# INTRODUCTION

Assembly of the Shoo-fly System is simple and accomplished with a small amount of tools. No special tools are required. You will need the following: Hammer, Screwdriver, Crescent Wrench, Diagonals and a straight blade.

There are two important steps to be taken prior to starting the assembly:

1. Inventory all items to assure all material and parts are accounted for. If any items are missing contact Shoo-fly to have those items forwarded to you.
2. Read the instructions completely **before** starting to assemble the system. It is important to understand what each unit does and how its function contributes to the entire system.

**LIMITED WARRANTY:** Shoo-fly warrants your Shoo-fly system for a period of one year from the date of purchase by the original purchaser to be free of manufacturing defects. The system and the insecticide are designed to operate as a unit. The use of other insecticides through this system voids the warranty.

Thank you for your purchase,

Shoo-fly Staff

Please return the enclosed warranty card to Shoo-fly and fill out information below for your records.

---

For Your Records

Purchased from: _____

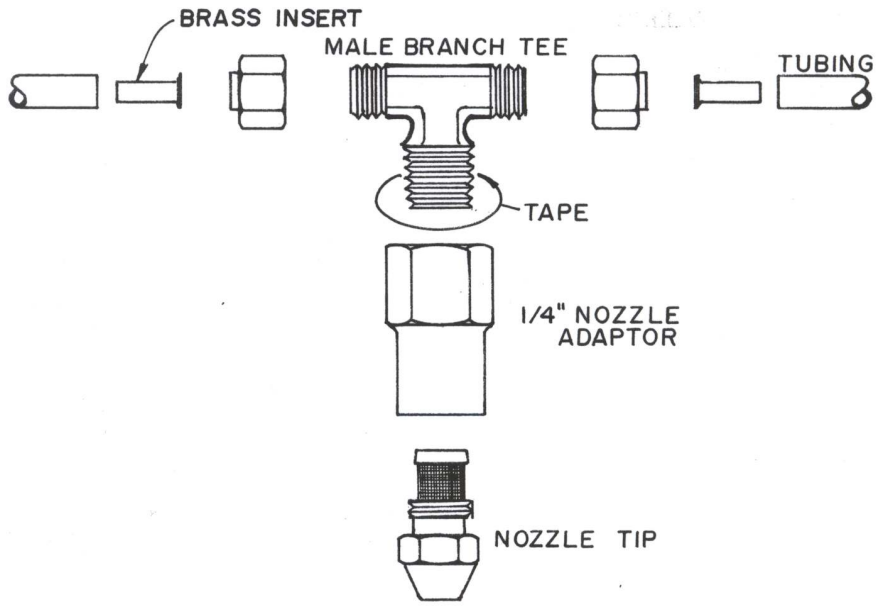
Phone # _____ Date: _____

Insecticide used: _____ Number of Nozzles: _____

# NOZZLE ASSEMBLY

Required Parts:

Male Branch Tee, 1/4" Nozzle Adapter, Nozzle Tip




NOZZLE ASSEMBLY

Procedure:

1. Wrap the male pipe threads on the center stem of the Male Branch Tee with teflon tape. Wrap the tape in the direction the Nozzle Adapter will be turned when screwed onto the male fitting (*if the tape is wrapped in the wrong direction, the tape will come off when screwed into the adapter*). Overlap the tape about 25%. Be certain the tape covers the beginning threads. Use this procedure for all pipe thread connections.

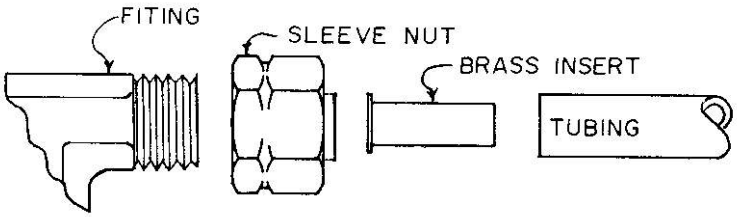
2. Screw the hexagonal end of the Nozzle Adapter onto the center stem of the Male Branch Tee (over the teflon tape). Do not over-torque this connection. The fitting will seat before all of the threads are covered.

3. Screw Nozzle Tip into the tubular end of the Nozzle Adapter. Finger tighten until the shoulders make contact. Finish with approximately a 1/16th turn with a wrench to seat.

4. A Male Elbow may be used in place of the Male Branch Tee, if it is necessary to dead end the tubing run.

# CONNECTION OF TUBING & BRASS FITTINGS

Compress-Align Fittings




Procedure:

1. Cut the Tubing at approximately a 90 degree angle; slight variation is acceptable.

2. Slide a Brass Insert into the square-cut end of the Tubing.

3. Screw the Sleeve Nut onto one of the appropriate fittings. Tighten the Nut finger-tight until the Sleeve makes contact with the shoulder inside the fitting.

4. Pass Tubing with Brass Insert through the Sleeve Nut. Hold the Tubing against the bottom of the fitting and tighten the Nut 1 1/4 to 1 1/2 turns to seat the Sleeve into the Tubing. ***Do not*** over-torque.

5. Sleeve Nuts with Tubing attached, which have been disconnected from their former fittings and need to be re-attached again, do not need to be screwed down as tightly because the Sleeve has already been seated into the Tubing. Just screw the Nut down until the Sleeve makes contact with the shoulder and then tighten approximately 1/8th turn.

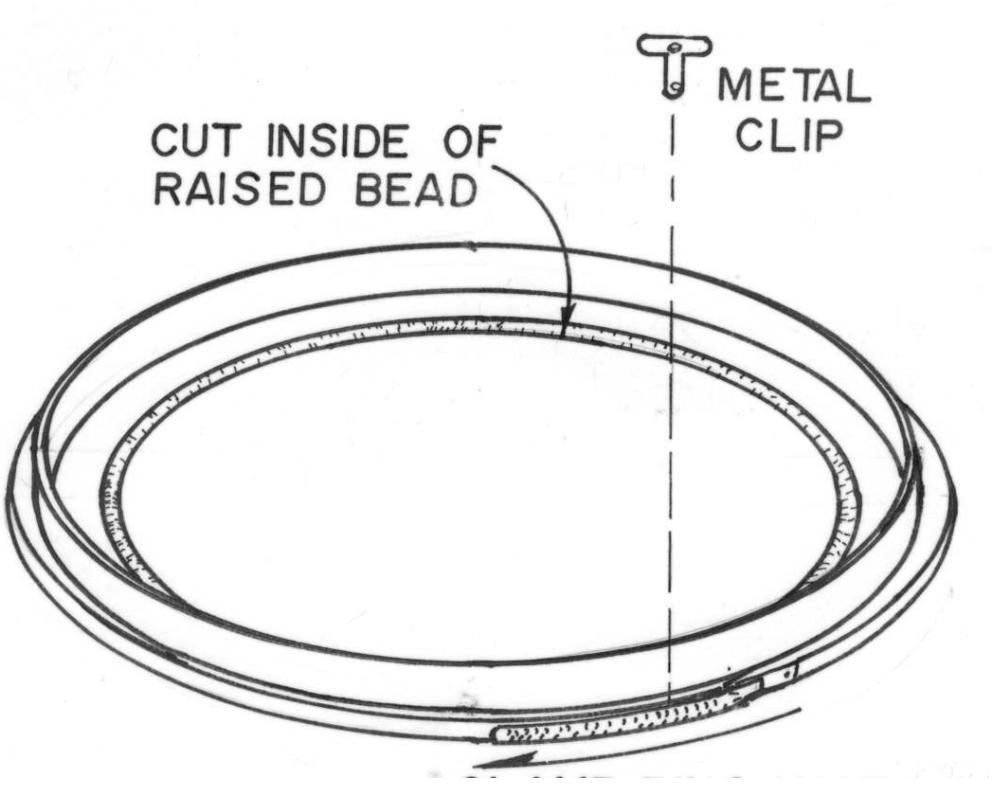
## ASSEMBLY OF THE MASTER UNIT

The Master Unit consists of two (2) sub-units: 1. The Drum 2. The Pump Assembly.

