FluoroSeal



HP BUTTERFLY VALVES

ANSI/ASME/DIN
CLASS150/300
PN10/PN16/PN25
LUG, WAFER & DOUBLE FLANGE TYPE



FluoroSeal Class 150, HP Butterfly Valve
Wafer type with Pneumatic Actuator

LONGEVITY AND PERFORMANCE IN ONE

FluoroSeal® High Performance Butterfly Valves offer outstanding performance in a wide variety of applications in chemical processing, refining, pulp and paper, ethanol, gas separation, desalination, mining, utility, and many other industries. Because of their cost effective, yet robust design FluoroSeal High Performance Butterfly Valves often out-perform other valves by offering long term positive bi-directional shut-off in both control as well as on-off applications.

EXCELLENT CHOICE FOR CONTROL AND ON-OFF APPLICATIONS

Because of their optimized disc profile FluoroSeal High Performance Butterfly Valves (HPBV) offer precise flow control characteristics over the full range of valve rotation. Manual valve control is assured through the use of a multi-position lockable positioning plate which is standard for all lever operated valves. FluoroSeal HPBV incorporate a rugged mounting pad which allows for ease of automation utilizing pneumatic, electric, and hydraulic actuators as well as a variety of accessories including solenoid valves, limit switches, positioners, and speed control devices. Factory automation with FluoroSeal's own pneumatic rack and pinion actuator assures single source responsibility and guarantees optimum performance in demanding flow control and on-off applications.

FluoroSeal® High Performance Butterfly Valves offer increased value by incorporating advanced design features

- **DOUBLE OFFSET DESIGN**

FluoroSeal's HPBV design includes a double-offset shaft and eccentric disc. When the valve is opened the disc lifts completely off of the seat with a cam like action and eliminates seat wear and seat deformation at the top and bottom shaft areas. Due to the double-offset design FluoroSeal High Performance Butterfly Valves outperform traditional butterfly valves in terms of both sealing capabilities and service life. Because the disc doesn't contact the seat when the valve is opened operating torque is reduced resulting in lower automation cost. When the valve is closed the disc cams into the seat creating a bubble tight bi-directional seal.

- **BODY CONFIGURATION**

FluoroSeal High Performance Butterfly Valves are available as standard in ASME Class 150 and Class 300 wafer or lug style designs. Optional double flanged valves are available upon request. Both lug style and double flanged valves are fully rated for dead end service installations. In addition all FluoroSeal High Performance Butterfly Valves include an integrally cast internal over-travel stop to prevent disc and seat damage.

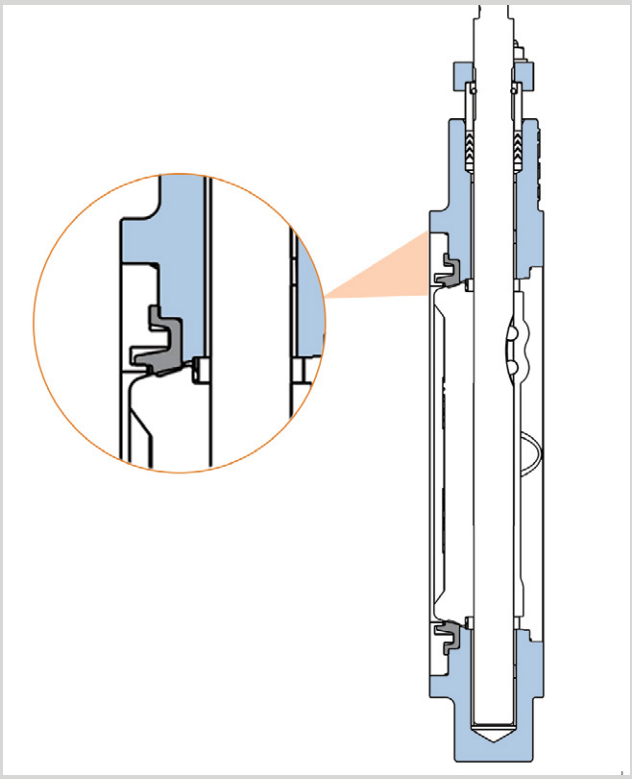
- **SEAT**

The flexible polymeric GF2P seat is a simple yet effective design - there are no springs, membranes, or o-rings to fail which can compromise long term bi-directional shut-off. GF2P is a chemically inert molecularly-modified ptfe with improved thermo-mechanical properties, improved cold flow resistance, and increased toughness which work together to increase temperature capability and extend the valve service life. FluoroSeal is the only High Performance Butterfly Manufacturer to offer this proprietary, upgraded seat material as a standard. FluoroSeal offers a variety of optional seat materials for difficult and demanding applications.

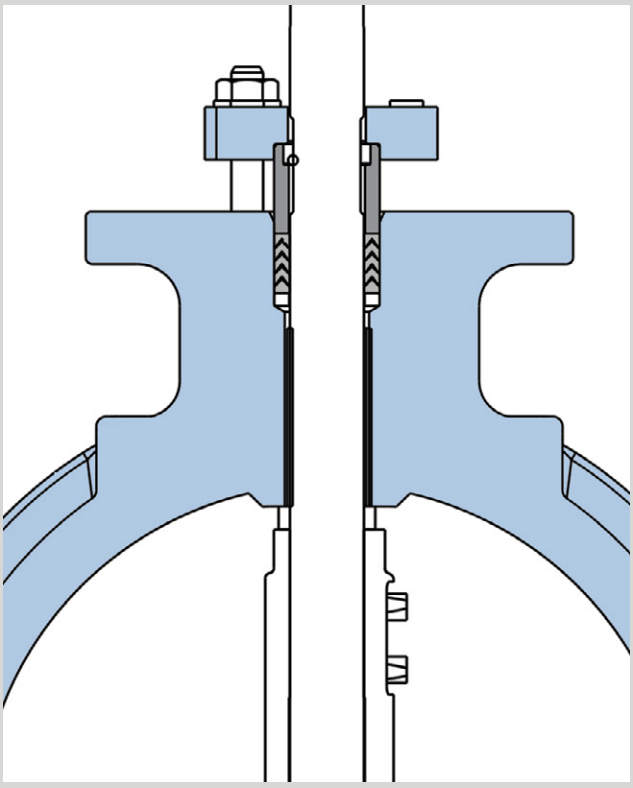
- Reinforced PTFE (RPTFE) – glass fiber reinforced PTFE for additional strength and rigidity and reduced cold flow.
- Hi-Temp – specially formulated GF2P with the addition of a proprietary carbon based filler which adds stability and allows the seat to be used in applications with continuous temperatures up to 600°F (316°C). In addition to its improved temperature capabilities the Hi-Temp seat also offers improved abrasion / erosion resistance, and excellent performance in saturated steam applications up to Class 300.
- Ultra High Molecular Weight Polyethylene (UHM-WPE) – highly resistance to abrasion / erosion as well as offering excellent radiation resistance.

