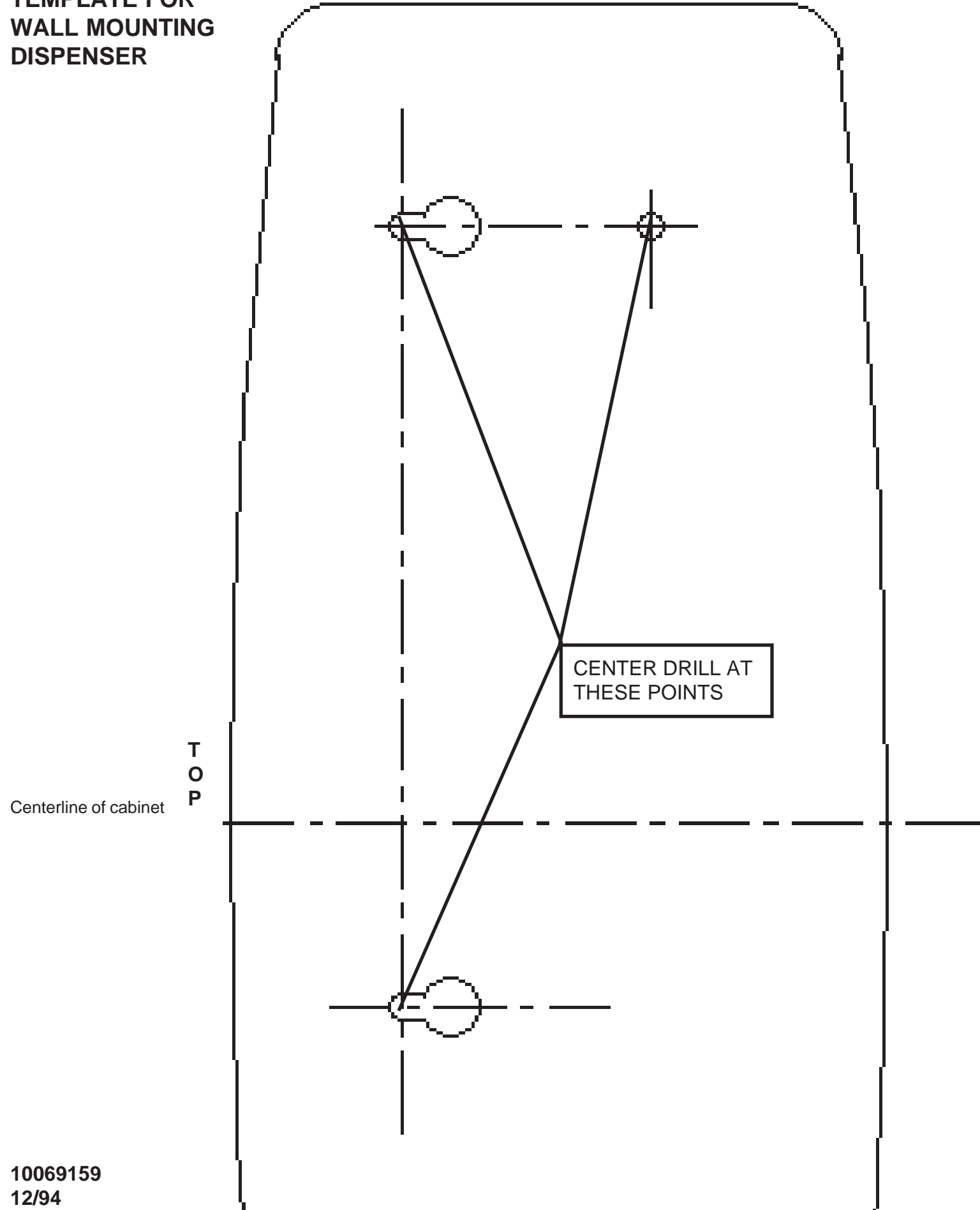


**TEMPLATE FOR  
WALL MOUNTING  
DISPENSER**



# Hydro<sup>®</sup> AutoDose<sup>™</sup> Programmable Dispensers

## Models 1060, 1065, 1070, 1075, 1080 & 1085: Operation & Maintenance

AutoDose<sup>™</sup> programmable dispensers are battery operated peristaltic pumping systems (convertible to AC power) which run automatically at preset times as programmed on an electronic timer/control mechanism. Models vary as to the pump's power source and the pump tubing material (see page 7 for specifications).

### THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Please use this equipment carefully and observe all warnings and cautions.

