Certificate No:
TAS00003CX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Cranes, gen.

with type designation(s)
Helicopter Transfer System

Issued to
ALJO Aluminium-Bau Jonuscheit GmbH
Berne, Niedersachsen, Germany

is found to comply with
DNV standard DNV-ST-0377 – Standard for shipboard lifting appliances

Application :

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

Issued at **Hamburg** on **2022-03-09**
This Certificate is valid until **2027-03-08**.
DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Björn Henke**

for **DNV**

Jörg Kallies
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.

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.

Product description

Helicopter Transfer System SWL 20kN

The drawings are evaluated with respect to structural strength and material qualities according to DNV-ST-0377 Edition 2022 “Shipboard Lifting Appliances”.

- Safe Working Load (SWL): 2.3t (23 kN)
- Wire rope: Ø10 mm, galv., MBL=115kN
- Design dynamic factor: 1.43
- Design temperature: -10ºC

Application/Limitation

- All materials are to be delivered with material certificate type 3.1 documenting mechanical properties in accordance with DNV-ST-0377 Edition 2022.
- The various components transferring the load like wires, shackles, hooks, etc. are to comply with international standards and are to be delivered with relevant certificates for materials and testing (CG3/CG4 or ILO form 3/4).
- The winch drums and main frames are covered by this type approval. The complete winches incl. gear and drive have to be delivered with manufacturer product declarations.
- Installation on board, support to the deck structure and connection to power supply are not included in this approval and shall be evaluated in each case.
- After installation on board, thorough testing shall be carried out as basis for issuance of OLA 201 crane certificate.

Type Approval documentation

Drawing No.	Title	Rev.
1383	1383-Aljo-WinchForHelikopterTransferSystem_200228_Rev00.pdf	Rev 00
1413	1413-Aljo-ResidualAccelerationControlCabinetMEKO200_200710_RevA.pdf	Rev B
1410	1410-Wei-ShockcalculationElectricMotor86475_200520_RevA.pdf	Rev A
118803-63000	118803-63000-Technische Beschreibung_rev005.pdf	Rev 005
119060-81100	Console welded	Rev 000
119060-32100	Rollenbock welding assy	Rev 002
118803-10750	Holder terminal box	Rev 000
118803-30210	Roller unit WG	Rev 000
118803-38100	Deflector Roller WG	Rev 000
118803-20350	Arm hold-down roll	Rev 000
118803-10350	Arm hold-down roll	Rev 000
114051-30100	Support	Rev 002
118803-20450	Arm hold-down roll	Rev 000
118803-10450	Arm hold-down roll	Rev 000
119060-20000	Winch Type 2	Rev 004
119060-10000	Winch Type 1	Rev 004
30224901-KU-02	Unit HFUC-90-xxx-2UH-SP	
119060-50000	119060-50000_Index_001.PDF	Rev 001
AMB1138r00	PM Motor	
119060-81000	Control Cabinet	Rev 000
119060-30000	Deflection Sheanve	Rev 001
118803-22000	Drive Housing	Rev 002
119060-36000	Holder for Control Console	Rev 000
119060-38000	Hangar Door Deflector Roller	Rev 000

118803-12000	Drive Housing	Rev 003
119060-00030	Wire rope	Rev 000
118803-23001	Winch drum	Rev 000
119060-35000	Swivel Sheave	Rev 002
118803-30200	Roller Unit	Rev 000
118803-12100	Drive Unit	Rev 003
119060-32000	Through Deck Sheave	Rev 001
118803-13001	Windentrommel	Rev 000
119060-71000	Kräfteplan	Rev 003
119060-62100	Equipment dimension sheets MEKO A-200 EN	Rev 006
	Drawing List	Rev 000

Tests and welding

We have noted that the components of the system have been type tested with max. wire rope force of 1.25xSWL=1.25*2.3t=2.9t (document reference: 161433).

Further systems shall be tested in "as installed" condition prior to first use. Functional testing shall be performed, in the presence of a DNV surveyor and in accordance with DNV-ST-0377 Standard for “Shipboard Lifting Appliances", February 2022.

All welding is assumed carried out by qualified welders and according to welding procedures acceptable to the surveyor. NDT is to be in accordance with DNVGL-ST-0377 Standard for “Shipboard Lifting Appliances", February 2022, Sec.11 [11.5.8] and to the surveyor's entire satisfaction.

The manufacturer is required to have a DNV surveyor witnessing all important production and tests as required. Based on this witnessing the surveyor should personally stamp the units, sign the reports and issue certificate.

Marking of product

Each unit is to be marked with manufactures name or trademark, type designation, serial number, safe working load in accordance with DNV-ST-0377 Standard for “Shipboard Lifting Appliances", February 2022.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform a periodical assessment after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE