Clinispin® CT40 Centrifuge
User Manual

WOODLEY
EQUIPMENT COMPANY LTD.

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1. Introduction

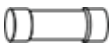
The Clinispin CT40 Centrifuge is equipped with a maintenance free drive, a large display and simple interface for efficient operation for daily lab usage. The programmable centrifuge can deliver up to 4500 RPM and can accommodate different types of rotors. It features various programmable modes to save time and add convenience.

2. Intended Use

The Clinispin CT40 is a large capacity centrifuge designed to separate, sediment, spin down aqueous solutions and solvent suspensions of differing densities in compatible sample containers.

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. It is not a document which aids in repair. If repairs are needed, please contact Woodley Equipment Company.

3. Symbols

 Warning	 Waste electrical
 Fuse	

4. Features

- Delivers up to 4500 RPM for all compatible rotors
- Brushless DC maintenance free motor drive
- Imbalance detection with auto cutoff feature
- Lid lock safety feature – lid does not open during operation
- Program mode for customised operation
- Speed setting by RPM/RCF mode
- Countdown timer range from 1 to 99 minutes
- Last run memory feature
- Convenient and easy user interface
- Emergency lid release during power outage
- Automatic internal diagnosis and error display

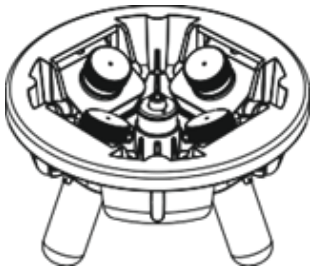
5. Standard Accessories

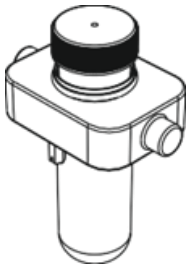
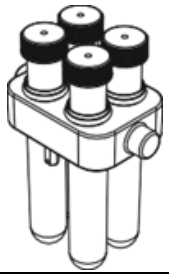
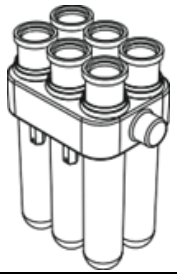
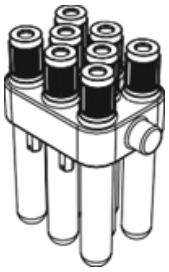
- Power Cord
- T-Allen Key
- Grease Tube
- User Manual

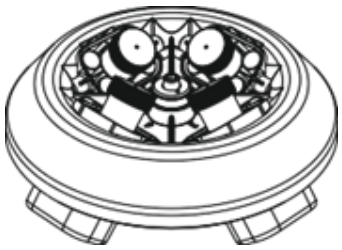
6. Technical Specifications

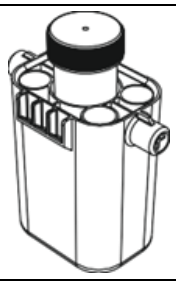
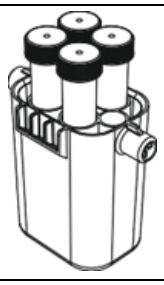
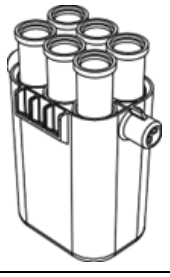
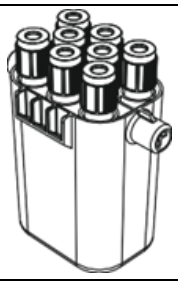
Motor Type	Brushless DC Motor	
Max. Capacity	360ml (24 x 15ml)	
Max. Speed	4500 RPM	
Speed Accuracy & Speed Step	± 100 RPM	
Run Time	1 min to 99:59 mins & infinite mode	
Min. Acceleration Time	≤35 seconds	ACC 9 / DCC 9 mode, 32 x 6ml swing out rotor (without load)
Min. Deceleration Time	≤35 seconds	
Noise Level	<68 db (A)	
Ambient Temperature	+5°C to +40°C	
Relative Humidity	≤80%	
Dimensions	553 (L) x 427 (W) x 247 (H) mm	
Weight	16.2kg (without rotor)	
Power Supply	230 VAC, 50 Hz	
Power Consumption	391 W	
Safety Fuse Rating	250 VAC, 3A	
Altitude	Use up to an altitude of 2000m above MSL (Mean Sea Level)	
Pollution Degree	2	
Environment	For indoor use only	

