

NEST<sup>®</sup>

# Nutating Mixer

105005US/EU

User's Manual



NEST<sup>®</sup>

[www.cell-nest.com](http://www.cell-nest.com)

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# Section 1 Inspection and Installation

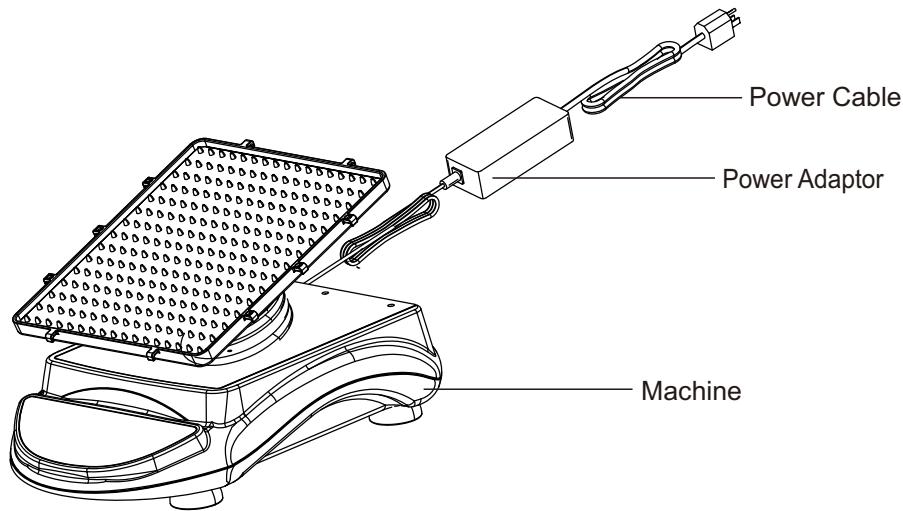
1. Inspect package and contents upon receipt of the instruments. If the package is severely damaged or if there are any missing pieces, please contact the manufacturer immediately.
2. Unpack the instrument, ensure all parts of the instrument and accessories are not missing or damaged. Make sure to take out all the components before discarding packing. If there are any missing or damaged pieces, please contact the manufacturer immediately.
3. Place the instrument on a level and firm surface to avoid vibration and noise.
4. This is the general user manual for three instruments. Please make sure to refer to the corresponding chapter for your instrument.

## 1.1 Packing List

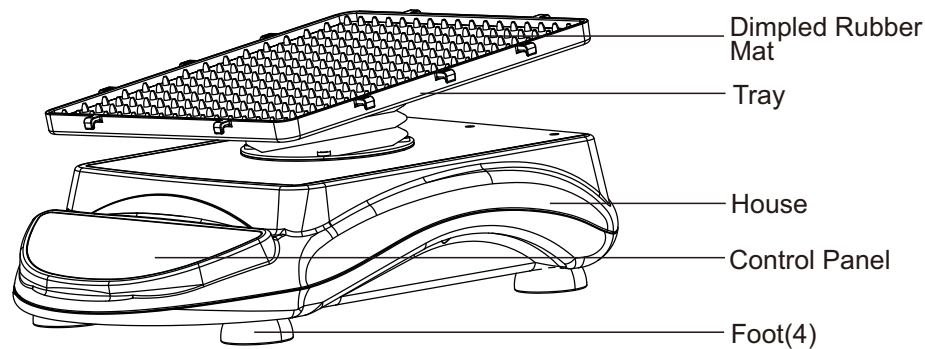
Table -1 Packing List

Model	105005US/EU	Figure
Product Name	Nutating Mixer	
Dimpled Rubber Mat	1	
General Power Adaptor	1	
Power Supply Cable	2	
Rubber Strips	6	
User Manual	1	

## 1.2 Connections



## 1.3 Structure Diagram



## Section 2 Overview

### 2.1 Specifications

Speed Range	2 to 80rpm
Display Mode	LED
Display Accuracy	1rpm
Speed Accuracy	±1rpm
Tilt Angle	7°
Tilt Angle Accuracy	±1°
Rotation Angle	0 to 360°
Maximum Load (Centered on tray)	0.8kg
Timer Range	0~99h59min
Requirement	100~240V, 50Hz/60Hz, 0.8A
Overall Dimensions	440×296×189mm (17.3×11.6×7.4in.)
Tray Dimensions	307×267mm (12.1×10.6in.)
Package Dimensions	505×385×270mm (19.9×15.2×10.6in.)
Net Weight	7.3kg(16.1lb)
Gross Weight	9.4kg(20.7lb)
Noise Level	< 55 dB with no load when ambient noise is 45 dB

**Note:** Maximum speed/tilt angle may vary with heavy or unbalanced loads.

### 2.2 Environmental Conditions

Application Environmental Conditions: indoor use

Temperature	5 to 40 °C (41 to 104 °F)
Humidity	20% to 85%,
Altitude	≤2,000 m
Voltage Fluctuation	± 10% of the nominal voltage

Storage Environmental Conditions

Temperature	0 to 60 °C (36 to 124 °F)
Humidity	20% to 90%, non-condensing

## 2.3 Safety Instructions

Please read the entire instruction manual before operating the Nutating Mixer.

