

# 642B

## *Operator's Manual*



 **Drucker Diagnostics**

P/N 03-0-0002-0078 Rev. H

# TABLE OF CONTENTS

|                                        |    |
|----------------------------------------|----|
| Caution and Warning Statements.....    | 1  |
| Model Description .....                | 2  |
| Intended Use: .....                    | 2  |
| Warranty.....                          | 2  |
| Supplied Equipment.....                | 3  |
| Features .....                         | 3  |
| General Specifications .....           | 3  |
| Setup Location .....                   | 4  |
| Initial Setup Procedure .....          | 5  |
| Operation.....                         | 6  |
| Spinning Balanced Loads .....          | 7  |
| Rotor Removal And Installation .....   | 7  |
| To remove the rotor:.....              | 7  |
| To install the rotor:.....             | 7  |
| Care And Preventative Maintenance..... | 8  |
| Cleaning and Disinfection .....        | 9  |
| Troubleshooting.....                   | 10 |
| Emergency Rotor Chamber Entry .....    | 12 |
| Calibration Testing.....               | 12 |
| Safety .....                           | 12 |
| Replacement Parts.....                 | 13 |
| Available Accessories .....            | 13 |

## CAUTION AND WARNING STATEMENTS

- This device is intended to be operated by properly trained personnel who have carefully read the operating manual and are familiar with the function of the device.
- For the safety of both the operator and service personnel, care should be taken when using this centrifuge if handling substances that are known to be toxic, radioactive or contaminated with pathogenic microorganisms. When Risk Group II materials are used, (as identified in the World Health Organization “Laboratory Bio-Safety Manual”), a Bio-Seal should be employed. The Bio-Seal accessory for the model is the non-aerosol shield cap with appropriate tube holders (contact Drucker Diagnostics to purchase). In the event that materials of a higher risk group are being used, more than one level of protection must be provided.
- The use of flammable or explosive materials as well as those materials which have a vigorous chemical reaction is prohibited.
- For your safety and the durability of your machine, never transport or store centrifuge with tube holders inside machine.
- Inspect centrifuge for cracks or physical damage to cabinet, lid, rotor, or tube holders. Damage may result in unsafe operation. Discontinue use until repairs have been performed.
- Users should also comply with the specimen receptacle manufacturer’s specific instructions for use, in addition to any other protocols established by the testing organization

## MODEL DESCRIPTION

The Model 642B is a continuous-duty, horizontal centrifuge. The unique rotor design allows for horizontal operation without the need for any extra parts beyond tube carriers. The unit is controlled by a mechanical timer settable from 1 to 30 minutes. Samples can be safely viewed through the transparent lid. In the event that the lid is opened during a run, the power to the motor is disconnected.

This general-purpose laboratory centrifuge may also be used to spin approved containers with biologics, chemicals (non-flammable, non-explosive, non-volatile, and non-highly reactive), and environmental samples.

## INTENDED USE:

General purpose laboratory centrifuge, intended for the density-based separation of fluids through centripetal acceleration.

## WARRANTY

Drucker Diagnostics warrants that this centrifuge is free from defects in workmanship and parts for 2 years.

## SUPPLIED EQUIPMENT

|                                    |             |
|------------------------------------|-------------|
| One (1) six-place horizontal rotor | P/N 7786061 |
| Six (6) 75/100mm tube holders      | P/N 7713079 |

The rotor and accessories are rated for a rotation frequency of 4,000 RPM.  
For optional accessories, see page 13 of this manual.

## FEATURES

- Swing-out horizontal rotor design incorporating a unique test tube holder that produces horizontally separated samples while requiring no additional parts
- Cool-Flow air flow design that prevents overheating of samples
- Heavy gauge steel construction for safety and durability
- Lid safety switch that prevents the centrifuge from operating unless the lid is closed and latched
- Removable rotor for easy cleaning
- Brushless permanent split capacitor AC motor
- Clear lid for safe observation of samples and optical calibration of speed

## GENERAL SPECIFICATIONS

|                                       |                                         |
|---------------------------------------|-----------------------------------------|
| <b>Nominal Speed (Horizontal)</b>     | 3,380 (+/- 100) RPM                     |
| <b>Nominal RCF (Horizontal)</b>       | 1,600 (+/- 90) xg                       |
| <b>Maximum capacity (Horizontal)</b>  | 60 mL (6 x 10 mL)                       |
| <b>Overall Dimensions (H x W x D)</b> | 8.75 in. x 11.75 in. x 14 in.           |
| <b>Centrifuge Motor:</b>              | 1/30 HP, p.s.c. motor                   |
| <b>Maximum Acceleration Time</b>      | 10 seconds                              |
| <b>Protection Breaker</b>             | 4 Amp. re-settable                      |
| <b>Timer</b>                          | electronic, 1 to 30 minutes,<br>+/- 10% |
| <b>Current Requirement</b>            | 1.5 Amps                                |
| <b>Voltage Requirement</b>            | 115 (+/- 10) Volts                      |
| <b>Frequency</b>                      | 60 Hz                                   |
| <b>Weight</b>                         | 11 lbs                                  |

