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# E6155.00 Orbital Shaker

Variable Speed with Timer and Tachometer 30-300 rpm, 115 V, 50/60 Hz

#### **USE AND CARE FOR CATALOG NUMBER:**

E6155.00 Orbital Shaker Power Unit
 Variable Speed 30-300 rpm with Timer and Tachometer
 115V 50/60Hz

### **GENERAL INFORMATION**

- Handle this unit with care. Unpack and check that the contents coincide with the packing-list. If any part is damaged or missing, please advise the distributor immediately.
- o Do not install or use this equipment without first reading this manual.
- This manual should always be attached to the equipment and made available to all users.
- Immediately after reading this manual power on the machine to verify that it is working properly.
- If you have any doubts or inquiries, please contact your supplier or *Eberbach Corporation* technical service.

### **OPERATION**

The *Eberbach* orbital shaker catalog # *E6155.00* features:

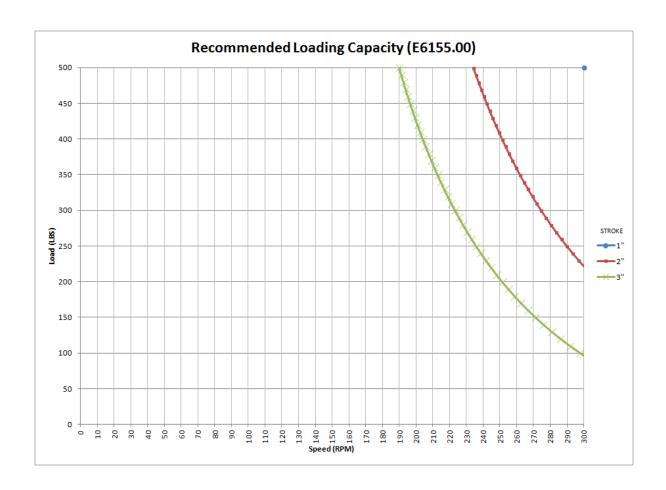
- An Oriental 400W BLDC Motor Drive for long life and low maintenance.
- A digital tachometer and timer for simple and accurate use.
- o Base designed to be moved with a narrow fork (21") forklift or pallet jack.
- A continuously variable speed range, adjustable between 30 and 300 rpm/min with stock orbit set to 2" (50.8mm). Also available in 1" (25.4mm) or 3" (76.2mm) orbits.
- See Load Graph on following page for recommended working load speeds.

**NOTE**: Due to the large inertia of the E6155 the machine may take as much as 45 seconds to completely accelerate or decelerate to its target speed.

**NOTE:** Do not overuse the EMERGENCY STOP button! Do not use the EMERGENCY STOP to stop the machine in normal conditions. Always turn off the power on the machine after the EMERGENCY STOP is pressed to reset motor and driver.

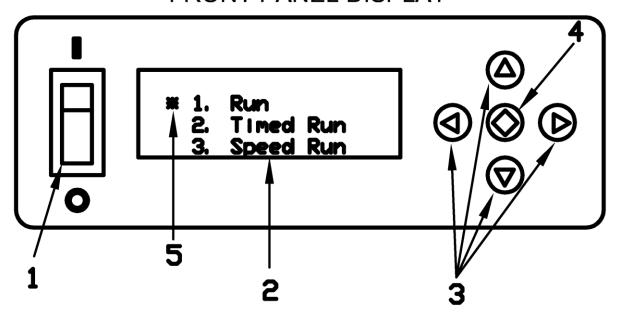
**WARNING:** Do not turn the POWER SWITCH off until machine has come to a complete stop! Doing so can damage the Motor and Gear Box.

# See Graph Below For Maximum Load/Speed Recommendations Based on Orbit Diameter



Contact *Eberbach Corporation Technical Support* for other stroke setting weight limits.

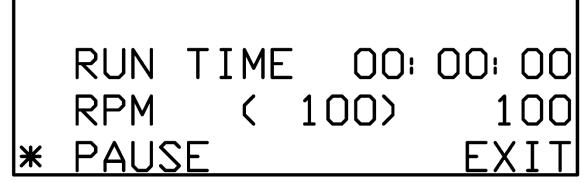
### FRONT PANEL DISPLAY



- 1) Power Switch
- 2) Liquid Crystal Display (LCD)
- 3) Directional Pad (D-Pad)
- 4) Enter Button
- 5) Cursor

<u>Operation:</u> Press the **Power Switch** down into the ON position. The **LCD** should light up and show the main menu. There are three different run modes to choose from. Select a run mode by moving the **Cursor** (using the **D-PAD**) and press the **Enter Button**.

