

## OPERATING INSTRUCTIONS - STORAGE

1. When the treatment is finished, flush the fogger's system with distilled water and make repeated puffs.
2. Turn the fogger off and let it fully cool down.
3. Add 3 table spoons of mineral oil, and allow it to go into the pump system.
4. Clean the fogger system after each use, to ensure proper pump functioning.
5. Flush the fluid reservoir with distilled water after use. Clean the built-in filter.
6. Remove the propane cylinder from the fogger and store it in a cool, well ventilated area, out of the reach of children.
7. Transport the device in a sealed package.
8. Store it in a well ventilated, non-residential building.

## SPARE PARTS ARE AVAILABLE

Visit us for spare parts for the fogger, and many other beekeeping items.



FEEL FREE TO CONTACT US WITH ANY QUESTIONS:  
[VAROMORUS.COM](http://VAROMORUS.COM)    [VAROMORUS@GMAIL.COM](mailto:VAROMORUS@GMAIL.COM)

  
**VAROMORUS**  
BEEKEEPING TOOLS

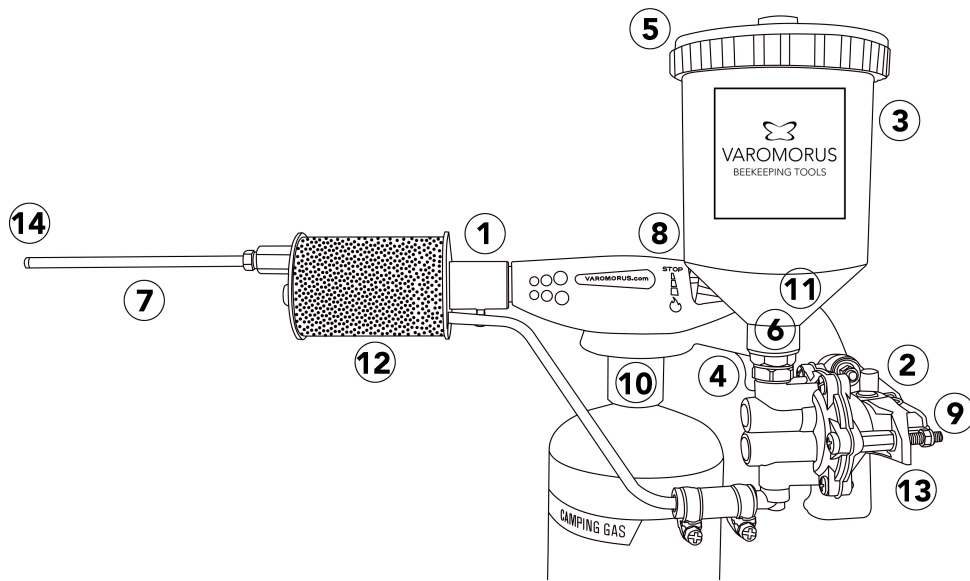
## USER MANUAL



**VAROMORUS TURBO  
PROPANE INSECT FOGGER NORTH AMERICAN**

**CAUTION: READ INSTRUCTIONS BEFORE OPERATING.**

## COMPONENTS OF THE VAROMORUS FOGGER



1. Gas-burner.
2. Fluid Pump.
3. Fluid Reservoir (White Jar for the Working Solution).
4. Automatic Piezo Ignition Trigger.
5. Fluid Reservoir Lid.
6. Fluid Reservoir Attachment Fitting.
7. Extension Nozzle.
8. Gas Valve.
9. Screw for Dose Adjustment of Fluid Supply.
10. Gas Cylinder Attachment Area.
11. Fine Parts Filter (Installed Inside the Fluid Reservoir).
12. Mesh Burner Cover.
13. Fluid Pump Lever.
14. Nozzle Injector.

## PREPARING A WORKING SOLUTION

**Safety first: Always wear protective gloves, a respirator and protective glasses while operating the fogger or working with hazardous substances.**

### Preparation of treatment mixture # 1

**Note:** It is recommended to use powdered oxalic acid (not crystals) as oxalic acid powder dissolves faster and is better than oxalic acid crystals.

