



Hayward Series

PVF, CPVF, GFPP

Butterfly Valve Product Guide

FLOW CONTROL

define
design

deliver

BYV Series Butterfly Valve

PVC, CPVC AND GFPP

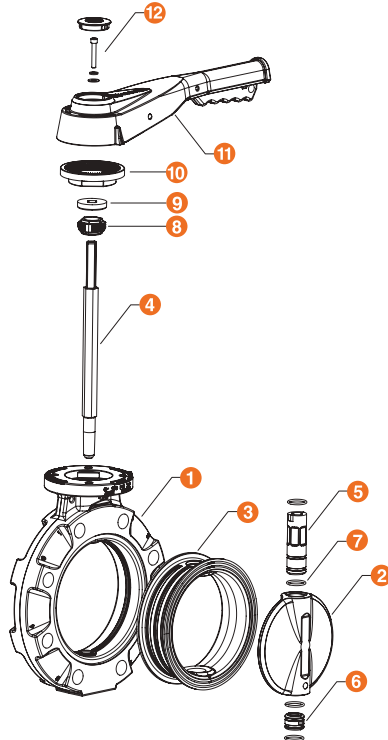


BYV Series in GFPP
with Hand Lever

Certified to
NSF/ANSI 61 & 372
PVC/EPDM 2" - 12"
CPVC/EPDM 4" - 12"

EXPLODED VIEW

- 1 Body
- 2 Disc
- 3 Liner
- 4 Stem
- 5 Upper Stem Bearings
- 6 Seal Retainer
- 7 O-Rings (4)
- 8 Threaded Retaining Gland
- 9 Weather Seal
- 10 Splined Throttle Plate (Uitem®)
- 11 Hand Lever Assembly
- 12 Bezel, Washers, Socket Head Cap Screw



The Revolutionary and patent-pending BYV Series Butterfly Valve from Hayward features the most advanced thermoplastic design and construction in the industry today.

Available in multiple thermoplastic materials from 2" through 12", the BYV has an extremely robust body construction while lighter weight than a metal equivalent. The revolutionary hand lever design features a 72 spline interlock mechanism allowing for 19 stopping positions every 5 degrees. Additionally, the hand lever material incorporates a UV inhibitor for enhanced performance in outdoor applications. The BYV features reinforced lug holes and can be ordered with overmolded 316 stainless steel lugs for dead end service needs.

Designed for global use, the BYV is available in ANSI and DIN/EN flange patterns with a pressure rating of 150 PSI / 10 Bar across all sizes and materials. Finally, the BYV Series is Made by Hayward in the USA!

KEY FEATURES, BENEFITS AND ADVANTAGES

- One Piece Body and Disc in PVC, CPVC and GFPP Materials
- Revolutionary Hand Lever with 19 Lockable Stop Positions and 360° Interlock
- External Disc Position and Flow Indication
- Hydro-dynamic Centric Disc Design for Increased Flow Performance
- Over-Sized Liner Face Maximizes Surface Contact with Flanges
- EPDM, Viton® or Nitrile Liners
- 1-Piece 316 Stainless Steel Stem with Threaded Retaining Gland
- Stem Bearing and Seal Retainer for Absolute Stem Positioning and Sealing
- ISO 5211 Top Flange and Stem Drive
- All Sizes Meet ANSI B16.10 / ISO 5752 Narrow Face-to-Face Dimensions
- Pressure Rated at 150 PSI / 10 Bar in All Sizes @ 70°F Non-Shock

OPTIONS

- Over-Molded 316 Stainless Steel Lugs
- Lock Out Cap with or without Locking Tab for Padlock
- Gear Operators
- Complete Range of Pneumatic or Electric Actuators
- Stem Extensions
- 2" Square Operating Nut
- Chain Operator for Gear Box

TYPICAL APPLICATIONS

- Water and Wastewater Treatment
- Aquatic and Animal Life Support Systems
- Chemical Processing and Handling
- Marine and Corrosive Environments
- Mining
- Metal Plating and Surface Finishing
- Landfills / Environmental Infrastructure
- Water / Theme Parks

