



Laboratory Shakers

User Manual & Setup Guide

TS RANGE

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**General
Warning Sign**

Warning sign: signifies a general warning, and indicates a risk to people specified by the supplementary sign that if not avoided, may result in death or serious injury.



**Warning;
Flammable**

Warning; Flammable: signifies a flammable warning, and indicates a risk of flammable content as specified by the supplementary sign that if not avoided, may result in a fire by igniting flammable material.



**Warning;
Electricity**

Warning; Electricity: signifies a electricity warning, and indicates a risk of contact with electricity as specified by the supplementary sign that if not avoided, could result in injury.



**Warning; Hot
Surface**

Warning; Hot Surface: signifies hot surface warning, and indicates a risk to people specified by the supplementary sign that if not avoided, will result in contact with hot surface.



**General
Prohibition Sign**

General Prohibition: signifies a prohibited action, indicates a risk to people specified by the supplementary sign that if not avoided, will result in death or serious injury.



**Do Not Expose
Outside**

Do Not Expose Outside: signifies prohibiting the exposure to direct sunlight, and indicates a raised temperature due to sunlight or placement on hot surface can cause harmful damage to the shaker.

This user manual is intended for Thermoline's range of laboratory shakers. We recommend that you read this user manual the whole way through before you start using the shaker. Consider this manual as a part of the shaker and an integral part to its function. We recommend keeping it close and within easy access.

Intended Use

The Thermoline range of shakers is available in several different configurations with an orbital/ linear shaker, a rocker and a 3D model. The accessories also available make the shakers suitable for a number of different sample types.



Product Specifications



TS-OL-4E



TS-RK-4E



TS-3D-4E

Dimensions

External WxDxH (mm)

450x400x105

452x407x175

452x407x195

Platform WxDxH (mm)

317x317

324x317

317x317

Technical Specifications

Shaking Motion

Orbital / Linear

Rocking shaker with an angle of 9°

3D shaking with an angle of 9°

Motor Type

Brushless DC motor

Brushless DC motor

Brushless DC motor

Speed range (rpm)

20-500

10-70

10-70

Orbital Diameter (mm)

10

N/A

N/A

Electrical

40W/230V

40W/230V

35W/230V

Maximum Load (with platform)

7.5kg

10kg

5kg

Weight

11kgs

9.7kgs

12kgs

Features

Timer Setting Range

0min - 99h 59min

LED Display Resolution

0.1°C

Universal 4 Bars Attachment

Included

Optional

Optional

Dish Platform with Fixing Strings

Optional

Included

Included

Flask Clips Attachment

Optional

Optional

Optional

25ml Flask Clips

Fits 16 clips

50ml Flask Clips

Fits 16 clips

100ml Flask Clips

Fits 16 clips

250ml Flask Clips

Fits 9 clips

500ml Flask Clips

Fits 4 clips

Safety

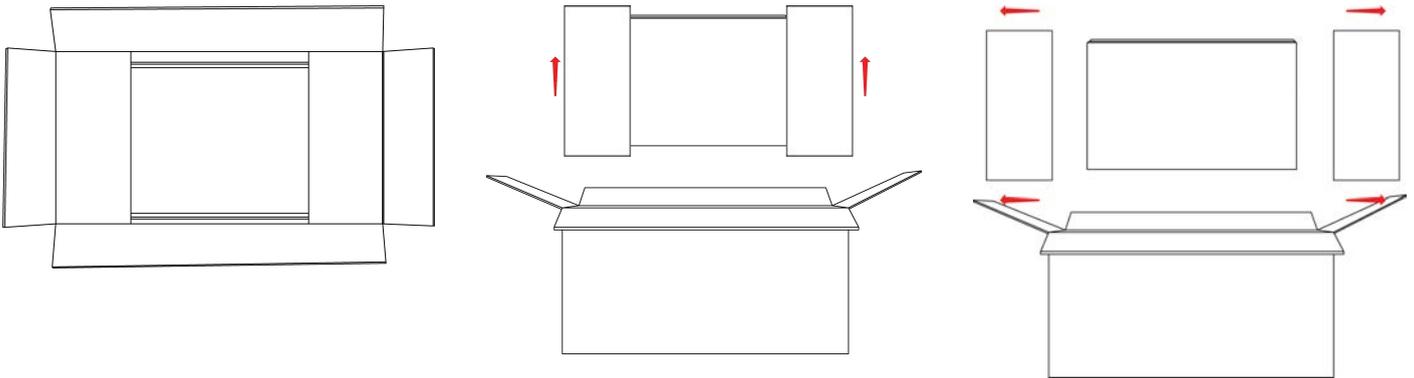
Over-load and over-speed

✓

Unpacking

Unpacking Process:

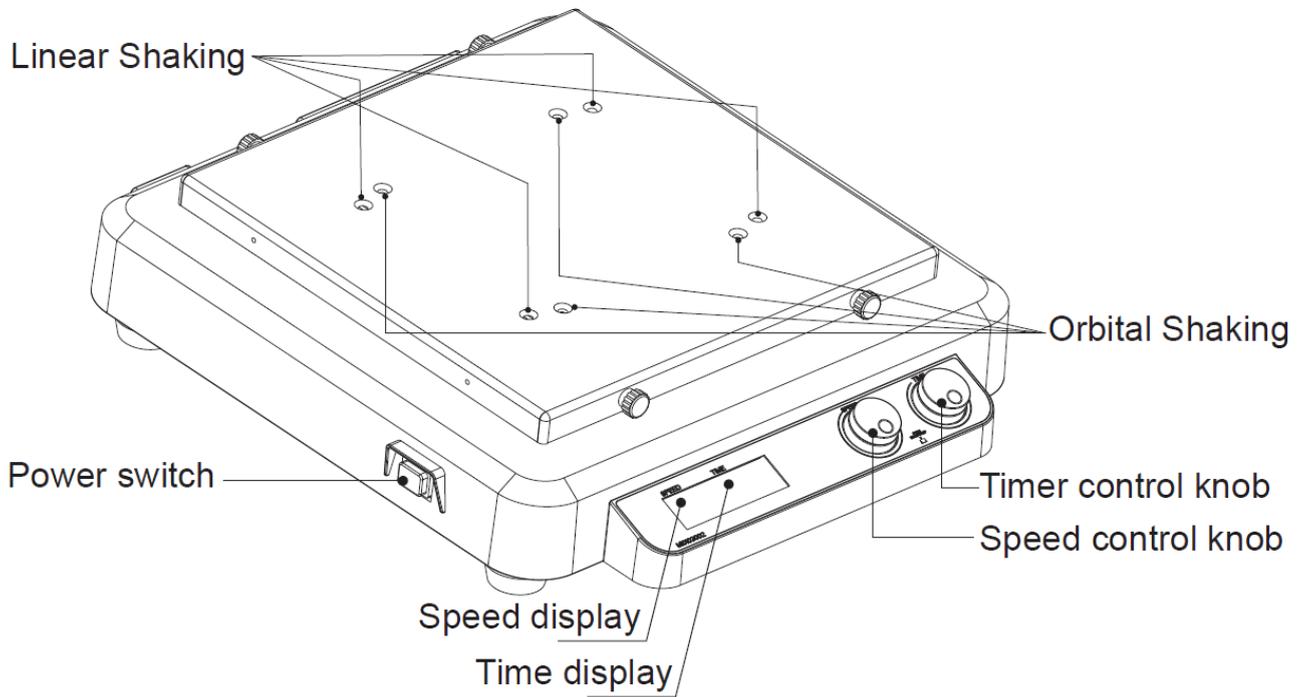
- The laboratory shaker will be delivered packed in a carton.
- Please see the below diagrams for removing the shaker from the carton.
- If upon opening your package damage is present, notify the detail of any damage to your supplier or to Thermoline without delay at +61 2 9604 3911 or email at service@thermoline.com.au.



