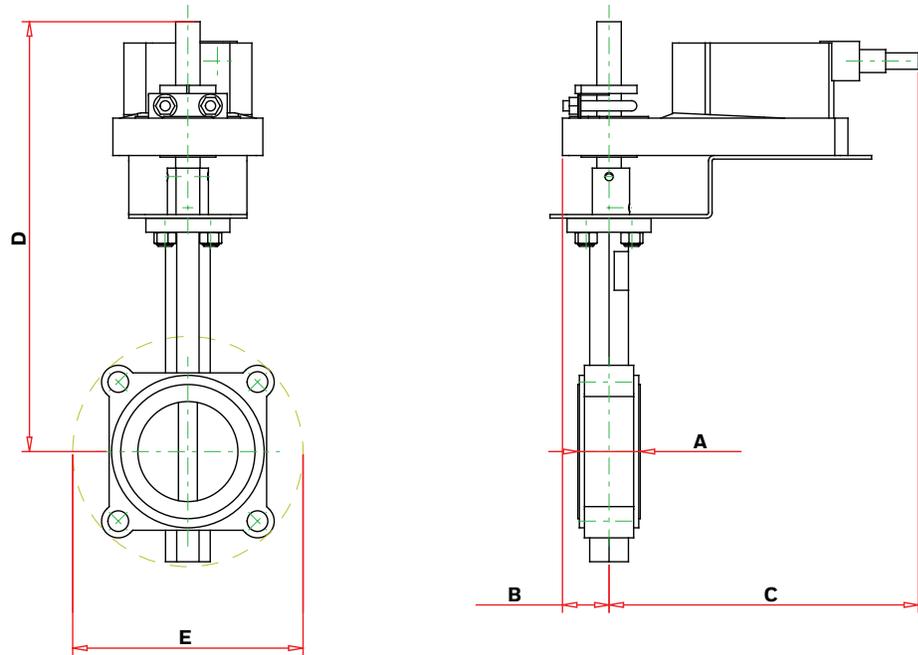
Fig. 3. 2-way valves with NEMA 4 MBP,E...3,4 actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	1.90 (48)	2.72 (69)	8.06 (205)	10.98 (279)	7.02 (178)

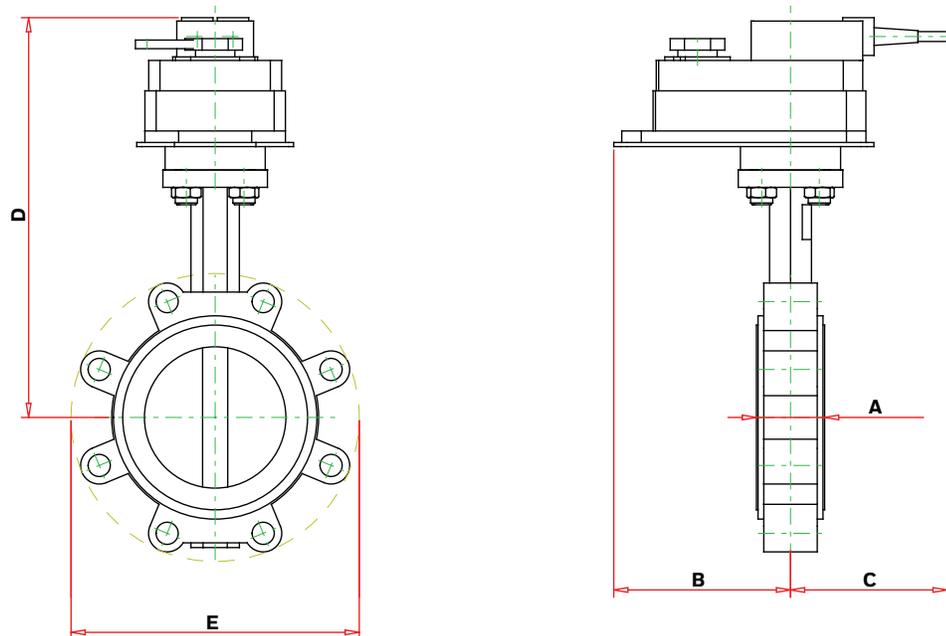
Fig. 4. 2-way valves with NEMA 2 MBP...4 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	1.90 (48)	1.42 (36)	9.43 (240)	13.11 (333)	7.02 (178)

