DNV·GL

Certificate No:
TAP00001N9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hydraulic Cylinders

with type designation(s)
HTK-125-90-305-100, HTK-140-90-1149-100, HTK-140-90-1178-100, HTK 140-90-1178-110, HTK-140-90-1515-100, HTK-160-100-1444-100

Issued to
Elbe-Hydraulik in Stade GmbH
Stade, Niedersachsen, Germany

is found to comply with
IMO Resolution MSC.48(66) as amended
DNV GL class guideline DNVGL-CG-0194 – Hydraulic cylinders
DNV GL standard DNVGL-ST-0377 – Standard for shipboard lifting appliances

Application :

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

Type	Design pressure (push)	Design pressure (pull)	Cylinder sizes
HTK-125-90-305-100	200	200	125-90-305
HTK-140-90-1149-100	200	200	140-90-1149
HTK-140-90-1178-100	200	200	140-90-1178
HTK 140-90-1178-110	200	200	140-90-1178
HTK-140-90-1515-100	200	200	140-90-1515
HTK-160-100-1444-100	200	200	160-100-1444

Issued at **Hamburg** on **2019-01-04**
This Certificate is valid until **2024-01-03**.
DNV GL local station: **Hamburg**

Approval Engineer: **Stefan Heuer**

for **DNV GL**

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.

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Product description

Hydraulic cylinder for freefall life-saving launching appliances

Application/Limitation

Design temperature: -20°C

The cylinders are approved for use in the following Hatecke life-saving appliances:

Type	Appliance
HTK-125-90-305-100	DFR600S; DFR600IB
HTK-140-90-1149-100	FFA4,9M; FFA4,9C; FFA5,7M; FFA5,7C
HTK-140-90-1178-100	FFA6,5M; FFA6,5C; FFA6,6M; FFA5,5C17; FFA5,8C17; FFA5,8C21; FFA6,6C17; FFA6,6C21
HTK-140-90-1178-110	FFA6,5M; FFA6,5C; FFA6,6M; FFA5,5C17; FFA5,8C17; FFA5,8C21; FFA6,6C17; FFA6,6C21
HTK-140-90-1515-100	FFA7,4M; FFA7,4C; FFA8,1M; FFA8,1C
HTK-160-100-1444-100	FFA9,0M; FFA9,0C

All materials are to be delivered with 3.1 certificates acc. to EN 10204 (or ISO 10474). Impact energy KV $\geq$ 27J at -20°C [CG-0194, Sec. 2, 2.]

Product testing:
To obtain DNVGL Product Certificates, each cylinder be tested with 300 bar in presence of DNVGL

Type Approval documentation

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

For retention of the Type Approval, a DNV GL 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