

INSTRUCTION MANUAL



Advanced Hotplates, Stirrers,
Hotplate-Stirrers



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PACKAGE CONTENTS

Hotplate, Stirrer or Hotplate-Stirrer
92" (234cm) detachable power cord (except 10 x 10, 120V heating models)
Spin bar (stirring models only)
Instruction manual
Warranty card

WARRANTY

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

Upon receiving the Talboys 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 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 (15.2cm) from vertical surfaces. Always place the unit on a sturdy work surface.

The Hotplate/Stirrer/Hotplate-Stirrer is supplied with a power cord that is inserted into the IEC connector on the back of the unit first, then it can be plugged into a properly grounded outlet. The 120V unit plugs into a 120 volt, 50/60 Hz source. The 230V unit plugs into a 230 volt, 50/60 Hz source. Be sure the power cord is fully and correctly installed into the IEC connector before powering the unit.

Note: 10 x 10, 120V heating models have a fixed power cord terminated with a NEMA 5-15P appliance connector.

MAINTENANCE & SERVICING

The Hotplate/Stirrer/Hotplate-Stirrer is built for long, trouble-free, dependable service. 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 or top plate 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.

CLEANING CERAMIC TOPS:

First remove any burnt-on deposits or spills from the top plate with a scraper (similar to scraping paint off of windowpanes in your home). For your safety, please wear an insulated mitt when using a metal scraper. When the top plate has cooled, apply a few dabs of a non-abrasive cleaner over the surface with a damp paper towel. As a final step, clean with water and wipe surface with a clean, dry paper towel.

CLEANING ALUMINUM TOPS:

For simple dust and dirt, clean the aluminum top by using a damp cloth with soap and water. For more stubborn deposits, try using a flat edge wooden spatula to scrape off as much as possible. For more stubborn stains, try using a couple of tablespoons of white vinegar to two pints of water and mix well. Dip a clean cloth into the mixture and gently rub the exterior of the

MAINTENANCE & SERVICING CONT'D

aluminum surface. Generally, it is not a good idea to use abrasive pads or cleaners on aluminum, as the metal will scratch easily. If you must use some type of abrasive, try applying baking soda to the surface and then rubbing with a moist cloth. This will work as well as most scouring pads and is less likely to create deep scratches in the surface. Be careful not to use steel wool or scouring pads as they can leave the aluminum riddled with little scratches that make it harder to clean in the future. If you feel you must use steel wool, use the finest grade you can find and use as sparingly as possible with as little pressure as possible. Go with the grain rather than using circular motions.

INTENDED USE

These Hotplates/Stirrers/Hotplate-Stirrers are intended for general laboratory use.

ENVIRONMENTAL CONDITIONS

Operating Conditions: Indoor use only.

Temperature:	5 to 40°C (41 to 104°F)
Humidity:	20% to 80% 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 80% relative humidity, non-condensing

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

EQUIPMENT DISPOSAL



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 Hotplate/Stirrer/Hotplate-Stirrer.



WARNING! DO NOT use the Hotplate/Stirrer/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 unit or unplug 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. **DO NOT** immerse the unit for cleaning. Alkalis spills, hydrofluoric acid or phosphoric acid spills may damage the unit and lead to thermal failure.



CAUTION! The top plate can reach 500°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 at high temperatures without a vessel/sample on the top plate.

WARNING! Units are **NOT** explosion proof. Use caution when heating volatile materials.

Replace the ceramic top immediately if damaged. A damaged top can break in use.

DO NOT operate the unit if it shows signs of electrical or mechanical damage.

SAFETY INSTRUCTIONS CONT'D



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:

EN 60101-1

EN 61010-2-010

EN 61010-2-051

CAN/CSA C22.2 61010-1

CAN/CSA C22.2 61010-2-010

CAN/CSA C22.2 61010-2-051

UL 61010-1

EMC standards:

EN 61326-1

IEC 61000-4-4

EN 55022-B

IEC 61000-4-5

IEC 6100-3-2

IEC 61000-4-6

IEC 61000-3-3

IEC 61000-4-11

IEC 61000-4-3

Associated EU guidelines:

EMC directive 2004/108/EC

LVD directive 2006/95/EC

ROHS directive 2011/65/EU

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.

CONSIGNES DE SÉCURITÉ

Veillez lire la totalité du manuel d'instruction avant d'utiliser le dispositif Agitateur/Agitateur à plaque chauffante.



AVERTISSEMENT! N'UTILISEZ PAS le dispositif Plaque chauffante/Agitateur/Agitateur à plaque chauffante dans une atmosphère dangereuse ou avec des matériaux dangereux pour lesquels l'emploi du dispositif n'a pas été conçu. L'utilisateur doit en outre toujours être conscient du fait que la protection fournie par le fabricant peut être désactivée si le dispositif est utilisé avec des accessoires non fournis ni recommandés par le fabricant ou s'il est utilisé de manière non stipulée par le fabricant.

