




Cryogenic Triple-offset Butterfly Valve (Down to -196°C)

Technical Datasheet & Specifications

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1. Product Overview

Parameter	Specification
Product Name	Triple Offset Butterfly Valve – Metal Seated (TOBV)
Description	Butterfly Valve for Oil & Gas, Petrochemical, Water Treatment. KSA/UAE export. A

2. Salient Features



✓ IBR Certified Valves

✓ NiAlBr NAB Valves

4. Technical Specifications

Parameter	Specification
Design Standard	API 609 (Category B), BS 6364 (Cryogenic), ASME B16.34
Pressure Rating	ASME Class 150 to 600, PN10 to PN100
Size Range	3" to 48" (80 mm to 1200 mm)
Body Styles	Wafer, Lugged, Double Flanged
Extended Bonnet	Per BS 6364, keeping packing out of cryogenic temperature zone
End Connections	ASME B16.5, ASME B16.47, EN 1092-1
Testing Standard	BS 6364 Cryogenic Testing, API 598, ISO 5208
Seat Sealing	Inconel 625 + Graphite laminated ring, Stellite body seat
Leakage Class	Class VI Zero Seat Leakage / Rate A down to -196°C
Fire Safe Design	Certified to API 607 / ISO 10497

5. Materials of Construction

Part	Standard Material
Body & Disc	ASTM A351 Gr. CF8 / CF8M / CF3 / CF3M (Austenitic Stainless Steels)
Body Seat	Hard-faced with Stellite 21 / Stellite 6 hardfacing (friction-free)
Laminar Seal Ring	UNS N06625 (Inconel 625) + Flexible Graphite laminate
Shaft / Stem	Stainless Steel A564 Gr 630 (17-4PH) / SS316 conditioned
Shaft Bearings	Nitrided SS316 or chrome-plated bearings to prevent low-temperature seizing
Gland Packing	Die-formed graphite with cryogenic lip seal barrier

6. Dimensions



Conforms to API 609 or ISO 5752 Series 20. Bore sizes are full-bore from DN80 to DN1200. Standard Wafer, Lug, and Flanged face-to-face dimensions. General arrangement drawings (GAD) featuring electric actuator, pneumatic scotch-yoke actuator, or manual gear box dimensions are supplied per Purchase Order.

7. Testing & Inspection

Test	Standard Reference	Acceptance Criteria
Body Hydrostatic Shell	API 598 / ISO 5208	1.5 x Class Rated Pressure (e.g. 30 bar for 150#)
High Pressure Seat	API 598 / ISO 5208	1.1 x Class Rated Pressure (e.g. 22 bar for 150#)
Low Pressure Seat Air	API 598 / EN 12266-1	6 bar air pressure, 60s hold, zero bubbles/leak
Fire Safe Test	API 607 / ISO 10497	Intrinsically fire-safe design verified by fire test
PMI & Casting NDT	ASTM E1476 / ASME V	PMI check on SS316/Duplex disc and laminate

8. Design Standards & Codes

Code/Standard	Description
API 609	Butterfly Valves: Double Flanged, Lugged, and Wafer Type (standard)
ASME B16.34	Valves -- Flanged, Threaded, and Welding End (master pressure-temp)
ASME B16.5 / B16.47	Pipe Flanges and Flanged Fittings (dimensional standards)
API 607 / ISO 10497	Fire Test for Soft-Seated Quarter-Turn Valves
NACE MR0175 / ISO 15156	Materials for use in H2S-containing environments in oil and gas produ

9. Documentation & Certification

Deliverable	Details / Status
Material Test Certificates	EN 10204 3.1 Mill Certificates with full chemical & mechanical heat tra
Pressure Test Reports	Hydrostatic and pneumatic test certificates signed by QA/QC inspect
Fire Safe Certificate	API 607 / ISO 10497 fire-safe certificates signed by Lloyd's



10. General Notes

Extended gas column bonnet per BS 6364 to protect packing

Premium austenitic stainless steel casting body & trim

Inconel 625 laminate handles extreme thermal cycling

Functional SIL-2/3 safety ready for LNG hazard loops

Highly suited for: LNG Liquefaction & Regasification Terminals

Highly suited for: Liquid Nitrogen, Oxygen, Argon & Hydrogen Storage

Highly suited for: Air Separation Units (ASU)

Highly suited for: Aerospace Rocket Propellant Loading Systems

11. Contact & Enquiry

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Product Range

Gate Valves

Gate Valves Overview

Knife Edge Gate Valve

Sluice Valve

Pressure Seal Gate



API 600 Gate Valves

● **Globe Valves**

Globe Valves Overview

Piston Valve

Needle Valve

Pressure Reducing Valve

● **Ball Valves**

Ball Valves Overview

1-Piece Ball Valve

2-Piece Ball Valve

3-Piece Ball Valve

3-Way Ball Valve

Trunnion Ball Valve

Cryogenic Ball Valve

Fire Safe Ball Valve

✦ **Butterfly Valves**

Butterfly Valves Overview

Wafer Type

Lug Type

Flanged Type

NAB Seawater Valves

PTFE Lined

Triple Offset

✓ **Check Valves**

Check Valves Overview

Swing Check Valve

Dual Plate Check

Wafer Check Valve

Lift Check Valve

Non-Slam Check Valve

Silent Check Valve

Alloy 20 Valves



▼ Strainers & Filters

Y-Strainer

Basket Strainer

T-Strainer

🤖 Automated & Control

Actuated Ball Valves

Control Valve Pneumatic

Control Valve Electric

Automated Butterfly

★ Specialty & Other

Sight Glass

Flush Bottom Valve

Steam Trap

Safety Relief Valve

Blow Down Valve

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