Certificate Number: 16-GE1565114-PDA
10/OCT/2016

Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 02/AUG/2020. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 27/SEP/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Flexible Hose

Model Name(s): ROCKMASTER/12, ROCKMASTER/13, ROCKMASTER/15

Presented to:
MANULI HYDRAULICS (SUZHOU) CO. LTD.
NO. 85 XINGLIN STREET
SUZHOU INDUSTRIAL PARK
China

Intended Service:	Hydraulic Systems - Sea Water - Sanitary Systems
Description:	Oil resistant synthetic rubber hoses reinforced with 4 or 6 high tensile steel wire spirals, covered with a synthetic rubber sheath.
Ratings:	ROCKMASTER/12 - from DN10 to DN51, pressure from 280 to 175 bar. ROCKMASTER/13 - from DN6 to DN51, pressure from 690 to 350 bar. ROCKMASTER/15 - from DN19 to DN 38, pressure 420 bar. Continuous service temperature for all hoses from -40 deg C to +121 deg C, max temp. +125 deg C For details refer to attached table.
Service Restrictions:	1) Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 2) Hoses are to be complete with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications. 3) End connections are to comply with applicable requirements and limitation of Rules (4-6-2/5.5.4, 4-6-2/5.5.5, 4-6-7/3.5.1, 4-6-7/5.3.2). 4) Hose assemblies are to be installed only where flexibility is required, in clearly visible and readily accessible locations, and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only. 5) Not to be used in high pressure fuel oil injection systems, steam systems or oil supply lines to boilers. 6) Not to be used for installations where repeated and/or

	frequent flexing is expected. 6)) Flexible hoses are to be permanently marked by the manufacturer with the following details: Hose manufacturer's name or trademark, Date of manufacture (month/year), Designation type reference, Nominal diameter, Pressure rating, Temperature rating.
Comments:	The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. Only MANULI approved ferrules and inserts are to be used for end fittings, as per the manufacturer's recommendations.
Notes / Documentation:	Drawing No. ABS 01-GE217368-4-PDA, ABS 01-GE217368-4-PDA, Revision: 0, Pages: 1 Drawing No. Burst test R12 dn10, Burst test R12 dn10 dated 21 Jul 2015, Revision: -, Pages: - Drawing No. Burst test R12 dn12, Burst test R12 dn12 dated 16 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn16, Burst test R12 dn16 dated 12 Jun 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn19, Burst test R12 dn19 dated 05 May 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn25, Burst test R12 dn25 dated 03 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn31, Burst test R12 dn31 dated 07 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn38, Burst test R12 dn38 dated 08 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn51, Burst test R12 dn51 dated 15 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn10, Burst test R13 dn10 dated 14 Aug 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn12, Burst test R13 dn12 dated11 Jul 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn19, Burst test R13 dn19 dated 08 Feb 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn25, Burst test R13 dn25 dated 06 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn31, Burst test R13 dn31 dated 10 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn38, Burst test R13 dn38 dated 10 Jun 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn51, Burst test R13 dn51 dated 07 May 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn6, Burst test R13 dn6 dated 31 Jan 2013, Revision: -, Pages: - Drawing No. Burst test R15 dn19, Burst test R15 dn19 dated 23 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn25, Burst test R15 dn25 dated 23 Feb 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn31, Burst test R15 dn31 dated 15 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn38, Burst test R15 dn38 dated 24 Feb 2016, Revision: -, Pages: - Drawing No. Certyfikate for MHM, Certyfikate for MHM, Revision: 0, Pages: 1 Drawing No. DNV_ R-13_DN19-31-51_Hydraulics Test Report_60042706, DNV_ R-13_DN19-31-51_Hydraulics Test Report_60042706 dated 19 Jan 2011, Revision: -, Pages: - Drawing No. Data sheet R12, Data sheet R12, Revision: -, Pages: - Drawing No. Data sheet R13, Data sheet R13, Revision: -, Pages: - Drawing No. Data sheet R15, Data sheet R15, Revision: -, Pages: - Drawing No. ISO 9001 MHITA_exp, ISO 9001 MHITA_exp, Revision: 0, Pages: 1 Drawing No. ISO9001 MHS, ISO9001 MHS, Revision: 0, Pages: 1 Drawing No. R-12_DN51_Hydraulics Test Report_60043523, R-12_DN51_Hydraulics Test Report_60043523 dated 13 May 2011, Revision: -, Pages: - Drawing No. R-13_DN19-38_Hydraulics Test Report_60042631, R-13_DN19-38_Hydraulics Test Report_60042631 dated 15 Jun 2006, Revision: -, Pages: - Drawing No. R-15_DN38_Hydraulics Test Report_60041951, R-15_DN38_Hydraulics Test Report_60041951 dated 09 May 2011, Revision: -, Pages: - Drawing No. ROCKMASTER 12 _fluid resistance, ROCKMASTER 12 _fluid resistance dated 18 Sept 2015, Revision: -, Pages: - Drawing No. ROCKMASTER 13_fluid resistance, ROCKMASTER 13_fluid resistance dated 18 Mar 2016, Revision: -, Pages: - Drawing No. ROCKMASTER 15 _fluid resistance, ROCKMASTER 15 _fluid resistance dated 18 Mar 2016, Revision: -, Pages: - Drawing No. Type Approval Request for R-12-13-15, Type Approval Request for R-12-13-15, Revision: -, Pages: - Drawing No. cold ROCK 12 DN 10 MHS., cold ROCK 12 DN 10 MHS dated 09 Apr 2015., Revision: -, Pages: - Drawing No. cold ROCK 12 DN 19 MHS, cold ROCK 12 DN 19 MHS dated 15 Jan 2016, Revision: -, Pages: - Drawing No. cold ROCK 12 DN 51 MHS, cold ROCK 12 DN 51 MHS dated 21 Apr 2015, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 10 MHS, ozone ROCK 12 DN 10 MHS dated 26 Feb 2016, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 19 MHS, ozone ROCK 12 DN 19 MHS DATED 26 fEB 2016, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 51 MHS, ozone ROCK 12 DN 51 MHS dated 26 Feb 2016, Revision: -, Pages: - Drawing No. ozone ROCK 13 DN 38 MHS, ozone ROCK 13 DN 38 MHS dated 02 May 2016, Revision: -, Pages: - Drawing No. sa_doc, signed application documents to ABS, Revision: 0, Pages: 1 Drawing No. sa_doc, signed application documents to ABS, Revision: 0, Pages: 2

