Certificate No: LR25190467TA
Issue Date: 21/01/2026
Expiry Date: 20/01/2031

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer **FLOERINER (CHINA) CO.,LTD**

Address No.10 Shengke Road, Huishan Economic and, Technological Development Zone, Wuxi, 214100, China

Type Valves - General

Description
Butterfly and Ball Valves
FCW: Center line butterfly valve wafer type
FCD: Center line butterfly valve flange type
FCL: Center line butterfly valve lug type
FCU: Center line butterfly valve U-flange type
FDW: Double eccentric butterfly valve wafer type
FDD: Double eccentric butterfly valve flange type
FDL: Double eccentric butterfly valve lug type
FTW: Triple eccentric butterfly valve wafter type
FTD: Triple eccentric butterfly valve flange type
FTL: Triple eccentric butterfly valve lug type
Ball valves FB2F, FB2FT and FB3F

Trade Name Butterfly valves -FCW, FCD, FCL, FCU, FDW, FDD, FDL, FTW, FTD, FTL & Ball Valves- FB2F, FB2FT, FB3F

Application
Marine and offshore application for Seawater, Water, Oils Steam, Gas, Corrosive, and Liquid
1. Ships side valves - Ductile material.
2. Salt and Fresh Water-cooling lines

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Gopal Nair
Piping & Pressure System Principal Specialist
to Lloyd's Register North America, Inc.
A member of the Lloyd's Register group

820 Gessner Road, Suite 300, Houston, Texas,
77024, United States

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3. Water Ballast and Fresh Water pumping systems.
4. Cargo lines on oil tankers and as " in line valves" on chemical tankers.
5. Bilge suction for holds in bulk carriers - only when fitted in pipe tunnel in conjunction with a non-return valve.
6. As suction valves on double bottom fuel tanks (only when located in a closed pipe tunnel or duct keel)
7. As pump suction valves from the main bilge line (only where the valve is in the immediate vicinity of the pump. The valve is to be fitted in conjunction with a metal non-return valve, which is to be on the bilge main side of the butterfly valve).
8 Fire tested valves as in line valves only inflammable and hydraulic systems.
9. Sanitary systems.
10. Inert gas systems.
11. Air piping system having working pressures less than seven bar (except as stop valves on air receivers).

Specified Standard

Lloyd's Register Rules and Regulations for Classification of Ships 2025
Lloyd's Register Rules and Regulations for Classification of offshore Units 2024
API 607-2022
ISO10497-2010

Ratings

See Appendix

Additional Tests

1. FDW Series butterfly valves with material CF3M, with RPTFE+ Metallic seating, have successfully passed the fire type testing in compliance with API607-2022, demonstrating full conformity with the standard requirements.

a) Fire test report FDW16050- Size 50- PN 16
b) Fire test report FDW16080- Size 80- PN 16
c) Fire test report FDW160200- Size 200- PN 16

2. FB2F Series ball valves with material CF3M, with RPTFE+ Metallic seating,

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have successfully passed the fire type testing in compliance with API 607-2022, demonstrating full conformity with the standard requirements.

a) Fire test report FB2F15005002- Size 50- 150#

Other Conditions

1. Nodular iron may be used for Classes I, II piping systems valves, shell side connections and collision bulkhead valves as per Rules provided it has an elongation of not less than 12%.
2. Materials for metallic castings and forgings of Class I and Class II piping systems, Shipside and Collision bulkhead are to be produced at a works approved by Lloyd's Register.
3. The non-fire-resistant valves are not to be used in the following systems:
    a. For fire mains and hydrants.
    b. For connection to the shell where the failure of the material in the event of a fire would give rise to danger of flooding.
    c. Flammable systems containing gas and liquid.
    d. Starting air. Instrument and control air systems.
4. For connections to the shell of a vessel and collision bulkhead only lug and flanges type valves are acceptable.
5. Butterfly & ball valves are not to be used for remote closure of valves on flammable oil tanks in ships (deep tank valves) as required by SOLAS.
6. Butterfly and ball valves are not to be used bilge systems on passenger ships and use in bilge lines also should be agreed with Flag Administration.
7. A small distance spool piece should be fitted inboard of shell side valves. Shell side valves should be bolted to shell side connection in such a way that the section of pipe immediately inboard of the valve can be removed, if necessary.
8. All butterfly and ball valves in liquified natural gas carriers and LNG process systems have to comply with IGC code requirements Chapter 5, and requirements of IGC code Chapter 5 have not been evaluated as part of this approval.
9. Where one end of the ball valve is threaded, application of threaded joint ball valves will be limited as per Part 5, Chapter 12 section2.10 of threaded sleeve joints.
10. Where the valves are intended for low temperature operations requirements of Chapter 4 section 7 and 8 Rules for the manufacture, testing

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and certification of materials should be complied with.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register North America, Inc. of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: New Certificate

The Design Appraisal Document TSO/25-03875/ PRJ11100493905/ LR25190467TA/GN and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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77024, United States

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