

# INSTRUCTION MANUAL

talboys™

Mini Hotplate

Mini Stirrer

Mini Hotplate Stirrer



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### PACKAGE CONTENTS

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Mini Hotplate, Stirrer or Hotplate-Stirrer  
72" (183cm) power cord  
Spin bar (stirring models only)  
Instruction manual  
Warranty card

### WARRANTY

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Manufacturer warrants this product to be free from defects in material and workmanship when used under normal conditions for five (5) years. Please complete and return the enclosed warranty card. For your reference, make a note of the serial number, date of purchase and supplier here.

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Supplier: \_\_\_\_\_

## INSTALLATION

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Upon receiving the Talboys Mini Hotplate/Stirrer/Hotplate-Stirrer check to ensure that no damage has occurred in shipment. It is important that any damage that occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately.

After unpacking, place the Mini Hotplate/Stirrer/Hotplate-Stirrer on a level bench or table, away from explosive vapors. Ensure that the surface on which the unit is placed will withstand typical heat produced by the unit and place the unit a minimum of six (6) inches from vertical surfaces. Always place the unit on a sturdy work surface.

The Mini Hotplate/Stirrer/Hotplate-Stirrer is supplied with a 3-prong power cord that should be plugged into a standard 3-prong grounded outlet. If the cord supplied does not meet your needs, please use an approved power cord that suits local codes and electric supply. Replacement of the plug must be made by a qualified electrician.

## MAINTENANCE & SERVICING

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The Mini Hotplate/Stirrer/Hotplate-Stirrer is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required. It needs no user maintenance beyond keeping the surfaces clean. The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. Spills should be removed promptly after the unit has cooled down. Do not use a cleaning agent or solvent on the front panel which is abrasive or harmful to plastics, nor one which is flammable. Always ensure the power is disconnected from the unit prior to any cleaning. If the unit ever requires service, contact your Talboys representative.

## ENVIRONMENTAL CONDITIONS

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**Operating Conditions:** Indoor use only.

Temperature: 5 to 40°C (41 to 104°F)

Humidity: 20% to 85% relative humidity, non-condensing

Altitude: 0 to 6,562 ft (2000 M) above sea level

**Non-Operating Storage:**

Temperature: -20 to 65°C (-4 to 149°F)

Humidity: 20% to 85% relative humidity, non-condensing

Installation Category II and Pollution Degree 2 in accordance with IEC 664.

## EQUIPMENT DISPOSAL

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This equipment must not be disposed of with unsorted waste. It is your responsibility to correctly dispose of the equipment at life-cycle-end by handing it over to an authorized facility for separate collection and recycling. It is also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect the persons involved in the disposal and recycling of the equipment from health hazards.



For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment. By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

## SAFETY INSTRUCTIONS

Please read the entire instruction manual before operating the Mini Hotplate/Stirrer/ Hotplate-Stirrer.



**WARNING! DO NOT** use the Mini Hotplate, Stirrer, or Hotplate-Stirrer 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 used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety. Do not lift unit by the top plate.



**CAUTION!** To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the wall outlet. Disconnect unit from the power supply prior to maintenance and servicing.

Spills should be removed promptly after the unit has cooled down. Alkalis spills, hydrofluoric acid or phosphoric acid spills may damage the unit and lead to thermal failure. Do not immerse the unit for cleaning.



**CAUTION!** The top plate can reach 400°C, DO NOT touch the heated surface. Use caution at all times. Keep the unit away from explosive vapors and clear of papers, drapery and other flammable materials. Keep the power cord away from the heater plate.

Do not operate the unit without a vessel/sample on the top plate.

Do not operate the unit if it shows signs of electrical or mechanical damage.



**CAUTION!** Hotplates are not explosion proof. Use caution when heating volatile materials.



Earth Ground - Protective Conductor Terminal



Alternating Current

## STANDARDS & REGULATIONS

Henry Troemner LLC hereby declares under its sole responsibility that the construction of this product conforms in accordance with the following standards:

### Safety standards:

- IEC 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use. Part: General Requirements.
- IEC 61010-2-010 Part II: Particular requirements for laboratory equipment for the heating of materials.
- IEC 61010-2-051 Part II: Particular requirements for laboratory equipment for mixing and stirring.
- UL Std. No. 61010-1

### EMC standards:

- |                 |             |
|-----------------|-------------|
| EN45501         | EN55022-A   |
| EN61000-3-2/3-3 | EN61000-4-2 |
| EN61000-4-3     | EN61000-4-4 |
| EN61000-4-5     | EN61000-4-6 |
| EN61000-4-11    |             |

### Associated EU guidelines:

- EMC directive 2004/108/EC
- LVD directive 2006/95/EC
- RoHS directive 2011/65/EU

## SPECIFICATIONS

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<b>Overall dimensions (L x W x H):</b>	6.5 x 5.75 x 5.32" (16.5 x 14.6 x 13.5cm)
<b>Top plate dimensions (dia.):</b>	4.5" (11.4cm)
<b>Top plate material:</b>	aluminum
<b>Electrical (50/60 Hz)</b>	
Hotplate/Hotplate-Stirrer: 120 volts:	6 amps, 565 watts
230 volts:	2.5 amps, 430 watts
Stirrer: 120 volts:	0.5 amps, 20 watts
230 volts:	0.25 amps, 20 watts
<b>Fuses:</b>	5mm x 20mm, 5 amp quick acting
<b>Temperature range:</b>	Hotplate/Hotplate-Stirrer: to 400°C
<b>Speed range:</b>	Stirrer/Hotplate-Stirrer: 100 to 1200rpm
<b>Speed stability:</b>	Stirrer/Hotplate-Stirrer: +/-2%
<b>Weight capacity:</b>	1000mL
<b>Controls:</b>	heat knob, 1 to 10 dial markings stir knob, 1 to 10 dial markings
<b>Ship weight:</b>	3.6lbs (1.6kg)



Mini Hotplate-Stirrer with glassware

## HOTPLATE/HOTPLATE-STIRRER HEATING OPERATING INSTRUCTIONS

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### 1. **Get ready:**

The heat knob has a built in on-off switch at its extreme counter-clockwise position. Turn the heat knob to the off position. Plug the power cord into a properly grounded outlet. Place a vessel with solution and the appropriate accessories in the center of the top plate. This is important for heating because the vessel will be over the hottest part of the top plate.

### 2. **Set temperature:**

From the off position, turn the heat knob clockwise until pointer reaches the selected heat setting (graduations on the panel surrounding the control knob are reference marks only and do not indicate specific temperatures). Rotating the heat control to its full on position will bring the hotplate surface to its maximum temperature of about 400°C. After cycling for a short period, the top plate temperature should stabilize between 350°C and 400°C, when the control setting is left at the maximum position. To prevent possible damage, however, this position should not be maintained indefinitely. Do not allow the unit to operate at maximum temperature without a beaker or flask (with fluid) on the top plate.

### 3. **Adjust temperature:**

Temperature adjustments can be made without interrupting heating by turning the indicator knob clockwise to increase heat, or counter-clockwise to decrease heat.

### 4. **Turning unit off:**

To stop heating, turn the heat knob to the extreme counter-clockwise position. The unit is now in the off position. Your vessel can then be removed. The heat knob should be kept in the off position when not in use. To completely cut off power to the unit, un-plug the power cord from the wall outlet.

## HEATING OPERATING TIPS

Best performance will be obtained if the unit is kept as clean as possible. Accumulated deposits on the top plate will retard the uniform distribution of heat. Materials, especially insoluble gums, resins, adhesives, etc., should be quickly removed from the top plate surface before they harden. Care should be taken as well, to prevent corrosive materials from entering the housing.

**CAUTION!** Hotplates/Hotplate-Stirrers are not explosion proof. Use caution when heating volatile materials.

## STIRRER/HOTPLATE-STIRRER STIRRING OPERATING INSTRUCTIONS

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The Stirrer/Hotplate-Stirrer is designed to enable stirring at very slow speeds.

### 1. **Get ready:**

The stir knob has a built in on-off switch at its extreme counter-clockwise position. Turn the stir knob to the off position. Plug the power cord into a properly grounded outlet. Place a vessel with solution and the appropriate accessories in the center of the top plate. This is important for stirring because the spin bar will be well within the magnetic field.

### 2. **Turning unit on:**

From the off position, turn the stir knob clockwise until a click is heard, then continue turning until the desired speed is obtained. The stirrer may initially have to be set at a higher speed to overcome friction in the motor and the material being stirred. Once this is done, the stirrer will maintain the approximate speed set for as long as desired.

### 3. **Set speed:**

Speed adjustments can be made without interrupting stirring by turning the stir knob clockwise to increase speed or counter-clockwise to decrease speed.

### 4. **Turning unit off:**

To stop stirring, turn the stir knob to the extreme counter-clockwise position. The unit is now in the off position. Your vessel can then be removed. The stir knob should be kept in the off position when not in use. To completely cut off power to the unit, un-plug the power cord from the wall outlet.

**PLEASE NOTE:** When using stirrer and heater simultaneously, the stir setting will need to be increased to maintain the same speed as when the heater is off. This will not effect the operation of the unit.

### **STIRRING OPERATING TIPS**

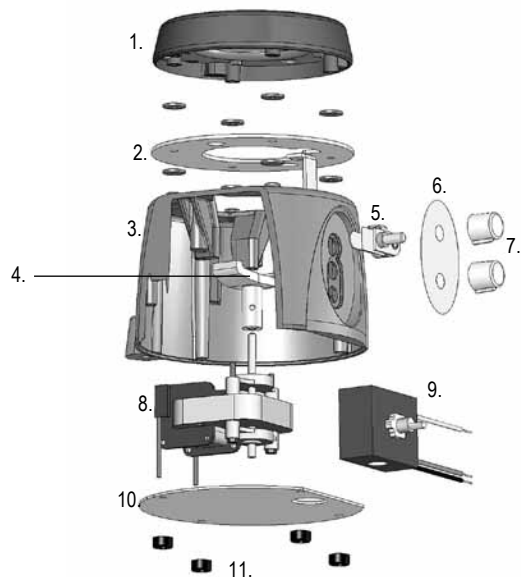
The stirrer increases speed at a steady rate until the set-point is reached, if the spin bar is too large or the liquid is too viscous, the stirrer may not reach its set-point. The set-point speed needs to be reduced.

### **Stirring vessels in oil baths:**

When heating and stirring a reaction vessel within an oil bath or similar set-up, the stirring function will stir up to approximately one (1) inch from the top plate. The stirring speed will vary according to liquid viscosity, spin bar length and distance from the top plate. Adjust one or all of these to achieve the desired stirring speed.

**EXAMPLE:** The closer the reaction vessel is to the top plate the stronger the magnetic connection.

## REPLACEMENT PARTS



DESCRIPTION	PART NUMBER
1. Top plate assembly: Hotplate/Hotplate-Stirrer, 120V	842001-00
Hotplate/Hotplate-Stirrer, 230V	842002-00
Stirrer	242012-00
2. Reflector plate	242014-00
3. Housing	242110-00
Support stand thumb knob	586105-00
Line filter: Hotplate/Hotplate-Stirrer, 230V	387022-00
4. Magnet assembly: Stirrer/Hotplate-Stirrer	842005-00
5. Thermostat: Hotplate/Hotplate-Stirrer	342004-00
6. Front panel overlay: Hotplate/Stirrer	542019-00
Hotplate-Stirrer	542018-00
7. Controls: heat knob - Hotplate/Hotplate-Stirrer	242016-00
stir knob - Stirrer/Hotplate-Stirrer	242017-00
8. Motor: Stirrer/Hotplate-Stirrer, 120V	386027-00
Stirrer/Hotplate-Stirrer, 230V	386037-00
9. Speed control: Hotplate-Stirrer, 120V	342007-00
Stirrer, 120V	330027-00
Stirrer/Hotplate-Stirrer, 230V	342013-00
10. Base plate	242015-00
Base plate plug	186109-00
11. Feet	530052-00



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