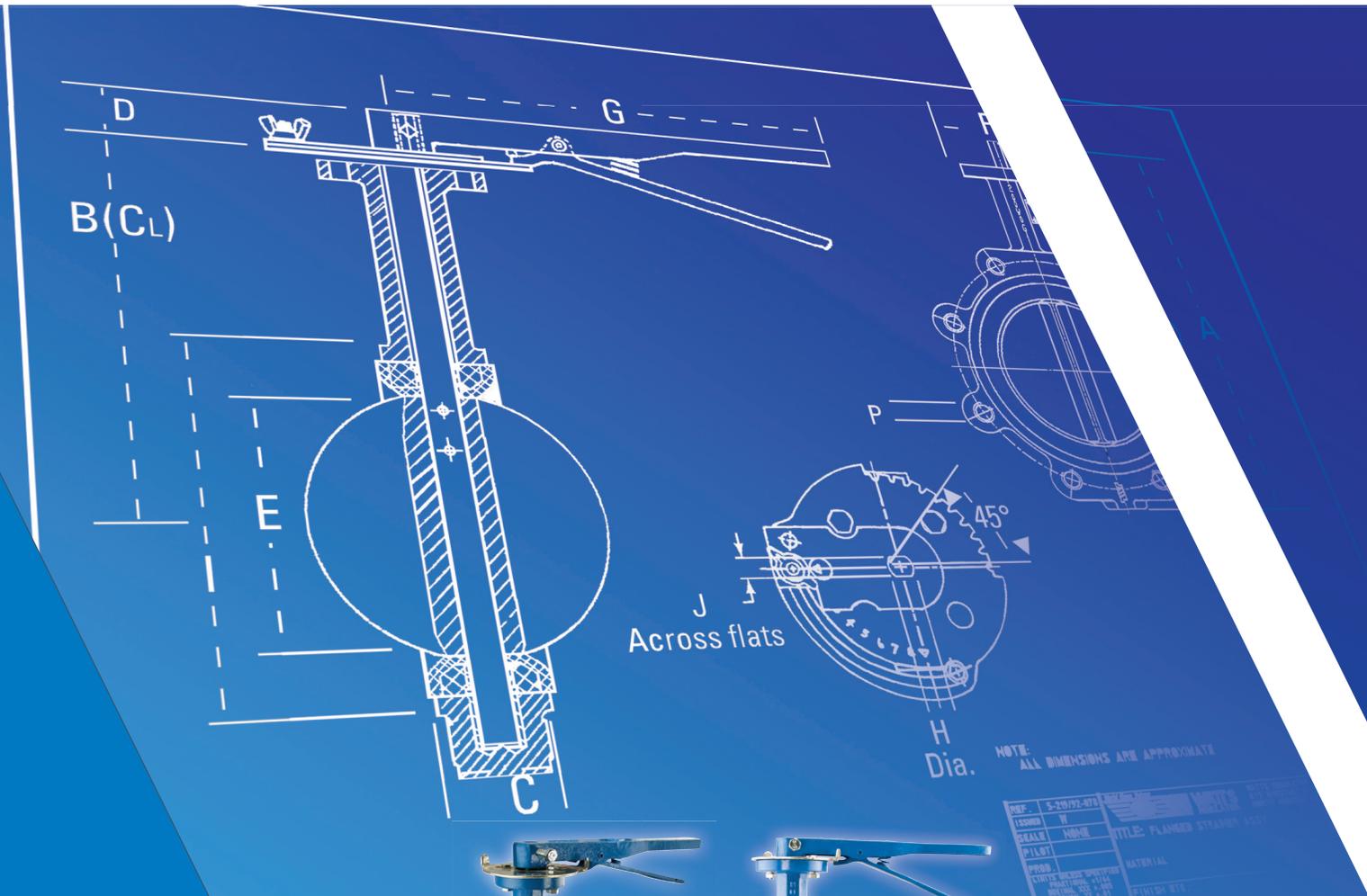


# Butterfly Valves

Designed for a variety of general applications for controlling liquids, gases, and slurries





**Note:** Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

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# Butterfly Valves

## DBF<sup>Ⓐ</sup> and BF Series with ISO 5211 Mounting Pads

Watts DBF and BF Series resilient seated butterfly valves are available in sizes 2" – 24" in wafer or lug design. Watts butterfly valves have a pressure rating of 200psi (13.8 bar) for sizes (2" – 12") and 150psi (10.3 bar) pressure rating for 14" – 24".