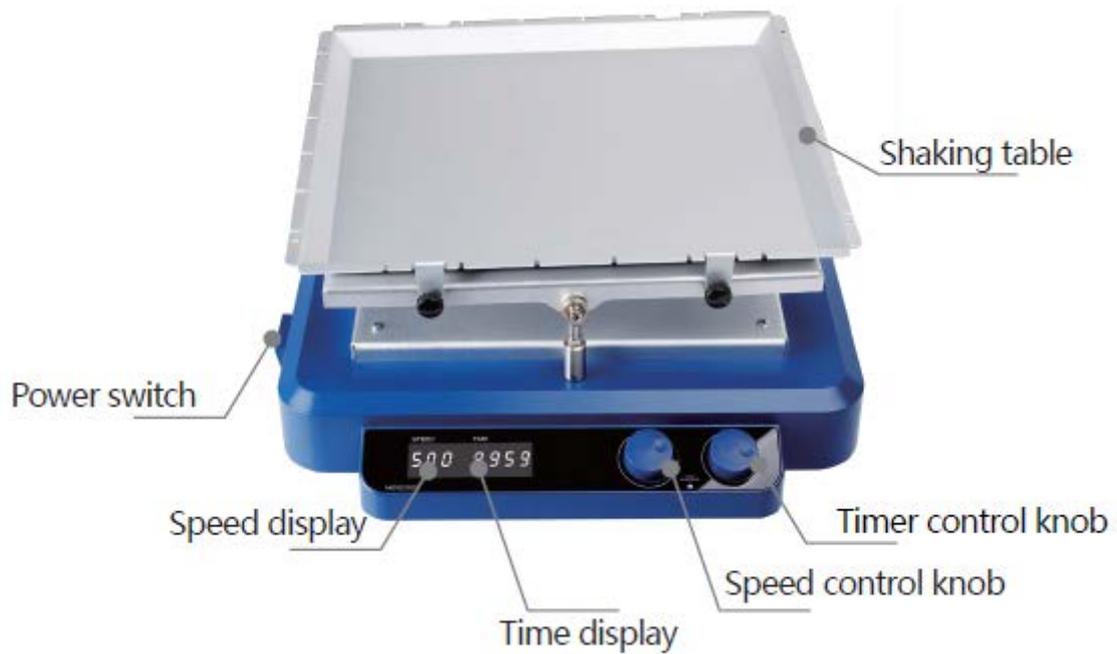
Packing List

| | TS-OL-4E | TS-RK-4E | TS-3D-4E |
|----------------------------------|--|----------|----------|
| Power Lead | 1 | 1 | 1 |
| Universal attachment with 4 bars | 1 | Optional | Optional |
| Non-slip mat | Optional | 1 | 1 |
| Fixed string | Optional | 6 | 6 |
| Rubber plug | 4 | N/A | N/A |
| Column (Linear) | 4 | N/A | N/A |
| Operating manual | Downloaded from the Thermoline Website | | |

