

MicroFogger 2 Instruction Manual

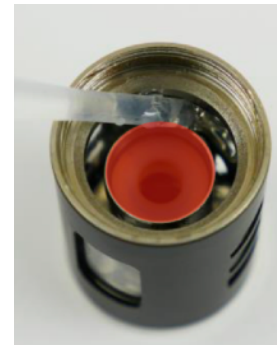
This instruction manual only applies to newer MicroFoggers fitted with an ON/OFF toggle switch

Part A - Quick start guide

We know you're excited to get started so the following guide will show you how to setup your new MicroFogger 2 for the first time. Carefully follow each step - failure to do so can damage the product and cause frustration!

Before starting you must read part G of this manual to familiarize yourself with the safety procedures.

1. Upon unboxing your parcel, locate the MicroFogger 2 and the USB charging cable. Take them out of the packaging, turn the MicroFogger on using the toggle switch and place MicroFogger in standby mode by rapidly clicking the main trigger button 5 times. The top led will turn red once this is done. Now, plug it into the charger using the included cable. **The MicroFogger can only be charged while it is on.** We highly recommend that you allow the MicroFogger to fully charge before beginning to use it in step 6. It will be fully charged when the bottom LED displays a blinking green light.
2. While the MicroFogger is charging, carefully unscrew the fluid tank (the black metal cylinder) by turning it in an anti-clockwise direction. Once removed, please note that it consists of an inner and outer wall. The fog liquid is supposed to be poured between these walls, around the circumference of the fluid tank.
3. Locate the 50ml bottle of fog liquid and unscrew the top cap. Using the pipette-style tip, carefully pour fog liquid into the afore-mentioned cavity. Take your time and don't squeeze the bottle too hard - you don't want to make a mess! **Don't pour any liquid into the middle cavity (marked in red)** as this is where the airflow will pass through. If you do, simply wipe it away using a paper towel. Keep filling the fluid tank until the liquid is at the same level as the top of the interior metal wall.
4. Now that the fluid tank is filled up, it's time to screw it back on but before you do so, take a moment to check that the heating coil (the small silver cylinder) is tightened sufficiently. Only do this with your fingers, don't use any pliers or other tools - it doesn't need to be incredibly tight! If it didn't come installed, make sure to install it beforehand. Once you are satisfied, screw the fluid tank back on while keeping the microfogger pointed down to prevent any spillage. Once again, don't



over-tighten it when it's screwed in. Do not screw the fluid tank on if the coil isn't installed

5. This is a simple step - all you need to do is wait. Let the MicroFogger rest in an upright position for a minimum of 30 minutes, this ensures that the liquid has a chance to seep into the dry heating coil. If you don't wait this long you run the risk of damaging the coil since instead of evaporating the liquid, you will essentially be burning the dry absorbent material.
6. Well done, your MicroFogger is ready for use! Exit standby mode by rapidly clicking the top button 5 times. Now, when you hold down the main button, the MicroFogger will produce smoke. To ensure the longevity of the heating coil, we recommend keeping the MicroFogger on a lower power level for the first few bursts to get the coil broken in. However tempting it may be to now fill your entire room with smoke just remember that the MicroFogger is designed to be an impulse device - using it continuously will make the heating coil wear out faster. It can easily fog up a room but be patient - let it rest for 10 seconds between each burst!

Part B - On-board user interface

We've designed the MicroFogger 2 to have the maximum number of features while keeping the information you need to remember to use them to a minimum. By now, you've probably noticed that there are 3 buttons, a toggle switch and 2 lights (LEDs) on the device.

Large top power button

- Quickly click 5 times to toggle standby mode
- Hold down when the device is on to begin smoke production, let go to stop

