

ClinispinTM

MPC Combi



Operator's Manual

Table of Contents

Model Description	Page 3
Supplied Accessories	Page 3
Warranty Information	Page 4
Specifications	Page 4
Control Panel / Parts of the Centrifuge	Page 5
Safety Precautions	Page 6
Setup Location	Page 7
Initial Setup Procedure	Page 7
Operation	Page 8
Rotor Configuration	Page 10
Filling of Capillary Tubes	Page 11
Rotor Installation	Page 12
Control Panel Functions	Page 14
Advanced User Settings	Page 16
Care and Maintenance	Page 17
Troubleshooting	Page 18

WARNING: For the safety of both the operator and service personnel, care should be taken when handling substances that are known to be toxic, radioactive or contaminated with pathogenic micro-organisms when using this centrifuge. When Risk Group II materials are used (as identified in the World Health Organisation “Laboratory Bio-Safety Manual”), a Bio-Seal should be employed. The rotor and rotor accessories should not be considered as Bio-Seals. More than one level of protection must be provided in the case of materials of a higher group. The use of flammable or explosive materials as well as those materials which chemically react vigorously is prohibited.

DO NOT USE MPC COMBI ROTOR IN ANY OTHER MPC CENTRIFUGE.

MODEL DESCRIPTION

The Clinispin MPC Combi is a high speed centrifuge equipped with a maintenance free drive, digital display and simple interface for silent & efficient operation. It is designed to provide rapid and accurate Haematocrit determination using capillary tubes. It is used for the determination of volume fractions of red cells in blood and also for separation of blood. The horizontal rotor allows for quick and easy sample loading. 3 predefined pre-sets allows easy and rapid operation at one press of a button.



SUPPLIED ACCESSORIES (Standard)



One (1)
18 Tube HCT/QBC +
4 x 2 ml tube Rotor



Four (4)
Tubes holder

Also included (not shown):

• User Manual • Power Adaptor (110 - 240 VDC, 50 / 60 Hz) • Power Cord • Allen Key

Note: The rotor and rotor accessories are rated for a rotational speed of 12000 RPM (14119 x g)

WARRANTY:

Woodley Equipment Company warranties that this centrifuge is free from defects in workmanship and parts for 12 months.

WOODLEY
EQUIPMENT COMPANY LTD.

Old Station Park Buildings
St. John Street, Horwich,
Bolton, BL6 7NY, United Kingdom

Tel: +44 (0) 1204 669033 • Fax: +44 (0) 1204 669034

www.woodleyequipment.com Email: sales@woodleyequipment.com

SPECIFICATION:

Motor	: Brushless DC Motor
Maximum Speed	: 12000 RPM
Maximum RCF	: 14119 x g (HCT / QBC rotor) 9982 x g (2 ml)
Speed accuracy	: ± 100 RPM
Maximum Time	: 15 minutes
Acceleration time	: 80 ± 5 seconds
Braking time	: 80 ± 5 seconds
Weight	: 6 Kg
Overall Dimensions	: 365 x 291 x 134 mm (L x W x H)
Maximum Volume	: 18 x 75 mm (HCT/QBC) 4 x 2 ml (Micro Tube)