MATERIALS

- PVC per ASTM D1784 Cell Class 12454
- CPVC per ASTM D1784 Cell Class 23447
- GFPP per ASTM D4101 Cell Class 85580
- EPDM, Viton® and Nitrile Liners

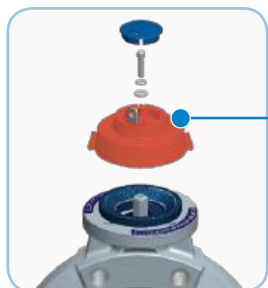
BYV Series Butterfly Valve

OVERVIEW

Engineered Hand Lever Design for Enhanced Strength and UV Performance



Ergonomic Grip and Lockouts



Option

Lock Out Cap provides an integrated and corrosion resistant lock out



72-Spline Interlocking Throttle Plate with 19 Locking Positions

1-pc Stem with Threaded Retaining Gland for Positive Stem Retention

High Visibility Disc Position and Flow Rate Indication

ISO 5211 Top Flange and Stem Drive for Ease of Actuation

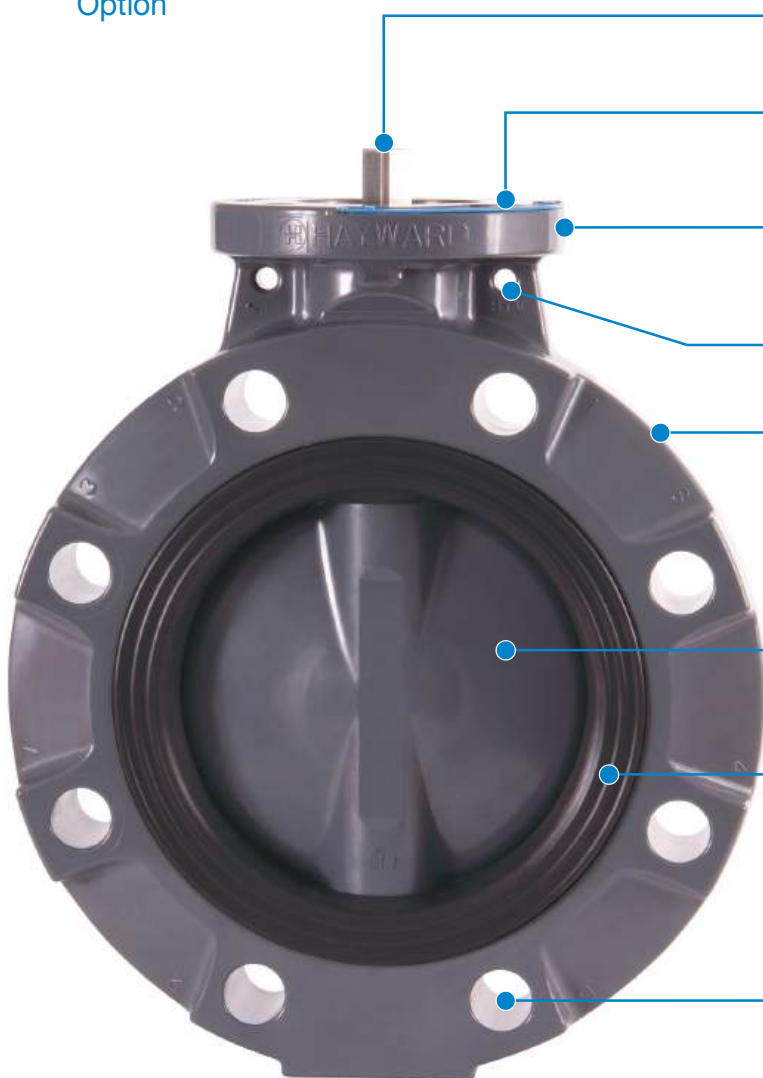
Molded-In Hang Tag Holes

Robust 1-Piece Valve Body Construction in PVC, CPVC or GFPP Materials

Hydro-dynamic Disc for Increased Flow Performance

Over-sized Liner Face Maximizes Flange Surface Contact

Reinforced Lug Holes Standard Overmolded 316 Stainless Steel Lugs Available



BYV Series Butterfly Valve

KEY FEATURES AND ADVANTAGES

Engineered Hand Lever for Enhanced Strength

- Ergonomic grip for ease of use
- Form fitting under grip for all hand sizes
- Lockout and tag-out holes molded into grip
- Made from GFPP with UV Inhibitor for superior outdoor performance
- Exceeds industry standards for strength requirements



19 Position Throttle Plate with 72 Interlocking Splines

- Made from Ultem® material for superior strength, temperature and corrosion resistance
- Provides locking positions every 5 degrees
- Ensures absolute control and positioning of disc
- Easy operation with a smooth drive



High Visibility Disc and Flow Indicators

- Allows for exact positioning of the disc to meet flow requirements
- Shows degrees Open and Cv percentage
- High contrast permanent markings
- Made from PP material



Overmolded Lug Option

- Threaded lugs made from 316 Stainless Steel
- Full width of the valve body for maximum engagement with bolt threads
- Allows for dead end service (Hayward recommends the use of a downstream flange)
- Does not require a different valve body or change of body materials to support threaded lugs



Hydro-dynamic Disc Design

- Contoured shape for increased flow performance and high Cv
- Minimizes turbulence due to reduction of flow
- Allows for maximum flow through valve port
- Centric seat design for bubble tight seal
- One Piece Stem with upper bearing seal and lower seal carrier

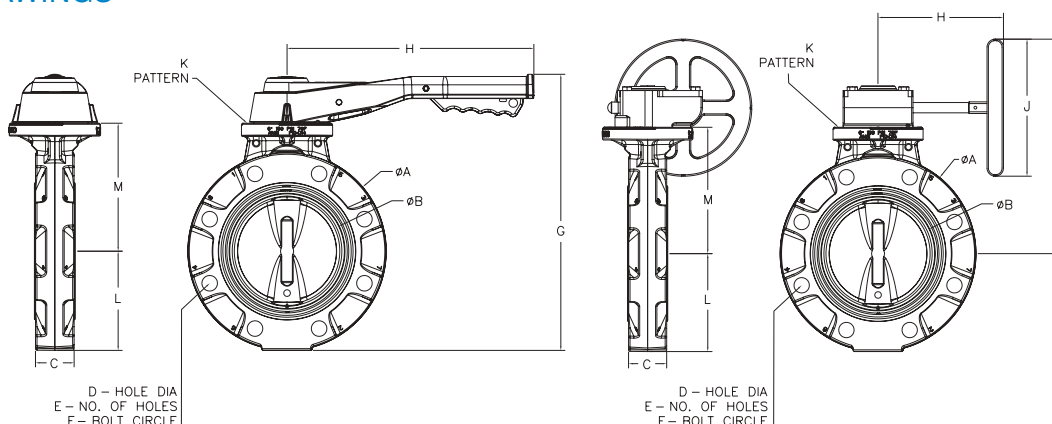


BYV Series Butterfly Valve

TECHNICAL INFORMATION

PARTS LIST / 2D DRAWINGS

1. Body
2. Disc
3. Liner
4. Stem
5. Upper Stem Bearings
6. Seal Retainer
7. O-Rings (4)
8. Threaded Retaining Gland
9. Weather Seal
10. Splined Throttle Plate (Utem®)
11. Hand Lever Assembly
12. Bezel, Washers, Socket Head Cap Screw