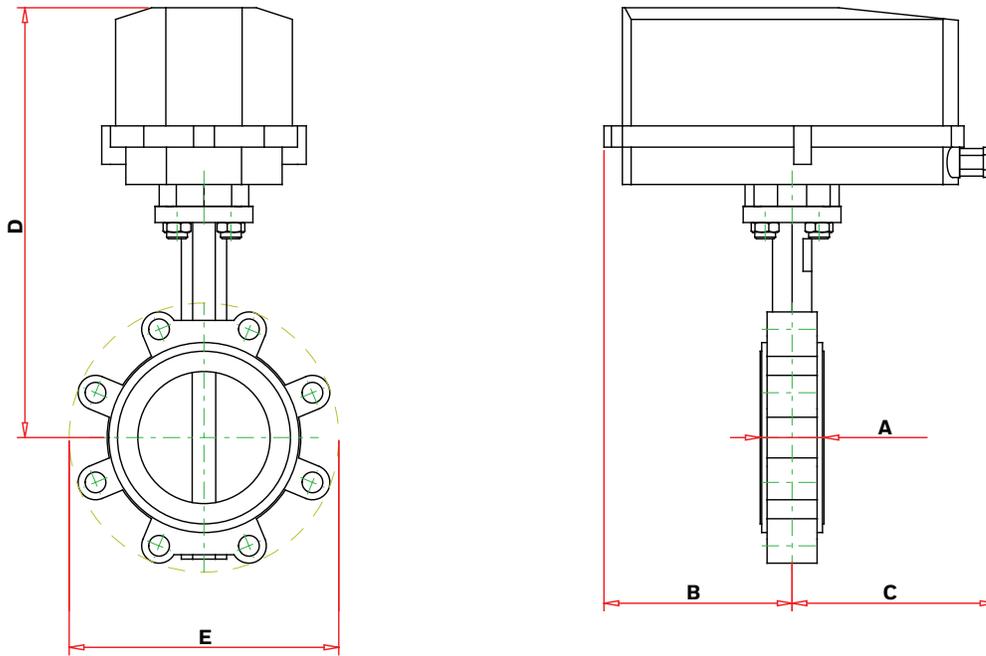
Fig. 5. 2-way valves with NEMA 2 MBE...4 actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
4	100	2.12 (55)	5.99 (152)	5.30 (135)	13.03 (331)	8.52 (216)
5	125	2.31 (59)	5.99 (152)	5.30 (135)	13.55 (344)	9.76 (248)

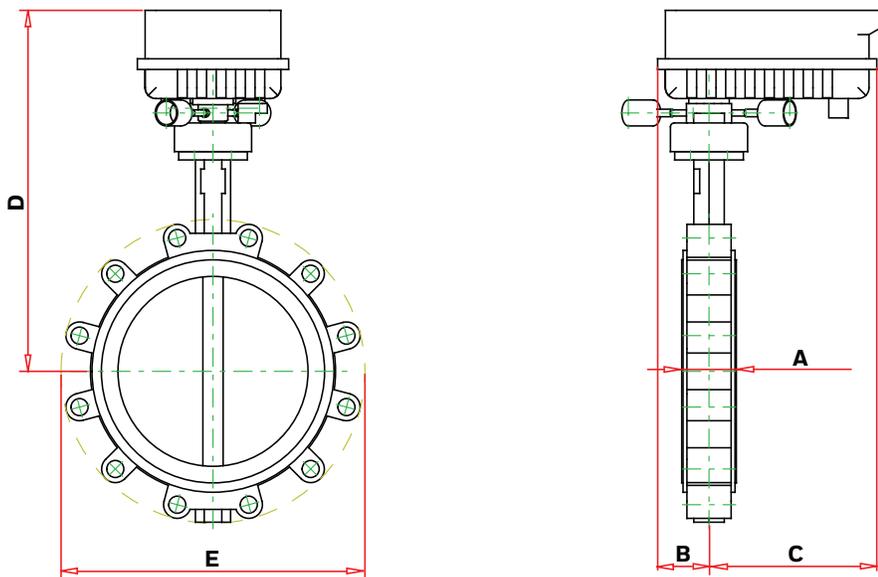
Fig. 6. 2-way valves with NEMA 2 MBP,E...5 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
4	100	2.15 (55)	6.81 (173)	7.34 (186)	15.07 (383)	8.52 (216)
5	125	2.31 (59)	6.81 (173)	7.34 (186)	15.59 (396)	9.76 (248)

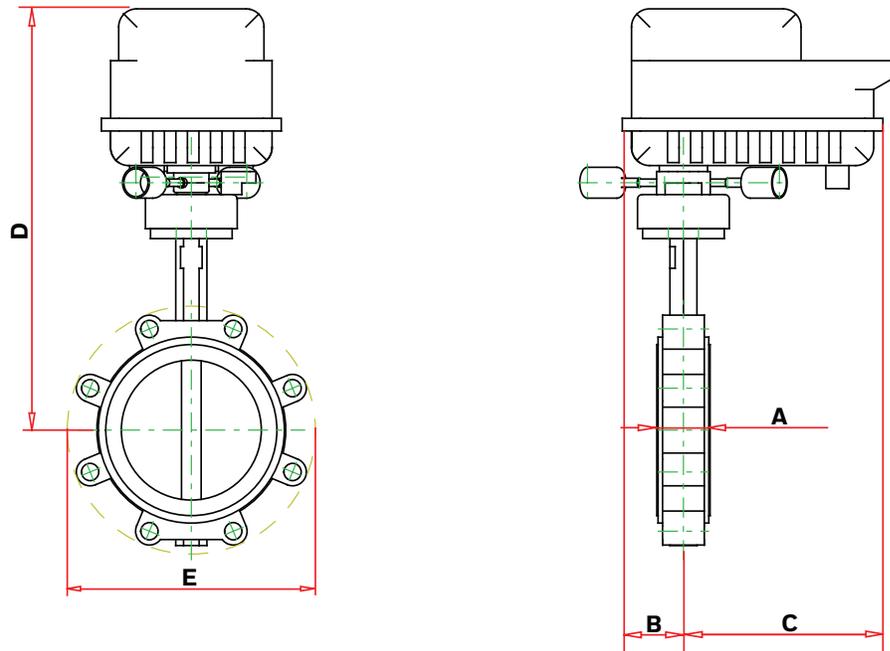
Fig. 7. 2-way valves with NEMA 4 MBP,E...5 actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
6	150	2.20 (56)	2.65 (67)	9.30 (236)	16.03 (407)	10.76 (273)
8	200	2.36 (60)	2.65 (67)	9.30 (236)	17.37 (441)	13.02 (331)
10	250	2.68 (68)	2.65 (67)	9.30 (236)	18.63 (473)	15.68 (398)
12	300	3.07 (78)	2.65 (67)	9.30 (236)	20.40 (518)	18.40 (467)