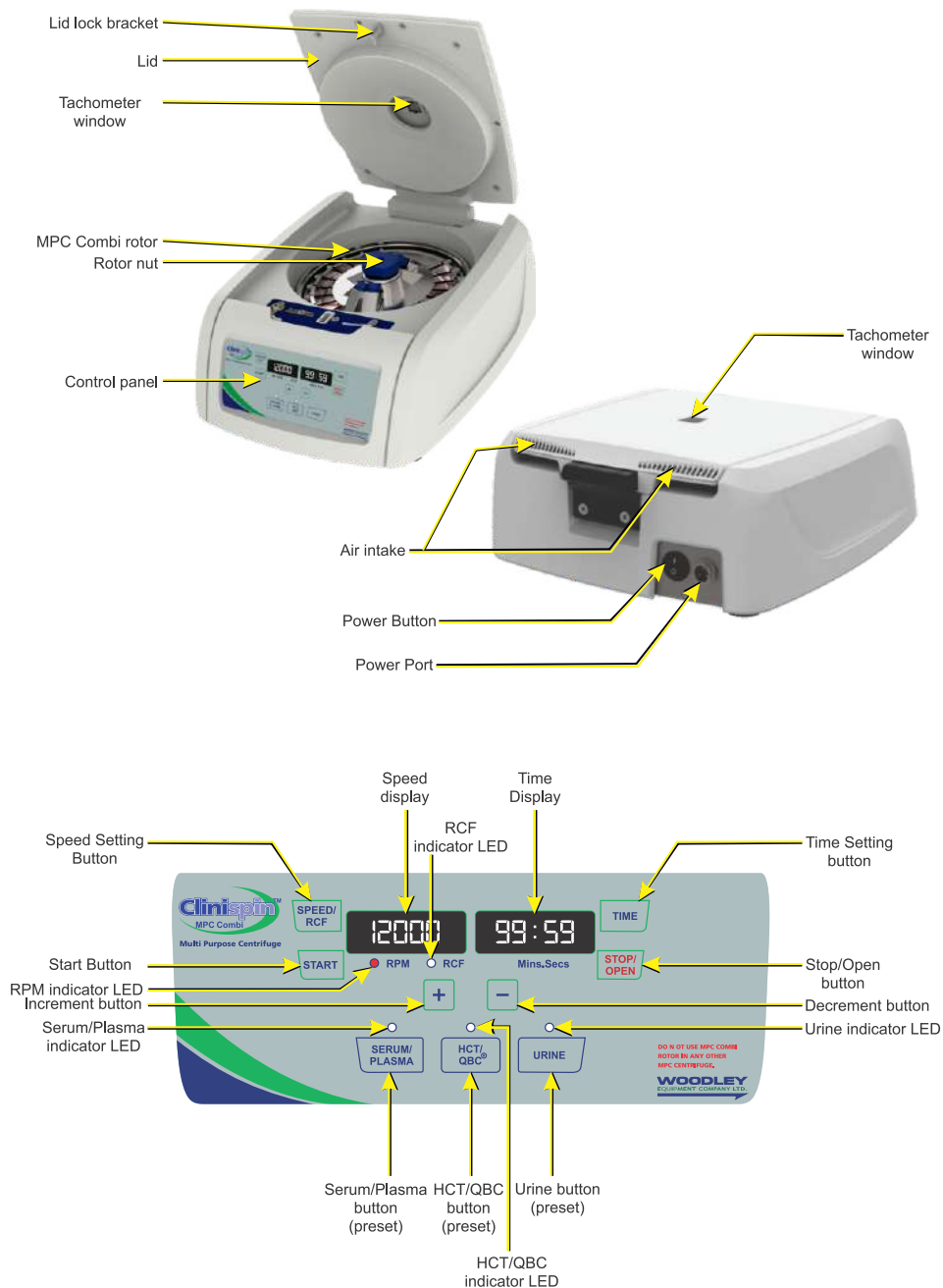
Permitted Environment Conditions

Ambient Temperature during operation	: 4°C to 40°C
Maximum Relative Air Humidity	: <80%
Noise Level	: <60 dB

Electrical Requirements

Input Voltage	: 24V $\overline{\text{---}}$ 6.25 A
Power Consumption	: 145 W

CONTROL PANEL / PARTS OF THE CENTRIFUGE



SAFETY PRECAUTIONS

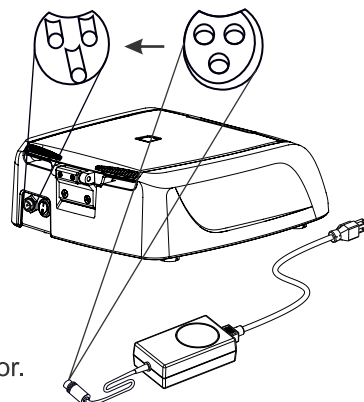
- Never use the centrifuge in any manner not specified in this manual.
- Equipment used in any manner not specified in this manual or by the manufacturer, the protection provided by the equipment may be impaired.
- Never move the centrifuge while the rotor is spinning.
- The rotor and the rotor lid must always be securely fastened. If the centrifuge makes unusual noise during operation, the rotor or rotor lid fitment needs to be checked. Switch off the device immediately by pressing STOP, check rotor lid & fasten securely.
- The rotor must be loaded symmetrically. Each tube should be counter balanced by another tube of the same weight and volume.
- Do not use centrifuge or rotor which have not been correctly installed or damaged.
- Repairs must only be performed by an authorised service technician.
- Only use recommended original rotor and spare parts.
- Centrifuge may be used for the specified applications only. It must not be operated in a hazardous or flammable environment and must not be used to centrifuge explosive or highly reactive substances. Do not place potential hazardous material within the clearance area/envelope.
- If liquids are spilled on the rotor or rotor chamber, the centrifuge must be cleaned carefully and properly before being used again.
- Prior to centrifugation, the tubes should be visually inspected for material damage. Damaged tubes may not be centrifuged. This is because broken tubes can, in addition to sample loss, create imbalance which can result in further damage to the centrifuge and accessories.
- Rotors and rotor lids are high-graded components which are subject to extreme mechanical strain. Even slight scratches and tears can lead to serious internal material damage. Ensure to check rotor for any signs of damage before use.
- Rotor & rotor lid showing visible signs of corrosion or mechanical damage should not be used.

