

Installation of Your Automatic Fly & Mosquito Spray System

1. At the installation site, remove all equipment from the corrugated box and the polyethylene drum and replace the drum lid. Check the picture to identify each piece of equipment from box and drum (figure 1).



Figure 1 – Equipment From Box and Drum

NOTE: HIGH PRESSURE TUBING MUST BE USED OR WARRANTY IS VOID!!

SYSTEM TOP INSTALLATION

2. Cut out or peel off tape covering large holes.
3. Unlatch metal ring and slide it down so it remains around the drum.
4. Remove drum lid.

The following steps can be completed with the drum top resting on the lip of the drum, or on any support that allows access to the bottom of the drum lid.

5. Carefully drop float through top of matching large hole. Make sure float line isn't pinched between the drum lid and system disk.
6. Insert bolts into the bolt holes through the top of the plastic disk and secure to the drum top. Tighten by hand to hold system disk in place and then use wrenches to finish tightening. *Don't over-tighten; plastic system disk can crack.

7. Run the end of the intake tubing from the intake filter through the PVC circle and connect it to the pump suction inlet (figure 2).
8. Insert the check valve assembly through the PVC circle and connect it to the pressure-regulating valve (figure 2).
9. Mount the PVC circle on top of the drum making sure all lines are hanging freely, with no pinching
10. Secure drum top with metal ring.
11. The latch on the metal ring can be locked in place for safety against opening.
12. Make sure that the male elbow points away from timer.

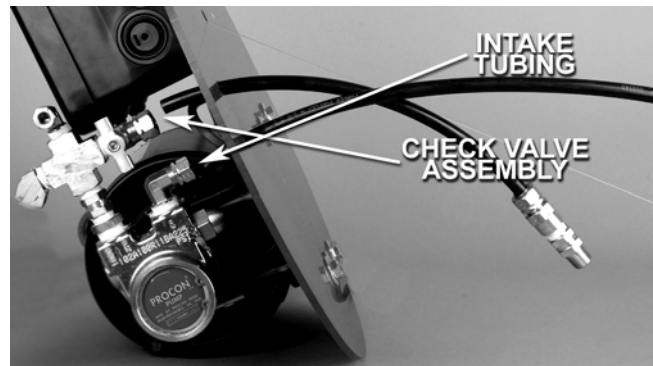


Figure 2 – PVC Circle with Intake Tubing and Check Valve Assembly

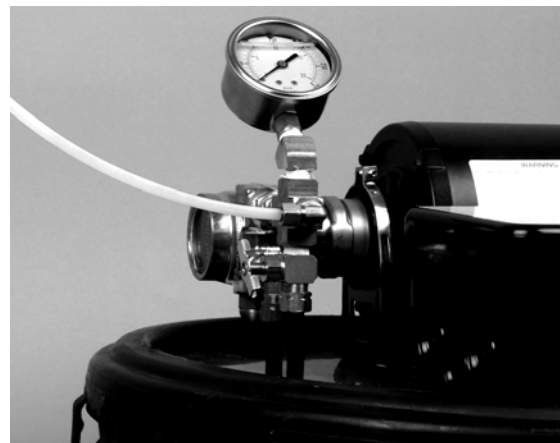


Figure 3 – Pressure Gauge Mounted Into Brass Cross Assembly

13. Remove the spray nozzles from package. Using the barn diagrams as a guide (figure 4), run the $\frac{1}{4}$ inch nylon tubing on the ground around the stall area to be treated, beginning at the tank.