Utilisez toujours le dispositif sur une surface à niveau pour optimiser non seulement la performance mais la sécurité.

NE SOULEVEZ PAS le dispositif en saisissant la plaque supérieure.



ATTENTION! Pour éviter tout choc électrique, coupez le courant vers le dispositif en débranchant le cordon d'alimentation du dispositif ou de la prise murale. Débranchez le dispositif de l'alimentation avant d'effectuer toute opération de maintenance ou de réparation.

Les liquides renversés doivent être nettoyés tout de suite après le refroidissement du dispositif. **N'IMMERGEZ PAS** le dispositif pour le nettoyer. Les produits déversés comme les alcalis et les acides hydrofluorique et phosphorique peuvent entraîner un choc thermique.



ATTENTION! La plaque supérieure peut atteindre 400°C, **NE TOUCHEZ PAS** la surface chauffée. Faites preuve de prudence à tout moment. Tenir le dispositif loin des vapeurs explosives et des papiers, rideaux et autres substances inflammables. Tenir le cordon d'alimentation loin de la plaque chauffante.

N'UTILISER PAS le dispositif à des températures élevées si un récipient/échantillon n'est pas sur la plaque supérieure.

AVERTISSEMENT! Les dispositifs **NE SONT PAS** antidéflagrants. Faites preuve de prudence lors du chauffage de substances volatiles.

CONSIGNES DE SÉCURITÉ CONT'D

Remplacez la plaque céramique immédiatement si celle-ci est endommagée. Une plaque endommagée peut se fendre si elle est utilisée.

N'UTILISEZ PAS le dispositif s'il y a des signes de dommages électriques ou mécaniques.



Mise à la terre - Borne du conducteur de protection



Courant alternatif

NORMES ET RÉGLEMENTATIONS

Henry Troemner LLC déclare par la présente sous sa seule responsabilité que la conception de ce produit répond aux exigences des normes suivantes:

Normes de sécurité:

EN 60101-1
EN 61010-2-010
EN 61010-2-051
CAN/CSA C22.2 61010-1
CAN/CSA C22.2 61010-2-010
CAN/CSA C22.2 61010-2-051
UL 61010-1

Normes EMC:

EN 61326-1	IEC 61000-4-4
EN 55022-B	IEC 61000-4-5
IEC 6100-3-2	IEC 61000-4-6
IEC 61000-3-3	IEC 61000-4-11
IEC 61000-4-3	

Directives UE associées:

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

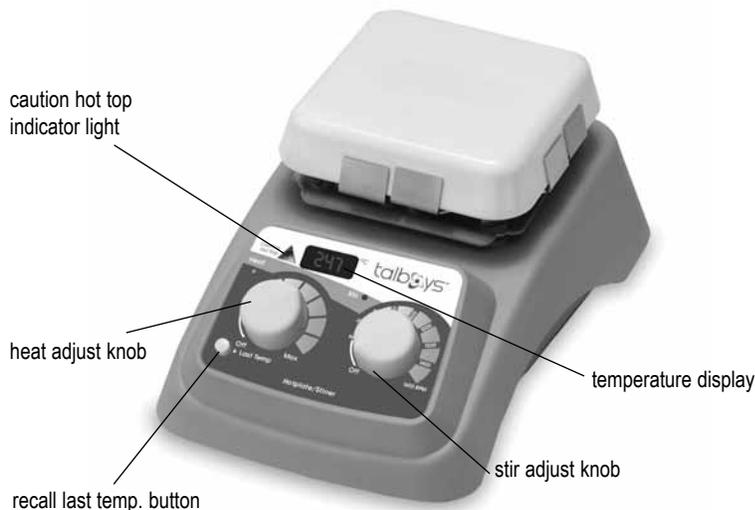
4 x 4 HOTPLATE/STIRRER/HOTPLATE-STIRRER SPECIFICATIONS

Dimensions (L x W x H):	10.80 x 6.58 x 4.27" (27.4 x 16.7 x 10.8cm)
Top plate dimensions (L x W):	4 x 4" (10.2 x 10.2cm)
Electrical (50/60 Hz):	
Hotplate:	120V: 2.9 amps/350 watts 230V: 1.5 amps/350 watts
Stirrer:	120V: 0.4 amps/50 watts 230V: 0.2 amps/50 watts
Hotplate-Stirrer:	120V: 3.3 amps/400 watts 230V: 1.7 amps/400 watts
Fuses:	5mm x 20mm, 5 amp quick acting
Temperature range:	ceramic: ambient +5°C to 500°C aluminum: ambient +5°C to 400°C
Temperature stability:	ceramic*: +/-3% aluminum*: +/-2%
Speed range:	60 to 1600rpm
Speed stability:	+/-2%
Capacity:	600mL, gross weight should not exceed 20lbs
Controls:	see diagram
Ship weight:	6.2lbs (2.8kg)

