

CO₂ Incubator with O₂ Controller

(Air Jacket)User manual

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I: Precautions

1. The equipment should be installed in a place where air is clean and the temperature change is small, avoid direct sunlight and heating equipment around. Place it carefully.
2. Carefully read the instruction manual before operation.
3. The power socket should be reliably grounded to ensure safety.
4. Handle with care. Do not tilt more than 45° and transport it upside down.
5. Store the equipment in a room where the relative humidity does not exceed 80%, free of corrosive gases and well ventilated. Ambient temperature is around 20~25°C, the setting temperature is at least 3-5°C higher than the ambient temp.
6. Prepare 2 cylinders and 2 pressure reducing valves. One cylinder is 99.9% concentration CO₂ gas, the other is 99.9% concentration N₂ (customer buy at local place). The pressure of reducing valve is adjusted between (0.06 ~ 0.08) MPa and the maximum cannot be greater than 0.1 MPa.
7. If the incubator cannot power on, please check whether the fuse is normal, please cut off the power supply before checking and replacing the fuse. Replace the fuse with same specification.
8. When there is culture in the incubator, do not turn on UV lamp for sterilization to avoid damaging the culture. Please turn off the power when changing lamps.
9. When the cylinder pressure is too low and flow is unstable, please replace the cylinder immediately.
10. Do not put inflammable, explosive or poisonous objects inside the chamber.
11. In order to maintain the appearance of the equipment, please do not use acid or alkali and other corrosive materials to wipe the surface, the box can be cleaned regularly with a dry cloth.
12. Please turn off power before any repair.
13. Turn off power when stop using.

II. Application

CO₂ incubator is widely used for the cultivation of biological cells, tissues and bacteria in medicine, biochemistry and agricultural science.

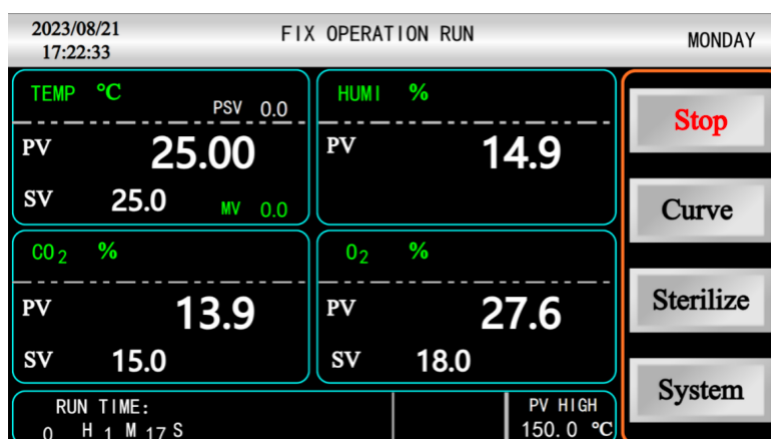
III: Technical Specifications

Model	TG-85T
Capacity	85L
Temp. Range	RT+3~60°C
Temp. Fluctuation	≤±0.2°C
Temp. Uniformity(°C)	≤±0.3°C
Timing Range	1~9999 minutes
CO ₂ Range	0~20%
CO ₂ Control Accuracy	± 0.1%(Imported sensor)

O2 Range	1~25%
O2 Control Accuracy	±0.1%(Imported sensor)
Humidity Method	Natural Vaporization
Power	600W
Chamber Size (WxDxH)cm	40×42.5×50
Shelf(Std./MAX)	2/10

IV:Operation Instructions

- 1.Turn on the power, press "Enter" to enter the main interface.



2. Set temperature CO₂ and O₂ concentration

SV means the setting value. Press SV zone and input the required value. After setting, press Enter to save and exit. Shown as below

2023/08/21 17:19:01		FIX OPERATION STOP		MONDAY	
TEMP °C PV 24.99 SV 25.0		HUMI % PV 12.9		<div>Start</div> <div>Curve</div> <div>Sterilize</div> <div>System</div>	
CO₂ % PV 13.9 SV 15.0		O₂ % PV 27.6 SV 18.0			
		PV HIGH 150.0 °C			

After setting temperature ,CO₂ and O₂ concentration, press start to start running. Press stop to stop working. When the instrument starts working, the chamber heating and door heating flash in green and keep white when stopped.

When door opened, will prompt “The box door is open,please close the door before the test”.

Close the chamber door first and then carry out the test. After the door is closed, it will be converted to the normal startup screen.

