DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM00000UT

This is to certify:

That the Gas Engine

with type designation
L30KG

Issued to
Kawasaki Heavy Industries, Ltd. Kobe Works
- Kobe, Japan

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: propulsion, auxiliary

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

This Certificate is valid until **30th June, 2023.**
Issued at **Høvik** on **15th March, 2018**
DNV GL local station: **Kobe** 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.

Product description
Four stroke, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant-pressure charging system, indirect injection, injection operation electronically controlled, valve operation by cams, gaseous fuel

Cylinder bore [mm]	300
Piston stroke [mm]	480
No. of cylinders	5, 6, 7, 8, 9

Place of production
Kawasaki Heavy Industries, Ltd. Kobe Works, Kobe, Japan

Application/Limitation

Rated power [kW/cyl.]	445
Rated speed [rpm]	750
Mean effective pressure [bar]	21

Type Approval documentation

Tests carried out
Documentation:

Test report titel	91001-16052 R01
Place of test	Kobe, Japan
Date of test	2014-02-25 until 2014-02-27

Test engine:

Model	L30KG
Serial no.	8534
No. of cylinders	6
Power [kW/cyl.]	445
Speed [rpm]	750

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 after the issue date of the Type Approval Certificate 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.

The explosion protection of the gas admission valves does not comply with the hazardous area zone definition of the IGF Code, paragraph 12.5.1 and -2. For installation of engines on ships subject to that Code, proof of suitability for the intended use, either by (a) explosion protection certification, or (b) any other suitable measures in addition to the existing explosion protection level of the valve, shall be documented in the safety concept and approved accordingly. Additional measures (b) are subject to final acceptance by the relevant flag state administration for ships subject to the IGF Code.

END OF CERTIFICATE