Watts DBF and BF Series valves also feature ductile iron body construction, a choice of ductile iron, aluminum bronze, or 316 stainless steel discs and standard seat materials of EPDM, BUNA-N or Viton®. Sizes 2" – 12" are supplied with a phenolic seat backing, while the 14" – 24" are supplied with an aluminum backing designed to prevent valve seats from collapsing or dislodging.

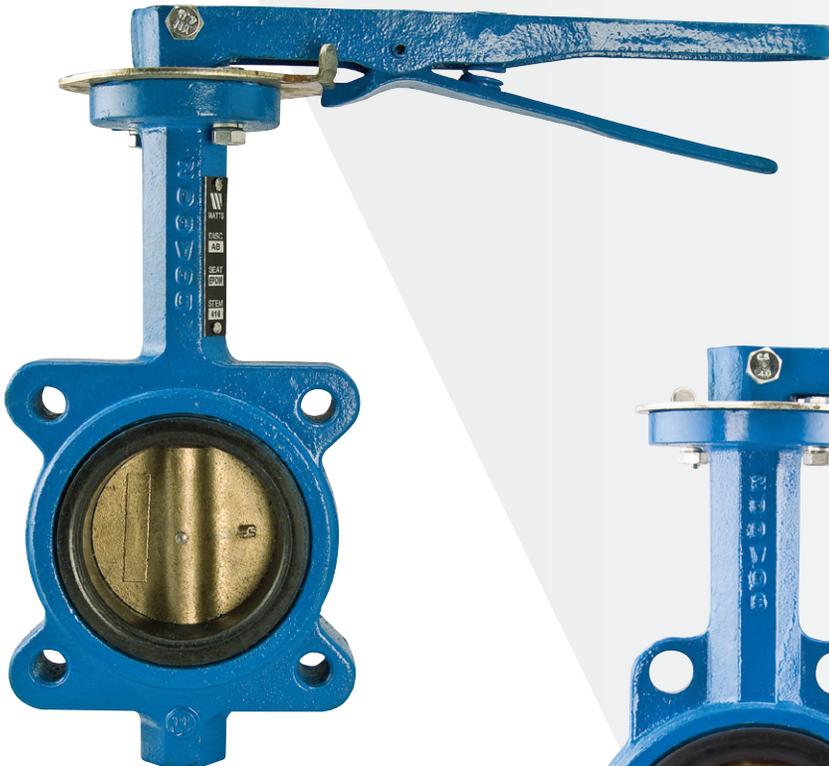
All Watts butterfly valves meet the stringent requirements of HVAC, Irrigation, OEM Commercial, and Institutional applications and can be used wherever positive shutoff is required for liquids and slurries.

Watts DBF and BF butterfly valves are designed and manufactured for use with ANSI Class 125 or 150 flanges and in compliance with API 6709 and MSS-SP-67.

All Watts Lugged Style Butterfly Valves feature dead-end service to full pressure rating of valves.



Lugged style DBF-03-M2 <sup>Ⓐ</sup>



BF-04-M2 Wafer

<sup>Ⓐ</sup> DBF series butterfly valves use domestic and foreign components that have been assembled and tested in the U.S.A.

# Valve Features

## Shaft Seal

Bidirectional shaft seal prevents external contamination of stem area and provides backup for the primary shaft seal formed by the disc-to-seat interface.

