Certificate No:
TAM000004Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine
with type designation(s)
DI 13 M
Issued to

Scania CV AB (Publ)

Södertälje Stockholms Län, Sweden
is found to comply with
DNV GL rules for classification – Ships

Application :

The approval is valid for propulsion, auxiliary and emergency duty.
Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.
Rating **see page 2**

This Certificate is valid until **2020-12-31**.

Issued at **Høvik** on **2016-01-12**
DNV GL local station: **Stockholm**
Approval Engineer: **Tage Olav Alexander Strøm** for **DNV GL**

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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Product description

Four stroke diesel engine
Cylinder bore : 130 mm
Piston stroke : 160 mm
No. of cylinders : 6 in-line

Application/Limitation

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

Engine model:	DI 13 M				
Propulsion	Auxiliary/emergency				
Mean indicated pressure (bar) :	26.2	-	-	-	-
Max. cylinder pressure (bar) :	202	-	-	-	-
Rated continuous output (kW) :	551	405	405	426 (+10%)	426 (+10%)
Corresponding to (RPM) :	2300	1800	2100	1500	1800

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, 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.

The main scope of the assessment normally includes:

- Verification of the company's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the TA documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

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

Torsional vibration calculations to be submitted for each installation according to the DNV GL Rules Pt. 4,Ch. 3, Sec. 1, [1.4] Documentation of arrangement.
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 Pt.1 Ch.3 Sec.3 [I020] Control System functional Description.
Electric cables and installation of this is not covered by this approval and must be verified to comply with the requirement of DNV Rules for Ships/ High, Speed Light Craft and Naval Surface Craft DNV GL Pt.4 Ch.8 - Electrical Installation.
Flexible hoses with couplings to be type approved by DNV.
NV product certificate is not required for engines intended for emergency/auxiliary duty where engine power is less than 200kW. The engine shall be delivered with makers statement of compliance with the Type Approval.
The approval does not include driven member.
END OF CERTIFICATE