SETUP LOCATION

- 1) The MPC Combi is supplied in a box. Open the box, then remove the packaging and gently take the centrifuge out of the small box. Before 1st time usage, open the centrifuge & ensure all packaging is removed from the rotor chamber & ensure rotor is firmly tightened. The user manual and accessories should be kept with the centrifuge.
- 2) Choose a setup location which meets the following criteria:
 - a) A bench top clearance height of 40 cm is required in order to open the lid.
 - b) The clearance envelope is the space around the centrifuge which is required for safety. Choose a setup location which will allow for a clearance envelope of at least 60 x 60 cm, (with centrifuge at the centre). No person or hazardous material shall be permitted in the clearance envelope during operation. The operator time within the envelope shall be limited to the time necessary for loading, unloading and centrifuge operation only.
 - c) Proper ventilation is necessary to prevent the overheating of samples as well as premature failure of the centrifuge. Choose an area which will allow unencumbered air flow.
 - d) The centrifuge is designed to rest on its four rubber feet. No adjustment is necessary for leveling the centrifuge, however, the surface should be flat and leveled.
 - e) Be sure the outlet is always within reach as the main lead is the means of emergency disconnection.

INITIAL SETUP PROCEDURE

1. Connect one side of power adaptor to rear side of centrifuge and other to approved electrical outlet.
2. Rotate the adaptor nut clockwise to tighten the adaptor with the centrifuge. Ensure the power switch is OFF while connecting the power adaptor.



3. For operator safety, the locking system is always active requiring power and direction from the user to disengage it (the lid also automatically unlocks at the end of a run when it is safe to do so). To unlock the lid (in order to access the rotor chamber) press the 'OPEN / STOP' button on the control panel.
4. Open the lid and spin the rotor by hand and check for free and level rotation. If the rotor does not spin freely, refer to the section on troubleshooting (page 18).
5. Ensure that the rotor lid is tightened securely.
6. Close the lid by pressing down firmly. The centrifuge will not run unless the lid is latched properly.
7. Initiate a test run by pressing the 'START' button.
8. The centrifuge starts and reaches the set RPM steadily. When the set RPM / RCF is reached the timer starts to countdown.
9. Listen to the sound of the centrifuge. A smooth whirring sound should be heard. If there are any loud or unusual sounds, stop the centrifuge by pressing the 'OPEN / STOP' button immediately and refer to the section on troubleshooting (page 18).
10. Press the 'OPEN / STOP' button to terminate the test run. The rotor will decelerate to a complete stop and the lid will then unlock automatically when rotor comes to standstill.
11. The centrifuge is now ready for operation.

OPERATION

NOTE: Follow the initial setup procedure before initial operation.

1. Press the 'OPEN / STOP' button to unlock the lid and then open the lid.
2. Open the rotor lid by loosening the rotor lid nut and place the urine tubes/serum tubes/ capillary tubes with samples into the rotor tube carriers. Be sure to follow the rules for balanced loads.
3. Ensure that the rotor lid is tightened securely.
4. Close the centrifuge lid by pressing firmly. If the lid is not completely latched, the error "LID OPEN" will appear in the display and the centrifuge will not operate. To resolve the error, see the troubleshooting guide. (Page 18)

5. Set the desired speed and run time by using the appropriate preset button. If further adjustment is necessary, use the appropriate increment and decrement buttons.
6. Begin the run by pressing the 'START' button on the control panel.
7. The centrifuge should begin to spin. A smooth whirring sound should be heard.

IF A PROBLEM IS FOUND DURING A SPIN THAT REQUIRES THE CENTRIFUGE TO BE SHUT DOWN, PRESS THE 'OPEN / STOP' BUTTON IMMEDIATELY !

