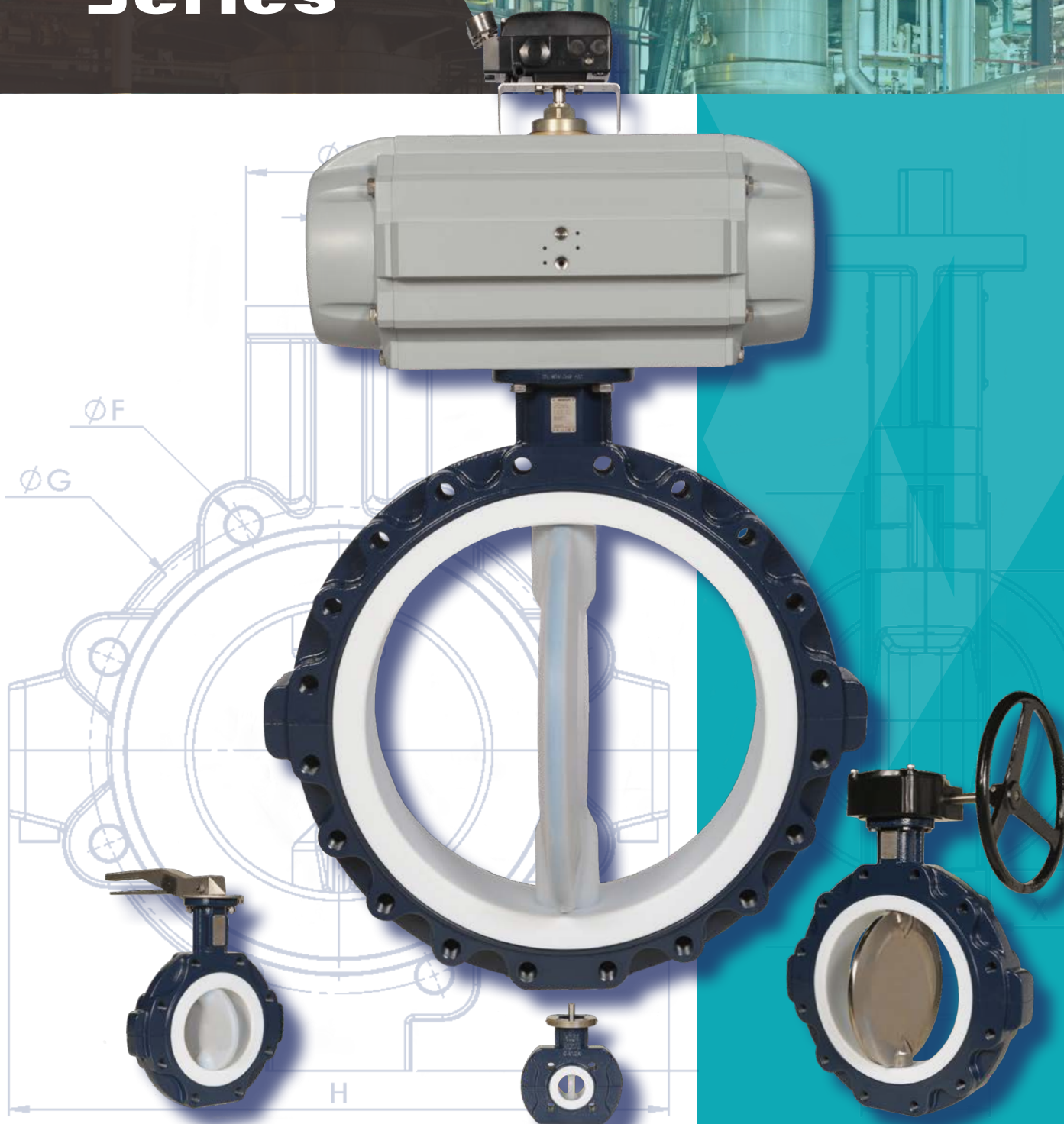


# ADREM™

*Fully Lined, High Performance*  
**Butterfly Valves**



## Series



CE 1250



## CHLORINE GAS / HCL

ADREM™ high performance lined butterfly valves are **ideally** suited for the stringent performance requirements demanded with isolating and controlling wet and dry **chlorine gas** as well as **hydrochloric acid**. Valves for these hazardous chemicals are thoroughly cleaned, dried and packaged per our factory procedures and conform to **Chlorine Institute Pamphlet 6** requirements. Our environmentally safe, mechanical shaft sealing technology and (Molecular Enhanced) **MPTFE** body lining offers industries using these highly regulated chemicals unparalleled performance, permeation resistance and reliability.

### HIGH INTEGRITY STEM SEAL

ADREM™ valves are designed to offer long-term maintenance-free security against the harmful affects of fugitive emissions. Our industry validated, innovative stem sealing system has revolutionized the performance benchmark for lined butterfly valves and has established a new standard for safety, reliability and environmental security.

