

Clinispin™ HCT II

User Manual



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1. Introduction

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

2. Intended Use


The Clinispin HCT II Haematocrit Centrifuge is used for the determination of volume fractions of erythrocytes (Red blood cells) in blood and also for separation of micro blood.

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 only and not its repair. For repair please contact the supplier.

3. Features

- Brushless DC motor for maintenance free long life
- Precise RPM setting from 500 – 12,000 RPM with least count of 100 RPM
- Lid lock safety - lid releases automatically after run completion
- Timer setting up to 12 minutes
- RPM & RCF toggles alternatively on the display during operation
- Large LCD display for easy setting and reading multiple parameters
- Small footprint saves valuable bench space

4. Standard Accessories

- Power Adaptor – 100-230 VAC, 50/60Hz (Input), 24V  6.25A (Output)
- 24 Slot Capillary Rotor (pre-installed)
- Haematocrit Reader
- T-Allen Key
- User Manual
- Warranty Card

5. Technical Specifications

Motor Type	Brushless DC Motor
Maximum Volume	24 x 40 / 75 mm (capillary tubes)
Speed Setting	500 – 12,000 RPM
	Preset for 12,000 RPM for 5 minutes
	14,119 x g (Max RCF)
Speed Accuracy	±100 RPM
Run Time	1 - 12 minutes
Acceleration Time	70 ± 5 seconds
Deceleration Time	80 ± 5 seconds
Permissible Temperature	5 – 40°C
Humidity	<80%
Weight	5kg (without rotor)
Dimensions (W x D x H)	365 x 301 x 105 mm
Input Power	24V $\overline{\overline{\overline{\quad}}}$ 6A
Power Consumption	135W

6. 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 can result in the lapse of warranty.
- Never move the centrifuge whilst in operation.
- The rotor must always be fitted securely. If the centrifuge makes unusual noises during operation, the rotor or the rotor lid fitment needs to be checked. Switch the device OFF immediately by pressing 'STOP'. Check the rotor or rotor lid and fasten it if required.
- The rotors must be loaded symmetrically. Each tube should be counter balanced by another tube of the same weight.
- **The rotor lid must always be fitted before centrifuging samples.**
- Do not use a centrifuge or rotor which hasn't been correctly installed or show any signs of damage.
- Repairs must only be performed by authorised Woodley Equipment Company personnel.
- Only use rotors and spare parts supplied by Woodley Equipment Company for best results and safety.
- The centrifuge must be used for the specified application only. It must not be operated in a hazardous or flammable environment and must not be used to centrifuge explosive or highly reactive media. Also, do not place the potential hazardous material within the clearance area.
- 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 any damage. Damaged tubes must not be used. This is because broken tubes can result in sample

loss and create imbalance in the centrifuge which can result in further damage to the centrifuge and its accessories.

- The centrifuge's capacity must not be exceeded.
- Do not lean on the equipment as it may damage the equipment or harm the user.
- When moving the centrifuge from a cold room to normal room temperature, run the centrifuge for 30 minutes beforehand in the cold room to avoid condensation. Alternatively, allow it to warm up in a lab for at least three hours but do not plug in the centrifuge in order to prevent possible damage by condensation.
- Rotors and adaptors are high-grade components which are subject to extreme mechanical strain. Even slight scratches and tears can lead to serious internal material damage. Ensure to check the rotor for any signs of damage before use. Rotors and rotor lids showing visible signs of corrosion or mechanical damage should not be used.
- For safety, Woodley Equipment have provided protective earthing with the power supply. Please ensure the power supply is earthed.
- In the event of contamination caused by aggressive agents, the rotor must be cleaned immediately using a natural cleaning liquid. If there are any signs of damage, contact Woodley Equipment Company.
- Before using cleaning or decontamination methods other than those stated in this manual, please contact Woodley Equipment Company to ensure that the intended method will not damage the centrifuge.
- The power adaptor supplied with the centrifuge is designed to be used for this specific centrifuge only. Do not use any other power adaptor.

7. Installation

The Clinispin HCT II is supplied in a packaging box. Upon receiving the centrifuge, gently remove the upper packaging and take out the centrifuge by holding it from the bottom. Ensure that all the packaging accessories are removed from the rotor chamber. The rotor is pre-installed, make sure it is firmly tightened. Accessories and the user manual are kept inside the box with the centrifuge. Please keep all the packaging stored safely for at least two years for warranty purposes.

