



MARINE DIVISION

Certificate number: 11657/C0 BV

File number: MOT 93/163

Product code: 02101

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

DIESEL ENGINES Type: D5A T, D5A TA, D7A T, D7A TA and D7C TA

Requirements:

BUREAU VERITAS Rules for the Classification of Steel 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: 20 Dec 2018

For BUREAU VERITAS,

At BV HAMBURG, on 20 Dec 2013,

Adama Diene



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 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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

DIESEL ENGINES: D5A T, D5A TA, D7A T, D7A TA and D7C TA

4 and 6 Cylinders in Line
Four stroke, Single acting
Bore x Stroke: 108 x 130 mm.

Identification of engines, engines denomination, maximum approved ratings, and applications are the following:

File Number	Engine Name	Ratings	Particulars
MOT 93/163/1	D5A T	95 kW / 2300 rpm	(1) / (3)
MOT 93/163/1	D5A T	89 kW / 2100 rpm	(1) / (3)
MOT 93/163/1	D5A T	83 kW / 1900 rpm	(1) / (3)
MOT 93/163/1	D5A T	81 / 85 kW / 1800 rpm	(1) / (2) / (3)
MOT 93/163/1	D5A T	74 / 81 kW / 1500 rpm	(1) / (2) / (3)
MOT 93/163/2	D7A T	145 kW / 2300 rpm	(1) / (3)
MOT 93/163/2	D7A T	134 kW / 2100 rpm	(1) / (3)
MOT 93/163/2	D7A T	126 kW / 1900 rpm	(1) / (3)
MOT 93/163/2	D7A T	123 / 128 kW / 1800 rpm	(1) / (2) / (3)
MOT 93/163/2	D7A T	111 / 122 kW / 1500 rpm	(1) / (2) / (3)
MOT 93/163/3	D5A TA	118 kW / 2300 rpm	(1) / (3)
MOT 93/163/3	D5A TA	110 kW / 2100 rpm	(1) / (3)
MOT 93/163/3	D5A TA	103 kW / 1900 rpm	(1) / (3)
MOT 93/163/3	D5A TA	100 / 105 kW / 1800 rpm	(1) / (2) / (3)
MOT 93/163/3	D5A TA	91 / 97 kW / 1500 rpm	(1) / (2) / (3)
MOT 93/163/4	D7A TA	174 kW / 2300 rpm	(1) / (3)
MOT 93/163/4	D7A TA	162 kW / 2100 rpm	(1) / (3)
MOT 93/163/4	D7A TA	153 kW / 1900 rpm	(1) / (3)
MOT 93/163/4	D7A TA	149 / 155 kW / 1800 rpm	(1) / (2) / (3)
MOT 93/163/4	D7A TA	134 / 146 kW / 1500 rpm	(1) / (2) / (3)
MOT 93/163/5	D7C TA	195 kW / 2300 rpm	(1) / (3)
MOT 93/163/5	D7C TA	182 kW / 2100 rpm	(1) / (3)
MOT 93/163/5	D7C TA	169 kW / 1900 rpm	(1) / (3)
MOT 93/163/5	D7C TA	163 kW / 1800 rpm	(1) / (3)
MOT 93/163/5	D7C TA	142 kW / 1500 rpm	(1) / (3)

Particulars:

- (1) for Propulsion and Auxiliary (variable speed applications)
- (2) for Auxiliary (constant speed applications)
- (3) for Emergency application

2. DOCUMENTS AND DRAWINGS :

The reviewed drawings of the crankshafts are as follows:

Engine Name	Drawing Number	Rev.
D5A T, D5A TA	0420 9225 UA 0131-05, sheet 1-3	4
D7A T, D7A TA, D7C TA	0420 9230 UA 0131-05, sheet 1-3	4

3. TEST REPORTS :

Type test conducted at DEUTZ premises on 29 - 31 Aug, 2001 on Engine BF 6M 1013 MCP (D7C TA) Serial number 597229 with the rating of 195 kW/Cyl. at 2300 rpm; as per Test Report no. MN 597 229.

4. APPLICATION / LIMITATION :

- 4.1 Diesel engines intended for Ship Propulsion and Generating Set.
- 4.2 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.
- 4.3 These engines may be fitted on ships granted with an automation notation provided that all the requirements stated in our Rules are complied with. The documents required by the rules for these propose will have to be submitted and reviewed for each application.
- 4.4 The engines shall be equipped with the parts listed in the manufacturer's Parts Catalogue exclusively.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 The engines are to be supplied by the manufacturer 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 BUREAU VERITAS product certificate is required.
- 5.4 Arrangements shall be made for a Society's Surveyor to attend the tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme, BV Mode I, has been arranged, in order to issue the BUREAU VERITAS certificate for the units to be fitted on board ships classed with BUREAU VERITAS.
- 5.5 **DEUTZ AG, Köln/GERMANY** has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at following production site:
DEUTZ AG, Köln/GERMANY
- 5.6 The inspection made at the manufacturer 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.
- 5.7 Tests and trials, as per the requirements of Pt C, Ch 1, Sec 2 of BUREAU VERITAS Rules for the Classification of Steel Ships, must be conducted.
- 5.8 If required by the Rules, each attached piece of equipment is to be individually inspected at workshops by Society Surveyors.
- 5.9 The engine must be tested with all its final equipment accessories.

6. MARKING OF PRODUCT :

- Manufacturer's name or logo
- Engine Type
- Serial number
- Rated power and speed
- Application
- Date of workshop trial
- Date and location of final fitting
- BUREAU VERITAS' marks

7. OTHERS :

- 7.1 The engines will be delivered with the relevant documentation for their maintenance and their operation.
- 7.2 The following information must be provided for each delivery:
 - Actual rating
 - List of actual attached equipment
 - List of actual options

- 7.3 When required by the Rules, over speed tripping devices are to be submitted.
- 7.4 This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **DEUTZ AG, Köln/GERMANY** and **AB VOLVO PENTA, Göteborg /SWEDEN** will accept full responsibility for informing shipbuilders, ship owner or their subcontractors of the proper methods of use and general maintenance of the units and the conditions of this approval.
- 7.5 This Certificate supersedes the Type Approval Certificate N° 11657/B0 BV issued on 05 Sep 2007 by the Society.

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