

ROBINSON MANUFACTURING COMPANY INC.
Recommended
Installation and Operating Instructions

Robinson Centrifuge Model 930

The model 930 is an electrically heated centrifuge that operates on 120 volts AC. It is equipped with operator controlled display, with LED temperature read out, electronic tachometer with LCD readout that shows actual motor speed, variable speed motor control for slow smooth start, motor run timer with LCD readout, power on indicator lamps for the motor and the heaters. The motor will not operate when the lid is open and the lid can not be opened while the motor is running. It is also equipped with two separate switches. The switch on the left is the power on for the motor and the switch on the right is the power on for the heaters.

The timer and temperature controller have been pre-set, the timer to 11 minutes and the temperature controller to 145 degrees Fahrenheit. Both the timer and temperature controller can be changed. The ASTM D4007 laboratory procedures calls for the sample to be centrifuged for 10 minutes with a minimum relative centrifugal force (rcf) of 600 and maintain the temperature of the sample during the entire centrifuging procedure to 140 degrees Fahrenheit, plus/minus 5 degrees F. The timer has been set to 11 minutes to assure that the sample has a full 10 minutes of centrifuging. The time period can be changed by following the attached instructions. The temperature of the sample will be maintained with a temperature setting of less than 145 degrees. The temperature setting can be changed by the up and down buttons on the controller. The maximum temperature the controller can be set at is 160 degrees. It is recommended that the temperature setting be set at the lowest temperature that will maintain the sample temperature as required.

1. Set the centrifuge on a level surface near a 120 volt ac outlet. The temperature of the bottom of the centrifuge when the heaters are in operation can reach approximately 130 degrees. This should be taken into consideration with regards to your particular table top.
2. Plug the power cord into a 120 volt ac outlet.
3. Switch the bowl heaters on (right side) and the power "on" indicator lamp for the heaters will light up. Depending on the ambient temperature this should be done 15 to 20 minutes prior to centrifuging the first sample.
4. Fill the centrifuge glass tubes per specification and heat.
5. Place the heated samples into the centrifuge aluminum shields. Always be sure to place the samples on opposite sides of the centrifuge head to establish a balanced condition.
6. Close the centrifuge lid.

7. Switch the motor power switch on (left side) and the power “on” indicator lamp will light up.
8. The timer must be actuated to begin the centrifuge cycle. This is done by depressing the “R” key to start the timer.
9. Slowly turn the motor speed control knob clock-wise to the full open position.
 ** We recommend that the centrifuge is operated at full speed.
10. Allow the sample to be centrifuged to specifications. The motor will stop at the completion of the cycle. The lid can not be open during the centrifuge cycle and until the control knob is returned to the off position. Turn the control knob counter clock-wise to the “off” position.
11. The centrifuge should come to a complete stop within 30 seconds from the time the motor goes off.
12. Remove the centrifuged samples.
13. Keep the centrifuge lid closed when not in operation to reduce heat loss and to maintain a stable temperature.
14. When the centrifuge is not being used turn the heaters off. This will extend the life of the heaters.

Relative Centrifugal Force
 Calculations for the 6” short cone tube

RPM's	RCF's
1600	600
1700	678
1800	761
1900	848
2000	940
2100	1036

Program the time cycle.
After the timer is installed in the panel.

1. Press the down key. The letter "P" will appear on the left most column and be flashing. The six columns to the right will be zeros.
2. Press the "R" key.
3. The left most digit will start flashing. Continue to press the "R" key until the third digit from the right begins to flash.
4. Press the down key, the figure 9 will appear. Continue to press the down key until the number "1" appears.
5. Press the "R" key to go to the second column. The zero will be flashing.
6. Press the down key, the figure 9 will appear. Continue to press the down key until the number one (1) appears.
7. Press the "R" key again to go to the first column. The zero will be flashing.
8. Press the "R" key again. The flashing will stop and the time has been set to 11 minutes.
9. The "P" will remain and the time will be set.
10. Press the down key. "M" and two zeros will appear on the display.

Activate the Timer

Press the "R" key and the timing cycle will begin.