	Drawing No. R-13_DN19-31-51_Fire Resistance TR_60042704, R-13_DN19-31-51_Fire Resistance TR_60042704 dated 24 Oct 2003, Revision: -, Pages: - Drawing No. LAPI Fire Test Report R15 DN38 dated 27 Apr 2010, Revision: -, Pages: -
Term of Validity:	This Product Design Assessment (PDA) Certificate 16-GE1565114-PDA, dated 28/Sep/2016 remains valid until 27/Sep/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.
ABS Rules:	2016 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, Appendix 2 and 3, which covers the following: 2016 Mobile Offshore Drilling Unit Rules 1-1-4/9.7, Appendix 2 and 3, 4-2-1/11.29 2016 Rules for Conditions of Classification, 1-1-4/7.7, 1-1 Appendix 3 and 4, which covers the following: 2016 Steel Vessel Rules 4-6-2/5.7, 4-6-7/3.5.2 2016 Steel Vessel Rules Under 90 Meters 4-4-1/9.19 2016 Offshore Supply Vessel Rules 4-6-2/5.7 2016 High Speed Craft Rules 1-1-4/11.9, 1-1-Appendix 2 and 3, 4-4-1/9.19 2014 (Up-dated 2015) Guide for Building and Classing Yachts 1-1-3/3.3, 1-1-A3/5 and 4-1-1/Table3, 4-4-1/9.19
National Standards:	
International Standards:	
Government Authority:	
EUMED:	
Others:	

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	16-GE1565114-PDA	28/SEP/2016	27/SEP/2021

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

Attachement to PDA Certificate No. 16-GE1565114-PDA-DUP

POS	SIZE			MODEL	MAX WORK PRESS [bar]	FITTINGS	
	DN	DASH	INCH				
1	10	-6	3/8	ROCKMASTER/12	280	MF+M00910-06	OPK-06
2	12	-8	1/2	ROCKMASTER/12	280	MF+M00910-08	OPK-08
3	16	-10	5/8	ROCKMASTER/12	280	MF+M00910-10	OPK-10
4	19	-12	3/4	ROCKMASTER/12	280	MF+M00920-12	OPK-12
5	25	-16	1	ROCKMASTER/12	280	MF+M00920-16	OPK-16
6	31	-20	1 1/4	ROCKMASTER/12	210	MF+M00920-20	OPK-20
7	38	-24	1 1/2	ROCKMASTER/12	175	MF+M00910-24	OPK-24
8	51	-32	2	ROCKMASTER/12	175	MF+M00910-32	OPK-32
9	6	-4	1/4	ROCKMASTER/13	690	-	-
10	10	-6	3/8	ROCKMASTER/13	690	-	-
11	12	-8	1/2	ROCKMASTER/13	620	-	-
12	19	-12	3/4	ROCKMASTER/13	350	IP+M01500-12	SP+M05400-12
13	25	-16	1	ROCKMASTER/13	350	IP+M01500-16	SP+M05400-16
14	31	-20	1 1/4	ROCKMASTER/13	350	IP+M01600-20	SP+M05500-20
15	38	-24	1 1/2	ROCKMASTER/13	350	IP+M01600-24	SP+M05500-24
16	51	-32	2	ROCKMASTER/13	350	IP+M01800-32	SP+M05500-32
17	19	-12	3/4	ROCKMASTER/15	420	IP+M01500-12	SP+M05400-12
18	25	-16	1	ROCKMASTER/15	420	IP+M01500-16	SP+M05400-16
19	31	-20	1 1/4	ROCKMASTER/15	420	IP+M01600-20	SP+M05500-20
20	38	-24	1 1/2	ROCKMASTER/15	420	IP+M01600-24	SP+M05500-24

Certificate Number: 16-GE1565114-PDA-DUP
19/OCT/2016

Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 04/DEC/2019. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 27/SEP/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Flexible Hose

Model Name(s): ROCKMASTER/12, ROCKMASTER/13, ROCKMASTER/15

Presented to:
MANULI HYDRAULICS MANUFACTURING SP. Z O.O.
PRZEDSIEBIORCOW STR. 5
Poland

Intended Service:	Hydraulic Systems - Sea Water - Sanitary Systems
Description:	Oil resistant synthetic rubber hoses reinforced with 4 or 6 high tensile steel wire spirals, covered with a synthetic rubber sheath.
Ratings:	ROCKMASTER/12 - from DN10 to DN51, pressure from 280 to 175 bar. ROCKMASTER/13 - from DN6 to DN51, pressure from 690 to 350 bar. ROCKMASTER/15 - from DN19 to DN 38, pressure 420 bar. Continuous service temperature for all hoses from -40 deg C to +121 deg C, max temp. +125 deg C For details refer to attached table.
Service Restrictions:	1) Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 2) Hoses are to be complete with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications. 3) End connections are to comply with applicable requirements and limitation of Rules (4-6-2/5.5.4, 4-6-2/5.5.5, 4-6-7/3.5.1, 4-6-7/5.3.2). 4) Hose assemblies are to be installed only where flexibility is required, in clearly visible and readily accessible locations, and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only. 5) Not to be used in high pressure fuel oil injection systems, steam systems or oil supply lines to boilers. 6) Not to be used for installations where repeated and/or frequent flexing is expected. 6)) Flexible hoses are to be permanently marked by

