Certificate No: LR26360902TA
Issue Date: 30/07/2026
Expiry Date: 31/01/2031

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	**Dalian Marine Valve Co., Ltd**
Address	No. 16 Wangxian Street, Qixianling, High-tech Industrial Zone, Dalian, 116023, China
Place of Production	Dalian Marine Valve Co., Ltd No. 16 Wangxian Street, Qixianling, High-tech Industrial Zone, Dalian, 116023, China
Type	Cryogenic Valves
Description	Cryogenic Globe Valve Type DF191 Series Cryogenic Needle Valve Type DF191Z Series Cryogenic Ball Valve Type DF135 Series
Trade Name	DMV
Application	Marine, offshore applications for LNG carrier cargo piping system or other piping system with design temperature not lower than -163°C complying with LR Rules and Regulations of Ships for the Carriage of Liquefied Gases in Bulk, July 2025
Specified Standard	Rules and Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk, July 2025 Rules and Regulations for the Classification of Ships, July 2025 ISO 28921-1:2022

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Ru Zhang Shi

Engineering Technical Team Lead Piping/ Decarbon-Greater China to Lloyd's Register Classification Society (China) Co., Ltd.

Room 02-05, 48F, Raffles City Shanghai Office Tower, No.268 Xi Zang Middle Road, Huangpu District, Shanghai, 200001, China

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Ratings

Maximum working pressure (MPa):	1.0
Maximum operation temperature (°C):	50
Minimum operation temperature (°C):	-163
Nominal diameter (mm):	
Cryogenic Globe Valve Type DF191 Series:	NPS 1''/2''/3''/4''
Cryogenic Needle Valve Type DF191Z Series:	NPS ½''
Cryogenic Ball Valve Type DF135 Series:	NPS 1''
Material:	
Cryogenic Globe Valve Type DF191 Series:	
Body	A351 CF3M
Disc	A351 CF3M
Bonnet	A351 CF3M
Stem	A182 F316L
Cryogenic Needle Valve Type DF191Z Series:	
Body	A182 F316L
Bonnet	A182 F316L
Stem	A182 F316L
Cryogenic Ball Valve Type DF135 Series:	
Body	A351 CF3M
Bonnet	A182 F316L
Stem	A182 F316L

Other Conditions

For application on a Lloyd's Register (LR) classed vessel, the following conditions are to be complied with: -

1. Valves are to be selected and installed in accordance with the manufacturer's instructions and recommendations and to the attending Surveyor's satisfaction.
2. Materials for castings and forgings of Class I & Class II piping systems are to be produced at a works approved by LR. Testing is to be in accordance with the Rules for Materials and Table 6.1 and 6.4 in Chapter 6 of the Rules for Ships for Liquefied Gases.
3. In addition to the prototype testing of valves intended to be used at a working temperature below minus 55°C, cryogenic testing consisting of

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valve operation and leakage verification for a minimum of 10 percent of each type and size of valves is to be completed to the satisfaction of the LR Surveyor refers to LR5.13 of the Rules for Ships for Liquefied Gases.

4. LR 's material certificate is required if operating at cryogenic temperature lower than minus 55°C.
5. The materials are to be suitable for the intended service conditions.
6. Actuators and accessories are not covered by this appraisal.
7. It is concluded the subject valve would not be used as emergency shut down valves.

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 Classification Society (China) Co., Ltd. of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: LR2162331TA

The Design Appraisal Document LR26360902TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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