

## RAISING THE PERFORMANCE BAR

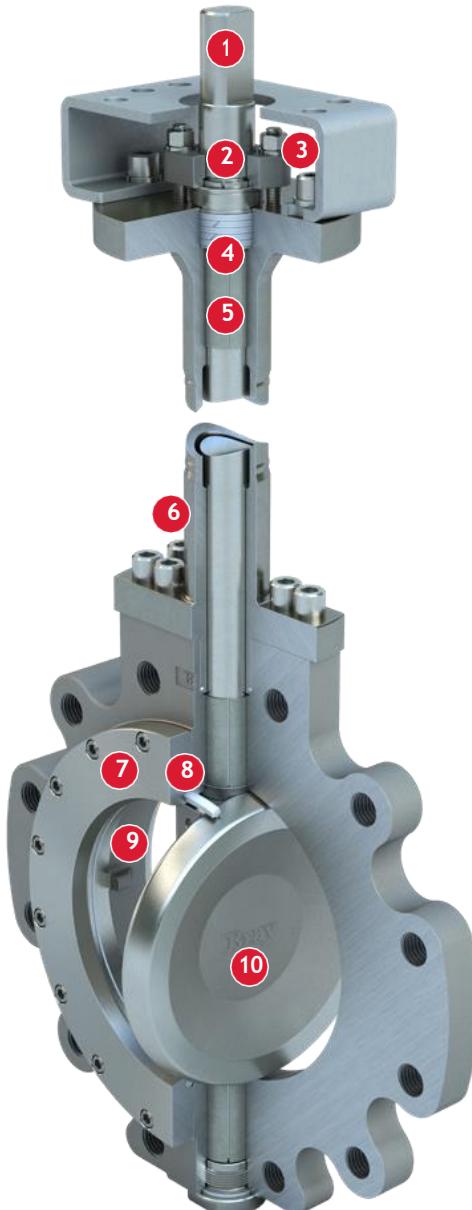
The McCannalok Cryogenic high performance butterfly valve provides industry leading cryogenic sealing technology and performance while being produced to the highest quality standards. The valve is designed to handle the most difficult medias in today's industrial environments — liquid oxygen, liquid natural gas, and other cryogenic liquids.

## SPECIFICATIONS

<b>Size Range</b>	NPS 3 to 24
	DN 80 to 600
<b>Body Style</b>	Wafer   Lug
<b>Temperature Range</b>	Standard
	-320°F to +250°F
	-196°C to +121°C
<b>Pressure Ratings</b>	ASME Class 150   300
	PN 10   16   25   40
<b>Shutoff Rating</b>	Zero Leakage (at ambient temperatures)
	BS 6364 (at cryogenic temperatures)
	ISO 28921 (at cryogenic temperatures)

## DESIGN FEATURES

- 1 STEM DESIGN:** High-strength, one-piece stem design is standardized for interchangeability of Bray actuators.
- 2 BLOWOUT-PROOF STEM:** The stem retention design does not rely on actuation components to prevent stem blowout. Designed to provide safe operation for cryogenic conditions.
- 3 ADJUSTABLE STEM PACKING:** Easy access allows simple quarter-turn field adjustments without actuator removal.
- 4 STEM SEAL SYSTEM:** Packing rings, compressed by the packing gland, provide a positive seal around the stem. Certified compatibility with liquid and gaseous oxygen service (tested by third party).
- 5 STEM BEARINGS:** Top and bottom bearings securely support the stem, provide excellent corrosion resistance, and minimize deflection from mechanical loading forces.
- 6 BOLTED BONNET:** Connection prevents internal stress during valve cool-down. Extended neck protects stem packing from extreme temperatures, and allows access for stem packing adjustments and actuator mounting.
- 7 FULL-FACED SEAT RETAINER:** Utilizes cap screws located outside the flange gasket sealing area — improving flange gasket sealing and allowing simple seat replacement.
- 8 POLAR® SEAT:** Jacket and energizer maintain consistent sealing performance during process thermal cycling and extend valve cycle life by reducing seat wear. Provides sealing at temperatures as low as -320°F (-196°C).
- 9 INTERNAL TRAVEL STOP:** Minimizes possible seat damage and extends the service life of the seat.
- 10 DISC:** The disc is engineered to maximize flow and minimize resistance, for optimal Cv / Kv values.



# VTE® - CRYOGENIC HIGH PERFORMANCE BUTTERFLY VALVE

## McCANNALOK SERIES



### CRYOGENIC TESTING

Bray operates world class cryogenic testing facilities in the USA, China, and India dedicated for research & development validation and customer specific testing. Run by trained and experienced cryogenic valve specialists, our Raymond Technical Center in Houston utilizes:

- > Cryogenic test pit for safe testing of large valves.
- > 6,000 gallon liquid nitrogen tank.
- > Mass spectrometers.

*Bray operates three precision cleaning facilities around the world to meet customer's oxygen cleaning needs.*

### DESIGN STANDARDS

<b>Valve Design</b>	ASME B16.34
	ASME BPVC VIII
	EN 593
	EN 12516
<b>Actuator Mounting</b>	ISO 5211
<b>Flange Drilling<sup>1</sup></b>	ASME B16.5
	EN 1092-1
<b>Seat Testing</b>	BS 6364
	ISO 28921
	ISO 5208
	MSS SP 61
	EN 12266
<b>Face-to-Face</b>	ASME B16.10
	API 609
	EN 558
	ISO 5752

#### NOTE

1 Additional flange drilling options available.

### MATERIAL OPTIONS<sup>1</sup>

<b>Body</b>	316 Stainless Steel
<b>Stem</b>	XM-19
<b>Packing</b>	PTFE
	Graphite
<b>Bearing</b>	Teflon Lined Stainless Steel
	Nitride Hardened Stainless Steel
<b>Disc</b>	316 Stainless Steel
<b>Seat</b>	Polar® Seat
<b>Extended Bonnet</b>	316 Stainless Steel

#### NOTE

1 Other materials are available on request.

### INDUSTRIES AND APPLICATIONS

- > Aerospace
- > Air Separation
- > Beverage Processing
- > Ethylene
- > Food Processing
- > Gas to Liquids
- > Liquid Nitrogen
- > Liquid Oxygen
- > LNG Liquefaction
- > LNG Receiving Terminals
- > LPG Handling
- > Petroleum
- > Refrigeration
- > Steel Production

### CERTIFICATIONS & APPROVALS

<b>Certifications</b>	CE/PED
<b>Approvals</b>	ABS Type
	Bureau Veritas Type
	DNV
	China Classification Society (CCS) Type



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