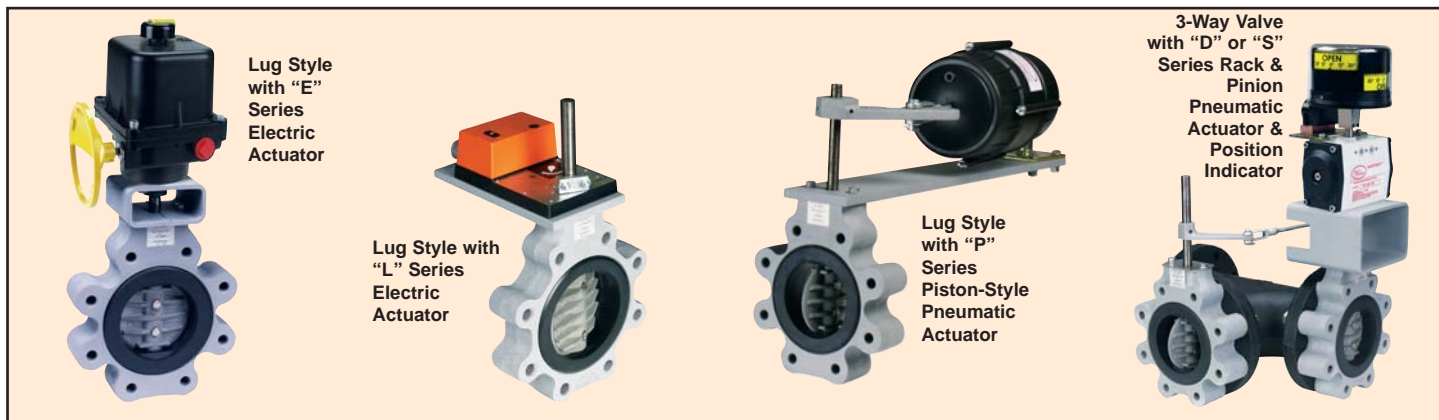




Butterfly Valves - Resilient Seated

2-Way and 3-Way, Perfect for Flow Control off Hot and Chilled Water



Corrosion and abrasion resistant thermoplastic discs are at the heart of these butterfly valves. Select from wafer or lug patterns with cast iron or aluminum bodies. Standard valves provide bubble tight sealing to 150 psi (10.3 bar) and reduced seat valves are rated to 50 psi (3.4 bar). Valves are to be used with and meet the dimensional requirements of Cl. 125 (ANSI B16.1) and Cl. 150 (ANSI B16.5) flanges.

Features

- Seat provides bubble tight shutoff to 150 psi
- Reduced seat option decreases torque requirement allowing smaller, lower cost actuators
- Plast-a-Vane™ disc available in 2" to 10" sizes
 - Made from Noryl® a corrosion and abrasion resistant reinforced thermoplastic resin
 - Incorporates a unique ribbed design that creates small vortex trails yielding lower pressure drop with a lower noise level than conventional butterfly discs
- One piece thru stem design provides strength and ensures reliability and positive disc positioning

Applications

- Perfect for on-off or throttling service.
- Ideal for flow control of water in chillers, cooling towers, and thermal storage systems.
- Air Dampers
- Irrigation Systems
- Tank Trucks
- Sewage Systems, Waste Water Treatment

BUTTERFLY VALVE DATA

TORQUE CHART (INCH LBS.) FOR LINED VALVES

Size	SERVICE PRESSURE						
	0 psi	25 psi	50 psi	75 psi	100 psi	125 psi	150 psi
2	45	60	75	90	105	120	135
2½	75	94	125	144	150	157	165
3	135	150	180	195	210	225	240
4	225	300	345	375	450	495	525
5	495	570	675	725	782	875	975
6	525	600	750	900	1050	1125	1275
8	900	1213	1525	1838	2150	2463	2775
10	1500	2295	2550	3300	3750	4200	4800
12	1938	2613	2938	3500	4306	4815	6000
14	3600	4675	5750	6825	7900	8975	10050
16	4200	4875	6250	8025	10050	12375	15300

For unlined valves torque figures are 25% less and 3-way valves torque figures are 50% higher than figures shown.
Tested at 70°F (21 °C) with water.

SPECIFICATIONS

VALVE BODY

Service: Compatible liquids, gases, and steam.

Line Size: 2" to 16".

Body Style: 2-way or 3-way, wafer or lug butterfly.

End Connections: Flange, to be used with flanges that are ANSI Class 125 (B16.1) and ANSI Class 150 (B16.5) dimensions.

Pressure Limit: 150 psi (10.3 bar) WOG.

Wetted Materials:

Body Material: Cast iron or aluminum.

Disc/Vane: Noryl, 316 SS, aluminum/bronze, or epoxy coated iron.