Start by emptying the shipping Drum and inventorying all parts. The Drum itself is the reservoir for Shoo-fly insecticide.

## DRUM ASSEMBLY

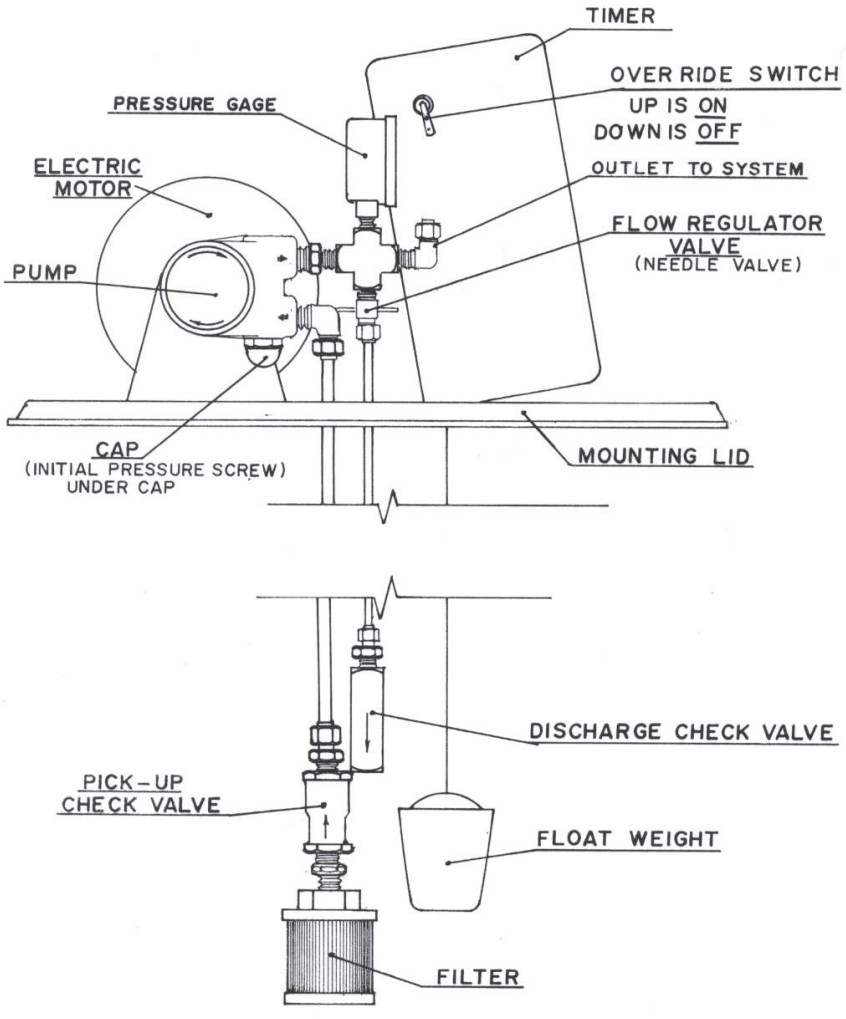
Referring to figure below there is a half round bead on the Drum Lid. On the inside of this bead, drill a hole big enough to place a saw blade into. Cut inside of the bead all the way around and discard the inner piece of plastic. With a file smooth the raw cut edges. Before placing the Lid on top of the Drum, make sure there are no shavings or dirt inside the Drum. ***ALWAYS*** keep the inside of the Drum clean and free of foreign matter. Place the plastic ring (the Lid) that is left on top of the Drum. Fit the Metal Ring so the two ridges of the Drum and Lid are inside the Metal Ring. The Ring Clamp has to fold down for the Ring to clamp down properly. After clamping the Ring in place, insert the Metal "T" Clip in the slot provided in the handle, bend over excess Clip material. Or A cable tie can be looped through the slot a the excess cut off. In this manner the Clamp is locked to the Metal Ring. This completes the Drum Assembly.



# PUMP HEAD ASSEMBLY

The Pump Head has been partly assembled. The Filter & Pick-Up Check Valve plus the Discharge Check Valve (Fig. 1 & 2, pg. 6) has to be attached. Loosen the Mounting Screw, shown in (Fig. 3, pg. 6), just enough to rotate the Pump so the Pressure Gauge is in the horizontal position. Tighten the mounting to hold the Pump in this position. (Fig. 4, pg. 6) shows the position the Pump should be in. Take the Tubing end of the Filter & Pick-Up Check Valve Assembly and feed it up through the larger of the two holes in the Lid. Insert the 3/8" Brass Insert into the Tubing and attach this to the Pick-Up Connector (Fig. 5, pg. 6).

*CAUTION*: When tightening the Brass Nut **DO NOT** over tighten. Refer to Connection of Tubing and Brass Fittings, page 3. Attach the Discharge Check Valve in the same manner. Feed the 1/4" Tube up through the small hole and use a 1/4" Brass Insert. Attach this Tube to the Flow Regulator Valve (Fig. 6, pg. 6). Loosen the Mounting Screw and turn the Pump so the Pressure Gauge is in the vertical position. This completes this phase of the Master Unit Assembly.