DIMENSIONS – INCHES / MILLIMETERS

SIZE	A	B	C (1)	D ANSI (2)	D DIN (3)	E	F ANSI (2)	F DIN (3)	G		H		J	K (4)	L	M	WEIGHT w LEVER	WEIGHT w GEAR
inches / DN	in / mm	in / mm	in / mm	in / mm	in / mm	ANSI / DIN	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	lbs / Kg	lbs / Kg
2 / 50	6.12 / 155	2.09 / 53	1.69 / 43	0.75 / 19	0.71 / 18	4 / 4	4.75 / 121	4.92 / 125	9.41 / 239	7.53 / 191	10.5 / 267	4.75 / 121	5 / 125	F07-D11	3.17 / 81	3.97 / 101	4.0 / 1.8	5.8 / 2.6
2.5 / 65	7.25 / 184	2.57 / 65	1.81 / 46	0.75 / 19	0.71 / 18	4 / 4	5.50 / 140	5.71 / 145	10.3 / 262	7.96 / 202	10.5 / 267	4.75 / 121	5 / 125	F07-D11	3.63 / 92	4.40 / 112	4.9 / 2.2	6.7 / 3.0
3 / 80	7.75 / 197	3.36 / 85	1.81 / 46	0.75 / 19	0.71 / 18	4 / 8	6.00 / 152	6.30 / 160	10.9 / 277	8.31 / 211	10.5 / 267	4.75 / 121	5 / 125	F07-D11	3.88 / 99	4.75 / 121	5.2 / 2.4	7.0 / 3.2
4 / 100	9.13 / 232	4.25 / 108	2.06 / 52	0.75 / 19	0.71 / 18	8 / 8	7.50 / 191	7.09 / 180	12.54 / 319	9.29 / 236	12.00 / 305	7.28 / 185	5 / 125	F07-D14	4.57 / 116	5.69 / 145	7.7 / 3.5	11.1 / 5
6 / 150	11.25 / 286	6.09 / 155	2.19 / 56	0.88 / 22	0.87 / 22	8 / 8	9.50 / 241	9.45 / 240	15.66 / 398	12.36 / 314	14.00 / 356	7.75 / 197	8 / 200	F10-D14	5.63 / 143	7.25 / 184	12.7 / 5.8	16.2 / 7.4
8 / 200	13.75 / 349	7.84 / 200	2.38 / 60	0.88 / 22	0.87 / 22	8 / 8	11.75 / 298	11.61 / 295	18.03 / 458	13.48 / 342	16.00 / 406	7.75 / 197	8 / 200	F10-D17	6.88 / 175	8.38 / 213	18.5 / 8.4	21.9 / 10.0
10 / 250	16.13 / 410	9.79 / 249	2.69 / 68	1.00 / 25	0.87 / 22	12 / 12	14.25 / 362	13.78 / 350	NA	17.37 / 441	NA	9.50 / 241	8 / 200	F12-V28	8.06 / 205	10.88 / 276	N/A	34.2 / 15.5
12 / 300	19.13 / 486	11.51 / 292	3.06 / 78	1.00 / 25	0.87 / 22	12 / 12	17.00 / 432	15.75 / 400	NA	18.87 / 479	NA	9.50 / 241	8 / 200	F12-V36	9.56 / 243	12.38 / 314	N/A	50.4 / 22.9

(1) Dimension per ASME B16.10 Class 150, Steel, Narrow

(2) ANSI dimension per ASME B16.5, Class 150

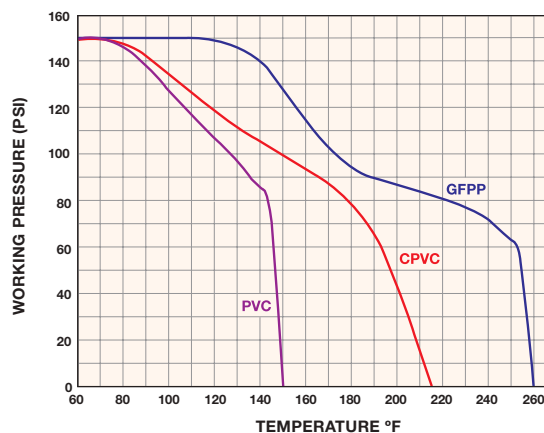
(3) Dimension per DIN 2501, PN10

(4) ISO 5211 Flange and Drive

CV VALUES

SIZE in / DN	FULL OPEN POSITION	PRESSURE LOSS CALCULATION FORMULA
2 / 50	92	$\Delta P = \left[\frac{Q}{C_v} \right]^2$ ΔP = Pressure Drop Q = Flow in GPM C_v = Flow Coefficient
2-1/2 / 65	165	
3 / 80	250	
4 / 100	470	
6 / 150	1510	
8 / 200	2820	
10 / 250	4723	
12 / 300	6400	

PRESSURE / TEMPERATURE CHART



Utem® is a registered trademark of SABIC

BYV Series Butterfly Valve Lock Out Caps

FOR BYV SERIES 2" – 8" / DN50 - DN200



KEY FEATURES AND BENEFITS

- Designed to provide an integrated and corrosion resistant lock out for BYV Series Butterfly Valves
- Robust design allows for quick and easy field lock out and disc positioning of BYV Butterfly Valves
- Available with or without Stainless Steel locking tab for padlock
- Made with Glass Filled Polypropylene with UV Inhibitor
- Bright orange color for easy identification
- Allows for external position indication of disc

