



Model pictured:

E8 Touch

Not all features available on all models - see back page for model specifications.



Introduction

The LW Scientific USA E8 centrifuge with angled 8-place rotor spins up to eight 3.0ml-15ml test tubes. It is available in 3 models: E8F (Fixed speed), E8V (Variable speed), and E8T (Touch Screen, Digital Speed). The E8F is designed for blood separations at a fixed speed of 3500 rpm only (1534 g-force). The E8V and E8T will separate blood at 3500 rpm and can be slowed to separate other fluids at lower g-force, such as urine specimens as outlined by C.L.I.A. regulations.

The LW Scientific USA E8 Combination centrifuge spins 8 microtubes or test tubes (1ml-15ml) in an angled 8-place rotor, and spins 8 microhematocrit tubes (75mm) with the included Crit Carriers. It is available in 3 models: The USA E8 Fixed-speed Combination is for spinning blood tubes and microhematocrits only, and the USA E8 Variable-speed Combination and Touch Screen Combination units are designed for spinning blood, urine, fecal, and microhematocrit.

Installation and Set-up

Includes:

1 E8 centrifuge	1 8-place rotor (installed)	8 15ml blue tube sleeves
8 3-4ml black tube sleeve inserts	1 12v / 8amp AC power adapter	1 3-prong wall power cord

Combination units only:

2 4-place Crit-Carrier inserts	6 1ml-2ml green tube sleeve inserts	1 EZ Reader card
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Read the instruction manual in full before operating. Store the operation instructions in a safe place, easily accessible by the trained staff who will be operating the centrifuge.

- 1 Remove the centrifuge from the shipping container and inspect for any possible shipping damage. If the centrifuge appears to be damaged from shipping, please contact your distributor immediately.
- 2 Read and fill out the warranty form online: www.lwscientific.com/warranty_form. The warranty form documents your purchase. Failure to complete the warranty form may void any warranty claims on the unit.
- 3 Place the centrifuge on a sturdy, level surface. Turn the lid latch to the UNLOCK position ("U"). Open to verify that there are no loose objects or packing material in the tube chamber, and that the 8 large blue tube shields and the 8 smaller black tube shields are in place and seated in the angled 8-place rotor. The smaller tube shields can be removed when spinning larger test tubes.
- 4 Verify that the power switch on the front of the unit is in the OFF position. Connect the 3-prong wall power cord to the AC power adapter, and then connect the AC power adapter to the back of the centrifuge. Plug the power cord into an approved and properly grounded outlet. Do not insert specimen test tubes prior to initial test run.
- 5 Close the lid, turn the lid latch to the LOCKED position ("L") and turn power switch ON. For fixed and variable units, turn the timer to 10 minutes. For variable units only, turn the speed control to at least the 9 o' clock position for the unit to run. For digital units, adjust speed to 3500rpm and set the timer to 10 minutes. Now press RUN. If there is a smooth whirring sound and the unit accelerates with little or no vibration, your E8 centrifuge is ready to operate. If there are loud, unusual sounds or if you experience excessive vibration, immediately turn the unit off. DO NOT OPERATE – Contact your dealer or LW Scientific, Inc.

Loading and Operation



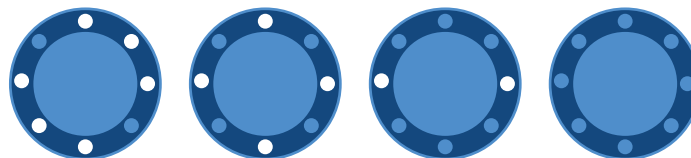
This symbol refers to hazards that may be encountered when using this product.

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

- 1 The large blue tube shields are designed to hold large test tubes from 5ml to 15ml (17.5mm x 130mm max). The smaller black tube shields can be inserted inside the large tube shields, and are designed to hold smaller 3.0ml to 4.5ml test tubes (usually 13mm diameter x 75-80mm tall). **For the digital speed units, always insert all eight large blue tube shields into the rotor at minimum to ensure safe operation and avoid overspeed error.**

Ensure that test tubes are supported from the bottom and not hanging by their caps.

