



Certificate no.:
TAS00004E7

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Gears

with type designation(s)
DAT 450/4457

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:

See next page

Issued at **Høvik** on **2024-09-06**

This Certificate is valid until **2029-09-05**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Peder Bendik Møll**

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.



Form code: TA 251

Revision: 2023-09

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Page 1 of 2

Product description

Slewing Gearbox type DAT 450/4457 excluding brake.

Application/Limitation

The gearbox is approved for the following conditions:

Stage 1 ratio	8.500
Stage 2 ratio	7.000
Stage 3 ratio	4.167
Overall ratio	247.92
Service lifetime	3200hrs
Maximum Static output torque	82300Nm

Load case	Dynamic torque Output Torque Nm	Output Speed rpm	Running Life %
1	41350.0	11.8	16.7
2	30309.6	11.8	16.7
3	19310.5	11.8	16.7
4	8270.0	50	16.7

Note:

1. The gearboxes have been designed in accordance with the recognised standard ISO 6336 and the min safety factors as per DNV-ST-0378.
2. All load-bearing materials are to be delivered with 3.1 certificates, documenting mechanical properties and chemical composition in accordance with the DNV-ST-0378 Sec.3.
3. Gear calculations are based on assumption that optimum hardening depths have been achieved according to recognized standards and manufacturer's experience.
4. Bearings lifetime has not been evaluated. It is assumed the bearings are delivered with sufficient capacity documented
5. Bolts/screws shall be preloaded according to the manufacturer's recommendations.

Type Approval documentation

Tests carried out

Certification

In order to obtain a DNV Product Certificate, the winch shall be tested according to the DNV-ST-0378 Table 14-1 and NDT to be carried out according to DNV-ST-0378 Sec.3.

Marking of product

Each Winch 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.