DNV·GL

# TYPE APPROVAL CERTIFICATE

Certificate No:
**TAM00000TY**

## This is to certify:

**That the Diesel Engine**

with type designation
**H17/28**

Issued to
**Hyundai Heavy Ind. Co., Ltd. Engine & Machinery Division**
**- Ulsan, Republic of Korea**

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

## Application :

Multi engine plant: mechanical propulsion, auxiliary

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **31st December, 2022**.

Issued at **Høvik** on **23rd May, 2018**
DNV GL local station: for **DNV GL**

Approval Engineer: **Tage Olav Alexander Strøm**

**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: **262.1-006238-5**
Certificate No: **TAM00000TY**

## Product description
Four stroke, in-line engine, non-reversible, trunk-piston, with supercharging, pulsating pressure charging system, direct injection, injection operation by cams, valve operation by cams, liquid fuel

| | |
|---|---|
| Cylinder bore : | 170 |
| Piston stroke : | 280 |
| No. of cylinders : | 5,6,7,8 |

## Additional place of production
not applicable

## Application/Limitation

| | | | | |
|---|---|---|---|---|
| Rated power [kW/cyl.] | 115 | 120 | 125 | 125 |
| Rated speed [rpm] | 900 | 1000 | 900 | 1000 |
| Mean effective pressure [bar] | 24.1 | 22.7 | 26.2 | 23.6 |
| Max. firing pressure [bar] | 170 | 170 | 180 | 180 |

## Type Approval documentation

## Tests carried out
Documentation:

| | |
|---|---|
| Test report titel | Type Approval Test report Himsen Engine H17/28 (B99-230590-4) |
| Place of test | Ulsan, Korea |
| Date of test | 2004-12-14 until 2004-12-16 |

Test engine:

| | |
|---|---|
| Model | H17/28 |
| Serial no. | BE0009 |
| No. of cylinders | 8 |
| Power [kW/cyl.] | 115 |
| Speed [rpm] | 900 |

## 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 2.5 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 Vibrations.

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

Flexible hoses with couplings 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 - Documentation requirements.

Electric cables and cabling are not covered by this approval and must be verified to comply to the rules Pt.4 Ch.8 - Electrical Installation.

END OF CERTIFICATE