- 2 Spin only balanced loads. Make sure that tube shields are filled with equal weight tubes. Tubes of equal weight and size should be placed opposite each other as pictured below. Use water-filled tubes for balance if necessary. Proper sample balancing will improve sample separation and will extend the life of the centrifuge. Out of balance loads may break glass test tubes or damage the centrifuge.



- 3 For fixed and variable speed units, the mechanical timer should always be turned past 10 minutes to engage the spring and bell. The timer can then be turned forward or backward to select time. For variable speed units, the speed control should always be turned to at least the 9 o' clock position for the unit to run.
- 4 After each run cycle has ended, the lid must be opened and closed before the next cycle is run. This allows for re-loading and re-balancing each load.



WARNINGS: Always ensure rotor is secure before each use! DO NOT OPEN WHILE SPINNING.

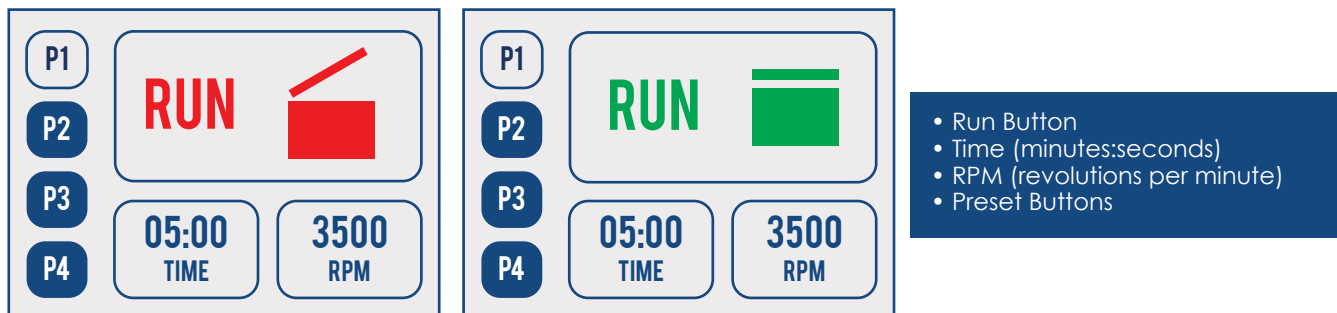
Touchscreen Operation (E8 Touch Only)

The following instructions describe the touchscreen **Graphical User Interface (GUI)** usage for LW Scientific USA E8 Touch Centrifuges. Upon plugging in the unit and flipping the red power switch to ON, the touch screen will activate and display the Home Page.

The various display pages are noted throughout the Touch Screen Operation Instructions and refer to corresponding sections. It is recommended to refer to these sections for guidance.

1 Home Page

The **Home Page** shows the following sections:



Idling at the **Home Page** for 60 seconds will activate the sleep screen. Touching the screen or unlocking/locking the lid will return the user to the **Home Page**.

Run Button:

The status of the lid (LOCK or UNLOCK) is displayed at the top of the screen.

When the lid latch is in the UNLOCK position, the Run Button will display red RUN text and a red open symbol. Attempting to press the Run Button at this stage will cause the unit to not run and instead display the **Error Page**. Pressing the Error Button will return the user to the **Home Page**.

To prepare the centrifuge for use, set the lid to the LOCK position. The Run Button will display green RUN text and a green closed symbol. Pressing the Run Button at this stage will begin centrifuge operation with the currently active time and RPM settings and display the **Running Page**.

Preset Buttons

The currently active preset is highlighted. Selecting a different preset will highlight the selected preset and change the Time and RPM to the corresponding settings. Entering **Centrifuge Settings Page** will cause the currently active preset to be deselected. Any changes made through the **Centrifuge Settings Page** will be reflected in the Time and RPM until a preset is reselected or the unit is power cycled.

