

1200^oC

TUBE FURNACE

Gas Flow Package



SH-FU-50/80/100/120STG-WG

SH-FU-50/80/100/120LTG-WG

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Keep this manual on-hand so it can be used by all operators of the unit.
Use the unit only in the way described in this manual.
Failure to follow the instruction in this manual may cause wrong operation.

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1. General Description

Thank you for purchasing our product. We know that in today's competitive marketplace, customers have many choices when purchasing laboratory equipment. We appreciate your choosing our quality product. We stand behind our products and want to let you know we are here if you need us.

Before you use the unit, read this entire manual carefully to understand how to install, operate and maintain the unit in a safe manner.

Your satisfaction with the unit will be maximized as you read this manual thoroughly.

Our capable products will satisfy you by the best performance with easy operation.

2. Graphic Symbols

BE SURE THAT YOU UNDERSTAND ALL OF THESE SYMBOLS BEFORE OPERATING THE UNIT.



Important operating and / or maintenance instruction.
Read the accompanying text carefully.



This symbol indicates items and procedures that are **STRICTLY PROHIBITED** with regards to the unit.



Potential electrical hazards.



Explosive.



No disassemble.

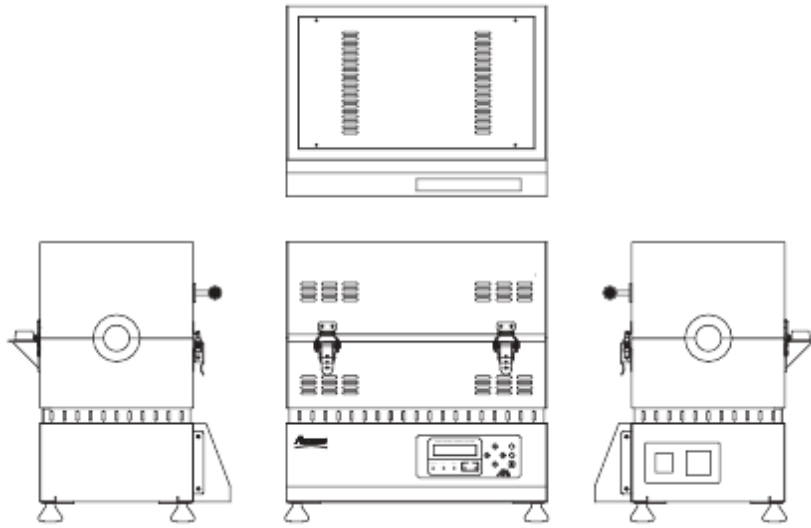


Flammable.

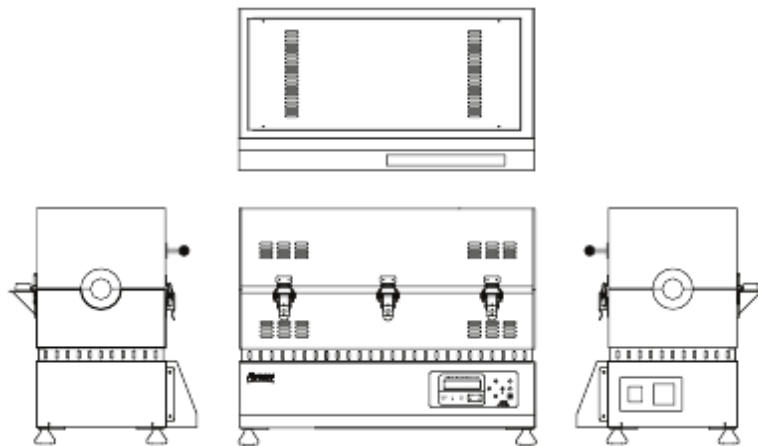


Hot surface or steam.