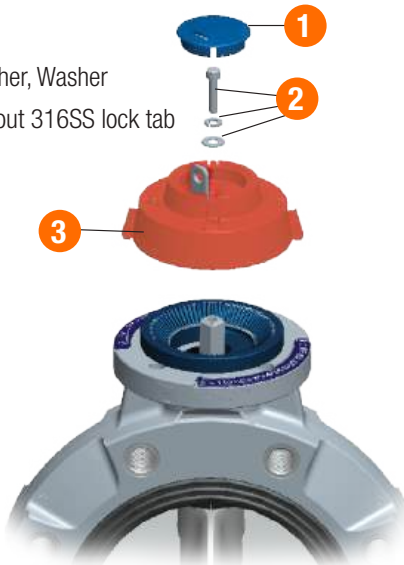


EXPLODED VIEW

1 Cap Bezel

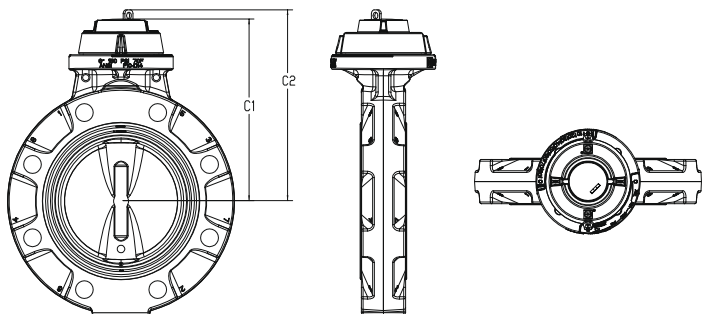
2 SHCS, Lock Washer, Washer

3 Cap with or without 316SS lock tab



PART NUMBER / DIMENSIONS (INCHES / MILLIMETERS)

PART NUMBER Without Lockout / With Lockout	VALVE SIZE in / DN	C1 in / mm	C2 in / mm
BYVCAPK030 / BYVCAPK030L	2 / 50	5.50 / 140	6.00 / 152
BYVCAPK030 / BYVCAPK030L	2-1/2 / 65	5.88 / 149	6.38 / 162
BYVCAPK030 / BYVCAPK030L	3 / 80	6.25 / 159	6.75 / 171
BYVCAPK040 / BYVCAPK040L	4 / 100	7.18 / 182	7.68 / 195
BYVCAPK060 / BYVCAPK060L	6 / 150	9.00 / 229	9.50 / 241
BYVCAPK080 / BYVCAPK080L	8 / 200	10.13 / 257	10.63 / 270



BYV Series Butterfly Valve

ACTUATION AND CONTROLS

ELECTRIC ACTUATORS

- Powder Coated Aluminum Alloy Housing
- NEMA 4/4X/IP67 Enclosure
- Raised Position Indicator
- ISO5211 Compliant Mounting
- Internal Low Power Heater
- Clutchless Manual Override
- Self-Locking Drive
- Permanently Lubricated
- Thermally Protected Motor
- 2 Auxiliary Switches
- Silicone Free



PNEUMATIC ACTUATORS

- Corrosion-Resistant Housing
- Position Indicator
- Available in Double Acting and Spring Return Designs
- Permanent Lubrication
- Lightweight – Easy for Installation
- Namur-Style Solenoid Mounting
- ISO 5211 Mounting Base
- Stainless Steel Fasteners



LHB SERIES MANUAL LIMIT SWITCH

- Ideal for Remote Monitoring of Critical Services
- Fits All Hayward® Ball Valves up to 6" and Butterfly Valves up to 8"
- Features Two Adjustable SPDT 10 Amp at 120 VAC Switches (Open/Close Position)
- Robust GFPP Body, Cover and Plate
- 304 Stainless Steel Stem and FPM Seals
- 1/2" Conduit Port
- Terminal Blocks for Ease of Wiring
- Meets ISO5211, F05, F07 and F10 Patterns
- NEMA 4X
- Switches CSA Listed
- Patent Pending Design



HAYWARD®
Quik-Ship
Ready in 24HRS

Automation When You Need It...

