



Certificate No. 02-002828/024830

## TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

### DIESEL ENGINE, type DI13 M

MANUFACTURER:



SE-151 87 Södertälje  
Sweden

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

**CRS: Rules for the classification of ships, Part 9. - Machines.**

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2023-12-16**

Place and date: Split, 2019-11-08

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

**DETAILED PRODUCT DESCRIPTION:**

**4-stroke, single acting diesel engine**

**Cylinder bore: 130 mm**  
**Piston stroke: 160 mm**  
**Cylinder number: 6(L)**  
**Compression ratio: 16,3:1**

**APPLICATION / LIMITATIONS:**

<b>MCR (kW)</b>	<b>speed (rpm)</b>	<b>service</b>
405	1800	propulsion continuous
680	2100	propulsion continuous
426	1500	auxiliary/ emergency
426	1800	auxiliary/ emergency
551	2300	propulsion non-continuous

**Engines in auxiliary and emergency service are over loadable with 10% of power.**

**TYPE APPROVAL DOCUMENTATION:**

**Drawings and calculations approved by CRS with letter: 2327/TS/IA/023161 (2011-12-16)**  
**2555/TSE/IA/024489 (2018-11-16)**

**MARKING OF PRODUCT:**

- **manufacturer's mark**
- **location and year of final fitting**
- **CRS mark**

**CONDITIONS FOR CERTIFICATION:**

**Minimal tensile strength of crankshaft material is 850 MPa.**

**Signalization and protection related to the engine shall be subject to CRS approval in each particular case and will depend on service applied and the degree of automation of the engine plant.**

**Must not be used when duplication of cooling water pump is requested.**

**Torsional vibration calculation shall be submitted for each installation in accordance with the Rules of CRS.**