Corning® LSE™ Multipurpose Digital Vortexer

Instruction Manual

Cat. No. 6709, 115V
Cat. No. 6710, 230V

CORNING

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1.0 General Description

1.1 Definition

The Corning® LSE™ Multipurpose Digital Vortexer is intended for vortexing microliter plates, tubes, bottles, flasks, dishes, and other laboratory vessels. The Vortexer is driven by asynchronous motors, which enable silent operation and constant shaking speed, independent of the load or power supply fluctuations.

1.2 Principles of Operation

Each Vortexer device consists of two main components:

▸ Motor with eccentric mechanism

▸ Control electronics

The motor drives the Vortexer's eccentric mechanics and generates the shaking effect.

The electronics control the motor RPM, TIME, and keyboard functions.

2.0 Technical Features

2.1 Construction

The Vortexer housing is made from a high-grade, cold rolled steel plate and painted with a highly resistant polyurethane lacquer.

2.2 General Specifications

Power Supply	115V/60Hz or 230V/50Hz
Motor Power	15W
Fuse	2 x 0.25AT, 230V 2 x 1AT, 115V
Operation Range	4°C to 65°C, 85% RH
RPM (Digital Load Independent)	100 to 1,200 rpm in 10 rpm intervals
Motion/Orbit Size	Circular, 3 mm
Timer	• 30 seconds to 99 minutes 50 seconds in 10-second intervals • <10 minutes in 1-second intervals • Continuous when using timer HOLD function
Load	4.4 lbs. (2 kg)
Dimensions (W x L x H)	10.3 x 13.3 x 5.1 in. (26.2 x 33.7 x 13 cm)
Weight	16 lbs. (7.3 kg)

3.0 Installation

3.1 Unpacking

Before starting installation, carefully examine the Vortexer for damage or missing parts.

▸ Open the box and lift the device together with inner packing out of the box.

▸ Remove the inner packing and check that the Vortexer has not been visibly damaged during transportation. Keep the packing material until you are sure that the Vortexer works properly.

▸ Check information on the rear data label and verify the following are correct:
  • Model
  • Serial number
  • Electrical rating

Should any kind of damage have occurred during transportation, immediately notify the carrier. The carrier is responsible for correcting damage caused in shipment.

3.2 Selecting a Suitable Location

When selecting a location for the Vortexer, please consider the following:

▸ Put the device on a smooth, horizontal, and stable surface.

▸ Leave enough space around the device for normal air circulation, minimum 10 cm.

▸ Leave enough space around the device so that it can easily be controlled and maintained.

▸ Do not use the device in surroundings where there are major temperature and humidity fluctuations. Also avoid locations in direct sunlight or places near devices that produce heat.

▸ Avoid locations with excessive vibrations.

3.3 Attaching the Power Cord

Fit the main power cord, which is included in the package, into the power receptacle on the Vortexer. Connect the other end of the cord to a properly grounded wall outlet. To avoid interference from noise, surges, and spikes, a dedicated line is preferred. If no such line is available, avoid lines to which powerful electric motors, refrigerators, and similar devices are connected.

Take care when you plug the cord to a grounded wall socket. Do not touch the plug with wet hands. Plug the cord to a grounded wall socket only with a dry hand.

3.4 Environmental Requirements

The Corning® LSE™ Multipurpose Digital Vortexer has been built for operating in both cold and heated laboratory environments and in high humidity environments as follows:

◗ At temperatures between 0°C and +65°C

◗ In humidity up to 85% (without condensation)

4.0 Installation of Vortexer Platforms

Cat. No.	Platform Descriptions
48010	Platform for 4 microplates
48011	Platform with non-slip rubber mat
48012	Spring loaded platform for flasks, bottles, or tube racks

The Corning LSE Multipurpose Digital Vortexer requires the installation of the selected platform. Please follow the instructions below for installing the platform.
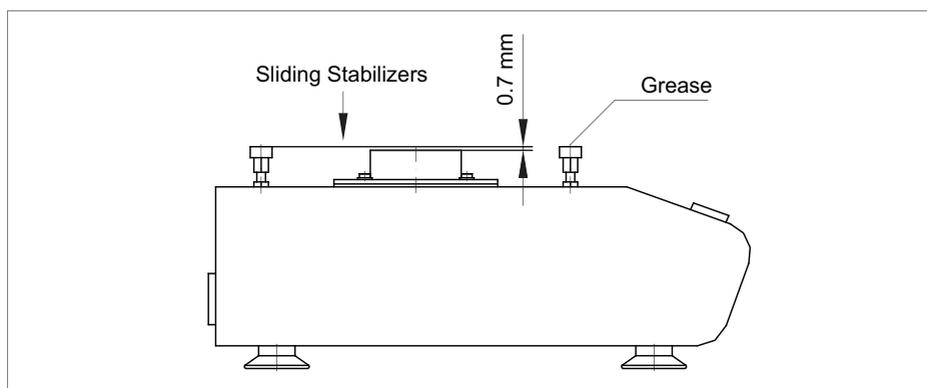