Run Mode: The shaker will begin the run mode at its lowest speed. The speed shown in parenthesis (xxxx) is the set speed controlled by the user. The speed listed to the right is the tachometer read out or the actual speed of the shaker in real time. The speed can be increased/decreased by pressing and holding the up/down arrows on the D-PAD. The longer the button is held down the faster the speed will increase/decrease. Once engaged the timer will begin counting all the way up to 999 hours before the timer overflows back to zero. To pause the shaker move the Cursor to the PAUSE item by pressing the left arrow on the D-PAD and press the Enter Button. The clock will pause at its current time and the shaker will gradually come to a complete stop. The clock and shaker can be resumed at its current time and speed by selecting RESUME and pressing the Enter Button. To go back to the main menu move the Cursor to the EXIT item by pressing the right arrow on the D-PAD and then press the Enter Button.



RUN MENU

<u>Timed Run Mode:</u> The timed run mode features a count down timer that automatically shuts the shaker off when the time runs out. When selected the user will be taken to the Timed Run Setup Menu and will need to input the run time in hours, minutes, seconds and select the speed for the run. The left/right arrows on the **D-PAD** can be used to move the cursor between hours, minutes or seconds and the up and down arrows can be used to set the time. The longest run time allowed is 999:59:59. Once the time is set move the **Cursor** down by pressing the right arrow on the **D-PAD** until the **Cursor** is next to the RPM line item. The speed can be set using the up and down arrows on the **D-PAD**. Now that the data is set navigate the **Cursor** to the START line item using the left/right arrows on the **D-PAD** and press the **Enter Button**.

TIMED RUN SETUP
RUN TIME HR: MN: SC
\* RPM 100
START EXIT

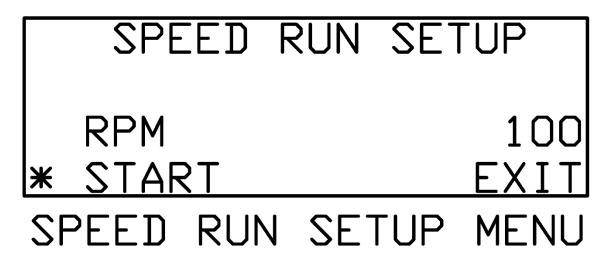
TIMED RUN SETUP MENU

After selecting START the shaker will begin at the selected speed and the timer will begin counting down. The speed can be adjusted in real time using the up/down arrows on the **D-PAD**. The speed shown in parenthesis is the target speed controlled by the user and the speed listed to the right is the actual speed as read by the tachometer. The shaker and countdown timer can be paused and resumed. Move the **Cursor** to the line item PAUSE by pressing the left arrow on the **D-PAD** and then press the **Enter Button**. Exiting the Timed Run Menu will bring the user back to the Timed Run Setup Menu.

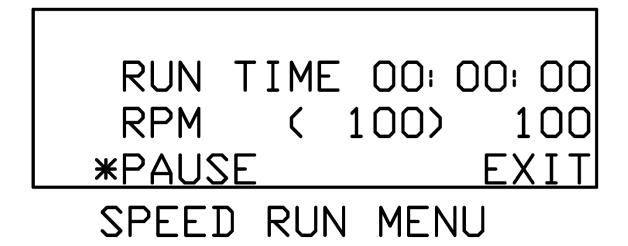
RUN TIME 999: 59: 59 RPM ( 100) 100 \* PAUSE EXIT

TIMED RUN MENU

<u>Speed Run Mode:</u> The speed run allows the user to program in a set run speed. Once engaged the timer will begin counting all the way up to 999 hours before the timer overflows back to zero. Select the speed run mode from the main menu and press the **Enter Button.** The user will be prompted with the speed run setup menu. Set the desired speed using the up/down arrows on the **D-PAD.** The left/right arrows can be used to move the **Cursor** between START and EXIT. EXIT will take the user back to the main menu. Keep the **Cursor** next to the START line item and press the **Enter Button**.



The user will now be taken to the speed run menu. The shaker will begin at the speed selected in the setup menu. The speed run menu behaves in the same way as the run menu with one exception. Pressing EXIT will not take the user back to the main menu instead pressing EXIT will take the user back to the speed run setup menu.



