



## 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 RYCO Hydraulics Sdn. Bhd.</b>
<b>Address</b>	Plot 207, Kuala Ketil Industrial Estate, Kuala Ketil, Kedah, 09300, Malaysia
<b>Place of Production</b>	MANULI RYCO Hydraulics Sdn. Bhd. Plot 207, Kuala Ketil Industrial Estate, Kuala Ketil, Kedah, 09300, Malaysia
<b>Place of Production</b>	Manuli Ryco Hydraulics (Dalian) Co., Ltd. 38 Ying Ri Road, Ying Cheng Zi Industrial Zone, Gan Jing Zi District, Dalian, Liaoning, 116036, China
<b>Place of Production</b>	Manuli Hydraulics (Suzhou) Co., Ltd. No. 85, Xinglin Street, Suzhou Industrial Park, Suzhou, Jiangsu, 215021, China
<b>Type</b>	Flexible Hoses
<b>Description</b>	Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings, Designations: Defiant SRF, SRX
<b>Trade Name</b>	Defiant SRF, SRX
<b>Application</b>	For use on ships and offshore installations classed with Lloyd's Register, as short lengths in systems of fresh and seawater, petroleum and water based

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hydraulics.

### Specified Standard

Part 5, Chapter 12 of Lloyd's Register's Rules and Regulations for the Classification of Ships (July, 2013) Part 5, Chapter 10 of Lloyd's Register's Rules and Regulations for the Classification of Mobile Offshore Units (September 1996 plus Notices Nos. 1, 2, 3, 4, 5 & 6 as applicable)  
Fire Resistant Testing according to ISO 15540/15541

### Ratings

Sizes: DN 19 to DN 76 (Refer to appendix)  
Maximum Working Pressure: 4 to 21 bar (Refer to appendix)  
Service Temperature: -40°C to +100°C (Refer to appendix)  
Coupling Material: Carbon Steel AISI/  
Stainless Steel (Option)  
Electroplated Fe/Zn12c acc. to AS1789

### Other Conditions

In the case of seawater systems, where failure of the hoses could give rise to the danger of flooding, the hoses are to be suitably enclosed.  
Hose clamps are to be restricted to the engine cooling water system, where the hose consists of a short straight length joining two metal pipes, between two fixed points.  
Carbon steel couplings are to be normalized for temperatures below -10°C.  
In all cases the hoses are to be installed in accordance with the manufacturer's instructions and tested to the satisfaction of the attending surveyor.

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 Singapore Pte Ltd of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document SEATASS232 and its supplementary Type Approval Terms and Conditions form part of this Certificate.



## Appendix

### RATINGS

XTREME SRX	DN (mm)	Max. Pressure (bar)
SRX12	19	21
SRX16	25	17
SRX20	31	14
SRX24	38	11
SRX32	51	7
SRX40	63	4
SRX48	76	4
Temperature Range: -40°C to +100°C		

DEFIANT SRF	DN (mm)	Max. Pressure (bar)
SRF12	19	21
SRF16	25	17
SRF20	31	14
SRF24	38	11
SRF32	51	7
Temperature Range: -40°C to +100°C		

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