Certificate No: LR25313791TA
Issue Date: 31/03/2025
Expiry Date: 30/03/2030

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	**Graco High Pressure Equipment Inc.**
Address	2955 West 17th Street, Suite 6, Erie, Pennsylvania, 16505-3928, United States
Type	Air Operated Needle, Ball and Check Valves
Description	Air Operated Needle, Ball and Check Valves Part Numbers 20-41LF6-T-LC 20-41LF6-T-0.062-LC 20-41LF6-T-SP2-LC 603897-LC 20-11LF6-LT-HPO-NO-LS-ATEX-LC 20-11LF6-LT-HPO-NC-LS-ATEX-SP1-LC
Trade Name	Graco HIP Valves
Application	Low Temperature LNG systems
Specified Standard	ASME B 31.3 - 2024 Lloyd's Register Rules and Regulation for Classification of Ships- 2024 Lloyd's Register Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk- 2024

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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

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77024, United States

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Type Approval Certificate

Ratings

Design Conditions 689 bar

Design Temperature: -
Air-operated needle and check valves Minus 54 Degree to + 148 Degree C
Ball Valves Minus 28 Degree to + 148 Degree C

Additional Tests

Body and Seat Leak Test dated Feb 21, 2020

Other Conditions

1. Materials used in the construction are to be manufactured and tested in accordance with the requirements of the Rules for the Manufacture, Testing and Certification of Materials to Class I requirements to attending surveyor's satisfaction.
2. In calculations tensile strength is considered as 95000 psi and yield strength as 75,000 psi, these values are much higher than commercially available ASTM A 479/276 – TP316. For each heat of material sourced from Lloyd's Register approval works, the certificate should show values equal to or higher than these values.
3. Impact tests are required for materials at minus 60 Degree C and acceptance energy should be 41KV.
4. If the valves are used for the application of emergency shutdown and if the valve have materials having melting temperatures lower than 925°C, the type testing shall include a fire test to a standard acceptable
5. With respect screwed couplings and end connections, which comply with recognized standards shall only be used for accessory lines and instrumentation lines of LNG classed installation applications with external diameters of 25 mm or less, the sealing arrangements for other than this application should be agreed with local Lloyd's Register plan approval office for each application for classed installations.
6. IEx requirements have not been verified, and it should be agreed with the client and electrical plan approval surveyor for each application

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Type Approval Certificate

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: LR2004619TA

The Design Appraisal Document TSO/25-043516/LR25313791TA/PRJ111005048130/GN and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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