

## 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>Hy-Lok Corporation</b>
<b>Address</b>	#97, Noksansandan 27-ro, Gangseo-gu, Busan, Republic of Korea.
<b>Place of Production</b>	Hy-Lok Corporation #97, Noksansandan 27-ro, Gangseo-gu, Busan, Republic of Korea.
<b>Type</b>	Cryogenic Ball Valve
<b>Description</b>	Top Entry Ball Valve / Trunnion Ball
<b>Trade Name</b>	VCRYOTA VCRYOTB VCRYOTC VCRYOTD
<b>Application</b>	Marine use for cargo piping systems in ships for carriage of liquefied gases in bulk
<b>Specified Standard</b>	Lloyd's Register Rules and Regulations for Classification of Ships (July 2019), Part 5, Chapter 12  Chapter 5 of Lloyd's Register's Rules and Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk (July 2019)



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<b>Ratings</b>	Refer to Appendix
<b>Additional Tests</b>	The following tests are carried out on representative samples in accordance with BS 6364:1984, ANSI/ISA-75.02.01:2008, and KS B 2101:2003 with satisfactory results:- <ol style="list-style-type: none"><li>1) Shell test</li><li>2) Cryogenic service test</li><li>3) Seat leakage test</li><li>4) Flow capacity test</li></ol>
<b>Other Conditions</b>	<ol style="list-style-type: none"><li>1) Where the valves are intended to be installed on a ship classed with LR, the valves are to be made, installed and tested in accordance with the Class I &amp; II piping systems requirements of Part 5, Chapter 12 of the Rules and Regulations for the Classification of ships.</li><li>2) Seat tightness testing for bi-directional flow is to be additionally performed where it is required by 5.13.1.1.1 of the IGC code.</li><li>3) The requirements for design temperatures below -165°C shall be specially agreed with the Flag Administration in accordance with Chapter 6, Table 6.4 of the IGC Code.</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 Asia of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. LR2016009TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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