fisherbrand

Operations Manual

Multi-Purpose Tube Rotator

V1 12/05/17

fisher scientific
part of Thermo Fisher Scientific

This manual covers the model shown below

NA Model	EU Model	Voltage	Description
88861049	N/A	100~240V	Multi-Purpose Tube Rotator 5 - 80 rpm, 100 - 240V, US plugs
88861050	15524080	100~240V	Multi-Purpose Tube Rotator 5 - 80 rpm, 100 - 240V, EU ANZ(CN) UK plugs

Before using this product, read this entire operation manual carefully. Users should follow all of the operational guidelines contained in this manual and take all necessary safety precautions while using this product. Failure to follow these guidelines could result in potentially irreparable bodily harm and/or property damage.

Caution all internal adjustments and maintenance must be performed by qualified service personnel.

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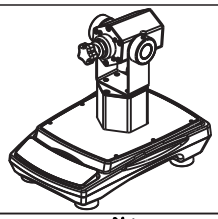
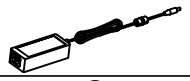
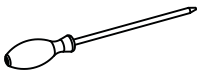
Section 1 Inspection and Installation

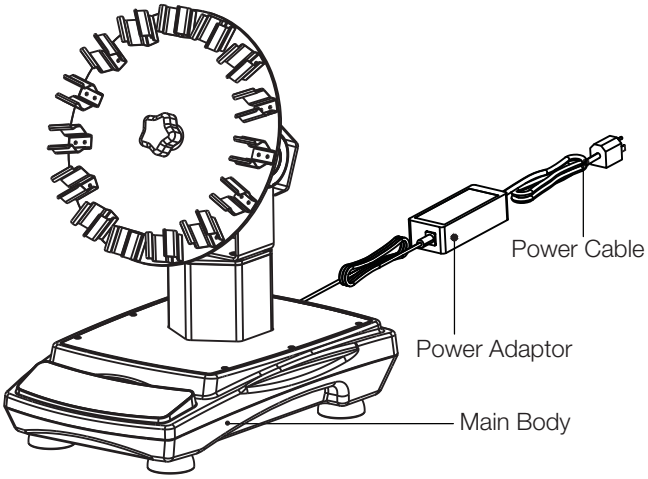
1. Inspect package and contents upon receipt of the instruments. If the package is severely damaged or if there are any missing pieces, please contact the manufacturer immediately.
2. Unpack the instrument, ensure all parts of the instrument and accessories are not missing or damaged. Make sure to take out all the components before discarding the 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.

1.1 Packing List

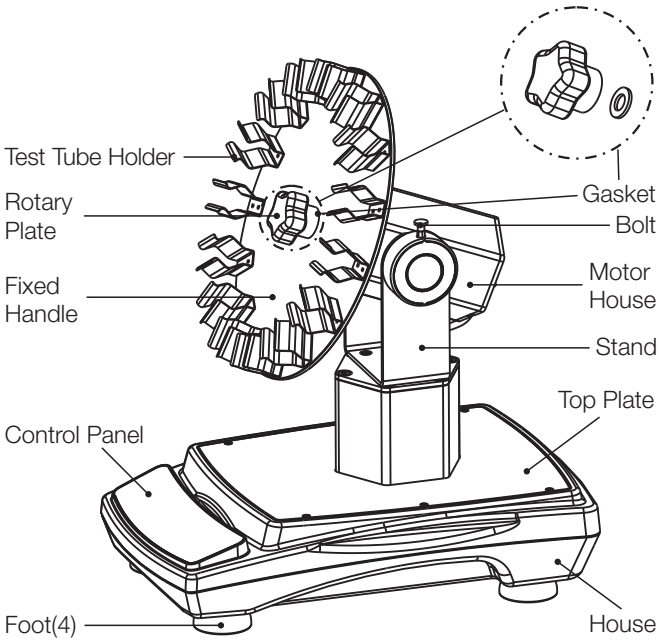
Table -1 Packing List

Description	NA Cat. No.	NA/EU Cat. No.	
Multi-Purpose Tube Rotator	88861049 US plug	88861050 /15524080 Intl plug	
15×50ml Rotator Drum	1	1	
General Power Adaptor	1	1	
US Plug	1	N/A	
CN Plug	N/A	1	
EU Plug	N/A	1	
UK Plug	N/A	1	
Screw Driver	1	1	

1.2 Connections



1.3 Structure Diagram



Section 2 Overview

2.1 Specifications

Category Number

Description	NA Cat. No.	NA/EU Cat. No.
Multi-Purpose Tube Rotator	88861049 US plug	88861050 /15524080 Intl plug

Speed

Speed Accuracy	±1rpm
Display	LED

Note: Maximum speed may vary with heavy or unbalanced loads.

