

ADREM™

DVL/SC



**Structural Composite High Performance
Fully Lined Diaphragm Valves**



Engineered Features:

- ◆ 30% GF PPS Structural Composite Body/Bonnet
- ◆ Fully Fluoropolymer Lined Body
- ◆ Molded Closed Diaphragm
- ◆ Zero Stem Leakage
- ◆ Zero Dead Space
- ◆ Low Operating Torque
- ◆ 3-layer Laminated MPTFE Diaphragm w/ Gas Barrier
- ◆ Ideally used as Control and Isolation Valves
- ◆ Atmospheric Bonnet Seal
- ◆ Non-Conductive
- ◆ Lockable, Rotating/Non-rising Hand-wheel
- ◆ Over-molded Metallic Flange Inserts

DVL/SC	
Application	Isolation and Control of Corrosive and Ultra-pure Processes
Conforming Standards	ASME B16.5, API 598
Size	1/2" - 6"
Body	30% GF PPS
Lining	PFA (PVDF optional)
Temperature	30°F to 320°F (PFA) 30°F to 275°F (PVDF)
Process Sealing	Gas Tested, Bubble Tight per API 598
Stem Sealing	3 Layer MPTFE Diaphragm with PFA Gas Barrier
Pressure Rating	ANSI 150#
Connection Type	ANSI 150# Flanged
Control Characteristics	≈ Linear
Flow Direction	Bi-directional

Product Design:

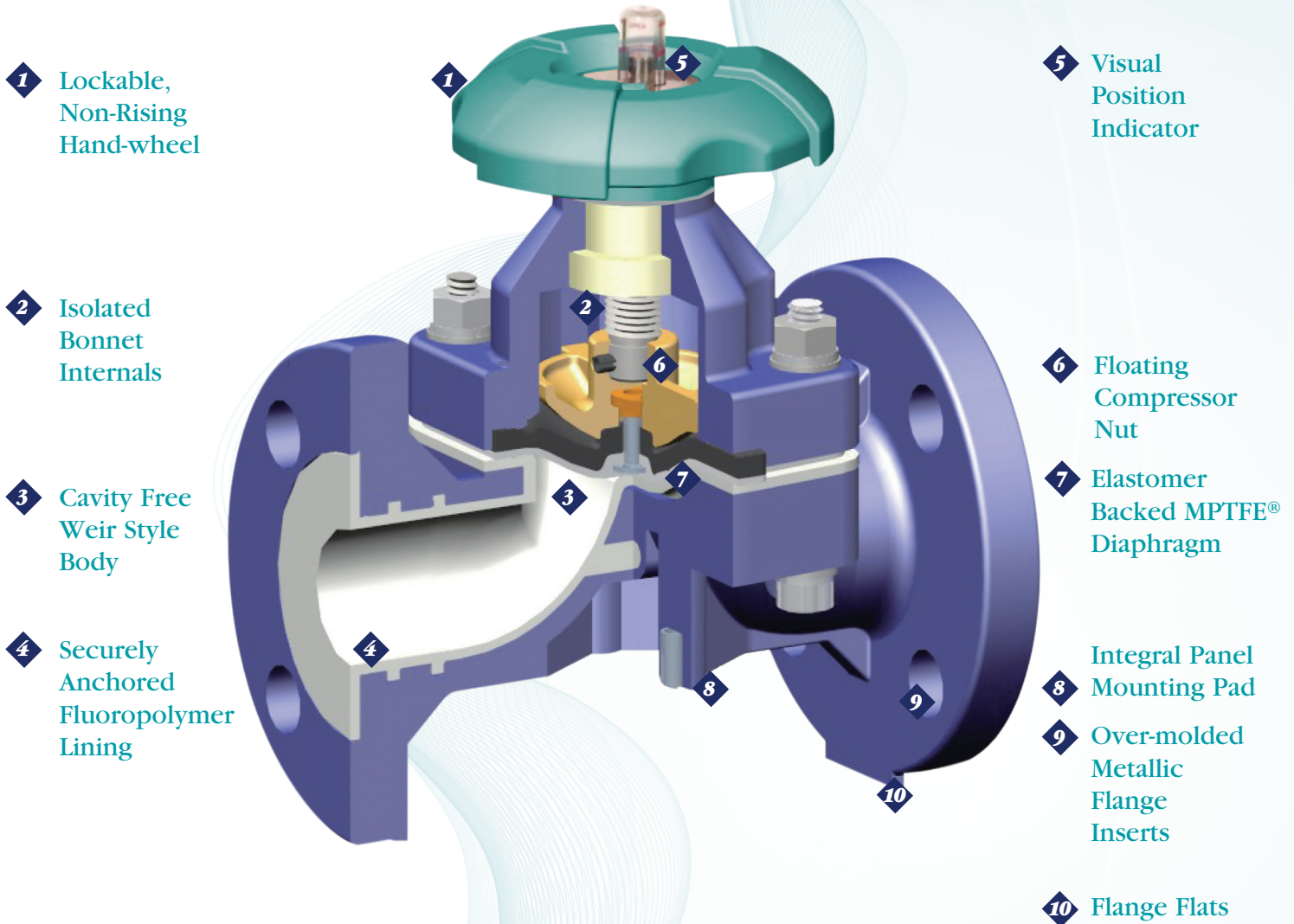
Constructed of engineered structural composite materials, the body of the DVL/SC valve is 10 times stronger than conventional fiberglass and dual laminate piping systems and is non-conductive. The DVL/SC valve offers an ideal solution to process conditions where internal and external corrosion issues exists as well as applications where electrolytic corrosion, weight, pipe stress and valve torque are concerns.