Add 25 grams of the oxalic acid powder (about 3 tbsp) to 100 milliliters of 91% isopropyl alcohol. Stir and warm up the fluid in a water bath (temp. 40-50°C / 104-122 °F) until the acid is completely dissolved. Do not boil it. Stir slowly until the fluid is clear, everything has dissolved and there is no formation of oxalic acid crystals. It is also recommended to filter the fluid with a regular paper coffee filter to make sure all undissolved oxalic acid powder or crystals are removed. Transfer the oxalic acid solution you just prepared into the fluid reservoir.

This amount of fluid is calculated to be able to process about 25 standard size beehives. If stored properly, it retains its properties for 2-3 weeks.

**For the oxalic acid solvent, one of the following substance can be used instead:**

- ✓ 95 % Grain alcohol
- ✓ 96 % Ethanol
- ✓ Vodka
- Distilled water

**Dissolve 25 g of Oxalic Acid powder in 100 ml of the chosen solvent listed above.**

### Preparation of treatment mixture # 2

Add 5 ml of "Bipin" or "Tactic" to 100 ml of purified kerosene. During this, a white colored homogeneous fluid should be formed, without any sediment. This amount of treatment fluid is calculated to be able to process 50 beehives. It retains its properties for several months if stored properly.

### Preparation of treatment mixture # 3

Add 5 ml of clartane or fluvalinate to 100 ml of water. Preheat in a water bath (temp. 40-50 °C/ 104-122 °F) until completely dissolved. Such treatment fluid must be prepared immediately before use. It can be used for processing of 50 beehives.

**NOTE: Residues of the treatment fluid should not be stored in the working system of the device, and in the case of repeated use, it is recommended to filter it.**

### Treatment with Mineral Oil

**NOTE:** Care must be taken before adding mineral oil to oxalic acid for use in beehive fogging. This is due to the properties of mineral oil which mean it is not able to dissolve oxalic acid. The result is that the mineral oil being fogged is in its pure form. Oil is a hydrocarbon and when heated to high temperatures it becomes very flammable. There is a very high likelihood that the mineral oil will burst into flames when run through a fogger. Beekeepers should be very careful not to send a burst of flames into their hives. Bees will get singed and the hive may catch fire.

## SAFETY PRECAUTIONS



### CAUTION: Read entire instruction manual before operating.

**Read User Manual carefully.** Read and fully understand the user manual before operating this device. Use of the device requires compliance with safety rules when working with gas cylinder equipment, and flammable substances.

- **Caution! Risk of burns.** Device generates strong heat during use.
- Always wear protective clothing (gloves, safety glasses, respirator mask).
- **Do not inhale the fog or vapors.** It is essential to ensure adequate respiratory protection.
- Always keep the fogger away from flammable materials.
- Always follow the working solution instructions.
- Always pre-heat your fogger for at least 2 minutes, while keeping the fogger level to the ground. Pre-heat for at least 2 minutes to get the right working temperature.
- Failure to pre-heat may clog the burner outlet causing damage to the unit.
- Use only with the solutions that are indicated in the manual. The use of other solutions or chemicals may damage your fogger and could result in unsafe operations and thereby voiding the warranty.
- Only carry out the fogging procedures in calm, non-windy weather. Do not apply when the wind is greater than five miles per hour. When handling the treatments, move against the wind.
- Always operate your fogger in an upright position (parallel to the ground).
- Do not turn the unit upside down.
- Turn the gas valve in the clockwise direction to turn off the gas.
- Make sure you turn it all the way to the end.
- Turn the gas valve in the counterclockwise direction to turn on the gas.
- Always do it carefully and gradually, starting from a minimal flame position.
- Do not allow any mechanical damage to the device.
- This can lead to the loss of its tightness and possible leakage of gas or working fluid.
- Always inspect the threaded outlet of the propane fuel cylinder and remove any dirt that may be there. Improper attachment of the propane gas cylinder to the fogger may result in a gas leak. Care must be taken not to cross the thread when attaching the cylinder into the valve.
- Operate the fogger outdoors only. **DO NOT USE INDOORS** or within any enclosed structure. Always keep the fogger away from flammable materials.
- Do not smoke while filling and/or operating the unit. **Contamination, fire, or explosion could occur.** Remove or cover exposed food and drinking water before application.
- It is forbidden to have food or drink, or to smoke, during the treatments.
- **Do not** allow adults, children, or pets to enter until vapors and mists have dispersed.
- Do not apply this product in a way that the mist will contact adults, children or pets either directly or indirectly through drifting.
- Keep fogger, propane cylinder, and the working solution **out of the reach of children.**
- Keep your face, hands, and clothing away from the protection mesh basket at all times. The protective mesh basket becomes very hot while in operation.
- Do not touch it, **to avoid getting burned.**
- Do not leave the fogger unattended while the burner is lit.