Angle

Angle Adjustment Range	95° ~180°
Step Angle	17°
Adjustment Method	Manual Adjustment

Time

Timing Range	1min~99h59min
Display	LED

Load

Maximum Capacity	64×Φ18.5mm culture tubes (drum rotor)
Maximum Load (Centered on tray)	5 kg (Contain rotator drum weight)

Size

Overall Dimensions	415×293×464mm(16.3×11.5×18.3in)
Standard Match Dimensions	15×50ml rotary plate (Diameter Φ290mm/11.4 in)
Packaging Dimensions	486×381×470mm(19.1×15.0×18.5in)

Weight

Net Weight	9.3Kg(20.5lb)
Gross Weight	11.8Kg(26.0lbs)

Power Supply

Requirement	AC100-240V, 50Hz/60Hz, 0.2A

Others

Certification	ROHS, WEEE, cCSAus, CE Mark

2.2 Environmental Conditions

Application Environmental Conditions: indoor use

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

Storage Environmental Conditions

Temperature	0 to 60℃(36 to 124 ℉)
Humidity	20% to 90%, non-condensing

2.3 Safety Instructions

Please read the entire instruction manual before operating the Multi-Purpose Tube Rotator.

WARNING DO NOT use the Multi-Purpose Tube Rotator 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 no 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. Bio hazard 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.

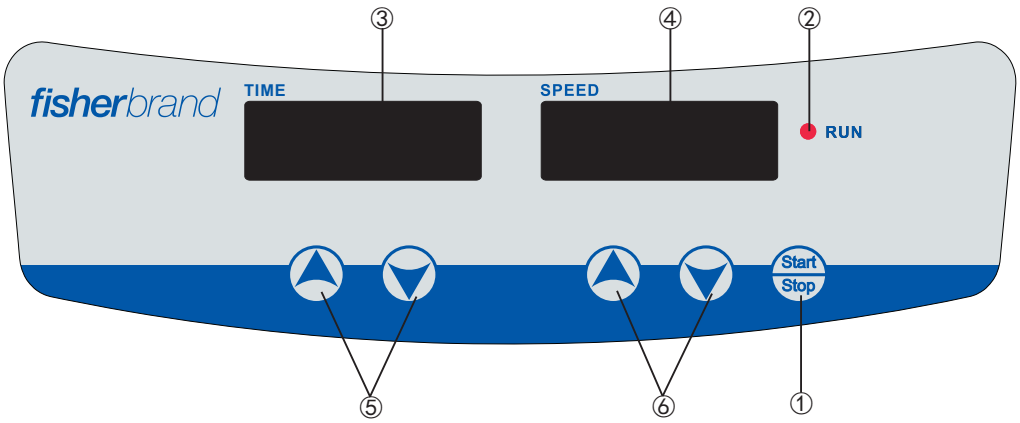
Note: The rotary plate maybe have a little vibration below 11 rpm, but the vibration will relieve or disapear when add some loads.

Various independent clamps are available with this Multi-Purpose Tube Rotator for convenient combination use. It is applicable for 1.5 to 50ml microtubes to mix liquid efficiently and gently. It has an angle range of 95 to 180 degrees and can maintain suspension state of biological samples such as blood mixing. Applications include blood coagulation prevention, emulsion diagnosis, immunoprecipitation, and other related areas.

Section 3 Operation

This chapter covers the control panel and its operation.

3.1 Control Panel



The front panel of the Multi-Purpose Tube Rotator contains all the controls needed to operate the unit.

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 Installation

1. Connect all the components according to the figures shown on page 4 of this manual. Use grounded power outlet.
2. Press down the power switch on the back right side of the instrument and put it to the "|" state and then the instrument is in standby.

3.3 Settings

Time Settings

1. Continuous mode

Press the "▲" or "▼" arrow button below the TIME display window. When the number shown on the display window starts flashing, press "▼" arrow button to decrease the time to 00:00 and then release the button. The time setting is finished after the number shown on the display window has flashed twice.

2. Timer mode

Press the "▲" or "▼" arrow button below the TIME display window. When the number shown on the display window starts flashing, press "▲" or "▼" arrow button to increase or decrease the time value. Release the button when the time shown on the display window reaches the set value. The time setting is finished after the number shown on the display window has flashed twice.

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 and the instrumentwill 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, 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.

Note:

To ensure shaking operation smooth and steady, it may take 1minute for the microprocessor control system to accelerate the tray to the set speed.

Alarm Instructions

In Timer mode, the instrument will stop operation automatically and the alarm will sound when the timer goes off.

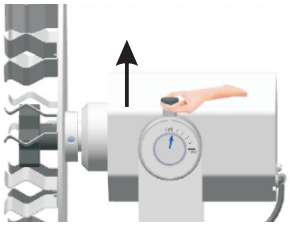
Power Recovery

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.

