DNV·GL

Certificate No:
TAM000001T

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Thrustbearing

with type designation(s)
LAZFZ63-550

Issued to
Renk AG
Hannover, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships/High Speed and Light Craft

Application :

The approval is valid for propulsion duty.
Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2019-08-27**.

Issued at **Høvik** on **2015-08-28**

for **DNV GL**

DNV GL local station: **Magdeburg**

Approval Engineer: **Nadine Grace Mosteiro Halvorsen**

Oddvar Deinboll
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-020109-1**
Certificate No: **TAM000001T**

Product description

Thrust bearing for POD-propulsion

Application/Limitation

The approval is valid for propulsion with the following limitations:

Model	LAZFZ63-550
Max. input speed [rpm]	155
Min. input speed [rpm]	10
Max thrust [kN]	1500
Max specific thrust load [N/mm2]	4,0

Type Approval documentation

Other conditions

The following is not included in this Type Approval Certificate and has to be submitted for approval case-by-case:

- Thrust shaft

Marking of product

The product is to be marked with Manufacturer's name or trademark and type number designation.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform a survey every second year and before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued. The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

\- END OF CERTIFICATE -