



CERTIFICATE NUMBER

04-HG445260-2-PDA

DATE

29 November 2013

ABS TECHNICAL OFFICE

Hamburg Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
AB VOLVO PENTA - S-405 08 GOTEBORG

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.

PRODUCT: **Diesel Engine**

MODEL: **D5A T, D5A TA / D5A -B TA, D7A T, D7A TA / D7A -B TA, D7C TA / D7C -B TA.
(All Diesel engine types manufactured by Messrs. DEUTZ AG).**

This Product Design Assessment (PDA) Certificate 04-HG445260-2-PDA, dated 29/Nov/2013 remains valid until 28/Nov/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Wulf-Peter Senebald

Engineer

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).

Additional Product Details

Product: Diesel engines for propulsion, auxiliary drives and emergency services.

AB Volvo Penta (Engines manufactured by DEUTZ AG).

04-HG445260-2-PDA

In-line engines - Bore/Stroke: 108 mm/130 mm.

Diesel Engine Model	Number of Cylinders	MCR [kW]	RPM [min ⁻¹]	Mean Effective Pressure [bar]
D5A T	4	95	2300	10.4
		89	2100	10.7
		83	1900	11.0
		81	1800	11.4
		74	1500	12.4
		85	1800	11.9
		81	1500	13.6
D5A TA		118	2300	12.9
		110	2100	13.2
		103	1900	13.7
		100	1800	14.0
		91	1500	15.3
		105	1800	14.7
		97	1500	16.3
D7A T	6	145	2300	10.6
		134	2100	10.7
		126	1900	11.2
		123	1800	11.5
		111	1500	12.4
		128	1800	12.0
		122	1500	13.7
D7A TA		174	2300	12.7
		162	2100	13.0
		153	1900	13.5
		149	1800	13.9
		134	1500	15.0
		155	1800	14.5
		146	1500	16.4
D7C TA		195	2300	14.3
		182	2100	14.6
		169	1900	15.0
		163	1800	15.2
		142	1500	15.9

Diesel Engine Model	Number of Cylinders	MCR [kW]	RPM [min ⁻¹]	Mean Effective Pressure [bar]
D5A-B TA	4	92	1500	15.5
		100	1800	13.99
		89	1900	11.8
		102	2300	11.2
		103	1900	13.66
		118	2300	12.92
D7A-B TA	6	139	1500	15.6
		148	1800	13.8
		130	1900	11.5
		148	2300	10.8
		153	1900	13.52
		174	2300	12.7
D7C-B TA		146	1900	12.9
		166	2300	12.12
		169	1900	14.94
		195	2300	14.24
		182	2100	14.55

AB VOLVO PENTA

AVD 48870 Z1.1
S-405 08 GOTEORG
Sweden
Telephone: +46 31 322 0895
Email: mikael.borg@volvo.com

MA Certificate No. 13-GB2360146-X

Product: Diesel Engine

Model: D5A T, D5A TA / D5A -B TA, D7A T, D7A TA / D7A -B TA, D7C TA / D7C -B TA.
(All Diesel engine types manufactured by Messrs. DEUTZ AG).

Intended Service:

For propulsion, auxiliary drives and emergency services.

Description:

High speed, four stroke, single acting, direct injection, trunk piston, in-line, turbocharged Diesel engines with four (4) and six (6) cylinders.

Bore/ stroke: 108 mm/ 130 mm.

Diameter of pin/ journal: 68 mm/ 85 mm.

Crankshaft material: UTS = 850 N/mm².

Nominal alternating torsional stress: 47.8 N/mm².

MFP = 128.81 bar (Four cylinder versions).

MFP = 133.72 bar (Six cylinder versions).

Ratings:

For approved ratings click on link: "[Click here to view more details](#)".

Service Restrictions:

Unit Certification is required for this product in accordance with Section 4-1-1/Table 1 of the ABS Steel Vessel Rules.

Comments:

These engines that are manufactured by "DEUTZ AG" will require unit certification if they will have a rated power of 100 kW (135 Hp) or higher and are intended for propulsion or for auxiliary services essential for propulsion, maneuvering and safety. When used for emergency power or lifeboat propulsion additional SOLAS requirements may apply and any ABS Technical Office may be contacted for details.

The fitting of the Rule required protective devices is to be verified during installation on board a vessel or marine structure intended for or in class with the Bureau.

Diesel engine control, monitoring, alarm and safety systems shall be subject of individual case review.

Compliance with Section 4-1-1/Table 7 (Inclination requirements) confirmed by engine manufacturer.

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 Design Assessment (PDA) Certificate 04-HG445260-2-PDA, dated 29/Nov/2013 remains valid until 28/Nov/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

AB VOLVO PENTA

AVD 48870 Z1.1

S-405 08 GOTEBORG

Sweden

Telephone: +46 31 322 0895

Email: mikael.borg@volvo.com

MA Certificate No. 13-GB2360146-X

ABS Rules:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. The Rules applicable to this assessment are:

2013 Steel Vessel Rules 1-1-4/7.7, 1-1 Appendix 3, 4-1-1/Table 1 + 7, 4-2-1

National:

N.A.

International:

NA

Government Authority:

NA

EUMED:

NA

Others:

NA