Certificate No: LR26370646TA
Issue Date: 04/08/2026
Expiry Date: 03/08/2031

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	**WinGD Ltd.**
Address	Schützenstrasse 3, Winterthur, 8400, Switzerland
Type	Internal Combustion Engines
Description	2-stroke, single-action, cross-head, in-line, reciprocating, reversible, turbocharged with intercooler, dual-fuel (ammonia) direct-injection, electronically controlled main engine
Trade Name	X72DF-A-1.0
Application	Prime mover for single- or multi-engine propulsion installation(s)
Specified Standard	Rules and Regulations for the Classification of Ships, July 2025 Rules and Regulations for the Classification of Ships using Gases or other Low-flashpoint Fuels, July 2025 Rules and Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk, July 2025
Ratings	Ouput (MCR): 3920 kW per cylinder Speed at MCR: 89 rpm (R1) Maximum Firing pressure: 200 bar Mean Indicated Pressure: 22.4 bar

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Jong-Yong Ha

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A member of the Lloyd's Register group

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Other Conditions

1. The scope of this Type Approval is limited to the mechanical and piping aspects within the engine boundary and excludes ancillary equipment and the engine control system. The 110% load point was not tested in dual fuel mode in accordance with IACS UR M78.

2. Lloyd's Register's specific requirements for the controls, alarms and safeguards of main propulsion engines vary depending on the requested class notation. Accordingly, plans and details of these systems are to be submitted for each installation, as required by the specified Rules, Part 6, Chapter 1, Section 1 and Appendix LR2, Part A-1, Section 15.

3. Engine control, monitoring, alarm and safeguard systems for main propulsion engines are to comply with the specified Rules, Part 5, Chapter 2, Sections 4, 7 and 15, Part 6, Chapter 1, Sections 2 and 4, and Appendix LR2, Part A-1, Section 15. These systems remain subject to appraisal for each installation.

4. To maintain the validity of this certificate, the production facilities of WinGD licensees are to be inspected by an LR Surveyor, who shall verify that each engine is manufactured under Special Survey and conforms to the approval documentation referenced in the associated Machinery General Design Appraisal.

5. Each engine installation and/or conversion project is to include a Risk Based Certification process, including HAZID/HAZOP workshops, to address, together with all relevant parties, the toxic hazards associated with ammonia fuel operations.

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 Asia of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR26370646TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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