To set Time and RPM

The current centrifugation time and RPM parameters are displayed at the bottom of the screen. Pressing the Time or RPM buttons will display the **Centrifuge Settings Page**.

2 Running Page

The **Running Page** shows the following sections:



After pressing Run, the acceleration page will display

Once the centrifuge reaches speed, the count down timer will display.

After the timer reaches '0', the deceleration page will display.

Current RPM

Displays the Current RPM. The Current RPM updates as the rotor accelerates or decelerates.

Acceleration

Displays whether the motor is accelerating or decelerating. When the motor reaches the desired RPM, this section is replaced with the Display Timer.

Display Timer

Displays the remaining time, counting down from the Time, after the centrifuge reaches the RPM.

When the Display Timer reaches 00:00, the motor begins deceleration until coming to a complete stop. The "Done" screen will display.

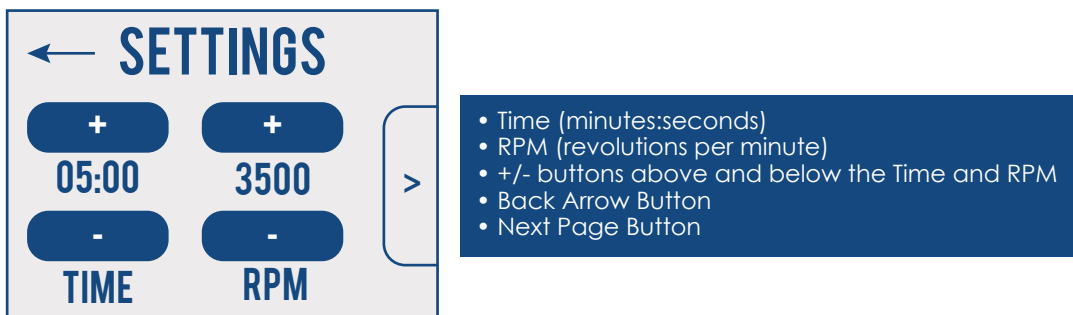
Back Arrow Button

Pressing the Back Arrow Button during acceleration or Display Timer countdown will begin deceleration until the motor comes to a complete stop. The "Done" screen will display.

To exit the **Running Page** and return to the **Home Page**, press the Back Arrow Button when the "Done" screen is displayed.

3 Centrifuge Settings Page

The **Centrifuge Settings Page** shows the following sections:



The **Centrifuge Settings Page** allows the user to set a specific time and RPM without changing a preset default. Reselecting a preset or power cycling the unit will cause the changes made in **Centrifuge Settings Page** to be lost.

To set Time and RPM

To increase or decrease the Time, press the + or - button respectively. The maximum/minimum time is 60:00/00:15.

To increase or decrease the RPM, press the + or - button respectively. The maximum/minimum RPM is 3500/500.

Press and hold the + or - buttons to continuously change the Time or RPM in increments.

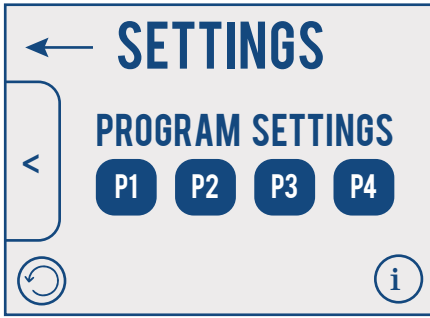
Back Arrow Button

To save any changes made to the Time and RPM, exit the **Centrifuge Settings Page**, and return to the **Home Page**, press the Back Arrow Button.

Next Page Button

To enter **Centrifuge Additional Settings Page**, press the Next Page Button.

4 Centrifuge Additional Settings Page



- Run Button
- Time (minutes:seconds)
- RPM (revolutions per minute)
- Preset Buttons

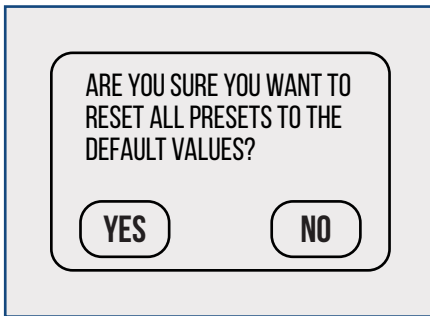
Program Presets (P1, P2, P3, P4)

To change the default Time and RPM values of a preset, press the corresponding program preset button. Changes made to preset defaults will remain unless preset defaults are reset.



