Certificate no.:
TAS00004SB

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Slewing Bearing

with type designation(s)
ROD01814-028DJ11-001-000

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

is found to comply with

DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application:

See next page

Issued at **Høvik** on **2025-03-17**
This Certificate is valid until **2030-03-16**.
DNV local unit: **Augsburg**

Approval Engineer: **Peder Bendik Møll**

for **DNV**

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 USD 300 000.

Product description
Three row roller slewing bearing for offshore gangway

Application/Limitation
Minimum design temperature: -20°C
Slewing bearing is approved for the loads specified below which are to including all dynamic factors and additional offshore safety factors SF1 as specified in DNV-ST-0378 Sec.8 if applicable.

	Time	Speed	Axial Force	Radial Force	Tilting Moment	Slewing Moment*
	%	rpm	kN	kN	kNm	Nm
LC1	15	0.5	-275	55	1420	80 000
LC2	25	0.5	-300	84	1680	100 000
LC3	25	0.5	-300	148	1930	200 000
LC4	25	0.5	-390	320	2740	500 000
LC5	5	0.5	-400	438	3170	700 000
LC6	5	0.5	-400	570	3500	930 000
LC7	-	Static	-450	730	4000	-
LC8	-	Static	-1090	343	6000	-

Calculated lifetime for rolling elements: 334224 revolutions
Lifetime for Slewing gears root safety 330 000cycles**

Slewing gears flank safety is calculated with a safety factor of 0.653 at 330 000 cycles**. Damage of flank is likely to occur during the lifetime. The acceptance of this should be evaluated in crane /offshore gangway design.

*) Total slewing moment on slewing bearing, to be divided equally on 5 pinions
**) For a given tooth in the geared ring, each contact with a pinion counts as a cycle.

Number of teeth in slewing bearing -111
Module 14

1. Flanges and adjacent structure have not been evaluated nor covered by this approval.
2. Slewing Bearing Mounting bolts M36 to be class 10.9 in both inner and outer ring.
3. Slewing Bearing Mounting bolts shall be permanently pretensioned to 80% of yield strength.
4. The slewing ring and slewing ring fastener material needs to be delivered with 3.2 material certificate, documenting compliance with DNV material requirements.

Type Approval documentation

Tests carried out
Separate test of slewing bearing is not required. The slewing bearing is to be tested together with the crane/offshore gangway.

Marking of product
Each slewing bearing is to be marked according to DNV-ST-0378 Sec.14.5

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.

Job ID: **262.1-042835-1**
Certificate no.: **TAS00004SB**

Manufactured by:
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