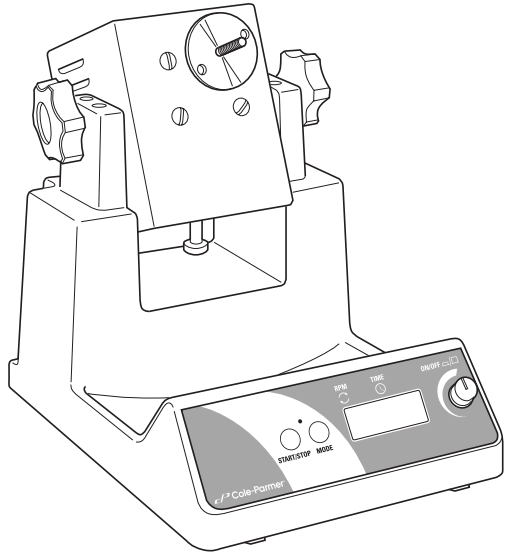


Tube Rotator



User Guide

Figure 1: Fixed Speed Model

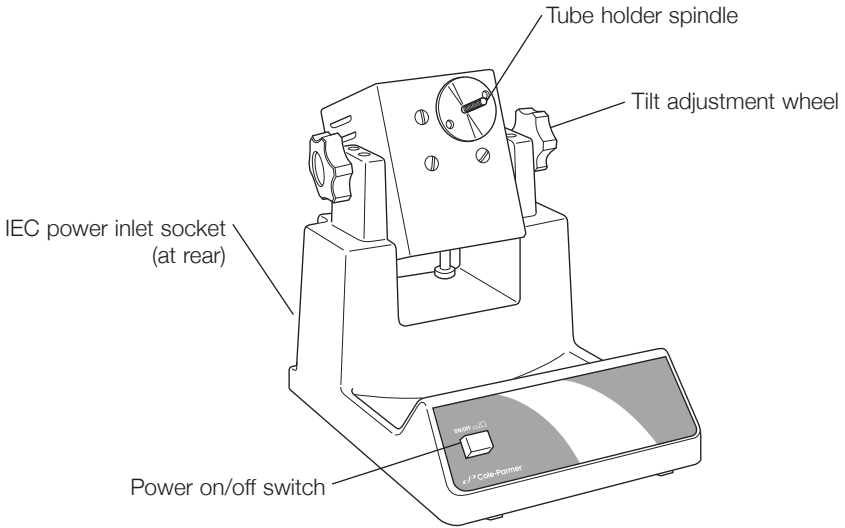
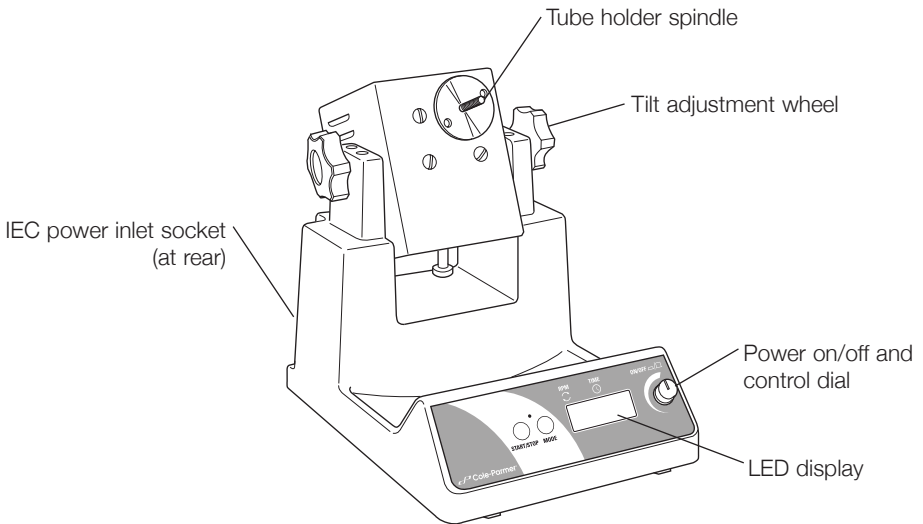


Figure 2: Variable Speed Model



Tube Rotator

Introduction

Thank you for purchasing this Cole-Parmer product. To get the best performance from the equipment, and for your own safety, please read these instructions carefully before use. Before discarding the packaging check that all parts are present and correct.

This equipment is designed to operate under the following conditions:

- ❖ For indoor use only
- ❖ Use in a well ventilated area
- ❖ Ambient temperature range +5°C to +40°C (+41 to +104°F)
- ❖ Altitude to 2000m (6500 ft)
- ❖ Relative humidity not exceeding 80%
- ❖ Power supply fluctuations not exceeding 10% of nominal
- ❖ Overvoltage category II IEC60364-4-443
- ❖ Pollution degree 2 IEC664
- ❖ Use with a minimum distance all round of 200mm (8 in.) from walls or other items

If the equipment is not used in the manner described in this manual and with accessories other than those recommended by the manufacturer, the protection provided may be impaired.

Electrical installation



THIS EQUIPMENT MUST BE GROUNDED

Before connection please ensure that the line supply corresponds to that stated on the rating label.

Power requirements:

230v Models		120v Models	
00077-00	50W	00077-01	50W
00077-02	50W	00077-03	50W

The 230v Models are provided with a UK 3-pin and a "Schuko" 2-pin plug. The 120v Models are provided with a NEMA 5-15 plug.

Should the cable not be suitable for connecting to the power supply, replace the plug with a suitable alternative.

THIS OPERATION SHOULD ONLY BE UNDERTAKEN BY A QUALIFIED ELECTRICIAN.

NOTE: Refer to the equipment rating plate to ensure that the plug and fusing are suitable for the voltage and wattage stated.

The wires in the power cable (230V) are colored as follows:

BROWN - HOT/LIVE

BLUE - NEUTRAL

GREEN/YELLOW - EARTH

The wires in the power cable (120V) are colored as follows:

BLACK - HOT/LIVE

WHITE - NEUTRAL

GREEN - EARTH

IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN

Should the power cable need replacing, a cable of 1mm² of harmonized code H05W-F connected to an IEC320 plug should be used.

The appropriate power cable should be connected BEFORE connection to the power supply.

General description

The Tube Rotators comprise of a motor unit fitted to a stable base with a swivel facility to tilt the angle of the unit from a vertical to a horizontal position. The rotator can be locked at any angle by a side tilt adjustment wheel.

00077-00 & 00077-01: Rotate at a fixed speed of 20rpm.

00077-02 & 00077-03: Speed of rotation is variable between 2 and 40rpm.

Available separately are multiple types of tube holder discs providing end-over-end mixing or gentle rotational mixing of culture tubes. Please visit the Cole-Parmer website www.coleparmer.com for further information.



Safety Advice

Users should be aware of the following safety advice:

- ❖ The unit should be carried using both hands with the fingers under the side edges.
- ❖ NEVER move or carry the unit with containers on the top or while still connected to the power supply.
- ❖ DO NOT mix combustible liquids or use the equipment in hazardous atmospheres.
- ❖ In case of power interruption, a fault or mechanical failure, the unit will continue to operate on removal of fault.
- ❖ Mechanical energy can lead to breakage of glass vessels. Use with care.
- ❖ DO NOT position the unit such that it is difficult to disconnect it from the power by removing the power cable from the socket at the back.
- ❖ NEVER stop the rotation by hand and ALWAYS ensure the rotator disk is evenly balanced with tubes.
- ❖ ALWAYS ensure is sufficient free space around the rotator so that it does not come in contact with anything else during use.

Operation

Position the tube rotator on a firm level surface but DO NOT connect to the power supply yet. Please refer to the installation instructions for the chosen accessory before applying power and ensure there is sufficient room for the tube holder disc to rotate.

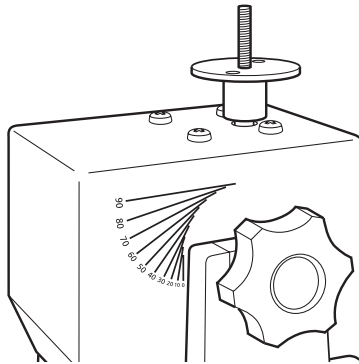


Figure 3

Adjust the Angle of Rotation

Loosen the right-hand side adjustment wheel by turning it counter-clockwise. Using the edge of the main body of the rotator as a guide, position the holder by lining up the desired angle marker parallel to the edge (see Fig. 3). Tighten the adjustment wheel clockwise to set the required angle.

Fixed Speed Model

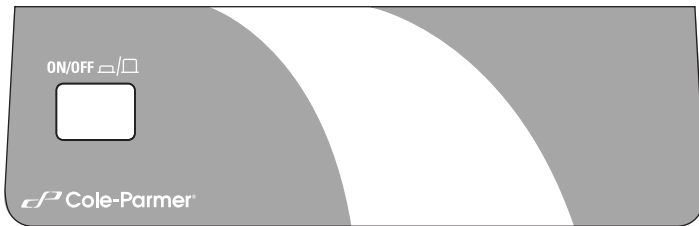


Figure 4

Connect the unit to the power supply and load the tube holder ensuring it is evenly balanced. For an even number of tubes, load in opposite positions. For an odd number of tubes, load the tubes at equal intervals.

Switch the unit ON using the power On/Off switch (see Fig. 4). The unit will rotate at a fixed speed of 20rpm. Once mixing is complete switch the unit OFF using the same switch and unload the tubes.

Variable Speed Model

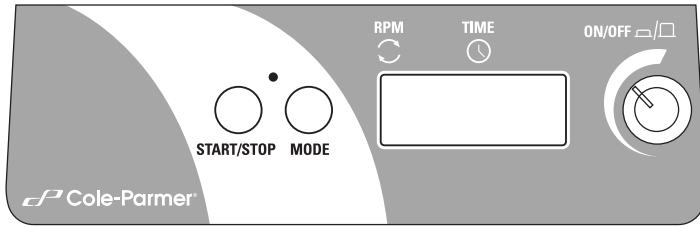


Figure 5

Connect the unit to the power supply and load the tube holder ensuring it is evenly balanced. For an even number of tubes, load in opposite positions. For an odd number of tubes, load the tubes at equal intervals.

Switch the unit ON by pressing the control dial in (see Fig. 5). The LED display will show present set speed (red dot in the display shows RPM is selected). This can be adjusted by turning the control dial. Once the correct speed is displayed, press the START/STOP button to begin rotating. Rotation can be halted at any time by pressing the START/STOP button. To switch the Tube Rotator OFF completely, press the control dial in.

Setting the Timer - Variable Model Only

In order to use the timer, halt rotation and press the MODE button. The red dot on the display moves over to TIME. Select the desired count-down time using the control dial. When the display shows the correct time in minutes, press the START/STOP button to begin rotation.

During operation, rotation can be paused at any time by pressing the START/STOP button. If this button is pressed again, rotation will start again and the timer will continue to count down. When the timer reaches zero, rotation will be automatically halted and an audible alert will sound. The display settings will revert back to the last values saved in the memory (see Saving Speed/Time Values section below).

NOTE: To disable the timer and revert to continuous rotation, select - - - in the display while in timer mode.

Saving Speed/Time Values

In order to save a commonly used speed/time value, switch the unit ON by pressing the control dial in (see Fig. 5) and select both a speed value (2 to 40rpm) and a time value (either 1 to 9999 minutes, 1 second to 90 minutes, 1 minute to 9 hours, or continuous - - -) using the instruction given above. Then switch the unit OFF by pressing in the control dial. Wait 5 seconds and switch the unit back ON by pressing the control dial in. The inputted values are now saved in the memory. They can be altered at any time by following the same procedure.

NOTE: When the unit is switched OFF using the control dial, whatever values of speed/time were set prior to turning the unit off will be saved, and will be the values restored when the unit is switched back on.

Changing the Timer Unit

The unit timer is defaulted to minutes only (1 to 9999 minutes). To change to minutes and hours (1 minute to 9 hours, where H is displayed in the left digit of the timer display), or to change to seconds and minutes (1 second to 90 minutes), turn the unit OFF using the control dial. Hold down both the START/STOP button and the MODE button while simultaneously switching the power back ON using the control dial. The display will temporarily show 88:88 then OFF. Using the control dial turn the unit ON, the display will show nn:ss for minutes and seconds, H:nn for hours and minutes and nn for minutes. Use the control dial to select the desired units of time and turn the unit OFF by the control dial; OFF will be displayed. When the unit is next used the timer will have been altered to the set units of time.

Cleaning and Care



WARNING: Ensure the unit is disconnected from the power supply before attempting maintenance or servicing.

The unit should be cleaned using a damp cloth and a mild detergent solution.

Cleaning is made easier if spillages are attended to promptly. In any case, spillages of acids and alkalis **MUST** be removed immediately as these chemicals can attack and damage the casework finish. Ensure that the appropriate safety precautions are observed.

Accessories

Tube Holder Discs

Multiple types of tube holders providing end-over-end mixing or gentle rotational mixing of culture tubes.

Please visit the Cole-Parmer website www.coleparmer.com for further information.

Servicing and Repair

This product range does not require any routine servicing.

Note: There are no internal user replaceable parts.

In the event of product failure it is recommended that any repair is only undertaken by suitably qualified personnel. For advice, please contact Cole-Parmer quoting the model and serial number.

Only spare parts supplied by the manufacturer or its agent should be used. Fitting of non-approved parts may affect the performance of the safety features of the instrument.

If in doubt, please contact Cole-Parmer.

Warranty

Cole-Parmer warrants this equipment to be free from defects in material and workmanship, when used under normal laboratory conditions, for a period of **three (3)** years. In the event of a justified claim, Cole-Parmer will replace any defective component or replace the unit free of charge.

This warranty does NOT apply if:

- ❖ Any repair has been made or attempted other than by the manufacturer or its agent.
- ❖ Any minor coating chips or scratches occur during normal use (i.e., wear and tear).
- ❖ Damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by installation, adaptation, modification or fitting of non-approved parts.

Technical Specification

	00077-00	00077-02
Speed	Fixed - 20 rpm	Variable - 2 to 40 rpm
Speed display	None	Digital
Timer	No	Yes – up to 9999 mins
Dimensions (w x d x h)	200 x 270 x 240 mm (7.6 x 10.6 x 9.5 in.)	200 x 270 x 240 mm (7.6 x 10.6 x 9.5 in.)
Weight	3.2 Kg (7 lb)	3.2 Kg (7 lb)
Electrical supply	230V, 50Hz, 50W	230V, 50Hz, 50W

	00077-01	00077-03
Speed	Fixed - 20 rpm	Variable - 2 to 40 rpm
Speed display	None	Digital
Timer	No	Yes – up to 9999 mins
Dimensions (w x d x h)	200 x 270 x 240 mm (7.6 x 10.6 x 9.5 in.)	200 x 270 x 240 mm (7.6 x 10.6 x 9.5 in.)
Weight	3.2 Kg (7 lb)	3.2 Kg (7 lb)
Electrical supply	120V, 60Hz, 50W	120V, 60Hz, 50W



These products meet the relevant EC harmonized standards for radio frequency interference and may be expected not to interfere with, or be affected by, other equipment with similar qualifications. We cannot be sure that other equipment used in their vicinity will meet these standards

and we cannot guarantee that interference will not occur in practice. Where there is a possibility that injury, damage or loss might occur if equipment malfunctions due to radio frequency interference, or for general advice before use, please contact the manufacturer.

Declaration of Conformity

Catalog Number:	Description:
00077-00	TUBE ROTATOR, FIXED SPEED, 230V
00077-01	TUBE ROTATOR, FIXED SPEED, 120V
00077-02	TUBE ROTATOR, VARIABLE SPEED, 230V
00077-03	TUBE ROTATOR, VARIABLE SPEED, 120V

This product complies with the requirements of the EU Directives listed below:

2004/108/EC EMC Directive

2006/95/EC Low Voltage Directive (LVD)

2011/65/EC RoHs Directive



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