

# MDG

## User Guide



# THE ONE

**Atmospheric Generator**

*Model 1.30 & 1.31*

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## USER GUIDE

Congratulations on your purchase of the **MDG theONE™**. These original instructions describe the use of this Atmospheric generator.

**MDG** manufactures fog generators since 1980. Our fog systems have been used in numerous applications including firefighters' training, the motion picture industry, theatres, theme parks, flight simulators, and also educational, worship and touring venues throughout the world. With proper care, we are confident your **MDG theONE™** will provide you with years of quality service.



### 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.



### CAUTION

This equipment must always be disconnected from its power source during service or when replacing parts.

## HOW TO READ THIS USER GUIDE



**WARNING** and **CAUTION** are used throughout this manual to forewarn of possible danger to the users if precautions are not observed. As is customary in military and some commercial manuals, the precautions will always precede the steps to which it refers so that the users will be aware of any potential danger before performing the task.



**WARNING** and **CAUTION** labels are key equipment parts. Do not remove, change or cover these labels. If the labels are not readable, contact **MDG Fog Generators Ltd.**

**BOLD TEXT:** Contains important information, cautionary steps and warnings that should be read and understood prior to installing the unit.

**BOLD and ITALIC TEXT:** *pertains to product names and trademarks, proprietary names and products made by MDG Fog Generators Ltd.*

Please read the following instructions carefully and completely before installing, pressurizing and turning on the Fog Generator.

## COPYRIGHT NOTICE

This User Guide (Original Instructions) is copyrighted and all rights are reserved by MDG Fog Generators Ltd.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of MDG Fog Generators Ltd.

## theONE

The **MDG theONE** is a revolutionary, digital, dual mode atmospheric generator.

Its simple and efficient multi-level User Interface, accessible from the backlit LCD panel, allows for a gradual switch between either mode seamlessly using various networking protocols, DMX-512-A USITT and RDM ANSI E1.20. Each parameter is set into specific presets but can be accessed and redefined by advanced users.

The networking capability of the **MDG theONE** allows the user to install the generator as part of an existing network.

The generator pumps its fluid from its 20 l (5.28 US gal) container into a pressurized reservoir.

The two interconnected 9 kg (20 lb) CO<sub>2</sub> (or N<sub>2</sub>) bottles sit in separate cradles in the universal standard rolling rack, for easier storage and freight.

The 100~250V, 50/60Hz universal power supply, dual rigging points, and supplied half-couplers make the **MDG theONE** especially fit for ready-to-go touring conditions (indoor use or outdoor with shelter).

## QUALIFIED PERSONNEL

**MDG theONE** systems will perform as designed but are to be installed, operated, and serviced by trained personnel. Installation, operation and servicing of this equipment require trained personnel with technical skills in electrical theory and fluid dynamics. This manual is not a substitute for qualified technicians or local authorities on electricity, gas, fluid, or engineering, and therefore does not supersede, amend or void local safety installation practices. Please refer to local authorities for further information.

## NEED A LITTLE HELP?

At MDG, we try our best to provide you with complete information for our products. Despite it all, sometimes, a little more is required due to the specifics of your project and installation. We're looking forward to go that extra mile for you. Contact us:

By Phone: +1-800-663-3020 +1-514-272-6040  
By Fax: +1-514-722-3229  
By e-mail: [info@mdgfog.com](mailto:info@mdgfog.com) On the Web: [www.mdgfog.com](http://www.mdgfog.com)

By Mail: **MDG Fog Generators Ltd.**  
10301, Avenue Pelletier  
Montréal, QC, H1H 3R2  
Canada

Please note that our business hours are from 08h30 to 12h00 and from 12h30 to 17h00 (8:30AM to 12:00PM and 12:30PM 5:00PM), Eastern (GMT -5).

## PRE-INSTALL

### ELECTRICAL REQUIREMENTS

- Operating voltage: 100-250 VAC, single phase. 50/60 Hz, 1100-1480 W.
- Ground / Earth connection **REQUIRED**.

### ENVIRONMENTAL REQUIREMENTS

Indoor use or outdoor with shelter

Dry room conditions, 90 % relative humidity @ 50 °C (122 °F), and non-condensing -30° C (-22° F) to 50° C (122° F) operating temperature

1 m (3.3 ft) clearance on all sides and in front of the equipment required.

Dust-free space

Storage conditions: -40 °C to 60 °C (-40 °F to 140 °F), 80 % relative humidity @ 60° C (140 ° F).

### CABLE REQUIREMENTS

Power input:	1.5 mm (14 AWG), 3-wire, 90 °C copper, CE UL/CSA compliant cable
DMX/RDM data:	Dual twisted pair 0.75 mm (22 AWG) + shield, XLR-5 type connector, CE UL/CSA compliant cable
Network data:	Network cable category 5 (four “twisted” wire pairs), with standard RJ-45 plugs. CE UL/CSA compliant cable
USB data:	Standard USB 2.0 cable, A to B Male/Male type, CE UL/CSA compliant cable

Note: Install Power and Data in separate conduits, or as per local electrical code requirements.

### TUBING REQUIREMENTS

<b>theONE</b> touring	Included.
<b>theONE</b> standalone	1/4" SS flexible braided Hose, end connection female JIC 37° flare 3/8" OD plastic hose for the liquid input



**CAUTION:** If the installation requires tubing, before linking the tubing to this system or any of its components, it is mandatory that all the tubing be rinsed, for at least 30 min, with pressurized hot water (minimum 60 psi @ 170 °F / 414 kPa @ 77 °C) to remove all contaminants, dust and metal particles.

## UNPACKING

The system is carefully packed at the factory for shipment. Each device is fitted into cardboard box. Upon arrival, carefully inspect the box and its content for any shipping damage.



If **ANY** damage is found, immediately report it to the freight service and to **MDG Fog Generators Ltd** within 24 hours.

When opening the container, ensure that you do not damage the exterior finish of the enclosure. Save all packing material for eventual equipment factory return.

- ✓ **theONE** atmospheric fog generator
- ✓ **theONE** rack with gas bottles, a 20 L (5.8 US gal) liquid container and an external fan
- ✓ **theONE** user's manual, and quick start

## SETTING UP



### WARNING

It is recommended that this system be operated under the supervision of personnel who have read and understood this manual.

Never install this unit overhead. Do not operate closer than 2 m (6.5 ft) from personnel.

The **MDG theONE** fog generator and its fluid bottle must be operated and installed in an upright position and in a well-ventilated area.

When not in use, **ALWAYS** turn off the main power switch located on the back panel and unplug the generator.



### WARNING

**RISK OF FIRE HAZARD** – Do not install the **MDG theONE** Fog Generator output closer than 2 m (6.5 ft.) from any open flame.



## GAS AND FLUID REQUIREMENTS

### GAS



#### WARNING

To avoid fire hazard as well as explosion risk, use **ONLY industrial** grade Carbon Dioxide gas (CO<sub>2</sub>) or **industrial** grade Nitrogen gas (N<sub>2</sub>).



#### 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 CO<sub>2</sub> gas regulator and the N<sub>2</sub> regulator do not use the same thread to mate with the cylinder. Make sure to use a CO<sub>2</sub> gas regulator with the CO<sub>2</sub> gas cylinder and to use a N<sub>2</sub> gas regulator with the N<sub>2</sub> cylinder.



#### WARNING

To prevent gas leak and drop of pressure, **ALWAYS** use a **nylon or Teflon washer** when connecting the regulator to the cylinder.

### FLUID



#### WARNING

**Use only MDG Neutral Fog Fluid.**

Not doing so **will void the warranty, may damage the generator, and cause serious injury.**

Do not add or mix any other particles or liquids to the MDG Neutral™ Fog Fluid.

The MDG Neutral™ Fog Fluid produces a pure white non-toxic fog.

MDG Neutral™ Fog Fluid is available at authorized MDG dealers or distributors.



## INSTALLING THE *MDG theONE*

Exercise caution when selecting the location to install or use this equipment:

- Install the **MDG theONE** away from rain, wind, heavy dust or any harsh environment situations (indoor or outdoor with shelter).
- Ensure available space for all conduits and tubing runs, if you are using the **MDG theONE** without its rack.
- Install the **MDG theONE** as close to fluid supply as possible, when using the **MDG theONE** without its rack.
- The **MDG theONE** requires 1 m (3.28 ft) of clearance on each side and 2 m (6.56 ft) to the front.

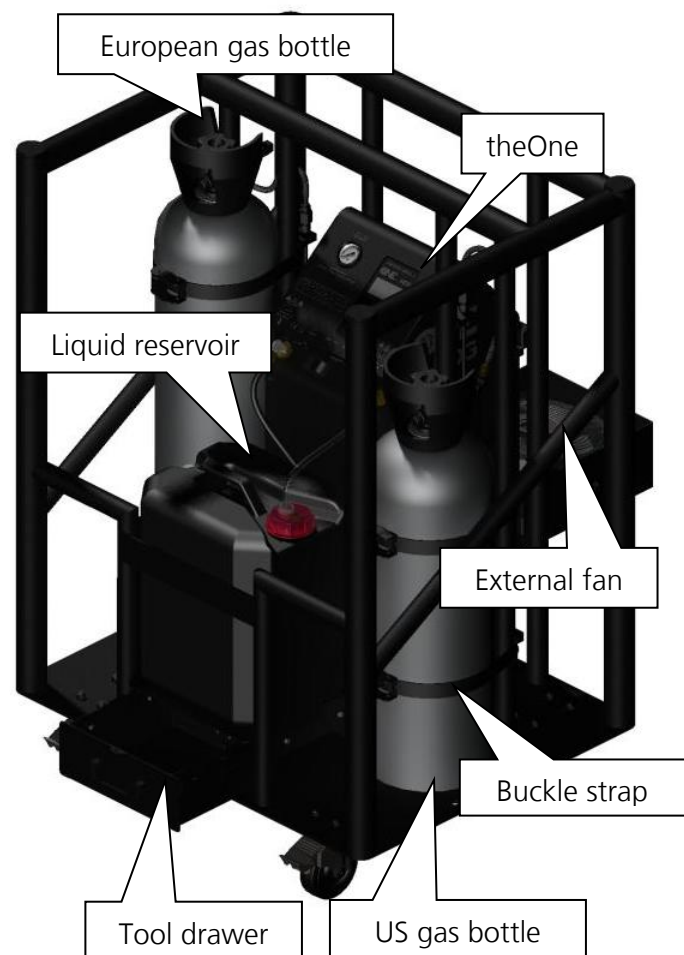
### **MDG THEONE WITH ITS RACK**

The **MDG theONE** touring (with its rack) comes almost ready to use.

