

# **DIGITAL OIL BATH**



## **Instruction Manual**



**Model No.: LOB-200T**

**Please read this manual carefully before using the instrument**

**Labnics Equipment**

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# Table of Content

Chapter	Content	Page No.
1.	Before Use	1
2.	Safety Precaution	1
2.1	Power connection	1
2.2	Installation	2
2.3	operation	2
2.4	Maintenance	2
3.	Feature and Advantage	3
4.	Specifications	4
5.	Parts and Functions	4
6.	Controller and Function	4
7.	Operation	6
8.	Frequently Asked Question	8
8.1	Temperature keep increasing and decreasing under operating temperature	8
8.2	LED displays uuuu and beep	8
9.	Trouble Shooting	8
10.	Inspection Log	9
11.	Maintenance & Service Check List	10
12.	Service Report	11

## CHAPTER 1. BEFORE USE:-

Thank you for choosing Labnics Laboratory Products

Please read this operation manual carefully before use for your safety and optimum operating performance.

If you have any question, please contact sales representative or service engineer.

## CHAPTER 2. SAFETY PRECAUTION:-

This manual contains important operating and safety information. You must carefully read and understand the contents of this manual prior to the use of this equipment.



### **Warning:-**

Warning alert you to a possibility of personal injury



### **Caution:-**

Caution alert you to a possibility of damage to the equipment.

### 2.1 Power Connection:-



### **Caution**

1. Your Digital Oil Bath designed for 110VAC 60Hz 1P or 220VAC 50/60Hz 1P.
2. Check electrical requirement on the name plate before use. Name plate is located in electric cord connection.
3. Connect to receptacle with ground connection.
4. Be sure to supply enough electrical current.

## 2.2 Installation:-



**Caution**

### **Do not use or heat up without oil or water in bath**

1. Install instrument at least 100mm apart from side wall.
2. Place flat, rigid and leveled surface.
3. When moving oil bath do not up-side-down.

## 2.3 Operation :



**Warning**

Your oil bath is used for high temperature application. Do not touch surface of oil bath without protection gear to prevent injury.



**Caution**

1. Use proper oil.
2. Silicone Oil is recommended.
3. After purchase auto-tune your oil bath with oil you are using.
4. Do not put volatile, flammable and explosive material inside of oil bath.
5. Be careful not to spill liquid on the control panel.

## 2.4. Maintenance:-



**Caution**

1. Do not pour water or solvent when you clean oil bath.
2. Do not use high organic solvent for cleaning surface of oil bath.

## CHAPTER 3. : FEATURE

Labnics LOB-200T Digital Oil Bath is .....

ideal for general laboratory use requires constant temperature range from ambient +10°C to 250°C.

- Controller -**
- Digital microprocessor PID Controller
- Performance -**
- Temperature Range : ambient +10°C ~ 250°C
  - Resolution : ± 0.1°C
- Material -**
- Inner Bath : Stainless Steel 304 (ANSI 304)
  - Outer Cabinet : Steel with epoxy powder coating
  - Lid Packing : Stainless Steel 304 (ANSI 304) /w Silicone
  - Insulation : Mineral Glass Wool
- Safety -**
- Over current cut-off Leak age Breaker
  - Over temperature cut-off

## CHAPTER 4.SPECIFICATIONS:-

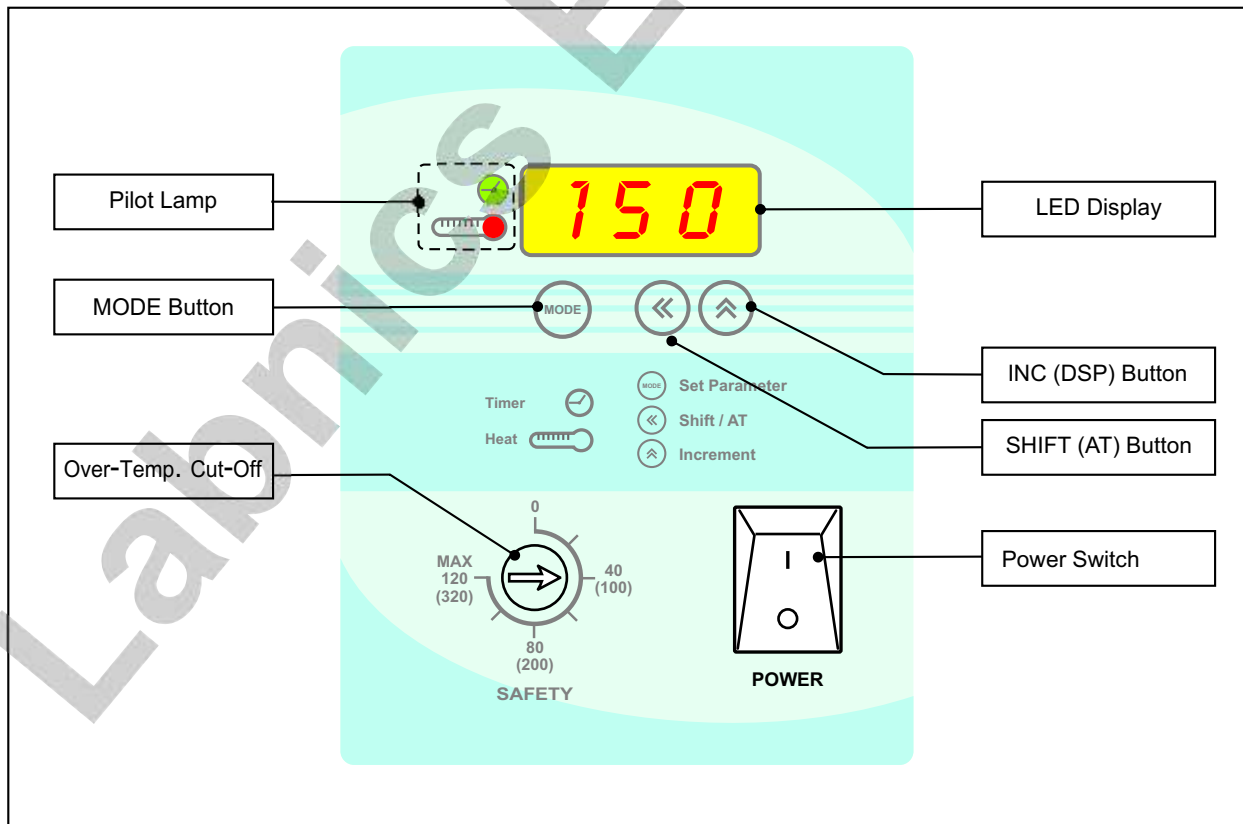
Model		LOB-200T
Chamber Volume		20 Liter
Temperature	Range	Ambient + 10°C ~ 250°C
	Accuracy	± 1.5°C
	Uniformity	± 3°C
Heater		3.0 Kw
Controller		Digital PID Controller with Timer and Auto-Tuning
Wait off Timer		mm:ss / hh:mm / dd:hh / Continuous Selectable
Sensor		PT Sensor
Safety Device	Temperature	Hydraulic Over Temperature Protection Safety Device
	EL Leakage	Electrical Leakage Breaker
Dimensions W x D x H mm	Inner	400 x 300 x 170
	Usable	400 x 300 x 130
	Outer	640 x 380 x 320
	Clearance	650 x 390 x 330
Material	Bath	Stainless Steel 1.6 T Polished (SUS304)
	Case	Powder Coated Steel
Cover	External	Stainless Steel 1.6T
	Insulation	Ceramic Wool 50 mm
	Lid Gasket	High Temperature Resistance Foamed Silicone Rubber
Electrical Requirement		220V, 60 Hz

## CHAPTER 5 : PARTS AND DESCRIPTIONS

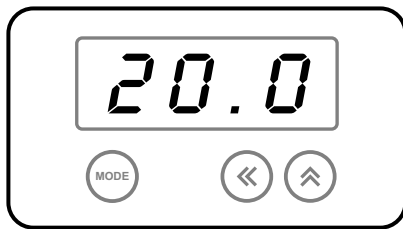


## CHAPTER 6 : MAIN CONTROLLER

### 6.1 Main Controller:-



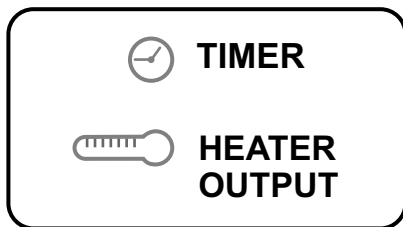
## < DISPLAY >



### Digital LED Display

- Display current temperature of the Oil Bath when turned on. Press INC (↗) button to show temperature and timer alternatively .

