



CERTIFICATE NUMBER

05-LD494767-1-PDA

DATE

30 March 2010

ABS TECHNICAL OFFICE

London Ship Engineering

# CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of  
**VOLVO PENTA AB - GOTEBOG**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate. It will remain valid as noted below or until the Rules or specifications used in the assessment are revised (whichever occurs first).

PRODUCT: Diesel Engine

MODEL: D9

ABS RULE: 2010 Steel Vessel Rules 1-1-4/7.7 and 4-2-1

OTHER STANDARD

AMERICAN BUREAU OF SHIPPING

Mark S Penfold  
Engineering Type Approval Co-ordinator

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

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**PRODUCT:**  
**Diesel Engine**

**MODEL:**  
**D9**

**Intended Service:**

For propulsion, auxiliary drives and emergency services for marine vessels.

**Description:**

Four-stroke, high speed, direct injection, turbo-charged, aftercooled, 6 cylinder in line , high speed diesel engine.  
Bore: 120 mm, Stroke: 138 mm.

**Ratings:**

See attachment

**Service Restriction:**

Unit Certification is required for this product.



**Comments:**

- 1) Torsional vibration analysis showing compliance with 4-3-2/7.5 of the Rules is required for each propulsion installation.
- 2) The fitting of Rule required protective devices is to be verified at installation on board a vessel or marine structure intended for, or in, class with the Bureau as well as the Rule required quantity of pump units depending on actual installation arrangements.
- 3) For engines intended to be used for emergency services, supplementary tests in accordance with regulations of the Administration whose flag the vessel flies may be required.
- 4) Products requiring witnessed testing by a Surveyor as part of their certification for use on a vessel, MODU, or facility classed by ABS, as defined in the applicable section of the Rules, will continue to require witnessed testing. Each engine produced in future where ABS certification is required is to be shop tested in the presence of our Surveyor as per 4-2-1/13.9 of the Rules.
- 5) Strength analysis for the engine supports and the seating arrangements should be submitted for review as per 4-2-1/1.9 of the Rules, on a case-by-case basis.

**Notes / Drawings / Documentation:**

This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

**Term of Validity:**

This product/model is covered under Product Design Assessment (PDA) Certificate # 05-LD494767-1-PDA, dated 30/Mar/2010. This PDA Certificate expires 29/Mar/2015. It will remain valid for 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first). It is valid for all vessels contracted on or before the date of the Rules used in this evaluation.

**VOLVO PENTA AB**  
**STANDARDS**

**ABS Rules:**

2010 Steel Vessel Rules 1-1-4/7.7 and 4-2-1

**National:**

NA

**International:**

NA

**Government Authority:**

NA

**EUMED:**

NA

**Others:**

NA





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D9					
Application	Marine Diesel Engine				
Operation	Propulsion Rating			Aux / Emergency Rating	
Speed	Power	MFP	Ratings	Power	MFP
1500	NA	NA	NA	247 kW	178 bar
1800	NA	NA	NA	278 kW	180 bar
	221 kW	178 bar	Rating 1	NA	NA
	261 kW	178 bar	Rating 1	NA	NA
2200	261 kW	181 bar	Rating 1	NA	NA
	313 kW	185 bar	Rating 2	NA	NA
	313 kW	185 bar	Rating 3	NA	NA
2600	368 kW	194 bar	Rating 4, (5*)	NA	NA

**MARINE COMMERCIAL RATINGS:**

**RATING 1 (Heavy Duty Commercial)**

For commercial vessels with displacement hulls in heavy operation. Load and speed could be constant, and full power can be used without interruption.

**RATING 2 (Medium Duty Commercial)**

For commercial vessels with semi planing or displacement hulls in cyclical operation. Full power could be utilized max 4 hour per 12 hour operation period. Between full load operation periods, engine speed should be reduced at least 10% from the obtained full load engine speed.

**RATING 3 (Light Duty Commercial)**

For commercial vessels or craft with high demands on speed and acceleration, planing or semi-planing hulls in cyclical operation. Full power could be utilized maximum 2 hour per 12 hour operation period. Between full load periods, engine speed should be reduced at least 10 % from the obtained full load engine speed.

**RATING 4 (Special Light Duty Commercial)**

For light planing craft in commercial operation. Recommended speed at cruising is 25 Knots. Full power could be utilized max 1 hour per 12 hour operation period. Between full load operation periods, engine speed should be reduced at least 10% from the obtained full load engine speed.

**RATING 5 (Special Light Duty Commercial)**

This power is intended for pleasure craft applications, and can be used for high speed planing crafts in commercial applications with special limited warranty, see warranty and service book.

**Prime Power**

For Gensets and Auxiliary engines with constant speed ratings. For continuous service-overloadable by 10% for one hour within an operating period of 12 hours.



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