

DRAIN GUARD III - INTRODUCTION

The Drain Guard III is a microprocessor controlled dispenser which can be programmed to operate a pump at any time during the day or night. The unit requires 12 VDC or 24 VAC for operation, which is provided from alkaline lantern batteries or a step-down transformer respectively.

The unit uses a MT-300 control capable of programming up to 20 separate run events per day, and the pump can run for up to 16 minutes for each event.

The MT-300 circuit board has a security feature to prevent accidental, or unauthorized programming changes once the unit has been programmed. An "onboard" battery (with 5-year life) keeps the current time setting in the event of main power loss, and non-volatile memory saves all programmed information.

DRAIN GUARD III - INSTALLATION

- (1) Mount the unit on a wall using the supplied mounting bracket and hardware. Mount the unit in a convenient location near both injection point and chemical supply. CAUTION: Do not mount the unit in direct path of steam. This can short circuit and permanently damage your system.
- (2) Connect batteries or power wires and all electrical wiring as shown in the attached wiring diagram and per local electrical codes. Failure to do so will void warranty.
- (3) Install poly tubing between the discharge (right) tube side of the peristaltic pump and the injection point. Use tie wraps to secure flow tubing to squeeze tube. Be sure to draw the tubing through the end of the pickup tube.
- (4) To fill the suction and discharge tubing connected to the pump, depress the "PRIME 1" switch on the front cover of the system. The pump will run as long as the switch is depressed.

HOW TO EASILY CALCULATE PUMP RUN TIMES

- (1) Decide number of ounces (volume) of product required.
- (2) Pump 30 seconds of product into a measuring cup and calculate: $\text{Ounces/Second} = \text{Ounces Measured} \div 30 \text{ seconds}$.
- (3) Time to be programmed for the amount of product: $\text{Time (Seconds)} = \text{Ounces Required} \div \text{Ounces/Seconds}$.

Example:

Volume Required is 10 Ounces.

Let's say that 6 ounces of product is pumped in 30 seconds. The resulting flow rate would be 0.2 ounces/second (using the calculation previously mentioned in step 2 which would be $6 \div 30$ in this example).

Therefore, the pump run time to be programmed will be 50 seconds (using the calculation previously mentioned in step 3 which would be $10 \div 0.2$ in this example).

MT-300 OPERATION

It is a continuous 24-hour clock that turns on pumps at programmed times during the day. During programming, or after programming, if a button is not pushed within 2 minutes, the display will disappear and the control will return to operating mode.

There are up to 20 pump events ("on times") per day available.

BUTTON FUNCTIONS

PRGM:	Steps you through the setup program. Hold the button down to go faster.
PRIME 1 (↕):	Primes pump when not programming. Advances numbers when programming.
PRIME 2 (↑):	Advances numbers when programming.
SET:	Not used.

SECURITY FEATURE - REMOVE JUMPER JP1 TO PROGRAM

To prevent unauthorized tampering with the program, the events and time/day setting can be "secured" by placing a jumper on the JP1 pins on the back of the board. The jumper acts like a lock and key: When the MT-300 is secured (jumper on) the display will show "SECU" if the PRGM button is pressed. The PRIME button will still allow the pump to be primed, and the time of day clock will display while priming. Removing the jumper allows the MT-300 to be programmed or to change the time of day clock. Replace jumper when done programming to secure the system.

HOW TO SET THE SYSTEM

- (1) Remove the Security Jumper to program.
- (2) Press the PRGM button - set the clock to the current time of day. Use ↑/↓ to set the clock (note AM/PM).
- (3) Press PRGM button - PE 1 will be displayed. PE = Pump Events ("on times") needed per day. Use ↑/↓ to set the number of pump events per day that are required.
NOTE: The system will activate only the number of pump events indicated by the PE #.
- (4) Press PRGM button again - E 1 will be displayed indicating that you are going to program the first event.
- (5) Press PRGM button again - pump start time will be displayed. Use ↑/↓ to set the pump start time (note AM/PM).
- (6) Press PRGM button again - pump run time will be displayed. Use ↑/↓ to set the pump run time (min:sec).
- (7) a) Press PRGM button again - E 2 will be displayed if you selected more than 1 pump events (PE) per day. Program all pump events the same as the instruction in steps 4 & 5.
b) After all pump events are programmed, pressing the PRGM button will return you to the clock.
- (8) To review your pump programming, press the PRGM button and slowly step through the program. Make changes as necessary referring to the above instructions.
- (9) To prevent tampering, replace the Security Jumper.

* NOTE: If you get lost in the program, press the PRGM button until you return to the blank display. Follow the instructions above.

* TIP: If you hold down any of the programming buttons for 2 seconds the numbers will scroll much faster.

WIRING DIAGRAM - DRAIN GUARD III

