

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000GJ

This is to certify:

That the Diesel Engine

with type designation(s)
L23/30

Issued to

**MAN Diesel & Turbo, Filial of MAN Diesel & Turbo SE,
Germany
Copenhagen SV, Denmark**

is found to comply with

**DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal
Combustion Engines**

Application :

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

This Certificate is valid until **23rd March, 2022**.

Issued at **Høvik** on **24th March, 2017**

DNV GL local station: **Copenhagen**

for **DNV GL**

Approval Engineer: **Amir Dzaferi**

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Oddvar Deinboll
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, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, direct injection, injection operation by cams, valve operation by cams, liquid fuel

Cylinder bore : 225
Piston stroke : 300
No. of cylinders : 5-8

Application/Limitation

Rated power [kW/cyl.]	142	148	175
Rated speed [rpm]	720	750	900
Mean effective pressure [bar]	19.9	19.8	19.6
Max. firing pressure [bar]	145	145	145
Definition			

Tests carried out

Type Approval Retention Survey dated 2006-10-19 performed at MAN Diesel SE, Frederikshavn, Denmark, which confirms that the engine series complies with DNV Rules for Ships January 2004 edition.

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, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases 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

- Foundation arrangement to be submitted for each installation according to the Rules Pt.4 Ch.3 Sec.1 [1.4] – Documentation of arrangement.
- Torsional vibration calculations to be submitted for each installation according to the Rules Pt.4 Ch.2 Sec.2 – Torsional Vibration.
- Signboards according to the Rules Pt.4 Ch.3 Sec.1 [2.3.6] – Warning Notice.
- Flexible hoses to be Type Approved by DNV GL.
- 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 the Rules Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant type approval certificates.
- Electric cables and installation of this is not covered by this approval and must be verified to comply with the requirement of the Rules Pt.4 Ch.8 - Electrical Installation.
- The approval does not include driven member.

END OF CERTIFICATE