

Operating Instructions



500 cc Dragonfly Electronic Biting Insect Trap

**Read Before Unpacking and Operating
The Dragonfly Electronic Biting Insect Trap**

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Thank You!

Your Dragonfly[®] electronic biting insect trap is enclosed. Please carefully read these instructions. They tell you how to unpack, setup and operate the unit, and how to ship it to another location.

Safety

Observe the following safety precautions at all times:

1. USE ONLY EXTENSION CORDS HAVING PLUGS AND RECEPTACLES THAT ACCEPT THE DRAGONFLY ELECTRONIC BITING INSECT TRAP'S PLUG.
2. THE ELECTRICAL RATING OF THE EXTENSION CORD MUST BE AS GREAT AS THE ELECTRICAL RATING OF THE DRAGONFLY ELECTRONIC BITING INSECT TRAP.
3. CONNECTION FOR OUTDOOR USE MUST BE OF A SEALED TYPE
4. DO NOT ABUSE CORD - NEVER CARRY DRAGONFLY ELECTRONIC BITING INSECT TRAP BY CORD OR PULL IT TO DISCONNECT FROM RECEPTACLE. KEEP CORD FROM HEAT, OIL AND SHARP EDGES.
5. TO PROVIDE CONTINUED PROTECTION AGAINST THE RISK OF ELECTRIC SHOCK, CONNECT TO PROPERLY GROUNDED OUTLETS ONLY.
6. THE DRAGONFLY ELECTRONIC BITING INSECT TRAP IS EQUIPPED WITH AN APPROPRIATE 3-CONDUCTOR CORD AND 3-PRONG GROUNDING TYPE PLUG TO FIT THE PROPER GROUNDING-TYPE RECEPTACLE. TO REDUCE THE RISK OF ELECTRIC SHOCK THE PLUG MUST BE PLUGGED INTO AN APPROPRIATE OUTLET THAT IS PROPERLY INSTALLED AND GROUNDED.
7. THE DRAGONFLY ELECTRONIC BITING INSECT TRAP UTILIZES A 110, 115, 230 OR 240 VOLT OUTLET WITH GROUNDING PIN. BE SURE THE POWER SOURCE IS PROPERLY GROUNDED. CONSULT A SUITABLY QUALIFIED PERSON IF THE GROUNDING INSTRUCTIONS ARE NOT COMPLETELY UNDERSTOOD, OR IF IN DOUBT AS TO WHETHER PROPER GROUNDING EXISTS.
8. USE ONLY 3-WIRE EXTENSION CORDS, WHICH HAVE 3-PRONG GROUNDING TYPE PLUGS AND 3-POLE RECEPTACLES, WHICH ACCEPT THE DRAGONFLY ELECTRONIC BITING INSECT TRAP'S PLUG. REPLACE OR REPAIR DAMAGED CORDS.
9. OUTDOOR EXTENSION CORDS MUST BE USED WITH THE DRAGONFLY ELECTRONIC BITING INSECT TRAP. SUITABLE EXTENSION CORDS ARE SURFACE MARKED AND HAVE A TAG STATING THAT THEY ARE SUITABLE FOR OUTDOOR USE.
10. CONNECTION TO THE DRAGONFLY ELECTRONIC BITING INSECT TRAP AND ANY EXTENSION CORD MUST BE KEPT DRY AND OFF THE GROUND.
11. CHECK THE VOLTAGE REQUIREMENTS OF THE DRAGONFLY ELECTRONIC BITING INSECT TRAP AND CONFIRM THE PROPER POWER SOURCE.
12. FOR SAFE OPERATION, IT IS RECOMMENDED THAT THE POWER OUTLET BE FUSED AT 15 AMPS.
13. THE DRAGONFLY ELECTRONIC BITING INSECT TRAP IS SUPPLIED WITH AN APPROPRIATE POWER CORD AND 3-PRONG PLUG CONNECTOR. CONNECT THE DRAGONFLY ELECTRONIC BITING INSECT TRAP TO THE POWER SOURCE WITH THE CORD/CONNECTOR SUPPLIED. DO NOT ATTEMPT TO USE THE DRAGONFLY ELECTRONIC BITING INSECT TRAP IF THIS CONNECTOR IS INCOMPATIBLE WITH THE INSTALLATION.
14. CONNECT THE CORD TO THE POWER SOURCE ENSURING THE COLOR CODE IS STRICTLY FOLLOWED: BLACK-Live; WHITE-Neutral; GREEN-Ground or BROWN-Live; BLUE-Neutral; GREEN/YELLOW-Ground.
15. ONCE CONNECTED THE CORD SHOULD BE MECHANICALLY SECURED.

