

**SORVALL Legend T/RT Centrifuge**  
**Instrument Instructions**  
Updated November 14, 2017  
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**\*\*NOTE\*\*--This is a high speed centrifuge that can be easily damaged. Please use with care and caution.**

1. Choose the correct rotor, centrifuge tubes, and settings for your application.
2. OPEN the centrifuge lid by pressing the “open lid” key.
  - a. If “Lift lid” appears, lift it slightly by hand.
  - b. Install the rotor of choice
  - c. **If you need help installing the rotor, or have any other questions, please see Celeste or Professor Vasudevan.**
3. Once the correct rotor for your application is in place, turn Power On. The settings on the display are what were last used.
4. **Program the desired parameters:**
  - a. For swinging bucket rotors, press the bucket selection key until the correct bucket appears.
  - b. Once the power is turned on, the speed display is set. Use the speed mode selection key (up/down arrow) to switch between rpm and RCF display.
  - c. **Speed** is adjusted in increments of 10rpm. Use the “set” keys ▲ or ▼ to adjust the speed.
    - i. For **FIXED ROTOR**:
      1. The speed limit is 6000 for 15ml tubes (set to Max. of 5000rpm)
      2. The speed limit is 9000 for 50ml tubes (set to Max. of 7500rpm)
    - ii. For **SWINGING BUCKET**:
      1. Use Max. of 3500rpm
  - d. Once the centrifuge has started, the rotor is identified and the current RCF value is displayed. The RCF set point can be adjusted in steps of 1 if necessary.
  - e. **Run Time:**
    - i. **Standard Mode:** 1 min. to 9 hours 59min
    - ii. **Extended Mode:** 1 min. to 99 hours
    - iii. In the “run time” section of the control panel, press the ▲ ▼ keys to adjust. (0.01 for 1 min. and 9.00 for 9 hours)
  - f. To set to continuous mode, press the ▼ key until the display reads “hLd” The centrifuge will keep running until manually stopped ■.

- g. For extended time mode, to switch on or off, press the program selection key, “1” and start the centrifuge simultaneously. Pressing the ▲ key can switch between standard and extended time when in the “t-set” menu.
- h. Set **Acceleration** and **Deceleration** to 6 and 5 respectively by pressing the “set” keys ▲ ▼.
- i. Setting **Temperature**: use the ▲ ▼ keys to raise or lower the temp. by 1°C. By using the ☀ key, you can preset the temp.

#### 5. Loading the Rotors:

- a. Make sure you are using the correct centrifuge tubes for the rotor you need. The tubes are rated for a maximum RCF value.
- b. Overloading the rotor can result in damage. Please ask if you feel you may have exceeded the maximum permissible load. If using adapters, they will add to the total weight.
- c. If maximum permissible load is exceeded, you must either reduce the sample volume or calculate the permissible speed using the following formula:
  - i. **Formula:**  $\text{Permissible Speed} = \text{Maximum Speed} \times \frac{\text{Maximum Permissible Load}}{\text{Actual Load}}$

#### 6. Inserting the Centrifuge Tubes:

- a. **Fixed-Angle Rotors** and **Swinging Bucket Rotors** must be loaded symmetrically, so as not to cause damage. Refer to Figures 1 and 2.
- b. **It is crucial that the tubes are balanced in both position and weight.**

#### 7. Starting the Centrifuge:

- a. After samples are properly placed, secure the lid of the fixed angle rotor using the hex wrench.
- b. Close the centrifuge lid by slightly pressing down on front part of lid. Locking is motor-driven.
- c. Press the “start” key ► in the control panel. You cannot open the lid during the run.
- d. If rotor is not balanced properly, after the rotor reaches 300rpm, the message “bAL” will appear in the speed display. The run will automatically terminate and you may restart after reloading the rotor to correct the imbalance.
- e. The parameters can be changed during a run by pressing any “set” key.

#### 8. Stopping the Centrifuge:

- a. When the run is done, as pre-set, the speed display will read “End”
- b. You can also manually stop the centrifuge at any time by pressing the “Stop” ■ key.

- c. When run is stopped, open the lid by pressing the “open lid” key. You may need to manually lift the lid if it has not been fully lifted out of the lid lock.
- d. Remove the lid to the rotor using the hex wrench. Place the removed lid on the bench as a safe practice.
- e. Remove your samples.
- f. Wipe off any condensation that appears.
- g. Secure the lid to the fixed angle rotor---NEVER LEAVE THE LID ON THE ROTOR WITHOUT SECURING IT CLOSED WITH THE HEX WRENCH.
- h. Turn off the centrifuge (switch on right side panel) and pull down the cover.

**9. Removing the Rotor--If switching the rotor is necessary, follow these instructions:**

- a. Open the centrifuge lid.
- b. Remove the rotor cover (on applicable rotors).
- c. Unscrew the clamping sleeve counterclockwise using the socket wrench supplied with the instrument until no resistance exists.
- d. Grab the rotor with both hands and pull it perpendicularly off the drive shaft carefully. Make sure not to tilt it.