Any use other than those specified by the Manufacturer is explicitly prohibited.  
Maximum sample density is 1.15 grams / mL, (water density = 1.0 grams / mL)

## SETUP LOCATION

1. Unpack the centrifuge and verify that all of the supplied equipment is present.
2. Choose a setup location which meets the following criteria:
  - a. A clearance height of 20" is required to open the lid.
  - b. The clearance envelope is the space around the centrifuge which is required for safety. Choose a setup location which will allow for a clearance envelope of at least 24" x 24", (with the centrifuge at the center). No person or hazardous material shall be permitted in the clearance envelope during operation. The operator time within the envelope shall be limited to the time necessary for loading, unloading and centrifuge operation only.
  - c. Proper ventilation is necessary to prevent the overheating of samples as well as premature failure of the centrifuge. Choose an area which will allow unencumbered air flow.
  - d. The centrifuge is designed to secure to the operating surface by four suction feet. No adjustment is necessary for leveling the centrifuge; however, the surface should be flat and level.
  - e. **Be sure the outlet is always within reach as the line cord is the means of emergency disconnection!**

## INITIAL SETUP PROCEDURE

**If any problems are found during the initial setup procedure, refer to the troubleshooting section on page 10. For further assistance, contact Drucker Diagnostics at 814-692-7661.**

1. Plug the centrifuge in to an approved electrical outlet. For electrical safety, the unit must always be properly grounded.
2. Spin the rotor by hand, check for free and level rotation. If the rotor does not spin freely refer to page 10 on troubleshooting.
3. Place the six test tube holders inside the rotor and verify that they are seated properly.
4. Close the lid. Rotate the lid knob clockwise to its complete stop position.
5. Turn the centrifuge on by turning the timer to 10 minutes.
6. The test tube holders will slide up into the horizontal position and the unit will accelerate to full speed.
7. 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 turning the timer to zero (0).
8. While the machine is running, try to turn the latch counterclockwise.
9. Power should be cut to the motor
10. If the motor power is not cut when the lid latch is opened, contact Drucker Diagnostics for assistance

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

## OPERATION

**NOTE: Follow the initial setup procedure on page 6 before initial operation.**

1. Plug the centrifuge into an approved 115 Volt A.C., 60 Hz. outlet.
2. Turn the latch counterclockwise and open the lid.

**NOTE: If the desired rotor is not installed, go to page 8 for the rotor removal and installation procedure.**

3. Place the test tube samples into the tube holders. Be sure to follow the rules for balanced loads (page 7).
4. Close the lid and turn the lid knob clockwise to its complete stop position.
5. Turn on the machine by turning the timer to the desired run time. The centrifuge should begin to spin.

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

6. Once the timer reaches zero (0), power will be cut to the motor and the rotor will coast to a stop. Do not open the lid until the rotor has come to a complete stop.
7. Turn the lid knob counterclockwise and open the lid.
8. Remove the samples.
9. The centrifuge is immediately ready for operation.

## SPINNING 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.

## ROTOR REMOVAL AND INSTALLATION

### TO REMOVE THE ROTOR:

1. Unlock the centrifuge by pushing the 'OPEN / STOP' button and unlatch and open the lid.  
**CAUTION:** Unplug the centrifuge from the electrical outlet to eliminate the possibility of electrical shock or other injury.
2. Remove the test tube holders.
3. Remove the nut in the center of the rotor by turning it counterclockwise (a tool may be required).
4. The rotor is sitting on a cone-shaped adapter. Pull the rotor up and off this adapter.

### TO INSTALL THE ROTOR:

1. Place the rotor back onto the cone-shaped adapter. You may need to turn the rotor slightly to line it up properly.
2. The rotor should slide onto the rotor cone freely.
3. Once a proper fit has been achieved, replace the nut and turn it until it is hand-tight, (a tool may be required).
4. Replace the tube holders and verify that they are seated properly.
5. It is recommended that the initial setup procedures be performed to ensure that the rotor has been installed correctly and that no damage has been done to the centrifuge during either the rotor installation or possible rotor chamber cleaning. See page 6 for this procedure.