Fig. 8. 2-way valves with MBP...6,7,8 actuators

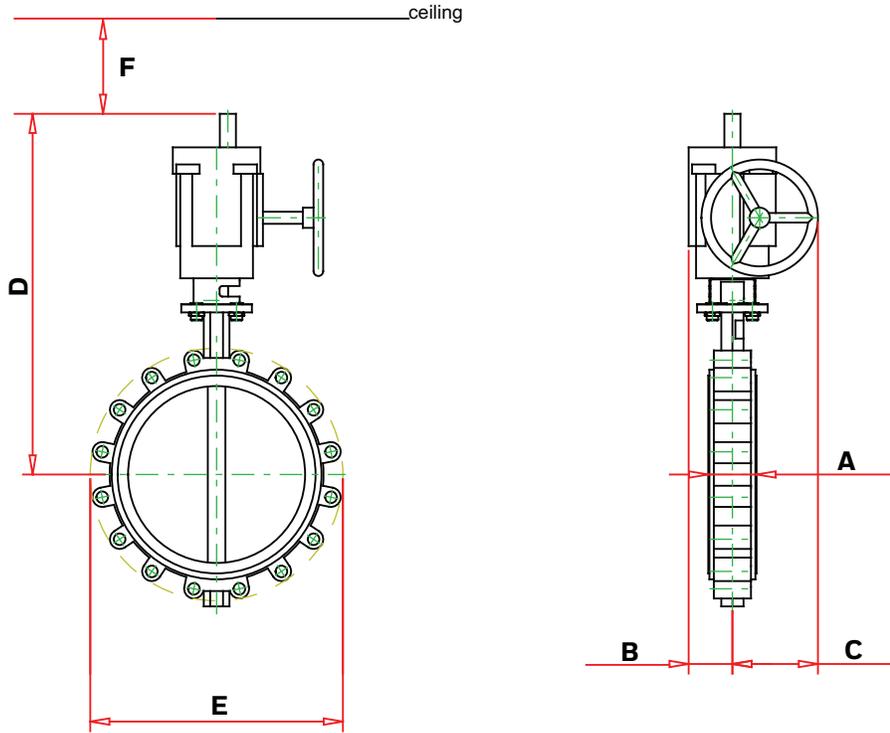
VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
5	125	2.20 (56)	2.65 (67)	9.30 (236)	17.77 (451)	9.76 (248)
6	150	2.20 (56)	2.65 (67)	9.30 (236)	18.28 (464)	10.76 (273)
8	200	2.36 (60)	2.65 (67)	9.30 (236)	19.62 (498)	12.96 (329)
10	250	2.68 (68)	2.65 (67)	9.30 (236)	20.88 (530)	15.66 (398)
12	300	3.07 (78)	2.65 (67)	9.30 (236)	22.65 (575)	18.40 (467)