- Install the gas bottles, if they are not already in the rack. *Tighten the buckle straps.*
- Connect *both* bottles to the gas inlet flexible braided Hoses.
- Open the gas bottles, and check the gauge, on top of the generator, to verify there is enough pressure (Pressure > 100 psi / 690 kPa).
- Replace the seal liquid reservoir cap with the cap equipped with the liquid line and the vent. Keep seal cap for future use.
- Insert the liquid line in the liquid input fitting.
- Connect the data wiring (DMX/RDM or Network), if you want to use remote control.
- Plug the power cord,  
100–250 VAC, 50/60 Hz, 1100-1480 W.

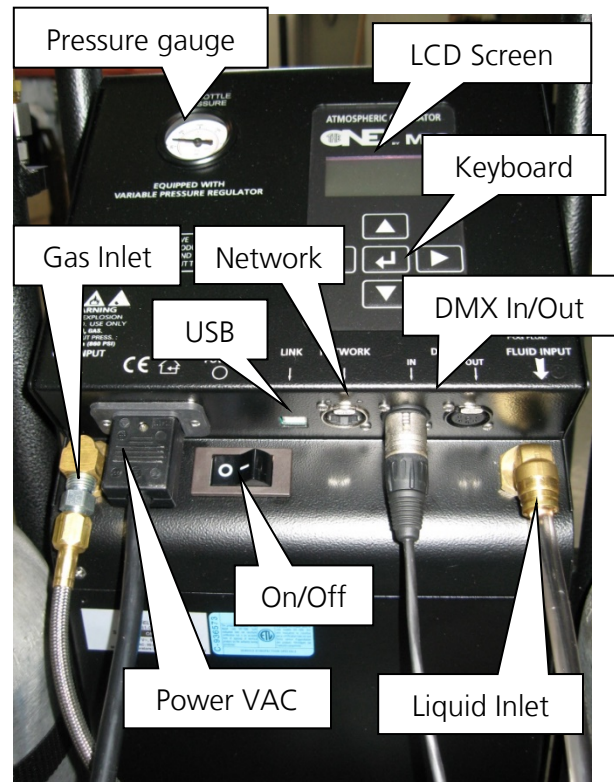
The MDG theONE is ready to be powered.

See Touring Rack chapter for more details.



## MDG theONE STANDALONE

- Connect the gas inlet to a gas bottle via a flexible braided Hose.
- The gas inlet is a 1/4" male JIC 37° flare fitting.
- Connect the liquid reservoir to the liquid inlet via a 3/8" plastic tube.
- Do not forget to open the vent on the reservoir.
- Leave the reservoir as close as possible to the **MDG theONE**.
- Connect the data wiring (Male XLR-5 connector for DMX/RDM, RJ45 for network).
- Connect the power cord.  
100–250 VAC, 50/60 Hz, 1100-1480 W.
- Open the gas bottle, and check the gauge, on top of the generator, to verify there is enough pressure (pressure > 100 psi / 690 kPa - MAX 2500 psi / 17.2 MPa).



The **MDG theONE** is ready to be powered.

## WORKING WITH THE MDG theONE

The user Interface of the **MDG theONE** includes a LCD 4x20 characters white LED backlight screen, with five (5) tactile buttons, located on top of the generator.

### START THE MDG theONE

Switch On the power.

The **MDG theONE** will display during four (4) seconds, the following message:

**theONE, by MDG  
Version x.xx**

**Testing BootLoad....**

These four seconds allow you to connect the generator to your PC, via a USB cable, to update the firmware of the control board (see *BootLoader* for further details).

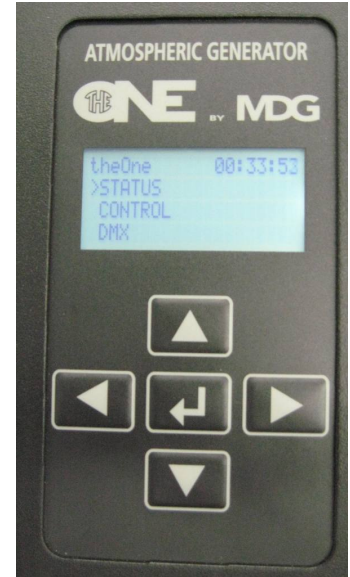
Then, the **MDG theONE** will display during two (2) seconds, the following message:

**theONE  
by  
MDG Fog Generators Ltd  
(V: x.xx – F: y.yyy)**

where 'x.xx' is the version of your generator, and 'y.yyy' is the firmware of the program.

The program will load the configuration parameters, saved in the EEPROM memory.

Finally, the screen will display the menu.



## THE MDG THEONE MENU

The user can scroll in the menu by using the buttons of the keyboard:

- '▼' moves the selection to the next menu (same level), or decrease a data value.
  - When at the end of a list, the program moves back to the first item of this list.
  - If the selected menu is a **data input menu**, keeping this key pressed will increase the value more rapidly.
  - In a **data input menu**, when the value reaches its maximum value, the program continues with the minimum value.
- '▲' moves the selection to the previous menu (same level), or increase a data value.
  - If the item is the first of a menu, the program moves the selection to the last item of that menu.
  - If the selected menu is a **data input menu**, keeping this key pressed will decrease the value more rapidly.
  - In a **data input menu**, when the value reaches its minimum value, the program continues with the minimum value.
- '◀' moves the last selection to the upper level
  - This key has no effect in the first level.
  - In a **data input menu**, pressing this key permits to exit the menu without changing any value (escape).
- '▶' moves the selection to the sub-menu
  - This key has the same effect that the key '↵', when scrolling through the menus.
- '↵' confirms a selection or data value.
  - This key has the same effect that the key '▶', when scrolling through the menus.
  - In a **toggle menu**, this key confirms the selection and moves the cursor back to the upper level menu.
  - In a **data input menu**, this key confirms the value of the data and moves the cursor back to the upper level menu.

## LCD SAVER

The program can automatically switch off the LCD screen (menu display and backlight) if there is no keyboard activity. The user can choose between a 30 second and a 2 minutes delay in the Settings Menu (« SETTINGS ▶ LCD SAVER »).

When the LCD Saver is activated, just press any key of the keyboard to re-activate the LCD screen functions.

The user can also deactivate the LCD saver by selecting the OFF option.

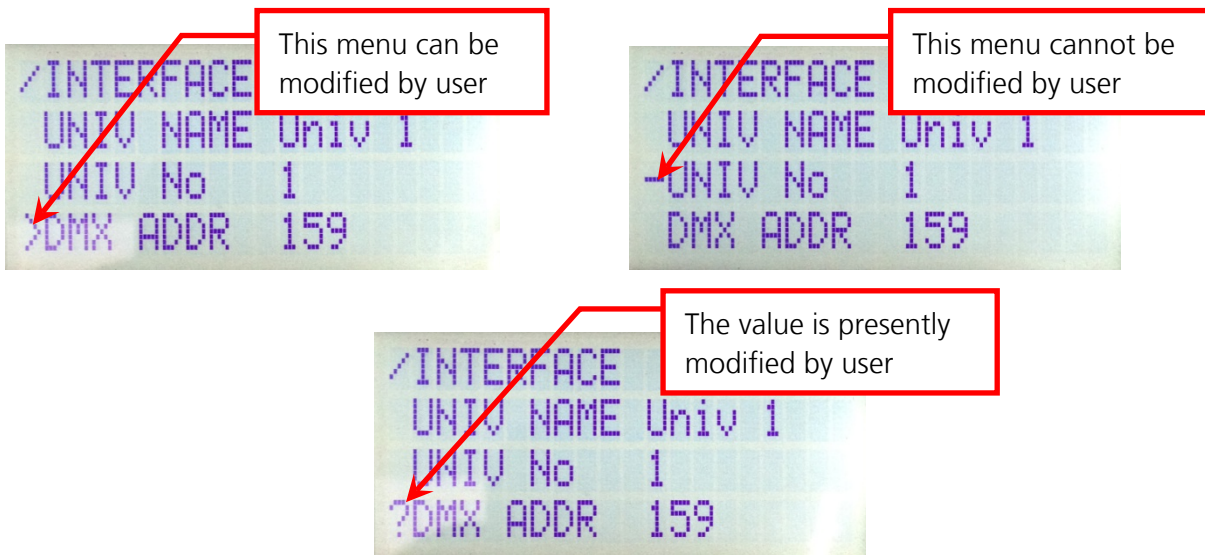
## MENU TREE



The menu is divided in four (4) main menus:

- **Status Menu** summarizes all the state of the fog generator. None of its sub menus can be modified.
- **Control Menu** allows the user to control locally the MDG theONE. All its sub menus can be set, as long as the generator is not in DMX/RDM or Ethernet mode.
- **Interface Menu** allows the user to define or verify the communication via DMX/RDM or Network.
- **Setting Menu** summarizes general configuration of the generator.

The menu is refreshed every second.

- Items display with a « - » character are state messages or parameters, updated by the program.
- The user cannot modify them.
- Items display with a « > » character are control parameters.
- The user, within specific ranges or choices, can **MODIFY** them. In user input mode, the value or the choice is preceded with a « ? »



The tree menu architecture is explained below. Items highlighted in blue are state menu (  ), and those highlighted in yellow are control menu (  ).

## STATUS

### STATE

UNIT OFF  
 xx% HEAT  
 PURGE  
 READY  
 FOG ON  
 VENT  
 FAIL

### Status menu

Status **State** string  
 - the generator is **off**  
 - the generator is **heating**, but not ready  
 - the generator is **purging** the heating module  
 - the generator is generator is **ready** to produce fog  
 - the generator is producing **Fog**  
 - the generator is **venting** the internal reservoir  
 - the generator is off, due to a **failure** (see Diagnostic)

### ERROR

**Error** message when **State = FAIL** (see Diagnostic)

### MODE

HAZE  
 FOG

**Mode** status  
 - **Haze** mode  
 - **Fog** mode

### TEMP.

TOO LOW  
 OK  
 TOO HIGH

**Temperature** status (heating module)  
 - temperature **too low**  
 - temperature within specifications (**ready**)  
 - temperature **too high**

### PRESSURE

xx.x

Current reservoir **pressure**

### LEVEL

LO / LO  
 HI / LO  
 HI / HI

Lower / Upper liquid level  
 - the liquid level is **below** the lower level  
 - the liquid level is **above** the lower level, but **below** the upper level  
 - the liquid level is **above** the upper level

### RUN TIME

xx.x

Total Run Time (decimal hour)

### HAZE TIME

xx.x

Total Haze Time (decimal hour)

### FOG TIME

xx.x

Total Fog Time (decimal hour)

### LAST ERR.

xxxxxx

Five Last Errors (see Troubleshooting)

## CONTROL

### UNIT

OFF  
 ON

### Control menu

**Unit** toggle  
 - the generator is **off**  
 - the generator is **on**

### HAZE/FOG

OFF  
 ON

**Fog** toggle  
 - the hazelfog is **off**  
 - the hazelfog is **on**

### MODE

HAZE  
 FOG

**Mode** toggle  
 - Haze mode  
 - Fog mode

### PRES HAZE

xx.x

**HAZE** operating **pressure** from 3 to 30 psi (see Units)



PRES. FOG      xx.x  
 EXT. FAN      xxx

**FOG** operating **pressure** from 5 to 40 psi (see Units)  
 External **fan speed** (0 - 255)

## INTERFACE

COMM.      ----  
                  AUTO  
                  LOCAL  
                  DMX  
                  ETHERNET

Network /DMX/RDM Menu

### Communication toggle

- the generator is controlled by **DMX/RDM** if a signal is present, or **locally** if there is no signal
- the generator is controlled by the **keyboard ONLY**
- the generator is controlled by **DMX/RDM ONLY**
- the generator is controlled by **Ethernet ONLY**

DEV LABEL    YYYYYY

**RDM Device Name**                      Network / RDM

DEV ID        YYYYYY

**RDM Device ID**                         Network / RDM

UNIV NAME    YYYYYY

**Universe Name** on the Network

UNIV No      YYY

**Universe Number** on the Network (1 to 128)

DMX ADDR    YYY

**DMX Address** (1 to 508)                Network / DMX / RDM

1 UNIT        YYY

Channel #1 value:    OFF < 50% (127) < ON

2 MODE       YYY

Channel #2 value:    HAZE < 50% (127) < FOG

3 OUTPUT     YYY

Channel #3 value:    0% (0) to 100% (255)

4 HAZ/FOG   YYY

Channel #4 value:    OFF < 50% (127) < ON

5 EXT FAN    YYY

Channel #5 value:    0% (0) to 100% (255)

## SETTINGS

Settings menu

UNITS        ----  
                  PSI  
                  kPA  
                  BAR

### Units toggle

- pressure in **psi**
- pressure in **kPa**
- pressure in **bar**

LCD SAVER   ----  
                  30 s  
                  2 min  
                  OFF

### LCD Saver toggle

- LCD Saver\* activated after 30 seconds
- LCD Saver\* activated after 2 min
- LCD saver is off

VERSION     x.xx

**Model Version** theONE

FIRMWARE    x.xx

**Program Firmware**

\* Just press any key to re-start the Menu.



## OPERATING INSTRUCTIONS

The **MDG theONE** Generator is quite easy to operate and require no preventive maintenance.

The generator can be controlled either locally, with the keyboard, via DMX (see *DMX control and RDM Control*) or network protocol (see *Network control*). This paragraph focuses on **local control**.

### Starting Procedures

Powered up the generator, the control program first checks the level of fluid inside the internal reservoir. If the reservoir is partially empty, the program will start the pumps to fill the reservoir to capacity, except if the reservoir has not been properly vented (see *shutdown procedures*). This procedure may take up to two minutes.



#### **WARNING**

**If the program is unable to refill the reservoir, a FAIL state will disable the generator (see *Fail State* paragraph).**

At this point, the **MDG theONE** switches to stand-by mode, and most of the electronic controls are off (pressure, and temperature of the heating module).

When the generator is manually switched to «UNIT ON» mode («CONTROL ▶ UNIT ▶ ON»), the program starts the heating cycle («STATUS ▶ STATE = UNIT ON»), which will last approximately 7 minutes. When the temperature reaches operating level (READY level), the Automatic Purging System™ (APS™) will be automatically initiated («STATUS ▶ STATE = PURGE»).

After the first purging cycle is completed (30 to 60 sec.), the reservoir is vented, and the generator is ready to produce fog («STATUS ▶ STATE = READY»).

### Operating Mode

The menu «CONTROL ▶ MODE» controls the Fog / Haze mode.

- Choosing the HAZE mode will switch the **MDG theONE** in a *Haze mode*.
- Choosing the FOG mode will switch the **MDG theONE** in a *Fog mode*.

Adjusting the working pressure of the internal reservoir controls the amount of the fog / haze emission.

- «CONTROL ▶ PRES HAZE» sets the working pressure of the Haze Mode from 3 to 30 psi
- «CONTROL ▶ PRES . FOG» sets the working pressure of the Fog Mode from 5 to 40 psi

### Fog/Haze Production

- Switching the generator in «**FOG ON**» mode («CONTROL ▶ FOG ▶ ON») starts the production of Fog / Haze. Depending of the mode choice («CONTROL ▶ MODE», or see «STATE ▶ MODE»), the **MDG theONE** will start to produce a haze (HAZE mode) or a fog (FOG mode), with an internal pressure defined by the working mode pressure.
- The **MDG theONE** will produce fog as long as the control parameters are within specifications, the liquid reservoir filled and the gas bottles pressurized.
- If a critical problem occurs, the program shuts down automatically the fog generator, and displays an error message in the **Status Menu** (see *Fail State* paragraph).
- Switching the MDG **theONE** in «**FOG OFF**» mode («CONTROL ▶ FOG ▶ OFF»), automatically initiates the APS™ cycle to clean the heating module.



#### **WARNING**

- Never power off a generator while it is producing fog – See the shut down procedures.
- Switching from **HAZE to FOG** mode while the generator is producing haze, the generator will switch mode, then will start to produce fog immediately.
- Switching from **FOG to HAZE** mode while the generator is producing fog, the generator will initiate a 10 seconds purge, and then will start to produce haze.

### Shut down procedures

**Never shut down** the MDG **theONE** while making Fog. Power off the generator observing the following sequence:

- **Turn off** the fog emission («CONTROL ▶ FOG ▶ OFF»),
- Wait 1 minute for the purge cycle to complete, and a extra 30 seconds for the depressurization of the reservoir,
- Switch the generator «**UNIT OFF**» mode («CONTROL ▶ UNIT ▶ OFF»),
- Power off the MDG **theONE** (by switching off the “MAIN POWER SWITCH” or by removing the MAIN POWER.
- Close the gas bottles.

Switching directly the generator in «**UNIT OFF**» mode by DMX/RDM or Network will yield the same result as above. Wait until complete depressurization before powering off the unit and follow the same procedure.

## Auto/Local

In «Local» Mode («INTERFACE ▶ COMM. ▶ LOCAL»), only the keyboard controls the MDG **theONE**.

In «Auto» Mode («INTERFACE ▶ COMM. ▶ AUTO»), the MDG **theONE** is controlled via DMX / RMD if there is a DMX signal on the line, or via the keyboard if there is no signal.



### **WARNING**

***In «AUTO Mode», DMX commands always take precedence over Local commands***

If the DMX Signal is valid, the menus will be partially disable

Unplug the DMX data wire to control the generator locally.

## EEPROM Parameters

The following parameters are saved at each time they are modified

- Communication Mode                      AUTO/LOCAL/DMX/ETHERNET
- DMX Start Address
- Device Label
- Universe Name
- Units (Pressure)
- LCD Saver

Powering off the MDG **theONE**, the program saves the last set of parameters as follows:

- Mode    HAZE / FOG, if User is in Local Mode
- HAZE Pressure                                If User is in Local Mode
- FOG Pressure                                 If User is in Local Mode
- Universe Address
- Total Run Times

At the next start-up, parameters readings automatically configure the menu for the user.

Default parameters will be loaded if the generator is unable to read the parameters (electrical shutdown during EEPROM writing).

## FAIL State

**FAIL state mode** is initiated if any critical error occurs. In this state, the MDG *theONE* is **off**, awaiting an action from the user, and the LCD is flashing.

When error happens, the menu jumps directly to the **Error String** in the **Status Menu**. The last five (5) critical errors are displayed in the LAST ERR String («STATUS ▶ LAST ERR»):

- **ERROR = REFILL**

**LAST ERR CODE = C**

This error will occur if the generator is unable to fill the reservoir within a fixed time interval.

This may be due to a leak from the fluid line between the external reservoir and the generator, or simply that the external reservoir is empty.

- **Error = P. LOW**

**LAST ERR CODE = 7**

This error will occur if the generator is unable to reach the operating pressure within a fixed time interval.

This may be due to a leaking gas line (between the gas bottle and the generator), a closed or empty gas bottles, a siphon (liquid) CO<sub>2</sub> bottles, a ball valve closed on the gas line or a problem with the pressure transducer.

- **Error = P. HIGH**

**LAST ERR CODE = 8**

This error will occur if the pressure is too high for a specific regime, while the gas flow inlet is fully closed.

This may be due to a solenoid valve malfunction (electronic or physical blockage), a problem with the pressure transducer, the heating module partially clogged or the use of siphon (liquid) CO<sub>2</sub> bottles.

- **Error = HEATER**

**LAST ERR CODE = 6**

This error will occur if the temperature of the heating module is not increasing with the proper thermal ramp.

This is generally due to a heater cartridge problem. Shut down the generator and restart it. Check the heating process with the value of the Status («STATUS ▶ STATE ▶ xx% HEAT»). If the percent is not increasing, the heater cartridges have failed.

Using the generator in 100-130 VAC will solve the problem temporary if only one cartridge has failed

Please contact an Authorized Service Center if this problem persists.

- **Error = T. HIGH**

**LAST ERR CODE = 4**

This error will occur if the temperature of the heating module is too high.

This is generally due to an electronic problem. Shut down the generator and restart it.

Please contact an Authorized Service Center if this problem persists.

• **Error = T. SAF** **LAST ERR CODE = 5**

This error will occur if abnormal temperature difference between the two sensors of the heating module is detected.

This is generally due to an electronic or a sensor problem. Shut down the generator and restart it.

Please contact an Authorized Service Center if this problem persists.

• **Error = PCB HIGH** **LAST ERR CODE = D**

This error will occur when the internal temperature of the generator is too high.

This may happen if the external temperature is very high or if the vents of the MDG theONE are partially blocked. Clear out the vents and put the generator in the shade. Shut down and restart the generator.

Please contact an Authorized Service Center if this problem persists.

• **Error = WD RESET** **LAST ERR CODE = E**

This error will occur if the watchdog (software safety) resets the generator.

This is generally due to software or chip problem. Shut down the generator and restart it.

Please contact an Authorized Service Center if this problem persists.