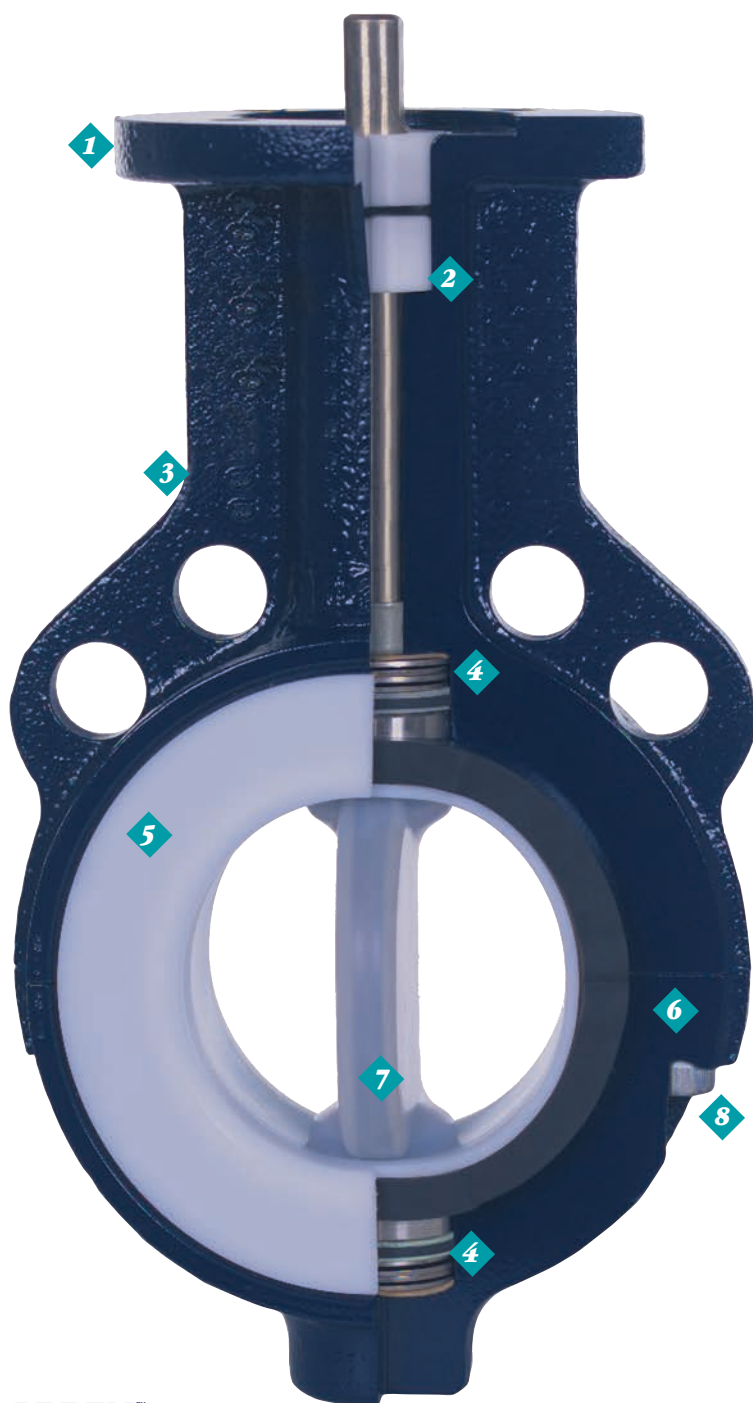
### HAZARDOUS SERVICE APPLICATIONS

- ◆ Wet/Dry Chlorine Gas
- ◆ Cell Effluent
- ◆ Chlorine Condensate
- ◆ Caustic
- ◆ Chlorinated Brine
- ◆ Hydrobromic Acid
- ◆ Sodium Hypochlorite
- ◆ Anolyte
- ◆ Catholyte
- ◆ Hydrochloric Acid
- ◆ Acidic EDC
- ◆ Spent Acid
- ◆ Sulfuric Acid
- ◆ Chlorinated Solvents
- ◆ Bromine
- ◆ Brine
- ◆ Hydrofluoric Acid
- ◆ Chlorinated Organics

### ADREM CS SERIES

		Optional
Temperature	-40°F to 450°F (PFA)	0°F to 275°F (PVDF)
Connection Type	ASME 150# Flanged	PN 6, PN 10, PN 16
Lining	MPTFE	UHMPE, PVDF
Body	A-395 Ductile Iron	
Size	1" - 48"	
Max Pressure	250 PSI	
Application	Reliable Isolation & Control of Extremely Hazardous Liquids & Gases	
Conforming Standards	API 609, API 598, ASME B16.5, ASME B16.34/42, MSS SP-25 & MSS SP-68	
Stem Sealing	Dynamically Loaded Mechanical Shaft Sealing System	
Process Sealing	Gas Tested, Bubble Tight per API 598/EN 12266-1-P12 Leakage Rate A	
External Coating	3 Component Epoxy Paint	
Flow Direction	Bidirectional	
Control Characteristics	Equal Percentage	

- ◆ Industry Proven Reliability Where Isolation & Control of Corrosive Process Media is Critical
