DNV·GL

Certificate No:
TAM00000B9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Dual Fuel Engine

with type designations(s)
W-X62DF, W-X62DF_L

Issued to
Winterthur Gas & Diesel Ltd.
Winterthur, Switzerland

is found to comply with
DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal Combustion Engines

Application:

propulsion

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL

This Certificate is valid until **22nd November, 2021**
Issued at **Hamburg** on **23rd November, 2016**

DNV GL local station: Augsburg

for **DNV GL**

Approval Engineer: Sven Neddenien

Frank Lutz
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

two stroke, in-line engine, reversible, crosshead, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation electronically controlled, valve operation electronically controlled, dual fuel

Cylinder bore: 620 mm
Piston stroke: 2658 mm

Additional place of production

not applicable

Application / Limitation

Rated power [kW/cyl.]	2385	2385
Rated speed [rpm]	103	103
Mean effective pressure [bar]	17.3	17.3
Max. firing pressure [bar]	150	200
Definition	Diesel mode	Gas mode

Type Approval documentation

14-011733, 262.1-016990-3, 262.1-016990-4

Tests carried out

Documentation:

Test report titel	Type approval test report Wärtsilä W-X62DF
Test report reference	262.1-016990-3, 2016-11-17
Place of test	Korea, Changwon, Doosan
Date of test	2016-08-25 until 2016-08-27

Test engine:

Model	W6X62DF
Serial no.	DWL0105316
No. of cylinders	6
Power [kW/cyl.]	2385
Speed [rpm]	103

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment

Meetings on regularly basis and at least every second year with the Type Approval applicant (hereof: the Engine Designer) shall be arranged with the objective to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued, and to keep DNV GL updated with regard to:

- The latest development status and design as covered by the Type Approval certificate.
- Damages and failures of products certified by DNV GL leading to break down or other malfunctions in service. The causes and reasons for the failure and results from investigations are to be made available to DNV GL upon request. Failure to inform DNV GL may lead to suspension of this Type Approval certificate.

In cases where the Type Approved design is manufactured at other companies, DNV GL shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors.

Other conditions

END OF CERTIFICATE