2023/08/21 17:22:33		FIX OPERATION RUN		MONDAY	
TEMP °C PV 14.7 SV 13.9 SV 15.0		HUMI % PV 27.6 SV 18.0		<div>Stop</div> <div>Curve</div> <div>Sterilize</div> <div>System</div>	

→

2023/08/21 17:22:33		FIX OPERATION RUN		MONDAY	
TEMP °C PV 25.00 SV 25.0		HUMI % PV 14.9		<div>Stop</div> <div>Curve</div> <div>Sterilize</div> <div>System</div>	
CO₂ % PV 13.9 SV 15.0		O₂ % PV 27.6 SV 18.0			
RUN TIME: 0 H 0 M 29 S		PV HIGH 40.0 °C			

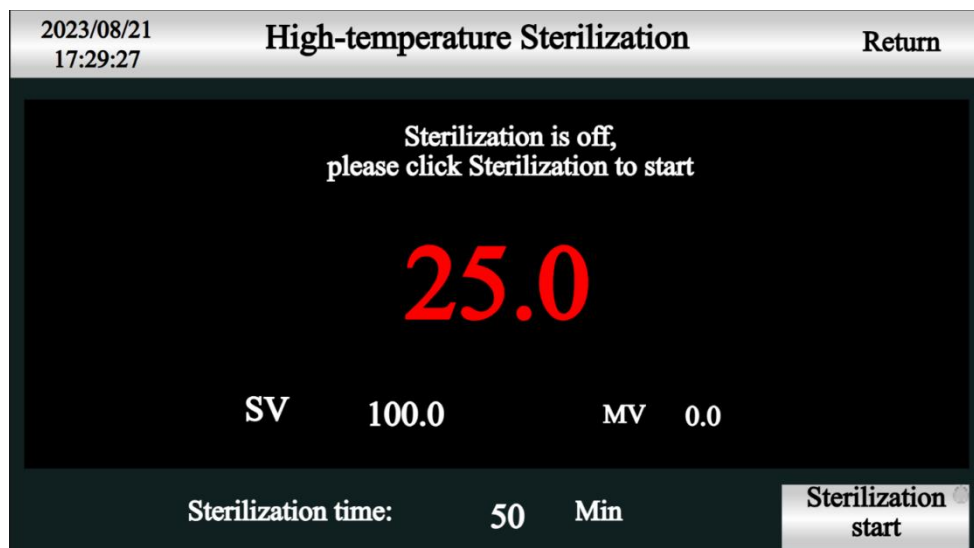
Program Run Screen

2023/08/22 10:11:48		NAME: _____		TUESDAY	
TEMP °C PV 25.00 SV 35.0		HUMI % PV 14.5		<div>Stop</div> <div>Curve</div> <div>Sterilize</div> <div>System</div>	
CO₂ % PV 13.9 SV 20.0		O₂ % PV 27.6 SV 10.0			
SEG TIME: 0 :19:54 / 0 :20:0 PTN NO. 1 SEG NO. 1 / 2		PV HIGH 150.0 °C			

Item	Name	Definition
1	PV	Current temperature, CO ₂ and O ₂ concentration
2	time left	The first is the remaining time of the current segment, the second is the set time of the current segment
3	light	Lights on button
4	SEG NO.	The first is the number of segments currently running, the second is the total number of segments in the current program.
5	SV	Displays the set temperature, CO ₂ and O ₂ concentration
6	PTN NO.	Current running program number

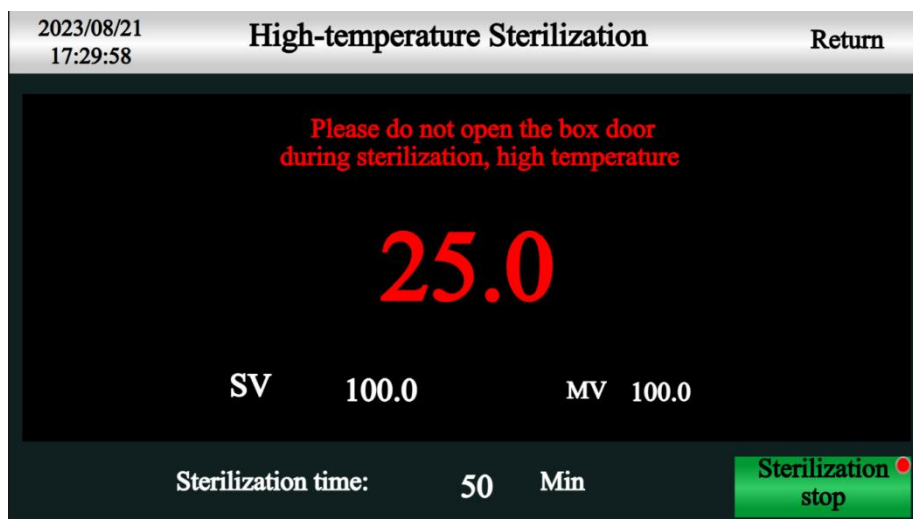
3. Sterilize

Press "Sterilization" to enter the following screen



Item	Name	Definition
1	Sterilization time	Sterilization time setting
2	Sterilization start	Sterilization start button

