

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Diesel Engine**

with type designation(s)

6DE(M)-33(F)(L), 8DE(M)-33(F)(L)

Issued to

**Daihatsu Diesel Mfg. Co. Ltd Moriyama Division
Moriyama Shiga Pref, Japan**

is found to comply with

DNV GL rules for classification – Ships**Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

Type	Rating
6DE(M)-33(F)(L)	3600kW @ 720 / 750 rpm
8DE(M)-33(F)(L)	4800KW @ 720 / 750 rpm

This Certificate is valid until **2021-03-02**.Issued at **Høvik** on **2016-03-03**DNV GL local station: **Kobe**for **DNV GL**Approval Engineer: **Tage Olav Alexander Strøm**

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 diesel engine

Cylinder bore: 330 mm
Piston stroke: 440 mm
No.of cylinders: 6 and 8 in-line

Model designation as follows:

"-" is generator duty, eg 6DE-33

"M" is propulsion duty, eg 6DEM-33

"F" is modified for front end power take off to other machinery duty, eg 6DE-33F

"L" is anticlockwise rotation, eg 6DE-33L

Application/Limitation

The approval is valid for propulsion and auxiliary duty and based on the following main data:

	6DE(M)-33(F)(L)		8DE(M)-33(F)(L)	
Mean indicated pressure, [bar]:	2.80	2.69	2.80	2.69
Mean effective pressure, [bar]:	2.66	2.55	2.66	2.55
Max. cylinder pressure, [bar]:	230	230	230	230
Rated cont.output, [kW]:	3600	3600	4800	4800
Corresponding to, [rpm]:	720	750	720	750

Type test performed and witnessed 9-10th and 12th Feb 2016 with engine type 6DE(M)-33, engine serial no DET633Z0001 and reported 12 Feb 2016.

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. This to verify that the conditions of the type approval are complied with and not altered since the Type Approval Certificate was issued.

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 Vibrations.

Signboards according to the Rules Pt.4 Ch.3 Sec.1 [2.3.6] - Warning Notice.

Flexible hoses with couplings 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 - Documentation requirements.



Job Id: **262.1-021037-1**
Certificate No: **TAM0000061**

Electric cables and cabling are not covered by this approval and must be verified to comply to the rules
Pt.4 Ch.8 - Electrical Installation.

END OF CERTIFICATE