Rotor Type	Fixed Angle	Swing Angle
Bucket Type	4 x 50ml 24 x 15ml 32 x 6ml 16 x 15ml	4 x 50ml 24 x 15ml 32 x 6ml 16 x 15ml
Max. RCF	2766 xg	3334 xg
Max. Volume	360ml (24 x 15ml)	
Imbalance Cutoff	Automatic	
Display Type	4 Digit, 7 Segment	

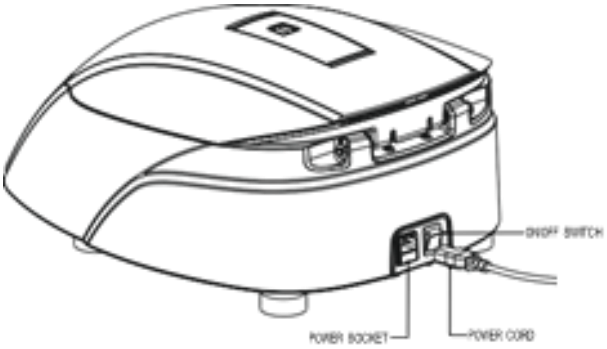
Swing Out Rotor (Plastic)		
	**Rotor Type**	**RCF Value (xg)**
	4 x 50ml	3315
	16 x 15ml	3334
	24 x 15ml	3220
	32 x 6ml	3153

Adaptor			
50ml Adaptor (Aluminium)	**15ml Adaptor (Aluminium)**	**15ml Glass Tube Adaptor (Aluminium)**	**6ml Adaptor (Aluminium)**
			

Fixed Angle Rotor (Plastic)		
	**Rotor Type**	**RCF Value (xg)**
	4 x 50ml	2562
	16 x 15ml	2744
	24 x 15ml	2744
	32 x 6ml	2766

Adaptor			
50ml Adaptor (Plastic)	**15ml Adaptor (Plastic)**	**15ml Glass Tube Adaptor (Plastic)**	**6ml Adaptor (Plastic)**
			

7. Standard Parts Listing



8. Installation

The Clinispin CT40 is supplied in a packaging box. Upon receiving the centrifuge, gently remove the packaging and take out the centrifuge by holding it from the bottom. Ensure that all the packaging accessories are removed from the rotor chamber. Please keep all the packaging safely for at least two years for warranty purposes.

8.1 Location & Mounting

Place the centrifuge on a flat, solid and level surface. Ensure that all 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 +25°C ± 5°C. Avoid placing the centrifuge in direct sunlight.
- Ensure clearance of at least 30cm from all sides for ease of use.
- 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.

8.2 Rotor Installation

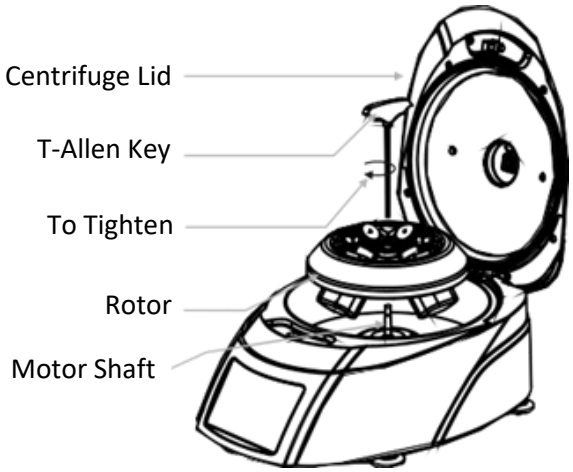
Rotor Removal and Replacement Process

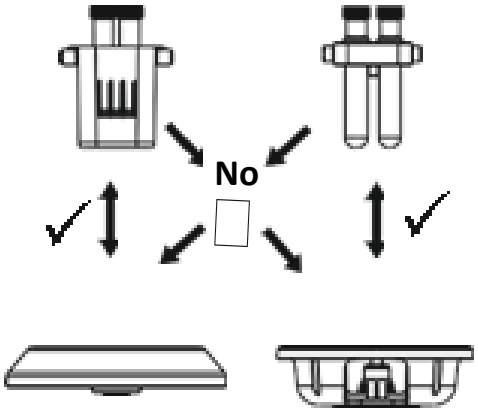
To remove or replace the rotor, follow the instructions below.