- ◆ Manufactured in Accordance with ISO 5752 & DIN EN 558-1 Range 20
- ◆ Bi-directional Zero Leakage (Gas Tested per API 598/ EN12266-1/P12-Leakage Rate A)
- ◆ High Precision, Injection Molded Elastomeric Energizers Yields Uniform Sealing Pressure Onto the Entire Circumference of the MPTFE Liner
- ◆ 100% Spark Tested to 10,000 Volts
- ◆ Industry Safe, One Piece Blow-out Proof Disc/Stem Design
- ◆ Minimum 3mm Lining Thickness Assures Superior Permeation Resistance
- ◆ ISO 5211 Actuator Mounting Flange
- ◆ Equal Percent Control Characteristics
- ◆ Certified TA Luft VDI 2440 5.2.6.4, Environmentally Safe, Mechanical Shaft Sealing System
- ◆ PED 97/23/EG Certified (European Pressure Equipment Directive)
- ◆ ATEX Compliant Version for Explosive Surroundings, Group II, Zones 0, 1, 2, 20, 21 & 22
- ◆ Conforms to Chlorine Institute Pamphlet 6 Requirements
- ◆ Spherically Molded & Machined Disc/Liner Sealing Interface
- ◆ Individual Serial #'s Assure Complete Product Traceability
- ◆ Engineered and Individually Tested for Consistent Operating Torques
- ◆ SQS ISO 9001 Quality Management Certified
- ◆ Ideally Suited for Wet/Dry Chlorine Gas & Aqueous HCL



- ◆ **Integrally Cast ISO 5211 Mounting Flange**  
Facilitates direct mounting of actuators and manual gear operators
- ◆ **Environmental Seals**  
Oversized pressed fit Delrin bushings with inner and outer static Viton® o-ring seals
- ◆ **External Corrosion Protection**  
Provided by a 3 part, highly corrosion resistant epoxy paint system
- ◆ **Dynamically Loaded Shaft Seal**  
Spherically machined three point mechanical shaft sealing system
- ◆ **(Molecular Enhanced) MPTFE Liner**  
Minimum 3mm thick, spherically molded and machined, features superior permeation and cold flow resistance
- ◆ **Zero Leakage Performance**  
High precision, injection molded, 360° radially loaded elastomeric energizers transfer uniform sealing forces to the entire circumference of the MPTFE liner.
- ◆ **Robust PFA Lining**  
Minimum 3mm thick, spherically molded, machined and inter-locked to the metal disc core
- ◆ **High Quality Bolting**  
ASTM A193-B7 (Standard), Alloy 20 and C276 options

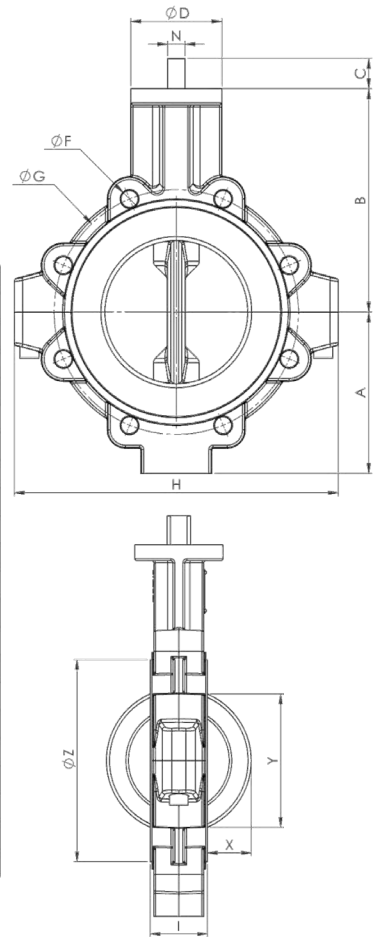
## ASSEMBLY MODEL



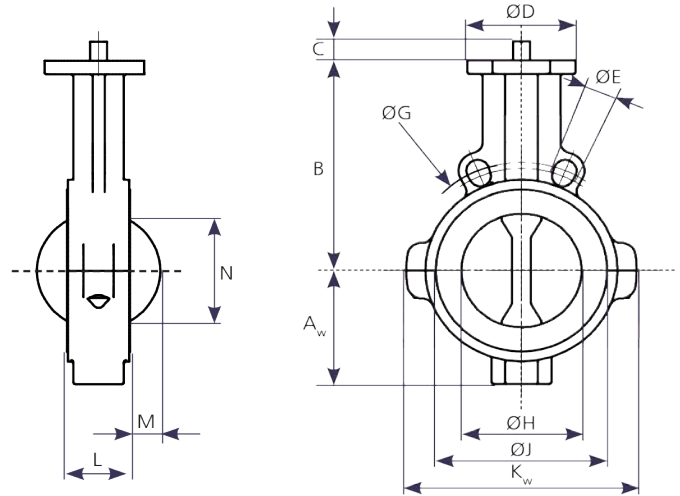
Disc	1	PFA
Liner	2	MPTFE
Energizer	3	Viton
Body	4	A395 Ductile Iron
Pusher	5	316SS/Viton
Belleville Springs	6	Galv. Spring Steel
Shaft Bushing	7	316SS/PTFE
Top Bushing	8	Delrin/Viton
Body Bolts	9	8.8, A4

