

# Heavy Duty LE Rotator Operation Manual



## PRODUCT INFORMATION:

Item # LE1002/LE1003

Date of Purchase \_\_\_\_\_

LE Rotator Serial # \_\_\_\_\_

(Please record the serial # of your LE Rotator here for easy reference. Your serial # is located on the back of your rotator.)

# ENVIRONMENTAL EXPRESS

843.881.6560 ■ Fax 843.881.3964 ■ [www.environmentalexpress.com](http://www.environmentalexpress.com)

Congratulations on the purchase of your Heavy Duty LE series rotator from Environmental Express. Each unit is constructed from the finest materials and quality components to ensure many years of dependable service.

The large 6.25" x 6.25" x 12.75" stainless steel compartments on the LE rotator accommodate most zero space extractors and many styles of glass and plastic bottles. The box-style design offers a greater degree of safety than other rotator designs.

The 12-position sample box is constructed of 14-gauge stainless steel welded and reinforced at all joints. The drive shaft is a full 1" in diameter to prevent any breakage, even with off-center loads. Glass bottles containing extraction fluid are shielded within the stainless steel box, not rotating exposed in your laboratory.

Rotators use Brother® 1/6hp, 60Hz, 120VAC (also available in 240VAC) high-efficiency gear motors with self-lubricating drive chains. Brother gear motors are designed in accordance with today's most stringent industrial standards to ensure longer service life and increased reliability. These all-helical gears are among the quietest available and have the very high surface hardness required to ensure extended wear resistance commonly associated with EPA Method 1311.

A self-lubricating chain prevents slippage and requires no maintenance. Precise, constant speed control (30rpm) is maintained during long hours of continuous operation.

The advantage that stands out with the LE Heavy Duty Rotator is the quiet, consistent and dependable service this well designed power system delivers.

**Accessories available for use with the Heavy Duty LE Rotator include:**

- Compartment spacers/cushions
- A variety of bottles and extraction devices

**Heavy Duty LE1002/LE1003 Rotator Product Warranty:**

*The Environmental Express Heavy Duty LE Rotators are warranted against defects in materials and workmanship, when used in accordance with applicable instructions for the period of one year from the date of shipment. This warranty extends to parts and labor, applies only to damage or failure caused by normal laboratory use and is limited to product repair. If Environmental Express is unable to repair the Rotator, the customer may, at his or her option, receive a replacement or a full refund. Environmental Express makes no other warranty, expressed or implied, for this product with respect to fitness for a particular use or any other matter. Environmental Express is not liable for any consequential or compensatory damages arising from the use of, or in conjunction with this product. The maximum liability shall be the invoice price of the product.*

**Safety Precautions:**

***Please read this manual carefully. It contains valuable information that will prevent damage to the machine and/or serious bodily injury to personnel.***



**CAUTION**



- Always stay clear of rotating parts!
- Failure to read and practice these safety precautions could result in serious damage to equipment and/or cause serious bodily injury to operating personnel.
- Do not attempt to use this equipment if you are not familiar with the dangerous characteristics it offers.
- This unit can develop significant torque. IT CAN HURT YOU. Do not allow clothing or long hair near an operating unit.
- Never remove protective guards. Failure to comply could cause serious damage to equipment and/or serious bodily injury — including electrocution.
- All repairs should be performed by a qualified technician.

Please read this manual before plugging in your unit.

**Placement of Your LE Rotator:**

It is important that your rotator is situated in a safe, cool and dry environment. The rotator weighs in excess of 172 pounds. With this in consideration, a solid structure such as a counter top is an ideal location. If a sturdy counter top is not available place the unit directly on the floor.

**The unit should be placed far enough away from the front edge of the counter to avoid possible contact with passersby.**

**Caution: Never allow the power cord to come into contact with rotating components.**

**The use of extension cords should be avoided if at all possible.** The unit should be placed close enough to a grounded electrical outlet to enable use of the factory power cord. If it is impossible to avoid use of an extension cord, make sure that you use a three-prong 14 AWG cord (or larger, i.e. 12 AWG) only. Using too small of an extension cord will cause the cord to become very hot thus becoming a fire risk. Failure to comply could also cause serious damage to the electrical components of your rotator and would void your warranty.

**Basic Operating Procedures:**

Once you have read this manual thoroughly, ensure that the power switch is in the OFF position and that all obstacles and personnel are clear of the unit. Plug the power cord into a 120VAC (LE1002) or 240VAC (LE1003) outlet, as described in the previous section. Turn the unit on to confirm operation. The switch should always glow amber during operation. Refer to the troubleshooting section of this manual if the unit does not operate.

