



ATMOSPHERE^{APS} Series
Haze Generator



MAX^{APS} Series
Fog Generator



USER GUIDE

No: 120815, Revision A/c



Les Générateurs de Brouillard MDG Ltée / MDG Fog Generators Ltd
10301 avenue Pelletier, Montréal, Québec, Canada H1H 3R2
Tel. 514-272-6040 / 800-663-3020 - Fax 514-722-3229
www.mdgfog.com e-mail : info@mdgfog.com



Intentionally left blank

INTRODUCTION

Congratulations! You are now in possession of a MDG **MAX** Fog Generator series and/or a MDG **ATMOSPHERE** Haze Generator series.

We hope it will bring you long hours of satisfaction. This product is available in many versions to satisfy the needs of our professional users.

Please read the following instructions carefully and completely before filling your generator with fog fluid and turning it on.



CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



CAUTION

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

BASIC DESCRIPTION

The MDG MAX^{APS} and ATMOSPHERE^{APS} Series as well as their H.O. / TOURING^{APS} Versions were designed with safety and reliability in mind. They are capable of generating pure white fog or haze for as long as you want (100% duty cycle). Those generators are also equipped, as a standard feature, with the Automatic Purging System™ (APS™). This system purges the heating module(s) after the first heating cycle and after every emission of fog preventing residual build up and clogging.

The MDG MAX^{APS} and MAX^{APS} H.O. / TOURING^{APS} Series are variable output Fog Generators capable of generating large volumes of very dense fog in a short period of time. They are one of the quietest units on the market.

The MDG ATMOSPHERE^{APS} and ATMOSPHERE^{APS} H.O. / TOURING Series are non-stop haze generators capable of creating the finest and almost invisible mist. They highly emphasize laser and light beams. They also feature variable output.

