

GENERAL INCUBATOR



Instruction Manual



Model : LGI-050T

Please read this manual carefully before using the instrument

Labnics Equipment

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CHAPTER1. 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 department.

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 alerts you to a possibility of damage to the equipment.

2.1 Power Connection:



Caution

1. Your Incubator is 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. Make sure to supply enough electrical current.

2.2 Installation:



Caution

1. Do not use in high humid environment.
 - May cause Electrical leakage
 - Water droplet may occur on the door
 - Corrosion may occur
2. Do not use in high temperature environment or so not use beside instrument generate heat.
3. Install incubator at least 50mm apart from side wall.
4. Place flat, rigid and leveled surface.
5. When moving oven do not up-side-down.
6. Do not place any object on the top of incubator.

2.3 Operation :



Warning

1. Do not put volatile, flammable and explosive material inside of incubator.
2. Do not put volatile, flammable and explosive material nearby incubator.



Caution :

1. Do not spill liquid in the chamber.
2. Be careful not to spill liquid on the control panel.

2.4. Maintenance:



Caution

1. Do not pour water or any liquid when you clean incubator.
2. Do not use highly organic solvent for cleaning surface of incubator.

CHAPTER 3. FEATURE:

Labnics LGI-Series

Microbiology Incubator is.....

ideal for general laboratory incubation requires temperature range from ambient +5°C to 70°C.

- Controller** - Digital microprocessor PID Controller
- Performance** -
 - Temperature Range : ambient +5°C ~ 70°C
 - Resolution : ± 0.1°C
 - Accuracy : ± 0.2°C
 - Uniformity : ± 0.5°C
- Material** -
 - Inner Chamber : Stainless Steel 304 (ANSI 304)
 - Outer Cabinet : Steel with epoxy powder coating
 - Glass Door : Tempered Safety Glass 5mm thick
- Convenience** -
 - Round cornered edge for easy cleaning and decontamination
 - Transparent glass inner door
 - Height adjustable shelve in 25mm increment
- Safety** -
 - Over current cut-off
 - Over temperature cut-off