Removing the Rotor

1. 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.
2. Once the rotor nut has been loosened completely, pull up the rotor vertically.

Replacing the Rotor





Do not interchange the buckets of the fixed angle and swing rotors.

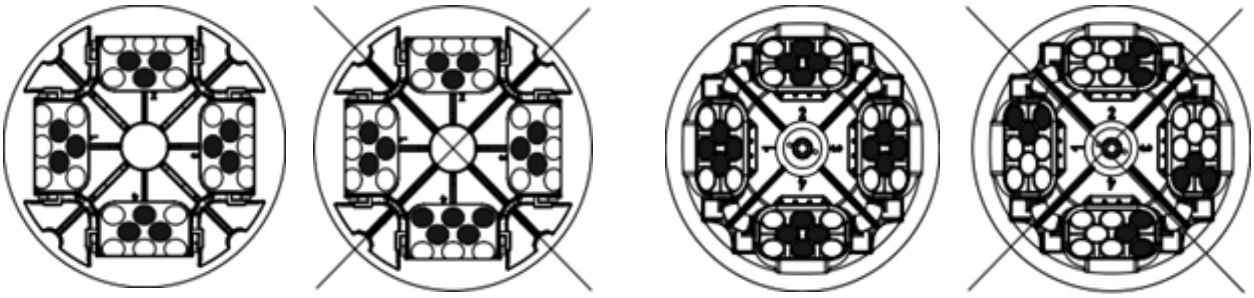
1. To replace or install the rotor, take the rotor and load vertically onto the motor shaft.
2. Place the rotor nut in the centre hole of the rotor onto the motor shaft.
3. Put the T-Allen Key into the rotor nut and turn clockwise to tighten and counterclockwise to loosen the rotor.

NOTE:

- Check the rotor is firmly tightened before running the next program.
- Ensure you do not interchange the buckets of the fixed angle and swing rotors. The warranty will be void if they are interchanged.

Balancing the Rotor

Swing Angle Rotor **Fixed Angle Rotor**

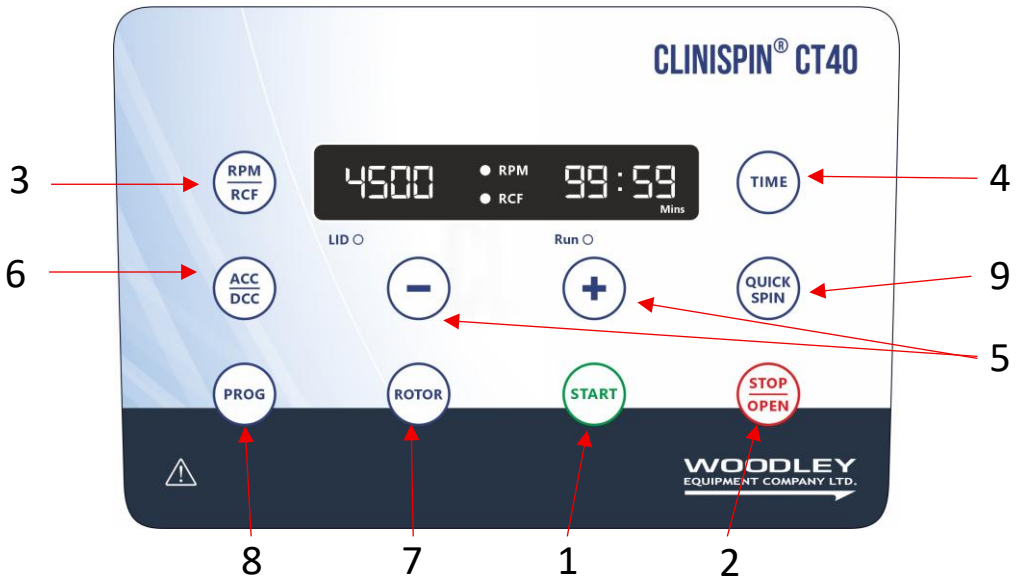


Balanced Rotor Imbalanced Rotor Balanced Rotor Imbalanced Rotor

1. Always balance the rotor before centrifugation. Above are examples of balancing the rotors.
2. The samples in the tubes should be of equal volume.
3. If the tubes are not loaded correctly – vibration or imbalance can occur which can cause serious damage to the centrifuge.
4. If the tubes are not loaded symmetrically, the imbalance detector will cut off 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.

9. User Interface & Display



No.	Button	Function
1	Start	Press once and the motor will start as per the selected RPM and time if the lid is closed. The START button only works if the lid is closed.
2	Stop/Open	Press once and the motor will stop. After the motor has stopped, the lid will open automatically. The OPEN button will only work when the unit has come to a complete stop.
3	RPM/RCF	Press once and the speed display will flash 5 times to set RPM. Select the RPM value to be set for centrifugation. Press and hold the button to switch between RPM and RCF. Select the RCF value to be set for centrifugation. RPM/RCF mode is indicated via LED on the panel.
4	Time	Press once and the minutes can be set. The timer can be set from 1 min to 99 mins 59 seconds, infinite mode and roll over mode. The display will flash 5 times and then set the selected time.
5	Increment/ Decrement	Press Plus (+) or Minus (-) to increase or decrease the speed, time, program value or program number.
6	Acceleration/ Deceleration	Press once to set acceleration. Press once again to set deceleration.
7	Rotor	Press once to select the rotor number. Press multiple times to change the rotor number.
8	PROG	Press and hold to enter program mode. The display will flash 5 times to set the program number. To change the program number, use the Plus (+) and Minus (-) buttons. After 5 flashes, specific program

		values can be set by using the Plus (+) and Minus (-) buttons, for confirmation each value will flash 5 times.
9	Quick Spin	Press and hold the button to run the last set RPM program.

LEDs for lid open/close indication, run indication and RPM/RCF functions.

Display Element: 4 digit, 7 segment.

10. Operating the Centrifuge

10.1 Switch the Centrifuge On

After connecting the power cord, switch the main power supply ON. Then, switch the power switch located on the rear side of the centrifuge to ON. Check the rotor fitment before use. The centrifuge will not operate when the lid is open.

NOTE:
Maintain a gap of 3 seconds between switching OFF and switching ON again. DO NOT switch OFF and ON again immediately.

10.2 RPM/RCF Setting

- After closing the centrifuge lid, press the RPM/RCF button to select speed setting in RPM/RCF mode. Press the (+) button to increase the RPM/RCF value or press the (-) button to decrease the RPM/RCF value.
- Minimum and Maximum RPM of the centrifuge is 500 RPM to 4500 RPM respectively. No roll over mode.
- The flashing of the RPM value will stop and the RPM value will be stored automatically if no buttons are pressed after 5 flashes of the adjustment.
- RPM/RCF can also be changed while the centrifuge is under operation. Press the RPM/RCF button and use the (+) and (-) buttons to change the value. Changing the RPM/RCF value between the ongoing centrifugation will run the centrifuge at the updated speed for the remaining time as indicated by the timer.
- To set the RCF value, press and hold the RPM/RCF button to change the RCF setting. Press the (+) and (-) buttons to increase or decrease the value. The flashing of the RCF value will stop and the RCF value will be stored automatically if no buttons are pressed after 5 flashes of the adjustment.
- The value will flash 5 times to indicate acceptance.

10.3 Timer Setting

- Operating time can be selected from 1 min to 99:59 mins, or continuous.
- Press the TIME button to change the time setting.
- Press the (+) and (-) buttons to increase or decrease the value. After the display flashes 5 times, the value will be set.
- The centrifuge time set for run between 1 min to 99:59 minutes or operated in infinite time mode or roll over mode.
- Infinite timer will be indicated by][on the display.
- The timer on the centrifuge's countdown timer in the display will be in Minutes/Seconds.

- The time will be shown after 5 seconds.
- The time will be indicated on the TIME LED light.
- The input will be accepted once the value has flashed 5 times. The value will flash 5 times to indicate acceptance.

