



Certificate No. 02-002907/024940

## 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:

### Marine Reduction Gearboxes for Diesel Engine Propulsion ZF 50xx family

MANUFACTURER:

**ZF Friedrichshafen AG**  
Marine & Special Driveline Technology  
Ehlersstraße 50  
88046 Friedrichshafen  
Germany

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

### 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: **2024-02-19**

Place and date: Split, 2020-02-19

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:**

Marine reduction gearboxes ZF 5000, ZF 5050, ZF 5055, ZF 5060 (NR, NR2, D) with built-in hydraulic clutches and with/without reversing stage.

**APPLICATION / LIMITATIONS:**

Approved ratings according to ZF selection guide:

<b>Continuous Duty, commercial use, single propulsion</b>				
<b>Model</b>	<b>MCR</b>	<b>RPM</b>	<b>Torque</b>	<b>Ratios</b>
ZF 5000 (NR, NR2, D)	1099kW	2000	5249Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5050 (NR, NR2, D)	1264kW		6034Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5055 (NR, NR2, D)	1466kW		7001Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1;
	1375kW		6570Nm	2.963:1;

<b>Medium Duty, commercial use, single propulsion</b>				
<b>Model</b>	<b>MCR</b>	<b>RPM</b>	<b>Torque</b>	<b>Ratios</b>
ZF 5000 (NR, NR2, D)	1734kW	2600	6369Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5050 (NR, NR2, D)	1941kW		7130Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5055 (NR, NR2, D)	2316kW		8505Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1;
	2155kW		7914Nm	2.963:1;

<b>Light Duty, commercial use, multiple propulsion</b>				
<b>Model</b>	<b>MCR</b>	<b>RPM</b>	<b>Torque</b>	<b>Ratios</b>
ZF 5000 (NR, NR2, D)	1952kW	2600	7170Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5050 (NR, NR2, D)	2381kW		8744Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1;
	2227kW		8179Nm	2.963:1;
ZF 5060 (NR, NR2, D)	2532kW		9299Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1;
	2443kW		8973Nm	2.731:1;
	2227kW		8179Nm	2.963:1;

<b>Pleasure Duty, private use, single propulsion</b>				
<b>Model</b>	<b>MCR</b>	<b>RPM</b>	<b>Torque</b>	<b>Ratios</b>
ZF 5000 (NR, NR2, D)	2194kW	2600	8060Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1; 2.963:1;
ZF 5050 (NR, NR2, D)	2453kW		9010Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1;
	2348kW		8624kW	2.963:1;
ZF 5060 (NR, NR2, D)	2612kW		9592Nm	1.256:1; 1,526:1; 1.771:1; 2.031:1; 2.233:1; 2.500:1; 2.731:1;
	2379kW		8738Nm	2.963:1;

*The approval status is based on application factor 1,30.*

**TYPE APPROVAL DOCUMENTATION:**

*Drawings and calculations approved by CRS with letters:*

361/023865/TSE/IA/023865 (2016-02-19)  
409/024940/TSEv/KF/024940; (2020-02-19)

**MARKING OF PRODUCT:**

- *manufacturer's mark*
- *serial No.*
- *location and year of manufacturing*
- *CRS mark*

**CONDITIONS FOR CERTIFICATION:**

*The manufacturer shall make arrangements for the CRS Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits in case an alternative survey scheme has been approved. Relevant CRS certificate for each particular reduction gearbox will be issued after satisfactory completion of the procedure.*

*Measuring devices, sensors and alarms shall be subject to CRS approval in each particular case and will depend on service applied and the degree of automation of the propulsion plant.*