

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000E6

This is to certify:

That the Diesel Engine

with type designation
H21/32

Issued to

Hyundai Heavy Ind. Co., Ltd.
Ulsan, Korea (South)

is found to comply with

DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal Combustion Engines

Application :

Mechanical Propulsion / Auxiliary

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

This Certificate is valid until **30th January, 2022.**

Issued at **Høvik** on **31th January, 2017**

DNV GL local station: **DNVGL Ulsan**

for **DNV GL**

Approval Engineer: **Geir Olav Moen**

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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.

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Product description

Four stroke, in-line engine, non-reversible, trunk-piston, with supercharging

Cylinder bore : 210
Piston stroke : 320
No. of cylinders : 5, 6, 7, 8, 9

Application/Limitation

Rated power [kW/cyl.]	160	160	175	175	200	200	220
Rated speed [rpm]	720	750	720	750	900	1000	900
Mean effective pressure [bar]	24.06	23.1	26.3	25.3	24.06	21.65	26.5
Max. firing pressure [bar]	200	200	210	210	200	200	210

Tests carried out

Documentation:
Test report title Type Approval Test HiMSEN Engine H21/32
Place of test Ulsan, Rep. of Korea
Date of test 2002-10-21 until 2002-10-23

Test engine:
Model H21/32
Serial no. BE0006
No. of cylinders 6

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

Foundation arrangement to be submitted for each installation according to the Rules Pt.4 Ch.3 Sec.1 [1.4]
– Documentation of arrangement.

Torsional vibration calculations to be submitted for each installation according to the Rules Pt.4 Ch.2 Sec.2 – Torsional Vibration.

Signboards according to the Rules Pt.4 Ch.3 Sec.1 [2.3.6] – Warning Notice.
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



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the requirement of the Rules Pt.4 Ch.8 - Electrical Installation.

END OF CERTIFICATE