



Portable Aerosol Unit: Training Guide

OVERVIEW

The PAS is a multi-functional sprayer / fogger that can be used for flying and crawling insect control in residential and commercial accounts.

Although it is a sophisticated delivery system, it is easy to use, easy to clean, and easy to maintain. It has the same basic parts as a B&G tank sprayer and Extenda-Ban valve.

The PAS can be used to deliver oil- or water-based insecticides, including microencapsulated formulations. It is not designed to deliver wettable powder formulations.

It is a functional ULV fogger, The droplet size is 16 microns (diameter), which gives the spray an airborne time of about 10 minutes,

OPERATION

The 1 gallon tank is connected to the small compressor by a (black) hose with a quick-connect coupling.

The compressor cycles on/off during use to maintain constant air pressure (~30 psi) in the tank. There is a pressure regulator (with gauge) that allows you to control the particle size from a ULV fog to a heavy mist. The white tube from the pressure regulator carries air to the valve.

The gauge is linked to the liquid coming from the tank; it is connected to the siphon tube of the tank. During operation, the liquid pressure can be adjusted from 10 to 30 psi to control the spray droplet size. The black tube carries liquid to the valve.

Remove tank from carry case to fill; first, disconnect compressor hose.

The gasket inside the tank cap may become loose—do not pressurize the tank without the gasket. This gasket is in the GD-124 Gasket Kit for easy replacement.



SAFETY PRECAUTIONS

Do not pressurize tank with any gas.

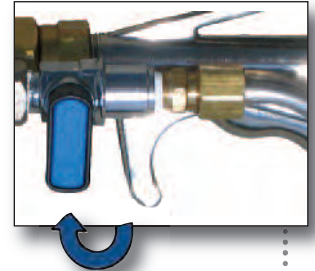
Do not pressurize an empty tank.

Open tank cap slowly when removing.

Do not transport while tank is pressurized.

Do not treat voids with electric outlets or cables.

To safely transport, relieve all tank pressure by slowly opening tank cap. Allow all pressure to be relieved before removing cap.



APPLICATION MODES

The PAS system operates in three modes:

Aerosol and ULV Fogging – For this operation the air lever is turned on and the valve trigger is depressed. This delivers air and liquid at the same time to the tip to produce the fine-droplet fog. When finished each application, turn the air valve off.

Flushing – For this operation *only the air lever* is turned on, the valve trigger is not depressed. This delivers a forceful air stream from the nozzle.

Pin Stream – For this operation *only the valve trigger* is depressed, the air lever remains closed. This delivers a stream of liquid for crack-and-crevice application.

AEROSOL AND ULV FOGGING

The PAS delivers a ULV fog at a steady (flow) rate and the powerful air stream projects the droplets toward the target surface or into the space or void being treated.

Flow rate: 17-18 seconds = 1 fluid ounce

Projection: Droplets are forced 12+ feet from the nozzle; it is best to stand 8-10 ft from a wall or ceiling of a room that is treated.

Insecticide labels typically recommend fogging application rates from 1/2 oz. to 2 oz. per 1,000 cubic feet; with the PAS delivery system this would be an application of 8-9 seconds (1/2 oz.) to about 35 seconds (2 oz.) per 1,000 cubic feet.

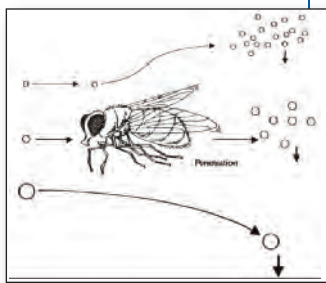
Airborne droplets. A large number of droplets from the PAS application will remain in the air for about 10 minutes. This is sufficient time for flying insects to contact droplets when flying through the treated air, or



for droplets to contact resting insects on exposed surfaces and in harborages.

Space sprays. Treating confined spaces with ULV droplets (fogging) is similar to treating a solid substrate with a liquid to establish a residual. The difference is that the air is the substrate, and the flying insects pass through the substrate and contact a lethal number of droplets—just as when crawling insects walk on a treated surface (dried droplets) and pick up insecticide on their feet.

There are some droplets in the fog that are too small to impact on the flying insect (and are not effective). There are droplets that are large and drop from the air quickly and do not contact a flying insect, but when they land on a surface they may establish a surface residue. The PAS aerosol / ULV fogging spray has droplets that are small enough to remain in the air for an extended time, yet large enough to deliver a lethal dose of insecticide to the pest.



FLUSHING

The forceful air that exits from the nozzle (without liquid) can be used in the monitoring and inspection portion of modern IPM programs. Directing the air stream into cracks and crevices suspected to be a harborage for cockroaches, bed bugs, silverfish, and spiders can result in these pests moving away from the air stream—and onto surfaces that have been treated with residual insecticide. The forced air stream can also be used to dislodge dry food debris from inaccessible sites, and further serve the inspection portion of IPM programs. After dusting, an air stream can be used to 'push' the dust further into wall voids and other spaces behind baseboards and under counters.

PIN STREAM

The pin stream function of the PAS should be used in crack-and crevice applications. The amount of liquid delivered is equal to that of the red C+C straw, which is one of the straws used with the B&G Multeejet nozzle.



