Bray®

YOUR GLOBAL FLOW CONTROL PARTNER

BRAY McCANNALOK

Cryogenic & Low Temperature High Performance Butterfly Valves Featuring the Polar Seat®

Reaching new heights in cryogenic applications

Bray McCannalok Cryogenic Features

The advanced engineered **Polar Seat®** has been contoured to provide strength and flexibility at cryogenic temperatures delivering consistent tight shut off.

- Industry leading shut-off with high cycle capability at cryogenic temperatures
- Advanced engineered Polar Seat®
- Certified compatibility with liquid and gaseous oxygen (Material compatibility of critical components have been certified by third party testing laboratory)
- ASME Class 150 / 300:
  3" – 24" (80mm - 600mm)
  wafer, lug and flanged body styles
- **Cryogenic Trim**
  -320 °F to +100 °F (-196 °C to +38 °C)
- **Low Temperature Trim**
  -60 °F to +100 °F (-51 °C to +38 °C)
- One-piece high-strength impact resistant stem
- Contoured disc to maximize flow
- Oxygen cleaning capabilities

Bray's Polar Seat® Performance

Bray has raised the bar on cryogenic Double Offset Butterfly Valves by providing superior performance for cryogenic applications. Reliability tested and validated to perform 5,000 cycles at -320 °F (-196 °C) while maintaining strict leakage standards.

Bray McCannalok Has Met These Cryogenic Seat Leakage Standards

BS 6364	100 mm^3/s x DN
MSS SP-134	75 cc/min/NPS
ISO 28921-1	50 mm^3/s x DN
Major Oil & Gas Co.	33 mm^3/s x DN
Major Air Separation Co.	15 mm^3/s x DN

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

CE Available with the CE marking, signifying compliance with the Pressure Equipment Directive (PED)

LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

ABS FOUNDED 1862

Materials of Construction

Cryogenic Trim

-320 °F to +100 °F (-196 °C to +38 °C)
Extended bonnet per ISO 28921-1
Customized bonnet lengths available.
For Liquid Oxygen service Bray's LOX trim must be specified.

Body:	ASTM A351 Gr CF8M Stainless Steel
Stem:	Nitronic 50 (XM-19)
Packing	PTFE
Disc:	ASTM A351 Gr CF8M Stainless Steel
Seat:	Polar Seat®
Extended Bonnet:	316 Stainless Steel

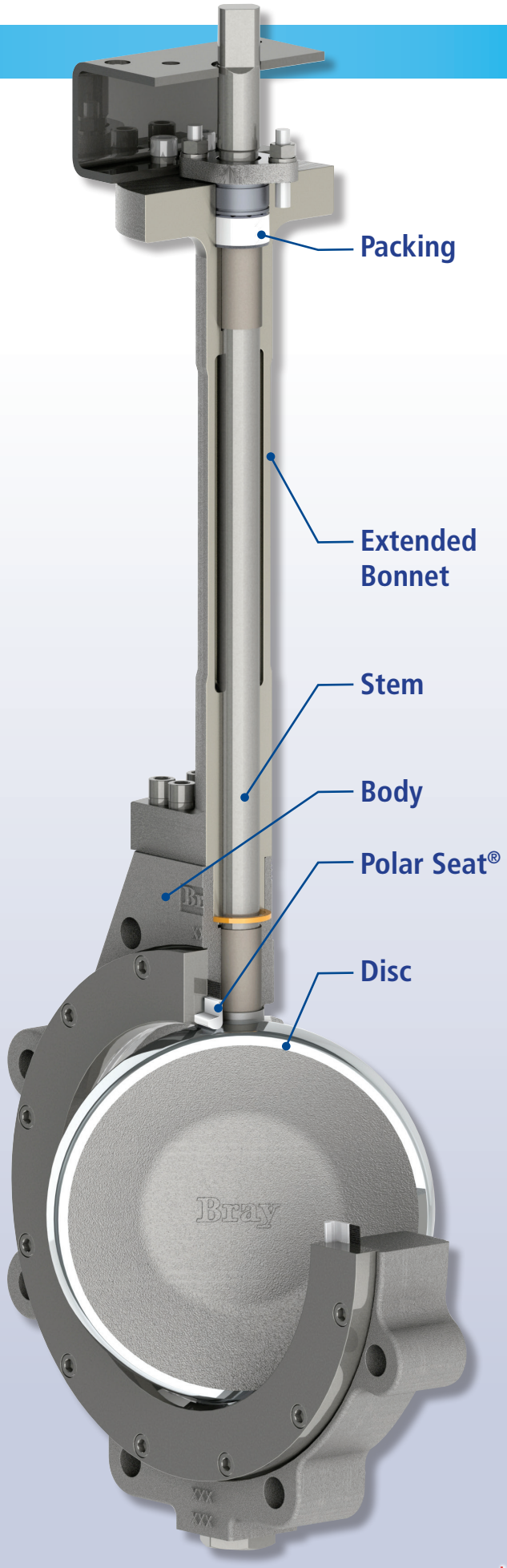
Low Temperature

Extended bonnet not required.

Low Temperature Trim

-60 °F to +100 °F (-51 °C to +38 °C)
Extended bonnet not required.

Body:	ASTM A352 Gr LCC impact tested at -60 °F (-51 °C)
	ASTM A351 Gr CF8M Stainless Steel
Stem:	17-4 PH Gr H1150D
Packing	PTFE
Disc:	ASTM A351 Gr CF8M Stainless Steel
Seat:	Polar Seat®



Cryogenic Testing Facilities:

Bray's Technical Center in Houston includes a dedicated area with cryogenic test bunker for validations and customer testing. Run by trained and experienced cryogenic valve specialists, our facilities include:

- **6,000 gallon liquid nitrogen tank**
- **Mass spectrometers**
- **Stainless Steel test boxes**
- **Control panel with remote operation and monitoring**

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Bray Controls

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