3.4 Tray Installation and Tilt Angle Adjustment

Angle Adjustment Method

1. Pull out the black bolt.

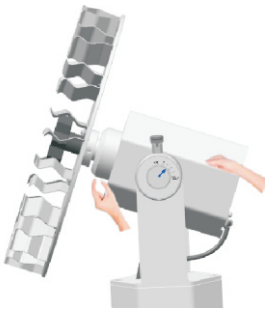


Pull bolt upward

Note: If bolt does not pull out, please operate according to the following instructions

1) Turn motor houseback and forth gently by hand and pull bolt upward at the same time.
2) If still cannot pull out bolt, please use vise grip plier to pull bolt upward and turn motor houseat the same time.
3) Please contact us immediately if the problem still exists.

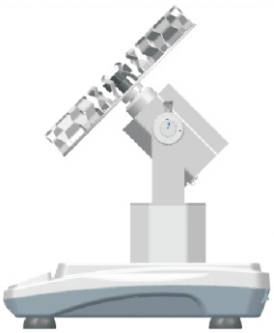
2. Rotate the motor house gently by hand to adjust the angle.



3. Pull out bolt and turn 90 degrees and insert the top of the bolt into the long slot of the hexagon block. Push the motor house gently until the bolt fits well.

4. Angle adjustment range is shown in the figures.

Mixing angle 95°



Mixing angle 135°

Mixing angle 180°

Single Tray Installation

1. Insert the stud on the rotation shaft into the center hole of the tray and make sure the tray is firmly touching the fixing block of the rotary plate, as shown in figure 1.
2. Screw in the fixed handle until the tray fastens, as shown in figure 2 .
3. Align the tip of the screw driver with the hole at the side of the fixing block of the rotary plate. Make sure the fixing block of the rotary plate is not moving and continue screwing the fixing handle until the tray is fastened tightly, as shown in figure 3.

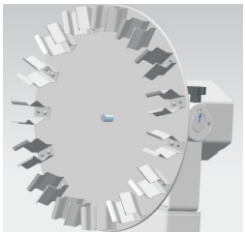


figure 1

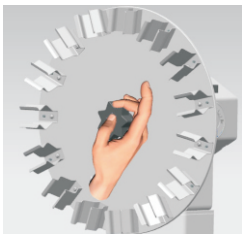


figure 2

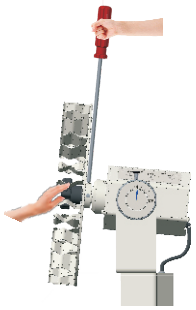
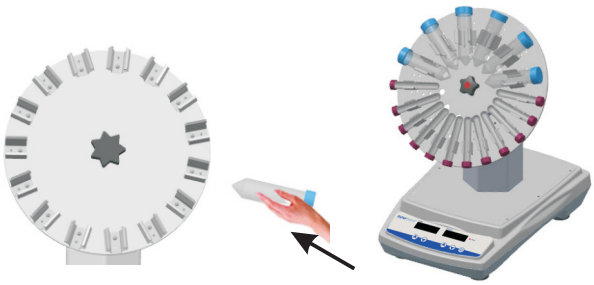


figure 3

4. Insert the test tube from the outside of the tube holder until it reaches the appropriate position.



Double Tray Installation

1. Insert the stud on the rotation shaft into the center hole of the tray and make sure the tray is firmly touching the fixing block of the rotary plate, as shown in figure 4.
2. Insert the special-purpose handle into the center hole and screw in the stud until the tray is fastened (shown in figure 5).

figure 4

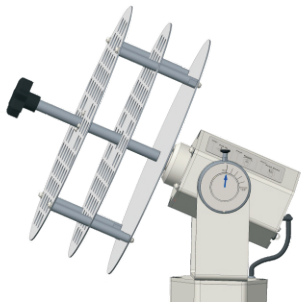


figure 5

3. Fasten the screw on the tray with the screw driver to keep the tray is fixed well, as shown in figure 6.

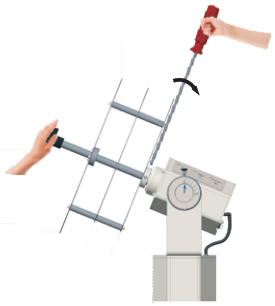
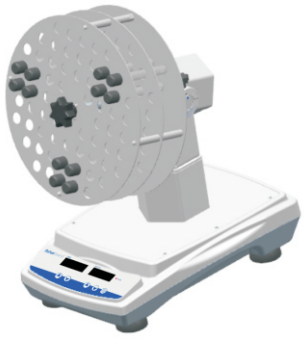


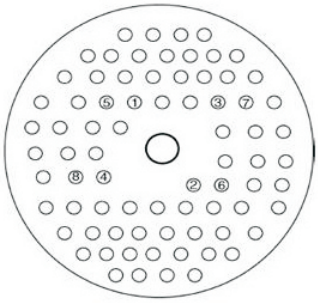
figure 6

Caution:
Failure to load or unload the tray as listed above may result in uneven tray rotation or possible stalling of the tray

4. Insert the test tube into the hole. Make sure to place the test tubes close to the center or symmetric around the axis.