Flow rate: ~7.5 oz. per minute (0.12 oz. / second)

The best use for pin stream would be in 1-3 second applications to voids and to cracks and crevices that can not be otherwise reached directly with the nozzle, or when a strong stream of liquid is needed.

PEST CONTROL APPLICATIONS

Bed bugs – Box springs can be treated with the PAS by removing a corner of the cloth covering and treating the inside. The close range of spraying will deliver insecticide to the cracks and crevices that provide harborage for adult and nymph bed bugs. Baseboards and along wall-to-wall carpeting can be treated with an aerosol application or the liquid-only crack-and-crevice spray.



Cockroaches – Fogging can be used to flush cockroaches from harborages with pyrethrins (such as Kicker™), and can be used to treat harborages and voids with residual insecticide. Large voids, such as above suspended ceilings or attics can be treated as fogging space-spray to flush cockroaches (such as the smokybrown cockroach).



Fleas – The resting or sleeping sites of dog and cat pets on carpets indoors can be treated with the PAS aerosol spray. The close range will direct the fine droplets into the carpet and to the base where flea larvae and pupae remain.



Cluster flies – The fogging capability of the PAS can be used to treat attics (as a space spray) for cluster flies resting there in fall and winter. The extended time the droplets remain in the air can increase the potential of contact with fly cluster flies, and eventually those resting on horizontal surfaces.

Spiders – These are difficult to control with residual insecticides because of the limited tarsal contact on surfaces, and the time spent in their web. Fogging indoors can be an effective means of contacting spiders in corners and behind furniture.



House centipede – This is one of the most common household pests, and one of the most difficult to control. The PAS is especially suited for aerosol treating behind baseboards and into wall voids where these pests find harborage.

Outdoor /Indoor Pests: Boxelder bugs, Asian ladybird beetles, Earwigs – These pests gather in large numbers around the outside and inside of residential and commercial buildings. The most effective control inside is to use the PAS aerosol / ULV spray to contact the individual insects with a lethal dose of insecticide.



Fruit flies, moth flies, and house flies – Fogging can be used to remove adult flies in restaurants and commercial food kitchens. The long air time feature of the fine droplets from the PAS permits contact between flies and suspended droplets.



GENERAL INSTRUCTIONS FOR APPLICATIONS

The PAS unit delivers droplets under 30 microns in diameter, and 80% of the droplets are under 30 microns diameter.

Space Spraying for Flying Insects – Close doors, windows, and turn off all ventilating equipment. Direct the ULV spray to upper corners of room and ceiling. Do not remain in the treated room after application. Close room for at least 1/2 hour. Ventilate thoroughly before people or pets are allowed to re-enter.

Space Spray for Crawling Pests – First, use liquid-only application to treat cracks and crevices in woodwork, walls, floors, behind and beneath equipment, cupboards, underneath sinks, and behind pipes. Place the nozzle tip into narrow openings and move tip along the crack while treating. Follow up the crack-and-crevice treatment with a general space spray application (described above).

Treating at the rate of 3 linear feet per second along a crevice, the delivery will be about 0.04 fl. oz. per foot.

Surface Sprays – To kill accessible stages of insects and other pests hold the tip about 18 inches from the target substrate. This will result in thorough coverage of the surface with a pattern of insecticide droplets. Treat areas where insects travel or rest: around drains, under sinks and around water pipes, in wall voids, beneath and behind appliances and large equipment.

The small droplet-spray achieved by the PAS will result in thorough coverage with less liquid, and reduce the potential for runoff.

Portable Space Spraying / Indoors – The pressurized tank can be disconnected from the compressor and removed from the case to treat enclosed spaces, such as small storage rooms, crawl spaces, and attics. Add only 16 oz.

of liquid to the tank and allow the compressor to fully pressurize the tank (compressor cycles off). Turn off compressor at switch. Disconnect the (black) hose from the compressor to the tank, and remove the tank from the case.

A total of 70 seconds of ULV fogging time is available before the tank pressure is depleted.

The total delivery (70 seconds) will be about 4 fl. oz.

Note: *Adding more than 16 oz. of liquid to the tank will reduce the amount of air pressure the tank can hold and reduce the total delivery time for portable spraying.*

Portable Space Spraying / Outdoors – The pressurized tank can be used separately for outdoor fogging for mosquitoes and other flying insects. The typical label application rate for outdoor fogging for flies and mosquitoes is 0.12 oz. per square foot (i.e., Shockwave™-Fogging Concentrate, MGK Corporation). Hold the nozzle about 18 in. from shrubs, bushes, or other target surfaces and treat with a slow sweeping motion while moving away from the treated area.

A total of 70 seconds of fogging time would permit treating about 30 sq. feet of outdoor vegetation dumpsters, trash containers, and outside surfaces of buildings or other areas where mosquitoes and other flies have been seen or found resting or flying.

CARE AND MAINTENANCE

Flush tank and extension with clean water.

Inspect hoses for wear.

Protect application tip when not in use.

Store coiled hose in tank when unit not in use.

For Technical Support or if you have any further questions, please contact B&G directly at 800-544-8811

NOTES: