

# Heavy-Duty LE Rotator

## Operating & Instruction Manual

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**ENVIRONMENTAL EXPRESS®**  
*a Cole-Parmer company*

800-343-5319 or 843-881-6560 [www.environmentalexpress.com](http://www.environmentalexpress.com)

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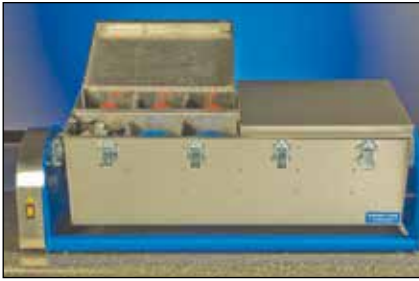
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## Congratulations on the purchase of your Heavy-Duty LE Rotator from Environmental Express.

The well-designed Heavy-Duty LE Rotator delivers quiet, consistent and dependable service. Large 6.25" x 6.25" x 12.75" stainless steel compartments accommodate most zero headspace extractors and many styles of glass and plastic bottles. The box style design offers a greater degree of safety than other styles of rotators.

The 12-position sample box is constructed of 14 gauge stainless steel 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.

LE1002 Heavy-duty LE Rotators use Brother® 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 insure extended wear resistance commonly associated with EPA Method 1311. A self-lubricating chain prevents slippage and requires no maintenance. Precise, constant speed control is maintained during long hours of continuous operation.

### Heavy-Duty LE Rotator Specifications:

Dimensions:	24.5"W x 21.5"D x 45.0"L; 12-place
Weight:	172 lb.
Construction:	14 gauge stainless steel
Compartments:	12, 6.25" x 6.25" x 12.75"
Shipping Weight:	262 lb. Delivery by truck only.
Electrical:	Gearmotor LE1002 — Brother 1/6 HP/120VAC/60Hz/1.7AMP (FL) Gearmotor LE1002-240 — 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 LE1002-240 — 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

<i>Description</i>	<i>Catalog #</i>
Twelve-place rotator, 120 VAC	LE1002
Twelve-place rotator, 240 VAC	LE1002-240

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## Accessories

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Extractor Pads are available to fit both zero headspace extractors and a variety of bottles.

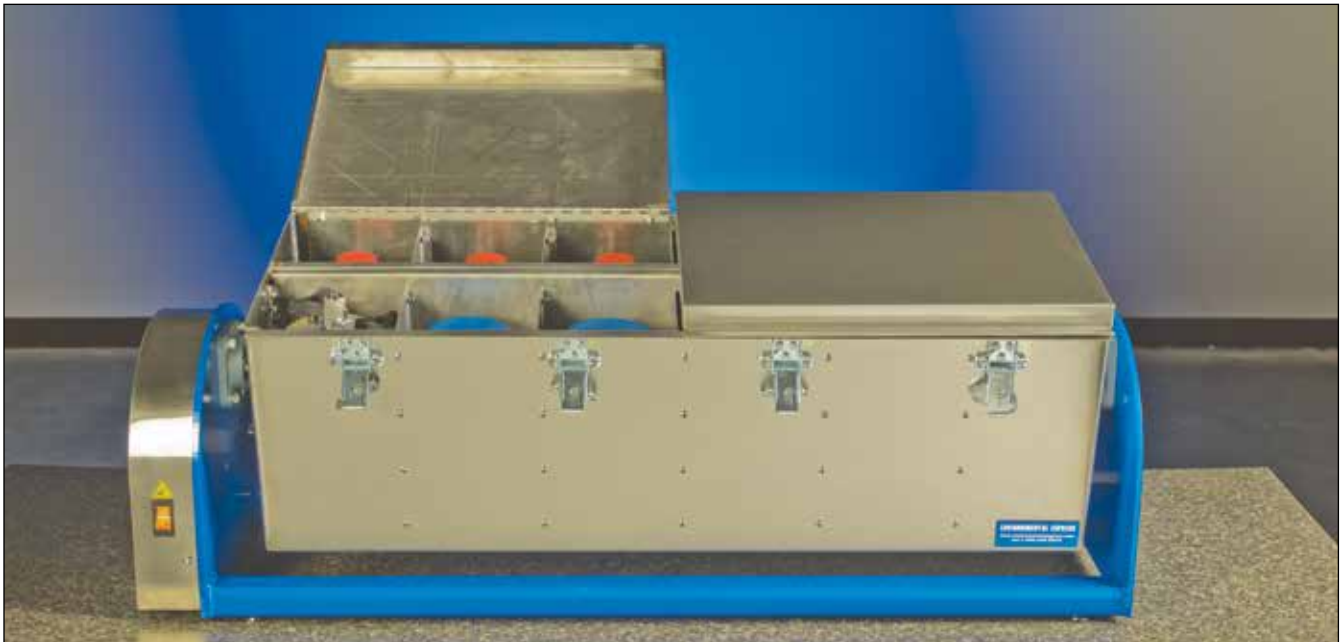
Polyurethane Extractor Pads for LE Rotators are die-cut to enable various vessels to fit in the Environmental Express LE Rotators. Also available is the foam rubber collar to allow bottles to fit in clamp style rotators (catalog BW2000A).

<i>Description</i>	<i>Catalog #</i>
Extractor Pad for Environmental Express ZHE+ <sup>®</sup> unit	LE1603
Extractor Pad for Millipore <sup>®</sup> ZHE unit	LE1604
Extractor Pad for BC2000-1 Bottle	LE1606
Extractor Pad for BX3000-4 Jar	LE1607
Extractor Pad for BF2501-6 Jar	LE1608
Extractor Pad for BK3000-1 Jar	LE1609

**Heavy-Duty LE1002/LE1002-240 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.



Call 800-343-5319 or 843-881-6560 [www.environmentalexpress.com](http://www.environmentalexpress.com)  
 2345 A Charleston Regional Pkwy • Charleston, SC 29492

**Product Information:**

Item # LE1002/LE1002-240

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.



## Safety Information

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

### WARNING

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- 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. Call Environmental Express at 1-800-745-8218 for technical support.

### 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.**

Avoid the use of extension cords. 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.

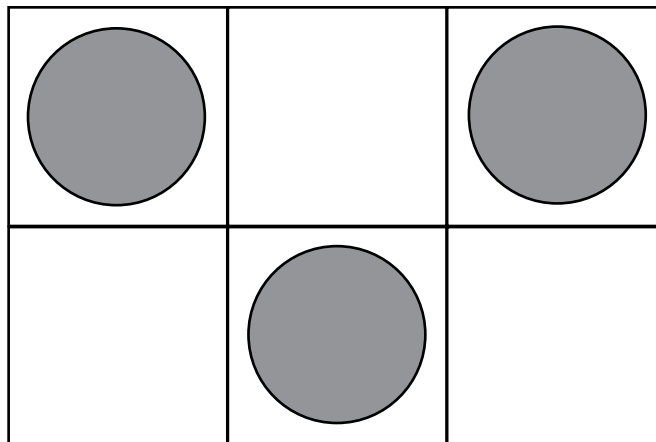
### Basic Operating Procedures:

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 (LE1002-240) 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.

