

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Cargo Securing Devices**with type designation(s)
Turnbuckle TB-3AR

Issued to

GERMAN LASHING Robert Böck GmbH
Bremen, Germanyis found to comply with
DNV GL rules for classification – Ships**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****SWL, tension (kN) 245**Issued at **Hamburg** on **2020-03-18**This Certificate is valid until **2025-03-17**.DNV GL local station: **Essen**for **DNV GL**Approval Engineer: **Aadil Wafdi**

Andree Orth
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.



Product description

Turnbuckle TB-3AR

Application/Limitation

Load	Tension [kN]
Test Load	306
Breaking Load	490

Tests to be carried out:

- Production testing: At least 2% of the items delivered are to be selected and subjected to the test load.
- Material tests are to be included energy testing at -20°C, with the impact energy requirements acc. to DNVGL-CP-0068. The material shall be according to the approved drawings. Material certificates shall be 3.1 acc. to ISO 10474:2013.

Type Approval documentation

Drawing No.	Rev.	Title
Complete	h	TB-3AR_Complete
Body	f	TB-3AR_Body Range +300/-300
Knob Pocket	d	TB-3AR_Knob Pocket
Lower Bridge	f	TB-3AR_Lower Bridge
Jaw Complete welded	g	TB-3AR_Jaw Complete welded
Jaw with internal thread Tr32x4 welded	I	TB-3_Jaw with internal thread
Clawnut	b	TB-3SL_Clawnut
Securing bolt for Jaw	I	TB-3A / TB-3SL
Lock Nut Tr32x4 for Jaw	c	TB-3A

Drawing approval: Ref.No. 14-114086, dated 2015-01-15

Tests carried out

The prototype test was carried out in Nanjing, P.R. China, dated 2020-02-28 in accordance with the DNVGL-CP-0068.

Marking of product

Each item shall be marked by manufacturer for traceability.

Periodical Assessment

For retention of the Type Approval, a DNVGL surveyor shall perform a survey after 2 and 3.5 years, to verify that the Type Approval is complied with.