



User Manual



WOODLEY
EQUIPMENT COMPANY LTD.

Table of Contents

1. INTRODUCTION	4
2. INTENDED USE	4
3. SYMBOLS	4
4. FEATURES	4
5. STANDARD ACCESSORIES	4
6. TECHNICAL SPECIFICATIONS.....	5
7. SAFETY PRECAUTIONS.....	5
8. INSTALLATION.....	7
9. STANDARD PARTS LISTING.....	8
10. USER INTERFACE & DISPLAY	8
11. ROTOR INSTALLATION	9
12. OPERATING THE CENTRIFUGE	10
13. MAINTENANCE & CLEANING.....	13
14. TROUBLESHOOTING	13
15. WARRANTY STATEMENT.....	15
16. PRODUCT DISPOSAL.....	16

1. INTRODUCTION



This manual provides important safety information for the Clinispin HCT Centrifuge. It should be kept near the centrifuge for quick and easy reference. This centrifuge is equipped with a maintenance free drive, a large display and a simple interface for silent & efficient operation. This centrifuge comes with a host of safety features including imbalance detection.

2. INTENDED USE

The Clinispin HCT is a benchtop centrifuge designed to hold 40/75mm length capillaries with 1mm diameter in its 24 positions, aiding separation/sedimentation of aqueous solutions and solvent suspensions of differing densities.

NOTE: Before using the centrifuge, please read this user manual carefully. This user manual is intended to assist with the operation and care of the unit, and is not a document which aids in repair. For repairs, please contact Woodley Equipment Company.

3. SYMBOLS

 Warning	 Waste Electrical
--	--


4. FEATURES

- Brushless DC Motor: Low maintenance and long lasting
- Precise RPM Control from 500 to 12,000 RPM with increments of 100 RPM
- Lid Lock Safety: Lid releases automatically after run completion
- Run timer with up to 12 minutes of run time
- Display toggle to alternate between RPM and RCF
- Large LCD Display for easy setting control and parameter display
- Small physical footprint saves valuable bench space


5. STANDARD ACCESSORIES

- Power Adapter
- 24 Slot Capillary Tube Rotor (Pre-installed)
- HCT Reader
- T-Allen Key
- User Manual
- Warranty Card
- Grease Tube

6. TECHNICAL SPECIFICATIONS

Speed Setting	12,000 RPM
	14,118 xg (Max RCF)
Speed Accuracy	± 100 RPM
Speed Steps	± 100 RPM
Noise Level	<67 dB (A)
Run Time	1 to 12 mins
Acceleration Time	60 ± 5 seconds
Braking Time	70 ± 5 seconds
Ambient Temperature	+5°C to +40°C
Permissible Relative Moisture	≤80%
Weight	4.3kg approx. (with rotor)
Dimensions (W x D x H)	330 x 265 x 161 mm
Altitude	Use up to an altitude of 2000m above MSL (mean sea level)
Pollution Degree	2
Environment	For indoor use only
Power Adapter Details	Input: 100-240 VAC, 50/60 Hz Output: 24V  6A
Power Consumption	132W

7. SAFETY PRECAUTIONS

 Read all safety and usage information provided in this manual carefully before using the centrifuge.

- Do not use the centrifuge in any manner not specified in this manual.
- Using the centrifuge in any manner not specified in this manual or by Woodley Equipment Company will void the warranty.
- Do not move the centrifuge while the rotor is spinning.
- The rotor and the rotor lid must always be securely fastened. If the centrifuge makes an abnormal noise during operation, the rotor or rotor lid fit needs to be checked. Turn the centrifuge off immediately by pressing 'STOP' and check the rotor fit to ensure it is securely fastened.
- The rotor must be loaded symmetrically. Each tube should be counterbalanced by another tube of the same weight.
- Do not use centrifuges or rotors that have not been correctly installed, or have been damaged.
- Repairs must only be performed by Woodley Equipment authorised personnel.

- Using incorrect rotors and spare parts will void the warranty.
- This centrifuge must be used for the specified applications only. It must not be operated in a hazardous or flammable environment, and it must not be used to centrifuge explosive or highly reactive substances.
- If liquids spill/leak into 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 should not be centrifuged. Broken or damaged tubes can lead to sample loss and create imbalance which can result in further damage to the centrifuge and accessories.
- The maximum capacity of the rotor is 24 capillary tubes. Do not exceed this capacity.
- Do not lean on the equipment. It may damage the equipment or harm the operator.
- When moving the centrifuge from a cold environment to a room temperature environment, run the centrifuge for 30 minutes in the cold environment beforehand to avoid condensation. Alternatively, allow the centrifuge to attain room temperature in the room temperature environment for at least 3 hours before use, but do not plug in the centrifuge to prevent possible damage due to condensation.
- Close all tube lids tightly prior to centrifugation. Unsecured tube lids can be torn off during centrifugation and may damage the rotor lid or centrifuge.
- Rotors and rotor lids are high-grade components subject to extreme mechanical strain. Even slight scratches or tears may lead to serious internal material damage. Check the rotor and rotor lid for any signs of damage before use. Rotors and rotor lids showing any signs of corrosion or mechanical damage should not be used. Contact Woodley Equipment Company for replacement rotor or parts.
- Do not fill tubes while they are in the rotor. Liquid spillage may harm the centrifuge.
- In the event of contamination, the rotor must be cleaned immediately using a natural cleaning liquid (e.g. water). This is particularly important for the bores of the tubes. If there are signs of damage, contact Woodley Equipment Company.
- Contact Woodley Equipment Company before using cleaning or decontamination methods other than those recommended in this manual. Alternative cleaning methods may damage the centrifuge.
- Do not use any other power adaptor with this centrifuge. The power adaptor supplied with the centrifuge is specifically designed for this centrifuge. A different power adaptor may damage the centrifuge.

8. INSTALLATION

Open the box and remove the packaging. Gently take the centrifuge out of the box. Before using the centrifuge, open the centrifuge and remove all packaging from the rotor chamber. Next, ensure the rotor is firmly secured. The user manual and accessories should be kept near the centrifuge. Please keep all packaging in safe storage for warranty purposes.

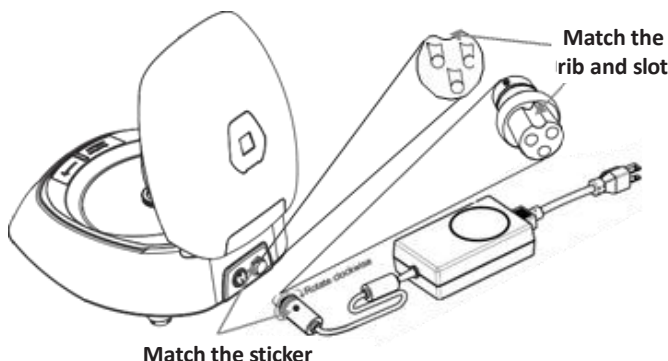
MOUNTING

Place the centrifuge on a flat and level surface. Ensure that the four feet of the centrifuge stand on the surface firmly. Avoid installing on a slippery surface or surface prone to vibration.

- Ideal ambient temperature is $+20^{\circ}\text{C} \pm 5^{\circ}\text{C}$; do not place the centrifuge in direct sunlight.
- Keep clearance of at least 10cm on both sides and at least 30cm behind the centrifuge to guarantee cooling efficiency.
- Keep away from heat or water to avoid sample temperature issues or centrifuge failures.
- Do not place the centrifuge in any area where operating the unit may be difficult.

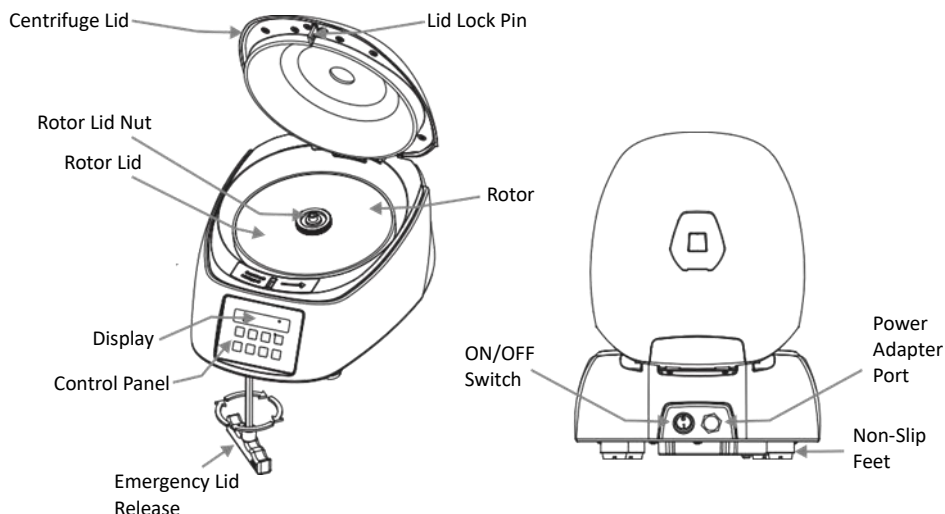
CONNECTING POWER ADAPTER

1. Ensure the power is switched OFF while connecting the power adapter.
2. The sticker on the centrifuge and on the power adaptor indicate the position of the slot and corresponding rib, respectively. Align these and gently push the power adaptor end into the centrifuge.
3. If matched correctly, the plug should enter easily without much force needed. Do not try to force the plug in. Once the plug is inserted into the centrifuge fully, turn the loose ring clockwise to secure the fit onto the centrifuge.

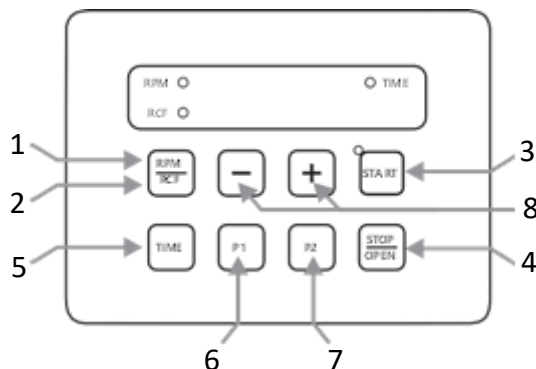


4. Plug the other end of the power adaptor into the electrical socket of the power supply.

9. STANDARD PARTS LISTING



10. USER INTERFACE & DISPLAY



Item	Name	Function
1	RPM	Displays the RPM value during operation.
2	RCF	Displays the RCF value during operation.
3	START BUTTON	Press button to START the centrifugation.
4	STOP/OPEN BUTTON	Press button to STOP the ongoing operation. Lid opens automatically after rotor comes to a stop.
5	TIME BUTTON	Press button to select TIME. Press "+" or "-" to increase or decrease the values

6	P1	Preset Mode 1 button. Press button to enter Pre-set Mode 1. Hold button to exit mode.
7	P2	Preset Mode 2 button. Press button to enter Pre-set Mode 2. Hold button to exit mode.
8	+/-	Press button to increase or decrease toggled value.

11. ROTOR INSTALLATION

ROTOR REMOVAL AND REPLACEMENT PROCESS

The rotor comes pre-installed in the centrifuge. If you want to remove or replace the rotor, follow the instructions below.

REMOVING THE ROTOR

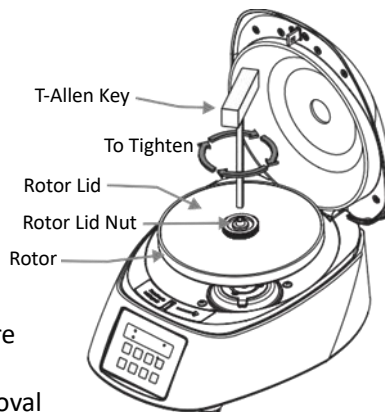
1. Do not remove or loosen the rotor lid before attempting to remove the rotor.
2. Using the T-Allen Key, loosen the rotor nut by turning it counterclockwise. Do not try to pull the rotor, the rotor will come up automatically.
3. Once the rotor nut is completely loosened, pull the rotor up vertically.

REPLACING THE ROTOR

1. To replace or install the rotor, take the replacement rotor attached with lid and load it vertically onto the empty motor shaft.
2. Place the rotor nut in the centre hole of the rotor onto the motor shaft.
3. Put the T-Allen Key into the rotor nut and turn clockwise to tighten the rotor nut.

NOTE: 1. Ensure that the rotor is firmly secured before next using.