	the manufacturer with the following details: Hose manufacturer's name or trademark, Date of manufacture (month/year), Designation type reference, Nominal diameter, Pressure rating, Temperature rating.
Comments:	The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. Only MANULI approved ferrules and inserts are to be used for end fittings, as per the manufacturer's recommendations.
Notes / Documentation:	Drawing No. ABS 01-GE217368-4-PDA, ABS 01-GE217368-4-PDA, Revision: 0, Pages: 1 Drawing No. Burst test R12 dn10, Burst test R12 dn10 dated 21 Jul 2015, Revision: -, Pages: - Drawing No. Burst test R12 dn12, Burst test R12 dn12 dated 16 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn16, Burst test R12 dn16 dated 12 Jun 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn19, Burst test R12 dn19 dated 05 May 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn25, Burst test R12 dn25 dated 03 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn31, Burst test R12 dn31 dated 07 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn38, Burst test R12 dn38 dated 08 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R12 dn51, Burst test R12 dn51 dated 15 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn10, Burst test R13 dn10 dated 14 Aug 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn12, Burst test R13 dn12 dated11 Jul 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn19, Burst test R13 dn19 dated 08 Feb 2015, Revision: -, Pages: - Drawing No. Burst test R13 dn25, Burst test R13 dn25 dated 06 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn31, Burst test R13 dn31 dated 10 Aug 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn38, Burst test R13 dn38 dated 10 Jun 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn51, Burst test R13 dn51 dated 07 May 2016, Revision: -, Pages: - Drawing No. Burst test R13 dn6, Burst test R13 dn6 dated 31 Jan 2013, Revision: -, Pages: - Drawing No. Burst test R15 dn19, Burst test R15 dn19 dated 23 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn25, Burst test R15 dn25 dated 23 Feb 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn31, Burst test R15 dn31 dated 15 Jul 2016, Revision: -, Pages: - Drawing No. Burst test R15 dn38, Burst test R15 dn38 dated 24 Feb 2016, Revision: -, Pages: - Drawing No. Certyfikate for MHM, Certyfikate for MHM, Revision: 0, Pages: 1 Drawing No. DNV_ R-13_DN19-31-51_Hydraulics Test Report_60042706, DNV_ R-13_DN19-31-51_Hydraulics Test Report_60042706 dated 19 Jan 2011, Revision: -, Pages: - Drawing No. Data sheet R12, Data sheet R12, Revision: -, Pages: - Drawing No. Data sheet R13, Data sheet R13, Revision: -, Pages: - Drawing No. Data sheet R15, Data sheet R15, Revision: -, Pages: - Drawing No. ISO 9001 MHITA_exp, ISO 9001 MHITA_exp, Revision: 0, Pages: 1 Drawing No. ISO9001 MHS, ISO9001 MHS, Revision: 0, Pages: 1 Drawing No. R-12_DN51_Hydraulics Test Report_60043523, R-12_DN51_Hydraulics Test Report_60043523 dated 13 May 2011, Revision: -, Pages: - Drawing No. R-13_DN19-38_Hydraulics Test Report_60042631, R-13_DN19-38_Hydraulics Test Report_60042631 dated 15 Jun 2006, Revision: -, Pages: - Drawing No. R-15_DN38_Hydraulics Test Report_60041951, R-15_DN38_Hydraulics Test Report_60041951 dated 09 May 2011, Revision: -, Pages: - Drawing No. ROCKMASTER 12 _fluid resistance, ROCKMASTER 12 _fluid resistance dated 18 Sept 2015, Revision: -, Pages: - Drawing No. ROCKMASTER 13_fluid resistance, ROCKMASTER 13_fluid resistance dated 18 Mar 2016, Revision: -, Pages: - Drawing No. ROCKMASTER 15 _fluid resistance, ROCKMASTER 15 _fluid resistance dated 18 Mar 2016, Revision: -, Pages: - Drawing No. Type Approval Request for R-12-13-15, Type Approval Request for R-12-13-15, Revision: -, Pages: - Drawing No. cold ROCK 12 DN 10 MHS., cold ROCK 12 DN 10 MHS dated 09 Apr 2015., Revision: -, Pages: - Drawing No. cold ROCK 12 DN 19 MHS, cold ROCK 12 DN 19 MHS dated 15 Jan 2016, Revision: -, Pages: - Drawing No. cold ROCK 12 DN 51 MHS, cold ROCK 12 DN 51 MHS dated 21 Apr 2015, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 10 MHS, ozone ROCK 12 DN 10 MHS dated 26 Feb 2016, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 19 MHS, ozone ROCK 12 DN 19 MHS DATED 26 fEB 2016, Revision: -, Pages: - Drawing No. ozone ROCK 12 DN 51 MHS, ozone ROCK 12 DN 51 MHS dated 26 Feb 2016, Revision: -, Pages: - Drawing No. ozone ROCK 13 DN 38 MHS, ozone ROCK 13 DN 38 MHS dated 02 May 2016, Revision: -, Pages: - Drawing No. sa_doc, signed application documents to ABS, Revision: 0, Pages: 1 Drawing No. sa_doc, signed application documents to ABS, Revision: 0, Pages: 2 Drawing No. R-13_DN19-31-51_Fire Resistance TR_60042704,