- **STEM SEAL**

FluoroSeal High Performance Butterfly Valves utilize a proven ptfe v-ring packing arrangement loaded by a gland/follower as the standard stem seal to atmosphere. Optional double packing, live loading, and monitoring port are available in applications where fugitive emission resistance is critical.



Seat



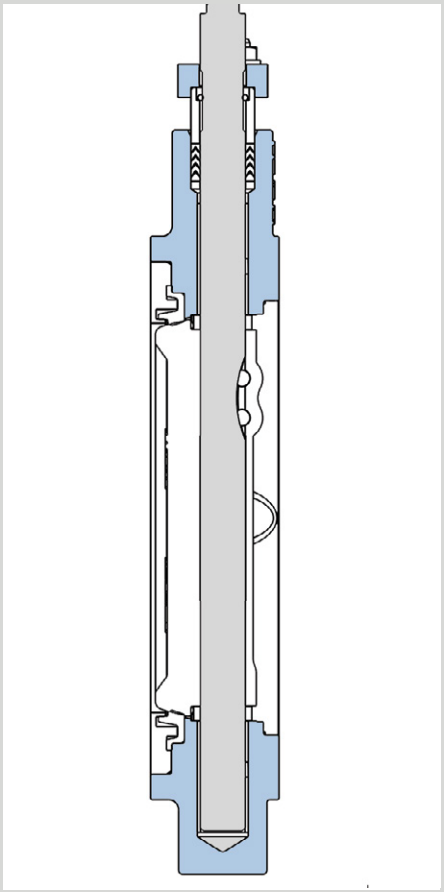
Stem Seal

- **BEARING DESIGN**

Stainless steel / ptfe shaft bearings provide shaft support while resisting deformation due to line pressure to maintain shaft concentricity with stem packing to assure a positive seal to atmosphere and practically eliminate fugitive emissions. The ptfe impregnated bearings provide lubricity which ensures smooth cycling and lower operating torque.

- **BLOWOUT PROOF SHAFT**

A high strength, blow-out proof 17-4PH shaft is standard on all FluoroSeal High Performance Butterfly Valves. The shaft is positively contained in the case of failure by a metal retaining ring. FluoroSeal utilizes a one-piece shaft (6" and above) and a closed bottom body design to increase reliability and eliminate a potential leak path. FluoroSeal utilizes 2 piece shaft for 4" and below in order to optimize flow rates.



Blowout Proof Shaft

MAINTENANCE

FluoroSeal High Performance Butterfly Valves are virtually maintenance free and are engineered to provide a long, trouble free service life. Should seat replacement be required, it can easily be replaced by simply removing the body insert. No dis-assembly of the disc and shaft is required.

SPECIAL APPLICATIONS

FluoroSeal High Performance Butterfly Valves can be successfully used in a wide range of specialized services. Some special services applications are listed below. FluoroSeal can also provide special service High Performance Butterfly Valves built on unique end-user specifications.

- **Fugitive Emissions** – Optional double packing and live-loading offers increased emissions resistance on FluoroSeal® High-Performance Butterfly Valves. Live-loaded packing compensates for both thermal gradients as well as normal wear while double packing offer the increased sealing of two independent packing sets. A monitoring port can be supplied on those valves that incorporate double packings.
- **Vacuum** – Standard FluoroSeal® High-Performance Butterfly Valves are rated to provide positive shut-off and stem sealing in vacuum down to 2x10-2 torr; specially designed high-vacuum valves can perform in vacuum applications down to 1x10-5 torr.
- **Chlorine and Oxygen** – valves are specially cleaned and prepped to assure cleanliness and eliminate the potential of contamination with oil, grease, or other foreign material. Chlorine prepped valves meet the requirements of the Chlorine Institute Pamphlet VI.
- **NACE** - Valves are modified to meet the latest NACE specifications for materials used in sour environments: NACE MR0175 / ISO 15156 and NACE MR0103-2003. Excellent for use in sour gas, sour oil, or other applications where sulfide stress cracking or chloride stress cracking is a concern.
- **Steam** – Standard valves with RPTFE seats can be used in saturated steam applications up to 135 psig while valves with Hi-Temp seats can be used in saturated steam applications up to 150 psig.
- **Abrasive Service** - Tungsten titanium carbide (TTC) hard coated discs are available for use in abrasive applications involving slurry or solid particles in suspension. The TTC coating greatly increases the service life of the valve and its in-line sealing ability. TTC can be applied to other valve parts as required.

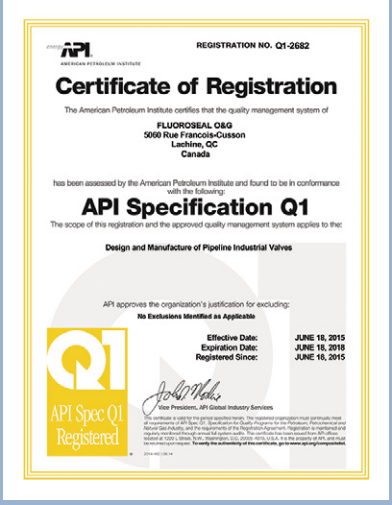
PLEDGE OF QUALITY

All major pressure bearing and/or boundary components of FluoroSeal valves are fully traceable to mill test certificates ensuring material authenticity. Quality levels are maintained through continuous inspection and manufacturing surveillance of these and all other components. A concerted effort is made to conform to all regulatory authority requirements where and when invoked, in keeping with FluoroSeal's pledge of "Quality First."

QUALITY ASSURANCE

FluoroSeal Valves possess all of the best design features presently available on the market. They are inspected throughout the full manufacturing process from foundry to final assembly and packaging to assure high quality and consistency in every unit.

API Spec Q1


REGISTRATION NO. Q1-2682

Certificate of Registration

The American Petroleum Institute certifies that the quality management system of

FLUOROSEAL O&G
5060 Rue Francois-Cusson
Lachine, QC
Canada

has been assessed by the American Petroleum Institute and found to be in conformance with the following:

API Specification Q1

The scope of this registration and the approved quality management system applies to the:

Design and Manufacture of Pipeline Industrial Valves

API approves the organization's justification for excluding:

No Exclusions Identified as Applicable

Effective Date: JUNE 18, 2015
Expiration Date: JUNE 18, 2018
Registered Since: JUNE 18, 2015

Q1 API Spec Q1 Registered

Vice President, API Global Industry Services

Registration No. Q1-2682
Design and Manufacture of Pipeline Industrial Valves

ISO 9001 : 2008


CERTIFICATE

TUV Rheinland of North America, Inc.
1300 Massachusetts Avenue, Suite 103, Boxborough, MA 01719

TÜVRheinland®

Hereby certifies that

Fluoroseal Incorporated
1875 46e Avenue, Lachine QC H8T 2N8, Canada
Management, Sales, Purchasing, Design and Development, Manufacturing

Fluoroseal Specialty Valves (Suzhou) Co., Ltd.
No.1319 Jinfeng South Road, Suzhou City 215101,
Jiangsu Province, P.R. China
Manufacturing: Machining, Casting, Assembly and Test

has established and maintains a quality management system for the

Design and Manufacture of Industrial Valves

An audit was performed and documented in Report No 7468.
Proof has been furnished that the requirements according to

ISO 9001:2008

are fulfilled.
Further clarification regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by contacting TRNA.

