

Biogents CO₂ Upgrade Set

To upgrade the Biogents traps with CO₂

Instruction Manual (EN)

Carbon Dioxide is a Powerful Attractant for Bloodsucking Insects

Carbon dioxide gas (CO₂) is an important attractant for mosquitoes. Therefore, an accurate release quantity of CO₂ is, a deciding factor in the catch success of a mosquito trap. Thorough respiration, a human gives off roughly one kilogram of carbon dioxide into the environment per day (roughly 40 g/h). Biogents' mosquito traps are specialized to work with sufficiently less carbon dioxide. The CO₂ emission rate of each trap should be between 8 and 20 grams per hour. The catch success of the trap with an emission rate of 8 g/h is obviously lower than that with an emission rate of 20 g/h; however, it is entirely sufficient for smaller mosquito problems.



How Mosquitoes Locate Humans

Biogents mosquito traps with CO₂ upgrade attract mosquitoes by imitating human breathing by releasing carbon dioxide into the air and skin compounds in appropriate concentrations.

When humans exhale, they release carbon dioxide into their surroundings. Exhaled breath containing the carbon dioxide as well as compounds from the skin is an attractive stimuli that is carried by the wind. Mosquitoes follow these plumes to find their blood source.

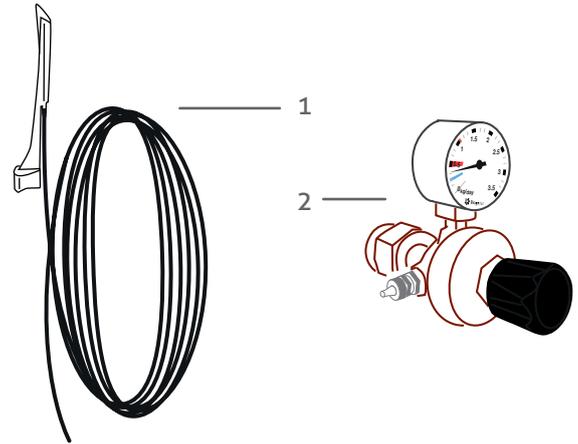
The Biogents skin odor (BG-Sweetscent) is in combination

with the Biogents traps sufficient in attracting and catching tiger mosquitoes; however, the addition of CO₂ to the trap dramatically increases the catch rate of tiger mosquitoes as well as all other mosquito species and various bloodsucking insects.

The CO₂ upgrade set releases pure CO₂ from the specialized emitter nozzle which is designed to optimize the dispersal of carbon dioxide. By using a specialized pressure reducing regulator, the flow rate of CO₂ can be regulated. This allows the adaptation of the carbon dioxide emission to the local and seasonal conditions.

Contents Included in the Packaging

1. Carbon dioxide (CO₂) emitter nozzle with attached CO₂ tube
2. Pressure reducing regulator for CO₂

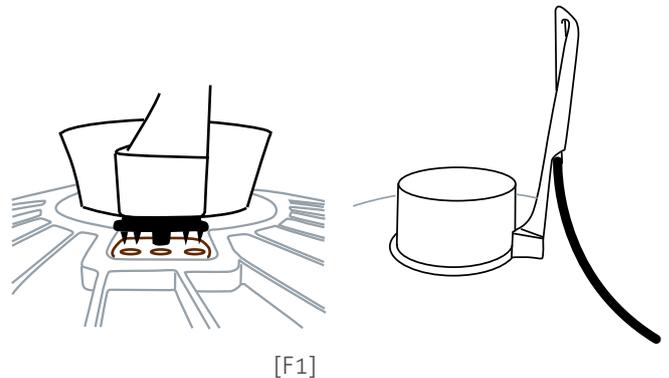


Attaching the CO₂ Emitter Nozzle

The Biogents CO₂ upgrade set comes with the specialized CO₂ emitter nozzle for an optimal dispersal of CO₂. The nozzle can be attached to all Biogents traps.