Hayward Flow Control's industry leading actuation offering and service is now quicker than ever before, if that is possible to believe. By maximizing our LEAN production model and full scale US manufacturing base, Hayward can get your system up and running when it has to. Get any one of the selected automated butterfly valve packages shipped out to you within one business day of ordering. That simple. That easy.

SAMPLE SPECIFICATION

All thermoplastic wafer-style butterfly valves shall be manufactured from PVC Type 1, Grade 1 (ASTM D1784, Cell Classification 12454), CPVC (ASTM D1784, Cell Classification 23447) or glass filled Polypropylene (ASTM D4101, Cell Classification 85580). All valve bodies shall contain integral top mounting flange with dimensions and bolt circles conforming to ISO 5211. Bodies shall contain fully-supported flange bolt holes, be one piece construction and meet ANSI B16.10 narrow face-to-face dimensions in all sizes. If LUGGED butterfly valves are required, lugs shall be over-molded, 316 stainless steel and be the full width of the body. Liners shall be EPDM, Viton® or Nitrile. Liner shall be FULL BOOT design, and shall be retained in the body via rib and groove engagement. Liner shall serve as primary disc seal and face seals for mating flanges. Secondary upper bearing and lower seal retainer o-ring seals to be EPDM or FPM. Stem shall be 316 stainless steel, non-wetted and provide full engagement over length of disc. Stem shall have position retention design.

Lever handle shall be trigger-style with 360° interlocking splines allowing the handle to position the disc in 5° increments. Mounting of stop plate for lever handle shall be non-invasive to the valve body and shall not incorporate self tapping screws or other fasteners that connect directly to the valve body. Trigger shall contain hole for padlock, as well as slot for cable tie, to lockout valve. Lever handle material to be 30% glass filled Polypropylene with UV Inhibitor.

Sizes 2" through 8" will be lever-operated as standard, and sizes 10" and 12" will be gear-operated as standard. Gear operators will be available for all sizes of valves as needed. All sizes of butterfly valves (2" through 12") shall be pressure-rated for 150 PSI at 70°F non-shock.

All butterfly valves shall carry a three-year warranty, and shall be manufactured by Hayward Flow Control products in the USA.

PART NUMBER MATRIX

A		B		C		M		E		F		G		H		I	
BYV		1		1		040A		0		E		L		I		00	
VALVE SERIES	SUFFIX A	BODY MATERIAL	SUFFIX B	DISC MATERIAL	SUFFIX C	SIZE	SUFFIX M	STEM MATERIAL	SUFFIX E	LINER MATERIAL	SUFFIX F	METHOD OF OPERATION	SUFFIX G	LUG OPTION	SUFFIX H	OPTIONS	SUFFIX I
BYV Butterfly	BYV	PVC	1	PVC	1	2"	020A	316	0	Viton®	V	Lever	L	none	0	none	00
		CPVC	2	CPVC	2	2-1/2"	025A	Ti	8	EPDM	E	Gear	G	316SS	I	PER PO	##
		GFPP	4	GFPP	4	3"	030A			Nitrile	N	Bare Stem	K				
						4"	040A										
						6"	060A										
						8"	080A										
						10"	100A										
						12"	120A										
						DN50	050M										
						DN65	065M										
						DN80	080M										
						DN100	100M										
						DN150	150M										
						DN200	200M										
						DN250	250M										
						DN300	300M										

Inch Size valves have an ANSI flange pattern

Metric Size valves have a DIN flange pattern

Please see table of dimensions for further data.



Hayward is a registered trademark
of Hayward Industries, Inc.
© 2019 Hayward Industries, Inc.

