

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hydraulic Cylinders

with type designation(s)
180/100-300, 250/140-1550, 265/180-1820

Issued to

Dalian Nurmi Hydraulics Co., Ltd.
Dalian, China

is found to comply with

DNV standard DNV-ST-0194 – Hydraulic cylinders
IMO Resolution MSC.48(66) as amended

Application :

Product(s) approved by this type approval is/are accepted for DNV product certification.

Type	Design pressure (push)	Design pressure (pull)	Cylinder sizes
180/100-300	250	250	180-100x300
250/140-1550	230	250	250-140x1550
265/180-1820	285	285	265-180x1820

Issued at **Hamburg** on **2022-05-16**

This Certificate is valid until **2027-05-15** .

for **DNV**

DNV local unit: **Dalian NB & CMC**

Approval Engineer: **Heiko Herrmann**

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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

Hydraulic cylinders for service boat launching appliances.

Application/Limitation

Design temperature: -20°C

All materials to be delivered with 3.1 certificates acc. to EN 10204 (or ISO 10474)

Impact energy to be provided: KV ≥ 27J at -20°C

Cylinders are approved for use following launching appliances by MacGregor:

No.	Description	Designated Equipment	Function
1	180-100-300	HMD G130 MK3	damping
2	250-140-1550	HMD G130 MK3	tilting
3	265-180-1820	HMD G160 MK3	tilting

Type Approval documentation

Product testing

To obtain DNV Product Certificates, each cylinder be tested with 1.5 x design pressure in presence of DNV.

Marking of product

Each cylinder shall be marked by the manufacturer with at least:

- Manufacturer's name or trademark
- Type of cylinder
- Serial number
- Year of construction
- Design pressure in bar

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

End of certificate