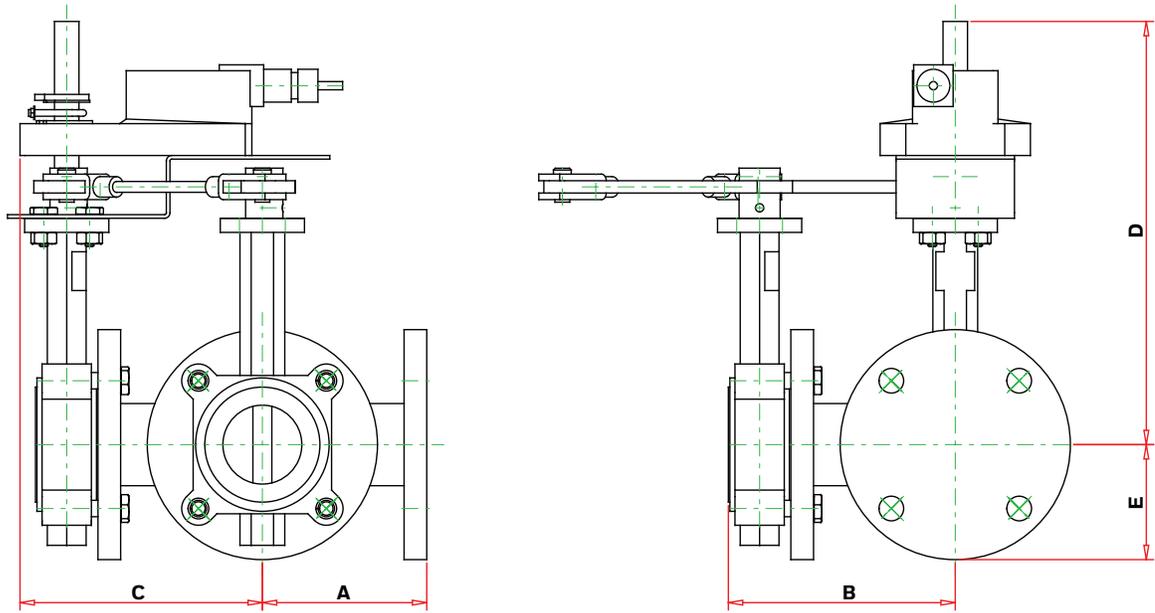
Fig. 9. 2-way valves with MBE...6,7,8 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



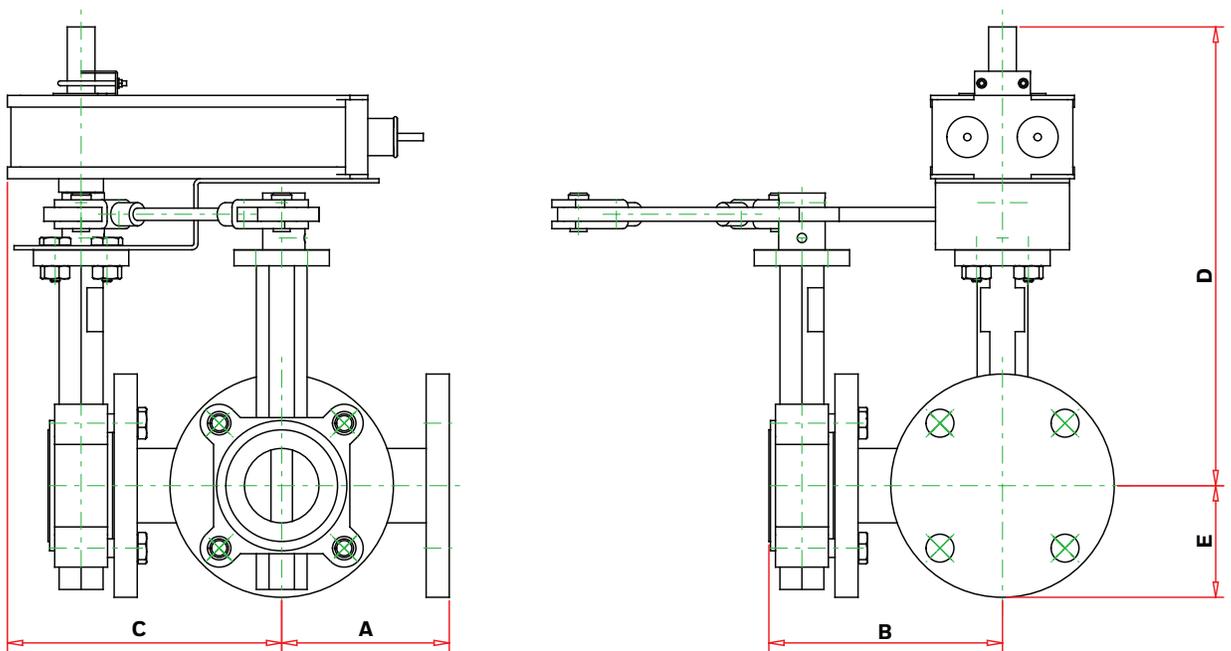
Size		Dimensions, in. (mm)					
in.	DN	A	B	C	D	E	F
14	350	3.22 (82)	4.40 (112)	7.13 (181)	26.97 (685)	20.39 (518)	15.07 (383)
16	400	4.22 (107)	4.40 (112)	7.13 (181)	30.77 (782)	22.89 (581)	16.70 (424)
18	450	4.71 (120)	4.27 (109)	8.35 (212)	35.22 (895)	24.65 (626)	19.87 (505)
20	500	5.25 (133)	4.27 (109)	8.35 (212)	37.50 (953)	26.89 (683)	19.16 (487)
24	600	6.36 (162)	3.18 (81)	14.98 (381)	43.93 (1116)	31.64 (804)	21.66 (550)

Fig. 10. 2-way valves with MBP...B,C,E,H actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	4.50 (114)	6.27 (159)	6.57 (167)	12.33 (313)	3.00 (76)
2.5	65	5.00 (127)	6.90 (175)	7.37 (187)	12.88 (327)	3.50 (89)

