

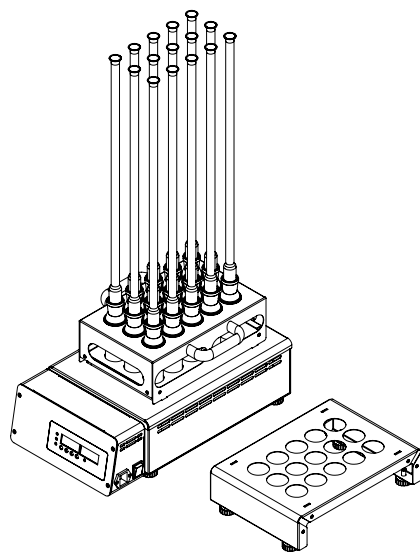
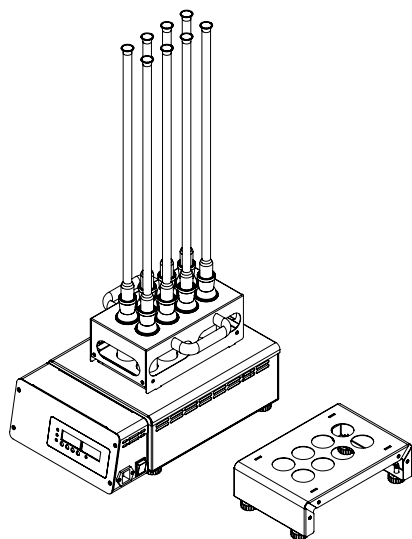
LABQUEST
BY **BOROSIL**®

CHEMICAL OXYGEN DEMAND

OPERATING MANUAL

COD080

COD015



DEALER :

THANK YOU NOTE

We Borosil, one of India's most customer oriented brands truly appreciate your business and express our gratitude for the trust you have placed on us.

We hope your choice serves you well in your scientific endeavors and aspire to have the pleasure of doing business with you for years to come.

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SPECIFICATIONS

PARAMETERS	COD080	COD015
SAP Code	BLFACOD08000000000	BLFACOD01500000000
SAP Description	08POSN OPEN REFLUX BASIC COD DIGESTER	15POSN OPEN REFLUX BASIC COD DIGESTER
No. Of Position	200 ml x 8	200 ml x 15
Material Of Construction	SS304 and MS-Powder coated	SS304 and MS-Powder coated
Dimensions (WxDxH) in mm	290 x 470 x 880 mm	290 x 525 x 880 mm
Temperature Controller	Available	Available
Temperature Range	Ambient to 200°C	Ambient to 200°C
Temperature Accuracy	+/- 3°C	+/- 3°C
Timer	Available	Available
Heating Source	Mica heater	Mica heater
Max. Heating Element Temperature	200°C	200°C
Heating Chamber Unit	Aluminium Block, machined 1060	Aluminium Block, machined 1060
Power Consumption	1200 W	1600 W
Current Consumption	8 A	10 A
Voltage	230 V	230 V
Frequency	50 Hz	50 Hz
Test Tube Material	Borosilicate Glass	Borosilicate Glass
Fume Extractor Material	Borosilicate Glass	Borosilicate Glass
Ambient Temperature	10°C to 45°C	10°C to 45°C
Safety & Efficiency	Auto OFF After safety time is completed	Auto OFF After safety time is completed

PACKING LIST OF COD080

1. Digestion Unit.....01 No.
2. Test Tube Tray.....01 No.
3. Cooling Tray.....01 No.
4. Fuse 8 Amp.....01 No.
5. Operating Manual.....01 No.
6. Test Report.....01 No.
7. Service Report.....01 No.

GLASS PARTS	COD080
Test Tubes	08 Nos.
Air Condensers	08 Nos.

PACKING LIST OF COD015

1. Digestion Unit.....01 No.
2. Test Tube Tray.....01 No.
3. Cooling Tray.....01 No.
4. Fuse 10 Amp.....01 No.
5. Operating Manual.....01 No.
6. Test Report.....01 No.
7. Service Report.....01 No.

GLASS PARTS	COD015
Test Tubes	15 Nos.
Air Condensers	15 Nos.

SAFETY AND WARNING



Important operating and maintenance instructions

Read the accompanying text carefully.



POTENTIAL ELECTRICAL HAZARDS

Only qualified persons should perform procedures associated with this symbol.



LIFTING HAZARD WARNING

The COD080 digestion unit weighs around 25 kg & COD015 digestion unit weighs around 30 kg. Take adequate safety measures while moving this unit.

Equipment being maintained or serviced must be turned off and locked off to prevent possible injury.



CAUTION:

- On long hours of usages the glass test tubes, body panels and trays will get hot.
- The hot surfaces may cause burns to unprotected skin, or to materials which may be damaged by elevated temperatures.
- Always use proper protective equipments. (Clothing, gloves, goggles, etc.)
- Always follow good hygiene practices.
- Each individual is responsible for his / her own safety.

SAFETY INSTRUCTIONS

- Do not keep the unit on wet bench top.
- Do not wash the unit with water.
- Wipe the unit with dry cloth after usage.
- Ensure no fluid is spilled on the top surface of the equipment and heater.
- Do not touch the equipment, test tubes while in use as it will be hot.
- The unit should be plugged to standard 230V 50Hz, 15A, 3 pin power socket.
- The unit should be plugged into power socket having proper earthing.