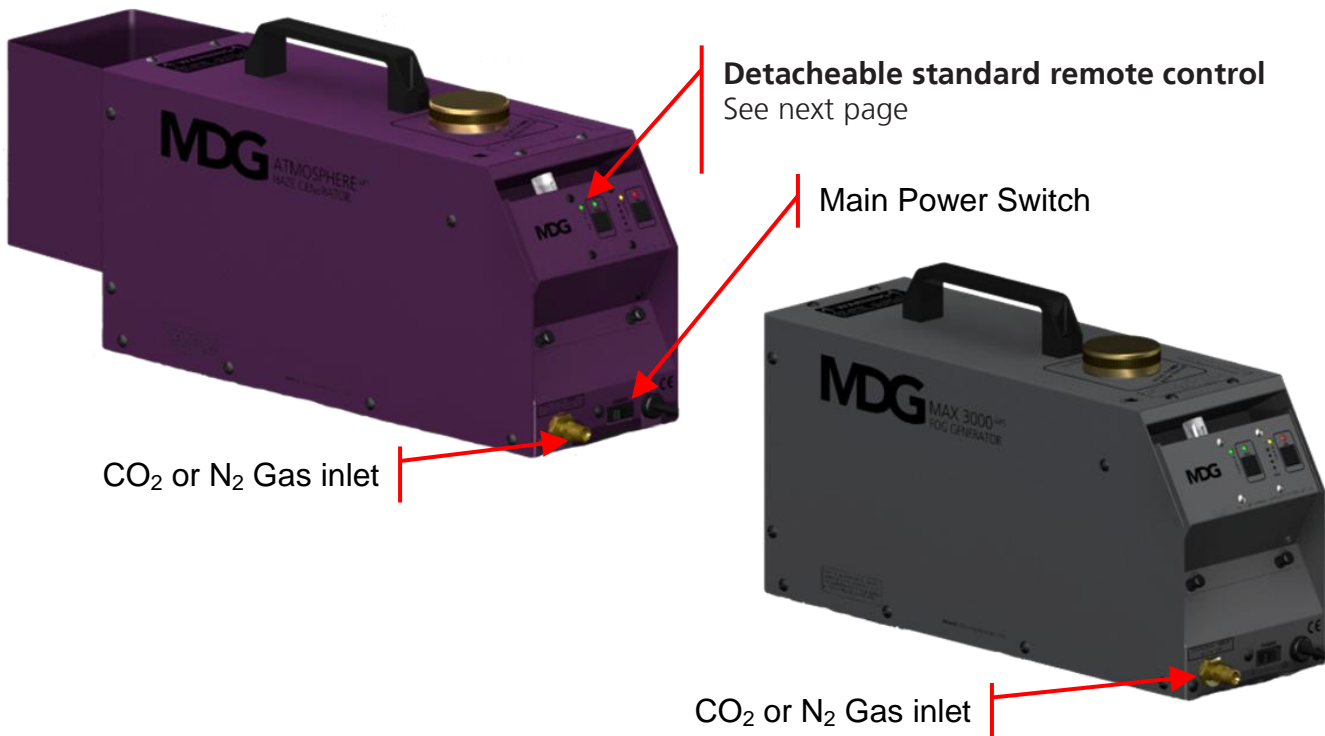
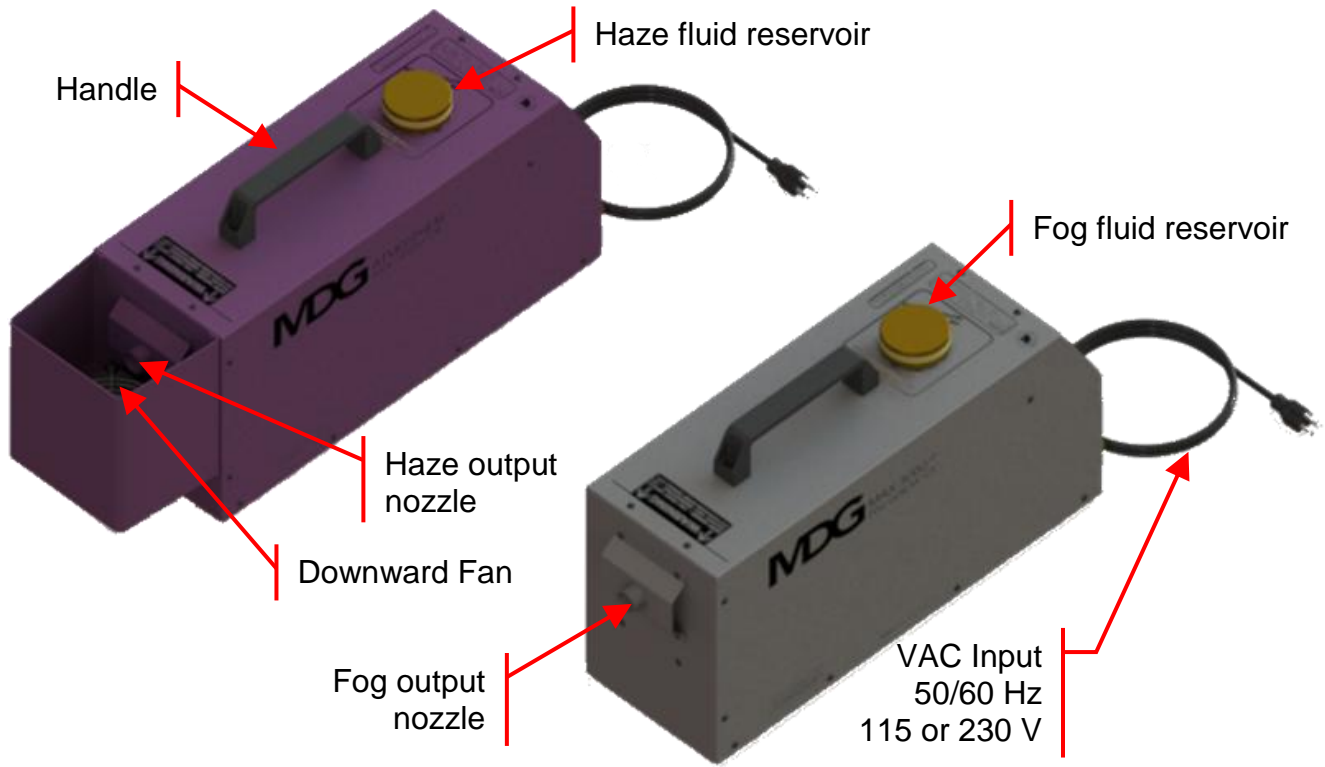
At the heart of the MDG Generators is an electronic assembly that keeps the heating module(s) at a very stable temperature which integrates three types of fail-safe systems. Those three types of electronic fail-safe systems are designed to protect against over and under-heating conditions and, against component failure.

