

# DEMCO Butterfly Valves

The Resilient Seated Butterfly Valve of Choice for a Wide Variety of Applications within the Oilfield Industrial Industries

B  
U  
T  
T  
E  
R  
F  
L  
Y  
  
V  
A  
L  
V  
E  
S



Acclaimed as the most durable of all resilient-seated butterfly valves in the industry, DEMCO butterfly valves excel in a wide variety of applications.

Cast in both wafer and tapped-lug patterns in a wide variety of material choices, DEMCO butterfly valves feature a one-piece body for minimum weight and maximum strength. The unique stem hole design in the disc ensures a dry stem journal, and the hard-backed seat (2"-36") allows ease of installation, reliable operation, and is field-replaceable without special tools. DEMCO butterfly valves are available in sizes 2" through 48".

Engineered for long-term, maintenance-free performance, DEMCO butterfly valves are commonly selected for a variety of applications spanning a wide range of industries:

- Chemical and petro-chemical
- Agriculture
- Oil and gas drilling and production
- Food and beverage
- Water and waste water
- Cooling towers (HVAC)
- Power
- Mining and materials
- Dry bulk handling
- Marine and government

T  
H  
E  
D  
E  
M  
C  
O  
A  
D  
V  
A  
N  
T  
A  
G  
E

# The DEMCO Advantage...

## Bi-Directional Sealing

This valve provides bi-directional sealing at full-rated pressure with identical flow-way from either face.

## Integral Flange Seal

Molded into the edge of the seat is an integral flange seal which accommodates ANSI weld neck, slip-on, threaded and socket flanges as well as "stub end" type C flanges.

## ANSI Class 150 Rating

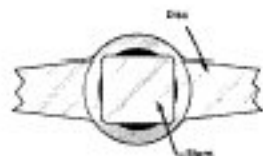
Body rating is ANSI class 150 (285 psi non-shock). Wafer body diameters are designed to self-center in ANSI 150 flange patterns.

## Multiple Pressure Ratings

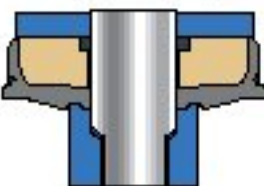
Three drop tight pressure ratings are offered for 2" to 12" sizes. The standard shut off pressure rating is 200 psi, but 285 and 50 psi shut off ratings are also available. And, where drop tight closure is not required and minimal torque is desired, a throttling rated valve is available. Both the 50 psi and throttling ratings allow for smaller actuators, which can significantly reduce overall installation cost in automated applications. The 14" to 48" size valves are available in 150 and 50 psi drop tight shut off ratings as well as throttling.

## Positively Oriented Disc

Proper orientation of the stem/disc connection is assured by the rectangular drive. The disc is permitted to float on the stem to perfectly center in the valve seat. This design enhances drop tight sealing and prolongs service life.



## Hard-Backed Cartridge Seat (2"-36")



The DEMCO cartridge seat is constructed by permanently bonding a

resilient elastomer to a rigid backing ring. In addition to superior sealing integrity, this design: 1) makes valve installation easier because no special precautions are required for disc position. This is especially advantageous when installing valves with fail closed actuators; 2) eliminates high torque and premature failure caused by elastomer distortion as found in other butterfly valve brands with non-rigid seat design; 3) simplifies seat replacement because it is slip fitted into the body, with no need for special tools.

## Dry Stem Journal Eliminates Potential For Leakage

The DEMCO disc is uniquely designed with a continuous annular raised land around the stem hole and disc edge, which presses into the seat flat at every angular position. The resilient seat presses back with a higher specific force than the line pressure, preventing leakage to the stem. In addition, two O-ring ribs are provided in the seat stem bore creating a triple stem seal.

In competitive stem seal designs with boot seats, a seal is accomplished by an interference "squeezing" on the stem or an O-ring in the stem journal. The potential for leakage behind the seat with this design is high. As

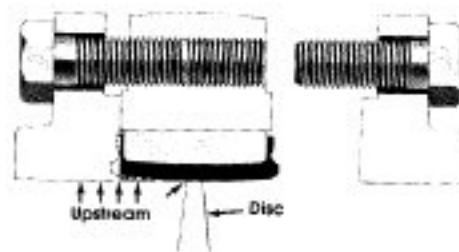
the disc wipes the seat, elongation of the stem seal area allows leakage to collect behind the seat. This condition is eliminated by DEMCO's dry stem journal and hard-backed seat.

## End-of-Line Service

Lug body valves may be used in end-of-line service, with downstream piping removed. (Only weld neck or socket flanges can be used for this service.) Since upstream pressure is excluded between the flange and the seat face by the exclusive DEMCO

flange seal design, there is no effective force to slide the seat down-stream. DEMCO 2"-12" Lug Butterfly Valves are suitable for liquid service up to 200 psi with downstream piping removed (150 psi 14"-36").