2. Loosen the rotor lid before placing and removal of capillaries.



BALANCING THE ROTOR



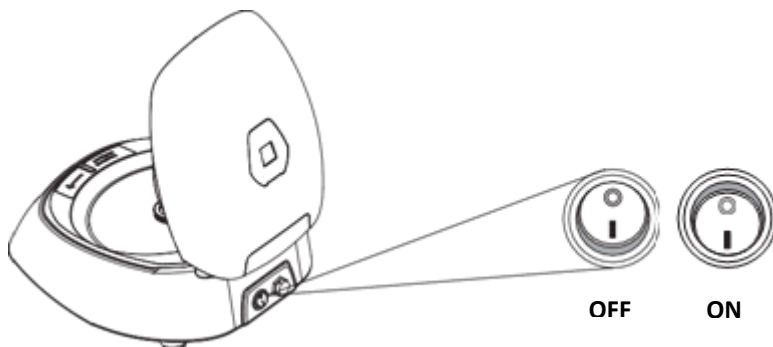
- Always balance the rotor before centrifugation runs. Above are examples of properly balanced rotors.
- The samples in the tubes should be of equal volume.
- If the tubes are not loaded correctly, vibration or imbalance can occur which can cause serious damage to the centrifuge.

Incorrect examples of tube loading in centrifuge rotor are shown below.



12. OPERATING THE CENTRIFUGE

After properly installing the centrifuge, turn the centrifuge on by toggling the power switch on the rear panel to 'ON'. The lid status will be shown on the display. If the lid is open, the display will show 'Lid' and if it is closed, the set RPM will be displayed. Please ensure that the tube holders are inside the rotor.



SPEED SETTING

After closing the centrifuge lid, press the 'RPM/RCF' button to toggle the speed control. The speed display will flash for 5 seconds. Press the (+) button to increase the speed value and/or press the (-) button to decrease the speed value. The RPM value will stop flashing and the value will be stored automatically if no buttons are pressed for ~1 second after the adjustment.

The speed can also be changed while the centrifuge is running. To do so, press the 'RPM/RCF' button and use the (+) and (-) buttons to change the speed. Changing the speed during centrifugation will run the centrifuge at the updated speed for the remaining time as indicated by the timer.

The speed can be displayed in RCF value. Hold the 'RPM/RCF' button to switch to RCF. Press the (+) and (-) buttons to increase or decrease the value. The RCF value will stop flashing and will be stored if no buttons are pressed for ~1 second after the adjustment. The value will flash 5 times to indicate acceptance.

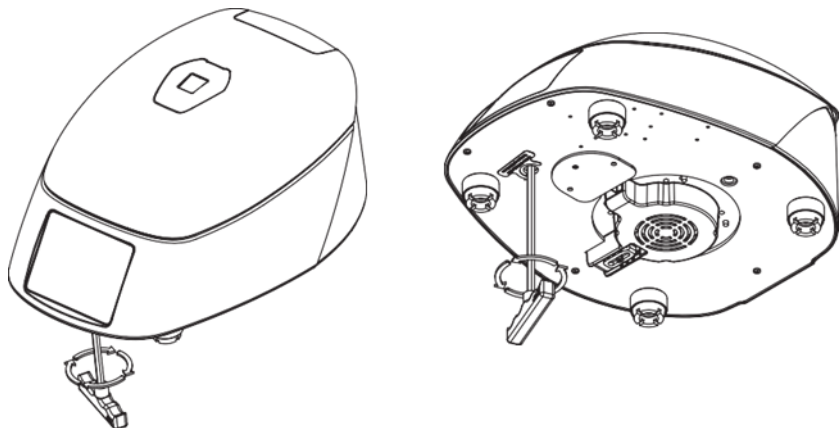
TIME SETTING

Operating time can be set from 1 minute up to 12 minutes. Press the 'TIME' button to toggle the time setting. The value will flash 5 times and can then be changed. Use the (+) and (-) buttons to increase and/or decrease the time setting. Once the time is correct, do not change it for ~1 second and the entered value will be set. This is confirmed when it flashes 5 times. The time will be displayed as minutes and seconds.

START & STOP OPERATION

Press the 'START' button to start a centrifugation run and press the 'STOP' button to stop an ongoing run. While the centrifuge is running, the LED light is on. Pressing the 'STOP/OPEN' button will stop the ongoing run. Once the run is fully stopped, the centrifuge lid will open automatically. If the lid does not open, press the 'STOP/OPEN' button to open the centrifuge lid.

OPENING THE CENTRIFUGE LID IN CASE OF POWER FAILURE



Disconnect the centrifuge from the main supply. Wait until the rotor comes to a standstill (this may take some time). Once the rotor has stopped, use the T-Allen Key from bottom side of the unit, rotate the T-Allen Key counterclockwise, as indicated in the above figure. This will open the centrifuge lid in case of an emergency.

PROGRAM MODE

Press the 'P1' or 'P2' buttons to enter into program mode.

