# SHD-U-EC

## Self-adaption Energy-saving Hopper Dryer

Date: July 2024

Version: Ver. F

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# 1. General Description

Read this manual carefully before operation to prevent damage of the machine or personal injuries.

SHD-U series hopper dryer adopt hot air down-blowing design and stainless steel hopper. It has “hot air down-blowing” and “cyclone exhausting” function, and double-layer insulated hopper, which is especially suitable for use with honeycomb dehumidifiers to dry engineering plastics.

Picture 1-1: Hopper Dryer SHD-80U-EC

All service work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both handling and servicing. Chapter 6, which contains service instructions intended for service engineers. Other chapters contain instructions for the daily operator.

Any modifications of the machine must be approved by SHINI in order to avoid personal injury and damage to machine. We shall not be liable for any damage caused by unauthorized change of the machine.

Our company provides excellent after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

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## 1.1 Safety Regulations

 Note!

Electrical installation should be done by qualified electrician only.

Before connecting to the power supply, make sure whether the power switch specification and load protection rated current are appropriate and safe. Be noted to turn the main power switch to “OFF” position before connecting the machine to the power supply. When the machine is under care or maintenance, turn off both power switch and automatic operation switch.

### 1.1.1 Safety Signs and Labels

 Danger!

High Voltage!

It is attached to the control box.

 Attention!

This mark reminds you to be more careful.

 Warning!

High temperature surface may burn hands!

This label should be stick to the shell of electric heating box.

 Warning!

No need for regular inspection because all the electrical parts in the control unit are fixed tightly!

 Attention!

To prevent over-temperature alarm from causing machine shutdown, don't randomly adjust EGO setting temp.

 Attention!

For test of SHD-2500U and above models, connect all hot air pipes to avoid damage of the blower.

Attention!

For test of SHD-2500U and above models, half-open the air-in valve of the blower to avoid damage of it.

### 1.1.2 Signs and Labels

| | |
|---|---|
|  | Push-and-pull switch for shut-off plate:<br>I: Means "Pull"<br>O: Means "Push" |

## 1.2 Exemption Clause

The following statements clarify the responsibilities and regulations born by any buyer or user who purchases products and accessories from Shini (including employees and agents).

Shini is exempted from liability for any costs, fees, claims and losses caused by reasons below:

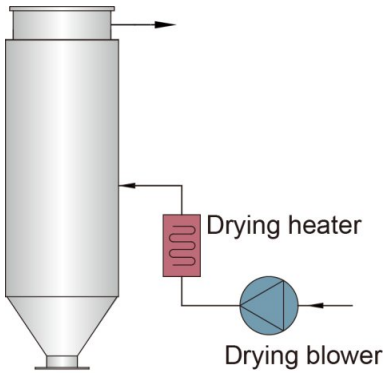
1) Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2) Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible natural disasters including fire, flood, storm and earthquake.
3) Any operational actions that are not authorized by Shini upon machine, including adding or replacing accessories, dismantling, delivering or repairing.
4) Employing consumables or oil media that are not appointed by Shini.

# 2. Structure Characteristics and Working Principle

## 2.1 Working Principle

In material processing, the self-adaption energy-saving hopper dryer through the drying blower to blow the high-temperature air with a constant temperature into a double-layer insulated hopper. After drying the materials, it will take the moisture of materials in the hopper away, thus achieving the purpose of removing the material contained moisture.

### 2.1.1 Working Principle Illustration

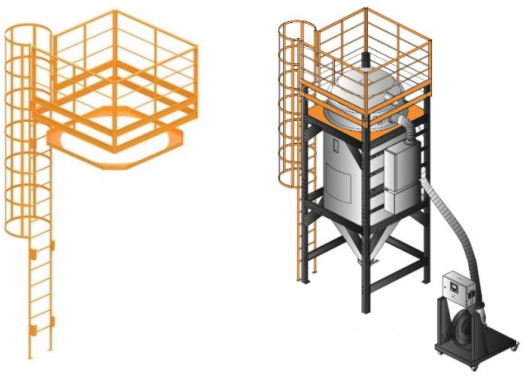



Picture 2-1: Working Principle Illustration

Air blown out of drying blower becomes high temperature drying air after being heated. Through particular down-blowing air pipe, hot air can be equably dispersed in the material storage tank. Hot air recycler is optional to filter and recycle the air from the air outlet and form a closed loop circle.

## 2.2 Optional Accessories

### 2.2.1 Safety Ladder



Picture 2-2: Safety Ladder and Other Dryers Assembly Diagram

Optional safety ladder ML is optional for SHD-1500U and above models.

### 2.2.2 Floor Stand

Euro floor stand helps to move the drying hopper out of the injection moulding workshop, which is suitable for plant with insufficient height, easy to move and can be easily worked with other machines.

Each model has corresponding floor stand, and the assembly diagram of floor stand and hopper is shown in Figure.

Suitable for SHD-20U-750U-EC

Picture 2-3: Floor Stand and Other Dryers Assembly

### 2.2.3 Aluminum Magnetic Base

Picture 2-4: Assembly Diagram of Alu. Magnetic Base with the Dryer

Made of aluminum with built-in hopper magnet, can effectively separate metal scraps out to avoid material contamination and protect the screw.

Replace the standard base below the hopper dryer with a magnetic base during assembly.

Notes: Add “U” at the end of the stainless steel model.

### 2.2.4 HAR-U "Euro" Hot Air Recycler

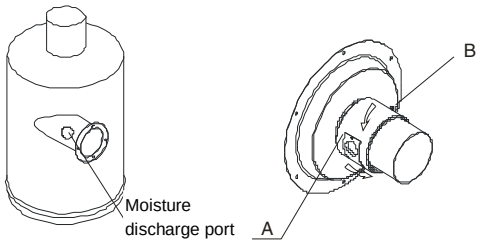
HAR-U "Euro" hot air recycler has energy saving and dust-collecting function,its design is for working with "Euro" dryer to form a sealed loop. This machine has a simple structure and very easy for installation. High efficiency in hot air recycling use will save energy up to 40% and improve the production efficiency greatly. The built-inside filter can maintain the air clean so to ensure production quality. The machine has a backup air adjusting valve and moisture drainage bore to make better recycling use of hot air.

Model: HAR-80U

Picture 2-5: "Euro" Hot Air Recycler

#### 2.2.4.1 Working Principle

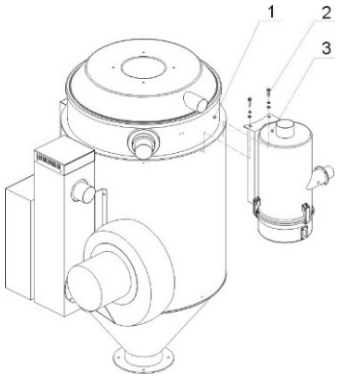
HAR-U "Euro" hot air recycler has filter built in to connect the air vent of the dryer and back up air inlet of the blower. The hot air that discharged from dryer's air vent has moisture and dust powder,within which the humid air is discharged from the bores on (see Fig.1) filter barrel. After filtering by the filter, the residual hot air will be heated by the electric heater, and will enter the dry drum again to dry the materials, so it can be used repeatedly.HAR-U hot air recycler has rotary air adjusting aluminum sleeve (A), customer can unscrew the lockup screw (B) according to practical requirement to adjust the coming air in the dryer.




Picture 2-6: "Euro" Hot Air Recycler

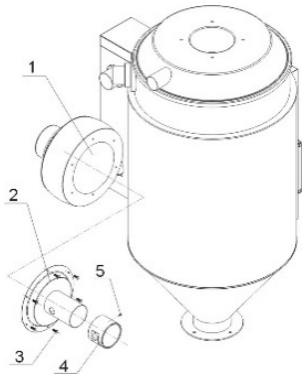
2.2.4.2 Installation Steps

1) Mount HAR/AIF/ADC on the drying hopper.
   a) Mount the hot air recycler (3) on proper place of the drying hopper at first.
   b) Find corresponding installation hole on the aluminum ring right behind the drying hopper (1).
   c) Mount the hot air recycler (3) and lock it with screws (2).




Picture 2-7: Installation of "Euro" Hot Air Recycler

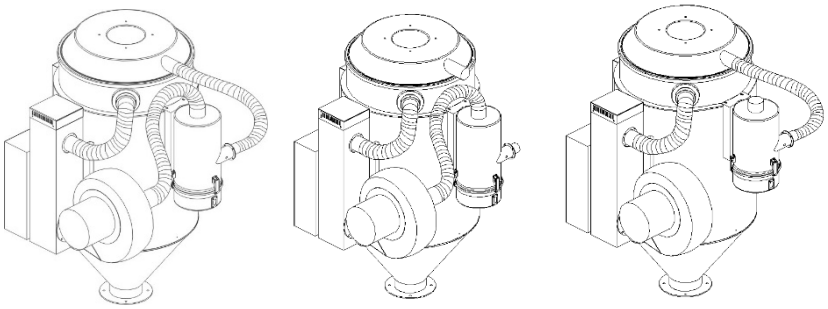
2) Installation of the Flange at HAR/AIF Blower Inlet
   a) First insert the aluminum made air volume adjusting ring assembly parts (4) onto the coupling flange (2), to align the air adjusting bore, and then screw the insertive screw (5).
   b) Mount coupling flange at the blower's air inlet (5),tighten up the screw (3).




Picture 2-8: Installation of the Flange at the Blower Inlet

3) Connection of Air Pipe

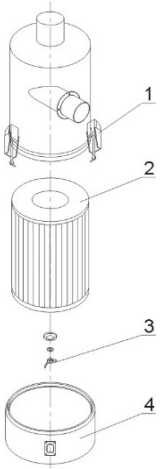
a) Mount the air pipe with according size as following picture, which are HAR，AIF，ADC.



Picture 2-9: Connection of Air Pipe

2.2.4.3 Clean up the HAR/AIF/ADC

1) Loosen the spring clip (1), and take out the dust collecting barrel (4) of the hot air recycler.
2) Unscrew the butterfly nut (3), and take out the filter (2) then clean it with a high pressure air jetter.
3) Install the filter in opposite steps.




Picture 2-10: Clean up the HAR/AIF/ADC

### 2.2.5 AIF-U “Euro” Blower Inlet Filter

AIF-U "Euro" blower inlet filter has filtering and dust-collecting function.Its design is for working with "Euro" dryer and can be installed at the backup air inlet of the blower. This machine features simple structure, easier installation and greatly improves the production efficiency. The built-inside filter can maintain the air clean so to ensure production quality. The machine has also configured with a backup air adjusting valve.

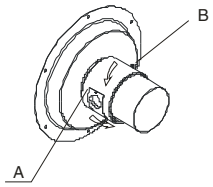
Model: AIF-80U

Picture 2-11: "Euro" Blower Inlet Filter

#### 2.2.5.1 Working Principle

AIF-U "Euro" blower inlet filter has filter built in to connect the air vent of backup air inlet of the dryer blower and air vent of filter blower to improve production quality.AIF-U "Euro" blower inlet filter has rotary air adjusting aluminum sleeve

(A),customer can unscrew the lockup screw (B) according to practical requirement to adjust the coming air in the dryer.




Picture 2-12: Working Principle

### 2.2.6 ADC-U”Euro” Air Filter

ADC-U “Euro” air filter can avoid 100% dust with good exhaust effect. This machine features simple structure, easier installation and greatly improves the production efficiency. The built-inside filter can maintain the air clean so to ensure production quality. The machine has also configured with a backup air adjusting valve.

