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INSTRUCTIONS

GARDCO DISTRIBUTED PRODUCTS



HOT POT GEL TIMER

SERIAL NO. _____

INSTRUCTIONS

1. Insert dial thermometer in well in front of Hot Pot.
2. Connect Hot Pot cord to 110V AC outlet with UL approved grounded connection.
3. Turn on heater with switch in front of unit.
4. Adjust thermostat control knob to attain desired temperature. Full scale is approximately 350°F. Pilot light will turn off when heat level is reached.
5. Insert aluminum cup liner in Hot Pot well, carefully pushing it all the way down to make good contact.

NOTE: Hot Pot can be used without aluminum cup insert as it is lined with Teflon. However, some delay may result in performing tests as it is difficult to remove samples that are gelled but not completely cured. If pot is used without liner cup, we suggest that a high temperature mold release such as silicone or fluorocarbon be applied with each use. Although the Teflon lining is durable, sharp tools used to remove stuck particles will damage the surface.

6. Mix test sample (90-110 cc) thoroughly before pouring into Hot Pot cup.
7. Insert wire stirrer, placing hook in drive shaft hole.
8. Set clock-counter to zero. Reset button is on right side of clock-counter.
9. Start timer with toggle switch on right of instrument face. Pilot light will light.
10. The Gel Timer is designed to run until the viscosity of the resin increases to a point where the drag exceeds the torque of the motor. The motor then stalls, stopping the clock-counter and activating a flashing red light which signals the end of the test. When the switch is turned off the light will stop flashing, but the gel time will continue to be displayed on the clock-timer until the reset button is actuated. The motor can remain stalled for several days without harm.
11. Shut off heater switch when test is completed.



The manufacturer of the Shyodu Gel Timer series has issued the following updated statement regarding the specifications and calibration test procedures for their line of instruments:

The SHYODU GEL TIMER works on the principle that the stirrer drive motor stops when the gel state of the material under test puts a torque load on the stirrer in excess of the motor torque. The torque is consistent as long as the electric current supply is maintained (115V-60 Hz or 20V - 50 Hz).

The counter is geared to the motor and stops when the motor stops. (See comments on new timer designs, noted below.) There is no adjustment of the synchronous motor torque as it is built into the motor by the manufacturer and will only run at a speed controlled by the frequency (Hz) of the electric current supply.

The torque tolerance for our acceptance of the motor is:

Minimum 0.80 inch ounces (577 mm grams)

Maximum 1.005 inch ounces (760 mm grams)

The lower value is checked on each motor and is accomplished by the motor with drive shaft (3/8" dia) lifting a 120 gram weight via a thread wrapped around the shaft. Motors too weak for this test are discarded. Motors lifting 150 grams are too strong, but can be adjusted for lower torque.

In our new timers, we still use the synchronous motor, but we sense the time via a crystal controlled digital timer coupled optically to the motor and circuited so that the timer stops only when the motor stops. Then this timer always reads real time regardless of the length of cure.

Consistency of test results is probably more influenced by the temperature of the resins, the resin/hardener ratio, the total amount of material for the test, than by the variability of the gel timer.

Our STABLETEMP HOT POT incorporates an electronic proportioning control which regulates the temperature that is set with virtually no drift or variation.

Gerald D. Shook Pres.
Shyodu Instrument Corp