

DIGIBLOCK

SAMPLE PREPARATION SYSTEM



USER MANUAL – Version 202303DG

INDEX

DISCLAIMER 4

INTRODUCTION5-7

 About your system 5

 Compliance..... 5

 WEEE/RoHS..... 5

 Warranties and Liabilities 6

 Conventions..... 7

 Contact us 7

Safety Rules8-9

 General Information 8

 Electrical safety..... 8

 Fire safety..... 8

 Chemical safety..... 8

 Recommendation 9

 Other Information 9

General Information.....10-11

 Specification10

 EDS Series Front View10

 EDS iTouch Series Front View11

Installation.....12-13

 Site Requirements12

 Positioning the instrument12

 Electrical Requirements.....13

 Set Up.....13

Operation 14-22

Controller CAL3300 built-in14

Change the Setpoint14

How to Select Display Resolution14

How to Setup Program Ramping15

How to Unlock Parameters15

iTouch Separate Controller16

Main Interface17

Method View Interface18

Method Setup Interface19

Editing an Application Setup Interface20

Preventive Maintenance..... 23

Troubleshooting 23

The Colour of surface coating changed23

The coating desquamated23

The display temperature is jumping23

Declaration of Conformity 24

Spare Part List..... 25

DISCLAIMER

Thank you for selecting our products.

We are sure that you will be completely satisfied with the performance of this new unit entering your laboratory. We invite you to carefully read this user manual and to keep it close to the instrument for convenient and fast consulting. For any possible clarification or any request for assistance please contact either your local Representative or LabTech at the following address:

LabTech SRL
Via Fatebenefratelli, 1/5
24010 Sorisole (BG) Italy
Tel +39 035 576614
Website: www.labtechsrl.com
E-mail: marketing@labtechsrl.com

LabTech SRL provides this document to its customers at the time of purchasing to be used during the product operation. This document is copyright protected and any reproduction of the whole or any part of it is strictly prohibited, except with the written authorization of LabTech SRL.

The contents of this document are subjected to change without notice. All technical information in this document is for reference purposes only.

INTRODUCTION

About your system

Thank you for selecting our DigiBlock.

We are sure that you will be completely satisfied with the performance of this new unit entering your laboratory. We invite you to carefully read this user manual and to keep it close to the instrument for convenient and fast consulting.

Compliance

Products tested and found compliant with the requirements defined in the EC Council Directive for Electromagnetic Compatibility established by 2014/30/EU as well as Low Voltage Directive (LVD) 2014/35/EU can be identified by the CE mark on the rear of the unit. The testing has demonstrated compliance with the following directives:

- EN 61010-1:2010
- EN 61326-1:2013
- 2014/35/EC
- 2014/30/EC
- 2011/65/EC

WEEE/RoHS

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2011/65/EC. It is marked with the following symbol:



Warranties and Liabilities

Seller warrants the products manufactured and sold by it, to be, for the period of warranty coverage, free from defects of materials or workmanship under normal prior use and service. The period of warranty coverage is specified for the respective products in the respective Seller instruction manuals for those products but shall in no event exceed 1 year from the date of shipment thereof by Seller. Seller's liability under this warranty is limited to such of the above products or parts thereof as are returned, prepaid transportation to Seller's plant, not later than 10 days after the expiration of the period of warranty coverage in respect thereof and are found by Seller's examination to have failed to function properly because of defective workmanship or materials and not because of improper installation or misuse and is limited to, at Seller's election, either (a) repairing and returning the product or part thereof, or (b) improper installation or misuse and is limited to, at Seller's election, either (a) repairing and returning the product or part thereof, or (b) furnishing a replacement product or part thereof, prepaid transportation by Seller in either case. In an event Buyer discovers or learns that a product does not conform to warranty, Buyer shall immediately notify Seller in writing of such non-conformity, specifying in reasonable detail the nature of such non-conformity. If Seller is not provided with such written notification, Seller shall not be liable for any further damages which could have been avoided if Seller had been provided with immediate written notification, this warranty is made and accepted in lieu of all other warranties, express or implied. All other obligations and liabilities of Seller, whether in contract or tort (including negligence) or otherwise, are expressly excluded. In no event shall Seller be liable for any costs, expenses, or damages, whether direct or indirect, special, incidental, consequential, or other, on any claim of any defective product, more than the price paid by Buyer for the product including prepaid return transportation charges.

No warranty is made by Seller of any Seller product which has been installed, used or operated contrary to Seller's written instruction manual or which has been subjected to misuse, negligence or accident or has been repaired or altered by anyone other than Seller or which has been used in a manner or for a purpose for which the Seller product was not designed nor against any defects due to plans or instructions supplied to Seller by or for Buyer.