### **Error: No Tachometer**

If the Tachometer should fail your machine will shut down for safety reasons. This can also be caused by a stalled motor or unplugged Tachometer cable. The No Tachometer Error message will be flashed across the top line. It is possible to run the machine without a Tachometer although the accuracy of the speed may vary. To do this follow the prompt and select yes to run in open loop mode.

**Note:** All run menus will have two speeds listed. The leftmost speed will be displayed inside parenthesis. This is the target speed controlled by the user. The shaker will attempt to match this speed and should do so within ten seconds after making an adjustment. The rightmost speed is the tachometer reading, which shows the user what the shaker is actually running at. The tachometer reading will not necessarily match the target speed at all times, but is guaranteed to be within +/- 1% RPM.

**Note:** Reciprocating shakers will display OSC (oscillations) instead of RPM (revolutions per minute).

**Note:** Use slowest speed necessary to produce required shaking action.

If you have any doubts or inquiries concerning operation contact your supplier or Eberbach Corporation technical service.

LOADING:

It is impossible to outline the exact limitations for loading a shaker, as resulting shaking action is dependent upon several factors. Principal among these is the size and shape of the containers, speed, orbit radius, and the amount and type of material being shaken.

Basic considerations should be:

- Use lowest speed consistent with the required shaking action.
- At higher speed use less weight on platform.
- When using a tiered platform (one platform above the other), place equal load on each or, if possible, place heavier mass on lower platform and lighter on the top. If shaking action imparts a "whip" to the upper platform, then either the speed is too high or the load is too heavy on that platform.
- If shaker has tendency to "walk" on floor, then rubber feet should be secured to the floor using rubber or contact cement.

Good judgment in the selection of the factors will contribute to proper use of the shaker.

#### **BELT INSPECTION:**

Remove top plate and inspect belt annually and replace if actually broken or if the cords are exposed and frayed. In the case of a high duty cycle inspect every 6 months. Small outer fabric breaks are not harmful.

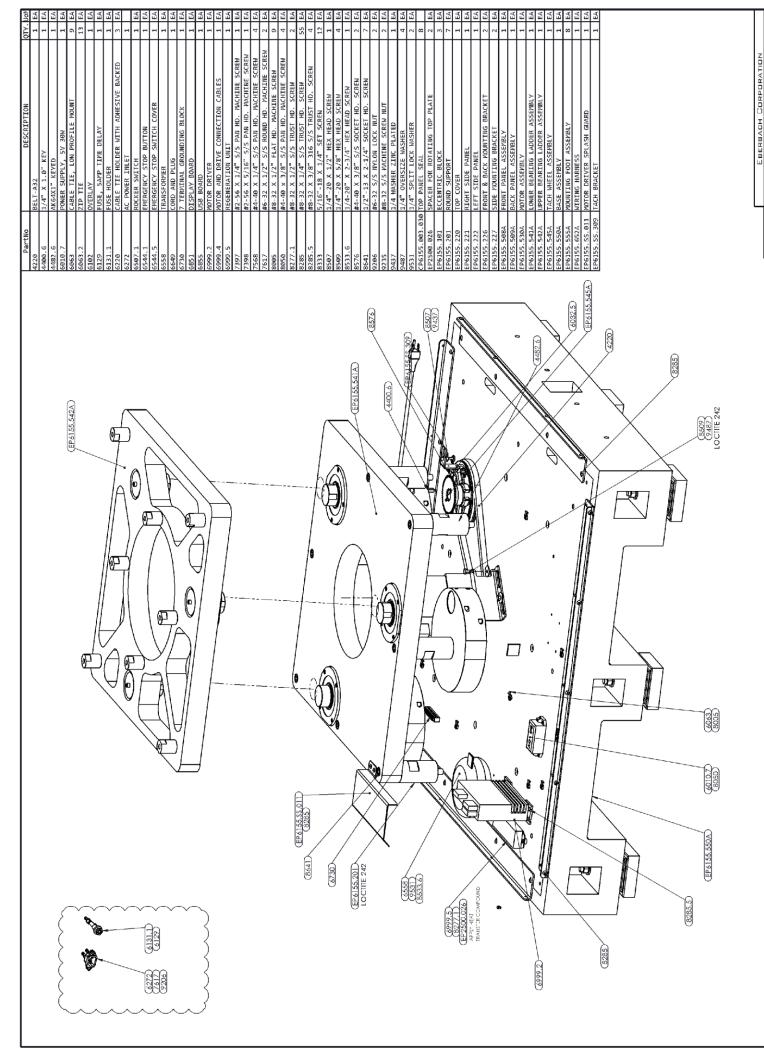
#### BELT REPLACEMENT AND ADJUSTMENT:

To replace belt, loosen motor mount screws and drop belt below both pulleys. Install new belt (Stock #4220) and tighten the motor screws but do not tighten belt to the point where the bearings will be overloaded. When belt is tight, the operator should be able to press lightly on the middle of the belt and cause it to bow in an amount equal to the width of the belt.