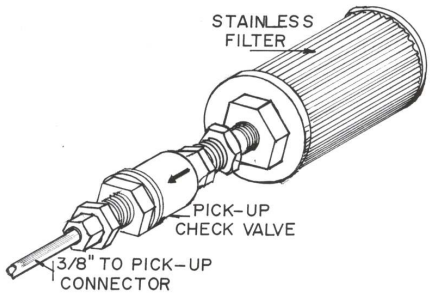



Fig. 1

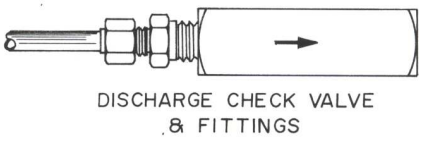



Fig. 2

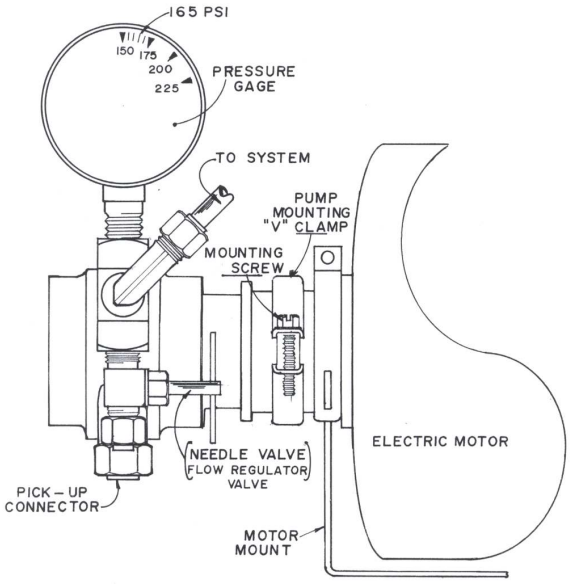



Fig. 3

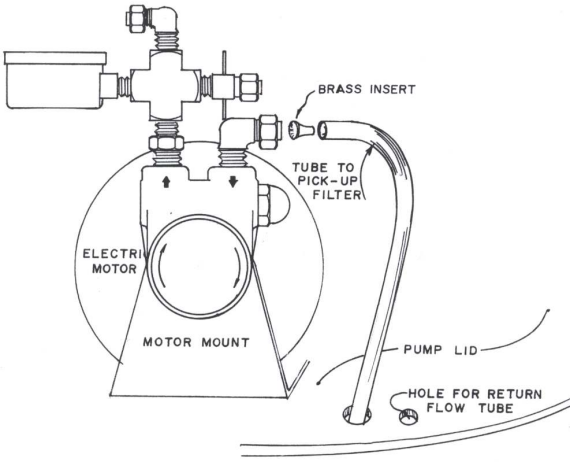



Fig. 4

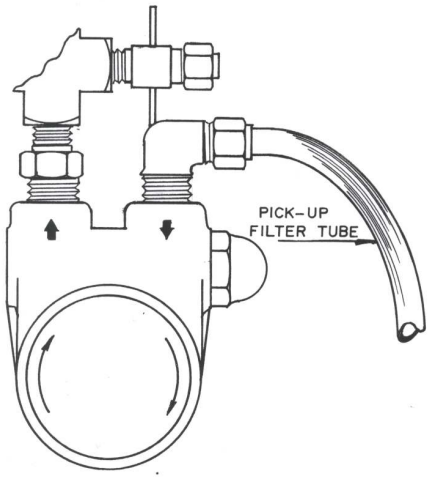



Fig. 5

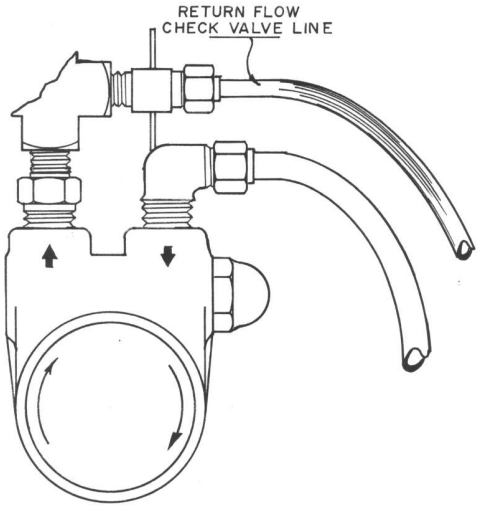



Fig. 6

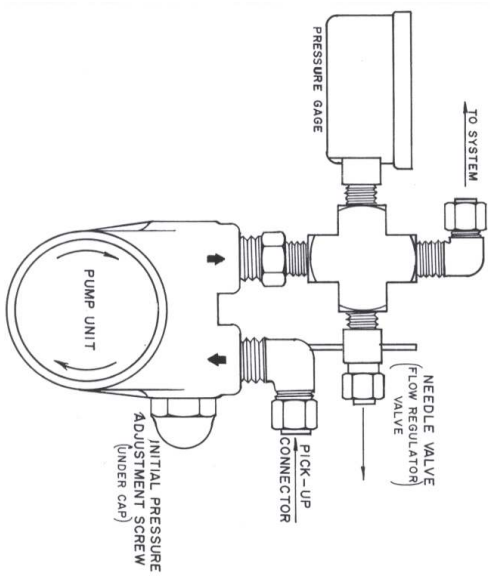


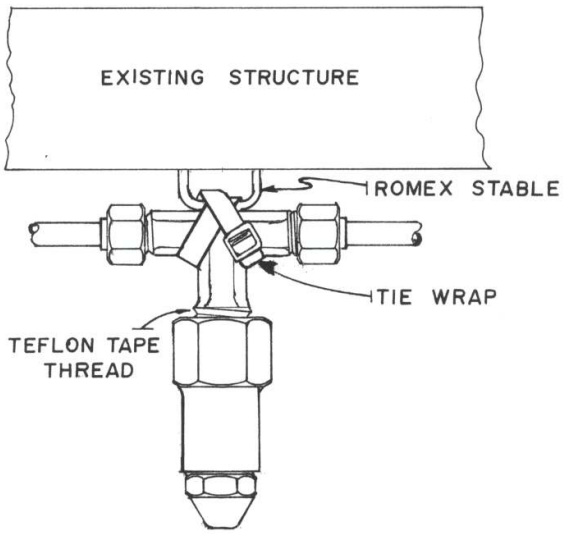

Fig . 7

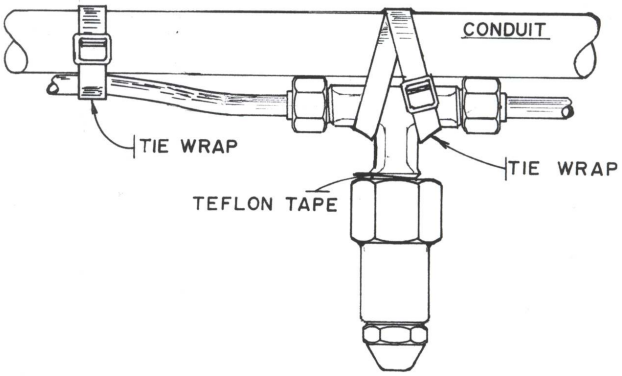
# INSTALLATION OF NOZZLES

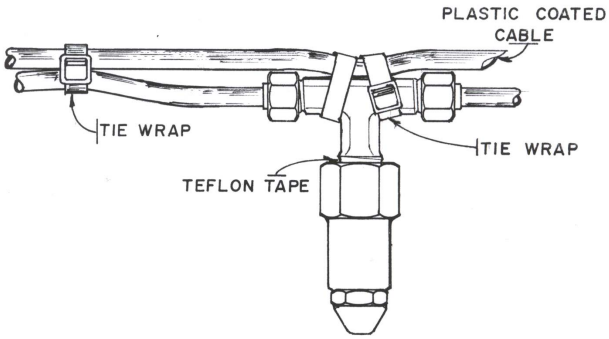
The optimum height for the Nozzle above the floor surface of the stall is 9 to 12 feet. Use any structure such as a rafters, trusses, sub-floor, or electrical conduit to fasten tubing over the center of each stall. Figures below show the three ways to attach Nozzles. If a wooden structure or conduit is not available, then it is necessary to string plastic coated cable. Using plastic cable ties, mount Nozzles over the center of each stall.

Run the Tubing through out the barn. Basically, run the Tubing over the stalls and back to the Master Unit. Pages 8 and 9 show different barn configurations and are discussed under each configuration.

*NOTE*: Barns with more than 25 Nozzles in one building should use 3/8" Tubing from the Master Unit to the main loop. See pages 15 and 16 for more information

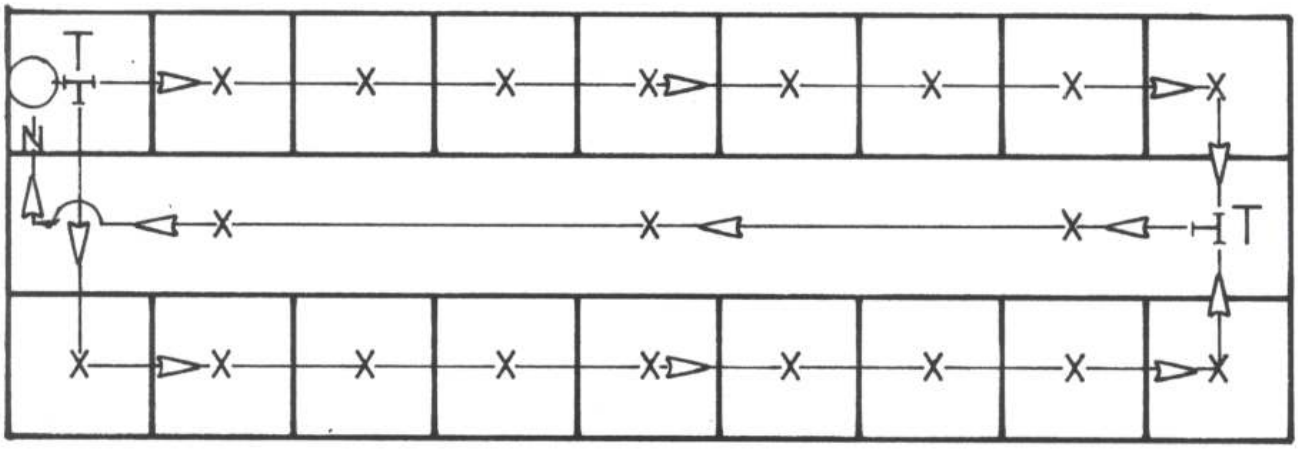


# ROUTING OF TUBING

Suggested pattern for CENTER AISLE BARN:



KEY:

- ◯ MASTER UNIT
- X NOZZLE ASSEMBLY
- N 1/4" NEEDLE (BLEEDER) VALVE
- T 1/4" UNION TEE
- ▷ DIRECTION OF FLOW

Loop the Tubing through the center of the stalls and back to the point of beginning. Connect and fasten all Nozzles in their permanent location. Using 1/4" Tubing from the Master Unit connect into the loop with a Tee. This completes your main loop.