Conventions

All safety symbols are followed by **WARNING** or **CAUTION**, which indicates the degree of risk for personal injury and/or instrument damage. Cautions and warnings are followed by a description. A **WARNING** is intended to prevent improper actions that could cause personal injury. A **CAUTION** is intended to prevent improper actions that may cause personal injury and/or instrument damage. The following safety symbols may be found on your instrument and/or in this guide.



Burn Hazard: This symbol alerts you to the presence of a hot surface that *could* or *may* cause burn injuries.



Electrical Shock Hazard: This symbol indicates that an electrical shock could or may occur.



Chemical safety: This symbol indicates a risk of contact with chemical substances could or may occur.



Fire Hazard: This symbol indicates a risk of fire or flammability could or may occur.

Contact us

There are several ways to contact LabTech Srl.

To contact Technical Support:

Phone +39 035 576614

E-mail customer.care@labtechsrl.com

To contact Application Department:

Phone +39 035 576614

E-mail customer.care@labtechsrl.com

To contact Sales Department:

Phone +39 035 576614

E-mail marketing@labtechsrl.com

To suggest changes to documentation:

Send an e-mail with subject: Technical Publications Editor at customer.care@labtechsrl.com

Safety Rules

General Information

Please carefully read this user manual before starting to use the instrument and follow its prescriptions with the utmost care. This user manual is part of the delivery, hence must be always kept together with the instrument on its working place.

It is imperative that every person operating with this system has read and fully understood this manual. The non-observance of the instructions contained herein, or improper use may involve damages/injuries that are not covered by product liability.

Please use the equipment within the fixed temperature range. Over-range using is forbidden because it may damage the control system.

Electrical safety

The instrument must be used within the rated voltage. Prior to use, please check if the wire is aged. In case of aged wires, please contact the after-sales service for inspection. It is forbidden to disassemble the instrument and to connect internal circuit parts, to avoid a short circuit or open circuit.

Please use the special-purpose and independent socket, and the capacity of cable must be enough. Besides, a safe protection ground wire must be allocated; otherwise, it may cause the electric accident.

Always turn off the equipment and disconnect the power cord from the power source before performing any service or maintenance procedures, or before moving the unit.

Fire safety

Numerous reagents are flammable and explosive. When the solvent vapor concentration reaches a certain level, it becomes flammable and could cause fire. The instrument should be kept away from the sources of ignition and high temperature places. If there is solvent pungent smell, carefully check whether there is gas or liquid leakage, and turn off the power.

Chemical safety

The unit is an instrument for organic chemical sample pre-treatment. The involved chemical solvents have harmful effects on the human health. Despite the instrument is fully closed and features full vent design, it is recommended to pay attention to the personal safety during the use. Regular check of liquid waste barrels as well as working conditions of the vent fan are required to avoid the risk of leakage caused by corrosion and to avoid the formation of organic solvent vapours affecting operator's health. If there is a fault, please contact the after-sales service.

Never place the equipment in a moist place.

Recommendation

The equipment cannot be covered in small object while working, in case that the high temperature damages the control system.

When the equipment is working or its temperature hasn't cooled down to the room temperature, make sure not to touch the heating board.

Observe all warning labels and never remove them.

Never operate damaged equipment.

Must leave a distance above 100mm around the equipment, if the distance is too short, it may cause articles around to be damaged.

Please put the equipment on a firm, strong holder.

It's better to consult the engineers of our company before performing maintenance; wrong action may damage the equipment and void the manufacturer's warranty.

Other Information

1. If your unit belongs to EHD series, you will see 5~10°C temperature pulse when the temperature is lower than 150°C, so please carefully setup and adjust the temperature.
2. The working temperature of polypropylene tube cannot exceed 130°C.
3. The working temperature of PTFE tube cannot exceed 210°C.
4. The working temperature of 18 positions heating rack with Teflon coating cannot exceed 210°C.
5. Please carefully control temperature when using acid HClO_4 . The temperature should not exceed 130°C if sample includes quite big organic components. It is appropriate to increase the temperature above 180°C when the sample decomposition is basically finished.
6. The digestion reaction will be very strong if the sample includes quite big organic components. We recommend not to cover the tube.
7. Glass vessels are not easy to uncap after heating. Let the tube cup cool down to ambient temperature.
8. For applications where an EHD unit must work constantly over 12 hours, it is recommended to set temperature not higher than 380°C.

General Information

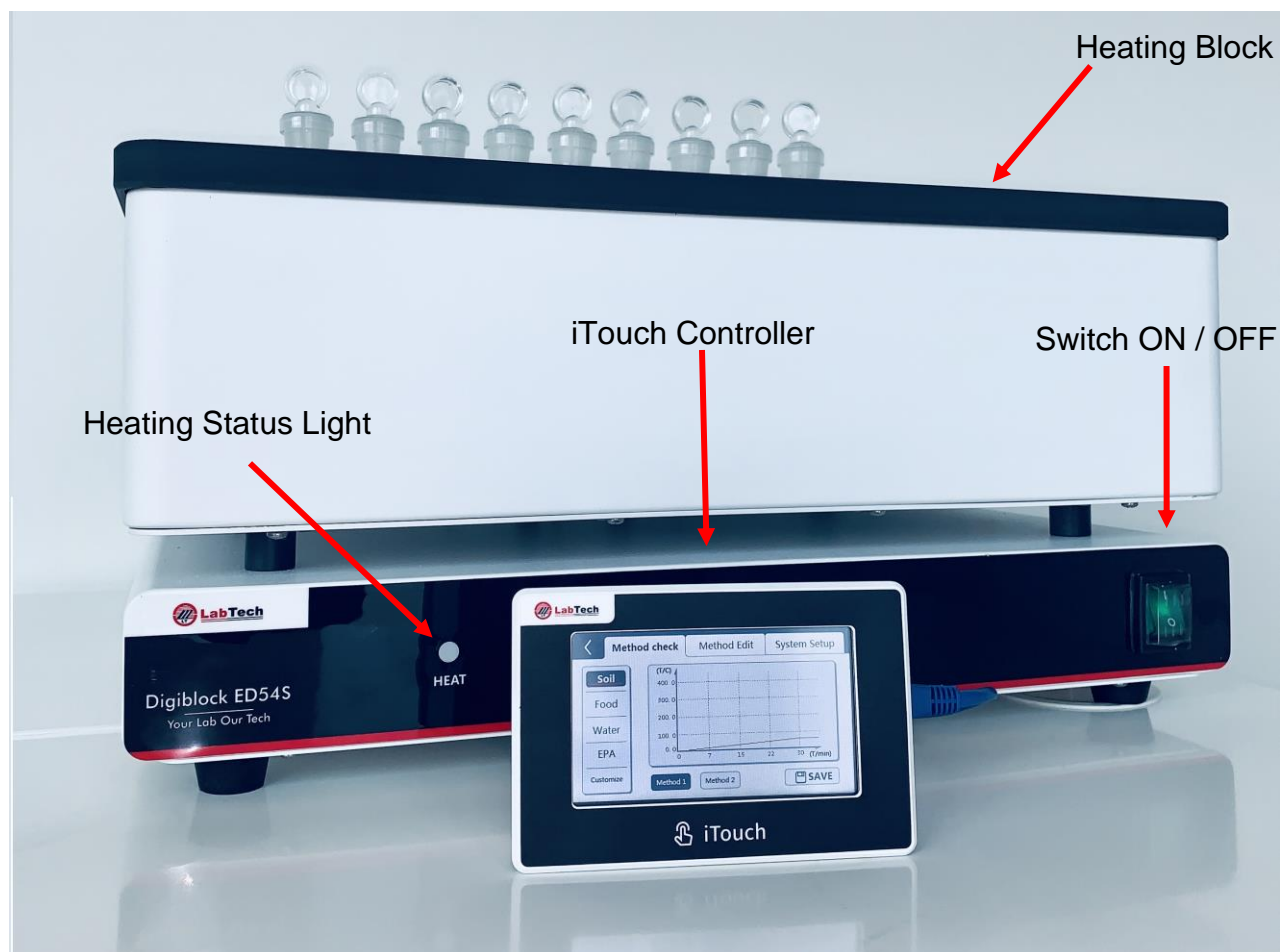
Specification

Model		HeatingBlock	Max Power.	Max. Temp.	Temp. Accuracy	Power Supply
ED-S series	ED16S / ED16S iTouch	Aluminum alloy PTFE coated	1000W	210 °C	±0.2°C	230V±10% 50/60Hz±5%
	ED36S / ED36S iTouch		1400W	210 °C	±0.2°C	
	ED54S / ED54S iTouch	Graphite PTFE coated	3000W	240 °C	±1.0°C	
EHD series	EHD36S / EHD36S iTouch	Graphite	3000W	450 °C	±0.1°C	

EDS Series – Front View



EDS iTouch Series – Front View



Installation

Site Requirements

Ambient Temperature Range: 10°C to 35°C (50°F to 94°F)

Relative Humidity Range: 10% to 80% (non-condensing)

Never place the unit in a location where excessive heat, moisture, or corrosive materials are present.

Positioning the instrument

Never place the unit in a location where excessive heat, moisture or corrosive materials are present.

Please keep the unit away from installations which release strong electro-magnetic field or high-frequency waves.

The unit should not be placed in a place with excessive corrosive gases such as chlorine, hydrochloric acid, hydrogen sulphide, sulphurous acid gas, etc.

The installation platform must be horizontal and stable without vibration, capable of supporting the total weight of the main unit and accessories. A distance at least 15 cm must be kept between the left side of the instrument and the wall for undisturbed ventilation. Enough space around the unit fan should be left for smooth ventilation.

Do not place the unit in a place exposed to direct sunlight.

Do not place the unit in a dusty environment.

NOTE: improper working environment may significantly affect the measurement performance and reduce the lifespan of the unit.

Electrical Requirements

The unit provides extra protection against the risk of electrical shock by grounding appropriate metal parts. The extra protection may not function unless the power cord is connected to a properly grounded socket. It is the user's responsibility to assure a proper ground connection is provided.

The following power options are available:

The unit is supplied with a European power cable. It is used to relate to power supply. Plug the cord into socket and plug in rear into electric socket of the unit. Then the unit is ready to be used.

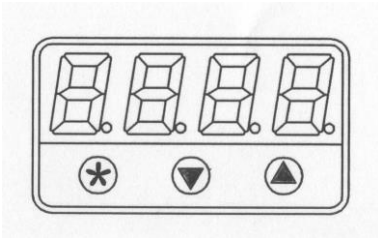
Set Up

- Step 1: open the package and take out the unit. Place it on a stable laboratory bench. Handle the unit carefully to avoid bumping it. The laboratory bench should be stable, reliable and with no vibrations.
- Step 2: connect the power supply cord. Take care the power switch is on the "O" position before connecting the power supply cord.
- Step 3: after the power supply cord is properly connected, switch ON the unit.

Optimized design has significantly improved the performance depending on installation conditions of the unit. Adequately selected installation environment will certainly be helpful to ensure longer service life and more efficient performance.

Operation

Controller CAL3300 built-in





Change the Setpoint


Press and hold , the temperature of setpoint is displaying on LCD.

Press and hold , use  or  buttons to decrease or increase the temperature of setpoint.


How to Select Display resolution

The selected temperature display is 1°C or 0.1°C, and the operation as follows.

Press  and  together for 3 seconds to enter program mode.

Press  one time and LCD will alternatively display LEUL and 1.

Press and hold  and press  one time to enter 2 and LEUL 2.



Press  continually until $\pm 5^{\circ}\text{P}$ indicated on the LCD. The LCD alternatively display $\pm 5^{\circ}\text{P}$ and 0.1.





Press and hold  and press  or  to display resolution 0.1 or 1 degree.





Once the setpoint is adjusted, release the  button.





Press  and  together for 3 seconds again to exit program mode.

How to Setup Program Ramping

Press  and  together for 3 seconds to enter program mode.

Press  continually until $SP_{r\uparrow}$ indicated on the LCD. Press and hold  and press  or  to adjust the slope of temperature ramping 0~150°C/Hour (Temperature is ramping).



Press  continually until $SP_{r\downarrow}$ indicated on the LCD. Press and hold  and press  or  to $\square\square$.


Press  continually until SO_{AL} indicated on the LCD. Press and hold  and press  or  to adjust the keeping time (0~1440min) after reaching the setpoint.

Press  and  together for 3 seconds again to exit program mode.


When $SP_{r\uparrow}$ and real temperature display alternatively the setup is finished. When SO_{AL} and real temperature display alternatively the unit is running the set procedure. When STOP and real temperature display alternatively means the temperature program ramp is finished.



How to Unlock Parameters




Press  and  together for 3 seconds to enter program mode.

Press  one time and LCD will alternatively display LEUL and 1.

Press and hold  and press  one time to enter 3 and LEUL 3.

Press  continually until $\mu E_{r\uparrow}$ indicated on the LCD. The LCD alternatively display $\mu E_{r\downarrow}$ and corresponding number.

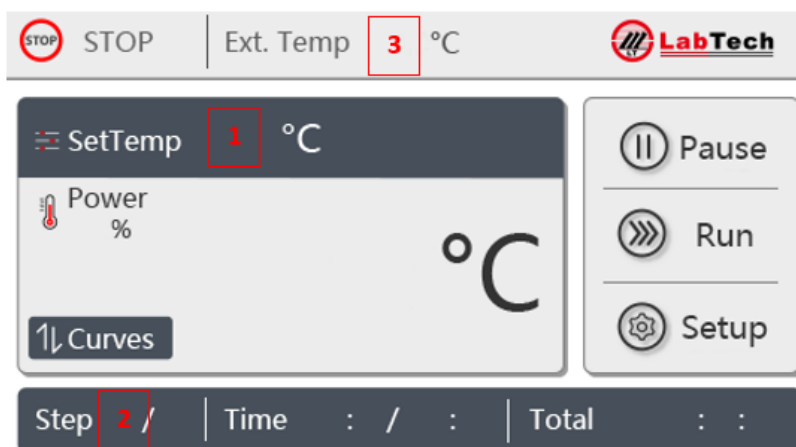
Press  and  together for 10 seconds to enter LEUL 4.

When LO_{CE} display on the LCD, press, and hold  and press  or  to NO_{PE} .

Press  and  together for 3 seconds again to exit program mode. The unlock procedure is finished.

Attention Please: It is prohibited to change any other parameters that are not indicated in user manual.

iTouch Separate CONTROLLER



LabTech iTouch controller operates by simply touching the keys on the screen.

Connect the iTouch controller to the back of DigiBlock main unit, switch ON the DigiBlock and the iTouch screen is automatically ready for operations.

1. Temperature control range: room temperature to 210°/415°C (based on different DigiBlock model).

2. Working time: from 1 to 15 heating steps. Each step can be set from -2 to 9999min.

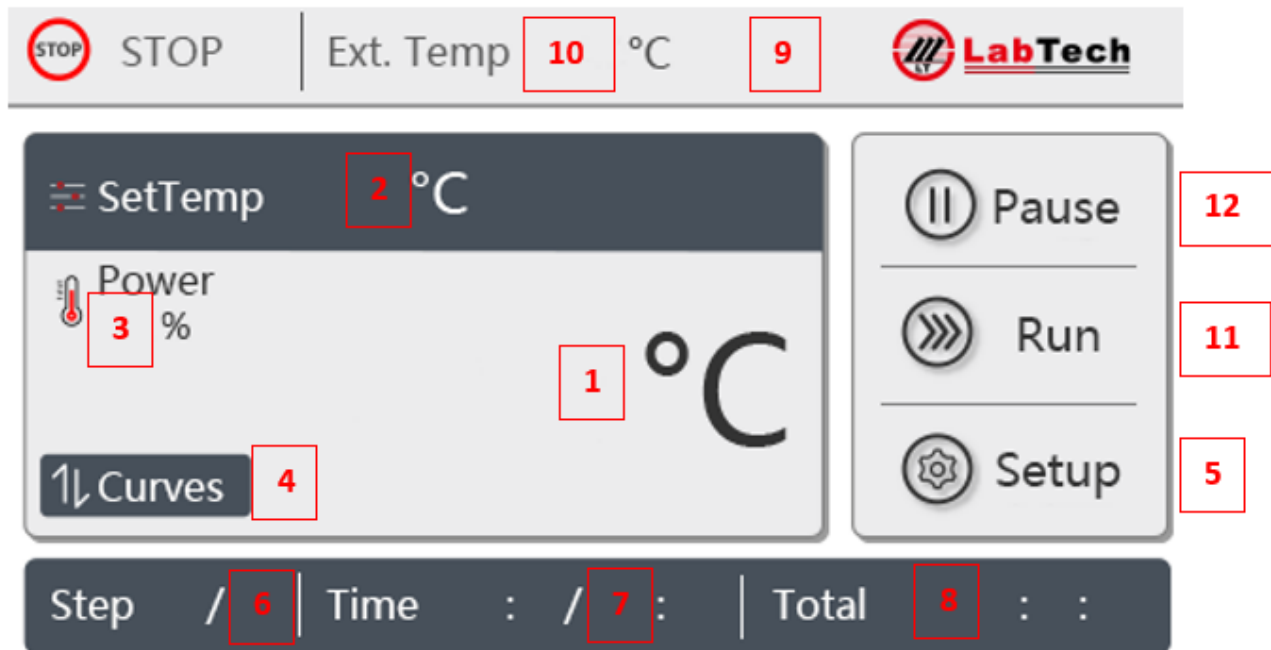
“-2” Maximum heating speed to reach temperature setpoint.

“-1” End the program.

“0” Maintain previous step time setting.

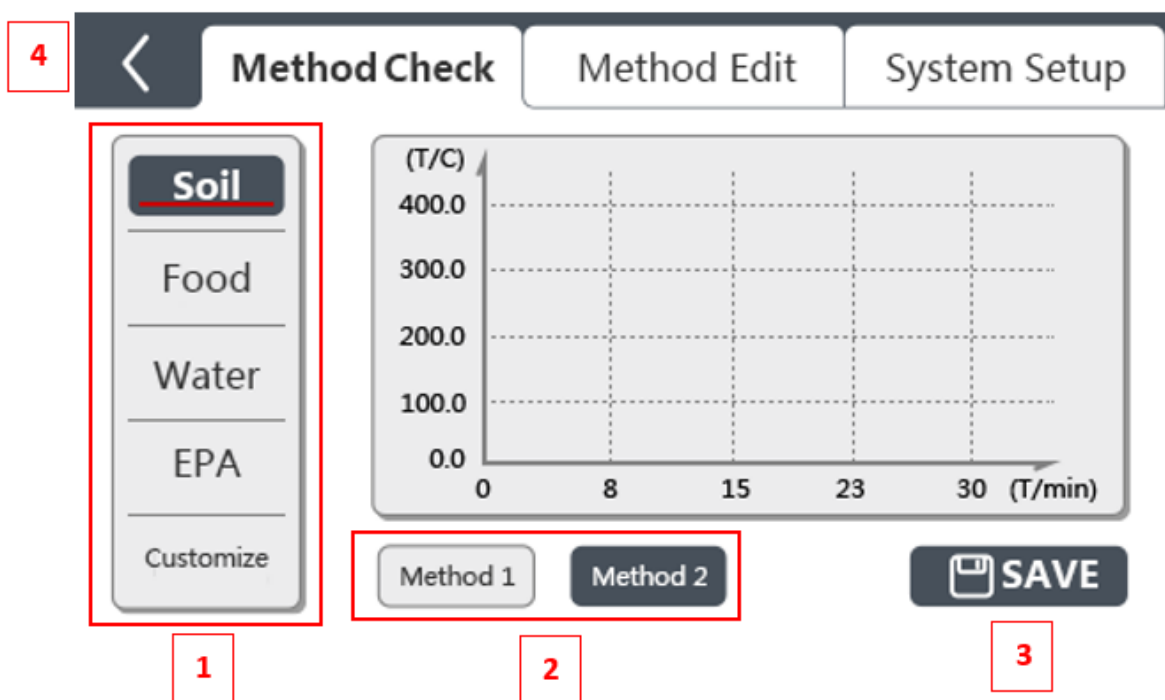
1) Temperature sensor mode: built-in K type sensor or optional PT100 external sensor.

Main Interface - iTouch Screen



1. Real -T °C: actual temperature.
2. SetTemp °C: temperature setpoint of running heating step.
3. Power %: Output power percentage.
4. Curves: Switch to heating graph page.
5. Setup: Switch to method setup page.
6. Step A/B: A means the running step no. B means the total step no. in a method.
7. Time A/B: A means actual running time of current heating step. (B means set time of current heating step)
8. Total: Total running time of the method.
9. Method running status display.
10. Ext. Temp: Display the external temperature (external sensor will be needed)
11. Run: Start selected method, once press Run, bottom Stop appear for abort the method.
12. Pause: Pause running method.

Method View Interface



- 1) Category selection: touch **SETUP** button and select desired category name located in the left column.
(**Soil, Food, Water, EPA and Customize**)
- 2) Method selection: touch **Method1** or **Method2** buttons to select method 1 or 2.
- 3) Save: select a desired method to run.
- 4) Exit: back to the main page without selecting any method.

Method Setup Interface

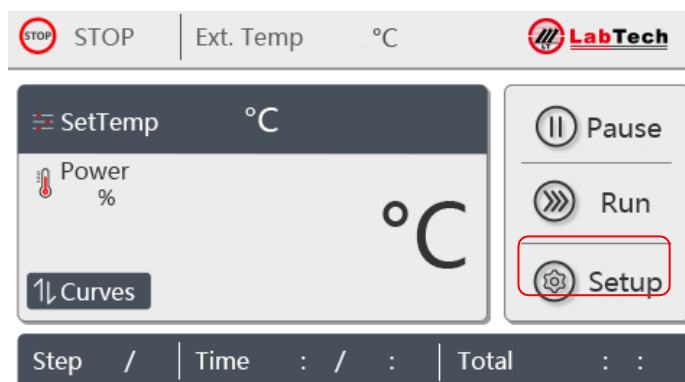
The screenshot displays the 'Method Edit' screen of the LabTech interface. At the top, there are three tabs: 'Method Check', 'Method Edit' (highlighted with a red box and number 3), and 'System Setup'. On the left, a vertical column (boxed with a red box and number 1) contains category buttons: 'Soil', 'Food', 'Water', 'EPA' (highlighted with a red box and number 1), and 'Customize'. The main area (boxed with a red box and number 2) shows five steps, each with a time input (min), a temperature input (°C), and a 'Back' button. The 'Next' button (boxed with a red box and number 4) is located to the right of the steps. At the bottom, there are two buttons: 'Method 1' and 'Method 2' (boxed with a red box and number 2), and a 'SAVE' button (boxed with a red box and number 5). The 'SAVE' button is located at the bottom right of the screen.

1. Category selection: select desired method category located in the left column.
2. Method selection: touch **Method1** or **Method2** buttons to select method 1 or 2.
3. Step no.: Square min means temperature heating time (usually set to -2, that means heat in max. heating speed); even number means temperature holding time. Square °C means set temperature.
For last step of the program, please set to -1 to stop heating after time end. Max N°3 Steps.
4. Next: next page
5. Save: save modified parameters

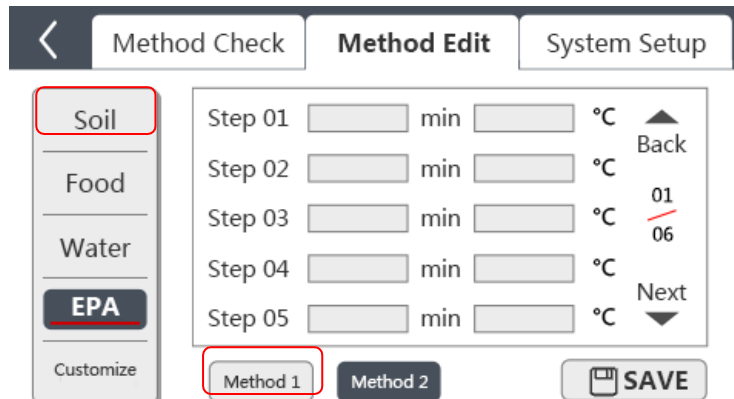
Editing an Application Setup Interface

Edit a soil digestion method in Soil category, heat from room temperature to 100°C and hold in 100 °C until switch off the unit.

- A. In home page, touch Setup to enter method set interface.

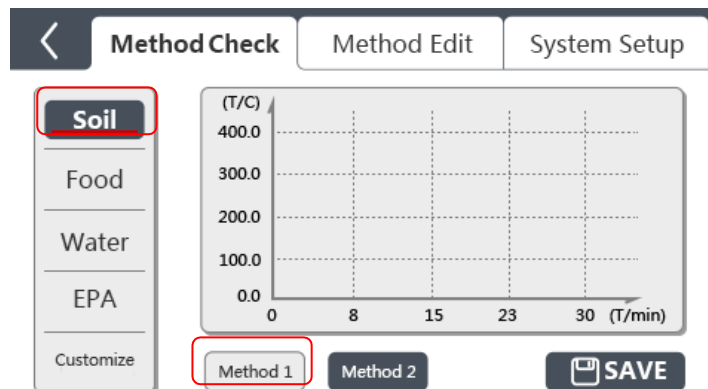


- B. Enter Method Edit interface, touch Soil and Method1



- C. Step 01: Touch the Temp. Text box, input 100 via the digital key. Then touch Time text box to input -2 which means heat in max. heating speed (Normally, the average heating speed is around 5°C/min).
Step 02: Touch the Temp. text box and input 100 via the digital key. Then touch Time text box to input 0 which means hold the temperature at previous step setpoint.

D. Touch Method Check to review the method.



E. Touch Soil then Method1 to check if the program heating curve you just set is correct. Touch Save to quit the interface and select this program.

F. In home page, touch RUN to start the selected program.

Edit another soil digestion method in Soil category, heat from room temperature to 100°C within 15min, hold 100°C for 60min, then increase the temperature to 150°C within 8min, hold 150°C for 60min. End the program.

A. In home page, touch Setup to enter Method Edit interface.

B. Touch Soil and Method2

Step 01: Touch the Temp. Text box, input 100 via the digital key. Then touch Time text box to input 15.

NOTE: Recommended temperature increasing Time is '-2' (the average heating speed is around 5°C/min), thus the unit can heat in the max. heating speed.

Step 02: Touch the Temp. text box and input 100 via the digital key. Then touch Time text box to input 60 which means hold the temperature at previous step setpoint for 60min.

Step 03: Touch the Temp. Text box, input 150 via the digital key. Then touch Time text box to input 8 which means temperature increase from 100C to 150C within 8min.

Step 04: Touch the Temp. Text box, input 150 via the digital key. Then touch Time text box to input 60 which means holding temperature at 150C for 60min.

Step 05: Touch the Temp. Text box, input 150 via the digital key. Then touch Time text box to input -1 which means stop the program after step 04.

Touch SAVE to save the method.

- A. Touch Method Check to view and check the heating graph.
- B. Touch Soil then Method2 to check if the program heating curve you just set is correct. Touch Save to quit the interface and select this program.
- C. In home page, touch RUN to start the selected program.
- D. When finish all the steps, the unit stops and buzzer screaming. Touch any key to stop the buzzer.

Preventive Maintenance

Pay attention to surface of ED series DigiBlocks, especially the corrosion-resistant model. Keeping the surface clean and check the surface periodically. Avoid acid splash during the use.

Troubleshooting

The colour of surface coating changed.

If the colour becomes dark. The reason is that high temperature condition makes the coating crystallized and reorganized. This is not affecting the usage. And, if the colour becomes white. The reason is that the super high temperature condition makes the pigment of coating decomposed. This is not affecting the usage. (Notice: please use in the safe working temperature range.)

The coating desquamated.

The surface coating of ED series products couldn't be scratched. If it is scratched, the material will be corrupted, and the corrosion-resistant coating will be scaling off.

The display temperature is jumping.

Firstly, please check whether the ground wire of power supply is well connected or not. If it is well connected, please turn on the power supply after turning off a minute. If it is still abnormal, please check around whether there are strong interference sources or not.

Declaration of Conformity

LabTech Srl

Via Fatebenefratelli 1/5
24010 Sorisole (BG) Italy
Tel. +39 035 576614
Fax +39 035 4729414

E-mail: info@labtechsrl.com
www.labtechsrl.com
C.F. – P.IVA – Reg. Imp. 03242600165
R.E.A. Bergamo 361520
Cap. Soc. 100.000,00 int. vers.

EU/UE
DICHIARAZIONE DI CONFORMITÀ
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KOFOMITÄTSEKLRUNG
DECLARACIÓN DE CONFORMIDAD



Noi
We
Nous
Wir
Nosotros

LabTech s.r.l.

(nome del produttore) (manufacturer's name) (nom du fournisseur) (Name des Anbieters) (Nombre del productor)

Via Fatebenefratelli, 1/5

24010 SORISOLE (BG) – ITALY

(indirizzo) (address) (adresse) (Anschrift) (Dirección)

dichiaro sotto la nostra unica responsabilità che il prodotto
declare under our sole responsibility that the product/system
déclarons sous notre seule responsabilité que le produit/système
erklären in alleiniger Verantwortung, dass das Produkt/System
declaramos bajo nuestra exclusiva responsabilidad que el producto/sistema

ED & EHD DIGIBLOCK PRODUCT

(modello) (model) (modèle) (Modell) (modelo)

al quale questa dichiarazione fa riferimento, è conforme con le seguenti norme
to which this declaration relates is in conformity with the following standards
auquel se réfère cette déclaration est conforme aux normes
auf das sich diese Erklärung bezieht, mit der/den folgenden Normen
el modelo al que se refiere esta declaración, es conforme a las siguientes reglas

EN 61010-1:2010 and EN 61326-1:2013

(titolo e/o numero e data) (title and/or number and date) (titre et/ou no et date) (Titel und/oder Nummer und Datum) (título y/o el número y la fecha)

Secondo le prescrizioni della(e) Direttiva(e):

Following the provisions of Directive(s):

conformément aux dispositions de(s) Directive(s):

Gemäß den Bestimmungen der Richtlinie(n) :

En conformidad con las especificaciones de las directivas:

2014/35/EC, 2014/30/EC and 2011/65/EC

(titolo e/o numero della direttiva) (title and/or number of directive) (titre et/ou no du directive) (Titel und/oder Nummer von Anweisung) (título y/o número de la Directiva)

LabTech s.r.l.

Via Fatebenefratelli, 1/5

24010 SORISOLE (BG)

P.IVA 03242600165

Mr. Diego Cortesi

General Manager

12/01/2018

Spare Parts List

DDL-RDO002	Thermo couple Ktype 1m
BCP-DYB051	Temperature protection board
ITOUCH-C	iTouch controller without main board
DDL-KZB002/D	iTouch controller display screen
DDL-KZB002/M	iTouch main board for DigiBlock
DDL-KZB002/MCI	connection interface of itouch main board
S0602170/171/069/072	iTouch controller external panel box
DDL-JRG024	Heating tube of ED54/S
DDL-JDQ008	Electromagnetic relay NT90 TPNCE220CB
DDL-JDQ005	SSR of ED54/S
DDL-KG011	Power switch
DDL-RDO007	Thermo couple 0.6m for ED54/S
SDL-KZQ002	Temperature controller
DIGI-GB54	Heating block of ED54
DIGI-AL36	Heating block of ED36S
DDL-WX001	Ethernet cable of iTouch (stop)
DDL-LB002/DFL-PTF001/DFL-LSG008	Heating block of ED16S
DDL-JJJ003-SHB	lime block ED54s
DDL-BYQ009	Transformer of ED36S
S36-WGJ020	Heater of ED36S New version/pc 300W
EHD36-WGJ021	Heater of EHD36/pc 500W
DDL-JRG027	Heater of EHD36S old version/pc
DDL-JRG016	Heater of ED36S old version/pc
EHD36-JJJ004	Teflon coated graphite cover of EHD20/EHD36
DDL-JXP005	Wire connection bar
EHD36-JJJ004/QTL004	Square graphite cover of EHD36S
EHD36-JJJ003/QTL003	Graphite heating block of EHD36S