Before you attach the platform, make sure that the slide stabilizers are properly fastened, adjusted, and lubricated with the included grease.

The flat mat platform has a circle cut-out in the rubber and screw holes in the center. Remove the cut-out rubber circle and screw down the 4 screws onto the Vortexer. After attaching the platform, remove the non-adhesive backing paper on the rubber circle, and paste it back into place.

The grease is used to lubricate the slide stabilizers. It is sufficient for 1,000 working hours (approx. 1 year). After that time you should remove the platform and clean, adjust, and re-grease the slide stabilizers. If they are worn out, you should replace them with new stabilizers and set to appropriate height.

## 5.0 Operating Instructions

5.1 Introduction
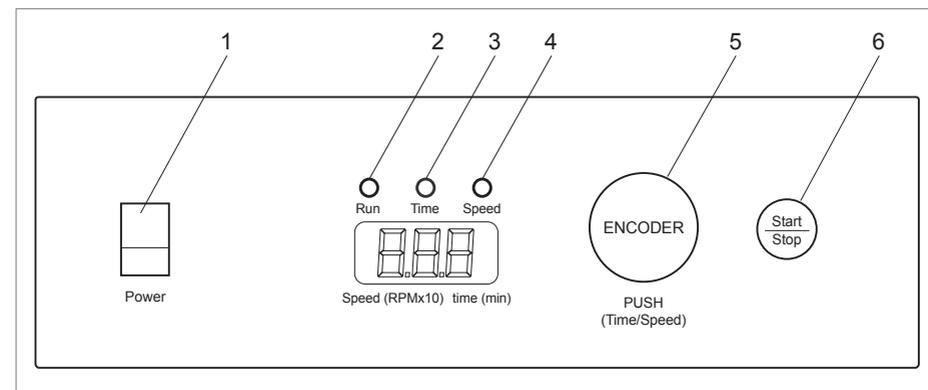
1. **POWER** switch– switches Vortexer ON (light on) or OFF.

2. **RUN** green signal light – lit when the Vortexer is running.

3. **TIME** yellow signal light – lit when the Vortexer is set on time.

4. **RPM** yellow signal light – lit when the Vortexer is set on rpm.

5. **ENCODER** – by rotating the encoder right (+) or left (-) you can change the set TIME or RPM. Push the encoder to switch between TIME and RPM set values. If you rotate the ENCODER knob fast, the values go up or down on the display very quickly.

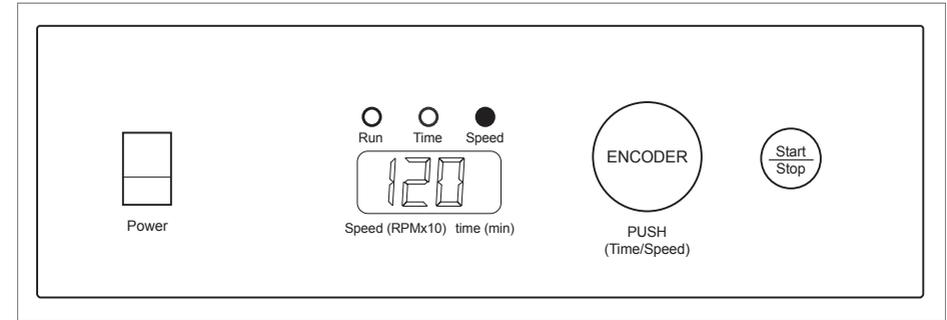6. **START/STOP** button – press to START or STOP operation.