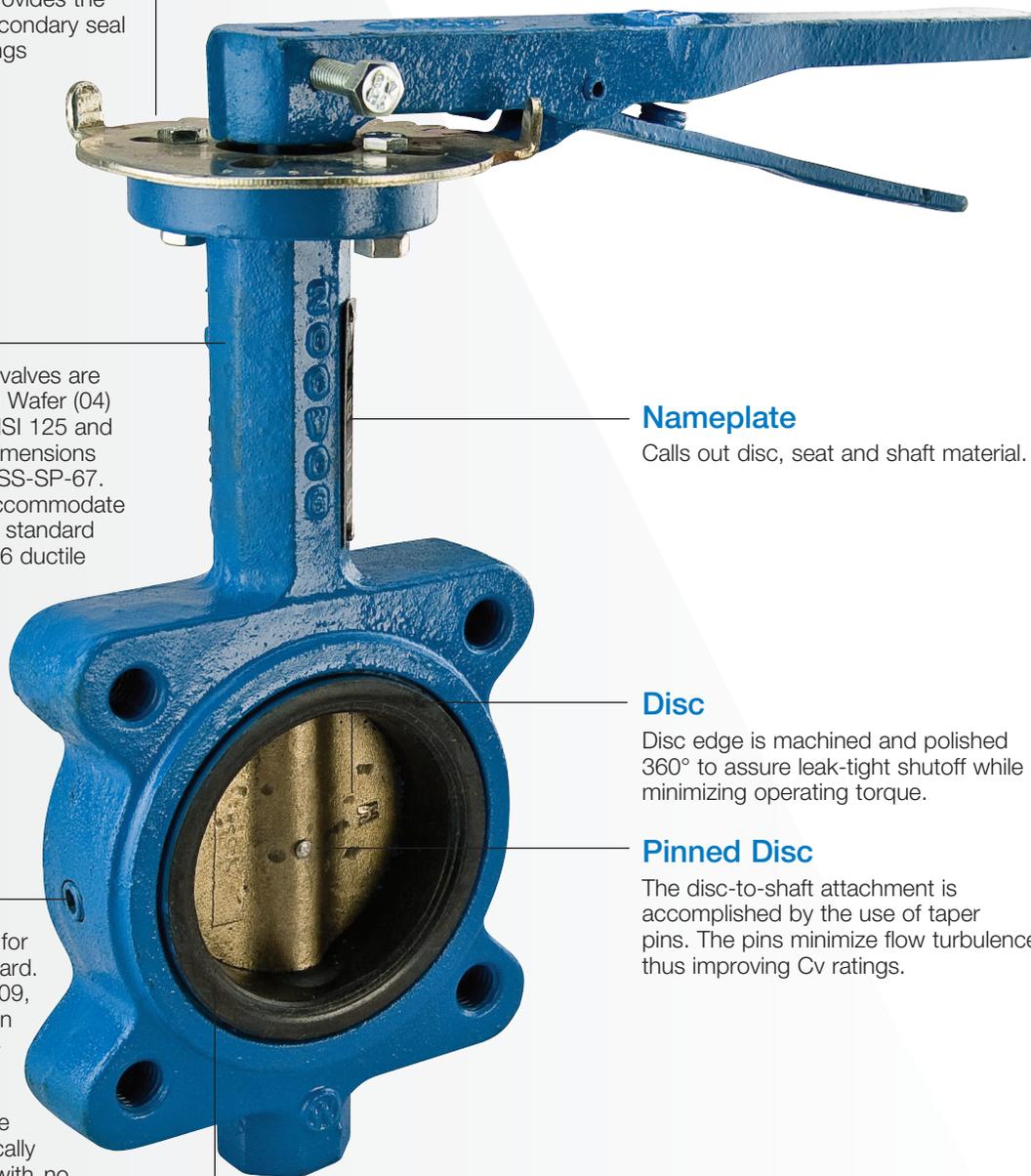
The disc-to-seat interface provides the primary shaft seal, with a secondary seal provided by a series of O-rings molded into the seat at the shaft location.

## Mounting Pad

ISO 5211 bolt pattern for easy adaptation for actuators, gear operators, and lever handles.

## Bushings

Three composite Duralon bushings in 2" – 12" valves and three bronze bushings in 14"-24" valves provide shaft support and alignment.



## Body

Watts DBF and BF butterfly valves are available in Full Lug (03) and Wafer (04) designs for use between ANSI 125 and 150 flanges. Face-to-face dimensions comply with API 609 and MSS-SP-67. All valves are designed to accommodate 2" (50mm) of insulation. The standard body material is ASTM A-536 ductile iron.

## Nameplate

Calls out disc, seat and shaft material.

## Disc

Disc edge is machined and polished 360° to assure leak-tight shutoff while minimizing operating torque.

## Pinned Disc

The disc-to-shaft attachment is accomplished by the use of taper pins. The pins minimize flow turbulence, thus improving Cv ratings.

## Dead-End Service

Dead-end service feature for all lug style valves is standard. This complies with API 609, Fifth Edition requirements on seat retention. Valves suitable for dead-end service to full pressure rating of valves without down stream flange required. Seat is mechanically retained in the valve body with no interruption of the seating surface.

