Certificate no.:
TAM00001FB

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Diesel Engine

with type designation(s)
D3872LE4XX

issued to
MAN Truck & Bus SE
Nürnberg, Bayern, **Germany**

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.3 Sec.1 Reciprocating internal combustion engines

Application:

Propulsion (mechanical propeller drive, multi engine plant, variable speed)

Issued at **Hamburg** on **2025-11-28**
This Certificate is valid until **2030-11-27**.
DNV local unit: **Augsburg**

Approval Engineer: **Jan Sell**

for **DNV**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

4-stroke, trunk piston, V-engine, non-reversible, with supercharging, with charge air cooling, constant pressure charging system, valve operation by cams,
liquid fuel, ULSD, HVO, direct injection, injection electronically controlled, common-rail fuel injection system

Cylinder bore: 138 mm
Piston stroke: 165 mm
No. of cylinders: 12

D3872LE4XX: Intended for variable speed mechanical propeller drive

Following sub-systems are approved as part of the engine design and covered by this certificate:

- Torsional vibration damper acc. to drawing 51.02201-0231
- eGP (electronic Gear Pump) 51.12101-7154 or 51.12101-7158 with housing 51.12502-0026, arranged in external diesel supply system but supplied together with the engine and considered as an integral engine part
- Turbochargers, stage one: HoneywellGarret GT45, drawing 51.09000-8140
  or BorgWarner K3NS, drawing 51.09000-8149
  stage two: BorgWarner K3CS, drawing 51.09000-8153

Following sub-systems are in principal accepted to be used but shall be covered by separate approval:

- Engine Control System (ECS): with Bosch ECU MD1+ (see Other Conditions)
- Alarm and safety system: MAN Truck & Bus iSea Class (see Other Conditions)

Application/Limitation

Rated power [kW]	1213	1471	1618
Rated speed [rpm]	2100	2300	2300
Mean effective pressure [bar]	23.4	25.9	28.5
Firing pressure [bar]	194	205	223
Rating definition	MD*	LD*	LD**

*: non continuous rating according to engine manufacturer definition
**: non continuous rating according to engine manufacturer definition, non overloadable (no 110 % load capability)

Type Approval documentation

DNV reference:	Order:
262.1-042602-1	A1597048

Tests carried out

- January 2025, Basic endurance test (type test Stage A) of D3872LE433, 1618 kW at 2300 rpm, serial no. 6196 801, DNV reference 262.1-042602-1
- 2025-05-14, initial Type Approval Test of D3872LE443, serial no. 7261 803, 1471 kW at 2300 rpm, at MAN Truck & Bus SE, Nürnberg, Germany, DNV reference 262.1-042602-1
- 2025-07-15, Integration test of alarm and safety system MAN iSea Class and ECS with Bosch ECU MD1+ on D3872LEXXX at MAN Truck & Bus SE, Nürnberg, Germany
- 2025-11-18, Fire test of eGP pump 51.12101-7158 with housing 51.12502-0026 at IHA, DNV reference 262.1-042602-1

Marking of product

The engine is to be marked with the manufacturer's name or trademark, the engine model designation, the serial number and the output rating (kW at rpm).

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the 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.

Manufactured by:

MAN Truck & Bus SE, Nürnberg, Germany

Other Conditions

1. Engine safety, control and monitoring systems, including sensors and actuators, are not covered by this certificate. Documentation for engine safety, control (including speed governing), and monitoring systems shall be submitted for approval according to DNV Rules Ships Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant Type Approval certificates.
2. The torsional vibration calculation acc. to DNV Rules Ships Pt.4 Ch.2 Sec.2 shall confirm that cylinder misfiring is not detrimental to any components in the shafting system, unless approved means for misfire detection will be fitted (DNV Rules Ships Pt.4 Ch.3 Sec.1 Tab.10 and Tab.11).
3. All connections of pipes carrying lubrication oil or fuel oil > 1.8 bar shall be suitably screened, mainly and preferably by means suitable for re-assembly, to prevent spray onto hot surfaces (DNV Ships Pt.4 Ch.3 Sec.1 [2.6.2.1]).
4. For seawater hoses fitted with hose clamps, the following applies:
   Hose clamps shall be of rigid design, entirely seawater resistant (all parts, including screws) and fitted as double clamps. Seawater shutoff valves shall be installed upstream and downstream of each engine which can be operated from outside the engine room.

END OF CERTIFICATE