

GCC-S Clinical Centrifuge

USER MANUAL



Low Speed Clinical Centrifuge

IMPORTANT: Carefully and completely read this user manual to ensure user safety and achieve most efficient operation.

USER MANUAL

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Globe Scientific Inc. reserves the right to change information at any time. Note that specifications of the centrifuge are subject to change.

Important Safety Information

Common Safety Precautions

Carefully read the following safety precautions for a thorough understanding.

- Follow the instructions and procedures described in this manual to operate this centrifuge safely.
- Carefully read all safety messages in this manual and the safety instructions on the centrifuge.
- Safety messages are labeled as indicated below. They are in combination with signal words of “WARNING” and “CAUTION” with the safety alert symbol  to call your attention to items or operations that could be dangerous to you or other persons using this centrifuge. The definitions of signal words are as follows:



WARNING: Personal Danger

Warning notes indicate any condition or practice, which if not strictly observed, could result in personal injury or possible death.



CAUTION: Possible Damage to Centrifuge

Caution notes indicate any condition or practice, which if not strictly observed or remedied, could result in damage or destruction of the centrifuge.

NOTE: Notes indicate an area or subject of special merit, emphasizing either the product’s capability or common errors in operation or maintenance.

- Do not operate the centrifuge in any manner not described in this User Manual. When in doubt or if you have any troubles with this centrifuge, please CONTACT GLOBE SCIENTIFIC AND ASK FOR HELP.
- The precautions described in this User Manual are carefully developed in an attempt to cover all the possible risks. However, it is also important that you are alert for unexpected incidents. Be careful operating this centrifuge.



WARNING

- This centrifuge is not explosion-proof. Never use explosive or flammable samples.
- Do not install the centrifuge in or near places where inflammable gases are generated or chemicals are stored.
- Do not place dangerous materials within 30cm (approximately 12 inches) of the centrifuge.
- Prepare all necessary safety measures before using samples that are toxic, radioactive or contaminated with pathogenic micro-organisms. Use of these materials are at your own risk.
- If the centrifuge, rotor and accessories have been contaminated by solutions with toxic, radioactive or pathogenic materials, clean them according to the decontamination procedure as specified.
- If you require service, please sterilize and decontaminate the centrifuge in advance and then notify the service center the details of the materials and procedure.
- To avoid electrical shocks, ensure hands are dry before handling the power cord or turning on/off the power switch.
- For safety purposes, do not come within 30cm (approximately 12 inches) around the centrifuge when in operation.
- While the rotor is rotating, never release the lid lock.
- Unauthorized repairs, disassembly, or modifying the centrifuge except by an authorized Globe Scientific service center or service technician is strictly prohibited.

Important Safety Information (Cont.)

CAUTION

- This centrifuge must be located on a firm and level table.
- Make sure the centrifuge is horizontal before running.
- Do not move or relocate the centrifuge when it is running.
- If fluid spills in the rotor chamber, please promptly clean and dry with a dry cloth to avoid sample contamination.
- Ensure removal of any objects and/or fragments of the tubes dropped inside the rotor chamber before running the centrifuge.

Rotor Cautions:

- Always check for corrosion and damage on the rotor surface before using it. Do not use the rotor if an abnormality is found.
- Do not set the speed beyond the allowable maximum speed of the rotor kits (rotor and adapters).
- Do not exceed the allowable imbalance.
- Use the rotor and tubes within their actual capacities.
- If any abnormal condition occurs during operation, please stop immediately and contact our service center. Notify the service center of the warning code (if displayed) along with the model and serial numbers and a detailed description of the issue.
- Vibrations are likely to damage the centrifuge. Please contact our service center if any abnormality is observed.

1. Specifications

Maximum Speed	4500rpm(300-4500rpm)
Maximum RCF	2490×g
Maximum Capacity	10ml×12, 15ml×8
Timer	10seconds to 99minutes
Noise	56dB(A)
Driving Motor	DC motor
Safety Devices	Door interlock, over-speed detector
Power Requirements	Single-phase, 110V-240V, 50Hz/60Hz, 3A. 220V-240V, 50Hz/60Hz, 3A
Operating Conditions	
-Location	Indoors only
-Altitude	Up to 2000 m above sea level
-Ambient Temperature	2°C ~ 40°C
-Humidity	80% RH, non-condensing
Device Protection Class	I
EMC	EN/IEC 61326-1 FCC Class A
-Emitted Interference, Interference Immunity	Class A
Dimensions (mm)	280 × 364 × 266 (L x W x H)
Weight	6kg

2. Required Operating Conditions

2.1 Basic Operational Conditions

- Power: 110V-240V, 50Hz/60Hz, 3A
- Ambient temperature: 2°C~40°C
- Relative humidity: ≤80%, non-condensing
- No vibration and airflow around the centrifuge
- No static, explosive and corrosive gases around the centrifuge

2.2 Transport and Storage Conditions

- Storage temperature: -40°C-55°C
- Relative humidity: ≤93%

3. Installation

This section describes the instructions that you should adhere to when installing the centrifuge to ensure your safety and optimum performance of the unit. Before moving the centrifuge, the rotor must be removed.

WARNING

- Improper power supply may damage centrifuge
- Make sure the power source conforms to the required power supply before connecting

3.1 Location

1. Place this centrifuge on a firm, flat and level surface and ensure the four feet of this centrifuge stand on the counter firmly. Avoid installing on a slippery surface or a surface prone to vibration.
2. Ideal ambient temperature is 20°C ± 5°C, avoid placing the centrifuge in direct sunlight if the ambient temperature exceeds 30°C.
3. Keep obstructions clear of the centrifuge at least 10cm on both sides and at least 30cm behind it to ensure optimal cooling efficiency.
4. Keep away from heat or water to avoid sample temperature issues or centrifuge failures.

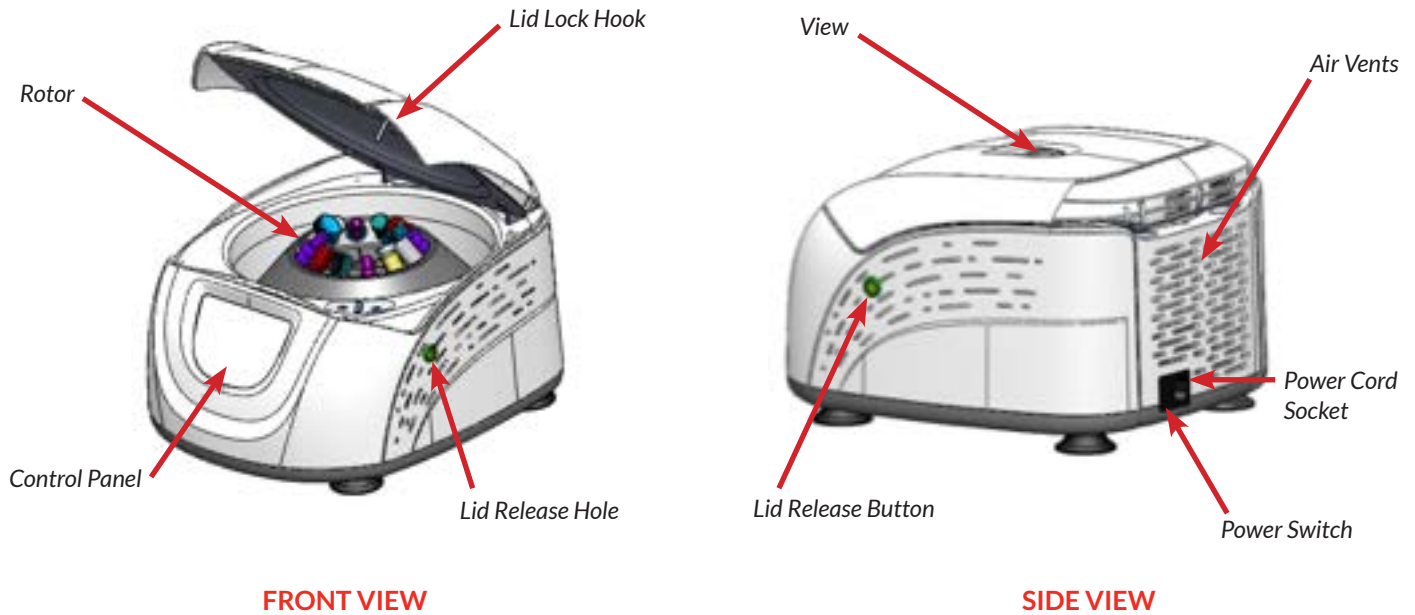
3.2 Connection of the Power Cord and Grounding

