

**TISCH**  
S c i e n t i f i c



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## Magnetic Stirrer Hotplate



# Table of Contents

1.What's in the box.....	2
2.Technical specifications.....	3
3.Safety precautions.....	4
4.Operation guide.....	5
5.Warranty Info.....	6

# 1.What's in the box?

One of the units below:



Besides the hotplate, you should have also received

(note that stirring bar is only included with magnetic stirrer models):



① Power cord



③ Support



⑤ Magnetic stirring bar



② Spare Fuse



THPMS-19 & THPMS-19T only





④ Temp probe

⑥ User manual

**PLEASE CONTACT US IF YOU ARE MISSING ANY OF  
THESE COMPONENTS**

## 2. Technical Specifications

This hot plate contains an integrated magnetic stirrer, ideal for use in a laboratory. The dual controls allow you to set heat output and stirring speed independently. The hot plate can reach a maximum temperature of 350 °C (662 F) (depending on model) with an output of 180 watts. The magnetic stirrer is adjustable from 100 to 1600 rpm.

Magnetic Hotplate Stirrer Technical Data				
Model	THPMS-12	THPMS-17	THPMS-19	THPMS-19T
Picture				
Plate size	12*12 CM	17*17CM	19*19CM	19*19CM
Voltage	Both 110 and 220 Volts			
Heating Temperature	280°C	300°C	350±10%	350±10%
Stirred volume	1L	3L	5L	5L
Speed	0 - 1600 rpm	0 - 1600 rpm	0 - 1600 rpm	200 - 2000 rpm
Plate material	Aluminum Surface	Aluminum Surface	Aluminum Surface	Ceramic Surface

### How to replace the fuse:

Check the Fuse regularly to see if it is in good condition or if you experience issues running your machine

Where to find the fuse:



1. Remove the fuse compartment from underneath the plug socket. (Achieved by using a flat-head screwdriver to gently push out the fuse holder)
2. Replace the fuse only with a F10AL250V fuse.
3. Replace the fuse compartment, ensure that it is properly affixed, and run the machine normally

### 3.Safety Precautions



**Please read these thoroughly before operation:**

- Do not unplug the power connector while the device is working
- Do not unplug power supply while your hands have liquid on them
- Do not clean or perform maintenance on the machine while it is powered on and plugged in
- Do not use the device on and unsteady or unlevel work surface
- Always wear proper PPE, and follow safety protocols of your institution, while operating

- Be very careful with the hotplate turned on. Do NOT touch the aluminum surface as it gets very hot and can cause severe burns.

## 4. Operation Guides

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### **How to assemble the device:**

To set up the support stand: Screw the two rods together making one support rod. Make sure they fit tightly. Insert the slotted end of the rod into the plastic holder on the back of the base. Slip the right-angle clamp onto the support rod and tighten the knob. Slide in the thermometer holder and tighten the other knob. The height of the thermometer holder can be adjusted by moving the clamp up or down on the support.

### **To operate the non-digital device:**

#### **To use the hot plate:**

1. Make sure the knobs are turned off. The white mark on each knob should be pointing down.
2. Connect the power cord to the back of the base. The base should be set on a hard surface, like a countertop or table.
3. Plug the other end of the power cord into a standard outlet. Make sure the outlet is safe and the power cord is not twisted.
4. Flip the power switch on the right side of the base. The line (-) indicates on and the circle (o) indicates off.

**WARNING:** Be very careful with the hotplate turned on. Do NOT touch the aluminum surface as it gets very hot and can cause severe burns.

5. Rotate the right knob in a clockwise direction. At maximum power the hot plate will take around 20-30 minutes to boil a large beaker of water. The surface in the middle of the plate can reach 350°C (662°F) (depending on the model) when the knob is turned all the way to maximum power.
6. Adjust the knob to keep the desired heat level, using a thermometer to check the temperature of the solution.
7. To turn off the hot plate, rotate the knob counterclockwise until you hear a click and the white mark is pointing down.
8. Make sure both knobs are off and flip the power switch off. Unplug the cord from the outlet by pulling on the plug, not the cord.

#### **To use the magnetic stirrer:**

1. Drop the stir bar into the solution and let it settle.

2. Turn on the magnetic stirrer by flipping the power switch on (-), then rotating the left knob in a clockwise direction. **Please note that the hotplate will not heat if the probe is not connected.**
3. The further you rotate the knob, the faster it will spin to stir your solution.
4. To turn off the magnetic stirrer, rotate the knob counterclockwise until you hear a “click” and the white mark is pointing down. Flip the power switch off. Unplug the device.
5. Remove the stir bar with a metal utensil. The stir bar will stick to it so you can lift it out easily.

### To operate the digital device:



1. **【TEMP】 key:** set or view the temperature setting value and its internal parameters.  
**【SPEED】 key:** set or view the speed setting value and its internal parameters.  
**【TIME】 key:** set the running time. After the timing is over, the time setting operation can restart the temperature control operation.  
**【▲/SHIFT】 key:** In the *non-set state*, hold this key for 3 seconds to switch between 2 channels of temperature and save it automatically; in the *set state*, click this key to increase the set value, and hold this key to increase the set value continuously.  
**【▼/Auto-tuning】 key:** In the *non-set state*, press this key for 6 seconds to enter the temperature auto-tuning selection state; in the *set state*, click this key to decrease the setting value, and hold this key to decrease the setting value continuously.  
**【SWITCH】 key:** on-off key of the stirring (speed).

Place the machine on a level surface, connect the power supply and turn on the switch on the side of the machine.

### 2. Setting of temperature, speed and time

> In the *non-set state*, press the [TEMP] key to enter the temperature setting mode. When the temperature display window value flashes, press the [▲] key and [▼] key to set the desired value and then press [TEMP] to set the value. The system will automatically save and return to normal display state.

> In the *set state*, the method of speed and time is the same as above.

### 3. Timing function

> Timing adopts a countdown mode. When selecting the timing, you can choose to run either timing mode or constant temperature timing mode. Timing can be set in hours or minutes.

> When the running time is set to "0", it means that the timing function is not turned on and the machine is in continuous operation mode.

> When the running time is set to greater than "0," it means that the timing function is turned on (if the running timing mode is selected).

#### **4. Agitating speed setting**

> After turning the power on, the speed window will display "OFF." Press [SWITCH] to enter the stirring speed setting mode.

#### **5. Temperature control switching function**

In the *non-set state*, hold the [▲] key for 3 seconds to switch between the liquid temperature (A mode) and the heating plate surface temperature (B mode). When switched to the liquid temperature control mode, "A" lights up. When switched to the heating plate control mode, "B" lights up.

#### **6. Overtemperature alarm**

> If a temperature deviation and/or an overtemperature occurs, a buzzer will beep continuously, the "ALM" character will light up, and the machine will stop heating.

#### **7. Abnormal temperature measurement alarm**

> If "E-X" is displayed in the upper row of the display window, it means that the temperature sensor is faulty, the temperature exceeds the measuring range, or the machine is faulty. The machine will automatically stop heating, the buzzer will beep continuously, and the "ALM" character will light up. Please check the temperature sensor and wiring carefully.

#### **NOTE:**

E-1: indicates failure of the liquid temperature (A mode); temperature probe failure

E-2: Indicates the heating plate surface (B mode) is faulty; the machine is faulty

E-3: indicates that the ambient temperature is faulty

#### **NOTE:**

Press any key to turn off the buzzer.

### **System tuning**

If the temperature control effect is not ideal for the application, the system can be auto-tuned.

**The user should be aware that the temperature will have a large overshoot during the auto-tuning process.** In the *non-set state*, hold the [▼] key for 6 seconds to enter the system auto-tuning selection state. The temperature window will display the auto-tuning prompt (Indicator "AT"). The speed window will display the value; click the [▲] and [▼] keys to choose to display "0" or "1."

When set to "1," click the [TIME] key and the controller will enter the system into auto-tuning state. The [AT] character flashes after the auto-tuning is complete. When the [AT] character stops flashing, the controller will get a better set of system PID parameters. The parameter values will be saved automatically.

During the process, hold the [▼] key for 6 seconds to stop the auto-tuning program.

Note that the "Temperature" key is invalid during system auto-tuning.

## **5. Warranty Info**

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Tisch Environmental Inc. (dba: Tisch Scientific) conditionally warrants this instrument when used for its intended purpose for a 1-year period after the date of purchase. The warranty coverage is limited to manufacturing defects or product performance defects.

The subject warranty shall be voided under the following conditions but not limited to issues being caused by misuse or abuse of the product or customer tampering with the instrument or both.

Valid warranty claims as determined by Tisch Scientific will be dispositioned by replacement or repair.

**Do not attempt to repair on your own.**

**Please contact us at 513-467-0413 or [support@tisch-env.com](mailto:support@tisch-env.com) for RMA info.**

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