## LUG DIMENSIONS

Valve Size	A	B	C	ØD	H	ØG	NxØF	I	X	Y	ØZ	Weight/lbs
1"	2.08	3.70	0.75	2.56	5.43	3.13	4x1/2"-13 UNC	1.29	0.000	0.47	2.05	5.50
1-1/2"	2.08	3.74	0.75	2.56	5.43	3.87	4x1/2"-13 UNC	1.29	0.040	0.51	2.99	6.00
2"	2.36	5.12	0.75	3.54	6.14	4.75	4x5/8"-11 UNC	1.69	0.433	1.93	3.35	11.00
3"	3.46	6.49	0.75	3.54	8.58	6.00	4x5/8"-11 UNC	1.81	0.787	2.80	4.80	17.60
4"	4.05	7.28	0.98	3.54	9.42	7.50	8x5/8"-11 UNC	2.05	1.06	3.58	5.64	24.20
6"	5.04	8.54	1.18	3.54	12.20	9.50	8x3/4"-10 UNC	2.20	1.97	5.71	7.60	34.80
8"	6.30	9.65	1.02	4.92	14.57	11.75	8x3/4"-10 UNC	2.36	2.83	7.72	9.90	54.00
10"	7.95	10.63	1.18	4.92	17.95	14.25	12x7/8"-9 UNC	2.68	3.70	9.69	11.85	73.40
12"	9.25	12.12	1.18	4.92	20.49	17.00	12x7/8"-9 UNC	3.08	4.49	11.65	13.75	124.75
14"	10.03	12.99	1.10	5.91	23.09	18.75	12x1"-8 UNC	3.62	4.92	12.91	16.30	191.30
16"	11.41	14.37	1.10	5.91	25.20	21.25	16x1"-8 UNC	4.02	5.75	14.84	18.12	235.00
18"	12.36	15.75	1.46	6.89	27.55	22.75	16x1-1/8"-7 UNC	4.50	6.46	16.69	20.28	334.75
20"	13.46	17.13	1.46	6.89	29.53	25.00	20x1-1/8"-7 UNC	5.00	7.24	18.78	22.44	407.30
24"	15.78	20.08	1.85	8.27	34.25	29.50	20x1-1/4"-7 UNC	6.06	8.46	22.05	26.46	673.60
28"	22.72	22.88	1.85	8.27	39.37	34.00	28x1-1/4"-7 UNC	6.06	10.40	26.18	39.37	974.00
30"	23.94	23.94	2.20	11.81	40.94	36.00	28x1-1/4"-7 UNC	6.06	11.38	28.19	33.50	1,080.00
32"	24.80	24.80	2.20	11.81	43.70	38.50	28x1-1/2"-6 UNC	6.06	12.36	30.20	35.20	1,388.00
36"	26.93	26.93	2.20	11.81	49.00	42.75	32x1-1/2"-6 UNC	6.06	14.33	34.17	40.00	1,721.00
40"	30.35	30.35	2.20	11.81	55.51	47.25	36x1-1/2"-6 UNC	6.06	16.06	37.68	43.35	2,170.40
42"	30.24	30.24	2.20	11.81	55.51	49.50	36x1-1/2"-6 UNC	6.06	17.05	39.76	46.06	2,287.60
48"	35.63	35.63	2.20	11.81	63.78	55.99	49x1-1/2"-6 UNC	6.06	20.00	45.67	52.96	2,671.90



## WAFER DIMENSIONS



DN (mm)	50	65	80	100	125	150	200	250	300
DN (inch)	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"
A <sub>w</sub>	2.36	2.76	3.31	3.94	4.33	5.12	6.22	7.64	8.56
B	5.12	5.75	6.50	7.28	7.95	8.54	9.65	10.63	12.13
C <sub>P2</sub>	0.75	0.75	0.75	0.98	0.98	1.18	-	-	-
C <sub>D4/P4</sub>	0.67	0.67	0.67	0.67	0.67	0.87	1.02	1.18	1.18
ØD	3.54	3.54	3.54	3.54	3.54	3.54	4.92	4.92	4.92
ØE <sub>DIN</sub>	0.71	0.71	0.71	0.71	0.71	0.87	0.87	0.87	0.87
ØE <sub>ANSI</sub>	0.75	0.75	0.75	0.75	0.87	0.87	0.87	1.00	1.00
ØG <sub>DIN</sub>	4.92	5.71	6.30	7.09	8.27	9.45	11.61	13.78	15.75
ØG <sub>ANSI</sub>	4.75	5.50	6.00	7.50	8.50	9.50	11.75	14.25	17.00
ØH	2.36	2.36	3.15	3.94	4.92	5.91	4.70	9.80	11.81
ØJ	3.35	4.17	4.80	5.63	6.54	7.60	9.88	11.85	13.74
K <sub>w</sub>	4.88	5.83	6.50	7.56	8.78	9.96	12.28	14.72	16.69
L	1.69	1.81	1.81	2.05	2.20	2.20	2.36	2.68	3.07
M	0.433	0.394	0.787	1.06	1.46	1.97	2.83	3.70	4.49
N	1.93	1.81	2.80	3.58	4.65	5.71	7.72	9.69	11.65
Weight/lbs	7.00	9.00	11.00	14.00	17.00	22.00	36.00	54.00	82.00

