DNV·GL

Certificate No:
TAM000007K

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designation(s)
QSK38, QSK50

Issued to
Cummins Inc.
North Charleston SC, United States

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.3 Sec.1 Reciprocating internal combustion engines
DNV's Offshore Standard DNV-OS-D101 "Marine and Machinery Systems and Equipment"

Application :

The approval is valid for propulsion in multi engine plants, auxiliary and emergency duty according to DNV GL Rules for ships Pt.4 Ch.3 Sec.1 and for use onboard mobile offshore units of surface units type when installed in longitudinal direction according to DNVGL-OS-D101, Ch.2 Sec.1 [2.2].

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

Type	Rating
QSK38	See page 2
QSK50	See page 2

This Certificate is valid until **2021-06-30**.

Issued at **Høvik** on **2016-12-20**
DNV GL local station: **New York** 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.

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Job Id:
Certificate No: **TAM000007K**

Product description

4 - Stroke Diesel Engine

Cylinder bore: 159 mm
Piston stroke: 159 mm
No. of cyl.: 12 (QSK38) and 16 (QSK50) in-V

Manufacturing plant:
Daventry Engine Plant (DAV), Daventry, England

Application/Limitation

The approval is valid for propulsion in multi engine plants, auxiliary and emergency duty based on the following main data:

Propulsion:	QSK38-M1		
Mean eff.press (bar):	20,7	18,5	17,4
Max.cyl. press (bar):	153	155	154
Rated cont.output (kW):	1044	1044	1044
Corr. to (RPM):	1600	1800	1900

Rated output below the above stated is also approved.

Propulsion:	QSK50-M1		
Mean eff.press (bar):	19,9	20,2	20,6
Max.cyl. press (bar):	156	154	163
Rated cont.output (kW):	1342	1529	1641
Corr. to (RPM):	1600	1800	1900

Rated output below the above stated is also approved.

Auxiliary/Emergency:	QSK38-DM1		QSK50-DM1	
Mean eff.press (bar):	20,9	18,5	20,4	21,7
Max.cyl. press (bar):	141	151	146	164
Rated cont.output (kW):	984	1044	1291	1641
Corr. to (RPM):	1500	1800	1500	1800

Rated output below the above stated is also approved.

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.

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 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.

When a Type Approved product is manufactured at other companies, the Type Approval applicant takes the sole responsibility for the conformity of the product to the applicable requirements.

Other conditions

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

END OF CERTIFICATE