

◆ During operation wear the necessary personal protections to avoid the risk of possible damages as:

- Burns caused by splashing and evaporation of liquids
  - Intoxication caused by release of toxic or combustible gases.
- ◆ Set up the instrument in a spacious area on a stable, clean, non-slip, dry and fireproof surface; do not operate with the equipment in explosive atmospheres, with hazardous substances or under water.
- ◆ In models with stirring function, gradually increase or reduce the speed if:
- The stirring bar breakaway because of too high speed
  - The instrument is not running smoothly
- ◆ Temperature must always be set to at least 50°C lower than the ignition point of the media used.
- ◆ Beware of hazards due to:
- Flammable material or media with a low boiling temperature
  - Overloading of media
  - Unsafe container
- ◆ Process pathogenic materials only in closed vessels.
- ◆ In case the stirrer bar used is made of PTFE, please note:
- ◆ Elemental fluorine, three fluoride and alkali metals will corrode the PTFE, and halogen alkynes make it expansion at room temperature. Molten alkali, alkaline earth metals or their solution, as well as the powder in second and third ethnic of the Periodic Table of elements will have chemical reaction with PTFE when temperature reaches 300 ~400 °C
  - ◆ Before operation, always check the instrument and accessories are not damaged.
  - ◆ 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.
  - ◆ The instrument can only be disconnected from the main power supply by pulling out the connector plug, not the cable.
  - ◆ The voltage stated on the label must correspond to the main power supply.
  - ◆ Keep away from high magnetic field.
  - ◆ Respect the minimum safety distances between devices, between the device and the wall and above the assembly (min.100 mm).

## 2. FEATURES

The equipment is designed for heating and/or stirring mixtures of liquids in schools, laboratories and industry. It is not recommended domestic use of this equipment or use in environments that can be hazardous for user or instrument, according to what is stated in chapter 1.

Main features:

- ◆ Heat resistant and alkali-free glass fiber has been used as isolating material and as hea-

## 10 MAIN TECHNICAL FEATURES

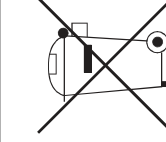
Code	Max. volume	Max. speed	Max. temp.	Heating power	Voltage
<b>Series 655, Analogical regulation</b>					
50655150	50 mL	-	370° C	100 W	220v/50hz
50655210	100 mL	-	370° C	100 W	220v/50hz
50655220	250 mL	-	370° C	150 W	220v/50hz
50655250	500 mL	-	370° C	250 W	220v/50hz
50655310	1000 mL	-	370° C	350 W	220v/50hz
50655320	2000 mL	-	370° C	450 W	220v/50hz
50655330	3000 mL	-	370° C	550 W	220v/50hz
50655250	5000 mL	-	370° C	650 W	220v/50hz
<b>Series 656, Analogical regulation with stirring</b>					
50656210	100 mL	1400 rpm	370° C	100 W	220v/50hz
50656220	250 mL	1400 rpm	370° C	150 W	220v/50hz
50656250	500 mL	1400 rpm	370° C	250 W	220v/50hz
50656310	1000 mL	1400 rpm	370° C	350 W	220v/50hz
<b>Series 658, Digital regulation with stirring</b>					
50658220	250 mL	1400 rpm	370° C	150 W	220v/50hz
50658250	500 mL	1400 rpm	370° C	250 W	220v/50hz
50658310	1000 mL	1400 rpm	370° C	350 W	220v/50hz
50658320	2000 mL	1400 rpm	370° C	450 W	220v/50hz

## 11. WORKING CONDITIONS

Ambient temperature: 5~40°C

Ambient humidity: ≤90%;

Voltage: 220V±10%, 50±1 Hz



### INSTRUCTIONS ON ENVIRONMENT PROTECTION

At the end of its life cycle, please, do not dispose of this equipment by throwing it in the usual garbage; hand it over a collection point for the recycling of electrical and electronic appliances. It does not contain dangerous or toxic products for humans but a non adequate disposal would damage the environment.

The materials are recyclable as mentioned in its marking. By recycling material or by other forms of re-utilization of old appliances, you are making an important contribution to protect our environment.

Please inquire at the community administration for the authorized disposal location.

ted to the equipment, the temperature sensor is damaged, the temperature exceeds the measuring range of sensor or controller itself faults. The heating function will automatically stop; please check if there is any visible damage on temperature sensor and if it is well connected to the equipment

## 7. TROUBLESHOOTING

<i>Problem</i>	<i>Cause</i>	<i>Solution</i>
Equipment does not turn on	- Bad connection of the cable - Damaged circuit	- Check connection - Contact to Nahita Technical Service
Equipment does not heat	- Damaged heating resistance	- Contact to Nahita Technical Service
There is no temperature control	- Damaged control panel	- Contact to Nahita Technical Service

## 8 MAINTENANCE AND CLEANING

- ◆ Proper maintenance helps to keep instruments working in a good state and lengthen its lifetime.
- ◆ Be careful not spray the detergent or water into the instrument when cleaning.
- ◆ Unplug the power line when cleaning.
- ◆ Only use the following products to clean the equipment:
  - For dyes: Isopropyl alcohol
  - For construction materials: Water containing tenside / Isopropyl alcohol
  - For cosmetics: Water containing tenside / Isopropyl alcohol
  - For food: Water containing tenside
  - For fuels: Water containing tenside
- ◆ Wear the proper protective gloves during cleaning of the instrument.
- ◆ Before using other method for cleaning or decontamination, please contact your distributor to avoid damages on the equipment.
- ◆ 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 stable temperature environment.

## 9 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

ting element a nickel-chromium wire resistance sealed in an isolating layer has also been used; the wire has been weaved inside the hemispheric chamber of the heating component.

- ◆ This heating system has the advantages of a large heating surface, fast heating, no flame, high temperature homogeneity, light weight, energy saving, higher safety and less danger of damages in the glass recipient.
- ◆ Equipments with stirring function allow a more homogeneous heating of the liquid, resulting ideal for laboratories or chemical industry.
- ◆ Temperature regulation is performed through advanced technology of silicon components that together with the speed regulation circuits, facilitate the control and adjustment of heating and stirring functions.

## 3 INSPECTION

### 3.1 Reception

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



**NOTE: If there is any apparent damage on the equipment, do not plug it into the power line.**

### 3.2 Listing of Items

Nahita Bñue heating mantles are supplied with the following accessories:

Main unit	1 pc
Power cable	1 pc
Magnet	1 pc
Rod support	1 pc
Temperature sensor (series 658)	1 pc
User's manual	1 pc

## 4 TRIAL RUN

- ◆ Make sure the required operating voltage and power supply voltage match.
- ◆ Ensure the socket is earthed reliably.
- ◆ Ensure the potentiometer/s of the equipment is in off position.
- ◆ Pour the liquid to be heated in a vessel; if a mantle with stirring function is going to be used put a stirring bar inside the vessel.
- ◆ Put the vessel into the heating mantle.
- ◆ Connect the wire.

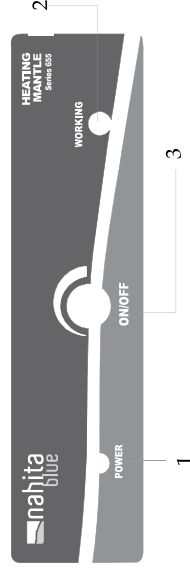
- ◆ Select heating temperature; the equipment starts working
- ◆ In case of models with stirring (series 656 and 658), select the stirring speed.
- ◆ Check the stirring bar and LED display (series 658). Check real temperature in LED display (series 658).
- ◆ Turn heating and stirring functions and disconnect the equipment.

If the 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 your distributor.

## 5. CONTROL PANEL

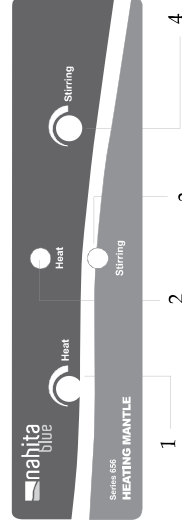
### NAHITA heating mantles, series 655

1. Power indicator pilot
2. Indicator pilot for operation
3. Temperature adjustment knob



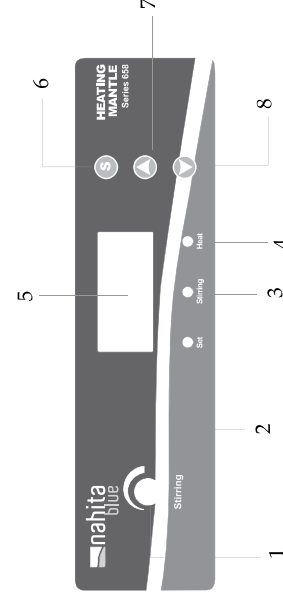
### NAHITA-BLUE heating mantles with stirring series 656 (analogic regulation)

1. Temperature adjustment knob
2. Indicator pilot for temperature
3. Indicator pilot for stirring
4. Stirring adjustment knob



### NAHITA-BLUE heating mantles with stirring series 658 (digital regulation)

1. Stirring adjustment knob
2. Indicador modo ajuste temp.
3. Indicador agitación
4. Indicador calentamiento
5. Temperature adjustment display
6. Temperature adjustment mode
7. Increase button
8. Decrease button



## 6 OPERATING MODES

### 1 Analogical models:

- ◆ Put the equipment on a plane, stable surface and then put the container with the liquid inside the heating mantle.
- ◆ Connect the equipment to the power supply.
- ◆ Turn the temperature knob clockwise until reaching the desired temperature. The corresponding indicating pilot will light up.
- ◆ If the equipment is provided with stirring function (series 656), turn the speed knob clockwise until reaching the desired speed. The corresponding indicating pilot will light up.

### 2. Digital models:

#### 2.1 Main technical features:

- ◆ Temperature sensor Pt100
- ◆ Temperature setting range: 0-370°C; temperature measuring range: -10/400°C
- ◆ Error of temperature measurement: <0.5%

#### 2.2 Control panel buttons

- ◆ **SET** Set the temperature value.
- ◆ **▶** Decrease the value.
- ◆ **▲** Increase the value.

#### 2.3 Operation mode

- ◆ Connect the Pt100 temperature sensor at the base of the equipment.
- ◆ Connect the heating mantle to the power supply; display will automatically light up, Pr will be displayed, and then real temperature value will be displayed. Attention! If the last programmed temperature is higher than room temperature, then heating function will start working automatically and indicating pilot will light up.

#### Temperature setting

- ◆ Press **SET** to enter temperature setting mode; the temperature setting mode indicating pilot will light up and last set temperature will be displayed. To modify the temperature value press buttons **▶** and **▲**. Press **SET** again to go out adjusting mode and save new selected temperature value.
- ◆ When real temperature is lower than selected temperature, the heating system will start working and corresponding indicating pilot will light up.

#### Speed setting

- ◆ Turn the speed adjustment knob clockwise until reaching the desired speed; the corresponding indicating pilot will light up.

#### Abnormal temperature measurement

- ◆ If display shows "HHH" that means that the temperature sensor has not been connected.