

SHD-U

Hopper Dryer

Date: March 2026

Version: Ver. B (English)



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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. There are 25 models available, ranging from 20 to 8,000 liters.



Picture 1-1: Hopper Dryer SHD-120U

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.



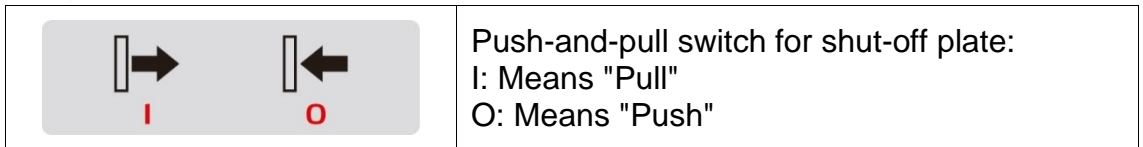
Attention!

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



When replacing materials, it must disassemble, clean and dry the parts contacted with the materials, such as down-blow air pipe clamp to avoid mixed color.

1.1.2 Signs and Labels



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:

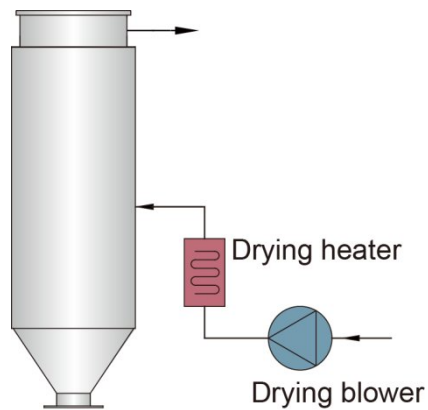
- 1) Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
- 2) Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible 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 the drying process, constant high temperature air is blown into the double-layer insulated hopper by the blower of the SHD-U Hopper Dryer. After drying the materials, moisture will be taken away from the materials, thus to gain a satisfied drying effect.

2.1.1 Working Principle Illustration

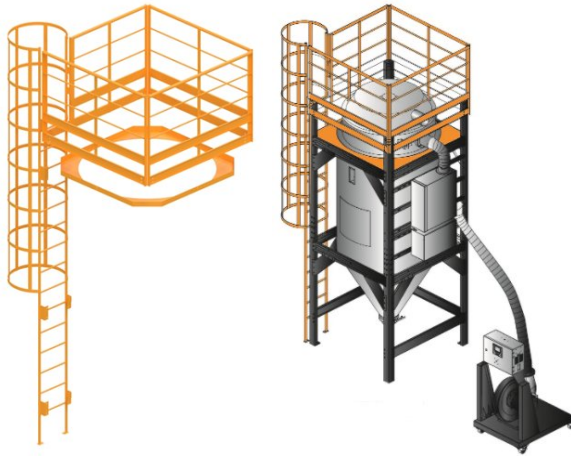


Picture 2-1: Working Principle Illustration

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(except SHD-80U/120U)



Suitable for SHD-80U/120U

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.

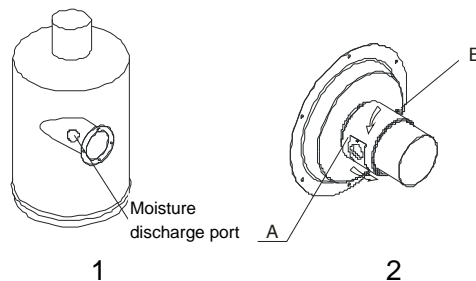


Model: HAR-80U

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 backup 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.

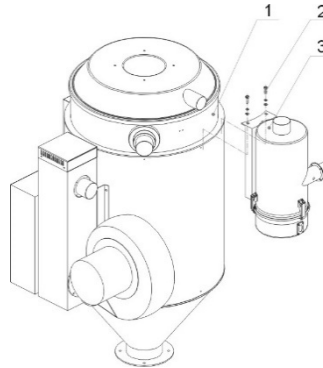


Picture 2-6: "Euro" Hot Air Recycler

2.2.4.2 Installation Steps

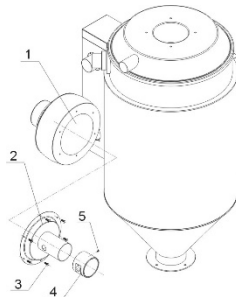
- 1) Mount HAR/AIF/ADC on the drying hopper.
 - a) Mount the hot air recycler (3) on proper place of the drying hopper at first.
 - b) Find corresponding installation hole on the aluminum ring right behind

- the drying hopper (1).
- c) Mount the hot air recycler (3) and lock it with screws (2).



