Kalstein

Constant Temperature and Humidity Incubator

Model YR0250PG

Instruction Manual

Thank you very much for purchasing our Kalstein´s Constant Temperature and Humidity Incubator Model YR0250PG.

Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the "Warranty" at a hand place for future reference.

⚠️ Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

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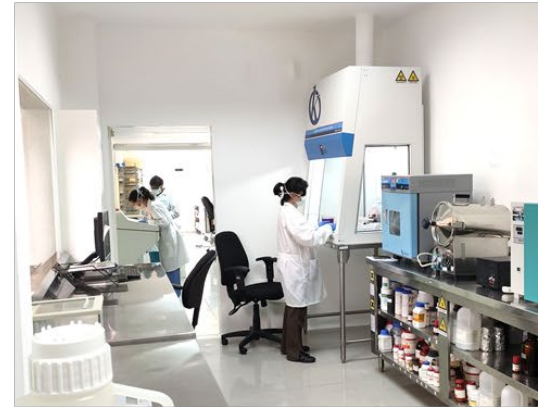
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1．Application

　　YR　constant temperature and humidity incubator is a high precision constant temperature equipment with hot and cold control function, can be used for plant cultivation, breeding experiment, bacteria, mold, microbial cultivation and preservation, water analysis in determining BOD test. Is the ideal test equipment for biological engineering, medical, health institution ,drug testing, animal husbandry, fishery and other scientific research units.

2. Product Drawing
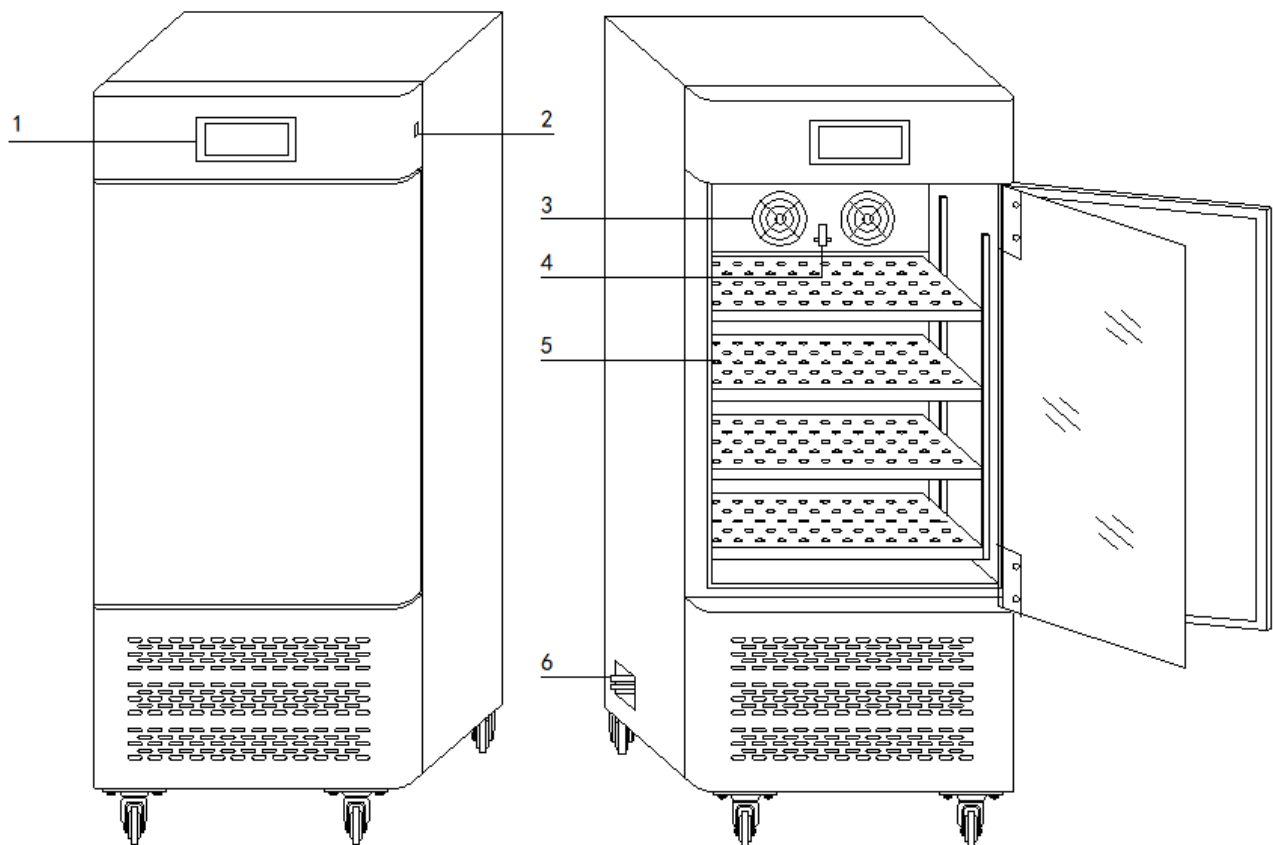
1.controller　　　2.Power Switch　　　3.Fan

4.temp and humidity sensor　　　5.Layer plate　　　6.Overflow port

3、 Structure

The machine body is made of high quality sheet processing, surface coating is firm and looks beautiful. built-in interior door glass Windows, and with the lighting in the cabinet, make the test items at a glance. Inner is stainless steel material , match the activity shelf,   inside cabinet the temperature uniformity is good, the machine is durable and easily to clean.

Temperature control part adopts new intelligent digital display temperature control instrument with single-chip microcomputer technology, users can according to different requirements, by manipulating the touch control panel keys and set temperature, humidity, time for adjustment to reach the purpose of the test.

In both Chinese and English display optional, interface clear, humanized operation

4、 Working principle

Constant temperature and humidity incubator is working by feeling the actual temperature and humidity, then transfer into electrical signals through temperature and humidity sensor , heater or refrigeration compressor working under the microcomputer control ,so as to achieve the required temperature; control the humidifier to reach the humidity as required.

5、 Run Preparation

Before the first operation of this machine, please do according to the following procedure:

1. Remove the shelf and other accessories inside equipment

2. Use alcohol soaked sponge to wipe disinfection cabinet wall, then using a dry gauze with alcohol wipe to clean

3. Put the shelf according to the experimental requirements inside equipment.

4. Before using ,water tank should be placed on the top of the equipment, then insert pipe to back water inlet and weir (refer to the parts diagram), and placed water basin   for use under the overflow pipe outlet.

5. Give enough water into the water tank.

6、 Technical Parameters

1、 Temp. Range：without lighting and humidity   5～50℃；(with lighting and humidity 10～50℃)

2、 Temp. accuracy：±0.1℃；

3、 Temp. Fluctuation：±0.5℃（10℃～40℃）；

4、 Temp. Uniformity：±1℃（10℃～40℃）；

5、 Humidity range：20-98%RH（10℃～40℃）；

6、 Humidity fluctuation：±3%；

7、 Voltage: Single phase 220V/50HZ

8、 Power：1500W（250L）；

9、 Working environment：ambient temperature 10~30℃   humidity below 70%

10、 Refrigeration fluid：R134；

11、 Device Class：Class I.

12、 Note: this machine has low temperature automation function, temperature and humidity in low temperature automatic defrost there will be some fluctuation is a normal phenomenon.

13、 Precautions：YR0250PG series

Limit humidity is not recommended when the temperature is set at 0-10℃; When the temperature is set at 10-20℃, the humidity controllable range is 20-90%; When the temperature is set at 20-40℃, the humidity controllable range is 20-95%; When the temperature is set at 40-60℃, the humidity controllable range is 30-95%; When the temperature is set at 60-80℃, the humidity controllable range is 60-98%; Note: The above data varies according to different volume of the box and actual ambient temperature, etc., for reference only.

7、Equipment installation

1. The device should be installed in the ventilated dry room to avoid direct sunlight, and equipment must have at least 10 cm distance to the wall.

2. At the bottom of the box is equipped with universal wheel, please lock the front two brake pedal when moving to make the machine place smoothly.

3. This equipment use 220V / 60 hz ac power supply, power supply circuit must be reliable grounding line, ensure use safety.
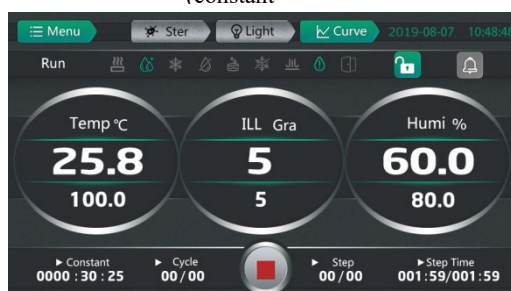
8. Interface and Operation

1. Monitor interface
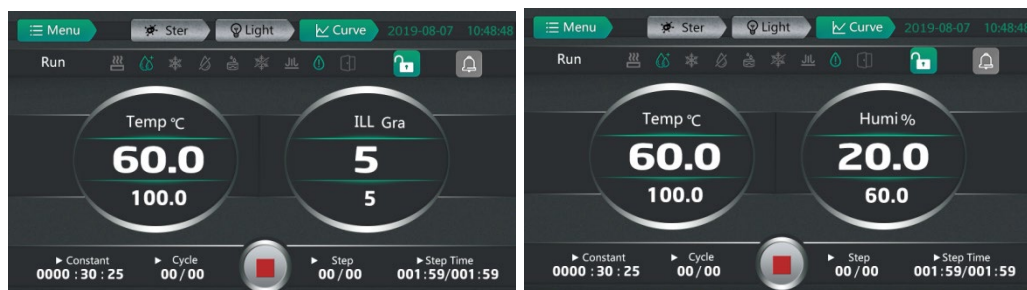
（constant

（constant

（Artificial

4

In the monitor interface, users can view the data to be controlled, the time progress of operation, the control output state of the system, the operation of the control system, the output state of temperature heating, refrigeration, defrosting, pressure relief, gating and control of lighting and sterilization output and shutdown operations

1.1 Icon Description

Name	Icon	Name	Icon	Name	Icon	Name	Icon
Heating without output		Heating output		Humidification no output		Humidification output	
Dehumidifica-tion no output		Dehumidifica-tion output		No water injection		Water injection	
No Frost		Frosting		Solenoid valve closed		Solenoid valve open	
No shortage of water		Water scarcity		Closed		Open door	
Refrigeration no output		Refrigeration output		Refrigeration delay		Alarm	

1.2 Key Description

| Icon	Name	Description
Menu	[Menu]	Click to enter the [Menu Interface]
	[Alarm]	Enter the alarm interface to view the detailed alarm content; no alarm icon is gray, alarm icon is red and flashing
	[Start]	Click the pop-up dialog box to make the system run;
	[Stop]	Click the pop-up dialog box to make the system stop;
Light	[Light]	Click to turn on or off the light and the button turns on (this feature is optional)
Ster	[Sterilization]	Click to turn on or off the sterilizing lamp, and the button turns on (this function is optional)
Curve	[Curves]	Click to enter the Real-Time Curve interface
	[Lock]	Click to enter the lock screen interface

1.3 State of operation

In the lower left corner of the monitoring interface,there are four running states of the system, [running stop],[Reservation waiting],[running] and [timing];

1.3.1 Reservation waiting

At the [user set]->[time parameter] interface, the user can set the reservation time, if the reservation time is greater than the current time, in the [monitor interface], click the [Start] key, the system will first enter the [reservation waiting] state; when the system time reaches the reservation time, the system automatically enters the [running] state;
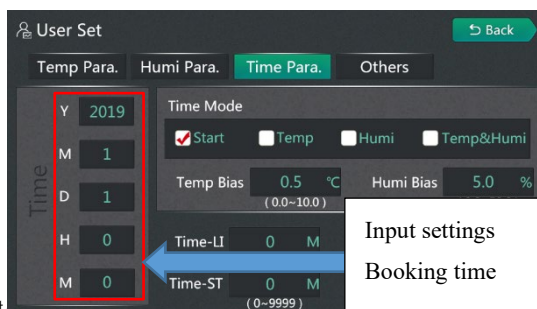
1.3.2 Running

When the system time reaches the reservation setting time, the system enters the [running] state from the [reservation waiting] state, or the user does not set the reservation time, then click the [running] key system to enter the [running] state directly. At this point, the system will be selected;

A user can set [select] in the [user set]->[time parameters] interface, as shown below:
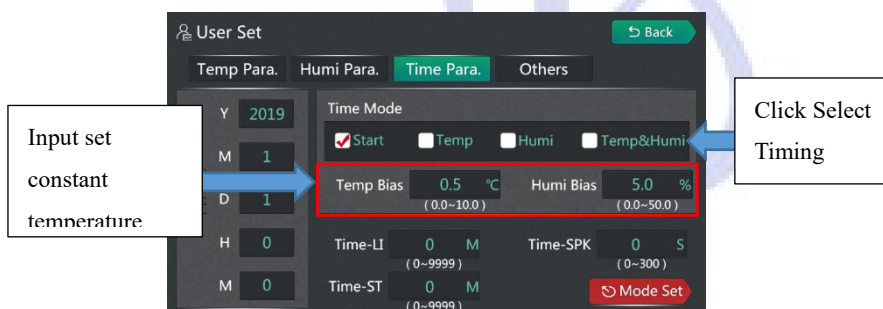
- Start timing: the system directly skipped the running state and entered the timing state directly;
- Constant temperature timing: when "**set temperature-therm timing deviation value < temperature measurement value < set temperature + constant temperature timing deviation value** ", the system from [running] state, into [timing] state;
- Constant humidity timing: when "**set humidity-steady humidity timing deviation value < humidity measurement value < set humidity + constant humidity timing deviation value** ", the system from [running] state, into [timing] state;
- Temperature and humidity timing: when "**set temperature-temperature timing deviation value < temperature measurement value < set temperature + constant temperature timing deviation value**" and "**set humidity-steady humidity timing deviation value < humidity measurement value set humidity + constant humidity timing deviation value** ", the system from [running] state, into [timing] state;

1.3.3 Timing

When the condition of timing judgment is satisfied, the system enters the [timing] state from [running], and the timing time begins to change. The system automatically converts in [running] and [timing] states according to different control modes and mode conditions (reference mode setting), and enters [running stop]

state when the running stop condition is satisfied;

1.3.4 Operation Stop

After the running time is over, the system closes all outputs and enters the [running stop] state;

1.4 Alarm function

When an alarm occurs in the system, the buzzer calls and prompts, and the[alarm] in the monitor interface is red and flashing. Click to enter the alarm list interface to see the specific alarm content, such as:


1.4.1 Temperature alarm

Temperature alarm includes [over temperature deviation alarm][under temperature deviation alarm][low temperature protection alarm][high temperature protection alarm][temperature overflow], as follows:

Alarm type	Alarm Description
Over temperature deviation alarm	When "measuring temperature > setting value + over temperature alarm deviation value ", there is over temperature deviation alarm
Under temperature deviation alarm	When "measuring temperature < setting value + under temperature alarm deviation value ", there is under temperature deviation alarm, set to 0 to indicate no under temperature deviation alarm;
Temperature-UP protection alarm	High temperature protection alarm when measuring temperature >= high temperature protection point
Temperature-DN protection alarm	At "measuring temperature <= low temperature protection point ", there is a low temperature protection alarm
Temperature overflow	When the temperature of the temperature sensor fails, a temperature overflow alarm is generated

The user can set the alarm value of [over temperature deviation alarm][under temperature deviation alarm] in [user set]->[temperature control], set the alarm value of [high temperature protection alarm][low temperature protection alarm] in [system set]-[temperature control], operate as follows:
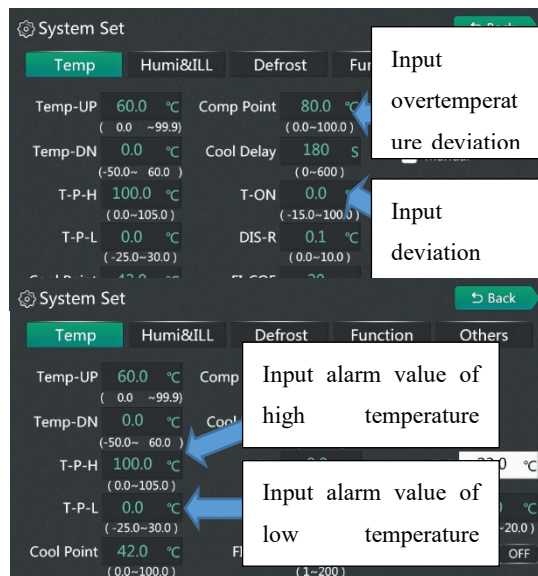
1.4.2 Humidity alarm

Humidity alarm includes[V-UP-H alarm][V-DN-H alarm][humidity overflow], as follows:

| Alarm type	Alarm note
Super-wet deviation alarm	When "measure humidity > set value + ultra-wet alarm deviation value ", there is super-wet deviation alarm
Unwet deviation alarm	When "measuring humidity < setting value + the deviation value of under-humid alarm ", there is an alarm of under-humid deviation, set to 0 to indicate no under-temperature deviation alarm;
Humidity overflow	When the temperature of humidity sensor fails, humidity overflow alarm is generated

A user can set an alarm value in [user set]->[humidity parameter] for [V-UP-H alarm][V-DN-H alarm], as shown below:
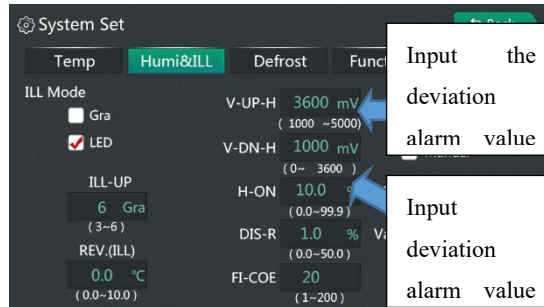
1.4.3 Other alarms

Alarm type	Alarm note
W-ALM alarm	"Detected water shortage time > water shortage alarm delay" when there is water shortage alarm;
D-ALM	when "detected opening time > door alarm delay ", there is a door alarm;

