

AEGIS[®]

BFV/SC Composite Series

*Fully Lined Structural Composite High Performance Butterfly Valves
Engineered for Industries Most Hazardous Internal & Externally Corrosive Environments*



BIO-TECHNOLOGY - CHEMICAL - CHLOR ALKALI - PETRO CHEMICAL - PHARMACEUTICAL - PULP & PAPER - SEMICONDUCTOR
PHARMACEUTICAL - PULP & PAPER - SEMICONDUCTOR - BIO-TECHNOLOGY - CHEMICAL - CHLOR ALKALI - PETRO CHEMICAL

AEGIS' BFV/SC series fully lined structural composite high performance butterfly valves feature industries **Most Advanced Technology** available for controlling and isolating, **Corrosive, Ultra-pure and Highly-toxic** process liquids and gases. Ideally suited for non-metallic piping systems, our innovative composite technology rivals the physical strength of lined metal valves with a **50% weight savings**. Designed using industry's pertinent specifications as a minimum requirement, **AEGIS** valves incorporate the highest standards of fundamental engineering principles, quality, and safety that are essential in assuring reliable long term performance and protection against environmental concerns. **AEGIS** valves are routinely used to replace conventional quarter turn and rising stem valves where tight shutoff is imperative! Our in-depth knowledge of materials and industrial processes allows us to advise our customers on the selection of the most appropriate valve for their applications. As a result, Aegis valves are routinely specified for the most demanding services associated with the following industries:

<i>Bio-Technology</i>	<i>Mining</i>	<i>Pulp & Paper</i>
<i>Chemical</i>	<i>Petro Chemical</i>	<i>Semiconductor</i>
<i>Chlor Alkali</i>	<i>Pharmaceutical</i>	<i>Textile</i>

AEGIS' BFV/SC series valves features:

Quality Assurance

AEGIS' BFV/SC series lined butterfly valves are designed, engineered and manufactured under a company committed quality assurance process that has been audited and approved by the **SQS ISO 9001:2008** for Quality and Management Systems and the **PED** (Pressure Equipment Directive) **97/23/EG** for mechanical integrity. All valves are manufactured utilizing modern computer aided production methods and molding technology, guaranteeing control of the manufacturing process and reduction of rework thus assuring defect free products that are delivered on time. Each valve is individually tested in accordance with the API 598 specifications and is spark tested with 20,000 volts to assure lining integrity. A PMI process is performed on all critical components allowing material identification. In addition, each valve is subjected to visual and dimensional examinations as well as functional test. Subsequent to successfully completing all testing, each valve is permanently assigned a stainless steel serial numbered identification plate that assures complete trace ability. Mill Test Certificates are available upon request.

Design Criteria

AEGIS' BFV/SC series butterfly valves are designed in accordance with the following specifications:

<i>API 609</i>	<i>MSS SP-25</i>	<i>DIN PN 10</i>
<i>ISO 5752/20</i>	<i>MSS SP-67</i>	<i>DIN PN 16</i>

Atmospheric Corrosion Protection

The UV stabilized vinyl ester resin matrix of the BFV body provides "**superior resistance**" to the harmful effects of external corrosion associated with acidic, alkaline, brine and other chemically aggressive environments, as well as ultraviolet rays.

API 609 Conformance

AEGIS' BFV/SC series valve conforms to the dimensional design requirements of API 609. The structural integrity of our vinyl ester, carbon, glass and graphite fiber matrix is **10x stronger** than conventional FRP piping systems making the valve body virtually indestructible.

ATEX Approved Design

Our electrically and thermally conductive valve body is designed to satisfy ATEX requirements by eliminating the potential sparking hazard associated with static electricity.

Zero Leakage Performance

AEGIS VALVES feature a resilient non-wetted, 360 ° radially loaded elastomeric energizer. It is isolated and chambered within the valve body to provide un-interrupted uniform sealing pressure to the **entire** circumference of the liner, resulting in **absolute bi-directional bubble tight shut off**. Each valve is tested and certified per the API 598 or the EN 12266-1, leakage rate A specifications.