Shaker Components

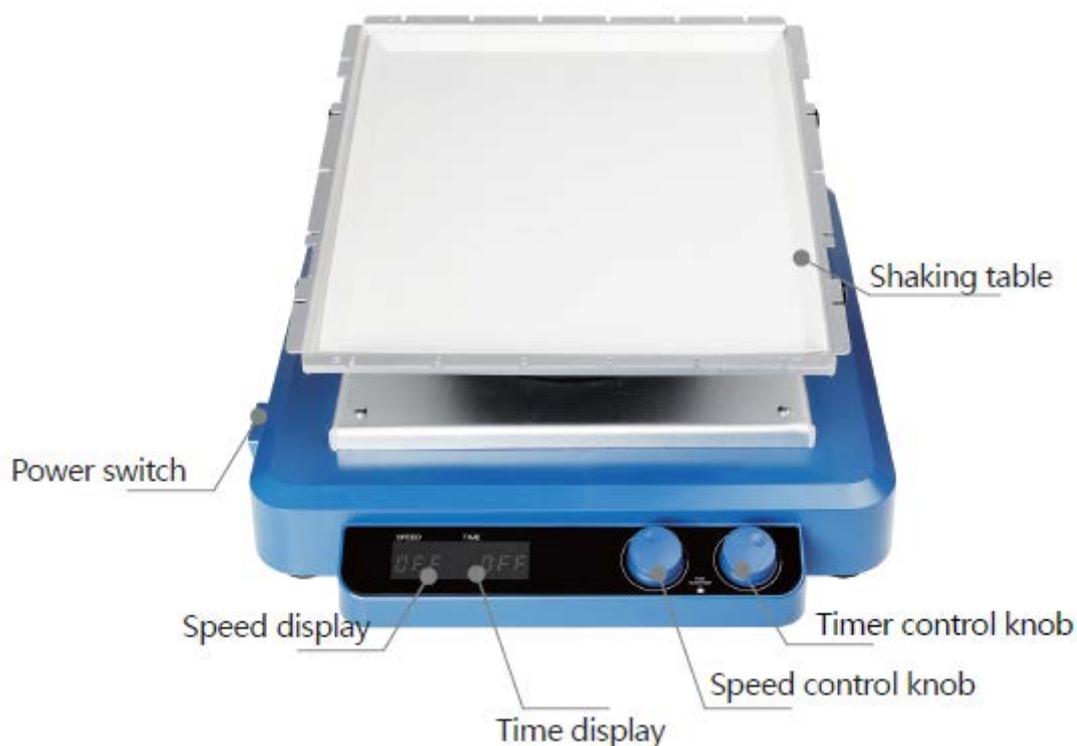


TS-OL-4E



TS-RK-4E

Shaker Components



TS-3D-4E

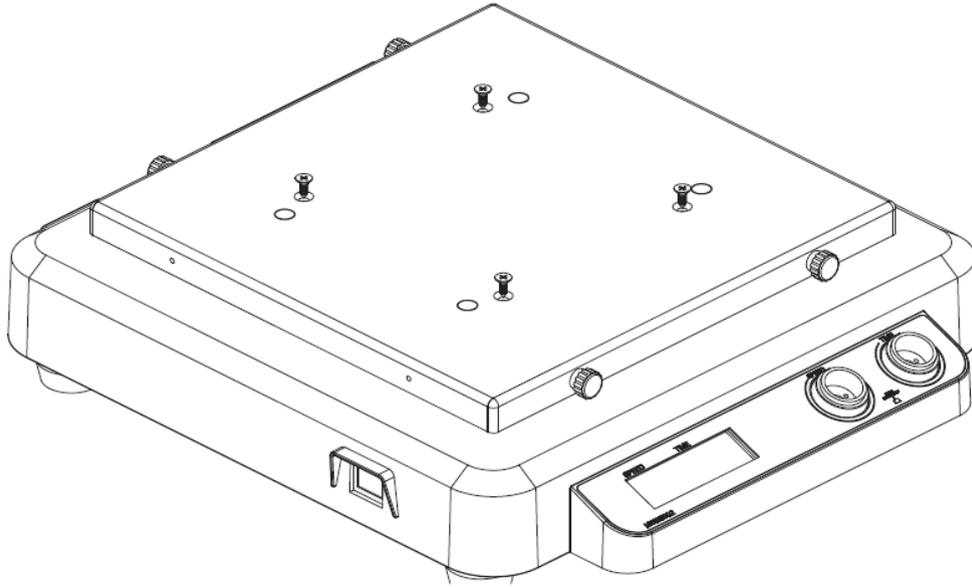
| | |
|--------------------|--|
| Speed control knob | Set target speed. Push on/off the knob to start/stop the shaking function. |
| Timer control knob | Set target time. Push on/off the knob to start/stop the shaking function. |
| Speed display | Display the set and real speed values. |
| Time display | Display the set and remain time values. |
| Power switch | Switch ON/OFF instrument. |

Orbital Linear Shaker

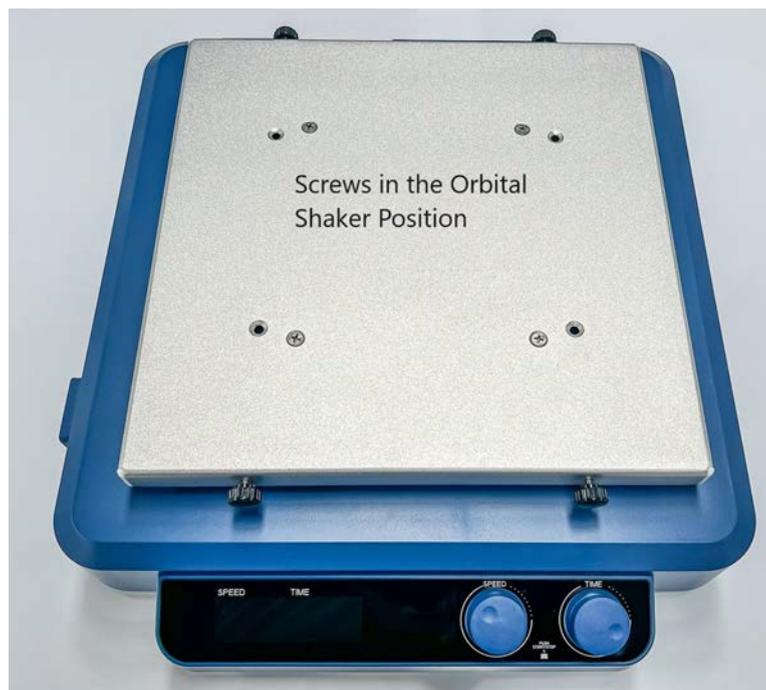


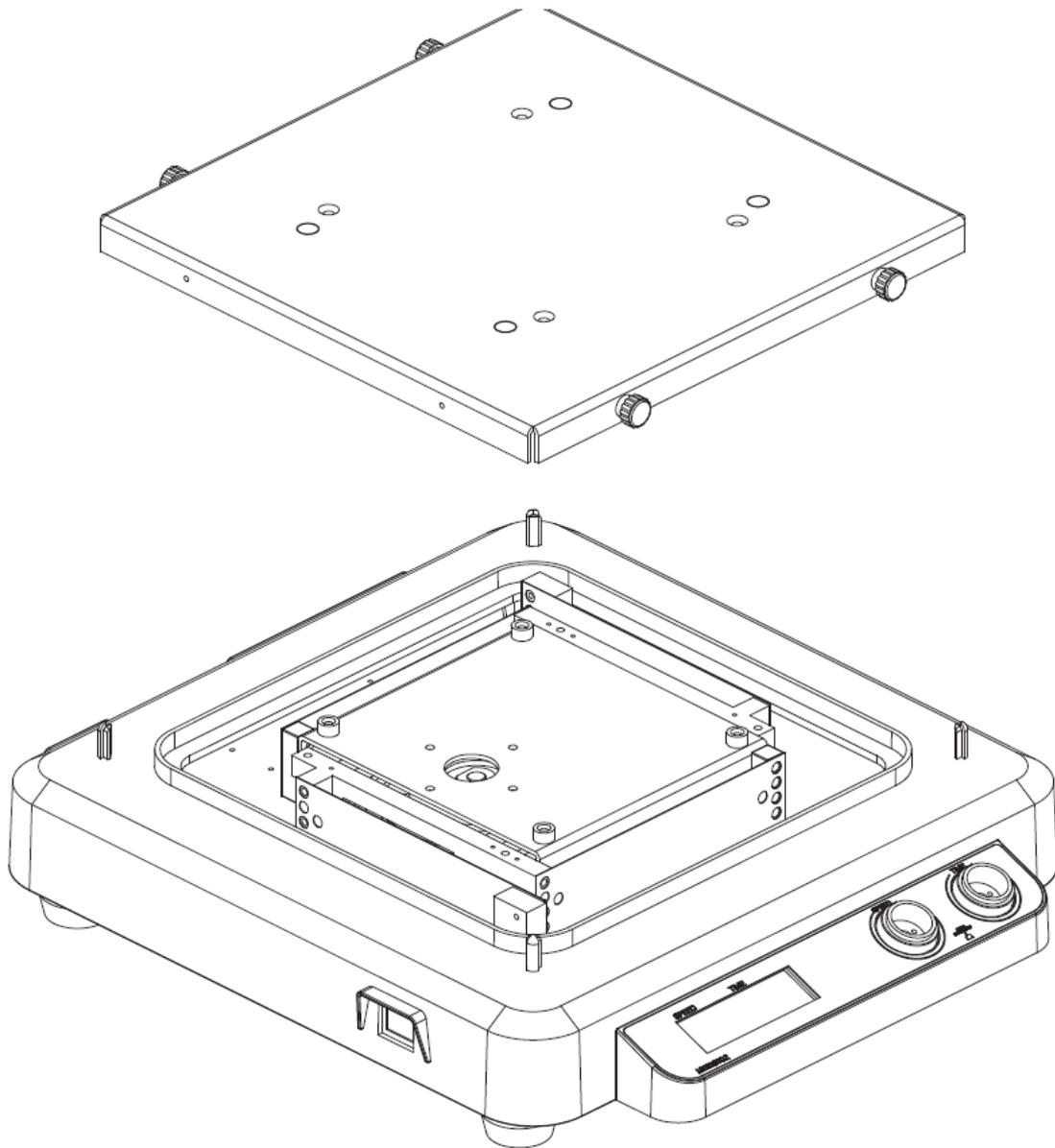
This shaker can be swapped from orbital to linear shaking using the below instructions.

Note: Power must be disconnected while the plate is removed.



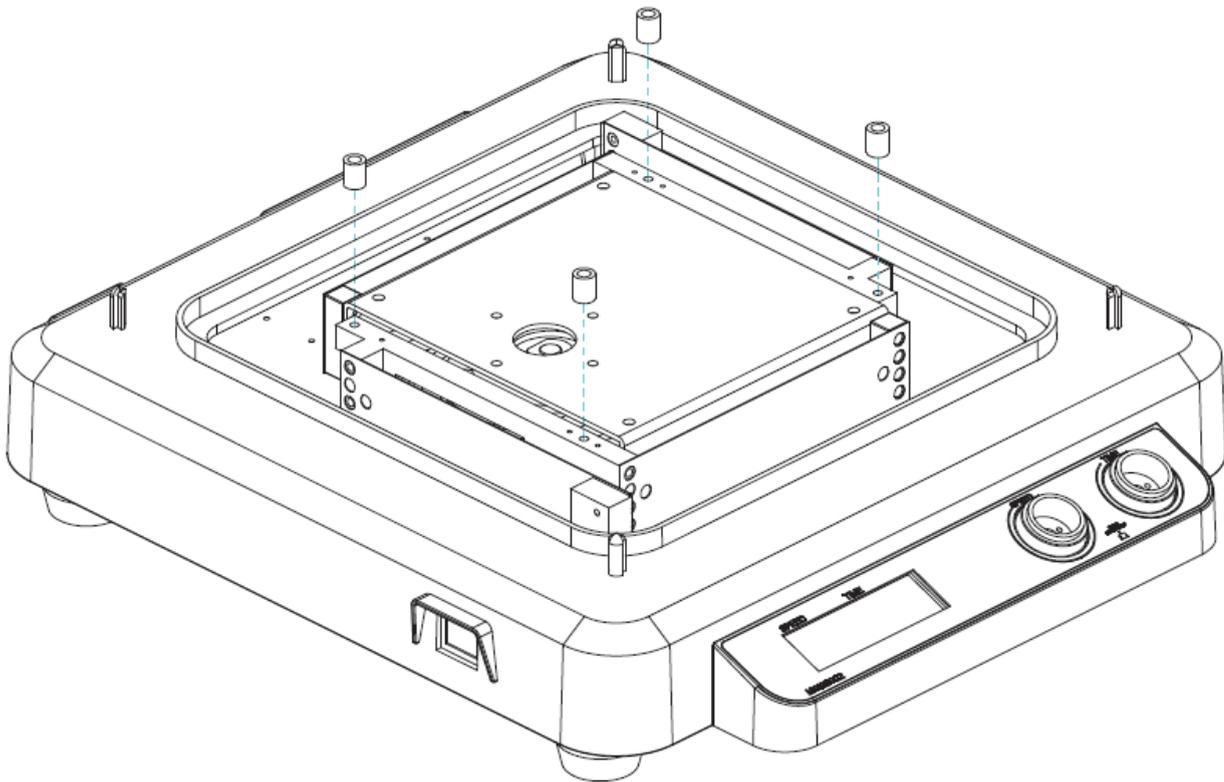
Remove the 4 screws on the plate



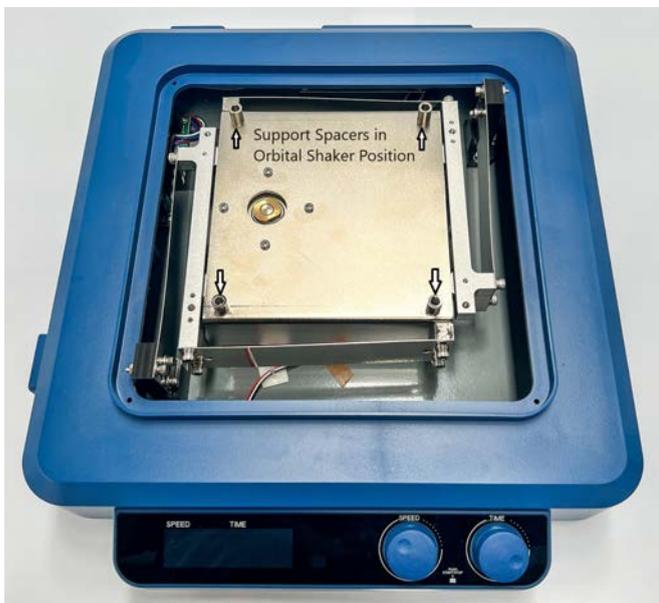


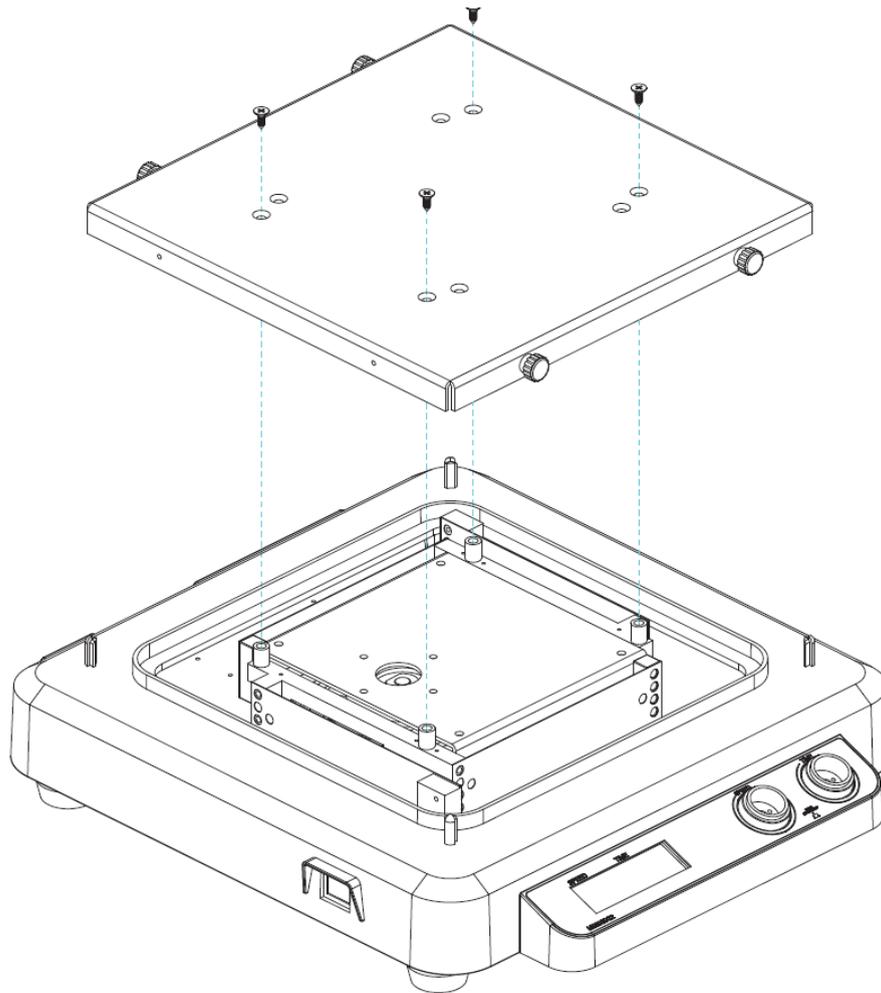
Remove the plate and the 4 support spacers from the main unit.

Setup



Put the 4 support spacers supplied with the shaker (for linear shaking) into the corresponding screw holes





Put the plate back in position and tighten the 4 screws.



Setup

Laboratory Shaker Location

Ensure the laboratory shaker is placed in a suitable environment, away from direct sunlight or direct heat sources. The product shouldn't be placed in a room where the ambient temperature exceeds that of which it was designed to operate. Laboratory shakers should be stored inside at all times.

Extreme Operating Conditions:

- **Temperature:** 5°C to 40°C
- **Humidity:** Up to 80%RH

Ideal Conditions:

- **Temperature:** 23°C (+/- 5°C)
- **Humidity:** 50%RH (+/- 25%RH)

Ensure the laboratory shaker is placed on a level sturdy surface and that the mains plug and the switch are easily accessible.

While the shaker doesn't necessarily require ventilation, Thermoline still suggests 100mm on the sides and back to aid with accessibility.

Electrical Connections

The laboratory shaker require a 10amp 230V 50hz power supply.

A dedicated outlet should be used for all laboratory shakers. Do not use power boards or the like. Included with the laboratory shaker is a removable mains power lead with a three pin plug and straight female IEC plug.

On the rear laboratory shaker itself is a 10 amp male IEC socket (power port) with a power switch on the left hand side. Ensure that the mains plug and the switch are easily accessible.

Cleaning

The interior and exterior can be cleaned as often as required using a soft cloth and soapy water. Never use abrasive cleaners or scouring pads, as these will scratch the surface and may result in corrosion. Never use caustic-type cleaning agents.

All laboratory shakers have electrical components such as the temperature control and internal light. These items should not be subjected to any levels of moisture.

Note: Always switch the shaker off and unplug it from the power before cleaning.



Setup

Accessories

There are various accessories available as shown in the below table.

| | Part Number | Description |
|---|-------------|---|
|  | TS-DP-4E | Dish platform with non-slip mat and fixed string(6 pcs) |
|  | TS-UA-4E | Universal attachment |
|  | TS-CA-4E | Fixing clip attachment |
|  | TS-50FC-4E | Fixing clip for flask volume 50 ml |
|  | TS-100FC-4E | Fixing clip for flask volume 100 ml |
|  | TS-250FC-4E | Fixing Clip for flask volume 250ml |
|  | TS-500FC-4E | Fixing Clip for flask volume 500ml |

The accessory plates attach the same way to the shaking plate using the slot and the thumb screws (please see below).



Laboratory Shaker Warnings



Laboratory shakers should be stored inside at all times. Failure to adhere to this could cause significant drops in performance and damage to items stored inside.



Laboratory shakers are not suitable for use with flammable solvents! They are fitted with components that may be the source of ignition.



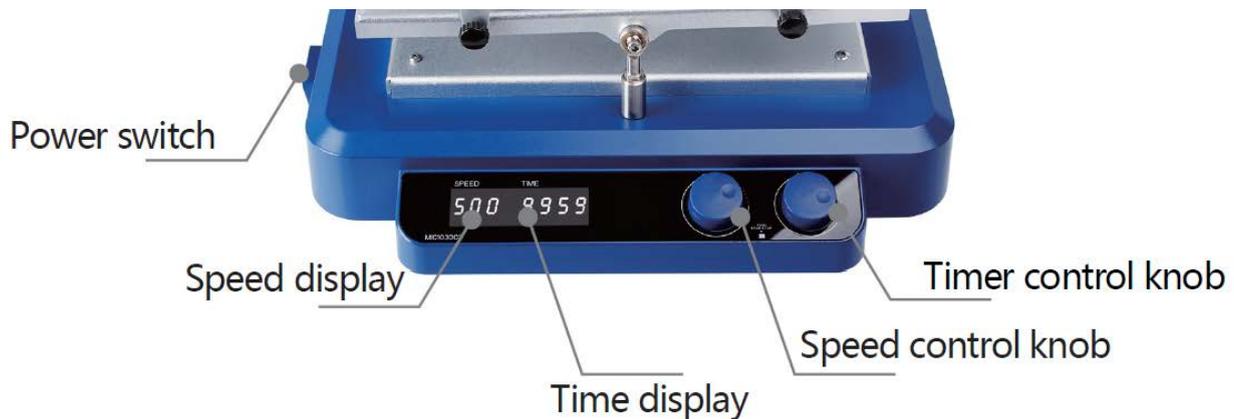
When you remove packaging from the laboratory shaker you should be careful when using knives to cut tape and cardboard.

