

**REISSUED**

**TYPE APPROVAL CERTIFICATE**  
No. MAC033209PU



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

<i>Description</i>	<b>Crankcase explosion relief valves</b>
<i>Type</i>	<b>KSRV Series</b>
<i>Applicant</i>	<b>KWANG SAN CO., LTD. 1173-2 JISA-DONG, GANGSEO-GU 618230, BUSAN KOREA, REPUBLIC OF</b>
<i>Manufacturer</i>	<b>KWANG SAN CO., LTD.</b>
<i>Place of manufacture</i>	<b>1173-2 JISA-DONG, GANGSEO-GU 618230, BUSAN KOREA, REPUBLIC OF</b>
<i>Reference standards</i>	<b>IACS UR M66: Rev. 3 Jan 2008; IACS UR M9: Rev. 3 Jan 2005, Corr. 2 Sept 2007; RINA Rules for the Classification of Ships, Part C - Machinery, Systems and Fire Protection, Chapter 1: 2009</b>

*Issued in* **BUSAN** on **April 16, 2009**. *This Certificate is valid until* **April 15, 2014**

*Dominic Suk*



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This certificate consists of this page and 1 enclosure



# RINA

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**KSRV Series**

### Product Description

- Crankcase explosion relief valves for crankcases of internal combustion engines having following technical data:

Model No.	Drawing No.	Open Area [cm <sup>2</sup> ]	Free Area [cm <sup>2</sup> ]	Opening Pressure [bar]	Remark
KSRV-735	KSRV-735-0 (Rev. 2)	3904	4602	0.05±20%	
KSRV-735H(A)	KSRV-735H-01 (Rev. 1)	3904	4602	0.05±20%	Hinged Type
KSRV-645	KSRV-645-0 (Rev. 2)	2990	3465	0.05±20%	
KSRV-645H(A)	KSRV-645H-01 (Rev. 1)	2990	3465	0.05±20%	Hinged Type
KSRV-565	KSRV-565-0 (Rev. 2)	2299	2633	0.05±20%	
KSRV-565H(A)	KSRV-565H-01 (Rev. 1)	2299	2633	0.05±20%	Hinged Type
KSRV-480	KSRV-480-0 (Rev. 2)	1662	1896	0.05±20%	
KSRV-420	KSRV-420-0 (Rev. 2)	1257	1447	0.05±20%	
KSRV-266	KSRV-266-1 (Rev. 2)	499	541	0.05±20%	
KSRV-224(A)	KSRV-224-1 (Rev. 3)	346	354	0.05 ~ 0.1	
KSRV-204(A)	KSRV-204-1 (Rev. 3)	284	300	0.05 ~ 0.1	
KSRV-173(A)	KSRV-173-1 (Rev. 3)	201	210	0.05 ~ 0.1	
KSRV-173(B)	KSRV-173-5 (Rev. 3)	201	210	0.05 ~ 0.1	Drain Hole Type
KSRV-162(A)	KSRV-162-1 (Rev. 3)	177	188	0.05 ~ 0.1	
KSRV-122(A)	KSRV-122-1 (Rev. 3)	95	104	0.05 ~ 0.1	
KSRV-98(A)	KSRV-98-1 (Rev. 1)	59	70	0.05 ~ 0.1	

\* Fully open at a pressure not greater than 0.2 bar

- Equipped with a Flame Arrester which permits flow for crankcase pressure relief and prevents passage of flame following a crankcase explosion
- Orientation (in which the valve was tested): vertical position

### Reference Documents

- Specification: Kwangsan specification No. KSRV-735~420 (Rev. 2), No. KSRV-266~204 (Rev. 3), No. KSRV-173~122 (Rev. 3) and No. KSRV-98 (Rev. 1) dated 30/06/2009, No. KSRV-735H~565H (Rev. 1) dated 30/06/2009
- Test Report: FTZU Test Report No. 08.0398-47 and No. 08.0397-47 dated 08/08/2008, No. 08.0852-47 dated 25/11/2008, No. 08.0815-47 and No. 08.0813-47 dated 14/11/2008, No. 09.0040-47 dated 20/01/2009

### Note/Remark

- The product is subject to the compliance with RINA Rules and Standards mentioned on the certificates
- Type Approval certifies that a representative sample of the product has been found to meet the applicable design criteria
- Any modification or change shall not be valid until approval is granted by RINA as a result of due assessment.
- Manufacturer's installation and maintenance manual in compliant with IACS UR M9 is to be provided.
- Valves are to be provided with suitable markings in accordance with IACS UR M9.
- Plans showing details and arrangements of crankcase explosion relief valves are to be submitted for approval.
- The aggregate free area of the valves fitted on an engine must not be less than 115cm<sup>2</sup>/m<sup>3</sup> of the crankcase gross volume.

**BUSAN April 16, 2009**

\*Rev. 1 of MAC033209PU by the request of applicant "Kwangsan": BUSAN July 24, 2009  
- updated certificate according to the latest revision on specification (detail drawing) as of 30/06/2009



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