Maintenance Free, Mechanical Shaft Sealing Mechanism

AEGIS' innovative upper and lower dynamically loaded mechanical shaft sealing mechanisms feature industry proven belleville spring technology that is self compensating and never requires adjustment. The **primary** seal is the result of a dynamic pre-loaded force being generated at the interface between the PFA encapsulated spherical ball of the disc hub and the machined concave surface of the Paraflon® liner. The **secondary** radial lip seal is created at the interface between the PFA encapsulated stem/extended Paraflon® liner collar. The **tertiary** seal is created by a strategically placed, radially loaded viton o-ring that is positioned around the top of the Paraflon® liner's extended collar. The unique geometric profile of the disc and liner, eliminate the cold flow and deformation problems typical of conventional lined butterfly valves, resulting in a conditional environmentally safe, **lifetime shaft seal guarantee**.

Disc Swing Clearance

The disc swing clearance of the **AEGIS** high performance butterfly valves is compatible with ANSI F423-82 Teflon lined piping systems, as well as fiberglass, carbon steel and exotic piping systems. PTFE lined piping systems with heavy duty linings may require the use of tapered spacers during the installation.

Superior Permeation Resistance

AEGIS' molecular and mechanically enhanced **Paraflon®** linings and proprietary molding technology utilizes premium grade virgin resins to produce superior linings and encapsulations with a minimum thickness of **3 mm**. Our fully fluorinated polymer molding technology features a substantially greater crystallinity, density, flex life and lower melt viscosity during the sintering process resulting in long term resistance to permeation, absorption and swelling. Building a portfolio of documented successful installations, the industry proven results of our technology is "**paragon performance**" in some of the most hazardous services such as:

<i>Bromine</i>	<i>Chlorine Dioxide</i>	<i>Nitric Acid</i>	<i>Sodium Chlorate</i>
<i>Caustic</i>	<i>Chlorinated Organics</i>	<i>Oleum</i>	<i>Spent Acid</i>
<i>Chlorine Gas</i>	<i>Chlorinated Solvents</i>	<i>Phosphoric Acid</i>	<i>Sulfuric Acid</i>
<i>Chlorinated Brine</i>	<i>Hydrobromic Acid</i>	<i>Phosgene Gas</i>	<i>Ultra Pure Water</i>
<i>Chlorine Condensate</i>	<i>Hydrochloric Acid</i>	<i>Sodium Hypochlorite</i>	<i>Vinyl Chloride Monomer</i>



Size Range

The standard product is available from sizes 2" – 12" (DN 50 – DN 300) wafer and lug style bodies.

Temperature Rating

The temperature range of the BFV/SC valve is -10° F to 300° F (depending on liner selection).

Reduced Cold Flow

The superior physical properties of **AEGIS'** molecular and mechanically enhanced Paraflon® liner technology is engineered to reduce the effects of cold flow during the installation. Featuring spherically molded and machined extra wide liner sealing faces that are securely anchored and chambered within the valve body, our innovative technology exhibits exceptional resistance to the effects cold flow placing the BFV/SC valve in a performance class of its own.

ISO 5211 Mounting Flange

The **BFV/SC series** valve features an integrally molded ISO 5211 mounting flange allowing the direct mounting of actuators thus reducing automation costs and eliminating hysteresis.

UPW Service

Valves intended for the meticulous requirements of the semiconductor industry's **18 mega OHM de-ionized water** service are assembled and tested in industry approved clean rooms beneath Class 100 Hepa Filters to assure that the environment is grease, dirt, dust, oil and lubricant free. Each valve is thoroughly cleaned via DI water baths and IPA wipe downs. The light weight construction eliminates supporting problems, pipe deflection and reduces the potential for bacteria growth. All personnel also wear semiconductor clean room approved attire during the assembly process.

