

# Centrifuge – Reference Aid

Drucker • 642E • Laboratory Centrifuge

## Initial Setup Procedure:

1. Plug the centrifuge in to an approved electrical outlet. For electrical safety, the unit must always be properly grounded.
2. For safety purposes, the locking system is always activated. To deactivate the system, (in order to insert or retrieve samples), press the 'OPEN / STOP' button on the control panel. The 'UNLOCKED' indicator light should illuminate. If it does not, refer to page 10 on troubleshooting. The lid will be unlocked for 15 seconds after pushing the 'OPEN / STOP' button.
3. Turn the latch counterclockwise and open the lid.
4. Spin the rotor by hand; check for free and level rotation. If the rotor does not spin freely, refer to page 10 on troubleshooting.
5. Place the six test tube holders inside the rotor (as shown to the right), and verify that they are seated properly.
6. Close the lid. Rotate the lid knob clockwise to its complete stop position. The 'LATCHED' indicator light should be illuminated. If it is not, make sure that the lid is latched properly. The centrifuge will not run unless the lid is latched and that the 'LATCHED' light is on.
7. Turn the centrifuge on by pushing the 'START' button.
8. The 'RUNNING' indicator light will illuminate.
9. The test tube holders will slide up into the horizontal position and the unit will accelerate to full speed.
10. Listen to the sound of the centrifuge. A smooth whirring sound should be heard. If there are any loud or unusual sounds, stop the centrifuge by pushing the 'OPEN / STOP' button immediately and refer to page 10 on troubleshooting.
11. While the machine is running, try to turn the latch counterclockwise. Power may be cut to the motor but you should be unable to fully turn the latch. If it is possible to turn the latch and open the lid while the unit is running, contact Drucker Diagnostics for assistance. Close and latch the lid.
12. Push the 'OPEN / STOP' button. The 'RUNNING' indicator light should go out and the motor should slow to a stop.
13. The lid should remain locked until the rotor has nearly stopped. If the machine unlocks prematurely, contact Drucker Diagnostics for assistance. Once the rotor has stopped, the interlock system will become disengaged for sixty (60) seconds. The 'UNLOCKED' indicator light will illuminate during this time.
14. To gain entry into the centrifuge after this period has ended, simply press the 'OPEN / STOP' button. The lid will unlock for fifteen (15) additional seconds.



***After the centrifuge has passed this procedure it is ready for operation.***

## Cleaning and Disinfection:

To prolong the life of the centrifuge cleaning and disinfection is recommended every six months, or whenever there is a spillage or tube breakage. Contaminants must be removed immediately, or corrosion and premature degradation of components can occur.

1. Unplug the centrifuge before cleaning.
2. Apply cleaning solutions with a towel or cloth. Do not submerge the centrifuge in water or other cleaning solutions as this will cause damage and void the warranty.
3. **ONLY isopropyl alcohol, soap and water, or a 10% (5500 PPM) bleach solution should be used for cleaning and disinfection of the centrifuge and accessories.**
4. All surfaces must be dried immediately after cleaning and disinfecting.
5. TBQ Germicidal products shall not be used, as they will cause damage to the centrifuge and void the warranty.
6. The use of fully/partially halogenated hydrocarbons, ketones, esters, ethers, benzyls, ethyl benzenes, and all other chemicals not prescribed by the manufacturer shall not be used as they may cause damage to the rotor chamber, rotor, tube holders, accessories and centrifuge exterior and void the warranty.
7. It may be necessary to remove the rotor and clean the rotor chamber. Follow the instructions on page 8 to remove and reinstall the rotor.

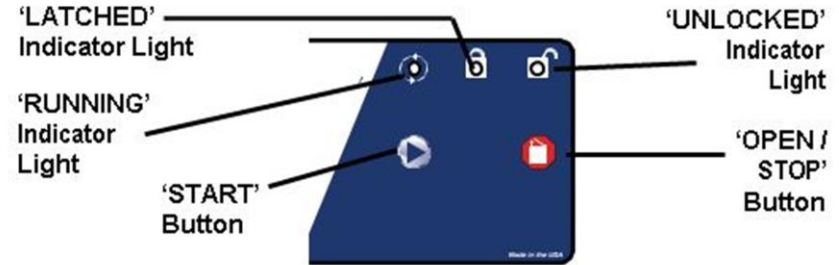
## Troubleshooting:

### NOTE:

The latch must be turned completely clockwise to its stop position in order for the centrifuge to operate.

<b>1. Problem:</b> The rotor does not spin freely.
<b>Solutions:</b> <ul style="list-style-type: none"><li>– Make sure nothing has fallen into the rotor chamber.</li><li>– If there is nothing obstructing the rotor, the rotor may be damaged. Contact Drucker Diagnostics for further assistance.</li></ul>
<b>2. Problem:</b> Excessive noise when the machine is running.
<b>Solutions:</b> <ul style="list-style-type: none"><li>– Check to see that the load is balanced.</li><li>– Make sure that nothing has fallen into the rotor chamber.</li><li>– Make sure that the nut in the center of the rotor is tight.</li><li>– Have a technician test the motor and replace it if necessary.</li></ul>
<b>3. Problem:</b> The centrifuge does not run.
<b>Solutions:</b> <ul style="list-style-type: none"><li>– Check the electrical outlet.</li><li>– Make sure the lid latch is turned completely clockwise to its stop position. When the lid is closed properly, the latch light on the control panel will illuminate.</li><li>– Check the circuit breaker switch at the bottom left of the machine. If the switch is white, the breaker has tripped. Contact Drucker Diagnostics for further assistance.</li><li>– The printed circuit board may be damaged. Have a technician test and replace the circuit board if necessary.</li></ul>
<b>4. Problem:</b> The latch light does not come on when the lid is closed.
<b>Solutions:</b> <ul style="list-style-type: none"><li>– Make sure that the unit has power.</li><li>– Make sure the lid latch is turned completely clockwise to its stop position. The latch makes contact with a switch underneath the front top of the cabinet. If this switch is not activated, the light will not turn on and the machine will not run.</li></ul>
<b>5. Problem:</b> The machine does not unlock after a run has completed.
<b>Solutions:</b> <ul style="list-style-type: none"><li>– The lid should remain locked until the rotor has nearly come to a complete stop and then unlock for 60 seconds. If additional unlock time is needed, press the 'OPEN / STOP' button with the machine plugged in and the rotor stopped. If the lid remains locked after this and will not unlock, the electronics may have been damaged. Contact Drucker Diagnostics for assistance.</li></ul>

### Control Panel:



'RUNNING'	Lights up when the machine is in operation, (power is being applied to the motor).	'START'	Begins a new run
'LATCHED'	Lights up when the lid has been closed and latched properly.	'OPEN / STOP'	Allows for access into the rotor chamber by disengaging the locking mechanism. Entry is only permitted when the rotor is stopped. Pressing this button during operation will terminate the run and unlock the lid after the rotor has come to a stop.
'UNLOCKED'	Lights up to indicate that the locking mechanism has been deactivated, allowing access to the rotor chamber.		

#### To verify the preset time: NOTE: Your centrifuge must be plugged in.

- Push the OPEN / STOP button to disengage the lock and then open the lid.
- Push and hold the START button for approximately three (3) seconds. The Yellow LATCHED indicator light will begin to flash, indicating program mode.
- When you release the START button, the RUNNING indicator light will begin to flash. Each flash represents one minute of run time.
- Press the START button to verify the brake setting. When you release the START button, the RUNNING indicator light will begin to flash. Each flash represents the brake setting, from 1 to 10.

#### To change the preset time: NOTE: Your centrifuge must be plugged in.

- Push the OPEN / STOP button to disengage the lock and then open the lid.
- Push and hold the START and OPEN buttons for approximately three (3) seconds. The yellow LATCHED indicator light will begin to flash slowly, indicating that you can now program run time.
- Press START one time for each minute of run time desired, from a minimum of 1 minute to a maximum of 30 minutes. The green START indicator light will flash each time you press the START button.
- Press OPEN to enter the run time. You will now begin to adjust the brake setting.
- Press START to adjust the brake setting, from a minimum of 1 to a maximum of 10. The green START indicator light will flash each time you press the start button.
- When you are finished, press the 'OPEN' button to exit. Use the above procedure to verify the run time and brake setting change.

## Operation:

**NOTE:** Follow the initial setup procedure on page 4 before initial operation.

1. Plug the centrifuge into an approved 115 Volt A.C., 60 Hz. outlet.
2. Push the 'OPEN / STOP' button and then open the lid.
3. Insert cushions (if needed) into the tube holders for the tube size you are using.
4. Place the test tube samples into the tube holders. Be sure to follow the rules for balanced loads.
5. Close the lid and turn the lid knob clockwise to its complete stop position. The 'LATCHED' indicator light should turn on to indicate that the latch is closed properly.  
If the lid knob is not completely latched, the 'LATCHED' indicator light will not turn on and the centrifuge will not operate!
6. The timer has been set to a preset time of ten (10) minutes.  
\*Most Lab test receive 10 minute Centrifuge.
7. Turn on the machine by pushing the 'START' button on the control panel.
8. The centrifuge should begin to spin. The 'RUNNING' indicator light should illuminate.

### IF A PROBLEM IS FOUND DURING A SPIN THAT REQUIRES THE CENTRIFUGE TO SHUT DOWN, PRESS THE 'OPEN / STOP' BUTTON!

9. The 'RUNNING' indicator light will begin to flash when one minute remains.
10. After time has elapsed, the 'RUNNING' indicator light will extinguish and the rotor will slow to a complete stop.
11. The 'UNLOCKED' indicator light will illuminate and the locking mechanism will disengage allowing entry into the rotor chamber.
12. Turn the lid knob counterclockwise and open the lid.
13. Remove the samples.
14. If the machine re-locks before the samples are removed, press the 'OPEN/STOP' button to unlock the lid for an additional fifteen (15) seconds.

### BALANCED LOADS

**Your centrifuge must contain a balanced load in order to work properly.  
Use the following rules when loading the rotor.  
Spinning balanced loads will extend the life of the machine and produce better results.**

1. Opposing tube holders must be identical and must contain the same cushion, or none at all.
2. Opposing tube holders must be empty or loaded with equally weighted samples.
3. If an odd number of samples is to be spun, fill a tube with water to match the weight of the unpaired sample and place it across from this sample.

## Tube Holder Configurations:

The Model 642E is capable of spinning test tubes up to 17 mm x 100 mm with its horizontal rotor. Use the following chart and drawing to determine which tube holder and cushion combination should be used with your application.

### DIRECTIONS:

1. Compare the tube to be spun with the three boxes shown below.
2. Find the box that most closely matches the tube's length. NOTE: The tube length with its stopper or cap must be shorter than the chosen box or the tube will not fit properly in the tube holder.
3. Match the letter from the chosen box with one of the configurations shown.

*For Example: A tube is found to be as long as box B. Accordingly, we can use a 100 mm tube holder with a 1525 cushion or a 75 mm tube holder with no cushion, (configurations B1 or B2).*