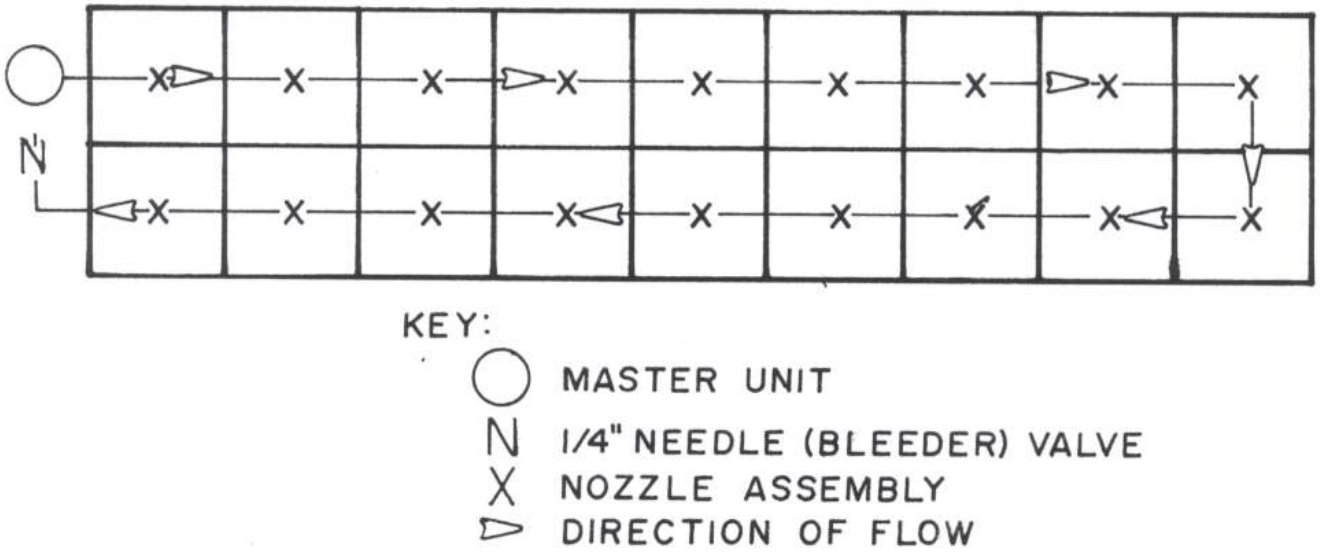
Next, Tee into the center of the loop at the opposite end of the barn and route the Tubing along the center of the aisle, returning to the Master Unit. Do not Tee into the loop near the Master Unit. Connect and fasten all Nozzles in their permanent location. Attach the Needle (bleeder) Valve approximately 18" from the end of the Tubing in a location that is comfortable to reach so that the Lid of the Master Unit can be lifted, the end of the Tubing dropped in, and all excess fluid can be bled back into the Drum.

See page 10 for Final Setup.

See pages 15 & 16 for barns with more then 25 nozzles.

# ROUTING OF TUBING

Suggested Pattern for CENTER STALL BARN or SHEDROW BARN:




Loop the Tubing through the stalls and return to the Master Unit. Connect and fasten all Nozzles in their permanent location. Attach the Needle (bleeder) Valve approximately 18" from the end of the Tubing in a location that is comfortable to reach so that the Lid of the Master Unit can be lifted, the end of the Tubing dropped in, and all excess fluid can be bled back into the Drum.

Barns with 25 or more Nozzles:

Loop the Tubing over the stalls and return to Master Unit as described above. To finish Tubing installation and bleeding refer to Equalization of Pressure (pg. 16) and follow instructions given there.

# FINAL SET UP & OPERATION OF THE SYSTEM

Position the Master Unit in its permanent location and fill with insecticide as described in "Filling or Refilling of Drum" (pg. 12). When setting the Pump Head on top of the Drum be sure that Tubing and Weight lines are hanging straight and not tangled. Figure 8, pg 11 shows how the Unit should look while lowered into the Drum. Place the Hood over the Pump Assembly and around the Metal Ridge of the Drum. Be sure the draw strings are in a convenient location. Cut a small hole in a convenient location to make the final connection of Tubing to the Master Unit. Feed the line that is connecting the Nozzles located in the barn through the hole that you have just made in the Hood and connect the Tubing to the system (Fig. 9, pg. 11). A slit can be made anywhere, the material will not unravel.

After the system is connected to the Tubing from the barn be sure the Flow Regulator Valve (Fig. 8, pg. 11), located just below the Pressure Gauge, is closed. Lift Pump Assembly Lid and place bleed line into the Drum. Open the Needle (bleeder) Valve to the full open position. Flip toggle switch on left side of timer to "ON" position (see page 13 for timer instructions). Let system run until all of the air is bled from the lines. Once a uniform flow of insecticide is accomplished close the Needle (bleeder) Valve. The system then should pressurize and each Nozzle should have a uniform pattern. The Pressure Gauge should read 200-225 PSI. If there is not 200-225 PSI turn the Pump off. Adjust the screw in the cap (Fig. 8, pg 11) 1/4 turn clockwise, for each 25 lbs of pressure that the Pump is deficient. To do this you will need loosen the band clamp on the pump to be able to tip it up to reach the adjustment screw. Make sure the clamp has been tightened before re-checking the pressure. Once 200-225 PSI is obtained open the Flow Regulator Valve until the system shows **175** PSI. This is the *optimum operating pressure* of the system.

There are several variables that should be taken into consideration when setting the time the Master Unit will dispense the insecticide. The variables are: time of year, temperatures, when the animals are present in the barn, and insect infestation.

We have found that during the summer hours the system may need to be set 4 or 5 times per day.

*Example*: 8 a.m., 11 a.m., 2 p.m., 5 p.m., and 8 p.m. During the Fall and early Spring they might be set at 10 a.m. and 2 p.m.

During a mosquito outbreak the system may have to be operated a couple times at night.

*Example*: 10 p.m. and 3 a.m. You will have to determine the time that is most appropriate for your situation.

For the operation of the different components of the Timer refer to Operation Of The Timer (pg. 13).

Place Hood over the Unit and this completes installation.