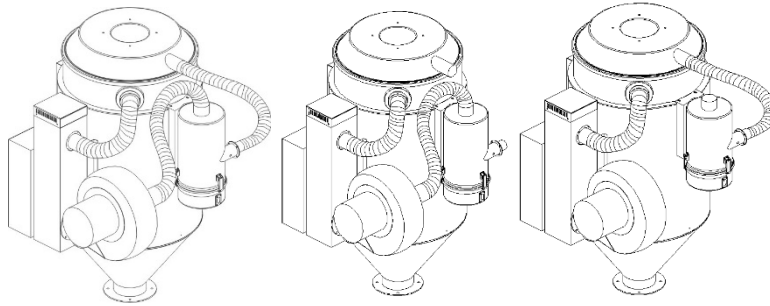
Picture 2-7: Installation of "Euro" Hot Air Recycler

- 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

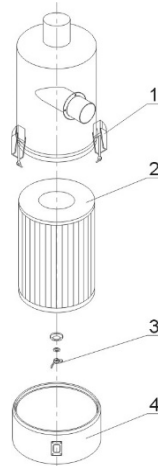
- 3) Connection of Air Pipe
- a) Mount the air pipe with according size as following picture, which are HAR, AIF, ADC.



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.



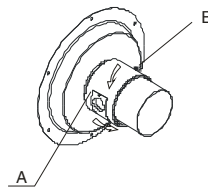
Model: AIF-80U

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

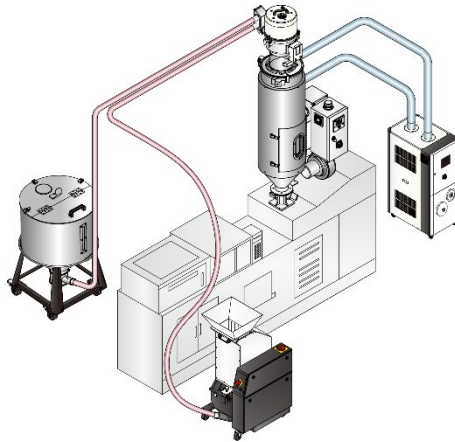
ADC-U "Euro" air filter has a built-in cylinder filter, which can avoid 100% dust with good filtering effect. It can keep the air in the plant clean and improve the production efficiency.