Small bottom adjustment buttons

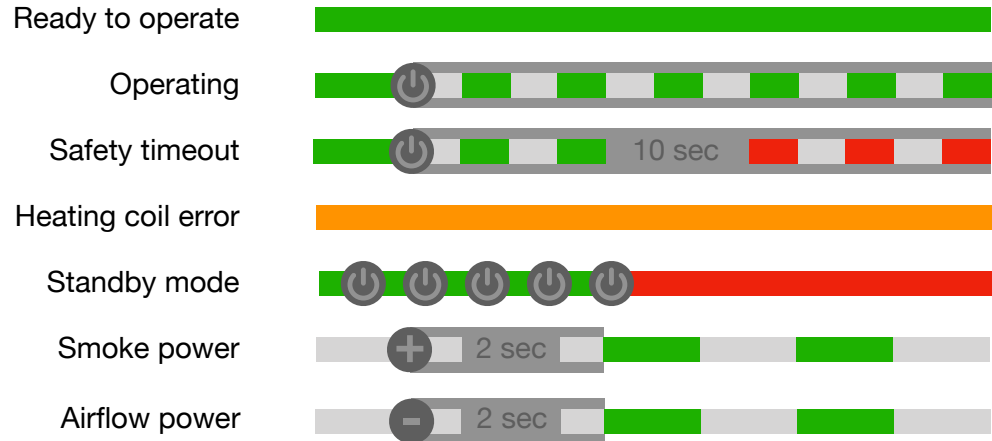
- Hold right button (+) for 2s to start changing smoke power (smoke density)
- Hold left button (-) for 2s to start changing airflow power (smoke airflow speed)

When the mode is switched, the top LED will blink twice to confirm this change

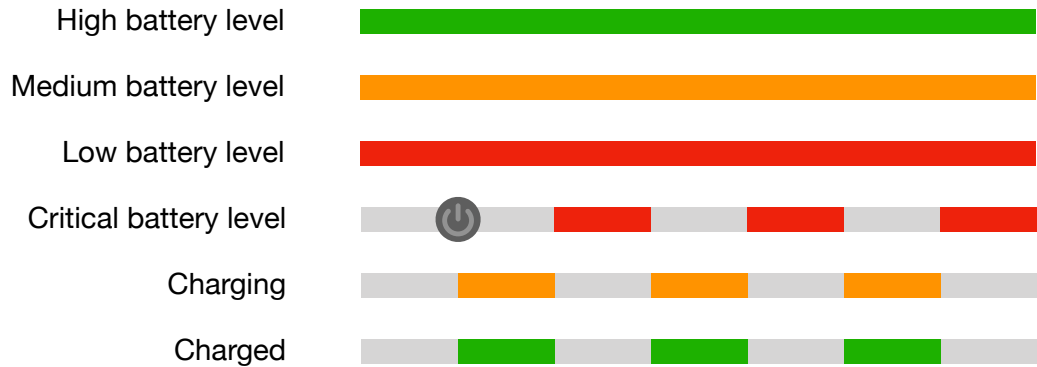
-Once the desired mode is selected, press the + or - buttons individually to increase or decrease the smoke density or airflow speed. There are 4 power levels in each mode and you are able to change the power while the MicroFogger is operating in order to achieve the desired effect. Modes can only be changed when the MicroFogger isn't running.

Below is a diagram for the LED codes that may be appear on your MicroFogger:

Top LED



Bottom LED



When the MicroFogger is off using the toggle switch, both LEDs will also be turned off.

Part C - The remote control

If selected, you will receive a keyfob-style remote control in your MicroFogger 2 order. In order to activate the remote control, remove and discard the plastic battery protection strip. If applied, you may now also remove the blue protective wrap. Once activated, the remote control will send commands to any nearby MicroFoggers when a button is pressed. There is no limit on the number of MicroFoggers that you can simultaneously control provided that they are all within range. The functions of each of the buttons are detailed below:

- A - triggers the MicroFogger at the current user-set power/airflow level combination
- B - triggers the MicroFogger at the **high** power/airflow level
- C - triggers the MicroFogger at the **medium** power/airflow level
- D - triggers the MicroFogger at the **low** power/airflow level

The remote control can also individually control up to 3 groups of MicroFoggers. The setup of this additional feature is detailed in Part I of this instruction manual.

The maximum tested range of the controller is 25m although in most cases, this value will be lower due to interferences caused by other radio devices and surrounding physical objects in the environment. The controller's optimal position is when it is pointed directly at the MicroFogger. Your body is an effective radio signal blocker so take care not to place any fingers over the front of the remote control as this will diminish range.

FCC test results for the remote control are available upon request.

