CRYOGENIC HIGH PERFORMANCE BUTTERFLY VALVE
McCANNALOK SERIES

RAISING THE PERFORMANCE BAR

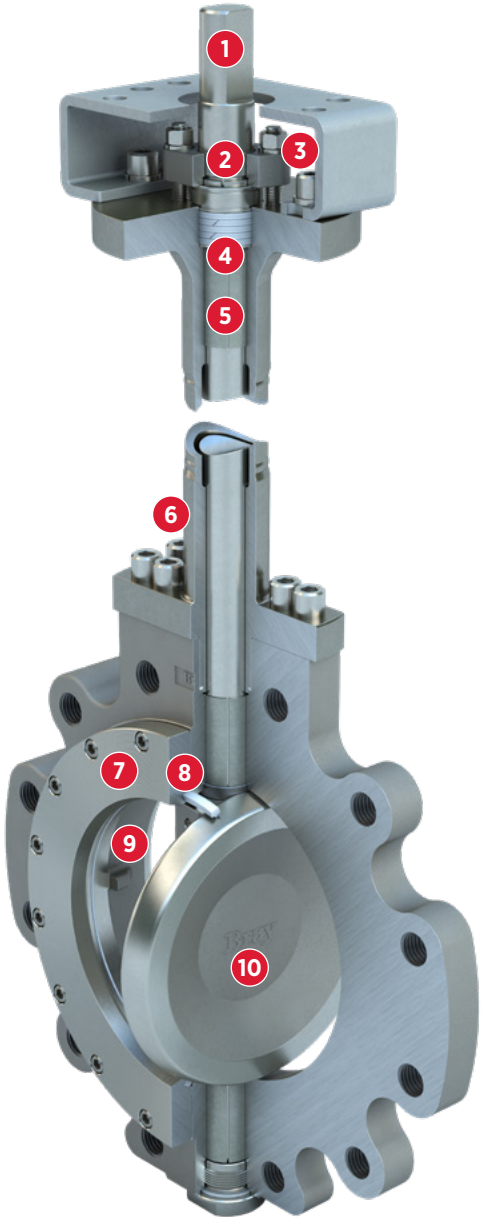
The McCannalok Cryogenic high performance butterfly valve provides industry leading cryogenic sealing technology and performance while being produced to the highest quality standards. The valve is designed to handle the most difficult medias in today's industrial environments — liquid oxygen, liquid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

SPECIFICATIONS

Size Range	NPS 3 to 24	
	DN 80 to 600	
Body Style	Wafer | Lug	
Temperature Range	Standard	-320°F to +250°F
		-196°C to +121°C
Pressure Ratings	ASME Class 150 | 300	
	PN 10 | 16 | 25 | 40	
Shutoff Rating	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, compresssed 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.



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

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

NOTE
1 Additional flange drilling options available.

MATERIAL OPTIONS[1]

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

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