WARNING

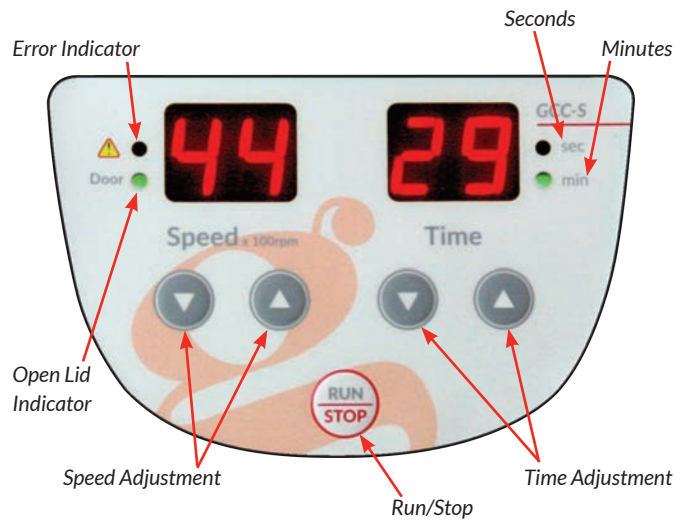
- To avoid electrical shocks, ensure your hands are dry when touching the power cord.
- This centrifuge must be grounded properly.

A minimum 10A outlet providing a sufficient ground is required, and this must meet local safety requirements.

4. Unit Overview



5. Control Panel



The main interface is shown above. Left up and down keys are for setting speed; right up and down keys are for setting time. Once set, press **RUN/STOP** and the centrifuge will run. During operation, the **Speed** display will show actual speed and **Time** will begin to count down once the set speed is achieved.

6. Rotor Preparation

CAUTION

- Do not overload samples into the centrifuge as this will cause leaking.
- Do not exceed the actual capacity allowed in this user manual.

6.1 Inspect the Rotor

Check the rotor for corrosion or scratches before using.

CAUTION

- If any abnormality such as corrosion or scratches are found, stop using the rotor and contact Globe Scientific.
- Only Globe Scientific rotors may be used with the centrifuge.

6.2 Symmetrically Load Tubes Into Rotor

IMPORTANT: The rotor should always be loaded in a balanced manner to avoid personal injury and to ensure centrifuge longevity.

- When any tube is loaded, a tube of the same type, volume and weight must be added in the opposite rotor location.
- Never intentionally run the centrifuge in an unbalanced condition even if operation is not affected.

CAUTION

- Make sure the rotor and shaft are tightened. Otherwise, the rotor may come apart while operating and cause damage to the centrifuge and rotor.

7. Operation

CAUTION

- If the centrifuge makes a strange noise during operation, stop it immediately and contact Globe Scientific. Please include any warning code(s), if displayed.

7.1 Starting the Centrifuge

Turn on the power and momentarily afterwards the display screen will light up.

- Press the speed buttons to adjust to the desired setting.
- Press the time buttons to adjust to the desired time setting (for set times more than 60 seconds, the “MIN” (minute) light will be lit. Less than 60 seconds, the “SEC” (second) light will be lit).
- Press the “RUN/STOP” button, starting the centrifuge.

7. Operation (Cont.)

7.2 Stopping the Centrifuge

There are three conditions in which the centrifuge will stop running:

- The centrifuge will stop running when the set time runs out.
- Press the “RUN/STOP” button to shut down the centrifuge before the set time runs out.
- Opening the door while the centrifuge is running and the centrifuge will brake the rotor and stop.

