

# ***DRAMM***



## **Supplemental Manual for All PulsFOG Machines**



Shipped to:

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Serial #

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Packed By: \_\_\_\_\_

date \_\_\_\_\_

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## Thank you for your purchase of this pulsFOG thermal fogger.

The Dramm Corporation is the North American representative of pulsFOG, Dr. Stahl & Sohn GmbH of Überlingen Germany. We appreciate your purchase.

As the representative of pulsFOG, Dramm will supply equipment, parts, service and technical advice to customers in North America. Please feel free to contact us for any of these needs.

This manual supplement is designed to help with mixing and care for your pulsFOG thermal fogger. The included pulsFOG manual handles basic operation of your unit. In addition to this manual, advice and operational videos are available on our website at [www.dramm.com](http://www.dramm.com).

The included manual is specific to your PulsFOG and contains valuable operational information as well as basic maintenance and repair information.

**REVIEW ALL MATERIALS** before operating your PulsFOG.

Please direct any questions or service requests you might have to the contacts below.

**Dramm Corporation**  
Main Office  
PO Box 1960  
2000 North 18<sup>th</sup> Street  
Manitowoc, WI 54221

**Dramm Corporation**  
Canadian Office  
RR#4 906 Hwy 20 W  
Fenwick, ONTARIO  
CANADA, L0S 1C0

920/684.0227  
[information@dramm.com](mailto:information@dramm.com)  
[www.dramm.com](http://www.dramm.com)

## Limited Warranty

This is a limited warranty as defined in in the consumer product warranty and federal trade com- mission improvement act. This warranty gives you specific legal rights which may vary from state to state.

DRAMM CORPORATION warrants all PulsFog thermal fogging units, Models K-10, K-22, K-30 and K- 30/20, to be free from defect in materials and workmanship to the original purchaser for a period of one (1) year, on labor and parts that are not subject to unusual wear. This warranty does not cover units that have been abused or used in a manner inconsistent with the owners manual instructions. Use of other solutions negates any warranty.

DRAMM CORPORATION gives no warranty, expressed or implied, in regard to efficacy of any pesticide.

DRAMM CORPORATION warrants that VK-I, VK-II and NutriFOG fogging solution is plant compatible when used as directed. These directions reflect the opinion of experts and are believed to be reliable. Special emphases should be paid to dilution rates, temperatures and application rates of pesticides as listed on their labels. It further warrants that VK-I, VK-II and NutriFOG are inert diluents for pesticides to be used only in PulsFOG thermal fogging units.

Under no circumstances will the manufacturer(s) or DRAMM CORPORATION be liable for damages due to incorrect stocking, faulty operation or application, non-observance of safety standards or non- observance of chemical label directions. The manufacturer(s) or DRAMM CORPORATION under no circumstance will be responsible for damage(s) done to any property or persons.

Under no circumstance will the manufacturer(s) or DRAMM CORPORATION be responsible for crops. It is understood that the limit of seller liability for breach of any warranty shall be the invoice price of goods.

This warranty begins on the date of original purchase. If warranty service is required, the equipment must be sent prepaid to:

**Dramm Corporation  
2000 North 18<sup>th</sup> Street  
Manitowoc, WI 54220-1960 USA**

**920/684-0227**

## Mixing Instructions:

The pulsFOG requires the use of a carrier solution for best application. The carrier solution helps to produce a more even sized droplet, preventing very large droplets from forming.

While some chemicals may include fogging adjuvants, most do not. Check with your chemical manufacturer regarding this.

Dramm sells three different carrier solutions for the pulsFOG: VK-I, VK-II and NutriFOG.

<b>VK-I</b>	Use with EC chemicals only
<b>VK-II</b>	Use with all formulations of chemical
<b>NutriFOG</b>	Use with all formulations of chemical

**VK-I** requires no water for mixing. Mix the correct quantity (see accompanying chart) of EC chemical directly into 1 liter of VK-I to treat 10,000 square feet.

**NOTE: Do not apply VK-I over wet crops. Leaves should be dry during the application.**

**VK-II** is mixed with water. Mix the correct quantity (see accompanying chart) of chemical with 0.5L of VK-II and 1.5 L of water to treat 10,000 square feet.

**NOTE: VK-II can damage certain crops, especially when in bloom. Take care when using, especially later in the season.**

**NutriFOG** is mixed with water. Mix the correct quantity (see accompanying chart) of chemical with 0.25 L of NutriFOG and 1.75 L of water to treat 10,000 square feet.

**NOTE: Do not apply more that 1.5 L of NutriFOG to the same 10,000 square foot area in ONE MONTH.**

While these carrier solutions have been used with most greenhouse chemicals without incident, it is always advisable to perform a jar test with the proper ratios of chemical, carrier, and water to ensure compatibility with any chemical you are not certain of.

This pulsFOG includes a laminated chart showing the correct ratios of solution and water as well as chemical. To calculate this on your own, follow these instructions:

**Calculate the amount of chemical required for 10,000 square feet.**

Find the 100 gallon chemical label rate for the product you wish to apply. Multiply this by 0.40. This is the amount of chemical to use in 10,000 square feet.

*Example:*

100 gallon rate of CHEMICAL Z = 10 oz  
 $10 \text{ oz} \times 0.40 = 4 \text{ oz}$  of CHEMICAL Z for 10,000 square feet.

Mix with the appropriate amount of carrier and water for 10,000 square feet.

If you wish to treat a larger or smaller area adjust by the percentage increase or decrease appropriate.

*Example:*

Treat a greenhouse of 15,000 square feet with CHEMICAL Z.  
15,000 square feet is 1.5 times larger than our standard of 10,000 sq feet.  
 $4 \text{ oz CHEMICAL Z} \times 1.5 = 6 \text{ oz CHEMICAL Z}$  for 15,000 square feet.