## PRINCIPLE OF FOGGING TREATMENT

**Varomorus Fogger** – a modern beekeeping tool for effective management of Varroa mites in bee hives. With this portable propane powered fogger, you can easily treat multiple bee colonies in a quick time. This professional fogger is used to fumigate beehives and thus, with the evaporation of the solution, the bees get the necessary dose of the treatment drugs. The Varomorus is meant for the effective treatment and prevention of varroaosis. The treatment solution is completely evaporated by the fogger without forming any crystals. It is heated in the coil and comes out as a dense white fog. Those droplets are very fine, around about 15-18 micron size, and do not hurt the bees. It causes the bees to groom themselves and in that process, the very fine droplets block the breathing spiracles on the Varroa mites. The bees will actively circulate the fog throughout the hive, which significantly increases the efficiency of using the Varomorus Fogger. Varomorus is particularly useful for those organic beekeepers. So, using it with clean environmental products (thymol, oxalic acid, etc.), you can effectively deal with varroa mites without using chemicals. It saves time and gives a high-quality treatment.

### The following can be used as treatment substances:

- ➡ Oxalic acid powder
- ➡ Mineral oil
- ➡ Bipin
- ➡ Fluvalinate
- ➡ Thymol
- ➡ Amitraz
- ➡ Taktic
- ➡ Mavric

### The following can be used as the solvent:

- ➡ 91% Isopropyl alcohol
- ➡ 95 % Grain alcohol
- ➡ 96 % Ethanol
- ➡ Vodka
- ➡ Purified kerosene
- ➡ Distilled water

### THIS IS AN UPDATED VERSION OF THE FOGGER: VAROMORUS “TURBO”.

IT CAN BE USED WITH OXALIC ACID OR WITH MINERAL OIL.

**FOR THE OXALIC ACID SOLUTION:** use minimal flame power, it will be enough for quality evaporation.

**FOR MINERAL OIL:** use medium flame power for quality evaporation. Regulate the flame power with the gas valve on the torch (pic.8)

It is recommended to test the device by filling a fluid reservoir (3) with kerosene or 91% isopropyl alcohol that doesn't contain the active substance. Then pull the pump lever (13) a few times to check if the fluid flows properly.

