



Certificate No. 02-005280/026930

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:

EXHAUST GAS TURBOCHARGERS series B2, S200, S300, S330, S410, S430, S510

MANUFACTURER:

BORGWARNER TURBO SYSTEMS
1849 Brevard Road
Arden NC 28704
USA

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: **2030-01-28**

Place and date: Split, 2026-01-28

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:

Radial flow, exhaust driven turbochargers (Category A) for installation on marine internal combustion engines.

APPLICATION / LIMITATIONS:

The turbochargers (Category A) are intended to be used on internal combustion engines with power (MCR) per cylinder group less than 1000 kW.

The turbochargers are approved for use on internal combustion engines with application data as given in table below.

The turbochargers are to be fitted on internal combustion engines in accordance with the engine manufacturer instructions.

The air inlet of turbochargers shall be fitted with a filter.

Turbocharger Qualified Limits:

<i>Serie</i>	<i>Turbine Wheel Diameter (mm)</i>	<i>Compressor Wheel Diameter (mm)</i>	<i>Max Speed (rpm)</i>	<i>Max Temp. (°C)</i>	<i>Design Lub. Oil Pressure (bar)</i>	<i>Minimum Lub. Oil Pressure (bar)</i>	<i>Maximum Pressure Ratio</i>
<i>B2</i>	<i>70</i>	<i>76</i>	<i>122,850</i>	<i>689</i>	<i>3.4</i>	<i>1.36</i>	<i>3.40</i>
<i>S200</i>	<i>58</i>	<i>67</i>	<i>159,000</i>	<i>680</i>	<i>3.4</i>	<i>1.36</i>	<i>3.86</i>
<i>S300</i>	<i>74</i>	<i>83</i>	<i>120,000</i>	<i>680</i>	<i>3.4</i>	<i>1.36</i>	<i>3.86</i>
<i>S330</i>	<i>76</i>	<i>87</i>	<i>115,525</i>	<i>703</i>	<i>3.4</i>	<i>1.36</i>	<i>3.80</i>
<i>S330</i>	<i>76</i>	<i>83</i>	<i>120,000</i>	<i>680</i>	<i>3.4</i>	<i>1.36</i>	<i>3.50</i>
<i>S410</i>	<i>96</i>	<i>105</i>	<i>90,000</i>	<i>680</i>	<i>3.4</i>	<i>1.36</i>	<i>3.10</i>
<i>S410</i>	<i>83</i>	<i>96</i>	<i>103,000</i>	<i>736</i>	<i>3.4</i>	<i>1.36</i>	<i>3.50</i>
<i>S410</i>	<i>80</i>	<i>91</i>	<i>117,000</i>	<i>736</i>	<i>3.4</i>	<i>1.36</i>	<i>3.80</i>
<i>S430</i>	<i>83</i>	<i>95</i>	<i>117,800</i>	<i>758</i>	<i>3.4</i>	<i>1.36</i>	<i>3.90</i>
<i>S510</i>	<i>110</i>	<i>120</i>	<i>75,100</i>	<i>599</i>	<i>3.4</i>	<i>1.36</i>	<i>3.40</i>
<i>S510</i>	<i>100</i>	<i>110</i>	<i>105,000</i>	<i>680</i>	<i>3.4</i>	<i>1.36</i>	<i>3.80</i>

TYPE APPROVAL DOCUMENTATION:

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

194/TSEv/KF/026930

(2026-01-28)

MARKING OF PRODUCT:

- *manufacturer's mark*
- *type or model identification*
- *serial number*
- *location and year of final fitting*

CONDITIONS FOR CERTIFICATION:

Turbochargers are categorized in three categories depending on power (MCR) served by each turbocharger:

Category A: ≤ 1000 kW,

Category B: > 1000 kW and ≤ 2500 kW

Category C: >2500 kW.

Turbochargers shall be delivered with a product certificate issued by the manufacturer (category B) or by the class society (category C). For turbochargers of category A, certificates are not mandatory.