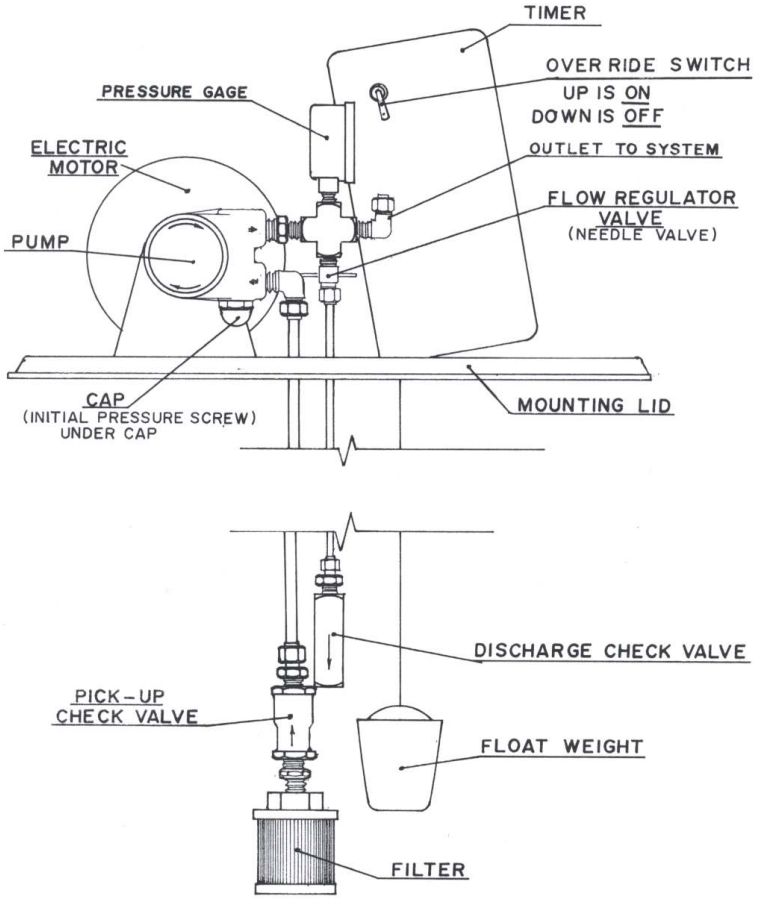

TIMER
OVER RIDE SWITCH
UP IS ON
DOWN IS OFF
PRESSURE GAGE
ELECTRIC MOTOR
OUTLET TO SYSTEM
FLOW REGULATOR VALVE
(NEEDLE VALVE)
PUMP
CAP
(INITIAL PRESSURE SCREW) UNDER CAP
MOUNTING LID
DISCHARGE CHECK VALVE
PICK-UP CHECK VALVE
FLOAT WEIGHT
FILTER

Fig. 8

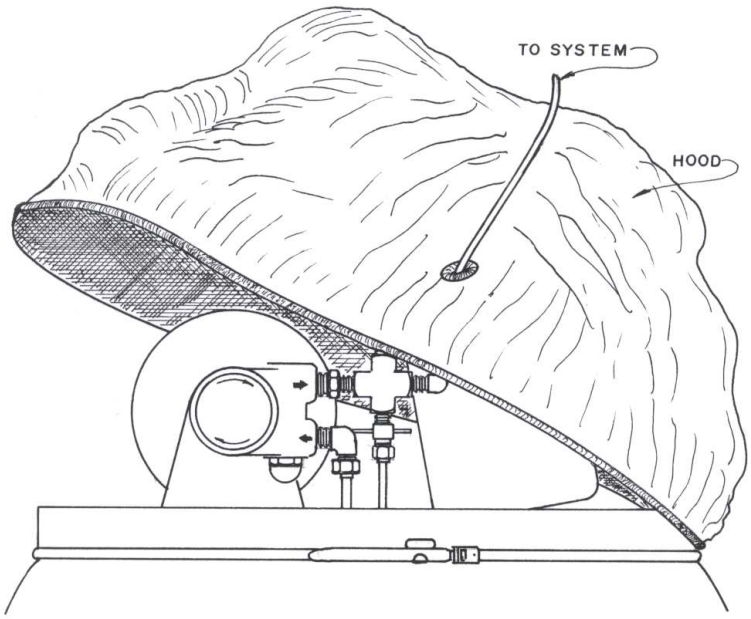

TO SYSTEM
HOOD

Fig. 9

# FILLING OR REFILLING OF DRUM

**Note: These instructions are for "Concentrate 1" - there will be a variation on instructions for other insecticides. Always refer to instructions enclosed with each package of insecticide.**

**1. READ LABEL !!!**

**2.** *SHAKE INSECTICIDE WELL*! Use one gallon of Concentrate diluted in 39 to 59 gallons of water, depending upon the difficulty of insect control. The average use is one gallon of Concentrate 1 to 54 gallons of water for a total of 55 gallons of ready-to-use insecticide. Most drums can hold up to 63 gallons of fluid, so be careful **not** to fill the drum higher than 8 inches from the lid. **DO NOT OVER DILUTE!**

**3. Unplug** the Master Unit.

**4.** Remove the Filter and clean it, then replace it finger tight. Examine the interior of the Drum for cleanliness. If the interior of the Drum appears to be dirty or has any residue build-up it is recommended that the Drum be taken outside and washed with a strong bleach or a chlorine solution. *Be sure* to rinse all detergents and bleach from the Drum before refilling. This procedure should be performed at least once a year.

**5.** Place **clean** water hose inside the Drum with the nozzle at the **bottom** (to prevent foaming of insecticide), and fill the Drum 1/3 full with fresh water. **Slowly** add insecticide to the water while filling the second 1/3 of the Drum. Do not add insecticide too quickly or the insecticide will gel and then have to be mixed with a paddle.

**6.** Rinse the empty insecticide container 3-5 times until it rinses clear, pouring the rinse water into the Drum. Do this while filling the last 1/3 of the Drum.

**7.** Replace the Lid, plug in the machine and set the Timer.

**NOTE:**

For customers with hard water it has been found that adding ½ to 1 gallon of white vinegar will help balance the PH and you will get better performance from your insecticide and the equipment, less nozzle plugging and a smother mixture of insecticide. Vinegar may be added in the water before the insecticide

# FILLING OR REFILLING OF DRUM

**Note: These instructions are for "Livestock & Poultry Concentrate and PBO Concentrate" - there will be a variation on instructions for other insecticides. Always refer to instructions enclosed with each package of insecticide.**

**1. READ LABEL !!!**

**VERY IMPORTANT**: Add Livestock & Poultry (or Ten-Ten) Concentrate **first**
Add PBO Concentrate **second.**

**2.** *SHAKE INSECTICIDE WELL*! Use 64 ounces of Livestock & Poultry Concentrate and 32 ounces of PBO Concentrate diluted in 40 to 54 gallons of water, depending on difficulty of insect control. Most drums can hold up to 63 gallons so be careful not to fill closer than 8 inches from the Lid. **DO NOT OVER DILUTE!**

**3. Unplug** the Master Unit.

**4.** Remove the Filter and clean it, then replace finger tight. Examine the interior of the Drum for cleanliness. If the interior of the Drum appears to be dirty or has any residue build-up it is recommended that the Drum be taken outside and washed with a strong bleach or chlorine solution. Be **sure** to rinse all detergents and bleach from the Drum before refilling. This procedure should be performed at least once a year.

**5.** Place **clean** water hose inside the Drum with the nozzle at the **bottom**, and fill the Drum 1/3 full with fresh water. While filling the **second** 1/3 of the Drum **slowly** add Livestock & Poultry Concentrate to the water. Rinse the empty insecticide container 3-5 times until it rinses clear, pouring the rinse water into the Drum. **Next, slowly** add PBO Concentrate to the water. Do not add insecticide too quickly. Rinse the empty insecticide container as above, pouring the rinse water into the Drum. Finish filling the last 1/3 of the Drum with water, to no more than 8 inches from the top of the Lid.

**6.** Replace the Lid, plug in the machine and set the Timer.

**NOTE:**

For customers with hard water it has been found that adding ½ to 1 gallon of white vinegar will help balance the PH and you will get better performance from your insecticide and the equipment, less nozzle plugging and a smother mixture of insecticide. Vinegar may be added in the water before the insecticide.