Part D - Normal operation

As previous mentioned, holding down the main power button while the MicroFogger is turned on will begin smoke production. Due to safety reasons, there is a 10 second limit on continuous use at full power after which point the MicroFogger will stop producing smoke and you will need to re-press the power button to resume. We highly recommend you wait at least 10 seconds between each burst to allow the fog fluid to be re-absorbed. Failing to do so will cause excessive coil wear and will may make the smoke smell burnt. For lower smoke power levels, the safety cutoff time is increased.

Although the MicroFogger can be used in any orientation provided that the tank is mostly full, we still recommend that you keep it upright (with the nozzle pointing vertically upwards) as much as possible. This position allows the coil to optimally absorb the liquid, even if the tank is near-empty. If there isn't much fog liquid remaining in the tank, avoid using the MicroFogger in any orientation other than upwards as this would have the same effect as running it without any liquid. If you are mounting the MicroFogger in a static position and require smoke output in a downward direction, we would recommend using our hose attachment accessory.

Part E - Storage and maintenance

To store the MicroFogger, fully charge it and then turn it off using the toggle switch. Place it in a cool, dry place that is away from direct sunlight and any potentially flammable materials. Unscrew the fluid tank and heating coil to give them a quick rinse to remove any fog liquid and then dry them. Make sure to leaving the heating coil unscrewed during storage.

If, during use, you notice a burning smell coming from the MicroFogger, it's time to replace your heating coil by following the steps below:

1. Unscrew the MicroFogger while keeping the nozzle pointed downwards to prevent any liquid from spilling.
2. Wipe away any liquid that remains on the now-exposed metal components on the body of the MicroFogger
3. Unscrew the heating coil (the small metal cylinder) by rotating it in an anti-clockwise direction. Most of the time, you'll be able to use your fingers to do so but if the coil is excessively tight, you can use some pliers or other gripping tools to get more torque.
4. If you notice any liquid in the airflow channel under the heating coil, try to wipe away as much of it as possible using a paper towel.
5. Locate the spare heating coil included with your order and remove it from its packaging
6. Screw the new heating coil into the slot. Make sure it is tight - a loose heating coil can cause the MicroFogger to leak or display a heating coil error.
7. Re-fill and re-screw the fluid tank to complete the procedure. As with the first-time setup guide, please allow the liquid to absorb for at least 30 minutes before using the MicroFogger.

If, during use, the MicroFogger isn't producing any smoke and there is a bubbling sound, immediately stop operation. This means that there is excessive fog liquid inside heating coil which must be removed. Please try the following methods to remove the excess liquid:

-Shake it out by "flicking" the MicroFogger away from you to expel the liquid from the barrel.

-Gently tap the MicroFogger's barrel on surface while keeping it upside-down to encourage the liquid to drip out

-If the above methods don't work, please replace the heating coil.

Part F - Troubleshooting

Top LED displays a heating coil error (solid orange) - Ensure the heating coil is fully tightened. If the problem persists, carefully insert a fine screwdriver or other rod-like object into the barrel of the MicroFogger (the hole from which smoke is emitted) while the unit is turned off. Briefly apply light pressure to the screwdriver, this will ensure that proper electrical contact is restored. Remove the screwdriver and try again. Should there still be an error, replace the coil with a new one.

Fluid tank leaking - Ensure that the tank and heating coil are fully screwed in. If problem persists, ensure that all white gaskets on the heating coil and tank are in place and undamaged.

MicroFogger won't turn on - Plug it in to charge (while the toggle switch is in the ON position) and wait 4 hours until the MicroFogger exits the critical battery level.

MicroFogger won't charge - If the MicroFogger is in a critically low battery state, the flashing LED may not come on for the first 30 minutes of charging. If the MicroFogger proceeds to not display any LED codes after this time, please try using another charger and micro-USB cable to diagnose whether it is an issue with the MicroFogger or not.

MicroFogger keeps charging forever (blinking orange) - Some USB ports may not charge the MicroFogger to 100% of its capacity but rather to a nearly-charged state of around 90%. To fully charge the MicroFogger, try plugging it into another USB port.

MicroFogger turns on when the USB cable is plugged into it but the other end of the cable is not in a charger - this can occur with some cables because the MicroFogger is recognizing it as a trigger input (a feature that allows you to trigger it through a cable). Disconnect the cable from the MicroFogger and plug it into a charging port before re-connecting the MicroFogger. Alternatively, you can simply put the MicroFogger in standby mode by quickly clicking the main button 5 times before plugging it in.