# **REPLACEMENT PARTS LIST FOR E6155.00**

PartNo	DESCRIPTION	QTY.
4220	BELT-A32	1
4400.6	1/4" X 1.0" KEY	1
4482.6	AK64X1" KEYED	1
6010.7	POWER SUPPLY, 5V 30W	1
6063	CABLE TIE, LOW PROFILE MOUNT	9
6063.2	ZIP TIE	13
6102	OVERLAY	1
6129	FUSE, 5AMP TIME DELAY	1
6131.1	FUSE HOLDER	1
6220	CABLE TIE HOLDER WITH ADHESIVE BACKED	3
6272	AC POWER INLET	1
6507.1	ROCKER SWITCH	1
6544.1	EMERGENCY STOP BUTTON	1
6544.5	EMERGENCY STOP SWITCH COVER	1
6558	TRANSFORMER	1
6649	CORD AND PLUG	1
6730	7 TERMINAL GROUNDING BLOCK	1
6851	DISPLAY BOARD	1
6855	USB BOARD	1
6999.2	MOTOR DRIVER	1
6999.4	MOTOR AND DRIVE CONNECTION CABLES	1
6999.5	REGENERATION UNIT	1
7397	#2-56 X 1/4" S/S PAN HD. MACHINE SCREW	1
7398	#2-56 X 5/16" S/S PAN HD. MACHINE SCREW	1
7568	#4-40 X 1/4" S/S PAN HD. MACHINE SCREW	4
7617	#6-32 X 1/2" S/S ROUND HD. MACHINE SCREW	2
8005	#8-32 X 1/2" FLAT HD. MACHINE SCREW	9
8050	#4-40 x 3/8" S/S PAN HD. MACHINE SCREW	4
8277.1	#8-32 X 1/2" S/S TRUST HD. SCREW	2
8285	#8-32 X 1/4" S/S TRUST HD. SCREW	55
8285.5	#8-32 X 3/8" 316 S/S TRUST HD. SCREW	4
8333	5/16"-18 X 1/4" SET SCREW	12
8507	1/4"-20 X 1/2" HEX HEAD SCREW	1

8509	1/4"-20 X 5/8" HEX HEAD SCREW	4
8533.6	1/4-20" X 2-3/4" HEX HEAD SCREW	1
8576	#4-40 X 3/8" S/S SOCKET HD. SCREW	2
8641	1/2"-13 X 2-1/4" SOCKET HD. SCREW	7
9206	#6-32 S/S NYLON LOCK NUT	2
9235	#8-32 S/S MACHINE SCREW NUT	2
9437	1/4 WASHER ZINC PLATED	1
9487	1/4" OVERSIZE WASHER	4
9531	1/4" SPLIT LOCK WASHER	2
CP6155.003.030	TOP PANEL SEAL	8
EP2500.026	SPACER FOR ROTATING TOP PLATE	2
EP6155.101	ECCENTRIC BLOCK	3
EP6155.201	ROUND SUPPORT	7
EP6155.220	TOP COVER	1
EP6155.221	RIGHT SIDE PANEL	1
EP6155.222	LEFT SIDE PANEL	1
EP6155.226	FRONT & BACK MOUNTING BRACKET	2
EP6155.227	SIDE MOUNTING BRACKET	2
EP6155.508A	FRONT PANEL ASSEMBLY	1
EP6155.509A	BACK PANEL ASSEMBLY	1
EP6155.530A	MOTOR ASSEMBLY	1
EP6155.541A	LOWER BEARING LADDER ASSEMBLY	1
EP6155.542A	UPPER BEARING LADDER ASSEMBLY	1
EP6155.545A	TACH WHEEL ASSEMBLY	1
EP6155.550A	BASE ASSEMBLY	1
EP6155.555A	MOUNTING FOOT ASSEMBLY	8
EP6155.652A	WIRING HARNESS	1
EP6155.SS.011	MOTOR DRIVER SPLASH GUARD	1
EP6155.SS.309	TACH BRACKET	1



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