



## Innovation, Versatility & High Performance Technology



Spears® innovative 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 is offered with a full variety of options for greater application versatility. Standard valves are produced from PVC or high temperature CPVC in IPS sizes 1-1/2" through 14". PVC and CPVC True Lug valves are produced in sizes 1-1/2" through 12".

### Special Offset Disc

Lifts quickly from single contact sealing surface to reduce seat wear and lower operating torque, with bubble-tight seal off. Suitable for vacuum service.

### Limited Contact Interference Seat Design

Sealing contact between disc and seat takes place only at close of valve, allowing free travel through full range of valve opening. Eliminates seat creep, extrusion and wear typical with conventional liner-type seats. Exclusive design interlocks seat and body to prevent wash-out or blow-out.

### Field Replaceable Seat — Choice of Buna-N, FKM, or NSF® Certified EPDM

Replace seat without full valve disassembly using convenient Seat & Seal Carrier Replacement Kit or Full Valve Overhaul Kit. Choice of Buna-N, EPDM or FKM seats and seals. EPDM valves are NSF® Certified for use with potable water.

### Solid, Chemical & Corrosion Resistant 316 Stainless Steel Stem — Fully Isolated

Heavy blow-out proof 316 stainless steel stem is standard on all valves. Fully isolated (dry stem) eliminates contact with process fluid.

### Rugged PVC or CPVC Body & Disc

Computer engineered design places strength where needed most. PVC or high temperature handling CPVC materials provide exceptional chemical and corrosion resistance. Integrally molded actuation mounting pad and lug receptacles for field installable lug sets.

### Full 150 psi Pressure Rating

Pressure rated to a maximum internal pressure of 150 psi at 73°F — including Dead-End Service.

### Low Profile Cast Aluminum Gear Operator

Standard on 10" and larger sizes, utilizes high efficiency worm gear drive, with high impact polypropylene handwheel and built-in position indicator. Available as an option on smaller valves. Special order gear operators available for a variety of submersible and other environmental applications.

### Field Installable Lug Inserts or Factory Installed True Lug Valves (Sizes 1-1/2" - 12")

Standard valve body accepts optional field installable lug insert sets for easy single-sided installation and system add-on. True Lug valve comes with factory installed lugs for total versatility, including disconnection from either side while under pressure. Both styles suitable for full pressure dead-end service. Choice of stainless or zinc plated steel lugs.

### Exclusive Factory Reconditioning Program

Spears® will factory recondition originally purchased Butterfly Valve to full working order — regardless of condition. Contact Spears® Technical Services Department for details and pricing.

### High Impact Polypropylene Lever Handle

Standard on 1-1/2" through 8" sizes, provides quick selection from any one of seven stop positions, with built-in lockout capability. Reversible 180° for either right or left side operation.

### Polypropylene & PTFE Lined Valves

High performance Butterfly Valves are available in Polypropylene 1-1/2" through 60". See publication PPBFV-2 for additional details. Plus, unique PTFE lined valve design custom manufactured for high purity systems. Contact Spears® Technical Services for additional information.

### Sample Engineering Specification

All thermoplastic valves shall be Butterfly type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All valve seats and O-rings shall be Buna-N, EPDM or FKM. Seat shall be a non-liner type interlocked to valve body. Bolt hole patterns shall conform to ANSI/ASME B-16.5 CL 150. Disc shall be offset design with Type 316 stainless steel stem. Lever operated valves shall be equipped with high impact polypropylene handle having built-in lockout capability. Gear operated valves shall be equipped with position indicator and high impact polypropylene handwheel. Valves through size 12" shall accept field installable lug inserts or shall be factory installed True Lug type. Lugs shall be stainless steel or zinc plated steel. Valves shall be pressure rated at 150 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

## Valves Technical Butterfly Valves Overview



### Basic Valve Options

Butterfly Valves can be purchased with any combination of the following options:

- Lever Handle Valve (through 8" only)
- Gear Operated Valve
- Valve Only (no handle/operator)
- True Lug Valves
  - Stainless Steel
  - Zinc Plated Steel
- Buna-N Seats
- EPDM Seats
- FKM Seats
- PTFE Sleeved Seats

### Valve Repair & Accessory Kits

- Lever Handle Kits
- Gear Operator Kits
- Chainwheel Operator Kits
- Lug Insert Sets (for standard valve)
  - Stainless Steel
  - Zinc Plated Steel
- 2" Square / T-Style Gear Operator Nuts
- Seat & Seal Carrier Replacement Kits
- Valve Overhaul Kits
- Stem Extension Kits

### Cv Values & Operating Torque

Valve Size	Cv Degrees Open						Operating Torque (in.-lbs.)
	15°	30°	45°	60°	75°	90°	
1-1/2	2	8	20	36	61	81	100
2	3	11	27	49	82	109	110
2-1/2	5	19	48	86	144	192	206
3	9	35	86	155	259	345	360
4	10	41	103	185	308	411	420
6	28	113	281	506	844	1125	720
8	56	225	562	1012	1687	2249	1200
10	111	444	1110	1998	3330	4440	1320
12	158	631	1577	2839	4732	6309	1920
14	176	705	1762	3172	5286	7048	See Note

**Note:** Operating torque for large diameter valves varies significantly with system operating pressure, flow direction and velocity. Contact Spears® for torque requirement based on application.

SPEARS® Butterfly Valves are designed for installation with user supplied full-face, 1/8" thick Neoprene (or desired elastomer) gaskets, hex bolts, nuts, and washers. True Lug Valves may be installed for flow in either direction. Standard Valves may be installed for flow in either direction in a dual flange (flange each side) installation, but require attention to direction of flow when installed in a single-side (flange one-side only) application for dead-end service. Consult installation instructions for details of single-side installation and special instructions for use of lug-insert option.

### General Conformance Specifications

**Material** — ASTM D 1784 (PVC Cell Classification 12454, CPVC Cell Classification 23447); Certified by NSF International for potable water service.

**Bolt Hole Pattern** — ANSI/ASME B-16.5; Class 150

**Laying Length (Standard valve ONLY)** — AWWA C504 (wafer valve); MSS SP-67

**Pressure Class** — 150B, AWWA C504

**Hydrostatic Pressure Test** — AWWA C504, ASTM D 1599

SUITABILITY OF VALVE AND VALVE COMPONENTS FOR APPLICATION AND OPERATING ENVIRONMENT IS AT USER'S DISCRETION AND RESPONSIBILITY.