Users can set the alarm value of water shortage alarm [water shortage alarm] in [system set]->[function selection], as shown below:
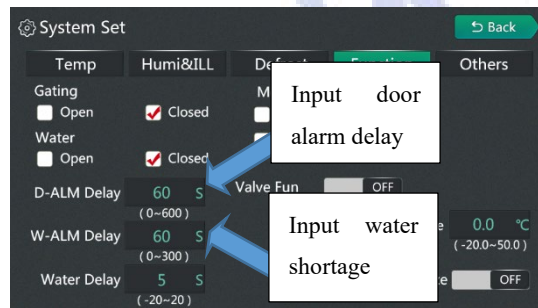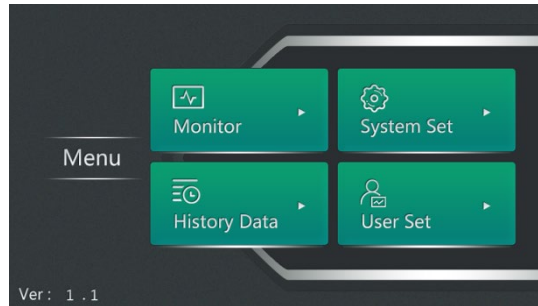

1.5 Real Time curve

The user can click on the curve to enter the real time curve interface, and the temperature and humidity curves can be viewed in the last 10 hours in the real-time curve interface. The vertical coordinate range is 10.0℃ and 10%RH;

	Constant temperature/constant humidity/constant temperature and humidity timing	Step time is not timed, the system controls temperature / humidity / temperature and humidity, after reaching the constant temperature / humidity / constant temperature and humidity timing range, jump to the next set value to continue to run, if the last paragraph, jump to the first paragraph, If it is also the last cycle, the operation stops;
Not 0	Running time	Click run, step time start timing, step time to set time, jump to the next set value to continue running, step time to start the timing again, if the last paragraph, jump to the first paragraph, if also the last cycle, the run stops;
	Constant temperature/constant humidity/constant temperature and humidity timing	Click run, the system controls temperature / humidity / temperature and humidity, after reaching the constant temperature / humidity / constant temperature and humidity timing range, step time starts timing, step time reaches the set time, jump to the next set value to continue running, Temperature / humidity / temperature and humidity still need to reach constant temperature / humidity / constant temperature and humidity range, step time starts again, if the last paragraph, jump to the first paragraph, if the last cycle, stop running;

3.3 Operational examples

Fixed value mode

For example: set temperature 30.0℃, set humidity 50%. When the current running mode is fixed mode, enter the [program mode] setting interface, and then click the mode selection button to enter the [value mode] setting interface. After setting the correct set value, click return, if the current mode is not fixed mode, will prompt whether to modify the mode, and then click confirm to complete the determination of the fixed mode;
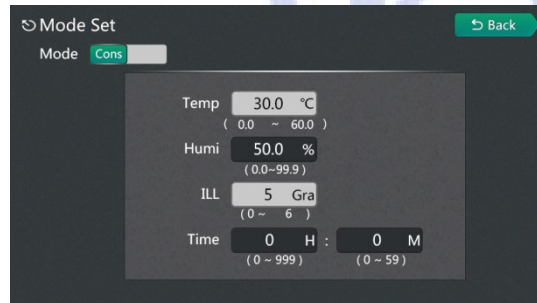
Number	Content	Note
1	Time set	Click on the Time Text box to set 0:0 for running
2	Temperature set	Click to set the set value mode to set the temperature value
3	Humidity set	Click to set the set value mode to set the humidity value
4	Illumination set	Click to set the set mode to set the illuminance value

Program Mode

When the temperature rises to 25.0±0.5℃ for 1 hour and 30 minutes, then to 35.0℃ for 1 hour, the cycle runs once, that is, the cycle is 1, set as follows:

Number of steps	Setting time	Set temperature	Setting humidity	Set illumination
Paragraph 01	1.30(1 hour 30 minutes)	25℃.0	40.0%	20%
Paragraph 02	1(0 hours and 10 minutes)	35℃.0	50.0%	30%

Action flow as follows: determine [user set]->[time parameters] timing mode selection [constant

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temperature]; in [monitor] click on the set value to enter the [mode set] interface (when the current running mode is program mode, go directly to the program mode setting interface; When the current running mode is fixed mode, enter the [fixed mode] setting interface, then click the mode selection button to enter the [program mode] setting interface), after setting the correct setting value in the [program mode] setting interface, click return, If the current mode is not program mode, you will be prompted to modify the mode, and then click confirm to complete the program mode determination, such as the following figure:

Number	Content	Description
1	Cycle set	Click on the periodic text box, pop up the numeric keyboard, set to 1
2	Step set	Click on the text box, pop up the numeric keyboard, set to 2
3	Time set	Click 01 and 02 time boxes respectively to set 1:30 and 1:00
4	Temperature set	Click on the 01 and 02 temperature text boxes to set to 25 and 35, respectively.0.0
5	Humidity set	Click on section 01 and section 02 humidity text box to set to 40.0 and 50.0 respectively
6	Illumination set	Click 01 and 02 illuminance text boxes to set to 20 and 30, respectively

4. Historical data
4.1 Historical data

4.1.1 interface description

The user enters the [history data] interface to view temperature measurements automatically saved by the system.

Set value, humidity measurement, set value, illuminance measurement value and historical data of running and alarm state, save interval time is 1 minute, save time limit is 7 days;

4.1.2 key Description
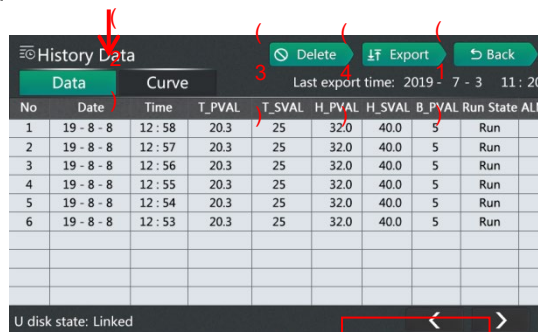
Serial numb	Content	Description
1	[Return] Key	Click to return to [Directory Interface]

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2	[History Curve] button	Click to enter the History Curve interface
3	[Delete] key	Click the pop-up Clear Data Confirmation dialog box; click Yes to delete the data
4	[Export] Key	When the U disk connection state is connected, click the data Export button to pop up the U disk export confirmation dialog box;
5	[page turning] button	Click to turn the page

4.1.3 Export data

Users need to export historical data with U disk, can click on the [export] button, pop up to confirm whether to export dialog box, the user should confirm that the U disk has been inserted, to avoid system errors, click OK to complete the data guide operation as shown below;

