

# **VorTemp 56™ Shaking Incubator**

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## **User Manual**



**S2056A**  
**S2056A-230V**

Your Distributor is:  
Braintree Scientific, Inc.  
PO Box 850498, Braintree, MA 02185  
781-917-9526  
Email: [Info@braintreesci.com](mailto:Info@braintreesci.com)  
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## **1.0 GENERAL INFORMATION**

### **1.1 DEFINITION**

The **VorTemp 56** is a benchtop shaker and heating chamber for incubating and shaking sensitive samples. It replaces two devices, reducing both time and space needed. It is suitable for biochemistry, microbiology and clinical laboratories in which applications require temperature and shaking treatment.

### **1.2 KEY FEATURES**

- Wide temperature range – Ambient +5°C – 99.5°C
- Large environment temperature range — safe for use in cold rooms and up to 85% RH
- Digital display of running parameters — View set RPM, temperature or time when device is running or when it is in stand-by mode.
- Temperature and RPM settings can be adjusted while the unit is running.
- Last used settings are saved in memory after the unit is switched off.
- Precise temperature control system provides for temperature uniformity of +/-0.5°C.
- Over-temperature protection system for sample safety.
- Simple user interface – encoder knob enables rapid adjustment of settings.
- Interchangeable platforms for test tubes and stainless steel platforms for microplates.
- High capacity - 56 microtubes or 4 microplates (or 2 deep well microplates).

## **2.0 TECHNICAL DESCRIPTION**

### **2.1 CONSTRUCTION**

The housing of VorTemp 56 is constructed of steel plate coated with highly resistant polyurethane lacquer. The interior chamber is isolated with special thermal protection materials and insulation foam. Both the shaking mechanism and temperature chamber regulated via microprocessors, which control all sensors for motor speed, temperature and time.

### **2.2 MAIN COMPONENTS**

The VorTemp consists of seven main parts:

- Drive Motor
- Eccentricity control mechanism
- Chamber Fan
- Heating element
- Temperature sensor
- Temperature controlled chamber
- Control electronics

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The motor drives the eccentricity control mechanism which generates the orbital motion of the sample platform.

The motion of the motor also drives the fan, which moves air over the heating element and throughout the temperature chamber. The convection action of the airflow creates a very uniform temperature environment throughout the chamber. Chamber conditions are monitored by the temperature sensor and the control electronics regulate heater function to maintain the set temperature.

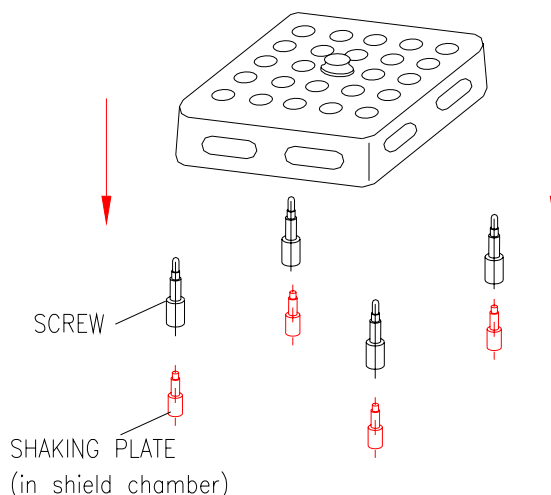
## 2.3 ACCESSORIES

The following accessories are available for the VorTemp 56:

1.5/2.0mL Platform	S2056-R
Adapter for 0.5mL	C1205
Adapter for 0.4mL	C1206
Adapter for 0.25mL	C1222
Microplate Platform	S2056-Q

### 2.3.1 MICROTUBE PLATFORM

The Microtube Platform is intended for shaking 56 1.5/2ml test tubes. There are accessory adapters available which allow for running several different microtube sizes. In addition, the platform and adapters are autoclavable.



Installing the microtube platform is very simple and requires no special tools. The unit comes pre-assembled with four posts screwed into the shield plate. Then grip the microtube platform by the center knob and align the four rubber grommets with the four posts of platform and press down gently.

For processing large sample quantities it is often more convenient to use more than one microtube platform and switch between them.

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**IMPORTANT NOTE:**

If you work with temperatures over 50°C, we recommend the use of special microtubes which are designed for use in thermal cyclers. These tubes are molded from plastic designed to withstand temperatures as high as 135°C. The thin - walled construction also allows for fast heat transfer and reduced heating times.

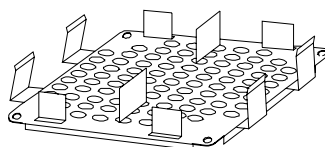
**2.3.2 MICROPLATE HOLDER PLATFORM**



**WARNING:** Be careful if the unit has been used to heat samples because the internal components can be extremely hot and can cause burns to uncovered skin. Always check the handle temperature before changing the platform.

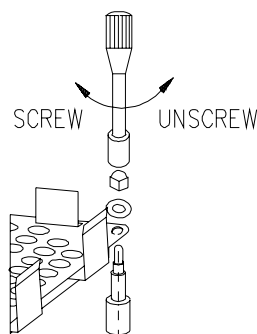
The Microplate Holder Platform is designed for shaking up to 4 microplates or 2 deep well microplates. For a more precise temperature controlled environment we recommend inserting only one microplate on the platform. Additional microplates can have an insulating effect on other plates, especially when stacked. The working temperature range is ambient +5°C to 45°C. Please note that the normal maximum temperature for ordinary microplates is below 60°C. The platform is made of stainless steel and is equipped with springs for keeping microplates secure.

The VorTemp comes with the microtube platform installed. To install the microplate platform, first you have to remove the microtube platform and then unscrew all four posts from the lower platform – see the below picture.



To attach the microplate platform (see the below picture), you must center the platform corner holes with device shield plate. Make sure the alignment arrows are pointing towards the front of the unit and then press the platform on the shield plate. Take the supplied nuts and washers and screw them on the microtiter platform and tighten them with the included wrench. Then insert the microplates with your samples and start the device.

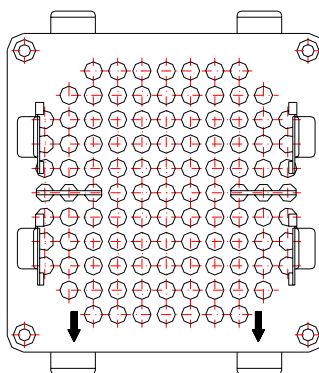
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### IMPORTANT NOTE:

When you attach microplate platform, it must be attached so that arrows are pointed towards the front of Vortemp.

Back of Vortemp



Front of Vortemp

## 3.0 INSTALLATION

### 3.1 UNPACKING

Before installing the VorTemp, carefully examine the unit for possible shipping damage or missing parts:

- Open the box and remove the unit and all the accessories.
- Remove the packing material and inspect the machine to be sure that it has not been visibly damaged during shipping. Keep all packing material until you are sure that the machine functions properly.
- Check the rear label for the following information:
  - Model Number
  - Serial Number
  - Electrical rating
  - Regulatory markings
- Check the plug to be sure that it is compatible with your electrical outlet

If any damage occurred during shipping, notify the carrier immediately. If any parts or accessories are missing, this should be reported to your distributor immediately.

### 3.2 SELECTING A LOCATION

When selecting the right place for device, please consider following:

- Place the unit on a smooth, level and stable surface
- Leave at least 10cm of space around the device for adequate air circulation
- Don't place the device in a location, where there are rapid temperature and humidity changes. Also avoid places where the unit would be exposed to direct sunlight or next to devices which output large amounts of heat.
- Also avoid places where the unit may be exposed to excessive shocks or vibrations.



**Do not use the device in an inflammable or explosive atmosphere**

**Note:** The unit should not be placed so that it is difficult to pull out the plug from the back of the unit.

### 3.3 ATTACHING THE POWER CORD

Attach the main cord to the inlet in the back of the unit. Connect the other end of the cord to a grounded electrical outlet.

### 3.4 STARTING UP

#### 3.4.1 STARTING UP CHECK LIST

- Unpack and install the device as specified in the previous section.
- Open the lid and attach the microtube platform or the microplate platform.
- Close the lid.
- Switch on the device using of the ON/OFF switch on the front panel  
The switch will illuminate to indicate that power is on.
- Check the running parameters and set new parameters if necessary. Please refer to the instructions described in next chapters.

### 3.5 SAFETY RECOMMENDATIONS

**NOTE:** Be careful when changing the microtube platform, especially when you have used unit at temperatures higher than 60°C. Always wear protective clothing before you handle a hot microtube or microplate platform.

The unit will continue to shake for 5 seconds after the lid is opened. Be careful when opening the lid as the parts inside may still be in motion. In addition, never touch the fan unless the unit is turned off or unplugged.



- Before cleaning the housing unplug the unit. The housing should only be cleaned with a damp cloth and if necessary, a mild soap. Don't use aggressive or aerosol cleaners.
- Do not use the unit near sources of water. Take care to ensure that water will not spill in the device; especially during cleaning procedures.
- Make sure, that all test tubes are closed tightly before placing them into the unit to avoid spilling samples inside the chamber.

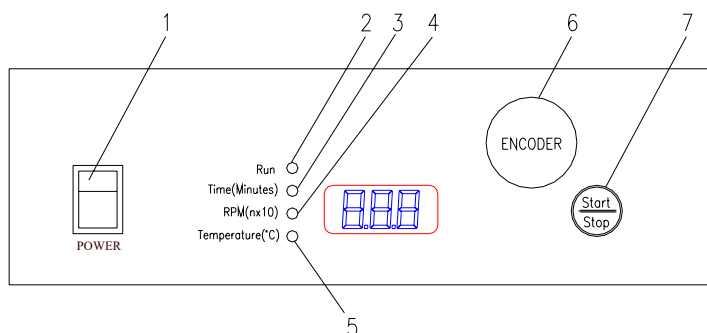
In the case of a malfunction, unplug the device and contact your distributor for service.



**Do not shake flammable or explosive samples!**

## 4.0 INSTRUCTIONS FOR USE

### 4.1 INTRODUCTION



1. **POWER** key – switch ON (illuminates when on) or OFF.
2. **Run** green signal light – illuminated when the shaker is operating.
3. **Time** yellow signal light – illuminated when the unit is set to adjust time.
4. **RPM** yellow signal light – illuminated when the unit is set to adjust RPM.
5. **Temperature** yellow signal light – illuminated when shaker is set to adjust the set temperature.
6. **ENCODER** – by rotating the encoder right (+) or left (-) you are modifying the Time, Temperature or RPM settings of the unit. Push in on the encoder to change between Time, Temperature and RPM set values.  
 If you rotate ENCODER knob quickly, then the adjustment increments are larger and it will allow for values to be set more quickly.
7. **START/STOP** button – START or STOP shaking.

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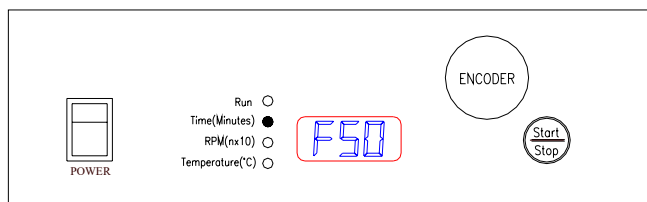
**781-917-9526**

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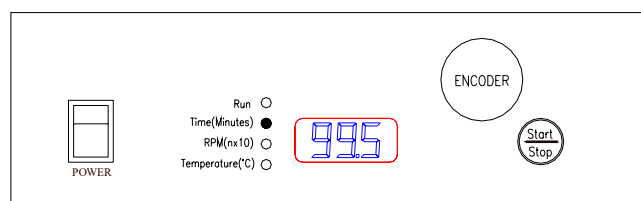
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## 4.2 BASIC OPERATION



- Press POWER key on control panel. On the LED display the unit will automatically detect the line frequency F50 (50Hz) or F60 (60Hz). After a 2 second delay the unit will then default to the time setting.

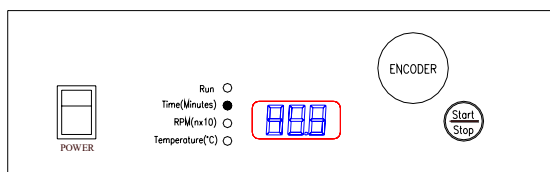


- Time** LED illuminated. With the encoder knob, right (+) or left (-) sets the run time to the desired value from 30 sec to 99 min 50 sec:

99.5  $\Rightarrow$  99 min 50 sec

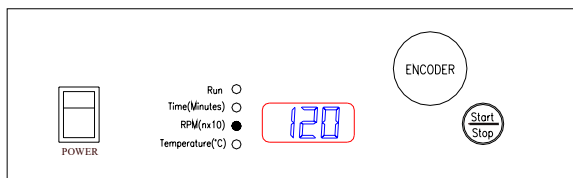
9.59  $\Rightarrow$  9 min 59 sec

0.30  $\Rightarrow$  30 sec



- If you want the unit to run continuously, set **Time** on **hold**. The timer is set to hold when "HLd" is displayed. Rotate the encoder under 0.30 or above 99.5 to set this hold function.  
 Push encoder knob to adjust the RPM setting

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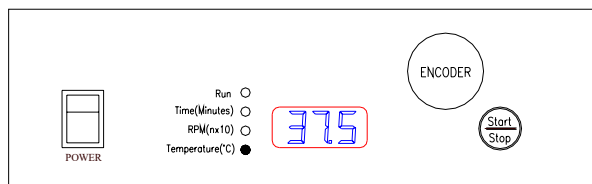


- **RPM** illuminated. Rotate the encoder right (+) or left (-) set the rotating speed to the desired value:

34  $\Rightarrow$  340 Rpm  
 120  $\Rightarrow$  1200 Rpm

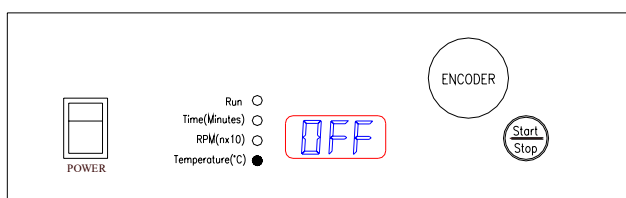
By turning the RPM setting below 20, the shaking function can be turned off. When the shaker is off, "OFF" is displayed.

Push encoder knob to adjust the Temperature setting.



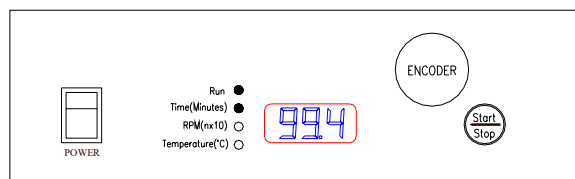
- **Temperature** illuminated. Rotate the encoder right (+) or left (-) set temperature to the desired value:

37.4  $\Rightarrow$  37.4°C



If you want use shaker **without temperature control activated** – Turn the encoder under 0.5 or above 99.5 until the display reads "OFF".

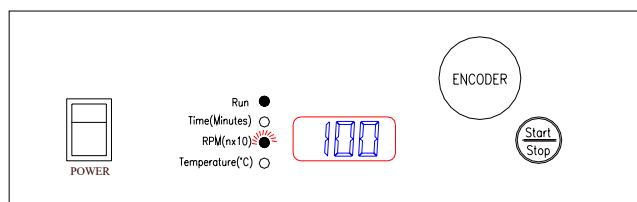
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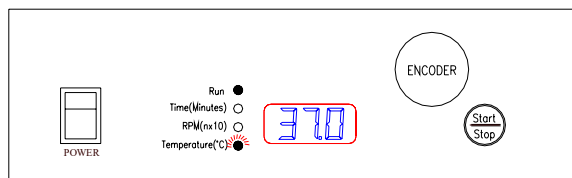
**Press START/STOP button.**

- Run and Time are illuminated. The timer will count down from set time value.

**NOTE : YOU CANNOT ADJUST THE SET TIME DURING SHAKING**

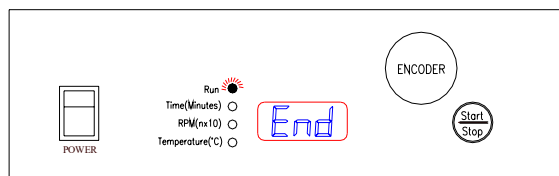


- If you want change the **RPM** during a run, push the encoder knob until the RPM light is illuminated. Rotate the encoder right (+) or left (-) until the new value is set. While adjusting the RPM, the light will pulse. When you stop rotating the encoder knob, the RPM light will stop pulsing after 2 sec.



- If you want change the **Temperature** during operation, push the encoder knob until the Temperature light is illuminated. Rotate the encoder right (+) or left (-) until the desired temperature is set. While adjusting the temperature, the temperature light will pulse. When you stop rotating the encoder knob, the temperature light will stop pulsing after 2 sec.

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- When the set time expires or if you press the START/STOP button, “End” will be displayed and the Run light will pulse. When the unit stops shaking, the last set values for Time, RPM and Temp will be saved in memory.

#### 4.3 SHAKING WITHOUT HEATING

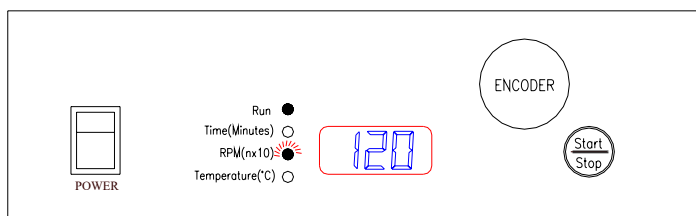
- If you want shake samples without heating, set Temp to OFF.

#### 4.4 HEATING WITHOUT SHAKING

- If you want heat samples without shaking, set RPM to OFF.

**NOTE:** The shaker motor drives the fan, which circulates warm air throughout the chamber aiding in temperature uniformity. If the shaker is set to OFF, the temperature control will not be as precise due to lack of airflow over the heating element.

#### 4.5 ADDITIONAL OPERATIONS



- If you want to view the set value for **RPM** during shaking, turn the encoder ONE CLICK right (+) or left (-). Note: the unit must be set for RPM mode. On the display the RPM light will pulse for 2 sec and display will show the set RPM. After 2 sec the display will return to showing the actual RPM and the light will stop pulsing.

Your Distributor is:

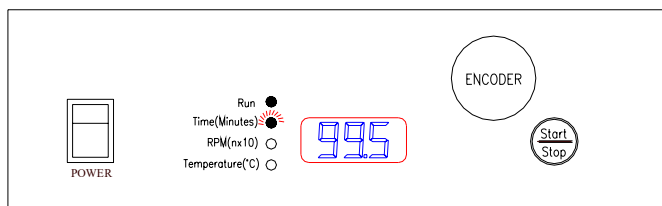
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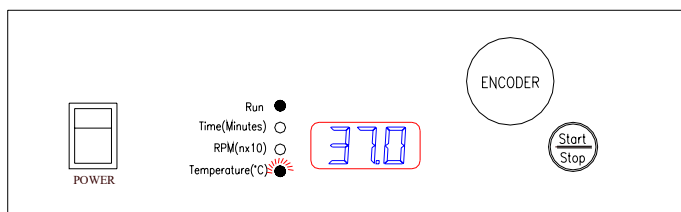
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- If you want to view the set value for **TIME** during shaking, turn the encoder ONE CLICK right (+) or left (-). Note: the unit must be set for Time mode. On the display the Time light will pulse for 2 sec and display will show the set Time. After 2 sec the display will return to showing the actual Time and the light will stop pulsing.



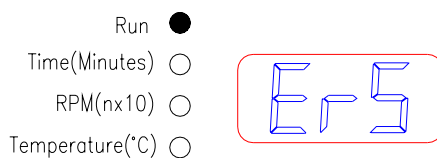
- If you want to view the set value for **Temperature** during shaking, turn the encoder ONE CLICK right (+) or left (-). Note: the unit must be set for Temperature mode. On the display the Temperature light will pulse for 2 sec and display will show the set Temperature. After 2 sec the display will return to showing the actual Temperature and the light will stop pulsing.

## 5.0 TROUBLESHOOTING

### 5.1 ERRORS

The VorTemp features built in self-diagnostic procedures which are constantly checking the operating parameters and performance, as well as functions that are necessary for safe and reliable operation. An error code is shown on the LCD display if an error occurs.

Sample of Error display:



## **5.2 DESCRIPTION OF POSSIBLE ERRORS**

- E 1.1:** This error message appears when something is wrong with motor regulation (PWM regulator, pulse generator, motor). The unit will automatically stop. Call for service.
- E 1.2:** This error appears when the motor does not reach set RPM in 30 sec. The unit will automatically stop. Call for service.
- E 1.3:** This error appears when set RPM oscillates more than 100 RPM in 2 seconds. The unit will automatically stop. Call for service.
- E 2.1:** The temperature sensor is not working properly with regards to the heater. The unit will automatically stop. Call for service.
- E 2.2:** Temperature sensor registers a 5°C higher temperature than set temperature. The unit will automatically stop. Call for service.
- Er 5:** The lid of shaker is opened for more than 5 seconds. The unit will automatically stop. To restart the shaker, close the lid and press start.

## **6.0 SERVICE AND SUPPORT**

### **6.1 WHERE TO FIND HELP**

Should you have a question about the operation of *the Vortemp 56 Incubator* or if service is required, contact **Corning at: 800-492-1110**. Do not send in a unit for service without first calling to obtain a repair authorization number. Should the unit require return to Corning for service, it should be properly packed to avoid damage. Any damage resulting from improper packaging shall be the responsibility of the user.

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## **6.2 WARRANTY**

### **6.2.1 ONE-YEAR LIMITED WARRANTY**

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of one (1) year from date of purchase. CORNING DISCLAIMS ALL OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Corning's sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in material or workmanship within the warranty period, provided the purchaser notifies Corning of any such defect. Corning is not liable for any incidental or consequential damages, commercial loss or any other damages from the use of this product.

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

In the event this product fails within the specified period of time because of a defect in material or workmanship, contact Corning's Customer Service at the following numbers: USA: 1-800-492-1110; Canada: 1-978-442-2200. For other regions of the world, please visit [www.corning.com/lifesciences](http://www.corning.com/lifesciences) or see the included instruction manual for a list of World Wide Support Offices.

Corning's Customer Service team will help arrange local service where available or coordinate a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, padded to avoid damage. Corning will not be responsible for damage incurred by improper packaging. Corning may elect for onsite service for larger equipment.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No individual may accept for, or on behalf of Corning, any other obligation of liability, or extend the period of this warranty.

For your reference, make a note of the serial number, date of purchase and supplier here.

Serial No. \_\_\_\_\_ Date Purchased \_\_\_\_\_

Supplier \_\_\_\_\_

**Warranty/Disclaimer:** Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Corning makes no claims regarding the performance of these products for clinical or diagnostic applications.

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## 6.2.2 EXCLUSIONS

The warranty on manufacturer products shall not apply to defects or damage resulting from:

Improper or inadequate maintenance by customer  
 Unauthorized modification or misuse  
 Operation outside of the environmental specifications for the product  
 Improper site preparation and maintenance

## 6.2.3 WARRANTY LIMITATIONS

The warranty set forth above is exclusive and no other warranty, whether written or oral, is expressed or implied.

## 6.2.4 SERVICE DURING WARRANTY PERIOD

If your hardware should fail during the warranty period, contact an authorized manufacturer dealer or distributor in your country or contact Corning directly at 800-492-1110.

When shipping your equipment to for service, follow the packing guidelines listed below.

Shipping damage as result of inadequate packaging is the customer's responsibility. Use original packing materials whenever possible.

## 6.3 REPACKAGING GUIDELINES FOR RETURNING YOUR EQUIPMENT

- Clean the inside of the chamber and platforms according to GLP standards; especially if you have used the equipment with hazardous biological or radioactive materials.
- A written description of the error should accompany the unit
- Use the original shipping container and packaging materials if possible

## 7.0 TECHNICAL SPECIFICATIONS

### 7.1 TECHNICAL DATA

POWER	515W
HEATHER POWER	500W
MOTOR POWER	15W
FUSE	2 x 3.15A 250V 2 x 6.3 A 115V
ENVIRONMENT TEMPERATURE	4°C to 65°C
RELATIVE HUMIDITY	Up to 85%, non condensing
RPM REGULATION	Digital, load independent, from 100 to 1200 RPM in 10 RPM steps 1400 RPM*
SHAKER ORBIT	3mm
TEMPERATURE OPERATING RANGE	4°C above room temperature to 99.5°C
TEMPERATURE SENSOR	PT100
HEATING-UP TIME	Approx. 5°C/min
TEMPERATURE UNIFORMITY	±0.5°C
TIMER	30 sec - 99min 50sec. in 10 sec. steps, under 10 min. in 1 sec. steps, timer HOLD function
MAXIMUM CAPACITY	56 test tubes -1.5, 0.7, 0.5, 0.25 ml
DIMENSIONS w x d x h	265 x 325 x 225
WEIGHT	11kg

\* Only at 60 Hz

Your Distributor is:  
 Braintree Scientific, Inc.  
 PO Box 850498, Braintree, MA 02185  
 781-917-9526  
 Email: [Info@braintreesci.com](mailto:Info@braintreesci.com)  
 Web: [www.braintreesci.com](http://www.braintreesci.com)

**WARNING:**

**There are no end-user serviceable parts. Any service to the unit must be performed by a trained service technician.**

## **8.0 TEMPERATURE CALIBRATION**

The temperature control software allows for user calibration of the temperature settings. First, measure the temperature in the middle of the chamber after allowing the temperature to equilibrate for two hours. The temperature should be measured with a digital calibrated thermometer with precision 0.1°C or more. After allowing the temperature to equilibrate 2 hours, read the temperature on thermometer and compare it with the temperature on the LED display. This difference between the thermometer and the display is the value which you will enter into the unit to recalibrate it.

**Example 1: Temperature on thermometer is 37.9°C, temperature on display is 37°C. Difference is  $37.9 - 37 = 0.9$ . This value 0.9, is the value which you will enter into the software.**

**Example 2: Temperature on the thermometer is 36.2°C, temperature on display is 37°C. The difference is  $37 - 36.2 = -0.8$ . This value -0.8, this is the value which you will enter into the software.**

Procedure for temperature calibration:

- Hold (press) the encoder for 5 seconds – the display then show “Cor” (correction).
- Press the encoder once and then enter the value from the previous section by rotating the encoder left or right to select a value (see Example 1 and Example 2 above). Be sure to note whether your value was positive or negative. After you have entered the value press the encoder again.
- Press the START/STOP button to complete the temperature calibration.

**Remember: Temperature calibration should only be performed by qualified personnel.**

## **9.0 MAINTENANCE AND CLEANING INSTRUCTIONS**

The chamber should be cleaned regularly. Any samples which spill inside or outside the chamber must be wiped up immediately. Use only warm water or a mild soap solution to clean the surfaces of the unit. Using aggressive or abrasive cleaners can cause permanent damage to the finish.

To decontaminate the surface of the unit, use only neutral solutions (Ph 7-8). The stainless steel platform and nuts can be decontaminated with autoclave (120 °C).

**NOTE: Take care when cleaning device after operation, especially when you have used device at temperatures higher than 60°C. Exposed surfaces will be extremely hot and may cause burns to unprotected skin.**

**Before you begin cleaning the unit, be sure to unplug the unit.**

Before using any cleaning or decontamination methods other than those recommended by the manufacturer, contact Labnet to check that the proposed method will not damage the equipment.

#### **EQUIPMENT DISPOSAL-EUROPEAN REGULATIONS**



*According to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), VorTemp 56 Incubator is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.*

*Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products*

