Certificate No:
TAM0000050

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine
with type designation(s)
12AYM-WGT/WET/WST
Issued to

Yanmar Co., Ltd. Tsukaguchi Plant

Amagasaki Hyogo Pref, Japan
is found to comply with
DNV GL rules for classification – Ships

Application :

The approval is valid for propulsion duty.
Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.
Rating see page two for ratings

This Certificate is valid until **2020-12-31**.

Issued at **Høvik** on **2016-01-21**
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.

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Job Id: **262.1-011180-2**
Certificate No: **TAM0000050**

Product description

Four stroke diesel engine
Cylinder bore: 155 mm
Piston stroke: 180 mm
No. of cylinders: 12 Vee

Application/Limitation

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

12 AYM -				
WST	WET	WGT		
Mean indicated press. (bar):		15.5/17.5	19.7/20.4	21.8
Max. cylinder press. (bar)		130/140	150/153	155
Rated cont. output (kW):		882/1030	1140/1220	1340
Corresponding to (RPM):		1850/1900	1840/1900	1940

Tests carried out

Type approval test carried out 2011-03-01/02, test report dated 2011-03-01/02.

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. 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.1 Ch.3 Sec.3 [I020] Control System functional Description.
Electric cables and cabling are 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