

**POTVRDA O TIPNOM ODOBRENJU**  
**TYPE APPROVAL CERTIFICATE****Br /No**      **02-001495/023104**

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 3000***Marine Reduction Gearboxes for Diesel Propulsion – ZF 3000 family***PROIZVOĐAČ:**  
*MANUFACTURER:***ZF Friedrichshafen AG**

Marine Propulsion Systems

Ehlersstraße 50

88046 Friedrichshafen

Germany

**PROIZVOD UDOVOLJAVA SLJEDEĆIM 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: 2015-05-30***APPROVAL IS VALID UNTIL:***Mjesto i datum: Split, 2011-05-30***Place and date:***M.P.***(Seal)***Goran Begović, 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.*

**PODROBNJI OPIS PROIZVODA:**  
**DETAILED PRODUCT DESCRIPTION:**

**Brodski reduktori ZF 3000, ZF 3050, ZF 3055, ZF 3060 (NR, NR2) sa ugrađenom hidrauličkom spojkom sa ili bez prekreta.**

*Marine reduction gearboxes ZF 3000, ZF 3050, ZF 3055, ZF 3060 (NR, NR2) with built-in hydraulic clutches and with/without reversing stage.*

**PODRUČJE PRIMJENE / POSEBNI GRANIČNI UVJETI:**  
**APPLICATION / LIMITATIONS:**

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

**Broj okretaja je 2100 o/min za trajno, srednje i lako opterećenje, odnosno 2300 o/min za luksuznu upotrebu.**

**Prijenosni omjeri su 1,093 1,250 1,441 1,500 1,563 1,645 1,700 1,733 1,800 1,828 2,037 2,154 2,240 2,375 2,500 2,609 2,773 2,952 osim gdje je označeno\*.**

**Model ZF 3055 za srednja opterećenja MCR 1157 kW i moment 5261 Nm ne uključuje omjer 2,952, a model ZF 3055 za srednja opterećenja MCR 1120 kW i moment 5093 Nm je sa prijenosnim omjerom 2,952 (\* u tablici).**

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

*Values of RPM are 2100 for Continuous, Medium and Light Duty, and 2300 for Pleasure Duty.*

*Ratios included are 1,093 1,250 1,441 1,500 1,563 1,645 1,700 1,733 1,800 1,828 2,037 2,154 2,240 2,375 2,500 2,609 2,773 2,952 except where denoted\*.*

*Model ZF 3055 Medium Duty MCR 1157 kW and Torque 5261 Nm does not include ratio 2,952, and Model ZF 3055 Medium Duty MCR 1120 kW and Torque 5093 Nm is with ratio 2,952 (\* in a table).*

Model (NR, NR2)	MCR, kW				Torque, Nm			
	Continuous Duty	Medium Duty	Light Duty	Pleasure Duty	Cont. Duty	Medium Duty	Light Duty	Pleas. Duty
ZF 3000	836	881	1063		3801	4006	4834	
ZF 3050	979	1082	1179	1418	4454	4920	5361	5888
ZF 3055		1157/1120*	1228	1492		5261/5093*	5584	6197
ZF 3060			1402	1682			6375	6984

**DOKUMENTACIJA ZA TIPNO ODOBRENJE:**  
**TYPE APPROVAL DOCUMENTATION:**

**Nacrti i proračuni odobreni od HRB dopisom:**

*Drawings and calculations approved by CRS with letter:*

678/023093 (2011-04-11)

**OZNAČAVANJE PROIZVODA:**  
*MARKING OF PRODUCT:*

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