

VALVES FOR MARINE AND OFFSHORE APPLICATIONS

IMI PBM ball valves are designed, tested and manufactured in the United States for long service life under arduous conditions and available in a wide choice of materials to meet the most aggressive marine corrosion environments.

- Air, Ballast, Cooling/Lubrication, and Fire Protection Systems
- Desanitation/Drinking/Water Treatment, Injection Water, and Water Flood
- Drinking Water Shipboard, Platform and Pier Transportation Systems - NSF 61 Certified
- Fuel, Flare Gas, Mud Transfer, Critical Utility and Process Systems for OSV, FPSO
- Liquid Natural Gas (LNG) Processing Storage and Transfer, Platform, Tankers
- Specialized Vessels and Terminal Facilities

- Pressures up to 2500# Class (6000 psi)
- Temperatures: From -320° (-200°C) to 800°F (427°C)
- Sizes: 1/4" - 12"
- Materials:

Non-Ferrous:

- Bronze; 836, 922
- 955 and 958 NiAl-Bronze
- 953 and 954 Al-Bronze
- 70/30 and 90/10 CuNi
- (Bronze and Copper Nickel valve testing and acceptance criteria IAW MSS-72)

Ferrous:

- Stainless Steels: 304, 316, 316L, 317, etc.
- Duplex and Super Duplex Alloys
- High Performance alloys (Monel, Hastelloy, Alloy 20, etc.)
- (ASME B16.34 and MSS-61 and others as required)
- Laser etched high pressure to low pressure flow directive



APPROVALS:

- | | | |
|------------------------|------------------------------------|---|
| • ABS Type Approval | • API 607 Fire Test Design | • CE |
| • BV Type Approval | • API 6D (certification per order) | • CRN Registrations |
| • DNV-GL Type Approval | • API 622 Low-E Packing | • EU Pressure Equipment Directive (PED) |
| • LR Type Approval | | • ISO 9001 |
| | | • NACE - MR 0175 |
| | | • NSF-61* / ANSI-372 |
| | | • USCG Category A |

* COPPER ALLOYS C89833, C8935, AND C87600 HAVE BEEN EVALUATED BY NSF TO NSF/ANSI/CAN 61 FOR USE IN DRINKING WATER SUPPLIES PH OF 6.5 AND ABOVE. DRINKING WATER SUPPLIES THAT ARE LESS THAN PH 6.5 MAY REQUIRE CORROSION CONTROL TO LIMIT LEACHING OF COPPER INTO THE DRINKING WATER



IMI PBM's **CRYOGENIC** AND **LNG** VALVES ARE DESIGNED FOR LIQUEFIED NATURAL GAS PRODUCTION, PURIFICATION, TRANSPORTATION AND STORAGE.

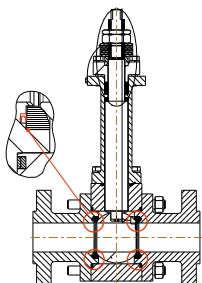
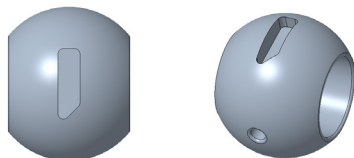
SAFETY IS #1

IMI PBM's Cryogenic Valves are designed to B16.34, tested to API 607 and meet seat leakage criteria of MSS SP-134 which exceeds BS 6364.

- Sizes ½" – 4"
- Temperatures from 400°F (205°C) to -320°F (-200°C)
- Pressures to ANSI Class 600# (1440 psi)
- V-TEF™ Seats/graphite seals
- Optional Low-e Packing (Cannot be lox cleaned)
- Cleaned for oxygen service
- Manual Locking lever handle, or optional oval locking handwheel with quarter turn operation
- Custom engineered pneumatic, electric and hydraulic automation and control packages.

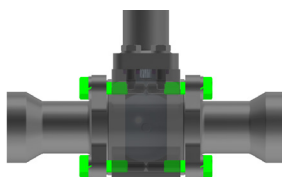
KEYED STEM BALL INTERFACE

IMI PBM's stem to ball slot keying ensures proper orientation of the ball within the valve assembly with respect to flow direction and venting - reducing costly assembly and maintenance errors.



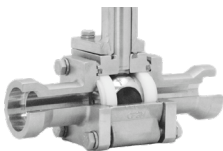
ENERGIZED SEAT BACK GASKETS

Standard Inconel energized seat back gaskets enhance sealing throughout temperature fluctuations.



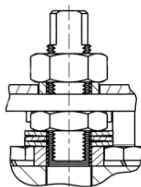
THERMAL EXPANSION

Independent bolting for each valve end connection ensures consistent sealing throughout thermal cycles.



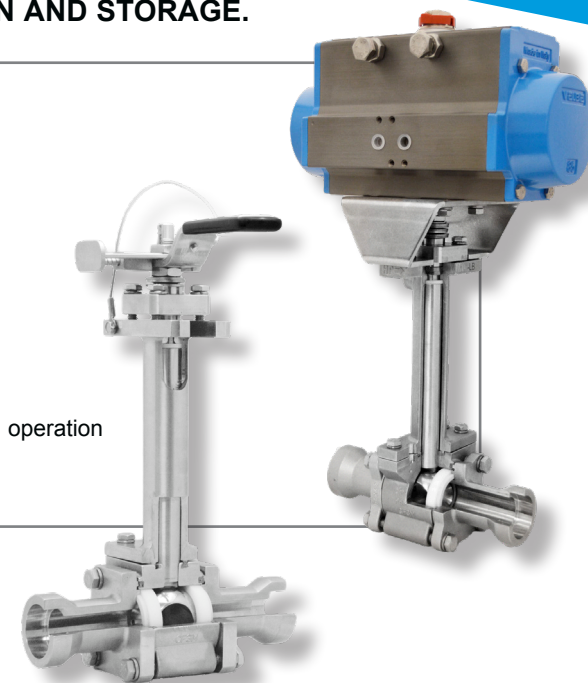
NO DISASSEMBLY

No disassembly is required for socket weld and butt weld end valves.



LIVE LOADED STEM PACKINGS

Robust live loaded stem packing ensures reliable positive seal engagement throughout operating the thermal cycle and pressure range.



Cryogenic Allowable Leakage Rate Comparison

| NPS | DN | Allowable He scc/min | |
|-------|-----|----------------------|--------------|
| | | MSS-SP134-2010 | BS 6364-1984 |
| 1/4 | 8 | 18.75 | 48 |
| 3/8 | 10 | 28.125 | 60 |
| 1/2 | 15 | 37.5 | 90 |
| 3/4 | 20 | 56.25 | 120 |
| 1 | 25 | 75 | 150 |
| 1-1/4 | 32 | 93.75 | 192 |
| 1-1/2 | 40 | 112.5 | 240 |
| 2 | 50 | 150 | 300 |
| 2-1/2 | 65 | 187.5 | 390 |
| 3 | 80 | 225 | 480 |
| 4 | 100 | 300 | 600 |



FIRE TESTED TO API-607

PLEASE VIEW OUR CRYOGENIC PRODUCT BULLETINS FOR MORE INFORMATION:

- PB-C6
- PB-CD6
- PB-CP6
- PB-CN6
- PB-CN600#