



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAM00000Y5
Revision No:
3

This is to certify:

that the **Clutch and Friction Brake Coupling for Shaft**

with type designation(s)
Series: 0021-, 0002-

issued to
Ortlinghaus-Werke GmbH
Wermelskirchen, Nordrhein-Westfalen, 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 **2025-11-21**

This Certificate is valid until **2030-11-20**.

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

Oil pressure operated multidisc clutch.

Application/Limitation

The clutches are approved for main propulsion (incl. ice class notations) and auxiliary purposes, based on an oil operating pressure of 20 bar for the 0021- size 47 and 55, 25 bar for the remaining sizes for the 0021-series and 24 bar for the 0002- series.

The clutches are approved with ball valve, bolts for emergency running or a combination. Clutches with ball valve is designated -100 at the end of the drawing / type number, with emergency bolts -001 and with a combination -101.

Clutches with ball valves are approved for a higher RPM than without ball valves. Approved RPM is given in the tables in following pages.

General:

The permissible rated torque is found by dividing $T_{dyn}(T_d)$ by at least 1,3 and $T_{stat}(T_s)$ by at least 1,8, the minimum of these applies. Normally T_{stat} is not to exceed 2,5 times the rated torque. Special vibration conditions may require deviations of the a.m. limits.

Ice class notations:

In case the ice class applications the results of the appropriate ice simulation have to be used. See the Rules Pt.6 Ch.6 Sec.3 and Sec.7

Note: Identification of clutch by: Series, Size, T_d , RPM

Type Approval documentation

Table 1 is valid for the 0021- series.

| Series-xxx-Size- | Engagement torque T_d (Nm) | Static torque T_s (Nm) | Max RPM | |
|------------------|------------------------------|--------------------------|---------|------|
| | | | | * |
| 0021-xxx-47- | 2000 | 3000 | 3000 | 4100 |
| 0021-xxx-55- | 4000 | 6000 | 3100 | 3200 |
| | 5900 | 8850 | 2550 | 3200 |
| | 7000 | 10500 | 3100 | 3200 |
| | 7600 | 11400 | 2300 | 3200 |
| | 9000 | 13500 | 2300 | 3200 |
| 0021-xxx-59- | 11200 | 16800 | 2250 | 3070 |
| 0021-xxx-63- | 16000 | 24000 | 2000 | 2725 |
| 0021-xxx-66- | 22500 | 33750 | 1800 | 2450 |
| 0021-xxx-72- | 32000 | 48000 | 1600 | 2100 |
| 0021-xxx-75- | 45000 | 67500 | 1400 | 1950 |

| | | | | |
|--------------|--------|--------|------|------|
| 0021-xxx-78- | 63000 | 94500 | 1300 | 1710 |
| 0021-xxx-79- | 90000 | 135000 | 1150 | 1560 |
| 0021-xxx-81- | 125000 | 187500 | 1000 | 1400 |
| 0021-xxx-85- | 180000 | 270000 | 900 | 1250 |
| 0021-xxx-89- | 250000 | 375000 | 800 | 1125 |
| 0021-xxx-91- | 315000 | 472500 | 750 | 1000 |
| 0021-xxx-94- | 450000 | 675000 | 700 | 890 |
| 0021-xxx-96- | 630000 | 945000 | 600 | 815 |

* Max. RPM for clutch with ball valve.

Table 2 is valid for the 0002- series.

| Series-xxx-Size- | Engagement torque Td(Nm) | Static torque Ts(Nm) | Max RPM | |
|------------------|--------------------------|----------------------|---------|------|
| 0002-xxx-47- | 3200 | 4800 | 3000 | |
| | 4600 | 6900 | 3000 | |
| | 5025 | 7538 | 2250 | * |
| 0002-xxx-55- | 5500 | 8250 | 2500 | 3500 |
| 0002-xxx-63- | 9000 | 13500 | 2200 | 2925 |
| | 13000 | 19500 | 2200 | 2925 |
| | 15600 | 23400 | 2400 | 2925 |
| 0002-xxx-69- | 12000 | 18000 | 1800 | 2500 |
| | 17000 | 25500 | 1800 | 2500 |
| | 20500 | 30750 | 1800 | 2500 |
| 0002-xxx-75- | 24000 | 36000 | 1500 | 2015 |
| | 30000 | 45000 | 1500 | 2015 |
| | 36000 | 54000 | 1500 | 2015 |
| 0002-xxx-78- | 37000 | 55500 | 1200 | 1805 |
| | 41000 | 61500 | 1200 | 1805 |
| | 50000 | 75000 | 1200 | 1805 |

| | | | | |
|--------------|--------|--------|------|------|
| 0002-xxx-81- | 45000 | 67500 | 1000 | 1500 |
| | | | | |
| | 60000 | 90000 | 1000 | 1500 |
| | | | | |
| | 75000 | 112500 | 1000 | 1500 |
| | | | | |
| | 90000 | 135000 | 1000 | 1500 |
| | | | | |
| 0002-xxx-84- | 92000 | 138000 | 800 | 1320 |
| | | | | |
| | 102000 | 153000 | 800 | 1320 |
| | | | | |
| | 123000 | 184500 | 800 | 1320 |
| | | | | |
| 0002-xxx-87- | 140000 | 210000 | 750 | 1180 |
| | | | | |
| | 175000 | 262500 | 750 | 1180 |
| | | | | |
| | 210000 | 315000 | 750 | 1180 |
| | | | | |
| 0002-xxx-90- | 240000 | 360000 | 750 | 1060 |
| | | | | |
| | 300000 | 450000 | 700 | 1060 |
| | | | | |

* Max. RPM for clutch with ball valve.

The type approval is also valid for designs deviating from the above mentioned types, provided no essential changes are made for the power transmitting parts.

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification, serial number, working pressure, torque and certificate number.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform a survey after 2 and 3,5 years after issue 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.

Other conditions

For single propulsion plants, the clutch is to be of such design that sufficient torque transmission can be arranged in event of loss of hydraulic or pneumatic pressure.

The connection of the clutch to adjacent parts is not included in the type approval.



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The type approval is also valid for versions with tapered shrink fit between hub and shaft.
The parts "Träger" and "Gehäuse" are to be made of material quality C45 EN 10250-2 or better, e.g. forged steel according to EN 10250-3.

END OF CERTIFICATE