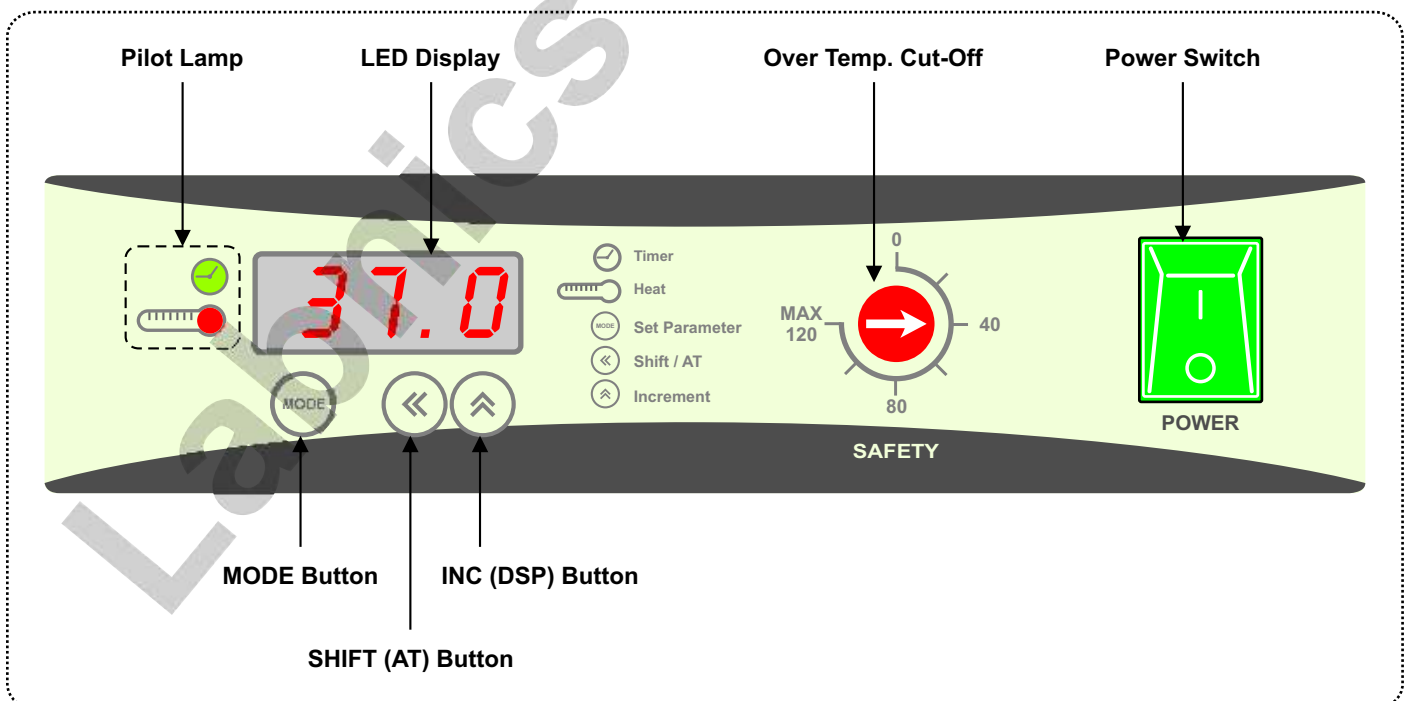
CHAPTER 4.SPECIFICATIONS:-

Model		LGI-050T
Chamber Volume		50L
No. of Room		1
Temperature	Range	Ambient + 5°C ~ 70°C
	Accuracy	± 0.1°C at 37°C
	Uniformity	± 0.5° C at 37°C
Heater		100Watt
Controller		Digital PID Controller with Timer and Auto-Tuning
Wait off Timer		mm:ss / hh:mm / Continuous Selectable
Sensor		Pt 100
Safety Device	Temperature	Hydraulic over Temperature protection safety Device
	Electrical	Electrical Leakage Breaker
Dimensions W x D x H mm	Inner	400 x 300 x 400
	Outer	580 x 530 x 600
Shelves		PVC Coating wire shelf
Electrical Requirement		120VAC 60Hz/220 VAC 50/60 Hz

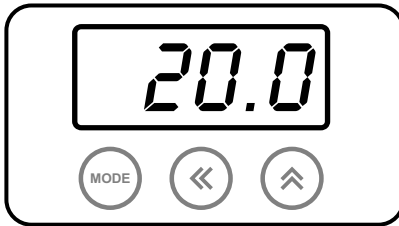
CHAPTER 5. PARTS AND DESCRIPTIONS :



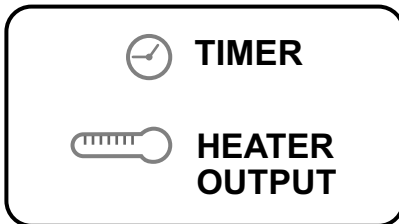
CHAPTER 6. MAIN CONTROLLER



[DISPLAYS]



< Display Mode Lamp >



Digital LED Display

- Display current temperature of the incubator when turned on.
- Press INC button to show temperature and timer alternatively.

Display mode Lamp

TIMER :

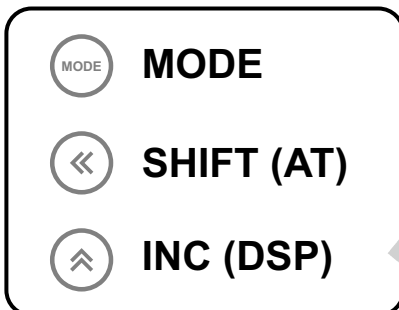
If user set wait-off timer, lamp turned on .

- 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 incubator.

[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 set before shipment.
Do not change without understanding of each function of parameters.

SHIFT (AT) Button

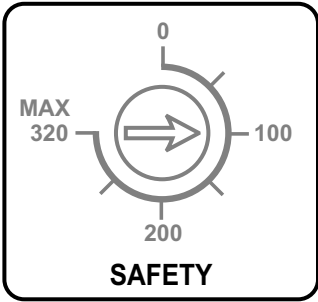
- Shift to left digit

AUTO-TUNING Function

- Press and hold for 30 seconds to start auto-tuning.
- Auto-tuning was finished before shipment.

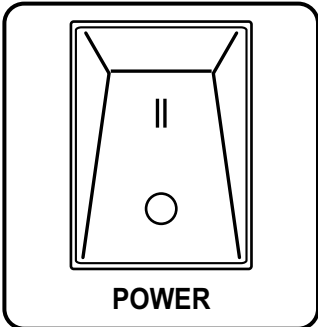
INC (DSP) Button

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



SAFETY

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



POWER SWITCH

Main power switch.