Upon first use, the program will have '0' for all values. Once program mode is entered, the display will indicate 'P1' or 'P2'. Press the 'RPM/RCF' button to toggle speed control, and use the (+) or (-) buttons to increase or decrease the speed. Similarly, you can press the 'TIME' button to access and change the time setting. Values for either parameter are saved after the value is not changed for ~1 second. The value will flash 5 times to indicate it has been set. Press the 'START' button to start the indicated program.

To exit program mode, hold either the 'P1' or 'P2' button.

13. MAINTENANCE & CLEANING

Before cleaning the centrifuge, turn it off and disconnect the power cord.

EXTERIOR OF THE CENTRIFUGE

- Clean the outside of the centrifuge with a soft, dry cloth.
- Do not use aggressive chemicals such as alcohol, benzene, acetone or phenol.
- If the device is contaminated, use a 70% IPA solution to decontaminate it.
- Be careful to not scratch the surface of the equipment when cleaning it.
- Do not use a metal sponge.

INTERIOR OF THE CENTRIFUGE (CHAMBER)

- If the chamber is not dry, wipe away any moisture with a dry cloth.
- Clean the chamber and motor shaft at least once a week with a mild cleaning fluid.

ROTOR

- To prevent corrosion, take the rotor out of the chamber.
- If any sample is spilled inside the rotor, wash and dry the rotor well.
- The standard rotor is metal and is fully autoclavable (121°C for 15 mins).
- You can sterilise the T-Allen Key by wiping it with 70% IPA (isopropyl alcohol).
- A Grease Tube has been provided as part of the standard accessories. Minor grease has to be applied on the Motor Shaft (Threaded Parts, Grooves) every 2 weeks to prevent rotor and shaft jam. This will also ease the installation process in case of regular rotor change.

14. TROUBLESHOOTING

The Clinispin HCT can self-diagnose. If a problem occurs, an error/warning code will be displayed and the code can be matched with the below list to find the solution.

Display	Problem	Solution
No display	No main power connection	Check the power connection and ensure the power adapter is properly connected.
	Power failure	Check that power is being supplied to the outlet.
Lid Open	Lid not closed correctly	Close lid correctly.
	Error with lid closing and opening mechanism	Contact Woodley Equipment Company.
Err 55	Motor shaft under strain	Do not use further. Contact Woodley Equipment Company.

Centrifuge lid cannot be opened	Rotor is still spinning	Wait for the rotor to come to a full stop.
	Power failure	Pull emergency lid release after rotor is fully stopped.
Centrifuge shakes during acceleration or makes noise during run	Rotor is not loaded symmetrically	Load rotor symmetrically and restart operation.
	Broken tube(s)	Carefully open rotor, then remove and replace any broken tubes. Clean rotor if needed.
	Damaged motor	Contact Woodley Equipment Company.
	Damaged rotor	Remove and change rotor.
Err 1	Latch motor is damaged, latch is jammed or latch components are damaged	Contact Woodley Equipment Company.
Err 52	Rotor is stuck	Turn centrifuge OFF. Check the rotor for fit and restart the centrifuge.

IMPORTANT NOTE:

- Leave a 3 second gap between turning the centrifuge off and turning it back on. The gap is essential to storing last run parameters, otherwise these may be lost.
- If the motor heats up leading to a fluctuation in centrifugation speed, allow the centrifuge to cool down before further usage. Let the device cool for at least 30 minutes.
- Do not use liquids with a density higher than 1.2 g/mL if running the centrifuge at full capacity.

15. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions:

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this manual. This warranty does not cover damage caused by accidents, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.

The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on Woodley Equipment Company for the products or damages caused by its use. The buyer and its customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested, the products must be returned well packed and all shipping charges must be paid.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

Products received without proper authorisation will not be entertained. All items returned for service should be returned in the original packaging or other suitable carton, padded to avoid damage. Woodley Equipment Company is not responsible for damage incurred by improper packaging.

For your reference, make a note of the serial number and date of purchase here.	
Serial No.:	Purchase Date:

16. PRODUCT DISPOSAL

In case the product is to be disposed of, the relevant legal regulations are to be observed.

Information on the Disposal of Electrical and Electronic Devices in the European Community

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. They are marked with the following symbol to indicate this.



As disposal regulations within the EU may vary from country to country, please contact Woodley Equipment Company if necessary.



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

Tel: +44 (0) 1204 669033

Email: sales@woodleyequipment.com

Web: www.woodleyequipment.com