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16. DISCONNECT THE DRAGONFLY ELECTRONIC BITING INSECT TRAP FROM THE POWER SUPPLY WHEN NOT IN USE, BEFORE SERVICING, CLEANING, INSPECTING AND THE LIKE.
17. DO NOT INSERT FOREIGN OBJECTS INTO THIS DRAGONFLY ELECTRONIC BITING INSECT TRAP.
18. THE DRAGONFLY ELECTRONIC BITING INSECT TRAP MUST NOT BE INSTALLED WHERE DANGEROUS CONCENTRATIONS OF FLAMMABLE OR EXPLOSIVE SUBSTANCES ARE LIKELY TO OCCUR IN THE AIR.
19. STORE THE DRAGONFLY ELECTRONIC BITING INSECT TRAP INDOORS WHEN NOT IN USE-OUT OF REACH OF CHILDREN.
20. DO NOT CLEAN THIS DRAGONFLY ELECTRONIC BITING INSECT TRAP WITH WATER SPRAY OR THE LIKE.
21. THE USER MAY REPLACE THE CO2 CYLINDER AND BITING INSECT LURE. ALL OTHER REPAIRS AND MAINTENANCE MUST BE PERFORMED ONLY BY QUALIFIED SERVICE PERSONNEL.
22. ONLY QUALIFIED PERSONNEL MUST INSTALL THE UNIT.
23. OPERATING TEMPERATURE: 13° C TO 48° C (55° F TO 120° F).
24. DO NOT CONTINUOUSLY SHORT THE ELECTROSTATIC PANELS. DISCONNECT POWER IF PANELS ARC CONTINUOUSLY
25. READ AND FOLLOW ALL INSTRUCTIONS AFFIXED TO THE CO2 CYLINDER
26. DO NOT EXPOSE THE CO2 CYLINDER TO TEMPERATURES ABOVE 71° C (160° F).
27. NEVER ATTEMPT TO REMOVE VALVES OR BURST-DISKS FROM CO2 CYLINDER

Dragonfly electronic biting insect trap Placement

The Dragonfly electronic biting insect trap is a powerful mosquito attractant. The key to the Dragonfly electronic biting insect trap's extraordinary power is the way it turns the insects' keen sense of smell and poor eyesight against them. Mosquitoes and biting flies have an amazing sense of smell. They can detect the Dragonfly electronic biting insect trap's scent from up to 100 m (300 ft.) away. When they detect it they immediately fly toward it. Like bloodhounds, they have very poor eyesight and smell their prey long before they see it - but unlike mans' best friend, these blood-hounds *really* want blood!

The visual range of mosquitoes is approximately 10 m (30 ft.), and they are attracted to the motion of people or animals within this radius. **Placing the Dragonfly electronic biting insect trap too close to people or animals creates a situation in which some insects drawn by the Dragonfly electronic biting insect trap's scent may be diverted by the motion of people or animals nearby - so keep it 10 m (30 ft.) away from the area you want to protect.**

The trick to getting the most from the Dragonfly electronic biting insect trap is simple:

- ❑ put it between you and the places mosquitoes live (forest, pond, stream, etc.),
- ❑ but 10 m (30 ft.) to 15 m (45 ft.) away from the area you want to protect (deck, pool, patio, etc.).

