

The Revvity logo is displayed in white lowercase letters on a black background. The background of the entire page features a graphic of several overlapping, translucent spheres in shades of yellow, orange, and green, resembling a molecular or cellular structure.

revvity

USER MANUAL

# Bead Ruptor™ 4 Bead Mill Homogenizer

Version: S

Date: September 2024

Document Number: 03-225-01

Data herein has been verified and validated. It is believed adequate for the intended use of the instrument. If the instrument or procedures are used for purposes over and above the capabilities specified herein, confirmation of the validity and suitability should be obtained; otherwise Revvity does not guarantee results and assumes no obligation or liability. This publication is not a license to operate under, or a recommendation to infringe upon, any process patents.

This product is warranted to be free from defects in material and workmanship for a period of ONE YEAR from the date of delivery. Revvity will repair or replace and return free of charge any part which is returned to its factory within said period, transportation prepaid by user, and which is found upon inspection to have been defective in materials or workmanship. This warranty does not include normal wear from use; it does not apply to any instrument or parts which have been altered by anyone other than an employee of Revvity nor to any instrument which has been damaged through accident, negligence, failure to follow operating instructions, the use of electric currents or circuits other than those specified on the plate affixed to the instrument, misuse, or abuse. Revvity reserves the right to change, alter, modify, or improve any of its instruments without any obligation whatever to make corresponding changes to any instrument previously sold or shipped.

THE FORGOING OBLIGATION IS IN LIEU OF ALL OBLIGATIONS AND LIABILITIES INCLUDING NEGLIGENCE AND ALL WARRANTIES OF MERCHANTABILITY OR OTHERWISE, EXPRESSED OR IMPLIED IN FACT OR BY LAW, AND STATE OUR ENTIRE AND EXCLUSIVE LIABILITY AND BUYERS EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH THE SALE OR FURNISHING OF GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION, OR OPERATION. REVVITY WILL IN NO EVENT BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND THEIR LIABILITY UNDER NO CIRCUMSTANCES WILL EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

This product has been engineered for safety; however, basic safety precautions and common sense must always be demonstrated when using any electrical product.

- Use this product only for its intended purpose.
- Keep this product away from heated surfaces.
- **DO NOT** attempt to modify any part of this product.
- **DO NOT** allow the machine to be submerged in any liquid.
- **DO NOT** use in any setting other than an indoor laboratory.
- **DO NOT** use attachments not recommended by the manufacturer.
- **DO NOT** operate the product if it is damaged in any way.
- **DO NOT** operate the product with the safety ground disconnected.
- **DO NOT** modify the plug or cord that is provided.

**WARNING:** Reduce the risk of unintentional starting; make sure the machine is OFF before plugging into a power supply.

**WARNING:** Damaged or worn power cords should be repaired or replaced immediately by a qualified electrician.

**WARNING:** Improper connection of the equipment can result in a risk of electric shock.

## **Copyright**

This manual is published by Revvity 935 Cobb Place Blvd, Kennesaw, GA 30144 USA. Copyright Revvity, Inc. All rights reserved, including but not limited to those rights to reproduce this publication or parts thereof. Reproduction of this publication or parts thereof, or the products it describes, by any means or in any form is expressly prohibited without the written permission of Revvity.

## **Trademarks**

Revvity is a registered trademark of Revvity. All other trademarks are the property of their respective owners.

## **Proper Equipment Operation**

To reduce the risk of electric shock, do not remove the cover. No user serviceable parts are inside. Refer to qualified service personnel if help is required.

Use this product only in the manner described in this manual. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## **Cleaning**

Follow internal laboratory process for cleaning and decontamination using 70% ethanol followed by a disinfecting wipe, then a final rinse with ethanol.

## **Preventative Maintenance**

Normal use: 12 month interval.

Heavy use may require a 6 month interval.

## **Operating Environment**

4°C to 40°C / 39°F to 104°F, Humidity: 5% to 95% RH. Internal use only

## **Electrical Supply**

100-230V, 50/60 Hz, 4A Max

## **FCC**

This device complies with part 15 of the FCC (United States Federal Communications Commission) Rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

## **CE/UKCA**





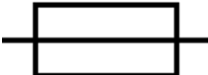







This device complies with all CE and UKCA rules and requirements.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Table of Contents

Table of Symbols.....	5
Specifications.....	6
Unpacking.....	7
System Overview.....	8
General Operation.....	9
Loading 1.5 mL and 2 mL Sample Tubes.....	10
Loading 7 mL Sample Tubes.....	10
Replacing the Tube Holder (Maintenance at 12 month interval).....	11
Replacing the Neck Gasket (Maintenance at 12 month interval).....	11
Troubleshooting.....	12
Transporting and Storage.....	13
Appendix.....	14

## Table of Symbols

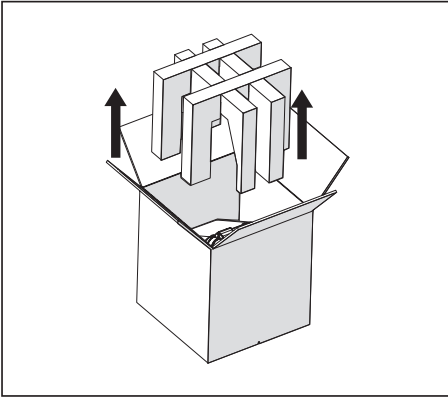
Symbol	Description	Symbol	Description
	Caution. Refer to the User documentation (ISO 7000-0434B)		On (power). (IEC 60417-5007)
	Hazardous voltage; risk of electric shock. (IEC 60417-6042)		Off (power). (IEC 60417-5008)
	Fuse. (IEC 60417-5016)		Consult Instructions for Use. (ISO 7000-1641)
	Alternating current. (IEC 60417-5032)		CE Compliance Mark
	UKCA Certification Mark		WEEE symbol (EN50419:2005)
	RoHS Certification Mark		KC Certification Mark

## Specifications

Part Number	25-010
Input Voltage	100-230V, 50/60 Hz
Weight	16.5 lbs. (7.48 kg)
Dimensions	W: 8.5" (21.5 cm), D: 10" (25.4 cm), H: 11.5" (29.2 cm)
Input Current	4A max
Power Connector	IEC 60320 C13
Fuse	6 x 30 mm / 4A max
Overvoltage Category	II
Pollution Degree	2
Altitude	Up to 2000 m
Warranty	1 Year
Standards Approval	CE and UKCA Approved

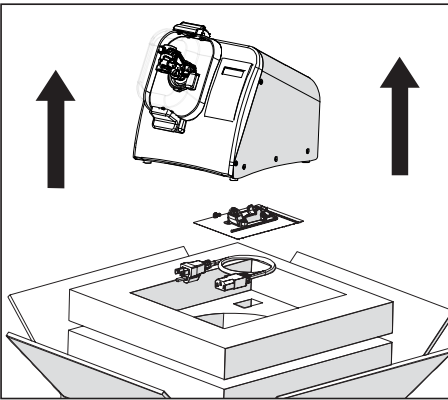
## Unpacking

1.



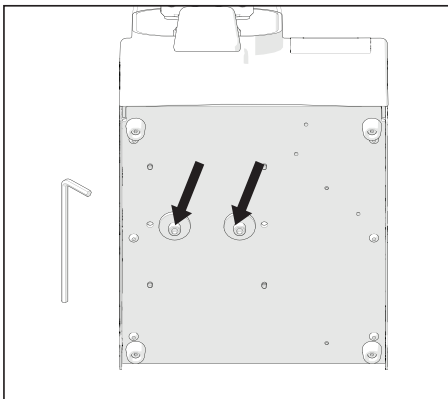
Lift foam from box.

2.