4.2 Historical curves

4.2.1 interface description

In the history curve interface, the user can view the trend of the historical data curve for a period of time, which corresponds to the data stored in the history data.
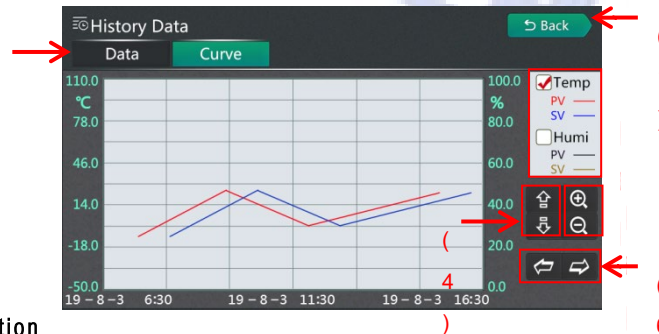
4.2.2 Key description

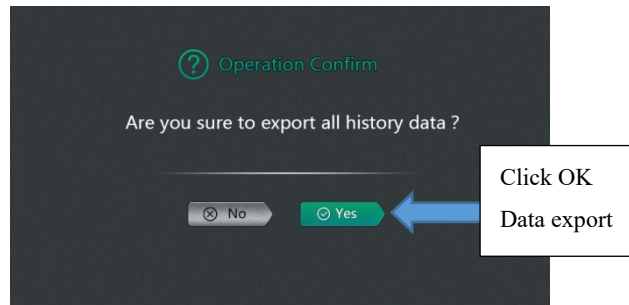| Number	Content	Description
1	[Return] Key	Click to return to the directory interface
2	[History Data] Key	Click to enter the History Data interface
3	Temperature and humidity curve	Click to set the temperature curve and humidity curve respectively
4	Upward and downward curves	Click on the vertical coordinates of the up or down curves
5	Zoom in and narrow the curve	Click on the zoom or zoom curve
6	Left shift, right shift	Click the left or right curve

5. User set

Enter [user set], you need to enter **password 3** to enter, otherwise pop up error prompt pair boxes;

5.1 Temperature parameters

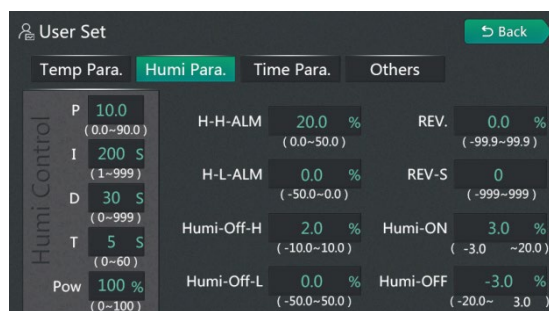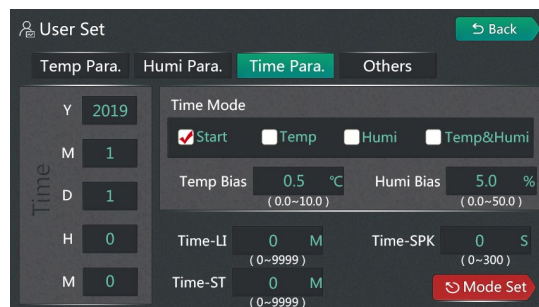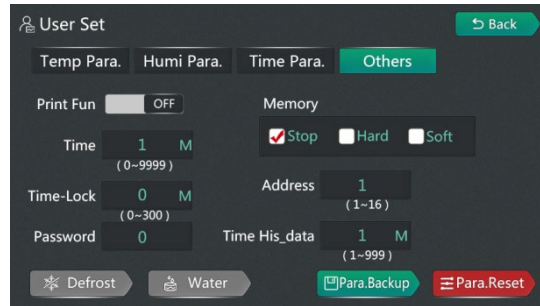| Name	Function	Initial value (set range)
Temperature proportional zone	Time ratio regulation.	(0.1〜50.0) 10.0
Temperature integration time	Integral action regulation.	(1~2000 s)500
Temperature differential time	Differential action regulation.	(0~2000 s)200
Temperature heating cycle	Heating control cycle.	(1~60 s)5
Temperature heating power	maximum power percentage of heating output.	(0〜100%) 100
T-H-ALM	If "the measured value > the set value + this parameter ", the alarm indication flashes, has the over-temperature alarm record, the temperature alarm relay has the output, the buzzer calls, clicks any key to cancel the buzzer.	(0〜20.0℃) 5.0
T-L-ALM	If "measured value < set value + this parameter ", the alarm indication flashes, there is under-temperature alarm record, temperature alarm relay has output, buzzer calls, click any key to cancel buzzer.	(-50.0〜0℃) 0
Heat-Off-H	There is no hot spot in high temperature control, only when the temperature setting value is higher than the ambient temperature.	(-10.0〜10.0℃) 5.0
Heat-Off-L	No hot spots in low temperature control, only when the temperature setting value is lower than the ambient temperature.	(-2.0〜0℃) -0.5
REV	Correction of sensor (low temperature) measurement error; this parameter = the actual temperature value - the instrument measurement value.	(-99.9〜99.9℃) 0
REV-S	Correction of sensor (high temperature) measurement error; this parameter =1000*(actual temperature value - meter measurement value)/ meter measurement value.	(-999〜999) 0
Cool-ON	When the compressor is manual start and stop mode and the compressor is intermittent control, if "measure temperature ≥ set temperature + this parameter ", open the compressor.	(Refrigeration shutdown ~℃10.0) 0.4
Cool-OFF	When the compressor is manual start and stop mode and the compressor is intermittent control, if "measure temperature ≤ set temperature + this parameter ", close the compressor.	(-10.0~ Refrigeration on) 0.4

