



Bi-Directional Economy Rotator

Models No.

4630Q

4630JPNQ

4630-1CE

4630-1CECN

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Safety Information

Alert Signals



Warning

Warnings alert you to a possibility of personal injury.



Caution

Cautions alert you to a possibility of damage to the equipment.



Note

Notes alert you to pertinent facts and conditions.



Hot Surface

Hot surfaces alert you to a possibility of personal injury if you come in contact with a surface during use or for a period of time after use.



Risk of Electric Shock

Disconnect unit from power source before removing cover.

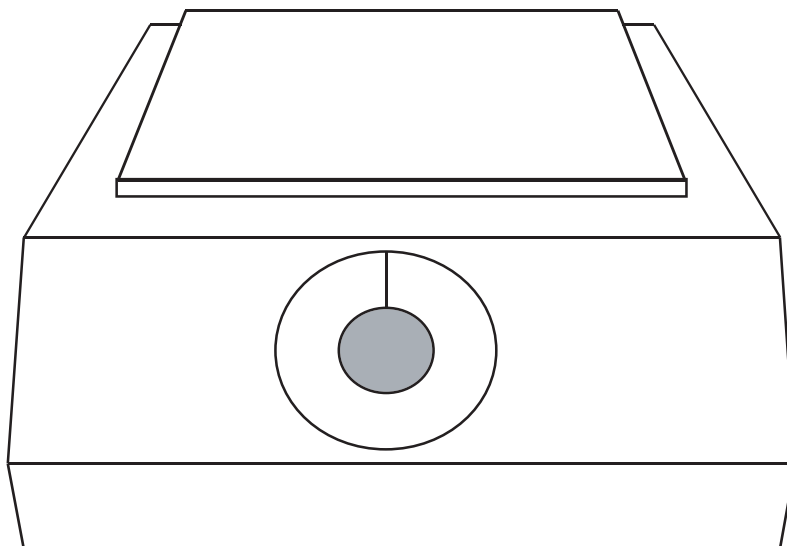
Your Thermo Scientific Lab-Line Bi-Directional Economy Rotator has been designed with function, reliability, and safety in mind. It is your responsibility to install it in conformance with local electrical codes. It is most important that the user follow installation instructions exactly as written. Failure to do so is likely to lead to improper operation, erroneous calibrations and possible damage to the equipment. Do not attempt operation without this information.

Description

The Model 4630Q Bi-directional Rotator is a compact, lightweight unit designed for serological and other laboratory procedures which require a smooth, consistent mixing action. The mechanical action of the unit provides a circular motion coupled with a rocking pattern that keeps liquids and solutions gently mixed without the potential for shearing or other damage. The range of motion reaches a maximum of 10 degrees from the horizontal and the mixer operates at a fixed 30 rpm.

The rotator may be operated in the continuous or timer mode. The timer switch provides timed intervals of 1 minute up to a maximum of 60 minutes or a CONSTANT setting for continuous mixing action.

A lightweight body makes for easy portability and its compact size permits use in limited space areas on laboratory tops. The non-skid platform surface holds containers in place and rubber feet on the unit provide stability.



Specifications



Note

Acceptable supply voltage fluctuation range for proper equipment operation (e.g., $\pm 10\%$ of normal supply.)

Power Requirements

Model 4630Q:

120V, 60 Hz, 0.03 Amps, 4.0 Watts

Model 4630JPNQ:

100-120V, 50 Hz, 0.04 Amps, 4.0 Watts

Models 4630-1CE & 4630-1CECN:

220-240V, 50 Hz, 0.03 Amps, 4.0 Watts

Shaker Motion

A three-dimensional action that combines rocking and circular motions with a maximum range of movement of 10-degrees from the horizontal.

Shaking Speed

30 revolutions-per-minute.

Timer

60-minute timer adjustable in 1-minute intervals or for continuous mixing, use the CONSTANT setting.

Dimensions

Platform 6-3/4" W x 5"D (17 x 13 cm)

Overall 6-7/8" W x 8-1/8"D x 7"H (17 x 21 x 18 cm)

Shipping Weight

25 lbs. (11 kg)

SPECIFICATIONS

Declaration of Conformity

(For 220 to 240 volt, CE models only)

We hereby declare under our sole responsibility that this product conforms with the technical requirements of the following standards:

EMC:	EN 61000-3-2	Limits for harmonic current emissions
	EN 61000-3-3	Limits for voltage fluctuations and flicker
	EN 61326-1	Electrical equipment for measurement, control, and laboratory use; Part I: General Requirements
Safety:	EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use; Part I: General Requirements
	EN 61010-2-010	Part II: Particular requirements for laboratory equipment for the heating of materials
	EN 61010-2-051	Part II: Particular requirements for laboratory equipment for mixing and stirring

per the provisions of the Electromagnetic Compatibility Directive 89/336/EEC, as amended by 92/31/EEC and 93/68/EEC, and per the provisions of the Low Voltage Directive 73/23/EEC, as amended by 93/68/EEC.