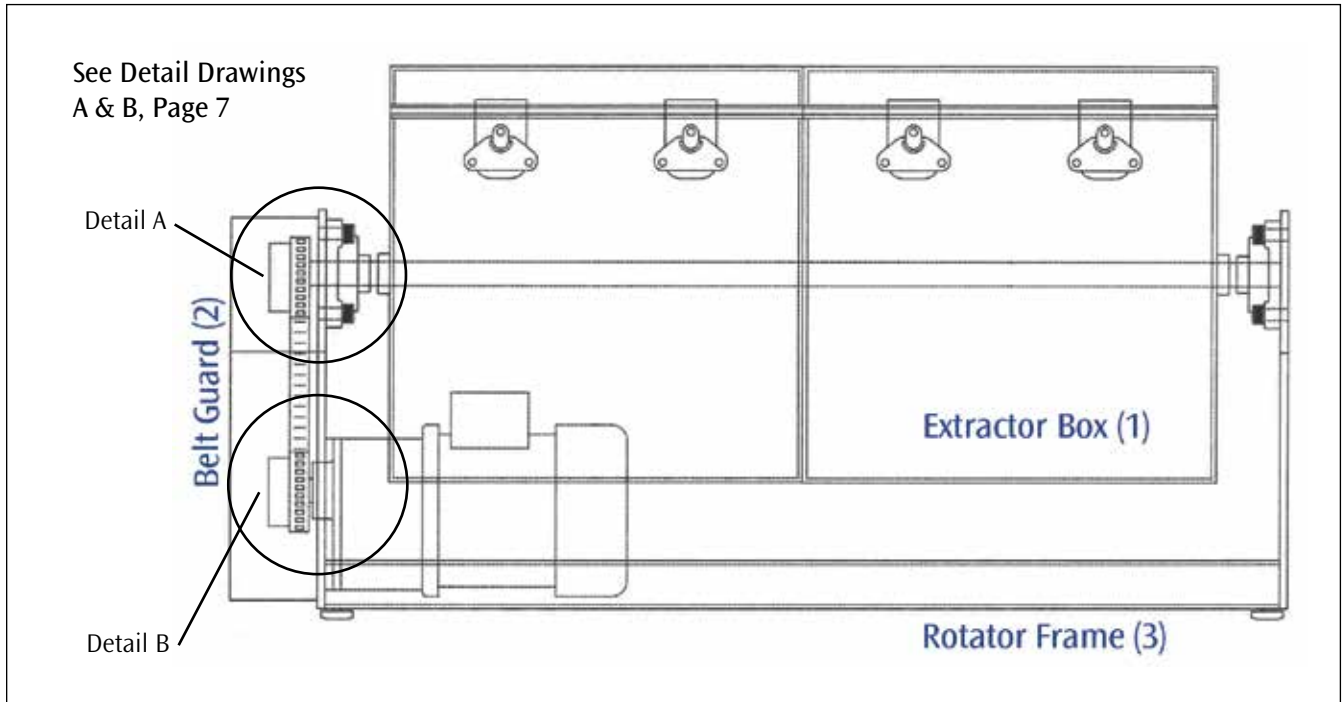
**⚠ Caution: It is important to offset your load (Refer to figure 1). For example, when you are loading a 12-place unit, and you have 6 bottles to load, avoid putting all six bottles on the front or back side of the box. Put the first bottle in the back left compartment, the second bottle in the second 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 longer.