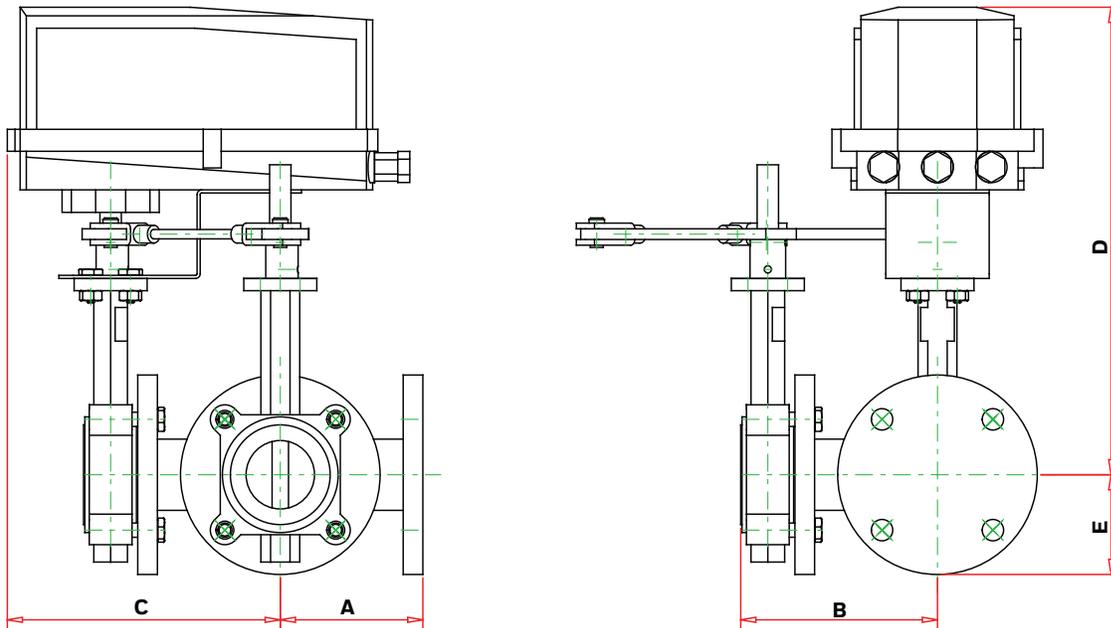
Fig. 11. 3-way valves with NEMA 2 MBP,E...2,3,A,R actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	4.50 (114)	6.27 (159)	7.37 (187)	12.33 (313)	3.00 (76)

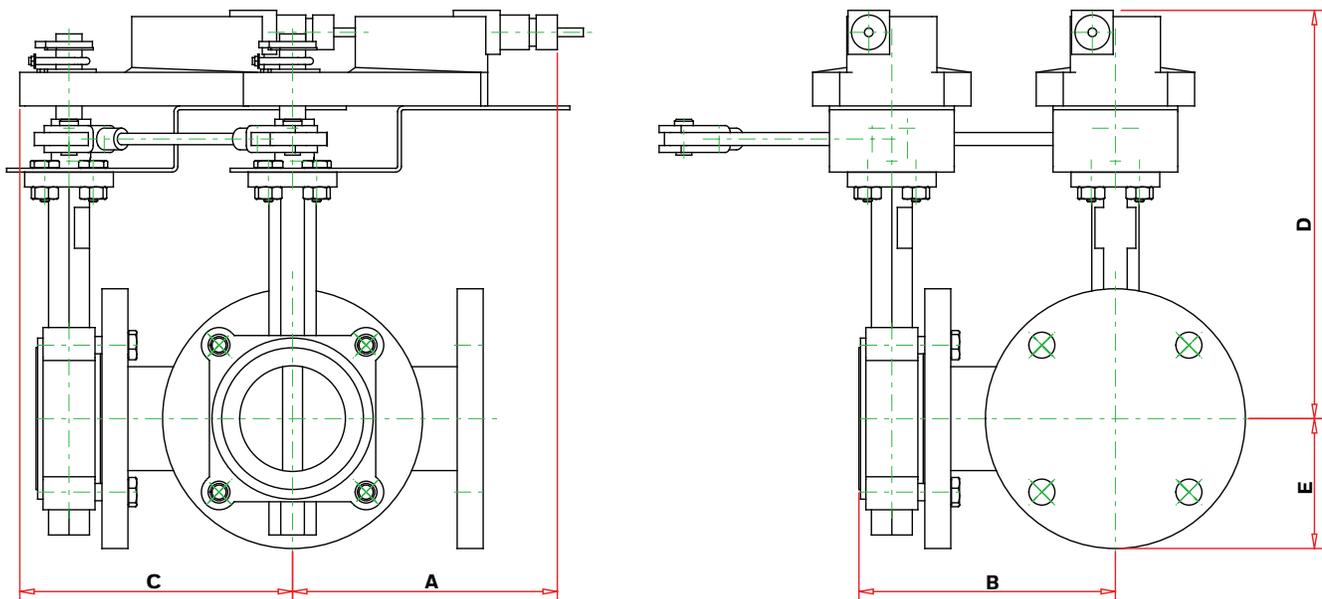
Fig. 12. 3-way valves with NEMA 2 MBS...1,3 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