8. Maintenance

8.1 Cleaning

CAUTION

- Failure to follow the recommended instructions for cleaning and disinfecting may result in damage to the centrifuge.

1. Centrifuge

- If the centrifuge is exposed to ultraviolet rays for a long period of time, the lid may discolor or the label may be peel off. It is recommended to cover the centrifuge with a piece of cloth to protect it from direct exposure or to move it from direct exposure.
- If the centrifuge needs cleaning, clean it with a cloth or sponge moistened with a neutral detergent solution.
- Sterilize the centrifuge by wiping with a cloth moistened with a 70% ethanol solution.

2. Rotor Chamber

CAUTION

- Do not directly pour water, neutral detergent or disinfectant solution into the rotor chamber, otherwise fluids may leak into the drive units and cause corrosion or deterioration to the bearings.

- If the rotor chamber needs cleaning, clean with cloth or sponge moistened with a neutral detergent solution. Sterilize the centrifuge by wiping with a cloth moistened with a 70% ethanol solution.

3. Drive Shaft

- We recommend regular maintenance for the drive shaft. You can wipe the drive shaft with a soft cloth, and then apply a thin coat of silicon grease.

4. Lid

- Clean and sterilize the lid using the same method as in step one above.

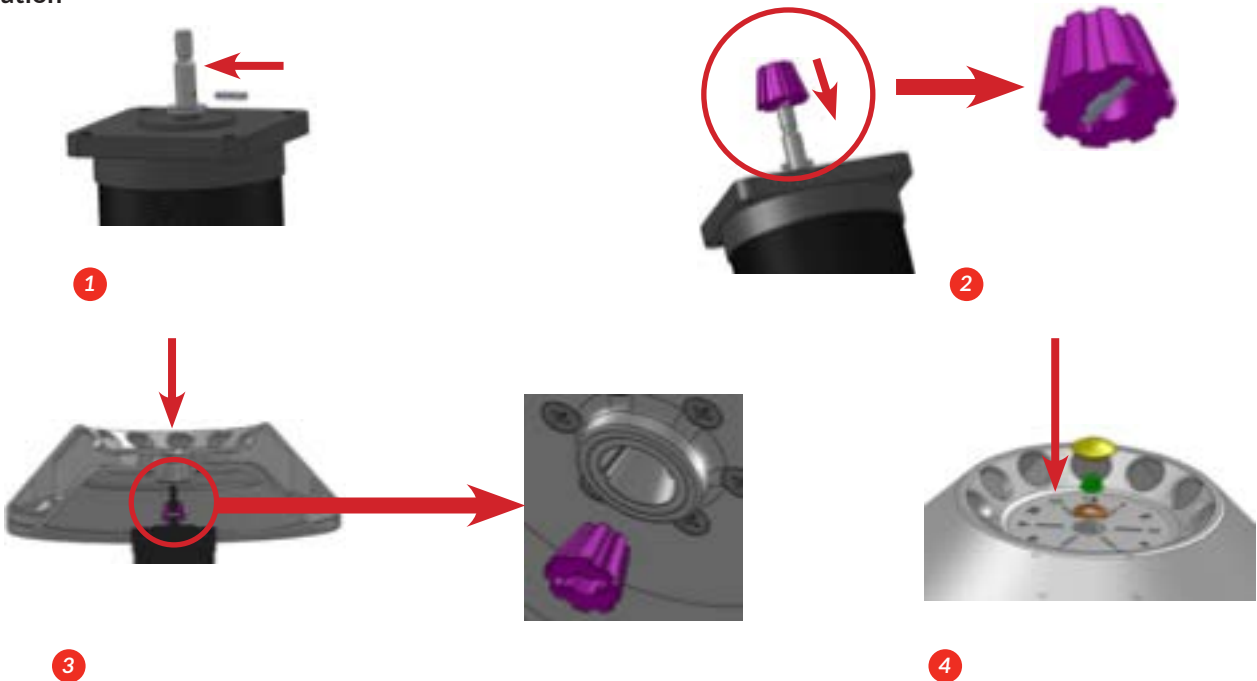
8. Maintenance (Cont.)