**WARNING** **DO NOT** use the Nutating Mixer in a hazardous atmosphere or with hazardous materials for which the unit was not designed. Also, the user should be aware that the protection provided by the equipment may be impaired if accessories used are not provided or recommended by the manufacturer, or are used in a manner not specified by the manufacturer.

**CAUTION !** To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug from the wall outlet. Disconnect unit from the power supply prior to maintenance and service. Any spills should be removed promptly. Biohazard spills should be cleaned using approved liquid promptly. Solvent spills are a fire hazard. Stop the unit immediately, and **DO NOT** operate until clean up is complete and vapors have dissipated.

**DO NOT** immerse the unit for cleaning.

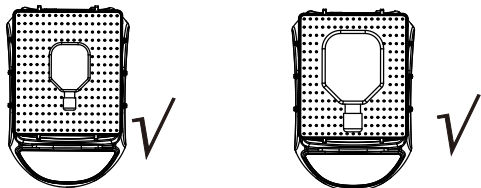
**DO NOT** operate the unit if it shows signs of electrical or mechanical damage.

### Position of Loads

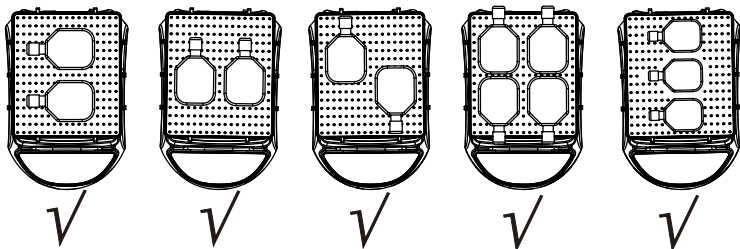
Place the loads in the recommended positions below:

1. Place load at the center of the tray
2. Place loads symmetrically around the center of the tray
3. Make sure to use rubber strips to fasten containers onto the tray

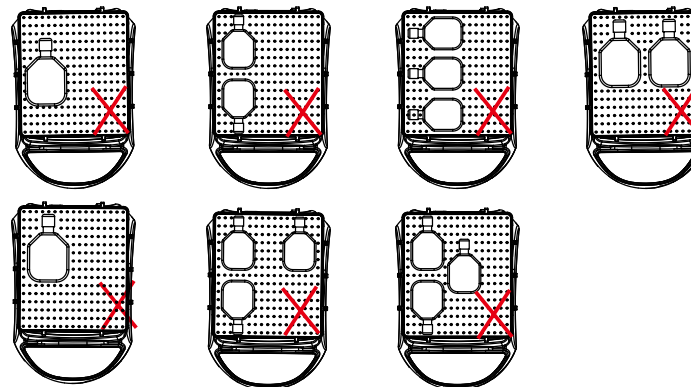
#### Centered Placement



#### Symmetrical placement



#### Asymmetrical placement



**WARNING** Asymmetric loading or unloading may affect the normal operation of the instrument and may even cause unpredictable damage.

## 2.4 Loads and Speed

Cell Culture Flask Specification(cm2)	≤Capacity (ml)	Maximum Speed (rpm)
25	30/40	80
75	225	80
150	450	80
175	600	80
225	800	80

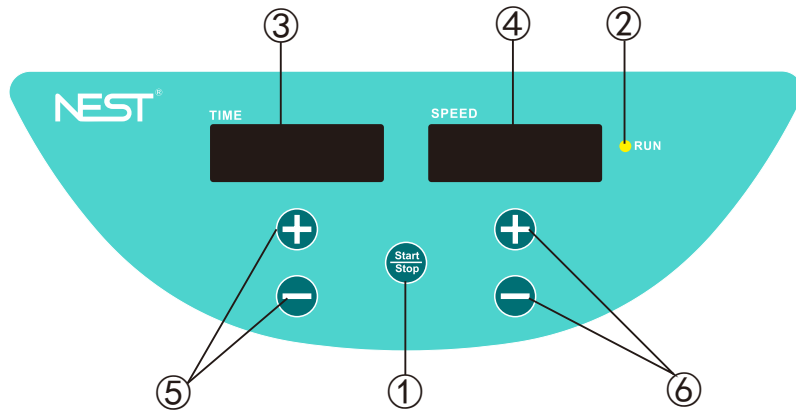
**Warning:** The rotation speed is inversely proportional to the load. When the instrument is in use, it is recommended to adjust the rotation speed from low to high, step by step and run the machine at an appropriate speed to avoid accidental spillage of liquids.

For safety, please always using rubber strip to hold samples in place.

## Section 3 Operation

This Chapter covers introduction of the control panel and its operation.

