Heating Mantle (Digital / Magnetic)

FAITHFUL®

User Manual

98-I-B Manual Heating Mantle
98-II-B Magnetic Heating Mantle
98-I-C / 98-II-C Digital Heating Mantle
98-III-B Magnetic and Digital Heating Mantle
98-IV-B Rows Manual Heating Mantle
98-V-B Rows Magnetic Heating Mantle

Please read the User Manual carefully before use, and follow all operating and safety instructions!

The website: www.labinstrument.cn
E-mail : info@labinstrument.cn
Service E-mail: service@labinstrument.cn

Huanghua Faithful Instrument Co.,Ltd
No.7 Road, Economic & Technique Zone, Huanghua City,
Hebei, P.R.China Postcode: 061100
Tel: 86-317-5337349 5327117
Fax: 86-317-5338349
E-mail: info@labinstrument.cn
Service : service@labinstrument.cn
Website: www.labinstrument.cn

Distributed by:
Huanghua Faithful Import & Export Co.,Ltd
Complex Building Qingqing Homegarden, Huanghua City, Hebei, P.R.China

Contents

Preface

Thank you for purchasing our products: Heating Mantle. Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

Service

When help needed, you can always contact the service department of manufacturer for technical support in the following ways:

Huanghua Faithful Instrument Co.,Ltd
No.7 Road, Economic & Technique Zone, Huanghua City, Hebei Province,P.R. China
Postcode：061100
Tel： 86-317-5337349 / 5327117
Fax: 86-317-5338349
Service E-mail: service@labinstrument.cn
Webstie: www.labinstrument.cn

Warranty

You have purchased a Faithful instrument. This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 12 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claims under the warranty please contact with us. You may also send the instrument direct to our works or we send you the spare parts to help you resolve this problem in next order, enclosing the invoice copy and by giving reasons for the claim. You would be solely liable for freight costs.

1 Safety Instructions

	Connect the device to an earthed power supply to ensure safety of machine and experiment; connect the power as the machine required.
	This equipment is forbid to use in inflammable and explosive, poisonous and strong corrosive experiments.
	Make sure horizontal installation.
	Non-professionals are not allowed to disassemble and repair this machine.
	Pay attention to the set temperature while dealing with the inflammable matters.
	Make sure dry the resin container, if the temperature is setting too high by accident, the container would be dissolved and then fall on the heater to cause fire.
	Overfilled of sample will lead to overheat of working room under parts, which will dissolve the inflammable material and cause fire.
	While the machine is working, don' t touch the top, and exhaust port of the device to protect from high-temperature burns.
	Read the instruction book before operation.

Table 1

- When working, ware the personal guard to avoid the risk from:
  – Splashing and evaporation of liquids
  – Release of toxic or combustible gases.
- Set up the instrument in a spacious area on an stable, clean, non–slip, dry and fireproof surface, do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- Temperature must always be set to at least 25℃ lower than the fire point of the media used.
- Beware of hazards due to:
  – Flammable materials or media with a low boiling temperature
  – Overfilling of media
  – Unsafe container
- Process pathogenic materials only in closed vessels.
- Check the instrument and accessories before hand for damage each time you use them. Do not use damaged components. Safe operation is only guaranteed with the accessories described in the "Listing of Items" chapter. Accessories must be securely attached to the device and cannot come off by themselves. Always disconnect the plug before fitting accessories.
- Ensure that the external temperature sensor is inserted in the media to a depth of at least 20mm.
- When using metal vessels, do not place the temperature sensors on the bottom of the vessel. Placing sensors on the vessel bottom can cause excessively high temperature to be measured especially in media which have poor conductivity. The tip of the measuring sensor must be at least 5mm from the vessel bottom, a distance of 10mm is ideal.
- The instrument can only be disconnected from the main power supply by pulling out the mains plug or the connector plug.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the mains power supply cable does not touch the heating base surface. Do not cover the device.
- Keep away from high magnetic field.

2 Proper Use

The instrument is designed for mixing and / or heating liquids in schools, laboratories or factories. This device is not suitable

for using in residential areas.

3 Inspection

3.1 Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. If it happens, please contact manufacturer for technical support.

Note:

If there is any apparent damage to the system, please do not plug it into the power line.

3.2 Listing of Items

The packing includes the following items:

98–I–B Manual Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
User Manual	1

Table 2

98–II–B Magnetic Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
User Manual	1
Stir bar	1

Table 3

98–I–C / 98–II–C Digital Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
User Manual	1
Rack with Rods	1

Table 4

98–III–B Magnetic and Digital Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
Stirrer bar	1
User Manual	1
Rack with Rods	1

Table 5

98–IV–B Rows Manual Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
User Manual	1

Table 6

98–V–B Rows Magnetic Heating Mantle

Items	Qty
Main unit	1
Power Cable	1
Stirrer bar	Rows
User Manual	1

Table 7

Please check the instrument and appendix with the packing list when you first open the instrument packing case. If you find there is something wrong with the instrument and the appendix, do contact the vendor or the producer.

4 Trial Run

- Make sure the required operating voltage and power supply voltage match.
- Ensure the socket must be earthed reliably.
- Ensure the power be off
- Plug in the power cable, ensure the power be on and begin initializing.
- Add the medium into the vessel with a stirring bar if with the magnetic stirrer function.
- Put the vessel on the work plate.
- Adjust the stirring speed and start stirring if with the magnetic stirrer function..
- Observe the stirring bar and LCD display if with digital function.
- Adjust the temperature and start heating.
  Observe the real temperature on LCD display if with the digital function.
  Stop the heating and stirring functions.

If these operations above are normal, the device is ready to operate. If these operations are not normal, the device may be damaged during transportation, please contact manufacture for technical support.

5 Operating Modes

5.1 98–I–B Manual Heating Mantle and 98–IV–B Rows Manual Heating Mantle:

- Place the equipment on level worktable, put the container with liquid inside into heating mantle.
- Switch on the power accords with the machine, the power indicator light will be lighten; turn on the power of regulation knob, and turn the knob clockwise, the working indicator light will be lighten; in the process of regulating, the light intensity changes according to different regulation position, and the temperature rises as well. turn the knob anticlockwise to adjust the temperure down.

Notes:
- The power must accord with the machine.
- Make sure the power line has safety distance from the heating mantle.
- When the machine meets fault, please cut off the Electricity first.

Figure 1

5.2 98–II–B Magnetic Heating Mantle and 98–V–B Rows Magnetic Heating Mantle:

- Place the equipment on level worktable, put the container with liquid inside into heating mantle.
- Switch on the power accords with the machine, the power indicator light will be lighten; turn on the power of regulation knob, and turn the knob clockwise, the working indicator light will be lighten; in the process of regulating, the light intensity changes according to different regulation position, and the temperature rises as well.
- The same to adjust the magnetic stirring power. anticlockwise to adjust the temperure down.

Notes:
- The power must accord with the machine.
- Adjust the speech slowly, please adjust the speech when too high speech makes the stir breakaway
- Make sure the power line has safety distance from the heating mantle.
- When the machine meets fault, please cut off the Electricity first.

Figure 2

5.3 98–I–C Digital Heating Mantle :

- Place the equipment on level worktable, put the container with liquid inside into heating mantle.
- Install the Sensor Rack with Stainless Rods on the heating mantle back holder.
- Put the temperature sensor into the liquid.
- Turn the knob anticlockwise to the left place, Setting the inquiry temperature and the equipment will working slowly.
- If the temperature on the screen can' t up to the setting temperature, turn the knob clockwise slowly, the real temperature on the screen will increase slowly.
- If the temperature still can' t up to the setting temperature, do this process again.
- If the temperature higher than the setting temperature, turn the knob anticlockwise to make the temperature down.

Notes:
- The power must accord with the machine.
- Make sure the power line has safety distance from the heating mantle.
- When the machine meets fault, please cut off the Electricity first.

Figure 3

5.4 98–II–C Digital Heating Mantle :

- Place the equipment on level worktable, put the container with liquid inside into heating mantle.
- Install the Sensor Rack with Stainless Rods on the heating mantle back holder.
- Put the temperature sensor into the liquid.

- Press the S keyboard comes into the setting condition. Adjust the temperature by press the up and down keyboard.
- Press the S keyboard again to finish the temperature setting the equipment comes into the working condition.

Notes:
- The power must accord with the machine.
- Make sure the power line has safety distance from the heating mantle.
- When the machine meets fault, please cut off the Electricity first.

Figure 4

5.5 98-III-B Magnetic and Digital Heating Mantle:

- Place the equipment on level worktable, put the container with liquid inside into heating mantle.
- Install the Sensor Rack with Stainless Rods on the heating mantle back holder.
- Put the temperature sensor into the liquid.
- Press the S keyboard comes into the setting condition. Adjust the temperature by press the up and down keyboard.
- Press the S keyboard again to finish the temperature setting the equipment comes into the working condition.
- Turn the knob clockwise and anticlockwise to adjust the magnetic stirrer power.

Notes:
- The power must accord with the machine.
- Make sure the power line has safety distance from the heating mantle.
- Adjust the speech slowly, please adjust the speech when too high speech makes the stir breakaway
- When the machine meets fault, please cut off the Electricity first.

Figure 5

6 Faults

- When working, ware the personal guard to avoid the risk from:
  - Instruments can't be power ON
  - Check whether the power cable is plugged
  - Check whether the fuse is broken or loose
- Temperature cannot reach set point or stirring can't be starts when adjust the control knob
  - Check whether the heating wire broke during transport
  - Check whether the controller broke during transport

If these faults are not resolved, please set the instruments to factory default setting, or take the unit to your technical service center, or contact with the manufacturer.

7 Maintenance and Cleaning

- Proper maintenance can keep instruments working in a good state and lengthen its lifetime.
- Be careful not spray the cleanser into the instrument when cleaning.
- Unplug t he power line when cleaning.
- Only use cleanser that we advised as below:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside
Cosmetics	isopropyl alcohol water containing tenside
Foodstuffs	isopropyl alcohol Water containing tenside
Fuels	Water containing tenside

Table 8

- Wear the proper protective gloves during cleaning of the instrument.
- Before using other method for cleaning or decontamination, the user must contact the manufacturer ascertain that this method does not destroy the instrument.
- The instrument must be cleaned and put it into the initial packaging carton before sending to service for repair, avoiding the contamination of hazardous.
- Use the instrument in a dry clean room and temperature stable environment.

8 Storage and transportation

- Keep it in dry and clean room with good ventilation and no corrosive gas
- prevent it from wetting by the rain and avoid violent collision in transportation.

9 Main technical parameters

Model	Capacity (ml)	Voltage (V)	Max. Temp.	Power (W)	Working Time	Exterior Size (mm)	Packing Size (mm)	N.W. (KG)	G.W. (KG)
98-I-B	50	200-240V /50-60Hz And 100-120V /50-60Hz	450℃	80	Continuous	Φ200x160	230x230x170	2	2.5
	100			100					
	250			150					
	500			250					
	1000			350		Φ260x200	290x290x220	3.5	4
	2000			450		Φ300x230	330x330x250	4	5
	3000	200-240V /50-60Hz		600		Φ300x250	330x330x270	6	7
	5000			800		Φ350x270	380x380x290	7	8
	10000			1200		Φ420x320	450x450x340	10	12
	20000			2500		450x450x380	500x500x400	21	26
98-II-B	50	200-240V /50-60Hz And 100-120V /50-60Hz		80		Φ200x160	230x230x170	2.5	2.8
	100			100					
	250			150					
	500			250					

Model	Capacity (ml)	Voltage (V)	Max. Temp.	Power (W)	Working Time	Exterior Size (mm)	Packing Size (mm)	N.W. (KG)	G.W. (KG)
98-II-B	1000	200-240V /50-60Hz	450℃	350	Continuous	Φ260x200	290x290x220	4	4.5
	2000			450		Φ300x230	330x330x250	5	6
	3000			600		Φ300x250	330x330x270	7	8
	5000			800		Φ350x270	380x380x290x	9	10
	10000			1200		Φ420x320	450x450x340	12	14
	20000			2400		450x450x380	500x500x400	23	28
98-I-C	50	200-240V /50-60Hz And 100-120V /50-60Hz		80		Φ200x160	230x230x170	2.5	2.8
	100			100					
	250			150					
	500			250					
	1000			350		Φ260x220	290x290x220	5.5	6
	2000			450		Φ300x230	330x330x250	6.5	7
	3000	200-240V /50-60Hz		600		Φ300x250	300x330x270	7.5	8
	5000			800		Φ350x270	380x380x290	8.5	9.2
	10000			1200		Φ420x320	450x450x340	9.8	12
	20000			2500		450x450x380	500x500x400	21	26
98-II-C	50	200-240V /50-60Hz And 100-120V /50-60Hz		80		Φ220x165	230x215x195	2.5	2.8
	100			100					
	250			150					
	500			250					
	1000			350		Φ270x220	280x280x300	5.5	6
	2000			450		Φ330x230	345x290x350	6.5	7

Model	Capacity (ml)	Voltage (V)	Max. Temp.	Power (W)	Working Time	Exterior Size (mm)	Packing Size (mm)	N.W. (KG)	G.W. (KG)
98-II-C	3000	200-240V /50-60Hz	450℃	600	Continuous	Φ340x245	365x365x295	7.5	8
	5000			800		Φ350x250	390x390x310	8.5	9.2
	10000			1200		Φ425x320	470x470x380	9.8	12
	20000			2400		550x510x390	540x540x420	21	26
98-III-B	100	200-240V /50-60Hz And 100-120V /50-60Hz		100		Φ220x165	230x215x195	2.5	2.8
	250			150					
	500			250					
	1000			350		Φ270x220	280x280x300	5.5	6
	2000			450		Φ330x230	345x290x350	6.5	7
	3000	200-240V /50-60Hz		600		Φ340x245	365x365x295	7.5	8
	5000			800		Φ350x250	390x390x310	8.5	9.2
	10000			1200		Φ425x320	470x470x380	9.8	12
	20000			2400		550x510x390	540x540x420	21	26
98-IV-B Two Rows	100	200-240V /50-60Hz And 100-120V /50-60Hz		100x2		280x140x106	320x180x190	4	5
	250			150x2		320x160x170	360x190x200	4	5
	500			250x2		360x180x180	400x220x210	4	5
	1000			350x2		420x210x200	460x250x230	7	8
98-IV-B Four Rows	100			100x4		530x140x160	570x180x190	8	10
	250			150x4		610x160x170	650x190x200	8	10
	500			250x4		690x180x180	730x220x210	8	10
	1000			350x4		810x210x200	850x250x230	14	16

Model	Capacity (ml)	Voltage (V)	Max. Temp.	Power (W)	Working Time	Exterior Size (mm)	Packing Size (mm)	N.W. (KG)	G.W. (KG)
98-IV-B Six Rows	100	200-240V /50-60Hz And 100-120V /50-60Hz	450℃	100x6	Continuous	820x140x160	860x180x190	12	15
	250			150x6		940x160x170	980x190x200	12	15
	500			250x6		1060x180x180	1100x220x210	12	15
	1000			350x6		1240x210x200	1280x250x230	21	24
98-V-B Two Rows	100			100x2		280x140x106	320x180x190	4	5
	250			150x2		320x160x170	360x190x200	4	5
	500			250x2		360x180x180	400x220x210	4	5
	1000			350x2		420x210x200	460x250x230	7	8
98-V-B Four Rows	100			100x4		530x140x160	570x180x190	8	10
	250			150x4		610x160x170	650x190x200	8	10
	500			250x4		690x180x180	730x220x210	8	10
	1000			350x4		810x210x200	850x250x230	14	16
98-V-B Six Rows	100			100x6		820x140x160	860x180x190	12	15
	250			150x6		940x160x170	980x190x200	12	15
	500			250x6		1060x180x180	1100x220x210	12	15
	1000			350x6		1240x210x200	1280x250x230	21	24

10 Working condition

Ambient temperature: 5~40℃;
Ambient humidity: ≤90%;
Voltage: 220V ± 10%, 50/60Hz or 110V+/-10%, 50/60Hz