## CARE AND PREVENTATIVE MAINTENANCE

With proper care and maintenance your centrifuge will provide years of laboratory service. For proper care, the following steps should be taken:

1. **Provide Adequate Ventilation:** For cooling purposes, the Model 642B draws in ambient air through the air intake cover on the top of the lid and exhausts this air in the rear of the base. The centrifuge should be placed on a hard smooth surface for good air circulation.
2. **Always Spin Balanced Loads:** Make certain that you are always spinning a balanced load. The Model 642B has a unique counter balanced motor mounting design which, along with its rubber suction feet, produces excellent vibration dampening. However, out-of-balance loads may break glass test tubes and may produce unsatisfactory separation results. Proper load balancing will improve sample separation and extend the life of the centrifuge. Refer to page 7 on balanced loads for additional information on balancing the load.
3. **Keep the Tube Holders Clean:** NOTE: Always follow the safety guidelines of your laboratory to properly clean up and/or dispose of materials in the event that a substance known to be potentially toxic, radioactive or contaminated with a pathogenic microorganism is spilt in or on the centrifuge. Small glass fragments left in the tube holder after a tube breakage may adhere to the next test tube inserted in that holder. When this tube is handled, these fragments may puncture protective gloves and lacerate the operator's fingers or hand. Remaining fragments may provide stress points on subsequent tubes and result in additional breakage. If a tube breakage occurs, carefully remove the tube holder. Properly dispose of the sample and tube fragments and thoroughly clean both the inside and outside of the tube holder. Insert a new tube cushion (if necessary) and replace the tube holder in the rotor.
4. **Motor and Electrical Maintenance:** The Model 642B uses a brushless permanent split capacitor AC motor. It should not need routine servicing for the life of the centrifuge. The electrical components are selected for high reliability and should not need routine service.
5. **Tube Holder Replacement:** It is recommended that the tube holders be replaced after 24 months of use. Inspect tube holders regularly for cracks. If cracks are discovered, replace immediately.

6. **Remove Accessories Before Moving:** All tube holders, samples, and caps must be removed from the rotor chamber before transporting or storing the centrifuge to prevent damage and injury.

## 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>The rotor does not spin freely.</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>Excessive noise when the machine is running.</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>The centrifuge does not run.</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.</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> |

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>The machine does not unlock after a run has completed.</b></p> | <p>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. To access the rotor chamber, follow the procedure on next page, "Emergency Rotor Chamber Entry".</p> |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## EMERGENCY ROTOR CHAMBER ENTRY

In the event of power failure, it may be impossible to unlock the lid by conventional means. In this case, entry into the rotor chamber may be made by removing the latch label and using a pen to manually disengage the locking mechanism (see photo). Pull the mechanism towards the control panel and then unlatch and open the lid. If the unit is damaged, contact your authorized dealer or Drucker Diagnostics.



## CALIBRATION TESTING

It is recommended that the top speed be tested every two years for continued safe operation. Contact Drucker Diagnostics for further information or testing availability.

## SAFETY

The Model 642B complies with US, Canadian, and European Safety standards.

**Lid Safety Switch:** The Model 642B lid is secured to the top of the cabinet by a latching knob and pawl system. When the knob is rotated clockwise, the pawl grips the underside of the cabinet opening and prevents the lid from opening. A mechanical stop positions the pawl and prevents it from rotating completely. When rotated to the stop position, the pawl makes contact with a micro-switch mounted underneath the cabinet top. The lid safety switch prevents the centrifuge from operating while the lid is open.

**Note:** After the centrifuge has started spinning, it may be possible to rotate the lid knob enough to cause the pawl to lose contact with the lid safety switch. If this happens, the centrifuge motor may lose power. If the knob is accidentally moved and this situation should occur, rotate the knob fully clockwise to its stop position and the centrifuge will resume operation.

**Circuit Breaker:** The Model 642B is protected with a 4 Amp circuit breaker located at the rear of the machine mounted to the base. Any electrical short circuit will cause the breaker to cut power to the machine.

## REPLACEMENT PARTS

| <b>Part No.</b> | <b>Description</b>                                                 |
|-----------------|--------------------------------------------------------------------|
| 7724037K        | Foot, rubber (Pack of 4)                                           |
| 02-006-1-0012   | Lid Switch Assembly                                                |
| 7786061         | Rotor, six-place horizontal                                        |
| 02-005-1-0006   | Motor Assembly, 1/30 H.P., 115 V.A.C.<br>permanent split capacitor |
| 7729009         | Capacitor, 5uF, 250V A.C.                                          |
| 7751043         | Circuit Breaker, 4A                                                |
| 7724071         | Hinge, friction                                                    |
| 7732018         | Seal, lid gasket                                                   |
| 02-002-1-0027   | Lid assembly                                                       |
| 03-0-0003-0076  | Front Panel Label                                                  |

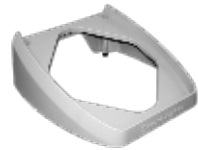
## AVAILABLE ACCESSORIES



**0.5 to 1mL Tube  
Adapter (Pack of 6)**  
p/n 7713068K



**1.5 to 2mL Tube  
Adapter (Pack of 6)**  
p/n 7713065K



**SmartView™  
Platform**  
p/n 00-079-009-001

**FDA LISTED**

**RoHS**  
**Compliant**



**ISO13485**  
**certified**

**INSTRUCTIONS FOR DISPOSAL OF WEEE BY USERS IN THE EUROPEAN UNION**



This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste disposal service, or where you purchased the product.



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