MSA
The Safety Company

GB

Basic Manual
M1 LGDV
Positive Pressure Lung Governed Demand Valve

Order No.: D2018702-EN/00

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1 Safety Regulations

1.1 Correct Use

The M1 LGDV, in this manual also referred to as device, is a lung governed demand valve for a Compressed Air Breathing Apparatus or Compressed Airline Breathing Apparatus. It is connected between compressed air supply and full face mask and controls the inhaled air.

The M1 lung governed demand valve series is only permitted for specific system components.

⚠ WARNING!

The device is not an independent breathing apparatus. It must be used exclusively mounted on a full face mask and an SCBA / CABA.
The device is not suitable for underwater diving.

⚠ WARNING!

This product is supporting life and health. Inappropriate use, maintenance or servicing may affect the function of the device and thereby seriously compromise the user's life.
Before use, the product operability must be verified. The product must not be used if the function test is unsuccessful, it is damaged, a competent servicing/maintenance has not been made, genuine MSA spare parts have not been used..

1.2 Liability Information

MSA accepts no liability in cases where the device has been used inappropriately or not as intended. The selection and use of the device are the exclusive responsibility of the individual operator.

Product liability claims, warranties and guarantees made by MSA with respect to the device are voided, if it is not used, serviced or maintained in accordance with the instructions in this manual.

1.3 Series

This manual applies to the following lung governed demand valves from the M1 LGDV series:

AS (push to connect / quick connect)

- M1-AS LGDV, short
- M1-AS LGDV, long
- M1-AS LGDV, fix

M45x3 (threaded version)

- M1-AE LGDV M45x3, short
- M1-AE LGDV M45x3, long
- M1-AE LGDV M45x3, fix

ESA (push to connect / quick connect according to DIN 58600)

- M1-ESA LGDV, short
- M1-ESA LGDV, long

AS-B (push to connect / quick connect with Bypass)

- M1-AS-B LGDV, short
- M1-AS-B LGDV, long

Explanations on model designation

AS:	Positive pressure, plug-in connection, suitable for full face masks PS-MaXX
AE:	Positive pressure, thread connection M45x3 according to DIN EN 148-3, suitable for full face masks -PF
ESA:	Positive pressure, plug-in connection according to DIN 58600, suitable for full face masks ESA
AS-B:	Positive pressure, bypass for constant air flow

2 Description

M1-AS LGDV **M1-AE LGDV** **M1-ESA LGDV** **M1-AS-B LGDV**

1	Flush button	6	Dust cap
2	Cover	7	Medium pressure hose
3	Positive pressure spring	8a	Short / long version for coupling
4	Diaphragm	8b	Fixed version
5	Valve assembly (inclusive housing)	9	Bypass

3 Use

3.1 Preparing the Device

⚠ WARNING!

The lung governed demand valve may only be put into use in a fully maintained and tested condition. If malfunctions or defects are noticed prior to use, do not use the lung governed demand valve under any circumstances. Failure to follow this warning can result in serious personal injury or death.
Get the apparatus checked and repaired by an authorised service centre.

Switching off the Device

Before connecting the device to medium pressure, in order to prevent accidental air delivery, push the red operating button to switch off the device.

3.2 Connecting the Device

1. Insert plug-in nipple of the device into the coupling of the medium pressure hose of an approved SCBA until it distinctly snaps into place (not for fixed LGDV).
2. Don full face mask and perform tightness check according to the mask operating manual.
3. Open cylinder valve(s) fully.
4. Screw the device into the mask (M1-AE) or insert it into the adapter of the mask until it distinctly snaps into place (M1-AS, M1-AS-B, M1-ESA).

Support during Donning

MSA recommends that the device must be attached to the mask and the connection inspected by a second person.

3.3 Putting the Device into Operation

To activate the device, inhale once forcefully or push the flush button.

⚠ WARNING!

When using the flush button, the compressed air consumption increases.

In case of an emergency, push the flush button to flush out smoke and gases from the mask.

3.4 Switching off the Device

To switch off the device, push red operating button until stopper.

3.5 Removing the Device from Mask

For M1-AE:

1. Switch off the device by pushing the red operating button.
2. Unscrew handwheel and separate device from the mask.

For M1-AS, M1-AS-B and M1-ESA:

1. Press both operating buttons simultaneously.
2. Separate the device from the mask.

3.6 Removing the Device from SCBA

1. If necessary, uncouple medium pressure hose (not for fixed LGDV): Push the plug-in nipple into the coupling of the medium pressure hose forcefully and pull back the coupling sleeve at the same time.

3.7 Bypass System (only for M1-AS-B LGDV)

A bypass system is available for the M1-AS-B LGDV.

It is a safety system that supplies the user with continuously flowing air independent of the lung governed demand valve. By turning the red handwheel, the bypass is opened and can be set individually.

⚠ WARNING!

When using the bypass, the compressed air consumption increases.

4 Maintenance

4.1 Maintenance Intervals

Component	Work to be performed	After use	Annually	Every 3 years	Every 10 years[1)]
M1 LGDV	Cleaning	X		X	
	Disinfection	X			
	Sight, function and tightness test	X	X[2)]		
	Diaphragm replacement			X	
	Overhaul				X

1) For compressed air breathing apparatus that are frequently used, MSA recommends a complete overhaul after approx. 540 hours. (This corresponds to 1080 uses with a usage duration of 30 minutes.)

2) Visual test of diaphragm only after use in aggressive media or under extreme conditions like i. e. excessive heat; function and tightness test always.

4.2 Cleaning and Disinfection

For cleaning and disinfection, see washing instructions.

4.3 Storage

Always store positive pressure lung governed demand valves when switched off. To do this, push the red operating button.

Store the device with protective cap attached. The storage should be in a clean and dry condition at normal climate free of hazards, protected against direct sunlight and heat.

The storage room must be cool, dry, dust-free and moderately ventilated.

The optimal storage temperature is between +15 °C and 25 °C. The optimal relative humidity is below 65 %.

4.4 Malfunction

In case of malfunctions, the device must be inspected and if necessary repaired by MSA or trained service personnel.

5 Technical Data

Operating pressure	:	4 - 9 bar dynamic
Operating temperature	:	-40 °C to 60 °C
Operating gas	:	Breathing air according to EN12021 or better
Max. flow bypass (AS-B)	:	650 l/min
Transponder	:	Amplitude modulation: 13.56 MHz, 1024 bit, IP 68 Temperature range: -40 °C up to +70 °C

6 Certification

Approvals	The device complies with the Regulation (EU) 2016/425.
CE	0158
EN 137	Lung governed demand valves of the M1 LGDV series are approved as components of a compressed air breathing apparatus in compliance with EN 137.
DEKRA	Dinnendahlstr. 9,44809 Bochum, Germany

The Declaration of Conformity can be found under the following link: https://MSAsafety.com/DoC

6.1 Marking

For ATEX marking for use in potentially explosive atmospheres see M1 LGDV operating manual.

7 Approved System Components

Compressed air breathing apparatus - Series
M1 ATO

Full face mask - Series
3S
Ultra Elite
G1

ATO = Assemble To Order

Manual	**Part Number**
Operating Manual M1 LDGV	10190261
Operating Manual G1 Facepiece	10161150
Operating Manual 3S and Ultra Elite full face masks	10126346

See MSAsafety.com.