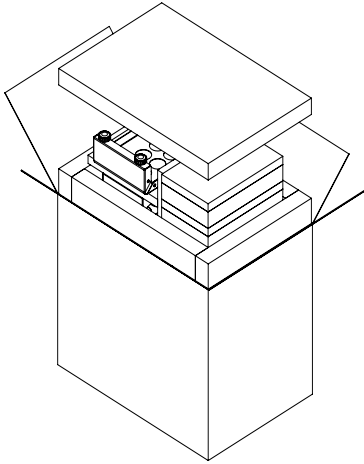


WARNING:

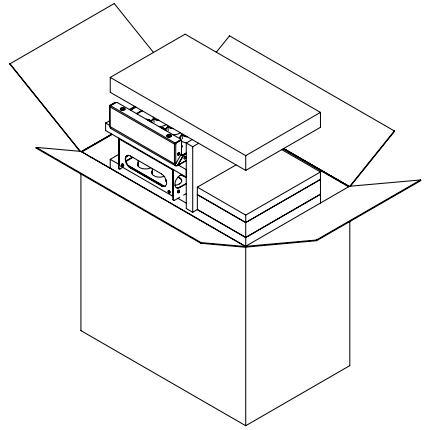
Inadequate earthing at the installation facility can lead to hazardous electrical shocks. The manufacturer is not liable for any injury or death resulting from electrical hazards due to faulty earthing in the lab.

UNBOXING OF THE PRODUCT COD080 & COD015

UNPACKAGING INSTRUCTION



COD080



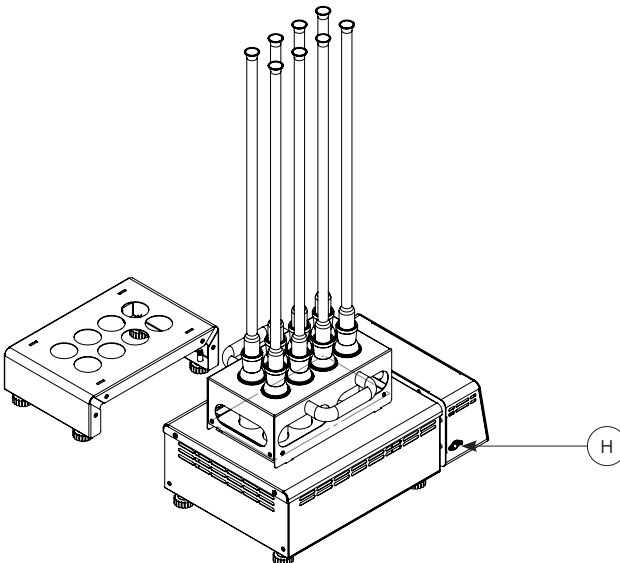
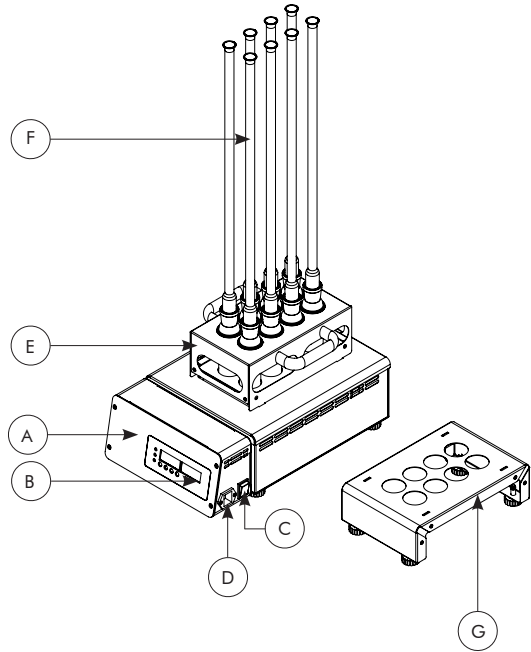
COD015

1. Safely remove the foam from the box.
2. Remove condenser and the test tubes from the box.
3. Handle the glass parts with utmost care and preserve it at a safe place until installation.
4. Remove test tube tray.
5. Remove the COD unit placed at the bottom of the box.
6. Post unpacking if any damage is found, please report to the dealer / delivery agent.

(Read manual before installation)

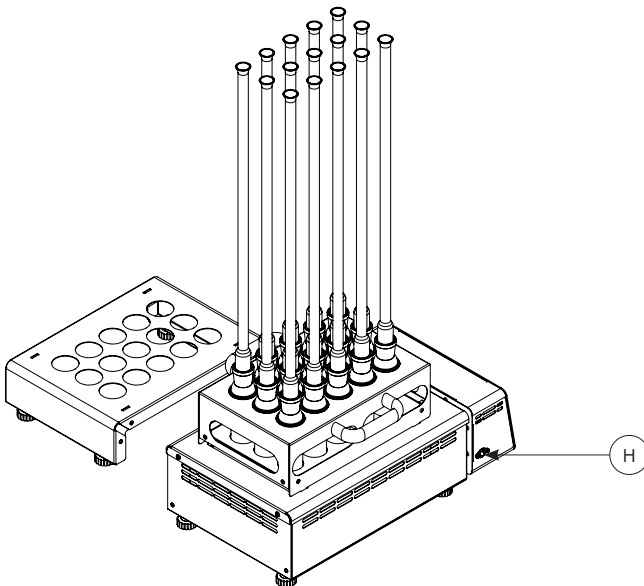
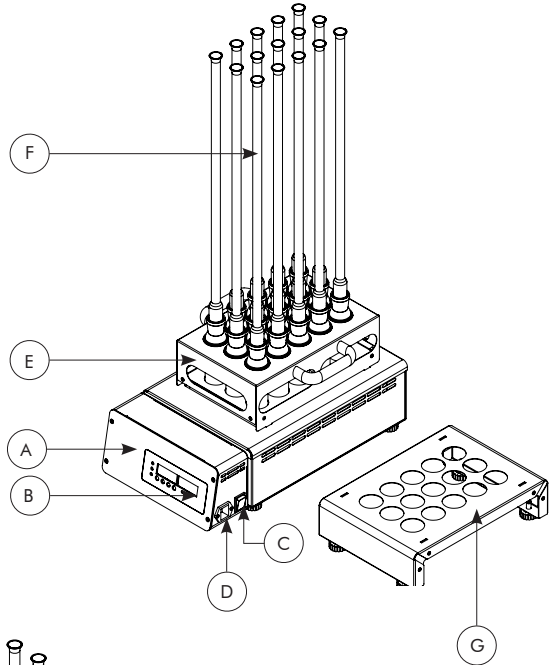
PRODUCT IDENTIFICATION OF COD080