5.2 Basic Operation
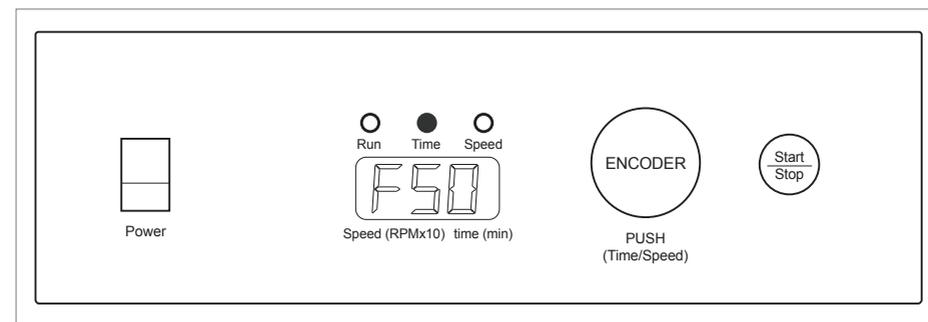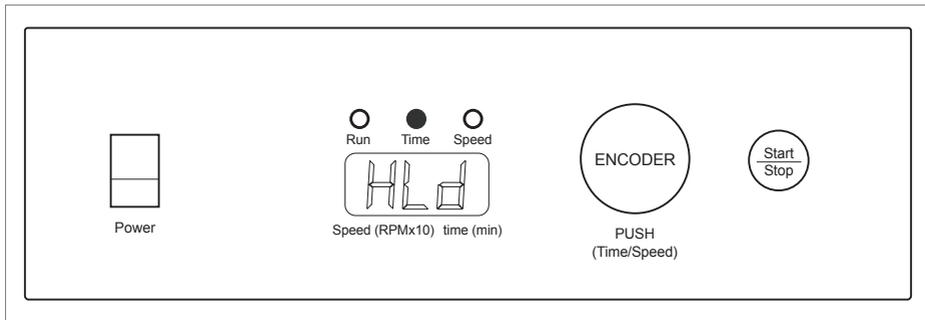

◗ Press the POWER switch on the control panel. The Vortexer automatically detects supply frequency of 50 or 60Hz, and displays F50 or F60. Then the display switches to show the set TIME and illuminates the TIME light.
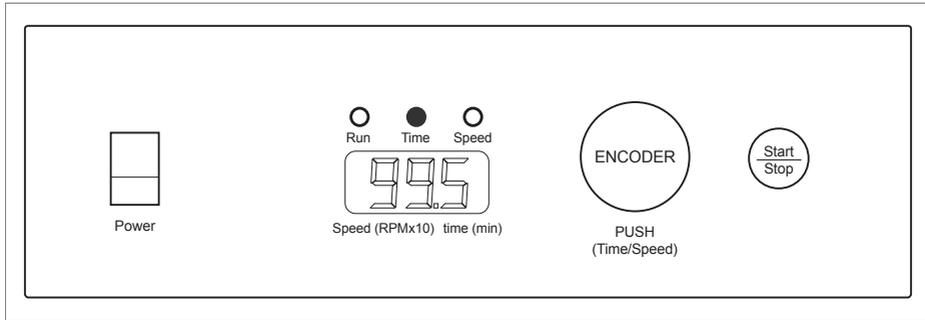
◗ TIME signal light is on. By rotating the encoder right (+) or left (-) the set time can be selected from 30 seconds to 99 minutes 50 seconds:

• 99.5 = 99 minutes 50 seconds

• 9.59 = 9 minutes 59 seconds

• 0.30 = 30 seconds

◗ If you want to set the timer to hold – turn the knob left or right until HLd is displayed. You can reach the HLd function by setting to under 0.30 or above 99.5.

◗ Push down on the encoder knob to switch modes between TIME set mode and RPM set mode.

◗ RPM signal light is on. By rotating the encoder right (+) or left (-) the desired RPM can be selected:

• 34 = 340 rpm

• 120 = 1,200 rpm
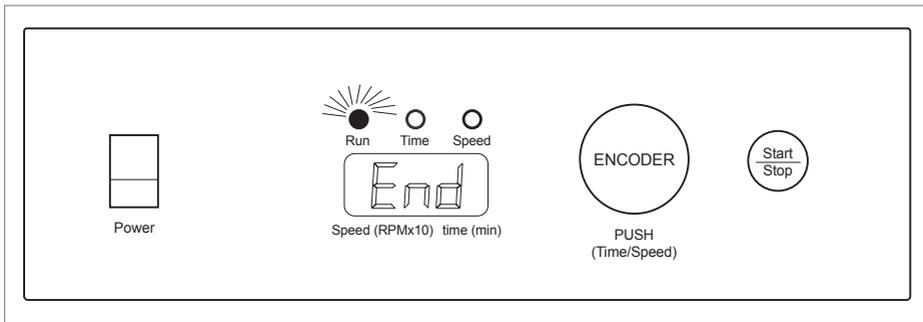
◗ Press the START/STOP button to start operation.
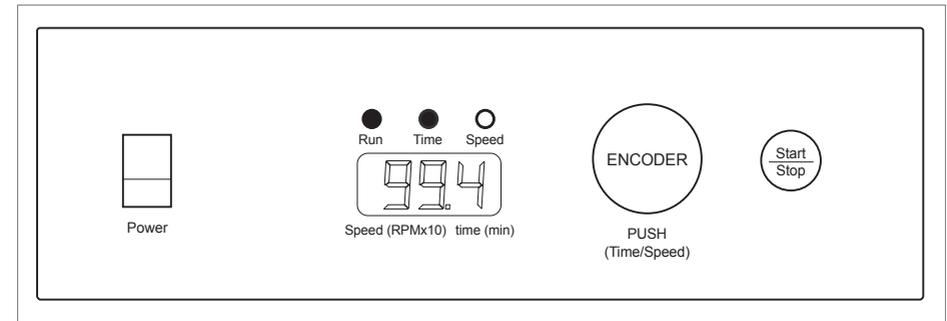
◗ RUN and TIME signal lights are on. The Vortexer runs and counts down the time from the set value.

NOTE: You cannot modify the set time during vortexing; however, you can stop the unit with the START/STOP button and then reset the time.
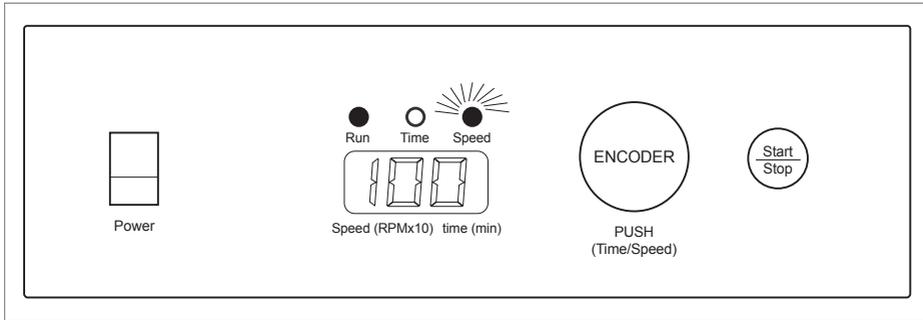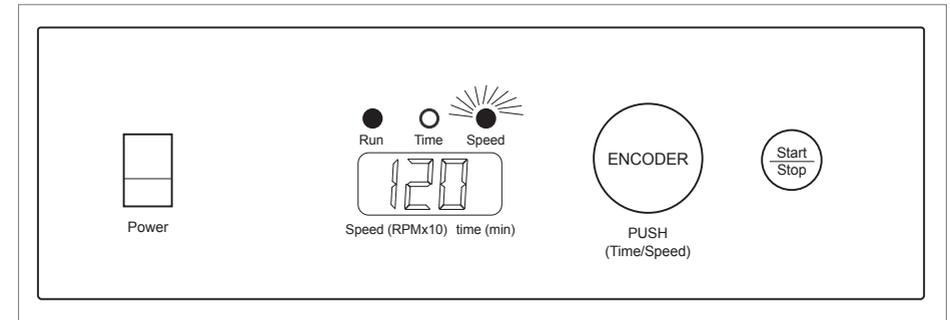
◗ If you want to change the RPM during vortexing, push the encoder knob to put the Vortexer into RPM set mode (RPM signal light will be on). Rotate the encoder right (+) or left (-) to set the desired value. In the meantime RPM signal light will flash. When you stop rotating the encoder knob, the signal light for RPM will stop flashing after 2 seconds.


◗ When the run time has elapsed or when you press the START/STOP button, the display will show "End" and the RUN light will flash. When the Vortexer completely stops the set speed and time will return to the last programmed values.

5.3. Additional Operations

◗ If you want to view the set value for RPM during vortexing, rotate the encoder knob for ONE CLICK right (+) or left (-). The RPM signal light will flash for 2 seconds and the display will show the set RPM. After 2 seconds the RPM and the signal light will stop flashing.