That's all there is to it! Insects drawn to the Dragonfly electronic biting insect trap cannot see you because they are too far away and the Dragonfly electronic biting insect trap destroys them.

To finish them off, the Dragonfly electronic biting insect trap tricks their body-heat sensors. Biting insects have heat sensors on the tip of their antennae that are unbelievably sensitive. Because their mouthparts cannot reach the blood supply except where it is close to the skin, and because these areas of the body are slightly warmer than other areas, insects use heat sensors to pick the best place to bite. A thermal lure at the center of the Dragonfly electronic biting insect trap mimics the infrared signature of the body's blood supply. As one entomologist aptly put it, "The Dragonfly always looks like a shaved rabbit!" When biting insects attempt to land on the Dragonfly electronic biting insect trap's thermal lure, they pass through an electrostatic panel and are destroyed.

The Dragonfly electronic biting insect trap is a powerful mosquito, biting fly and biting midge attractant which must be located at least 10 m (30 ft.) to 15 m (45 ft.) away from areas where people and animals congregate.

How Dragonfly electronic biting insect trap Works

1. CO₂ is released every 5 or 10 seconds simulating the "breath" of a small animal. CO₂ is the most powerful attractant for mosquitoes and biting flies. The unit measures the amount of CO₂ released and lets you know when the bottle is getting low.
2. The thermal lure heats up, producing the infrared image of blood near the surface of the skin and the body temperature of a small animal. Octenol, activated by the heat of the thermal lure, evaporates rapidly. Octenol is the second most powerful attractant for mosquitoes and biting flies.
3. The electrostatic panels are energized and destroy insects nearby. Like a miniature lightning bolt, an arc strikes the insect and destroys it instantly, but without exploding its exoskeleton and discharging fragments into the air. Insects fall into the collection tray. Mosquitoes and biting flies circling the thermal lure "sparkle" when they go near the electrostatic panels, but there is no unpleasant "zapping" sound.

The Dragonfly electronic biting insect trap is one part of the Dragonfly System®

The Dragonfly System® is designed to provide defense in-depth. The first line of defense is the Dragonfly electronic biting insect trap, which draws biting insects away from you and kills them. The second line of defense is the Mosquito 'Cognito® dispenser. The Mosquito 'Cognito dispenser emits Conceal™ inhibitor, which blocks the scent-tracking ability of biting insects.

The Conceal inhibitor is not a repellent. Repellents simply smell bad. Insects avoid repellents and look elsewhere for prey. Conceal inhibitor is different. Insects with a nose-full of Conceal can't track down anything because their olfactory sense is impaired.

Use Dragonfly electronic biting insect trap and Mosquito 'Cognito together for maximum effectiveness. Visit Mosquito Solutions on the Internet at www.mosquitosolutions.com for more information.

Unpacking the Dragonfly electronic biting insect trap

Open the container and remove the corrugated inserts. Store the container and corrugated inserts if you may need to ship the Dragonfly electronic biting insect trap elsewhere.

Remove the contents:

1. Dragonfly electronic biting insect trap,
2. foil-sealed Biting Insect Lure(s),
3. 1-kg (2-pound) CO₂ bottle (50-cc Residential Model only)
4. Mosquito 'Cognito dispensers and Conceal inhibitor cartridges

Note: 500-cc Dragonfly Electronic Biting Insect Trap requires a CO₂ bottle that is shipped separately. An optional Pedestal accessory is available.

500 cc Dragonfly electronic biting insect trap

Setup and Installation

The 500-cc Dragonfly electronic biting insect trap uses a 20-pound, external CO2 bottle supplied by Praxair or your local Pest Control Operator. The CO2 bottle is housed inside a Pedestal.