MicroFogger stays in the charging state even when unplugged - If the lower green LED keeps blinking even when the charging cable is disconnected, please inspect the charging port for any debris as there may be a short-circuit occurring. If no debris is found, plug and unplug the charging cable a few times in order to try to clear any hidden debris.

MicroFogger produces a burning smell even with a new heating coil - There may be a very slight burning smell present in the first few seconds of operation with a new coil, this is normal. If the smell does disappear or gets more severe, stop using the MicroFogger and allow it to rest for at least another 30 minutes before continuing. Ensure that the fluid tank is fully filled. In cold environments, the fog liquid becomes more viscous and will take longer to absorb into the heating coil. If this is the case, place the MicroFogger in a warm area before using it.

If you are still encountering difficulties, please consult the support guide which is available on our [website's support page](#).

Part G - Safety

The MicroFogger 2 is powered by a high-performance Lithium-ion battery. This type of battery presents a potential fire risk if handled improperly. The following safety guidelines aim to prevent any issues from arising:

- Never leave the MicroFogger charging while unattended
- Always place the MicroFogger in standby mode while charging
- Always keep the MicroFogger away from any flammable materials

- Never expose the MicroFogger to temperatures over 40 degrees Celsius
- Never attempt to disassemble the MicroFogger
- Never expose the MicroFogger to direct sunlight for extended periods of time
- Always ensure the MicroFogger's heating coil compartment is clear of debris
- If the MicroFogger sustains a significant impact through a drop or other mistake, immediately cease operation (unplug it if it is charging) and place it in a safe area outdoors and wait for at least 10 minutes. If no further changes in the MicroFogger's condition occur, you may proceed to use it.
- If the lower half of the MicroFogger heats up to a temperature of over 40 degrees Celsius, immediately cease operation (unplug it if it is charging) and place it in a safe area outdoors and wait for at least 10 minutes. If the MicroFogger has cooled down to operational temperatures, you may proceed to use it.
- Never attempt to power the MicroFogger using a home-made charging cable. If you do so, this will be at your own risk.
- Always store the MicroFogger with the heating coil unscrewed and toggle switch in the off position as this is the most stable and safe state that it could be in.

To produce smoke, the MicroFogger evaporates a mix of Propylene Glycol and Vegetable Glycerin. Although these chemicals are both generally recognized as safe and are commonly used in food additives and skin lotions, you must always follow the following safety points:

- Do not consume the fog liquid
- Do not get any fog liquid into your eyes
- Never use the MicroFogger near children under the age of 4 or pregnant women
- Never use the MicroFogger near people with renal health issues
- Never deliberately inhale the smoke produced
- Never operate the MicroFogger if the liquid tank is empty
- Never fog up a room to a visibility of less than 3m
- Never use any fog liquid other than the liquid which provided by us. If you decide to do so, this would be at your own risk as we can only guarantee the safety and performance of our own liquid.

If you feel nauseous, light-headed or exhibit any other adverse health-related side-effect, immediately cease operation and go to well-ventilated room with fresh air. Call a doctor if symptoms continue. Similarly, call a doctor if you are concerned about the impact of these chemicals on your health.

During operation, the MicroFogger heats an internal metal coil in order to achieve the afore-mentioned evaporation of chemicals. To prevent any heat-related issues please follow these guidelines:

- Never touch the fluid tank during operation as it can burn you
- Always allow the fluid tank to cool down before changing coils or refilling liquid
- Never aim the MicroFogger at people or animals that are within 1m of range as sometimes, small droplets of fog fluid can exit the nozzle
- Never look directly into the MicroFogger's nozzle while it is running

Finally, there are a few more miscellaneous guidelines that must be respected:

- Never allow anyone under the age of 18 to use the MicroFogger
- If the smoke starts smelling burnt, immediately cease operation and replace the heating coil with a new one.
- Never leave the MicroFogger in a car that is exposed to direct sunlight during hot weather as this is likely to cause the plastic case to degrade and potentially soften. This could result in gaps forming around the edges of the top cover.

