

## Beckman Ultracentrifuge Quick-Start/Refresher Instructions

***Incorrect use can destroy the instrument at a cost of ~\$100,000 and cause serious injury.***

### **Before preparing samples:**

1. Identify the rotor or conditions needed and determine if DBI has an appropriate rotor (see next page). An ultracentrifuge is only required when runs at greater than 48,000 x *g* are needed. If you need a *g*-force less than this, please use a superspeed centrifuge.
2. Make sure that you have appropriate tubes and adapters. Determine this from the page for the rotor at the Beckman website <https://www.beckmancoulter.com>. Search for the appropriate rotor and click on the Tubes & Bottles tab.
3. Identify any special considerations for a given run. For example, cesium chloride gradients cannot be run at low temperature or high speed because the salt will precipitate unbalancing the rotor and causing catastrophic failure. Special considerations include gradients, need for containment of biological materials, and the use of toxic compounds like ethidium bromide.

### **Starting a run:**

1. Prepare balanced tubes. For ultracentrifugation, tubes must be balanced to within 10 mg (0.01 g). DBI has provided an analytical balance in Rm. 169 for balancing tubes. Follow the filling requirements for the tubes you are using; some can be run partially filled, some must be completely filled.
2. Remove the rotor and buckets from the cold cabinet and inspect for wear, missing o-rings, overspeed disks, and other damage.
3. Load samples into the rotor or buckets. For swinging bucket rotors, all buckets must be placed on the rotor, even if they contain no sample. Make sure o-rings and cap threads are lubricated, buckets are correctly seated and move freely.
4. Turn on the centrifuge and slide the lid to open the chamber.
5. Seat the rotor on the spindle and slide the lid closed. Press "Vacuum" to evacuate the chamber.
6. Use the controls to set the centrifugal force, time, temperature. Press Start.
7. **FILL OUT THE LOGBOOK WITH YOUR RUN DETAILS.**
8. Stay with the centrifuge until it reaches speed.

### **Finishing a run:**

1. At the end of the run, the lid can only be opened after the rotor has stopped. Press the "Vacuum" button and wait for the chamber vacuum to be released.
2. Slide the lid open and check to see that there have been no spills or leaks. Remove the rotor and then remove your samples. If there are any spills, clean as needed. Rotor detergent and brushes are provided. **DO NOT USE METAL BRUSHES.**
3. Place the rotor back in the cold box for the next user.
4. Close the lid on the centrifuge and turn off. **NOTE THE REVOLUTION COUNTER VALUE IN THE LOGBOOK.**

If you have problems with a run or questions about using this instrument, please contact:

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**DBI Ultracentrifuge rotors**

**For Floor Model Ultracentrifuges:**

**15 Innovation Way**

SW28 Ti	Swinging bucket	6 x 38.5 mL	141,000 x g
SW55 Ti	Swinging bucket	6 x 5 mL	368,000 x g
70Ti	Fixed angle	8 x 39 mL	504,000 x g

**AP Biopharma**

SW32Ti	Fixed angle	6 x 38.5 mL	175,000 x g
SW55 Ti	Swinging bucket	6 x 5 mL	368,000 x g
70Ti	Fixed angle	8 x 39 mL	504,000 x g

**For Tabletop Ultracentrifuge:****AP Biopharma**

TLA55	Fixed angle	12 x 1.5 mL	186,000 x g
TLS55	Swinging bucket	4 x 2.2 mL	259,000 x g
TLA100	Fixed angle	20 x 0.2 mL	436,000 x g