To load the compartments, turn the latch counterclockwise to release tension. Open the lid and load the compartments to suit your needs.

**Caution:**

It is important to offset your load (Refer to figure 1). For example, when you are loading a 12-place unit, and you have 6 bottles to load, avoid putting all six bottles on the front or back side of the box. Put the first bottle in the back left compartment, the second bottle in the second front compartment, the third bottle in the third back compartment and so on. By doing this, you will reduce the stress on the geared components thus allowing your rotator to last much longer.

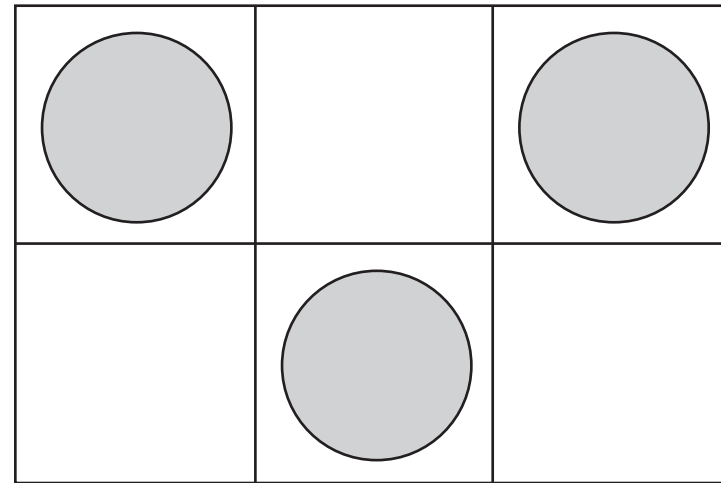


Figure 1, proper loading sequence

**Rotator Specifications —**

**Dimensional Information:** LE1002/LE1003 (12-place) 24.5"W x 43.6"L

**Weight:** 172lb.

**Shipping Weight:** 262lb. Delivery by truck only.

**Electrical:** Gearmotor LE1002 — Brother 1/6 HP/120VAC/60Hz/1.7AMP (FL)  
 Gearmotor LE1003 — Brother 1/6 HP/240VAC/50Hz/.8 AMP (FL)  
 Switch/Circuit Breaker — 15AMP Integral Unit  
 Capacitor LE 1002 — 120 VAC/24µF (+10 to -5%)  
 Capacitor LE1003 — 240 VAC/6µF (+10 to -5%)

**Bearings:** NTN® Sealed Ball, Maintenance Free, Heavy Duty Flanged.

**Drive Components:** Synchronous Self Lubricating Chain  
 Synchronous Timing Sprockets

**Rotating Box and Guard:** Custom Fabricated from type 304 Stainless Steel.

**Frame:** Custom Fabricated from Mild Steel Components.  
 Paint and Prime Coat, Chemical Resistant Two-Part Industrial Enamel.

## Troubleshooting Guide

### ***The unit is plugged into the wall outlet, the switch is on but nothing happens:***

1. Is wall outlet “hot”? Check the breaker box and try plugging another electrical device into the outlet to see if it works.
2. Does the switch on the unit light up? If not, the internal circuit breaker may have tripped. Try turning the switch off and back on to reset the circuit breaker. If the switch illuminates, but the unit still does not operate, unplug the unit immediately and call 1.843.881.6560 or 1.800.343.5319 for technical support. Only a competent electrician should attempt to work on the electronics of this unit. Failure to comply may void your warranty.

