



Certificate No:
TAP00002K4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Solenoid Valve**

with type designation(s)

RB01 - LEGV ...-MS...

Issued to

Robert Bosch AG
Hallein, Salzburg, Austria

is found to comply with

DNV rules for classification – Ships

DNV class programme DNV-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature -20°C...+110°C

Humidity <85%, non-condensing

Issued at **Hamburg** on **2022-08-08**

This Certificate is valid until **2027-08-07**.

DNV local station: **Augsburg**

for **DNV**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

.....
Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Page 1 of 4

Product description

Large Engine Gas Valve LEGV: Type RB01 – LEGV...-MSA is an electrically actuated metering valve for delivering controlled quantities of gaseous fuel, at a controlled moment, into an inlet manifold of gas fueled internal combustion engine.

Technical Data:

Nominal rated speed	500 ... 1900 rpm
Ambient temperature	-20°C ... +110°C
Ambient humidity	≤ 85%, non-condensing
Ambient air pressure	80k Pa ... 110 KPa
Gas supply temperature	-20°C ... +95°C
Max. gas supply pressure p_1	12 bara ¹ (1.2 MPa)
Max. air manifold pressure p_2	10 bara ¹ (1.0 MPa)
Differential pressure	Depend on size of LEGV

Note 1: to reach the performance stated under.

Materials for the drawings number: F000B.G00.00 and 0441.B00.215

Valve Parts	Material – Stainless Steel	EN Standard	Bosch – Order Specification
Housing	1.4305	DIN EN 10088-3:2014-12	F02X.000.480
Housing cover	1.4305		F02X.000.590
Claw	1.4112		4497.022.193
Flange	1.4305		F02X.000.590
Ring	1.4305		F02X.000.590

Sealings Components for the drawings number: F000B.G00.00 and 0441.B00.215

FKM, FPM acc. to Bosch Order specification: N28 GW13-033.

Application

Large Engine Gas Valve LEGV: Type RB01 – LEGV...-MSA are type approved for the following operating media: Gaseous fuels such as compressed natural gas (CNG) or boil-off gas from liquefied natural gas (LNG).

The scope of application includes power generation (GenSet), mechanical drive, marine as well rail, mobile Gen set, Marine and mining².

Note 2: underground mining applications are not permissible.

For selection of compressed natural gas (CNG) or boil-off gas from liquefied natural gas (LNG) treatment plants for the corresponding application and the right installation and maintenance the instructions of the manufacturer are to be observed.

Limitation

Large Engine Gas Valve LEGV: Type RB01 – LEGV... may not be used for other type of combustible and applications with flowing media specified as dangerous and toxic fluids.

Tests carried out

Large Engine Gas Valve LEGV: Type RB01 – LEGV...-MSA have been tested in accordance with the following standards:

Test standard: DNV Pt.4 Ch.3 DNV CP-186		Purpose
Title	Test reference	
Hydrostatic Pressure Test	Valve Body	To confirm the pressure containing capability of the shell against internal pressure Test pressure = 1,5 times the design pressure No leakage is permitted.
Hydrostatic/Pneumatic Seat tightness	Valve seat	To confirm the capability of the seats to comply with the specified leakage rate At the manufacture In the direction(s) for which the valve is designed No visible leakage.
Functional test	Valve assembly	Function test of completed assembled valve.

Type Approval documentation

Marking of product

For traceability to this type approval the Large Engine Gas Valve LEGV: Type RB01 – LEGV...-MSA are to be marked in particular with:

Scope	Example
Company name and logo	 BOSCH
Type designation	RB01-LEGV50 -MSA -XX-XX-B121
Part number	0441B00121
Seria number	037 00001
EU type examination conformity no. ATEX	EPS 19 ATEX 1 010 X
IECEEx certificate of conformity No.	IECEEx EPS 19.0002X
Place of manufacture	Austria
Date	2020-01

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNV CP-0338, Sec.4.

- The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE