

# DEFENDER

## Midge Machine Troubleshooting Guide

### Abbreviations

LCD	Liquid Crystal Display
LED	Light Emitting Diode
CO <sub>2</sub>	Carbon Dioxide
TEM	Thermo Electric Module
PCB	Printed Circuit Board

### Defender

- Q** *My defender is stopping (displaying fast flashing red light) after running for only 1 month or less – is it faulty?*
- A** Turn off gas, unplug machine, remove side vent from machine (using a Phillips screwdriver) tip machine over to vent side and shake - excess insects will fall out of machine. Machine should restart after emptying.
- Q** *My defender is dripping water at base of plume tube is this okay?*
- A** Yes this is normal the water is the by product from creating CO<sub>2</sub>

### Other Defender Issues

- Due to the net size of the Defender we have found that unless there is someone present daily to maintain the machine the volume of insects shuts it down over time. The defender is highly effective and is recommended for people with a minor insect problem.
- Before moving the defender it is crucial that the machine goes through its cooling down cycle to bring the burner temperature back to an acceptable level. If this is not carried out then damage can occur to components.
- The Defender cannot be run off a car battery without the use of an inverter. Tampering with the power cord voids warranty

## Fault Codes / Troubleshooting

Defender - Start Sequence:

1. Switch on machine ( rocker switch to LHS)
2. Machine will run for 3.30 mins and you will hear fan speed drop (ignition)
3. Machine will speed back up to normal fan speed
4. Approximately 7 mins later the machine should display solid red light (running)

Fault Code	Possible Causes	Remedy
Fast flashing red light	Gas out (No gas)	<ul style="list-style-type: none"><li>• Check gas tank is full,</li><li>• Check regulator connection and leak test if necessary</li><li>• Purge system using Co2 and re test machine.</li><li>• Remove side vent and empty machine</li><li>• Perform Gas Leak Test</li></ul> If all of the above fail the machine requires uplift

## Gas Leak Test

Gas leak tests can be carried out on regulators by carrying out the following instructions:

### Warning:

To perform gas leak test the machine must be switched OFF and disconnected from mains and battery.

1. Make a solution of washing up liquid and water (foam mixture) and soak up with a sponge.
2. Apply all around the regulator – if bubbles grow around areas of the regulator then a gas leak is present and regulator will require tightened.
3. If a gas leak is detected turn off gas immediately.
4. Repeat process until leak is repaired.

## Cooling and Restarting

- All machines must be left for a cool down period (min ¾ hr) before attempting to restart.
- As outlined in the Defender section it is crucial that the machine goes through its cooling down cycle to bring the burner temperature back to an acceptable level. If this is not carried out then damage can occur to components.
- Never attempt to move a machine while it is running, as this will invalidate the customers warranty - Always cool down machine before attempting to move.

## Regulators

- In appearance all of the Mosquito Magnet regulators look exactly the same - this is not the case!
- All regulators are calibrated to each machine's specification and therefore cannot be swapped over without invalidating the warranty. The only exception to this is the Grey Tank Adaptors (Portugal, Ireland, Spain, Norway etc) that are fitted to the regulator - these can be replaced without affecting warranty.
- All regulators use an O ring to form a gas tight seal between the regulator and gas tank. Please double check that this is present and in good condition with customers.
- All machines sold in the UK and Europe **do not** require the Gas re-set tool (USA only) mentioned in the manual.

## Regulator O ring

- All regulators use an O ring to form a gas tight seal between the regulator and gas tank. Please double check that this is present and in good condition with customers. Renew if perished.

## Gas Hoses

- All machine's gas hoses should be periodically inspected for damage. If a faulty hose is detected the machine must be returned for repair.

## Co2

**Q** Is this really necessary?

**A** Yes, all bottled propane contains contamination to a certain degree (depending on suppliers) and over a period of time the contamination (i.e. heavy oils & rust) builds up to a point that the machine nozzle becomes blocked making the starting/running of the machine more problematic. American BioPhysics recommends that machine's are quick cleared every 2/3 bottles of gas used. It is also a good practice to clean machine before winter storage and prior to start up.

**Q** Can I use my own Co2 to clear out machine?

**A** No

Only the product that is endorsed by American Bio Physics can be used on the machine. All other products vary in pressure and contamination and are therefore not suitable for use on the Mosquito Magnet range of machines

**Q** Co2 discharge only took 20secs - is this normal as it states in the manual that it should take up to 3 mins?

**A** Yes, the Co2 will discharge very quickly (up to 30 secs) and this is normal.

## Purge Procedures

Defender	Liberty Plus	Pro	Pro Plus
Disconnect Gas	Disconnect Gas	Disconnect Gas	Disconnect Gas
Switch machine on	Switch machine on	Switch machine on	Switch machine on
Screw on Co2 adapter			
Wait 3.5 mins	Wait 2 mins	Wait 2 mins	Wait 2 mins
Screw on Co2 cylinder			
Back off Co2 cylinder (anticlockwise) ¼ turn			
Wait 30 secs	Wait 30 secs	Wait 30 secs	Wait 30 secs
Unscrew Co2 & adapter from machine			
Connect gas to machine			
Turn gas on - slowly			
Start machine	Start machine	Start machine	Start machine
Repeat if necessary	Repeat if necessary	Repeat if necessary	Repeat if necessary

Note:

- Some machine's may require 2/3 purges before the nozzle is cleared - quick clear machine's on a frequent basis.

## Gas

The fuel used to power the Mosquito Magnets these are:

- Propane (UK)

Make sure gas cylinder is **red** to match the gas.

## Manuals

All Mosquito Magnets come complete with manuals and interactive placement CD-ROM.

**They are American but please read them.**

Take 5 minutes to familiarise yourself with the new purchase.