Model: ADC-80U

Picture 2-13: "Euro" Air Filter

#### 2.2.6.1 Working Principle

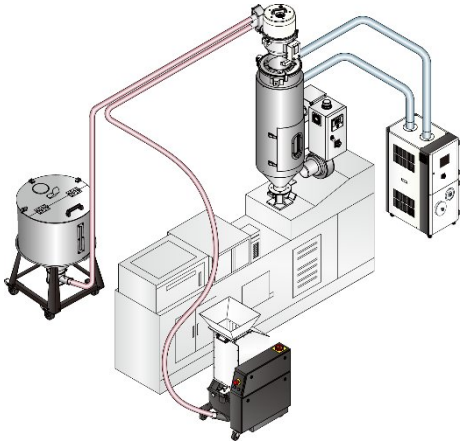
ADC-U “Euro” air filter has a built-in cylinder filter, which can avoid 100% dust with good filtering effect. It can keep the air in the plant clean and improve the production efficiency.

# 3. Installation and Debugging

This series of models can only be used in workplace with good ventilation.

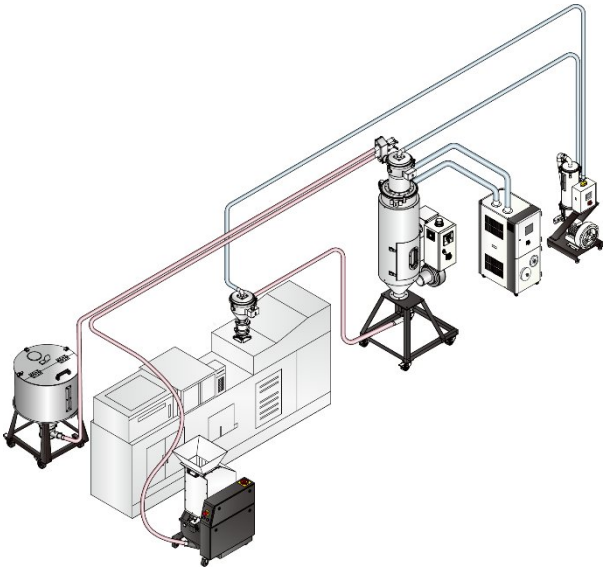
## 3.1 Machine Location

### 3.1.1 Install directly on a molding machine



Picture 3-1: Install Directly on a Molding Machine

### 3.1.2 To be used with Hopper Loaders



Picture 3-2: To be used with Hopper Loaders

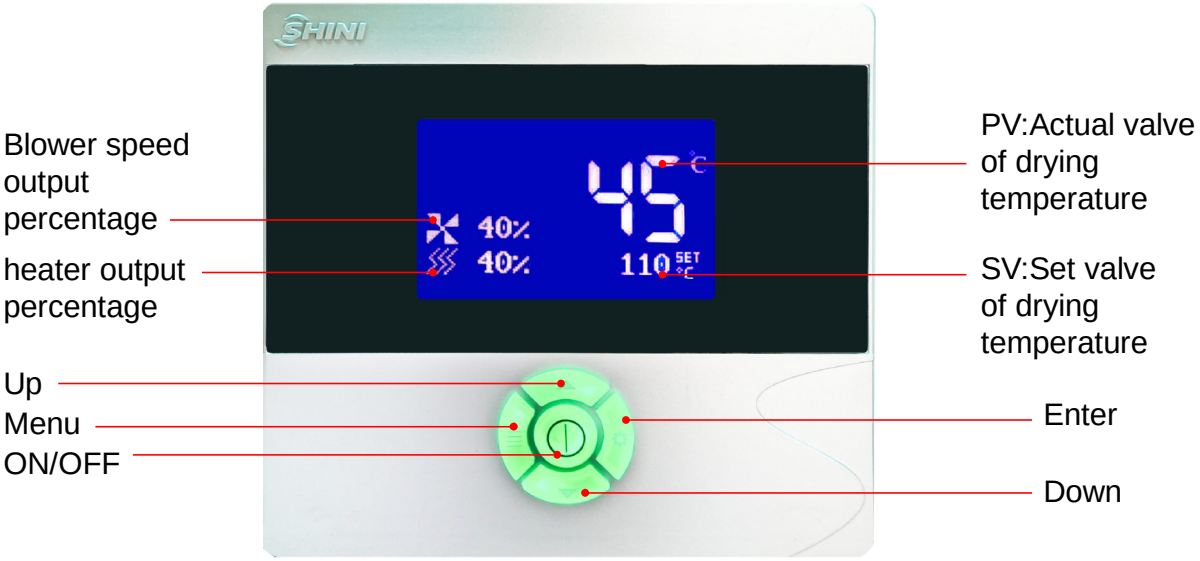
## 3.2 Power Connection

1) Make sure voltage and frequency of the power source comply with those indicated on the manufacture's plate, which is attached to the machine.
2) Power cable and earth connections should conform to local regulations.

3) Use independent power cable and ON / OFF switch. The cable's size should not smaller than those applied in the control box.
4) The power cable connection terminals should be tightened securely.
5) The machine requires a 3-phase 4-wire power source, connect the power lead (L1, L2, L3) to the live wires, and the earth (PE) to the ground.
6) Power supply requirements:
   Main power voltage: ± 5%:
   Main power frequency: ±2%
***7) Specific power supply specifications please refer to the schematic model.***