- A. OXYGEN DEMAND UNIT
- B. PID CONTROLLER
- C. POWER SWITCH
- D. POWER SOCKET
- E. TEST TUBE TRAY
- F. AIR CONDENSER
- G. COOLING TRAY
- H. DIN CONNECTOR



PRODUCT IDENTIFICATION OF COD015

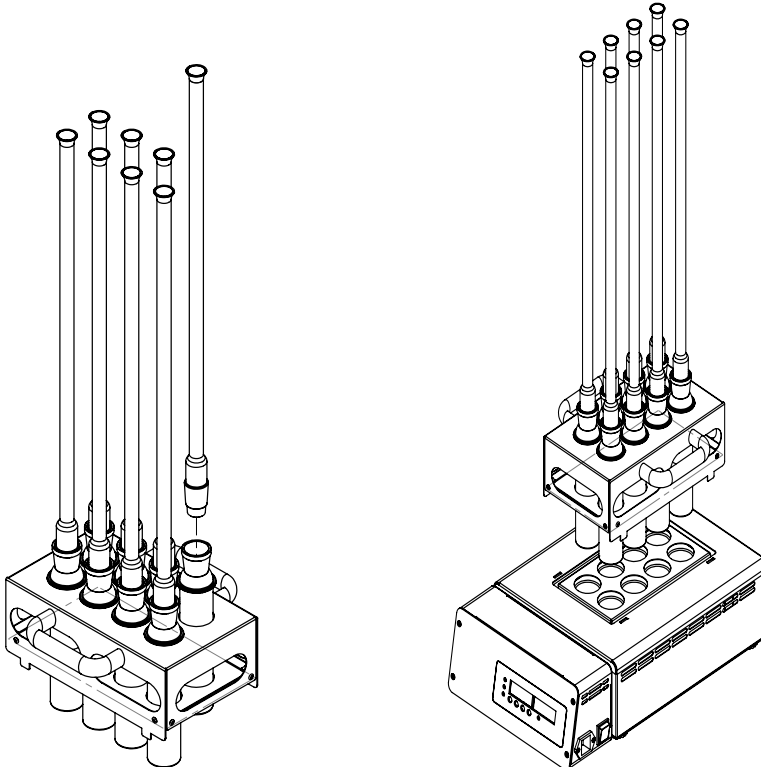
- A. OXYGEN DEMAND UNIT
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INSTALLATION OF COD080 & COD015

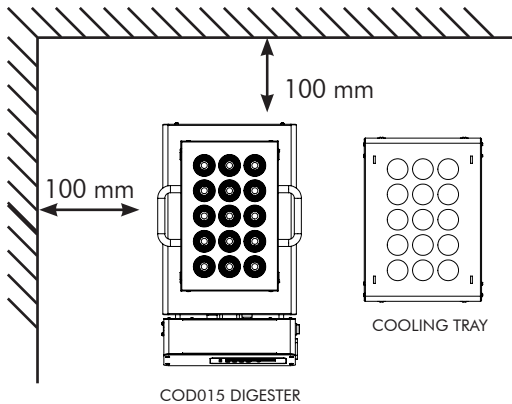
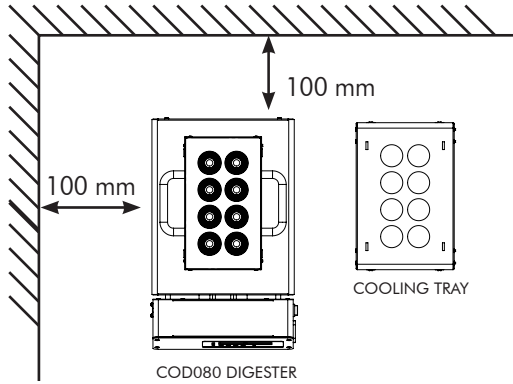
Instruction For Installing COD080 Unit

1. Locate the test tube holder on the base unit.
2. Now place the test tube in the test tube tray, making sure the tabs provided in the test tube tray gets fitted into the slot provided on top plate of the unit.
3. Now place the air condenser on the test tube.
4. This additional accessory is being provided to keep the test tube tray onto it after digestion is completed to avoid breakage of test tubes.
5. Please ensure the 8 Amp fuse is inserted in the fuse holder.
6. Please ensure the wall socket is of 15A outlet.
7. Connect the power cord to the wall socket.



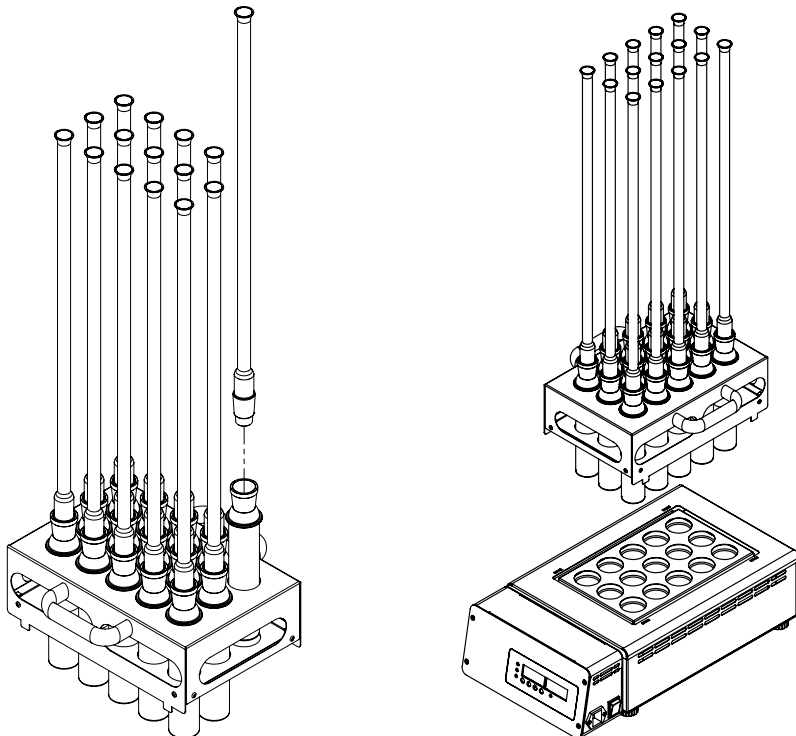
INSTALLATION OF COD080 & COD015

Place the whole unit at the 100 mm gap from side and from back.

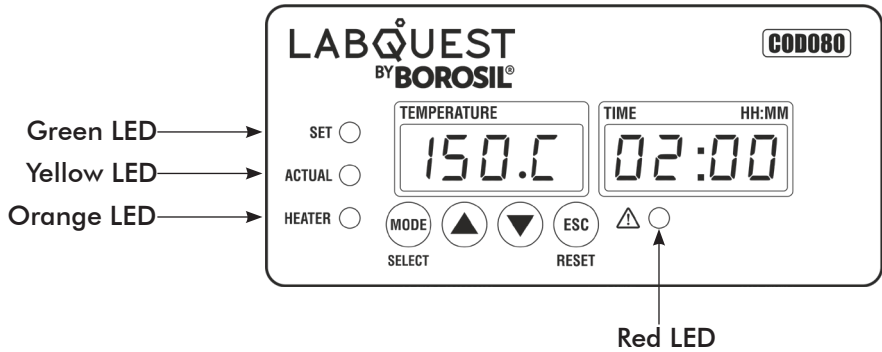


Instruction For Installing COD015 Unit

1. Locate the test tube holder on the base unit.
2. Now place the test tube in the test tube tray, making sure the tabs provided in the test tube tray gets fitted into the slot provided on top plate of the unit.
3. Now place the air condenser on the test tube.
4. The additional accessory i.e., cooling tray being provided, to keep the test tube tray onto it after digestion is completed to avoid breakage of test tubes.
5. Please ensure the 10 Amp fuse is inserted in the fuse holder.
6. Please ensure the wall socket is of 16A outlet.
7. Connect the power cord to the wall socket.



DESCRIPTION OF BUTTONS AND USB CONNECTIVITY



1. SELECT :

- Single press - It selects the parameter which needs to be set and also to start the process.
- Long press - It is used to enter in to the setting mode.

2. UP (▲) :

- It is used to increase the set point values and to scroll up the setting window.

3. DOWN (▼) :

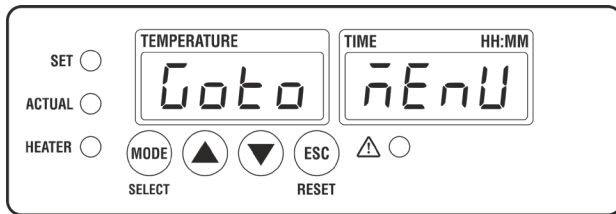
- It is used to decrease the set point values and to scroll down the setting window.

4. RESET (⊞) :

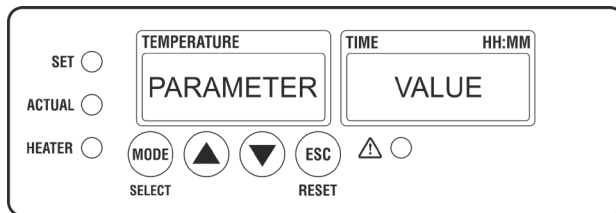
- Single press - It is used to go back to previous state (back function) also used to exit from settings mode.
- Long press - It is used to exit from the settings mode and to stop the process.



FEATURES OF COD080 & COD015

- Long press SET button and display will show “Goto Menu”. After releasing SET button Settings parameter’s will display.

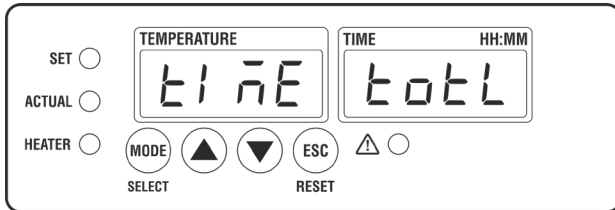
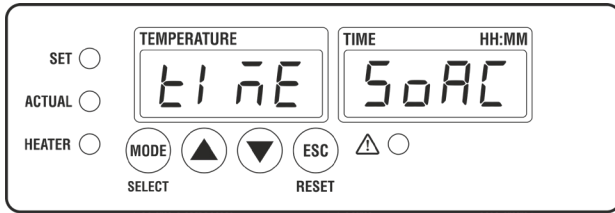


- In settings, First display will show Parameter while second display shows selected previous stored values.