# OPERATION OF THE MECHANICAL TIMER

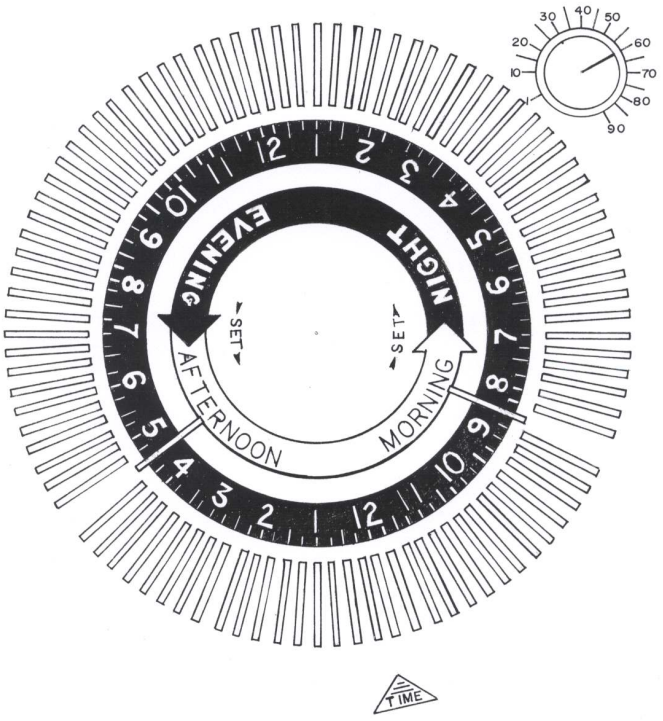
These instructions pertain to the "TORK" brand Timer.

Open the Timer compartment (there is a set of instructions inside of the door). Refer to figure below. Just below the Main Dial and to the right on the "TORK" label is a small triangle with the word "Time" printed on it. The Main Dial is divided into morning, afternoon, evening and night. Each graduation mark and silver ring represents 15 minutes. The figure below shows the time to be 12 o'clock noon.

To set: rotate the Main Dial counter-clockwise until the *present time* of day is adjacent to the small triangle.

To set the time for the Pump to operate, flip the desired silver ring to the center of the dial. In the figure below the Pump is set to operate at 8:30 in the morning and 4:30 in the afternoon. The Small Dial in the upper right hand corner of the Timer is used to determine the length of time the unit is to run. Running time can be set from 1 second to 90 seconds. 60 seconds is the optimum time for the insecticide to thoroughly cover the area. If the fly infestation is heavy, it is better to have the Unit operate more often during the day rather than lengthening the time for the Unit to operate. If the Unit is not to operate during a twenty-four hour period, push all the silver rings to the **outside** of the Dial. The system then can be operated by the Manual Over-Ride Switch. This is very convenient during the late Fall and early Spring. Times may vary. Refer to "Final Set Up" page 10.

*Note*: If there is a power failure the Timer will have to be re-set.



# OPERATION OF THE DIGITAL TIMER:

***A few items for you to understand before we begin.*** These will become more familiar to you later as we get into programming the digital timer.

You will need to program your timer with two vital pieces of information: how long do you want the unit to be running (called the **CYCLE**) and when do you want the unit to begin (called the **EVENT**) running.

A **CYCLE** is the length of TIME (duration) you want your unit to run. It is measured from 1 to 99 seconds. There are only TWO **CYCLES**, labeled $\mathbf{C_1}$ and $\mathbf{C_2}$. These will alternate back and forth as you enter your EVENTS for each **CYCLE**. Please note that you may choose to use only $\mathbf{C_1}$ or only $\mathbf{C_2}$ or BOTH.

An **EVENT** is any time your unit is scheduled to turn on. An **EVENT** will last only as long as the number of seconds you have entered into either $\mathbf{C_1}$ or $\mathbf{C_2}$**.** You can enter as many EVENTS as you need. They will be listed in sequence as 01, 02, 03, 04, 05, 06… and will be shown to the immediate RIGHT of the time you schedule your unit to turn on. This will be evident when we get to that point. Every **EVENT** has to be paired with either $\mathbf{C_1}$ or $\mathbf{C_2}$**,** the duration time that you enter.

**IMPORTANT: Due to a manufacturing defect as of May 2017 the digital timer does NOT have a 60 second duration option. Please use 59 seconds or 61 seconds instead. It will not operate for 60 seconds.**

**TIP:** The time that you set for each **EVENT** to occur does NOT have to be in order. For example, suppose you want the **EVENT** to occur (when you want your unit running) at 8:00 AM, 11:00 AM, 2:00 PM and 5:00PM. You missed 2:00 PM when programming your events. You may add 2:00 PM AFTER you have already input 5:00 PM. The timer will still run in real time.

**TIP:** Once you have entered information, you can use the **DEL/PREV** button to go backward. For example, if you accidentally entered 28 for the date of the month and you wanted 26, press **DEL/PREV** button twice to go backward to 26. If you entered 76 seconds and wanted only 70, press **DEL/PREV** six times to go back to 70.

## KEY FUNCTIONS:

Unit should be programmed with AC power. Do not program on super cap back up power.

Mode: Press to go to the next mode

Enter: Stores or saves current entry.

**DAY/YEAR:**

a. Press to set the year in the DATE mode.

b. Selects the desired day of the week in the DST (Daylight Savings Time) mode.

**OVR/PERMANENT:**

a. Press to change the load status in the AUTO (automatic) and the MAN (manual) mode.

**DEL/PREV:**

a. Press to delete the displayed entry.

b. Decrement the last selected entry.

**HOUR/MONTH:**

a. Press to set hour in CLK (clock) mode and the SCH (schedule) mode.

b. Press to set month in the DATE mode and DST (Daylight Savings Time) mode.

c. Press to active signal.

**MINUTE/DATE:**

a. Press to set minutes in CLK (clock)mode and the SCH (schedule) mode.

b. Press to set date in the DATE mode.

**ENTER:**

a. Press to store the displayed information into memory. Information will not be stored until the ENTER key is pressed.

Note: During settings, each press of the key will advance one number. For rapid advance hold key in.

**EVENT:**

a. Press to select ON/OFF/CI/C2 in the schedule.

b. Press to update the load status in the AUTO (automatic) mode.

**NOTE:** After making any changes to the program, press MODE to go to run mode and then press EVENT to update the load status.

## SETTING THE TIME

Unit must be plugged in to set the timer. Although your unit does NOT have a battery, it will still hold the charge if electricity is lost.

When you plug the unit in, you will see **d9 100** and **r – 5 1 60.** If the screen stays blank, hit **ENTER** or the recessed reset button. To hit the reset button you will need something small like the end of a paperclip. When these symbols do appear, they will flash and you will see a blinking 12 Hour. Here is your option to use a conventional12 hour clock or military 24 hour clock. If you want just a 12 hour clock, hit **ENTER**. If you want military time, press **HOUR/MONTH** button once and 24 hour will appear. Press it again and 12 hour will appear. Hit **ENTER** when ready.

**TIP:** If the timer has not been totally cleared, a flashing 12 HOUR screen can appear. That is OK. Press **HOUR/MONTH** for either 12 hour or 24 hour clock. Press **ENTER**.

You will see this screen:

SET

clk

Now simply use the **HOUR/MONTH**, **MIN/DATE** buttons to put in the correct time. Be aware of AM and PM if using conventional time (12 hour clock). Once an hour or minute is input, you may use the **DEL/PREV** to go backward if it is shorter than pushing buttons to go forward to the time you want. You may also use that button if you overshoot your numbers and need to go backwards to a number you accidentally went by. Use **HOUR/MONTH**, **MIN/DATE** or **DEL/PREV** to go backward or forward to change from AM to PM also. Press **ENTER.**

## SETTING THE DATE

After the correct time is set, program the month, day and year using the **HOUR/MONTH**, **MIN/DATE** and **SEC/DAY/YEAR** buttons. Don't forget to correct the year because that will affect what day of the week that appears.

The day of the week, abbreviated, will appear at the top of the screen.

Press **ENTER**.

## SETTING DAYLIGHT SAVINGS TIME

This is the next screen:

ON

dSt

The above screen will appear. (Daylight Savings Time) If you do NOT want Daylight Savings Time, press **DEL/PREV**. It will change from ON to OFF. Press **ENTER**.

