TYPE APPROVAL CERTIFICATE
No. **MAC139117XG/002**

This is to certify that the product identified below is in compliance with the regulations herewith specified.

Description	**Valves**
Type	**Ball Valves Series 47 C**
Applicant	**HABONIM Industrial Valves & Actuators KFAR HANASSI 1230500, ISRAEL Haifa ISRAEL**
Manufacturer	**HABONIM Industrial Valves & Actuators**
Place of manufacture	**KFAR HANASSI 1230500, ISRAEL Haifa ISRAEL**
Reference standards	**Part C, Chapter 1, Appendix 7 (Gas Fuelled Ship) RINA Rules ; Part E Chapter 9 Section 9 (Liquified Gas Carrier) RINA Rules; IGF Code as per IMO MSC.391(95), ; IGC Code as last amended by IMO MSC.377(93); BS 6364:1984**

Issued in **HAMBURG** on **May 10, 2017**. *This Certificate is valid until* **May 9, 2022**

RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE
No. **MAC139117XG/002**
Enclosure - Page 1 of 1
Ball Valves Series 47 C

Product Description
The products are cryogenic floating ball valves with hand lever designed and type tested according to British Standard – BS 6364:1984.

Reference documents
Assembly Drawings booklet approved with RINA no. HMMC-9098
Valves Catalogue booklet filed with RINA no. HMMC-9100
Operating & Maintenance Instructions booklet filed with RINA no. HMMC-9103
Test Reports booklet filed with RINA no. HMMC-9099

Materials/Components
Valves Body on Stainless steel according to the ASTM A351 CF3M/CF8M for cast made and 316/316L for bar made.
For material details reference shall be made to assembly drawings and catalogues above mentioned.

Technical Characteristics
Size DN 10 and DN 25 (3/8" and 1")
Minimum/Maximum Working Temperature range -196 °C / +230 °C
Maximum Working Pressure 100 bar
ANSI Class 600
End connections as per assembly drawings and catalogues above mentioned.

Field of Application
The valves can be used for LNG application such as cargo lines of liquified gas carriers, gas fuel supply and bunkering system of LNG propelled ships.

Acceptance Conditions

For gas fuelled ships the following IGF Code (IMO Resolution MSC.391(95)) and RINA Rules requirements are applicable:
- the valves connection to piping in accordance with 7.3.6.4.1 for direct connections and 7.3.6.4.2 for flanged connections.
- Material testing in accordance with Table 7.4
- Welding procedure tests in accordance with 16.3.4
- Tests on board as per 16.7.3.2 and 16.7.3.5
- Production Test in accordance with Part C Chapter 1 Appendix 7 par. 16.7.3 of RINA Rules

For liquefied gas carrier the following IGC code (as last amended by IMO Resolution MSC.377(93) and RINA Rules requirements are applicable:

- The valves connection to piping in accordance with 5.2.10
- Material Testing in accordance with Table 6.4
- Welding procedure tests in accordance with 6.3.5
- Production Test in accordance with Part E Chapter 9 Section 9 par. 3.1.2 of RINA Rules.

The connections shall be in compliance with Part C Chapter 1 Section 10 Table 14 & Table 15 of RINA Rules

Remarks
The maximum working pressure is to be reduced as per the Manufacturer's instructions.
Final acceptance of valves is subject to satisfactory outcome of testing as per RINA Rules.

HAMBURG May 10, 2017

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