TYPE APPROVAL CERTIFICATE

Certificate No:
TAM0000168

This is to certify:

That the Gas Engine

with type designation
B36:45

Issued to
Bergen Engines AS
Hordvik, Norway

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

Application :

Propulsion, multi engine plant / auxiliary

The approval is valid for inherently safe and emergency shutdown (ESD) machinery spaces.

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

Issued at **Høvik** on **12th October, 2021**
This Certificate is valid until **11th October, 2026**.

DNV local station: **Bergen**

for **DNV**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description
Four stroke, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, injection operation by cams, valve operation by cams, gaseous fuel

Cylinder bore [mm]	360
Piston stroke [mm]	450
No. of cylinders	6, 8, 9 in-line

Application/Limitation
The approval is valid for propulsion and auxiliary duty:

Rated power [kW/cyl.]	576	600
Rated speed [rpm]	720	750
Mean effective pressure [bar]	21,0	21,0
Max. firing pressure [bar]	170	170

Type Approval documentation

Tests carried out
Documentation:

Test report title	Summary of observations and registrations from type test of B36:45L
Place of test	Hordviknesset, Bergen
Date of test	23 to 25 June 2020

Test engine:

Model	B36:45L6-PG
Serial no.	23008
No. of cylinders	6
Power [kW] @ Speed [rpm]	3600 @ 750

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.

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, the periodical assessment shall be carried out randomly at these companies.

Other Conditions
Flexible hoses to be type approved by DNV.

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