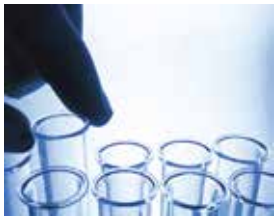
MX12 Centrifuge

Instruction Manual





Designed, Engineered & Assembled Proudly in America

Introduction

The LW Scientific MX12 centrifuge is a 24-place microhematocrit centrifuge for spinning full-size 75 mm capillary tubes. The unit is small, conserving counter space in the lab, but also sturdy with suction-cupped feet for stability. 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 12,000 rpm producing rapid PCV results. The included reader lid allows results to be read while still on the rotor.

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Unpacking and Set up

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.

What's included:
- MX12 Centrifuge
- 24- place flat rotor with reader lid for 75 mm capillary tubes

1. LW Scientific packs each MX12 centrifuge with utmost care. All units undergo a QC check prior to shipping from LW Scientific headquarters in Lawrenceville, GA to ensure proper operation. Examine the outer and inner containers for any visible damage, and retain the packing material. If there is visible damage, please contact the shipper or your distributor, as our warranty does not cover shipping damage.

   Please register your product online at: www.LWScientific.com/warranty_form. **Important:** Warranty information must be completed within 30 days of purchase.

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. **To open centrifuge lid,** press and hold the lid and, press the **STOP** button. Verify that there are no loose objects or packing material in the tube chamber. **DO NOT LOAD TUBES AT THIS TIME.**

4. The rotor lid thumbscrew has been secured prior to shipment. Ensure that it is secure before operating unit.

   Verify that the black rubber gasket is in place around the perimeter of the rotor.

   Verify that the rotor lid is securely tightened. Do not over tighten.

5. Close the centrifuge lid, ensuring that it clicks and locks. Press firmly with the palm of your hand.

6. Plug the power cord into the rear of the unit and plug the cord into an outlet. Press the **POWER** button to turn the unit on. The LED display should illuminate.

7. **Test the unit:** Set the time for 3 minutes and set the speed for 2,000 rpm. Press the **START** button. The unit should come up to speed with no vibration and a smooth and quiet sound.

   To set the speed: Press the **SET** button once and the Speed will start flashing. Now use the **UP** and **DOWN** buttons to set your desired speed.

   To set the time: Press the **SET** button again and the Time will start flashing. Use the **UP** and **DOWN** buttons to change and set the time setting to your desired time. Press **ENTER** to save setting.

8. Next, set the speed for 12,000 rpm and run again. If there are unusual vibrations or sounds, stop the unit and contact LW Scientific, Inc. or your distributor immediately.

   NOTE: The MX12 centrifuge takes 60 seconds to reach 12,000 rpm and 60 seconds to come to a complete stop.

WARNING: Ensure the rotor lid is securely fastened securing the rotor to the rotor shaft.

Failure to properly secure rotor lid and rotor could lead to personal injury or damage to the centrifuge.

WARNING: DO NOT OPEN LID WHILE ROTOR IS SPINNING.

WARNING: Not intended to be used under water or near fire hazard.

Loading and Operation

1. Prior to each use, ensure rotor is secured on the rotor shaft by tightening the rotor lid thumbscrew.
2. **Spin only balanced loads.** Use only 75 mm capillary tubes, ensuring that the sealant plug is aligned into the black gasket. When balancing, placing an empty capillary tube across from the sample tube is sufficient. Proper balancing will improve sample separation and extend the life of the centrifuge.
3. **Always ensure the thumbscrew on the rotor lid is finger tightened.**
4. Set the speed to 12,000 rpm and the time to 3 minutes.

5 Press the **START** button to run the cycle. The unit will stop on its own and beep upon completion.

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

WARNING: Use 24-place microhematocrit rotor or other rotors approved by LW Scientific for use in this centrifuge ONLY. Use of non-LW Scientific approved and tested rotors could lead to personal injury or damage to the centrifuge.

WARNING: DO NOT OPEN LID WHILE ROTOR IS SPINNING.

The **SHORT SPIN** button is for a manual run cycle. This allows you to spin the rotor for the time you are holding the **SHORT SPIN** button. Once you release the **SHORT SPIN** button the centrifuge will cycle down and come to a stop.

Press the **STOP** button during any cycle to stop a spin cycle.

The **RCF/RPM** button allows you to change the digital display from RPM to RCF (G-Force). **Note**: A period will appear to the right of the Speed / RCF display when the RCF is setting is selected. See Figure 1.

Figure 1

Reading Microhematocrit Tubes

1 After the rotor has stopped, turn the reader disk until the top of the fluid is aligned with the100% line.

2 Read the separation line in the middle for the PCV results.

Care and Maintenance

The MX12 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, Inc.

1 Use only quality 75 mm capillary tubes and fresh tube sealant. Lower-quality tubes may fracture and/or old sealant may cause blood to leak out of tubes.

2 Never force a tube into the slots in the microhematocrit rotor. The rotor was designed to hold the most common sized 75 mm capillary tubes.

3 Clean with common laboratory disinfectants regularly. Bleach may cause rubber gaskets to crack, so avoid using harsh cleaners. The black rubber gasket is replaceable. Do not allow moisture to seep into the centrifuge and do not contact the electrical components with any liquid during the cleaning process.

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 rotor lid, discontinue use and contact our service center.

Failure Code	Failure Mode	Possible Cause	Solution
E1	Imbalance	Imbalance detected	Balance the rotor load
E3	Lid Protection	Lid open	Close and latch lid
E5	Over Power	Input voltage is more than 240V	Check voltage at wall outlet
E7	No Speed	Motor is damaged	Contact LW Scientific
E8	Main Contact Failure	MCB or UIB is not working	Confirm all wires are connected at circuit boards
E11	Lack of Speed	Hall sensors of motor not working	Contact LW Scientific

Specifications

Speed Range: 100-12000 rpm
Max RCF: 13500 g-force
Max Volume: 24, 75 mm capillary tubes
Input Voltage: 110V AC/ 6A or 220V AC/3A
Timer: 1 sec - 99 min
Display: LED

Dimensions:
Height: 6.3” (160 mm)
Depth: 13” (330 mm)
Width: 9.6” (243 mm)
Weight: 13.1 lbs (6.53 kg)

G-Force Chart

Microhematocrit Rotor
Rotor Radius: 85mm

Speed (rpm)	G-Force (RCF)
500	20g
1000	90g
2000	380g
3000	840g
4000	1500g
5000	2340g
6000	3380g
7000	4590g
8000	6000g
9000	7590g
10000	9380g
11000	11340g
12000	13500g

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