## Phenolic Backed Seat

Phenolic Backed Seat: The phenolic backing 2"-12" or aluminum backing 14"-24" offers additional support to the seat making it non-collapsible and blowout proof. The seat face eliminates the need for flange gaskets. Full 360° sealing protects the body components from the media and provides the primary shaft seal. Seating is available in EPDM, Buna-N, and Viton.

## One Piece Shaft 2" - 24"

Delivers positive disc-to-seat location with maximum strength, and minimum shaft deflection due to upstream pressure. A 416 stainless steel shaft is standard with aluminum bronze and ductile iron discs. A 316 stainless steel shaft is standard with 316 stainless steel disc.

## Lugged style DBF-03-M2

# Butterfly Valves

## DBF and BF Series Methods of Operation

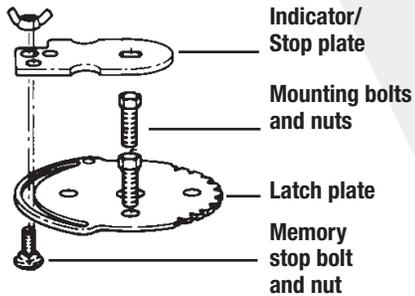
### Handles



Standard handle  
10-position

### Positioning/Locking Kit -

for converting standard ten-position handle to deluxe handle with memory stop, infinite position stop, locking device.



### Handle Kit Information

VALVE SIZE	STD. HANDLE	POSITION/LOCKING	CHAIN-WHEELS	CHAIN
2", 2½", 3"	HK-2000-M2	#1 Pos/Lock	#2 BCWK	#2 BCWC
4"	HK-2000-M2	#2 Pos/Lock	#2 BCWK	#2 BCWC
5", 6"	HK-2000-M2	#3 Pos/Lock	#2 BCWK	#2 BCWC
8"	HK-2000-M2	#4 Pos/Lock	#3 BCWK	#3 BCWC
10"	HK-2000-M2	#5 Pos/Lock	#3 BCWK	#3 BCWC
12", 14"	HK-2000-M2	#6 Pos/Lock	#3 BCWK	#3 BCWC
16", 18", 20"			#4 BCWK	#3 BCWC
24"			#5 BCWK	#5 BCWC

Chainwheel kits attach to gear actuator handwheel.