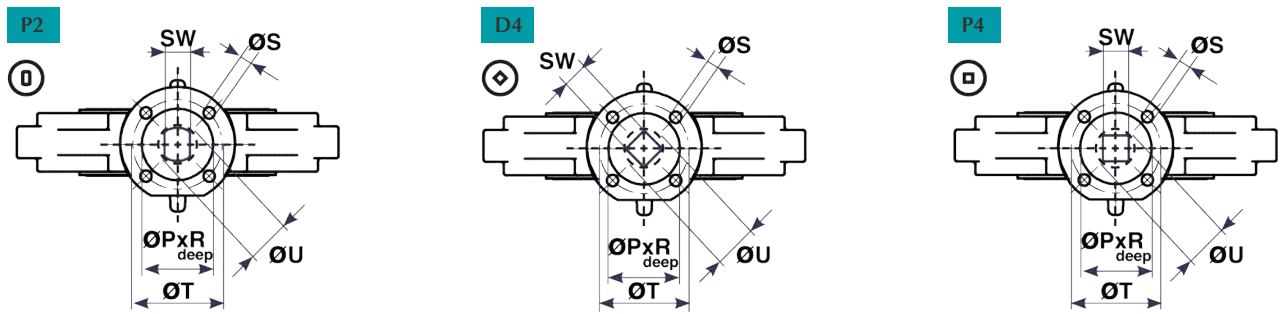
## CV VALUES

CV VALUES BASED ON DEGREES OPEN AND VALVE SIZE								
VALVE SIZE	20°	30°	40°	50°	60°	70°	80°	90°
1"	4	6	10	19	30	41	55	62
1-1/2"	7	16	31	55	83	116	150	171
2"	9	22	46	77	116	164	215	241
3"	20	43	89	162	235	332	434	518
4"	27	64	130	219	353	530	657	807
6"	83	178	320	534	876	1,314	1,677	2,067
8"	130	311	629	1,075	1,625	2,498	3,320	4,180
10"	232	466	944	1,568	2,177	3,270	4,932	6,087
12"	352	703	1,344	2,297	3,600	5,356	8,054	9,740
14"	466	877	1,567	2,433	3,895	6,148	9,701	11,834
16"	675	1,310	2,001	3,252	5,614	8,852	12,500	15,460
18"	915	1,697	3,070	5,303	8,610	12,700	16,870	20,520
20"	1,227	2,231	4,104	7,368	11,224	16,251	21,430	24,800
24"	1,796	3,043	5,915	10,498	16,060	23,277	29,998	34,670
28"	2,100	4,694	8,648	14,208	23,474	35,212	48,492	61,774
30"	2,516	5,661	9,750	18,982	29,705	44,280	54,648	62,760
36"	3,747	8,431	15,342	31,340	45,208	68,970	83,504	93,606
40"	4,260	9,654	17,554	27,784	46,390	68,960	100,304	112,842
42"	4,896	10,862	19,840	38,710	55,460	83,115	110,935	125,347
48"	6,182	13,765	22,609	41,124	66,760	95,130	121,120	146,410