R-13_DN19-31-51_Fire Resistance TR_60042704 dated 24 Oct 2003, Revision: -, Pages: - Drawing No. LAPI Fire Test Report R15 DN38 dated 27 Apr 2010, Revision: -, Pages: -

Term of Validity: This Product Design Assessment (PDA) Certificate 16-GE1565114-PDA-DUP, dated 03/Oct/2016 remains valid until 27/Sep/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules: 2016 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, Appendix 2 and 3, which covers the following: 2016 Mobile Offshore Drilling Unit Rules 1-1-4/9.7, Appendix 2 and 3, 4-2-1/11.29 2016 Rules for Conditions of Classification, 1-1-4/7.7, 1-1 Appendix 3 and 4, which covers the following: 2016 Steel Vessel Rules 4-6-2/5.7, 4-6-7/3.5.2 2016 Steel Vessel Rules Under 90 Meters 4-4-1/9.19 2016 Offshore Supply Vessel Rules 4-6-2/5.7 2016 High Speed Craft Rules 1-1-4/11.9, 1-1-Appendix 2 and 3, 4-4-1/9.19 2014 (Up-dated 2015) Guide for Building and Classing Yachts 1-1-3/3.3, 1-1-A3/5 and 4-1-1/Table3, 4-4-1/9.19

National Standards:
International Standards:
Government Authority:
EUMED:
Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA-DUP	16-GE1565114-PDA-DUP	03/OCT/2016	27/SEP/2021

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

Attachement to PDA Certificate No. 16-GE1565114-PDA

POS	SIZE			MODEL	MAX WORK PRESS [bar]	FITTINGS	
	DN	DASH	INCH				
1	10	-6	3/8	ROCKMASTER/12	280	MF+M00910-06	OPK-06
2	12	-8	1/2	ROCKMASTER/12	280	MF+M00910-08	OPK-08
3	16	-10	5/8	ROCKMASTER/12	280	MF+M00910-10	OPK-10
4	19	-12	3/4	ROCKMASTER/12	280	MF+M00920-12	OPK-12
5	25	-16	1	ROCKMASTER/12	280	MF+M00920-16	OPK-16
6	31	-20	1 1/4	ROCKMASTER/12	210	MF+M00920-20	OPK-20
7	38	-24	1 1/2	ROCKMASTER/12	175	MF+M00910-24	OPK-24
8	51	-32	2	ROCKMASTER/12	175	MF+M00910-32	OPK-32
9	6	-4	1/4	ROCKMASTER/13	690	-	-
10	10	-6	3/8	ROCKMASTER/13	690	-	-
11	12	-8	1/2	ROCKMASTER/13	620	-	-
12	19	-12	3/4	ROCKMASTER/13	350	IP+M01500-12	SP+M05400-12
13	25	-16	1	ROCKMASTER/13	350	IP+M01500-16	SP+M05400-16
14	31	-20	1 1/4	ROCKMASTER/13	350	IP+M01600-20	SP+M05500-20
15	38	-24	1 1/2	ROCKMASTER/13	350	IP+M01600-24	SP+M05500-24
16	51	-32	2	ROCKMASTER/13	350	IP+M01800-32	SP+M05500-32
17	19	-12	3/4	ROCKMASTER/15	420	IP+M01500-12	SP+M05400-12
18	25	-16	1	ROCKMASTER/15	420	IP+M01500-16	SP+M05400-16
19	31	-20	1 1/4	ROCKMASTER/15	420	IP+M01600-20	SP+M05500-20
20	38	-24	1 1/2	ROCKMASTER/15	420	IP+M01600-24	SP+M05500-24