Certificate Registration No.
74 300 7468

Certificate Issue Date
December 31, 2014

Certificate Expiration Date
December 30, 2017

ANAB

Certification of Management Systems

Certificate Registration No. 74 300 7468
Design and Manufacture of Industrial Valves

PED 97-23-EC


Certificate

Quality-Assurance System
acc. to Directive 97/23/EC

Certificate no.: 01 202 USA/Q-10 1738

Name and address of the manufacturer: FluoroSeal, Inc.
1875 46e Avenue
Lachine, QC H8T 2N8
Canada

Herewith we certify that the above mentioned manufacturer operates a quality system according to the European Directive 97/23/EC. The manufacturer has the permission to affix the following CE marking to pressure equipment described and manufactured in accordance to the scope covered by this Quality-Assurance System:

CE 0035

Tested acc. to Directive 97/23/EC: QS-System (Module H)
(the DIN-Modules H1, E, D1 and D are covered by Module H)

Audit report no.: USA/Q-10 1738

Area of validity: Design and manufacture of industrial valves, see annex to certificate

Manufacturing plant: Fluoroseal Specialty Valves (Suzhou) Co., Ltd.
No. 1913 Jinfeng South Road, Suzhou City,
215101, Jiangsu Province, P.R.China

Valid until: February 01, 2017

Cologne, March 06, 2014 Dipl.-Ing. Svenja Kreß

TÜVRheinland Certification Body for Pressure Equipment
TÜV Rheinland Industrie Service GmbH
Notified Body, ID-No. 0035
Am Grauen Stein, D-51105 Köln

D-014-Rev7

www.tuv.com

TÜVRheinland®
Precisely Right.

Certificate No. 01 202 USA/Q-10 1738
Design and Manufacture of Industrial Valves

AD 2000 -Merkblatt W0


Certificate

Quality-Assurance System
for Manufacturer of Materials
acc. to Directive 97/23/EC

Certificate no.: 01 202 USA/Q-14 6798

Name and address of the manufacturer: FluoroSeal, Inc.
1875 46e Avenue
Lachine, QC H8T 2N8
Canada

Herewith we certify that the material manufacturer has established and applies a Quality Management System. The system was audited according to the European Directive 97/23/EC, Annex I, Par. 4.3, with regard to the materials as listed in the scope of approval.

Tested acc. to Directive 97/23/EC: QM System acc. to EN 764-5, article 4.2 and AD 2000-Merkblatt W0

Audit report no.: USA/Q-14 6798

Range of materials: Production of Investment Castings, see annex to certificate

Manufacturing plant: FluoroSeal, Inc.
1875 46e Avenue
Lachine, QC H8T 2N8
Canada

Valid until: January 22, 2018

Cologne, January 23, 2015 Dipl.-Ing. Svenja Kreß

TÜV Rheinland Certification Body for Pressure Equipment
TÜV Rheinland Industrie Service GmbH
Notified Body, ID-No. 0035
Am Grauen Stein, D-51105 Köln

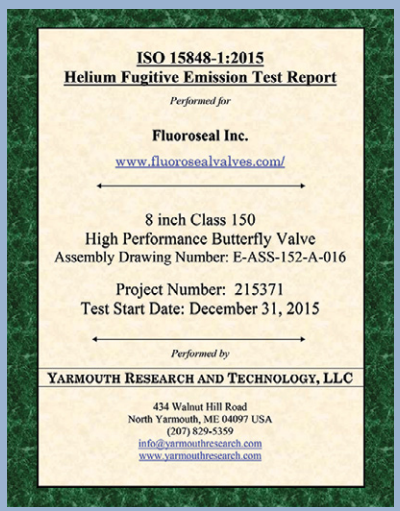
E-1006-Rev7

www.tuv.com

TÜVRheinland®
Precisely Right.

Certificate No. 01 202 USA/Q-14 6798
Production of Investment Castings

ISO 15848-1:2015


ISO 15848-1:2015
Helium Fugitive Emission Test Report

Performed for

Fluoroseal Inc.

www.fluorosealvalves.com/

8 inch Class 150
High Performance Butterfly Valve
Assembly Drawing Number: E-ASS-152-A-016

Project Number: 215371
Test Start Date: December 31, 2015

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

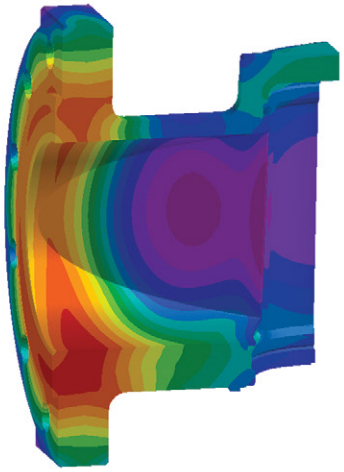
Certificate No. 215371
Fugitive Emissions

FOUNDRY

QUALITY ENGINEERED INTO EVERY CASTING

Through the use of solidification modeling, Niyama criterion, and other proprietary engineering techniques a unique system of gating and risering is developed which provide for even casting cooling which greatly reduces or eliminates internal casting defects such as shrinkage and micro-porosity.

All newly designed FluoroSeal casting designs are subjected to a rigorous first article sampling procedure which includes radiography, liquid penetrant examination, and other non-destructive as well as destructive testing to verify the production techniques.



Solidification Model



HIGH QUALITY RAW MATERIALS ENSURE HIGH QUALITY CASTINGS

All specialty and exotic alloy High-Performance Butterfly Valve (HPBV) body and disc castings poured in FluoroSeal's in house Montreal foundry are produced using VOD ingot (vacuum oxygen decarburization). VOD ingot is a highly refined, high purity raw material that helps to minimize impurities resulting in high quality castings. FluoroSeal never alloys specialty and exotic materials to produce castings at their in house Montreal foundry. In addition, each pour in the foundry is argon blanketed to reduce oxygen contamination.