## <DISPLAY MODE LAMP >



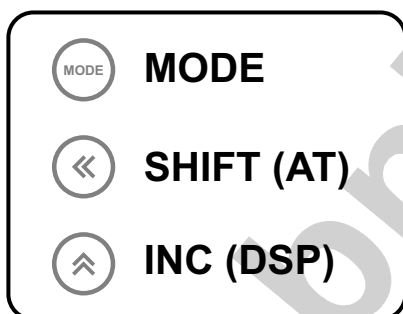
### Display Mode Lamp

**TIMER** : Lamp turned on during operation

- If user set wait-off timer, lamp blinks until temperature reach to set temperature
- Lamp stop blinking and start count down when temperature reach to set temperature

**HEATER OUTPUT** : Red lamp on and off when controller heat up Oil Bath

## < BUTTONS >



### MODE Button

- Push to Change temperature and time
- Push to change parameters  
Push and hold for 20 seconds to enter parameter mode (Remarks) Operating parameters are properly set before shipment. Do not change without understanding of each function of parameters.

### SHIFT (AT) Button

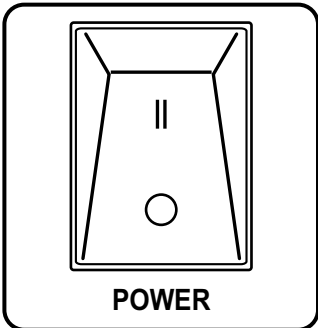
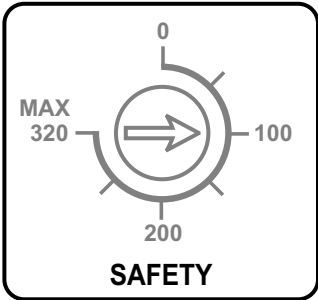
- Shift to left digit

### AUTO-TUNING Function

- Press and hold for 10 seconds to start auto-tuning.
- Your Oil Bath is auto-tuned at 85°C with water.
- **If you use different type of oil, auto-tune again before use.**

### INC (DSP) Button

- Increase value when setting temperature and timer
- Press to display temperature and timer alternatively in normal display mode



### SAFETY

- Safety dial for over temperature cut-off.
- Set dial 10 ~ 20% higher than operating temperature
- If temperature rise over operating temperature, safety automatically cut-off heater output to prevent over heating.

### POWER SWITCH

Main power switch.

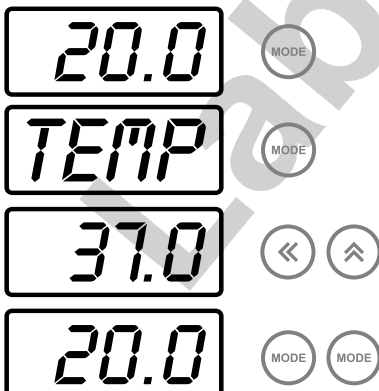
## CHAPTER 7 : OPERATION

### Before operation

- 1) Check electrical requirement on the name plate before connect to consent.
- 2) Place your Oil Bath on the flat and level surface
- 3) Remove packing material in the bath.
- 4) Connect power plug to wall mount receptacle  
Be sure to supply enough electrical power.

### Getting Started

- 1) Place heater cover on the bottom of your oil bath
- 2) Pour oil into the bath. Do not fill oil over 70% of the bath height.
- 3) **Silicone Oil is highly recommended.**
- 4) Turn the circuit breaker on located in the back of the bath. Turn the **POWER** switch on. The **Digital LED READOUT** displays current temperature of the bath.



### How to Set Temperature

- 1) In normal display mode
- 2) Press **MODE** button
- 3) LED displays "**TEMP**" symbol and prompt user input
- 4) Press **MODE** button again
- 5) LED displays current operating temperature
- 6) Input new operating temperature by using **SHIFT** and **INC** button
- 7) You can input operating temperature range from ambient **+10°C** to **250°C**
- 8) Press **MODE** button to set timer
- 9) Press mode button three times to skip timer setting





### How to Set Timer

- 1) Press **MODE** button twice to set timer
- 2) LED displays “**TIME**” symbol and prompt user input\
- 3) Press **MODE** button again
- 4) LED displays current timer setting (ex. **00:00** )
- 5) Input new wait-off timer value by using **SHIFT** and **INC** button
- 6) Default time scale is HH:MM
- 6) For continuous operation set timer at 00.00
- 4) You can input timer range from 1min to 99hr 59min.
- 5) Press **MODE** button back to normal display mode

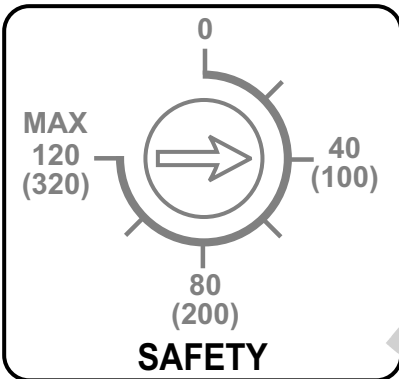
**(Remarks) Timer can be changed in different scale by changing parameter**

- 1) mm : ss 99min 59sec
- 2) hh : mm 99hr 59min
- 3) dd : hh 99day 23hr

refer parameter setting to change time scale

MODE 0, N1 : time scale selection parameter

- 0 : MM:SS
- 1 : HH:MM
- 2 : DD:HH



### Over Temperature Protection

User must set the over temperature protection before operation.