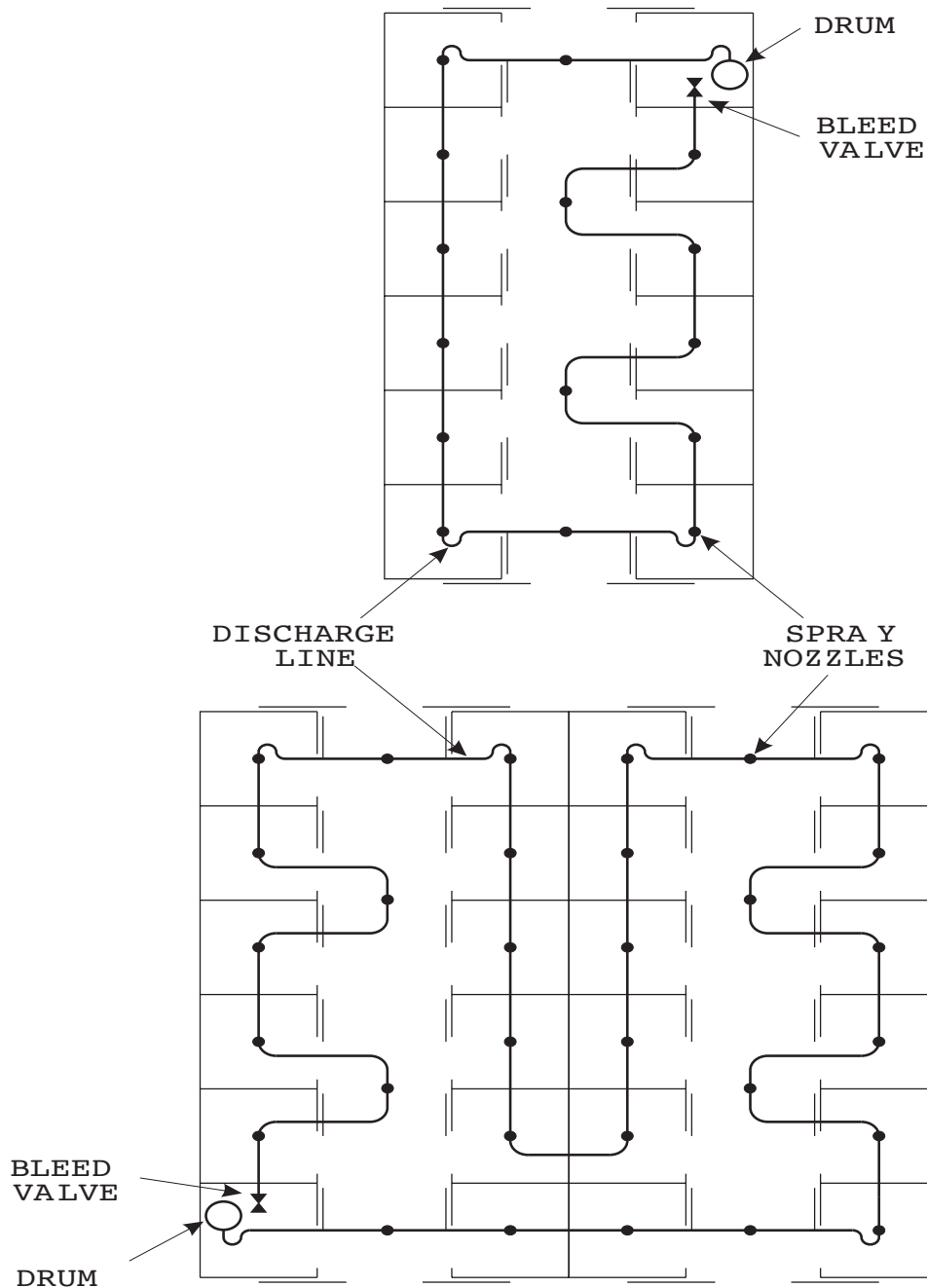


Figure 4 – Sample Barn Diagrams

14. Using a sharp knife, cut the tubing squarely to insure airtight connections at each spray nozzle.

15. Push the tubing firmly into the side of the spray nozzle tee (figure 5). Pull gently to confirm that you have secure connections. If leakage occurs, remove tubing by