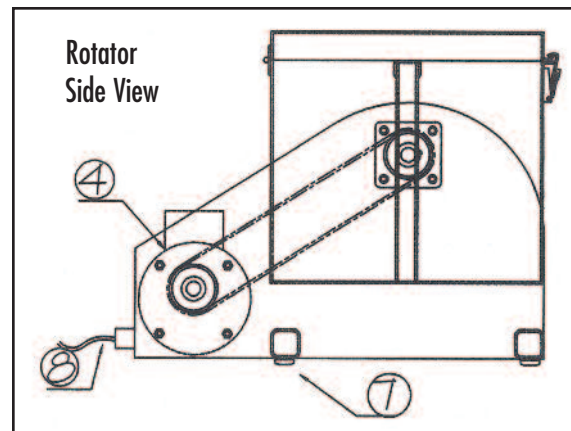
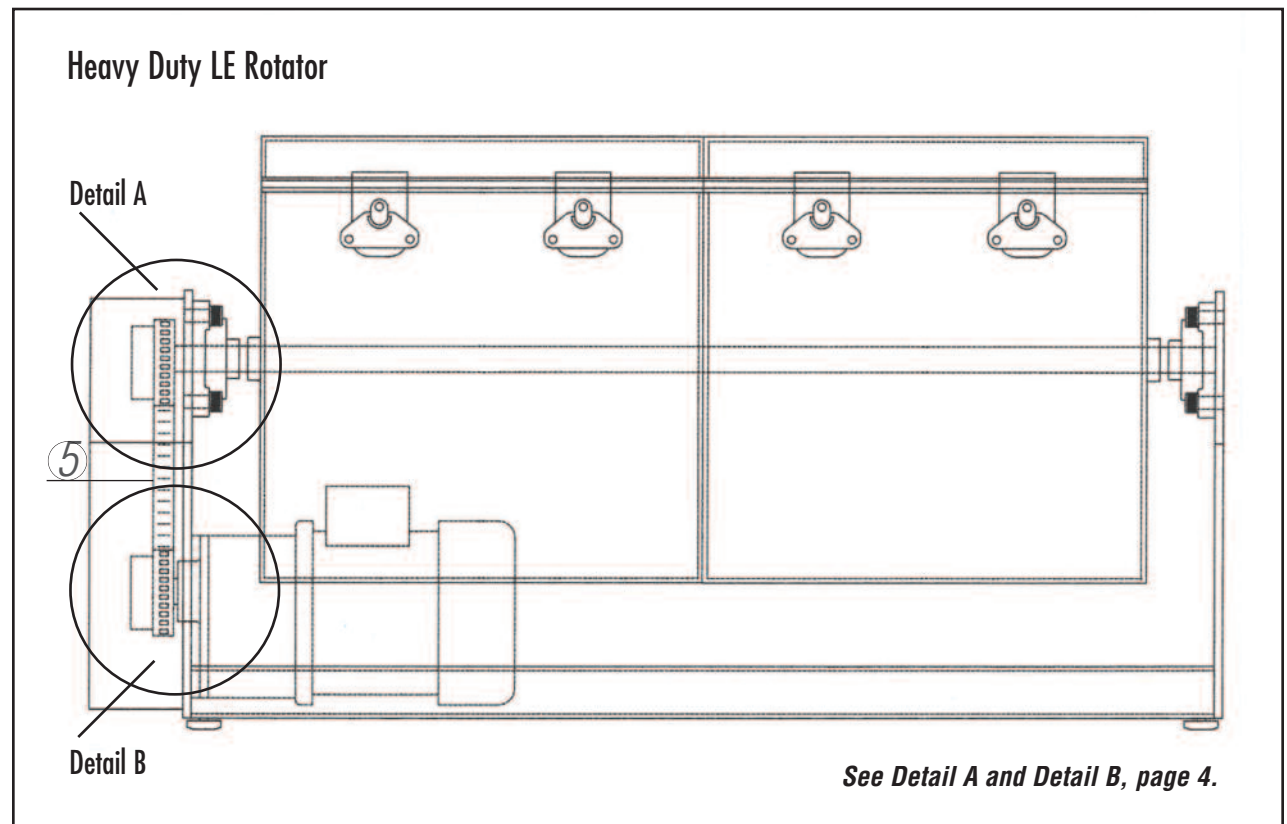
### ***The motor runs but the box does not rotate:***