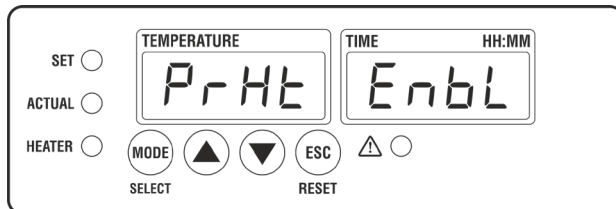
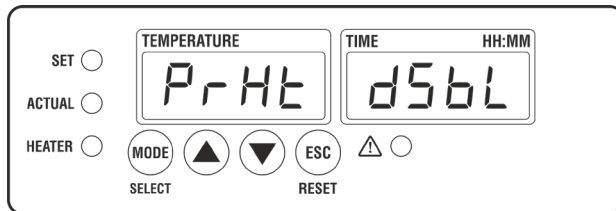
- To change value of Parameter single press **SET** button then second display will start blinking. To change current values press  or  button.
- To save that change values, single press **SET** button. Second display will stop blinking and user will see the selected values of parameter on second display.
- If user don't want to change the values of parameter and want the previous selected values of parameter then single press **RST** button and parameter will stop blinking and user will see the previous selected parameter's values on second display.

1. Time



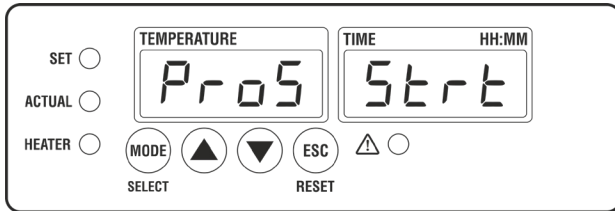
- User can select time with two modes : SOAK or TOTAL.
- If user kept time on SOAK mode, timer countdown will start after reaching the set temperature.
- If user kept time on TOTAL mode, timer countdown will start with the process.
- Default time selection is in SOAK mode.

2. Pre-Heat Selection Mode



- User can select Pre-Heat selection with two modes : DISABLE or ENABLE.
- If user kept Pre-Heat selection on DISABLE mode, timer countdown will start after reaching the set temperature.

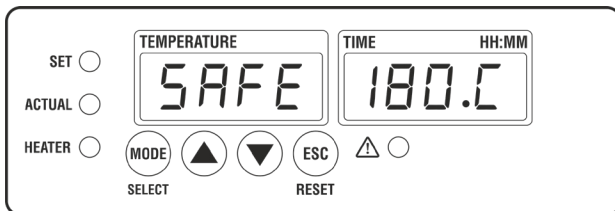
- If user kept Pre-Heat selection on ENABLE mode, after reaching to the set temperature, display will blink with the buzzer and shows on front panel “Process Starts”.



- By single press “ESC” button timer countdown will start.
- Default Pre-Heat selection is in DISABLE mode.

3. Safe

- In this feature, user can lock the maximum set temperature.



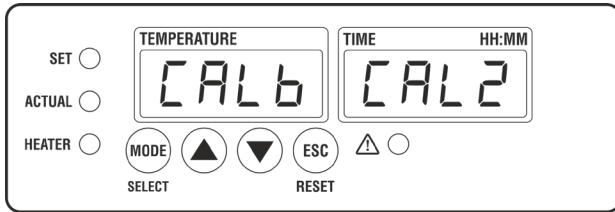
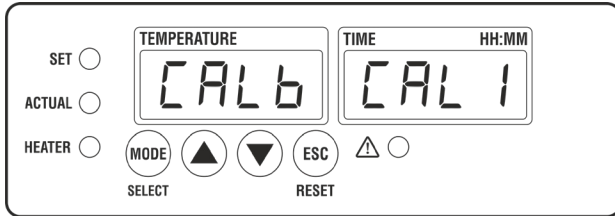
- User can select between ambient to maximum value of 180°C.

Example

- If the user locks internal set temperature value to 180°C using the safe function and saves it, then user can only set probe temperature value upto 180°C.

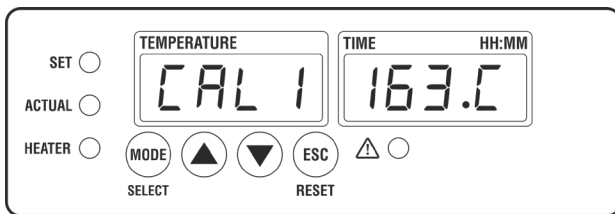
4. Selection of calibration mode

- In this feature, user can select calibration mode between single point calibration and two point calibration as per their requirement.

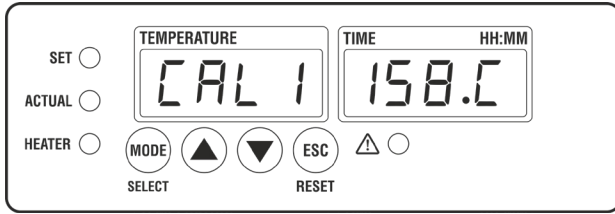


5. One point calibration

- In the One point calibration feature, the second display will show raw temperature



- If the reference thermometer/ Master calibrated device shows 158°C then single press SET button.
- Values will start blinking then press the decrement button after setting 158°C, to save these values press the SET button and display stops blinking and shows you the raw temperature value.



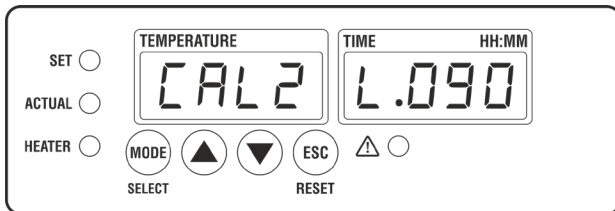
- Error calculation is done automatically and it adds in your current temperature as selected calibration is one point calibration.
- If you don't want to save the values press the RST button until values stop blinking and shows you the raw temperature value.

