



Marine & Offshore
Division

Certificate number: 13978/C0 BV

File number: MOT 99/35

Product code: 0210I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to
AB VOLVO PENTA
Göteborg - SWEDEN

for the type of product
INTERNAL COMBUSTION ENGINES
D9

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.
BUREAU VERITAS Rules for the Classification of Naval Ships.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 10 Feb 2020

For BUREAU VERITAS,

At BV GOTHENBURG, on 10 Feb 2015,

Magne MOLLER



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=qk5qqar0v6>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

D 9

6 Cylinders in Line
Four stroke, Single acting
Bore X Stroke: 120 X 138 mm.

Identification of engine, engine denomination, approved rating, and applications are the following:

| MOT n° Engine Name | Application | Rating | Observation |
|-----------------------|----------------------|--------------------|-------------|
| MOT 99/35 D9 | Propulsion | 221 kW at 1800 rpm | Rating 1 |
| | | 261 kW at 1800 rpm | |
| | | 313 kW at 2200 rpm | Rating 2 |
| | | 313 kW at 2200 rpm | Rating 3 |
| | | 368 kW at 2600 rpm | Rating 4 |
| | Auxiliary/ Emergency | 278 kW at 1800 rpm | |
| | | 247 kW at 1500 rpm | |

2. DOCUMENTS AND DRAWINGS:

Crankshaft drawing N° 3161415 rev 7.

Other materials and/or components:

The following equipment are covered by this Certificate:

- Oil cooler: according to drawing 20365073
- Charge air cooler: according to drawing 3587248
- Vibration damper: according to drawing 888256

3. TEST REPORTS:

Type Test performed at Volvo Penta Laboratory (Sweden) from June 28 to July 02 2004 on Engine D9-500 (Engine N° 13625) for propulsion application at 2600 rpm ;
and on 7 and 8 December 2004 for Auxiliary and Emergency applications.

Inclination angle: These engines have been tested to an inclination angle of 30° athwartship and 10° fore and aft.

4. APPLICATION / LIMITATION:

4.1 - This Certificate applies to bare engines. If required by the Rules, each attached piece of equipment is to be either type-approved or design-appraised on a case-by-case basis. The equipment listed in 2 above does not need to be resubmitted for approval.

4.2 - Diesel engines intended for propulsion of ships, auxiliary and emergency prime mover.

4.3 - These engines are not allowed when duplication of oil pump or fresh water pump is required.

4.4 - This engine may be fitted on ships granted with an automation notation provided that all the requirements stated in our Rules are complied with.

4.5 - The engine shall be equipped with the parts listed in the manufacturer's Parts Catalog exclusively.

4.6 - The engine will be delivered with the relevant documentation for their maintenance and their operation.

4.7 - The initial survey made at the factory does not prejudice of any additional test or survey which may be required for some specific applications, in order to comply with the related Rules of the Society.

4.8 - The oil sump could be aluminium alloy material. The oil filter cartridge holder could be aluminium alloy material where steel encapsulated.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The engines are to be supplied by **AB VOLVO PENTA** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - Tests and trials as per the requirements of Part C, Chap. 1, Sec. 2 of BUREAU VERITAS Rules for the Classification of Steel (Naval) Ships, must be conducted.

5.5 - If required by the Rules, each attached piece of equipment is to be individually inspected at workshops by Society Surveyors (See NR 266 DT R02 E).

5.6 - The engine must be tested with all its final equipment accessories.

5.7 - The inspection made at the manufacturer's premises does not prejudice of any additional equipment which may be required for some specific applications, in order to comply with the related Rules of the Society.

6. MARKING OF PRODUCT:

Serial number.

Rated power and speed.

Application.

Date of workshop trial.

Bureau Veritas' Marks.

7. OTHERS:

7.1 - It is understood that the herewith mentioned manufacturer will give the shipyards and related subcontractors all the relevant information for the proper fitting and uses of the product covered in this Type Approval Certificate. This information has to include the conditions stated in the Certificate.

It is also understood that Bureau Veritas remains rightfully entitled to perform any check or test on the product at any time.

7.2 - Where subcontracting takes place, the manufacturer remains entirely and solely responsible for compliance of the supplied products with the applicable requirements.

7.3 - This certificate supersedes the Type Approval Certificate N° 13978/B1 BV issued on 03 Apr 2013 by the Society.

***** END OF CERTIFICATE *****