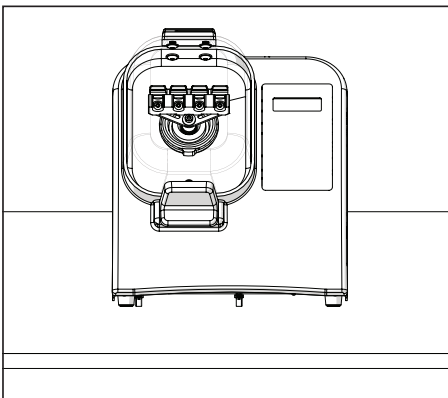
Lift unit up and off of the box bottom.  
**DO NOT LIFT THE UNIT BY HOLDING THE LID.**  
Remove tool kit and power cord.

3.



Remove the 2 screws from the bottom of the unit.

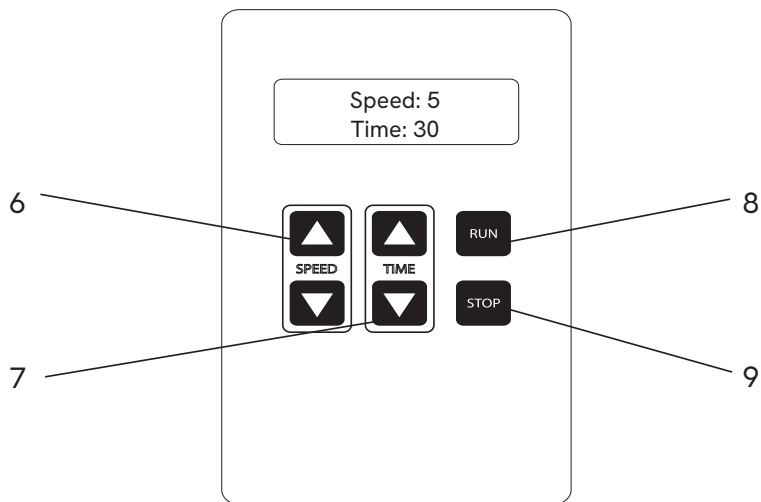
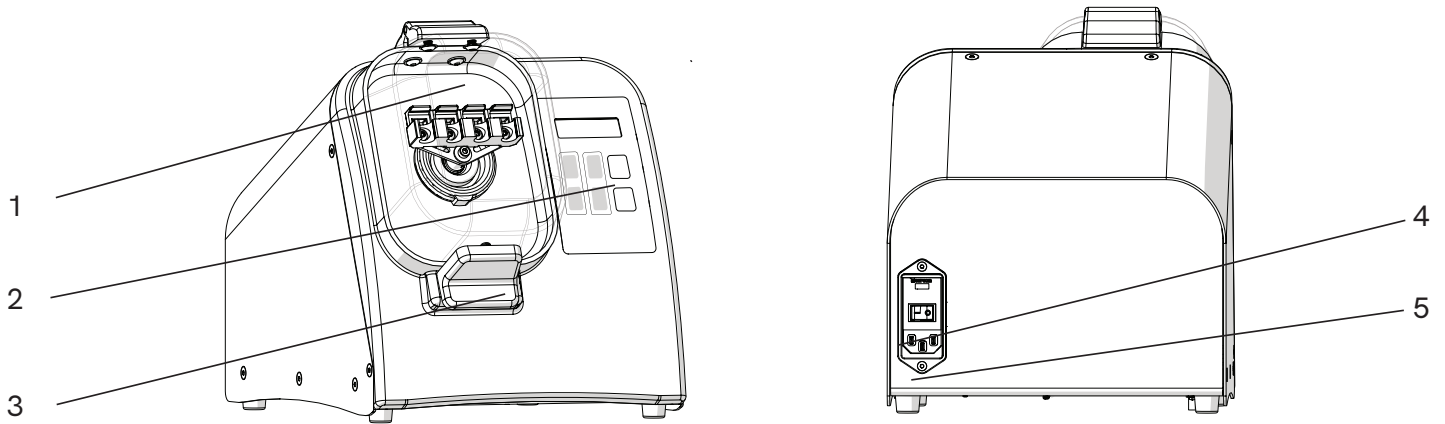
4.



Place the unit on a stable surface.

