

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM0000088

This is to certify:

That the Diesel Engine

with type designation(s)

5/6DC-17(A)(e)

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 :

The approval is valid for auxiliary duty.

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Rating see page two

This Certificate is valid until **2021-06-30**.

Issued at **Høvik** on **2016-05-20**

DNV GL local station: **Kobe**

Approval Engineer: **Tage Olav Alexander Strøm**

for **DNV GL**

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 diameter: 170 mm

Piston stroke: 270 mm

No. of cylinders: 5 & 6 In-Line

Model designation as follows:

"A" new version of the same engine

"e" IMO Tier II Complaint version

Application/Limitation

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

5DC – 17(A)(e)	6DC – 17(A)(e)			
Mean ind. Pressure, [bar]:	22,9	20,6	23,8	21,4
Max. cylinder pressure, [bar]:	170		170	
Rated cont. output, [kW]:	490		610	
Corresponding to, [RPM]:	900	1000	900	1000

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

Foundation 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