



Certificate No. 02-003363/025337

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 S2000 CR**

MANUFACTURER:

ROLLS-ROYCE SOLUTIONS GmbH

**Maybachplatz 1
88045 Friedrichshafen
Germany**

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: **2025-10-10**

Place and date: **Split, 2021-08-16**

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:

<i>Number of cylinders</i>	8, 10, 12, 16
<i>Cylinder arrangement</i>	Vee (V-angle 90°)
<i>Working cycle</i>	4- stroke
<i>Cylinder bore (mm)</i>	135
<i>Stroke (mm)</i>	156
<i>Kind of fuel</i>	Liquid
<i>Fuel injection system</i>	Electronically controled, common rail, direct injection
<i>Valve operation</i>	Cam control
<i>Turbocharging system</i>	Constant pressure, wih charge air cooling

APPLICATION / LIMITATIONS:

Application: Propulsion engine

<i>Rated power (kW/cyl.)</i>	110,2	121,2
<i>Rated speed (rpm)</i>	2450	2450
<i>Mean indicated pressure (bar)</i>	26,8	29,5
<i>Mean effective pressure (bar)</i>	24,2	26,6
<i>Max firing pressure (bar)</i>	200	200
<i>Application / Rating</i>	With overload capability	Without overload capability

Power ratings (at the same rated speed) lower than those stated is accepted as long as they are within the values approved by engine designer.

TYPE APPROVAL DOCUMENTATION:

Approved by the Croatian Register of Shipping with letter No.(dated):

871/TS/IA/023439 (2013-04-26)
 1630/TS/IA/023485 (2013-07-18)
 2210/TS/IA/023505 (2013-10-11)
 1797/TSE/IA/024178 (2017-08-08)

MARKING OF PRODUCT:

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

CONDITIONS FOR CERTIFICATION:

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.