DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000SS

This is to certify:

That the Diesel Engine

with type designation(s)
S16R2-T2MPTK/-T2MPTAW

Issued to
Mitsubishi Heavy Industries Engine and Turbocharger Ltd
Sagamihara, Japan

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

Application :

Propulsion, multi engine plant / auxiliary

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

This Certificate is valid until **10th January, 2023**.

Issued at **Høvik** on **11th January, 2018**
DNV GL local station: **Rotterdam** for **DNV GL**

Approval Engineer: **Dag Harald Williksen**

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.

Job Id: **262.1-013191-2**
Certificate No: **TAM00000SS**

Product description
Four stroke, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, direct injection, valve operation by cams, liquid fuel

Cylinder bore :	170
Piston stroke :	220
No. of cylinders :	16

Additional place of production
MHI MEA, Mulhouse, France
Mitsubishi Turbocharger and Engine Europe B.V., Almere, Netherlands

Application/Limitation

Rated power [kW/cyl.]	1590	1450	1600	1960
Rated speed [rpm]	1200	1350	1400	1500
Mean effective pressure [bar]	19.9	16.1	17.2	19.6
Max. firing pressure [bar]	131	114	122	142

Ratings which are lower than the above given ratings are also covered by this approval

Type Approval documentation

Tests carried out
Documentation:

Test report titel	Report S16R2-T2MPTAW
Place of test	MHI Equipment Europa B.V. Almere
Date of test	2012-11-27 until 2012-11-29

Test engine:

Model	S16R2
Serial no.	30038
No. of cylinders	16
Power [kW] @ Speed [rpm]	1960 kW @ 1500 rpm

Marking of product
The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment
For retention of the Type Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases 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
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 the Rules Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant type approval certificates.

Electric cables and installation of this 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