# 4. Application and Operation

## 4.1 Control Panel




Picture 4-1: Control Panel

Table 4-1: Control Panel

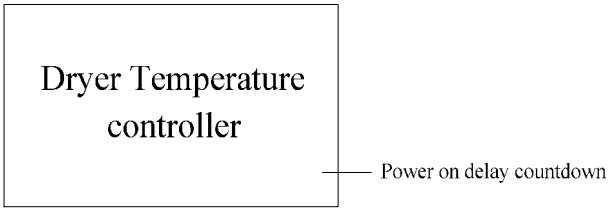
| ICONS | Name | Use |
|---|---|---|
| 20% | Heating ICONS | Represents the percentage of the current electric heating operating power, with a maximum value of "100" and a minimum value of "0". The current value is 20%, indicating that the power of the electric heating operation is 20% of the maximum power |
| 10% | Fan Running icon | Represents the percentage ofcurrent blower operating power, with a maximum of "100" and a minimum of "0". If it shows 10%, it means the blower's operating power is 10% of the maximum power. |
| | Lock icon | Lit: Set temperature lock, cannot be modified under the main screen<br>Off: Set temperature lock, can be quickly modified in the main screen |
| | Appointment timing icon | On: The reservation timing function is enabled<br>Off: The reservation timing function is disabled |

| | | |
|---|---|---|
| ECO | Heat Preservation Mode icon | Lit: The unit is in Heat preservation mode<br>Off: The unit is not in Heat preservation mode |
| AT | Self-setting icon | Lit: PID parameter self-tuning is on<br>Off: PID parameter self-tuning is off |
| | Status indicator | Steady yellow: Stop/In stopping<br>Steady green: In operation<br>Flickering red: Fault alarm |
| | On/Off button | On/off button |
| | Menu button | Enter the user menu |
| | Set button | Set key |
| | Up button | Add value, select parameter up |
| | Down button | Reduce the value and select the parameter down |

## 4.2 Common Interface

### 4.2.1 Start-up delay screen

When the device is powered on, the system has a 7-second delay. After the countdown is over, the system automatically enters the "home screen".

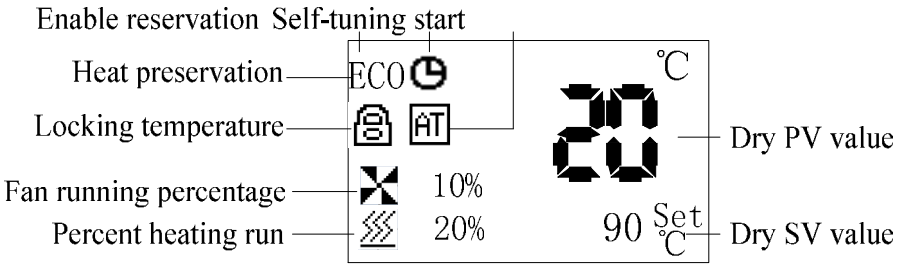



Picture 4-2: Start-up delay screen

### 4.2.2 Home screen

All startups are performed on the "Main operation interface". The corresponding icon indicates the relevant status. If the drying temperature now is 20 ° C and the drying temperature is set to 90 ° C (During operation, the blower and heating are

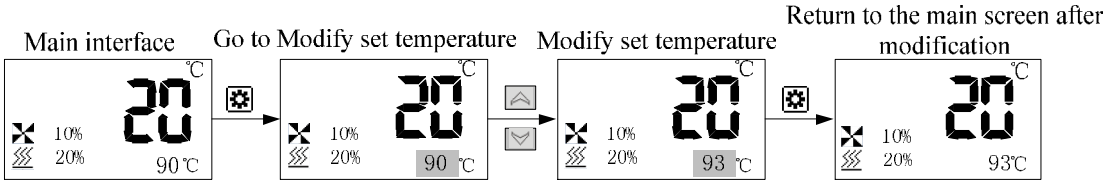
on, the timing function is enabled, and the temperature lock is enabled), the "main operation interface" will be displayed as follows:




Picture 4-3: Home screen

4.2.2.1 Quickly modify the set temperature under the main interface

If the user parameter [lock temperature] is set to "no", the set temperature can be directly modified under the main interface, the operation is as follows:

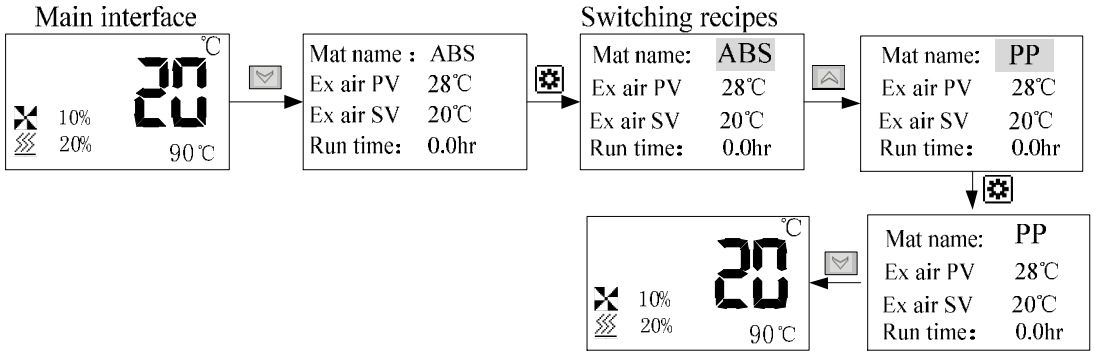



Note: You can also modify the set temperature in the user parameter.

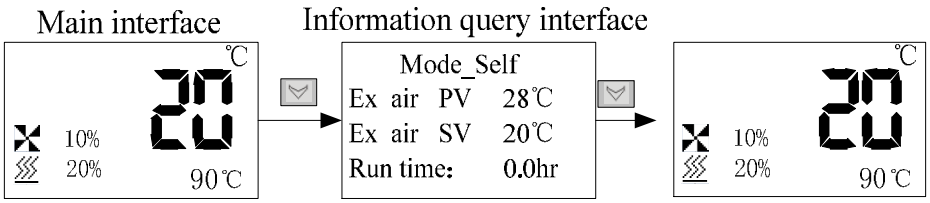
Picture 4-4: Drying Temperature Locking

4.2.2.2 Check related information on the main screen

1) The control mode is: Recipe mode:

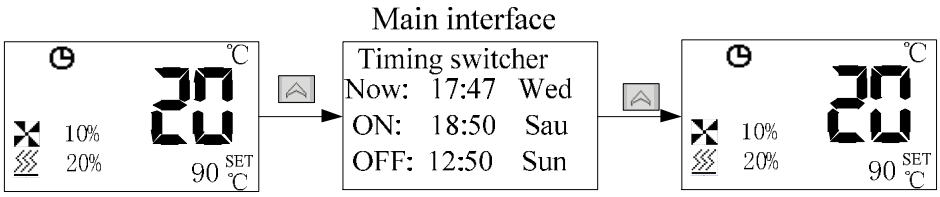



2) The control mode is: Self-adaption mode:




Picture 4-5: Self-adaption Mode Setting

4.2.2.3 The timing time is displayed on the main screen

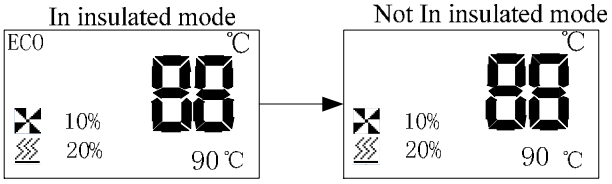



Picture 4-6: Timer On/Off Time Display

Note: If there is no timed startup, the time is displayed 00:00

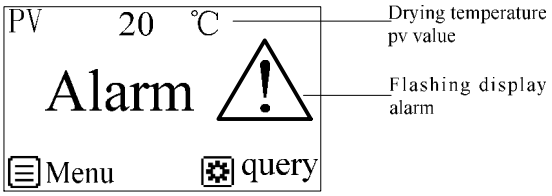
4.2.2.4 ECO Mode/Insulation Mode

After the first start-up and the drying time, when the actual exhaust air temperature > exhaust air set temperature, and the anti-excessive drying time (default 30 minutes) is over, the unit will enter the ECO mode. The actual drying temperature decreases and the temperature is determined by the cooling deviation (default 20 ℃); When the actual exhaust air temperature < exhaust air set temperature, the unit exits the ECO mode. To enter the ECO mode again, it only needs the actual exhaust air temperature > exhaust air set temperature and it lasts the anti-excessive drying time.




4.2.3 Fault screen

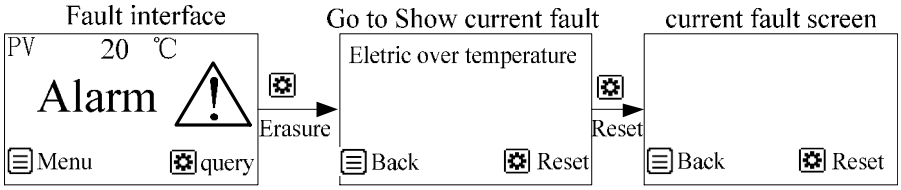
When the unit fails, it will automatically enter the fault interface, and the corresponding fault icon will be displayed. If the current drying temperature PV value is 20.0℃, the fault interface will be displayed as follows:




Picture 4-7: Fault screen

4.2.3.1 Fault query/reset interface

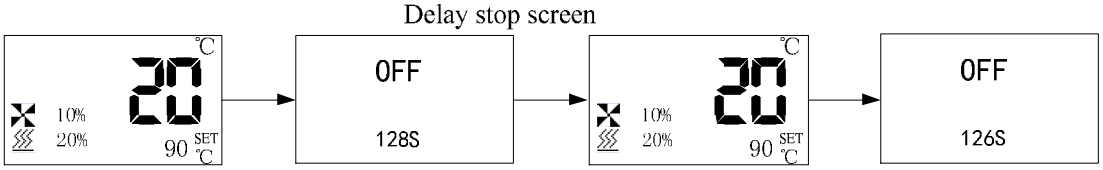
When the fault occurs, the alarm interface will automatically pop up. The fault query and reset operation are as follows:




Picture 4-8: Fault Inquiry and Reset Interface

4.2.4 Delayed shutdown and standby interface

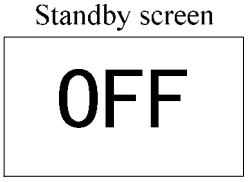
4.2.4.1 Delay stop interface




Picture 4-9:Delay Shut Down Interface

Note: In the case of delayed shutdown, the main interface and the delayed shutdown interface are alternately displayed every 2 seconds until the shutdown countdown is over.

4.2.4.2 Standby interface




Picture 4-10: Standby interface

Note: Enter the standby interface after the delayed shutdown ends.

## 4.3 User Menu

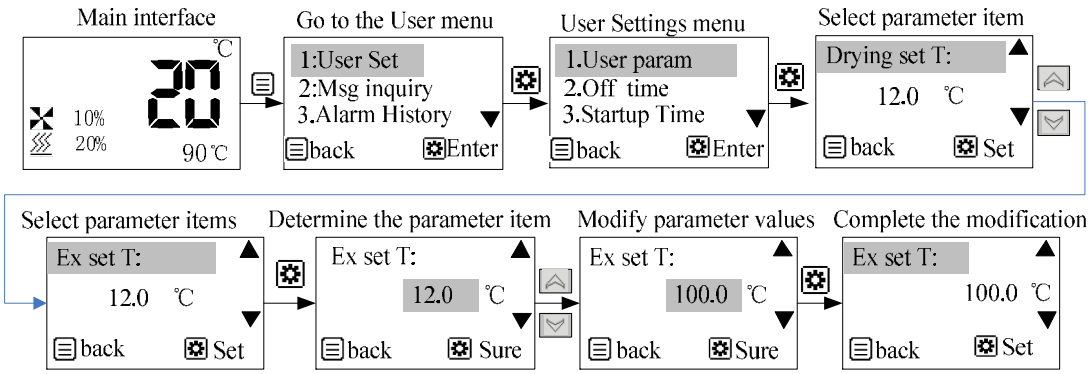
Press <Menu> key in the main interface to enter the user menu, the user menu parameters are as follows:

Table 4-2: User Menu Parameter Table

| Serial No. | Parameter Items | Parameter Function | Remarks |
|---|---|---|---|
| 1 | User settings | Set user parameters<br>Set the shutdown time<br>Set the boot time<br>Communication settings<br>Recipe settings | User Settings in the relevant parameter Settings, see the User Settings parameter table |
| 2 | Information inquiry | Check the PV value of the drying temperature<br>Check information such as the PV value of the return air temperature | |
| 3 | Historical fault | You can query all faults that have occurred in the last 10 times | Press the <Set> key for 2s to clear the history of failures. |
| 4 | Time settings | Set the current time to include year/month/day/hour/minute/second/week | |
| 5 | Version information | Inquire about the software version currently in use | |

## 4.4 User Parameter Operations

To modify the parameter, modify the exhaust air setting temperature in the user Settings in the user menu as an example.Refer to the user parameter setting table for the parameter number and meaning in the user menu. The specific configuration method is as follows.




# 4.5 Parameter Table

## 4.5.1 User Parameter Setting Table

Table 4-3: User Parameter Setting Table

| Serial No. | Items | Initial Value | Set Range | Units | Remarks |
|---|---|---|---|---|---|
| User parameters (public) :<br>On the home screen, press the "Menu" key to enter the menu. Select User Settings in the menu bar and press the "Set" key to access. Select User parameters and press the "Set" key to enter. Press the "Up" or "Down" button to pollor modify the parameters, and press the "Set" button to modify or confirm, and press the "Menu" button to exit. | | | | | |
| 1 | Drying time | 120 | 1-999 | Mins. | |
| 2 | Set drying temperature | 90 | 0.0 ~ 200.0 | ℃ | |
| 3 | Set exhaust air temperature | 60 | 0.0 ~ 200.0 | ℃ | |
| 4 | Timing function | Disable | Disable/use | | Disable: The reservation timing function is disabled.<br>Enable: The reservation timing function is enabled. |
| 5 | Lock the temperature | no | Yes/No | | No: The setting temperature can be quickly |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | modified from the home screen.<br>Yes: The set temperature can't be quickly modified on the home screen. |
| 6 | Self-tuning | Disabled | Disable/use | | This parameter is displayed only when the machine is running |
| 7 | Multiple languages | Chinese | Chinese /English | | |
| 8 | Control mode | Recipe Mode | Recipe mode/Adaptive mode | | |
| Shutdown time parameters (public) :<br>On the home screen, press the "Menu" key to enter the menu. Select User Settings in the menu bar and press the "Set" key to access. Select the shutdown time and press the "Set" key to enter. Press the "Up" or "Down" to poll or modify parameters, press the "Set" button to modify or confirm the setting, and press the "Menu" button to exit. | | | | | |
| 1 | Monday shutdown time: | 00:00 | 00:00 to 23:59 | | (1) The time is set to 00:00, and the timed shutdown function is disabled. |
| 2 | Tuesday shutdown time: | 00:00 | 00:00 to 23:59 | | |
| 3 | Wednesday shutdown time: | 00:00 | 00:00 to 23:59 | | |
| 4 | Thursday shutdown time: | 00:00 | 00:00 to 23:59 | | |
| 5 | Friday shutdown time: | 00:00 | 00:00 to 23:59 | | |
| 6 | Saturday shutdown time: | 00:00 | 00:00 to 23:59 | | |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Sunday shutdown time: | 00:00 | 00:00 to 23:59 | | |
| Boot time parameters (public) :<br>Press the "Menu" key from the home screen to enter the menu. Select User Settings in the menu bar and press the "Set" key to access. Select the boot time and press the "Set" key to enter. Press the "Up" or "Down" button to poll or modify parameters, press the "Set" button to modify or confirm, and press the "Menu" button to exit. | | | | | |
| 1 | Monday start time: | 00:00 | 00:00 to 23:59 | | (1) The time is set to 00:00, and the timed power-on function is disabled. |
| 2 | Tuesday boot time: | 00:00 | 00:00 to 23:59 | | |
| 3 | Wednesday boot time: | 00:00 | 00:00 to 23:59 | | |
| 4 | Thursday boot time: | 00:00 | 00:00 to 23:59 | | |
| 5 | Friday boot time: | 00:00 | 00:00 to 23:59 | | |
| 6 | Saturday boot time: | 00:00 | 00:00 to 23:59 | | |
| 7 | Sunday boot time: | 00:00 | 00:00 to 23:59 | | |
| Communication setup parameters (public) :<br>Press the "Menu" key from the main interface to enter the menu. Select User Settings in the menu bar and press the "Set" key to access. Select Communication Settings and press "Set" to enter. Press the "Up" or "Down" button to poll or modify parameters, press the "Set" button to modify or confirm, and press the "Menu" button to exit. | | | | | |
| 1 | Communication protocol | RTU | RTU | | |
| 2 | Mailing address | 1 | 1-99 | | |
| 3 | Baud rate | 19.2 K. | 4.8 K / 9.6 K / 19.2 K | | |
| 4 | Check bit | No parity | No parity / Odd parity / | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | Even parity | | |
| 5 | Data length | 8 | 8 | | |
| 6 | Stop bit | 1 | 1 ~ 2 | | |