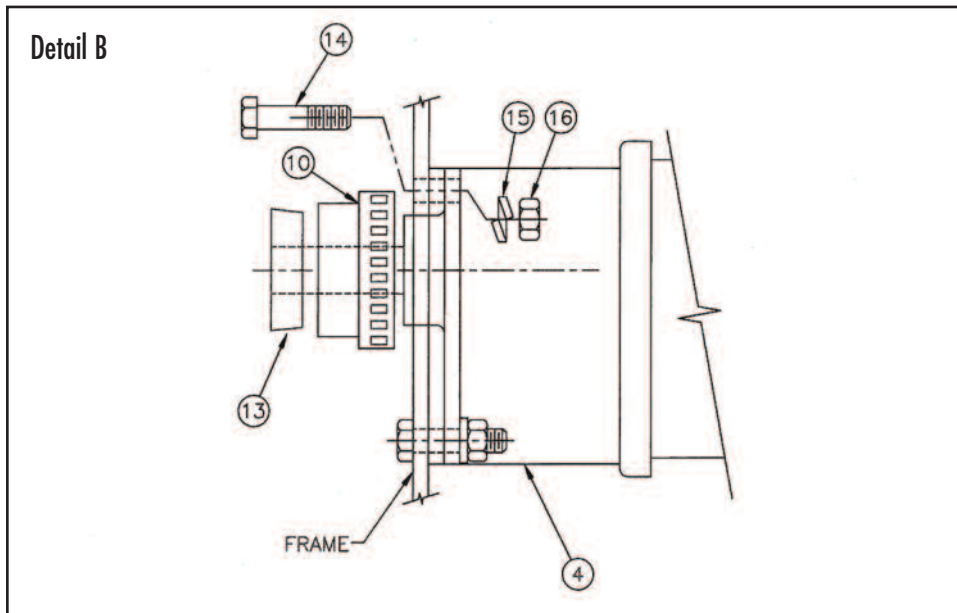
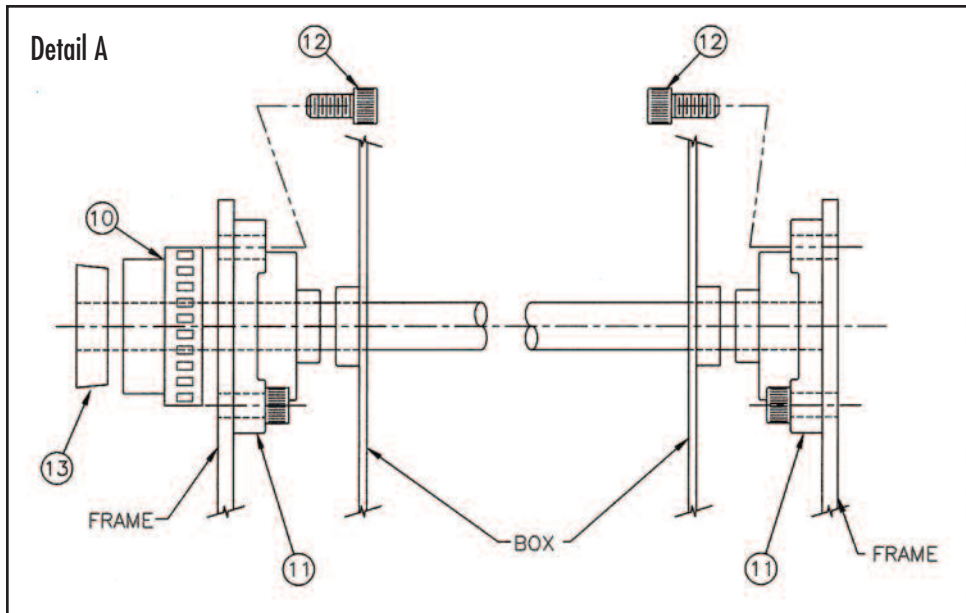
1. There could be several possibilities for this; stripped gears in the gearbox, a broken chain or loose set screws on pulleys are a few things to suspect. If this problem has occurred, please contact technical support at 1.843.881.6560 or 1.800.343.5319. Please do not attempt to retrofit any components. (If your unit is still under warranty, you may be entitled to parts at no expense to you.)

### ***The unit makes noise while rotating:***

1. After continued use over several years, it may be necessary to grease the two bearings. This is a very simple process. Unplug the unit, insert the grease gun fitting over the zerk nipple located on the bottom of each flanged bearing. Pump the grease gun until you notice a slight trace of grease discharge out of the bearing insert. This should correct the problem.

## Rotator Assembly Drawing





**Parts List:**

<i>Item #</i>	<i>Description</i>
1	Extractor Box
2	Belt Guard
3	Rotator Frame
4	Motor
5	Drive Chain
6	Circuit Breaker Switch
7	Leveling Feet
8	Power Cord
9	N/A
10	15 Tooth Sprocket
11	3/4" Flange Bearing
12	3/8" - 16 Socket Cap Screw
13	12 - 10 3/4" Taper Lock Bushing
14	5/16" - 18 Socket Cap Screw
15/16	5/16" - Flange Nut

## Drive Chain Adjustment and Maintenance

### ***Maintaining proper chain tension:***

The chain needs to be inspected routinely to maintain proper chain tension. If the chain develops 1/4" or more of slack it should be tightened using the procedure below.

### ***Steps to loosen chain:***

1. Loosen the jam nuts using a 7/16" wrench.
2. Loosen the adjusting bolts, which are the bolts that hold tension against the motor, with a 3/16" allen wrench.
3. Loosen the four bolts on the motor using a 1/4" allen wrench so that the motor can be slid over.

### ***Steps to tighten chain:***

1. Tighten the adjusting bolts with a 3/16" allen wrench which actually pushes the motor back into position. The chain should have no slack.
2. Tighten the jam nuts using the 7/16" wrench so that the motor will not slide out of position.
3. Tighten the bolts on the motor using the 1/4" allen wrench.

## Rotator Assembly Drawing with Drive Chain