3. Installation and Debugging

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

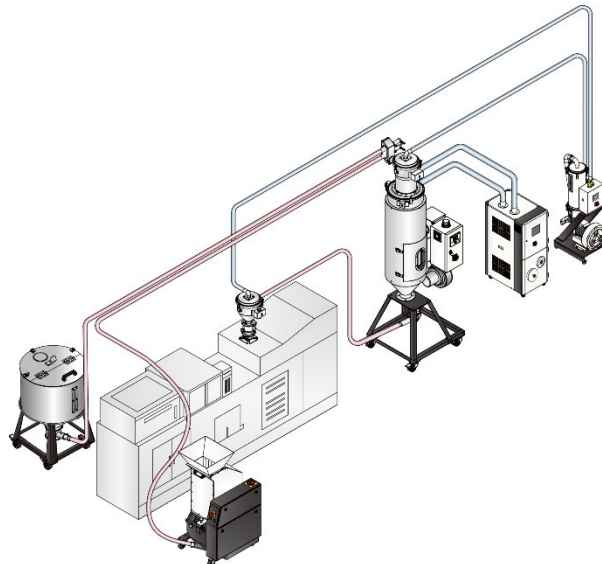
3.1 Machine Location

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

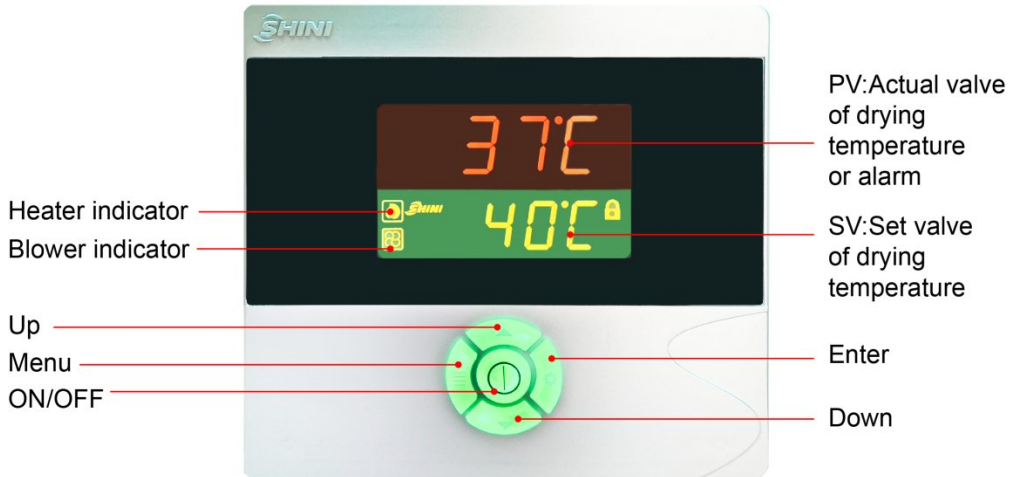
3.2 Power Connection

- 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: $\pm 5\%$
Main power frequency: $\pm 2\%$
- 7) ***Specific power supply specifications please refer to the schematic model.***

4. Application and Operation

4.1 Control Panel



Picture 4-1: Control Panel

4.1.1 Alarm Light Instruction

Table 4-1: Alarm Light Instruction

No.	Items	Instruction
1	Yel. light	Standby status (It means the machine is powered on, please be noted!)
2	Gre. light	Running status (It means the machine starts, and is running.)
3	Red light	Alarm status (It means that the machine has fault alarm. For specific fault information, please refer to corresponding alarm text or code.
4	Buzzer	Notes: Some models have mute function, and click the mute button on the controller screen. At this time, only red light of the machine is on. After clicking the mute button again, the machine will resume the buzzer output.)

4.1.2 Panel Operation

- 1) Turn on main power switch of control box.
- 2) Press "ON/OFF" key, it starts drying process, indicator turns green;
- 3) Press "ON/OFF" key, it stops drying process, indicator turns yellow.

4.1.3 Temperature Setting

- 1) The SV (Set valve) will flash after pressing "Menu" key, increase or decrease temperature by pressing "Up" or "Down" key.
- 2) Press "Enter" key again to confirm the input value.

4.1.4 Temperature Lock

- 1) Press “Menu” key for 2 seconds, it displays “TIME”.
- 2) Press “Up” key repeatedly, till it display “LOCK”;
- 3) Press “Enter” key, the set value will flash, press “Up” or “Down” key to select “YES”(lock temperature setting) and “NO” (Unlock).
- 4) Press “Enter” key to confirm the input value.
- 5) Press “Menu” key to return operation menu.

Notes: When “LOCK” is set as “YES, temperature setting value will be locked which not accessible to change.



Picture 4-2: Temperature Lock

4.1.5 PID Setting

- 1) Press both “Menu” and “Down” keys for 3 seconds, it shows “P” (proportion) setting;



Picture 4-3: PID Setting

- 2) Press "Enter" key, the set value will flash, then press “Up” or “Down” key to increase or decrease the value.
- 3) Press "Enter" key to confirm the input value.

- 4) Press “Up” key again and again, it displays “I” (integral time) and “D” (differential time) setting accordingly.
- 5) Repeat above step 2 and step 3, input and confirm related parameters.
- 6) Press “Menu” key, it returns operation menu.

Notes: The PID parameter will directly influence the effect of temperature control, please be careful to set the value!