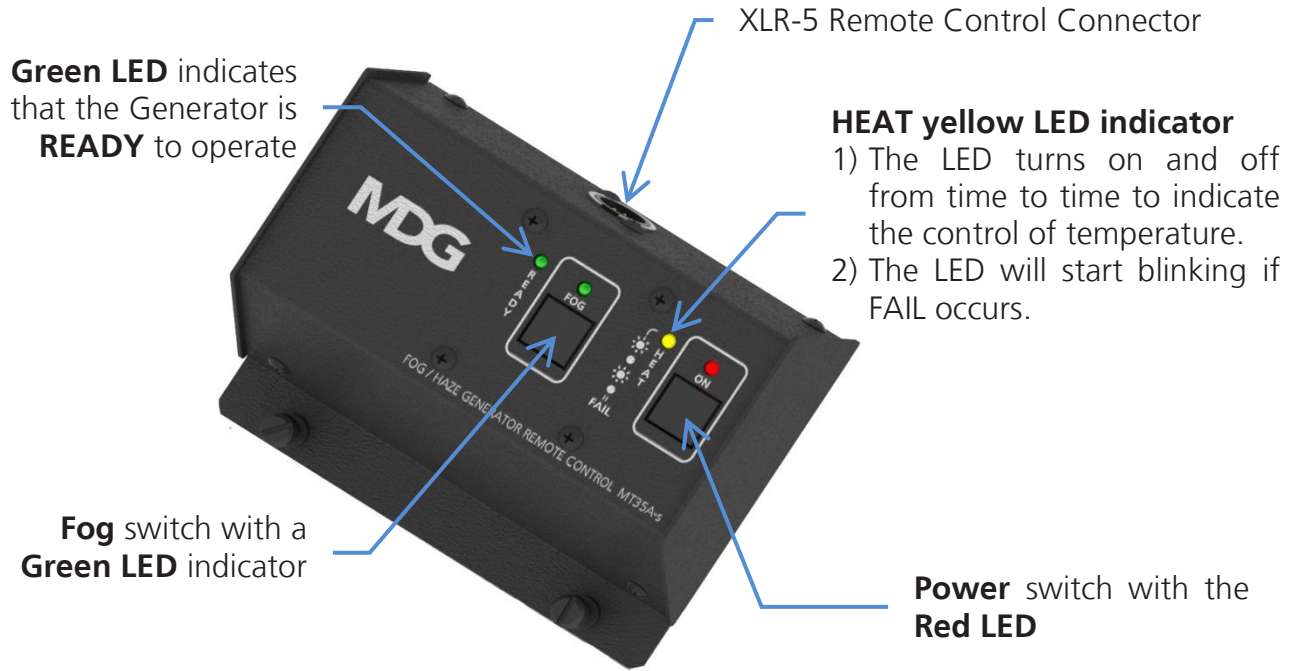
A fourth safety system consists of a pressure relief valve which limits the working pressure and protects against over-pressure.

The temperature is maintained within a narrow margin (the HEAT yellow LED turn on & off from time to time to indicate the control of temperature) otherwise, an error condition will result and the Fog Generator will shut down. When one of the safety systems is activated, the HEAT yellow LED will start blinking indicating the fail mode. Shut down the main power switch, wait 3 to 4 minutes and retry the generator. If the fail mode still appears, unplug your generator and return it to an authorized service center for verification.

The FOG ON signal (green LED) can be applied to produce fog / haze for as long as the ready level is reached and all other control parameters are within specifications. When the "FOG ON" signal is removed, the APS™ cycle is automatically initiated to clear the heating module(s). Never remove the power to a generator while it is producing fog – See the shut down procedures.

The 100% Duty cycle is continuous with specified line voltage, and will degrade with line voltage loss. If that is the case, it can be compensated by reducing maximum operating pressure.





Standard remote control

(Background color is purple for ATMOSPHERE^{APS}, and gray for MAX^{APS})

OPERATING INSTRUCTIONS

The MDG Fog Generators are quite easy to operate and require no preventive maintenance. They are supplied with a removable remote control. A DMX Interface can be bought as an option.

When the MAIN POWER (115 or 230 VAC) and the MAIN POWER SWITCH is applied, the generator is placed in stand-by mode. When in stand-by mode, most of the electronic controls are off (except for the three types of fail-safe systems), waiting for the ON switch on the remote control to be activated.

When the ON switch is pressed, the red LED indicating that the unit is working will light up, as well as the yellow LED called HEAT, indicating the start of the heating cycle which will last approximately 10 minutes. When the temperature reaches a pre-adjusted level called the READY level (indicated by a green LED), the HEAT yellow LED will turn off. The Automatic Purging SystemTM (APSTM) will be automatically initiated.

After the first purging cycle is completed (approx. time 30 to 60 sec.) the generator is ready to produce fog. The amount of the fog / haze emission can be controlled by adjusting the working pressure of the CO₂ or N₂ gas regulator.

When an overheating condition is detected, or if the internal temperature reaches 60°C (140°F), a safety circuit is triggered. This circuit removes the power to the heating elements, preventing hazardous conditions.

When an under-heating condition occurs, the generator will stop producing fog until the temperature of the heating module is back within parameters.

SETTING UP



WARNING:

- Do not operate at less than 2 meters (6.5 ft.) from people.
The MDG ATMOSPHERE^{APS} Series requires 1 m (3.28 ft) of clearance below the fan.
- Never install above people.
- When not in use ALWAYS switch OFF the power switch located on the back panel, or unplug the generator.
- Install the Fog Generator away from rain, wind, heavy dust or any harsh environment situations.
- These Fog Generators must be installed in an upright position on a stable and level surface.
- Ensure available space for all electrical cable and gas tubing runs,
- Use in a well ventilated area.

The **MDG Generators** are quite easy to operate and require no preventive maintenance.

- Fill the reservoir with **MDG Neutral Fog Fluid** (see FILLING THE FLUID RESERVOIR paragraph).
- Connect the power cord 115 or 230 VAC, 50-60 Hz (see **Table for Wattage**)
- Connect the gas inlet to a gas bottle equipped with a single or double stage regulator. The gas inlet is an Oxygen Adaptor (9/16-18 R.H).
- Open the gas bottle, and set the regulator to the operating pressure. The maximum operating pressure is defined as below:

• ATMOSPHERE ^{APS}	138 kPa / 1.38 bar / 20 psi,
• ATMOSPHERE ^{APS} H.O. / TOURING	207 kPa / 2.07 bar / 30 psi,
• MAX 3000 ^{APS} & MAX 5000 ^{APS}	276 kPa / 2.76 bar / 40 psi,
• MAX 5000 ^{APS} H.O. / TOURING	414 kPa / 4.14 bar / 60 psi,
- Switch ON the main Power switch.
- Press the Power switch on the remote control, a red LED will turn on. Then a yellow LED will turn ON indicating "HEAT ON".
- Wait 8 to 10 minutes until the green Ready LED turns ON.

- After the first purging cycle is completed (approx. time 30 to 60 sec.) the generator is ready to operate.

- Press the Fog switch to produce Haze or Fog.

The CO₂ or N₂ gases are used as a propellant when generating Fog / Haze.

Output pressure can be adjusted by mean of the CO₂ or N₂ gas regulator. The ideal range for MAX^{APS} Series is 10 to 40 psi. and the H.O. / TOURING^{APS} Version is 10 to 60 psi., for the ATMOSPHERE^{APS} Series it is 5 to 20 psi. and the H.O. / TOURING^{APS} Version is 5 to 30 psi.

- Press again the Fog switch to stop to produce Haze or Fog.

The APSTM cycle is then automatically initiated to clear the heating module(s).