Seat and O-ring: EPDM, Buna-N, or Viton®.

Stem: 17/4 PH. SS (2 to 10" size), 304 SS (12 to 16" size).

Disc/Vane Connection Screws: 316 SS.

Temperature Limits: Disc/Vane: Noryl™ and Epoxy coated iron: 225°F (107°C), 316SS: 300°F (149°C). Seat and O-ring: Buna-N: 180°F (82°C), EPDM: 225°F (107°C), Viton®: 300°F (149°C).

Bearings: Bronze (iolite).

Flow Rate: See Cv chart on page 282.

ACTUATORS

ELECTRIC "E" Series (E1 thru E8):

Temperature Limits: -20 to 140°F (-28.9 to 60°C).

Power Requirement: 120 VAC.

Standard Features: Manual override handwheel, heater, position indicator, NEMA-4 enclosure, (2) Travel limit switches, (2) Position limit switches.

Optional Features: Additional limit switches, 4-20 mA modulating input (E5 thru E8), 24 VDC, 220 VAC power voltage, NEMA 7 enclosure.

ELECTRIC "L" SERIES (L1 THRU L4):

Temperature Limits: -22°F (-30°C) to 122°F (50°C).

Power Requirement: 24 VAC ±20% 50/60 Hz.

Standard Features: Manual override, position indicator, override-proof sensors, reversing switch.

Optional Features: 120 VAC power voltage, auxiliary limit switch, 4-20 mA modulating input.

PNEUMATIC (PISTON-STYLE) "P" SERIES (P1 THRU P8):

Temperature Limits: -20 to 180°F (-28.9 to 82.2°C).

Connection: 3/16" nipple for 1/4" O.D. tubing.

Spring Range: 8-13 psi (.55-.90 bar).

Supply Pressure: 0 to 20 psig (0-1.4 bar) normal operating, 30 psig (2.1 bar) maximum.

Optional Features: Positive positioner (P5 thru P8), 60° maximum disc rotation.

PNEUMATIC RACK AND PINION (D1 THRU D8):

Temperature Limits: -10 to 195°F (-23.3 to 90.6°C).

Air Connection: 1/4" female NPT.

Supply Pressure: 80 psig (5.5 bar) normal operating, 150 psig (10.3 bar) maximum.

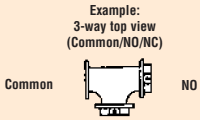
Optional Features: Spring Return (S1 thru S8), Solenoid, positioner, limit switches.

OPTIONS: Consult factory for Barber-Colman, Johnson Controls, Honeywell, Landis & Gyr or Robertshaw actuators factory mounted on 2- and 3-way valves; solenoids, positioners, limit switches, hydraulic actuation and marine applications.

BUTTERFLY VALVE MODEL CHART (Built Model Numbers with Prices on the next Page)