### 4.5.2 Recipe list

Table 4-4: Recipe List

| Groups | Ingredients | Drying time (min) | Drying temperature (℃) | Exhaust air temperature (° C) |
|---|---|---|---|---|
| 1 | ABS | 180 | 80 | 50 |
| 2 | PP | 120 | 90 | 45 |
| 3 | PE | 120 | 90 | 45 |
| 4 | PS | 120 | 80 | 45 |
| 5 | PPS | 240 | 140 | 65 |
| 6 | PVC | 120 | 70 | 40 |
| 7 | PBT | 240 | 120 | 60 |
| 8 | PC | 180 | 120 | 60 |
| 9 | CAB | 180 | 75 | 45 |
| 10 | SAN | 180 | 80 | 50 |
| 11 | PEI | 240 | 150 | 70 |
| 12 | PEN | 300 | 170 | 85 |
| 13 | SB | 120 | 80 | 50 |
| 14 | PET | 360 | 160 | 80 |
| 15 | PETG | 360 | 60 | 45 |
| 16 | PI | 180 | 120 | 60 |
| 17 | PMMA | 180 | 70 | 45 |
| 18 | POM | 180 | 95 | 50 |
| 19 | CA | 180 | 75 | 45 |
| 20 | PPO | 120 | 110 | 45 |
| 21 | LCP | 240 | 150 | 70 |
| 22 | CP | 180 | 75 | 45 |
| 23 | PSU | 240 | 120 | 60 |
| 24 | PUR | 180 | 90 | 50 |
| 25 | TPE | 180 | 105 | 55 |

| | | | | |
|---|---|---|---|---|
| 26 | PEEK | 240 | 150 | 70 |
| 27 | PES | 240 | 160 | 80 |
| 28 | PA | 360 | 70 | 45 |

Note: Under the condition that the moisture content of materials meets the standard, decrease the exhaust air temperature appropriately can improve the energy-saving effect.

### 4.5.3 Trouble Table

This controller has various alarm functions. When a failure occurs, the alarm interface displays the current fault. The specific fault code meaning is shown in the following Table.

Table 4-5: Trouble Table

| Faults | Action |
|---|---|
| Flash error | 1. When the alarm occurs, the machine stops running. After troubleshooting, manually reset it.<br>2. Start detection after powering on, it occurs when the correct data can't be read in the flash. |
| Probe failure | 1. Stop heating, delay stop blower, trip output for 5 secs. After troubleshooting, automatic reset.<br>2. The test starts as soon as it is powered on. |
| High temperature | When it alarms, stop heating, trip output 5 seconds, delay to stop the blower. After troubleshooting, manually reset.<br>Start testing as soon as you power it on<br>(1)【PV】-【SV】>【over temperature protection temperature】 and delay 2 seconds alarm.<br>(2) After modifying the set temperature, only after the current temperature passes through the set temperature once, if the conditions in (1) are still met, the alarm will be given. |
| Probe reverse connection | 1. Stop heating, delay stop the blower. After troubleshooting, automatically reset it.<br>2. The test starts after power-on. |
| Blower overload | Stop the heat and the blower. Reset manually after dismissing the fault.<br>Start testing as soon as you power it on. |

| | |
|---|---|
| No battery. | The machine continues to run when the alarm is given. After the fault is removed, the machine automatically resets.<br>The alarm is detected only when the reservation timing function is enabled. |
| Pipe overheat | Stop heating, delay stop blower, trip output 5 seconds. After troubleshooting, manually reset.<br>2. Start testing immediately after power-on: |
| Low temperature | 1. The machine continues to run when the alarm is given. After troubleshooting, the machine automatically resets.<br>2. Detection after power on<br>(1) [SV] - [PV] > [low temperature alarm] and delay [low temperature reaction time] alarm. When the temperature rises, automatic reset. If you want to prohibit, set [low temperature reaction time] = 0.<br>(2) Wait until the current temperature passes through the set temperature once before starting to detect. |
| Heating failure | When it alarms, the machine continues to run and automatically resets after the fault is removed.<br>Detection after starting up<br>(1) After starting up, the temperature within the [heating alarm] time, can't reach the [SV] -5℃ range, and it alarms. If you want to prohibit, set [heating alarm] = 0.<br>(2) After the current temperature passes through the set temperature, the alarm is no longer detected. |
| Return air probe fault | 1. Stop heating and delay stop blower. After troubleshooting, automatically reset.<br>2. The test starts after power-on. |
| Return air probe reversely connected. | 1. Stop heating and delay stop blower. After troubleshooting, automatically reset.<br>2. The test starts after power-on. |
| Inverter communication failure | 1. Stop the blower, stop heating. After troubleshooting, manually reset.<br>2. Start the test as soon as it is powered on. |

# 5. Troubleshooting

Table 5-1: Common Faults and Troubleshooting

| Fault | Possible Reasons | Solution |
|---|---|---|
| Overheat alarm (oH) | 1. Controller malfunction or large error | 1. Replace the controller |
| | 2. Contactor coil congregated | 2. Check and replace |
| | 3. Thermocouple error | 3. Check and replace |
| | 4. Blower motor error | 4. Check and replace |
| Thermocouple break alarm (bR) | 1. Thermocouple wiring loosen | 1. Check or locking |
| | 2. Thermocouple fault | 2. Check and replace |
| Blower overload alarm (oL) | 1. Phase loss | 1. After checking the circuit, press the Reset button on the loader. |
| | 2. Blower air inlet blocked | 2. Check whether the blower air inlet is smooth, and press the Reset button on the loader. |
| EGO overheat alarm | 1. EGO fault | 1. Check and replace |
| | 2. Thermocouple fault | 2. Check and replace |
| | 3. Middle relay fault | 3. Check and replace |
| | 4. Blower motor fault | 4. Check and replace |
| Blower direction is opposite to the arrow | 1. Blower wiring reversely connected | 1. Exchange any two power cables of the blower |
| The blower neither rotates nor heats up | 1. Overload trip | 1. Check and replace |
| | 2. Transformer fault | 2. Check and replace |
| | 3. Fuse melt | 3. Check and replace |
| | 4. Power fault | 4. Check the phase shortage |