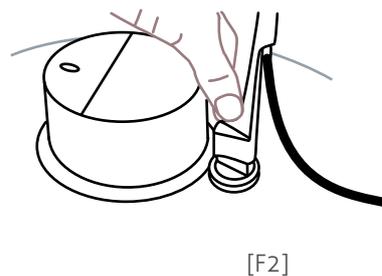
BG-Mosquitaire:

1. Remove the Biogents sticker located next to the intake funnel on top of the trap.
2. Plug the bottom of the CO₂ emitter nozzle with the attached CO₂ tube into the respective wholes in the lid of the trap [F1].



BG-Sentinel 2 and other traps with plastic cover:

1. Fix the CO₂ emitter nozzle with the attached CO₂ tube onto the BG-Lure cartridge [F2]. If the BG-Lure is not used, insert the CO₂ nozzle into the same opening on the cover.



Attaching the Pressure Reducing Regulator onto the CO₂ Gas Cylinder and adjusting the CO₂ consumption

Attaching the pressure reducing regulator onto the CO₂ gas cylinder:

The Biogents CO₂ upgrade set includes a specialized pressure reducing regulator for an optimal adaption of the CO₂ emission to the local and seasonal conditions.

Screw the pressure reducing regulator onto the CO₂ gas cylinder by rotating the screw on the end of the regulator onto the opening on the CO₂ cylinder, and make sure it is tight by using a wrench or pliers [F3].

Attaching the CO₂ tube:

The Biogents CO₂ upgrade set includes a CO₂ tube. One end is attached to the CO₂ emitter nozzle, and the other end is to be attached to the pressure reducing regulator. Unscrew the nut on the outlet of the pressure reducing regulator [F4, (1)]. Thread the end of the CO₂ tube through the nut [F5]. Then fix the end of the CO₂ tube onto the outlet [F6], and re-screw the nut back onto the outlet with a wrench size 12.

Adjusting the CO₂ consumption:

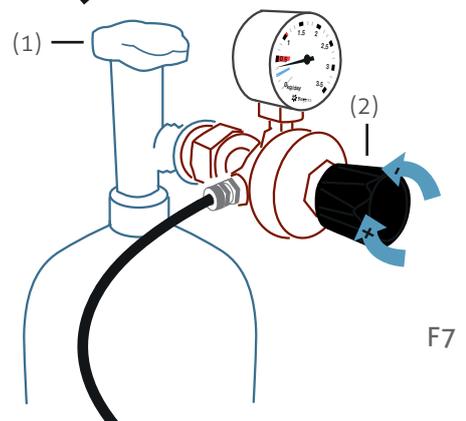
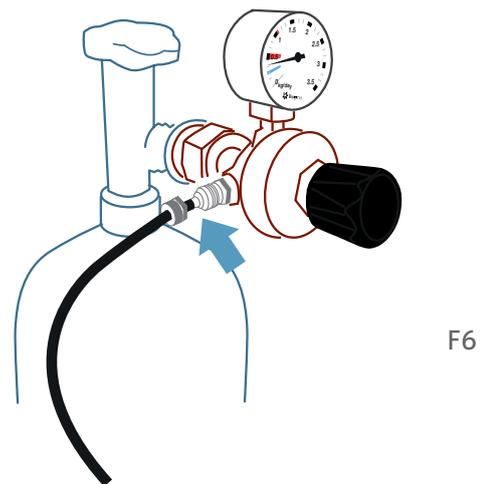
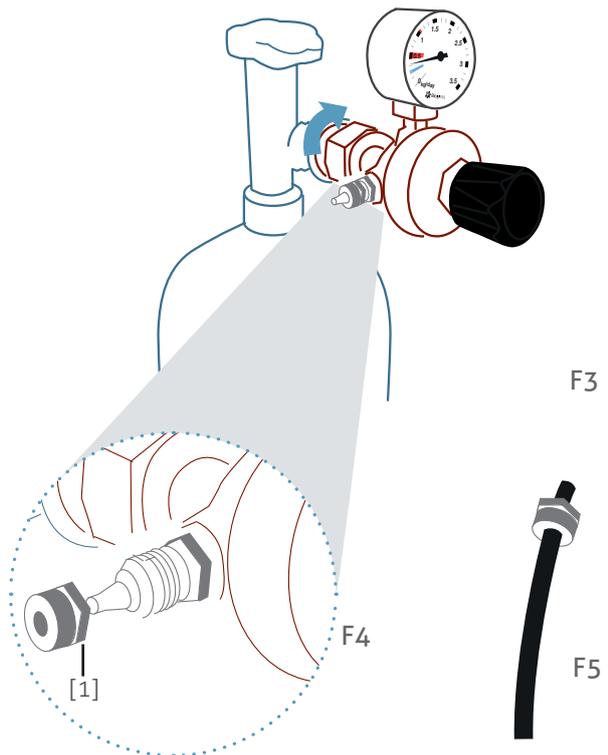
Open the valve on the CO₂ gas cylinder [F7, (1)] by turning it counterclockwise until it is completely open.