## BREAK TORQUE

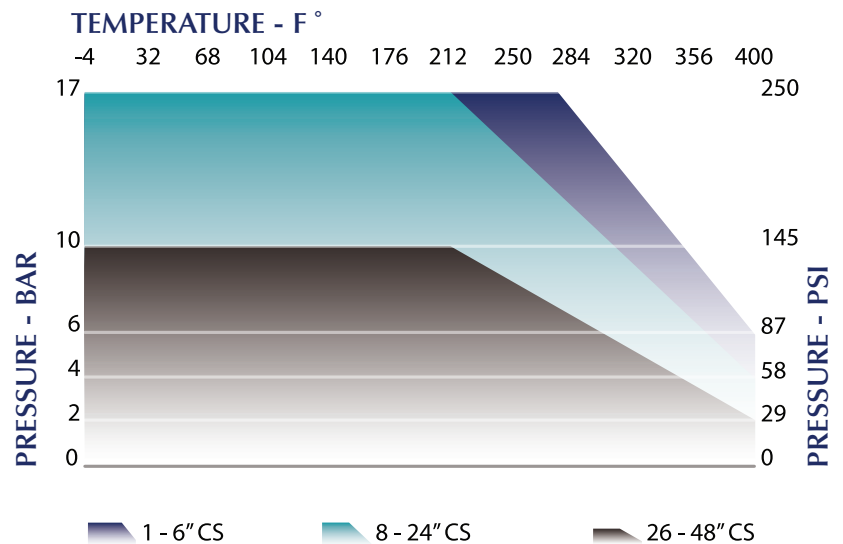
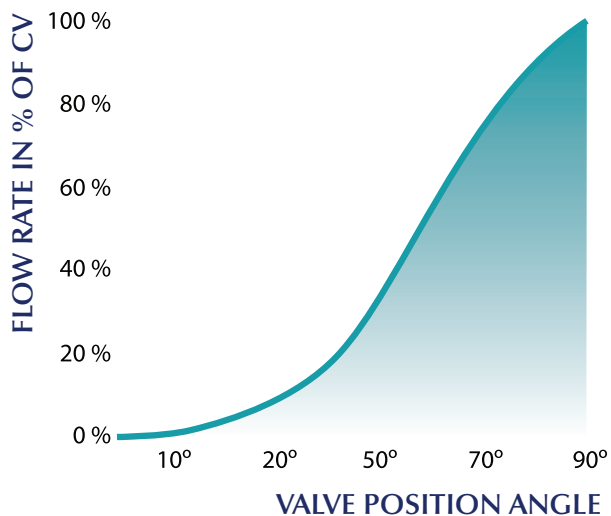
MAX ALLOWABLE SHAFT TORQUE						
SIZE	BREAK TORQUE		PFA (Duplex SS)		TITANIUM GR 2	
	N-m	In-Lb	N-m	In-Lb	N-m	In-Lb
1"	22	194	112	991	75	664
1-1/2"	26	230	112	991	75	664
2"	31	274	159	1,407	105	929
3"	54	478	159	1,407	105	929
4"	72	637	335	2,965	222	1,965
6"	132	1,168	608	5,381	400	3,540
8"	200	1,770	456	4,036	300	2,655
10"	334	2,956	664	5,877	470	4,160
12"	400	3,540	664	5,877	470	4,160
14"	540	4,779	1,227	10,859	875	7,744
16"	600	5,310	1,227	10,859	875	7,744
18"	720	6,373	2,900	25,667	2,050	18,144
20"	780	6,904	2,900	25,667	2,050	18,144
24"	1,068	9,453	6,070	53,724	4,300	38,058
28"	1,550	13,720	6,070	53,724	4,300	38,058
30"	2,400	21,242	10,375	91,826	7,320	64,787
36"	3,240	28,691	10,375	91,826	7,320	64,787
40"	4,100	36,288	10,375	91,826	7,320	64,787
42"	3,600	31,863	10,375	91,826	7,320	64,787
48"	5,760	50,981	10,375	91,826	7,320	64,787

