

Features

- Large heated surface area
- PID – Algorithmic temperature control with self adjustment and high precision
- Internal or external probe
- Heavy duty magnetic stirrer
- Brushless stirrer motor – sparkless, durable and quiet
- Digital display
- PBT high temperature flame retardant plastic shell
- Over-temperature protection
- Easy to use and read control panel

Operation

Fill with solution. (no higher than the rim)

Add the stirrer magnet to the reaction flask / boiling flask.

Attach the probe to the input port. (on rear)

Connect all glass pieces.

Connect the power cord to a 110V 15A outlet. (10L = 20A)

Turn the mantle ON using the power switch.

Press “Heat” to enable the heater.

Adjust heat setting using the “+” and “-” below “Heat” button.

Press “Stir” to enable the stirrer.

Adjust stirring setting using the “+” and “-” below “Stir” button.

When finished turn the heat off but leave the stirrer on to cool.

ZNCL-TS-2000
ZNCL-TS-5000
ZNCL-TS-10000

Intelligent Digital Magnetic Stirring Mantle

Instruction Manual

Operation (continued)

If self adjustment is needed note that it reduces time to heat, accuracy is improved when the mantle is in a different altitude or the amount of liquid reaches above the edge of the mantle.

Only start self adjustment when the mantle is cool.

To start self adjustment hold the + heat key for 5 seconds until “Lc” is displayed. Change the value to “27” then press “Heat” Change the value from “0” to “1” Press “Heat” again to return to the main menu.

When the volume of liquid is large or the viscosity is high increase the stirrer speed.

Internal probe can be used by plugging in the black jumper included.

External probe can be used by plugging in the stainless steel probe, tightening the locking collar on to the port and inserting the probe into the flask.

The mantle has thermocouple break protection, turning off the heater if the probe goes bad. The display will show “----” if activated.

Jumping stir bar magnet can be remedied by adjusting the stirrer to a slower speed. Then turning off the stirrer and waiting a moment before starting it again.

Technical Specifications

(2L, 5L) 110V 15A NEMA 5-15p | (10L) 110V 20A NEMA 5-20p

60hz Single Phase

Speed: 50-1,800 RPM

Motor Power: 40W 14-24V DC

Wattage: (2L) 650W (5L) 1,100W (10L) 1,500W

Temperature accuracy: +1°C, - 1°C

Control method: PID

Temperature limit: 380°C (sets for 400°C)

Heater wire: Cr20Ni80

Alkali-free glass fiber (temperature limit of 450°C)

Caution

Ensure that the mantle has a reliable ground connection

Do Not use only heating, always use the stirrer when heating.

This helps keep the motor cool as well as keep the temperature accurate.

After running the mantle at high temperatures turn heating off first and leave the stirrer on until the mantle has cooled down.

The mantle gets very hot, do not touch the glass fiber while hot.

Follow the burn-in process sheet included in the box.

1. Plug in unit in a very well ventilated area.

2. Plug in the black jumper into the probe port

3. Turn on the mantle

4. Set the temperature to 380°C

5. Run the mantle for 5 minutes.

6. Turn off the mantle and let it cool to room temperature

This process may produce excessive smoking and discoloration of the mantles glass fiber bowl due to leftover oils from manufacturing.

The mantle may make creaking and cracking noises due to the design of the heater wire, this is normal.

Wet hands, spills and high humidity environments may allow electrical induction to travel through the insulating cover. Ensure proper ground and do not use if the leak is severe.

Store the unit in a dry and non-corrosive area.

If the mantle does not power on and the outlet is functioning properly, call or email:

USA Lab

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sales@usalab.com

This manual and related products may be reformed without notice.