Mix with the appropriate amount of carrier and water for 15,000 square feet. Adjust the carrier and water based on the same ratio above.

**NOTE:** If the chemical you are using provides an area rate on the label in addition to the 100 gallon rate, **USE THIS INSTEAD OF CALCULATING** as shown above.

*Example:*

The label states "Use 10 oz per acre of CHEMICAL Z."  
One acre is 43,560 square feet.  
Divide  $10 \text{ oz} / 43,560 \text{ sq ft}$  (to determine how much per sq ft.) = 0.00023 oz/sq ft.  
Multiply by the number of sq ft to be covered.  $0.00023 \times 15,000 \text{ sq ft} = 3.4 \text{ oz}$

Mix into the appropriate amount of carrier and water for 15,000 square feet. Adjust the carrier and water based on the previous example.

**NOTE ABOUT MIXING THICK CHEMICAL SOLUTIONS:**

Depending on the type or volume of chemical product you are using, the solution may be too thick to apply without clogging. If the product does not seem dilute enough to apply correctly, it is advisable to add carrier and water in the correct ratio until the product is dissolved well enough to be applied as a fog.

Always adjust the fogging time to ensure that the appropriate amount of chemical active ingredient is applied to the area you are treating.

## Cleaning Your PulsFOG

To keep your PulsFOG running well, cleaning is essential. Most maintenance issues we service are a result of poor cleaning and care.

Your PulsFOG was shipped with two essential cleaning tools: A barrel cleaning brush and a solution line cleaning kit. Both should be used after each PulsFOG application.

### Cleaning the barrel:

Once the PulsFOG is no longer hot to the touch, brace the unit against a wall or other surface.

Insert the brush into the barrel and push. This will be difficult.

**DO NOT REMOVE BEFORE REACHING THE END OF THE BARREL.** As the bristles bend backwards removing in the middle of the barrel will be very difficult.

Push until the bristles reach the combustion chamber at the back of the barrel.

Pull the brush out. Again, this will be difficult.

***Cleaning the barrel of carbon and debris ensures that all exhaust gasses exit the combustion chamber as intended. If exhaust gasses fill the chamber, the combustion will not receive the proper amount of fresh air needed to sustain combustion and the unit will quit running.***

### Cleaning the solution system and lines:

Remove the chemical tank from the PulsFOG and disconnect the solution lines. Clean the tank thoroughly using hot water and a mild detergent. Rinse all detergent before using unit.

Assemble the included 5 liter cleaning tank and ball pump so that the ball pump will pressurize the cleaning tank. Fill the cleaning tank with PulsFOG Cleaning Solution (PFC). ***Dramm includes an 8 oz. sample of this solution with each PulsFOG.*** Insert the solution lines into the cleaning tank and seal.

Loosen the nozzles on the PulsFOG slightly by turning the nozzle canes.

Raise the rear of the PulsFOG and stand it on a block of wood or similar support.

Pressurize the cleaning tank by depressing the black air pump several times.

Once cleaning solution runs from nozzles the solution lines are clean.

Remove the solution lines and seal the cleaning tank for future use.

Replace the solution lines into the chemical tank, ready for your next PulsFOG application.

## Cleaning the Carburetor diaphragms

The PulsFOG requires a precise ratio of gasoline to air for proper combustion. The plastic carburetors at the rear of the unit regulate this air-flow. Inside of each carburetor is a set of Teflon diaphragms. These diaphragms should be kept clean and free from wear.

Clean and inspect these diaphragms **every 3 to 4 applications.**

To remove the diaphragms, disconnect the air line from the elbow on the cap of the carburetor.

Untighten and remove the cap.

Using a wrench, remove the nut holding the restrictor plate (#70) in place.

Remove, clean and inspect the diaphragms.

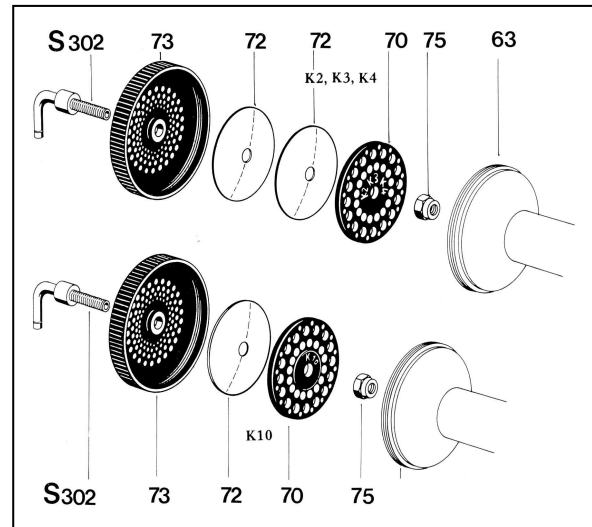
Roll the diaphragms around a finger or a pencil to encourage their natural curl.

Replace the diaphragms so that they curl toward the cap.

**IMPORTANT:** When replacing the restrictor plate and nut, ensure that you can read the engine type for your PulsFOG printed on the plate. This plate is used with different engine types and will cause the unit to run improperly if not replaced correctly.

Replace the cap onto the carburetor body. Tighten to hand-tight.

Replace the air-line onto the elbow.



## Gasoline in your PulsFOG

**Do not use old gasoline in your PulsFOG.**

**Do not store gasoline in your PulsFOG.**

**Use only FRESH GASOLINE in your PulsFOG.**

The addition of a fuel stabilizer may help prolong the life of your gasoline in your PulsFOG. Old gas will evaporate and cause clogging of the filter and check valves. Ensure that your fuel system is clean for best operation.

