

**POTVRDA O TIPNOM ODOBRENJU**
TYPE APPROVAL CERTIFICATEBr /No **02-002077/023865**

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za klasifikaciju brodova, Dio 1. - Opći propisi, Odjeljak 3. - Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenja pod nadzorom Hrvatskog registra brodova.

This is to certify that this product, on the basis of the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.

TIP I OPIS PROIZVODA:

TYPE AND DESCRIPTION OF PRODUCT:

Brodski reduktori za dizelski poriv – serija ZF 50xx
*Marine Reduction Gearboxes for Diesel Propulsion – ZF 50xx family*PROIZVOĐAČ:
MANUFACTURER:**ZF Friedrichshafen AG**Marine Propulsion Systems
Ehlersstraße 50
88046 Friedrichshafen
GermanyPROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:
THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:**HRB: Pravila za klasifikaciju brodova, Dio 9. - Strojevi.**
*CRS: Rules for the classification of ships, Part 9. - Machines.*DETALJI O PROIZVODU I UVJETIMA CERTIFIKACIJE DANI SU NA POLEĐINI.
FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.ODOBRENJE VRIJEDI DO: **2020-02-19**
APPROVAL IS VALID UNTIL:Mjesto i datum: **Split, 2016-02-19**
Place and date:M.P.
(Seal)

Marinko Popović, dipl.ing.

NAPOMENA: Ova potvrda nije valjana ako se proizvod ili način njegove proizvodnje promijenio u odnosu na tipno ispitani proizvod. Proizvođač treba obavijestiti Hrvatski registar brodova o bilo kojoj izmjeni na proizvodu kako bi ishodio valjanu potvrdu.

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.

PODROBNIJI OPIS PROIZVODA:
DETAILED PRODUCT DESCRIPTION:

Brodski reduktori ZF 5000, ZF 5050, ZF 5055, ZF 5060 (NR, NR2, D) sa ugrađenom hidrauličkom spojkom sa ili bez prekreta.

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

PODRUČJE PRIMJENE / POSEBNI GRANIČNI UVJETI:
APPLICATION / LIMITATIONS:

Odobreno za pogonski faktor $K_A = 1,30$.

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

Continuous Duty, commercial use, single propulsion				
Model	MCR	RPM	Torque	Ratios
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;	

Medium Duty, commercial use, single propulsion				
Model	MCR	RPM	Torque	Ratios
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;	

Light Duty, commercial use, multiple propulsion				
Model	MCR	RPM	Torque	Ratios
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;

PODRUČJE PRIMJENE / POSEBNI GRANIČNI UVJETI:
APPLICATION / LIMITATIONS:

Odobreno za pogonski faktor $K_A = 1,30$.

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

Pleasure Duty, private use, single propulsion				
Model	MCR	RPM	Torque	Ratios
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;

DOKUMENTACIJA ZA TIPNO ODOBRENJE:
TYPE APPROVAL DOCUMENTATION:

Nacrti i proračuni odobreni od HRB dopisom:

361/023865 (2016-02-19)

Drawings and calculations approved by CRS with letter:

OZNAČAVANJE PROIZVODA:
MARKING OF PRODUCT:

- | | |
|--------------------------|--------------------------------------|
| - oznaka proizvođača | - manufacturer's mark |
| - serijski broj | - serial No. |
| - mjesto i godina izrade | - location and year of manufacturing |
| - oznaka HRB | - CRS mark |

UVJETI ZA CERTIFIKACIJU:
CONDITIONS FOR CERTIFICATION:

Proizvođač mora organizirati prisustvo inspektora Registra pregledu i ispitivanju u tvornici ili se mora obaviti odgovarajući pregled ako se odobri alternativni način prihvata. HRB Potvrda za svaki pojedini reduktor izdat će se nakon zadovoljavajućeg završetka postupka.

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.

Raščlana

09.04.02

Zamjenjuje potvrdu

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