6. Two point calibration

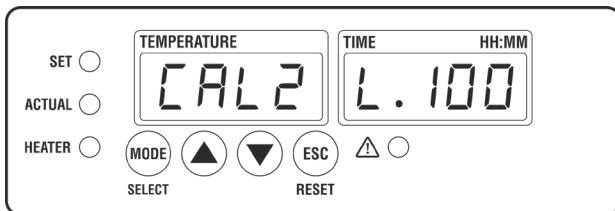
- In this feature the user has to calibrate two points, Low point and High point.
- Low point can calibrate between 70°C to 90°C.
- High point can calibrate between 150°C to 180°C.

Example

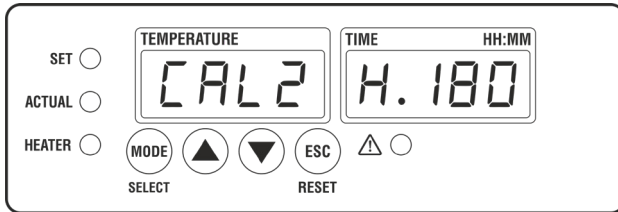
- If the user wants to calibrate the oxygen demand at 100°C and 180°C, select CAL2 feature.



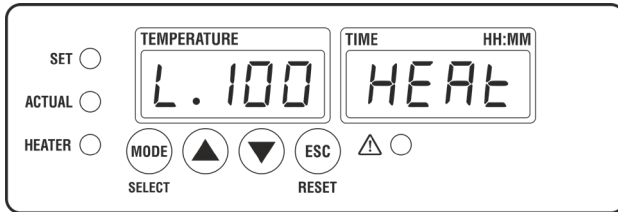
- Press SET button and set low point 100.



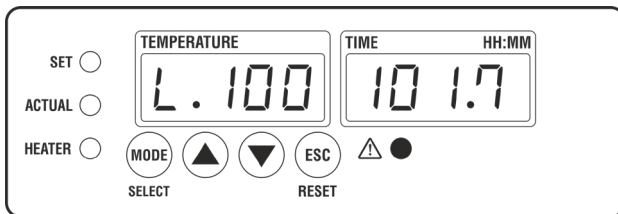
- After setting the low point, press the SET button and high point window will pop up. Set high point 180 and press SET button.



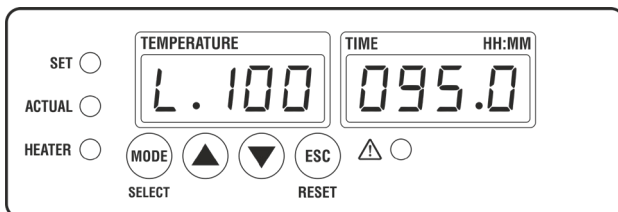
- It starts heating.



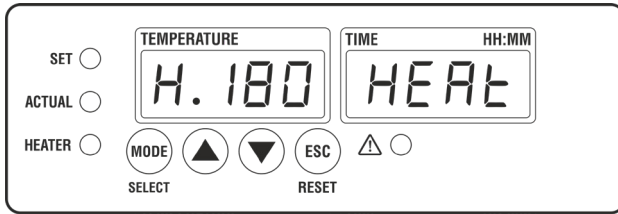
- After reaching a set low point temperature, one display will show the set temperature, while the other shows the current temperature and buzzer starts beep and red alarm led will ON.



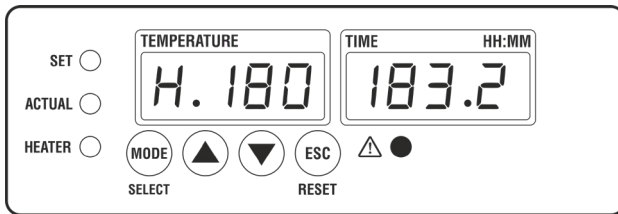
- Press the SET button and put the master's/ calibrated thermometer temperature.



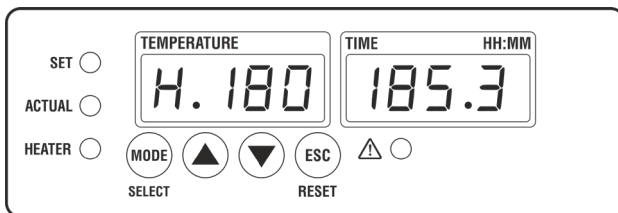
- Press SET button and it starts heating again for set high point temperature.



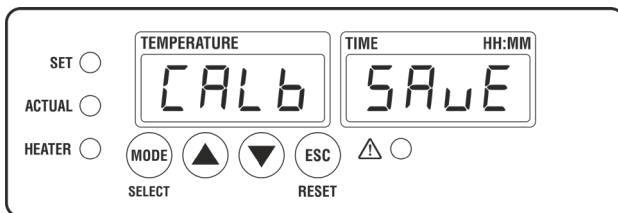
- After reaching a set high point temperature, one display will show the set temperature, while the other will show the current temperature and buzzer starts beep and red alarm led will ON.



- Press the SET button and put the master's/ calibrated thermometer temperature.



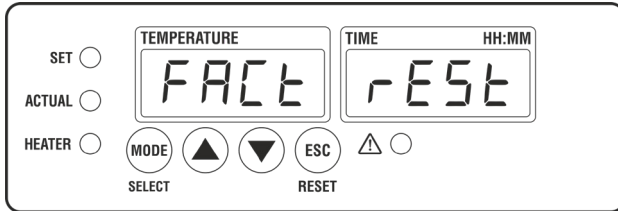
- When the window will show calibrated saved then two point calibration is done successfully.



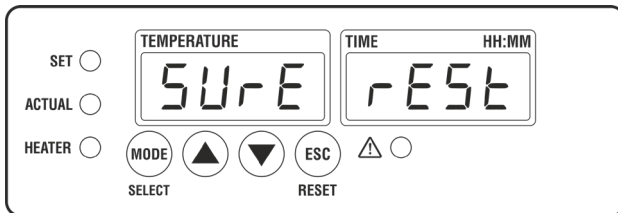
Note: If the set temperature is reached and within 30 min if there is no interruption from the user then the process will automatically switch off.

7. Factory Reset

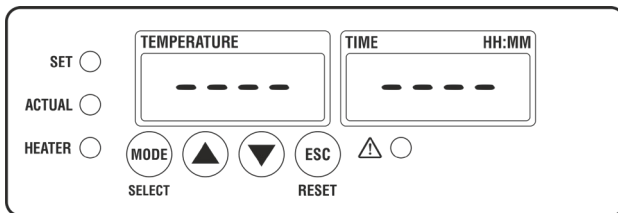
- This is a factory reset option. If the user selects this option then the product will reset and all the default value of features will be restored and calibration value will be discarded.



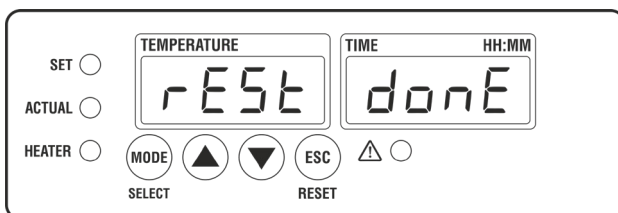
- Press the SET button and it will ask for confirmation to factory reset.



- Press the SET button and resetting of the unit will start.

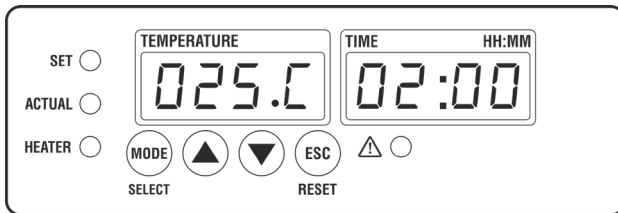


- Reset done window pops up and it goes to the home page after the factory reset is done.

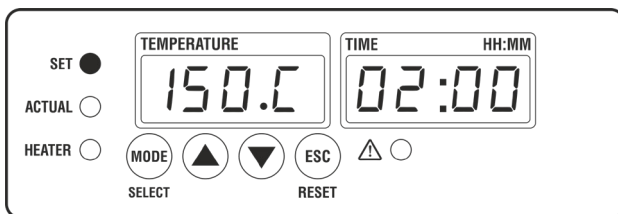


OPERATIONS OF COD080 & COD015

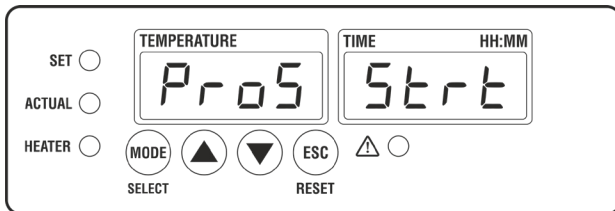
- Default power ON state - It will check whether the probe is connected or not.
- If probe is connected it displays the current temperature and previous saved time, otherwise it will display the probe error.



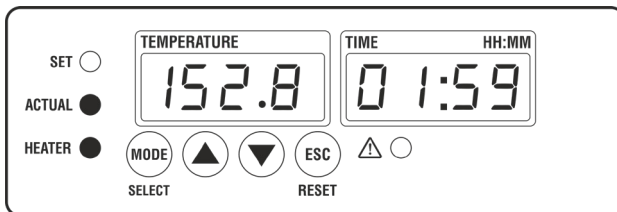
- PRESS MODE button to set parameters.
- Use ▲ & ▼ buttons to increase and decrease the set point values.
- To set temperature single press the mode button, first display will show the previous set temperature value, if previous set temperature value is less than 150°C then by default it will set 150°C.
- User can set maximum temperature upto 180°C.
- To set time single press the mode button, second display will show the previous set time, if previous set time is less than 2 hrs by default it will set 02:00 hrs.
- User can set maximum time (hour:min) 10:59



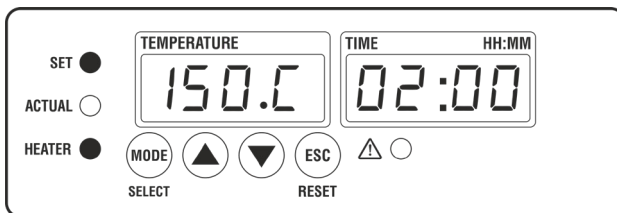
- After setting the time the process starts.
- If user wants to start the process with the previous parameter's (Temperature and Time) "Single Press" the MODE button, then "Long Press" the MODE button, process will start with the previous parameter's.
- After reaching to the set temperature display will blink with the buzzer (Different Sound/Tone) and shows on front panel "Process Starts".



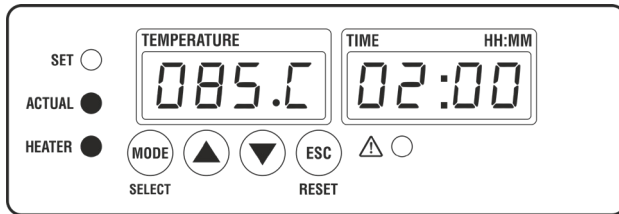
- By single press "ESC" button timer countdown will start.



- The process will stop after reaching the set time given by the user.
- If the user set, the set time to 00:00 the process will not start.
- Once the process is started, Process window will be shown.