The pressure can be adjusted to the local and seasonal conditions with the black knob on the front of the pressure regulator. To increase flow rates, turn to the right. To decrease flow rates, turn to the left [F7, (2)]. We recommend a flow rate of 0.5 kilograms per day (red marker on the display of the pressure regulator) for normal and high mosquito nuisance:

- when the disturbance from the mosquitoes strongly increases
- at the beginning of the high season for mosquitoes
- after flooding events
- when there are still puddles or similar collections of water that have not dried up seven days after heavy rainfall. In this amount of time, mosquito eggs can develop into adult mosquitoes.

With higher flow rates up to 1.5 kilograms per day, it is possible to further increase the catch rates.

For low mosquito nuisance, we recommend a flow rate of 0.2 kilograms per day (blue marker on the display of the pressure regulator).



The following is a consumption table of CO₂ comparing two CO₂ flow rates:

Consumption table of carbon dioxide			
	CO ₂ flow rate in ml/min	CO ₂ flow rate in kg/day	Number of days a 10 kg CO ₂ cylinder lasts
Low CO ₂ flow rate (blue marker on the display)	70	0.2	50
High CO ₂ flow rate (red marker on the display)	175	0.5	20

Commencing Operation of the Trap

After opening the valve on the CO₂ gas cylinder and adjusting the pressure to your needs, connect the power supply unit to the trap, and plug it into a wall socket.

The trap is now in operation.

ATTENTION: The Biogents CO₂ traps must be connected to the mains supply 24 hours a day; otherwise, the mosquitoes will be able to escape from the trap.

Recommended Types of Gas Cylinders and Sources

In order to supply the trap with the carbon dioxide (CO₂) attractant, a commercially available CO₂ gas cylinder with 6 or more kilograms is required. These can be acquired or rented at drink retailers or bottle depots for a deposit. Where applicable, a door-to-door delivery service is also possible. A 10-kg gas cylinder is recommended, which is also used in restaurants to draft beer and in soda machines.

ATTENTION: Check and make sure that there is enough carbon dioxide in the CO₂ gas cylinder by checking the pressure gauge on the pressure reducing regulator. If the pressure gauge is at 0, then the CO₂ gas cylinder needs to be replaced.

Criteria for Positioning the CO₂ Cylinder

- The CO₂ gas cylinder must be securely placed in a vertical position. It should be fixed with ropes or cords to prevent it from falling over.
- The CO₂ cylinder should not be exposed to direct sunlight, intense heat, extreme cold, or frost.
- The pressure reducing regulator needs to be protected from rain, for example, through a clear plastic bag or by being placed under shelter.
- People, children, and animals should not be able to trip over the electric cables or CO₂ tube.

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