3. The Outward

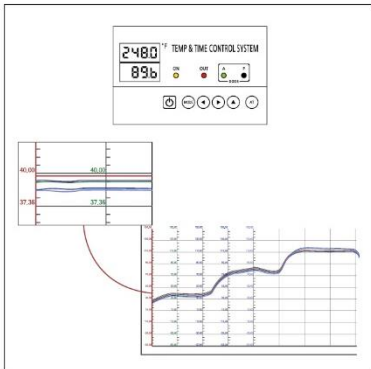


< 50/80/100/120STG >



< 50/80/100/120LTG >

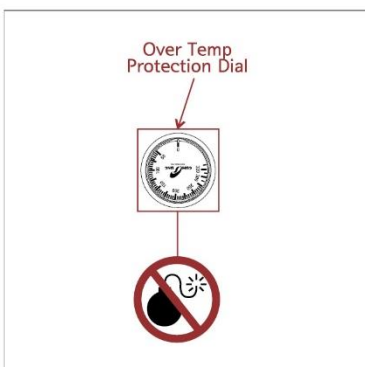
4. Key Feature



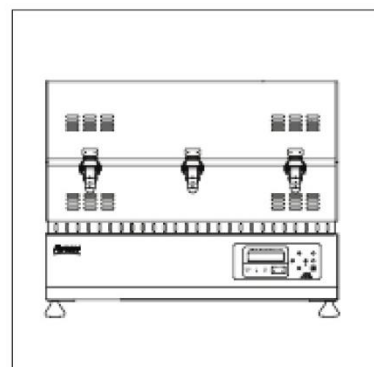
- Digital display of temp and time
- Multi key-in (100Ω(DIN Pt100Ω), KPt100Ω(JPt100Ω), K(CA))
- Precise temperature control
- Alarm when timer ends



- Auto back up

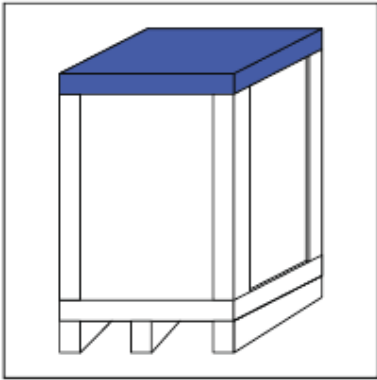


- Over-temperature protection function(FU-xxTG)

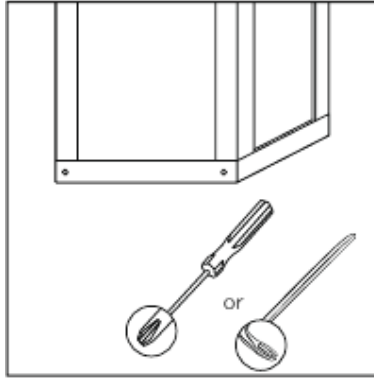


- Separated body and control box design protecting from thermal shock(FU-xxTG)

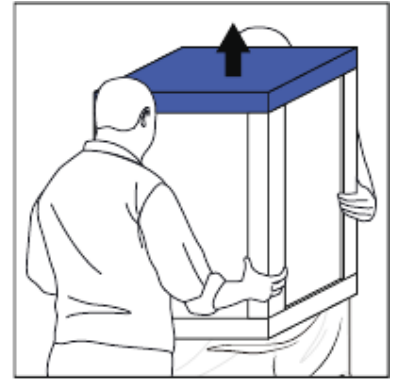
5. Installation



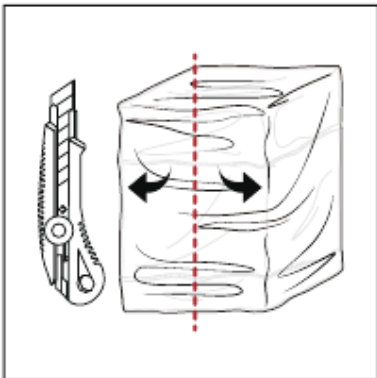
⊖ Once the product is delivered, place the package on a flat location.



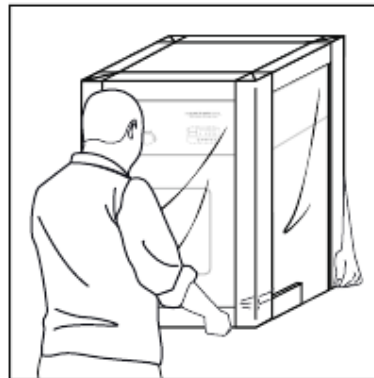
⊖ Unscrew the bottom of the box.



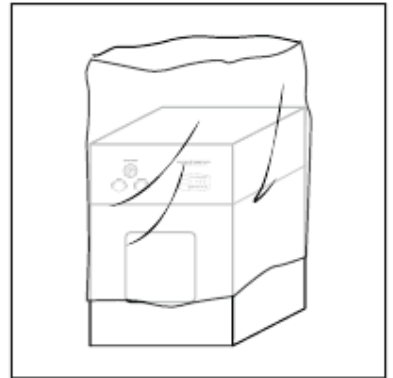
⊗ Lift the box as shown in the picture.



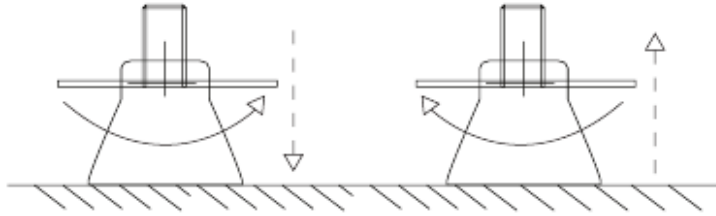
④ Unwrap the bag.



⑤ Place the equipment on your desired location.

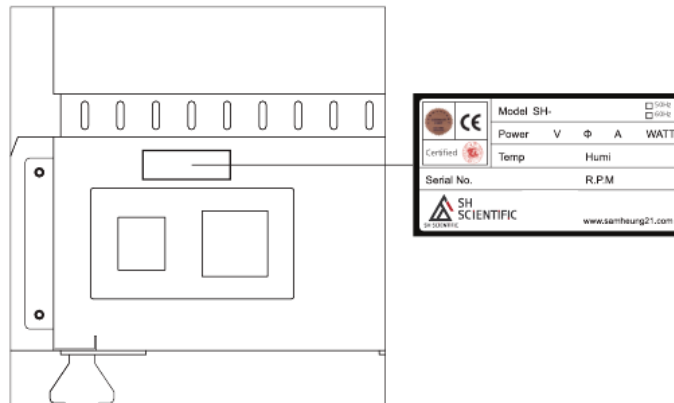



⑥ Lift the remaining plastic up.



<Fig-1>

Refer to above fig-1, level the equipment by adjusting the feet.



 Serial label shows the electric power specification of the unit. Connect power and turn on the main switch(E.L.B).



Please do not raise up it high temp at once. It case to decline durability.
We recommend raise temp under 15 °C/min

-How to use assemble pipe lines

- 1) Please check if all parts are in the package;
 - 1 panel of 1 Flowmeter and valve,
 - 3 pipe lines with nuts,
 - 1 Gas gauge with valve

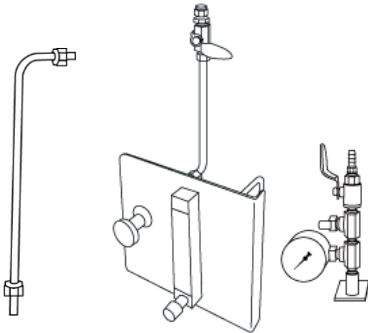


Fig-2)

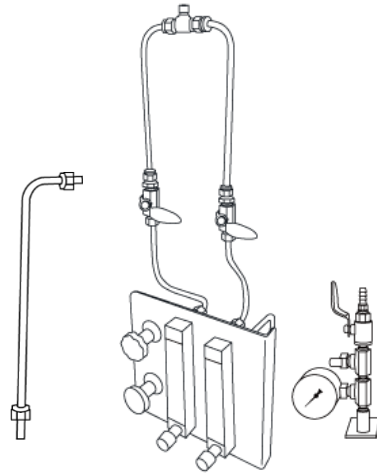


Fig-3)

Fig-3) In case of Pipe parts for 2 gas channels, 1 panel of 2 Flow-meters and valves, 4 pipe lines with nuts, 1 Gas gauge with valve.

- 2) Screw down the panel of flow meter and valve, connect 3 pipe lines each(Fig-4, -5, -6).
Tighten the each bolt and nut with spanner.