## MOUNTING FLANGE



DN (mm)	25	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1050	1200
DN (inch)	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"	40"	42"	48"
SW <sub>P2</sub>	9	9	11	11	11	14	14	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW <sub>D4/P4</sub>	9	9	11	11	11	14	14	17	19	22	22	27	27	36	36	46	46	55	55	55	55	55	55
ØU	13	13	14	14	14	18	18	22	24	28	28	36	36	48	48	60	60	72	72	72	72	72	72
ISO	F05	F05	F07	F07	F07	F07	F07	F07	F10	F10	F10	F12	F12	F14	F14	F16	F16	F25	F25	F25	F25	F25	F25
ØT	50	50	70	70	70	70	70	70	102	102	102	125	125	140	140	165	165	254	254	254	254	254	254
ØS	4x7	4x7	4x9	4x9	4x9	4x9	4x9	4x9	4x11	4x11	4x11	4x13	4x13	4x17	4x17	4x21	4x21	8x17	8x17	8x17	8x17	8x17	8x17
ØP x R <sub>DEEP</sub>	36 x 3.5	36 x 3.5	56 x 3.5	56 x 3.5	56 x 3.5	56 x 3.5	56 x 3.5	56 x 3.5	71 x 3.5	71 x 3.5	71 x 3.5	87 x 3.5	87 x 3.5	102 x 4.5	102 x 4.5	132 x 5.5	132 x 5.5	202 x 5.5	202 x 5.5	202 x 5.5	202 x 5.5	202 x 5.5	202 x 5.5

## FLOW CURVE PRESSURE-TEMPERATURE



## CONTROL VALVE ACCESSORIES



*Actuator with  
Pneumatic Positioner*



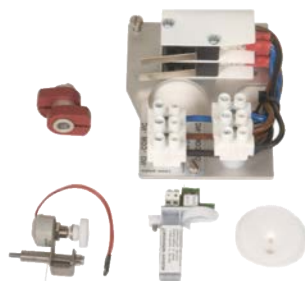
*Pressure Regulator  
with Gauge*



*Tufram Coated  
Pneumatic Positioner*



*Digital Positioner  
with Gauges*



*Feedback  
Module*



*Instrument  
Enclosure*



*Electro-Pneumatic  
Positioner with Gauges*



*Position Indicator with  
Beacon Indicator*

## ORDERING INFORMATION

Ordering example: **1-A-L-D-T-M-V-SB-O-C1**

### 1-Size

1" - 48"

### 2-Class

A - ANSI 150#  
B - DIN PIN 6  
C - DIN PIN 10  
D - DIN PIN 16

### 3-Body Style

L - Lug  
W - Wafer

### 4-Body Material

D - A395 Ductile Iron  
S - Stainless Steel  
C - Carbon Steel

### 5-Disc/Stem

T - PFA  
A - PFA/AS  
F - PVDF  
S - 316SS  
P - 316SS Polished  
N - Titanium  
Y - Hastelloy

### 6-Liner

M - MPTE  
A - MPTE/AS  
T - PTFE  
U - UHMPE  
F - ETFE

### 7-Elastomer

V - Viton  
L - Silicone  
E - EPDM

### 8-Operator

SB - Bare Shaft  
HL - Hand Lever  
MG - Manual Gear  
DA - DA Actuator  
FC - FC Actuator  
FO - FO Actuator

### 9-Accessories (optional)

PS - Proximity Switch  
MS - Micro Limit Switch  
PP - Pneumatic Positioner  
EP - Electro Pneumatic Positioner  
FR - Filter Regulator w/Gauge  
MO - Manual Override  
SV - Solenoid Valve  
O - NA

### 10-Cleaning (optional)

C1 - Chlorine  
C2 - UPW  
C3 - Oxygen

\*MPTE = Molecular/Mechanically Enhanced PTFE

\*\*Other Materials Available Upon Request

**ADREM** is a trademark of  
Severe Service Specialists, Inc.

**ADREM**™

Severe Service Specialists Inc.

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205-655-1163 sssvalve.com



'CS' is a trademark of  
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Switzerland

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