

INSTRUCTION MANUAL



Standard Slow Speed Stirrers
Advanced Slow Speed Stirrers



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PACKAGE CONTENTS

Standard or Advanced Slow Speed Stirrer
92" (234cm) detachable power cord
Stir bar, one (1) for each stirring position
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 Slow Speed 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 Slow Speed 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 Slow Speed 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.

MAINTENANCE & SERVICING

The Slow Speed 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. 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.

ENVIRONMENTAL CONDITIONS

Operating Conditions: Indoor use only.

* For use in CO₂ environments, incubators or cold rooms ranging from -10 to 40°C 14 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.

* **Avoid cold starts:** Unit is not designed to start after being in a cold room environment. Bring unit into cold room from a room temperature environment, operate and remove unit from cold room as soon as operation is complete.

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 Slow Speed Stirrer.



WARNING! DO NOT use the Slow Speed 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. **DO NOT** immerse the unit for cleaning.

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



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 I: General Requirements.
IEC 61010-2-051 Part II: Particular requirements for laboratory equipment for mixing and stirring.
UL Std. No. 61010-1

EMC standards:

EN61326-1 Class A	EN61000-3-2/3-3
EN55011 Group 1, Class A	EN61000-4-2
EN61000-4-3	EN61000-4-4
EN61000-4-5	EN61000-4-6
EN61000-4-8	EN61000-4-11

Associated EU guidelines:

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

SPECIFICATIONS - 1 POSITION SLOW SPEED STIRRERS

Overall dimensions (L x W x H)	12 x 8.25 x 3.5" (30.5 x 21 x 8.9cm)
Top plate dimensions (L x W)	7 x 7" (17.8 x 17.8cm)
Top plate material	aluminum
Electrical (50/60 Hz)	120 volts: 0.14 amps, 7.2 watts 230 volts: 0.14 amps, 14.4 watts
Fuses	5mm x 20mm, 5 amp quick acting
Speed range	1 to 150rpm
Timer - Advanced series	1 second to 160 hours
Maximum H2O capacity	one (1) 2L
Maximum vessel dia.	15cm
Controls	Standard series: stir knob, 1 to 10 dial markings Advanced series: see page 6
Ship weight	8.8lbs (4kg)



Standard Slow Speed Stirrer 1

SPECIFICATIONS - 4 POSITION/10L SLOW SPEED STIRRERS

Overall dimensions (L x W x H)	17 x 11 x 4" (43.2 x 27.9 x 10.2cm)
Top plate dimensions (L x W)	12.5 x 11" (31.8 x 27.9cm)
Top plate material	glass filled nylon
Electrical (50/60 Hz)	120 volts: 0.14 amps, 7.2 watts 230 volts: 0.14 amps, 14.4 watts
Fuses	5mm x 20mm, 5 amp quick acting
Speed range	1 to 150rpm
Timer - Advanced series	1 second to 160 hours
Maximum H2O capacity	4 position 10L four (4) 1L one (1) 10L
Maximum vessel dia.	4 position 10L 13cm 25cm
Controls	Standard series: stir knob, 1 to 10 dial markings Advanced series: see page 6
Ship weight	14.5lbs (6.6kg)



Advanced Slow Speed Stirrer 4

OPERATING INSTRUCTIONS - STANDARD SLOW SPEED STIRRERS

Standard Slow Speed Stirrers are used for general laboratory stirring needs.

1. **Getting ready:**

- a. The stir knob has an on-off switch built in at its extreme counter-clockwise position. Turn the stir knob to the off position. Plug the power cord into a properly grounded outlet.
- b. Place a stir bar into each vessel to be stirred.
- c. Place the vessel(s) to be stirred, with contents, onto the center of each stirring position on the top plate. This is important for stirring because the stir bar will be well with-in the magnetic field.

2. **Turning unit on:**

- a. From the off position, turn the stir knob clockwise until a click is heard, then continue turning until the desired speed is obtained. The microprocessor speed control slowly brings sample(s) to set speed to avoid splashing. The maximum speed is at the extreme clockwise position of the knob.