Example	2	02	WFB	2	5	1	6	E1	A	202WFB2516E1A Butterfly Valve; 2-way, cast iron wafer body, 17/4 Ph. St. Steel Stem, Noryl disc, EPDM liner, E1 Electric Actuator, Normally Open Position.
Configuration	2 3									2-Way Valve 3-Way Valve
Valve Size		02 25 03 04 05 06 08 10 12 14 16								2" Pipe Size 2½" Pipe Size 3" Pipe Size 4" Pipe Size 5" Pipe Size 6" Pipe Size 8" Pipe Size 10" Pipe Size 12" Pipe Size 14" Pipe Size 16" Pipe Size
Body Style			WFB WAB LTB LAB LDB —R —A							Cast Iron Wafer Body, Lined Cast Alum. Wafer Body, Lined Cast Iron Lug Body, Threaded, Lined Cast Alum. Lug Body, Threaded, Lined Cast Iron Lug Body, Drilled, Lined Reduced Torque Body, Max. 50 psi* Unlined Body, 5% leak rate *-Replace "B" in model number. Ex.: LTR
Stem Type				2 3 7 8						17/4 Ph. St. Steel Stem, Standard (2" to 10" only) 304 St. Steel Stem, Standard (12"-16") 17/4 Ph. St. Steel Stem, Long Shaft (2"-10") 304 St. Steel Stem, Long Shaft (12"-16") Long shafts must be used with "P" series actuators.
Disc Material					1 3 5 6					Aluminum/Bronze disc CF-8M Stainless Steel Disc Noryl® Disc (2" to 10" only) Epoxy-Coated Iron Disc
Liner Material						1 2 3				EPDM Liner and O-Rings BUNA-N Liner and O-Rings Viton Liner and O-Rings
Operator Type							0 1 2 6 7			Bare Stem Hand Lever Operator Manual Gear Operator Electric Actuator Pneumatic Actuator
Actuator Type								00 E1 E2 E3 E4 E5 E6 E7 E8 L1 L2 L3 L4 P1 P2 P3 P4 P5 P6 P7 P8 D1 D2 D3 D4 D5 D6 D7 D8 S1 S2 S3 S4 S5 S6 S7 S8		Bare stem, hand lever, or manual gear operator Electric, two position, 300 in-lb, NEMA 4 enclosure Electric, two position, 1300 in-lb, NEMA 4 enclosure Electric, two position, 5100 in-lb, NEMA 4 enclosure Electric, two position, 15000 in-lb, NEMA 4 enclosure Electric, 4 to 20 mA input, 300 in-lb, NEMA 4 enclosure Electric, 4 to 20 mA input, 1300 in-lb, NEMA 4 enclosure Electric, 4 to 20 mA input, 5100 in-lb, NEMA 4 enclosure Electric, 4 to 20 mA input, 15000 in-lb, NEMA 4 enclosure Electric, two position, 320 in-lb, general purpose enclosure Electric, two position, 640 in-lb (two L1), general purpose enclosure Electric, 4 to 20 mA input, 266 in-lb, general purpose enclosure Electric, 4 to 20 mA input, 532 in-lb (two L3), general purpose enclosure Pneumatic piston, 154 in-lb Pneumatic piston, 308 in-lb (two P1) Pneumatic piston, 504 in-lb Pneumatic piston, 1008 in-lb (two P3) Pneumatic piston, 154 in-lb, P1 w/ 8-13 psi positioner Pneumatic piston, 504 in-lb, P3 w/ 8-13 psi positioner Pneumatic piston, 308 in-lb, two P1 w/ 8-13 psi positioner Pneumatic piston, 1008 in-lb, two P3 w/ 8-13 psi positioner Pneumatic double acting rack & pinion, 203 in-lb Pneumatic double acting rack & pinion, 302 in-lb Pneumatic double acting rack & pinion, 526 in-lb Pneumatic double acting rack & pinion, 1032 in-lb Pneumatic double acting rack & pinion, 1479 in-lb Pneumatic double acting rack & pinion, 2958 in-lb Pneumatic double acting rack & pinion, 5865 in-lb Pneumatic double acting rack & pinion, 12132 in-lb Pneumatic spring return D1, 203 air start, 76 spring end in-lb Pneumatic spring return D2, 302 air start, 112 spring end in-lb Pneumatic spring return D3, 526 air start, 208 spring end in-lb Pneumatic spring return D4, 1032 air start, 379 spring end in-lb Pneumatic spring return D5, 1479 air start, 520 spring end in-lb Pneumatic spring return D6, 2958 air start, 1033 spring end in-lb Pneumatic spring return D7, 5865 air start, 2104 spring end in-lb Pneumatic spring return D8, 12132 air start, 4318 spring end in-lb
Valve Arrangement & Position									0 A C E G I K R	Not Applicable (Manual Operator) 2-Way, Normally Open (NO) 2-Way, Normally Closed (NC) 3-Way, Common/NO/NC 3-Way, Common/NC/NO 3-Way, NO/Common/NC 3-Way, NC/Common/NO Other (Please Specify) Normally open (NO) and Normally closed (NC) refer to the fail position for "P" series and "S" series spring return actuators, and "as assembled" orientation for all others.

Valves



BUTTERFLY VALVES

Sample Model Numbers with Prices

For your convenience, provided are sample model numbers with their respective prices. These models have a cast iron body, Noryl disc, and EPDM seat and O-ring. The 2-way configuration valves are positioned normally closed and the 3-way are positioned common/normally open/normally closed. All models shown with actuators are sized for the 150 psi maximum pressure. Actuators should be sized for the particular application since a larger actuator than necessary will be more expensive while an actuator that is too small will not move the valve properly.

2-Way Manual Operated - Lever Lock Handle

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB2511000	202LTB2511000
2½"	225WFB2511000	225LTB2511000
3"	203WFB2511000	203LTB2511000
4"	204WFB2511000	204LTB2511000
5"	205WFB2511000	205LTB2511000
6"	206WFB2511000	206LTB2511000

2-Way Manual Operated - Gear with Handwheel

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB2512000	202LTB2512000
2½"	225WFB2512000	225LTB2512000
3"	203WFB2512000	203LTB2512000
4"	204WFB2512000	204LTB2512000
5"	205WFB2512000	205LTB2512000
6"	206WFB2512000	206LTB2512000
8"	208WFB2512000	208LTB2512000
10"	210WFB2512000	210LTB2512000

2-Way with P Series Piston Style Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB7517P1C	202LTB7517P1C
2½"	225WFB7517P1C	225LTB7517P1C
3"	203WFB7517P2C	203LTB7517P2C
4"	204WFB7517P3C	204LTB7517P3C
5"	205WFB7517P4C	205LTB7517P4C
6"	206WFB7517P4C	206LTB7517P4C