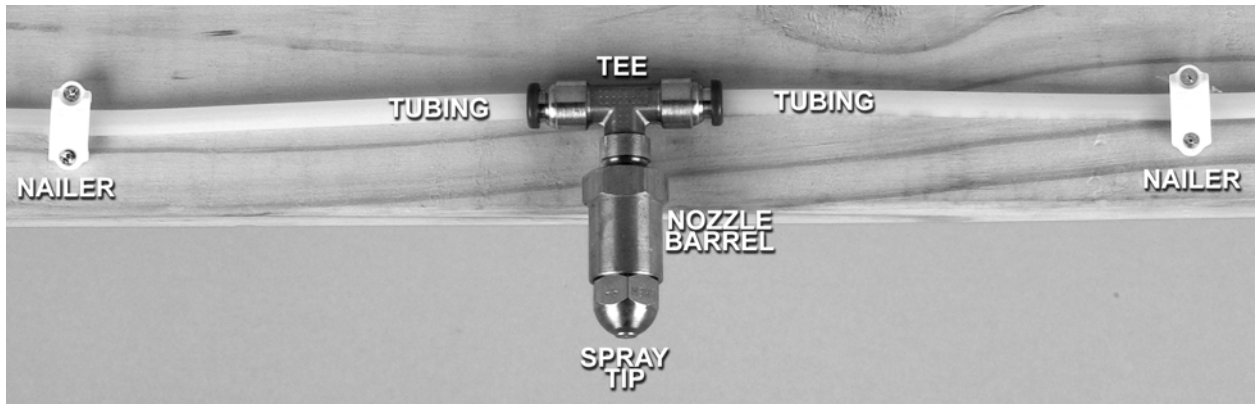


Figure 5 – Spray Nozzle Tee with Tubing and Nailers

pressing down on green circle, pushing the tubing in, pulling the tubing out and then releasing the green circle. Trim $\frac{1}{4}$ " off the tubing before reinserting.

16. Using the plastic nailers (figure 5) or plastic ties, install the tubing and spray nozzles above the center of each stall and 6 feet inside of each exterior door. Do not install above 15' from the floor. Use cable wire if necessary. Make sweeping turns with the tubing around corners to avoid kinking.
17. After all the spray nozzles have been installed, run one end of the tubing back to the drum and insert it into the male elbow of the brass cross assembly (figure 3). Tighten nut snug to a $\frac{1}{4}$ turn with wrench. Leave slack in line to allow easy shifting of lid to add insecticide.

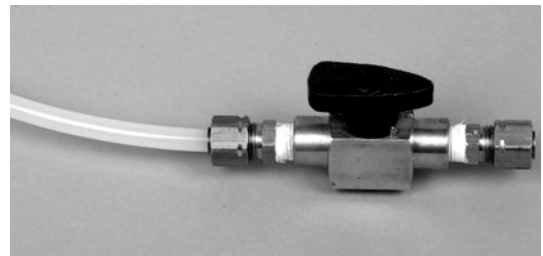


Figure 6 – Bleed Valve

18. At the end of the tubing line, past the spray nozzles, attach a bleed valve to shut off the line and hold pressure (figure 6). It is preferable to end at the drum for convenience in bleeding insecticide and air from the line into the drum. Close valve after air is removed.
19. Remove the PVC circle from the top of the drum. Fill the drum half full of clean water. ***Do NOT put insecticide in the drum until testing is completed.*** Replace the PVC circle on top of the drum. Do not restrict the float line and tubing.
20. Connect the electrical cord of the timer to an 110V outlet. Open the timer cover. To start the system, turn the run duration knob to "ON" and allow the system to operate for several minutes to be certain the pump is priming and that there aren't any leaks at the various tubing connections. Some nozzles may be spraying at this time, but this is normal.
21. At the end of the line, open the bleed valve until it pours a steady stream of liquid. Then, close the bleed valve.