SHUT DOWN PROCEDURE

A Fog Generator must never be shut down while making Fog.

To power OFF a Generator, the following sequence must be observed:

- Always turn OFF the fog emission,
- Wait a minimum of 1 minute for the purge cycle to complete. If possible avoid purging at very low pressure which reduces the efficiency of the Automatic Purging SystemTM. The recommended minimum final purging pressure is 10 psi.
- Power OFF the Fog Generator (by switching off the "MAIN POWER SWITCH" or by removing the MAIN POWER.

FILLING OF THE FLUID RESERVOIR



WARNING

Use only MDG **Neutral Fog Fluid**. Not doing so, will void the warranty and may damage the generator.



CAUTION

DISCONNECT UNIT BEFORE ADDING FOG FLUID AND WAIT COUPLE OF MINUTES TO BE SURE THE RESERVOIR IS FULLY DEPRESSURIZED.

Unscrew the brass closure and pour the **MDG Neutral Fog Fluid** until it reaches the inside bottom of the opening.

Avoid overfilling. Screw back the closure and make sure it is tightened.

GAS REQUIREMENTS



WARNING

In the European Community the gas cylinder and regulator must be compliant with the Pressure Vessel Directive.

In North America the gas cylinder must be manufactured, inspected and tested in accordance with U.S. Department of Transportation (DOT) 3AL and Transport Canada (TC) 3ALM requirements.



WARNING

The CO₂ gas regulator and the N₂ regulator do not use the same thread to mate with the cylinder. Make sure to use a CO₂ gas regulator with the CO₂ gas cylinder and to use a N₂ gas regulator with the N₂ cylinder.



WARNING

Only use industrial grade Carbon Dioxide gas (CO₂) or industrial grade Nitrogen gas (N₂).



CAUTION

To prevent gas leak and drop of pressure, ALWAYS use a neoprene washer when connecting the regulator to the cylinder

