



Beckman Coulter Allegra X-15R Centrifuge

Bergen County Technical Schools
Stem Cell Lab



**Beckman Coulter Allegra X-15R Centrifuge Safety Sheet**

1. Samples should be handled according to good laboratory procedures and methods in order to prevent accidents.
2. The centrifuge weighs 128kg (283 lbs). Do not attempt to lift or move without assistance.
3. Do not remove any panels or cords from the instrument to avoid electrical shock.
4. Do not place containers holding liquid on or near the chamber door. If they spill, liquid may get into the centrifuge and damage electrical or mechanical components, and can cause an electrical shock.
5. The centrifuge is not designed for use with materials capable of developing flammable or explosive vapors (i.e. chloroform or ethyl alcohol). Do not centrifuge such materials.
6. Use only the rotors and accessories designed for use in the centrifuge.
7. Do not exceed the maximum rated speed of the rotor in use.
8. Never attempt to slow or stop the rotor by hand.
9. Do not lift or move the centrifuge while the rotor is spinning.
10. Never attempt to override the door interlock system while the rotor is spinning.
11. Normal operation may involve the use of solutions or test samples that are pathogenic, toxic, or radioactive. Such materials should not be used in this centrifuge, however, unless all necessary safety precautions are taken.
12. Observe all cautionary information printed on the original solution containers prior to their use.
13. Handle body fluids with care because they can transmit disease. Because spills may generate aerosols, observe proper safety precautions for aerosol containment.
14. Dispose of all waste solutions according to appropriate environmental health and safety guidelines.
15. Make sure to clean the instrument and rotors after samples are run.
16. Food and drink should not be placed on or near the instrument.

17. Built in safety features:

- a. An electromechanical door lock system prevents operator contact with spinning rotors and prevents run initiation unless the door is shut and locked.
- b. The door is locked when a run is in progress and can be opened only when the rotor is stopped and the LED next to the door key is lit.
- c. If there is a power failure, the door lock can be manually tripped for sample recovery.
- d. A steel barrier surrounds the rotor chamber to provide full operator protection.
- e. A rotor identification system prevents the installed rotor from running above its maximum rated speed. During the acceleration, the microprocessor checks the magnetic rotor identification. Speed is limited to the maximum safe speed of the identified rotor.
- f. An imbalance detector monitors the rotor during the run, causing automatic shutdown if rotor loads are severely out of balance.



Beckman Coulter Allegra X-15R Centrifuge Information Sheet

The Beckman Coulter Allegra X-15R centrifuge is a refrigerated benchtop centrifuge that generates centrifugal forces required for a wide variety of applications. Together with the Beckman Coulter rotors defined for use in this centrifuge, the centrifuge applications include:

- Routine processing such as sample preparations, pelleting, extractions, purifications, concentrations, phase separations, receptor binding, and column centrifugations.
- Cell isolation.
- Binding studies and separation of whole blood.
- Processing large numbers of small-volume samples in multiwell plates for concentrating tissue-culture cells, cloning and replicate studies, in-vitro cytotoxicity studies, receptor binding, and genetic engineering experimentation.
- Rapid sedimentation of protein precipitates, large particles, and cell debris.

The Allegra X-15R is microprocessor-controlled, providing interactive operation. The instrument design features a brushless asynchronous motor, automatic rotor identification system, program memory that enables repeated run conditions, temperature control system (-10°C - +40°C), and a choice of acceleration and deceleration rates. User messages also alert the operator to conditions that may need attention.



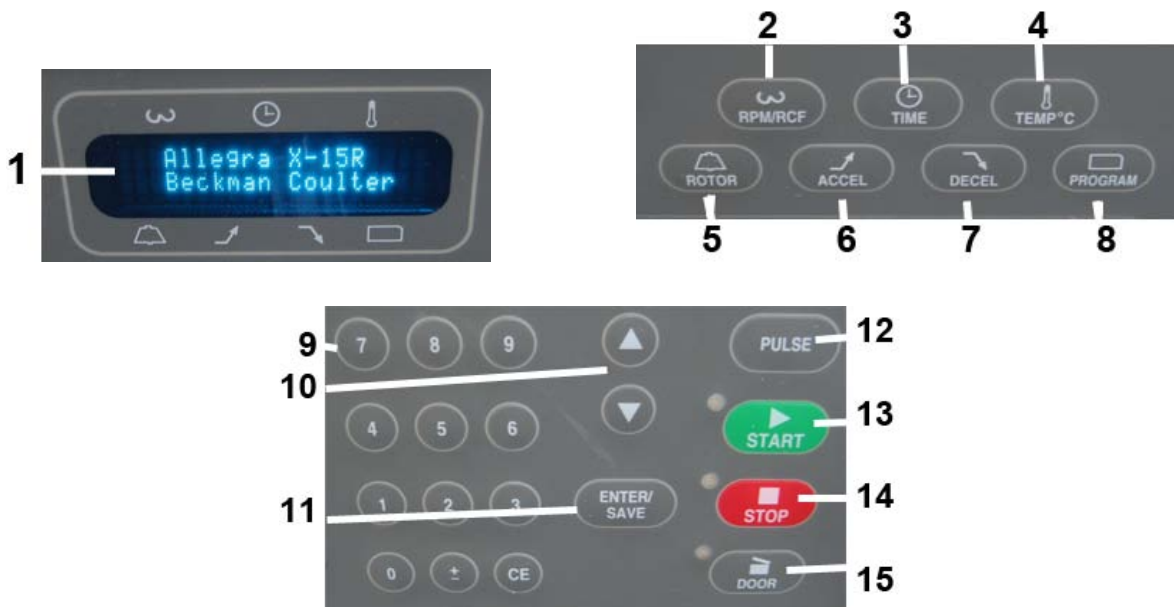
Beckman Coulter Allegra X-15R Centrifuge Instrument Information Sheet

