TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000KA

This is to certify:

That the Diesel Engine

with type designation(s)
D8

Issued to
AB Volvo Penta
Göteborg, Sweden

is found to comply with
DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal Combustion Engines

Application :

mechanical propulsion / auxiliary

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

This Certificate is valid until **21st June, 2022**.

Issued at **Høvik** on **22nd June, 2017**
DNV GL local station: **Gothenburg** for **DNV GL**

Approval Engineer: **Geir Olav Moen**

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, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, direct injection, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore :	110
Piston stroke :	135
No. of cylinders :	6

Additional place of production
not applicable

Application/Limitation

Rated power [kW/cyl.]	55.17	62.5	67.5
Rated speed [rpm]	2700	2850	2900
Mean effective pressure [bar]	19.1	20.5	21.7
Max. firing pressure [bar]	157	168	155
Definition	R3	R4	R4

Type Approval documentation

Tests carried out
Documentation:

Test report titel	Engineering Report
Place of test	Gothenburg, Sweden
Date of test	2017-03-23 until 2017-03-29

Test engine:

Model	D8 Marine
Serial no.	7008426825
No. of cylinders	6
Power [kW/cyl.]	405
Speed [rpm]	2900

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
Fundation 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 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 Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant type approval certificates.

Electric cables and cabling 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