# Butterfly Valves

## DBF and BF Series

### DBF, BF-M2 Specification 2" - 24"

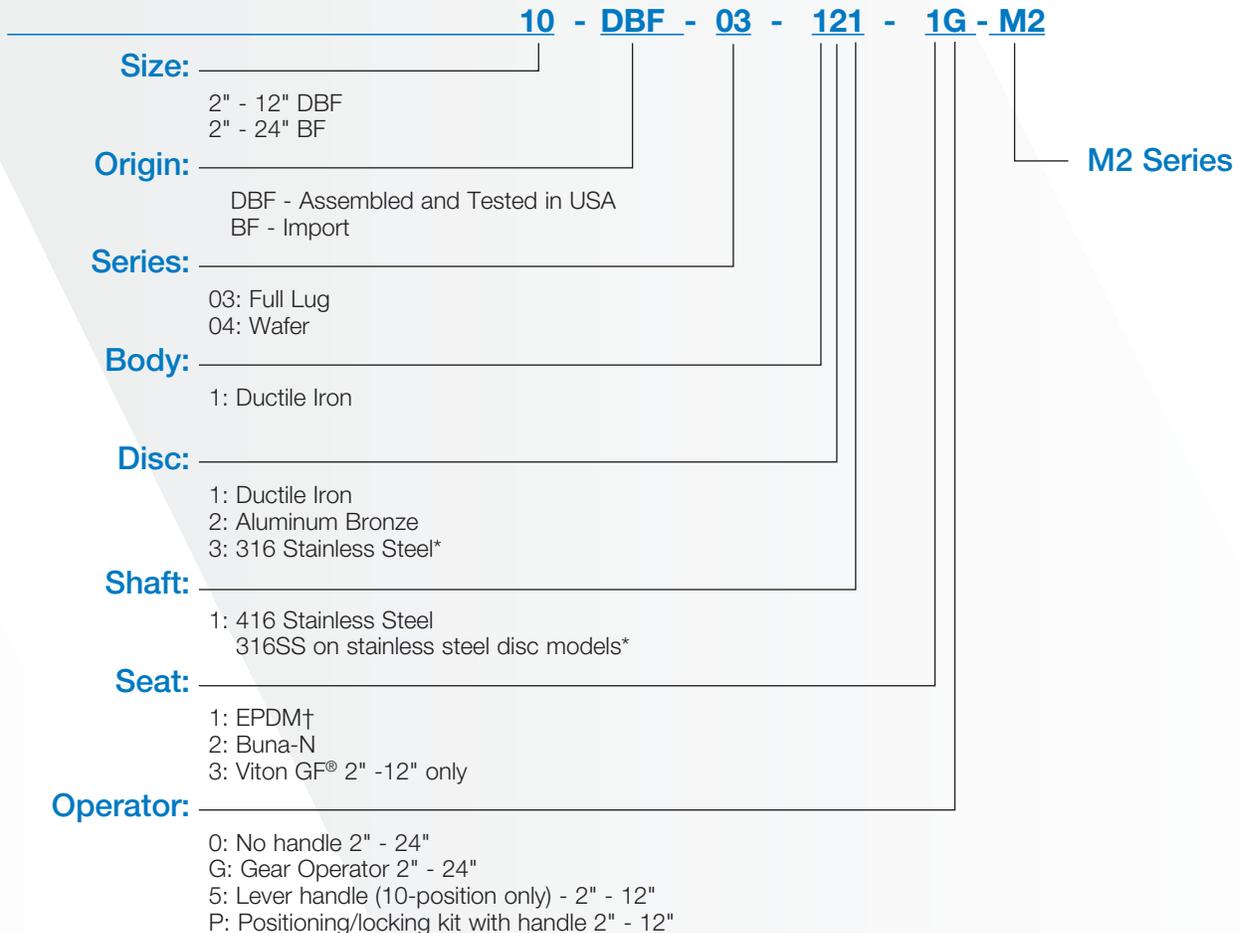
- All valve bodies shall be ductile iron ASTM A536. All lug body valves shall be fully rated for dead end bidirectional service to 100% of full rating. Lug bodies shall be of the full tapped lug pattern design. All bodies shall be suitable for ANSI 125/150 flanges
- All valves 2" - 12" shall be rated to 200 psi, 14" - 24" shall be rated to 150 psi.
- Lay length dimensions shall comply with API 609 and MSS-SP-67.
- Disc material shall be aluminum bronze, ductile iron, or stainless steel. Discs shall incorporate disc flats with polished radius on the disc edge circumference. Disc and shaft connection shall be precision taper pin design.
- Shaft shall be one piece through shaft design of 416 stainless steel or 316 stainless steel with stainless steel disc. Valve shafts shall not be exposed to the line media.
- Seats shall be Buna-N, EPDM, or Viton®. Seats shall fully encapsulate the body and incorporate a rigid backing and primary seal. All seats shall be suitable for weld neck, slip-on and Van Stone type flanges. Seats shall be suitable for full pressure and vacuum applications.
- NSF 61-G Listed

### Materials

- Body** – Ductile Iron ASTM A-536
- Disc** – ASTM A-395 Ductile Iron / Electroless Nickel Plated.  
ASTM B-148 Aluminum Bronze  
ASTM A-351 type 316SS
- Shaft** – 416 Stainless Steel,  
316 Stainless Steel on 316SS Disc Models
- Seat** – EPDM to (+5°F to + 248°F, -15°C to +120°C)  
Buna N (+14°F to + 176°F, -10°C to +80°C)  
Viton (-4°F to + 302°F, -20°C to +150°C)
- Bushings** – Duralon 2" – 12"  
Bronze 14" – 24"
- Stem O-ring** – Buna-N

†Do not use EPDM when hydrocarbons are present.

## How to order Watts Butterfly Valves



## Watts Family of Brands

Watts designs, manufactures, and sells an extensive line of flow control, water safety, water filtration & treatment, drainage, and PEX plumbing products.

The Watts family of companies provides a single source for solutions used to safely convey, conserve, and manage water.

Making Watts your single source for plumbing-related solutions will streamline your operations, save you money, and reduce the variety of repair parts needed for maintenance.



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