Designed for Extremely Corrosive Processes

- Acid Brine
- Catholyte
- Hydrobromic Acid
- Sodium Chlorate
- Spent Acid
- Wet Chlorine Gas
- Alkaline Brine
- Chlorinated Brine
- Hydrochloric Acid
- Sodium Hydroxide
- Sulfuric Acid
- Anolyte
- Chlorine Condensate
- Potassium Hydroxide
- Sodium Hypochlorite
- Ultra Pure Water

Property	Unit	Lining		Body
		PFA	PVDF	30% GF PPS
Specific Gravity	-	2.14 - 2.16	1.75 - 1.80	1520 Kg/m ³
Melting Point	°F	580	350	532
Tensile Strength	KSI	4.829	5.80 - 7.54	150 MPa
Continuous Service Temp	°F	500	275	392
Deflection Temp @ 260 PSI	°F	118	194	491

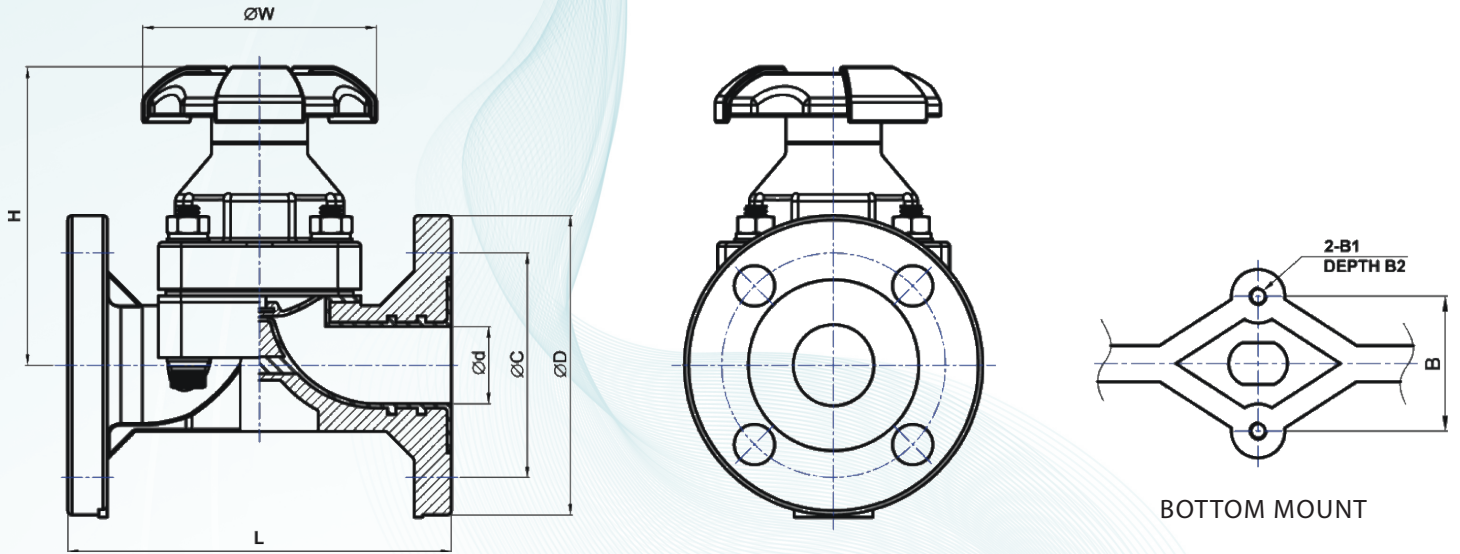
Design Detail



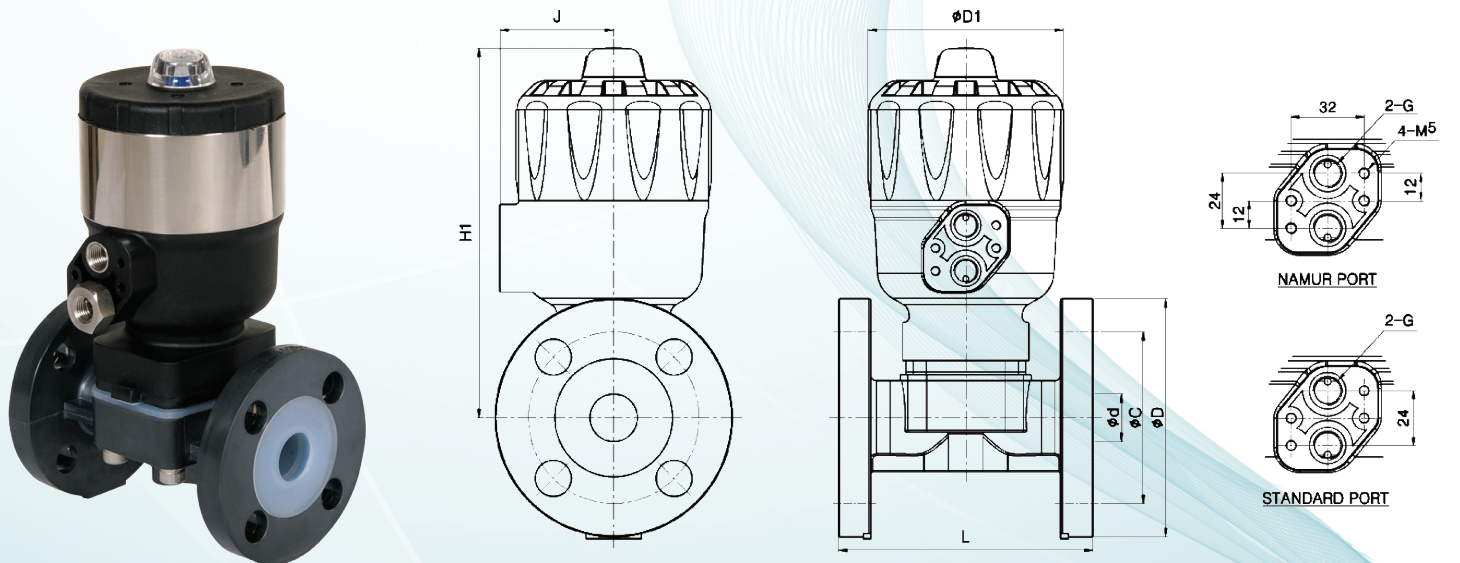
Bolt Torque

Size	Bonnet to Body		Valve Flange	
	N-m	(in-Lb)	N-m	(in-Lb)
1/2"	6.0	53.1	25	221.3
3/4"	6.0	53.1	25	221.3
1"	8.2	72.6	30	265.5
1 1/2"	13.1	115.9	35	309.8
2"	20.5	181.4	35	309.8
3"	27.2	240.7	45	398.0
4"	31.5	278.8	45	398.0
6"	50.0	442.5	70	619.5