## HOW TO USE THE VAROMORUS FOGGER

- Open the lid of the fluid tank and pour the mixed solution inside. Put the lid on. By turning the fuel valve counterclockwise, set the valve to the minimum position. Light the gas burner by squeezing the trigger of the automatic piezo ignition. Adjust the desired gas supply level. The flame of the burner must not protrude above the external protective cover.
- After 1-2 minutes of using the drive handle of the hydraulic fluid supply pump, pour the working mixture into the system, until persistent smoke puffs appear from the nozzle. During this, pull the drive handle all the way to the stop level. The liquid is supplied when the handle is released.
- The drive handle is adjusted to feed approximately 2ml of the working mixture.
- With the formation of the first smoke puffs, there might be a small drop of working fluid drip from the nozzle.
- Insert the nozzle into the bottom of the beehive entrance for about 1-2cm and feed one puff of smoke into the nest of the bee family if using amitraz as the active substance; if you are using thymol or oxalic acid, make about 3-5 puffs. It is recommended not to use thymol if there is a young barren queen bee in the nest, and also if the air temperature is above + 30°C. (+ 86° F).
- After the treatment is completed, the gas supply valve must be closed. During the summer period, treatment with amitraz can be carried out only after the last pumping of honey, or 45 days before the first pumping of honey, the selection of a bee bread or 7 days before the collection of the pollen load. The treatment of the bee colonies should be carried out in a hive, preferably in the evening, when the flying bees return from the field, or during the day in non-flying weather.
- In calm weather, it is not necessary to close the beehive entrances during treatment, whereas in windy weather, it is advisable to close the entrances for 15-20 minutes. If there is a brood, the treatment is carried out 4 times with an interval of 3 days in between. (For the destruction of any varroa that comes out of the brood). In the infertile period, the treatment is carried out 1-2 times with intervals of 3-4 days.
- It is important to use a catching net for mites during the treatment with any drug. The presence of nets prevents the emergence of resistant mites to a particular preparation and significantly increases the treatment efficiency.
- **Safety precautions when using the device.** Use of the device requires compliance with safety rules when working with gas cylinder equipment, and flammable substances. Please always follow the safety instructions.

## PACKAGE CONTENTS COMPLETE SET

- 1x—"VAROMORUS" Fogger
- 1x— Wrench 8/10mm
- 1x— Fine parts filter
- 1x— User manual (ENG)
- 1x— Extension nozzle
- 1x— Liquid reservoir



**NOTE: If you discover that the device has some signs of damage that arose during transportation, please don't use the damaged device.  
Contact us immediately for help to resolve the issue at: [varomorus@gmail.com](mailto:varomorus@gmail.com)**

### HAZARD STATEMENTS:



#### Risk of burns

caution device generates strong heat during use



#### Health hazard

depending on the vaporized substances, toxic and / or corrosive vapors may form



#### Respiratory protection

it is essential to ensure adequate respiratory protection



#### Eye protection

it is always necessary to wear eye protection



#### Protective gloves

it is always necessary to wear protective gloves



#### Read the Operator's Manual

read and fully understand operator's manual before using this device



#### Keep away from children



#### Use only outdoors

## ASSEMBLY INSTRUCTIONS

It's vital to know each part of your fogging device, as well as the basic operational principles. This knowledge will be useful for maintenance and repairs on your fogging device. It will also help you understand the safety precautions you'll need to consider when operating your insect fogger.

### Preparing Your Fogger For Use (Refer to components diagram)

**NOTE:** Use 16.4oz "Short" style propane cylinder - propane is sold separately.

Always inspect the threaded outlet of the propane cylinder and remove any dirt before attaching.

Make sure the gas valve (8) is completely closed before attaching the propane cylinder (turn the propane valve fully clockwise).

Insert the cylinder into the gas cylinder attachment area (10) at the bottom of the fogger.

To avoid damage, be sure to properly align the threads of the propane cylinder with the threads of the fogger. Turn the propane cylinder to tighten.

Hand tighten only.

## OPERATING INSTRUCTIONS - FILLING THE FLUID RESERVOIR

**NOTE:** While in use the fogger has to be in parallel to the ground position at all times. Do not flip it to the sides or upside down.

1. Your fogger is equipped with a white fluid reservoir (3).
2. Be sure the burner is not lit and the fogger is cool before filling the fluid reservoir (3).
3. Place the fogger on a flat, level, non-combustible, outdoor surface.
4. Do not overfill the reservoir.
5. Open the lid (5) of the fluid reservoir (3) and pour in the working solution.
6. Be sure to secure the reservoir lid (5) before use.
7. Pull the pump lever for 7-10 times to verify the liquid is reaching the heating system properly and there is no leakage.