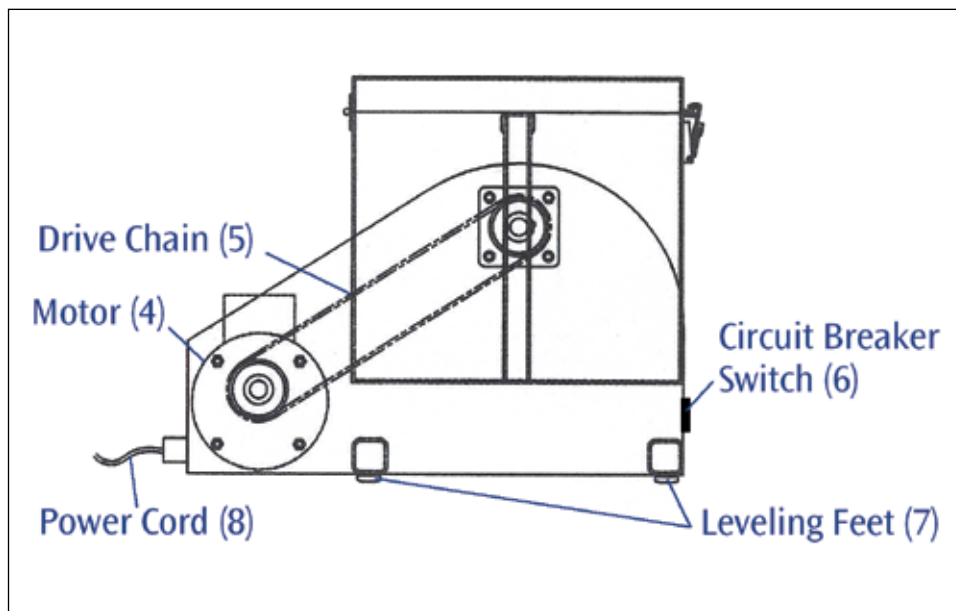


*Figure 1, proper loading sequence*

# LE Rotator



## Side View

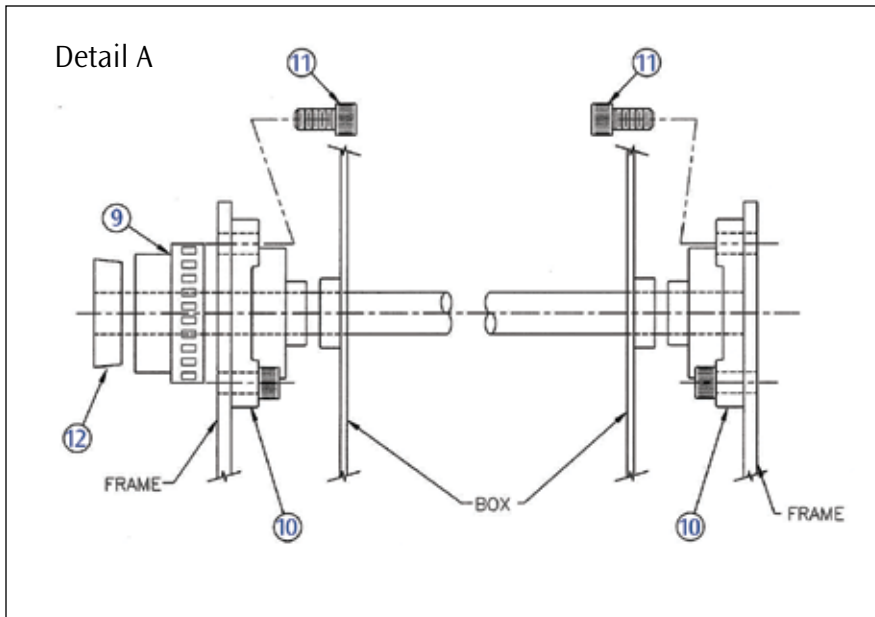


### LE Rotator Parts

- |   |                        |
|---|------------------------|
| 1 | Extractor Box          |
| 2 | Belt Guard             |
| 3 | Rotator Frame          |
| 4 | Motor                  |
| 5 | Drive Chain            |
| 6 | Circuit Breaker Switch |
| 7 | Leveling Feet          |
| 8 | Power Cord             |

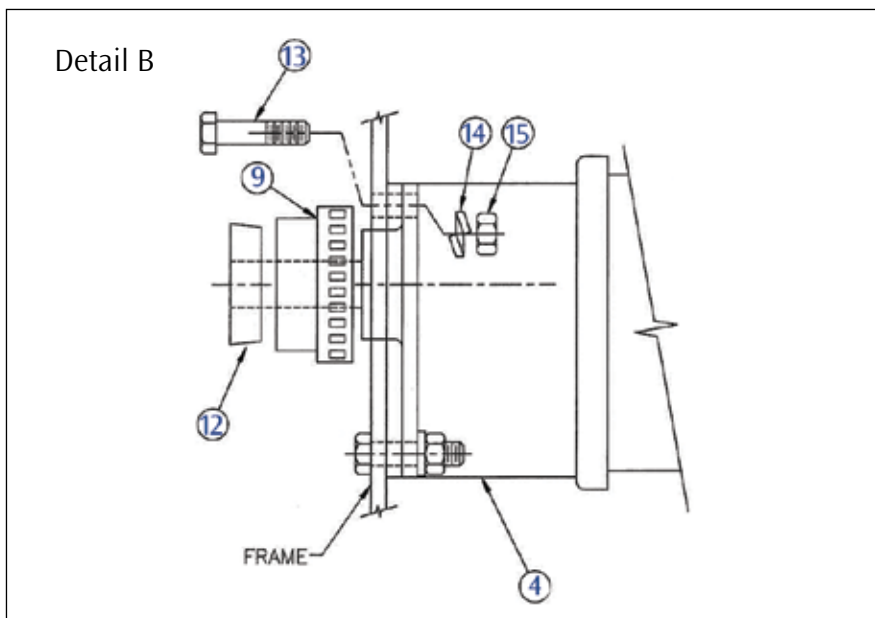
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**LE Rotator Parts, continued**

