

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Clutch and Friction Brake Coupling for Shaft**with type designation(s)
NKH 15000, NKH 7500, NKH 3500 and NKH 1250.

Issued to

KUMERA AS
SANDEFJORD, Norway

is found to comply with

DNV GL rules for classification – Ships**DNV GL rules for classification – High speed and light craft****Application :****The approval is valid for propulsion and auxiliary purposes.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2018-10-04**This Certificate is valid until **2023-06-30**.DNV GL local station: **Sandefjord**for **DNV GL**Approval Engineer: **Jørgen Jensen Tande**

Oddvar Deinboll
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.



Job Id: **262.1-009262-3**
Certificate No: **TAM00000XK**

Product description

Hydraulic Operated Clutches.

Type: NKH 15000, NKH 7500, NKH 3500 and NKH 1250.

Application/Limitation

Type	Rated nom. torque Nm	Max RPM	Corr.oil pressure BAR
NKH 15000	15 000	2 000	20
NKH 7500	7 500	2 500	20
NKH 3500	3 500	3 000	24
NKH 1250	1 250	3 000	24

$T_{dyn} \text{ min.} = 1.4 \times T_{nom}$, $T_{stat} \text{ min.} = 1.8 \times T_{nom}$, ref. letter from DNV GL to Kumera dated 1980-03-07.

The connection to driving and driven side is not included in this approval and has to be approved in each separate case.

Ice class notations:

See DNV GL Rules for Ships Pt.4 Ch.4 Sec.3 [2. 1. 2]

Type Approval documentation

N2-00562A for NKH 1250, N2-00652A for NKH 3500, N2-00753A for NKH 7500 and N2-00648B for NKH 15000.

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment

For retention of the type approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years, both referring to the issue date of the type approval certificate to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases where the type approved product is manufactured at other companies, the periodical assessment shall verify that the type approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore, periodical assessment shall be carried out randomly at these companies.

END OF CERTIFICATE