Chlorine and HCL Valves

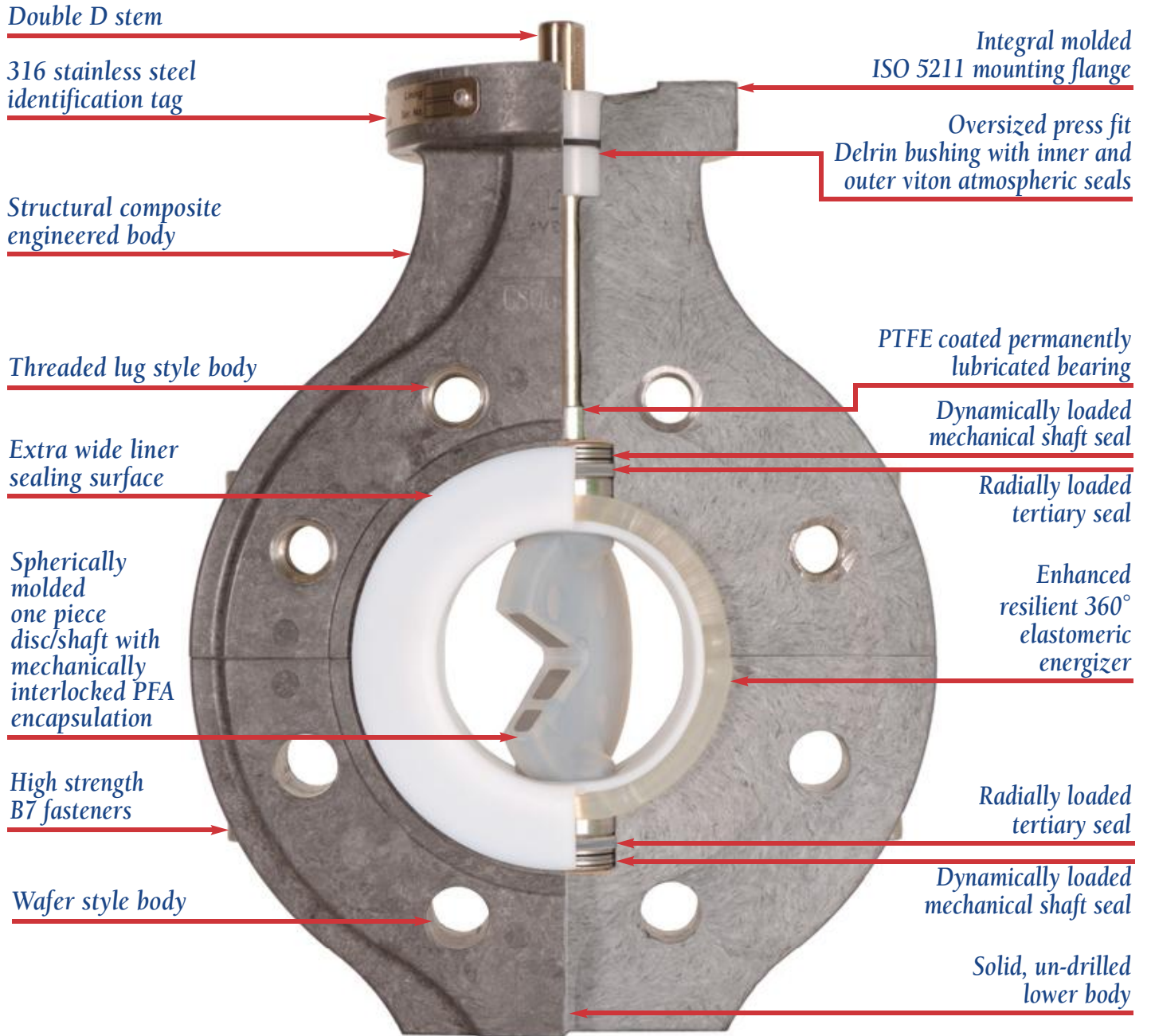
AEGIS' BFV/SC series lined butterfly valves are **ideally** suited for chlorine gas and hydrochloric acid applications. Valves for these hazardous services are thoroughly cleaned, degreased and packaged per our factory procedures and conform to the **Chlorine Institute Pamphlet #6 requirements**. Our molecular enhanced and mechanically superior Paraflon® lining technology offers industries using these highly regulated chemicals unparalleled performance and reliability.