2-Way with D Series Rack and Pinion Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB2517D1C	202LTB2517D1C
2½"	225WFB2517D1C	225LTB2517D1C
3"	203WFB2517D2C	203LTB2517D2C
4"	204WFB2517D3C	204LTB2517D3C
5"	205WFB2517D4C	205LTB2517D4C
6"	206WFB2517D5C	206LTB2517D5C
8"	208WFB2517D6C	208LTB2517D6C
10"	210WFB2517D7C	210LTB2517D7C

2-Way with S Series

Rack and Pinion - Spring Return Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB2517S3C	202LTB2517S3C
2½"	225WFB2517S3C	225LTB2517S3C
3"	203WFB2517S4C	203LTB2517S4C
4"	204WFB2517S5C	204LTB2517S5C
5"	205WFB2517S6C	205LTB2517S6C
6"	206WFB2517S7C	206LTB2517S7C
8"	208WFB2517S8C	208LTB2517S8C
10"	210WFB2517S8C	210LTB2517S8C

2-Way with L Series Electric Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB7516L1C	202LTB7516L1C
2½"	225WFB7516L1C	225LTB7516L1C
3"	203WFB7516L1C	203LTB7516L1C
4"	204WFB2516L2C	204LTB2516L2C

2-Way with E Series Electric Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	202WFB2516E1C	202LTB2516E1C
2½"	225WFB2516E1C	225LTB2516E1C
3"	203WFB2516E1C	203LTB2516E1C
4"	204WFB2516E2C	204LTB2516E2C
5"	205WFB2516E2C	205LTB2516E2C
6"	206WFB2516E2C	206LTB2516E2C
8"	208WFB2516E3C	208LTB2516E3C
10"	210WFB2516E3C	210LTB2516E3C

C. VALUES

Size	DEGREE OPENING					FULL OPEN
	30°	40°	50°	60°	70°	90°
2	14	23	36	63	105	130
2½	25	44	70	110	180	320
3	38	66	110	170	280	500
4	63	110	180	280	460	820
5	100	180	280	450	740	1300
6	140	250	400	640	1100	1900
8	250	440	690	1100	1800	3200
10	420	710	1174	1802	3059	5462
12	641	1082	1790	2748	4663	8326
14	883	1605	2523	3899	6423	11470
16	1147	2065	3211	5113	9712	14311

Cv is the number of U.S. GPM OF 60°F water that will pass through the valve with a 1 PSI pressure drop.

3-Way with P Series Piston Style Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	302WFB7517P1E	302LTB7517P1E
2½"	325WFB7517P1E	325LTB7517P1E
3"	303WFB7517P2E	303LTB7517P2E
4"	304WFB7517P3E	304LTB7517P3E
5"	305WFB7517P4E	305LTB7517P4E

3-Way with D Series Rack and Pinion Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	302WFB2517D2E	302LTB2517D2E
2½"	325WFB2517D2E	325LTB2517D2E
3"	303WFB2517D3E	303LTB2517D3E
4"	304WFB2517D4E	304LTB2517D4E
5"	305WFB2517D4E	305LTB2517D4E
6"	306WFB2517D5E	306LTB2517D5E
8"	308WFB2517D6E	308LTB2517D6E
10"	310WFB2517D7E	310LTB2517D7E

3-Way with S Series

Rack and Pinion - Spring Return Pneumatic Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	302WFB2517S3E	302LTB2517D2E
2½"	325WFB2517S3E	325LTB2517D2E
3"	303WFB2517S4E	303LTB2517D3E
4"	304WFB2517S5E	304LTB2517D4E
5"	305WFB2517S6E	305LTB2517D4E
6"	306WFB2517S7E	306LTB2517D5E
8"	308WFB2517S8E	308LTB2517D6E
10"	310WFB2517S8E	310LTB2517D7E

3-Way with L Series Electric Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	302WFB7516L1E	302LTB7516L1E
2½"	325WFB7516L1E	325LTB7516L1E
3"	303WFB7516L1E	303LTB7516L1E

3-Way with E Series Electric Actuator

PIPE SIZE	WAFER STYLE	LUG STYLE
2"	302WFB2516E1E	302LTB2516E1E
2½"	325WFB2516E1E	325LTB2516E1E
3"	303WFB2516E1E	303LTB2516E1E
4"	304WFB2516E2E	304LTB2516E2E
5"	305WFB2516E2E	305LTB2516E2E
6"	306WFB2516E2E	306LTB2516E2E
8"	308WFB2516E3E	308LTB2516E3E
10"	310WFB2516E3E	310LTB2516E3E

Options:

- Solenoid Valve Mounted on D or S Series actuators.

Add suffix, -SV3

Consult factory for prices of other options.