8. Once the set speed is reached the timer will begin - the remaining time will be displayed on screen.
After time has elapsed, the rotor will decelerate to a complete stop.
9. The centrifuge lid will unlock automatically when safe to do so and will allow access to rotor chamber.
10. Once the lid is unlocked, open the lid by hand to 90 degrees for accessing the rotor chamber.
11. Open the rotor lid and remove the samples.

ROTOR CONFIGURATION

Carrier Horizontal Combi Rotor (pre-installed):

This rotor is designed to hold up to 18 capillary tubes, up to size of OD: 1.5mm & Length: 75mm and 4x2 ml tube

Follow the procedure below for proper tube loading.

DO NOT USE MPC COMBI ROTOR IN ANY OTHER MPC CENTRIFUGE.

Your centrifuge must contain a balanced load in order to work properly. To ensure that the load is balanced, keep the rules below in mind when inserting tubes in to the rotor.



1. Opposing tube carriers must be identical.
2. Opposing tube carriers must be empty or loaded with an equal number of equally weighted samples.
3. If an odd number of samples is to be spun, use a water-filled tube to mate with the unpaired one.

FILLING OF HAEMATOCRIT CAPILLARY

The capillaries have different volume according to their type.

Capillary	Haematocrit	QBC	Haematocrit
Total Length	75mm	75mm	40mm

For Haematocrit measurement the capillaries are filled up to ~75%

Sealing and centrifugation of the haematocrit capillaries

Standard capillary tubes

1. When filling the capillary, ensure that the end of the capillary opposite the filler opening remains dry.
2. Seal at the dry end of the capillary:
Insert the capillary tube vertically into the seal up to the point where the end of the capillary touches the bottom of the seal plate.
Slightly tilt the capillary tube to the side and remove it from the seal.
Repeat this procedure to complete the seal.
3. Place the capillary tubes with the lute side facing outwards in the haematocrit rotor and apply the rotor lid.
4. Run the centrifuge.
5. Determine the haematocrit value using haematocrit card reader.

QBC Tubes

See manufacturer's instructions.

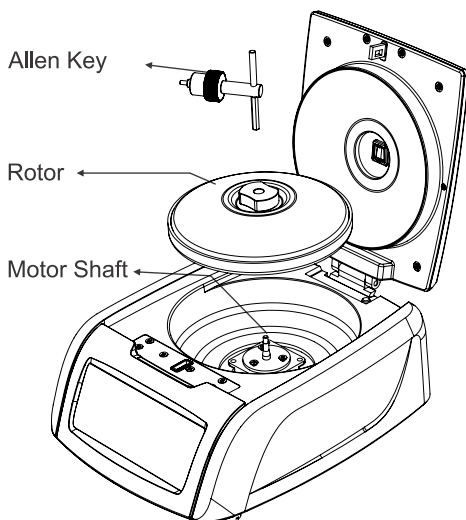
ROTOR INSTALLATION

Rotor Removing and Replacing Process

Upon receipt of centrifuge, the MPC Combi rotor comes pre-installed. In case you want to remove or replace the rotor, follow the below procedure.

Removing Rotor

1. The rotor lid **MUST BE TIGHTENED** securely to facilitate removal of the rotor.
2. Using rotor removal tool, loosen the rotor nut by turning it anti-clockwise.
Do not try to pull the rotor, rotor will come up automatically.
3. Once the rotor nut is loosened completely, lift the rotor vertically.

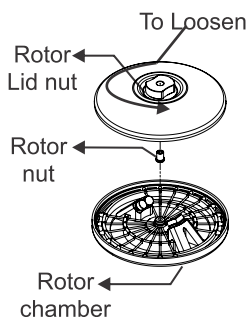


Replacing Rotor

1. To replace or install the rotor, take rotor and load vertically on the motor shaft.
2. Place the rotor nut in the centre hole of the rotor onto the motor shaft.
3. Put Rotor Removal Tool in rotor nut & turn clockwise to tighten and anti-clockwise to loosen rotor.
4. After proper fitting of rotor, place rotor lid on rotor and tighten it by rotating rotor lid nut clockwise by hand.

Note: 1) Check the rotor is firmly tightened before running.

2) Do not remove or loosen the rotor lid before removing rotor.

