

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000FA

This is to certify:

That the Diesel Engine

with type designation(s)
3500 B/ C

Issued to

Caterpillar, Inc.
IN Lafayette, United States

is found to comply with

**DNVGL Rules for Classification: Ships/ High Speed and Light Craft, DNV GL Offshore Standard
DNVGL-OS-D101, Marine and machinery systems and equipment**

Application :

propulsion / auxiliary / emergency

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **19th February, 2022.**

Issued at **Hamburg** on **20th February, 2017**

DNV GL local station: **New York**

for **DNV GL**

Approval Engineer: **Ralph Michael**

.....
Frank Lutz
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, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation by cams, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore : 170
Piston stroke : 190
No. of cylinders : 8,12,16

Additional place of production

Caterpillar Tianjin Ltd., Tianjin, China
Caterpillar India Pvt. Ltd. Power Systems Division, Hosur, India

Application/Limitation

Rated power [kW/cyl.]	121.31	121	102.58	107.31	91.83	81.13
Rated speed [rpm]	1835	1800	1600	1500	1200	1000
Mean effective pressure [bar]	18.4	19.7	17.84	19.9	21.29	22.57
Max. firing pressure [bar]	-	-	-	-	-	-
Definition	-	-	-	-	-	-

Type Approval documentation

Tests carried out

Documentation:
Test report title Type test report 3516B, 3508C
Place of test Lafayette, Indiana U.S.A.
Date of test 1998-03-02, 2010-04-20

Test engine:
Model 3516B, 3508C
Serial no. 8KN00231, TTB00418
No. of cylinders 16, 8
Power [kW/cyl.] 121.2, 102.5
Speed [rpm] 1835, 1600

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

Engine safety, control and monitoring systems, including sensors, cables 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 DNV GL Rule Pt.4 Ch.9 Sec.1

Capability of redundancy, e.g. connection for service of independent stand-by pump on engine with mechanically driven pump for a single propulsion application is not covered by this type approval certificate. Documentation for an individual ship project shall be submitted for approval according to DNV GL Rule Pt.4 Ch.6 Sec.5 / Item 1-1.1, Pt.4 Ch.1 Sect.3/ Item 2-2.3



Job Id: **262.1-002133-11**
Certificate No: **TAM00000FA**

END OF CERTIFICATE