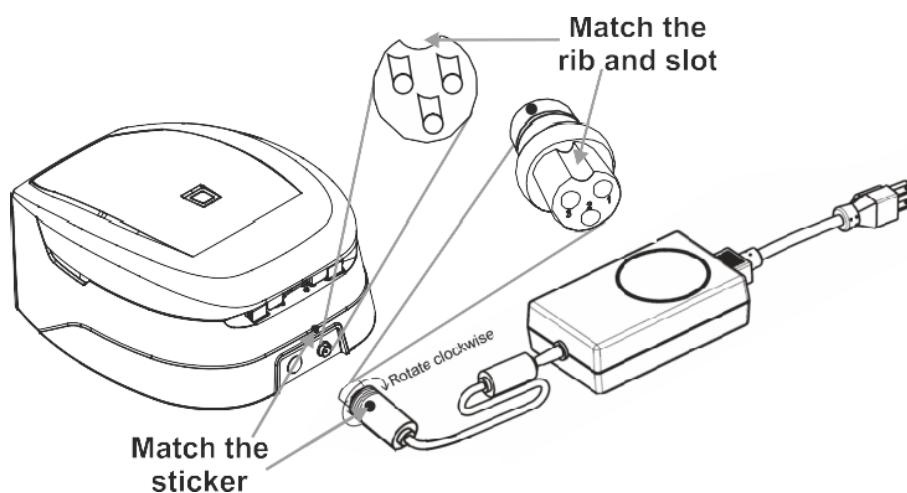
7.1 Location and Mounting

Place the centrifuge on a flat and level surface. Ensure that all 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 $20 \pm 5^{\circ}\text{C}$. Avoid placing the centrifuge in direct sunlight.
- Ensure clearance of at least 10cm on both sides and at least 30cm behind the centrifuge to guarantee cooling efficiency.
- Keep away from heat and water to avoid sample temperature issues or centrifuge failure.
- Do not place the centrifuge anywhere that makes it difficult to operate.