SPECIALTY ALLOY HIGH-PERFORMANCE BUTTERFLY VALVES ARE OUR SPECIALTY

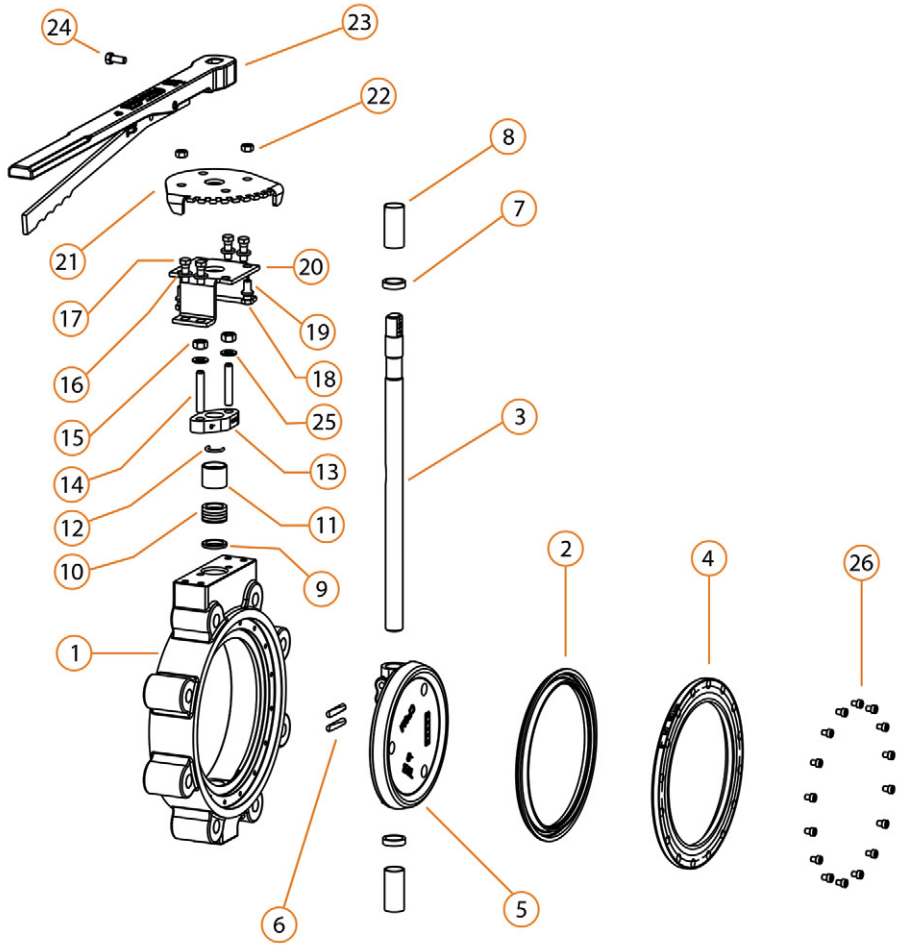
Because of their metallurgical expertise and captive in house foundry FluoroSeal controls and ensures the quality of their specialty and exotic alloy castings. Small capacity furnaces allow for low quantity casting runs greatly reducing lead times. Often times other manufacturers who utilize third party foundries are subjected to extremely long casting lead times as the foundry must wait until they have enough volume for a pour. FluoroSeal HPBV's are available in a wide variety of specialty alloys including Hastelloy B & C, Monel, Duplex Stainless Steels, Titanium, Zirconium, and many others.



Montreal Foundry

HIGH PERFORMANCE BUTTERFLY VALVE

Class 150: 2" to 12" / Class 300: 2" to 12"



LIST OF COMPONENTS

No.	Description/Part
1	Body
2	Seat
3	Shaft
4	Insert Lug
5	Disc
6	Pin
7	Spacer
8	Bushing
9	Packing Seat
10	Packing Group
11	Gland Follower
12	Retaining ring
13	Gland
14	Gland Stud
15	Gland Nut
16	Bracket Washer
17	Bracket Bolt
18	Plate Washer
19	Plate Bolt
20	Bracket
21	Position Plate
22	Plate Nut
23	Lever
24	Lever Nut
25	Gland Washer
26	Insert Screw

APPLICABLE STANDARDS

API 609
Specification for Butterfly Valves, Lug Type and Wafer Type
MSS SP-61
Pressure Testing of Steel Valves
MSS SP-25
Standard Marking System for Valves, Fittings, Flanges, and Unions
ANSI B16.34/ EN 12516-1
Valves – Flanged, Threaded and Butt-welding End
NACE MR0175/ ISO 15156
Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment
ANSI B16.5, NACE MR 0103
2½ " – 14" Pipe Flanged and Flanged Fittings
EN 1092-1
Flanges and joints
ANSI B16.47
Series A, 26" – 60" Large Diameter Steel Flanges
MSS SP-68
High Pressure Offset Seat Butterfly Valves
API 598
Valve Inspection and Testing
ISO 15848
Fugitive Emissions Testing
ASTM / ANSI/ EN
Materials

STANDARD CONFIGURATION

Carbon Steel Valve

- ASTM A216, Gr. WCB body, ASTM A351 Gr. CF8M disc, ASTM A564, 630 (17-4PH) Shaft, GF2P (Molecularly Enhanced PTFE) seat, PTFE packing, ASTM A193 Gr. B7 gland studs and ASTM A216, Gr. WCB Gland

Stainless Steel Valve

- ASTM A351, Gr. CF8M body and disc, ASTM A564, 630 (17-4PH) Shaft, GF2P (Molecularly Enhanced PTFE) seat, PTFE packing, ASTM A193 Gr. B8 gland studs, ASTM A351, Gr. CF8 Gland

TECHNICAL DATA

FLOW COEFFICIENT

CLASS 150/PN 10/PN 16		
Size		Cv
NPS	DN	
2 ½"	65	76
3"	80	166
4"	100	398
5"	125	647
6"	150	1,052
8"	200	2,198
10"	250	3,003
12"	300	5,097
14"	350	5,797

