Certificate no.:
TAS00004GZ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Slewing Bearing

with type designation(s)
Slewing bearing for telescopic access bridges / gangways

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:

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

Issued at **Høvik** on **2024-11-18**
This Certificate is valid until **2029-11-17**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Thomas Henrik Tranesen**

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
1-row slewing bearing intended for telescopic access bridge / gangway

Application/Limitation

Design temperature	-20°C / +80°C
Outer diameter	Ø1975mm
Runway diameter	Ø1800mm
Mounting bolts	M27, gr.10.9
Number of mounting bolts	60 / 60
Bolt pretension	80%

Load cases

LC	Axial [kN]	Radial [kN]	Moment [kNm]	Speed [rpm]	Time [%]	
1	-220	301	1000	1.91	76.8	@ nominal
2	-290	530	1500	0.95	23.2	@ max dynamic
3	-300	723	1600	0.00	-	@ max static
4	-390	946	2080	0.00	-	@ structural case

Operating hours	2297h
Revolutions	232599

Number of driving pinions	3
Module	14
Number of teeth	114
Tooth width	95

Type Approval documentation

Tests carried out
- Flanges and adjacent structure have not been evaluated nor covered by this type approval.
- It is the end user's responsibility that design parameters are not exceeded in practice.
- Mounting bolts shall be pretensioned to 80% of yield strength.
- The slewing bearing and slewing bearing fastener material needs to be delivered with 3.2 material certificate, documenting compliance with DNV material requirements.

Marking of product
The product is to be marked with manufacturer's name/trademark and type number identification.

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.

END OF CERTIFICATE