5.2 Humidity parameters

Name	Function	Initial value (set range)
Humidity proportional band	Time ratio regulation.	(0.0～90.0) 15.0
Humidity integration time	Integral action regulation.	(1~999 s)200
Humidity differential time	Differential action regulation.	(0~999s)30
Humidity heating cycle	Humidification control cycle.	(0~60s)5
Humidity humidification power	Maximum power percentage of humidified output.	(0～100%) 100
H-H-ALM	If "the measured value > the set value + this parameter ", the alarm indication flashes, has the super wet alarm record, the humidity alarm relay has the output, the buzzer calls, clicks any key to cancel the buzzer.	(0～50.0%) 20.0
H-L-ALM	If "measured value < set value + this parameter ", the alarm indication flashes, there is a wet alarm record, humidity alarm relay has output, buzzer calls, click any key to cancel buzzer.	(-50.0～0%) 0
Humi-Off-H	The controller will prohibit humidification if the humidity measurement value ≥ humidity setting value + this parameter.	(-10.0～10.0%) 2.0
Humi-Off-L	Humidity measurement value < humidity setting value + this parameter value, low humidity control point.	(-50.0～50.0%) 0.0
REV	Correction of sensor (low humidity) measurement error; this parameter = the actual humidity value - the meter measurement value.	(-99.9～99.9%) 0
REV-S	Correction of sensor (high humidity) measurement error; This parameter =1000*(actual humidity value-meter measurement value)÷ instrument measurement value.	(-999~999) 0
Humi-ON	When the compressor is manual start and stop mode and the compressor is intermittent control, if "measure humidity ≥ set humidity + this parameter ", open the compressor.	(dehumidification shutdown ~20.0%) 3.0
Humi-OFF	When the compressor is manual start and stop mode and the compressor is intermittent control, if "measure humidity ≤ set humidity + this parameter ", close the compressor.	(-10.0～10.0%) 2.0

5.3 Time parameters

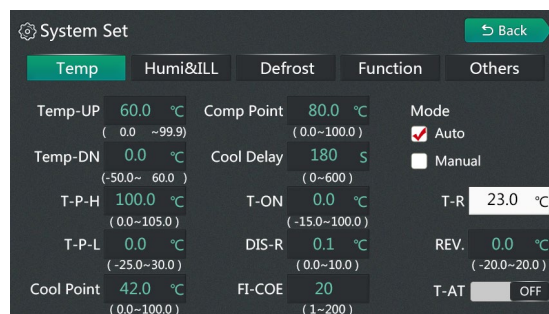| Name	Function	Initial value (set range)
Lighting time	After the lighting is turned on, the lighting time is automatically turned off.	(0~9999 min)0
Sterilization time	After sterilization is opened, the sterilization time is automatically closed.	(0~9999 min)0
Buzz Tip Time	After running, the buzzer prompts the time.	(0~300 s)0

5.4 Other parameters

Name	Function	Initial value (set range)
Print function	Print function switch.	Close
Print interval	printer print data interval time.	(0~9999)1 minute
Time-Lock	Automatic lock screen time 0 time no automatic lock screen.	0 minutes (0~300 minutes)
Lock screen password	When the lock screen time is 0, click the unlock key to enter the monitor interface directly	0（0~9999）
Power off start-up mode	Do not start: after power off restart, the system is in a stop state Hard start: after power off restart, the system starts from the first stage of the first cycle, and the timing time is zero Soft start: after power off restart, the system starts running from the period of time when power off	Not started
Address	Controller address	(1~16) 1
Data recording interval	The interval between keeping historical records.	(1~999) 1
Manual Frosting	Click to do a manual defrosting.The defrosting time is judged according to the frost temperature section of the current set temperature.	
Manually add water	Click to add water manually. If the water level is detected or click close the pump to stop adding water.	
Save default values	Click to save the current parameter to the user parameter area	
Restore default	Click to restore all parameters in the user parameter area	

6. System set

Enter [system set], you need to enter **password 9** to enter, otherwise pop up error prompt dialog box;

6.1 Temperature control

Name	Function	Initial value (set range)
Temp-UP	The maximum value of a temperature set value.	(Lower temperature limit ~99.9℃) 60.0
Temp-DN	The minimum value of a temperature setting.	(-19.9℃~ Temperature ceiling) 0.0
T-P-H	When "temperature measurement value ≥ this parameter ", the alarm indication flashes, has the high temperature protection alarm record, the operation stops, closes all outputs. The buzzer sounded.	(0～105.0℃) 100.0
T-P-L	When "temperature measurement value or temperature setting value ≤ this parameter ", the alarm indication flashes, has the low temperature protection alarm record, the operation stops, closes all outputs. The buzzer sounded.	(-25.0～30.0℃) -20
Comp Point	when "temperature measurement value ≥ this parameter ", the compressor is absolutely forbidden to work.	(0～100.0℃) 80.0
No temperature points	when "temperature set value ≥ this parameter ", open the compressor only once when the temperature measurement value is higher than the temperature set value.	(0～100.0℃) 42.0
Cool delay	Compressor start delay protection time, compressor from stop to restart the minimum time interval.	(0~600 s) 180
T-ON	when "temperature set value ≤ this parameter ", the compressor works in balance.	(-15.0～100.0℃) 0.0
DIS-R	The temperature shows an insensitive area.	(0～10.0℃) 0.1
FI-COE	Adjust temperature sensitivity.	(1～200) 50
Mode	Automatic or manual acquisition of refrigeration threshold.	Automatic
REV.	Correct the error caused by ambient temperature measurement. this parameter = the actual ambient temperature value - ambient temperature.	(-20.0～20.0℃) 0.0
T-AT	Self-tuning function switch	

6.2 Humidity control
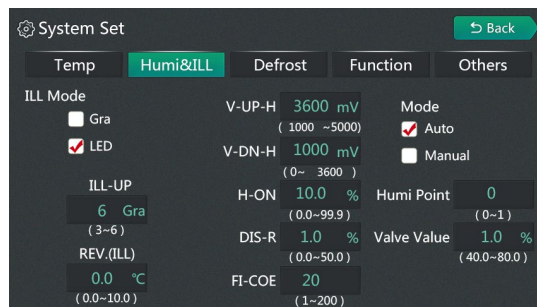
Name	Function	Initial value (set range)
ILL Mode	Graded illuminance function: graded relay output. LED illumination function :0-100% LED output.	Grading
ILL-UP	When the graded illumination function is turned on, the maximum value of the illuminance set value.	(3～6) 6
REV.(ILL)	When there is illumination output, the first illumination corresponds to the change value of ambient temperature, which is set to 0, that is, there is no temperature compensation of thermal light source.	(0～10.0℃) 0.0
V-UP-H	The corresponding input voltage value at 100% humidity.	(Humidity voltage limit ~5000) mv 3000
V-DN-H	The input voltage value corresponding to humidity 0.	(0~ Humidity Voltage Limit) mv 0