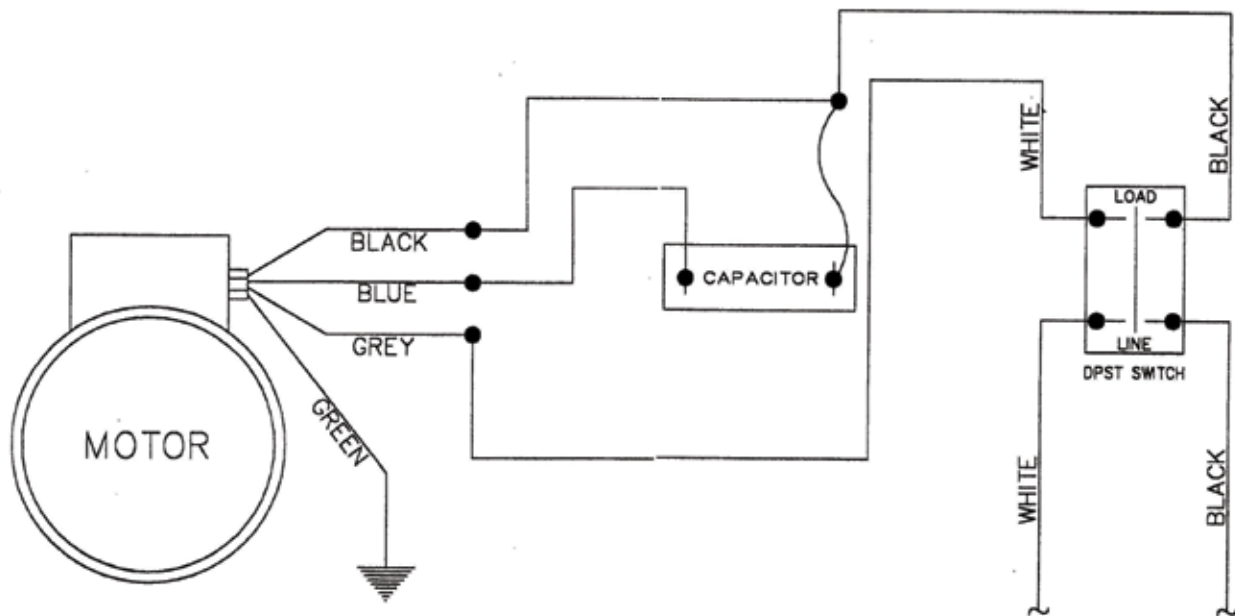
- 9 15-Tooth Sprocket
- 10 3/4" Flange Bearing
- 11 3/8" - 16 Socket Cap Screw
- 12 12 - 10 3/4" Taper Lock Bushing
- 13 5/16" - 18 Socket Cap Screw
- 14, 15 5/16" - Flange Nut



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**Wiring Schematic (shown for single phase 120VAC)**


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**Maintaining proper chain tension:**


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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.

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**Troubleshooting Guide:**

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

Is the wall outlet “hot”?

1. Check the breaker box and try plugging another electrical device into the outlet to see if it works.

Does the switch on the unit light up? If not, the internal circuit breaker may have tripped.

1. Try turning the switch off and back on to reset the circuit breaker.
  2. If the switch illuminates, but the unit still does not operate, unplug the unit immediately and call 1-843-576-1147 or 1-800-745-8218 for technical support. Only a competent electrician should attempt to work on the electronics of this unit. Failure to comply may void your warranty.
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**The motor runs but the box does not rotate.**

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 1-843-576-1147 or 1-800-745-8218. 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.)

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**The unit makes noise while rotating.**

After continued use over several years, it may be necessary to grease the two bearings. This is a very simple process.

1. Unplug the unit, insert the grease gun fitting over the zerk nipple located on the bottom of each flanged bearing.
2. Pump the grease gun until you notice a slight trace of grease discharge out of the bearing insert.

This should correct the problem.

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