Click on "Sterilization Startup" to enter the following screen

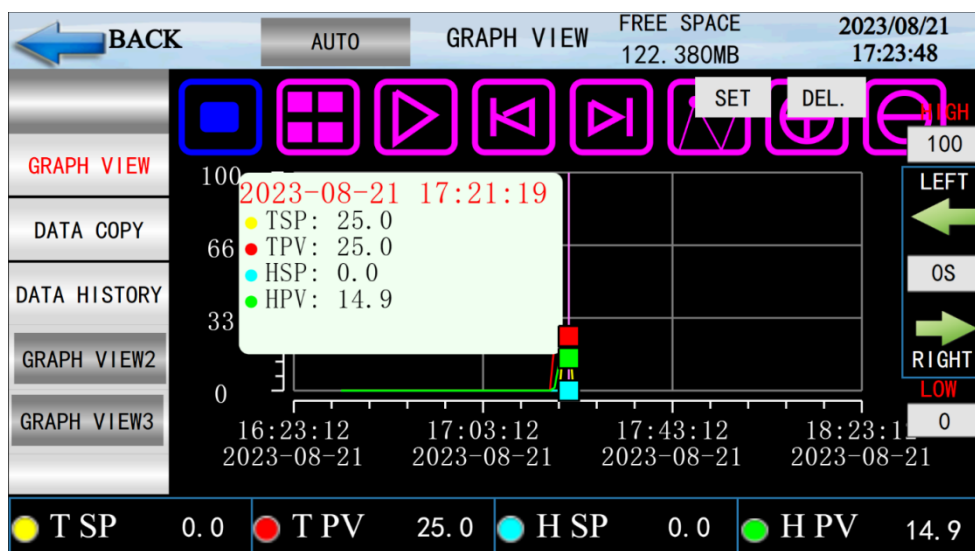









4.Operation procedure

- 1)Place the incubator and connect with CO₂ and N₂ gas.
- 2)Add 2/3 volume of pure water to the humidity plate and place it at the bottom of the chamber,close the door.
- 3) Turn on the power and set temperature CO₂ and N₂ concentration as above instruction.
- 4)Turn on the switch of the CO₂ and N₂ gas cylinder and slowly adjust the CO₂ pressure reducing valve till the pressure gauge indicates about 0.06Mpa.

5.Curve


Press curve monitor' to enter the following screen



Item	Name	Definition
1	TSV	Current set temperature display
2	TPV	Current temperature display
3	HSV	Current set humidity display
4	HPV	Current humidity display
5	HIGH	Curve display upper limit
6	LOW	Lower limit of curve display
7		Curve Inquiry Start Time Button
8		AutoPlay button
9		left shift key
10		right shift key
11		Cursor Display Keys
12		Zoom Curve Button
13		Zoom Curve Button

6.Data export

Press DATA COPY button to enter the following screen


BACK

DATA COPY

2023/08/21
17:24:26

GRAPH VIEW
DATA COPY
DATA HISTORY
FREE SPACE
122.380MB

NO.	NAME	RECORDING CYCLE	DATA COPY
1	123	60 S	

Y	M	D	H	MIN	S	START TIME
2023	8	21	16	24	0	
2023	8	21	17	24	0	END TIME

1: SUCCESS	102: NO. ERR	VIEW 0
100: NO DISK	103: ERROR	
101: FAIL	203: DOUBLE HIT	

Export data process: insert the USB disk into the touch screen at the back of the USB - A port, press DATA COPY on touch screen , data defined as 1, input file name as needs, for example 123.The storage interval is the interval we view the data.Set start time and end time according to the time period when you view the data.Then press 'data import U disk'.The status monitor show ' 1 ' means successfully exporting data.If other number displayed means the export data is not successful. Operate again according to below prompts.