5. Rotor

- To prevent corrosion, remove the rotor from the rotor chamber. If not in use for a long period of time, turn the rotor upside down to dry the tube cavities and keep clean.
- For sample leaks in the rotor, rinse the rotor with water. Apply a thin coat of silicon grease to the rotor when it is completely dry.
- The rotor should be checked every 3 months to ensure the tube and rotor cavities are clean and to apply a thin coat of silicon grease.

8.2 Rotor Installation

1. Installation



2. Adjustment



IMPORTANT:

Before locking the rotor, rotate it and carefully observe to see if there is any obvious wobbling. If so, remove the rotor, turn slightly and install it again until it rotates smoothly. Then lock in place.

9. Troubleshooting Tips

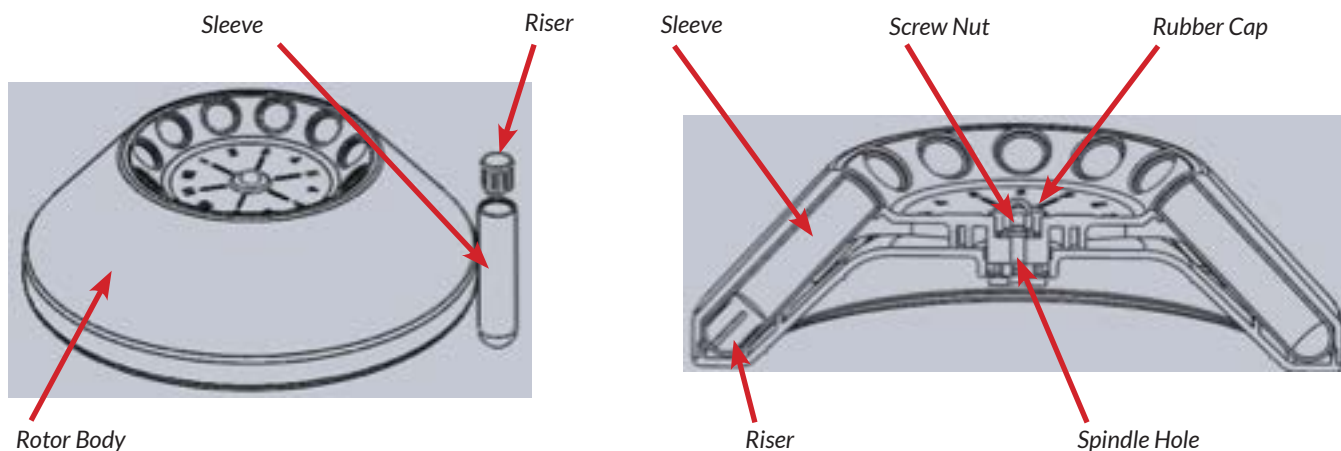
Problem	Cause	Solution
Power lamp does not light when the POWER is turned on	No power at the outlet	Reset the circuit breaker
	Fuse is blown	Check Fuse and replace
Abnormal Vibration	Rotor misaligned with motor shaft	Reinstall rotor as shown in Section 8.2
	Samples are unbalanced	Ensure tube weights match, install symmetrically as described in section 6.2
Door Fault	The door opened during operation	Close the lid immediately
	Door switch failure	Close the lid and then start normal operation
No Speed Signal	The centrifuge runs at very low speed	Check the speed sensor, reconnect or replace it
Over Speed	The centrifuge runs much higher than set or maximum speed	Contact Globe Scientific

10. Rotor Instructions

CAUTION

- Read the instructions thoroughly to properly load and use the rotor.
- Do not exceed the allowable maximum speed of the rotor, tube and adapters etc. Ensure the allowable maximum speed of the adapters is lower than the rotor's maximum speed.

