



Certificate no.:
TAS000045Y

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Slewing Bearing

with type designation(s)
Roller Slewing Bearing ROD02592-032DJ11-001-900

issued to
Liebherr-Components Biberach GmbH
BIBERACH AN DER RIB, Germany

is found to comply with
DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-01-25**

This Certificate is valid until **2029-01-24**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Andreas Sigvardsson**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2023-09

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Product description

Roller Slewing Bearing intended for use with offshore crane.

<i>Diameters</i>	
Outer diameter	2818 mm
Inner diameter	2307.2 mm
Height	180 mm

<i>Bearing material</i>	<i>Bolts – outer ring</i>	<i>Bolts – inner ring</i>
42CrMo4 QT	84 x M36 – 10.9	84 x M36 – 10.9

Application/Limitation

Application: Offshore, heavy lift crane

Design temperature: -20°C

Slewing bearing is approved for the maximum loads specified below which are including all dynamic and safety factors as specified in DNV-ST-0378 Sec.8:

	<u>Overturning moment</u> [kNm]	<u>Axial load [kN]</u>	<u>Radial load [kN]</u>
LC 1	10000	-1065	170
LC 2	9700	-1030	270
LC 3	9700	-970	350
LC 4	6500	-1100	660

For offshore cranes, SF1 as specified in DNV-ST-0378 [8.2.2.4] is to be taken into consideration during crane approval.

Type Approval documentation

Tests to be carried out on each individual product

- Charpy testing results of slewing ring to be in accordance with Table 3-4 in DNV-ST-0378.
- Charpy testing of slewing ring fasteners (bolts) to be in accordance with Table 3-3 in DNV-ST-0378.
- Load testing to be included as part of load test for the whole crane.

Comments

The slewing ring materials and slewing ring fastener material shall be delivered with 3.2 material certificate, ref. DNV-ST-0378 §3.1.4.1.

Slewing ring material to be in compliance with Table 3-4 in DNV-ST-0378.

Bolts shall be preloaded in accordance with the manufacturer's recommendations (pretension level 70%).

Each slewing bearing being marked/sold as "Type approved by DNV" is to be certified by DNV surveyors as outlined in DNV-ST-0378. A Product Certificate endorsed or issued by DNV surveyor is to accompany each slewing bearing delivery.

The slewing mechanism, including calculation of slewing ring teeth, is not part of this approval.

Marking of product

Slewing bearing is to be marked with manufacturer trademark, type designation and serial number. The surveyor shall stamp each unit with VL mark and with the DNV Product Certificate number or reference to Type approval.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform periodical assessment after two years (+/-90 days) and after 3.5 years (+/-90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.