

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil

with type designation(s)
ROCKMASTER/1SN, ROCKMASTER/2SN, ROCKMASTER/2SC, TRACTOR/1SC, TRACTOR/1SN, TRACTOR/2SC, TRACTOR/2SN

Issued to
JLLC MANULI HYDRAULICS MANUFACTURING BEL
Orsha, Belarus

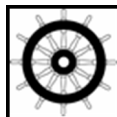
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2015/559,**
Annex A.1, item No. A.1/3.15c and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation II-2/4.2.2.5.1, II-2/4.2.2.5.6 & X/3 and 2000 HSC Code 7.5.4.

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-01-12.**

Issued at **Høvik** on **2017-01-13**

DNV GL local station:
St. Petersburg



for **DNV GL AS**

Approval Engineer:
Adel Samiei

Notified Body
No.: **0575**

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Vidar Dolonen
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Product description

Seven types of hose assemblies:

Tractor/2SN and Tractor/2SC:

- Hose:
- Tube: Oil Resistance synthetic rubber
- Reinforcement: Two high tensile steel braids
- Cover: Environment resistant synthetic rubber

Coupling:

- STD MF2000 couplings (M03400)

Tractor/1SN and Tractor/1SC:

Hose:

- Tube: Oil Resistance synthetic rubber
- Reinforcement: One high tensile steel braids
- Cover: Environment resistant synthetic rubber

Coupling:

- STD MF2000 couplings (M03400) for T1SN
- STD MF2000 couplings (M03300) for T1SC

Rockmaster/2SN and Rockmaster/2SC :

Hose:

- Tube: Oil Resistance synthetic rubber
- Reinforcement: Two high tensile steel braids
- Cover: Synthetic rubber with high ozone, weather and heat resistance

Coupling:

- STD MF2000 couplings (M03400)

Rockmaster/1SN:

Hose:

- Tube: Oil Resistance synthetic rubber
- Reinforcement: One high tensile steel braid
- Cover: Synthetic rubber with high ozone, weather and heat resistance

Coupling:

- STD MF2000 couplings (M03400)

Hoses and couplings are made by Manuli Hydraulics. (Hoses are made by Manuli Hydraulics in Belarus – Couplings are made by Manuli Hydraulics Polska S.A. in Poland)

Application/Limitation

Hose assemblies covered by this certificate are tested according to:

- 1) NS-EN ISO 15540: Fire resistance of hose assemblies- Test methods
- 2) NS-EN ISO 15541: Fire resistance of hose assemblies - Requirements for the test bench

Hose assemblies are suitable for use with petroleum base hydraulic fluids and water base hydraulic fluids.

Maximum working pressure for each type and size:

HOSE SIZE			Maximum Working Pressure (bar)						
DN	Dash	inch	R1SN	R2SN	R2SC	T1SC	T1SN	T2SC	T2SN
6	-4	¼"	225	400	400	225	225	400	400
8	-5	5/16"	215	350	350	215	215	350	350
10	-6	3/8"	180	350	330	180	180	330	330
12	-8	½"	160	-	275	-	160	275	275

Type Examination documentation

Manufacturer's catalogue for each type

Fire test reports witnessed by DNV local surveyor - Shanghai:

R1SN – DN6 dated 2011-05-23 / R1SN – DN25 dated 2011-05-23 / R1SN – DN60 dated 2010-12-28 /
 R2SC – DN6 dated 2011-01-13 / R2SC – DN31 dated 2011-01-25 / R2SC – DN76 dated 2011-01-21 /

Job Id: **344.1-006088-1**
Certificate No: **MEDB00001SW**

R2SN – DN6 dated 2011-01-13 / R2SN – DN25 dated 2010-11-22 / R2SN – DN60 dated 2011-01-19 /
T2SC (T2K) – DN76 dated 2011-01-19 / T2SN (T2T) – DN60 dated 2011-01-19

Fire test reports:

696.OIS0110/06 dated 2006-06-08 T2K (T2SC) DN12 (Done by LAPI) / 877.OIS0110/06 dated 2006-07-
24 T2K (T2SC) DN51 (Done by LAPI)

Fire test reports (Done by LAPI): 959.OIS0110/16 (R2SN-DN10) & 960.OIS0110/16 (T2SN-DN12)

LAPI Fire test reports No: 1036.OIS0110/06, 1037.OIS0110/06, 1038.OIS0110/06 (T1SN)

Fire test report: DNV GL-Ref.-No.: 10-072843, 12-003525 (T1SC)

Authorization letter from Manuli Suzhou (China) dated 2016-12-13

Tests carried out

Fire tests carried out according to ISO 15540/15541

Marking of product

As a minimum, the final products (hoses with couplings) are to be marked with:

- Manufacturer's name or trademark
- Manufacturer's address
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)