(Fig-4)



(Fig-5)

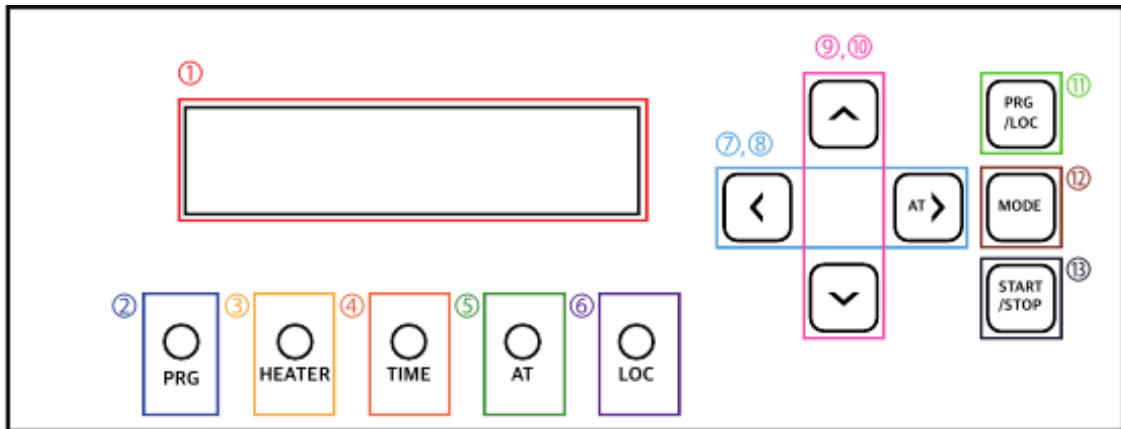


(Fig-6)



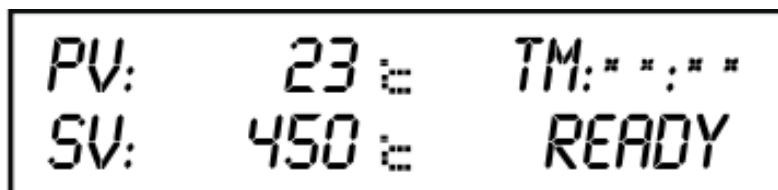
6. Setting and Operation

1) Controller



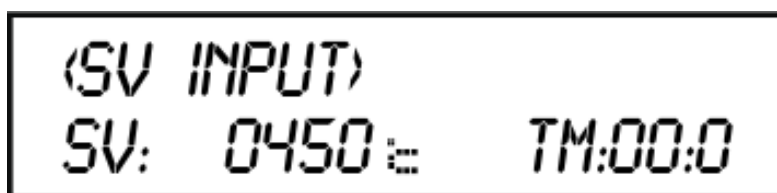
- ① LCD display
- ② Program mode lamp
- ③ Heater lamp
- ④ Timer lamp
- ⑤ Auto tune lamp
- ⑥ Local mode lamp
- ⑦,⑧ Shift button (Mute)
- ⑨,⑩ Setting
- ⑪ Program ↔ Local
- ⑫ Mode
- ⑬ Start/Stop

(1) Stand by

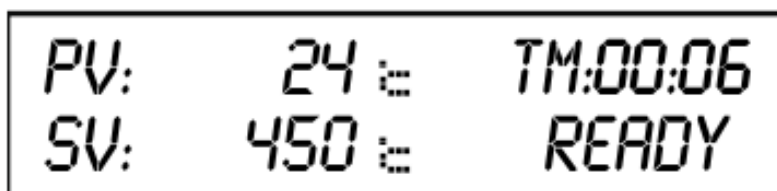


[**PV:** current temp. **SV:** Target temp. **TM:** Holding time at target temp.]
00:00 (hour : minute)

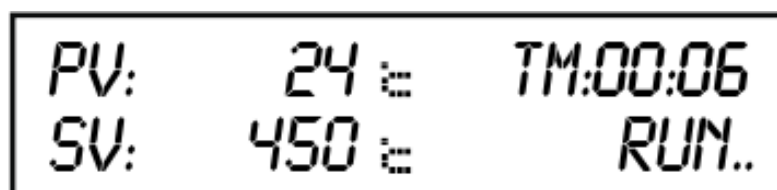
(2) Local mode



1. Press ⑫ to set temp. and holding time

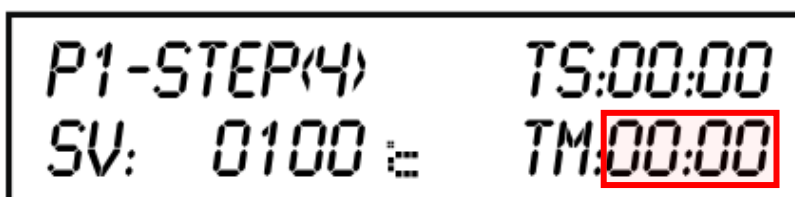


2. Set Temp. and Time with ⑦,⑧,⑨,⑩ and save it with pressing ⑫.

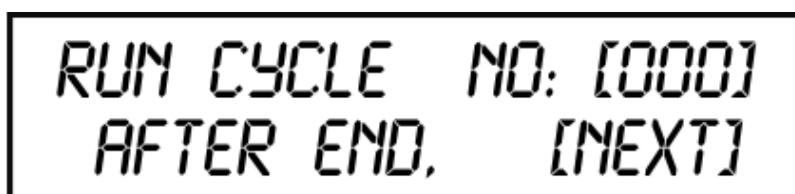


3. Push ⑬ to start running.

③ Heater lamp is on and ④ Timer lamp will blink until PV reaches to SV and be on when PV reaches to SV.

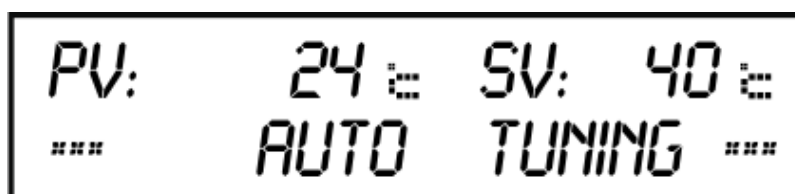


4. If you want to finish setting of pattern, set TM with 00:00 in last Step. Setting page and save it with pressing ⑫. Then it completes setting of pattern no.1.



5. Set number of cycling for the saved Pattern with ⑦,⑧,⑨,⑩.
(* 999 cycles can be set. *000 means infinite cycling.)
6. You can set next operation mode after running pattern no.1.
Press ⑪ to set next operation mode.
* STOP : It stops the operation after completing the saved pattern.
* MANU: It shift to Local mode after completing the saved pattern.
* NEXT : It moves to next pattern operation mode after completing the saved pattern.
7. Press ⑫ to save and start to run.

(4) Auto Tuning

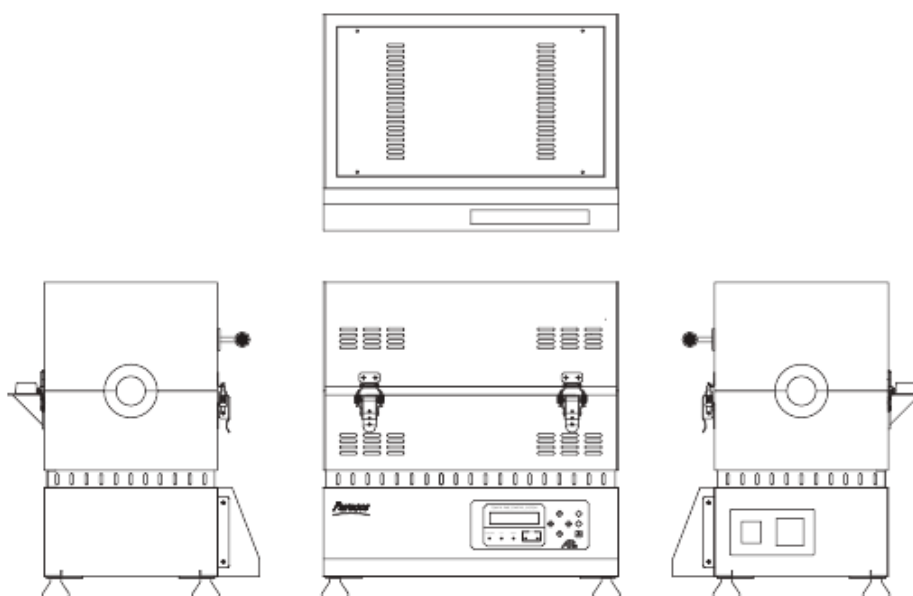


Auto Tuning is to sophisticatedly tune the output of heater when furnace reaches around SV for better temperature uniformity and minimal temperature fluctuation.