To install the Biting Insect Lure:

1. Place the Dragonfly electronic biting insect trap on its side.
2. A bayonet latch secures the collection tray. Remove the collection tray by gently pushing on the cover, rotating it counter-clockwise a few degrees until it stops, and pulling it away from the Dragonfly electronic biting insect trap.
3. To insert the Biting Insect Lure first remove it from its foil wrapper. Insert the lure through one of the two slots in the bottom of the Dragonfly electronic biting insect trap. When fully inserted, the lure will snap in place. The lure is asymmetrical and will insert in only one direction so that it is always properly positioned. Insert one Biting Insect Lure for mosquitoes and two for biting flies.
4. Replace the collection tray.



Figure 1 Aboveground Pedestal

Setup the Aboveground Pedestal

See Figure 1

1. Insert the Hook into the Pedestal Base. Attach with the bolt provided.
2. Remove the Cover on the Pedestal Base and place the CO₂ bottle in the base, feeding the flexible CO₂ connection through the cover and through the collection tray.
3. Attach the CGA-320 connector to the valve on the CO₂ bottle. Take care that the Teflon® seal in the CGA-320 connector seats firmly against the mating surface on the valve.
4. Hang the Dragonfly electronic biting insect trap on the Pedestal securely using the mounting ring on the top of the Dragonfly electronic biting insect trap.
5. Open the valve on the CO₂ bottle. Replace the Pedestal Cover.
6. Connect power cord.

The unit is now ready for use.



Figure 2 In-ground pedestal

Setup the In-Ground Pedestal

See Figure 2

1. Dig a hole 0.5-m (18-inches) deep and place the in-ground pedestal in it. Back-fill the hole such that the in-ground pedestal is securely anchored.
2. Remove the Cover on the Pedestal Base and place the CO₂ bottle in the base, feeding the flexible CO₂ connection through the cover and through the collection tray.
3. Attach the CGA-320 connector to the valve on the CO₂ bottle. Take care that the Teflon® seal in the CGA-320 connector seats firmly against the mating surface on the valve.
4. Open the valve on the CO₂ bottle. Replace the Cover.
5. Insert the Dragonfly electronic biting insect trap on the in-ground pedestal securely using the mounting surfaces on the top of the pedestal cover.
6. Connect power cord.

The unit is now ready for use.

Operating the 500-cc Dragonfly electronic biting insect trap

The Dragonfly electronic biting insect trap control panel consists of a water resistant membrane switch to set the operating **MODE**, a **STATUS** indicator light, and a photocell **SENSOR**. See **Figure 3**.



Figure 3 Dragonfly electronic biting insect trap Control Panel

Connecting the power cord turns the Dragonfly electronic biting insect trap on. A microprocessor constantly controls the operation of the Dragonfly electronic biting insect trap.

Six operating modes are selected using the MODE membrane switch. Press the MODE membrane switch repeatedly to toggle between the three SENSOR control settings and the three Constant On settings. The 500-cc/min setting attracts the most mosquitoes and uses the most CO₂, while the 125-cc/min setting lasts for months but attracts fewer mosquitoes. Experiment to find the best setting for the mosquito population in your location. Lower settings are adequate for most neighborhoods.

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MODE	STATUS			Description
	Flash	cc/min	Color	
Sensor control	1	125	Dim Green	Standby mode. The Dragonfly electronic biting insect trap is waiting for optimal mosquito conditions – nightfall, and a temperature above 13° C (55° F). The unit will remain in standby mode during daylight hours. Because mosquitoes are not active at temperatures below 13° C (55° F), the unit will remain in standby mode when the temperature is too cold for mosquito activity.
	2	250		
	3	500		
Sensor control	1	125	Green	Automatic operation - turns unit on one hour before sunset and turns unit off 5 hours later. This setting is effective against mosquitoes and conserves CO2. In this mode the unit discharges the selected amount of CO2, (125, 250, or 500 cc/min), activates thermal lure, emits octenol, and powers electrostatic panels.
	2	250		
	3	500		
Sensor control			Alternating Green and Red	Low CO2. Less than one week of CO2 remains in the bottle.
Constant On	1	125	Yellow	Constant ON - Unit will remain on until reset to Sensor control. In this mode the unit discharges the selected amount of CO2, (125, 250, or 500 cc/min), activates thermal lure, emits octenol, and powers electrostatic panels.
	2	250		
	3	500		
Constant On			Alternating Yellow and Red	Low CO2. Less than one day of CO2 remains in the bottle.