NOTE: The Vortexer must be in RPM mode — RPM signal light must be on.
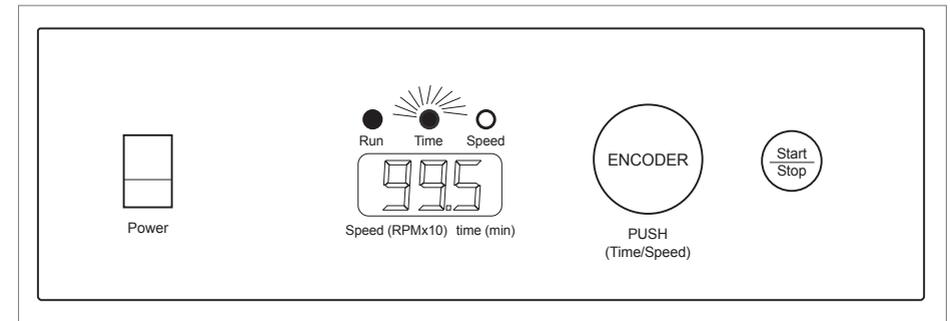
◗ If you want to view the set value for TIME during vortexing, rotate the encoder ONE CLICK right (+) or left (-). The TIME signal light will flash for 2 seconds, and the display will show the set TIME. After 2 seconds the display will return to the count TIME, and the signal light will stop flashing.

NOTE: The Vortexer must be in the TIME mode — the TIME signal light must be on.

6.0 General Precautions

◗ Always plug the unit into a properly grounded and fused outlet.

◗ Do not use the device near water sources. Take care so that water will not fall on the device, especially during cleaning procedures.

◗ Do not use the device in a caustic or explosive atmosphere.

◗ There are no user serviceable parts in the unit. Opening the unit may void the warranty. In case of a malfunction or liquid being spilled into the unit, unplug the device from its power outlet and contact Corning Customer Service.

⚠ **NOTE:** In the case that the device does not function properly even if you have exactly followed the instructions described in the User's Manual, contact Corning Customer Service. If the equipment is used in a manner not specified by this manual, the equipment may become unsafe to operate, could harm the user or the device, and may void the warranty.

Do not shake inflammable or explosive samples or use the unit in an inflammable or explosive environment.

7.0 Troubleshooting Guide

Problem	Solution
POWER key does not light	Check the power source. Check fuses.
Vortexer stalls – Message Er1	Power the unit down, then restart.
Display does not light Message Er2 on display Message Er3 on display Message Er4 on display	Contact Corning Customer Service.

8.0 Maintenance and Cleaning

◗ With the exception of the occasional maintenance described in section 4.0 of this manual, no scheduled maintenance is normally required. However, an experienced technician should regularly check the device operation at least once a year to make sure it is operating correctly.

◗ Regular cleaning of the housing is recommended.

◗ The housing of the Vortexer can be cleaned with special cleaners for polyurethane (plastic) surfaces. A damp (not wet) cloth is recommended.

NOTE: Do not use any aggressive or abrasive cleaners (acetone, nitro, polish, etc.) because its surface can be permanently damaged.

⚠ **Before cleaning the device, unplug the main cord from the wall socket.**

9.0 Limited Warranty

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of five (5) years from date of purchase. CORNING DISCLAIMS ALL OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Corning's sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in material or workmanship within the warranty period, provided the purchaser notifies Corning of any such defect. Corning is not liable for any incidental or consequential damages, commercial loss or any other damages from the use of this product.

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

In the event this product fails within the specified period of time because of a defect in material or workmanship, contact Corning's Customer Service at the following numbers: USA: 1.800.492.1110; Canada: 1.978.442.2200. For other regions of the world, visit **www.corning.com/lifesciences** or see the included instruction manual for a list of Worldwide Support Offices.

Corning's Customer Service team will help arrange local service where available or coordinate a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, padded to avoid damage. Corning will not be responsible for damage incurred by improper packaging. Corning may elect for onsite service for larger equipment.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No individual may accept for, or on behalf of Corning, any other obligation of liability, or extend the period of this warranty.

For your reference, make a note of the serial and model number, date of purchase, and supplier here.

Serial No. _____ Date Purchased _____

Model No. _____

Supplier _____

10.0 Equipment Disposal

According to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), the Corning® LSE™ Multipurpose Digital Vortexer is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at the following link: **www.corning.com/weee.**

Register your product warranty online at **www.corning.com/lifesciences/warranty**.

For more specific information on claims, visit the Certificates page at **www.corning.com/lifesciences**.

For additional product or technical information, visit **www.corning.com/lifesciences** or call 800.492.1110. Outside the United States, call +1.978.442.2200 or contact your local Corning sales office.

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