5. Connect the power cord.

## System Overview



- 1. Lid
- 2. Keypad
- 3. Lid Latch
- 4. On/Off Switch
- 5. Power Cord Port
- 6. Speed Control
- 7. Timer Control
- 8. Run Button
- 9. Stop Button

The Bead Ruptor™ 4 consists of the following:

Description	Quantity
Bead Ruptor™ 4	1
Power Cord	2
Spare Fuse	1
2 mL Tube Holder Assembly	1
7 mL Tube Holder Assembly	1
Allen Key	1
User Manual	1

The Bead Ruptor™ 4 Homogenizer is a homogenizing instrument that processes samples by shaking in sealed tubes at varying speeds and dwell times. It is recommended that no flammable liquids be used during processing.



# General Operation

## 1. Power

- Plug in the power cord and move the On/Off switch on back of the unit to the ON position.

## 2. Set Speed

- Adjust speed using up and down buttons.

## 3. Set Timer

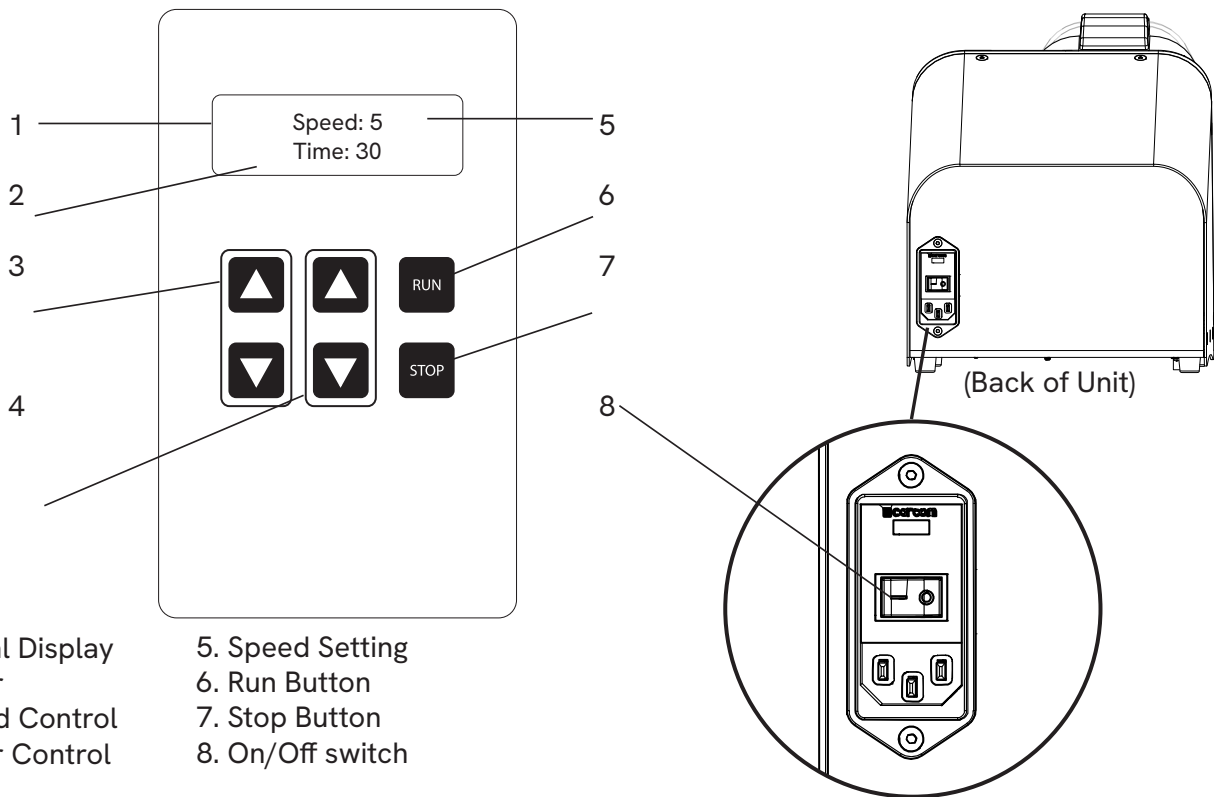
- Adjust run time using up and down buttons.