SES System

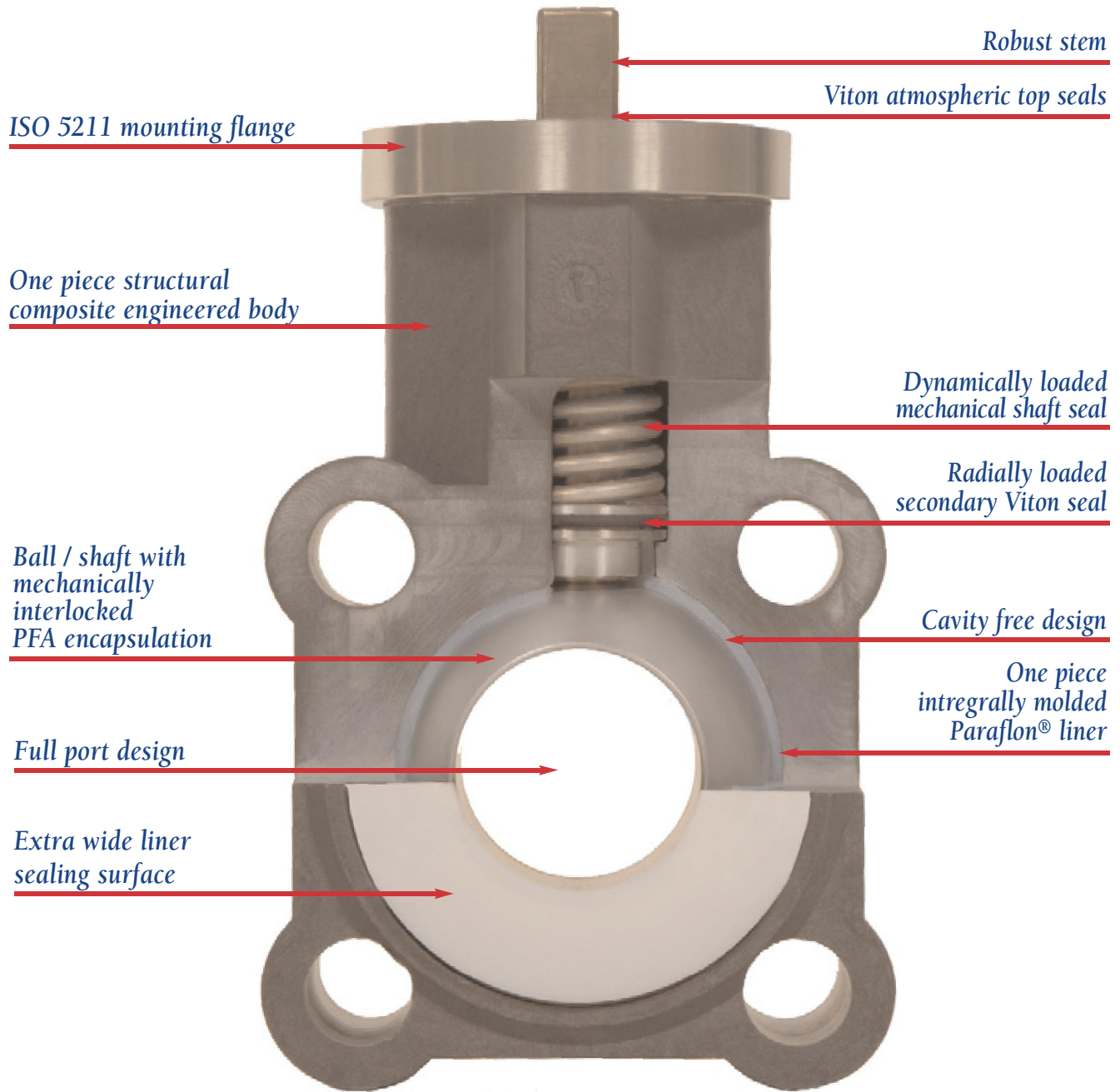
Fugitive emissions are a major concern of the operating personnel and surrounding communities within the chemical processing industry. As a result, the Aegis BFV/SC valve has been designed to incorporate an optional **Secondary Environmental Sealing System**. Featuring dynamically loaded seal packages and monitoring ports that are strategically placed above the primary seal, the SES system safely permits the monitoring of this region. Monitoring systems such as inert gas pads, scrubbers and low- pressure differential switches are easily adapted to the drilled and tapped valve body connection ports.