**NOTE**

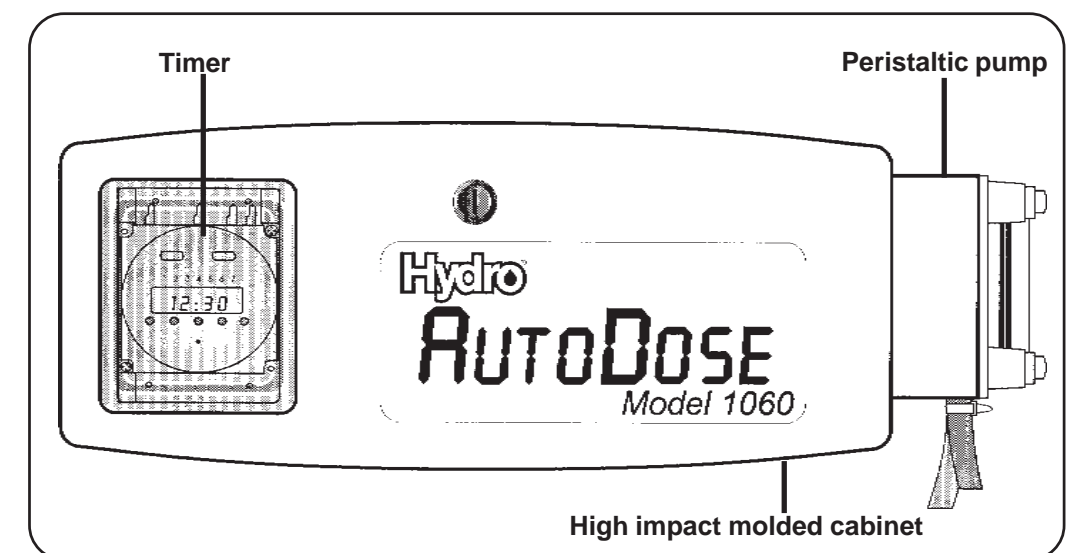
- ALWAYS** observe safety and handling instructions of the chemical manufacturers.
- ALWAYS** direct discharge away from you or other persons or into approved containers.
- ALWAYS** dispense cleaners and chemicals in accordance with manufacturer's instructions. Exercise CAUTION when maintaining your equipment.
- KEEP** equipment clean for proper operation.
- WEAR** protective clothing and eyewear when working in the vicinity of all chemicals, filling or emptying equipment or changing tubes.
- ALWAYS** re-assemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position. Assure that hoses and electrical wire are properly placed and not kinked or pinched.

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**This package should contain:**

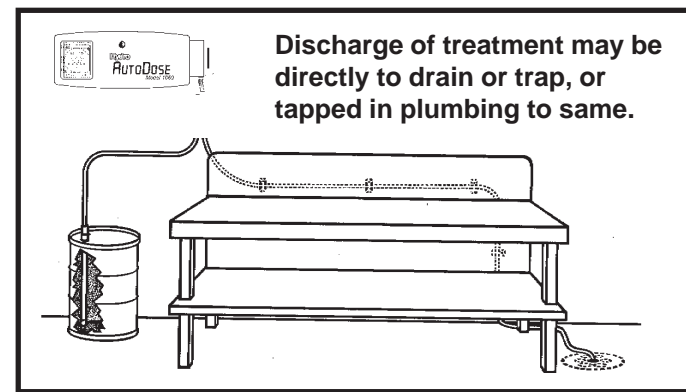
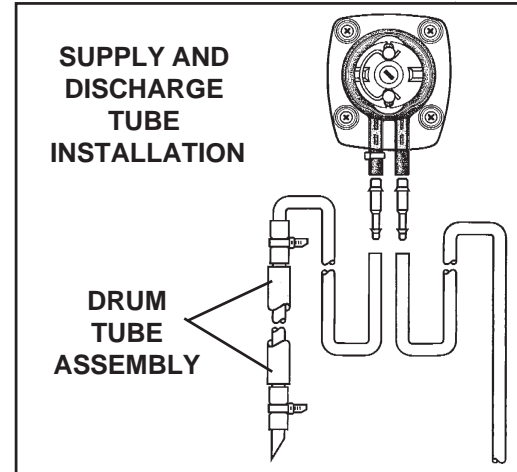
1. One dispenser -- pump, electronic timer/control and motor in high impact molded cabinet.
2. Supply tube (20 ft.)
3. Drum tube and holding tubes.
4. Injection fitting.
5. Mounting hardware.
6. Cable ties (25).
7. Tubing barbs (2).
8. Battery holder (Models 1080 & 1085 only).
9. AC adaptor (Models 1070 & 1075 only).
10. Instruction sheet.



**SYSTEM INSTALLATION:**

Refer to the diagrams at right.