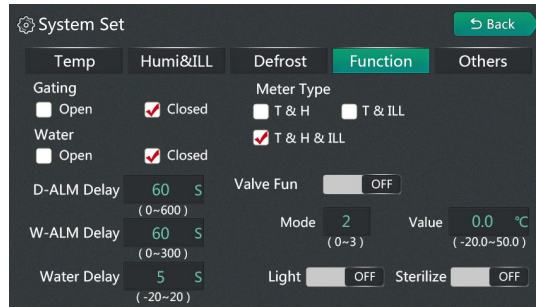|		
H-CN	when "humidity set value ≤ this parameter ", the compressor works in balance.	(0～100.0%) 10.0
DIS-R	Humidity shows an insensitive area.	(0～50.0%) 1.0
FI-COE	Adjust humidity sensitivity.	(1～200) 20
Mode	Automatically obtain the threshold of dehumidification control. Manually obtain the threshold of dehumidification control.	Automatic
Humi Point	Monitor the number of decimal places displayed by the interface humidity measurement.	0（0~1）
Valve Value	The limit value of high humidity state and low humidity state is judged.	65%

6.3 Defrost control
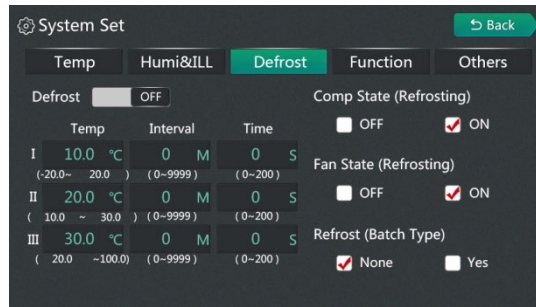
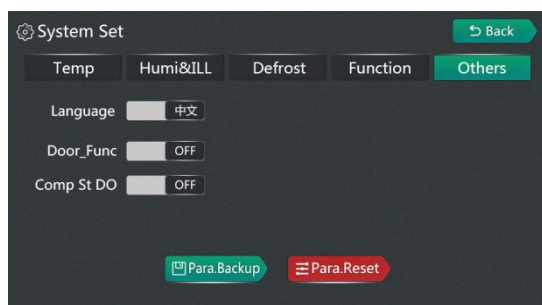| Name	Function	Initial value (set range)
Defrost function	Defrost function switch	Customs
Defrost temperature 1	Defrost interval temperature 1	(-20.0℃~ defrosting temperature 1) 10.0
Defrost temperature 2	Defrost interval temperature 2	(defrosting temperature 2~ defrosting temperature 3) 20.
Defrost temperature 3	Defrost interval temperature 3	(defrosting temperature 3~100.0℃) 30.0
Defrost interval 1	Defrost time interval when "temperature set value ≤ defrost temperature 1" is used. Note :0 indicates that this section has no automatic cream and can be opened manually.	(0~9999 min) 0
Defrost interval 2	The defrost time interval when "defrosting temperature 1< temperature setting value ≤ defrost temperature 2" is used. Note :0 indicates that this section has no automatic cream and can be opened manually.	(0~9999 min) 0
Defrost interval 3	The defrost time interval when "defrosting temperature 2< temperature setting value ≤ defrosting temperature 3" is used. Note :0 indicates that this section has no automatic cream and can be opened manually.	(0~9999 min) 0
Defrost time 1	Defrost opening time when "temperature set value ≤ defrosting temperature 1" is used. Note :0 indicates that there is no frosting in this section.	(0~200 s) 50
Defrost time 2	When "defrosting temperature 1< temperature setting value ≤ defrosting temperature 2" defrosting opening time. Note :0 indicates that there is no frosting in this section.	(0~200 s) 50
Defrost time 3	When "defrosting temperature 2< temperature setting value ≤ defrosting temperature 3" defrosting opening time. Note :0 indicates that there is no frosting in this section.	(0~200 s) 30
Compressor status during defrosting	Compressor state when defrosting.	Open
Fan condition during defrost	Fan state when defrost.	Open
Discontinuous defrost	Intermittent mode with or without defrosting control.	No defrost

6.4 Functional selection

Name	Function	Initial value (set range)
Gated function	The gating switch opens the door or closes the door.	Closed door
Water level function	The water level switch disconnects or closes the water shortage.	Closed water shortage
D-ALMdelay	When the door is continuously detected and the parameter time is maintained, the alarm indicator lights flicker, the door alarm record is opened, and the buzzer calls (click on the alarm record to mute).	(0~600) 60 s
W-ALMdelay	When water shortage is detected continuously and the parameter time is maintained, the alarm indicator lamp flashes, there is a water shortage alarm record, and the buzzer calls (click on the alarm record to mute).	(0~300) 60 s
Water Delay	If the parameter >0, add water after the full extension of the parameter time to close the water; If the parameter <0, water shortage is detected, delay the parameter time and add water.	(-20~20) 5
Type of instrument	Constant temperature and humidity: control temperature and humidity. Constant temperature and constant light: control temperature and illumination. Artificial climate: control temperature, humidity and illumination.	Artificial climate
Solenoid valve function	Solenoid valve function switch	Close
Functional selection	0： delay opening mode, when you need to open the compressor, if the delay time to open, first open the solenoid valve, after 10 seconds, then open the compressor. 1： upper and lower return difference mode: when "temperature measurement value < temperature setting value-solenoid valve threshold ", solenoid valve opens; when" temperature measurement value > temperature setting value + solenoid valve threshold ", solenoid valve closes ;(compressor balance type is effective). 2： setting value comparison mode: when "temperature setting value ≥ solenoid valve threshold ", solenoid valve opens; when" temperature setting value < solenoid valve threshold ", solenoid valve closes; 3： measurement value comparison method: when "temperature measurement value > temperature setting value + solenoid valve threshold ", solenoid valve opens; conversely, close solenoid valve;	（0~3） 2
Solenoid valve threshold	threshold for different solenoid valve functions.	(-20.0～50.0℃) 10
Lighting function	Lighting function switch	Open
Sterilization function	Sterilization function switch	Open

6.5 Other settings

Name	Function	Initial value (set range)
Language options	Choose the language displayed: Chinese, English	Chinese
Save ex-factory value	Backup all parameters to factory parameter area.	
Recovery of ex-factory values	Restore the current parameters from the factory parameter area.	

9. Notice and Maintenance

⃠Avoid putting down the Constant temperature and humidity incubator in greater than 45 degrees or inversion when moving it .