WorkshopScience will not accept any responsibility for property damage or bodily harm caused by the improper use of the MicroFogger 2. It is the user's responsibility to use good judgement and knowledge of the risks detailed above to correctly and safely operate the device.

Part H - package contents

The following base items should be included in your order of the MicroFogger 2. If you upgraded your order from an original MicroFogger order, the liquid may be missing depending on your original chosen option.

- MicroFogger 2
- Dropper bottle with 50ml of fog liquid
- Replacement heating coil
- Instruction manual download link
- USB charging cable

Depending on your order, any of the following additional items may be included in the box. The general layout of the parcel may be different should you purchase more than one of these items.

- Set of 5 additional replacement coils
- Remote control (located under replacement coils/charging cable)
- Extra bottle of fog fluid
- Hose attachment
- Control cable
- Rake attachment

Part I - additional features

The MicroFogger 2 supports several additional features that'll make it easier for you to incorporate it into your own custom projects should you decide to do so. Please note that although these modifications are officially supported, you will void your MicroFogger's warranty should you decide to proceed since there is a potential to damage the internal electronics if you are not careful. Whilst the following guides will detail each step to make the process as easy as possible, we still advise that you only attempt these modifications if you believe you have sufficient technical knowledge.

Proceed at your own risk.

Multi-device remote control operation

The included remote control keyfob can activate up to 3 separate (groups of) MicroFoggers. By default, the remote control will trigger any nearby MicroFoggers but if follow the following steps, you'll be able to change it so that buttons B,C and D activate MicroFoggers on Channels B, C and D respectively. Button A will serve as a general activation so while pressed, all in-range MicroFoggers will be turned on.

When a MicroFogger is activated in any of the multi-device modes, the power level will carry over from any adjustments made using the two bottom buttons. This means that in order to change the power levels while using different channels, you will need to set it on the MicroFogger itself.

To set your MicroFogger's channel, you will first need to turn it off and remove the top cover by unscrewing the two small screws located near the rear of the case. This can be done using a 1.5mm hexagonal tool. Once unscrewed, carefully remove the cover. You may need to pry it open which can easily be done by wedging the screwdriver into the cover's screw holes and pulling up at an angle. You will be presented with the circuit board and near the bottom left protruding area, there will be two small solder jumper pads labelled J1 and J2. By bridging these pads in different combinations using a soldering iron and some solder, you will be able to set the MicroFogger to different channels as detailed below:

- J1 bridged and J2 unbridged - Channel B
- J1 unbridged and J2 bridged - Channel C
- J1 bridged and J2 bridged - Channel D

Once the desired combination of pads is bridged, screw the cover back on while taking care not to over-tighten them as this can strip the screw's socket. If the circuit board has become dislodged during the adjustment, push it back into place before placing the cover. Failure to do so can lead to non-operational buttons. If this happens, remove the cover and re-adjust the circuit board.



Please take extreme care while bridging the pads. Touching the circuit board in any place other than the jumper pads can lead to permanent damage which will not be covered by the warranty.

Wired control

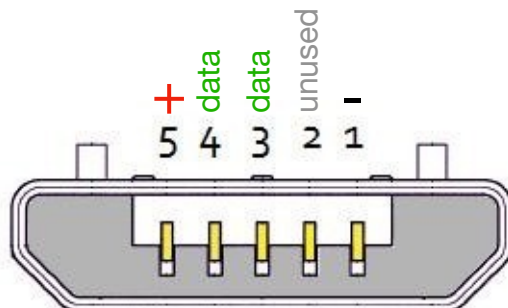
The MicroFogger can be triggered via its USB port to allow for automated control or to let you reliably activate it over long distances where the remote control may be unsuitable. This can be done by simply connecting the two data pins (pins 3 and 4) of the micro USB port together. To access these pins, you'll need to get one of our control cables. The control cable has 4 exposed and pre-tinned wires on one end; a red, black, white and green one. For triggering, the white and green wires will be used. You can now solder these wires to a relay or switch of your choice but take care to not let the red and black wires touch. In more advanced projects, you can connect the relay to a micro-controller such as a Raspberry PI or an Arduino to allow for precise timing or environment-dependent triggering when paired with additional sensors. Please note that the 10 second continuous use cutoff is still in place even when the MicroFogger is activated through the USB port. Although we strongly advise against it, the MicroFogger can be run for longer by simply un-shorting and re-shortening the data wires every 9 seconds.