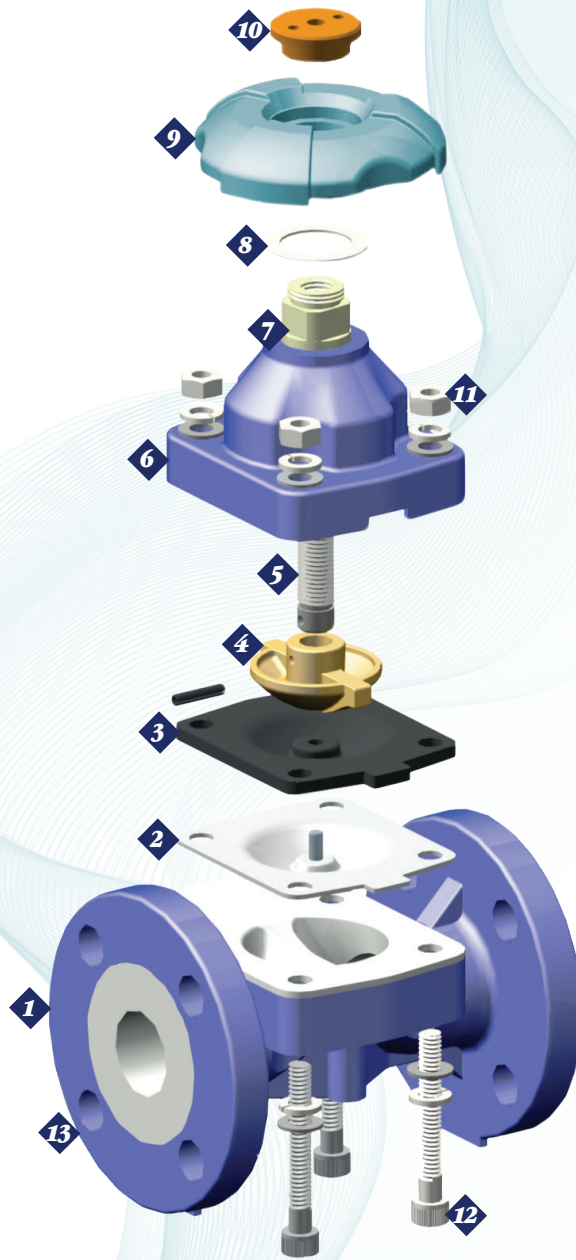
Dimensions



Size	$\varnothing d$	L	$\varnothing D$	$\varnothing D1$	$\varnothing C$	$\varnothing w$	H	H1	B	B1	B2	J	G
1/2"	0.59	4.25	3.50	4.06	2.38	3.35	3.35	7.48	0.98	M5	0.51	2.36	1/4
3/4"	0.79	5.87	3.88	4.06	2.75	3.35	3.35	7.48	0.98	M5	0.51	2.36	1/4
1"	0.98	5.87	4.25	4.06	3.13	3.35	3.74	7.60	0.98	M5	0.51	2.36	1/4
1-1/2"	1.50	7.00	5.00	6.10	3.88	4.37	5.51	11.02	1.77	M6	0.59	3.39	1/4
2"	1.97	7.95	5.98	6.10	4.75	4.92	6.16	11.42	1.77	M8	0.59	3.39	1/4
3"	3.15	10.35	7.50	10.24	6.00	8.66	7.87	15.75	3.94	M10	1.10	6.10	1/4
4"	3.94	12.93	9.02	10.24	7.58	10.24	9.45	16.14	4.72	M10	1.10	6.10	1/4
6"	5.97	18.90	10.94	13.50	9.50	15.50	16.30	23.90	4.72	M10	1.40	9.03	1/4



