



# ELECTRIC ACTUATED BUTTERFLY VALVES

## Spears® Butterfly Valve Premium Electric Actuation Package

Spears® innovative patented seat design departs from traditional liner-seat type valves to eliminate seat creep, reduce operating torque and provide positive seal off. Ideally suited for flow control or throttling, this high performance valve offers a full variety of options for greater application versatility. Fully isolated (Dry Stem), solid type 316 stainless steel with optional PTFE coated stems available for extra protection assurance. PVC and CPVC valves are available in Standard or True Lug style for sizes 1-1/2" through 14". Polypropylene valves are available in Standard valve style for sizes 1-1/2" through 24", plus sizes 30" through 60" produced to order. Premium electric actuator utilizes a reversing type motor with UL approved, built in thermal overload protection. Gear train is permanently lubricated with manual override standard. Enclosure is corrosion resistant polyester powder coated aluminum, weatherproof NEMA 4 rating, 1/2" NPT conduit outlet. Includes 2-SPDT limit switches pre-wired for standard 115 VAC connection.



Declutchable Style Shown

### Butterfly Valve Specifications

|                 |   |
|-----------------|---|
| Style           | Flanged   |
| Material        | PVC, CPVC, UV Stabilized PP   |
| Size Range      | PVC/CPVC = 1-1/2" - 12"<br>PP = 1-1/2" - 24" (custom 30" - 60")   |
| Pressure Rating | 1-1/2" - 12" = 150 psi @ 73° F<br>14" = 100 psi @ 73° F<br>16" = 85 psi @ 73° F<br>18" = 70 psi @ 73° F<br>20" - 24" = 50 psi @ 73° F |
| Seats & Seals   | Buna-N, EPDM or Viton® on PVC/CPVC valves; EPDM or Viton® on Polypropylene valves   |
| Bolt Pattern    | ANSI Class 125/150  |

### Special Valve Options & Accessories

- PVC & CPVC True-Lug valves w/ factory installed lugs
- Teflon® coated stainless steel stem
- Titanium & Hastaloy Stems
- PTFE encased valve seat
- Field installable Lug Insert sets for PVC/CPVC valves through 12"
- Stem Extensions
- Seat & Seal Replacement Kits
- 30" - 60" Polypropylene valves (contact Spears® for details)

### Custom Electric Actuation Options & Accessories

- Modulating (variable positioning)
- Heater & Thermostat
- Additional limit switch sets
- Position indicator
- LED Indicator lights
- Torque sensor
- Duty Cycle Upgrades (75% & 100%)
- NEMA 4x, 7, & 9 Enclosures
- Voltage Options: 24 VAC, 230 VAC, 230 VAC 3-phase 60 Hz, 460 VAC 3-phase 60 Hz, 12 VDC, 24 VDC (see Accessories & Options section for limitations)
- Custom ID Tags

### Standard 2-Position Actuator Specifications

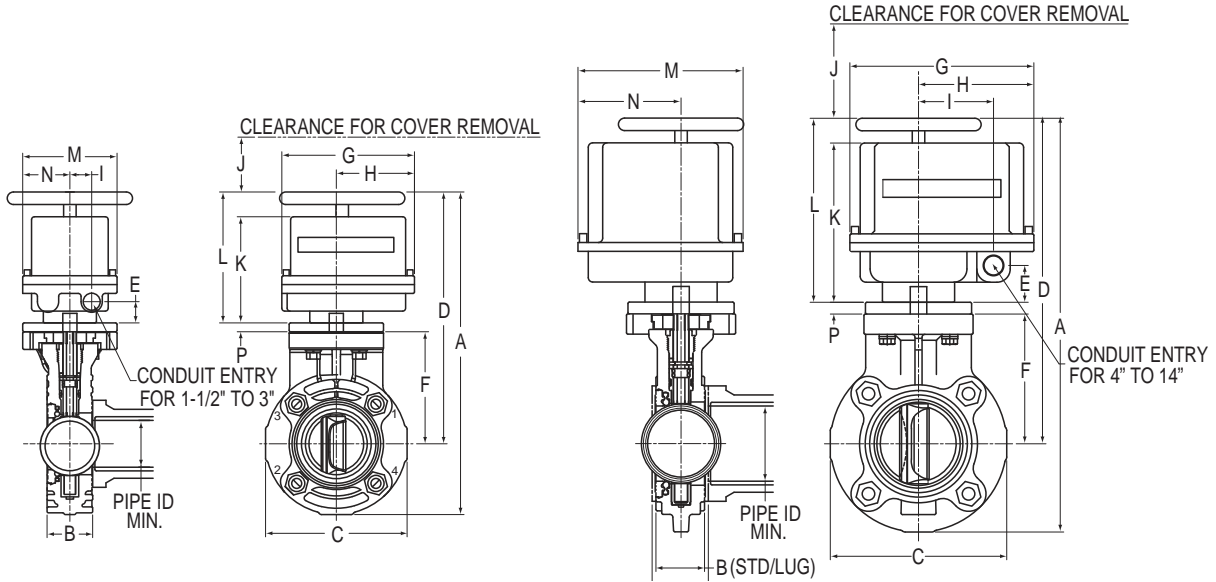
|                             |  |
|-----------------------------|--|
| Motor                       | Reversing  |
| Thermal Overload Protection | Standard   |
| Cycle Time (90°)            | 1-1/2" - 3" = 5 sec.<br>4" = 10 sec.<br>6" - 8" = 15 sec.<br>10" = 30 sec.<br>12" = 12 sec.                        |
| Duty Cycle                  | 1-1/2" - 10" = 25%<br>12" = 100%   |
| Lock Rotor Current          | 1-1/2" - 2-1/2" = 0.75 amps<br>3" = 0.75 amps<br>4" - 6" = 1.1 amps<br>8" - 10" = 1.1 amps<br>12" = 2.60/0.98 amps |
| Manual Override             | Standard (Declutchable 1-1/2" & up)  |
| Brake                       | Standard   |
| Limit Switch                | 2, SPDT  |
| Enclosure                   | NEMA 4, 1/2" NPT Connection  |
| Material/Finish             | Powder Coated Aluminum   |
| Voltage                     | 115 VAC, 60 Hz   |
| Lubrication                 | Permanent  |