10.4 ACC/DCC

This button will set the parameters of acceleration or deceleration of the rotor ramp. Press the ACC/DCC button once to set the acceleration from 1-9 by using the +/- buttons for increment/decrement respectively. Similarly, press the ACC/DCC button again to set deceleration from 1-9 by using the +/- buttons for increment/decrement respectively. The values of acceleration and deceleration timings are listed below.

Acceleration & Deceleration Time				
Rotor Type: Swing Out			Max. RPM: 4500	
Tube Capacity	4 x 50ml	16 x 15ml	24 x 15ml	32 x 6ml
Mode ACC/DCC	Time (S)	Time (S)	Time (S)	Time (S)
DL	478	478	481	478
D0	293	293	297	293
A1/D1	181/178	184/177	181/183	188/180
A2/D2	172/164	174/164	172/170	173/168
A3/D3	152/143	155/145	151/158	152/146
A4/D4	131/125	133/126	131/139	131/128
A5/D5	110/103	112/107	111/109	113/108
A6/D6	90/86	93/87	91/90	91/89
A7/D7	71/65	73/68	72/71	74/69
A8/D8	51/47	52/46	52/49	52/46
A9/D9	34/30	38/30	33/32	35/30

Acceleration & Deceleration Time				
Rotor Type: Fixed Angle			Max. RPM: 4500	
Tube Capacity	4 x 50ml	16 x 15ml	24 x 15ml	32 x 6ml
Mode ACC/DCC	Time (S)	Time (S)	Time (S)	Time (S)
DL	483	484	484	484
D0	301	302	301	301
A1/D1	182/187	181/188	182/188	181/188
A2/D2	173/174	172/176	172/174	172/176
A3/D3	152/153	150/153	151/152	151/153
A4/D4	131/133	129/134	130/133	130/134
A5/D5	111/112	110/113	111/113	110/113
A6/D6	91/93	89/94	90/93	90/94
A7/D7	71/73	68/74	71/72	70/73
A8/D8	51/48	50/49	51/49	51/49
A9/D9	33/34	32/34	33/34	32/34

NOTE:

The readings were taken under 'No Load' conditions so the results may vary when the equipment is loaded.

10.5 PROG

- Press the PROG button to select a program from P01 – P99.
- Each stored program can be used for direct operation.
- Different parameters of RPM/RCF, TIME and ACC/DCC can be set in each program.
- All the parameters save automatically after the value has flashed 5 times.
- RPM/RCF, TIME and ACC/DCC parameter values entered respectively.
- After entering each value, it will flash 5 times to indicate acceptance.

10.6 Quick Spin

Press and hold the QUICK SPIN button for immediate centrifugation of the samples up to previous run RPM. Releasing the button will stop the rotor gradually.

10.7 Rotor

Press the ROTOR button to select the rotor, as listed below. The rotor numbers can be changed by using the +/- buttons for increment or decrement of the rotor number.

Swing Out Rotor				
Rotor No.	**Max. Volume**	**Max. RPM**	**Max. RCF**	**Radius (cm)**
31	32 x 6ml	4500	3152	13.9
32	24 x 15ml	4500	3220	14.6
33	16 x 15ml	4500	3334	14.7
34	4 x 50ml	4500	3315	14.6

Fixed Angle Rotor				
Rotor No.	**Max. Volume**	**Max. RPM**	**Max. RCF**	**Radius (cm)**
51	32 x 6ml	4500	2766	12.2
52	24 x 15ml	4500	2744	12.3
53	16 x 15ml	4500	2744	12.3
54	4 x 50ml	4500	2562	11.5

Swing Out Bucket		Fixed Angle Bucket	
No.	**Max. Volume**	**No.**	**Max. Volume**
CT40-Swing-BH	Bucket Holder	CT40-Fix-BH	Bucket Holder
31	32 x 6ml	51	32 x 6ml
32	24 x 15ml	52	24 x 15ml
33	16 x 15ml	53	16 x 15ml
34	4 x 50ml	54	4 x 50ml

10.8 Start & Stop

Press the START button to start the operation and press the STOP button to stop the ongoing operation. When the centrifuge is running, the RUN LED light will be lit. Pressing the STOP/OPEN button will stop the operation. Once the centrifuge has stopped, the lid will automatically open.