## 4. Start

- Press Run button.
- Wait for the run time to elapse.

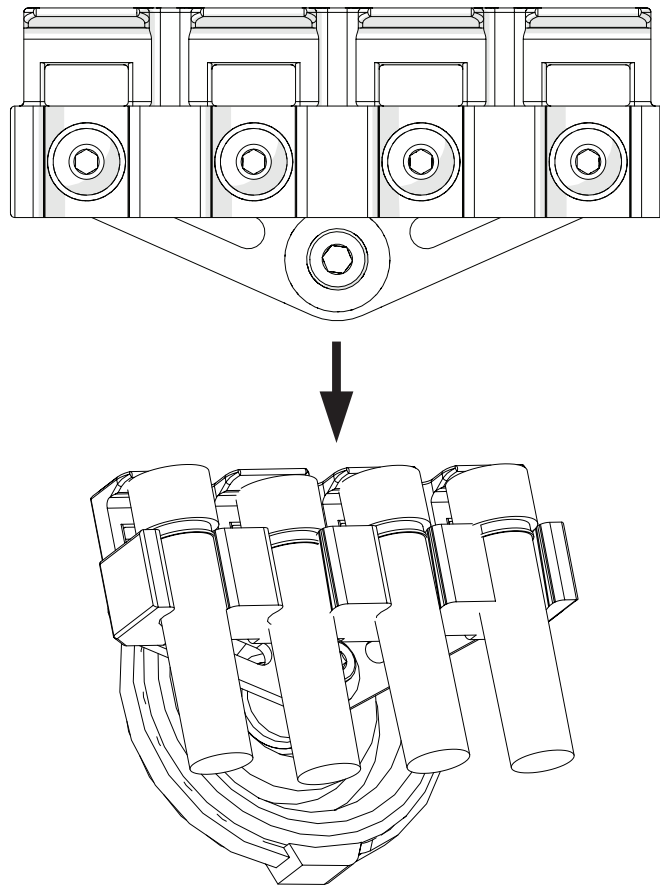
## 5. Pause/Stop

- Press Stop Button to Pause.
- Press Stop again to reset timer and cancel run.



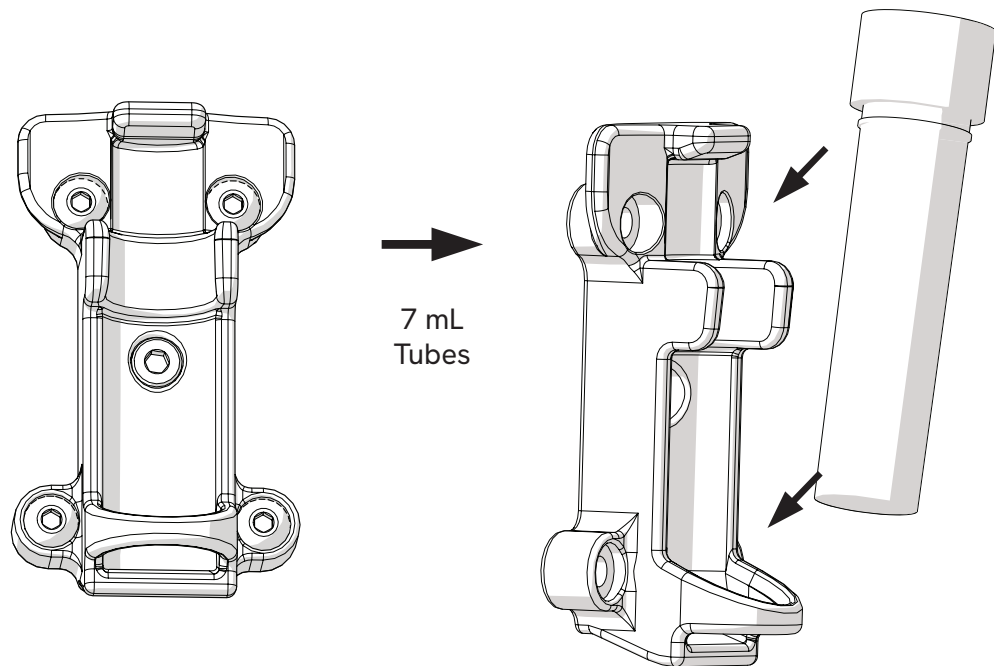
Speed Setting	Processing Power in G's	Processing Speed in m/s
1	30	1.5
2	60	2.5
3	90	3.7
4	120	4.4
5	150	5.0