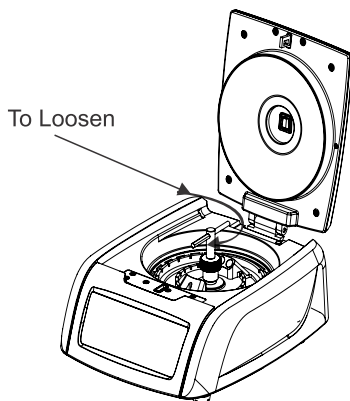


Removing Rotor Lid

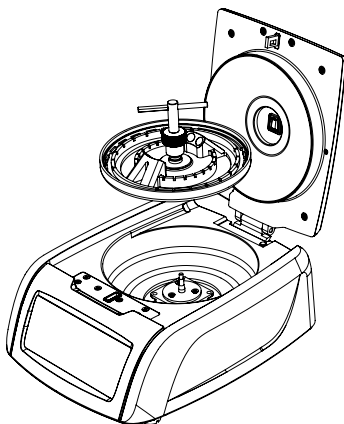
1. Turn rotor lid nut anti-clockwise to loosen and turn clockwise to tighten rotor lid.
2. Rotor nut is free and can also be removed after removing rotor lid.
3. Make sure to replace the rotor nut while tightening the rotor lid.

Removing Rotor in case Rotor is jammed or stuck:

- 1) Make sure to remove the rotor lid and its nut as mentioned in the above 2 sections.
- 2) As shown in the below figure, lock the rotor removal tool over the thread of rotor.
- 3) Loosen/pull a rotor with release tool, you need to rotate the tool (T shaped part) in a clockwise direction



- 4) Once the rotor is loose, lift it carefully from its position out of the centrifuge.



CONTROL PANEL FUNCTIONS:

Predefined Pre-sets:

The centrifuge has Predefined Pre-sets for easily accessing commonly used operations. After closing the centrifuge lid, a single press of any pre-set button will display the pre-set 'speed' and 'time' to be used. Below are the 3 available pre-set buttons.

1) SERUM / PLASMA

This "SERUM / PLASMA" button has the predefined speed & time value of 12000 RPM & 2 minutes respectively. Press the "SERUM / PLASMA" button to start operation at 12000 RPM for 2 minutes of time. Once the button is pressed, the predefined speed and time will appear in the display. This may be amended manually if required with the 'time' and 'speed' buttons.

2) HCT / QBC

This "HCT / QBC" button has the predefined speed & time value of 12000 RPM & 5 minutes respectively. Press the "HCT / QBC" button to start operation at 12000 RPM for 5 minutes of time. Once the button is pressed, the predefined speed and time will appear in the speed and time buttons display. This may be amended manually if required with the 'time' and 'speed' buttons.

3) URINE

This "URINE" button has the predefined speed & time value of 1000 RPM & 1 minute respectively. Press the "URINE" button to start operation at 1000 RPM for 1 minute of time. Once the button is pressed, the predefined speed and time will appear in the display. This may be amended manually if required with the 'time' and 'speed' buttons.

Time Adjustment and Timer Operation

The run time can be set from 1 minute to 15 minutes.

Press “TIME” button once to select time setting and press Increment or Decrement button to change the run time. Every single press of increment or decrement button will change the run time by 1 minute.

Timer is a countdown timer and once the set speed is reached, the timer starts the countdown.

The unit will run for a maximum of 15 minutes and will then shut off automatically. The ongoing centrifugation may also be terminated by pressing the “STOP/OPEN” button. The remaining time after the termination of ongoing centrifugation will be shown in the time display.

Speed Adjustment/ RCF Display

The speed can be set from 500 RPM to 12000 RPM & user can also set as per RCF value.

Press “SPEED/RCF” button to select speed setting in RPM and press Increment or Decrement button to change speed. Press and hold “SPEED/RCF” button to select speed setting in RCF and press Increment or Decrement button to change RCF.

If speed selected is in RPM mode, the LED adjacent to RPM will glow and if speed selected is in RCF mode, the LED adjacent to RCF will glow.

Press “SPEED/RCF” button to change the speed value in 1000 RPM.

Double press “SPEED/RCF” button to change the speed value in 100 RPM.

Starting and Stopping a Run

After closing the centrifuge lid, press “START” button to start operation and press “STOP/OPEN” button to stop ongoing operation.

Pressing the “STOP/OPEN” button will stop the operation, this will open the centrifuge lid automatically once the rotor comes to stop.