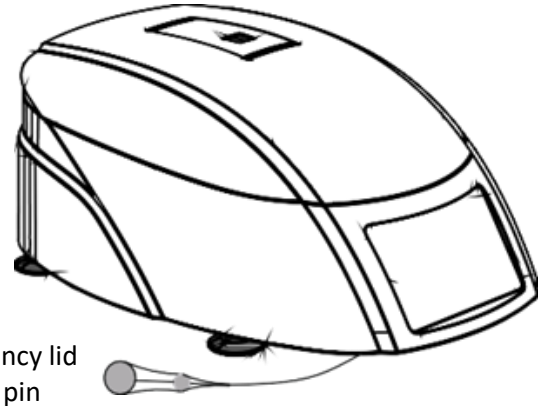
Once the set time has been reached, the centrifuge will stop automatically and the lid will open automatically.

10.9 Imbalance Detection

The centrifuge is equipped with an imbalance detection safety feature. When the rotor is not loaded symmetrically, the imbalance detector activates and will stop the centrifugation. The error "Err 55" will be shown on the display. First, correct the imbalance load. Then, switch the centrifuge OFF and ON again. The values will be same as those set before imbalance. The imbalance detection feature cannot be deactivated, as it is factory fitted.

10.10 Emergency Stop/Lid Release

Disconnect the centrifuge from the main power supply. Wait until the rotor has come to a complete stop (this may take some time). Once the rotor has stopped, pull the lid release thread located on the bottom left (to your right) of the centrifuge. This will open the centrifuge lid.



Emergency lid release pin

NOTE:

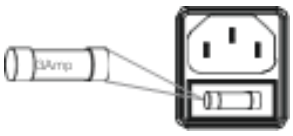
This method of opening the lid should only be used in case of emergency or power failure.

11. 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.
- Only use rotors and spare parts supplied by Woodley Equipment Company for best results and product safety.
- The rotors must be loaded symmetrically. Each tube should be counter balanced by another tube of the same weight.
- Do not use a centrifuge or rotor that has not been correctly installed or shows any sign of damage.
- The rotor must always be fitted securely. If the centrifuge makes unusual noises during operation, the rotor fitment needs to be checked. Switch OFF the centrifuge immediately by pressing STOP. Check the rotor fitment and fasten it if required.
- When first unboxing the centrifuge, please plug the centrifuge in and close the lid.
- Never move the centrifuge whilst in operation.
- 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 contamination, sample loss and can create imbalance in the centrifuge which can result in further damage to the centrifuge and its accessories.

- Do not fill tubes while they are in the rotor. Liquids spillage may damage the centrifuge. If liquids are spilled in the rotor or rotor chamber, the centrifuge must be cleaned carefully and properly before being used again.
- The centrifuge must 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 material. Also, do not place any potentially hazardous material within the clearance area.
- Equipment if used in any manner not specified in this manual or by the manufacturer can result in voiding the product warranty.
- Repairs must only be performed by Woodley Equipment authorised personnel.
- Do not lean on the equipment. It may damage the equipment or harm the operator.
- In the event of contamination caused by aggressive agents, the rotor must be cleaned immediately using a natural cleaning liquid. This is particularly important for the bores of the tubes. If there are any signs of damage, contact Woodley Equipment Company.
- Before using cleaning or decontamination methods other than those stated in this manual, contact Woodley Equipment Company to ensure that the intended method will not damage the centrifuge.
- For safety, Woodley Equipment Company have provided protective earthing with the power supply. Please ensure the power supply is earthed.
- Be sure to close the tube lids tightly prior to centrifugation. Open tube lids can be torn off during centrifugation and can damage the rotor or centrifuge.
- Rotor 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 showing visible signs of corrosion or mechanical damage should not be used.
- The centrifuge's capacity must not be exceeded.
- **For safety and air-tight sealing to minimise the air noise, higher force needs to be applied on the lid to close the latch properly.**
- The Safety Fuse provided is of 3 Amp configuration which can be replaced by the operator. The same will protect the machine circuit during an electrical fault or overload.



