



Hot Plate Stirrer



INSTRUCTION MANUAL

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1. INTRODUCTION

This manual provides important safety information for this Hot Plate Magnetic Stirrer. It should be kept near the equipment for quick & easy reference. This stirrer is specially designed for precise control of stirring speed and temperature; It allows gentle to vigorous mixing with speeds ranging from 200 to 2200 RPM with a maximum capacity of 10 L. The multipurpose digital display assists users by displaying various parameters like actual & set temperature, speed, mode of operation, etc.


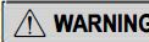
2. INTENDED USE

The hotplate stirrer is suitable to use for mixing and/or heating the liquids with the maximum capacity of 10 L. It is designed for use in general laboratories, pharmacies, schools and universities.

NOTE: Before using the instrument, please read this user manual carefully. This user manual is intended to assist with the operation and care of the unit only and not its repair. For repair please contact WestLab.





3. SAFETY INSTRUCTIONS

In order to use this equipment properly & safely, every user must read this manual & observe safety instructions.

1. Place the device on a flat, stable, clean, non-slippery and fire-proof surface.
2. Keep the instructions manual in a place where it can be accessed easily and ensure that only trained staff uses the device.
3. Beware of the possible effects of magnetic field on pacemakers, data media, etc.
4. Do not touch the hotplate surface when temperature of hotplate is over 50°C, this could result in serious burns or injury. Pay attention to the residual heat after switching off. 
5. Use both hands while moving or installing this device. Also, only move the device when it is at room temperature.
6. Make sure that power supply cord or temperature sensor cable do not come in contact with the heated mounting plate.
7. Do not place any steel or magnetic material on the top surface of the device except the recommended magnetic stir bar with beaker or flask in between. Doing this can affect the magnetism of device. 

8. Wear your personal protective equipment in accordance with the hazardous category of the media to be processed. Otherwise, there is a risk from:
 - Splashing and evaporation of liquids.
 - Ejection of parts.
 - The release of toxic or combustible gases.

3. SAFETY INSTRUCTIONS

9. The top surface must be clean and kept intact. Wear protective gloves while cleaning the device. Use a soft mild cloth to clean.
10. Do not use damaged beakers, flasks, stirring bar for operation of the unit. It may affect the efficiency of the device or result in injury.  **WARNING**
11. Reduce the speed if:
 - If the medium splashes out of the vessel.
 - If the appliance is not running smoothly.
 - If the container moves on the base plate.
12. Do not move the device when it's connected to power supply or during its operation.
13. Ensure that the product is used only for specified operation. It should not be used for shaking hazardous or reactive solutions.
14. Give specific attention to the risks associated with:
 - Flammable materials.  **CAUTION**
 - Flammable media with low steam pressure.
 - Overfilling of medium.
 - Incorrect vessel size.
 - Unstable vessel.
 - Glass breakage.
15. Note that, there is a possibility of contamination or unwanted chemical reaction.
16. **The RTD (PT 1000) sensor must always be immersed in the medium by at least 20 mm.**
17. The rating of power supply must match with the specified rating of the device.
18. The top surface will be hot after any heating operation. Do not touch the top surface when the hot LED indicator is glowing.  **DANGER**
19. Process pathogenic materials only in a closed vessel under a suitable fume hood. Do not operate the appliance in explosive atmospheres, under water or with the hazardous substance.
20. Only use liquid that does not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways.  **WARNING**
For example: Through light irradiation, through surrounding temperature etc.
21. The rotating spin bar can abrade the material of the vessel and disperse it into the medium you are working with.
22. The chemical reaction of PTFE can occur when in contact with molten or dissolved alkaline earth metals, as well as with fine partied powders of metals of the 2 and 3 group of the periodical system at temperatures above 300-400 °C. Only elementary fluorine, chlorine trifluoride and alkaline metals do attack PTFE, halogen hydrocarbons have a reversible swelling effect. Only glass-

3. SAFETY INSTRUCTIONS

coated magnetic rods should be used in combination with solute alkali metals or alkaline earth metals or at the temperature above 250°C.

23. Do not cover the device, even partially, with items such as metallic plates or sheets because it may cause the unit to overheat. Ensure that mounting plate remains clean.
24. The socket must be earthed (protective ground contact).
25. Do not use the device if the ceramic set-up surface is damaged.
e.g. scratches, splinters or corrosion. A damaged set-up surface could break if used.

4. TECHNICAL SPECIFICATIONS

Motor	DC
Number of stirring position	1
Max Stirring Quantity on Equip (H2O)	10 Liters
Speed range	200 to 2200 RPM
Speed control	10 RPM / Step
Temp. range	Room Temp. to 320°C
Safe Temp	345
Temperature control	1°C / Step
Time range	1 to 999 minutes & Infinite
Temp Accuracy (+/-K)	1
Recommended Stirring bar length	25 mm
Set-up plate dimensions	140 mm
Dimensions (L x W x H)	156 x 248 x 104 mm
Heat output	600 W
Protection class according to DIN EN	IP 21
Permissible ambient temp.	5 - 40°C
Permissible relative humidity	80%
Weight	2.2 Kg
Input Voltage	110V~2.65A, 220V~2.65A
Motor rating input & Output	5-7W
Total Power Consumption	610 W

5. FEATURES

- Powerful motor delivers constant speed under varying load conditions.
- Temperature setting from ambient to 320°C.
- Variable speed setting from 200 to 2200 RPM in increments of 10 RPM & a long timer range from 1-999 min as well as infinite mode.

5. FEATURES

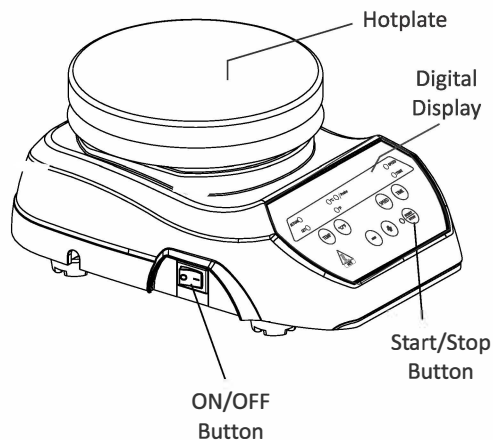
- Microprocessor controlled with last run memory feature.
- Large & clear display shows critical parameters for easy reading.
- Comes with PT-1000 temperature probe to accurately measure temperature of media.
- Small footprint saving valuable bench space.

6. ACCESSORIES

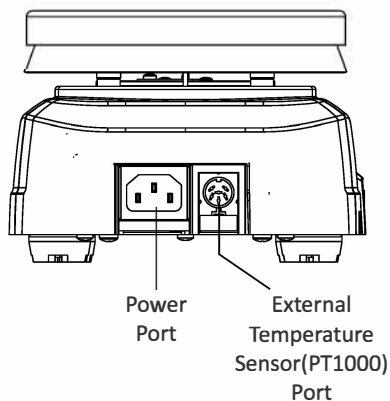
- PT 1000 Temperature probe and Probe Attachment Stand.
- Magnetic Stirring Bar.
- Power Cord.
- User Manual and Warranty Card.

7. STANDARD PARTS

Front Side



Rear Side



8. INSTALLATION

Remove the hotplate stirrer from the packaging and gently place the device on the firm & level surface. Take care while unpacking & removing all accessories. The user manual should be kept with the device for easy access. Please keep all packaging in safe storage for at least two years for warranty purpose.

8.1 LOCATION & MOUNTING

Place the stirrer on a flat and level surface & ensure that all four legs are firmly on the surface. Avoid installing on surfaces that are prone to vibration.

8. INSTALLATION

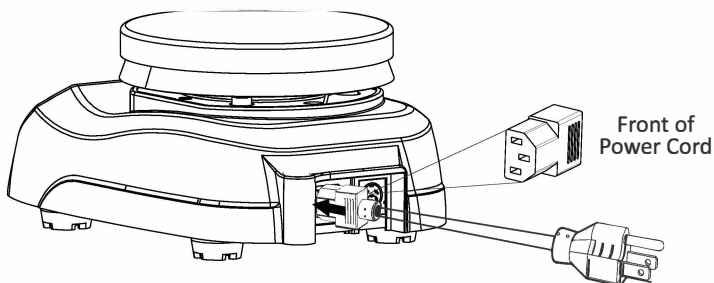
1. Ideal ambient temperature is $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$; avoid placing the unit in direct sunlight.
2. Keep clearance of at least 20 cm from all side to increase the cooling efficiency.
3. Keep the unit away from heated solution to avoid sample temperature issues.
4. Do not place the equipment at a place where it becomes difficult to operate it.

8.2 ASSEMBLING SUPPORT ROD STAND

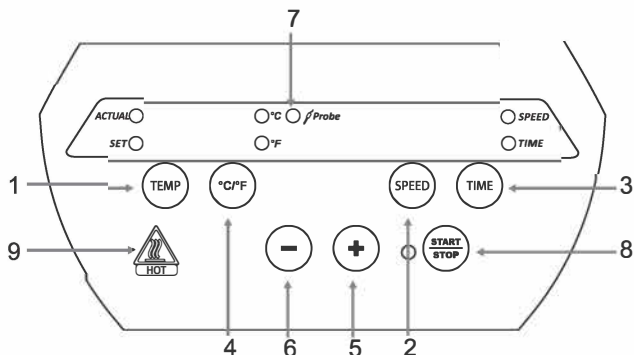
1. Screw in the support rod manually until it cannot be tightened any further.
2. Assemble the accessories mentioned in section 6 using a clamp.

8.3 CONNECTING POWER CORD

1. Connect one end of the power cord to the rear side of the stirrer and another end to the power supply as shown in the figure below.
2. Push the power cord firmly for proper connection and turn ON the main switch.
3. Make sure that input power source is according to stirrer requirement.



9. USER INTERFACE & DISPLAY



9. USER INTERFACE & DISPLAY

Display

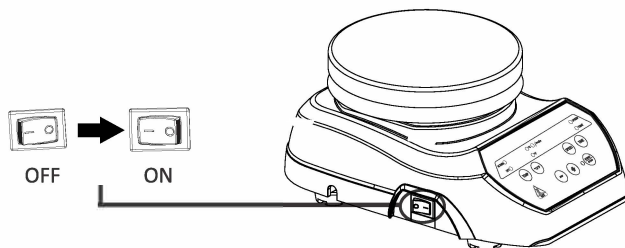
RPM	Mins	°C °F	ACTUAL	SET	PROBE
2200	999	°C °F	200	320	PROBE ●
Display shows current speed & time values	LEDs indicates in which unit temperature is displayed	Display shows Set and Actual Temperature value	LEDs indicates temp. displayed is of PROBE		

Item	Name	Function
1	Temp	Press "Temp" to select Temperature value. Then press "+/-" to set Temp value in °C.
2	Speed	Press "Speed" to select Speed value. Then press "+/-" to set Speed value in RPM.
3	Time	Press "Time" to select time value. Then press "+/-" to set Time value in minutes.
4	Temp. Selection	Press "°C/°F" to change the unit in which Temp. is displayed.
5	Increment	Press "+" to increase values.
6	Decrement	Press "-" to decrease values.
7	Probe	To display Temperature of probe at Actual Temp Display.
8	Start/Stop	Press "Start/Stop" to Start or Stop any operation.
9	HOT LED	Glows when top plate of the stirrer is HOT equal or above 50°C.

10. OPERATION

10.1 SWITCHING ON THE DEVICE

Plug the power cord into its socket on the rear panel, now connect the power cord to AC power output. Turn the unit on using the ON/OFF switch on the side, as shown in the figure. The power LED on its front panel will glow.



IMPORTANT NOTE: Values of any parameter will get set saved only after the respective display blinks for several times.

10. OPERATION

10.2 SETTING THE "SAFE TEMPERATURE"

This is a safety feature where if the temperature of heater exceeds the value saved in safe mode then operation (heating & stirring) will stop.

The safe temperature limit must always be set to at least 25 °C lower than the fire point of the media used.

Immediately after Switching ON the unit, Safe Temperature Setting mode will be initialized. The "ACTUAL" display of device will display "safe" and "SPEED/TIMER" display will show the respective value of safe temperature to be set.

By pressing +/- buttons, one can set the value of safe temperature. The maximum value of safe temperature can be set up to 345°C. After selecting the desired safe temperature value, the value gets saved automatically after blinking for 5 times in the display panel.

IMPORTANT NOTE: *The safe temperature must not be less than 25°C from ambient & it should be more than 25 °C from operational temperature for optimum performance.*

10.2 SETTING TIME

The time in the display will show in minutes. The stirrer timer set for operation is in between 1min to 999 mins and infinite. Infinite time is seen as "[]". To set time, press "TIME" button and then set the value by pressing "+/-" button. When time button is pressed, the "Mins" display will blink indicating the time value is selected. Once time value is selected, single press "+/-" will increase or decrease time value by 1min.

Long press "+/-" button to quickly increase or decrease time value. Time value gets saved after multiple blinks. The timer is a countdown timer showing remaining time left. Once time is over, the stirrer stops.

10.3 SETTING SPEED

Speed is displayed as RPM. The minimum and maximum speed of stirrer is 200 RPM and 2200 RPM respectively. When the equipment is used for the 1st time, the speed will be set to zero and shown as "0". Once speed value is selected, single press "+/-" will increase or decrease speed value by 10 RPM. Long press "+/-" to quickly increase or decrease speed value. Speed value get saved after 5 blinks.

To operate the device as a heater set the time and temperature as informed in the previous section and set the speed of the stirrer to zero by pressing "+/-".

10. OPERATION

10.4 SETTING TEMPERATURE

The temperature function will always be in OFF state when the unit is turned on. To set temperature, Single press “Temp” button to select Temperature value and then press “+/-” to set temperature value. SET temperature gets saved after display blinks for multiple times.

Temperature value can be set from Ambient temperature to 320°C. Once desired temperature value is selected, pressing “+/-” to will increase or decrease temperature value by 1°C and a long press “+/-” will quickly increase or decrease of the temperature value. Temperature value gets saved after multiple blinks.

One can select units of temperature (°C) OR (° F) by pressing the “°C/° F”, whichever temperature is selected its respective LED will glow. As per the selected unit, the Actual Value and Set value of temperature will change accordingly.

To operate the device only in stirring mode select the speed and time as mentioned in previous sections, for temperature single press the temperature button to select temperature then press “+/-” until the SET temp display show “RBL” (Ambient Temperature) then press the start button to start the stirrer.

10.5 WORKING WITH EXTERNAL TEMPERATURE SENSOR

Plug the connector of the temperature sensor to the temperature sensor socket on the rear side of the instrument. The “PROBE” LED will glow indicating that probe is selected and an ACTUAL display will automatically show the temperature of probe. Never remove or insert PT 1000 probe when the equipment is in running mode.

11. TROUBLESHOOTING

Any type of malfunction during operation can be identified by error an message on display. Proceed as follows in such cases

1. Problem : No Display.

Root Cause: No main power connection.

- Solution:
- 1) Check main power is available.
 - 2) Check that power adaptor is working properly and it is properly connected at both ends.
 - 3) If the problem still persists then call WestLab.

2. Problem : Err 2.

Root Cause: Motor blockage, over load, failure or Encoder Sensor fail.

- Solution:
- 1) Switch of the equipment, unplug and plug it back in
 - 2) If the problem still persists then call authorized service person.

11. TROUBLESHOOTING

3. Problem : Err 4.

Root Cause: Actual temp. is more than SET temp.

- Solution :
- 1) First switch off the equipment, Unplug it and plug it in again.
 - 2) If the problem still persists then call WestLab.

4. Problem : Err 5.

Root Cause: External Temperature Sensor(PT 1000) not connected/Probe not in medium.

- Solution :
- 1) Unplug the external temp. sensor and plug it back in.
 - 2) If the problem still persists then call WestLab.

5. Problem : Err 6.

Root Cause: Heater not working.

- Solution :
- 1) Restart device.
 - 2) If the problem still persists then call WestPav.

6. Problem : Err 7.

Root Cause: Internal Temperature of device exceeds 80°C.

- Solution :
- 1) Switch off the device and allow it to cool down then switch on.
 - 2) If the problem still persists then call WestLab.

12. MAINTENANCE & CLEANING

1. Before cleaning the device, allow the instrument to reach room temperature and remove the power cord from the unit.
2. To clean the housing of the device from dyes use a cloth and wipe isopropyl alcohol as a cleaning agent.
3. To clean the housing of the device from food materials or fuels, use a cloth and wipe with a gentle detergent and water.
4. Wear proper protective gloves while cleaning the instrument.
5. Be careful that no liquid enters the device during cleaning. Do not submerge the unit.

13. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions :

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This

13. WARRANTY STATEMENT

warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.

The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The buyer and its customer shall be responsible for the product or use of products as well as any supervision required for safety.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

If requested, the products should be returned in the original packaging or other suitable carton, padded to avoid damage. We will not be responsible for damage i

For you reference, make a note of serial number, date of purchase and supplier here.	
Serial No.:	Purchase Date:
Supplier: Westlab.	

14. PRODUCT DISPOSAL



In case the product is to be disposed of, return it to designated recycling facility.