Incorrectly wiring or accidental contact between any wires other than the data ones can lead to irreversible damage that is not covered by the warranty.

External Power

The MicroFogger can operate while charging so it is possible to power it off of a USB battery bank or any other other 5V power supply. If using a battery bank, you can connect it using the included micro USB cable. On the other hand, if a USB port is inaccessible, our control cable accessory be used. Simply connect the red wire to the positive terminal of a 5V power supply and the black wire to the negative one. On the MicroFogger's USB port, these wires correspond to pins 5 and 1 respectively (see diagram above). Using our control cable, it is possible to both charge and trigger the MicroFogger via the cable.

Incorrectly wiring, accidental contact between wires or the use of an unsuitable power supply voltage can lead to irreversible damage that is not covered by the warranty.



MicroFogger 2 female micro USB type B port top view

Heating coil error deactivation

The MicroFogger can occasionally display a heating coil error by mistake. This can cause inconveniences especially if an immediate release of smoke is required for an effect. You can disable the heating coil error detection entirely by bridging the J3 jumper on the circuit board. Please refer to the *Multi-device remote control operation* sub-section above for instructions on how to bridge the jumpers safely. Please note that once deactivate, you will need to check that the heating coil is securely fastened as there will be no warning light. This disable setting is recommended for theatre and SFX show use.

Safety cutoff timer deactivation

By default, the MicroFogger will turn off after a certain continuous-use time to prevent damage to the heating coil. To disable this safety feature, you can have to bridge the J4 jumper on the circuit board. Please refer to the *Multi-device remote control operation* sub-section above for instructions on how to bridge the jumpers safely.

Part J - support and FAQs

Can the MicroFogger trigger smoke alarms?

Yes, if enough smoke is produced then ionization and photoelectric smoke alarms will be activated. Traditional heat-activated smoke alarms and sprinklers won't be affected

Is it possible to change the smoke color?

Unfortunately not. The MicroFogger produces smoke through the evaporation of a fog liquid so it can only be white, adding a dye to the liquid will not change this. The only way to simulate colored smoke using the MicroFogger would be to light up the white smoke using some external lights.

Can I breathe in the smoke?

During proper operation, the fog produced is considered to be non-toxic but we do not recommend breathing it in anyway. The smoke can only become toxic if the safety precautions regarding the replacement of worn-out heating coils are not followed.

What is the fog liquid made out of?

Our fog liquid consists of a high purity vegetable glycerin and propylene glycol mixture. These chemicals are commonly-available chemical and may be found in local vape shops as a base liquids for electronic cigarettes.

Can I use liquids from other smoke machines?

Liquids from other fog machines are usually far less viscous than our composition so if used in the MicroFogger, they are unlikely to produce any smoke. We can only guarantee the safety and performance of the fog liquid that we sell so if you decide to experiment with other compositions, this would at your own risk.

How long does the smoke linger in the air?

Depending on the atmospheric conditions, the smoke can remain in the air for up to an hour after being released. The main factor affecting this is whether or not there is any air movement, drafts or wind will greatly accelerate the smoke dispersion.

Do original MicroFogger heating coils work with the MicroFogger 2?

Absolutely, we've kept the heating coils the same so that you can already use any that you have previously purchased from us.

What obstacles can the remote control signal go through?

It really depends on the exact situation but in general, as a rough guideline, you will be able to control the MicroFogger through several thin plaster walls. Similarly, if you decide to put it into cardboard or fabric enclosure, you shouldn't encounter any issues. On the other hand, metal barrier such as car doors will usually block the signal although we have even had luck with activating the MicroFogger while it was inside a car hood!

Can I control the MicroFogger 2 via a wired remote?

Yes, the usb charging port also doubles as a signal input which allows you to trigger the MicroFogger using a switch, relay or micro controller of your choice. You'll need our control cable accessory to access this functionality.

If you believe that your Microfogger is faulty, please check the support guide on our website's support page. This will give you instructions regarding the returns process. If you are sure that your inquiry cannot be answered by any of the information in this instruction manual, please reach out to us at the email address below. If it is a specific question about your order, please include your 4-digit order number which can be found on your printed invoice.

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