

INSTRUCTION MANUAL

HAND HELD FOGGERS



BF8026



BF1047



BF7087

Safety Precautions

Do not inhale fog output. Highly atomized liquid droplets can float in the air a long time and are quickly absorbed by the lungs. Depending on the material being fogged, this could result in serious injury or death.

Do not use to apply any liquid that is hazardous to people, animals or property when atomized into small droplets. The large surface area of small droplets increases their reactivity and potential to form an explosive mixture. Be aware of potentially dangerous interactions between liquid fog droplets and other aspects of the treatment area.

Read the label of the chemical you plan to use, and follow the instructions in its “Precautions” and “Directions for Use” sections. If the label lacks this information, obtain directions for use and safety precautions including personal protective equipment (respirator, face mask, special clothing) from the chemical manufacturer or distributor.

Do not atomize a flammable liquid. Electric arcs produced inside the motor during normal use could ignite it.

Do not fog near an open flame.

Keep an intake air filter in place during use. This will help prevent dust and fog droplets from entering the unit.

Use only a properly grounded (earthed) three pin electric outlet. The ground wire is an essential safety feature of this product. Do not remove the grounding lug on the power cord. Do not use an ungrounded (“3-to-2”) plug adapter.

An extension cord, if used, must have a continuous ground wire leading to earth. The amperage rating of an extension cord, if used, must be greater than the amperage shown on the fogger nameplate label. Do not chain two extension cords together.

Product Overview

This machine atomizes light liquids into a fog, mist or spray of small droplets. It can atomize both oil- and water-based solutions, as well as emulsions and dilute suspensions of wettable powders.

Typical uses of this machine include:

- Humidification (fogging water)
- Odor control (fogging odor neutralizers, scents or masking chemicals)
- Control of flying insects (application of insecticides)
- Cleaning, sanitizing and disinfecting (applying germicides or sanitizing chemicals), and for air duct cleaning, applying sealants
- Control of mold and mildew (applying sporicides, fungicides or anti-mildew chemicals).

The liquid flow rate determines the size of the fog droplets formed by the machine. Several factors influence the liquid flow rate – the density and viscosity of the liquid; the setting of the flow control valve or size of the flow restriction orifice; and the frictional resistance of the machine's internal parts.

Liquid viscosity and surface tension also affect the size of fog droplets produced. At a given flow, lighter liquids (lower viscosity, lower surface tension) generally make smaller droplets and finer fogs than heavier liquids.

This machine has a one-gallon [4 liter] reservoir to hold fogging liquid. Most models incorporate the fogging nozzle directly into the fogger power head; the F7087 has a nozzle at the end of a wand and hose attached to the power head.

Description of Operation

BioWorld foggers atomize liquids into small droplets (fog or mist) by shearing them in a highly turbulent section of the nozzle. A blower in the power head supplies air to the nozzle to create the turbulence.

The liquid flow rate controls fog characteristics and average droplet size. A low rate (1-2 ounces [30-60 ml] per minute) produces a dry fog of small droplets that float extensively and diffuse widely. Larger flow rates (4-8 ounces [100-250 ml] per minute) produce progressively larger droplets (wet fog, fine mist).

Liquid flow is regulated by a control valve or, for certain models, a fixed flow restrictor located within the liquid suction tube.

Calibration

Adjust the angle of the nozzle for your application and adjust the liquid control valve to obtain the desired fog droplet size characteristics.

Remove the power head from the tank or drum adapter. Place power head on a suitable stand, or suspend by its handle.

Fill a graduated cylinder or jar with a measured quantity of your fogging liquid. For hand held models, position the cylinder or jar so the liquid level is 6" (15 cm) below the fogger nozzle and insert suction tube.

Operate the fogger for 60 seconds. Remove suction tube, measure remaining liquid and compute liquid consumed. This is the flow rate per minute.

Equipment Setup

The hose and nozzle assembly of the F7087 Noz-L-Jet is shipped in a separate carton, and must be attached to the power head.

Attaching the F7087 Noz-L-Jet hose/wand assembly

From the open hose end of the hose/wand assembly, gently stretch out the internal tube to access the “push to connect” male fitting. The tube carries liquid to the nozzle.

On the power head, extend the liquid connector and insert male fitting fully. (For disassembly instructions, see Maintenance).

Attach hose to power head. Loosen hose clamp, slide hose firmly over air discharge opening, and retighten hose clamp to secure.

Set-up for all models.

Loosen tank clamps and remove power head from tank. Remove extra plastic tank liners from tank.

Open a protective plastic tank liner and position it inside tank (new units ship with a tank liner in place). The top of the liner should extend over and outside the top lip of the tank.

Add fogging liquid to the tank (inside the tank liner). Confirm that the tank gasket is in place inside the lip of the cover plate. Put the power head on the tank and fasten clamps to secure it.

Install the air intake filter over the air intake. Attach to “hook & loop” dots at the 10 and 2 o’clock positions on the housing, then stretch filter down and anchor over bottom of air intake.

Plug the fogger power cord into a grounded (earthed) outlet and turn power switch ON.

Adjust liquid valve for the desired fog droplet size characteristics [some models do not have a flow control valve]. On the F1047, push the red ring of control valve IN to lock valve setting (OUT to release).

On the F7087, depress thumb-operated fog control valve for fog, or latch valve handle up for continuous output.

Operation

Add chemical solution to the liquid tank. If applying a wettable powder or suspension, remove retaining ring and screen from weighted suction tube. Clamp the power head in place.

Using the calibrated flow rate and the dosage instructions provided by the chemical label or chemical manufacturer, calculate the time required to properly fog the area. You can control the fogging time manually, or with a timer.

Adjust the angle of the fogger power head for the space you are treating (point the nozzle slightly up for maximum distance).

