

## Type Approval Certificate Extension

This is to certify that Certificate No. 09/10016 for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

**PRODUCER** Kwang San Co., Ltd.

**PLACE OF PRODUCTION** 1173-2, Jisa-dong, Gangseo-gu, Busan, Korea 618-230

**DESCRIPTION** Crankcase Explosion Relief Valve with Flame Arrester

**TYPE** KSRV-735, KSRV-645, KSRV-565, KSRV-480, KSRV-420, KSRV-266, KSRV-224, KSRV-204, KSRV-173, KSRV-162, KSRV-122 & KSRV-98

**APPLICATION** Device to relieve the crankcase of diesel engines of pressure in the event of an internal explosion and to prevent the passage of flame outside the crankcase and the inrush of air into the crankcase after the explosion, in marine and offshore applications

**STANDARD** Lloyd's Register (LR) Rules and Regulations for the Classification of Ships, Part 5, Chapter 2, Section 6 "Crankcase safety fitting" (July 2009)  
IACS M66 (Rev.3 Jan 2008) "IACS Type Testing Procedure for Crankcase Explosion Relief Valves"

### RATINGS

Type	Outflow area (cm <sup>2</sup> )	Opening pressure (Bar)	Remarks
KSRV-735	3,904	0.05 ~ ±20%	Hinge type
KSRV-735H	3,904	0.05 ~ ±20%	
KSRV-645	2,990	0.05 ~ ±20%	Hinge type
KSRV-645H	2,990	0.05 ~ ±20%	

**Certificate No.** 09/10016(E1)

**Issue Date** 20 November 2009

**Expiry Date** 19 May 2014

**Sheet** 1 of 2



N. Nagamune  
Yokohama Design Support Office  
Lloyd's Register

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Type	Outflow area (cm2)	Opening pressure (Bar)	Remarks
KSRV-565	2,299	0.05 ~ ±20%	Hinge type
KSRV-565H	2,299	0.05 ~ ±20%	
KSRV-480	1,662	0.05 ~ ±20%	
KSRV-420	1,257	0.05 ~ ±20%	
KSRV-266	499	0.05 ~ ±20%	
KSRV-224	327	0.05 ~ 0.10	
KSRV-204	284	0.05 ~ 0.10	
KSRV-173	201	0.05 ~ 0.10	
KSRV-162	177	0.05 ~ 0.10	
KSRV-122	95	0.05 ~ 0.10	
KSRV-98	59	0.05 ~ 0.10	

## OTHER CONDITION

Approved installation orientation: vertically mounted  
Valves are to be provided with the information so as to be mounted in the vertical position on the crankcase of the engine.

*"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 of any modification or changes to the equipment in order to obtain a valid certificate."*

*The Design Appraisal Document No. 09/10016(E1) and its supplementary Type Approval Terms and Conditions form part of this Certificate.*

All other details remain as the previous Certificate No. 09/10016 to which this extension should be attached.

Certificate No. 09/10016(E1)  
Issue Date 20 November 2009  
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Sheet 2 of 2



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