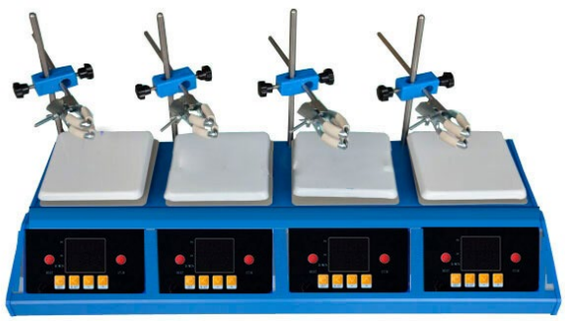
Kalstein®

Intelligent 4-position Hot Plate Magnetic Stirrer Model YR02952

Instruction Manual



Thank you very much for buying our Intelligent 4-position Hot Plate Magnetic Staring Model YR02952.

Read the “Operating Instructions” and “Warranty” before using this unit to ensure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” in a handheld location for future reference.

Warning: Before operating the unit, be sure to read carefully and fully understand the important warnings in the operating instructions.

CONTENT

INSTALLATION:

Upon receiving the 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 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 30 cm from vertical surfaces. Always place the unit on a sturdy work surface.

The Hotplate-Stirrer can be plugged into a properly grounded outlet. The 110V unit plugs into a 110-volt, 50/60 Hz source. The 220V unit plugs into a 220-volt, 50/60 Hz source...

MAINTENANCE&SERVICING:

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.

INTENDED USE:

These 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

SAFETY INSTRUCTIONS:

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

WARNING! DO NOT use the 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 350°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.

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

Ground - Protective Conductor Terminal Alternating Current

14X14cm HOTPLATE-STIRRER SPECIFICATIONS:

Top plate dimensions (L x W) for each top plate: 140 x 140mm

Electrical (50/60 Hz): 220V ± 10% / 110V ± 10%, 450 watts

Fuses: 5mm x 20mm, 5-amp quick acting

Temperature range: ambient +5°C to 400°C

Max Temperature for top plate: ambient +5°C to 300°C

Temperature stability: +/-3%

Speed range: 100 to 1500rpm

Speed stability: +/-2%

Capacity: 50- 2000mL, gross weight should not exceed 20lbs

Controls: see diagram

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

NOTE: On all units, the Max. temperature setting on the display is

300°C for hot plate top

18X18cm HOTPLATE-STIRRER SPECIFICATIONS:

Top plate dimensions (L x W) for each top plate: 180 x 180mm

Electrical (50/60 Hz): 220V ± 10% / 110V ± 10%, 550 watts

uses: 5mm x 20mm, 5-amp quick acting

Temperature range: ambient +5°C to 400°C

Max Temperature for top plate: ambient +5°C to 300°C

Temperature stability: +/-3%

Speed range: 100 to 1500rpm

Speed stability: +/-2%

Capacity: 50-5000mL, gross weight should not exceed 20lbs

Controls: see diagram

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

NOTE: On all units, the Max. temperature setting on the display is 300°C for hot plate top

23X23cm HOTPLATE-STIRRER SPECIFICATIONS:

Top plate dimensions (L x W) for each top: 230 x 230mm

Electrical (50/60 Hz): 220V ± 10% / 110V ± 10%, 750watts

Fuses: 5mm x 20mm, 5amp quick acting

Temperature range: ambient +5°C to 400°C.

Max Temperature for top plate: ambient +5°C to 300°C

Temperature stability: +/-3%

Speed range: 100 to 1500rpm

Speed stability: +/-2%

Capacity: 50-10000mL, gross weight should not exceed 20lbs

Controls: see diagram

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

NOTE: On all units, the Max. temperature setting on the display is

300°C for hot plate top

28X28cm HOTPLATE-STIRRER SPECIFICATIONS:

Top plate dimensions (L x W) for each dimension: 280 x 280mm

Electrical (50/60 Hz): 1000 watts, 220V ± 10% / 110V ± 10%.

Fuses: 5mm x 20mm, 5-amp quick acting

Temperature range: ambient +5°C to 400°C.

Max Temperature for top plate: ambient +5°C to 300°C

Temperature stability: +/-3%

Speed range: 100 to 1500rpm

Speed stability: +/-2%

Capacity: 50-20000mL, gross weight should not exceed 20lbs

Controls: see diagram

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

NOTE: On all units, the Max. temperature setting on the display is

300°C for hot plate top

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. Fix the support rod into the screw hole (at the back of the instrument); Adjust the height of the cross clip and fasten the glassware tightly with clip.

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.

c. Put the inner thermocouple on the machine.

(Inner Thermocouple)

2. Operating Instruction for Temperature Adjustment

• How to open the electrical power for each place

a. Put the inner thermocouple on the back of the machine machine as photos below (Note: connect the inner thermocouple with the machine for each place if you need 6 places work at the same time, and you can connect the inner thermocouple from 1 pc to 6 pcs with the machine when you don't need 6 place work at the same time, namely connect the inner thermocouple with any place which you need to work) .

B. PV display "K "means machine thermocouple is K type thermocouple.

And SV display "400" (means the temperature range of machine is ambient to 400 degree) at the same time.

Both of them are disappeared after within 3 seconds.

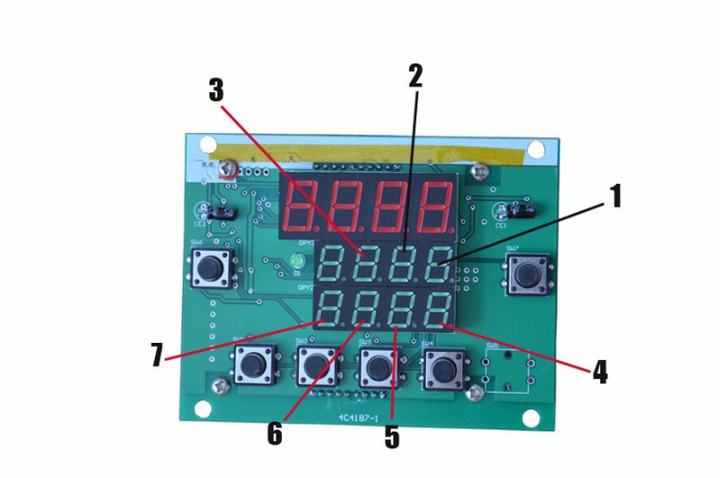
C. SV windows display the setted temperature last time, and PV windows display the measured temperature by inner thermocouple.

• • How to set Temperature value

a. Turn on the power button in the lateral

b. Press 

button, PV windows display the ambient temperature, and SV display the setted temperature last time. (Notice: The hotplate stirrer can reach the setted temperature automatically, if you don't set the temperature you need.)



c. Press 

button 3 seconds, the last figure flashes in the SV windows located 1 display

d. Press  or  to for more than 2 seconds quickly to set the temperature you required. The SV windows displays the changed value, PV windows display the ambient temperature.

e. Press Self-tunning button / translocated button 2 seconds again when the 1 temperature finished if you need higher temperature.

Then 2 flashes, press  or  to set the temperature you required for

tens digit. The SV windows displays the changed value, PV windows display the ambient temperature. (Note: Press 

again if you don't need the tens digit temperature, then setted temperature is finished)

F. Press Self-tunning button / translocated button button 2 seconds again when the 2-temperature finished if you need higher temperature.

Then 3 flashes, press  or  to set the temperature you required

for hundreds digit. The SV windows displays the changed value, PV windows display the ambient temperature. (Note: Press SET again if you don't need the hundreds digit temperature, then setted temperature is finished)

G: Press SET again when three digits finished their set. Then The SV windows displays the setted value, PV windows display the ambient temperature.

• How to use the self-tunning function.

1. Turn off the power button in the lateral when the PV windows temperature is increasing higher than setted temperature.

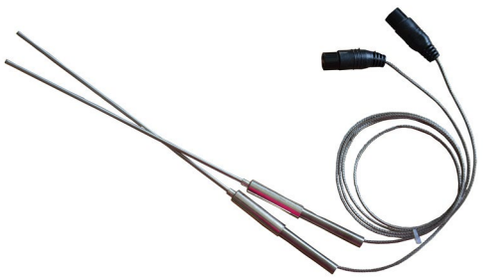
2. Wait for the machine temperature return to ambient temperature.

3. Press self-tunning 8 seconds until your setted temperature flashes.

4.Self-tunning function is finished when the SV window stop flashing, then temperature value of PV windows is the same as SV windows.

• Measured the liquid temperature adjustment

a. Pull out the inner thermocouple at the back of the product by hand. The PV windows displays HHHH, SV windows displays the setted temperature last time. (As following)



(Outer thermocouple)

(Inner Thermocouple)

b. Connect the outer thermocouple 4 holes with the hotplate stirrer 4 spins

PV windows display ambient temperature, and SV display the setted temperature.

c. Put another stainless-steel part of outer thermocouple length 20mm-30mm into the liquid you measured

PV windows display the changed temperature and SV display the setted temperature.

d. Burn out protection Function, when outer thermocouple disconnected, window display '"hhhh", green light off, hotplate stirrer stops working. When this occurred check it before using.

e. Pull out the outer thermocouple and put on the inner thermocouple again when you don't need to operate the temperature.

• Stirring Speed Operation (Two conditions)

1.When the Heating Function is working

a. Press the 

button for stirring on. (Notice: The r/min windows display the changed stir speed until reaching the setted stir speed if you don't set again.)

b. Press the set button 

2 seconds, The last figure 1 flashes in the

SV windows

c. Press the set button 

2 seconds again, The last figure 4 flashes in the r/ min windows

d. Press  or  to for more than 2 seconds quickly to set the stir speed you required. The r/min windows display the setted stir speed. The SV windows displays the changed value, PV windows display the ambient temperature.

E. Press Self-tunning button / translocated button 2 seconds again when the 4-stir speed finished if you need higher speed.

Then 5 flashes, press  or  to set the temperature you required for

tens digit.

F. You can set 6,7 like 4,5

e. Press 

button 2 seconds again when the setted stir finished.

2.**When the Heating Function isn't working.**

A. Turn on the power button in the lateral (as the following photos).

b. Press the 

button for stirring on. The r/min window display the stir speed (Notice: The r/min windows display the changed stir speed until reaching the setted stir speed if you don't set again.)

c Press the set button 

2 seconds again, The last figure 4 flashes in the r/ min windows

d. Press  or  to for more than 2 seconds quickly to set the stir speed you required. The r/min windows display the setted stir speed. The SV windows displays the changed value, PV windows display the ambient temperature.

E. Press Self-tunning button / translocated button 2 seconds again when the 4-stir speed finished if you need higher speed.

Then 5 flashes, press  or  to set the temperature you required for tens digit.

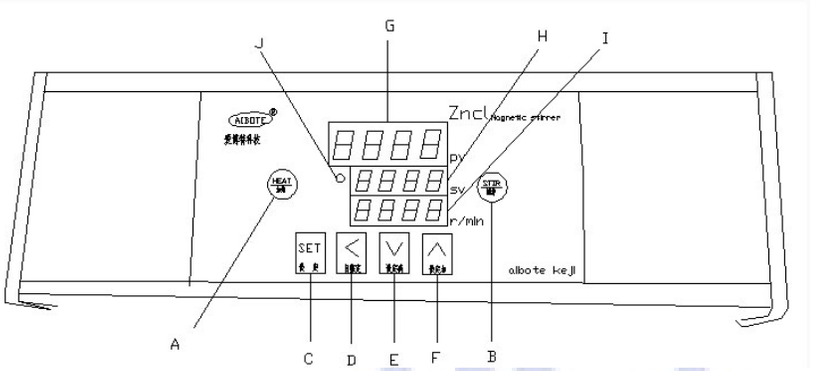
F. You can set 6,7 like 4,5.

G. Press  button 2 seconds again when the setted stir finished.

Note:

Then the r/min windows display the changed stir speed. And the figure can be stored next time if you don't set the stir speed again.

Front Panel Parts



A. Heating Power Button

B. Stir Power Button

C. Set temperature and stir speed button

D. Self-tunning Button

E. Reduce stir speed and temperature Button

F. Add Stir speed and temperature button

G. PV windows displays the surface temperature value of the plate

H. SV windows displays the setted temperature, stir speed value

I. R/min windows display the stir speed value.

Photos	Item	Quantity
	Can be Removed Holder 1. Length 280mm 2. Diameter 10mm 3. Material: stainless steel.	4 PCS
	Clamp with screw	4 PCS
	Inner Thermocouple 4 -spin	4 PCS
	Outer Thermocouple 4-spins Stainless Steel Length: 235mm Wire length: 1000mm	4 PCS
	•Designed specifically for round bottom flasks •**PTFE**-coated Length: 20mm Diameter: 10 mm	4 PCS

• Optional accessories

c. One ps clip

WARMINGS

• Use an electrical outlet that operates with a fuse or circuit breaker and a ground fault interrupt circuit (GFCI)

•Disconnect the mantle from the power supply prior to maintenance and servicing

To avoid personal injury:

• Don't use in the presence of flammable or combustible materials, fire or explosion may result.

• Refer servicing to qualified personal only.

•Flask or vessels should be handled with care. Appropriate safety clothing, glasses,

gloves, and coats should be worn when operating all mantles.

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.

CAUTION! The heating mantle 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 heating mantle.

DO NOT operate the unit at high temperatures without a vessel/sample into the heating mantle.

The symbol on the product or on its packaging indicates that this product may not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please search http://www.hp.com/go/recyle.