Table 4-2: PID Setting

Parameters	Codes	Factory Default
Proportion	P	8
Integral time	I	12
Differential time	D	100
Over-temp alarm	OTP	15°C
Control cycle	HCLE	20
Blower delay	FDLY	180
Temp. unit	UNIT	°C

4.1.6 Intermittent Operation Setting

- 1) Hold “Menu” for about 2 secs. to set current time and week. Press “Up” or “Down” key to set start/stop function of AUTO timer, the time for RONE intermittent operation, the OFF time of ROFF intermittent operation, the ON time of RON intermittent operation.

4.1.7 One-week Timing Setting

- 1) After current time is set, hold “menu” for about 5 secs, press “Up” or “Down” key to set OFF1 (Mon. off time), OFF2(Tues. off time), OFF3 (Wed. off time), OFF4(Thur. off time), OFF 5(Fri. off time), OFF6(Sat. off time), OFF7(Sun. off time).
- 2) Hold “Menu” for about 7S, press “Up” or “Down” key to set ON1.(Mon. start time), ON2(Tues. start time), ON3(Wed. start time), NO4(Thur. start time), ON5(Fri. start time), ON6(Sat. start time), ON7(Sun. start time).

4.1.8 Communication Setting

- 1) Press both “Menu” and “Up” for 3 seconds, it displays “PRO” (communication protocol) setting.

Notes: communication protocol is fixed to Modbus RTU protocol—“RTU”.



Picture 4-4: PID Communication Setting

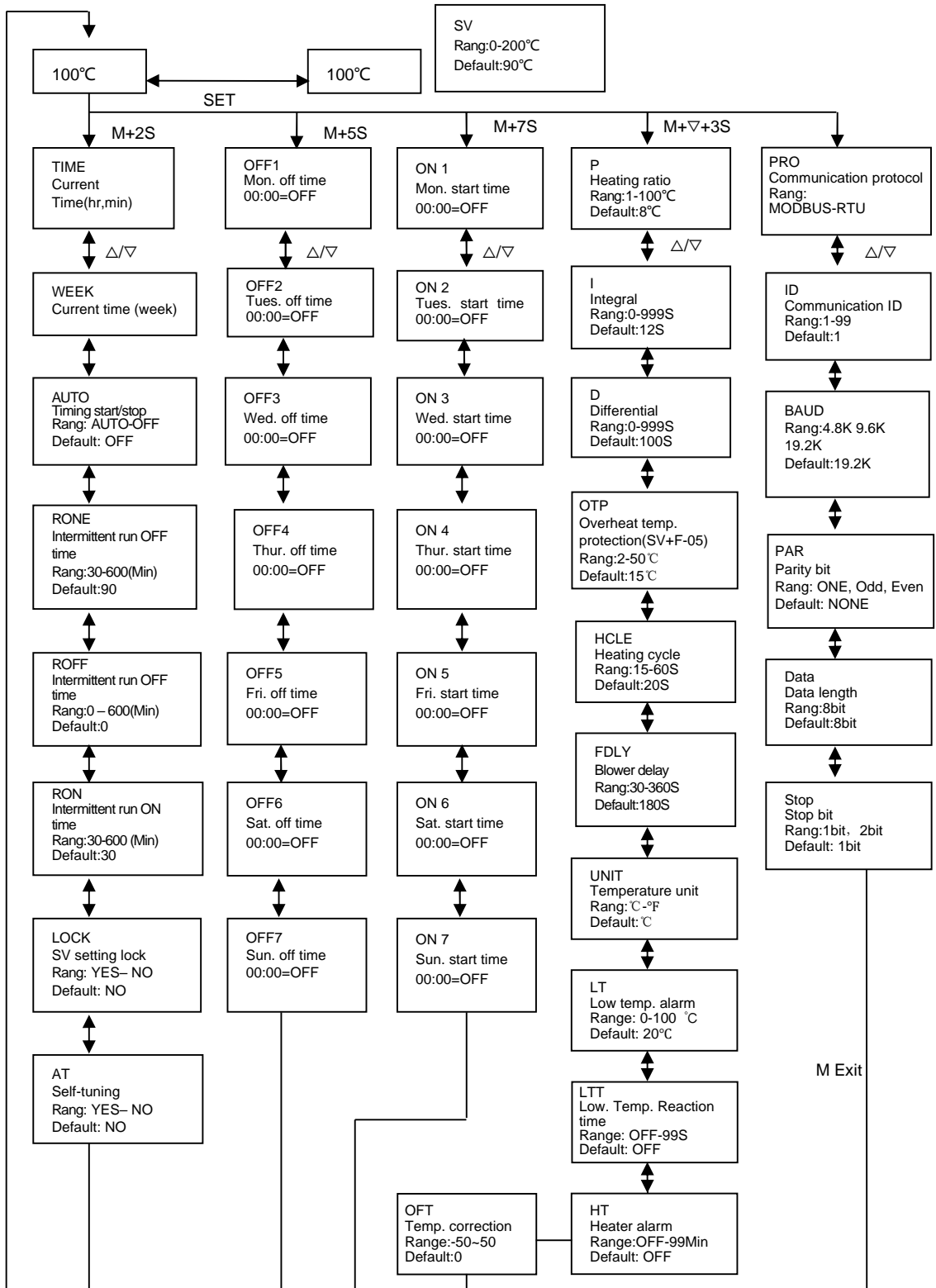
- 2) Press “Up” key to enter “ID”(communication address) setting;