Before setting cycle durations, record duration lengths in seconds ($C_1$ or $C_2$) and times (Events) you want your unit to run in chart below.

Duration Settings: **$C_1$** _____ seconds **$C_2$** _____ seconds

| Event | Time | Choose One | Event | Time | Choose One |
|---|---|---|---|---|---|
| 01 | _____ | $C_1$ or $C_2$ | 05 | _____ | $C_1$ or $C_2$ |
| 02 | _____ | $C_1$ or $C_2$ | 06 | _____ | $C_1$ or $C_2$ |
| 03 | _____ | $C_1$ or $C_2$ | 07 | _____ | $C_1$ or $C_2$ |
| 04 | _____ | $C_1$ or $C_2$ | 08 | _____ | $C_1$ or $C_2$ |

## SET CYCLE DURATION ($C_1$ and $C_2$)

Now you will see **$C_1$** for the first **CYCLE** duration period.

CYCLE

ON

— —

$C_1$

Using the **SEC/DAY** button, set the number of seconds you want to run the unit. Press **ENTER**. (If there is a number of seconds shown here already, you may change it or keep it.)

Now you will see **$C_2$** for the second **CYCLE** duration period. Using the **SEC/DAY** button, set the number of seconds you want to run the unit. You may enter the same duration (in seconds) as in **$C_1$** or a different duration. Use the **DEL/PREV** button to go backwards. (If there is a number of seconds shown here already, you may change it or keep it.)

CYCLE

ON

— —

$C_2$

Press **ENTER** and the screen should display **$C_1$** again. Remember, there is only **$C_1$** and **$C_2$**. If **$C_1$** does not show, press **ENTER** until it does.

Press **MODE** button to set Events.

# ENTERING THE TIME FOR EACH EVENT

## SCHEDULING EVENT 01:

This is your first **EVENT** (01) screen–what time you want the unit to turn on for the first time. Enter the time using the HOUR and MIN buttons for the unit to come on. Be sure of AM and PM. Use the Hour /Min buttons. (If there is a time already here, you may keep it or change it using the **HOUR/MONTH** and **MIN/DATE** buttons.)

_ _:_ _ 01

SCH

The screen will change to:

AM

OFF XX:XX 01 (XX:XX is the time you entered. Note AM or PM)

SCH

(01 is the FIRST event)

After you enter the time press the **EVENT** button. You have programmed **EVENT** 01.

At this point you may choose to use either CYCLE: $C_1$ or $C_2$.

Press **EVENT button** until you see the Cycle you want in the lower left.

It should look like this:

AM CYCLE

$C_x$ XX:XX 01 (XX:XX is your time entered)

SCH

($C_x$ is the CYCLE you have chosen, either $C_1$ or $C_2$)

Press **ENTER button** to save the event.

**SCHEDULING EVENT 02:**

You will see the screen come up for EVENT 02.

AM

_ _:_ _ 02

SCH

Program the time you want the unit to turn on using the **HOUR/MONTH and MIN/DATE buttons.** Be sure of AM and PM. Use the Hour /Min buttons. (If there is a time already here, you may keep it or change it using the **HOUR/MONTH** and **MIN/DATE** buttons.)

AM

Off XX:XX 02 (XX:XX is the time you entered)

SCH

(02 is the SECOND **EVENT**)

Press **EVENT button.** At this point you may choose to use either CYCLE: $C_{1\ or}\ C_{2.}$

Press **EVENT button** until you see the Cycle you want in the lower left.

It should look like this:

AM CYCLE

$C_x$ XX:XX 02 (XX:XX is the time you entered)

SCH

($C_x$ is the CYCLE you have chosen, either $C_{1\ or}\ C_2$)

Press **ENTER** to save this event.

**SCHEDULING EVENT 03:**

You will see the screen come up for EVENT 03.

_ _:_ _ 03

SCH

Program the time you want the unit to turn on using the **HOUR/MONTH and MIN/DATE buttons.** Be sure of AM and PM. Use the Hour /Min buttons. (If there is a time already here, you may keep it or change it using the **HOUR/MONTH** and **MIN/DATE** buttons.)

PM

Off XX:XX 03 (XX:XX is the time you entered)

SCH

Press **EVENT button.** At this point you may choose to use either CYCLE, $C_{1\ or}\ C_{2.}$

Press **EVENT button** until you see the Cycle you want in the lower left.

It should look like this:

AM cycle

XX:XX 03 (XX:XX is the time you entered)

$C_x$ SCH ($C_x$ is the CYCLE you have chosen, either $C_{1\ or}\ C_2$)

Press **ENTER** to save this event.

**SCHEDULING EVENT 04:**

You will see the screen come up for EVENT 04.

_ _:_ _ 04

SCH

Program the time you want the unit to turn on using the HOUR and MIN buttons. Be sure of AM and PM. Use the Hour /Min buttons. (If there is a time already here, you may keep it or change it using the **HOUR/MONTH** and **MIN/DATE** buttons.)

PM

Off XX:XX 04 (XX:XX is the time you entered)

SCH

Press **EVENT button.** At this point you may choose to use either CYCLE, $C_{1\ or}\ C_{2.}$

Press **EVENT button** until you see the Cycle you want in the lower left.

It should look like this:

PM cycle

XX:XX 04 (XX:XX is the time you entered)

$C_x$ SCH ($C_x$ is the CYCLE you have chosen, either $C_{1\ or}\ C_2$)

Press **ENTER** to save this event.

Repeat the above steps stated in the steps for **SCHEDULING EVENT** 04 for **EVENTS 05** and beyond.

After your last EVENT that you set, press **ENTER,** then press **MODE** and your unit is set up.

You should see "**FLASH**" briefly on the screen.

Your display should look like this:

FR

AM

OFF XX:XX XX

AUTO

(XX:XX is the current time. Current DAY, Friday, shows at the top. AM or PM will also show. NOTE that display also shows OFF. It will display either $\mathbf{C_1}$ or $\mathbf{C_2}$ when it begins running.)

Congratulations, you have set up your TORK timer.

## Additional Notes:

## TO ERASE DATE AND TIME ONLY

Pressing the recessed **RESET** button will allow you to erase the time and date settings. It will not change your $\mathbf{C_1}$ or $\mathbf{C_2}$ duration or scheduled **EVENTS**. The reset button is located in the hole to the right of the **EVENT** button. You will need something like a straightened paper clip to press that button.

## TO ERASE EVERYTHING AND START FROM THE BEGINNING:

When the time of day screen is showing, you can take the following action:

To clear the clock, $C_{1,}$ $C_{2,}$ and the scheduled EVENTS, press **ENTER**. You will see the screen below.

CLEAr OFF

**AUTO**

Hitting **EVENT** will change it to this:

ON

CLEAr

AUTO

Pressing **ENTER** will erase everything and you may start again. You will see 12 HOUR flashing again.

# WINTERIZING THE SYSTEM

Prolonged freezing temperatures in harsh climates may cause damage to the Nozzles and the Pump. The last fill up should be planned so as to run out of insecticide before freezing temperatures arrive, no more than 5 gallons of insecticide should remain in the system.

Using a non-toxic anti-freeze (such as the type sold for use in the water lines of recreational vehicles) add this to the remaining insecticide. Check the anti-freeze label for the dilution rate.