⃠ Do not change frequently of the use value, to   cause compressor frequently open and overload , affect the service life of the equipment。

❗ the machine have the power switch, in case of failure operation, please cut off power supply, check whether the control circuit is in good condition, then check the other parts.(see diagram)

❗ Be sure to close the inner door , and then the outdoor .If the inner   door didn't close well, even if close the outdoor, the device may not be able to maximum work., please be careful not to overexert cause damage door gasket When closing.

❗ Recommend to use the pure water or distilled water to fill in the   tank , ensure water is clean.

❗。In order to maintain the appearance of the equipment, do not use corrosive solution to clean the machine, can use dry cloth or alcohol to wipe, keep box clean.

❗ should keep in dry, and cut off power supply when the equipment is not using.

❗ In order to ensure the cabinet uniformity inside , should often check whether the axial flow fan   is running normally .When doing the experiment, should not put too close article to stop the fan outlet, make

sure the air circulation in the box is in good condition. Do not touch the thermal probe in the collision to cause temperature abuse

⚠Make sure shelf is fixed well, otherwise may make cultures damage

🚫 Don not　lean against the glass or put pressure on the glass, it may cause harm to personnel

🚫 Staff do not leak again the equipment on the door,　to prevent the equipment overturned or door broken making　ple harm or machine broken.
❗ When equipment fails to work, please ask professional technician or the factory sales department for help. Please don't do anything by yourself.

Optional Using

RS-232/RS-485 instructions for use of the converter
● In order to proceed with data communication between the different standard serial interface to the computer, an external device or smart instrument, must provide conversion of standard serial interface. The converter is compatible with RS-232, RS-485 standard, capable of converting single-ended RS-232 signal to a balanced differential RS-485 signals.(it can connect 16 controller of this series together at the same time)

Trouble shooting
　● Data communication failure
　(1)Check if RS-232 port inside connection is correct.
　(2)Check if RS-485 port inside connection is correct.
　(3)Check if port is connected.
　● Data is missing or incorrect
　　Please check if data communication equipment rate and format is accordance.

(1)Trouble shooting

Trouble	handling
Sensor failure warning	·Heating sensor abnormal, please check heating sensor (model:PT100) ·Humidity sensor abnormal, please check humidity sensor
Temp. can't reach setting value	·Please check heating tube
Humidity can't reach setting value	·Please check water level, water level should cover half of the heating tube. ·Please check humidity heating tube.

Screen displays nothing	·Please check if socket is 220V ·Please check if power is connected ·Please check if power switch, if it is tripping operation, please check wring layout.

10. Wiring layout
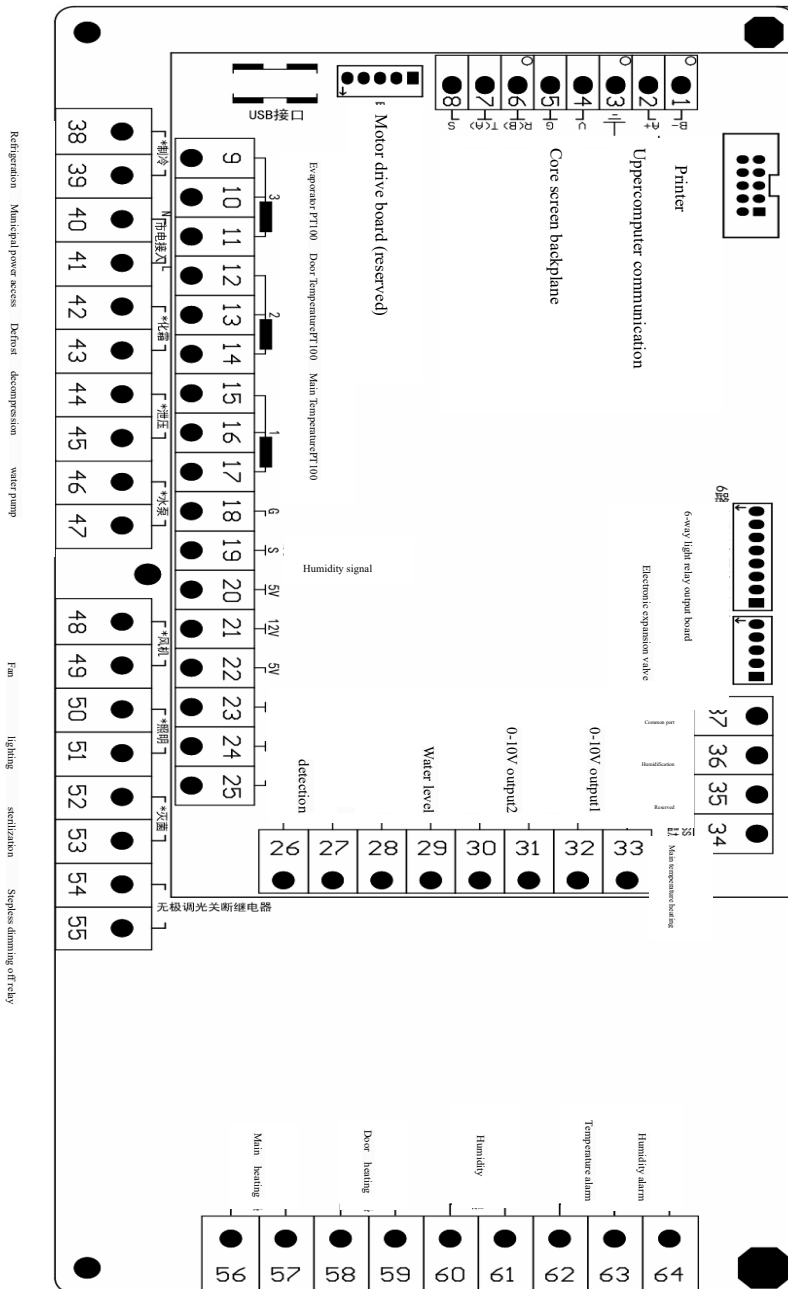
YR series

constant temperature and humidity chamber

Packing List

No.	Name	Quantity	Note
1	product	1	
2	manual	1	
3	Inlet pipe	1(2m)	With a hose hoopφ8-20
4	outlet pipe	1(0.3m)	With a hose hoopφ8-20
5	Overflow pipe	1(0.3m)	With a hose hoopφ8-20