BFV / SC SECTIONED MODEL



LBFW / SC FULLY LINED STRUCTURAL COMPOSITE BALL VALVE

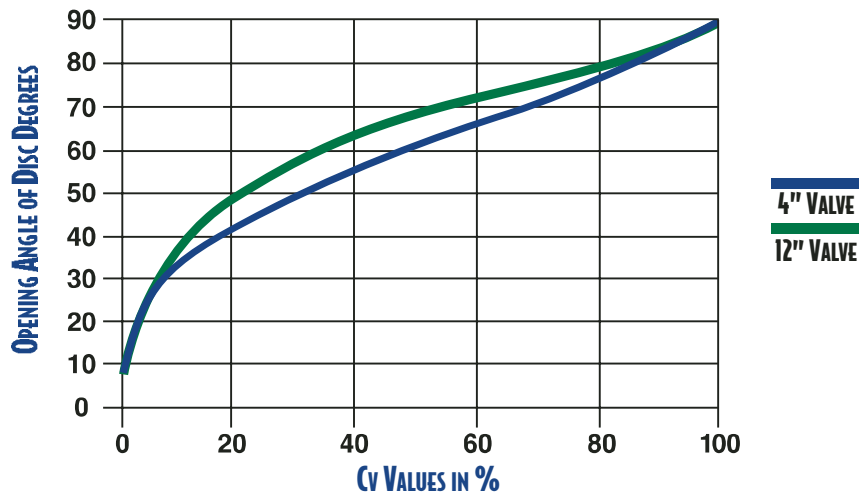


FLOW RATES / Cv VALUES

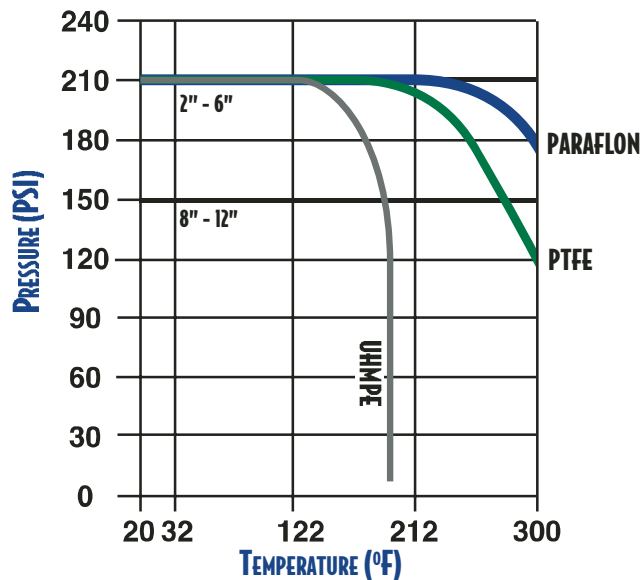
DEGREES OPEN OF VALVE DISC

Valve Size	20	30	40	50	60	70	80	90
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	1314	1677	2067
8	130	311	629	1075	1625	2498	3320	4180
10	232	466	944	1568	2177	3270	4932	6087
12	352	703	1344	2297	3600	5356	8054	9740