OPTIONAL ACCESSORIES

2 Channel DMX Interface



Remote Control Timer



PLC Interface



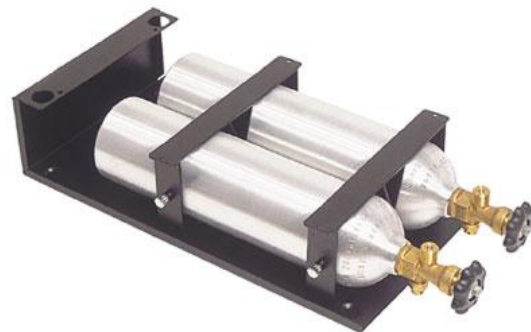
Flight cases



Portability Option



ATMOSPHERE^{APS}, MAX 3000^{APS}



ATMOSPHERE^{APS} H.O., MAX 5000^{APS}

TECHNICAL SPECIFICATIONS

	ATMOSPHERE ^{APS}		ATMOSPHERE ^{APS} H.O.		MAX 3000 ^{APS}		MAX 5000 ^{APS}		MAX 5000 ^{APS} H.O.
Electrical									
Voltage - VAC	115	230	115	230	115	230	115	230	230
Frequency - Hz	50-60	50-60	50-60	50-60	50-60	50-60	50-60	50-60	50-60
NB of phase	1	1	1	1	1	1	1	1	1
Watts	715	715	1415	1415	715	715	1415	1415	2815
Amp.	6,2	3,2	12,3	6,2	6,2	3,2	12,3	6,2	12,3
FLUID									
Type – M.S.D.S. available on request	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral	MDG Neutral
Reservoir size – litre (US gal.)	2,5 (0.66)	2,5 (0.66)	6,5 (1.72)	6,5 (1.72)	2,5 (0.66)	2,5 (0.66)	2,5 (0.66)	2,5 (0.66)	6,5 (1.72)
Consumption in litre (US oz) per hour @ 138 kPa / 1,38 bar / 20 psi	0,055 (1.85)	0,055 (1.85)			-	-	-	-	
@ 207 kPa / 2.07 bar / 30 psi			0,11 (3.7)	0,11 (3.7)					
@ 276 kPa / 2,76 bar / 40 psi	-	-	-	-	1 (34)	1 (34)	2,6 (88)	2,6 (88)	
@ 414 kPa / 4.14 bar / 60 psi	-	-	-	-	-	-	-	-	4,5 (120)
GAS									
Type (industrial grade quality)	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	CO ₂ or N ₂	N ₂ Only
Consumption in kg (Lb) per hour									
@ 138 kPa / 1,38 bar / 20 psi	0,18 (.4)	0,18 (.4)	-	-	-	-	-	-	-
@ 207 kPa / 2.07 bar / 30 psi	-	-	0,36 (0.8)	0,36 (0.8)	-	-	-	-	-
@ 276 kPa / 2,76 bar / 40 psi	-	-	-	-	0,97 (2.13)	0,97 (2.13)	2,25 (5)	2,25 (5)	-
@ 414 kPa / 4.14 bar / 60 psi	-	-	-	-	-	-	-	-	5 (11)
OUTPUT									
Fog volume in m ³ (ft ³) per min. @ 276 kPa / 2,76 bar / 40 psi	-	-	-	-	85 (3 000)	85 (3 000)	218 (7680)	218 (7680)	445 (15750)
Total running time in hour @ 138 kPa / 1,38 bar / 20 psi	45	45	60	60	-	-	-	-	-
Color	Pure white	Pure white	Pure white	Pure white	Pure white	Pure white	Pure white	Pure white	Pure white
Particle size in microns	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7	0,5 – 0,7

WARRANTY

When installed and operated as recommended, MDG Fog Generators Ltd., guarantees that this product will remain free of defects in parts and labor for a period of five (5) years from the moment it is delivered. This warranty does not apply if the product has been modified without our written authorization, or repaired without a written authorization from MDG or one of its authorized service centers, or if it is used under conditions for which it has not been designed, or if a non-MDG Fog Fluid has been used. MDG Fog Generators Ltd is not responsible for any damages resulting from a faulty installation or from abusive use of the product.

If any device is found unsatisfactory under the terms of this warranty, MDG Fog Generators Ltd will repair or replace it free of all charges except transportation costs.

This warranty applies only to the product itself and MDG Fog Generators Ltd declines responsibility for any losses, costs, or damages resulting from its use.

MDG Fog Generators Ltd shall not be liable for consequential damage in case of any failure to meet the conditions of any warranty or shipping schedule, nor will claims for labor, loss of profits, repairs, or other expenses incidental to replacement be allowed.

The repair or replacement of the product, by MDG Fog Generators Ltd shall constitute fulfillment of all obligations to the purchaser.

No other guarantees or warranties, expressed or implied, are made by MDG Fog Generators Ltd in connection with its products. This warranty is nontransferable and applies to the original purchaser only.

To obtain satisfaction under the terms of this warranty, contact your local sales office, and we will be pleased to help you.

DECLARATION OF CONFORMITY



EC DECLARATION OF CONFORMITY

According to IEC/ISO 17050

We, **MDG Fog Generators Ltd**
10301 ave Pelletier
Montreal, QC, Canada, H1H 3R2

declare under our sole responsibility, that the product including options or accessories

Fog Generators models:
MAX 3000 APS, MAX 5000 APS and MAX 5000 APS H.O.
ATMOSPHERE APS and ATMOSPHERE APS H.O.
ICE FOG Q and ICE FOG Compack
MM, MINI SINGLE, SINGLE and DUAL

to which this declaration relates, is in conformity with the following standards:

IEC 60335-1: 2001 (Fourth Edition) incl. Corr.1:2002 + A1:2004 + A2:2006
Household and similar electrical appliances – Safety/Part 1, September 2006
CISPR 22:2008-09/EN 55022, Class B
IEC 61000-6-1:2005/EN61000-6-1:2007, (EMC)-Part 6-1
FCC PART 15, Subpart B, class B

By conformance with the standards referenced, the product follows the provisions of the directives listed below:

2006/95/EC Low Voltage Directive
2004/108/EC EMC Directive

A handwritten signature in blue ink, appearing to read 'Martin Michaud', is written over a horizontal line.

Martin MICHAUD, President

August 17, 2012
Montreal, Canada