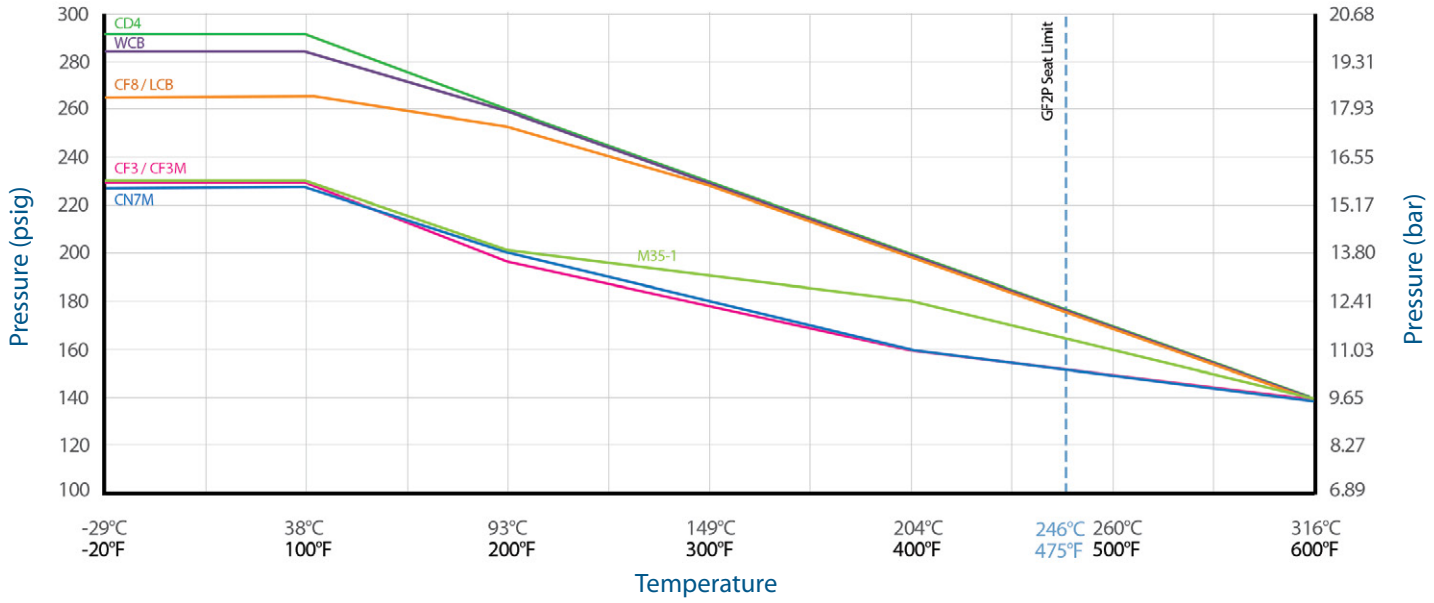
CLASS 300/PN 25		
Size		Cv
NPS	DN	
2 ½"	65	76
3"	80	166
4"	100	398
5"	125	647
6"	150	1,052
8"	200	1,795
10"	250	3,156
12"	300	4,745
14"	350	5,203

VALVE OPERATING TORQUES

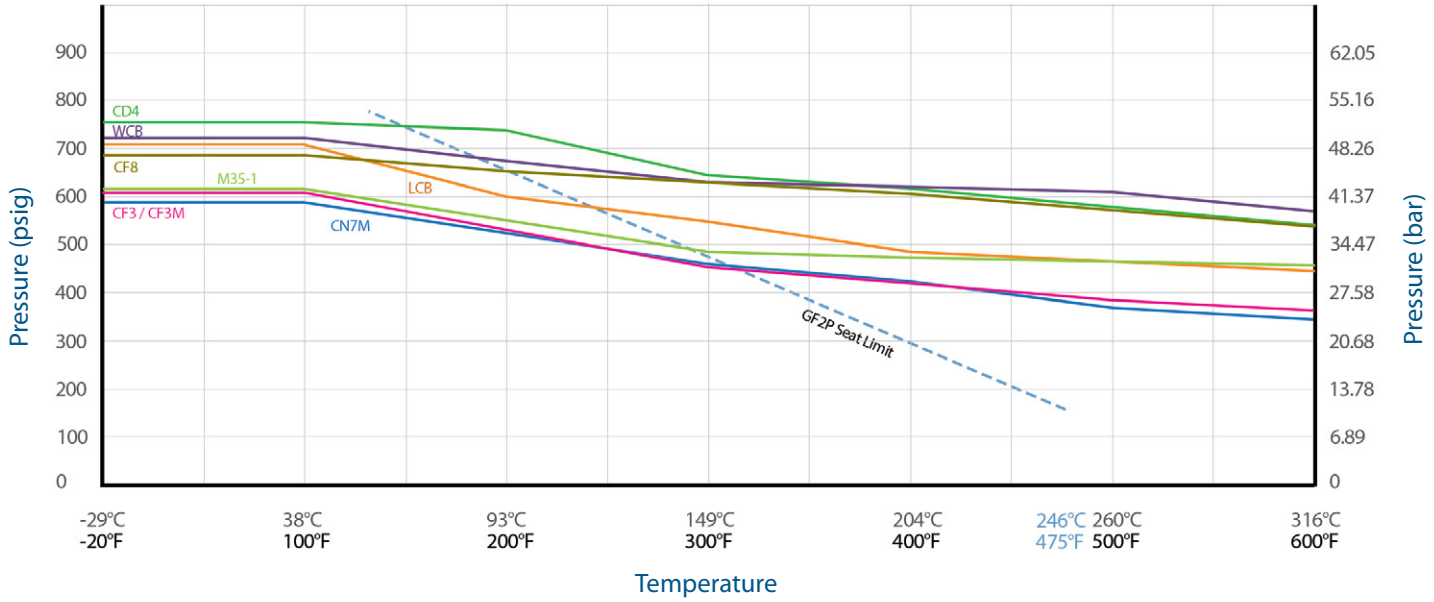
CLASS 150/PN 10/PN 16							
Size		100 psi / 6.9 bar		200 psi / 13.8 bar		285 psi / 19.7 bar	
in	DN	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
2 ½"	65	265	30	221	25	310	35
3"	80	309	35	345	39	363	41
4"	100	442	50	451	51	497	56
5"	125	549	62	655	74	770	87
6"	150	832	94	1,018	115	1,141	129
8"	200	1,433	162	1,726	195	1,947	220
10"	250	1,938	219	2,407	272	2,841	321
12"	300	2,593	293	3,487	394	4,186	473
14"	350	4,310	487	6.018	680	7,594	858

CLASS 300/ PN 25													
Size		300 psi / 20.7 bar		400 psi / 27.6 bar		500 psi / 34.5 bar		600 psi / 41.4 bar		700 psi / 48.3 bar		740 psi / 51 bar	
in	DN	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
2 ½"	65	309	35	336	38	336	38	424	48	389	44	389	44
3"	80	354	40	389	44	424	48	495	56	575	65	531	60
4"	100	646	73	725	82	752	85	823	93	911	103	991	112
5"	125	1,008	114	1,150	130	1,327	150	1,460	165	1,628	184	1,734	196
6"	150	1,389	157	1,637	185	1,911	216	2,106	238	2,336	264	3,310	274
8"	200	2,787	315	3,239	366	3,779	427	4,212	476	4,690	530	4,885	552
10"	250	4,274	483	5,036	569	5,859	662	6,673	754	7,478	845	7,868	889
12"	300	5,921	669	7,018	793	8,098	915	9,142	1,033	10,204	1,153	10,656	1,204
14"	350	9,912	1,120	12,169	1,375	14,435	1,631	16,621	1,878	18,834	2,128	19,781	2,235

