

VorTemp 56™ Shaking Incubator

User Manual



S2056A
S2056A-230V



TABLE OF CONTENTS		Page
1.0.	GENERAL INFORMATION	1
1.1	DEFINITION	1
1.2	KEY FEATURES	1
2.0.	TECHNICAL DESCRIPTION	1
2.1	CONSTRUCTION	1
2.2	MAIN COMPONENTS	1
2.3.	ACCESSORIES	2
2.3.1	TEST TUBES HOLDER PLATFORM	2
2.3.2	MICROPLATE HOLDER PLATFORM	3
3.0	INSTALLATION	4
3.1	UNPACKING	4
3.2	SELECTING THE RIGHT PLACE	5
3.3	ATTACHING POWER CORD	5
3.4	STARTING UP	5
3.4.1	STARTING UP CHECK LIST	5
3.5	GENERAL SAFETY RECOMMENDATIONS	
4.0	INSTRUCTION FOR USE	6
4.1	INTRODUCTION	6
4.2	BASIC OPERATIONS	6
4.3	SHAKING WITHOUT HEATING	9
4.4	HEATING WITHOUT SHAKING	9
4.5	ADDITIONAL OPERATIONS	9
5.0	TROUBLESHOOTING	10
5.1	ERRORS	10
5.2	DESCRIPTION OF POSSIBLE ERRORS	10
6.0	SERVICE AND SUPPORT	11
6.1	WHERE TO FIND HELP	11
6.2	WARRANTY	11
6.3	REPACKAGING GUIDELINES FOR RETURNING YOUR EQUIPMENT	12
7.0	TECHNICAL SPECIFICATION	12
7.1	TECHNICAL DATA	12
8.0	TEMPERATURE CALIBRATION	12
9.0	MAINTENANCE AND CLEANING INSTRUCTIONS	13

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

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.

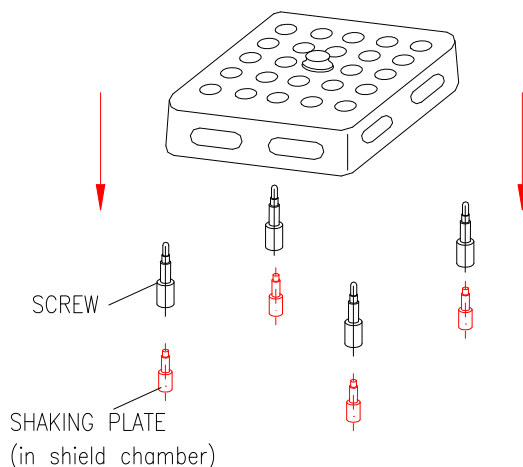
2.3 ACCESSORIES

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.

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.

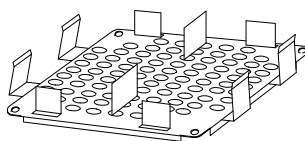
2.3.2 MICROPLATE HOLDER PLATFORM



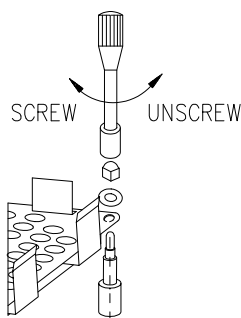
WARNING: Be careful if the unit has been used to heat samples because the internal components can be extremely hot and can cause burns to uncovered skin. Always check the handle temperature before changing the platform.

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.



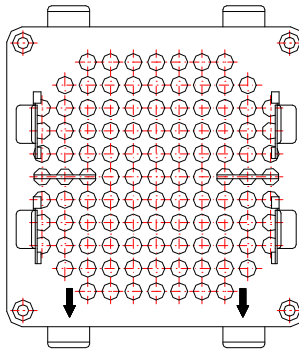
To attach the microplate platform (see the below picture), you must center the platform corner holes with device shield plate. Make sure the alignment arrows are pointing towards the front of the unit and then press the platform on the shield plate. Take the supplied nuts and washers and screw them on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



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.

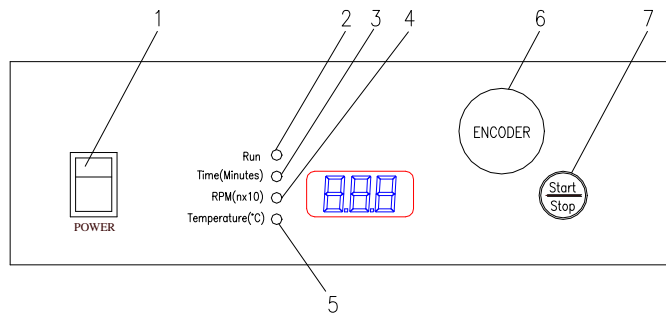
In the case of a malfunction, unplug the device and contact your distributor for service.



Do not shake flammable or explosive samples!

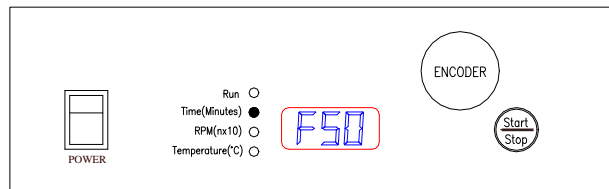
4.0 INSTRUCTIONS FOR USE

4.1 INTRODUCTION

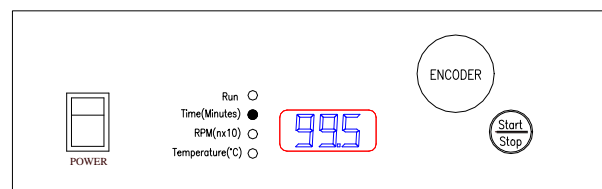


1. **POWER** key – switch ON (illuminates when on) or OFF.
2. **Run** green signal light – illuminated when the shaker is operating.
3. **Time** yellow signal light – illuminated when the unit is set to adjust time.
4. **RPM** yellow signal light – illuminated when the unit is set to adjust RPM.
5. **Temperature** 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.

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.

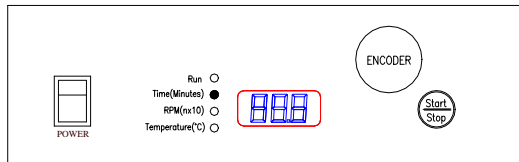


- **Time** LED illuminated. With the encoder knob, right (+) or left (-) sets the run time to the desired value from 30 sec to 99 min 50 sec:

99.5 ⇒ 99 min 50 sec

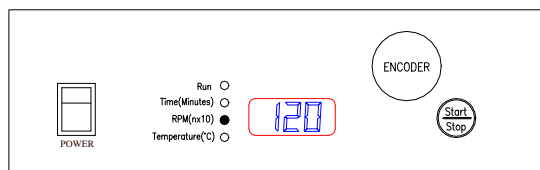
9.59 ⇒ 9 min 59 sec

0.30 ⇒ 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



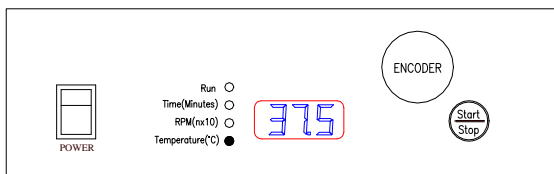
- **RPM** illuminated. Rotate the encoder right (+) or left (-) set the rotating speed to the desired value:

34 ⇒ 340 Rpm

120 ⇒ 1200 Rpm

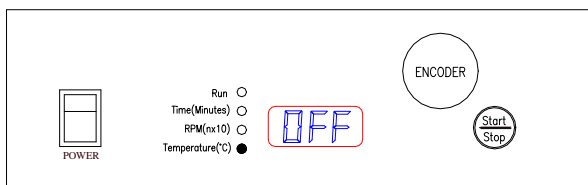
By turning the RPM setting below 20, the shaking function can be turned off. When the shaker is off, “OFF” is displayed.

Push encoder knob to adjust the Temperature setting.

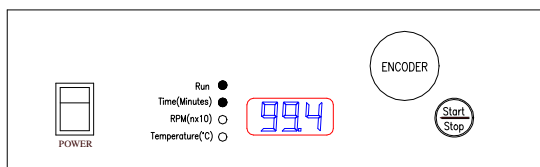


- **Temperature** illuminated. Rotate the encoder right (+) or left (-) set temperature to the desired value:

37.4 ⇒ 37.4°C



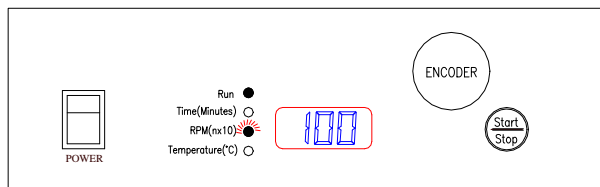
If you want use shaker **without temperature control activated** – Turn the encoder under 0.5 or above 99.5 until the display reads “OFF”.



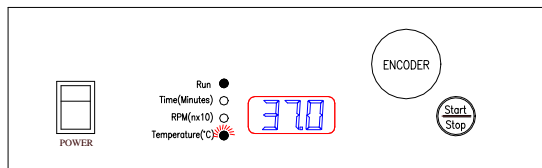
Press START/STOP button.

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

NOTE : YOU CANNOT ADJUST THE SET TIME DURING SHAKING

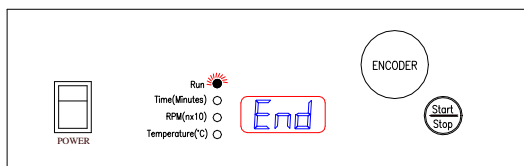


- If you want change the **RPM** during a run, push the encoder knob until the RPM light is illuminated. Rotate the encoder right (+) or left (-) until the new value is set. While adjusting the RPM, the light will pulse. When you stop rotating the encoder knob, the RPM light will stop pulsing after 2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



- 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

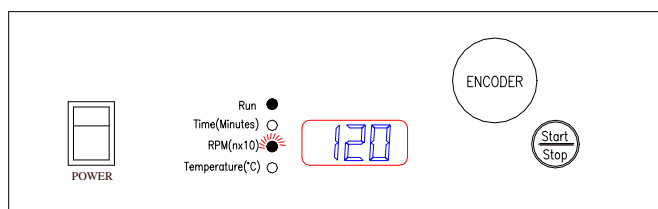
- If you want shake samples without heating, set Temp to OFF.

4.4 HEATING WITHOUT SHAKING

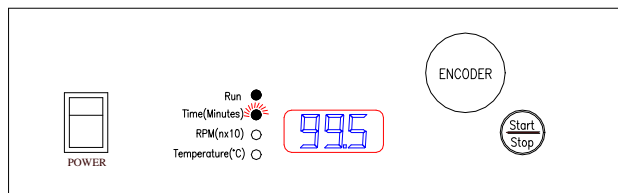
- If you want heat samples without shaking, set RPM to OFF.

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.

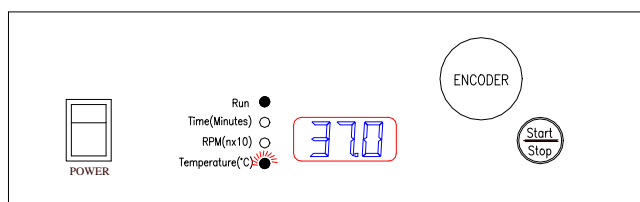
4.5 ADDITIONAL OPERATIONS



- 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.



- 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.



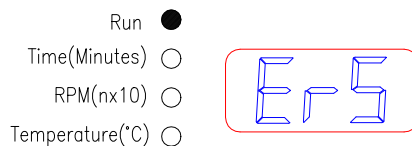
- If you want to view the set value for **Temperature** during shaking, turn the encoder ONE CLICK right (+) or left (-). Note: the unit must be set for Temperature mode. On the display the Temperature light will pulse for 2 sec and display will show the set Temperature. After 2 sec the display will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

Labnet International provides warranty and after-warranty support for all of the products they manufacture. Depending upon how you purchased your equipment, the best source of support is either Labnet, your dealer, your own organization. Labnet's warranty statement is included in this chapter and on the warranty card which was included with your unit. Please read over this information carefully and retain it for your records.

6.2 WARRANTY

6.2.1 ONE-YEAR LIMITED WARRANTY

Labnet International warrants this product against defects in materials and workmanship for a period of one year from receipt by the end user. During the warranty period, Labnet will, at its option, either repair or replace products, which prove to be defective.

Should manufacturer be unable to repair or replace the product within a reasonable amount of time, a refund of the purchase may be given upon return of the product.

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. Labnet specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

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 Labnet directly at 732-417-0700 during the hours of 8:30AM and 5PM EST.

When shipping your equipment to Labnet 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

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



This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.

Instead it's your responsibility to correctly dispose of your equipment at lifecycle-end by handing it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.

For more information about where you can drop off your waste equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you

Labnet
Labnet International, Inc.

Declaration of Conformity

Number: CE 00702

Labnet International, Inc., 31 Mayfield Ave., Edison, NJ 08837 USA

Labnet International declares that the devices described below are in conformity with the EC directives listed. In the event of unauthorized modification of any of the devices listed below, this declaration becomes invalid.

Device Name: VorTemp 56™ Shaking Incubator

Device Models Numbers: S2056A
S2056A-230V

Relevant EC Directives: Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC
Machinery Directive 2006/42/EC
WEEE 2006/96/EC

Harmonized Standards: EN ISO 12100-2
EN 61010-1
EN 61010-2-010
EN 61010-2-051
EN 55011
EN 55014-1
EN 55022
EN 61000-3-2
EN 61000-3-3
EN 6100-6-2
EN61326-1

Date: May 1, 2012



Amin Brihmat
Product Line Manager

Labnet
Labnet International, Inc.

LIMITED WARRANTY

Labnet International, Inc. warrants that this product will be free from defects in material and workmanship for a period of one (1) year from date of purchase. This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual.

Should this product require service, contact Labnet International, Inc.'s Service department at 732-417-0700 to receive 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. Labnet International, Inc. will not be responsible for damage incurred by improper packaging. Labnet International, Inc. may elect for onsite service for larger equipment.

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.

ALL WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION OF 12 MONTHS FROM THE ORIGINAL DATE OF PURCHASE.

LABNET INTERNATIONAL, INC.'S SOLE OBLIGATION UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT LABNET INTERNATIONAL, INC. DISCRETION, OF A DEFECTIVE PRODUCT. LABNET INTERNATIONAL, INC. IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGE, COMMERCIAL LOSS OR ANY OTHER DAMAGES RESULTING FROM THE USE OF THIS PRODUCT.

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 Labnet International, Inc., any other obligation of liability, or extend the period of this warranty.

Mail Warranty Registration to :	or	Register online at
Labnet International, Inc. 31 Mayfield Ave. Edison, NJ 08837		www.labnetinternational.com

✂ cut along the dotted line

To validate the warranty, complete and return this card within 10 days.

Model _____

Serial No. _____ Date Tested _____

Date Rec'd _____ PO# _____

Name/Title _____

Phone _____

Institution _____

Address _____

City _____ State _____ Zip/Postal Code _____ Country _____

Purchased from (distributor) _____

How would you rate the quality of this product? Excellent Good Fair Poor

What feature(s) on this product made you purchase it? _____

What feature(s) would you change to improve the performance of this product? _____



31 Mayfield Avenue. Edison. NJ. 08837
(p) 732.417.0700 (f)
732.417.1750