Note:
After continued and extended operation, it is possible for the tray to exhibit uneven or erratic rotation. This does not necessarilyindicate equipment malfunction and a cause for returning the unit to the manufacturer.



Tray, Front Facing

Loading and Unloading the Tray:
Maintaining Tray Balance
Because the rotator is a finely balance unit, loading and unloading the tray with culture tubes or other containers needs to maintain the overall balance of the tray, especially when it is moving. Starting from the center and working to the outside edge of the tray, insert or remove tubes that are diametrically opposed-that is, from the top, bottom, left, right. This way the container weight is distributed evenly, allowing optimum tray rotation.

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 or 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
7. Wear appropriate protective equipment during operation to prevent spillage of liquid or leakage of flammable or poisonous gas.

- Reagent must be sealed inside the test tube during operation to avoid spillage while rotating.
- Avoid vibration ensure precise operation of the instrument.
- Balance loads if possible to improve service life of the instrument. (It is recommended to reduce load or rotation speed if the loads are unbalanced.)
- Make sure to pull out the test tube horizontally from the holder to avoid side flip of the instrument.
- Fixed handle must be fastened to prevent rotary plate from falling during operation.

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.
Warning: Avoid dripping detergent or water into the inside of 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.

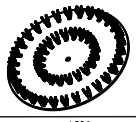
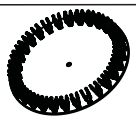
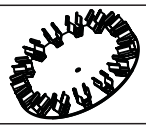
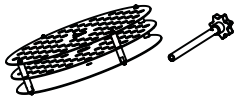
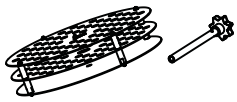
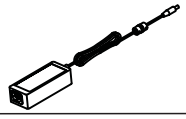
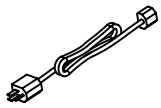
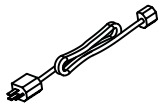
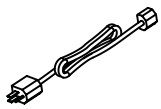
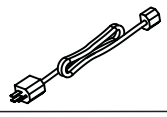
Warning: Disassembling/Assembling without a qualified professional's guidance may cause malfunctioning of the instrument.

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 switch off	Turn power switch on
	Power adaptor failure	Replace power adaptor
No shaking of the tray	Over-weighted or unbalanced load	Adjust the weight and position of load, decrease rotation speed
	Electrical malfunction	Contact Fisher Scientific
	Mechanical malfunction	Contact Fisher Scientific
Loud noise	Component loose	Fasten screws
	Rotary plate loose	Fasten fixed handle
	Uneven or resonant surface	Place instrument at a level and firm surface
Other	Keep record for maintenance	

Section 6 Optional Accessories/Spare Parts

Description	NA Cat. No.	EU Cat. No.	Dimensions	Max. Qty	Figure
50x1.5/2.0ml rotator drum	88861121	15584130	Φ290×24mm	1	
30x15ml rotator drum	88861122	15594130	Φ290×31mm	1	
15x50ml rotator drum	88861123	15574090	Φ290×48mm	1	
10x10/15ml + 20x5/7ml drum	88861124	15584090	Φ290×31mm	1	
64x14mm rotator drum	88861125	15594090	Φ310×75mm	1	
64x18.5mm rotator drum	88861126	15504100	Φ310×115mm	1	
General Power Adaptor (Spare Part)	88861154	15554120	AC 100~240V, 50/60HZ	1	
Power Cable US Plug (Spare Part)	88861155	N/A	125VAC, 10A, 1.8m	1	
Power Cable CN Plug (Spare Part)	88861156	N/A	250VAC, 10A, 1.8m	1	
Power Cable EU Plug (Spare Part)	88861157	15564120	250VAC, 16A, 1.8m	1	
Power Cable UK Plug (Spare Part)	88861158	15574120	250VAC,13A, 1.8m	1	

Section 7 Warranty

When used in laboratory conditions and according to these operation instructions and maintenance, this product is warranted for 24 months against defective materials or workmanship. The 24 month warranty period begins from the delivery date of this product.
For product quality or performance issues, contact Fisher Scientific Customer Service.

North America

United States
1-800-766-7000
fishersci.com

Canada
1-800-234-7437
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