DNV·GL

Certificate No:
TAM000006H

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designations(s)
2000 Mx6

Issued to
MTU Friedrichshafen GmbH
88045 Friedrichshafen, Germany

is found to comply with
DNV GL Rules for classification, Ships - Pt.4, Ch.3, Sec. 1, Reciprocating Internal Combustion Engines

Application:

propulsion, multi engine plant

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

This Certificate is valid until **6th April, 2021**
Issued at **Hamburg** on **7th April, 2016**

DNV GL local station: Augsburg

for **DNV GL**

Approval Engineer: Ralph Michael

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

four stroke, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore: 135 mm
Piston stroke: 156 mm

Additional place of production

not applicable

Application / Limitation

Rated power [kW/cyl.]	116.2	116.2	105.7	105.7
Rated speed [rpm]	2450	2250	2450	2250
Mean effective pressure [bar]	25.5	27.2	23.2	25.2
Max. firing pressure [bar]	220	220	220	220
Rating Definition	non-cont.	non-cont.	cont.	cont.

Type Approval documentation

15-038472, 15-058564, 15-059556, 262.1-021936-1

Tests carried out

Documentation:

Test report titel	Type Test of MTU 12V 2000 M86
Test report reference	262.1-021936, 2016-04-06
Place of test	MTU Friedrichshafen Works 1, Test Cell 21
Date of test	2015-09-07 until 2015-09-11

Test engine:

Model	12V 2000 M86
Serial no.	544 100093
No. of cylinders	12, 16
Power [kW/cyl.]	105.7
Speed [rpm]	2450

Marking of product

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

Periodical assessment

For retention of the Type Approval, DNV GL shall perform a Periodical Assessment every second year and before the expiry date of this certificate.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval certificate was issued.

In case where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore Periodical Assessment shall be carried out randomly at these companies.

Other conditions

1. Engine safety, control and monitoring systems, including sensors and actuators are not covered by this type approval certificate. Documentation for engine safety, control including speed governing and monitoring systems shall be submitted for approval according to DNV GL Rule Pt.4 Ch.9 Sec.1/ Item 1

END OF CERTIFICATE