OPERATING PRESSURE-TEMPERATURE CHART
HIGH-PERFORMANCE BUTTERFLY VALVES - CLASS 150/ PN 10/ PN 16



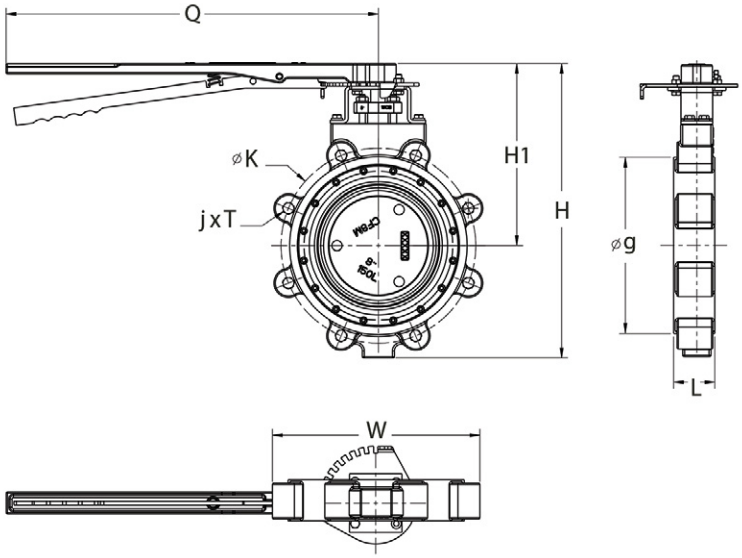
OPERATING PRESSURE-TEMPERATURE CHART
HIGH-PERFORMANCE BUTTERFLY VALVES - CLASS 300/PN 25



NOTES:

1. The information in this catalog is provided for general informational purposes only.
2. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.

DIMENSIONS & WEIGHTS



HIGH PERFORMANCE BUTTERFLY VALVE LUG - CLASS150 & 300/PN 10/ PN 16/PN 25

SIZE 2 ½" to 8"
(DN65-DN200)
Wrench Operated
Actuators Optional on All Sizes
Face-to-Face Dimensions to API 609, ANSI B16.10, and EN 558-1
Flanged End Dimensions to ANSI B16.5 and EN 1092-1

ANSI CLASS 150

Size		L		W		H		H1		K		g		T	j	Q	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.5	139.7	4.7	119	5/8-11 UNC	4	11.0	280
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.0	152.4	5.2	132	5/8-11 UNC	4	11.0	280
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.5	190.5	6.2	157	5/8-11 UNC	8	11.0	280
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.5	215.9	7.4	188	3/4-10 UNC	8	11.0	280
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	8.4	214.3	8.5	216	3/4-10 UNC	8	11.0	280
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.8	298.5	10.7	272	3/4-10 UNC	8	22.4	570

ANSI CLASS 300

Size		L		W		H		H1		K		g		T	j	Q	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm
2 ½"	65	1.9	49	7.2	182	11.6	295	7.8	197	5.9	149.2	4.6	118	3/4"-10 UNC	8	11.0	280
3"	80	1.9	49	7.9	200	12.7	323	8.2	208	6.6	168.3	5.2	132	3/4"-10 UNC	8	11.0	280
4"	100	2.1	54	9.0	229	14.1	357	8.6	219	7.9	200.0	6.8	172	3/4"-10 UNC	8	11.0	280
6"	150	2.3	59	12.0	305	14.6	371	9.4	238	10.6	269.9	7.6	194	3/4"-10 UNC	8	11.0	280
8"	200	2.9	73	14.3	363	17.8	451	11.0	279	13.0	330.2	9.8	248	7/8"-9 UNC	12	22.4	570

PN 10

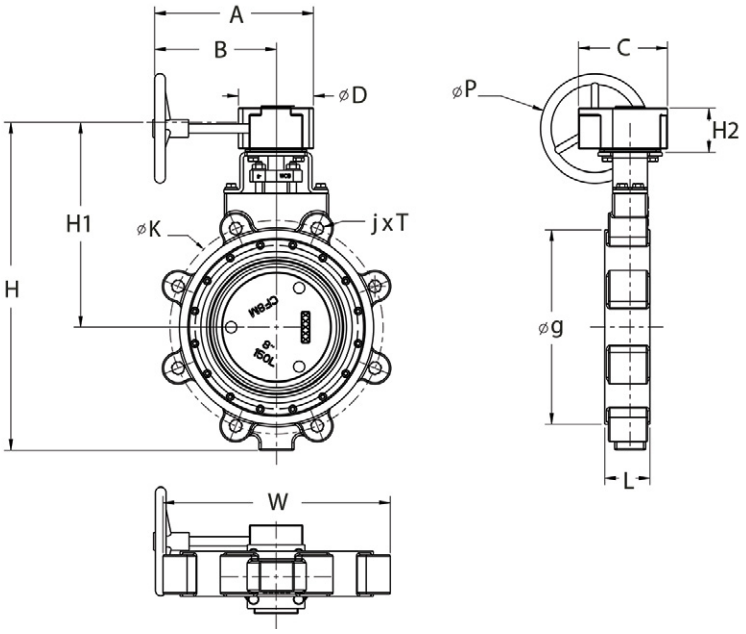
Size		L		W		H		H1		K		g		T	j	Q	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.7	145	4.7	119	M16X2	8	11.0	280
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.1	180	6.2	157	M16X2	8	11.0	280
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.3	210	7.4	188	M16X2	8	11.0	280
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	9.4	240	8.5	216	M20X2.5	8	11.0	280
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.6	295	10.7	272	M20X2.5	8	22.4	570

PN 16

Size		L		W		H		H1		K		g		T	j	Q	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.7	145	4.7	119	M16X2	8	11.0	280
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.1	180	6.2	157	M16X2	8	11.0	280
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.3	210	7.4	188	M16X2	8	11.0	280
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	9.4	240	8.5	216	M20X2.5	8	11.0	280
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.6	295	10.7	272	M20X2.5	12	22.4	570

PN 25

Size		L		W		H		H1		K		g		T	j	Q	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm
2 ½"	65	1.9	49	7.2	182	11.6	295	7.8	197	5.7	145	4.6	118	M16X2	8	11.0	280
3"	80	1.9	49	7.9	200	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280
4"	100	2.1	54	9.0	229	14.1	357	8.6	219	7.5	190	6.8	172	M20X2.5	8	11.0	280
6"	150	2.3	59	12.0	305	14.6	371	9.4	238	9.8	250	7.6	194	M24X3	8	11.0	280
8"	200	2.9	73	14.3	363	17.8	451	11.0	279	12.2	310	9.8	248	M24X3	12	22.4	570



HIGH PERFORMANCE BUTTERFLY VALVE
LUG - CLASS150 & 300/PN 10/ PN 16/PN 25

SIZE 8" to 14"
(DN200-DN350)
Enclosed Gear Operated
Actuators Optional on All Sizes
Face-to-Face Dimensions to API 609, ANSI B16.10, and EN 558-1
Flanged End Dimensions to ANSI B16.5 and EN 1092-1