Replacing CO2 Bottle and Biting Insect Lure

Always disconnect the power supply and close the CO2 bottle valve (turn clockwise) before proceeding.

Under SENSOR control the CO2 bottle will last 30 to 120 days. When a one-week supply of CO2 remains, the STATUS indicator will alternate Red. The Biting Insect Lure will last 30 to 60 days, depending on ambient temperature and operating mode.

1. Disconnect the power.
2. Remove the Dragonfly electronic biting insect trap from its Pedestal to gain access to the Pedestal Base.
3. Remove the pedestal base cover, close the CO2 valve by turning handwheel clockwise, and detach the flexible CO2 connector from the CO2 bottle by turning the handwheel counter-clockwise.
4. Place the Dragonfly electronic biting insect trap on its side.
5. Remove the collection tray. A bayonet latch secures the collection tray. Remove the collection tray by gently pushing on the cover, rotating it counter-clockwise a few degrees until it stops, and pulling it away from the Dragonfly electronic biting insect trap.
6. Remove the old Biting Insect Lure.
7. Insert the new Biting Insect Lure. To insert the Biting Insect Lure first remove it from its foil wrapper. Insert the lure through one of the two slots in the bottom of the Dragonfly electronic biting insect trap. When fully inserted, the lure will snap in place. The lure is asymmetrical and will insert in only one direction so that it is always properly positioned. Insert one Biting Insect Lure for mosquitoes and two for biting flies.
8. Replace the collection tray.
9. Replace the empty CO2 bottle with a full CO2 bottle.
10. Attach the CGA-320 connector to the valve on the full CO2 bottle. Take care that the Teflon® seal in the CGA-320 connector seats firmly against the mating surface on the valve.
11. Open the CO2 valve by turning counter-clockwise.
12. Replace the pedestal cover.
13. Replace the Dragonfly electronic biting insect trap on its pedestal.
14. Connect power cord.
15. Depress the MODE membrane switch and hold it for 3 seconds to reset the CO2 counter to zero. The STATUS indicator light will go off and then flash on, indicating that the CO2 counter has been reset.
16. Connect the power cord.

The unit is now ready for use.

Refilling CO2 Bottles

CO2 bottles may be refilled at a number of locations. Local compressed gas suppliers providing CO2 to restaurants, bars, and soda fountains (CO2 is the fizz in Champagne, beer and soft drinks) and for use as a laboratory, medical and welding gas. Visit Praxair on the Internet www.praxair.com for an on-line directory of Praxair CO2 stores

Note: **BioSensory recommends only Praxair® CO2.** Praxair is the only manufacturer of CO2 that is registered for use in the Dragonfly electronic biting insect trap by the United States Environmental Protection Agency. **In the United States it is unlawful to use non EPA approved CO2. Use of unregistered CO2 may void your Dragonfly electronic biting insect trap's warranty.**

Exchanging CO2 Bottles

For more information about exchanging CO2 bottles please contact your Pest Control Operator or Praxair at <http://www.praxair.com>.

Shipping the Dragonfly electronic biting insect trap

To ship the Dragonfly electronic biting insect trap:

- Replace the corrugated inserts in the shipping carton,
- place the Dragonfly electronic biting insect trap in shipping carton, and
- seal the shipping carton securely.