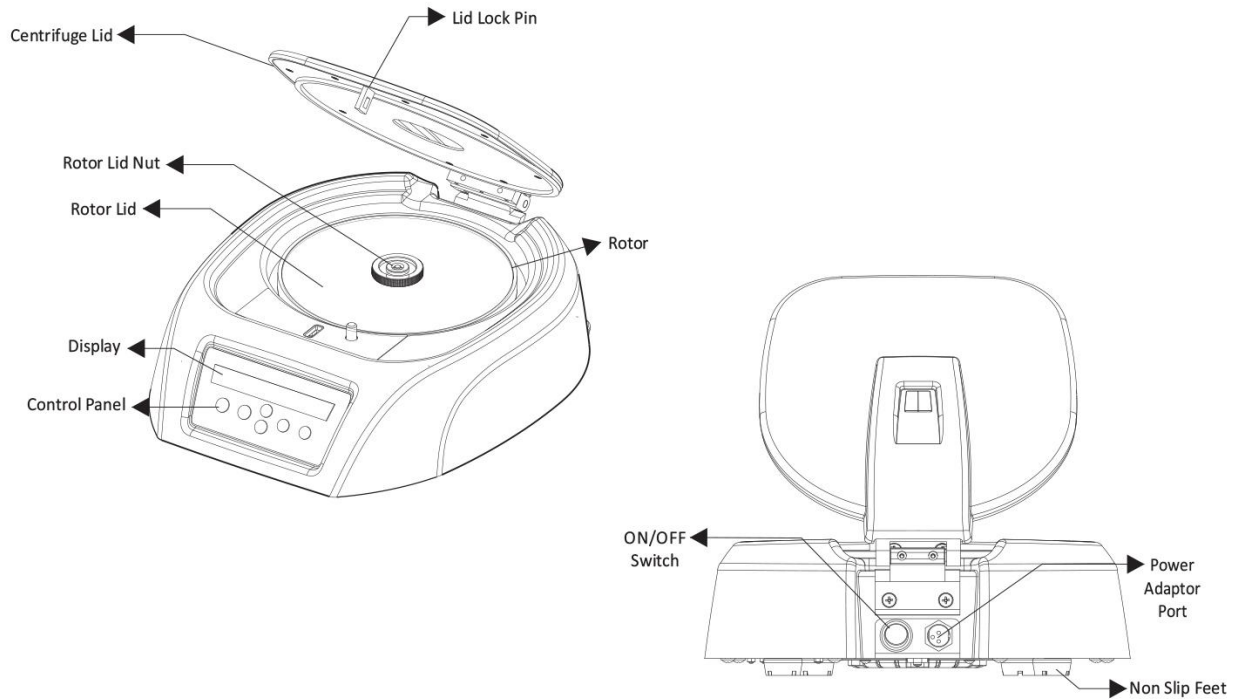
7.2 Connecting Power Adaptor

1. Connect one side of the power adaptor to the rear side of the centrifuge and the other side to the power supply as shown in the figure below.
2. Rotate the adaptor nut clockwise to secure the adaptor to the centrifuge. Ensure the power switch is off while connecting the power adaptor.
3. The sticker on the body and jack indicate the position of the rib on the jack. While fitting the adaptor to the unit, please match the sticker position as shown in the figure below and gently push it in.

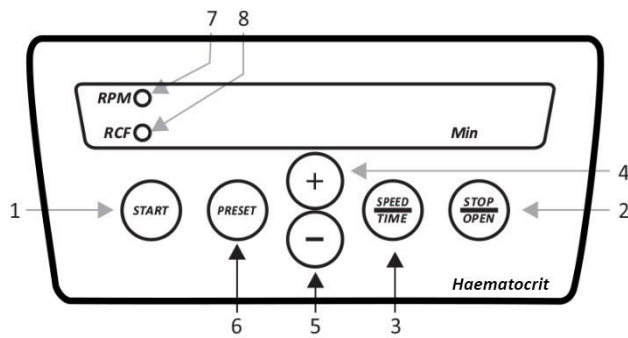


4. If matched correctly, the plug will go in easily without much force (do not try to force the plug in if it is not matched properly). Once the plug is inserted into position, turn the loose upper ring clockwise to tighten and to secure the fitment.

8. Standard Parts Listing



9. User Interface and Display



Item	Name	Function
1	START BUTTON	Press button to START the centrifugation.
2	STOP/OPEN BUTTON	Press button to STOP the ongoing operation. Lid opens automatically after rotor comes to a stop.
3	SPEED/TIME BUTTON	Long press button to select TIME mode. Press "+" or "-" to increase or decrease the values
4	+	Increase speed and time
5	-	Decrease speed and time
6	PRESET BUTTON	User favourite mode (see section 11)
7	RPM LED	Displays the RPM value during operation
8	RCF	Displays the RCF value during operation

10. Rotor Installation

10.1 Rotor Removal and Replacement

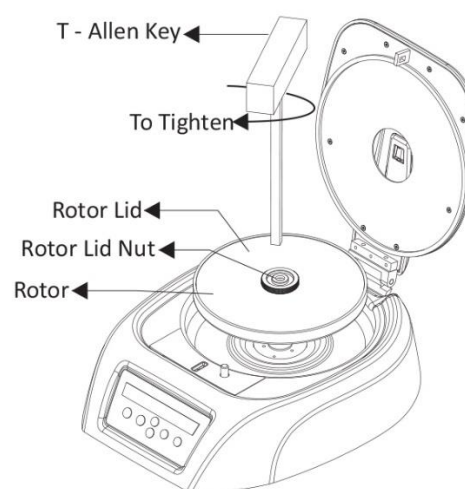
Upon receiving the centrifuge, its rotor comes pre-installed. If the rotor needs to be removed or replaced, follow the procedure below.

10.1.1 Removing Rotor

1. Do not try to remove or loosen the rotor with bare hands
2. Using the T-Allen Key, loosen the rotor nut by turning it anti-clockwise
3. Once the rotor nut is completely loose, pull up the rotor vertically

10.1.2 Replacing the Rotor

1. To replace or install the rotor, take the rotor and load it vertically onto the motor shaft
2. Place the rotor nut in the centre hole of the rotor onto the motor shaft
3. Put the T-Allen Key in the rotor nut and turn clockwise to tighten and anti-clockwise to loosen the rotor
4. After properly fastening the rotor, place the rotor lid on the rotor lid nut by hand and rotate the rotor lid nut clockwise



NOTE: 1) Check the rotor is firmly tightened before running the next program.
2) Do not remove or loosen the rotor lid before removing the rotor.