Reset Preset Defaults Icon

To reset all changes made to the preset defaults, press the reset preset defaults icon.



Selecting "Yes" on the following confirmation window will reset all preset settings to their default values:

PRESET	TIME (MINUTES)	RPM	APPLICATIONS
P1	10:00	3500	Serum Separation
P2	05:00	1800	Urine Sediment
P3	06:00	1500	Veterinary Fecal
P4	06:00	3500	Microhematocrit (Combination models only)



Information Icon

To enter the **Diagnostics Page**, press the information icon.

Back Arrow Button

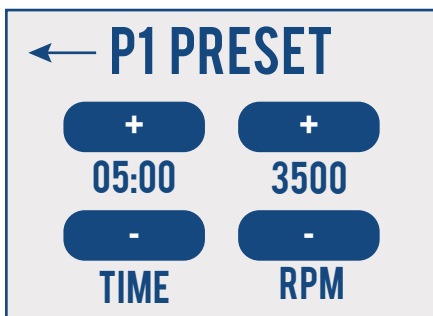
To return to the **Home Page**, press the Back Arrow Button.

Previous Page Button

To return to the **Centrifuge Settings Page**, press the Previous Page Button

5 Programming Page - For programming the presets (P1, P2, P3, P4)

The **Programming Page** shows the following sections:



- Time (minutes:seconds)
- RPM (revolutions per minute)
- +/- buttons above and below the Time and RPM
- Back Arrow Button

There is a **Programming Page** for each preset (P1, P2, P3, P4). The **Programming Page** can be entered by selecting a preset on the **Centrifuge Additional Settings Page**.

To set Time and RPM

To increase or decrease the Time, press the + or - button respectively. The maximum/minimum time is 60:00/00:15.

To increase or decrease the RPM, press the + or - button respectively. The maximum/minimum RPM is 3500/500.

Press and hold the + or - buttons to continuously change the Time or RPM in increments.

Changes made to the Time and RPM in the Programming Page are NOT reset after the unit is turned off and on again.

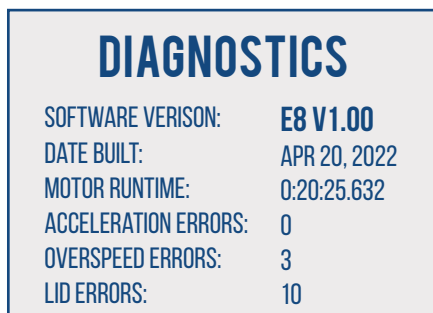
Back Arrow Button

To save any changes made to the Time and RPM, exit the **Centrifuge Settings Page**, and return to the **Home Page**, press the Back Arrow Button.

6 Diagnostics Page

To enter the **Diagnostics Page**, press the information icon on the bottom right corner of the **Centrifuge Additional Page Settings**.

The **Diagnostics Page**, displays the following sections:



- Software Version #
- Date Built
- Motor Runtime
- Acceleration Error Count
- Overspeed Error Count
- Lid Error Count

To exit the **Diagnostics Page** and return to the **Home Page**, press the screen.

7 Error Page

The **Error Page** shows the following sections:



- Error Message
- Error Button

Improper usage of the unit will cause the interface to display the Error Page.

Error Message

Displays the method to resolve the error.

ERROR	MESSAGE	CAUSE
Overspeed	Aborted. Motor over max speed.	Unit accelerates beyond acceptable RPM.
Acceleration	Aborted. Motor not accelerating.	Unit cannot accelerate to set RPM.
Lid UNLOCK	PLEASE CLOSE LID Aborted. Please close lid (if running) Please close lid (try to run with open)	Lid unlocked during run.
Start	CANNOT BEGIN WHILE ROTOR IS SPINNING.	Attempting to start run while rotor is spinning.