Lug body valves are recommended for isolation of pumps, control devices or other system components which may need to be removed for repair or replacement. Lug valves are also suitable for installation at points from which piping expansion may proceed. Such valves are normally blanked with blind flanges to protect the exposed seats until new piping is attached.



## PRODUCT PROFILE

### SIZES

2" - 48"

### BODY TYPE & STYLE DESIGNATIONS

**Long Neck NE-C and NF-C:** 2" - 48", 2"-36" wafer / lug, 42" - 48" flanged

**Short Neck NE-I, NE-I Sanitary:** 2" - 12", wafer / lug

**Notched NE-D:** 2" - 12", wafer

**NE-T Teflon:** 2" - 10" wafer / lug

**NE-D:** 2"-12" wafer notched body

**Marine:** 2" - 24" wafer / lug

### PRESSURE RATING

2" - 12": 0 (Throttling), 50, 200, 285 psi

2" - 10" NE-T: 150 psi

14" - 48": 0, 50 and 150 psi

### OPERATING TEMPERATURES

-30°F to +300°F (-34°C to +204°C) depending on seat material selection and application

### STANDARD MATERIAL OPTIONS\*

**Bodies:** Iron, Steel, Stainless Steel and Bronze

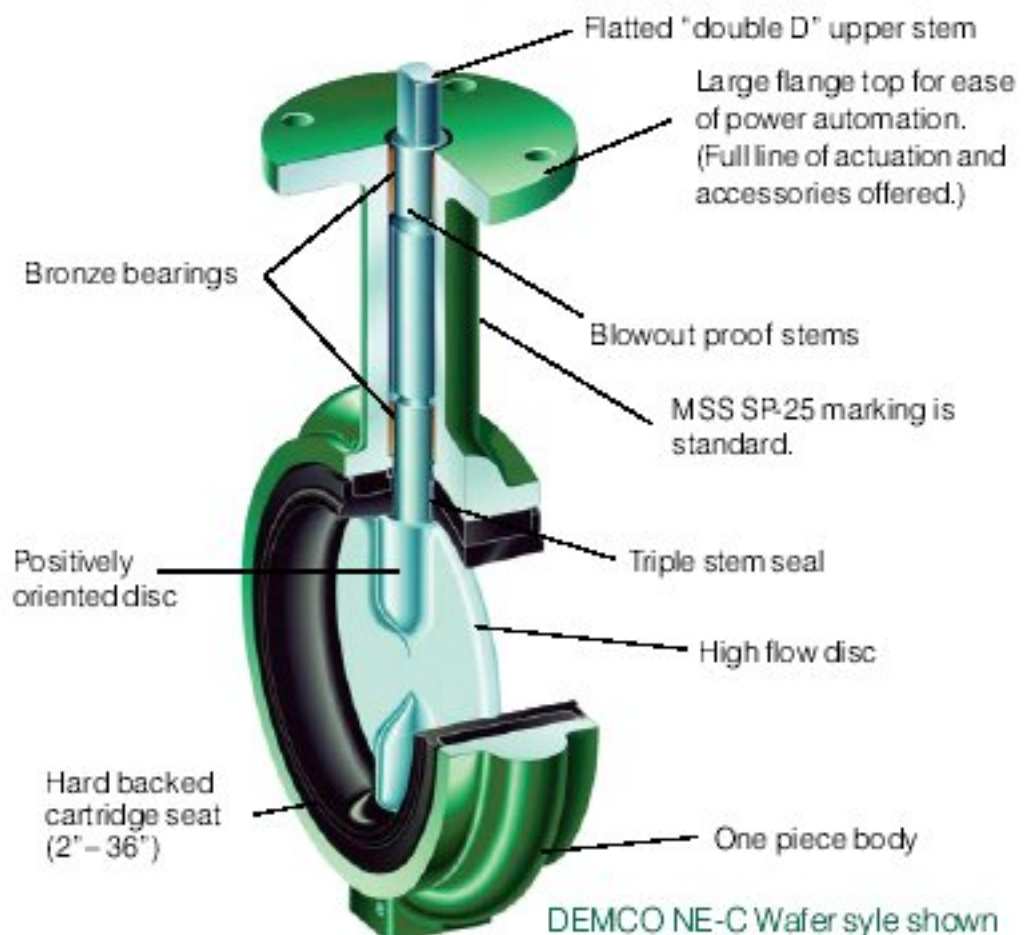
**Discs:** Nickel Plated Ductile Iron, Bronze and Stainless Steel

**Stems:** 416 and 316 Stainless Steel

**Seats:** Buna N, EPT, Viton, and Neoprene

\*Many more options available: consult factory or valve catalog

## DEMCO Butterfly Valve Features



## STYLES AND ACCESSORIES

This versatile valve comes in a variety of styles to suit an even wider range of applications. In addition, a variety of quality accessories are available to further enhance its suitability to the application.