Pre Use Procedure

- Before proceeding, please make sure that all internal and external packaging has been removed from the equipment and that all tape, plastic bags and foam pieces have been removed.
- Fit the appropriate accessories and in the case of the linear/orbital model pick the appropriate mode.
- Take the supplied lead and plug it into the male IEC socket on the rear of the laboratory shaker. Next, plug the 3 pin plug into a 10amp General Purpose Outlet.
- Turn the main switch on the side of the shaker to 'ON' to power it up. The shaker begins self-checking. When initialization is complete the LED displays the last running values of speed and time.



Shaker Controllers



Running the Shaker

When first turned on the display shows the previous speed and time.

The shaker can be run with and without the timer.

Running without the timer:

Rotate the speed control knob to set target speed.

- Press the speed control knob to start shaking function without timer.
- Press the speed control knob again to stop shaking function.

To use the shaker with the timer:

- Press the timer control button to start shaking, and rotate the timer control knob to set target time.
- Before the countdown time is over, the shaking can be stopped at any time by pressing the speed control knob.
- When the timer is stopped by pressing the timer control knob, press the timer control knob again, the shaking will start again and the timer will restart countdown.
- When the timer reaches zero, the unit will be automatically halted and an alert will sound.

Note:

- The speed should be adjusted by speed control knob slowly to make the instrument run smoothly.
- The speed value can be altered during shaking. The instrument will start to shake with new setting speed value.

When switched ON, if the instrument does not power up:

- Check whether the power cable is connected.
- Check whether the fuse is broken.

Below are the possible error codes for the laboratory shakers.

| Error Code | Cause | Solution |
|------------|-----------------|--|
| Er 01 | motor blocked | Pressing the speed control knob or timer control knob first to stop the shaking. Restart the shaking with a lesser load. If shaking doesn't start reduce the load further. |
| Er 02 | motor overspeed | Pressing the speed control knob or timer control knob first to stop the shaking. Restart the shaking with a lesser load. If shaking doesn't start reduce the load further. |

Technical and Repair Support

When contacting Thermoline regarding information about the product, it is important to have the Serial Number and other related information with you. The serial number is on a silver sticker, usually located near the power IEC socket.

Contact Thermoline service on +61 2 9604 3911 or email at service@thermoline.com.au



Model:
Serial No:
Watts/Amps:
Volts:

Phone: +61 2 9604 3911
Email: hello@thermoline.com.au



Have the following information available when you contact the service department. Model number and serial number. This is generally found on the exterior of the shaker in the form of a stick-on label. The company name, address, contact name, contact phone number. A brief description of the problem. All warranty claims must be reported to, and agreed to by a Thermoline representative prior to any work being carried out.

Standard 24 Month Warranty

Thermoline Scientific Equipment Pty Ltd ABN 80 000 859 129 (‘Thermoline’)

Thermoline warrants to the original purchaser that this product will perform to its product specification for a period of 2 years from date of purchase, provided that the installation of the product has been carried out in accordance with the latest version of the manufacturer’s instructions and further provided that the use of the product complies with that specified in the relevant specification. Thermoline is not responsible for any loss or damage arising from incorrect usage, usage outside the suitability of the product as stipulated in the manufacturer’s instruction, damage caused by accident, fire, flood, act of God or failure to properly install, operate or maintain the goods in accordance with the printed instructions provided.

The following statement applies only to product sales that fall within the definition of a Consumer Sale set out in the Australian Consumer Law contained within the Competition and Consumer Act (Cth) 2012:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Notwithstanding the preceding clause and to the extent permissible by law, the liability of Thermoline is limited, in relation to the warranted product and at the option of Thermoline to:

Replacing the product or the supply of equivalent product;
The repair of the product;
The payment of the cost of replacing the product or of acquiring equivalent product; or
The payment of the cost of having the product repaired.

To the extent permitted by law, all other warranties whether implied or otherwise, not set out in this Warranty are excluded and Thermoline is not liable in contract, tort (including, without limitation, negligence or breach of statutory duty) or otherwise to compensate the Purchaser for:

any increased costs or expenses;
calibration/certification services;
any loss of profit, revenue, business, contracts or anticipated savings;
any loss or expense resulting from a claim by a third party.
Any special, indirect or consequential loss or damage of any nature whatsoever caused by Thermoline’s failure in complying with its obligations or the purchaser’s failure due to accident damage, impact, misuse or negligence.

The benefits given to the purchaser in this Warranty are in addition to other rights and remedies under a law in relation to the products or services to which this warranty applies. This warranty applies only to products purchased and installed in Australia and does not cover any consumable items e.g. filters, light globes, ultrasonic nebulizers. The warranty does not extend to labour and freight costs where the warranted product is located outside Australia.

To make a warranty claim, contact Thermoline on 02 9604 3911 or service@thermoline.com.au.

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We will continue to invest in Australian
manufacturing.