## Loading 1.5 mL and 2 mL Sample Tubes



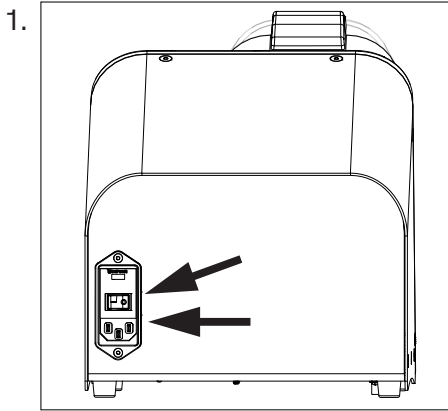
## Loading 7 mL Sample Tubes

7 mL Tube Carriage

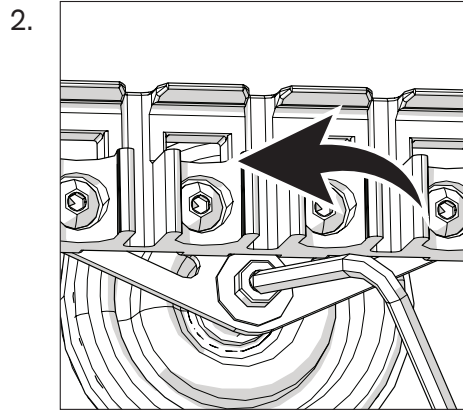


Revvity bead tubes should be used exclusively with Revvity Bead Ruptor™ Homogenizers.

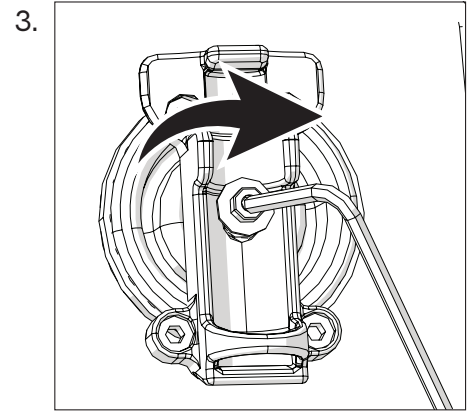
## Replacing the Tube Holder (Maintenance at 12 month interval)



Turn unit off and unplug power cord.

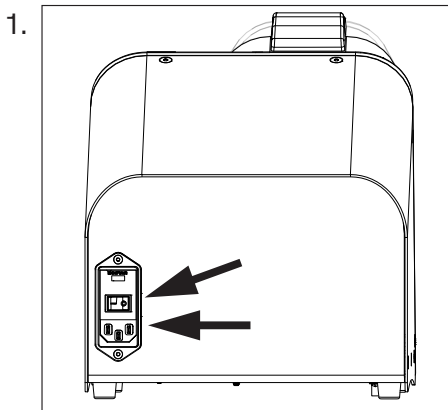


Use the supplied 3 mm allen wrench to loosen tube carriage holder screw.