## OPERATING INSTRUCTIONS - LIGHTING

**NOTE:** The burner may or may not light the first time the button is depressed, depending on the wind and other conditions.

Wait approximately 1-2 seconds after each push of the button. If the unit does not light after 5-6 times, turn the propane valve to the "off" position, wait approximately 30 seconds and then repeat the process with the valve slowly returned to the "on" position.

## OPERATING INSTRUCTIONS - LIGHTNING

**NOTE:** Follow the outlined steps in the *Assembly Instructions* section before proceeding.

1. Always place the fogger on a flat, level, non-combustible outdoor surface while lighting.
2. By turning the gas valve (8) a little, set the valve to the minimum position.
3. The Varomorus Fogger is equipped with an auto-ignite feature that allows for quick burner lighting with a simple push of a trigger button. To use the auto-ignite feature push the trigger button (4) while the propane valve is "on" and is on the minimum flame position, until the burner is lit.
4. **\*\*If the auto igniter should fail to work, go to the *Troubleshooting Section* to see how to light manually \*\***
5. After successful ignition, allow the fogger to pre-heat for at least 2 minutes while keeping it level to the ground. While pre-heating, some flame may appear around the mesh burner cover. **If the condition persists after the pre-heat period, do not use the fogger and immediately shut off the unit.** Contact our Customer Service at varomorus.com before using it again. **Failure to pre-heat the burner may clog the burner outlet causing damage to your fogger.**

## OPERATING INSTRUCTIONS - FOGGING

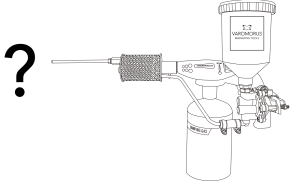
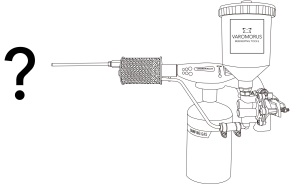
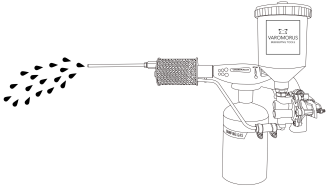
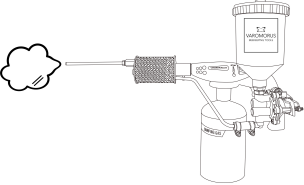
**NOTE:** Pre-heat the fogger for at least 2 minutes prior to fogging.

1. Adjust the desired (optimal) mode of gas supply.
2. The burner flame must not protrude above the mesh burner cover (12).
3. Repeatedly pull the pump lever (13) slowly at a rate of 5 to 10 seconds to obtain the most effective fog.
4. Always keep the breeze at your back.
5. Keep the hot mesh burner cover (12) away from skin and clothing.
6. Make 5 to 7 test puffs before starting to treat the first hive.
7. Insert the extension nozzle of the fogger (14) into the hive entrance for 1" and make 2-3 puffs depending on the number of boxes.
8. Close the beehive entrance with a cloth or towel for 2-3 minutes.

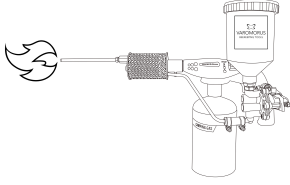
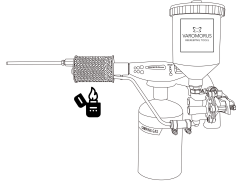
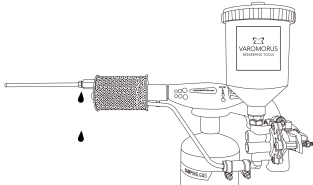
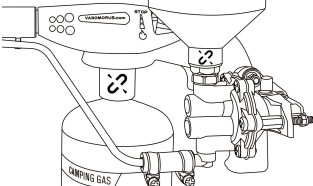
## OPERATING INSTRUCTIONS - SHUTTING OFF THE FOGGER

1. Stop pumping the lever.
2. Turn the gas valve (8) clockwise to shut off the propane supply.
3. **DO NOT OVER TIGHTEN THE PROPANE VALVE.**
4. Be sure the flame is completely extinguished and the unit has cooled down prior to storing it.