10.2 Balancing the Rotor



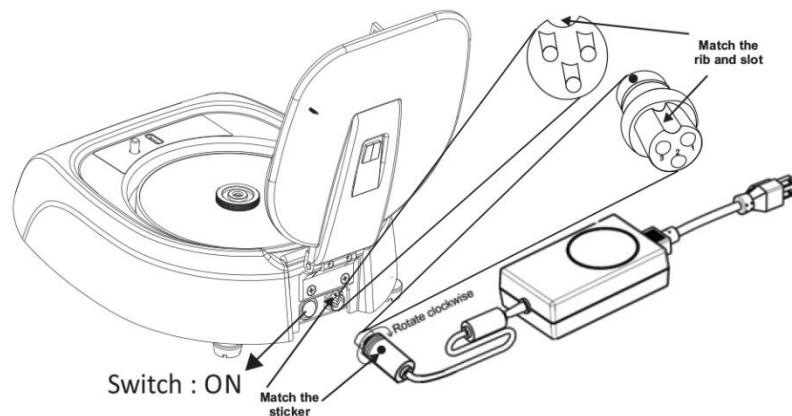
1. Always balance the rotor before beginning operation. Examples of properly balanced rotors are shown above.
2. The samples in the tubes should be of equal volume.
3. Symmetrical loading of tubes in the rotor is necessary. Otherwise, vibration or imbalance can occur which can cause serious damage to the centrifuge.
4. If the tubes aren't loaded symmetrically, the imbalance detector will stop the running centrifuge for device and user safety. This will stop the centrifuge and 'Err 55' will be seen indicating tubes are not loaded symmetrically. To resume operation, load tubes symmetrically and restart the centrifuge.

5. Below is the incorrect method of loading tubes in the centrifuge rotor.



11. Operating the Centrifuge

11.1 Switch on the Centrifuge



After connecting the power adaptor, switch the centrifuge on at the main power supply and the switch at the rear side of the centrifuge. Make sure to check the rotor fitment before use. The centrifuge will not operate with the lid open.

NOTE: Maintain a gap of three seconds between switching the centrifuge OFF and ON again. DO NOT switch OFF and ON again instantly.

11.2 Setting Speed and Time

The centrifuge is preset for 12,000 RPM for 5 minutes. To adjust this, after closing the centrifuge lid press the "SPEED" button to select the speed setting. Press "+" or "-" to increase or decrease values in intervals of ± 100 RPM. The minimum and maximum speeds of the centrifuge are 500 RPM and 12000 RPM respectively. The input will be accepted if the setting is left idle for 3 seconds. The value will blink multiple times to indicate acceptance.

NOTE: The speed cannot be changed during the operation. Long Press the "SPEED / TIME" button to select the time setting and press "+" or "-" to increase or decrease values by an interval of ± 1 mins. The centrifuge timer is set to run between 1 and 12 minutes.

The input will be accepted if the setting remains idle for 3 seconds. The value will blink multiple times to indicate acceptance.

11.3 Preset Feature

The preset feature works as a favourite mode and allows the user to run the centrifuge at their required settings with a single press of the PRESET button. The user can define their own preset values or by pressing the PRESET and then START buttons the centrifuge will run again at its last RPM and time combination.

11.4 Switching to RCF Display

On the Clinispin HCT II Centrifuge, SPEED and RCF toggle alternatively on the display once the SET speed is attained. The centrifuge is preset for 12,000 RPM for 5 minutes.

11.5 Opening the Centrifuge Lid During Power Failure

Disconnect the centrifuge from the mains supply. Wait until the rotor comes to a standstill (this may take some time). Once the rotor has stopped, pull out the emergency lid release which is located underneath the centrifuge. This will open the centrifuge lid.