Aim fog output towards area requiring treatment. For space fogging, select the direction of greatest clearance so fog droplets can fill the space; droplets that hit something will condense. You can also place machine on a turntable (except F7087).

Confirm that flow control valve is set to the desired setting, and turn on fogger. On F7087, press fog control valve on wand, or latch up.

When carrying fogger by hand, move it **gently and slowly** in a smooth arc. Sudden movements may impose excessive torque on the rapidly spinning fan blades and can cause premature blade failure.

Cleaning the Fogger

A. Normal cleanup. When fogging is complete, remove the suction tube from the liquid source and operate the fogger for one minute with the valve open full. This will remove remaining liquid from the fogger's internal lines. Transfer excess chemical from tank to an appropriate container.

B. Cleanup of difficult liquids. After fogging a viscous liquid, emulsion or a solids suspension, begin with a "normal cleanup" (step A). Then put suction tube into an appropriate solvent for your fogging chemical (water for water-dispersible liquids, kerosene for oil-based liquids, etc.) and operate unit for 1-2 minutes, flushing residual chemical with clean solvent. Then repeat step A.

C. Cleanup for long-term storage. Remove all liquid from tank to eliminate the potential for long term chemical attack on tank, suction tube weight, or tubing. Then follow steps A or B.

To prevent internal tubing from becoming brittle in prolonged storage, fog a few minutes with clean kerosene each 6-9 months, then clean as in step A. This will help keep tubing pliable.

Maintenance

The major components of the fogger are discussed in the product overview. A detailed parts list is available as a separate sheet upon request.

IMPORTANT: Unplug fogger power cord from electrical outlet before attempting any maintenance operation.

Routine maintenance

Clean fogger after each use. Wash outside of machine with a mild detergent and wipe with a soft cloth to maintain its appearance. (**Do not immerse machine.**) Replace motor brushes when they are completely worn.

Clean intake air filter

Wash filter with water or appropriate solvent, allow to dry and reinstall. A replacement filter is available (part number = PN080 for a package of 10).

Cleaning the nozzle

Deposits which form on the nozzle can degrade performance. Try to dissolve deposits with an appropriate mild solvent (soapy water, vinegar solution, kerosene, etc.). Add about 2 inches of liquid to tank and immerse nozzle (front of power head, or end of F7087 wand). If this is not successful, replace nozzle assembly. **Do not use a strong acid;** it will attack the metal components. Do not insert probe into nozzle opening.

Simple Workstation for maintenance

During maintenance, you can use the tank as a workstation to keep screws and other parts in position when opening the power head. Unclamp power head from tank and remove rubber gasket from beneath cover plate. Slide gasket over rear housing, flat side first (toward screw heads). Place fogger rear housing on tank. Remove cap head nuts and lift front housing to expose internal components.

About motor brushes

Two graphite brushes convey electric power to the motor commutator. Brushes are a consumable item with a lifetime of about 650 operating hours. However, operating without the air intake filter will let airborne dirt and moisture enter the motor and shorten brush life substantially. When brushes are worn the motor does not operate properly.

If replacing brushes, we recommend using a MOTOR SAVER brush on one side. The MOTOR SAVER brush contains an insulating pin to shut down the motor when the brush is worn, minimizing the chance that the motor will drag and scratch the commutator. Replacement brush part numbers are:

PN033: Brush kit (one standard, one MOTOR SAVER), 100-120 VAC.

How to replace motor brushes

Unplug power cord to prevent shock. Remove front housing (see “Simple Workstation”) to access the motor. Identify the two motor brush housings on opposite sides at the top of the motor.

Insert a small flat blade screwdriver between the motor wire/terminal and the plastic brush housing. Gently pry terminal out, pushing it towards the commutator until it is loosened. Do not break the terminal contact or the wire. If the plastic brush housing is very tight, heat slightly with a hair drier or heat gun to soften before sliding the wire/terminal out. Repeat for the second brush.

Remove two Phillips head screws and retaining bracket holding one motor brush. Lift brush off motor frame and discard.

Hold replacement brush in position (tab pointed down). Press the motor wire terminal (flat brass piece) partially into the brush assembly, between the brass shell and the plastic housing.

Slide the brush assembly towards the commutator until the tab seats in the notch on the motor frame. Replace retaining bracket and two screws. Then slide or pry the wire terminator securely back into the brush housing with the screwdriver.

Repeat for other brush.

Damaged power cord

If the power cord is damaged, it must be replaced in an approved manner with a continuous line to ground (earth) from the power head.

Return unit to BioWorld for service.

**A continuous ground (earth) line in the power cord is essential for safe operation.
Do not operate machine without a continuous line to earth.**

Replace motor

When excessive wear on the motor commutator shortens brush life unacceptably, a new motor should be installed.

Return unit to BioWorld for service.

Replace fan blade

Twisting the machine aggressively while it is running will cause the fan blade to flex and scrape against the fan housing with a shrill, grinding noise. Repeated flexing will eventually cause the fan to fail; the motor operates but does not blow air.

To replace fan blade, return unit to BioWorld for service.

Disassemble tubing connector

Certain models use “press to insert” quick connect fittings (tube-to-tube couplings, tube-to-thread adapters or tube-to-bulkhead adapters). To make the connection, push the stem into the receptacle and seat firmly.

There are two styles of connector. One has a release tab. To open this style, press release tab and pull fitting apart.

The other style uses a locking collet and spring clips inside the receptacle hold the connector securely together.

To open this style connector, release the locking collet by pushing it towards the housing with your thumbnail or a small screwdriver blade. Holding the collet ring in, withdraw the stem portion, twisting slightly if necessary.

Before using this device to dispense a chemical product, always read and follow its directions for use and safety precautions.