FLOW CURVE

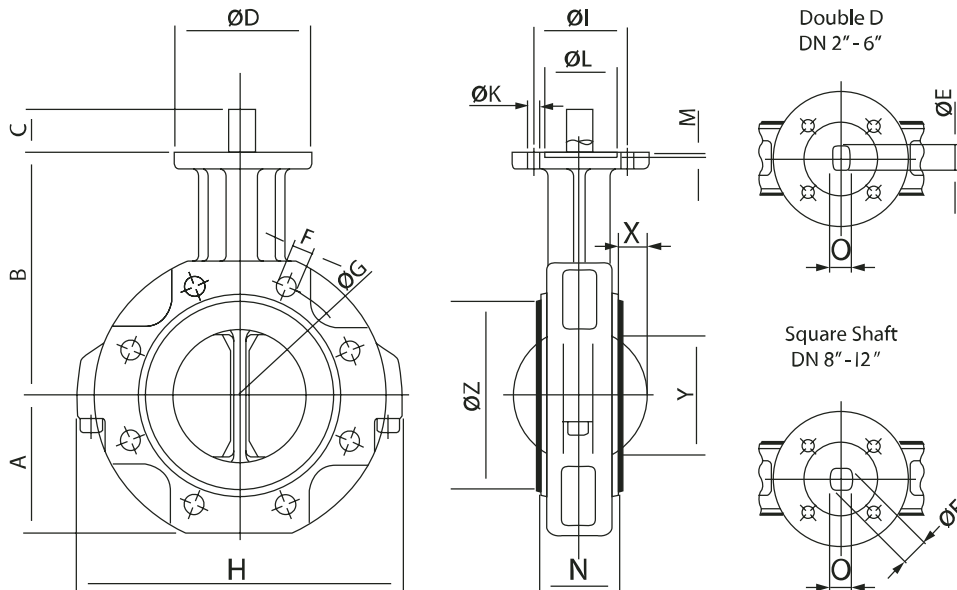


PRESSURE / TEMPERATURE CURVE OF LININGS



TORQUE VALUES / WEIGHTS / BOLT TORQUE

Valve Size	PARAFLOWN		UHMPE		Max. Allowable		Body Weight		Installation Bolt Torques	
	Nm	In Lbs.	Nm	In Lbs.	Nm	In Lbs.	Lbs.	Lbs.	Nm	In Lbs.
2	36	320	43	381	61	539	4.7	5.0	25	221
3	54	480	59	522	61	539	7.7	8.5	25	221
4	72	640	86	761	179	1584	11.0	12.0	25	221
6	132	1170	160	1416	309	2734	18.8	21.0	50	443
8	228	2020	271	2400	309	2734	29.5	31.0	50	443
10	360	3190	430	3805	604	5345	38.8	41.0	50	443
12	480	4250	550	4868	604	5345	64.8	67.0	60	531



ANSI 150 LB / INCH

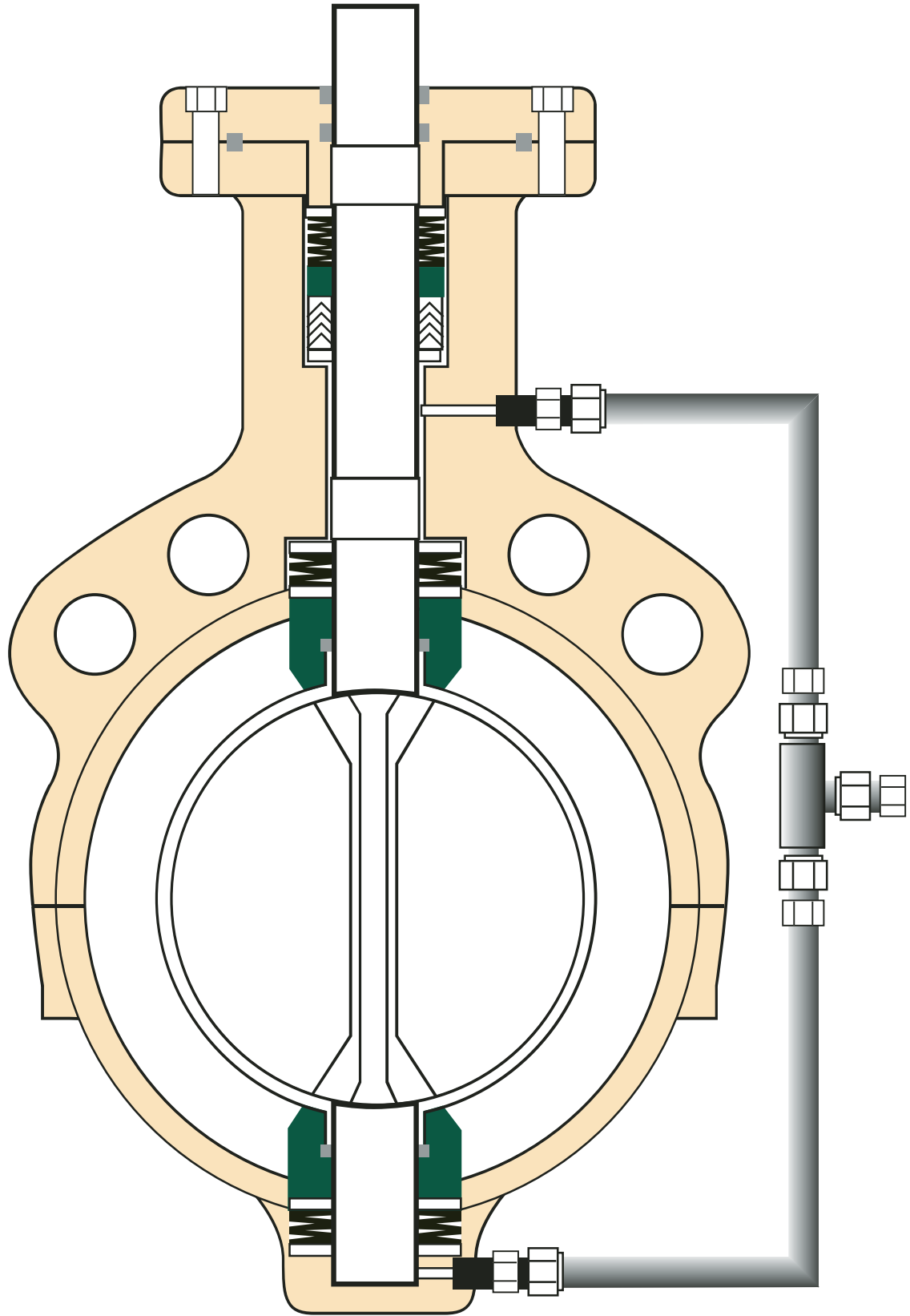
Size	A	B	C	ØD	ØE	F	ØG	H	ØI	ØK	ØL	M	ISO	N	O	X	Y	Z
2"	2.28	5.12	.75	4.02	0.55	4 x 5/8"-11	4.75	6.02	2.76	0.35	2.20	0.14	F07	1.69	0.43	0.24	1.22	3.35
3"	3.46	6.50	.75	4.02	0.55	4 x 5/8"-11	6.00	8.26	2.76	0.35	2.20	0.14	F07	1.01	0.43	0.67	2.48	4.80
4"	4.02	7.28	.98	4.02	0.71	8 x 5/8"-11	7.60	9.66	2.76	0.35	2.20	0.14	F07	2.06	0.65	1.06	3.64	6.63
6"	5.00	8.54	1.18	4.02	0.87	8 x 3/4"-10	9.50	11.61	2.76	0.35	2.20	0.14	F07	2.20	0.67	1.85	5.39	7.60
8"	6.30	9.65	1.18	5.98	0.95	8 x 3/4"-10	11.75	14.33	4.02	0.43	2.80	0.14	F10	2.37	0.75	2.80	7.44	9.88
10"	7.50	10.63	1.18	5.98	1.10	12 x 7/8"-9	14.25	16.97	4.02	0.43	2.80	0.14	F10	2.68	0.87	3.62	9.41	11.85
12"	8.94	12.13	1.18	5.98	1.10	12 x 7/8"-9	17.00	20.11	4.02	0.43	2.80	0.14	F10	3.09	0.87	4.41	11.42	13.74