Assembly

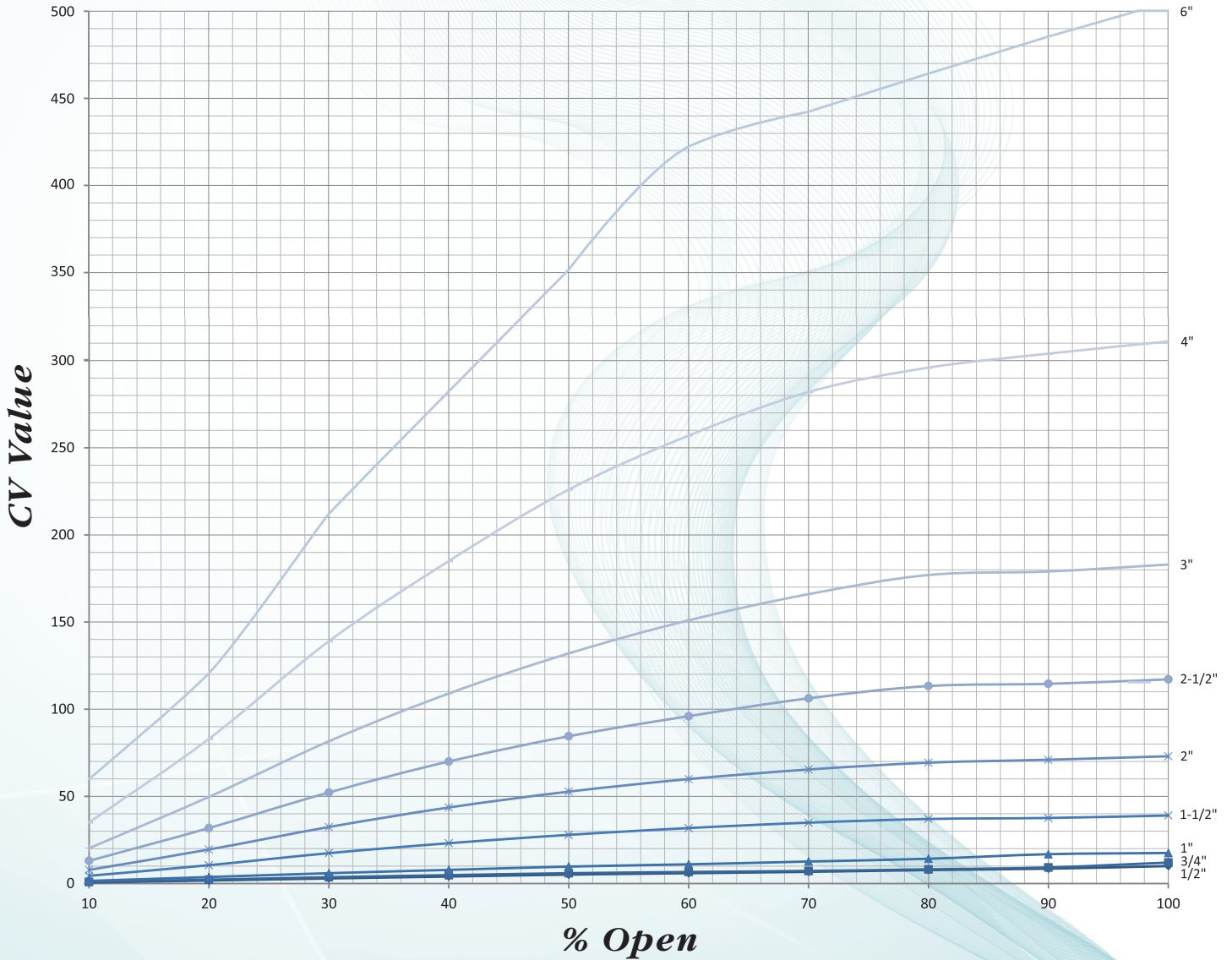


Item	Description	Material
1	PFA/PVDF lined Body	30% GF PPS
2	Diaphragm	MPTFE
3	Cushion Rubber	EPDM, Viton
4	Compressor	30% GF PPS
5	Spindle	304 SS, Carbon Steel
6	Bonnet	30% GF PPS
7	Spindle Bushing	POM, Brass
8	Handle Gasket	PTFE
9	Handwheel	30% GF PPS
10	Handwheel Cap	POM
11	Nut/Lock Washer	304 SS (Alloy 20 Option)
12	Fasteners	304 SS (Alloy 20 Option)
13	Metallic Flange Inserts	304 SS

Flow Characteristics

Size	CV Values									
	Percent Open									
	10	20	30	40	50	60	70	80	90	100
1/2"	0.7	1.5	2.2	2.9	3.6	4.4	4.6	4.8	5.1	5.9
3/4"	1	2	2.7	3.6	4.5	5.5	5.7	6	6.2	6.5
1"	1.3	2.7	4.1	6.3	7.8	9.4	9.9	10	12	12
1-1/2"	4.3	9	13	17	22	26	27	29	30	37
2"	6.9	16	25	33	41	49	51	53	56	60
2-1/2"	12	25	37	49	58	69	73	77	84	91
3"	19	41	62	83	103	124	130	136	142	150
4"	37	76	113	151	189	226	237	248	259	270
6"	60	121	211	281	351	422	442	464	484	503

Percent Open Vs Cv Value



$$CV = Q \sqrt{SG / \Delta P}$$

SG = Specific Gravity of fluid
Q = Volume flow rate (USGPM)
