## PROGRAMMING LOIS FOR MULTIPLE MIST SIGNALS

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A light operated interval switch (LOIS)* produces a signal designed to control mist applications during plant propagation. This signal is so well correlated with water loss that it can keep a uniformly moist condition from a light haze to a heavy drip. (See Connecticut Greenhouse Newsletter No. 65.)

This signal can be programmed to provide a variety of frequencies and durations that will be appropriate for nearly any situation. This will allow you to select a setting for newly stuck cuttings that require frequent misting and another for those that are nearly rooted and require only a little mist. Therefore, one basic signal can be programmed to provide variations in mist frequency and duration without changing the basic LOIS setting (6 seconds of mist every 4-6 minutes during intense light).

To provide 3 mist options, a 3-gang multiple cam timer (30 seconds) is wired as in Figure 1. The first cam is activated by two signals from LOIS and the timer then completes a cycle. Cams 2 and 3 are set to give signals of different durations at half the frequency of the LOIS SIGNAL.

Therefore, cam 1 is set to require 8 to 10 seconds of activation (assuming a 6 second LOIS signal). Cam

*Commercially sold as "Solatrol"

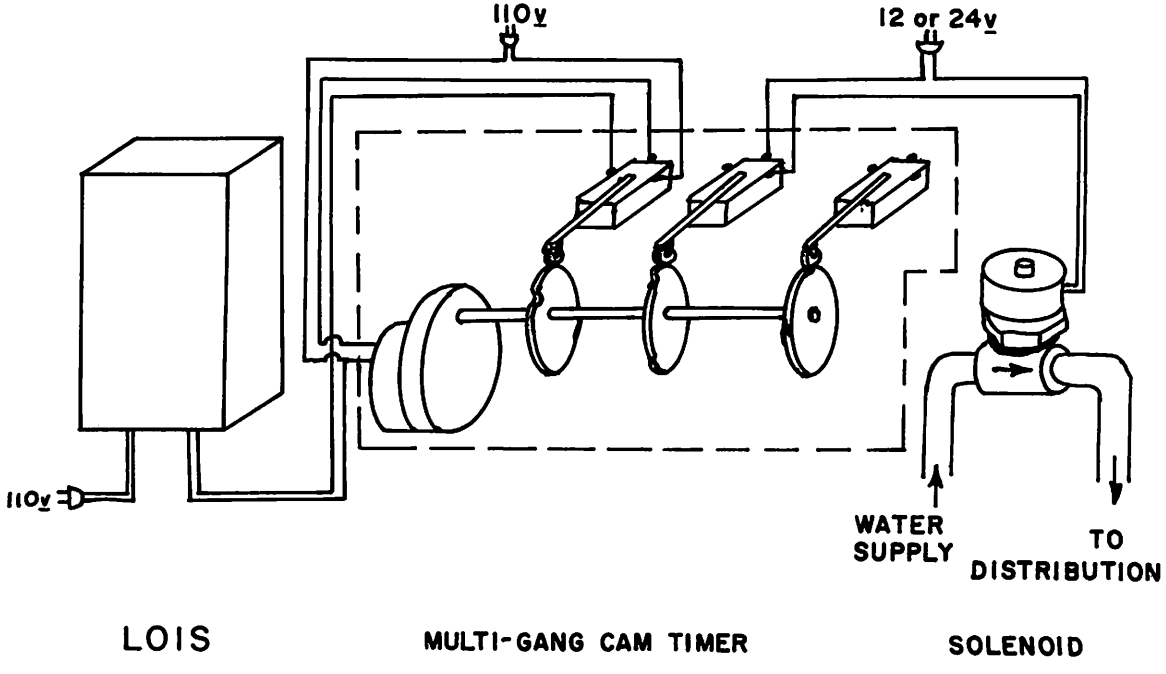


Figure 1. A multiple cam timer programmed to gradually reduce mist during propagation as the cuttings form roots.

2 may give a 9 second signal, cam 3 a 5 second signal. This results in a 12 second (two sixes), a 9 second and a 5 second signal to provide decreasing amounts of mist as the cuttings form roots (Table 1).

Table 1. Mist frequency/duration chart from 3-gang program timer.

| Signal from | Time of signal | Duration of mist signal Zone 1 | Zone 2 | Zone 3 |
|---|---|---|---|---|
| LOIS | 1:00, 0 sec. | 6 sec. | | |
| LOIS | 1:06, 0 sec. | 6 sec. | | |
| CAM 2 | 1:06, 13 sec. | | 9 sec. | |
| CAM 3 | 1:06, 23 sec. | | | 5 sec. |
| LOIS | 1:12, 0 sec. | 6 sec. | | |
| LOIS | 1:18, 0 sec. | 6 sec. | | |
| CAM 1 | 1:18, 13 sec. | | 9 sec. | |
| CAM 2 | 1:18, 23 sec. | | | 5 sec. |
| LOIS | 1:24, 0 sec. | 6 sec. | | |
| Repeat etc. | | | | |

One convenient way to design this system is to use an outlet box for four plugs. The first plug is wired to the LOIS signal, the second to cam 2, the third to cam 3 and the fourth to the power source for use in testing the mist line or for soaking.

All wiring should be properly installed in conduit if using 120 volt solenoid water valves. A safer system can be installed using 12 or 24 volt solenoids. A relay switch corrects the LOIS signal to a low voltage transformer for outlet 1. The low voltage current is connected to the switches on cams 2 and 3. If long distances separate propagation areas, it is possible to use a common ground wire so that only 5 wires are required for the 4 signals.