22. Turn the pressure regulating valve clockwise until the pressure gauge reads between 180 and 200 PSI (figure 7) and all nozzles are spraying a fine, even mist. Check again for any leaks at the tubing connections. NOTE: The system works best at 185-195 PSI and must not be set below 175 PSI or over 200 PSI. **DO NOT OPERATE SYSTEM WITH VALVE CLOSED!**

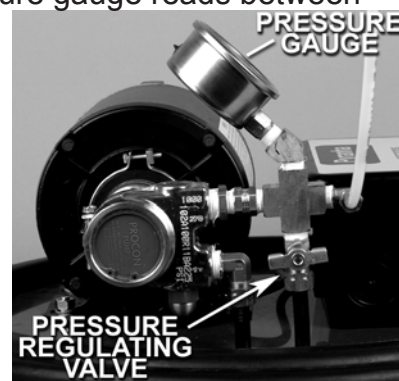


Figure 7 – Top of Drum Showing Pressure Gauge and Pressure Regulating Valve

23. After confirming that the spray nozzles are operating smoothly and there are no leaks at the tubing connections, turn the run duration knob to “OFF” and disconnect the electrical cord from the outlet. **CLOSE TIMER LID.**
24. Carefully lift the PVC circle and shift it to the side of the drum lid. Add the entire contents of Pyranha Insecticide Concentrate to the drum and finish filling the drum with clean water to 4” from the top of the drum. Replace the PVC circle on the drum lid (being careful to not pinch the float line or tubing) and reconnect the electrical cord.
25. Open timer cover. Turn duration knob to “ON” and fill the line with insecticide by opening the bleed valve and letting the system run. Close the bleed valve when insecticide is released. Adjust pressure to 180-200 PSI, if necessary.
26. Remove plastic cover on clock. Rotate clear plastic lens on clock dial clockwise to set time of day. The arrow in the upper left corner will indicate the military time of day (9 is 9am; 21 is 9pm).

27. Select the tripper for the time of day you want the system to operate by using a ball point pen or similar object to move the switch **OUT** into the **ON** position (figure 8). Red will show when switch is in **ON** position. Repeat the above for each time you want the system to operate. Spray times should be set from early morning to dusk. Your unit is shipped with timer set for six firing times.

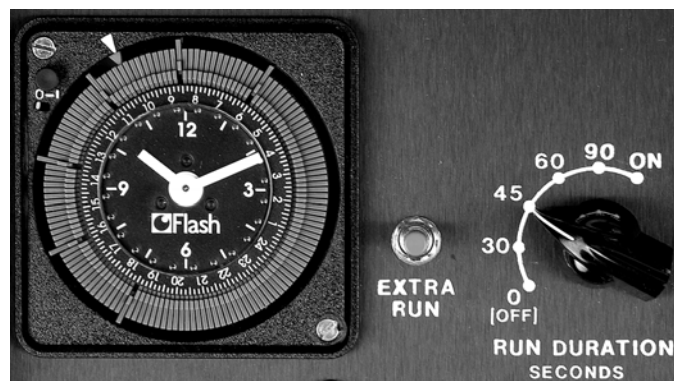


Figure 8 – Timer, Extra Run Button and Duration Selector Switch

28. Set the run duration selector switch to length of spray time desired. When first starting system, we recommend setting timer to operate 6 times for 45 seconds. When area is under satisfactory control (10 to 14 days), cut back the number of spray cycles and duration time to maintain control. **NOTE:** System will run continuously when run duration selector switch is in “ON” position. System will not operate when switch is in “OFF” position. Red “EXTRA RUN” button can be used at anytime to test system or for extra spraying (figure 8). **CLOSE TIMER LID WHEN FINISHED.**

Servicing Your Fly & Mosquito Spray System

When the drum is empty and needs refilling, use the following procedure:

1. Unplug the system from the power supply.
2. Lift the PVC circle and set it to one side of the drum lid. Normal refilling does not require that you completely remove the PVC circle from the drum; but if you do remove it, take care not to crimp or damage the intake tubing, float line or check valve assembly.
3. Inspect the intake filter and clean if necessary. We recommend changing the intake filter annually.
4. Check the empty drum for residue or dirt; if necessary, clean with bleach and flush the drum before adding new concentrate.
5. Add new Pyranha Insecticide Concentrate and refill the drum with liquid to within four (4) inches of the top.
6. Inspect all spray nozzles and confirm spray is a fine, even mist. If the nozzles fail to spray properly, see below.
7. Plug the system into the power source and reset the timer clock.

