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### Introduction

A preparative ultracentrifuge is used to isolate specific proteins/cellular structures/particles for reuse. It is considered to be a high-performance instrument that is reliable and efficient, and operates quickly and quietly. It features a variety of rotors that are suitable for a range of separation tasks used in cell biology, biochemistry, and molecular biology. A sample can be spun at a high speed until its components separate, which can then be isolated.

The ultracentrifuge is a delicate piece of equipment. Rotors on ultracentrifuge units are subject to mechanical stress that can result in rotor failure. In addition, improper loading and balancing of the rotor can cause it to break loose while spinning. For these reasons, the centrifuge must be properly used and maintained. Failure to follow SOP may not only result in the damage to the equipment and biological samples, but also cause the injury to the person who is operating it. Familiarity with the function, specifications, operation and routine operator care and maintenance is essential to the proper use of the ultracentrifuge and the safety of people.

### Associated Procedure

#### Guidelines

- ε BOOK CENTRIFUGE AND ROTOR ON CALENDAR PROVIDED
- ε OBTAIN KEY FOR CENTRIFUGE FROM RCF COORDINATOR

#### PRECHECKING

Check that the centrifuge chamber, drive spindle, and tapered mounting surface of the rotor are clean and free of scratches or burrs. Do not exceed the maximum rated speed of the rotor in use.

#### STANDARD OPERATION

Balance the loaded tubes carefully with an electronic scale and ensure they are well balanced. Avoid over filling or under filling.

Load tubes into the buckets, place bucket caps on and screw caps tight (with screwdriver depending on rotor model). If necessary, transport on a cart to the centrifuge room. RUN ROTORS WITH A FULL SET OF BUCKETS.

1. Turn on the power, open the chamber door, install the rotor and close the chamber. Press VACUUM if you want to evacuate the chamber.
2. Enter the required run conditions: SPEED, TEMP, and TIME, HOLD, or  $w^2t$ .
3. Select ACCEL and DECEL profiles if required, otherwise, the instrument will automatically select maximum acceleration and deceleration rates.
4. Press ENTER/RECALL then START. (The vacuum system is automatically activated if you did not press VACUUM earlier.
5. Press STOP to terminate a run in the HOLD mode (or to stop any run in progress.)

Runs in the timed or  $w^2t$  mode will terminate automatically when the set value is reached.

6. When the rotor has stopped, press VACUUM to vent the chamber. Then open the door and remove the rotor.

7. Leave the door open to evaporate any water after refrigerated runs and switch the power off.

8. Record the run information in log book for the rotor/ serial # used. Failure to comply will invalidate Beckman rotor

warranties.

#### REPEAT THE SAME RUN

To repeat the same run, press ENTER/RECALL then START. There is no need to re-enter the run conditions unless you need to make a change.

#### PROGRAMMED OPERATION

1. Press PROG, then use the keypad to select program number. (Or press PROG until the required program appears.)
2. Press ENTER/RECALL then START. (The vacuum system is automatically activated if you did not press VACUUM earlier.)

#### To Change a Parameter During a Programmed Run

1. Press the appropriate parameter key (for example, SPEED).
2. Use the keyboard to enter a new value.
3. Press ENTER/RECALL. Change other value in the same manner as required. The run in progress will be modified accordingly.
4. Run in the time or  $w^2t$  mode will terminate automatically when the set value is reached. When the rotor has stopped, press VACUUM to vent the chamber. Then open the door and remove the rotor.

#### DELAYED START PROGRAM

1. Press PROG. Use the keypad to enter 0 and then the number of the second program. Press ENTER/RECALL.
2. Press ENTER/RECALL then start.

#### CLEAN-UP PROCEDURE

After use, buckets, rotors and centrifuge interiors should be cleaned and/or disinfected. Clean up any biological spills immediately. Follow appropriate spill response procedures. Don't use corrosive reagents such as strong acid or base and chlorides to clean the buckets. Use cleaning detergent provided to clean rotors and buckets. Rinse buckets with 70% ethanol; wipe large buckets dry with kimwipes; invert small buckets on absorbent material and replace lids when dry.

#### TROUBLE SHOOTING

Review the owner's manual to identify and solve the problem that appears to you. Contact the RCF Coordinator if you cannot solve the problem. Never attempt to repair yourself. Centrifuge should be repaired only by the manufacturer or authorized dealer representatives.

It is the responsibility of the USER to report any damage or malfunction of this equipment to the RCF Coordinator. You are required to leave a note on the equipment describing the problem and including your name and date the problem occurred

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**Contact**

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