



## Low Speed Centrifuge – TS-C User Manual



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# 1. Getting Started

## 1.1 Packing list

In this box you should find the following items:

1x Benchtop Low Speed Centrifuge

1x rotor if ordered (pre-installed in the centrifuge)

1x 10mm driver

1x Operation Manual

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## 1.2 Button Functionality



Used to set parameters of each run. Click until the desired parameter is blinking and use the arrows to change the value.



Used to change values after making them blink using the "Set" button. Can be pressed simultaneously to switch from RPM mode to RCF (Relative Centrifugal Force) mode



Used for short spurts of centrifugation



Used to start or stop a run on the centrifuge



Used to open the lid when the centrifuge is not running

## 2. Technical Specifications

<b>Power Supply</b>	110V-60Hz or 230V-50/60HZ (Depending on model chosen)
<b>Power Usage</b>	40W
<b>RPM Speed Range</b>	500-5000 RPM (10RPM increments)
<b>Max RCF</b>	3074 x g
<b>Rotor Capacity</b>	8 x 15ml tubes*
<b>Max Runtime</b>	99 min 59 sec
<b>Max Liquid Density at Top Speed</b>	1.2g/ml
<b>Allowable Ambient Temp Range</b>	5°C-35°C
<b>Device Dimensions (mm) (LxWxH)</b>	400x340x270
<b>Weight (kg)</b>	5

### Rotor Info:



-Holds 6 15ml centrifuge vials -Max speed of 5000 RPM	-Holds 8 15ml centrifuge vials -Max speed of 5000 RPM	-Holds 12 5ml or 10ml vials -Max speed of 4000 RPM
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### 3. Safety Precautions

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**Please read these thoroughly before operation:**

- 3.1 Visually inspect the centrifuge before each run. Checking for damaged or missing parts
- 3.2 The rotor and centrifuge lid must always be securely fastened during a run. Failure to secure these parts could result in damage to the machine and even injury.
- 3.3 Never move the centrifuge while it is running.
- 3.4 If the centrifuge starts to vibrate excessively, or make unusual noise, stop the run immediately using the “Start/Stop” button. This could indicate that the rotor is not secured properly, the lid is not completely closed, or that the load is improperly balanced.
- 3.5 Please wear the appropriate safety attire when operating this machine, especially if the sample could potentially be dangerous to the human body.
- 3.6 Corrosive, explosive, and flammable solutions should not be used in the centrifuge.
- 3.7 Do not exceed a sample density of 1.2g/ml at max speed. If your sample exceeds this density, please reduce centrifuge speed to ensure safe operation.
- 3.8 Do not use damaged tubes in this centrifuge. This could result in damage to the centrifuge and even injury.
- 3.9 Ensure sample lids are fully closed. Lids opening during a run can result in sample loss, centrifuge damage and possibly injury
- 3.10 Always load the centrifuge symmetrically both in pattern and weight. If more tubes are needed to balance, a water filled tube of the same weight may be used to balance the machine. Unbalanced rotors can cause catastrophic failure to the machine and injury to the operator.
- 3.11 Ensure that motor ventilation slits are not blocked while in use
- 3.12 Do not perform maintenance/loading procedures on the centrifuge while it is powered on. Switch the machine off using the back power switch before doing either of these.

## 4. Operation Guide

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### Setup:

- After unboxing, place the rotor on a clean and stable surface. The surface should be as close to level as possible for best results.
- Move any other objects far enough away from the centrifuge so that air can flow freely around it.
- Open the lid and ensure that the rotor is properly affixed (See: [Rotor installation and removal](#))
- Connect the rotor to the power outlet ensuring that your outlet is the same voltage as your machine is rated for

### Loading the Centrifuge:



- Load tubes in a symmetrical manner
- Minimize difference in weight between samples each run. This will reduce wear on the motor and the potential for malfunction.
- Fill any slots that are needed to make a symmetrical pattern with a vial of the same weight as your solutions.

### Centrifugation with a preset time:


- Ensure one last time that the rotor is properly secured, and the lid is completely closed.
- To set rotor speed: press the  button until the RMP value is blinking. Use the arrow buttons to adjust speed to desired RPM. Once your desired value is reached, allow the number to blink 3 times, at which point it will stop blinking and confirm the number.
- To set the runtime: press the  button until the time values are blinking. Use the arrow buttons to adjust the minutes and seconds according to your need. Once you have reached your desired time, allow the value to blink 3 times and it will set the value.
- Press the  button to initiate the run. If you need to end the run prematurely, simply click the  again to do so.

- When the desired time is reached, the centrifuge will cease spinning. When the rotor has come to a stop, the lid will open automatically, and the machine will beep 4 times to indicate the run has ended.
- The runtime and speed may be changed mid-run using the same processed detailed above

### **Short term centrifugation:**

- Once the rotor is loaded properly, close the lid completely.
- Press and hold the  button for the desired amount of time.
- The centrifuge will spin up to the set RPM if given adequate time to do so.
- When you have reached the desired time, release the  button, and allow the centrifuge to come to a stop
- When the rotor has come to a stop, the lid will open automatically, and the machine will beep 4 times to indicate the run has ended.

### **Switching to RCF mode:**

- In order to switch the centrifuge from RPM mode to RCF mode, hold both arrow buttons simultaneously (This is done again to switch back to RPM mode.)
- You are now free to select your desired RCF value by using the  button to make it blink and then changing it with the arrow buttons.

### **Manual opening of centrifuge lid:**

- In the event of a power or program failure, ensure that the rotor has come to a complete stop, the centrifuge has been turned off, and it has been disconnected from the outlet.
- Next remove the red plug located on the front bottom side of the machine.
- Pull on the rope located behind the plug to manually open the centrifuge lid.
- Replace rope and plug when done.

## 5. Maintenance for Your Machine

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### **Rotor installation and removal:**

- Ensure the machine is powered off before completing any other step
- To attach the rotor, fit the rotor onto the motor shaft. Then affix the rotor nut by turning clockwise using the provided 10mm driver
- In order to remove the rotor, simply turn the nut counterclockwise and remove the rotor from the motor shaft.

### **Regular cleaning of your centrifuge:**

- You should regularly wipe down both the outside and inside of your machine.
- First, disconnect the machine from the power source.
- It is recommended to use a soft cloth that will not shed any material.
- Dampen the cloth slightly with water or a neutral cleaning agent as needed. Wipe down the outside as well as the rotor bay.
- Repeat process with a soft dry towel to remove any excess moisture left behind.
- Avoid using strong chemicals when cleaning to prevent damage to the parts of the centrifuge.



## 6.Troubleshooting Issues

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Error Code:	How to Fix:
<b>E1-</b> Unbalanced Load	Ensure that rotor is loaded symmetrically and that vials used are as close to the same weight as you can make them (including water-filled balancing vials)
<b>E2-</b> Maximum Speed Exceeded	This can result due to an issue with the speed controller. <b>Please contact us</b>
<b>E3-</b> Door Not Properly Closed	Allow the centrifuge to come to a stop, and then ensure that the door is closed properly. Open and reclose it if necessary.
<b>E6-</b> Voltage is Incorrect	Ensure you are using the factory power adapter and that your power source is working at the proper voltage. If problem persists, or the unit is damaged, please contact us.
<b>E7-</b> Motor Issues	Please contact us for return information.
<b>E11-</b> Cannot Reach Set Speed	Please contact us for return information.

## Warranty Info

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Tisch Environmental Inc. (dba: Tisch Scientific) conditionally warrants this instrument when used for its intended purpose for a 1-year period after the date of purchase. The warranty coverage is limited to manufacturing defects or product performance defects.

The subject warranty shall be voided under the following conditions but not limited to issues being caused by misuse or abuse of the product or customer tampering with the instrument or both.

Valid warranty claims as determined by Tisch Scientific will be dispositioned by replacement or repair.

**Do not attempt to repair on your own.**

Please contact us at **513-880-8499** or **[support@tisch-env.com](mailto:support@tisch-env.com)** for RMA info.

**Follow QR Code below to product page**