## DMX CONTROL

The MDG theONE can be controlled via a DMX512-A USITT standard protocol.



**WARNING**

Activating the **«DMX» mode** («INTERFACE ▶ MODE ▶ DMX»), controls the MDG theONE only by DMX signal. If the DMX wire is **unplugged** or DMX **signal is lost**, the generator **initiates an automatic shutdown procedure**.

Activating the **«AUTO» mode** («INTERFACE ▶ MODE ▶ AUTO»), controls MDG theONE by DMX, only if there is a signal. If the DMX wire is **unplugged** or DMX **signal is lost**, the generator **keeps the last DMX values**.



**WARNING**

In **«AUTO Mode»**, **DMX commands always take precedence over Local commands**.

The MDG **theONE** provides a simple way to check if there is DMX signal:



The user can change the DMX Start Address in the Interface Menu («INTERFACE ▶ COMM. ▶ DMX ADDR»), and choose any value between 1 and 508 (508+5 = 512, last DMX channel).

The Interface uses five (5) DMX channels:

- Channel 1 **0 (0%)** < UNIT OFF ≤ **128 (50%)** < UNIT ON ≤ **255 (100%)**
- Channel 2 **0 (0%)** < MODE HAZE ≤ **128 (50 %)** < MODE FOG ≤ **255 (100%)**
- Channel 3 **0 (0) – 255 (100%)**, FOG OUTPUT (from minimum to maximum pressure)
- Channel 4 **0 (0%)** < FOG OFF ≤ **128 (50%)** < FOG ON ≤ **255 (100%)**
- Channel 5 **0 (0) – 255 (100%)**, EXTERNAL FAN (from minimum to maximum speed)

These channels have the same behaviour that the menus of the local interface (see **Operating instructions** paragraph).

## RDM CONTROL

The MDG theONE can be controlled via a RDM ANSI E1.20 protocol, an intelligent bi-directional communication utilizing the DMX512 data link.

RDM permits a console or other controlling device to discover and then configure, monitor, and manage intermediate and end-devices connected through a DMX512 network. RDM provides for intelligent control of devices on a DMX512 network, which has not been previously available outside of proprietary networks

RDM Control has the same functionalities than the DMX Control (see *DMX Control*) with bi-directional functions allowing the user to read or write specific functions.

The RDM supported parameters implemented in the MDG theONE are summarized in the following table.

RDM Parameter ID's	Value	GET Allowed	SET Allowed	Comments
DISC_UNIQUE_BRANCH	0x0001			
DISC_MUTE	0x0002			
DISC_UN_MUTE	0x0003			
QUEUED_MESSAGE	0x0020	✓		
STATUS_MESSAGES	0x0030	✓		
SUPPORTED_PARAMETERS	0x0050	✓		
PARAMETER_DESCRIPTION	0x0051	✓		
DEVICE_INFO	0x0060	✓		
PRODUCT_DETAIL_ID_LIST	0x0070	✓		
DEVICE_MODEL_DESCRIPTION	0x0080	✓		Atmospheric Generator
MANUFACTURER_LABEL	0x0081	✓		MDG Fog Generators Ltd
DEVICE_LABEL	0x0082	✓	✓	
SOFTWARE_VERSION_LABEL	0x00C0	✓		
DMX_PERSONALITY	0x00E0	✓	✓	1
DMX_PERSONALITY_DESCRIPTION	0x00E1	✓		
DMX_START_ADDRESS	0x00F0	✓	✓	1 to 508
SLOT_INFO	0x0120	✓		
SLOT_DESCRIPTION	0x0121	✓		
DEFAULT_SLOT_VALUE	0x0122	✓		
IDENTIFY_DEVICE	0x1000	✓	✓	LCD flashes
RESET_DEVICE	0x1001		✓	0x01/0xFF Reset (Warm)
MDG_NETWORK_UNIVERSE_NUMBER	0x8000	✓	✓	1 < unsigned Word < 128
MDG_NETWORK_UNIVERSE_NAME	0x8001	✓	✓	ASCII text Up to 32 characters
MDG_GENERATOR_STATE	0x8002	✓		ASCII text Up to 20 characters
MDG_LCD_SAVER	0x8004	✓	✓	Unsigned Byte 0=30 s, 1=2 min, 2=Off
MDG_COMM	0x8005	✓	✓	Unsigned Byte 0 = AUTO, 1 = LOCAL, 2 = DMX, 3 = LAN

**Table 1: RDM Supported Parameters.**

## NETWORK CONTROL

On January 1, 2020, California became the first state to enforce cybersecurity and IoT related legislation. Oregon, New York and Massachusetts are following suit. California's law is Title 1.81.26 "Security of Connected Devices" and mandates that we equip our products with security features that are appropriate to the nature and function of the device. By law, this encompasses all products that are assigned Internet Protocol addresses which can connect to the Internet directly or indirectly.

The network interface, developed by **Pathway Connectivity Solutions**, still supports all major Ethernet DMX protocols, as well as their own protocols:

- Pathway ssACN (Secured)
- E1.31 sACN (Unsecured)
- ArtNet (Unsecured)
- Pathport (Unsecured)
- Shownet (Unsecured)

but requires a single password to allow configuration of the device, on your network, via Pathscape.

Install **Pathscape** (4.3.2 or above) by downloading the latest build from Pathway website <https://pathway.acuitybrands.com/>. You can use the Windows (64-bit only) or the macOS version.

Before launching **Pathscape**, the computer's network interface card (NIC) must be set to the same IP domain and subnet mask as the Pathport nodes, or the nodes will be shown as '**Limited Connection**'. The default settings for Pathway nodes are in the **10.x.x.x** IP range with subnet mask of **255.0.0.0**.

If the computer uses a wireless card, you may be obliged to disable it and turn the transmitter off.

If you are using a firewall, disable it too or allow a security exception to allow the program **Pathscape** to communicate through the firewall.

Connect to the **MDG theONE** via an Ethernet switch, using a normal Ethernet cable.

Switch the control mode to Ethernet («INTERFACE ▶ COMM. ▶ ETHERNET»).

Start **Pathscape** by clicking on the Pathscape icon.

The node will be discovered in the background while you log in, and sorted by current name.

**Read carefully the full manual of Pathscape to learn how to use this program. In this manual, we will focus ONLY on the MDG theONE functions.**



## Node Properties

To comply to the new enforced cybersecurity rules, MDG should send the board with a Unique Password. However, it is not possible for us to guarantee that the password would only be revealed to the end user.

Therefore, the MDG theONE is sent with a printed Pathscope Security Domain Recovery Key, from which the user is able to recover the domain, and enter his own password, while accepting all Risks of receiving unsecured protocols like ArtNet, sACN or ShowNet.

To access to the security domain, and modify the properties of the board, there are two solutions:

### 1. Reset the password of the security domain with the Recovery Key (recommended solution)

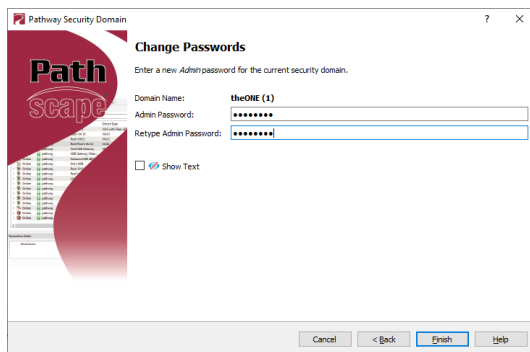
**The pathway board is shipped with a Recovery Key, which allows you to recover the domain, retaining its configuration and set new passwords.**

From the menu, choose Security > Recover Domain.

The Reset Device Security window will open.

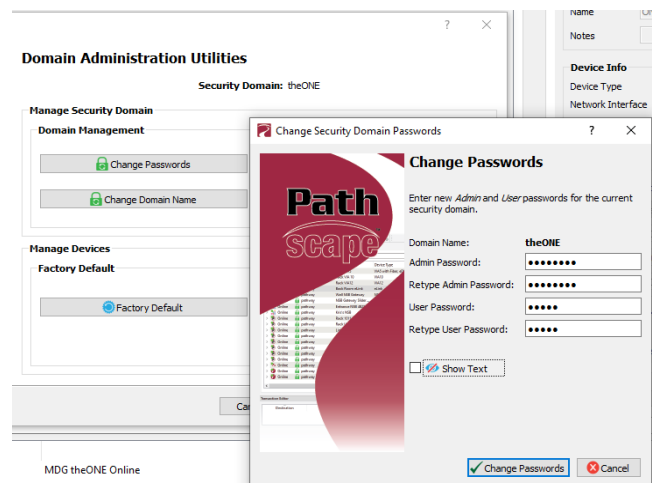
Type in the 25-digit Recovery Key and press Next.

Type in a new Administrator Password, and click Finish.



Now you can log into the Domain Administration Utilities Panel (Menu Security ▶ Administration), using the new Admin password you just specified, and reset the admin and the user passwords, as explained below.

- The Administrator can change passwords, change the Security Domain's name, factory default devices, manage Device Restore Points and add or remove devices from the domain.
- The User can change device properties and save and restore show files, but cannot change domain passwords, factory default devices or add/remove devices. There is one User account password for all users.



See Pathscope Manual for more details.

## 2. Physically reset the Pathway board

### 1. Pathway board before June 2023

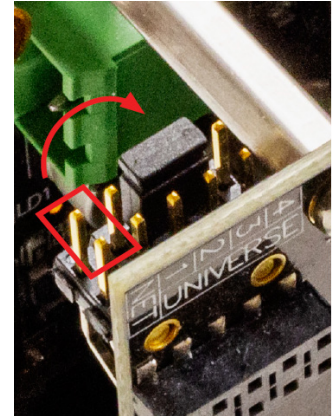
Keep the MDG theONE powered on, although, you may switch off the theONE while moving the jumper, if preferred.

On the top-right corner (when looking from the rear of the device), there is a set of pins (5x2) for hard patching the DMX Universe. The silkscreen on the edge of the board denotes "UNIVERSE", the numbers "1, 2, 3, 4" for Universes 1-4 and "NET".

The small black jumper is by default in the "NET" position. Remove the jumper from this position, rotate it 90° and place it across the pins for Universe 2 and 3, towards the inside. Once the jumper is placed in this position, the board will be factory defaulted immediately. There is no need to wait 5 seconds.

Place the black jumper back in the "NET" position.

NOTE: You can also short pins 2-3 with a metallic tool.

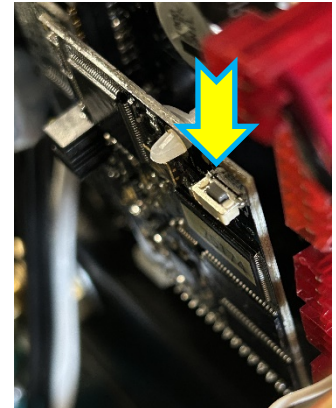


### 2. Pathway board after June 2023

The MDG theONE must be powered and booted up (about 10 seconds after power on).

Then hold down the button on the Pathway board for 10 seconds.

It doesn't need a connection to a network, it doesn't require Pathscape.

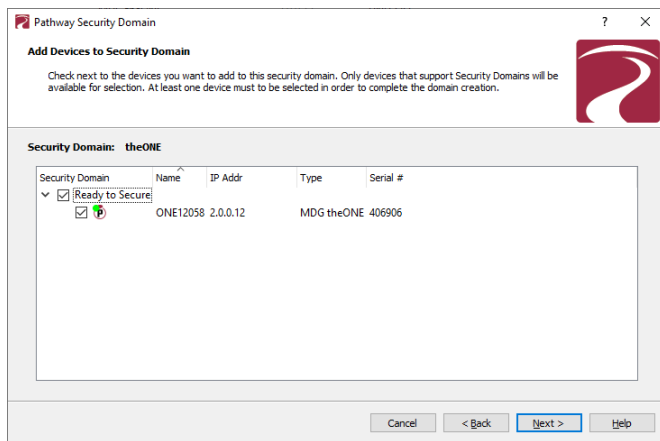
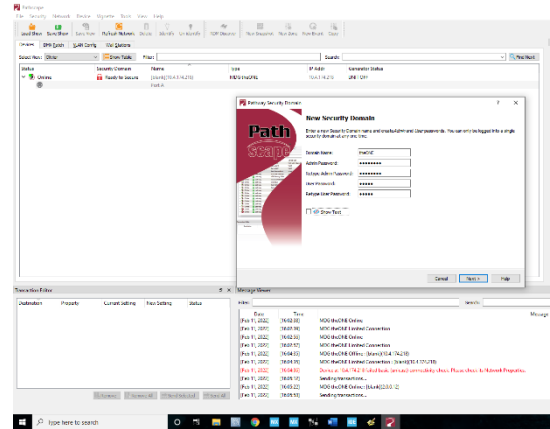


The Pathway interface should now appear as Ready to Secure.

From the Security menu, choose New Domain.

Enter the new Domain Name and Administrator and User passwords, then click Next.

- The Administrator can change passwords, change the Security Domain's name, factory default devices, manage Device Restore Points and add or remove devices from the domain.
- The User can change device properties and save and restore show files, but cannot change domain passwords, factory default devices or add/remove devices. There is one User account password for all users.



Add all the Ready to Secure devices on your network by checking the top checkbox labeled "Ready to Secure" and then click Next.

If you wish to add some but not all devices to this domain, click on the checkbox next to each device you'd like to add, and then click Add Devices.

Do not forget to print the Recovery Key.

See *Pathscape Manual* for more details.

To configure the device, you must log in to the domain as a user by pressing the Log In button in the toolbar.

Enter the **User password** for the Security Domain that was just created, and click Finish.

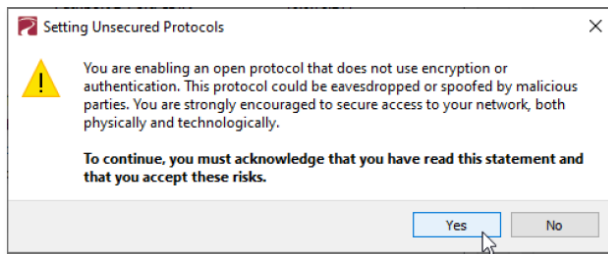
You have now access to the Pathway device properties.

### theONE property

We recommend the following configuration:

- Name Serial Number
- IP Mode Dynamic
- Start Address Any value
- Pathway ssACN  (secured sACN)
- Allow Unsecured RX

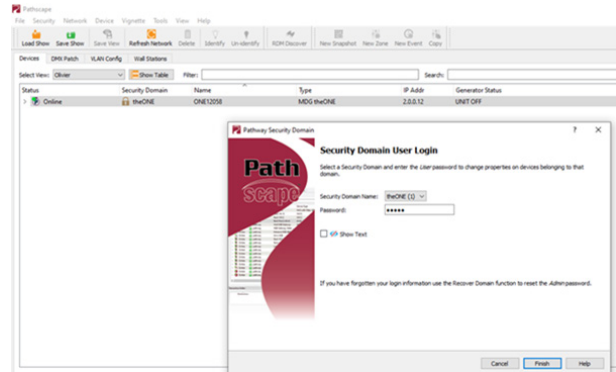
You will be obliged to accept the risks.



- Art-Net (Unsecured)
- E1.31 sACN (Unsecured)
- Pathport (Unsecured)
- ShowNet (Unsecured)
- Art-Net Alternate Mapping

Press **Send** button when you want to update the node.

See *Pathscope Manual* for more details.



The **DMX Start Address** defines the first DMX channel. Choose any value between 1 and 508 (508+5 = 512, last DMX channel).

The **DMX Start Address** can also be modified in «INTERFACE ► COMM. ► DMX ADDR».

Subdev property

The Port Direction is automatically set as Output.

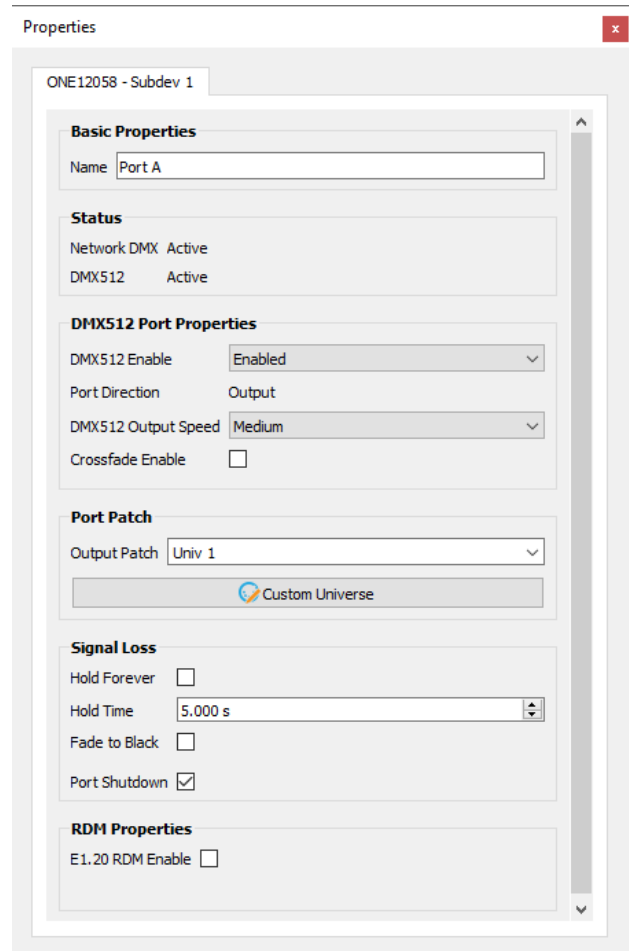
We recommend the following configuration:

- Name Port A
- DMX 512 Enable Enabled (Required)
- DMX 512 Output speed Medium
- Crossfade Enable
- Output Patch Univ 1
- Hold Forever
- Hold Time 5.000 s
- Fade to black
- Port Shutdown
- E1.20 RDM Enable

The **Universe Number** and **Universe Summary** fields are updated as soon as the Universe is modified, either in that pane, or on the MDG theONE.

Press **Send** button when you want to update the node.

See *Pathscape Manual* for more details.

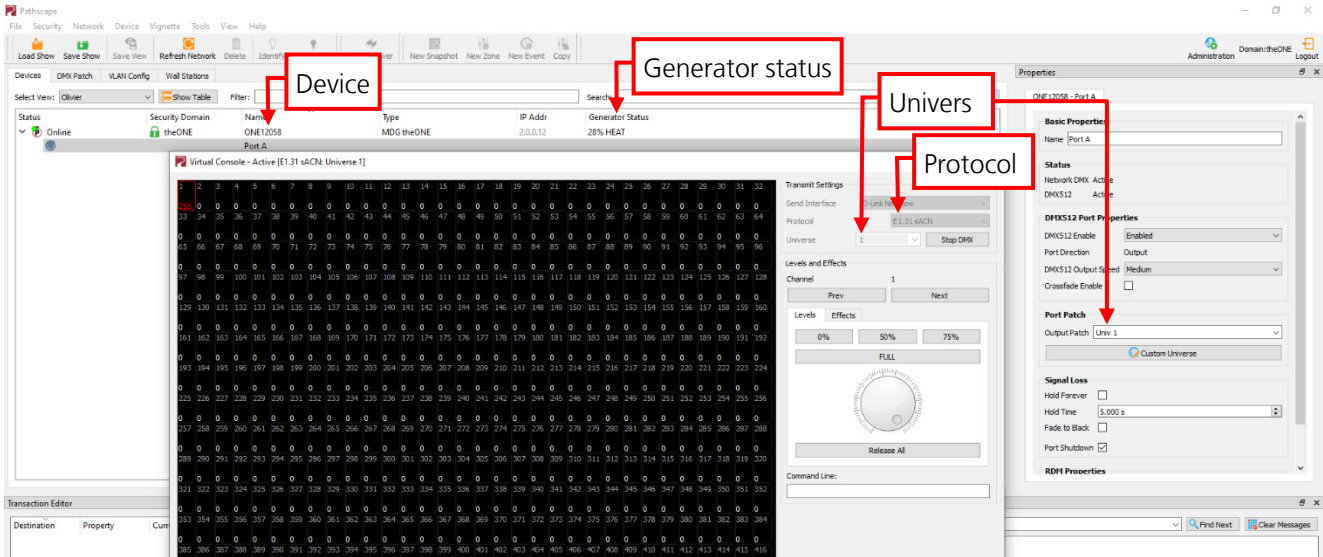


**When the Ethernet is active, the MDG theONE will act as:**

- a **DMX source**, if the **DMX512 Enable** property is checked
  - a **RDM controller** if the **E1.20 RDM Enable** property is checked
- for all the devices connected on its DMX output line.**

## DMX Control

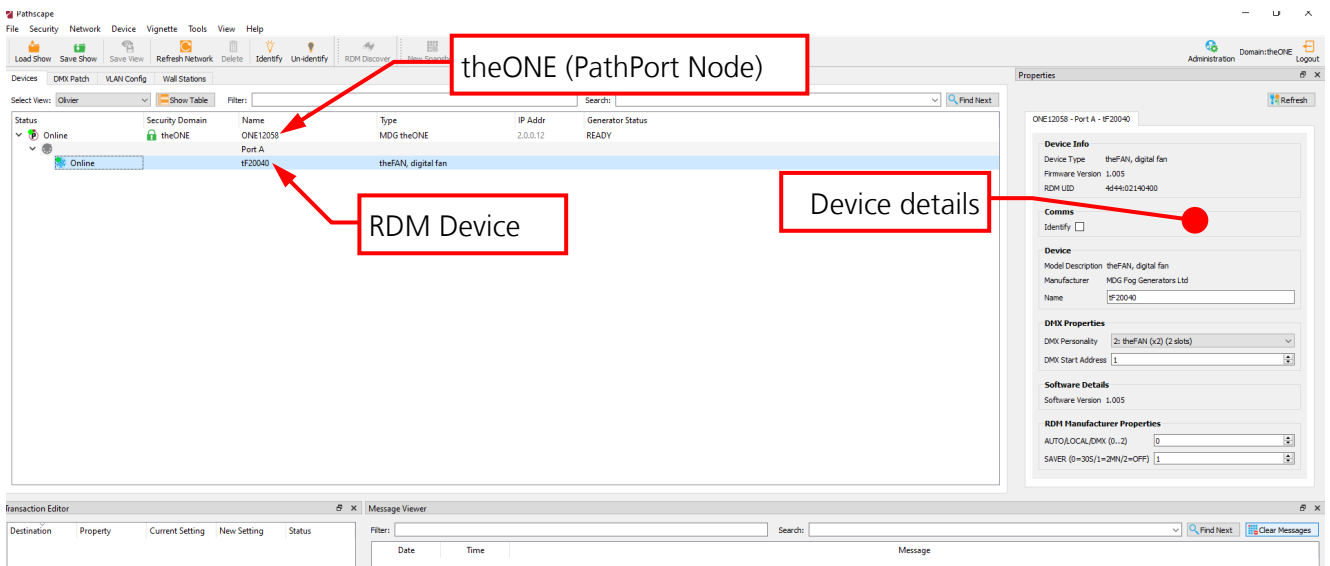
Click the menu **Tools / Virtual Console** to opens a virtual Network DMX console window, capable of outputting to any universe with multiple protocols.



See *Pathscope Manual* for more details.

## RDM Control

If the E1.20 RDM is enabled, **Pathscope** provides the user with a front-end interface allowing the discovery, configuration and monitoring of RDM devices connected to the Node, as the one mounted in the MDG theONE.



See *Pathscope Manual* for more details.

## USB CONTROL AND DIAGNOSTIC

The **MDG theONE** can now be connected to a Windows PC via an USB cable and interact with a Windows dialog Terminal.

Contact the MDG Service to have the last package for the MDG Terminal.

## BOOTLOADER

The **MDG theONE** uses a BootLoader, also called boot manager. This small program is a firmware (software embedded in a hardware device) located into the non-volatile memory of the microcontroller unit (MCU) that allows in-circuit reprogramming of the device using its USB communication ports.

To upgrade the firmware, you will need:

- a computer running under windows, with a USB 2.0 connector
- special driver for the USB, included in the package,
- a standard USB 2.0 cable, A to B Male/Male type

Contact the MDG Service to have the last package firmware upgrade for the **MDG theONE**.

## TOURING RACK

The theONE™ cradle contains the generator, its fan and a convenient tool drawer, and accommodates our 20 L (5.3 US gallons) fluid container and, uniquely, all known sizes of 9 kg (20 lb) CO<sub>2</sub> or N<sub>2</sub> gas bottle, within a single robust aluminium frame.

The rack can be equipped with any kind of gas bottles, from 150 to 200 mm (6" to 8") in diameter, with a maximal height of 915 mm (36").

A series of high-pressure pigtails (not included) allows the user to connect the most common standard CO<sub>2</sub> bottles to the **MDG theONE**.

The MDG Touring rack is engineered to hook under a truss with all the following components:

- theONE fog generator
- Two (2) gas bottles, fully loaded
- One (1) fluid reservoir 20 L (5.28 US gal), fully loaded of MDG Neutral fluid
- External MDG fan.



The total weight is around 120 kg (265 lb). See **Rigging the Touring Rack** paragraph for details.

The MDG Touring rack is also engineered to be stacked on another MDG Touring rack. See **Stacking the Touring Rack** paragraph for details.



**WARNING**

Users should inspect the rack for any bends, bumps, cracks, holes, etc, that might have been caused to the frame by abuse or inadequate storage and handling.

**Do not use damaged structures until a thorough inspection and /or repair procedures is carried out.**



**WARNING**

Severe load conditions such as shocks due to the unit being dropped, impacted by handling equipment, uneven loads, and wind loads have not been analyzed since there was no specific requests by the end customer.

**These loads could cause permanent damage, and this could lead to premature failure under more normal operating conditions.**



## HOW TO INSTALL THE FLUID RESERVOIR

Place the MDG fog fluid reservoir (Use only MDG Neutral fog Fluid) in the touring rack.

Attach the buckle strap. We recommend having the buckle strap passing through the handle of the reservoir as shown on the picture.

Attach the safety cable. We recommend having the safety cable passing through the handle, then several times around structural tubes as shown on the picture.

Replace the seal liquid reservoir cap with the cap equipped with the liquid line and the vent. Keep seal cap for future use.

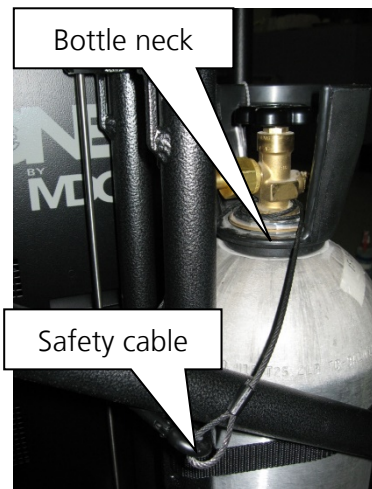
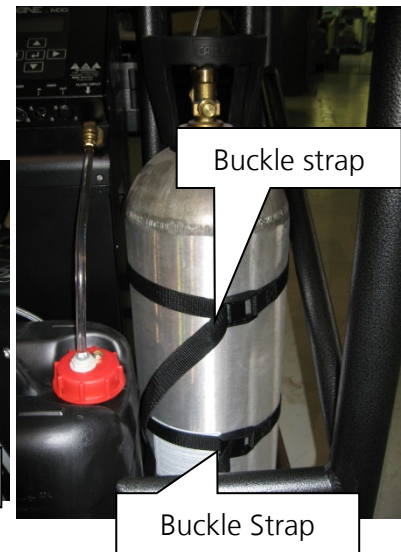
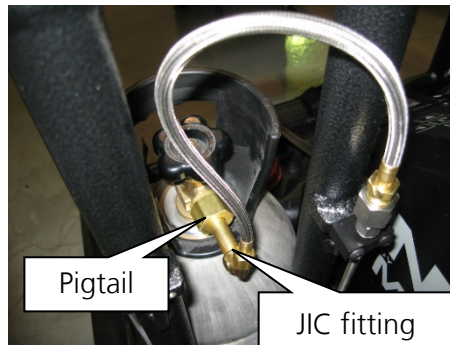
Insert the liquid line in the liquid input fitting (push-in fitting).



## HOW TO MOUNT A GAS BOTTLE

Depending of the height of your bottle (maximum of 915 mm, i.e. 36"), you may use the lower and the middle straps, or the lower and the upper straps.

Place the gas bottle in the rack. The gas bottle must be tangent to the two vertical tubes as shown on the picture, in such a way that the pigtail (gas exit) will be located between these two tubes.



Attach the buckle straps.

Mount the proper pigtail to the gas bottle.

Connect the pigtail to the pneumatic line (JIC 37° flare fitting). Be careful, to make smooth bends with the high pressure hose.

Attach the safety cable.

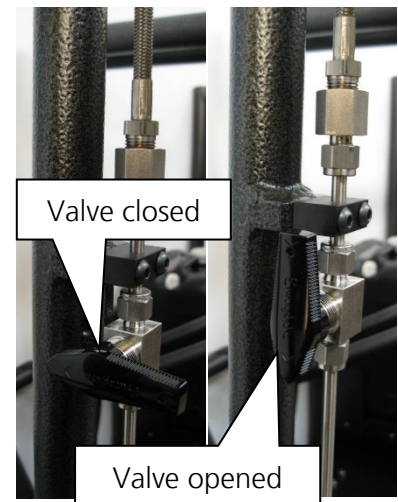
We recommend having the safety cable passing several times around the bottle neck, then around structural tubes as shown on the picture.

## HOW TO REPLACE A GAS BOTTLE

The Touring rack is equipped with a ball valve on each gas lines. Therefore, it is possible to replace the gas bottle while the fog generator is working.

To proceed:

1. Close the gas bottle
2. Close the ball valve
3. Replace the gas bottle (see *How to mount a gas bottle* for more details)
4. Open the gas bottle
5. Open the ball valve



## EXTERNAL FAN

The touring rack comes with an external fan for the MDG theONE.

The 10" external fan (900 CFM, 24 VDC) will improve tremendously the dispersion of the haze (or the fog) in large areas.

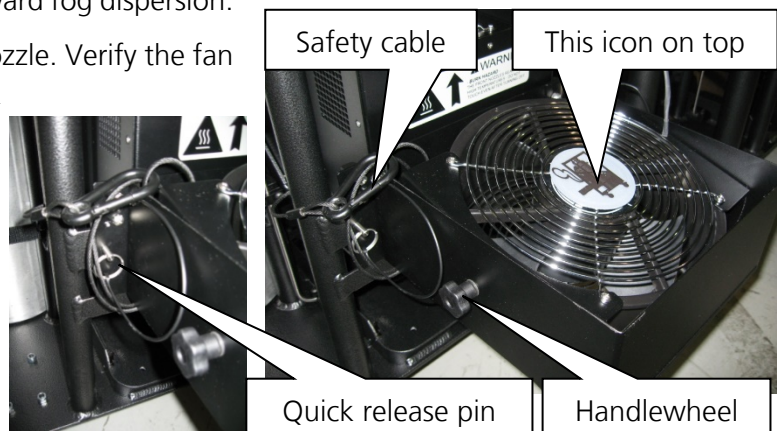
There is two different ways to install the fan on the rack, depending if the user wants to disperse the fog upward (floor installation), or downward (rigging installation). The fog or haze jets should never go through the fan.

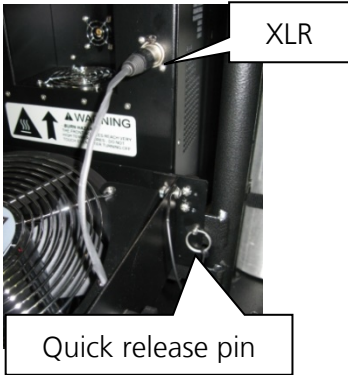
### Upward dispersion

Mount the fan below the fog nozzle for upward fog dispersion.

Just pin the fan at the position below the nozzle. Verify the fan support is horizontal and insert the quick release pins on both sides.

Attach the safety cable. We recommend having the safety cable passing inside the fan support, then several times around structural tube as shown on the picture.





Rotate the fan to have the configuration icon on top of the fan, and slightly incline the fan to have a downstream dispersion. Be careful to tighten the two handlewheels on both sides.



Connect the three (3) contacts XLR cable to the MDG theONE's front receptacle.

### Downward dispersion

Mount the fan above the fog nozzle for downward fog dispersion.

Just pin the fan at the position below the nozzle. Verify the fan support is horizontal and insert the quick release pins on both sides.

Attach the safety cable. We recommend having the safety cable passing inside the fan support, then several times around structural tube.



Rotate the fan to have the configuration icon on top of the fan, and slightly incline the fan to have a downstream dispersion. Be careful to tighten the two handlewheels on both sides.

Connect the three (3) contacts XLR cable to the **MDG theONE's** front receptacle.

### Transportation

When the external fan is not used, it can be stored under the **MDG theONE** generator.

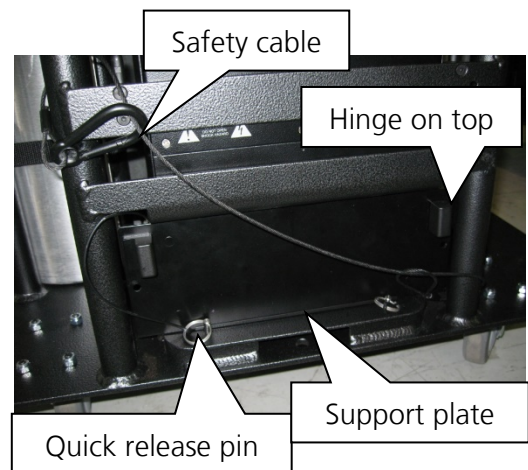
DO NOT FORGET TO DISCONNECT THE XLR cable, and to remove the quick release pins.

Ensure that the fan is horizontal, and place the XLR cable inside the fan support.

Slide the fan below the fog generator, with the metal hinge on top until you see two holes on the support plate. If you feel some resistance, pull upward the back of the fan.

Insert the quick release pins in the two holes of the support plate.

Attach the safety cable as shown on the picture.

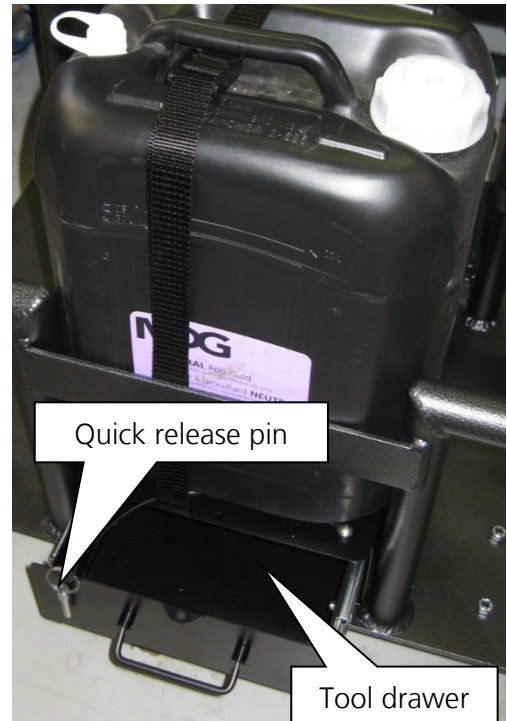




## TOOL DRAWER

The last version of the Touring rack is now equipped with a tool drawer located below the fluid reservoir.

DO NOT FORGET to insert the quick release pin to lock the tool drawer during transportation or when the Touring rack is rigged.

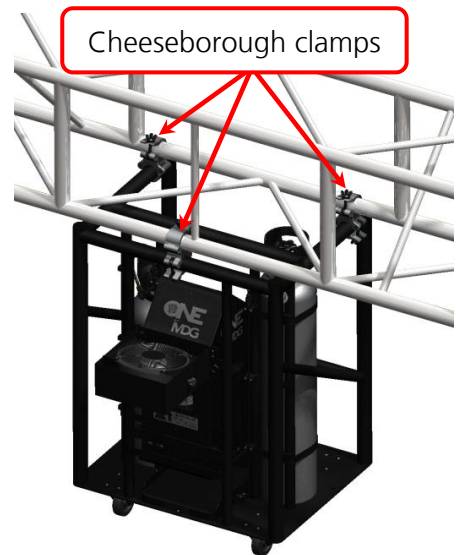


## RIGGING THE TOURING RACK

The MDG theONE touring Rack can be hooked under a truss with **three (3) Cheeseborough Clamps**.

We recommend using the T57100 Series Cheeseborough clamp from Doughty Engineering with a **Safety Work Load of 750 kg** (1650 lb) per clamp:

- Parallel couplers, P/N: T57104 or T57114
- 90 degrees fixed coupler, P/N: T57102 or T57112
- Swivel coupler, P/N: T57100 or T57110.



In these conditions, FEA analysis model gives a safety factor around eight (8), which exceeds the standard requirements of ESTA for rigging fixtures.



### WARNING

Rigging requires qualification and technical skills.

**Improper installation can result in bodily injury or damage property.**



**WARNING**

**NEVER HANG THE MDG TOURING RACK ABOVE AUDIENCE.**



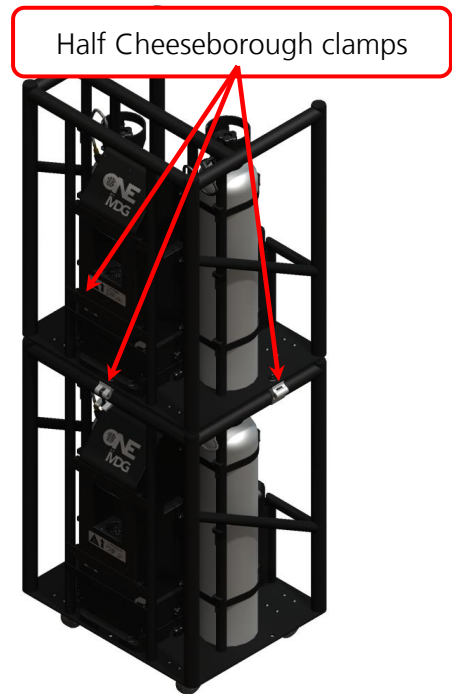
**WARNING**

**NEVER HANG THE MDG TOURING RACK ABOVE ELECTRICAL OR FLAMMABLE DEVICES.**

## STACKING THE TOURING RACK

We recommend using the three (3) T57000 Series Half Cheeseborough from Doughty Engineering with a **Safety Work Load of 750 kg** (1650 lbs, P/N: T57000 or T57010).

**Do not stack more than two (2) racks high.**



## TROUBLESHOOTING

Contact MDG, if symptoms are not listed, or if the provided solutions fail to resolve the issue.

**Table 2: Symptoms and Solutions**

Symptoms	Probable Causes and Suggested Actions
The generator does not switch On	<ul style="list-style-type: none"> <li>• Verify that AC power cord is properly connected on both ends.</li> <li>• Check the fuse or the breakers of your VAC entry. The wattage of the generator is 1100-1480 W.</li> <li>• Verify the AC voltage on the power cord. 100~250 VAC.</li> </ul>
The generator does not produce fog	<ul style="list-style-type: none"> <li>• Verify that the Unit is ON («CONTROL ▶ UNIT ▶ ON»)</li> <li>• Verify that the UNIT is READY («STATUS ▶ STATE = READY»)</li> </ul> <p>The generator needs approximately eight (8) minutes to be ready.</p> <ul style="list-style-type: none"> <li>• Verify that the Unit is not in a FAIL state («STATUS ▶ STATE = FAIL»)</li> </ul> <p>If Yes, check the symptoms below</p> <ul style="list-style-type: none"> <li>• Verify the communication mode («INTERFACE ▶ COMM.»)</li> </ul> <p>You cannot control the generator locally if you are in DMX mode, and vice-versa.</p> <ul style="list-style-type: none"> <li>• If you are in DMX mode:               <ul style="list-style-type: none"> <li>- Verify the cable</li> <li>- verify the DMX Start address and the channels</li> </ul> </li> <li>• If you are in Network mode:               <ul style="list-style-type: none"> <li>- Verify the cable</li> <li>- Verify the Node status</li> <li>- Verify the RDM ID number</li> <li>- Verify the Universe parameters and the DMX Start Address</li> </ul> </li> </ul>
	.../...

Symptoms	Probable Causes and Suggested Actions
<p>«STATUS ▶ STATE = FAIL»</p> <p>Verify the error messages:</p> <p>«STATUS ▶ ERROR = xxxx »</p>	<ul style="list-style-type: none"> <li>• Error = REFILL               <ul style="list-style-type: none"> <li>- Verify fluid level in the external reservoir</li> <li>- Verify that the filtered end of the fluid line is properly submerged and unobstructed in the fluid container</li> <li>- Verify that the fluid line is properly connected and not leaking</li> </ul> </li> <li>• Error = P. LOW               <ul style="list-style-type: none"> <li>- Open the gas bottles and the ¼ turn valves on the Touring rack</li> <li>- Verify the pressure in the gas bottle (check the gauge, on top of the generator)</li> <li>- Verify the gas line is not leaking or is not frozen</li> <li>- Verify the reading of the pressure transducer «STATUS ▶ PRESSURE»</li> </ul> </li> <li>• Error = P. HIGH               <ul style="list-style-type: none"> <li>- Verify the reading of the pressure transducer «STATUS ▶ PRESSURE»</li> <li>- Verify you are not using liquid CO<sub>2</sub></li> <li>- You may have a malfunction of a solenoid valve. Restart the generator, and check both modes (Fog/Haze) during several minutes.</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> <li>• Error = HEATER               <ul style="list-style-type: none"> <li>- This is a heating timeout, due to a cartridge heater problem.</li> <li>- Restart the generator and check the heating status «STATUS ▶ STATE = xx% HEAT». If the heating value is not progressing, you have a cartridge problem.</li> <li>- Restart the generator in 100-130 VAC.</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> </ul>
	<p>.../...</p>

Symptoms	Probable Causes and Suggested Actions
	<ul style="list-style-type: none"> <li>• Error = T. HIGH               <ul style="list-style-type: none"> <li>- Restart the generator. This is generally due to an electronic problem.</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> <li>• Error = T. SAF               <ul style="list-style-type: none"> <li>- Restart the generator. This is generally due to an electronic or sensor problem.</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> <li>• Error = PCB HIGH               <ul style="list-style-type: none"> <li>- Verify that the vents area are not blocked</li> <li>- Stop the MDG theONE, if it is possible</li> <li>- Try to change the position of the MDG theONE to a cooler place</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> <li>• Error = WD RESET               <ul style="list-style-type: none"> <li>- Restart the generator.</li> </ul> <p>Please contact the Service if this problem persists.</p> </li> </ul>
<p>LCD displays strange letters or does not seem to work normally</p>	<p>In some conditions (Radio transmission or static discharges), the LCD may lose its settings. The generator is still working, but the LCD displays strange or no characters:</p> <ul style="list-style-type: none"> <li>- Wait 30 seconds without touching any key, until the LCD saver starts</li> <li>- Press any key</li> </ul> <p>If the menu does not reappear, restart the generator.</p> <p>Please contact the Service if this problem persists.</p>



## MDG *theONE* SPECIFICATIONS

Series	<b><i>theONE</i></b> Atmospheric Generator								
Fog output:	85 m <sup>3</sup> (3000 ft <sup>3</sup> ) per minute in Fog mode, at full pressure								
Total Running Time (Touring <sup>†</sup> ):	<table border="0"> <tr> <td>Fog mode</td> <td>15 hours at 275 kPa / 40 psi</td> </tr> <tr> <td></td> <td>41 hours at 69 kPa / 10 psi</td> </tr> <tr> <td>Haze mode</td> <td>50 hours at 207 kPa / 30 psi</td> </tr> <tr> <td></td> <td>120 hours at 69 kPa / 10 psi</td> </tr> </table>	Fog mode	15 hours at 275 kPa / 40 psi		41 hours at 69 kPa / 10 psi	Haze mode	50 hours at 207 kPa / 30 psi		120 hours at 69 kPa / 10 psi
Fog mode	15 hours at 275 kPa / 40 psi								
	41 hours at 69 kPa / 10 psi								
Haze mode	50 hours at 207 kPa / 30 psi								
	120 hours at 69 kPa / 10 psi								
Fog colour:	Pure white								
Particle size:	0.5 to 0.7 microns								
Fluid consumption:	<table border="0"> <tr> <td>Fog mode</td> <td>1 L (0.26 US gal) per hour at 275 kPa / 40 psi</td> </tr> <tr> <td></td> <td>0.5 L (0.12 US gal) per hour at 69 kPa / 10 psi</td> </tr> <tr> <td>Haze mode</td> <td>55 mL (1.63 oz) per hour at 207 kPa / 30 psi</td> </tr> <tr> <td></td> <td>12 mL (0.35 oz) per hour at 69 kPa / 10 psi</td> </tr> </table>	Fog mode	1 L (0.26 US gal) per hour at 275 kPa / 40 psi		0.5 L (0.12 US gal) per hour at 69 kPa / 10 psi	Haze mode	55 mL (1.63 oz) per hour at 207 kPa / 30 psi		12 mL (0.35 oz) per hour at 69 kPa / 10 psi
Fog mode	1 L (0.26 US gal) per hour at 275 kPa / 40 psi								
	0.5 L (0.12 US gal) per hour at 69 kPa / 10 psi								
Haze mode	55 mL (1.63 oz) per hour at 207 kPa / 30 psi								
	12 mL (0.35 oz) per hour at 69 kPa / 10 psi								
Fluid type:	MDG Neutral™ Fog Fluid ONLY – M.S.D.S. available on request								
External fluid reservoir:	20 L (5.28 US gal) bottle								
Gas type:	Industrial Grade CO <sub>2</sub> or N <sub>2</sub>								
Gas pressure input:	17.2 MPa / 2500 psi								
Gas consumption:	<table border="0"> <tr> <td>Fog Mode</td> <td>1.16 kg (2.56 lb) per hour at 275 kPa / 40 psi</td> </tr> <tr> <td></td> <td>0.44 kg (0.97 lb) per hour at 69 kPa / 10 psi</td> </tr> <tr> <td>Haze Mode</td> <td>0.35 kg (0.77 lb) per hour at 207 kPa / 30 psi</td> </tr> <tr> <td></td> <td>0.15 kg (0.33 lb) per hour at 69 kPa / 10 psi</td> </tr> </table>	Fog Mode	1.16 kg (2.56 lb) per hour at 275 kPa / 40 psi		0.44 kg (0.97 lb) per hour at 69 kPa / 10 psi	Haze Mode	0.35 kg (0.77 lb) per hour at 207 kPa / 30 psi		0.15 kg (0.33 lb) per hour at 69 kPa / 10 psi
Fog Mode	1.16 kg (2.56 lb) per hour at 275 kPa / 40 psi								
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Haze Mode	0.35 kg (0.77 lb) per hour at 207 kPa / 30 psi								
	0.15 kg (0.33 lb) per hour at 69 kPa / 10 psi								
APS:	Automatic Purging System								
Warm-up time:	Under 10 minutes								
Operating voltage:	100-250 VAC, 50/60Hz, 1 phase								
Power consumption:	1100 W @ 100 VAC, 1100-1480 W @ 250 VAC								
Control signal:	Manual  USB (diagnostic & Bootload) DMX / RDM Protocol ArtNet Pathport Protocol Strand Shownet ETC Net2 eDMX Streaming ACN (E1.31 sACN)/ETC Net3								

<sup>†</sup> 2 x 9 kg (20 lb) CO<sub>2</sub> or N<sub>2</sub> gas bottle, 20 L (5.3 US gal.) Fog Fluid container

Noise emission (at 1 m/3.3 ft)	45 - 60 dB	<b>theONE Standalone</b>
	45 - 70 dB	<b>theONE Touring</b>
Operating temperature:	-30 °C (-22 °F) to 50 °C (122 °F)	
Operating humidity:	90 % relative humidity @ 50 °C (122 °F), non-condensing	
Storage temperature:	-40 °C (-40 °F) to 60° C (140 ° F)	
Storage humidity:	80% relative humidity @ 60° C (140 ° F)	
<b>theONE Standalone:</b>		
- Dimensions	61 cm (24") H x 25 cm (10") W x 30 cm (12") D	
- Weight:	23 kg (50 lb)	
<b>theONE Touring</b> (including rack):		
- Dimensions	106 cm (42") H x 76 cm (30") W x 61 cm (24") D	
- Weight:	120 kg (265 lb)	

# MAINTENANCE

This section covers the maintenance of your MDG **theONE**. The useful life of the MDG theONE will be extended by carefully following the procedures and maintenance schedule outlines in the Table below.

**Table 3: Maintenance Schedule**

Maintenance Action	Timetable	Procedure	Power Off
Ensure that enough MDG Neutral fluid is available for the day's use	Daily	Replace/replenish fluid supply	NO
Ensure that enough gas is available for the day's use	Daily	Replace/refill gas bottle	YES
Check the touring rack for any bends, bumps, cracks, holes, etc.	Weekly	Repair or replace	YES
Clean exterior of the MDG theONE	Monthly	Using a clean damp sponge with mild soap	YES
Inspect all fluid and gas <b>lines</b> for leaks	Monthly	Replace any leaking line	YES
Inspect all fluid and gas <b>fittings</b> for leaks	Monthly	Tighten or replace any leaking pipe	YES

## LIMITED WARRANTY

### ***Limited 2 years 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 two (2) 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 at one of its authorized service centre, or if it is used under conditions for which it has not been designed for, 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 non-transferable 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.*

**MDG Fog Generators Ltd**

## 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

Atmospheric Generator model: **theONE**

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

IEC 60335-1:2010 (Fifth Edition)  
Household and similar electrical appliances – Safety/Part 1: General Requirement

IEC 61000-6-1:2005, EN 61000-6-3:2007  
CISPR 16-2-3, CISPR 16-2-1, CISPR 16-1-2, CISPR 22, EN 61000-3-2, EN 61000-3-3  
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,  
IEC 61000-4-8, IEC 61000-4-11

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

2014/35/EU Low Voltage Directive  
2014/30/EU EMC Directive  
2006/42/EC Machinery Directive  
2011/65/EU RoHS2 Directive

**Martin Michaud, President**  
September 24, 2015  
Montreal, Canada

# CERTIFICATE OF COMPLIANCE

- CSA SPE-1000 for Serial Number below « **ONE-15111** »
- cQPSus certified for Serial Number above « **ONE-15112** »



**QPS Evaluation Services Inc**  
 Testing, Certification and Field Evaluation Body  
 Accredited in Canada, the USA, and Internationally

File
LR1268

<b>CERTIFICATE OF COMPLIANCE</b> (ISO TYPE 3 CERTIFICATION SYSTEM)	
Issued to	MDG Fog Generators Ltd.
Address	10301 av, Pelletier Montreal, Quebec H1H 3R2, Canada
Project Number	LR1268-1R2
Product	Commercial Fog Generator and Commercial Fan
Model Number	TheONE and theFan
Ratings	theONE: 100-250V, 50/60Hz, 1100-1480W theFan: 100-250V, 50/60Hz, 100W
Applicable Standards	<ul style="list-style-type: none"> <li>• CAN/CSA C22.2 NO.60335-1-11: Safety of Household and Similar Appliances - Part 1: General Requirements - First Edition</li> <li>• UL 60335-1: UL Standard for Safety of Household and Similar Electrical Appliances, Part 1: General Requirements - Fifth Edition</li> </ul>
Factory/Manufacturing Location	MDG Fog Generators Ltd. 10301 av, Pelletier Montreal, Quebec H1H 3R2, Canada
<p><b>Statement of Compliance:</b> The product(s) identified in this Certificate and described in the Report covered under the above referenced project number have been investigated and found to be in compliance with the relevant requirements of the above referenced standard(s). As such, they are eligible to bear the QPS Certification Mark shown below, in accordance with the provisions of QPS's Service Agreement.</p>	
Issued By: Scott Airdrie	
Signature: <i>Scott Airdrie</i>	Date: August 11, 2022