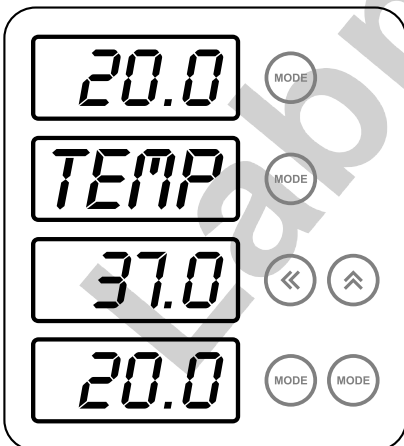
CHAPTER 7. OPERATION:-

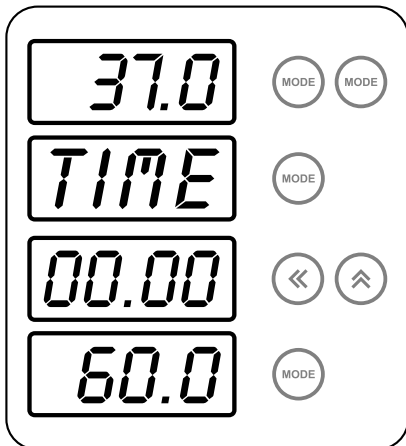
Before operation

- 1) Check electrical requirement on the name plate before connect to consent.
- 2) Remove packing material in the chamber and install shelves.
- 3) Connect power plug between AC inlet consent on the left side panel and wall mount receptacle.

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 +5°C to 70°C.
- 8) Press **MODE** button to set timer.
- 9) Press model 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.
- 7) For continuous operation set timer at 00.00.
- 8) You can input timer range from 1min to 99hr 59min.
- 9) Press MODE button back to normal display mode.

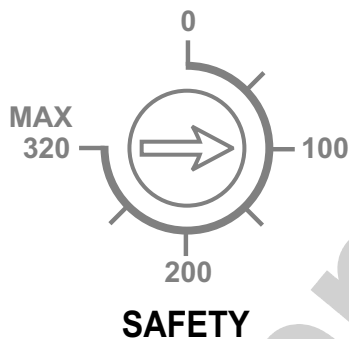
(Remarks) Timer can be changed in different scale by changing Parameter

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

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

- 1) User must set the over temperature protection before operation.
- 2) Turn over temperature protection dial with screw driver.
- 3) Set temperature about 10~20% higher than the operating (user set) temperature.
- 4) If over-temp. Protection value is under operating temperature, temperature cannot be reach up to operating temperature.

Start Temperature Control

- 1) After setting temperature and timer, incubator start increase temperature to operating temperature.
- 2) Put samples to be incubated on the shelves.
- 3) Do not put samples on the bottom of the chamber.
- 4) Close Glass door carefully and firmly.

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 Temperature Overshoot

Cause: High room temperature.

Solution: Your incubator has no cooling system. If room temperature is higher than 30°C, your incubator cannot maintain 37.0°C. Use incubator in optimum operating condition.

8.3 LED displays uuuu and beep

Cause: Over heat higher than 70°C.

Solution: Your incubator cannot be used over 70°C

If temperature increase over 70°C, controller warning high temperature and cut-off heater.

CHAPTER 9. TROUBLE SHOOTING

Error Symbol	Cause	Solution
uuuu	Over heat higher than 70°C	Call for Service
nnnn	Sensor disconnection	Call for Service

CHAPTER 10. SETTING PARAMETERS:-

10.1 Parameter

- To set parameters, press and hold **MODE** Button for 5 seconds.
- Press **SHIFT** and **INC** Button to change values.
- Press **MODE** Button to go next parameter.
- To escape from Parameter mode to normal display mode, press and hold **MODE** Button for 5 seconds.

Factory Parameter A

Parameter Symbol	Name of Parameter	Setting Range and Descriptions	Factory Default	User Value
ALH	Alarm Limit High	00.0 ~ 99.9°C	2.0	
ALL	Alarm Limit Low	00.0 ~ 99.9°C	21.0	
HYS	Hysteresis	00.0 ~ 99.9°C	0.2	
BEEP	Beep On Time	0 ~ 9999 Sec.	30	
ADJ	Temperature Calibration	-99.9 ~ 299.9°C		
LOC	Key, Data, Parameter Lock	0000 ~ 1111	0000	

10.2 Parameter 2

- To set parameters, press and hold **MODE** Button for 30 seconds.
- LED Display turns to ALH after 5 seconds. Keep press the button 25 seconds.
- Press **SHIFT** and **INC** Button to change values.
- Press **MODE** Button to go next parameter.

To escape from Parameter mode to normal display mode, press and hold MODE Button for 5 seconds.