### 3.1 Operations of the Control Panel



1. Start/Stop button: Start or stop the instrument
2. RUN indicator light: The light is on when the instrument is running and off when the instrument is in standby.
3. TIME display window: The window shows cumulative time (in continuous mode) or remaining time (in timer mode). The range of time displayed is 0 to 99 hours and 59 minutes. The accuracy is 1 minute.
4. SPEED display window: The window shows set speed (when the instrument is in standby) or current speed (when the instrument is running).
5. Set Time Buttons: UP/DOWN Arrow buttons are used to increase/ decrease the set time of the instrument.
6. Set Speed Buttons: UP/DOWN Arrow buttons are used to increase/ decrease the set speed of the instrument.

### 3.2 Settings

1. Connect all the components according to the figures shown on page 1-2 of this manual. Use grounded power outlet.
2. Press the power switch "I" side and switch on the instrument.

### Speed Settings

Press the “+” or “-” arrow button below the SPEED display window. When the number shown on the display window starts flashing, press “+” or “-” arrow button to increase or decrease the speed value. Release the button when the speed shown on the display window reaches the set value. The speed setting is finished after the number shown on the display window has flashed twice.

**Note:** press the “+” or “-” arrow button for a longer time to accelerate the setting.

### Run and Stop

#### 1. Continuous Mode

Press “Start/Stop” button and the instrument will start running with the specified settings and the RUN indicator light will be on. The TIME display window will show the cumulative time and the SPEED display window will show the current speed. Press “Start/Stop” button again and the instrument will slow down until it stops. The instrument will then be in standby and the two display windows will show the set values.

#### 2. Timer Mode

Press “Start/Stop” button the instrument will start running with the specified settings and the RUN indicator light will be on. The TIME display window will show the remaining time and the SPEED display window will show the current speed. Press “Start/Stop” button again and the instrument will slow down until it stops. The instrument will then be in standby and the two display windows will show the set values.

### Finish Operation

After the operation is finished, please press the power switch at the back right side the instrument and put it into the “O” state. Unplug the instrument and store the instrument according to the storage guide.

### Alarm System

When the normal operation is obstructed or stopped by malfunctioning, the instrument will stop running automatically within 2 minutes and the alarm will sound.

### Power Recovery

If the power supply is cut off suddenly while the instrument is in operation, the unit will automatically run at the previously set parameter upon power restoration. The display window will flash. Press any button to stop flashing.

## Section 4 Safety Tips and Maintenance

### Safety Tips

1. Use independent power supply.
2. Check if the local power supply voltage is suitable for use.
3. Do not drag the power supply cable when unplugging.
4. Do not use non-specified power cable nor damage cable.
5. Service should only be performed by a qualified professional.
6. The power supply must be unplugged under the following situations:
  - a. when the unit is moved
  - b. when the electrical cabinet or the moving component is opened
  - c. when the equipment is malfunctioning
  - d. when the equipment is not in use

### Maintenance

- a. This instrument uses a high-accuracy motor. It is maintenance free and has a long service time, high quality, and low noise level.
- b. Surfaces can be cleaned with a mild detergent and water. Liquid is not allowed inside the dust cover.

**Warning:** Avoid dripping detergent or water into the instrument during cleaning.

### Clean Spill

If accidental spillage of liquids caused by mishandling or contained breakage occurs on the surface of the instrument, please shut down the instrument and clean up the liquid immediately.

If the liquid has already spilled into the unit, cut off the power supply first and immediately clean up the liquid at the surface of the instrument. Place the instrument in a ventilated and dry environment for 24 hours before reuse. If the instrument is not functioning after drying for 24 hours, please contact the manufacturer.

**Warning:** Disassembling/Assembling without a qualified professional's guidance may cause malfunctioning of the instrument.

## Section 5 Troubleshooting

Please refer to the following table to troubleshoot if any malfunction occurs. If the problem still exists, contact your local sales representative.

Error	Cause	Solution
Cannot start machine, LED display window off	Power disconnected	Connect the power
	Power adaptor failure	Replace power adaptor
	Switch off	Switch on
No shaking of the tray	Electrical malfunction	Contact NEST
	Mechanical malfunction	Contact NEST
	Over-weighted or unbalanced load	Adjust the weight and position of load, decrease rotation speed
Loud noise	Load moving	Change Dimpled Rubber Mat or fasten load
	Tray loose	Fasten fixing screws on the tray
	House loose	Fasten fixing screws at the House
Other	Keep record for maintenance	

## Warranty Card

The certificate is an important basis for product warranty, please take good care of it!

### Warranty certificate

User name		Phone	
E-mail Address			
Zip code		E-mail	
Product Name		Product Model	
Production Number		The date of sale	

● Warranty  
1 year warranty

- The following circumstances, Warranty is not implemented:
1. Over the warranty period; (warranty period starts from the date of purchase within one year)
  2. Damage caused by use maintenance violate the instruction requirement of use, maintenance, custody
  3. Damage caused by Non-professionals dismantlement
  4. No valid invoice; (except the goods can prove the validity of the warranty)
  5. Product model and serial number of products does not match the warranty certificate
  6. The damage caused by force majeure;

Customer Service Phone: **0510-68788698**

Dear users, the above information is completed by the sellers and stamped effect.

### Maintenance records

Completed by maintenance organizations, and they should help customers to paste maintenance records in the appropriate position!

The 1 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	
The 2 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	
The 3 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	