12. Maintenance and Cleaning

- The rotor and the outside of the centrifuge should be cleaned regularly with a damp (with water) cloth.
- Ensure that the centrifuge is not plugged in while cleaning.
- Wear protective clothing and safety glasses while operating and cleaning the centrifuge.
- The brushless motor in the centrifuge requires no routine maintenance. Any required service should be performed by Woodley Equipment authorised personnel only. Repairs performed by unauthorised personnel may void the warranty.
- Always keep the centrifuge housing, rotor chamber and rotor clean. All parts should be wiped down periodically with a soft cloth.

NOTE: Liquid should not come into contact with the motor.

- After cleaning, ensure that all parts are dry before using.
- Regular cleaning of the rotor is important.

- If the rotor chamber needs cleaning, use a cloth or sponge dampened with a neutral detergent solution.
- Do not place the rotor into the cleaning solution.
- If corrosive, toxic or pathogenic bacteria are accidentally spilled in the rotor or rotor chamber, the centrifuge must be decontaminated thoroughly.
- A Grease Tube has been provided as a standard accessory. A small amount of grease has to be applied on the Motor Shaft (Threaded Parts, Grooves) every 2 weeks to prevent rotor and shaft jam. This will ease the installation process in case of regular rotor change.

13. Transportation & Storage

- Only use the original packaging during transportation.
- For longer distances, utilise transportation assistance such as robust trucks.
- Avoid knocking, harsh shaking or jolting the centrifuge.
- Always retain the packaging material and transportation protections for longer storage or transportation.

13.1 Transport

- Before transporting the centrifuge, the transport securing device must be installed.
- When the centrifuge and its accessories are transported, the following ambient conditions must be complied with:
  - Ambient Temperature: +5°C to +40°C
  - Relative Humidity: ≤80%, non-condensing

13.2 Storage

- The centrifuge and its accessories should only be stored in dry environments, away from direct sunlight.
- When the centrifuge and its accessories are stored, the following ambient conditions must be complied with:
  - Ambient Temperature: +5°C to +40°C
  - Relative Humidity: ≤80%, non-condensing

14. Troubleshooting

The centrifuge has a self-diagnostic function. If a problem occurs, an error/warning code will be displayed on the display screen and the operator can determine the error using the following table.

Error	Problem	Solution
No display	No main power connection	Check the power and properly plug in the mains cable at both ends.
	Power failure	Check the mains fuse of the lab.
	Improper connection	Connect the adaptor properly.
	Lid not closed properly	Close the lid correctly.
	Error with lid closing and opening mechanism	Contact Woodley Equipment Company.
Err 55	Rotor not loaded symmetrically with equal weights	Load rotor symmetrically and restart the centrifuge.
Centrifuge lid cannot be opened	Rotor is still spinning	Wait for the rotor to come to a complete stop.
	Power failure	Use the emergency lid release after the rotor has come to a complete stop.
Centrifuge shakes during acceleration and unusual running noise	Rotor not loaded symmetrically	Stop the centrifuge, load the rotor symmetrically and restart operation.
	Either a broken tube, damage to the rotor or motor is the cause of the unusual run noise	Replace the broken tube. For damaged rotor/motor, contact Woodley Equipment Company.
	Rotor damaged	Remove and change the rotor.
Display error	Loose connection of display	Contact Woodley Equipment Company.
Err 1	Latch damaged, latch jammed	Contact Woodley Equipment Company.
	Lid not closed/locked	Close/lock the lid.
Err 52	Rotor stuck or incorrect operating voltage	Turn the centrifuge OFF. Check the rotor fitment or apply correct 230 VAC ± 10 VAC operating voltage.
Power tripping	Cable not fit properly	Remove cable and connect properly.

IMPORTANT NOTE:

- If the system gets hot or overheats due to over current, switch the centrifuge OFF and ON (restart), and check it again.
- Maintain a 3 second gap between turning the centrifuge OFF and ON. Immediately turning the centrifuge back on can lead to a reset, erasing last run memory.
- If the motor overheats, there will be fluctuation in speed value. Allow centrifuge to cool down for at least 30 minutes. Do not perform any operations for 30 minutes.

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.

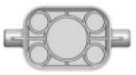
Information on the disposal of electrical and electronic devices in the European Community:

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 your supplier if necessary.

