



Marine & Offshore

Certificate number: 27640/C0 BV

File number: ACM 135/1939/09

Product code: 2104I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MANULI HYDRAULICS MANUFACTURING Sp. z o.o.
Myslowice - POLAND

for the type of product

NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES
ROCKMASTER/2SC

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 21 Jun 2027

For Bureau Veritas Marine & Offshore,

At BV KATOWICE, on 21 Jun 2022,

Wojciech Lubojanski

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

ROCKMASTER/2SC Wire braid reinforced hose

1.1 Technical Data

Hose ROCKMASTER/2SC according to EN 857/2SC

DN	5	6	8	10	12	16	19	25	31	38	51	63	76
Size (inch)	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
Maximum working pressure (bar)	420	400	350	330	275	250	245	210	140	100	90	70	45

Temperature range: - 40 °C to + 100 °C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature

1.2 Material Specification

Hose Type	ROCKMASTER/2SC
Tube	NBR
Reinforcement	Two high tensile steel braids *
Cover	CR

*According to steel wire data sheet N° 2002180/2002181/2011905/2002174 Rev.1 dated 01/06/2022

1.3 Fittings

Hose Type	Insert / Ferrule	Material *
ROCKMASTER/2SC	MF2000 - Multifit Type	Carbon steel, Stainless Steel

* Grade : Free Cutting Steel as per document N° CM25/18 dated 12/10/2018

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- MANULI GENERAL HYDRAULICS PRODUCT CATALOGUE 2020 edition
- ROCKMASTER/2SC Data sheet dated 06/03/2017
- User technical manual dated April 2009
- Rubber compounds for ROCKMASTER 2SC N° RCG_R/2SC Rev.00 dated 06/05/2022
- Material datasheet for NBR N° 252/254/257 dated 16/05/2022
- Material datasheet for CR N° 271 dated 16/05/2022
- Hose fittings steel material N° CM 25/18 dated 12/10/2018
- Steel wire data sheet N° 2002180/2002181/2011905/2002174 Rev.1 dated 01/06/2022

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

- Burst test reports N° 113-2017/HT (carbon steel and stainless steel), 051-2017/HT & 114-2017/HT dated 27/06/2017 (DN 6, 19 & 38, covering both carbon & stainless steel fittings) witnessed by a BV surveyor
- Pressure test reports N° 114-2017/HT dated 20/06/2017 (DN 38), N° 081-2017/HT dated 29/04/2017 (DN 19)
- Oil resistance test report dated 18/04/2016
- Cold flexibility test report dated 20/04/2016 (DN 51)
- Ozone resistance test report dated 28/04/2016 (DN 51)
- Dimension check test report dated 20/06/2016 (DN 38)
- Vacuum test report N° LL/156/2017 dated 29/06/2017 (DN 6 & DN 19)
- Fire resistance test report N° 2673.0ISO110/17 dated 11/10/2017 (DN19)
- Impulse test reports N°028-2017/IT dated 07/02/2017 (DN 6), 051-2017/IT dated 15/04/2017 (DN 19), 114-2017/IT dated 01/07/2017 (DN 38)
- Cover adhesion test report N° 4495 dated 08/09/2021 (DN 6)
- Change in length test report N° 28-2017/HT dated 03/02/2017 (DN 6)
- Vibration test not performed.

4. APPLICATION / LIMITATION

4.1 - May be used on the following services:

- Sea water and fresh water, lubricating oil and hydraulic oil, water spraying fire system

4.2 - End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop.

4.3 - The hoses assemblies are to be installed according to manufacturer's instructions and Bureau Veritas Rules

4.4 - The hoses are to be limited to a length necessary to provide for relative movement between fixed and flexibly mounted items of machine/equipment or systems and are only to be used in lengths up to 2 m. The hoses are to be installed in clearly visible and readily accessible locations at all times.

4.5 - Taper threaded end connections are not to be used for oil circuits in engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.

4.6 - The use of stainless steel is to be restricted as per the requirements of the Bureau Veritas Rules.

4.7 - Not to be used in case of high level of vibrations where fitted to engines, pumps, compressors and other sources of high vibrations

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **MANULI HYDRAULICS MANUFACTURING Sp. z o.o.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - This certificate is also valid for other companies authorised by MANULI when same specifications, tolerances, equipment and quality control procedures are used. In such case, the BV agreement will be obtained.

5.5 - Each hose with end fittings is to be hydraulically pressure tested to 1.5 times the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

5.6 - For information, **MANULI HYDRAULICS MANUFACTURING Sp. z o.o.** has declared to Bureau Veritas the following production sites:

- **Manuli Hydraulics (Suzhou) Co., Ltd :No.85 Xinglin Street, Suzhou Industrial Park, Jiangsu Province, Suzhou (China)**

- **Manuli Hydraulics Manufacturing Sp. z o.o at Przedsiębiorcòw str 5, 97-510 Radomsko (Poland)**

- **JLLC Manuli Hydraulics Manufacturing BEL : Lokomotivnaya 2, 211390 Vitebsk (Belarus)**

- The fittings are made by **Manuli Hydraulics Polska S.A. at Brzezinska 50, 41-404 Myslowice (Poland)**

6. MARKING OF PRODUCT

Each hose is to be clearly marked to avoid any wrong utilization with at least:

- Manufacturer name or logo

- Date of manufacture (month/year)

- Type designation

- Nominal Diameter

- Pressure rating

- Temperature rating

- Society's brand as relevant

7. OTHERS

It is **MANULI HYDRAULICS MANUFACTURING Sp. z o.o.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 27640/B0 BV issued by the Society.

*** END OF CERTIFICATE ***