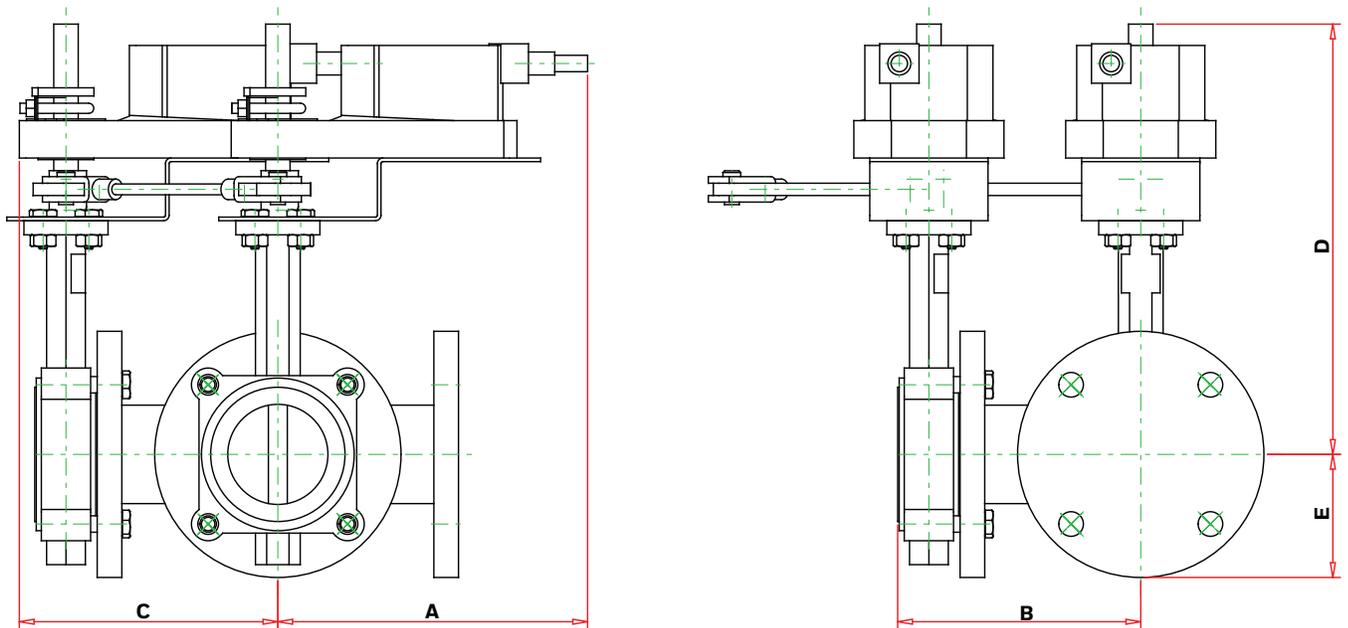
Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
2	50	4.50 (114)	6.27 (159)	9.01 (229)	15.86 (403)	3.00 (76)
2.5	65	5.00 (127)	6.90 (175)	9.57 (243)	16.41 (417)	3.50 (89)

Fig. 13. 3-way valves with NEMA 4 MBP,E...R actuators



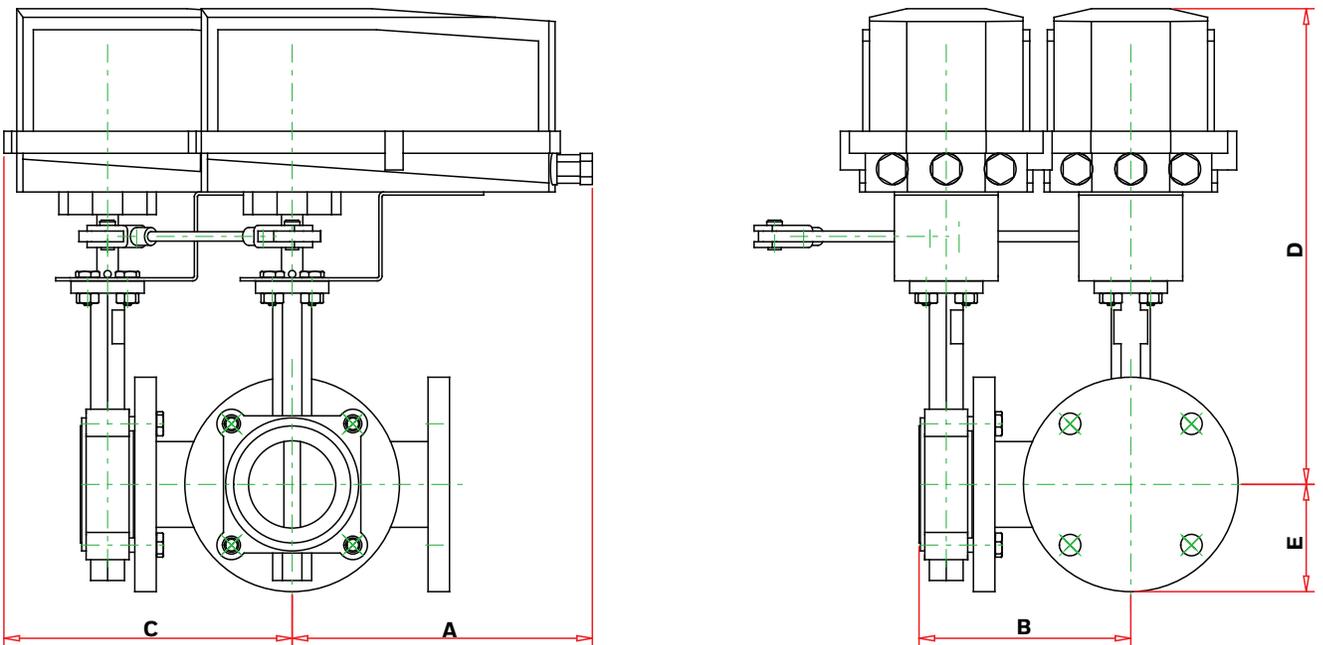
Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	7.64 (194)	7.40 (188)	7.87 (200)	11.79 (300)	3.75 (95)