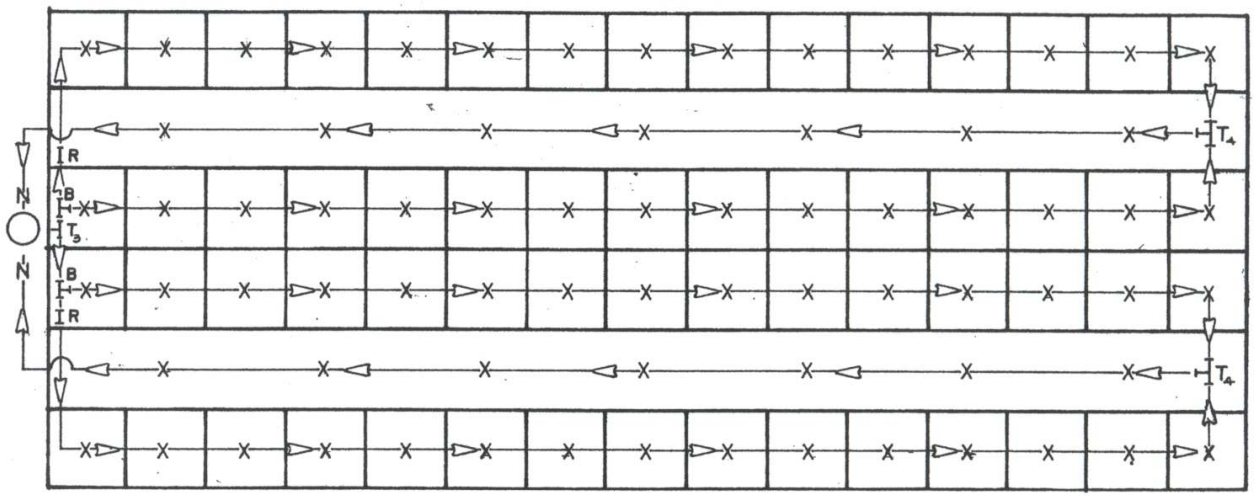
Open the Needle (bleeder) Valve on the end of the loop coming back to the Master Unit and turn on Master Unit. Let insecticide flow into the Master Unit until you see the change of color and you know the anti-freeze is throughout the Tubing and Nozzles. Close the Needle (bleeder) Valve and pressurize the system for about 10 seconds. This should be sufficient to get the anti-freeze into the Nozzle Tips. The system can then be turned off for the winter. When the fly season begins next spring, the anti-freeze should be bled out of the lines and the Drum cleaned.

We recommend cleaning the system with a strong bleach or chlorine solution and a scrub brush. The system should then be flushed with fresh water and vinegar and refilled with insecticide at the beginning of the season. Refer to "Filling Or Refilling Of Drum" pages 12 & 12a.

# LARGE BARNS

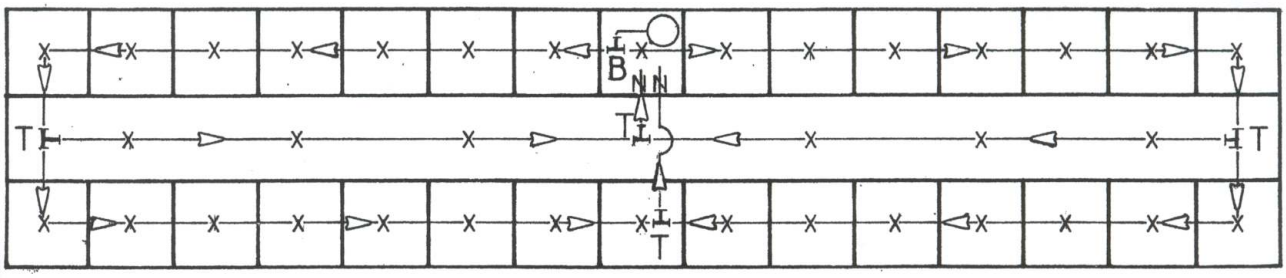
For large barns use the diagrams below to guide you in routing your tubing to get the optimum spray to each nozzle.

See page 16 for information on equalizing of pressure




KEY:

- ○ MASTER UNIT
- X NOZZLE ASSEMBLY
- $T_3$ 3/8" UNION TEE
- $T_4$ 1/4" UNION
- N NEEDLE (BLEEDER) VALVE
- B 3/8" FEM. CONNECTOR TO 1/4" BRANCH TEE
- R 3/8" TO 1/4" REDUCER
- ▷ DIRECTION OF FLOW

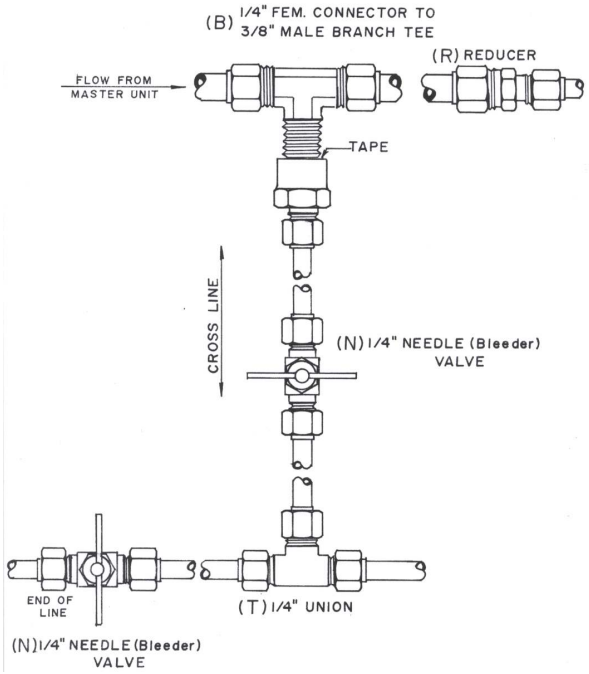


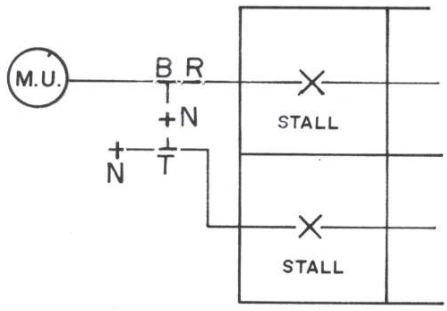
# EQUALIZATION OF PRESSURE

When operating 25 or more Nozzles, it is necessary to equalize pressure on both sides of the loop. To do this a Cross line with a Needle (bleeder) Valve must be installed into the System. A suggested set-up for this is described below.

Using 3/8" Tubing from the Master Unit to a convenient location prior to the first Nozzle install a 3/8" Male Branch Tee with a 1/4" Female Connector attached as shown below. On the other side of the Male Branch Tee install a 3/8" to a 1/4" Reducer and connect the Tubing going to the first Nozzle. From the last Nozzle continue the Tubing to the desired point of installation of the Cross line. At this point connect a 1/4" Union Tee as shown below. Between the Union Tee and the Branch Tee install a short length of 1/4" Tubing, mounting a Needle (bleeder) Valve half way between the two fittings. On the other side of the Union Tee run a 1/4" Tube back to the Master Unit to another Needle (bleeder) Valve. To this Needle (bleeder) Valve attach an 18" length of 1/4" Tubing. This goes to the Master Unit Drum and is used for bleeding purposes only. To bleed the system close the Cross line Needle (bleeder) Valve and open the bleeder Needle (bleeder) Valve near the Master Unit. Turn on the Over Ride Switch. Run the Pump until all air has been bled from the lines. Once a uniform flow of insecticide has been accomplished, close the Needle (bleeder) Valve and turn off Pump. Open Cross line Needle (bleeder) Valve. This completes the equalization of pressure.

The EQ Valve comes to you completely assembled as one piece with a 3/8 Tee, 3/8 to 1/4 reducer, Needle valve, & a 1/4 Tee. It is installed prior to the first nozzles as described above. The return line also attaches to the this valve and then returns back to the drum as described.




| | |
|---|---|
| M.U. | MASTER UNIT |
| B | 1/4" FEM. CONNECTOR TO 3/8" MALE BRANCH TEE |
| R | REDUCER 3/8" TO 1/4" |
| T | 1/4" UNION TEE |
| N | 1/4" NEEDLE (BLEEDER) VALVE |
| X | NOZZLE ASSEMBLY |