DIN PN 10/MM

DN	A	B	C	ØD	ØE	F	ØG	H	ØI	ØK	ØL	M	ISO	N	O	X	Y	Z
50	58	130	19	102	14	4 x M16	120.6	153	70	9	56	3.5	F07	43	11	6	31	85
80	88	165	19	102	14	8 x M16	152.4	210	70	9	56	3.5	F07	46	11	17	63	122
100	102	185	25	102	18	8 x M16	190.5	245	70	9	56	3.5	F07	52	14	27	90	143
150	127	217	30	102	22	8 x M20	241.3	295	70	9	56	3.5	F07	56	17	47	137	193
200	160	245	26	152	24	8 x M20	298.4	364	102	11	71	3.5	F10	60	19	71	189	251
250	193	270	30	152	28	12 x M20	361.9	431	102	11	71	3.5	F10	68	22	92	239	301
300	227	308	30	162	28	12 x M20	431.8	511	102	11	71	3.5	F10	78	22	112	290	319



SES SYSTEM



AUTOMATED VALVE



AUTOMATED VALVE ACCESSORIES



Proximity Switch



Proximity Switch



Proximity Switch w/solenoid valve



Pressure Regulator



Pneumatic Positioner w/gauges



Pneumatic Positioner



Electro Pneumatic Positioner w/gauges

BFV / SC SERIES

Ordering Information

Disc

P - PFA
C - PFA-AS
V - PVDF
E - ECTFE
S - 316 SS
F - 316 SS Polished
T - Titanium
H - Hastelloy
U - UHMPE
O - Other

Liner

T - Paraflon®
C - Paraflon® AS
P - PTFE
U - UHMPE
X - ETFE

Elastomer

V - Viton
S - Silicone
E - EPDM
H - Hypalon

Body Material

P - Structural Composite

Body Style

L - Lug
W - Wafer

Class

A - ANSI 150#
B - DIN PN 10
C - DIN PN 16

Operator

BS - Bare Stem
LH - Locking Handle
MG - Manual Gear
DA - Double Acting Actuator
FC - Fail Closed Actuator
FO - Fail Open Actuator

Accessories

A1 - Pneumatic Positioner
A2 - Electro Pneumatic Positioner
A3 - Proximity Switch Box
A4 - Micro Limit Switches
A5 - Solenoid Valve
A6 - Filter Regulator W/Gauge
A7 - Manual Override

Cleaning

C1 - Chlorine
C2 - UPW
C3 - Oxygen

AEGIS FLOW TECHNOLOGIES

6041 Industrial Drive • Geismar, LA 70734 USA

225-754-7977

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