Swing Out Rotor								
				Max. G Force/RCF			3334 xg	
				Max. Rotation Speed			4500 RPM	
				Acceleration & Deceleration Time			≤35s	
				Max. Load (Adapter, Tube Holder, Tube & Contents)			16 x 161.2 gm	
				Rotor Weight			866.4 gm	
No.	Tube	Tube Type	Adaptor	Adaptor Type	Holder	Holder	Tubes/ Holder	Max. G Force/ RCF
		Capacity		Diameter		Type		Max. Rotation Speed
		Diameter		Material		Material	Tubes/ Rotor	
		Length		Inner Depth		Dia		Radius
		Weight		Weight		Weight		
1		Conical Centrifuge Tube w/Cap		Spherical		4 x 50 ml	1/1	3315
		50 ml		Ø 31.5 mm		Bucket Holder		4500 RPM
		Ø 29 mm		SS		Aluminium Alloy	4/1	
		116.6 mm		98.3 mm		Ø 33 mm		14.6 cm
		12.8 gm		41.7 gm		152.7 gm		
2		Conical Centrifuge Tube w/Cap		Spherical		16 x 15 ml	4/1	3334
		15 ml		Ø 18 mm		Bucket Holder		4500 RPM
		Ø 15 mm		SS		Aluminium Alloy	4/1	
		120.5 mm		98.3 mm		Ø 19.5 mm		14.7 cm
		6.6 gm		22.1 gm		131.4 gm		
3		Glass Tube		Spherical		24 x 15 ml	6/1	3220
		15 ml		Ø 18 mm		Bucket Holder		4500 RPM
		Ø 15 mm		SS		Aluminium Alloy	4/1	
		120.5 mm		98.3 mm		Ø 19.5 mm		14.6 cm
		6.6 gm		22.1 gm		122.3 gm		
4		Conical Centrifuge Tube w/Cap		Spherical		32 x 6 ml	8/1	3152
		7 ml		Ø 14 mm		Bucket Holder		4500 RPM
		Ø 12.70 mm		SS		Aluminium Alloy	4/1	
		107 mm		89.5 mm		Ø 16.5 mm		13.9 cm
		8 gm		15..7 gm		94.2 gm		

Note: Rotor maximum service life 30,000 cycles (from first use).

Fixed Angle Rotor								
				Max. G Force/RCF				2766 xg
				Max. Rotation Speed				4500 RPM
				Acceleration & Deceleration Time				≤35s
				Max. Load (Adapter, Tube Holder, Tube & Contents)				32 x 154.2 gm
				Rotor Weight				1465.0 gm
No.	Tube	Tube Type	Adaptor	Adaptor Type	Holder	Holder Type	Tubes/ Holder	Max. G Force/ RCF
		Capacity		Diameter		Material		Max. Rotation Speed
		Diameter		Material		Dia	Tubes/ Rotor	
		Length		Inner Depth		Inner Depth		Radius
		Weight		Weight		Weight		
1		Conical Centrifuge Tube w/Cap	-	-		4 x 50 ml	1/1	2562
		50 ml				Bucket Holder		
		Ø 29 mm				Plastic		4500 RPM
		116.6 mm				Ø 32.47 mm	4/1	
		12.8 gm				84 mm		11.5 cm
						136.7 gm		
2		Conical Centrifuge Tube w/Cap	-	-		16 x 15 ml	1/1	2744
		15 ml				Bucket Holder		
		Ø 15 mm				Plastic		4500 RPM
		120.5 mm				Ø 17.97 mm	4/1	
		6.6 gm				84 mm		12.3 cm
						145.2 gm		
3		Glass Tube	-	-		24 x 15 ml	6/1	2744
		15 ml				Bucket Holder		
		Ø 15 mm				Plastic		4500 RPM
		120.5 mm				Ø 17.97 mm	4/1	
		6.6 gm				84 mm		12.3 cm
						151.8 gm		
4		Conical Centrifuge Tube w/Cap	-	-		32 x 6 ml	8/1	2766
		7 ml				Bucket Holder		
		Ø 12.70 mm				Plastic		4500 RPM
		107 mm				Ø 14.98 mm	4/1	
		8 gm				84 mm		12.2 cm
						145 gm		

Note: Rotor maximum service life 30,000 cycles (from first use).

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