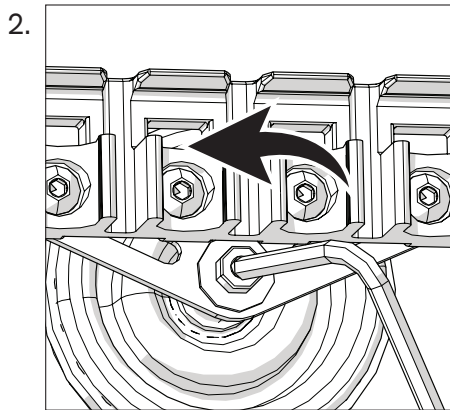


Use the supplied 3 mm allen wrench to tighten tube carriage holder screw

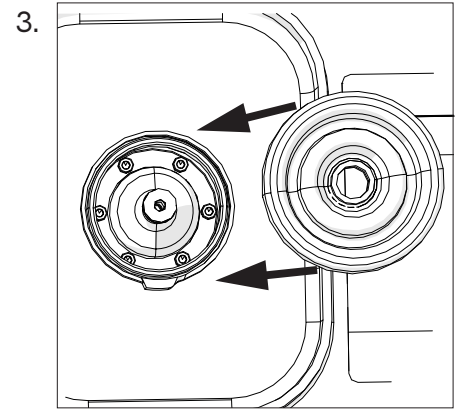
## Replacing the Neck Gasket (Maintenance at 12 month interval)



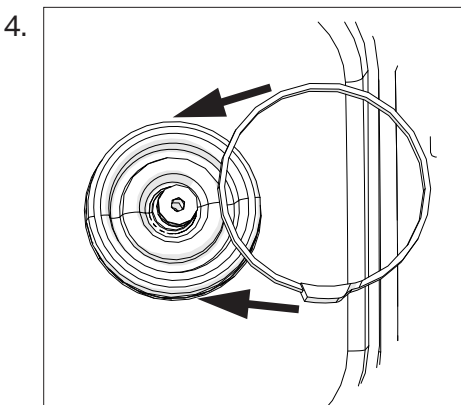
Turn unit off and unplug the power cord.



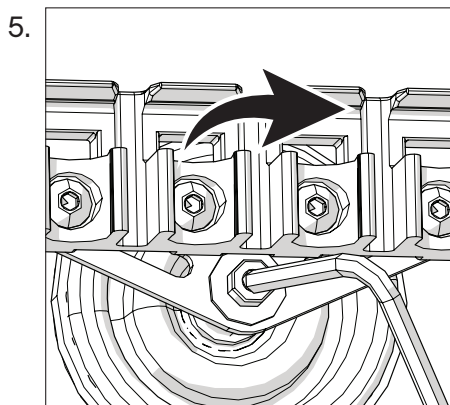
Use the supplied 3 mm allen wrench to loosen the central screw and remove restriction tie and old neck gasket.



Slide the new neck gasket onto the pivot shaft and housing



Secure the new neck gasket using the restriction tie with the clamp positioned toward the bottom of the instrument. Tighten central screw.



Use the supplied 3 mm allen wrench to tighten the central screw and secure the tube carriage.

## Troubleshooting

Error Code	Definition	Cause	Possible Solution
Error 1	Display screen shows incomplete or unusual characters	CPU needs to be reset	Turn off the unit. Wait 30 seconds. Turn the unit back on.
Error 2	No display on the screen	No Power	Check main voltage. Check that the voltage of the unit (100V-240V) matches what is being delivered by the main power supply. Make sure the unit is plugged in properly. Check and replace fuses if blown.
		Faulty display screen	Turn off the unit. Contact manufacturer for assistance.
Error 3	Unit powers on but motor does not turn	Faulty motor	Contact manufacturer for assistance.
Error 4	Close Door	Lid is not seated properly.	Check Lid latch for obstruction Press lid and ensure the handle is closed
		Detection system is faulty.	

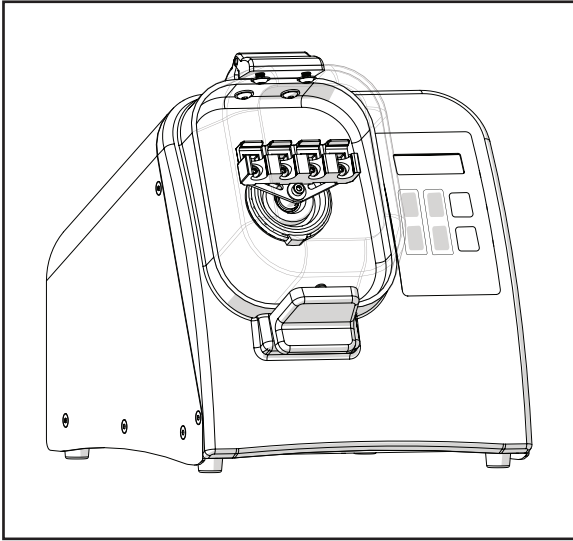
**WARNING:** Any service must be performed by a qualified service technician. This can be either an Revvity Technician or an end user resource.

