DNV·GL

Certificate No:
TAM00000VW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Elastic Couplings

with type designation(s)
CENTAX-TT size 130 - 460

Issued to
CENTA Antriebe Kirschey GmbH
Haan, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – High speed and light craft
DNV GL rules for classification – Ships

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2018-05-03**
This Certificate is valid until **2023-05-02**.
DNV GL local station: **Essen**

Approval Engineer: **Wolfgang Schütz**

for **DNV GL**

Burkhard Lilienthal
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: **262.1-001928-14**
Certificate No: **TAM00000VW**

Product description

"Twin Torque" Flexible rubber coupling

Application/Limitation

The coupling series is approved for auxiliary and propulsion duty. Ratings and coupling charateristics according to extract of catalogue cx-sec-07-10 and with the limitations given below.

Permissible damping power and other coupling characteristics to be adjusted for the actual application according to the guidelines given in the approved catalogues.

The connection to driven member is not covered by the approval and details have to be submitted for approval in each separate case.

Couplings for single propulsion plants have either to be fitted with an emergency claw device or other approved arrangement which could be monitoring and alarm system according to RU-Ships Pt.4, Ch.4, Sec.5 [5].

Maximum ambient temperature : 70°C.

T_{KN} means the nominal torque. i.e. average torque which can be transmitted continuously over the entire speed range.

T_{kmax1} means the temporary peak torque (e.g. passing through resonances, clutching in, etc.). T_{kmax1} may occur 50.000 times alternating or 100.00 times swelling. Permissible maximum torque T_{Kmax1} :

Rubber shore hardness 50 shore: $T_{Kmax1} = 1.1\ T_{Kn}$
Rubber shore hardness 60/70 shore: $T_{Kmax1} = 1.5\ T_{Kn}$

ΔT_{kmax} means the peak torque range (peak to peak) between maximum and minimum torque (e.g. switching in operation, passing through resonances, clutching in, etc.). Δ_{Tkmax1} may occur 50.000 times alternating or 100.00 times swelling. Permissible maximum torque range ΔT_{Kmax} :

Rubber shore hardness 50 shore: $\Delta T_{Kmax} = 1.3\ T_{Kn}$
Rubber shore hardness 60/70 shore: $\Delta T_{Kmax} = 1.8\ T_{Kn}$

T_{kmax2} means the transient torque rating for very rare, extraordinary conditions (e.g. short circuits). Permissible maximum torque T_{Kmax2} : According to catalogue values.

Type Approval documentation

Tests carried out

Test Report V-TT-001/96 - 009/96, report TT-0001 and tests carried out week 49-2001.

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification

Periodical assessment

For retention of the Type

Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the Type Approval are complied with. A renewal assessment will be performed at renewal of the certificate.

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

In cases where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore Periodical Assessment shall be carried out randomly at these companies.

When a Type Approved product is manufactured at other companies, the Type Approval applicant takes the sole responsibility for the conformity of the product to the applicable requirements.

Other conditions

DNV GL Product certificate is not required for couplings for auxiliary/emergency duty with power rating below 500 kW and rated torque less than 5 kNm.

This certificate replaces DNV certificate no. M-12375

END OF CERTIFICATE