**Note:** Contact Spears® for information on valve sizes 14" and larger.

### Sample Engineering Specification

All electrically actuated Butterfly valves shall be constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV stabilized Polypropylene. All valve seats and O-rings shall be Buna-N, EPDM or Viton®. Seat shall be a non-liner type interlocked to valve body. Bolt hole pattern shall conform to ANSI/ASME B16.5 CL 125/150. Disc shall be offset design with Type 316 stainless steel stem. Valves shall be pressure rated at [select from specification] for water at 73° F. Electric Actuators shall be factory installed, 115 VAC with thermally protected, reversing motor and powder coated NEMA 4 rated enclosure. Actuator shall be equipped with [selected options list] as manufactured by Spears® Manufacturing Company.

# ELECTRIC ACTUATED BUTTERFLY VALVES



| NOMINAL SIZE | A          |          | B        |          | C      | D          |          | G     | J | M     | MINIMUM PIPE ID FOR WAFER |
|--------------|------------|----------|----------|----------|--------|------------|----------|-------|---|-------|---------------------------|
|              | DISENGAGED | ENGAGED  | STANDARD | TRUE LUG |        | DISENGAGED | ENGAGED  |       |   |       |                           |
| 1-1/2        | 16-7/16    | 15-11/16 | 1-9/16   | 2-1/4    | 5      | 14-3/32    | 13-11/32 | 6-7/8 | 3 | 4-1/4 | N/A                       |
| 2            | 17-19/32   | 16-27/32 | 1-15/16  | 2-9/16   | 6      | 14-19/32   | 13-27/32 | 6-7/8 | 3 | 4-1/4 | N/A                       |
| 2-1/2        | 18-3/16    | 17-7/16  | 2        | 2-3/4    | 7      | 15-3/32    | 14-11/32 | 6-7/8 | 3 | 4-1/4 | N/A                       |
| 3            | 19-5/16    | 18-9/16  | 2-3/32   | 2-13/16  | 7-1/2  | 15-23/32   | 14-31/32 | 6-7/8 | 3 | 4-1/4 | 3-3/16                    |
| 4            | 19-1/4     | 19-1/32  | 2-9/32   | 3        | 9      | 14-3/4     | 14-9/16  | 7     | 4 | 7     | 4-1/8                     |
| 6            | 22-27/32   | 22-21/32 | 2-3/4    | 3-1/2    | 11     | 17-3/8     | 17-3/16  | 7     | 4 | 7     | 6-1/8                     |
| 8            | 25-1/16    | 24-27/32 | 2-15/16  | 3-3/4    | 13-1/2 | 18-3/8     | 18-3/16  | 7     | 4 | 7     | 7-11/16                   |
| 10           | 27-7/8     | 27-11/16 | 3-1/4    | 4        | 16     | 19-7/8     | 19-11/16 | 7     | 4 | 7     | 9-11/16                   |
| 12           | 34-1/6     | 33-1/8   | 3-1/2    | 4-1/4    | 19     | 21-1/2     | 23-5/8   | 9-1/4 | 4 | 9-1/4 | 11-11/16                  |

**Note:** Due to variations in potential system operating conditions, 14" - 24" Actuated Butterfly Valve packages are sized according to application parameters. Please contact Spears® for additional information.

## Electric Actuator Wiring Diagram

Rotary Electric Actuator

### Field Wiring

- T1 Neutral
- T2 To open valve
- T3 To close valve
- T4 Light indication for open position
- T5 Light indication for closed position

### Operation

Power to T1 and T2 will open valve (120VAC)  
 Power to T1 and T3 will close valve (120VAC)  
 Light connected to T1 and T4 indicates open  
 Light connected to T1 and T5 indicates closed