- Copy the template provided on page 8 and use the copy to drill three holes for the wall mounting anchors. Install the three anchors. Install mounting screws in the top two anchors. Slide the key holes in the back of the cabinet over the screw heads. Tighten the accessible screws. Place a screw in the lower hole to secure the unit from the inside of the enclosure. Location for the dispenser should be near the pipe or grease trap into which it will be dosing. In kitchens, the unit may be mounted beneath the dish machine work tables, on the wall.
- Install the supply tube onto the pump inlet tube with the barbed fitting. The larger end of the barb should be inserted into the pump tube. Secure with a cable tie around the pump tube over the barb.
- Draw the supply tube to the container of drain treatment. Cut the tube to the length required so that the tube will reach the bottom of the container and can be secured out of the path of personnel (on wall, to legs of work tables, etc.). The tubing should be cut on an angle. Save the remaining tubing: It will be used as discharge tubing.
- Secure the drum tube to the supply tube: Slide a short piece of rubber onto the supply tube, followed by the rigid plastic tube and then the second piece of rubber. Secure the short pieces with cable ties. (See diagram at right.)
- Install the tubing that remained from cutting the supply tube (step 4) onto the pump outlet tube stem using the other barbed fitting. Secure this connection with a cable tie around the pump tube stem.
- Take the discharge tube and draw it to the pipe or trap cover where the injection fitting is to be installed.
- Drill and tap the drain pipe or trap cover for the 1/8" NPT injection fitting. When the product should be dispensed into a trap but the trap is inaccessible, feed the tubing down the inlet pipe to the trap. For these cases, the fitting can be drilled through to allow the tubing to pass into the pipe. Wrap the injection fitting once with sealing tape (Teflon) and screw in the injection fitting. Tighten to provide a positive seal.
- Determine where the discharge tube will be secured to walls, tables, etc. Cut tubing the appropriate length for such installation. Connect the tubing to the injection fitting. Be sure the tubing will be out of the way of traffic and will not impede motion required in the area. (See diagram at right.) Creating a low place in run of tubing near the fitting will minimize drainage from the tubing.
- Put the container of treatment into place, open it, and insert the drum tube.
- Install the system power supply.

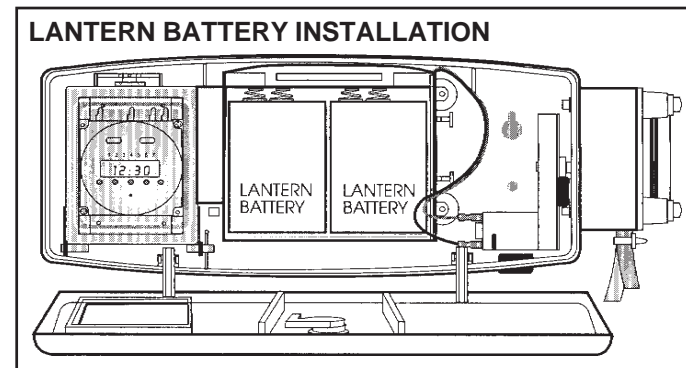


**CAUTION:**  
It is good practice to set the MODE switch to OFF (O) prior to performing any service to the system.

**Installing the power supply:**

**MODELS 1060 & 1065 (LANTERN BATTERIES)**

- (2) 6-volt alkaline spring contact batteries are required (Eveready Energizer 529, Duracell MN908 or equivalent).
- Open the front of the cabinet.
- Install the batteries with the springs up. Start with the top going in first, then push the bottom into place.
- Using a battery life of 40 running hours, determine when to replace the batteries. Write a safe replacement date on the label supplied and place it on the outside of the dispenser. (Using pencil to write the date allows changing the replacement date each time.)
- When replacing the batteries,** slide the mode (left) switch to the "O" (off) position before changing the batteries. After the new batteries are in place, slide the mode switch to "I" (on) position to be sure power is supplied to the pump motor. Be sure that the mode switch is returned to the center position so that the system runs according to program.



**MODELS 1070 & 1075 (AC ADAPTOR)**

- This adaptor plugs into a standard 110-volt AC outlet. There is an internal battery in the timer to maintain the time and the program if power is interrupted. This back-up battery will not run the pump motor.

**Dispenser Specifications:**

**PUMP:**  
Flow rate ..... 100 cc (approx 3.5 oz.)/min.  
**Tube:**  
Model 1060, 1070 & 1080 ..... Norprene  
Models 1065, 1075 & 1085 ..... Viton  
**Power:**  
Models 1060 & 1065: ..... Two 6-volt alkaline batteries\*  
Models 1070 & 1075: ..... AC adaptor  
Models 1080 & 1085 ..... (8) "D" cell batteries\*  
Motor ..... DC, with gearbox  
Rotor assembly ..... Spring suspended rollers

**SYSTEM CABINET:**  
Material ..... Molded ABS  
Size ..... 16" x 6" x 4"  
Lock ..... Key activated  
**PROGRAMMABLE TIMER/CONTROL:**  
Program duration ..... 7 days  
Max. # of events ..... 8 on/8 off per day  
Min. time "on" ..... 1 min.  
Min. time "off" ..... 1 min.  
Display ..... LCD

\* Batteries not included with the system as delivered.

**NOTE:** Using a total of 40 running (pumping) hours, create a schedule for servicing the unit and changing the batteries. Maintaining the power source this way will help to provide the proper dosing by providing a more consistent pumping rate. **USE ONLY ALKALINE BATTERIES. CAUTION: ALWAYS TURN THE MODE SWITCH TO THE "O" POSITION (OFF) BEFORE CHANGING ANY BATTERIES.**

**Tube Selection Guide:**

TUBE	DRAIN TREATMENT TYPE
Viton	Solvents, Acids
Norprene	Bacterias, Enzymes, Detergents

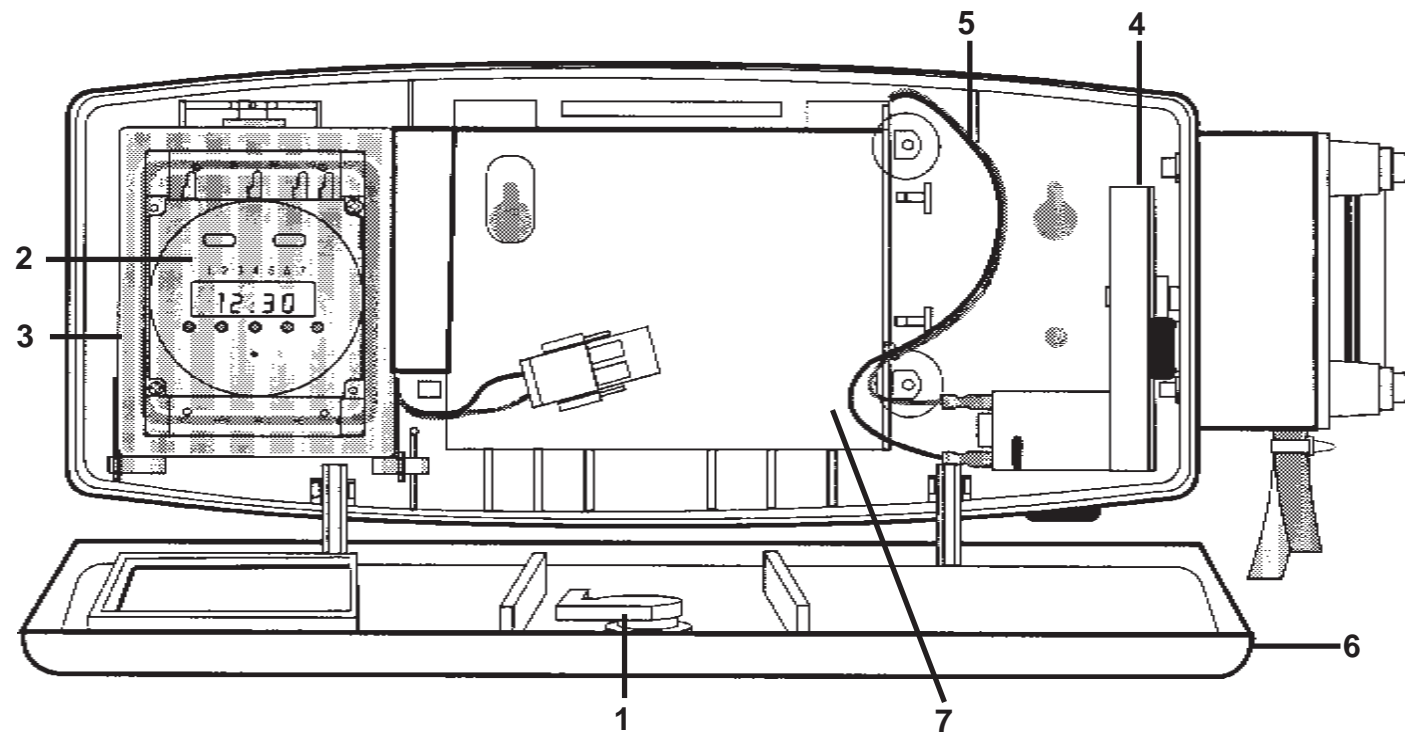
Tube life will vary depending on the type of drain treatment product used. To prevent emergency service, schedule replacement at least once per year.



Proportioning & Dispensing Systems

**Hydro Systems Company**  
3798 Round Bottom Road  
Cincinnati, OH 45244  
Phone: 513-271-8800  
Fax: 513-271-0160

## SYSTEM DIAGRAM AND PARTS LIST

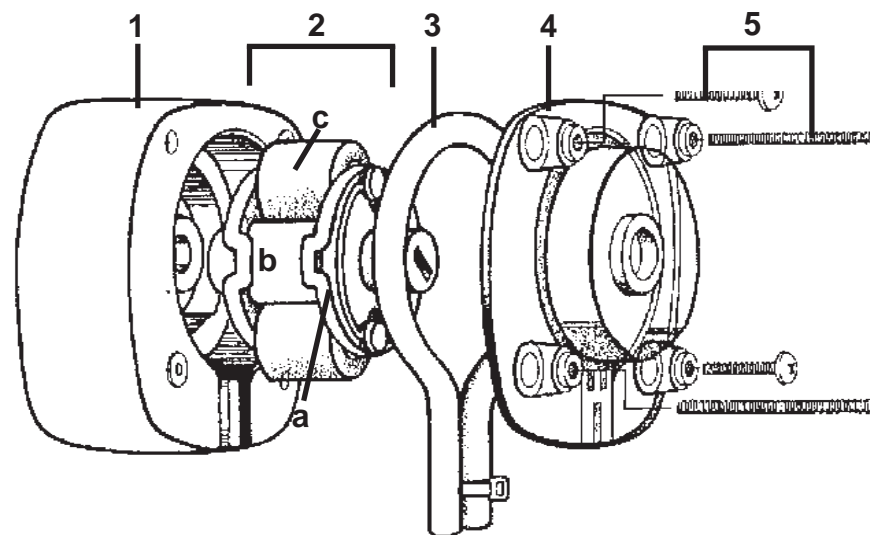


Key	Part #	Description
1	10069135	Lock replacement kit
2	10069136	Timer replacement kit
3	10069103	Timer cover (clear)
4	10006103	Motor/gearbox
5	10069108	Wire harness*
6	10069137	Door with lock
7	10069138	Inner body with wiring

NOT SHOWN:		
10016401	Tube connector barb kit	
10016201	Drum tube kit -- Norprene	
10016202	" " " -- Viton	
10012301	Polyethylene tubing -- 1/4" O.D. x 20 ft.	
Complete pump kits:**		
10016807	4cc Norprene	
10016808	4cc Viton	
10016500	Cable ties (25)	
10069110	AC adaptor	
10069109	"D" cell battery holder	

\* Black wire goes to motor terminal that is marked with a red dot.

## PUMP DIAGRAM AND PARTS LIST



Key	Part #	Description
1	10006700	Pump body
2	10011702	Rotor assembly a. wire spring b. rotor core c. roller with axle
3*		Tubing: 4 cc with grease & cable ties Viton (optional)
	10016008	Viton (optional)
	10016007	Norprene (standard)
4	10006601	Pump cover
5		Screws:
	10005201	short
	10005202	long

\* If changing pump tube material, use same material for securing drum tube: Securing pieces are: Viton -- 10006302, Norprene -- 10006206 (2 each required).

- Open the cabinet and remove the black plug in the bottom of the cabinet under the motor.
- Feed the white plug on the adaptor up through the hole in the bottom of the cabinet and connect it to the mating plug below the timer box. **Note: The plugs are keyed so that they only go together one way.**
- There is a split in the black plug removed from the cabinet. Place the wires to the adaptor through this split. Put the plug back into the cabinet. (Put the back edge in first, then press the front end into the cabinet.)
- Plug the adaptor into a standard 110-volt outlet. Route the wire so that it is out of the way of traffic. (Wires left hanging loose may be a tripping hazard, or may accidentally cause the adaptor to become unplugged.)

### MODELS 1080 & 1085 ("D" CELLS)

- (8) alkaline "D" size (UM-1) batteries are required.
  - Place the batteries as indicated in the battery holder supplied.
  - Open the front of the cabinet.
  - Attach the plug on the battery holder to the white plug below the timer box. **Note: The plugs are keyed so that they only go together one way.**
  - Using a battery life of 40 running hours, determine when to replace the batteries. Write a safe replacement date on the label supplied and place it on the outside of the dispenser. (Using pencil allows changing the replacement date each time.)
  - When replacing the batteries**, slide the mode (left) switch to the "O" (off) position before changing the batteries. Unplug the battery holder from the unit. There are tabs on both sides of the plug that hold the plugs together. Squeeze both tabs to release the plugs. After the new batteries are in place and the holder is plugged in, slide the mode switch to the "I" (on) position to be sure power is supplied to the pump motor. Be sure that the mode switch is returned to the center position so that the system runs according to the program.
- Prime the pump by placing the mode switch to the left (I) position. run the pump until treatment product has filled all tubing and has just begun to be discharged.

### Determining the proper dosage/setting for your application:

The dispenser has a 3.5-ounce per minute average flow rate. New batteries will produce a dispense rate of a little more than 3.5 ounces per minute. After the first few running hours, the dispense rate will be approximately 3.5 ounces per minute and remain close to that for the balance of the practical battery life (40 total running hours). The minimum dispensing time is one minute. (If a minimum dispense of less than 3.5 ounces is desired, inquire about smaller capacity tubes.)

- See the instructions for the treatment product to determine how much should be dispensed in each dose. Using the fact that each minute the pump runs doses 3.5 ounces of treatment, determine how long each dosing period should be. For example, if the treatment instructions call for 6 ounces to be dosed each time, program the timer to run for two minutes (an approximate 7 ounce dose). Always round to the next highest full minute in this determination.
- See the instructions for the treatment product to determine when the dosing is to occur. Program the timer to dispense at the appropriate times. Set the timer so that the pump runs for the required number of minutes to dose as determined in step 1 above.

### Programming the Timer:

The timer allows up to 8 different programmed (timed) periods. A timed period can occur on just one day of the week or it can be set to occur on one of several groups of days. The available groups of days (with day 1 being Monday) are:

- > 1, 2, 3, 4, 5 (Monday through Friday only),
- > 6, 7 (Saturday and Sunday only)
- > 1, 2, 3, 4, 5, 6 (every day but Sunday),
- > 1, 2, 3, 4, 5, 6, 7 (every day of the week).

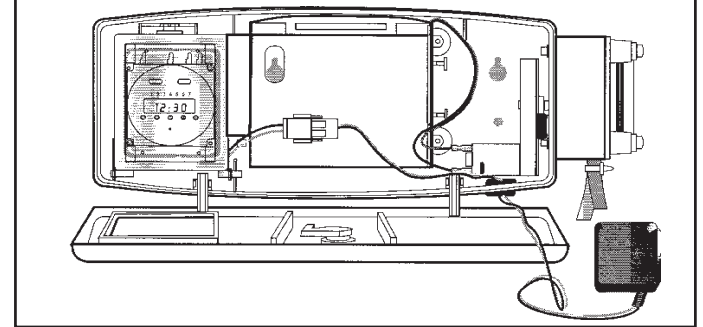
The programmer is controlled by two switches. The left side switch controls the MODE, and the right switch is used to SET the timer. In normal operation, both switches are in their center positions. When the "R" (reset) button at the bottom of the timer is pushed, the time and all programs will be erased. The display will flash 0:00 and a small triangle under the "7".

**To Set Current Time and Day:** (See timer diagram, next page. THIS MUST BE DONE BEFORE PROGRAMMING.)

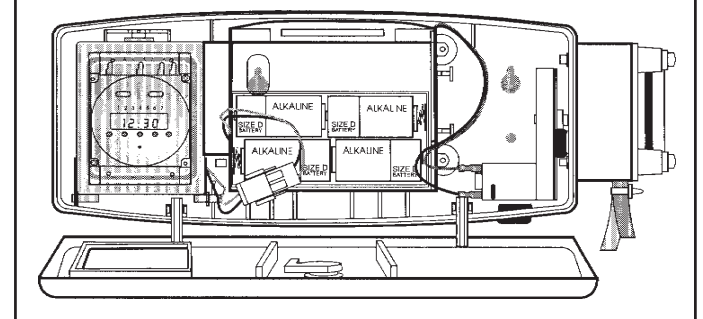
- Place SET (right) switch in the left position, as the face of the timer is viewed.
- Press "h" until the correct hour of the day is shown. (There is a "P" before the time to indicate p.m.) Likewise, press "m" to display the correct minutes.
- Press "1 . . . 7" to advance the indicating triangle at the top of the display to point to the current day of the week.

(continued, next page)

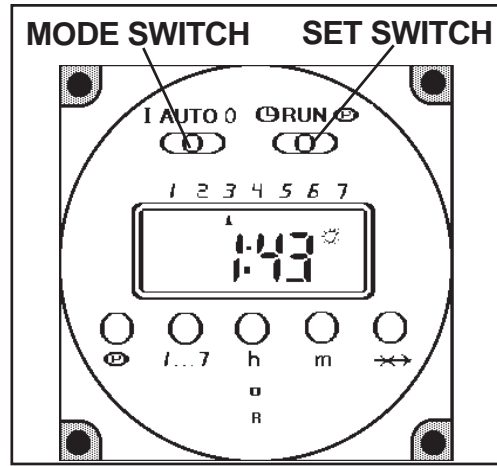
### AC ADAPTOR INSTALLATION



### D-CELL BATTERY INSTALLATION



- Return SET to the middle (RUN) position. Note that the display was frozen during the setting process, but that the internal clock kept track of the time elapsed since the switches were moved so the time of day is preserved during the setting operation.



**To Program: SET CURRENT TIME AND DAY FIRST!** (See page 3.)

- Place SET to the right (P) position. The display shows event 1. This is a “turn on” event, signified by the light bulb in the display. The time will be blank if the programmer has been reset (R). Set the hours (h) and minutes (m) of this event.
- By pressing “1 . . . 7”, select the day(s) this event is to occur. The display starts with day 7 (Sunday), then progresses to 1 through 6. After day 6, the display goes through the groups of days available. Pressing the “1 ... 7” button after the groups of days will leave the days blank. This can be used to remove an event that is not needed. **If no days are selected for an event, the event will not happen.**
- When the display is correct, press “P”. This enters the data for the event 1 and moves the display to event 2. This is a “turn off” event, so the light bulb symbol is now absent. Event 2 should be set to be the “off” event corresponding to the “on” of event 1. Make sure the day (or group of days) is the same as selected for event 1.
- Complete the desired remaining events. Note that “on” events are odd numbered and “off” events are even numbered. If an undesired display is inadvertently created (such as displaying 9:00 instead of 8:00), continue to press the control for the feature you wish to change: it will go through its list of available choices and return to the start of its sequence. The 16 possible program events can be indexed by pressing “P”. Return SET to the RUN (center) position so that the pump runs according to program. If the pump starts running when both switches are in the middle but your program does not call for it to be running, review the programs. Pay close attention to a.m./p.m. times and days the events are to happen.
- To remove an event:** Slide the SET (right) switch to the right (“P”). Use the “P” button to move to the event you want to remove. Use the “1 ... 7” button to remove the days for this event to happen. (After displaying the groups of days, one more pressing of the button will remove all the triangles under the day numbers.) Be sure to remove both the “on” and “off” events.
- To review a program:** Slide the SET (right) switch to the right. The first event will be displayed. The rest of the events can be displayed by pressing the “P” button in the lower left corner of the timer. When you are finished reviewing the program, be sure to slide the SET switch back to the center so that the dispenser will run according to the program. Reviewing programs does not change the settings, but you can change the program while you are reviewing it by using the “1 ... 7”, “h” and “m” buttons. If you are reviewing a program when a programmed “on” event should take place, the motor will not start until you switch the unit back to automatic. In the case of an “off” event, the dispenser will not stop until you switch the timer back to automatic mode.
- To change a program:** Changing the time or program during an “on” period may cause the unit to malfunction. To change the time or program, review the program first to be sure you will be finished before the next “on” period begins. Slide the SET switch to the right. Press the “P” button until the event you want to change is displayed. Change the event by pressing the “h”, “m” or “1 . . . 7” buttons to display the desired event. Any or all the events can be changed at one time.
- If the unit is to be shipped after it is programmed,** be sure to slide the mode (left) switch to the “O” position and remove batteries (Models 1060, 1065, 1080 and 1085), along with the battery holder (models 1080 & 1085), for shipping.

#### Skip Function:

The program for any next day can be skipped by pressing the  $\rightarrow$  button at the lower right. This also causes the  $\rightarrow$  symbol to appear in the display. When the next day begins, at midnight, the  $\rightarrow$  symbol will disappear from the display, and during the 24-hour period where the skip is in force, the day-indicating triangle will be flashing. The skip decision can be overridden before the “skip” day begins by pressing the  $\rightarrow$  button again. These commands must be entered with the switches in the center positions.

#### Manual Operation (Priming):

The pump can be turned on by moving the left (MODE) switch to its left (I) position. The light bulb symbol appears in the display. Run the system until treatment product fills all the tubing and has just begun to be discharged. When the MODE switch is placed in its right (O) position, the controller is off, and the pump will not run. This will not affect the programmed time period settings or the clock timer. **NOTE:** If the unit is being primed and a programmed period begins, the unit will continue to run when the mode switch is returned to the center position. The motor will stop after the period times out. Remember to return the timer to the automatic mode if you wish the pump to run according to the programmed event schedule. Prime the system during installation and when the chemical or pump tube is changed.

**REMEMBER: PUSHING RESET DISCARDS THE ENTIRE PROGRAM AND TIME, MAKING THE PROGRAMMER READY TO ACCEPT NEW SETTINGS. AFTER RESET IS PUSHED, ENTER THE NEW PROGRAM AS DESCRIBED ON THE PRECEDING PAGES. TIME OF DAY MUST BE SET BEFORE EVENTS CAN BE PROGRAMMED OR PUMP RUN FOR PRIMING**

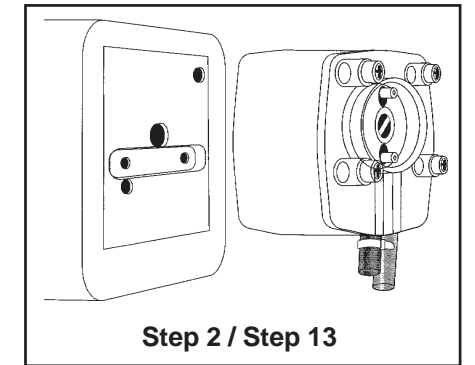
#### NOTE:

Assure that programmer is in automatic mode (both switches in center positions) to operate according to the programmed schedule. Check the set-up 7-10 days after installation to insure proper set-up/operation of the unit.

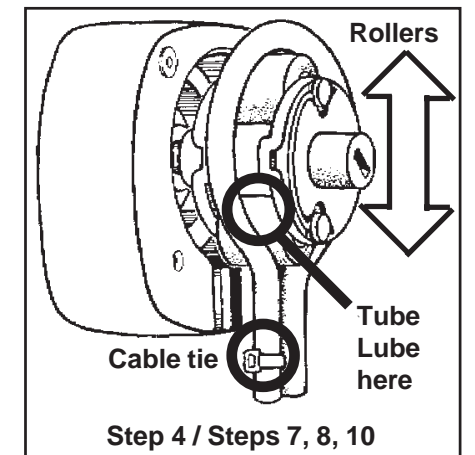
#### Changing the pump tubing:

You may want to work over old newspapers or other discardable material to protect floors or other areas from the possibility of spilled drain treatment. Be sure the MODE switch (left side of timer) is OFF (O — to the right). Refer to the diagrams on the next page for illustration of selected steps.

- Cut cable ties which secure the supply and discharge tubing barbs to the tube stems on the pump. Remove the barbs from the pump tubing ends (tube stems). Hold the tubes so that the drain treatment does not drip from the tubes. Lay aside the supply and discharge tubing.
- Remove long screws (lower left and upper right) from the face of the pump. Remove pump from system cabinet.
- Remove two remaining (short) screws. Lift the clear pump cover from the pump and lay it aside.
- Turn the rotor assembly so that the rollers are in a vertical alignment (one above the other). Pull gently but firmly until the rotor assembly is dislodged from the pump housing.
- Remove old tubing and discard it. If drain treatment leaks on pump housing, it can be washed in soapy water. If the rotor assembly has been wetted, wipe it with a dry cloth. It is not necessary to wipe the grease from the pump housing if the grease is clean. While the pump is disassembled, inspect all parts for foreign matter and clean the parts as required. Be sure the rollers turn freely. If the rotor needs service, replace the entire rotor.
- Put a dab of Tube Lube on each end of the rotor assembly shaft (bearings).
- Position the pump housing so that the tube exit channels are toward you.
- Bend the new tube in half over one of the rollers in the rotor assembly. Place this roller with the tube into the top of the pump housing (farthest away from you). Press the other roller into the bottom of the housing (closest to you).
- Push each end of the tube into the exit channels. A small amount of Tube Lube in each channel will help. **Be sure the tube is not at all twisted when you do this.** Twist in the tube may prevent pumping.
- Place a dab of Tube Lube on the lower roller as shown. Further lubing during operation is not needed.
- Replace the clear cover and install the two short screws into the brass inserts in the pump body.
- Put a cable tie on the inlet tube stem (left side as viewed from front) just below the pump housing. This will prevent the tubing from “walking” through the pump as the pump operates.
- Reinstall the pump on the motor shaft extending from the system cabinet and replace the two long screws.
- Re-attach the supply and discharge tubing along with the barbed fittings. Secure the barbs with cable ties around the pump tube stems.
- Prime the unit: Slide the MODE (left) switch to the left (I) position. Make sure the pump is turning freely.
- Return the pump control to automatic by setting MODE switch to center position (under clock).



Step 2 / Step 13



Step 4 / Steps 7, 8, 10

#### Troubleshooting:

##### UNIT IS NOT PUMPING FLUID:

Is the motor turning?

- |     |   |
|-----|---|
| YES | > check level of drain treatment supply.  |
|     | > check for air leaks in the supply tubing connection to pump tube stems.                   |
|     | > check for clogs in inlet and outlet tubes.  |
|     | > insure pump tube is not at all twisted.   |
|     | > check pump tube. As it wears out, the amount of fluid pumped decreases. Change tube.      |
| NO  | > insure timer is functioning: Try to run pump from manual mode.                            |
|     | > check program: Be sure timer is in auto mode for auto dispensing.                         |
|     | > check to insure wires from the electronic control to the motor are secure.                |
|     | > insure that wire from batteries to electronic control are secure.                         |
|     | > check batteries: try new ones. <b>BE SURE TIMER IS OFF</b> before changing the batteries. |
|     | > remove the pump to see if pump is binding the motor (run motor manually — see page 3).    |

##### UNIT IS PUMPING TOO MUCH FLUID:

Is the tubing the proper ID for your application?

- |     |  |
|-----|--|
| NO  | >replace tubing with proper size.  |
| YES | >check program to insure the required duration.  |
|     | >insure timer is turning on and off at set times.                                      |
|     | >remember that fresh batteries will result in a slightly higher than average dispense. |

##### TIMER IS “LOCKED UP” (does not respond to buttons pressed):

Press reset (“R”). Reprogram timer. Pushing reset removes time of day. Time of day must be entered before control can be reprogrammed.