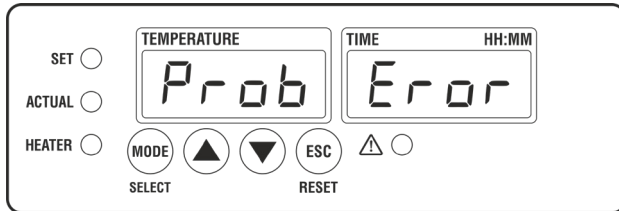


- At the same time Set window will be displayed alternatively.



POP UP ERRORS IN COD080 & COD015

Probe Error

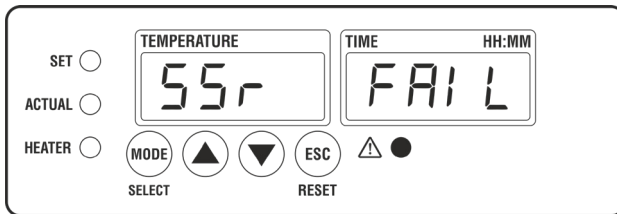


- This window will pop-up if the probe is open or the probe is faulty and buzzer will beep.
- If the error window is displayed by the system during the process (the controller will stop the heating and timer will be paused).
- Connect the probe to continue the process.

SAFETY ALERT

1. Whenever the plate temperature goes beyond 300°C in process and out of the process, contactor will cut off the power supply.
2. It helps to prevent the overheating.
3. User needs to switch off the unit directly, when SSR FAILURE ALERT shown on the screen.

Note: Please contact the BOROSIL service center.



OPERATING THE UNIT

1. Switch on the wall power switch.
2. Switch on the power switch on the device.
3. Please check whether the current is flowing in the body by using a tester.
4. Do not touch the unit with bare hands.



WARNING!

If the tester lights, switch off the unit, remove power cable from the wall and check earthing. If the problem persists, do not operate the unit and please contact Borosil Service Center.

5. Place the test tube with samples in the test tube holder and place it on the equipment. Ensure all test tubes are inserted into the heating chamber.
6. User can view both present temperature and set temperature on first display.
7. User can view countdown time on second display.
8. Now set the desired temperature required to digest the sample.
9. After setting time, press the MODE button.
10. The controller switches on and it turns on the heater.
11. For temperature and time setting please refer page no. 26.
12. The heater automatically switches OFF after completion of the set time.
13. If in case, user wants to terminate the process in between, then press the RST button.
14. Every time the user switches ON the equipment, the previously set time and temperature settings will be retained.
15. After process completes, buzzer will on and "RED LED" blink.

NOTE: As per the tests carried out, the heater reaches 180°C in 15 minutes.

TROUBLESHOOTING

S.NO.	PROBLEM	SOLUTION
1.	The unit is not turning ON.	<ul style="list-style-type: none"> • Check the power supply in mains. • Make sure power cable is inserted to the socket properly. • Check whether the main switch is ON or OFF. • If illuminated switch is not ON, please check the fuse.
2.	If the fuse is blown.	<ul style="list-style-type: none"> • Switch OFF the unit and remove power cable from AC mains. • On the right side of the equipment a fuse holder is present, remove the holder. • Check whether the fuse is damaged, if yes, please replace it with a spare fuse provided in the box.
3.	If the heater is not getting ON.	<ul style="list-style-type: none"> • Check the power supply in mains. • Check whether the switch is ON. • If the problem persists, please contact Borosil Service Center.



WARRANTY REGISTRATION

Please handover this registration form to the distributor from where you have purchased this product. The warranty is valid only when this warranty registration form is received by us within 30 days from the date of purchase.

Product: COD080 COD015

Product Sr. No.: _____

Date of Invoice : _____

Invoice No.: _____

Customer name & address

Name : _____

Address: _____

Telephone: _____

E-mail: _____

Customer sign & seal

Dealer name & address

Name : _____

Address: _____

Telephone: _____

E-mail: _____

Dealer sign & seal

BOROSIL® Scientific

STATEMENT OF WARRANTY

Borosil confirms that this product has been manufactured in accordance with our technical specifications and quality requirements.

- Borosil warrants the product from manufacturing and workmanship defects for a period of 12 months from the date of invoice.
- Warranty is void, if apparatus is not operated as prescribed in the operating manual supplied along with the unit.
- To be covered under warranty.
 - » Units have to be connected to standard 230V 50Hz, 15A wall sockets with proper earthing.
 - » The units should never be run with heater on continuously for more than 5 hours.
 - » Corrosion damage due to spillage of chemical will not be covered under warranty.
 - » Warranty does not cover rust and physical damage to metal parts due to corrosive environment in the lab.

Terms:

- » In the event of malfunction due to defect, the buyer will have to follow the Borosil’s service process.
- » Certain units can not be serviced/rectified at the buyer’s place and the units may have to be brought to Borosil’s service center as advised by Borosil’s representatives.
- » In no event shall Borosil be liable for consequential or incidental damages.

INVOICE DATE	BUYER	AFFIX SERIAL NUMBER
INVOICE#		
Dealer name & address		Dealer sign & seal

BOROSIL SCIENTIFIC LIMITED

Corporate Office : 1101, Crescenzo G-Block, Opp. MCA Club, Bandra Kurla Complex, Bandra (E), Mumbai-400051, India

: MANUFACTURED BY :

Borosil Scientific Limited

Plot No.7, Sr. No. 234, 235 & 245,
Indialand Global Industrial Park,
Hinjewadi Phase 1, Pune - 411057

Write to us on above address.

: MARKETED BY :

Borosil Scientific Limited

1101, G-Block, Parinee Crescenzo,
BKC, Bandra East, Mumbai - 51

Maharashtra, India

: CUSTOMER CARE CONTACT :

Phone : 1800 22 4551 | Email : lab.support@borosil.com

Website : www.borosilscientific.com