Error Button

Pressing the error button will return the display to the **Home Page**.

Spinning Microhematocrit Tubes (Combination Centrifuges Only)

- 1 After filling and sealing a 75mm microhematocrit capillary tube, insert the tube into a hole in one of the Crit Carriers. Note which hole number position (1 through 8) for proper identification of the tube when loading multiple samples.
- 2 Insert BOTH Crit Carriers into two blue tube sleeves, across from each other for proper balance. If spinning only one microhematocrit sample, it is not necessary to load another 75mm capillary tube for balance because the tube is very light, but BOTH Crit Carriers should always be across from each other.
- 3 Spin the centrifuge at 3500rpm for 6 minutes.
- 4 Remove the microhematocrit tube and read the PCV percentage using the included EZ Reader Card.



Cleaning & Maintenance

With proper care and maintenance, the E8 centrifuge will provide years of laboratory service. Please follow these recommended guidelines:

- 1 Use only quality test tubes which are rated for 1534 g-force or greater.
- 2 Never force a tube into the tube shield. The tube shields were designed to hold the most common sized tubes, Vacutainers, and SST's. Some plastic, conical, and glass test tubes are too large and should not be used in the E8.
- 3 Keep the tube shields clean. If a tube does break, either dispose of the entire tube shield (and remove the opposite shield for proper balance) or safely dispose of the sample and broken glass and thoroughly clean and disinfect the inside and outside of the tube shield. Additional tube shields are available for purchase from LW Scientific, Inc. **Do not use the digital speed unit without a minimum of eight large blue tube shields loaded onto the unit.**
- 4 Motor and electrical maintenance: The E8 utilizes a PMDC motor and its bearings are permanently lubricated. It should not need servicing for the life of the centrifuge. Likewise, the electrical components were designed for high reliability and should not need regular service. However, if repairs should be needed, please contact LW Scientific, Inc.

Because of the safety issues with high g-forces in a centrifuge, it is recommended that rotors and tube sleeves be inspected every 6 months for corrosion and fatigue. If there is any indication of wear, the rotor and sleeves should be removed from service. Contact LW Scientific for return instructions so the rotor and tube sleeves can be evaluated by an LW Scientific technician for repair and replacement. It is also recommended that after 2 years of service, rotors and tube sleeves be returned to LW Scientific for inspection and possible replacement. Following these procedures will ensure safety of lab personnel as well as extend the life of the centrifuge.

Specifications

G-Force		
RCF (g's)	Radius (mm)	RPM
31	112	500
80	112	800
125	112	1000
180	112	1200
245	112	1400
282	112	1500
321	112	1600
406	112	1800
501	112	2000
606	112	2200
721	112	2400
846	112	2600
982	112	2800
1127	112	3000
1282	112	3200
1364	112	3300
1450	112	3400
1534	112	3500

Maximum nominal:	3,500 RPM (+10% - 5%)
Maximum nominal RCF:	1,534 g
Max. Volume (8-Place Rotor):	120 ml
Max. Power:	12V, 8.0A
Height:	9.5 inches
Width:	11 inches
Weight:	9.5 lbs.
Boxed Dimensions:	13.5 x 12 x 15 inches
Boxed Weight:	12 lbs.

Fluid Recommendations:

	Speed	Time
Whole Blood	3500	10 min.
Urine	1800	5 min.
Fecal	1500	6 min.
Microhematocrit	3500	6 min.

Average Speeds for Variable Unit (E8V)

Dial Setting:	RPM Range:
Low (7:00 position)	500 (+10% - 5%)
Medium (12:00 position)	1700 - 1950
Medium (3:00 position)	3150 - 3350
High (5:00 position)	3500 (+10% - 5%)



Ideal Setting for Urine
(1700-1950rpm)



Ideal Setting for Blood
(3500rpm)