

## Type Approval Certificate

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

<b>Manufacturer</b>	<b>Manuli Hydraulics Manufacturing Sp. z o.o.</b>
<b>Address</b>	Brzezinska Street 50, 41-404 Myslowice, Poland
<b>Place of Production</b>	MANULI HYDRAULICS MANUFACTURING Sp. z o.o. ul.Brzezinska 50, Myslowice, 41-404
<b>Place of Production</b>	Manuli Hydraulics (Suzhou) Co.,Ltd No.85 Xin Lin Street,, Suzhou Industry Zone, Suzhou, 215021
<b>Place of Production</b>	MANULI HYDRAULICS MANUFACTURING Sp. z o.o. Przedsiębiorcow Street5, 97-500 Radomsko
<b>Place of Production</b>	JLLC 'Manuli Hydraulics Manufacturing Bel' Lokomotivnaya street 2, 211390 Orsha, Vitebsk Region
<b>Type</b>	Flexible Hose Assembly
<b>Description</b>	<ul style="list-style-type: none"> <li>• <u>Fire safe flexible hose of non-metallic material with permanently fitted couplings;</u> EQUATOR/1 (BLACK), EQUATOR/1 (BLUE), EQUATOR/2 (BLACK), EQUATOR/2 (BLUE), ROCKMASTER/1SN, ROCKMASTER/2SN, ROCKMASTER/12, ROCKMASTER/15, ROCKMASTER/1SC, ROCKMASTER/2SC, ROCKMASTER/4SH, ROCKMASTER/4SP, GOLDENGUARD/5000</li> <li>• <u>Fire safe flexible hose of non-metallic material and an external stainless steel flexible armour protection with permanently fitted couplings;</u> GOLDENARMOUR</li> </ul>
<b>Trade Name</b>	MANULI
<b>Application</b>	<ul style="list-style-type: none"> <li>• General purpose hydraulic hose assemblies for marine, offshore and industrial use; EQUATOR &amp; ROCKMASTER hoses</li> <li>• Hydraulic systems of Blowout Preventer control lines on drilling rigs; GOLDENGUARD/5000 &amp; GOLDENARMOUR</li> </ul>
<b>Specified Standard</b>	Lloyd's Register Rules and Regulations for the Classification of Ships. Refer the Design Appraisal Document for the additional tests and standards.

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<b>Ratings</b>	Nominal diameter (DN): 5 to 76 mm Max. working pressure (bar): 35 to 485 Temperature range: -550 to 1350 C See manufacturer's product catalogue and Design Appraisal Document for the detail ratings.
<b>Additional Tests</b>	Tests are carried out and reviewed on representative sample hose assemblies as per the specified standards.
<b>Other Conditions</b>	<ol style="list-style-type: none"><li>1. Hoses are to be selected, installed and tested in accordance with the manufacturer's recommendations and Lloyd's Register's Rules and Regulations for the Classification of Ships, Part 5, Chapter 12, Section 7.</li><li>2. Flexible hose assemblies are not to be installed where they may be subjected to torsional deformation (twisting) under normal operating conditions.</li><li>3. Flexible hoses are to be installed in clearly visible and readily accessible locations; service length should be as short as practicable.</li><li>4. The manufacturer's recommendations on replacement of the hoses after a specified period in service is to be strictly observed.</li><li>5. Hoses are not to be used where hoses are frequently flexed in service, hi pressure fuel oil injection systems, steam system and supplying fuel to burners (no external braid).</li><li>6. Each flexible hose with end fittings are to be provided with the manufacturer's pressure test report and conformity of the production and the following details are to be permanently marked as per applicable ISO/ International standard:<ul style="list-style-type: none"><li>• Manufacturer's name or trademark.</li><li>• Date of manufacture (month/year).</li><li>• Designation type reference.</li><li>• Nominal diameter.</li><li>• Pressure rating.</li><li>• Temperature range.</li></ul></li></ol>

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR21233564TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.