BYV0219

Contact Hayward Flow Control with questions:

USA: 1.888.429.4635 • Fax: 1.888.778.8410 • One Hayward Industrial Drive • Clemmons, NC 27012 USA • Email: hfcsales@hayward.com
Canada: 1.888.238.7665 • Fax: 1.905.829.3636 • 2880 Plymouth Drive • Oakville, ON L6H 5R4 Canada • Email: hflowcanada@hayward.com
 Visit us at: www.haywardflowcontrol.com



Guide to Manual and Automated Butterfly Valves



Chem-Tek Series

Performance Series

Tri-Max Series



P.O. Box 1293
Lumberton, NC 28359
E-Mail: sales@maxsealinc.com

Telephone: (910) 738-2866
Fax: (910) 739-1733

www.maxsealinc.com

Resilient Seated Butterfly Valves

Performance Series

Built for Heavy Duty Applications

Ductile Iron Body
Disc - Nylon Coated 316SS or Bronze
Disc Seat - EPDM / Buna / Viton/ PTFE
ISO 5211 Top Flange

Size Range: 2"-12"
Pressure: 225 WOG

Size Range: 14"-24"
Pressure: 200 WOG



51 Model - Wafer Type



52 Model - Lug Type

ISO Series

This series is in full compliance with ISO 5211

Low Torque - Direct Mount Automation Design

Ductile Iron Body / 316 SS Disc
Die Cast Aluminum Handle
Seat - EPDM / Viton / Buna / PTFE /
Specials

Size Range: 1½"-48"
Pressure: 200 WOG



51-I Model - Wafer Type



52-I Model - Lug Type

Chem-Tek Series

Designed for Corrosive Environments

316 Stainless Steel Standard
Body Special Duplex / Alloy 20
Seat - EPDM / Buna / PTFE / Viton
ISO 5211 Direct Mount
4 Drilled & Tapped Lugs, Ideal for Precise Alignment

Size Range: 2"-12"
Pressure: 150 WOG



53 Model - Semi-Lug



53 Model - Semi-Lug

Chem-Flo Series

Built for Highly Corrosive Media

Ductile Iron Body
Optional Stainless Steel Body
Wafer and Lug Available
Disc - 316SS or 316SS / PTFE Lined
Seat - PTFE / EPDM / Buna / Viton
2-Piece Body Design
ISO 5211 / Direct Mount

Size Range: 2"-24"
Pressure: 175 WOG



25 Model - Wafer Type



26 Model - Lug Type

High Performance Butterfly Valves

HP Series

Fire Safe - Fire Pro Series Design

Wafer and Lug Type
Built to ANSI & API standards
Eccentric Double Offset Design

Both Types
ANSI Class 150 / Class 300
Standard Material SS316
OR CS-WCB
Special Duplex SS / Alloy 20 17
- 4PH Shaft
Adjustable Stem Packing with
Gear or Actuator Mounted
Optional Valve Seats Available
ISO 5211 Top Flange
Fire Safe / Metal Seat

Size Range: 2"-48"

Pressure Classes: 150 / 300

Wafer Type
Class 150: Model BW631
Class 300: Model BW731

Lug Type
Class 150: Model BL631
Class 300: Model BL731



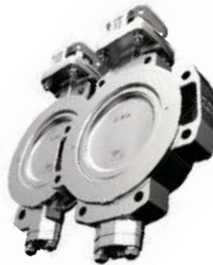
BW 631
Wafer Type
Class 150



Double Offset with
EZ Vane Actuator



BL 731
Lug Type
Class 300



Double Offsets



Hi-Tek Series

Triple Offset Butterfly Valves Flex-Seal Series

Triple Offset Butterfly Valves are designed for extreme temperatures, extreme pressures, and your toughest application challenges.

Triple Offset Butterfly Valves feature standard metal seats, robust laminated disc seats, and unique graphite stem bearing seals for long service life.

Design Features
Full Flanged End
Wafer Type
Lug Type
Butt Weld
Metal Seats
Class VI Shut-Off

Size Range:
3"-48"
Pressure Classes:
150/300/600/900



Triple Offsets



NEW

MAX SEAL®
Valves & Controls

*New State of the Art Double Offset
High Performance Butterfly Valve.*

Tri-Max Series

Different from all the others.

The standard soft seated valve design can be upgraded to a fire-safe or metal seated with our easy to install conversion kits.

Three different valves from one valve body.

FEATURES:

- Screwless retainer plates
- Low fugitive emissions, 15848-1, API641
- ISO Mounting - 5211
- Anti-static ground
- Live loaded Belleville washers
- Anti-blow-out stem