ANSI CLASS 150

Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.5	64	12.6	320	17.9	454	11.1	282	11.8	298.5	10.7	272	3/4-10 UNC	8	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	2.8	71	15.5	394	21.7	552	13.5	342	14.3	362.0	12.8	324	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.2	81	18.4	468	24.4	620	14.6	371	17.0	431.8	15.0	381	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	3.6	92	20.5	520	28.3	718	16.5	420	18.8	476.3	20.4	518	3/8-16 UNC	16	12.2	310	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

ANSI CLASS 300

Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	13.0	330.2	9.8	248	7/8"-9 UNC	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	15.3	387.4	11.7	298	1"-8 UNC	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	17.7	450.8	14.0	356	1 1/8"-8 UN	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	20.3	514.4	15.2	387	1 1/8"-8 UN	20	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

PN 10

Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	11.6	295	9.8	248	M20X2.5	8	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	13.8	350	11.7	298	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	15.7	400	14.0	356	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	18.1	460	15.2	387	M20X2.5	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

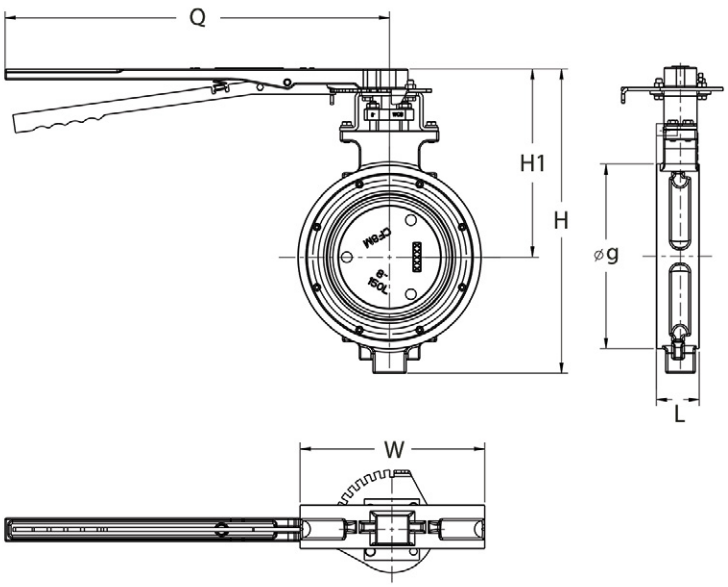
PN 16

Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	12.6	295	9.8	248	M20X2.5	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	14.0	355	11.7	298	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	16.1	410	14.0	356	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	18.5	470	15.2	387	M24X3	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

PN 25

Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	12.2	310	9.8	248	M24X3	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	14.6	370	11.7	298	M27X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	16.9	430	14.0	356	M27X3	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	19.3	490	15.2	387	M30X3	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

DIMENSIONS & WEIGHTS

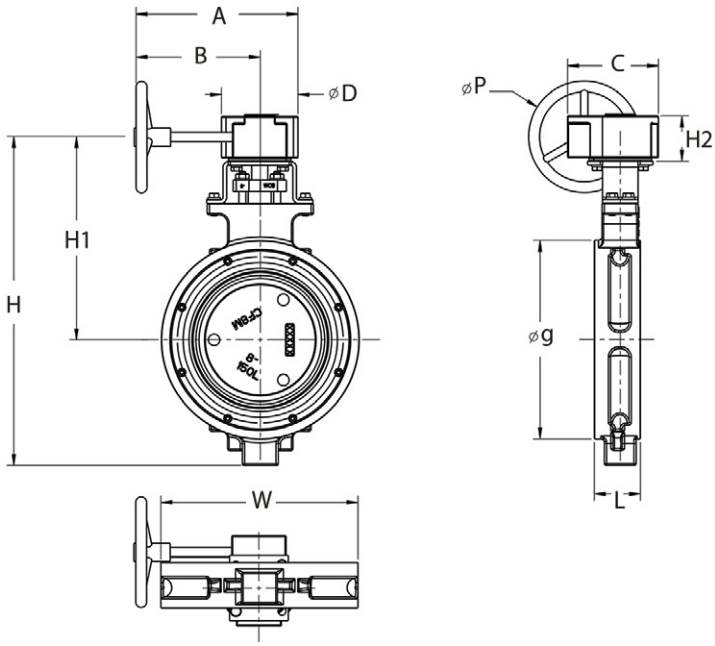


HIGH PERFORMANCE BUTTERFLY VALVE WAFER - CLASS150 & 300/PN 10/ PN 16/PN 25

SIZE 2 ½" to 8"
(DN65-DN200)
Wrench Operated
Actuators Optional on All Sizes
Face-to-Face Dimensions to API 609, ANSI B16.10, and EN 558-1
Flanged End Dimensions to ANSI B16.5 and EN 1092-1

ANSI CLASS 150/PN 10/ PN 16/ PN 25													
Size		L		W		H		H1		g		Q	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	4.7	119	11.0	280
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	5.2	132	11.0	280
4"	100	2.1	54	6.2	157	13.8	350	8.6	219	6.2	157	11.0	280
5"	125	2.5	64	7.4	188	13.7	348	8.7	220	7.4	188	11.0	280
6"	150	2.2	57	8.5	216	14.6	371	9.4	238	8.5	216	11.0	280
8"	200	2.5	64	10.7	272	17.8	451	11.0	279	10.7	272	22.4	570

ANSI CLASS 300/PN 10/ PN 16/ PN 25													
Size		L		W		H		H1		g		Q	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	4.7	119	11.0	280
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	5.2	132	11.0	280
4"	100	2.1	54	6.2	157	14.1	357	8.6	219	6.2	157	11.0	280
6"	150	2.3	59	8.5	216	14.6	371	9.4	238	8.5	216	11.0	280
8"	200	2.9	73	10.6	270	17.8	451	11.0	279	10.7	272	22.4	570



HIGH PERFORMANCE BUTTERFLY VALVE WAFER - CLASS150 & 300/PN 10/ PN 16/PN 25

SIZE 8" to 14"
(DN200-DN350)
Enclosed Gear Operated
Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609, ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and EN 1092-1

ANSI CLASS 150/PN 10/ PN 16/ PN 25																							
Size		L		W		H		H1		g		A		B		C		D		H2		P	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.5	64	10.7	272	17.9	454	11.1	282	10.7	272	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	2.8	71	12.9	327	21.7	552	13.5	342	12.8	324	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.2	81	15.0	381	24.4	620	14.6	371	15.0	381	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	3.6	92	18.7	475	28.4	721	16.5	420	16.3	413	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

ANSI CLASS 300/PN 10/ PN 16/ PN 25																							
Size		L		W		H		H1		g		A		B		C		D		H2		P	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
8"	200	2.9	73	10.6	270	17.9	454	11.1	282	10.7	272	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150
10"	250	3.3	83	12.8	324	21.7	552	13.5	342	12.8	324	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
12"	300	3.6	92	15.0	381	24.4	620	14.6	371	15.0	381	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300
14"	350	4.6	117	19.3	490	28.3	718	16.5	420	16.4	416	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300

NOTES:

1. The information on this catalog is provided for general informational purposes only.
2. Customization for specific applications is available upon request.
3. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.
4. We reserve the right to make changes without prior notice.