 ΔP = Pressure drop (PSI)

CV = Flow coefficient of value
CV defined as *Q* @ $\Delta P = 1$ PSI

Ordering information

1-Valve

DVL/SC

2-Size

1/2" - 6"

3-Lining

F1 - PFA*

F2 - PVDF

4-Body Material

M1 - 30% GF PPS

5-Diaphragm

D1 - EPDM/MPTFE*

D2 - Viton/MPTFE

D3 - Viton

D4 - EPDM

6-Operators

M - Manual Handwheel

DA - Double Acting Actuator

FC - Fail Close Actuator

F0 - Fail Open Actuator

7-Accessories (optional)

PS - Proximity Switch

PP - Pneumatic Positioner

EP - Electro Pneumatic Positioner

PR - Pressure Regulator

SV - Solenoid Valve

8-Cleaning (optional)

C1 - Chlorine

C2 - UPW

C3 - Oxygen

* Denotes standard

Ordering Example

1" PFA lined, 30% GF PPS body with EPDM/MPTFE Diaphragm, with a Fail Close Actuator, Pneumatic Positioner with the valve being chlorine cleaned

Type	DVL/SC
Size	1
Lining	F1
Body Material	M1
Diaphragm	D1
Operator	FC
Accessories	PP
Cleaning	C1

DVL/SC-1-F1-M1-D1-FC-PP-C1

DVL/SC SERIES

NOTES:

ADREM™

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