Item	Name	Definition
1	DATA COPY	Presented in tabular form
2	name	Naming the Export File
3	NO.	Exported data sets
4	RECORDING CYCLE	Interval between data
5	Delete data	Delete data
6	start time	Export data start time
7	END TIME	Deadline for exporting data
8	DATE COPY	Exporting data to a USB flash drive

Click on the 'Data Tables' button to enter the following screen

← BACK		DATA HISTORY							2023/08/21 17:25:14
	Time	TSP	TPV	HSP	HPV	CO ₂ SV	CO ₂ PV	O ₂ SV	
GRAPH VIEW	2023-08-21 17:24:19	0.0	25.0	0.0	14.9	15.0	13.8	18.0	
	2023-08-21 17:23:19	0.0	25.0	0.0	14.9	15.0	13.8	18.0	
	2023-08-21 17:22:19	0.0	25.0	0.0	14.9	15.0	6.9	18.0	
DATA COPY	2023-08-21 17:21:19	25.0	25.0	0.0	14.9	15.0	13.8	18.0	
	2023-08-21 17:20:19	25.0	24.9	0.0	14.7	15.0	13.8	18.0	
DATA HISTORY	2023-08-21 17:19:19	0.0	24.9	0.0	13.6	15.0	13.8	18.0	
	2023-08-21 17:18:19	0.0	21.9	0.0	1.4	0.0	133.8	0.0	
	2023-08-21 17:17:19	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
	2023-08-21 17:16:19	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
	2023-08-21 17:15:19	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
	2023-08-21 17:14:13	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
	2023-08-21 17:13:13	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
	2023-08-21 17:13:13	0.0	0.0	0.0	0.0	0.0	133.8	0.0	
FREE SPACE 122.340MB									
		SET	REFRESH	DELETE					

Item	Name	Definition
1	SET	Setting the query start point and span time period
2	REFRESH	refresh operation
3	DELETE	Delete all historical data (permission operator password 666666)

7. Check alarm

Press alarm to check alarm records as blow

2022/05/17 10:20:36

No.	Name	No.	Name
●		●	
●		●	
●		●	
●		●	
●		●	

Picture
DI alarm
Historical alarm
Return

2022/05/17 10:20:56

OccurrenceTime	AlarmText	ResetTime

Picture
DI alarm
Historical alarm
Return
Query

Set the historical alarm query time as below according to the needs.

2022/05/17 10:21:35

Start Time

Year 2022 Hour 10

Month 05 Min 20

Day 17 Sec 12

Time Span

1 Hour

Picture
DI alarm
Historical alarm
Return

Item	Name	Definition
1	DI alarm	External fault alarm display
2	Historical alarm	Historical data of alarms

V: Failure handling methods

Malfunction	Reasons	Solution
Display temp. exceeds temp. range	Chamber sensor error or short circuit.	Check the wire or change the sensor.
	Door sensor error or short circuit.	Check the wire or change the sensor.
No power	Not plugged or wire broken.	Plug it or check the wire.
	Fuse open circuit.	Change the same type fuse.
No heating.	Preset temperature too low.	Reset the temperature.
	Door open or door switch error.	Close the door or replace the door switch.
	Heater error.	Replace the same type heater.
CO ₂ and O ₂ alarm	CO ₂ Cylinder pressure too low.	Adjust the pressure reducing valve to get 0.06~0.08MPa
	CO ₂ Concentration rise too slow.	Pressure reducing valve too low. Adjust the pressure reducing valve clockwise.
	CO ₂ Concentration too high.	Pressure reducing valve too high.(turn pressure reducing valve anticlockwise to decrease it)
CO ₂ and O ₂ Concentration no increase.	Door open. (Fan not works).	Close the door or fix the door switch.
	Sensor error.	Replace the same type sensor.
	Solenoid valve error.	Replace the solenoid valve.



Note: The above maintenance operations should be carried out by qualified engineer Please turn off the power before maintenance!

VI: After-sales service

The warranty for the incubator is 14 months from delivery(except for the heating elements). If damaged due to non-human factors or can not work normally during warranty period,,our company is responsible for free repair or replacement of product parts. Beyond the warranty, we try our best to provide convenience for users.

VII: Packing List

Item	Description	Category	Quantity	Notes
1	CO2 Incubator with O2 Controller	Main equipment	1	
2	Humidifying plate	Part	1	
3	Shelves	Part	2	
4	Silicon soft tube	Part	1	
5	Fuse (Φ5×20)	Spare part	1	
6	Manual	Document	1	
7	Packing list	Document	1	

Incubator commissioning requirements:

- 1.** Customer provides 40L CO₂ cylinder, the CO₂ concentration should be 99.9%.
2. Customer provides 40L N₂ cylinder, the N₂ concentration should be 99.9%.
3. Customer provides 2 pressure reducing valves (output is about 0.1Mpa).

We reserve the right to change the data in the manual without prior notice. The company has the final interpretation right.