Fig. 14. 3-way valves with NEMA 2 MBP...R actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	9.43 (240)	7.40 (188)	7.87 (200)	13.11 (333)	3.75 (95)

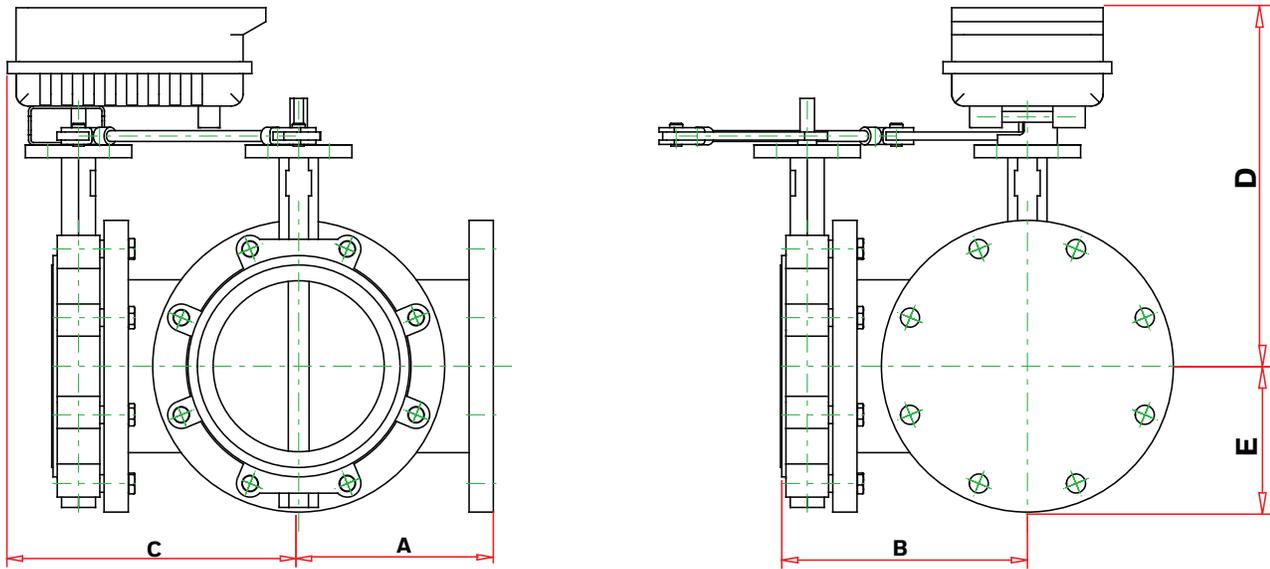
Fig. 15. 3-way valves with NEMA 2 MBE...R actuators



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	10.49 (266)	7.40 (188)	10.07 (256)	16.64 (423)	3.75 (95)