1. Wait till PV reaches around SV and then press AT button.
2. Auto Tuning will be carried out and stopped automatically.
3. ⑤ AT lamp will blink during Auto Tuning and will be off when it is done.

7. Specifications

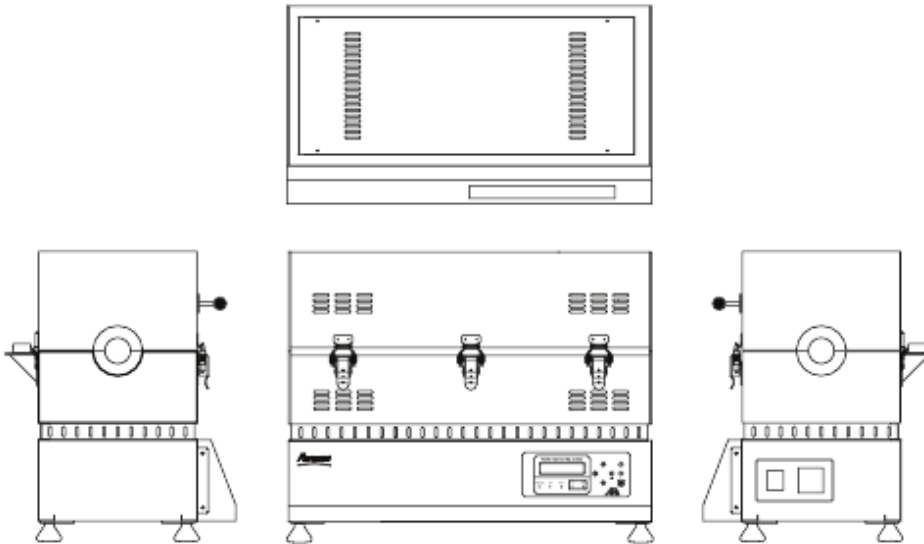
1200 °C Tube Furnace Gas Flow Package – 50/80/100/120STG-WG (300mm Length Hot Zone)



| Model | | SH-FU-50STG-WG | SH-FU-80STG-WG | SH-FU-100STG-WG | SH-FU-120STG-WG |
|------------|------|----------------------------------|----------------|-----------------|-----------------|
| Furnace | | SH-FU-50STG | SH-FU-80STG | SH-FU-100STG | SH-FU-120STG |
| Components | | Gas Flowmeter 1EA | | | |
| | | Stainless Steel Pipe & Connector | | | |
| | | Gas Sealing Mask | | | |
| | | Quartz Tube (Length 1000 mm) | | | |
| Cat. No. | 120V | FU50STGWG120 | FU80STGWG120 | FU100STGWG120 | FU120STGWG120 |
| | 230V | FU50STGWG230 | FU80STGWG230 | FU100STGWG230 | FU120STGWG230 |

7. Specifications

1200°C Tube Furnace Gas Flow Package – 50/80/100/120LTG-WG (600mm Length Hot Zone)



| Model | | SH-FU-50LTG-WG | SH-FU-80LTG-WG | SH-FU-100LTG-WG | SH-FU-120LTG-WG |
|------------|------|----------------------------------|----------------|-----------------|-----------------|
| Furnace | | SH-FU-50LTG | SH-FU-80LTG | SH-FU-100LTG | SH-FU-120LTG |
| Components | | Gas Flowmeter 1EA | | | |
| | | Stainless Steel Pipe & Connector | | | |
| | | Gas Sealing Mask | | | |
| | | Quartz Tube (Length 1200 mm) | | | |
| Cat. No. | 120V | FU50LTGWG120 | FU80LTGWG120 | FU100LTGWG120 | FU120LTGWG120 |
| | 230V | FU50LTGWG230 | FU80LTGWG230 | FU100LTGWG230 | FU120LTGWG230 |