For optimum effective spraying, we recommend replacing nozzles rather than attempting to unclog them.

Winterizing Your Fly & Mosquito Spray System

1. Disconnect the line at the elbow (next to pressure gauge) and open the bleed valve at the end.
2. Using an air compressor, blow liquid from the line until dry.
3. Lift the top and raise the intake filter out of the liquid; set timer switch to “ON” and run briefly to eliminate any liquid in the equipment.
4. **If you do not have a compressor**, keep line disconnected at elbow to empty the lines of as much liquid as possible. Leave intake line and filter separated from liquid.
5. **If the insecticide liquid freezes during the winter, you will need to stir the contents before reusing.**

(Reconnecting System After Winterizing)

6. After stirring the contents of your barrel, replace the top of the system taking care not to crimp the intake line, return line or float line.
7. Open bleed valve and run system long enough to remove the air in the lines.
8. Check your timer to verify the time is correct and the settings are correct.
9. The system is now ready for use.

Troubleshooting Guidelines

Problem:	Check For:
The system does not operate at the correct times.	correct time. Check the timer box and see that the clock is set with the current time (military).
The system will not build pressure.	<ol style="list-style-type: none"> 1. leaks in tubing or nozzles. Replace tubing or nozzle tips. 2. clogged intake filter. Clean or replace filter. 3. airlock in pump. Remove discharge line at elbow. Turn pump on briefly to check for liquid discharge. 4. broken pump. Remove intake filter. Lift tubing out of liquid and place thumb over end of tubing. Operate system; if strong suction is not evident, replace pump.
The system builds pressure but the nozzles do not spray.	<ol style="list-style-type: none"> 1. clogged tips. Clean outside with damp cloth or steel wool. If this does not work, see page 6 for suggestions. 2. restricted tubing. Remove any kinks in line or replace tubing.
The spray nozzles drip. 1	<ol style="list-style-type: none"> 1. excessive pressure. Pressure should not exceed 200 PSI. Reduce pressure by turning pressure regulating valve counterclockwise until pressure is in proper range (185-195 PSI). 2. air in lines. Locate bubbles in line, check tubing connection for leaks. Tighten fittings or replace tubing. Close bleed valve. If there is no bleed valve, operate system until spray is steady. 3. loose tip. Tighten nozzle tip. 4. malfunctioning check valve in return line to tank. If pressure drops to bottom of gauge, replace check valve. 5. insufficient pressure. Pressure should not be less than 150 PSI. Increase pressure by turning pressure regulating valve clockwise until pressure is in proper range (185-195 PSI). DO NOT TURN VALVE COMPLETELY CLOSED! Check bleed valve for leaks. Replace if necessary.

Problem:	Check For:
The system will not operate.	<ol style="list-style-type: none"> 1. not enough liquid. Add new insecticide concentrate and water. 2. no power. Confirm power to electric outlet. 3. loose connections. Review motor/timer connections. 4. malfunctioning timer. Replace timer.
The spray is not killing insects.	<ol style="list-style-type: none"> 1. insufficient pressure. Pressure should be 185-195 PSI. Increase pressure by turning pressure regulating valve clockwise until pressure is in proper range. DO NOT TURN VALVE COMPLETELY CLOSED! 2. incorrect spraying times. Confirm clock has correct time in military time. It may be off by 12 hours. System may need to be changed to increase number of spraying times and increase duration time. We recommend 6 times a day for 45 seconds to obtain control; then the duration time can be reduced. 3. clogged tips. Clean outside with damp cloth or steel wool. If this does not work, see page 6 for suggestions. 4. inoperative check valve in return line to tank. If pressure drops to bottom of gauge, replace check valve. This can cause air in lines and delay spraying of tips.