Turn over temperature protection dial with screw driver

Set temperature about 10~20% higher than the operating (user set) temperature.

If over-temp. protection value is under the operating temperature, temperature cannot be reach up to operating temperature

**Temperature range of Oil Bath is 0 -100 - 200 - 320 Max.**

### Auto-tuning

- 1) Turn power switch on
- 2) Set Over Temperature Cut-Off at maximum 320°C
- 3) Set operating temperature you frequently use.
- 4) Press and hold SHIFT button for 10 seconds to start Auto-Tuning
- 5) Temperature display on LED will start blinking.
- 6) Leave your oil bath until auto-tuning finished. It will takes about 2 ~ 3 hours.
- 7) Once the auto-tuning is finished, LED display stop blinking and start control temperature.
- 8) Temperature increase and decrease for several minutes to stabilize.
- 9) Your oil bath is ready to use.



**Press and hold 10 sec.  
to start Auto-Tuning**

## Start Temperature Control

1. After finishing auto-tuning, setting temperature and timer, Oil Bath start heat up oil in the bath to operating temperature
2. Put samples in the bath
3. Close lid if necessary

## CHAPTER 8. FREQUENTLY ASKED QUESTION

### 8.1 Temperature keep increasing and decreasing under operating temperature

Cause : SAFETY setting is lower than operating temperature

Solution : Turn SAFETY setting clockwise higher than operating temperature

### 8.2 LED displays uuuu and beep

Cause : Over heat higher than 250°C . Check Oil level.

Solution : Your oil bath cannot be used over 25 °C

If temperature increase over 250 °C, controller warning high temperature and cut-off heater

## CHAPTER 9. TROUBLE SHOOTING

Error Symbol	Cause	Solution
uuuu	Over heat higher than 100 °C	Call for Service
nnnn	Sensor disconnection	Call for Service

# *Inspection Log For Digital Oil Bath*

Model # : LOB-200T                      Serial # : \_\_\_\_\_                      Client : \_\_\_\_\_

Date & Time: \_\_\_\_\_                      Amb. Temp. : \_\_\_\_\_                      Electricity : VAC Hz

**Labnics Pretest check list (Initial after each Checkpoint)**  
**If Non-Applicable enter N/A**

Termination of each electrical connections		Surge protection termination	
No Water Leakage		Control panel key switch tight	
Equipped with proper accessories		Esthetics ok	

**JSWB TEST AREA, TEST LOG (NOTE) If units fails any portion of the test enter "NG" in the blank space adjacent to that check point**

Technician		Setpoint security verified	
Volts at plug / terminal strip / Hz		Labeling on components correct	
Cut in voltage		Molded plug not overheated	
Surge		Leak check while running	
Verify over temp. protection			

Released from test by :  
 From#QCF001frm  
 Approval :

Labnics Equipment Pvt. Ltd.

## Maintenance and Service Check List

Model	Labnics			
Descriptions	Digital Oil Bath			
Serial No.				
Date	Check	Technician	Remarks	Sign
200	Shipment			

		<input type="radio"/> Check	<input type="radio"/> Clean-Up	<input checked="" type="radio"/> Replace
Article	Every 6 Mo.	Every Yr.	Every 2 Yr.	
Controller		<input type="radio"/>		
CA Sensor		<input type="radio"/>		
Heater		<input type="radio"/>		
TRIAC		<input type="radio"/>		<input checked="" type="radio"/>
OPT		<input type="radio"/>		<input checked="" type="radio"/>
MAIN S/W		<input type="radio"/>		

# SERVICE REPORT

Customer's Address : \_\_\_\_\_  
 \_\_\_\_\_

Tel.No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Weekly Off.: \_\_\_\_\_

Contact Person / Designation : \_\_\_\_\_

Dept.: \_\_\_\_\_

Date	Time		System Configuration	Model	Serial No.	Date :		SR. No.	
	From	To				Status : OK	Not OK	Installation	Warranty
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Nature of Problem : \_\_\_\_\_  
 \_\_\_\_\_

Observation & Action Taken : \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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Customer's Remarks : \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Parts Replaced : \_\_\_\_\_  
 \_\_\_\_\_

Parts Recommended / Action Required : Yes  No  Requisition Number : \_\_\_\_\_

Service Engineer's Name & Signature	Customer's Name, Signature, Date & Stamp