The authorized representative located within the European Community is:

Thermo Fisher Scientific
419 Sutton Road
Southend On Sea
Essex SS2 5PH
United Kingdom

Copies of the Declaration of Conformity are available upon request.

Environmental Operating Conditions

Pollution Degree*	2
Installation Category*	II
Altitude	2000 Meters MSL (Mean Sea Level)
Humidity	80% maximum, non-condensing
Electrical Supply	120VAC or 240VAC
Voltage Tolerance	±10% of normal rated line
Temperature	15°C to 40°C
Product Usage	This product is intended for use indoors only

*Refer to IEC 664-1

Unpacking and Installation

Shipping Carton

This should be inspected upon delivery. When received, carefully examine for any shipping damage before unpacking. If damage is discovered, the delivering carrier should both specify and sign for the damage on your copy of the delivery receipt.

Open the carton carefully making certain that all parts are accounted for before packaging materials are discarded—after unpacking, if damage is found, promptly report it to the carrier and request a damage inspection promptly.

IMPORTANT: Failure to request an inspection of damage within a few days after receipt of shipment absolves the carrier from any liability for damage: you must call for a damage inspection promptly.

Electrical Requirements

120 VAC model requires a 120 VAC, 60 Hz power source. It is supplied with a 3-wire line cord and should be plugged into an outlet designed for 3-prong plugs. If an extension cord is used, it also should be the 3-wire grounded type. For an outlet designed to accept 2-prong plugs (ungrounded), it is required that a qualified electrician replace the outlet with a new grounded type.

240 VAC models require a 240 VAC, 50 Hz power source and are furnished with a European cord set.

100 VAC model requires a 100 VAC, 50/60 Hz power source. Because of the variety of plug configurations in use worldwide for 100 VAC power, the unit is furnished with the plug removed. The user must install a plug to conform with local code and configuration requirements.

If a plug must be installed, use only the 3-prong grounded type, rated for the unit load requirements and matching the power outlet. Make sure the green ground wire is secured to the plug ground terminal.



Note

Leave unit disconnected when not in use.

**Note**

Position rotator so that in case of emergency the plug is within easy to be quickly disconnected from the power outlet.

Location

For optimum performance, place the unit on a level, stable surface and in an area free from drafts, extraneous heat sources and vibration. Be sure to provide clearance on all sides so as to avoid contact of the moving platform with any surrounding equipment or objects.

- Do not use in a room with a temperature higher than 40°C.
- Do not use in a room with a temperature lower than 15°C.
- Do not use in a damp atmosphere.

Operation

**Warning**

Do not use in the presence of flammable or combustible materials or explosive gases—fire or explosion may result causing death or severe injury

**Warning**

Do not operate rotator without platform in place. Exposed rotating parts can be a hazard to fingers and/or clothing such as shirt cuffs, ties, buttons and similar items.

**Warning**

Protection provided by the equipment may be impaired if not correctly used in the manner specified.

**Note**

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The single rotating switch controls power to the unit and the timing mechanism.

Make sure that the switch is in the off or 0 position. Connect unit to an electrical outlet providing power requirements as listed on nameplate.

Position glass slides, microtiter plates, test tube racks or other vessels on the platform, so as to avoid any possibility of contact during the mixing action.

The unit is easy to operate and requires only determining beforehand whether the liquids or solutions are to be mixed on a continuous or timed basis.

Turn switch to CONSTANT position for continuous mixing action or select timing action in 1-minute intervals up to a maximum of 60 minutes. Once the switch is advanced, the rocking motion starts and continues until the timed period has elapsed. At any time the unit can be stopped by turning the switch to the 0 position.

To lengthen life of unit, it is recommended that unit be disconnected from its power source when not in use.

Maintenance



Note

Make no attempt to service or repair a Thermo Scientific product under warranty before consulting your Thermo Scientific dealer. After the warranty period, such consultation is still advised especially when the repair may be technically sophisticated or difficult.

If assistance is needed beyond what the distributor can provide, please call the customer relations department at (563) 556-2241 or (800) 553-0039. No merchandise, however, should be returned directly to the factory without prior approval from the manufacturer.

Any internal adjustments or repairs must be performed by a qualified service representative.



Caution

Disconnect plug from electrical outlet before attempting any maintenance or repair of this unit.

Neutralizing Spills

In the event of any spills on the surfaces of the unit, carry out appropriate neutralization procedures and wiped off using a clean cloth dampened with a cleaning solution made of warm water and a mild detergent. Surfaces should then be wiped with a second cloth dampened with clean water and dried thoroughly. Do not use abrasive cleaners on surfaces.

Timer Motor

The timer motor mechanism is equipped with permanently lubricated bearings and is basically maintenance free.

