



- A** Lid
- B** Rotor
- C** Open Button
- D** P2 Button
- E** Speed Adjustment
- F** Start/Stop Button
- G** Emergency Release Lever (Bottom of unit)
- H** Time Adjustment
- I** P1 Button
- J** RPM / RCF Button
- K** LCD Display
- L** Power Jack
- M** Power Switch

**Includes:**

- 6-place angled rotor for 7ml-15ml tubes
- 6 black inserts for 5ml-6ml tubes
- 6 white inserts for 3ml-4ml tubes
- 6 green inserts for 0.5ml-2.0ml microtubes
- Hex wrench for rotor screw

### Introduction

The LW Scientific Zip-IQ TT centrifuge is a 6-place test tube centrifuge for spinning blood, urine, and other fluids in 0.5ml to 15ml test tubes and microtubes. The unit is very small, conserving counter space in the lab, but also sturdy with suction-cupped feet for stability. Two programmable buttons allow you to set quick and easy speed and time selections. The RPM / RCF button toggles between displaying RPM or RCF (g-force). The digital controls allow speed and time to be adjusted with the touch of a finger and will show real-time speed and time remaining. The maintenance-free, brushless motor spins at 5,000rpm (2,500g) producing serum in as little as 5 minutes. Slow the speed to 2,000rpm (400g) to spin urines in 5 minutes. The auto-brake stops the rotor in 10 seconds, and the lid opens automatically upon completion.

## Warranty

LW Scientific instruments have a one (1) year limited warranty. This warranty is not valid on normal wear and tear, cosmetic damages caused by chemicals, solvents, and/or cleaning solutions, as well as acts of God.

Please register your product online at: [www.LWScientific.com/warranty\\_form](http://www.LWScientific.com/warranty_form).

**Important:** Warranty information must be completed within 30 days of purchase.

## Installation and Setup



This symbol refers to hazards that may be encountered when using this product.

**CAUTION** means that damage to product or environment could occur  
**WARNING** means that injury or contamination could occur

- 1 Remove the centrifuge from the shipping container and inspect for any possible shipping damage. If the centrifuge appears to be damaged, please contact LW Scientific or your distributor immediately.
- 2 Read the instruction manual in full before operating. Store the operation instructions in a safe place, easily accessible by the trained staff that will be operating the centrifuge.
- 3 Place the centrifuge on a sturdy, level surface. Using the emergency release lever underneath the centrifuge, open the lid. Verify that there are no loose objects or packing material in the tube chamber. **DO NOT LOAD TUBES AT THIS TIME.**
- 4 Using the included hex wrench, verify that the silver rotor screw in the center is tight. Verify that there are no tubes or inserts in the rotor.



**WARNING:** Ensure the rotor is securely fixed to the rotor shaft. Failure to properly secure rotor could lead to personal injury or damage to the centrifuge.

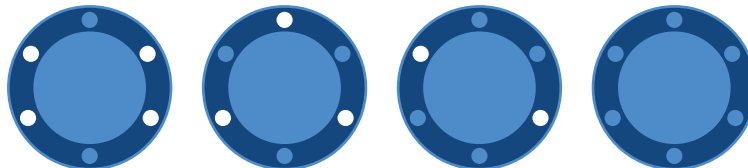
- 5 Close the lid, ensuring that it clicks and locks.
- 6 Plug the power adapter into the rear of the unit, and plug the cord into an outlet. Press the **POWER** button to turn the unit on. The LCD display should light up.
- 7 **Test the unit:** Set the time at 3 minutes, and set the speed at 1,000 rpm. Press the **START/STOP** button. The unit should come up to speed with no vibration and a smooth and quiet sound. Second, set the speed at 5,000 rpm and run again. If there are unusual vibrations or sounds, stop the unit and contact your distributor or LW Scientific.

## Loading and Operation

- 1 Prior to each use, ensure rotor is secure on the rotor shaft. If rotor appears loose, securely tighten using included hex wrench.



- 2 **Spin only balanced loads.** Ensure that tubes of similar size and equal weight are placed opposite of each other, or place 3 equal tubes in a triangle as pictured below. Use a water-filled tube as a balance tube if necessary. Proper balancing will improve sample separation and extend the life of the centrifuge. Spinning out of balance loads may break test tubes or damage the centrifuge.



## Loading and Operation Continued

- 3 Ensure that test tubes are supported from the bottom and not hanging by their caps. Use inserts as follows:

### White Inserts

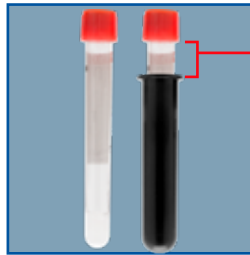
3ml-4ml tubes (13mm x 75mm)  
These support short, skinny tubes



**Note:**  
Not hanging  
by cap

### Black Inserts

5ml-6ml tubes (13mm x 100mm)  
These support tall, skinny tubes



**Note:**  
Not hanging  
by cap

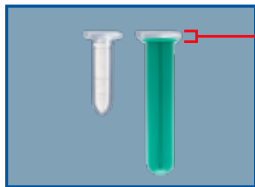
### No Inserts

7ml-15ml tubes (16mm x 100mm - 120mm)  
Use the openings in the rotor



### Green Inserts

0.5ml - 2.0ml microtubes  
Microtubes **ARE** designed to hang  
by the rim of the tube.



**Note:**  
Hanging  
by cap

- 4 Set the speed and time as recommended on page 4.
- 5 Press the **START/STOP** button to run the cycle. The unit will stop on its own, beep, and open the lid upon completion.
- 6 To program P1 and P2 buttons, select desired speed and time. Hold programmable button for 3 seconds. Once the programmable button has been set, the unit will beep as a confirmation.



**WARNING:** Failure to secure rotor could lead to personal injury or damage to the centrifuge.

**CAUTION:** Spinning unbalanced loads could damage unit and destroy samples.



**WARNING:** Use 6-place test tube rotor **ONLY** with this centrifuge. The unit is not designed to accept additional rotors. Use of other rotors could lead to personal injury or damage to the centrifuge.

## Care, Maintenance, and Troubleshooting

The Zip-IQ motor is designed to be maintenance-free. With proper care, this centrifuge will provide years of service. However, if repairs should be needed, please contact LW Scientific.

- 1 Use only quality test tubes that are rated for the g-forces utilized. Lower-quality tubes may fracture and allow contents to leak out of tube.
- 2 Never force tubes into the rotor. The rotor was designed to hold the most common sized test tubes.
- 3 Clean with common laboratory disinfectants regularly. Do not allow moisture to seep into the centrifuge and do not immerse the electrical components in any liquid during the cleaning process.
- 4 Because of safety issues with high g-forces in a centrifuge, it is recommended that rotors be inspected monthly for wear and fatigue. If there is any indication of wear, the rotor should be removed from service. Contact LW Scientific for return instructions so the rotor can be evaluated by a technician for repair or replacement. After 2 years of service, it is recommended that rotors be returned to LW Scientific for inspection or replacement.

Following these procedures will ensure safety of lab personnel as well as extend the life of the centrifuge.



**CAUTION:** If corrosion, scratches, or other abnormalities are found on rotor or tube shields, discontinue use and contact our service center.

## Recommended Fluid Speeds and Times

Set the speeds and times as follows, or defer to clinical protocols if different:

Fluid	Tube Size	Inserts	Speeds	Times
Blood	Large (6ml-15ml)	None or Black	5,000rpm	5 minutes
Blood	Small (3ml-5ml)	White	5,000rpm	6 minutes
Blood	Microtubes (0.5ml-2.0ml)	Green	5,000rpm	7 minutes
Urine	10ml-15ml urine tubes	None	2,000rpm	5 minutes
Fecals	10ml-15ml fecal tubes	None	1,700rpm	6 minutes

**NOTE:** G-Force is based on radius and speed. Using inserts for smaller tubes and microtubes reduces radius therefore reduces g-force, hence the spin times must be slightly longer in smaller tubes to achieve clear serum separations. Times and speeds can be adjusted based on visual results and clinical protocols.

## Specifications

<b>Speed Range:</b>	300-5,000rpm (increments of 100)
<b>Maximum RCF:</b>	2,500g
<b>Max. Volume:</b>	6, 15ml test tubes
<b>Input Voltage:</b>	100-240v AC; 50-60Hz
<b>Output Voltage:</b>	24v DC, 4 amps
<b>dBA:</b>	53 dBA +/- 3 dBA @ 18"-24"
<b>Timer:</b>	15 sec - 99 min
<b>Display:</b>	LCD Digital

<b>Product Dimensions:</b>	
<b>Height:</b>	6.2" (158 mm)
<b>Depth:</b>	10.6" (270 mm)
<b>Width:</b>	8.3" (212 mm)
<b>Weight:</b>	9.9 lbs (4.5 kg)
<b>Boxed Dimensions:</b>	
<b>Height:</b>	8.75" (203.2mm)
<b>Length:</b>	11" (279.4mm)
<b>Width:</b>	15" (381mm)
<b>Weight:</b>	12.25 lbs (5.56kg)

## G-Force Chart

Speed (rpm)	G-Force (RCF)			
	No Inserts / Black Inserts	White Inserts	Green Inserts	
	Radius: 9cm	Radius: 8cm	Radius: 7cm	
500	25g	22g	20g	
1000	101g	89g	78g	
1500	226g	201g	176g	
1700	290g	258g	226g	<b>Fecals - 6 minutes</b>
2000	402g	358g	313g	<b>Urine - 5 minutes</b>
2500	629g	559g	489g	
3000	906g	805g	704g	
3500	1233g	1096g	959g	
4000	1610g	1431g	1252g	
4500	2038g	1811g	1585g	
5000	2516g	2236g	1957g	<b>Blood - 5 to 7 minutes</b>

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