Factory Parameter B

Parameter Symbol	Name of Parameter	Setting Range and Descriptions	Factory Default	User Value
<i>RNT</i>	Maximum temperature limit to set	-99.9 ~ 299.9°C	71	Do Not Change
<i>ACTP</i>	Temp. where timer activate (Parameter can be changed only when the N2 value of Mode0 is 1) Timer starts count down when, (current temp. - set temp.) > ACTP	-00.0 ~ 99.9°C	0	
<i>PRD</i>	Period (Output Interval)	1 ~ 99 sec.	2	Do Not Change
<i>P</i>	Proportion	0 ~ 6999	Auto-tuned value	Do Not Change
<i>I</i>	Integral	0 ~ 6999	Auto-tuned value	Do Not Change
<i>R</i>	Anti-Intergran	0 ~ 6999	Auto-tuned value	Do Not Change
<i>D</i>	Differential	0 ~ 6999	Auto-tuned value	Do Not Change
<i>MODE0</i>	Operating Mode Control 0 N3 0 = KS, JIS Pt 100 1 = DIN Pt 100 N2 0 = ALH (Relative) 1 = AALH (Absolute) N1 0 = ALL (Relative) 1 = AALL (Absolute) N0 0 = 000°C 1 = Decimal display (000.0°C)	N3 N2 N1 N0 0 0 0 0 1 1 1 1	0001	Do Not Change
<i>MODE1</i>	Operating Mode Control 1 N3 0 = PID Control 1 = ON/OFF Control N2 0 = Timer Disable 1 = Timer N1 0 = Time Scale (mm:ss) 1 = Time Scale (hh:mm) 2 = Time Scale (dd:hh) N0 0 = Power on restore disable 1 = Power on restore	N3 N2 N1 N0 0 0 0 0 1 1 1 1	0111	

<i>MODE2</i>	Operating Mode Control 2 No Function	N3 N2 N1 N0 0 0 0 0 1 1 1 1	0000	Do Not Change
<i>DRAN</i>	Fix drift of temperature display within the set value		0.5	
	Temperature drifts during operation owing to several reasons. To eliminate temperature drift, set DrAn value to fix temperature within the value.			
<i>LBAT</i>	No Function		0000	

1) **RNT** : Maximum temperature limit to set.

User cannot set temperature higher than this value.

Do not alter the value. Factory default is 251.

2) **ADJ** : Temperature adjustment.

Sometimes the actual temperature of the water is slightly the different from displayed temperature.

User can adjust the displayed temperature by compensate the difference by Adj value.

Example :

- 1) Measure temperature of Incubator with calibrated thermometer.
- 2) Read LED display.
- 3) Change Adj value.

Thermometer Temperature Reading	Controller Temperature Reading	Adj Value
38.0°C	37.0°C	1
36.0°C	37.0°C	-1

Chapter 11: Inspection Log For Digital Water Bath

Model # : LGI-050T 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		Termination of remote alarm	N/A
Battery termination light	N/A	Surge protection termination	
No metal contact with refrigeration tubes	N/A	No gaps in insulation	
Control panel key switch tight		Equipped with proper accessories	
		Esthetics ok	

Labnics 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		Unusual vibration during run	
Volts at plug / terminal strip / Hz		Unusual noise during run	
Fans-Correct blade, no contact		Unusual fan noise or vibration	
Battery Check 12 volts or better	N/A	Display indication and warning functions	
Battery % reading from display	N/A	Leakage or condensation on the tubes	N/A
Cut in voltage		Back Up system	N/A
Display voltage		No condensation on cabinet at BO	N/A
Surge		Check frost on door and interior	N/A
Check Fuse LED		Lid/door seal at pull down	
RS232	N/A	Door close and latches	
Alarm/remote operation	N/A	Set point security verified	
Unusual noise at startup		Labeling on components correct	
No excessive dummy panel vibration		Molded plug not overheated	
Recorder check and calibrated	N/A	No frost on refrigeration components	N/A
Leakage on the water pipe line	N/A	Breaker fit at low temperature	N/A
Verify solenoid valve	N/A	Leak check while running	
Verify over temp. protection of chamber		Verify motor voltage (verify color code)	
Verify over temp. protection of humidity heater	N/A	Check fluorescent lamps and lights	N/A



Labnics Equipment
43040 Christy St., Fremont, CA 94538 USA.
Toll Free : (877) 620 9992
Tel. : (925) 271 4322
Fax : (925) 886 0400
Email : info@labnics.com
Website : www.labnics.com