



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAM00000TR
Revision No:
2

This is to certify:
that the Thrustbearing

with type designation(s)
Aquadrive HDL680, HDL690, HDL700, HDL700 HT, HDL780, HDL780 HT

issued to
Walterscheid GmbH
Lohmar, Germany

is found to comply with
DNV rules for classification – Ships
DNV rules for classification – High speed and light craft

Application:

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

Issued at **Høvik** on **2025-07-01**

This Certificate is valid until **2030-06-30**.

DNV local unit: **Essen**

Approval Engineer: **Stanislav Avanesov**

for **DNV**



Digitally Signed By:
Svein-Olav Hannevik
Location: **DNV Høvik, Norway**

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

Separate thrust bearing and shaft with constant velocity joints

Application/Limitation

The approval is valid for propulsion with the following limitations:

Model	Max. Torque [kNm]	Max thrust [kN]
HDL 680	4,3	40
HDL 690	4.3	40
HDL 700	4,3	40
HDL 700 HT	7,7	40
HDL 780	9,4	60
HDL 780 HT	13,8	60

Type Approval documentation

Technical information & installation instructions

60 32 190 rev. A Flensaxel 20680/20700
 60 32 193 rev.- Flensaxel 20680/20700HT
 60 32 192 rev. - Flensaxel 20700
 60 32 198 rev. A Flensaxel 20780
 60 31 171 rev.- Flens stl 42 20680
 60 31 175 rev.- Flens 20700
 60 31 176 rev.- Flens 20700 HT
 60 31 180 rev.- Flens 20780
 60 31 070 rev. G Lagerhus HDL680/700
 60 31 075 rev. E Lagerhus 20780
 60 90 005 rev.- Isolator 20680-20780
 60 31 174 Flens HDL680/700
 630Flange75 HDL690 7.5" flange
 60 39 322 Thrust Bearings, Complete units – HDL700HT

Technical data and results from tests for isolator material

Roller bearing calculations

Material certificates

Marking of product

The product is to be marked with Manufacturer's name or trademark and type number designation.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform a survey 2 and 3,5 years before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued.

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.

When a Type Approved product is manufactured at other companies, the Type Approval applicant takes the sole responsibility for the conformity of the product to the applicable requirements.