Fig. 16. 3-way valves with NEMA 4 MBP...R actuators

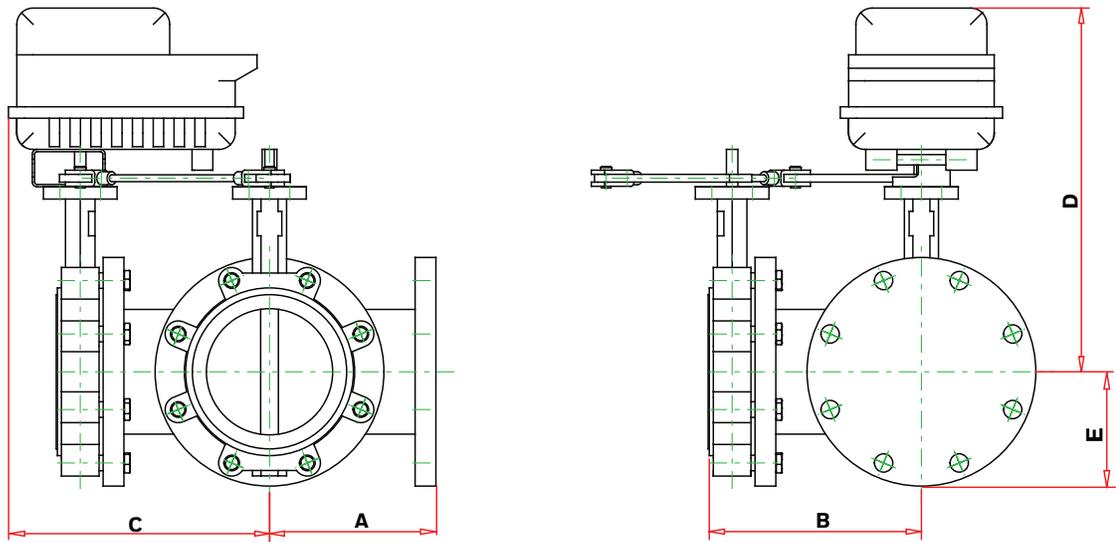
VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
3	80	5.50 (140)	7.56 (192)	8.89 (226)	14.97 (380)	3.75 (95)
4	100	6.50 (165)	8.55 (217)	11.13 (283)	14.22 (361)	4.50 (114)
5	125	7.50 (191)	9.70 (246)	12.05 (306)	14.74 (374)	5.00 (127)
6	150	8.00 (203)	10.20 (256)	12.55 (319)	15.25 (387)	5.50 (140)
8	200	9.00 (229)	11.36 (289)	13.47 (342)	16.59 (421)	6.75 (172)
10	250	11.00 (279)	13.68 (348)	15.31 (389)	17.85 (453)	8.00 (203)
12	300	12.00 (305)	15.07 (383)	16.12 (409)	19.62 (498)	9.50 (241)

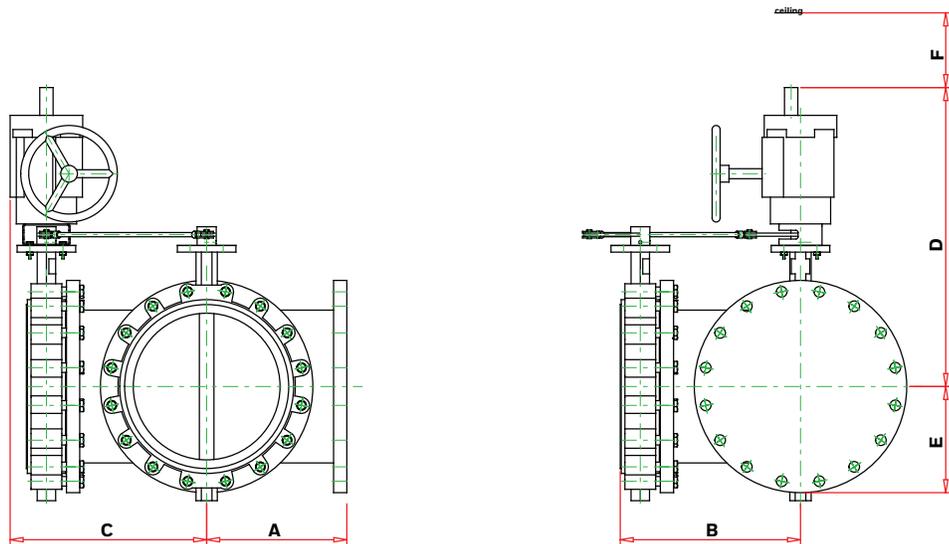
Fig. 17. 3-way valves with MBP...6,7,8 actuators

VR2, VR3, VR4, VR5 RESILIENT SEAT BUTTERFLY VALVES WITH LUGGED CONNECTIONS



Size		Dimensions, in. (mm)				
in.	DN	A	B	C	D	E
4	100	6.50 (165)	8.55 (217)	11.13 (283)	16.47 (418)	4.50 (114)
5	125	7.50 (191)	9.70 (246)	12.05 (306)	16.99 (432)	5.00 (127)
6	150	8.00 (203)	10.20 (259)	12.55 (319)	17.50 (445)	5.50 (140)
8	200	9.00 (229)	11.36 (289)	13.47 (342)	18.84 (479)	6.75 (172)
10	250	11.00 (279)	13.68 (348)	15.31 (389)	20.10 (511)	8.00 (203)
12	300	12.00 (305)	15.07 (383)	16.12 (409)	21.87 (556)	9.50 (241)

Fig. 18. 3-way valves with MBE...6,7,8 actuators



Size		Dimensions, in. (mm)					
in.	DN	A	B	C	D	E	F
14	350	14.00 (356)	17.22 (437)	20.01 (508)	29.51 (750)	10.50 (267)	8.80 (224)
16	400	15.00 (381)	19.22 (488)	21.38 (543)	34.35 (873)	11.75 (299)	8.80 (224)
18	450	16.50 (419)	21.21 (539)	23.13 (588)	35.22 (895)	12.50 (318)	8.80 (224)

Fig. 19. 3-way valves with MBP...C,D,E actuators