ORDERING INSTRUCTIONS

Size	Valve Type	Pressure Class	End Connection	Operator	Body Material	Stem Material	Disc Material	Seat Material	Coating	Special Service
–	HPB –	–	–	–	–	–	–	–	–	
Refer to Field 1	Refer to Field 2	Refer to Field 3	Refer to Field 4	Refer to Field 5	Refer to Field 6	Refer to Field 7	Refer to Field 8	Refer to Field 9	Refer to Field 10	Refer to Field 11

Field 1 - Size

Size Range
2" to 14"

Field 2 - Valve Type

Code	Type
HPB	High Performance Butterfly Valve

Field 3 - Pressure Class

Code	15	30	D10	D16	D25
Type	150	300	PN10	PN16	PN25

Field 4 - End Connection

Code	LF	DF	WF
Type	Lug (Single Flange)	Double Flange	Wafer

Field 5 - Operator

Code	A	WL	WXL	B
Type	Actuated	Wrench+ Locking Device (Standard)	Wrench + Locking Device + Stem Extension	Bare Stem
Code	EG		EXL	
Type	Enclosed Gear + Locking Device		Enclosed Gear + Locking Device + Stem EXtension	

Field 6 - Body Material

Refer to Table 1 - Available Materials

Field 7 - Stem Material

Refer to Table 1 - Available Materials

Field 8 - Disc Material

Refer to Table 1 - Available Materials

Field 9 - Seat Material

Code	G	R	H	U	X
Type	GF2P	RTFE	Hi-Temp GF2P	UHMWPE	Special

Field 10 - Coating

Code	Z	M	X
Type	No Coating	Manganese Dioxide	Special

Field 11 - Special Service

Code	1	CL	OXY	NACE	S	FE
Type	Standard	Chlorine	Oxygen	NACE MR-01-75 Service	Steam Service	Fugitive Emission Stem Seal
Code	V	TC	X			
Type	Vaccum Service	Abrasive Service	Special			

Table 1 - Available Materials

Code	Description	ASTM Designation	DIN	Code	Description	ASTM Designation	DIN
WCB	Carbon Steel	ASTM A216 Gr. WCB	1.0619	HC	HASTELLOY C	ASTM A494 Gr. CW6M	2.4883
LCB	Carbon St. Low Temp.	ASTM A352 Gr. LCB	1.6220	HC2	HASTELLOY C 276	ASTM A494 Gr. CW12MW	
LCC	Carbon St. Low Temp.	ASTM A352 Gr. LCC		I600	INCONEL	ASTM A494 Gr. CY40	
304	304 Stainless Steel	ASTM A351 Gr. CF8		NI	Nickel	ASTM A494 Gr. CZ-100	2.4816
304L	304L Stainless Steel	ASTM A351 Gr. CF3		MO	MONEL	ASTM A494 Gr. M35-1	2.4365
316	316 Stainless Steel	ASTM A351 Gr. CF8M	1.4408	TC2	Titanium (Comm. Pure)	ASTM B367 Gr. C2	
316L	316L Stainless Steel	ASTM A351 Gr. CF3M		TC3	Titanium	ASTM B367 Gr. C3	3.7031
317	317 Stainless Steel	ASTM A351 Gr. CG8M		TC5	Titanium	ASTM B367 Gr. C5	
317L	317L Stainless Steel	ASTM A351 Gr. CG3M		ZR2	Zirconium	ASTM B752 Gr. 702C	
A20	Alloy 20	ASTM A351 Gr. CN7M	1.4500	ZR5	Zirconium	ASTM B752 Gr. 705C	
904L	904L Stainless Steel	Cast Steel	1.4539				
CD4	CD4MCuN	ASTM A995 Gr. 1B	1.4463				
HB	HASTELLOY B	ASTM A494 Gr. N7M	2.4882				
HB2	HASTELLOY B 2	ASTM A494 Gr. N12MV					

MODEL SELECTION EXAMPLE

Example: 2"HPB-15WF/WCB-304-LCB-G-1-M

Description: FluoroSeal 2" API 609 Wafer Type, High Performance Butterfly Valve, Class 150, Body in ASTM A216 Gr. WCB, Seat in GF2P, Disc in ASTM A352 Gr. LCB, Stem in ASTM A351 Gr. CF8, Manganese Coated, Standard Service, Wrench Operated.

NOTES:

1. For all technical parameters of the product please refer to this catalog, additional information can be obtained from your local FluoroSeal sales office or authorized representative.
2. Customization for specific applications is available upon request.
3. For different materials, not listed in the above tables, please specify.
4. Special material configurations upon request with (XXX) or (X) shown in the model number.

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FluoroSeal Inc. will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal Inc. under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer. Any litigation will be interpreted in accordance with the laws of the Province of Québec, Canada and any suit, action or proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montréal, Québec, Canada.

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FluoroSeal Inc. cannot accept return of any product(s) unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) all material returned must, on its arrival at FluoroSeal Inc.'s plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) a handling charge deduction will be made from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid, will be deducted from credit memoranda.

SHIPMENTS

All products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made to the carrier, as FluoroSeal Inc.'s responsibility ceases, and title passes, on delivery to the carrier.

SPECIAL PRODUCTS

Orders covering special or non-standard products are not subject to cancellation except on such terms as FluoroSeal Inc. may specify on application.

PRICES AND DESIGNS

Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

TAXES

The amount of any sales, excise or other taxes, if any, applicable to the products, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides FluoroSeal Inc. with an exemption certificate acceptable to the taxing authorities.

NUCLEAR PLANTS

Where the products, engineering design or fabrication is for nuclear plant applications, Buyer agrees (a) to take all necessary steps to add FluoroSeal Inc. as an insured supplier under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for property damage and liability insurance and if necessary steps could have been taken, but are not taken, Buyer shall hold FluoroSeal Inc. harmless against all such losses which could have been thus covered; (b) Buyer agrees to hold FluoroSeal Inc. harmless with respect to any personal injury or death, property damage or any other loss in a nuclear incident which is caused directly or indirectly by defective design, material, or workmanship, furnished by FluoroSeal Inc. and which is covered by insurance maintained by Buyer (or which could be so covered but with respect to which Buyer has elected to self-insure), and further agrees to waive subrogation by its carriers of such insurance against FluoroSeal Inc.; (c) as to nuclear hazards for which Buyer cannot obtain insurance coverage, the liability of FluoroSeal Inc. for any personal injury or death, property damage or any other loss directly caused by defective design, material, or workmanship furnished by FluoroSeal Inc. shall not exceed the value of the material furnished by FluoroSeal Inc. at the time of the loss occurrence.

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