***Notes: Before inspecting or changing spare parts, make sure the main switch should be off.***

# 6. Maintenance and Repair

SHD-20U~750U-EC

1. Check whether the alarm light works normally. Period: daily.

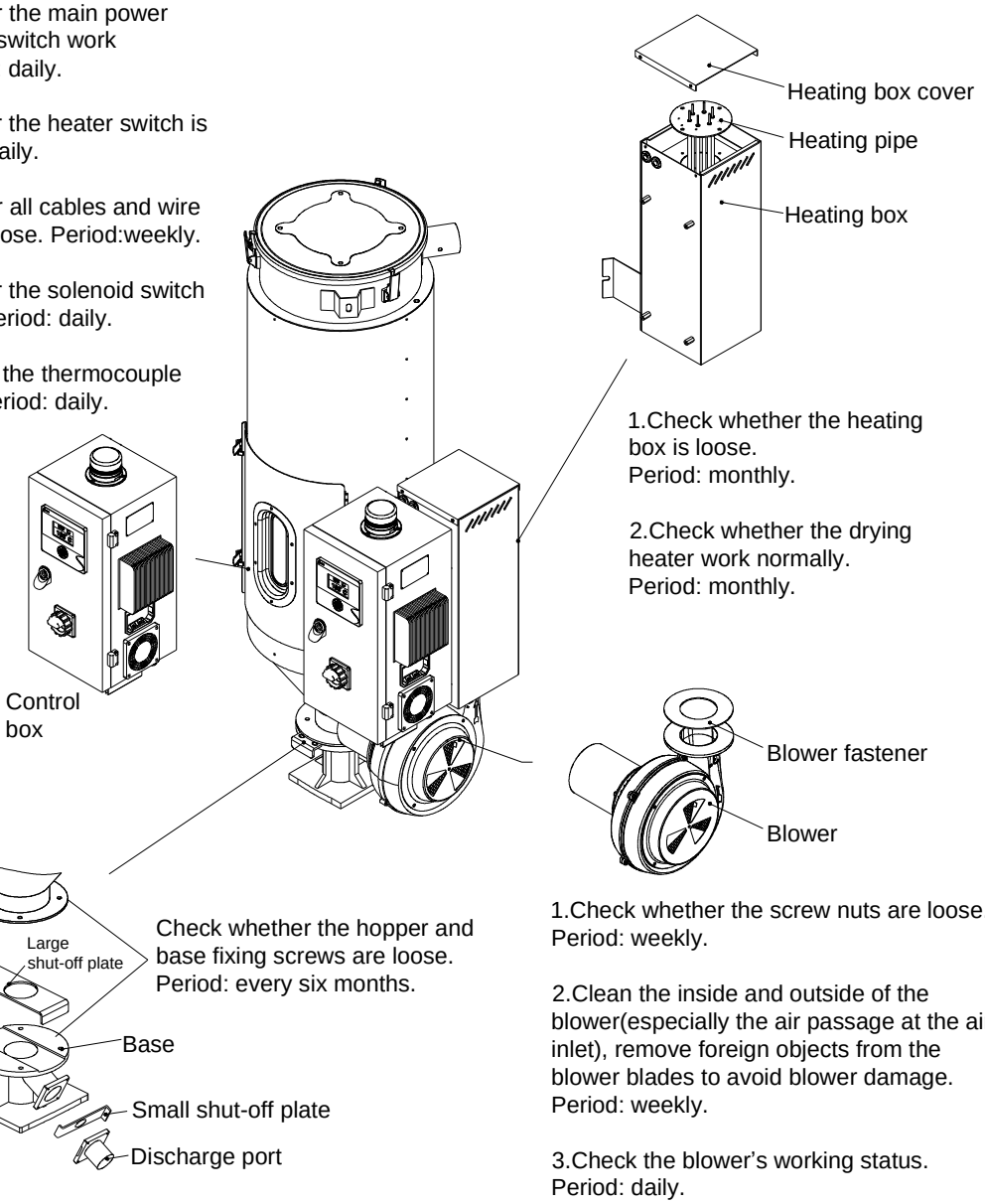
2. Check whether the main power switch and timer switch work normally. Period: daily.

3. Check whether the heater switch is normal. Period: daily.

4. Check whether all cables and wire connectors are loose. Period:weekly.

5. Check whether the solenoid switch work normally. Period: daily.

6.Check whether the thermocouple work properly. Period: daily.




1.Check whether the heating box is loose.
Period: monthly.

2.Check whether the drying heater work normally.
Period: monthly.

Check whether the hopper and base fixing screws are loose.
Period: every six months.

1.Check whether the screw nuts are loose.
Period: weekly.

2.Clean the inside and outside of the blower(especially the air passage at the air inlet), remove foreign objects from the blower blades to avoid blower damage.
Period: weekly.

3.Check the blower's working status.
Period: daily.

## 6.1 Blower

1) Clean the inside and outside of the blower (especially the air passage at

the inlet) to remove the surface dust.

2) Remove the foreign objects from the blower blades regularly to prevent blower damage.

## 6.2 Maintenance Schedule

### 6.2.1 General Machine Information

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

### 6.2.2 Installation & Inspection

☐ Check if the pipe joint is tightly locked by clips or not.

☐ Check that the material clearance door is firmly closed.

☐ Check that the piping system is correctly connected.

**Electrical Installation**

☐ Voltage _____ V _____Hz

☐ Fuse melt current: 1 Phase_____ A 3 Phase _____ A

☐ Check phase sequence of the power supply.

☐ Check the rotating direction of the blower.

### 6.2.3 Daily Checking

☐ Check the switches of the machine.

☐ Check auto-start function of the machine.

### 6.2.4 Weekly Checking

☐ Check all the electrical cables of the machine.

☐ Check if there are loose electrical connections.

### 6.2.5 Monthly Checking

- ☐ Check that the pipe heater is working properly.
- ☐ Check the performance of blower.
- ☐ Check the functions of electrical components.

### 6.2.6 Half-yearly Checking

- ☐ Check if there are damages of heat-resistant hose or not.
- ☐ Check the process heater.
- ☐ Check the blower.