10.1 Rotor Structure



10. Rotor Instructions (Cont.)

10.2 Available Rotors and Adapters

Rotor Type	Tube Type	Tubes Per Rotor	Dimension (ø×L mm)	Adapters Required	Maximum Speed (rpm)	Radius (cm)	Maximum RCF (×g)
CC-R1 (Standard Rotor)	15mL Conical	8	17×120	None	4500	11	2490
	1.5 - 5mL Vacuum	12	13×82	CC-AD1 CC-PLUG	4500	9.8	2218
	4 - 7mL Vacuum	12	13×106	CC-AD1	4500	11	2490
			16×75	CC-AD1 CC-PLUG		9.8	2218
	8.5 - 10mL Vacuum	12	16×107	CC-AD1	4500	11	2490
	2.7 - 3mL (EU) Collection	12	11×66	CC-AD1 CC-PLUG	4500	9.8	2218
	7.5 - 8.2mL (EU) Collection	12	15×92	CC-AD1	4500	11	2490

Note: The centrifuge rotor can separate samples with a density lower than 2.0g/ml. If the sample density is over 2.0g/ml, calculate allowable speed using the following formula:

$$\text{allow speed (rpm)} = \text{max speed} \times \sqrt{\frac{2.0(\text{g/ml})}{\text{sample density (g/ml)}}}$$

11. Calculating RCF

The RCF can be determined with the following formula:

$$\text{RCF} = 1.118 \times r \times n^2 \times 10^{-5}$$

r = rotating radius, unit: cm; n = rotating speed, unit: rpm

12. Returning and Disposal

12.1 Returning the Unit



Before returning the unit, a transport securing device must be installed.

Before the unit or its accessories are returned to Globe Scientific, they must be decontaminated and cleaned to protect people, the environment and property.

12.2 Disposal

Before disposal, the device must be decontaminated and cleaned to protect people, the environment and property. When you are disposing of the device, the respective statutory rules must be observed.

Pursuant to guideline 2002/96/EC (WEEE), all devices supplied after August 13, 2005 may not be disposed of as part of domestic waste. The device belongs to group 8 (medical devices) and is categorized in the business-to-business field. The icon of the crossed-out trash can shows that the device may not be disposed of as part of domestic waste. The waste disposal guidelines of the individual EC countries may vary. If necessary, contact your supplier.

13. Ordering Information

Item #	Descriptions	Unit
GCC-S	Clinical Centrifuge, 12-Place, 120v, 60Hz, US Plug	Each
GCC-S-UK	Clinical Centrifuge, 12-Place, 230v, 50Hz , UK Plug	Each
GCC-S-EU	Clinical Centrifuge, 12-Place, 230v, 50Hz , EU Plug	Each
Accessories		
GCC-ADP	Rotor Cavity Sleeves and Risers, converts the rotor cavity for use with: 5mL, 7mL and 10mL Tubes, 12 Each of Both Sleeves and Risers	24
GCC-AD1	Rotor Cavity Adapter Sleeves for 5mL, 7mL and 10mL Tubes	12
GCC-PLUG	Rotor Cavity Adapter Risers for 5mL, 7mL and 10mL Tubes	12

14. Warranty

This centrifuge is guaranteed for two years from the date of delivery provided that it has been operated and maintained properly.

Instances that would void the warranty include:

1. Failures caused by incorrect installation.
2. Failures caused by rough or improper handling.
3. Failures caused by transportation or relocation after installation.
4. Failures caused by unauthorized disassembly or modification.
5. Failures caused by using non-standard spare parts or accessories and/or unauthorized modification of the rotor or centrifuge.
6. Failures caused by natural disasters including fire, earthquakes, etc. (force majeure).

15. Service

To ensure safe and efficient operation of your GCC series centrifuge, it is necessary to keep the centrifuge clean and to use as recommended in this manual. If centrifuge has problems, do not attempt to repair it by yourself. In the unlikely event you require service or assistance, please contact Globe Scientific at:



E-Mail:

service@globescientific.com

Sales and Technical Support:

1 800-394-4562 ext. 2
1 201-599-1400
1 201-599-1406 fax

International Sales:

1 201-599-1400
internationalsales@globescientific.com

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