Allegra X-15R Overview:



1. Rotor Chamber Door
2. Power Button
3. Instrument Control Panel

Instrument Control Panel Overview:



1. Control Panel LED Display
2. Rotor Speed Button (RPM/RCF)
3. Time Button
4. Instrument Temperature Button
5. Rotor Select Button
6. Rate of Acceleration Button
7. Rate of Deceleration Button
8. Program Run Settings Button
9. Numeric Keypad
10. Arrow Keys
11. Enter/Save Selection Button
12. Pulse Spin Button
13. Start Centrifugation Button and LED Light
14. Stop Centrifugation Button and LED Light
15. Open Door Button and LED Light

Rotor Chamber Overview:



1. Steel Reinforced Rotor Chamber
2. Rotor Knob (with Model Number Printed on the Top)
3. Sample Holders for Centrifugation
4. Maximum Speed for the Rotor



Beckman Coulter Allegra X-15R Centrifuge Quick Start Guide

Powering On and Installing the Rotor

1. Turn on the Allegra X-15R Centrifuge by flipping the **Power Switch** (located on the left side of the instrument).
 - a. The **LED Display** will show “Allegra X-15R” and the software version while it is warming up.



2. Once the instrument is ready, and the LED light next to the Door Button is lit, **Press the Door Button** to open the **Chamber Door**.



3. Choose the appropriate **Rotor** for centrifugation.
 - a. If the rotor to be used is already installed, place samples into the sample holders, and press the lid down until it clicks closed.

b. If the rotor to be used is not the one installed in the centrifuge:

i. Unscrew the **Rotor Knob** in the center of the **Rotor Mount**.

ii. Lift the incorrect **Rotor** out of the centrifuge and place with the other unused rotors.

Take care not to dent rotors when changing.

iii. Lower the correct **Rotor** into the chamber, lining up the center of the rotor with the center of the chamber. Note the Rotor ID on the rotor.

iv. Tightly screw the **Rotor Knob** to secure the rotor.

v. Place samples into the sample holders in opposing pairs, and press the lid down until it clicks closed.



NOTE: Samples in a centrifuge must always be balanced. Ensure that all loaded samples are balanced in the centrifuge prior to closing the lid or running the instrument. Below is an example of a set of balanced samples.



Setting up the Centrifugation Conditions

1. Four conditions need to be set up in the instrument before running a sample.

a. **Press the Rotor Button** on the *Control Panel*.



i. Use the **Arrow Keys** to select the rotor that was installed in the instrument.



ii. **Press the Enter/Save Button** once the correct rotor has been selected.



b. **Press the RPM/RCF Button** on the *Control Panel*.



i. Use the **Numeric Keypad** to enter the speed at which to centrifuge the samples (maximum speed will depend on the rotor).

1. To change from RPM to RCF, or vice versa, **Press the RPM/RCF Button** again.

ii. **Press the Enter/Save Button** once the correct speed has been entered.



c. **Press the Time Button** on the *Control Panel*.



i. Use the **Numeric Keypad** to enter the amount of time to centrifuge the sample (up to 99 hours and 59 minutes), or **Press the Time Button** again to have the sample spin until stopped by the user.

ii. **Press the Enter/Save Button** once the correct time has been entered.



d. **Press the Temp °C Button** on the *Control Panel*.



i. Use the **Numeric Keypad** to enter the temperature (-10°C to 40°C) at which the samples will be run. For room temperature, leave the setting as 25°C.

ii. **Press the Enter/Save Button** once the correct temperature has been entered.



Creating a Programmed Run

1. If the centrifugation set up in the last step will be run multiple times over an extended time period, a programmed run can be setup.

- a. **Press the Program Button** on the *Control Panel*.



- b. Use the **Arrow Keys** to select a **Program Number** that is not in use and **Press the Enter/Save Button**.



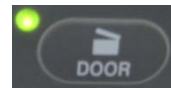
- c. Enter all of the parameters from the previous section, and **Press the Enter/Save Button** once all are entered.



- i. **Program Saved** will appear on the display if saved properly.

Centrifuging a Sample

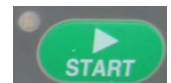
1. Once all of the conditions for the run have been entered using the *Control Panel*, make sure the door is shut (The LED light next to the **Door Button** will be lit).



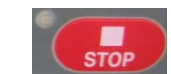
2. **Press the Enter/ Save Button**.



3. **Press the Start Button**.



- a. To stop the centrifugation before the set time has expired, **Press the Stop Button** (only if necessary).

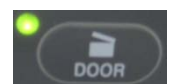


- b. When centrifuge is running, the door cannot be opened, so the LED Light next to the Door Button will not be lit.



4. Once the centrifugation is completed, the rotor will stop, a tone will sound, and the LED light next to the **Door Button** will be lit.

5. To remove samples from the centrifuge, **Press the Door Button**.



Shutting Down the Instrument

1. When sample have been removed from the centrifuge, close the lid until it clicks closed.
2. Shut down the instrument by flipping the **Power Switch**, located on the left side of the instrument.
3. **Make sure the station is neat before leaving the instrument!**