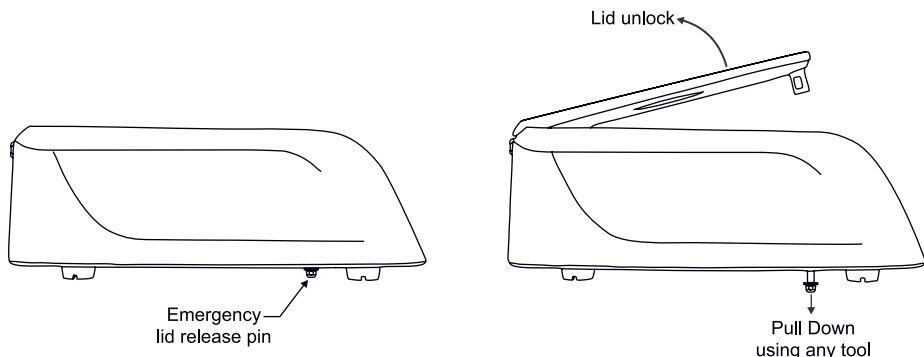
ADVANCED USER SETTINGS :

Imbalance Detection

This centrifuge is equipped with imbalance detection for user safety. In case of major imbalance, the centrifuge will terminate the current run and will begin to brake to a stop. The words “ERR 55” will flash on the speed display. Once the rotor has stopped, restart the centrifuge using the ‘POWER’ button to cancel the error reporting, balance the load and begin a new run.

Emergency Lid Release

Disconnect the centrifuge from the main supply. Wait until the rotor has come to a standstill (this may take a long time). Once the rotor has stopped, use any tool to pull down the emergency lid release cap. Insert the tool in the hole of emergency lid release cap and pull down. This will open the centrifuge lid. After the centrifuge lid opens, push the emergency release cap back in the hole.



CARE AND MAINTENANCE

With proper care and maintenance your centrifuge will provide years of laboratory service.

For proper care, the following steps should be taken:

1. Provide Adequate Ventilation: For cooling purposes, the centrifuge draws in ambient air through the air intake cover on the top of the lid and exhausts this air in the rear of the base. The centrifuge should be placed on a hard, smooth surface for good air circulation.

2. Motor and Electrical Maintenance: This centrifuge uses a brushless-DC motor. There are no brushes to replace and it should not need routine servicing for the life of the centrifuge. The electrical components are selected for high reliability and should not need servicing.

3. Keep the Centrifuge Clean: The cabinet, rotor top and accessories should be thoroughly cleaned using either soap and water, or a mild bleach solution. If it is necessary to remove the rotor for additional cleaning, a qualified technician is required to remove the outside housing and rotor assembly. Contact Woodley Equipment Company for additional information. Apply cleaning solutions with a towel or cloth. Do not submerge the centrifuge in water or other cleaning solutions as this will cause damage and void your warranty!

TROUBLESHOOTING:

1. Problem: No Display

- Solution:**
- Check mains power supply connection
 - Check that power adaptor is working properly and it is properly connected at both ends.

2. Problem: Centrifuge lid cannot be opened

- Solution:**
- Rotor might be spinning. Check in the view window for the rotor to stop.
 - There might be a power failure. Check in the view window for the rotor coming to a stop and use Emergency lid release to open.

3. Problem: Centrifuge shakes during acceleration & excessive noise

- Solution:**
- Rotor not loaded symmetrically. Load the rotor symmetrically and restart the operation.
 - A broken tube or damage to rotor. Clean the rotor chamber if there is any broken tube or replace rotor if damaged.
 - Motor might be causing excessive noise. Contact service representative.

4. Problem: Err 55

- Solution:**
- Rotor not loaded symmetrically / imbalance detected. Restart centrifuge and load rotor symmetrically.

5. Problem: Err 52

- Solution:**
- Rotor jammed - remove any obstruction to allow free rotor movement.
 - Motor jammed or damaged. Contact service representative.

6. Problem: System stops working / freezes

- Solution:**
- Electronics error. Switch off the centrifuge and then switch it ON again. If error still shows, contact service representative.

***For additional assistance, services and technical support
contact Woodley Equipment Company***

***Contact your authorised dealer or Woodley Equipment Company
to order replacement parts or accessories.***



Old Station Park Buildings
St. John Street, Horwich,
Bolton, BL6 7NY, United Kingdom
Tel: +44 (0) 1204 669033 • Fax: +44 (0) 1204 669034
www.woodleyequipment.com Email: sales@woodleyequipment.com