

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000NR

This is to certify:

That the Diesel Engine

with type designation(s)
W26 D D2 D3 F (line- and V-Configuration)

Issued to

Wartsila Italia S.p.A.
TS San Dorligo della Valle, Italy

is found to comply with

DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal Combustion Engines,
DNV GL Offshore Standard, DNVGL-OS-D101 "Marine and Machinery Systems and Equipment"
DNV GL Offshore Service Specification DNVGL-SI-0166 "Verification for Compliance with Norwegian Shelf Legislation"

Application :

propulsion / auxiliary / emergency

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

This Certificate is valid until **25th September, 2022.**

Issued at **Hamburg** on **26th September, 2017**

for **DNV GL**

DNV GL local station: **Venice**

Approval Engineer: **Ralph Michael**

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Burkhard Lilienthal
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.

Job Id: **262.1-001627-14**
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Product description

four stroke, in-line engine, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation by cams, valve operation by cams, liquid fuel

Cylinder bore [mm] : 260
Piston stroke [mm] : 320
No. of cylinders : 6, 8, 9, 12, 16

Additional place of production

Wärtsilä Qiyao Diesel Co., Ltd., Shanghai, China

Application/Limitation

Rated power [kW/cyl.]	340	325
Rated speed [rpm]	1000	900
Mean effective pressure [bar]	24	25.5
Max. firing pressure [bar]	210	210
Definition	cont.	cont.

The approval is valid to following duty types (as defined by Wärtsilä):

L/V26 : D/ D2/ D3 / F

L/V26 : D/ D2 in addition to pump drive application for power rating of 310 kW/cyl at 1000 rpm

L/V26 : D2/ D3/ F are equipped with variable inlet valve closure system (VIC)

L/V26 : D3 SCR Ready

Type Approval documentation

Tests carried out

Documentation:

Test report titel Type Testing Results, Wärtsilä 6L26B2, 9L26D, 12V26D, 16V26D2

Place of test Wärtsilä Italia S.p.A., Trieste, Italy

Date of test 2008-08-05 until 2008-08-07, 2008-10-27, 2008-11-4,
2009-07-16, 2012-03-22, 2013-03-06

Test engine:

Model 6L26B2, 9L26D, 12V26D, 16V26D2

Serial no. PAAE101924, PAAE105358, PAAE221509, PAAE103802, PAAE239015

No. of cylinders 6, 9, 12, 16

Power [kW/cyl.] 340 325

Speed [rpm] 1000 900

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

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.

Other Conditions

Engine safety, control and monitoring systems, including sensors, cables and actuators are not covered by this type approval certificate. Documentation for engine safety, control including speed governing and

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monitoring systems shall be submitted for approval. (DNV GL Rule Pt.4 Ch.9 Sec.1 Table 5 – Documentation requirements) and/or listed in relevant Type Approval certificates.

According to DNVGL Offshore Standard DNVGL-OS-D101 "Marine and Machinery Systems and Equipment", October 2012: The V-type engine Wärtsilä 26 A2/ D/ D2/ D3/ F are approved for use as drivers for generators for continuous duty and emergency generators onboard mobile offshore units given in application/limitation.

According to DNV's Offshore Service Specification DNVGL-SI-0166 "Verification for Compliance with Norwegian Shelf Regulations", October 2012: The design of engine type Wärtsilä L26 B2/ D/ D2/ D3/ F and Wärtsilä A26 is reviewed and found to comply with DNVGL-SI-0166 (NMD 856 §11.2, second bullet point stating 15 deg. , 1987-09-04) and are approved for use as drivers for generators for continuous duty onboard mobile offshore units, and emergency generators onboard jack-ups on the Norwegian Shelf given in application/ limitation.

According to DNV's Offshore Service Specification DNVGL-SI-0166 "Verification for Compliance with Norwegian Shelf Regulations", October 2012: The design of engine type Wärtsilä V26 A2/ D/ D2/ D3/ F is reviewed and found to comply with DNVGL-SI-0166 (NMD 856 §11, 1987-09-04) and are approved for use as drivers for generators for continuous duty and emergency generators onboard mobile offshore units on the Norwegian Shelf with data as given in application/limitation.

Approval according to DNVGL Statutory Interpretation DNVGL-SI-0166 "Verification for Compliance with Norwegian shelf regulations", July 2017:

The approval is valid for emergency use according to DNVGL-SI-0166(NMA856/87 §11) with data given in application/limitation and is valid for V type engines in combination with generators built according to the same construction principles as the tested Siemens 1DK4536-8AL05-7, Siemens 1DK4538-8AM05-Z and ABB AMG1120MR10LSE generators with regard to bearings and support.

Foundation arrangement to be submitted for each installation according to the DNV GL Rule Pt.4 Ch.3 Sec1/ [1.4] – Documentation of arrangement.

Torsional vibration calculations to be submitted for each installation according to the DNV GL Rule Pt.4 Ch.2 Sec.2 – Torsional Vibrations.

Signboards according to the DNV GL Pt.4 Ch.3 Sec.1 [2.3.6] – Warning Notice.

Flexible hoses with couplings to be type approved by DNV GL.

END OF CERTIFICATE