3. **Setting speed:**

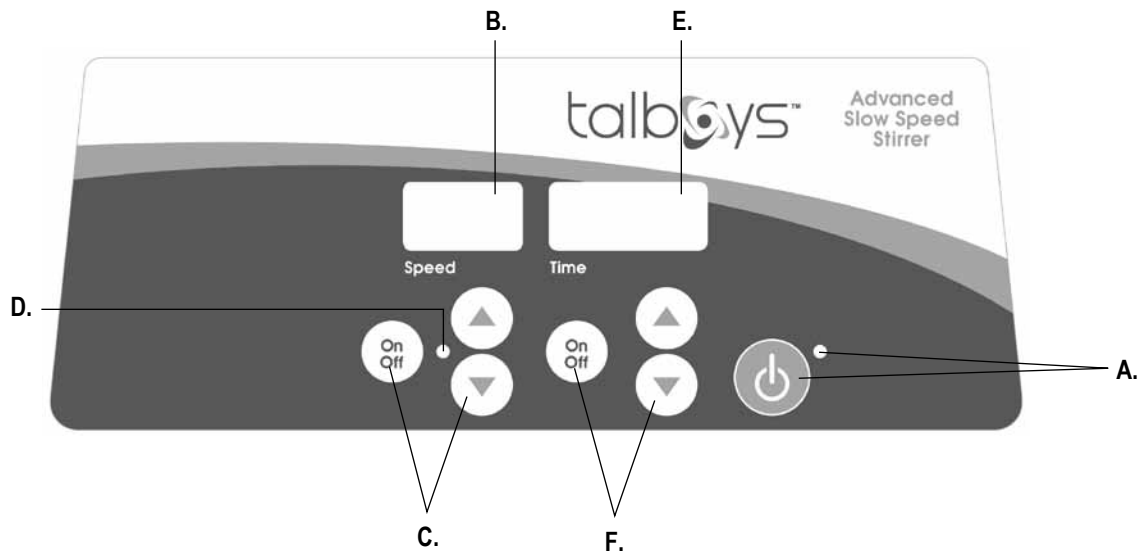
- a. When stirring has begun, the desired speed may be obtained by carefully turning the knob clockwise or counter-clockwise until reaching the desired speed. The micro-processor also monitors and regulates the stirring speed, sensing your requirements whether stirring an aqueous, viscous or semi-solid solution.

4. **Turning unit off:**

- a. To stop stirring function, turn the stir knob to the extreme counter-clockwise position. The stirrer should be kept in the off position when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or un-plug from the wall outlet.

OPERATING TIPS

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.



CONTROL PANEL - ADVANCED SLOW SPEED STIRRERS

The front panel of the Advanced Slow Speed Stirrer contains all the controls and displays needed to operate the unit.

A. Standby button/standby indicator light: The standby indicator light will illuminate when the unit is plugged in. The unit will be in standby mode. Press the standby button to activate the speed and time functions. The standby indicator light will shut off and the speed display and time display will illuminate. Press the standby button again and the unit will once again be in standby mode.

B. Speed display: Displays the speed of the stirrer.

C. Up/down arrows: for set-point control. **On/off button:** starts/stops stir function.

D. Speed indicator light: will be illuminated when the unit is stirring.

E. Time display: Displays accumulated time (continuous mode) or how much time is remaining (timed mode).

F. Up/down arrows: for set-point control. **On/off button:** starts/stops the time function. The display range is from 0 to 9,999 minutes in one (1) second increments. The display will indicate minutes and seconds until the timer reaches 99 minutes and 59 seconds (99:59), then the display will automatically display minutes up to 9,999.

OPERATING INSTRUCTIONS - ADVANCED SLOW SPEED STIRRERS

The Advanced Slow Speed Stirrers have been designed for the speed and time functions to work independently of one another. The speed can be re-set without re-setting the timer and the timer can be stopped and started without interrupting the stirring function.

1. Getting ready:

- Plug the power cord into a properly ground outlet. The standby indicator light will illuminate, verifying power to the unit.
- Place a stir bar into each vessel to be stirred.
- Place the vessel(s), with contents, onto the center of each stirring position on the top plate. This is important for stirring because the stir bar will be well within the magnetic field.
- Press the standby button to move the unit from standby mode. The standby indicator light will turn off and the speed/time displays will illuminate and display the previously used settings.



2. Setting speed:

- Press the up/down arrows below the speed display until you reach the desired speed. When you release the arrow button, the display will blink off and then on indicating the new set speed has been accepted.
- Press the on/off button to start the stirring function. The indicator light below the speed display will illuminate to indicate that stirring function is in-use and will remain lit until stirring has ceased. The microprocessor controlled ramping feature slowly increases speed until the set-point is reached which helps to avoid splashing and provides excellent low end control. The microprocessor also regulates the stirring speed, sensing your requirements whether stirring an aqueous, viscous or semi-solid solution.
- Speed adjustments can be made without interrupting stirring by using the up/down arrows below the speed display. After the change has been made and you release the arrow button, the display will blink off and then on indicating the new set speed has been accepted.

d. To stop the stirring function, press the on/off button below the speed display.

3. Setting time to zero (0:00) and continuous mode: Accumulated time.

- Press and hold the on/off button below the time display. After three (3) seconds, the display will indicate the previous set time.
- Simultaneously press both the up and down arrows, the display will indicate zero (0:00). The unit time is now set to zero (0:00) minutes. Alternately, you can use the up/down arrows to get to zero (0:00).
- Press the on/off button below the time display. The display will indicate the accumulated time. The up/down arrows will become inactive. To stop timer, press the on/off button again. **IMPORTANT:** This will **NOT** interrupt the stirring function. Press the on/off button below the speed display to interrupt the stirring function.
- To re-set, press and hold the on/off button below the time display. After three (3) seconds, the display will indicate the previous set time, which was zero (0:00).

4. Setting timed mode: Programmed time.

- Press the up/down arrows below the time display until you reach the desired time.
- Start this function by pressing the on/off button below the time display. The unit will run for the selected time, the up/down arrows will become inactive while the timer is running. The unit will stop stirring when the time display reaches zero (0:00). Four (4) audible beeps will indicate the time down function is complete. The time display will default back to the set time. To repeat for the same time, simply depress the on/off button again.

OPERATING INSTRUCTIONS CONT'D

- c. To interrupt an automatic timing cycle before it is completed, press the on/off button below the time display. The display will flash off and on to indicate the time function is on "hold". **IMPORTANT:** This will **NOT** interrupt the stirring function. Press the on/off button below the speed display to interrupt the stirring function. Restart the timer by pressing the on/off button below the time display, unit will continue counting down to zero (0:00). When the display reaches zero (0:00), you will hear the four (4) audible beeps that indicate the time down function is complete and stirring function will cease.

5. Turning unit off:

- a. To turn the unit off, press the standby button. The speed and time displays will be blank, the standby indicator light will illuminate. The stirrer should be kept in standby mode when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or un-plug from the wall outlet.

OPERATING TIPS

Built-in memory maintains the last used speed and time settings during a power interruption.

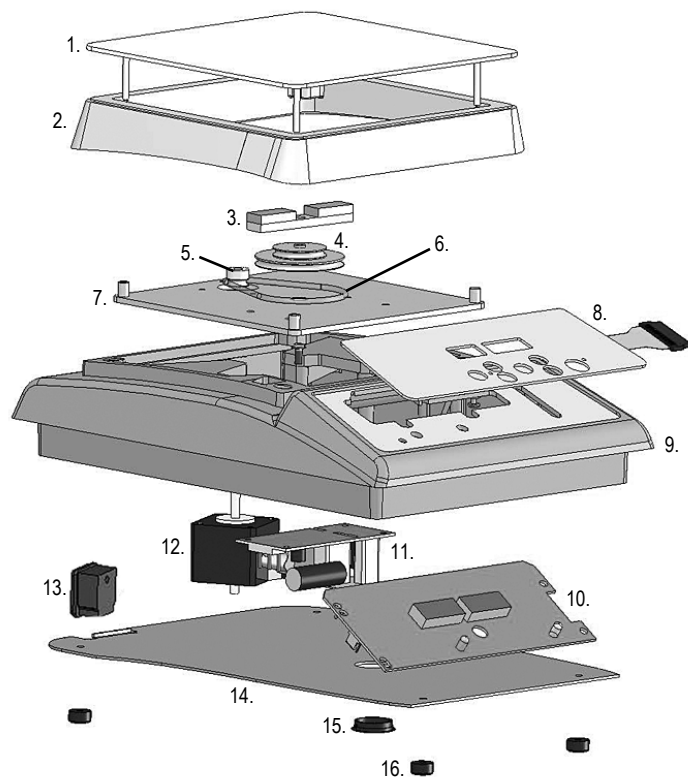
The stirrer increases speed at a steady rate until the set-point is reached, if the stir bar is too large or the liquid is too viscous, the stirrer may not reach its set-point. The set-point speed needs to be reduced.

TROUBLESHOOTING - ADVANCED SLOW SPEED STIRRERS

The following errors should **NOT** be address by the user. If any of these errors appear, contact your Talboys representative for repairs.

Error Code	Software Test	Cause
E3	Motor System Failure	<ul style="list-style-type: none">- rotor locked- motor failure- motor sensor failure- belt failure- magnetic material placed near or on the top plate surface

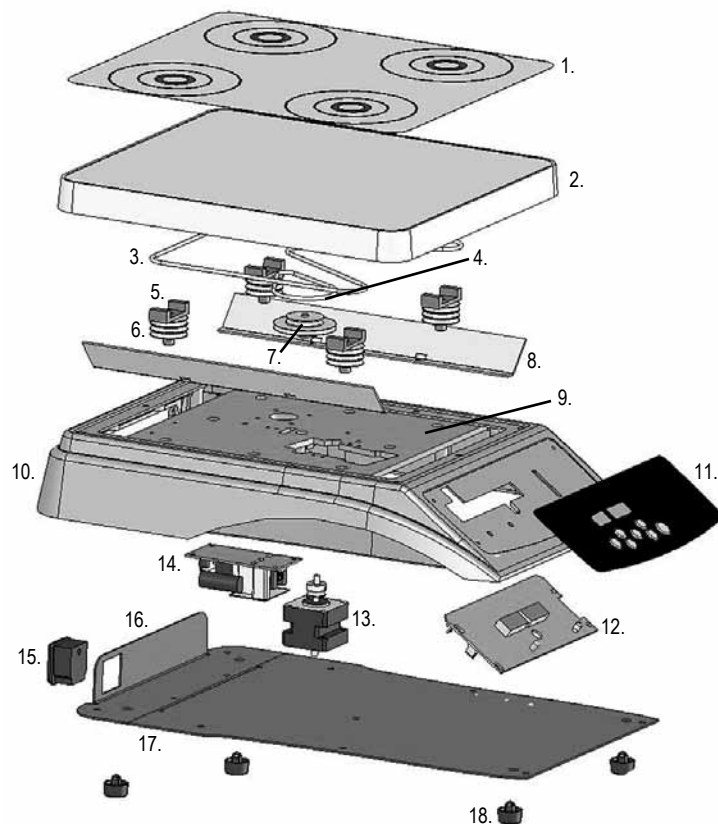
REPLACEMENT PARTS - 1 POSITION SLOW SPEED STIRRERS



DESCRIPTION	PART NUMBER
1. Top plate	286401-00
2. Top frame	286416-00
3. Magnet	286101-00
4. Pulley idler assembly	886401-00
5. Drive pulley	286407-00
6. Drive belt	586404-00
7. Mounting plate	286403-00
8. Front panel	Standard models 386475-00
Membrane switch	Advanced models 386479-00
Speed knob	Standard models 287010-00
9. Housing	286157-00
10. Processor board	Standard models 386455-00
	Advanced models 386454-00
11. Power supply	386453-00
12. DC stepper motor	380730-00
13. Power entry module	386122-00
14. Bottom plate	286131-00
15. Bottom plate plug	186109-00
16. Feet (4)	530052-00
Detachable 92" (234cm) power cord:	120V: 330100-00
	Euro plug: 330101-00
	UK plug: 330102-00
	Swiss plug: 330103-00

REPLACEMENT PARTS - 4 POSITION/10L SLOW SPEED STIRRERS

DESCRIPTION		PART NUMBER
1. Top plate overlay	4 position	386441-00
	10L	386440-00
2. Top plate		286400-00
3. Serpentine belt		586405-00
4. Drive belt		586404-00
5. Magnet	4 position	230110-00
	10L	286413-00
6. Pulley assembly		886400-00
7. Pulley idler assembly	4 position	886401-00
8. Side shield		286408-00
9. Mounting plate		286402-00
10. Housing		280303-00
11. Front panel	Standard models	386476-00
Membrane switch	Advanced models	386480-00
Speed knob	Standard models	287010-00
12. Processor board	Standard models	386455-00
	Advanced models	386454-00
13. DC stepper motor		380730-00
14. Power supply		386453-00
15. Power entry module		386122-00
16. Power entry module mounting plate		286409-00
17. Bottom plate		286410-00
18. Feet (4)		149023-00
Detachable 92" (234cm) power cord		
	120V:	330100-00
	Euro plug:	330101-00
	UK plug:	330102-00
	Swiss plug:	330103-00



Manufactured by:



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