All parts need to be sourced from the Revvity service department.

## Transporting and Storage

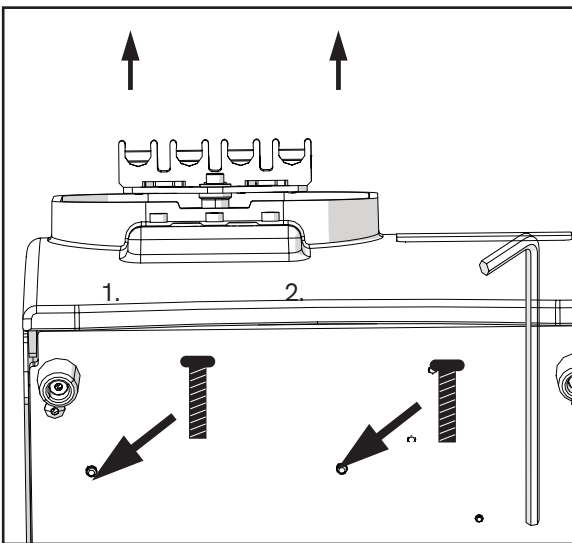
The Bead Ruptor™ 4 Homogenizer must be shipped in its original packaging. Before transporting please follow this steps.

1.



Remove all tubes, cover the unit in its plastic bag.

2.



The tube carriage will slide back. Lift the tube carriage to align the motor mount holes to the holes in the base plate.

Insert screws with allen key until you feel them engage (It may take some finesse to get them aligned with the internals of the unit).

Tighten screws until completely seated.

Permissible environmental conditions for transport and storage of the equipment:

- Temperature 35°F to 120°F / 2°C to 49°C
- Relative Humidity 10 % to 95 % (Non Condensing)
- Altitude 40,000 ft. (12,192 m)

## Appendix

This equipment is marked with the crossed-out wheeled bin symbol, to indicate that this equipment may not be disposed of as unsorted municipal waste.

It's your responsibility to correctly dispose of your equipment at life-cycle end, by handing it over to an authorized facility for separate collection and recycling of waste equipment. It's also your responsibility to decontaminate your equipment in case of biological, chemical or radiological contamination, and so protect the persons involved in the disposal and recycling of the equipment from health hazards.

For more information about where you can dispose of your waste equipment, please contact your local dealer, from whom you purchased the equipment.

By doing so, you will help to preserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.



This page left blank intentionally.



The information provided in this document is for reference purposes only and may not be all-inclusive. Revvity, Inc., its subsidiaries, and/or affiliates (collectively, "Revvity") do not assume liability for the accuracy or completeness of the information contained herein. Users should exercise caution when handling materials as they may present unknown hazards. Revvity shall not be liable for any damages or losses resulting from handling or contact with the product, as Revvity cannot control actual methods, volumes, or conditions of use. Users are responsible for ensuring the product's suitability for their specific application. REVVITY EXPRESSLY DISCLAIMS ALL WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDLESS OF WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED, ALLEGEDLY ARISING FROM ANY USAGE OF ANY TRADE OR ANY COURSE OF DEALING IN CONNECTION WITH THE USE OF INFORMATION CONTAINED HEREIN OR THE PRODUCT ITSELF.

[www.revvity.com](http://www.revvity.com)

revvity

For research use only. Not for use in diagnostic procedures

Revvity, Inc.  
940 Winter Street  
Waltham, MA 02451  
USA  
[www.revvity.com](http://www.revvity.com)

For a complete listing of our global offices, visit [www.revvity.com](http://www.revvity.com)  
Copyright ©2024, Revvity, Inc. All rights reserved.