## TROUBLESHOOTING

Trouble: (Symptom)	Probable Cause	Corrective Action
<p>No liquid reaching the heating system.</p> 	<ol style="list-style-type: none"> <li>Nozzle is clogged.</li> <li>Pump or heating system are clogged or inoperable.</li> </ol>	<ol style="list-style-type: none"> <li>Unscrew the nozzle check if the liquid flows without it.</li> <li>Remove the clog from the nozzle using a piece of wire .</li> </ol> <ol style="list-style-type: none"> <li>Contact us at: <a href="http://varomorus.com">varomorus.com</a></li> </ol>
<p>Burner is not operating properly.</p> 	<ol style="list-style-type: none"> <li>Propane gas cylinder is low or empty.</li> <li>Propane tank is attached improperly.</li> <li>Burner assembly fails to light or will not stay lit.</li> </ol>	<ol style="list-style-type: none"> <li>Replace the propane cylinder.</li> <li>Screw in the propane cylinder tightly.</li> <li>Check the igniter. (See the next page under "Unit doesn't light").</li> </ol>
<p>Dripping.</p> 	<ol style="list-style-type: none"> <li>Nozzle is loose.</li> <li>Excessive insecticide output.</li> <li>Not at proper operating temperature.</li> </ol>	<ol style="list-style-type: none"> <li>Tighten the nozzle securely.</li> <li>Pump at a slower rate. Wait 10-15 seconds before pumping.</li> <li>Increase the temperature with the gas valve (pic.8)</li> </ol>
<p>Low amount of fog.</p> 	<ol style="list-style-type: none"> <li>Improper fogging material.</li> <li>Fog quality is good but amount is too little.</li> <li>If the fog is wet, the pumping rate is too high or the unit has not reached its proper operating temperature.</li> </ol>	<ol style="list-style-type: none"> <li>Check the mixing recipes above.</li> <li>Regulate the dose amount with the pump screw (pic.9)</li> <li>Make sure the unit has been pre-heated for at least 2 minutes.</li> <li>Decrease your pumping rate.</li> </ol>

## TROUBLESHOOTING

Trouble: (Symptom)	Probable Cause	Corrective Action
<p>Flare-up / uncontrolled burning</p> 	<ol style="list-style-type: none"> <li>Liquid ignited.</li> </ol>	<ol style="list-style-type: none"> <li>Stop pumping immediately. Turn the propane valve off. The flame will stop after excess liquid is eliminated. Contact Customer Service at <a href="mailto:varomorus@gmail.com">varomorus@gmail.com</a></li> </ol>
<p>Unit doesn't light.</p> 	<ol style="list-style-type: none"> <li>Check propane.</li> <li>Igniter is not working.</li> </ol>	<ol style="list-style-type: none"> <li>Be sure there is propane in the tank.</li> <li>Light the unit manually. Place lighter under the mesh burner cover. To light coil, open the gas valve just a little. Ignition will take place immediately.</li> </ol>
<p>Leakage.</p> 	<ol style="list-style-type: none"> <li>Leakage at the extension nozzle connector.</li> <li>Leakage inside the heating system.</li> </ol>	<ol style="list-style-type: none"> <li>Tighten the extension nozzle connection. If the thread increases during preheating, tighten it with two wrenches used in opposite directions.</li> <li>Contact us at: <a href="http://varomorus.com">varomorus.com</a></li> </ol>
<p>Thread is damaged.</p> 	<ol style="list-style-type: none"> <li>Propane gas cylinder connector thread is damaged.</li> <li>The reservoir/pump thread is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>Do not connect the tank. Contact us for a replacement.</li> <li>Visit <a href="http://varomorus.com">varomorus.com</a> for spare parts.</li> </ol>