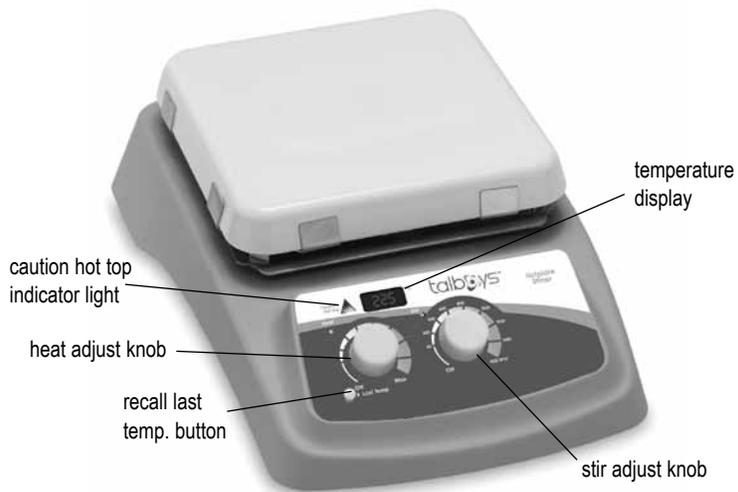
* Below 100°C +/-2°C. Environmental and sample conditions permitting.

NOTE: On all units, the Max. temperature setting on the display is 500°C for a ceramic top and 400°C for an aluminum top.

ADVANCED SERIES 4 x 4



Talboys Advanced 4x4, Ceramic Hotplate-Stirrer



Talboys Advanced 7x7, Ceramic Hotplate-Stirrer

7 x 7 HOTPLATE/STIRRER/HOTPLATE-STIRRER SPECIFICATIONS

Dimensions (L x W x H):	14.77 x 9.85 x 4.27" (37.5 x 25 x 10.8cm)
Top plate dimensions (L x W):	7 x 7" (17.8 x 17.8cm)
Electrical (50/60 Hz):	
Hotplate:	120V: 7.9 amps/950 watts 230V: 4.4 amps/1000 watts
Stirrer:	120V: 0.4 amps/50 watts 230V: 0.2 amps/50 watts
Hotplate-Stirrer:	120V: 8.3 amps/1000 watts 230V: 4.6 amps/1050 watts
Fuses:	HP/HPS: 5mm x 20mm, 10 amp slow blow Stirrer: 5mm x 20mm, 5 quick acting
Temperature range:	ceramic: ambient +5°C to 500°C aluminum: ambient +5°C to 400°C
Temperature stability:	ceramic*: +/-3% aluminum*: +/-2%
Speed range:	60 to 1600rpm
Speed stability:	+/-2%
Capacity:	2500mL, gross weight should not exceed 40lbs
Controls:	see diagram
Ship weight:	10.5lbs (4.8kg)

* Below 100°C +/-2°C. Environmental and sample conditions permitting.

NOTE: On all units, the Max. temperature setting on the display is 500°C for a ceramic top and 400°C for an aluminum top.

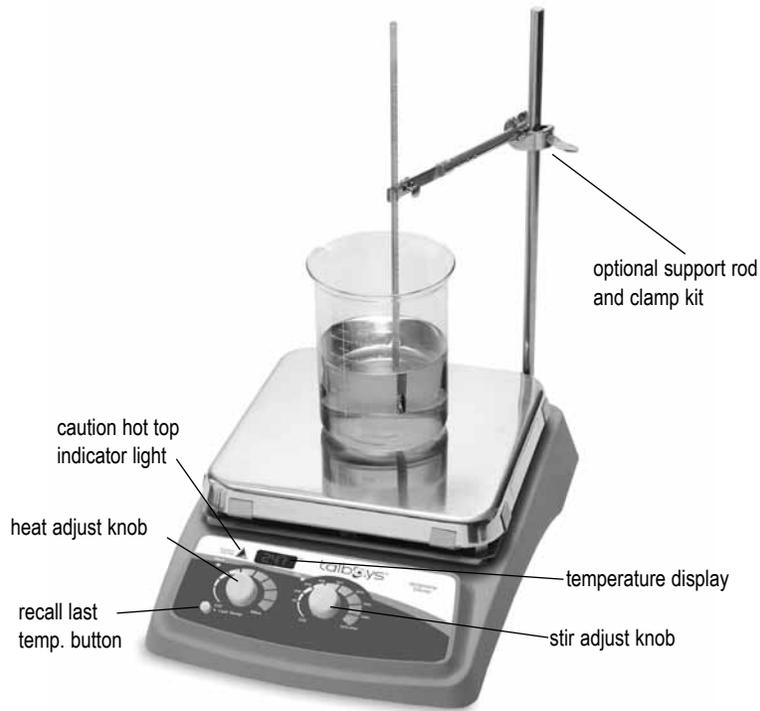
10 x 10 HOTPLATE/STIRRER/HOTPLATE-STIRRER SPECIFICATIONS

Dimensions (L x W x H):	17.90 x 13.00 x 4.27" (45.5 x 33.0 x 10.8cm)
Top plate dimensions (L x W):	10 x 10" (25.4 x 25.4cm)
Electrical (50/60 Hz):	
Hotplate:	120V: 10.8 amps/1300 watts 230V: 6.7 amps/1550 watts
Stirrer:	120V: 0.4 amps/50 watts 230V: 0.2 amps/50 watts
Hotplate-Stirrer:	120V: 11.2 amps/1345 watts 230V: 7.0 amps/1600 watts
Fuses:	120V HP/HPS: 1 1/4 x 1/4 in, 15 amp quick acting (internal) 230V HP/HPS: 5mm x 20mm, 16 amp slow blow Stirrer: 5mm x 20mm, 5 quick acting
Temperature range:	ceramic: ambient +5°C to 500°C aluminum: ambient +5°C to 400°C
Temperature stability:	ceramic*: +/-3% aluminum*: +/-2%
Speed range:	60 to 1600rpm
Speed stability:	+/-2%
Capacity:	6000mL, gross weight should not exceed 50lbs
Controls:	see diagram
Ship weight:	15.9lbs (7.2kg)

* Below 100°C +/-2°C. Environmental and sample conditions permitting.

NOTE: On all units, the Max. temperature setting on the display is 500°C for a ceramic top and 400°C for an aluminum top.

ADVANCED SERIES 10 X 10



Talboys Advanced 10x10, Aluminum Hotplate-Stirrer with optional probe kit and glassware*

* Glassware not included.

HEATING OPERATING INSTRUCTIONS

The Hotplates and Hotplate-Stirrers have a micro-processor controlled heater that is designed to bring samples to temperature quickly and accurately.

1. Getting ready:

- a. Turn the heat knob to the off position. Plug power cord into a properly grounded 3-prong outlet.
- b. Place a vessel with solution and the appropriate accessories in the center of the top plate. This is important because the vessel should be over the hottest part of the top plate.

2. Setting temperature for Advanced Series:

- a. Turn the heat knob clockwise until the display reaches the desired heat setting. The display will flash the set-point temperature until the temperature is reached, at which time the display will stop flashing and beep 5 (five) times. When the heat is turned on the indicator light above the heat knob is illuminated. Removing or adding more to a sample content could cause the temperature to fluctuate. If this occurs, the display will again start to flash until the set-point value is stabilized.
- b. Temperature adjustments can be made without interrupting heating by turning the heat knob clockwise to increase heat or counter-clockwise to decrease heat.
- c. To stop heating, turn the heat knob to the off position. Your vessel can then be removed.

Caution hot top indicator:

The caution hot top indicator light warns that the top plate is too hot to touch. The caution hot top indicator light will illuminate when the heat is turned on and remain on until the top plate cools down.



Recall last temperature button:

Advanced Series Hotplate/Hotplate-Stirrers have a built-in memory that allows users to recall the last set temperature, even after the unit has been turned off. (The temperature in memory is the last temperature that ran for more than 5 minutes.)

Max Temperature:

If the unit has an aluminum top, the max temperature setting is 400°C. If the unit has a ceramic top, the max temperature setting is 500°C.

OPERATING TIPS

The unit may overshoot the temperature up to 10°C before stabilizing at the set-point. The two methods suggested to minimize overshoot are:

1. Metal containers minimize overshoot. **CAUTION:** When heating metal containers on a ceramic top it is recommended to use the lowest temperature setting possible to limit thermal stress to the ceramic top.
2. If a glass vessel is used, anticipate overshoot. Start with a setting 5-10°C below the desired temperature. When the temperature stabilizes at this lower setting, turn the heat knob to the final temperature. Overshoot is then reduced to about 1°C.

The temperature display on the Advanced units show the actual temperature of the heater not the top plate or sample. The vessel contents being heated may be at a lower temperature depending on the size and insulating qualities of the vessel. It may be beneficial to monitor the temperature of the vessel contents and adjust the set-point temperature accordingly.

TYPICAL TIME TO BOIL WATER

The chart below is an example of an approximate time to boil for the specified amount of water in a specific vessel. *These values are only approximate and can vary from unit to unit. Values are based on 23°C water in an ambient environment of 23°C.*

CERAMIC TOP		
Size of Top Plate	Volume of Water	Time
4 x 4	500ml in 600ml beaker	40
7 x 7	1500ml in 2,000ml beaker	45
10 x 10	5000ml in 6000ml Erlenmeyer Flask	60

ALUMINUM TOP		
Size of Top Plate	Volume of Water	Time
4 x 4	500ml in 600ml beaker	40
7 x 7	1500ml in 2000ml beaker	60
10 x 10	5000ml in 6000ml Erlenmeyer Flask	70

TEMPERATURE CALIBRATION PROCEDURE (SINGLE POINT CALIBRATION)

This method can be used for calibrating the top plate surface.

To set a Single Point Calibration (SPC) adjustment:

- Turn the heat knob clockwise until the display reaches the desired heat setting, and let the unit stabilize to the user input temperature. The heater temperature has stabilized when the temperature display is no longer blinking and the unit will beep five times.
- Wait ten minutes for the surface temperature to stabilize. Measure the top plate with a traceable surface temperature measuring device.
- Press and hold the Last Temperature button. The display will start to scroll through the available SPC options (“UP”, “dn”, “SEt” and “dEL”) as long as the Last Temperature button is held down. Once you select “UP” or “dn” mode and release the Last Temperature button the unit will beep two times and the display will begin to blink quickly. This lets you know you are programming in SPC mode.

NOTE: There is a thirty second time out (Last Temperature button must be pressed at least once in thirty seconds, or unit will exit SPC mode). **Do not touch the heat knob while in SPC mode.** If the heat knob is adjusted during this procedure you will exit SPC mode.

- Once the desired option is displayed, release the Last Temperature button. Please see the explanation below for each option.
- Selecting the “SEt” option saves the Single Point Calibration adjustment for that temperature set point and allows you to exit this SPC mode (see Section c). When the “Set” option is selected “SEt” will be displayed. To save the current SPC point and exit the SPC programming mode, release the Last Temperature button when “SEt” is on the display. The display will now show your set point temperature with a decimal point for that setting.
- Select the “UP” option if your externally measured temperature of the top plate is **higher** than the set point on the display. When the “UP” option is selected the current SPC adjusted temperature is displayed and blinking quickly. **To increase the SPC, press and release the Last Temperature button multiple times (do not touch heat knob)** until the display reads the value you recorded

TEMPERATURE CALIBRATION PROCEDURE CONT'D

- as the measured temperature of the top plate. Changes are not saved until the "SEt" option is selected (and the Last Temperature button is pressed and released), if the temperature is adjusted too high, delete the SPC adjustment and repeat procedure.
- g. Select the "dn" option if your externally measured temperature of the top plate is **lower** than the set point on the display. When the "dn" option is selected the current SPC adjusted temperature will be displayed and blinking quickly. **To decrease the SPC, press and release the Last Temperature button multiple times (do not touch the heat knob)** until the display reads the value you recorded as the measured temperature of the top plate. Changes are not saved until the "SEt" option is selected (and the Last Temperature button is pressed and released), if the temperature is adjusted too low, delete the SPC adjustment and repeat procedure.
 - h. Selecting the "dEL" option will delete **all** Single Point Calibration points and allow you to exit this SPC mode (see Section c). When the "dEL" option is selected "dEL" will be displayed. To delete **all** SPC points and exit the SPC mode release the Last Temperature button when "dEL" is on the display.
 - i. For set point temperatures with a SPC adjustment, there will be a decimal point in the display. Once the SPC adjustment is set, the display will blink while the unit's temperature is settling. When the SPC set point is reached, the display will stop blinking and the unit will beep five times.
 - j. This process may be repeated for up to **three separate** set points. If a fourth SPC set point is entered, the first set point will be overwritten. To readjust an existing SPC set point, you must delete the current settings (all SPC points will be deleted, and the decimal points will no longer be displayed at those temperatures) and repeat the SPC procedure. If SPC adjustments are **not deleted** prior to resetting SPC for a set point then the temperature adjustment will not be accurate
 - k. The SPC adjustments are limited to the maximum and minimum temperatures and limits allowed by the particular unit.

STIRRING OPERATING INSTRUCTIONS

The micro-processor controlled ramping feature slowly increases speed until the set-point is reached. This feature helps to avoid splashing, improves magnetic coupling and provides excellent low end control. The micro-processor also monitors and regulates the stirring speed, sensing your requirements whether you're stirring an aqueous, viscous or semi-solid solution.

Initial stirring speed may exceed set speed if the following conditions exist:

1. The stirrer is set at a low speed and the stirrer has not been operated for an extended period of time.
 2. The stirrer is set at a low speed and it is the stirrer's initial use.
1. **Getting ready:**
 - a. Turn stir knob to the off position. Plug power cord into a properly grounded outlet.
 - b. Place a vessel with solution and the appropriate spin bar in the center of the top plate.
 2. **Setting speed:**
 - a. Turn the stir knob clockwise until the pointer reaches the desired speed setting. The stir indicator light above the stir knob will illuminate to indicate the stirring feature is in use. The stir indicator light will blink while reaching the set-point. Once the set-point is reached the light will remain lit.
 - b. Speed adjustments can be made without interrupting stirring by turning the stir knob clockwise to increase speed, or counter-clockwise to decrease speed.
 - c. To stop stirring, turn the stir knob to the off position. Your vessel can then be removed.

Stir protection for Hotplate-Stirrers:

If stirrer motor stops or fails, the unit will automatically shut down the heater.

The stirrer increases speed at a steady rate until the set-point is reached, if the stir 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. The magnetic strength of stir bars reduce over time and may need to be replaced.

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 (2.54cm) from the top plate. The stirring speed will vary according to liquid viscosity, stir bar length and distance from the top plate. Adjust one or all of these to achieve the desired stirring speed.

TROUBLESHOOTING (STIRRERS)

The stirring units do not have LED displays. In the event of a malfunction, the unit will beep 10 (ten) times. To clear the error, turn the control knob to the off position and cycle the power by disconnecting the power cord from the source. Reconnect power cord and resume operations. If the error persists, turn the unit off and contact your Talboys representative for repair.

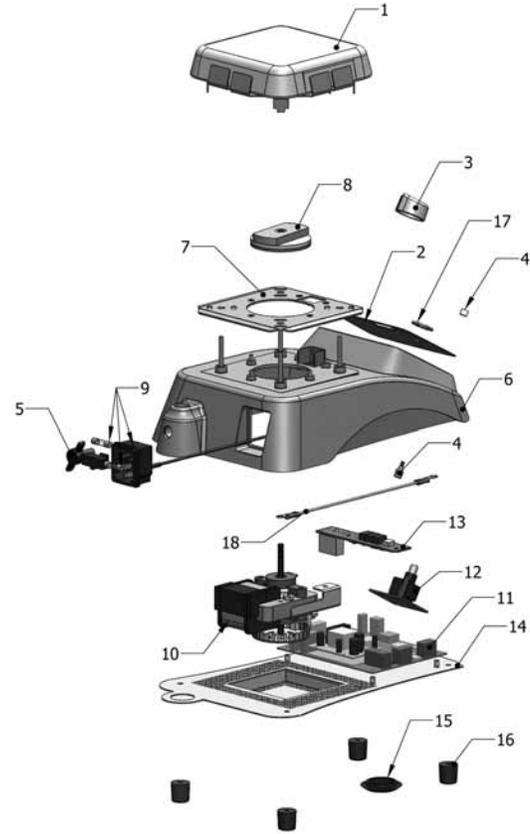
TROUBLESHOOTING (HOTPLATE / HOTPLATE-STIRRERS)

If the unit gives an error code, immediately switch the unit off. See error table below for proper corrective action. If the error cannot be cleared, please contact your Talboys representative for repairs.

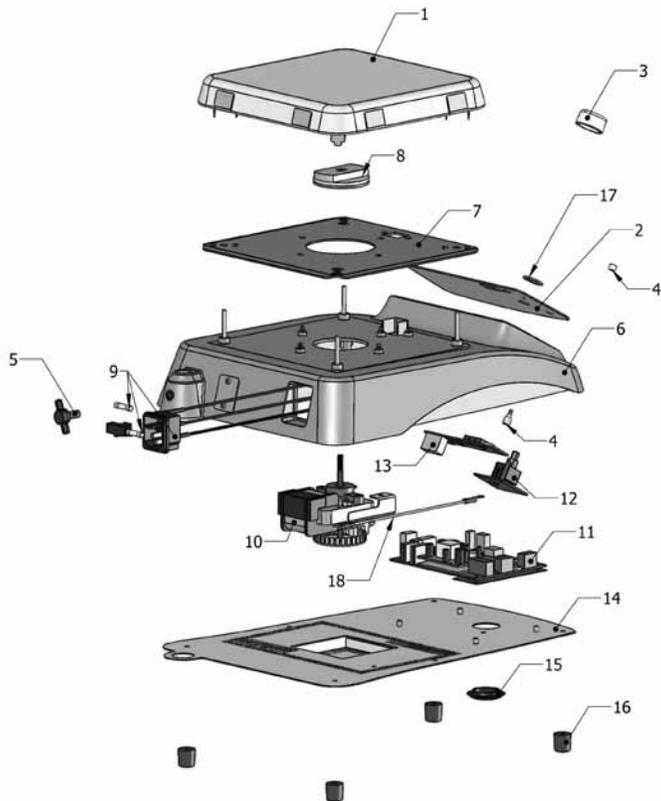
Error	Cause of Error	How to Fix
E1	An "E1" error means the heater sensor is open or malfunctioned.	This error cannot be fixed by the end user. Please contact your Talboys representative for repair.
E2	An "E2" error means the heater sensor shorted or malfunctioned.	This error cannot be fixed by the end user. Please contact your Talboys representative for repair.
E3	An "E3" error means there is either no motion on the motor or the motor is not working properly.	Reset the unit by rotating the knobs for speed and heat to the off positions until they click then turn them back on. If it still doesn't work, please contact you Talboys representative for repair.
E6	An "E6" error means there is an internal electronics system error.	This error cannot be fixed by the end user. Please contact your Talboys representative for repair.
E8	An "E8" error means the unit had a catastrophic over temperature condition or temperature runaway condition (temperature greater than 600°C) and therefore automatically shut down to prevent damage.	This error cannot be fixed by the end user. Please contact your Talboys representative for repair.
E9	An "E9" error means the heater failed. This might occur if heater temperature fails to rise when asked to, or there is a sudden drop in heater temperature for no apparent reason.	This error cannot be fixed by the end user. Please contact your Talboys representative for repair.

4 x 4 REPLACEMENT PARTS

DESCRIPTION	PART NUMBER
1. Top plate assembly:	
120V, ceramic, Hotplate, Hotplate-Stirrer	886310-00
230V, ceramic, Hotplate, Hotplate-Stirrer	886311-00
120V/230V, ceramic, Stirrer	886312-00
120V, aluminum, Hotplate, Hotplate-Stirrer	886313-00
230V, aluminum, Hotplate, Hotplate-Stirrer	886314-00
120V/230V, aluminum, Stirrer	886315-00
2. Front panel overlay:	
Stirrer	386217-00
Hotplate	386218-00
Hotplate-Stirrer	386219-00
3. Control knobs	286116-00
4. Last temperature (Advanced Heating Units only):	
switch	386104-00
button	386101-00
5. Support stand thumb knob	186208-00
6. Housing	286613-00
7. Heat Shield	286607-00
8. Magnet assembly:	
Stirrer, Hotplate-Stirrer	286616-00
9. IEC module	386680-00
Fuse 5 amp	380238-00
10. Motor:	
120V	286623-00
230V	286627-00
11. Main PCB:	386660-00
12. Pot PCB/Assy:	386661-00
13. Display PCB	
Hotplate, Hotplate-Stirrer	386663-00
Stirrer	386662-00
14. Bottom Plate	286610-00
15. Bottom Plate plug	186201-00
16. Feet	186200-00
17. Internal Lock Washer	130015-00
18. Ground Jumper Wire	
aluminum top units	386678-00
Detachable 92" (234cm) power cord:	
120V	330100-00
Euro plug	330101-00



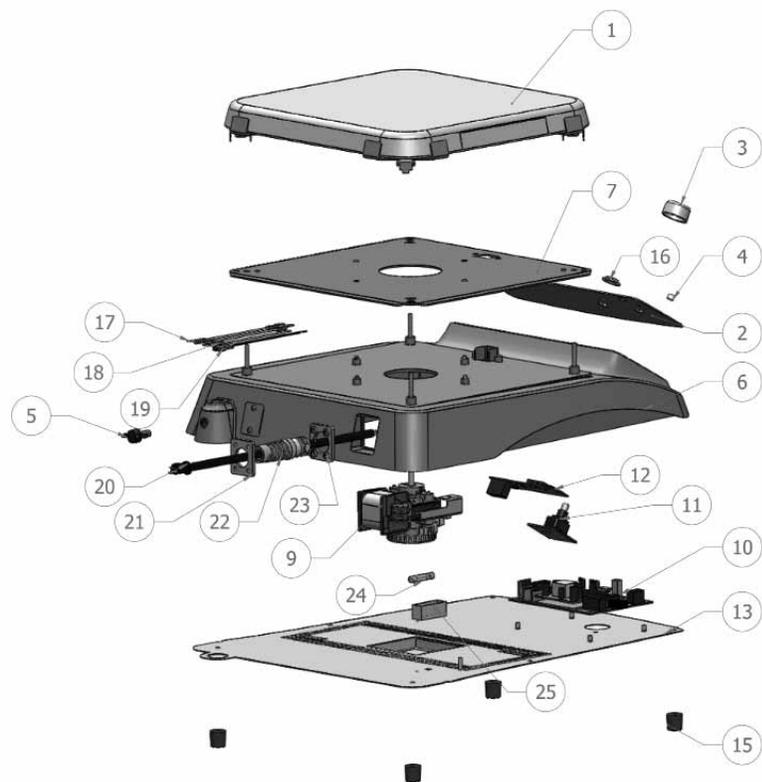
7 x 7 REPLACEMENT PARTS



DESCRIPTION	PART NUMBER	
1. Top plate assembly:	120V, ceramic, Hotplate, Hotplate-Stirrer	886316-00
	230V, ceramic, Hotplate, Hotplate-Stirrer	886317-00
	120V/230V, ceramic, Stirrer	886318-00
	120V, aluminum, Hotplate, Hotplate-Stirrer	886319-00
	230V, aluminum, Hotplate, Hotplate-Stirrer	886320-00
	120V/230V, aluminum, Stirrer	886321-00
2. Front panel overlay:	Stirrer	386220-00
	Hotplate	386221-00
	Hotplate-Stirrer	386222-00
3. Control knobs		286116-00
4. Last temperature (Advanced Heating Units only):	switch	386104-00
	button	386101-00
5. Support stand thumb knob		186208-00
6. Housing		286614-00
7. Heat Shield		286608-00
8. Magnet assembly:	Stirrer, Hotplate-Stirrer	286616-00
		386681-00
9. IEC module	Fuse 10 Amp	386005-00
	Fuse 5 Amp	380238-00
		386623-00
10. Motor:	120V	286623-00
	230V	286627-00
11. Main PCB:	Hotplate	386660-00
12. Pot PCB/Assy:		386661-00
13. Display PCB	Hotplate, Hotplate-Stirrer	386663-00
	Stirrer	386662-00
		386611-00
14. Bottom Plate		386611-00
15. Bottom Plate plug		186201-00
16. Feet		186200-00
17. Internal Lock Washer		130015-00
18. Ground Jumper Wire	aluminum top units	386678-00
Detachable 92" (234cm) power cord:	120V	330100-00
	Euro Plug	330101-00

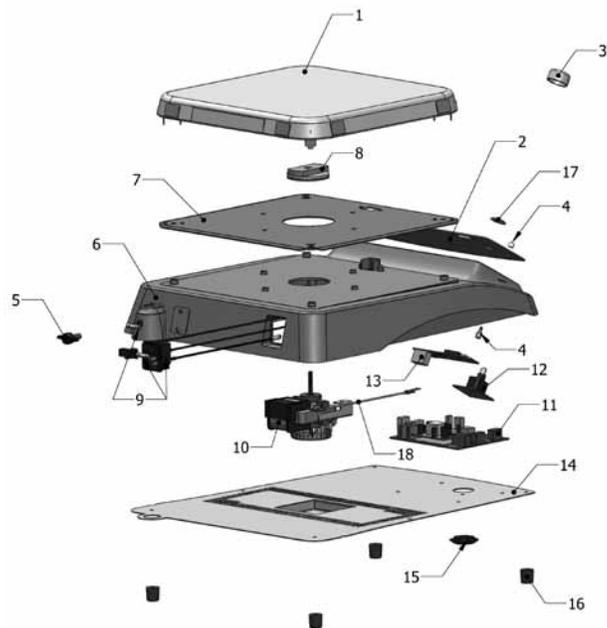
10 x 10, 120V HOTPLATE, HOTPLATE-STIRRER REPLACEMENT PARTS

DESCRIPTION	PART NUMBER
1. Top plate assembly:	
120V, ceramic, Hotplate, Hotplate-Stirrer	886322-00
120V, aluminum, Hotplate, Hotplate-Stirrer	886325-00
2. Front panel overlay:	
Stirrer	386279-00
Hotplate	386280-00
Hotplate-Stirrer	386281-00
3. Control knobs	286116-00
4. Last temperature (Heating Units only):	
switch	386100-00
button	386101-00
5. Support stand thumb knob	186208-00
6. Housing	286615-00
7. Heat Shield	286609-00
8. Magnet assembly:	
Stirrer, Hotplate-Stirrer	286616-00
9. Motor:	286627-00
10. Main PCB:	Hotplate
Hotplate	386660-00
11. Pot PCB/Assy:	386661-00
12. Display PCB	Hotplate, Hotplate-Stirrer
Hotplate	386663-00
Stirrer	386662-00
13. Bottom Plate	286612-00
14. Bottom Plate plug	186201-00
15. Feet	186200-00
16. Internal Lock Washer	130015-00
17. Motor to Chassis wire, Al plate	386696-00
18. PCBA to Chassis wire	386697-00
19. PCBA to fuse holder wire	386698-00
20. Fixed AC power cord	380109-00
21. Face plate	286644-00
22. Strain relief bushing	386688-00
23. Retention plate	286645-00
24. Fuse, 15 amps	386034-00
25. Fuse holder	386126-00



10 x 10 REPLACEMENT PARTS - 120V STIRRER, 230V ALL UNITS

DESCRIPTION	PART NUMBER
1. Top plate assembly:	
230V, ceramic, Hotplate, Hotplate-Stirrer	886323-00
120V/230V, ceramic, Stirrer	886324-00
230V, aluminum, Hotplate, Hotplate-Stirrer	886326-00
120V/230V, aluminum, Stirrer	886327-00
2. Front panel overlay:	
Stirrer	386279-00
Hotplate	386280-00
Hotplate-Stirrer	386281-00
3. Control knobs	286116-00
4. Last temperature (Heating Units only):	
switch	386100-00
button	386101-00
5. Support stand thumb knob	186208-00
6. Housing	286615-00
7. Heat Shield	286609-00
8. Magnet assembly:	
Stirrer, Hotplate-Stirrer	286616-00
9. IEC module	386681-00
Fuse 16 Amp	
Hotplate, Hotplate-Stirrer	386033-00
Fuse 5 Amp	
Stirrer	380238-00
10. Motor:	
230V	286627-00
11. Main PCB:	
Hotplate	386660-00
12. Pot PCB/Assy:	
Hotplate, Hotplate-Stirrer	386661-00
13. Display PCB	
Hotplate, Hotplate-Stirrer	386663-00
Stirrer	386662-00
14. Bottom Plate	286612-00
15. Bottom Plate plug	186201-00
16. Feet	186200-00
17. Internal Lock Washer	130015-00
18. Ground Jumper Wire	386678-00
aluminum top units	
Detachable 92" (234cm) power cord:	
Stirrer 120V	330100-00
Euro Plug	330101-00



Manufactured by:



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