On-Off Switch/Timer Control

Replacing the combination on/off switch and timer control requires removal of the bottom cover. Turn unit over and remove 4 screws holding the bottom cover, move control panel forward and lift cover from the housing.

Next, remove the control knob (2 setscrews) and a retaining nut to separate it from the panel. Unplug the connections from the old terminal connector and plug them into the new one. Reverse sequence to put new on/off switch/timer control into position.

Replace bottom cover and tighten the 4 screws that were previously removed.

Routine Cleaning

Cleaning of the surfaces should be performed using a clean cloth dampened with solution of warm water and a mild detergent. Surfaces should then be wiped with a second cloth dampened with clean water and dried thoroughly.

For cleaning in the event of a spill or dried contamination, the **Neutralizing Spills** procedure shall be followed.

Do not use abrasive cleaners on any surfaces as damage to surface finish will result.

Replacement Parts

<u>Description</u>	<u>Part Number</u>
Bearing:	140-258-00
Bellows:	790-340-00
Cordset, 4630Q:	470-187-00
Cordset, 4630-1CE:	CRX77
Cordset, 4630-1CECN:	CRMX10
Fuse, 0.5 Amp:	330-291-00
Knob (for timer switch):	560-223-00
Motor, 110/120V, 60 Hz:	370-317-00
Motor, 220/240V, 50 Hz:	370-318-00
Rotator Spindle:	659-028-00
Rubber feet (4):	790-214-00
Rubber Mat:	790-316-02
Timer, 60-minute:	270-109-00
Wiring Schematic, 120V unit:	228-059-00
Wiring Schematic, 240V unit:	228-060-00

Ordering Procedures

Please refer to the Specification Plate for the complete model number, serial number, and series number when requesting service, replacement parts or in any correspondence concerning this unit.

All parts listed herein may be ordered from the Thermo Scientific dealer from whom you purchased this unit or can be obtained promptly from the factory. When service or replacement parts are needed we ask that you check first with your dealer. If the dealer cannot handle your request, then contact our Customer Service Department at 563-556-2241 or 800-553-0039.

Prior to returning any materials to the manufacturer, please contact our Customer Service Department for a "Return Goods Authorization" number (RGA). Material returned without a RGA number will be refused.

One Year Limited Warranty

This Thermo Scientific product is warranted to be free of defects in materials and workmanship for one (1) year from the first to occur of (i) the date the product is sold by the manufacturer or (ii) the date the product is purchased by the original retail customer (the "Commencement Date"). Except as expressly stated above, the MANUFACTURER MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS AND EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF DESIGN, MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

An authorized representative of the manufacturer must perform all warranty inspections. In the event of a defect covered by the warranty, we shall, as our sole obligation and exclusive remedy, provide free replacement parts to remedy the defective product. In addition, for products sold within the continental United States or Canada, the manufacturer shall provide free labor to repair the products with the replacement parts, but only for a period of ninety (90) days from the Commencement Date.

The warranty provided hereunder shall be null and void and without further force or effect if there is any (i) repair made to the product by a party other than the manufacturer or its duly authorized service representative, (ii) misuse (including use inconsistent with written operating instructions for the product), mishandling, contamination, overheating, modification or alteration of the product by any customer or third party or (iii) use of replacement parts that are obtained from a party who is not an authorized dealer of Thermo Scientific products.

Heating elements, because of their susceptibility to overheating and contamination, must be returned to the factory and if, upon inspection, it is concluded that failure is due to factors other than excessive high temperature or contamination, the manufacturer will provide warranty replacement. As a condition to the return of any product, or any constituent part thereof, to the factory, it shall be sent prepaid and a prior written authorization from the manufacturer assigning a Return Materials Number to the product or part shall be obtained.

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO ANY PARTY FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR ANY DAMAGES RESULTING FROM LOSS OF USE OR PROFITS, ANTICIPATED OR OTHERWISE, ARISING OUT OF OR IN CONNECTION WITH THE SALE, USE OR PERFORMANCE OF ANY PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), ANY THEORY OF STRICT LIABILITY OR REGULATORY ACTION.

For the name of the authorized Thermo Scientific product dealer nearest you or any additional information, contact us:

North America: USA/Canada +1 866 984 3766 (866-9-THERMO) www.thermo.com

Europe: Austria +43 1 801 40 0, Belgium +32 2 482 30 30, France +33 2 2803 2180, Germany national toll free 08001-536 376,

Germany international +49 6184 90 6940, Italy +39 02 02 95059 434-254-375, Netherlands +31 76 571 4440, Nordic/Baltic countries +358 9 329 100,

Russia/CIS +7 (812) 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

Asia: China +86 21 6865 4588 or +86 10 8419 3588, India toll free 1800 22 8374, India +91 22 6716 2200, Japan +81 45 453 9220,

Other Asian countries +852 2885 4613 Countries not listed: +49 6184 90 6940 or +33 2 2803 2180