### Series NE-C Valve



Sizes 2" to 12", this series is a general purpose valve with neck length designed to provide full clearance of the valve top over two inches of insulation on ANSI 150 pipe

flanges; available in both wafer and lug styles.

### Series NE-I Valve



Sizes 2" to 12", it is suited for a wide range of applications in many industries, including

food and beverage utilities and process flow lines. This short neck design is offered in a wide variety of body materials. The valves are designed for installation between ANSI 125/150 flanges.

### Series NE-D Valve



Sizes 2" to 12", it is a short neck valve with body notches to fit popular lightweight

flange patterns, making it ideal for

bulk material handling and the transportation industry. Valves will also center in ANSI 125/150 flanges.

### Series NF-C Valve (14" - 48")



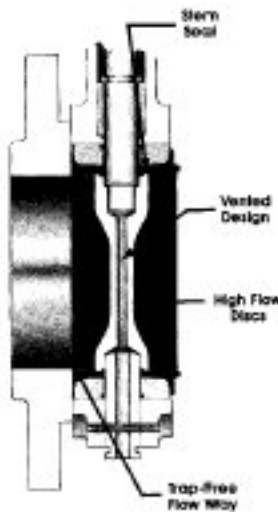
Series NF-C 16"



Series NF-C 30"

Sizes 14" to 36" are available in both wafer and lug styles. The wafer body has two drilled locator lugs at top and bottom for ANSI 150 flanges. 42" and 48" sizes are available with flanged bodies. On all sizes bronze bearings are installed on both stems for minimum operating torque.

### Series NE-I Sanitary Valves



Sizes 2" - 12", it is similar to our Series NE-I valve, but is exclusively designed to meet the rigorous requirements of sanitary service in the food and beverage industry. The body is avail-

able in bronze, stainless steel, aluminum or electroless nickel-coated ductile iron. FDA - approved materials are used for all wetted parts. Handle parts are bronze and stainless steel,

permitting caustic washdown. Other benefits:

- DEMCO dry journal stem seal system gives absolute assurance of sanitary butterfly valve construction.
- Drilled passageways, a design originated by DEMCO, vent the entire interior of the disc to atmosphere. No closed chamber is provided for the culture of undesirable organisms.
- Discs are produced from investment castings, smooth and non-porous. Stem bosses are minimized for increased flow.
- The projecting inner surface of the resilient seat contacts and is compressed by the mating flange to form a smooth and uninterrupted flow way. This positive seal between the innermost contact of the seat and flange ensure aseptic conditions after a piping flush.

### Series NEI-T Teflon Valves

Because of the inert, aseptic non-stick character of Teflon, DEMCO's NEI-T Teflon-lined butterfly valve is ideal for "clean" lines in food and beverage plants. The Teflon seat consists of a virgin Teflon liner overlaying and bonded to an elastomer cushion (either Buna-N or EPT are available) which provides resilience for sealing. The Teflon liner extends over the seat faces, completely covering and sealing the resilient material from contact with line fluids.

### Marine Valve

DEMCO Marine butterfly valves are available in the NE-C & NF-C Lug, NE-I Lug and Wafer and NE-D Wafer styles and conform to Title 46 of the Code of Federal Regulations, Part 56 of the U.S. Coast Guard's Marine Engineering Regulations as well as the American Bureau of Shipping Standard including tagging per MSS-SP-25 and testing per MSS-SP-67.

## Actuators

DEMCO Series DR pneumatic actuators (A1) are available in double-acting or fail-safe, spring return models. Series DR actuators are compact, high-torque, piston actuators. Series R diaphragm actuators (A2) incorporate a heavy-duty, enclosed rack-and-pinion linkage. Diaphragm actuators are suitable for low-pressure, pneumatic service. Electric actuators (A3) are used when compressed air is not available for pneumatic operation.



A1

**DEMCO NE-C wafer with Series DR actuator**



A2

**Series R diaphragm actuator**



A3

**Electric actuator**



**Stem extension with handle on Series NE-I butterfly valve**

## Handles and Stem Extensions

Three basic handle designs interchange on any 2" to 12" valves: ten position locking, two position locking and memory stop. Memory-stop handles provide throttling capability which is infinitely adjustable and can be set by a lock nut with memory-stop setting (adjustable open stop).

Handles are available in basic trim, corrosion-resistant trim and sanitary trim. Stem extensions are fabricated from carbon steel parts and contained in a tubular housing. Gaskets and O-rings seal the stem extension at top and bottom. These extensions are fabricated to customer specified lengths.

## Gear operators

DEMCO weatherproof gear operators are offered with a choice of handwheel, chain-wheel, or square nut. The worm gearing has self-locking set screws to control open and closed positioning or an optional adjustable memory stop for "balance return" to a preset open position after closing.



**Gear operator**