DNV·GL

Certificate No:
TAM0000091

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designation(s)
N45 MNA M10, N67 MNA M15, N67 MNS M22, N67 MNT M28

Issued to
Frydenbø Industri AS
HAUGLANDSHELLA, Norway

is found to comply with
IMO Resolution MSC. 81(70) Testing of Lifesaving Appliances
DNV-OS-E406 Design of Free Fall Lifeboats

Application :

The approval is valid for propulsion of free fall lifeboats.

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

Rating **See page 2.**

This Certificate is valid until **2021-06-08**.

Issued at **Høvik** on **2016-06-09**

for **DNV GL**

DNV GL local station: **Bergen**

Approval Engineer: **Tin Nguyen**

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: **262.1-012222-4**
Certificate No: **TAM0000091**

Product description

Engine series: NEFM-LBFF-E406
Four stroke diesel engine with reduction gear.

Cylinder bore : 102 mm
Piston stroke : 132 mm
No. of cylinders : 4 and 6

ENGINE MODEL	MAX RATING (kW)	MAX ENGINE SPEED (RPM)	GEARBOX
N45 MNA M10	74	2800	ZF45 A, ZF45 C, ZF45 IV, ZF45-1, ZF45-1 IV
N67 MNA M15	110		ZF45 A, ZF45 C, ZF45 IV, ZF45-1, ZF45-1 IV, ZF63, ZF63 A, ZF63 C, ZF63 IV
N67 MNS M22	162		ZF85 A, ZF85 IV, ZF220, ZF220 A, ZF280 IV, ZF280-1, ZF280-1A
N67 MNT M28	206		

Application/Limitation

The approval is valid for propulsion of free fall lifeboats acording to DNV-OS-E406, Section 7 E401,E402, Section 11 A1101 (first sentence), A1102, A1104, A1105, A1106, A1107, A1112 and A1113.

Tests carried out

Engine model N67 MNT M28 – Test carried out 2008-06-18, attended by DNV Bergen.
Engine model N67 MNT M28 – Cold start test carried out 2008-06-09, attended by DNV Bergen
Test report for compliance with DNV -OS-E406 dated 2012-01-13
Engine inspection report after DNV-OS-406 test dated 2012-01-13

Marking of product

The product to be marked with the manufacturer's name or trademark and type number identification.

Periodical assessment

For retention of the Type Approval, DNV GL shall perform a Periodical Assessment every second year and before the expiry date of this 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, these are also subject to periodical assessment.

END OF CERTIFICATE