11.6 Imbalance Detection

The centrifuge is equipped with an imbalance detection safety feature. When the rotor is not loaded symmetrically, the imbalance detector is activated and will stop the centrifugation. 'Err 55' will be shown on the display. First, correct the imbalance load using the method described in Section 10 of this manual. After correcting the imbalance, switch the centrifuge off and on. The values will be the same as set before imbalance. The imbalance detection feature cannot be deactivated as it is a factory fitted safety measure.

12. Maintenance and Cleaning

1. The rotor and the outside of the centrifuge should be cleaned regularly with a damp cloth.
2. Ensure that while cleaning the unit it is not connected to the power supply.
3. Wear protective gloves and safety glasses while operating and cleaning the device.
4. The brushless motor in the centrifuge does not require routine maintenance. Any required service should be performed by authorised, qualified personnel only. Repairs performed by unauthorised personnel may void the warranty.
5. Always keep the centrifuge housing, rotor chamber, rotor and rotor accessories clean. All parts should be wiped down periodically with a soft cloth. For more thorough cleaning, use a neutral cleaning agent (Ph between 6 and 8) applied with a soft cloth. Excessive amounts of liquid should be avoided. Liquid should not come into contact with the motor.
6. After cleaning, ensure that all parts are dried.

7. It is important to regularly clean the rotor.
8. If the rotor chamber needs cleaning, clean it with a cloth or a sponge moistened with a neutral detergent solution.
9. Do not place the rotor into the cleaning solution.
10. If corrosive, toxic or pathogenic bacteria are accidentally spilled in the rotor or rotor chamber, the centrifuge must be decontaminated thoroughly.

Warning! This product does not contain bio-seals as per IEC/EN/CSA 61010-2-20 and cannot provide any level of containment in case of a spill or release of toxic, radioactive or pathogenic micro-organisms thus these materials are not recommended to be used in this product.

13. Troubleshooting

The Clinispin HCT II has a self-diagnostic function. If a problem occurs, an error/warning code will be displayed on the screen and the operator can determine the malfunction with the error codes below.

Error	Problem	Solution
No display	No mains power connection	Check power and properly plug in the power adaptor at both ends
	Power failure	Check the main fuse
	Improper connection	Connect the adaptor properly
Lid Open	Lid not closed correctly	Close lid correctly
	Error with lid closing and opening mechanism	Contact Woodley Equipment Company
Err 55	Rotor not loaded symmetrically	Load the rotor symmetrically and restart the centrifuge
Centrifuge lid cannot be opened	Rotor is still spinning	Wait for the rotor to come to a stop
	Power failure	Press emergency lid release after rotor stops
Centrifuge shakes during acceleration and makes loud noises while running	Rotor is not loaded symmetrically	Load rotor symmetrically and restart operation
	Either a broken tube, damage to the rotor or motor is the cause for the noise	Replace the broken tube. For a damaged rotor/motor, contact Woodley Equipment Company
	Rotor is damaged	Remove and change the rotor
Display error	Loose display connection	Contact Woodley Equipment Company

Err 2	Lid is not properly latched	Open lid and close it properly
Err 52	Rotor is stuck	Turn the centrifuge off. Check and fit the rotor properly and turn the centrifuge on
Power tripping	Cable does not fit properly	Remove cable and connect properly
Last run memory not displayed	The centrifuge was turned ON immediately after being turned OFF	Maintain a 3 second gap between turning the centrifuge OFF and ON
System hang/freezes	Electronics error	Switch off centrifuge and then switch it ON again. If the error still shows, contact Woodley Equipment Company

NOTE:

1. *Maintain a 3 second gap between restarting the centrifuge. Instantly switching ON-OFF can lead to a reset, erasing the last run memory.*
2. *If the centrifuge is hot which may result in a fluctuation in speed then allow it to cool for at least 30 minutes whilst not using it.*
3. *Do not use liquids with density higher than 1.2g/ml for full load operation.*

14. Warranty

This product is warranted to be free from defects in material and workmanship for a period of two (2) years from 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 Ltd for the products or damages cause 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 suitable carton, padded to avoid damage. Woodley Equipment Company is not responsible for any damage incurred by improper packaging.

This warranty is only valid if the warranty is registered with the supplier within 30 days from the date of purchase.

15. Product Disposal

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

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.





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