DNV·GL

Certificate No:
TAM000006F

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designation(s)
L28/32

Issued to
MAN Diesel A/S
København SV, Denmark

is found to comply with
DNV GL rules for classification – Ships
DNV GL offshore standards

Application :

The approval is valid for propulsion and auxiliary duty.

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

Rating **see page two for approved ratings**

This Certificate is valid until **2021-03-06**.

Issued at **Høvik** on **2016-03-07**

for **DNV GL**

DNV GL local station: **Copenhagen**

Approval Engineer: **Dag Harald Williksen**

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.

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Job Id: **262.1-000646-4**
Certificate No: **TAM000006F**

Product description
Four stroke diesel engine

Cylinder bore:	280 mm
Piston stoke:	320 mm
Number of cyl:	5, 6, 7, 8, 9 in-line

Alternativ place of production
LICENSEE produced engines shall be approved, type approved or case by case approved, upon approval of documentation, submitted from the Licensee as required by the Rules and provided that the documentation is found to be in accordance with this type approval.

Application/Limitation
1. The approval is valid for propulsion and auxiliary duty and is based on the following main data:

	L28/32 Propulsion	L28/32 Auxiliary	L28/32 Auxiliary
Mean indicated pressure, [bar]:	21.6	20.3	20.4
Max. cylinder pressure, [bar]:	145	130	130
Rated cont. output, [kW/cyl.]:	245	210	220
Corresponding to, [rpm]:	775	720	750

2. The engine type MAN L28/32 is approved for use as driver for generator for continous duty and emergency generator onboard mobile offshore units according to DNVGL's Offshore Standard DNVGL-OS-D101 "Marine and Machinery Systems and Equipment", January 2016 with main data as specified in above table.

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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 a survey every second year and before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

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. The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

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

Fundation arrangement to be submitted for each installation according to the Rules Pt. 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.

END OF CERTIFICATE