



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. **24 215 - 04 HH**
Company **KNAPHEIDE GmbH**
Hydraulic Hoses
Gothaer Straße 4-6
99880 Waltershausen, GERMANY
Product Description **FLAME RESISTANT HYDRAULIC HOSES**
Type **4 SP corresponding to DIN EN 856 : 1996**

Environmental Category **None**

Technical Data /
Range of Application **TECHNICAL DATA**
Inner tube: **Oil resistant synthetic rubber**
Reinforcement: **Four steel spirals**
Cover: **Synthetic rubber**
Size range: **DN 10 to DN 25**
Pressure range: **acc. to DIN EN 856 : 1996**
Temperature range: **-40 [°C] to 100 [°C] depending on used media**
Ferrules: **EURO-4 SP, skive type**
Nipples: **EURO-4 SP**

RANGE OF APPLICATION

The above mentioned hoses may be used acc. to their suitability in:
fuel oil-, lubricating oil-, hydraulic oil-, bilge-, ballast-, freshwater cooling-,
sea water cooling-, compressed air- and secondary piping systems.

Test Standard **VI-7-8: Test Requirements for Components and Systems of Mechanical Engineering and Offshore Technology. Edition 2008.**

Documents
- Test Reports
- Technical Data Sheets, Catalogue, Quality Assurance Manual
- Auditreport no. 20120426Knapheide, 20120815Knapheide
- GL Approval-Ref.-No.: 12-010001

Remarks
Approved production places refer to page 2.
Manufacturer of hose assemblies shall be approved by GL.

Valid until **2016-05-01**

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File No. **II.D.01**

Hamburg, 2012-08-23

Germanischer Lloyd

Michael Kämpf

Sven Dudzus



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APPROVED PRODUCTION PLACES:

HOSE: Knapheide GmbH Hydraulic Hoses
 Gothaer Straße 4-6
 D-99880 Waltershausen

Fittings: Knapheide GmbH Präzisions-Drehtechnik
 Borsigstraße 10
 D-24568 Kaltenkirchen

The selection of the hoses for the corresponding application and the proper assembly are to be in accordance with the instructions of the manufacturer.

LIMITATION

The use of non-metallic hose assemblies is not permitted in permanently pressurized starting air lines of diesel engines.

Each batch of hose assemblies is to be subjected to a pressure test in the presence of a GL Surveyor.

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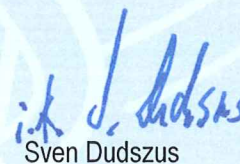
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