Notes: The communication address of every controller in the same system must be the only one, no repeat use. In principle: communication address of hopper 1 is 1, communication address of hopper 1 is 2, and so on.
- 3) Press “Setup” key, the set value flickers, then press “Up” or “Down” key to increase or decrease the value.
- 4) Press "Enter" key to confirm the input value;
- 5) Press “Up” key again and again, it displays “Baud” and “PAR” settings, (as below)
- 6) Repeat step 3 and step 4, then confirm the related input parameters.
- 7) Press “Menu” key to return operation menu.

Table 4-3: Communication Setting

Communication Parameters	Communication Codes	Factory Default
Communication Protocol	PRO	RTU
Communication Address	Id	1(current address)
Baud Rate	Baud	19.2K
PAR	PAR	none
Data Length	Data	8
Stop Bit	Stop	1

4.1.9 Operation Flow



4.1.10 Wrong Codes Remark



Picture 4-5: Wrong Codes Remark

Table 4-4: Error Code Description

Wrong Codes	Remark
bR	Thermocouple off-line alarm
oH	Over-heat alarm
REV	Temperature sensor reversely connected
oL	Overload alarm
bAT	Battery error alarm
EGO	EGO over-temperature alarm
xATx	Auto-turning error
LT	Low temperature alarm
HT	Heater alarm

5. Trouble-shooting

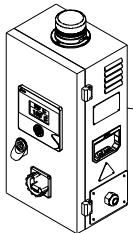
Faults	Possible Reasons	Troubleshooting Method
Overheat alarm (oH)	1. Controller fault or too large error	1. Replace the controller.
	2. Contactor coil bonded.	2. Check and replace.
	3. Thermocouple fault.	3. Check and replace.
	4. Blower motor error.	4. Check and replace.
Thermocouple break alarm (bR)	1. Thermocouple wiring is loose.	1. Check or lock it.
	2. Thermocouple fault.	2. Check and replace.
Blower overload alarm (oL)	1. Phase shortage	1. After checking the circuit, press the Reset button on the loader.
	2. Blower inlet is 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 error.	4. Check and replace.
The blower direction is opposite to the arrow	1. Reversed blower wiring.	1. Exchange any two power cables of the blower.
The blower doesn't run and no heating	1. Over-loader tripped.	1. Check and replace.
	2. Transformer fault.	2. Check and replace.
	3. Fuse melt.	3. Check and replace.
	4. Power fault.	4. Check whether there's phase loss.

Note: Main switch must be turned "OFF" when checking or replacing the components of the machine.

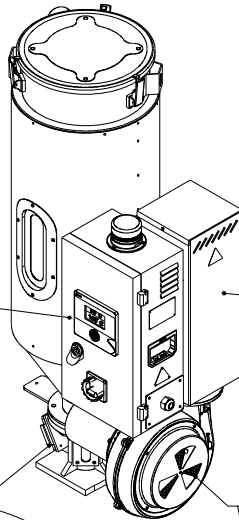
6. Repair and Maintenance

SHD-80U~120U

1. Check whether the alarm light works normally.
Cycle: Daily.
2. Check whether the power switch and timer startup function work normally.
Cycle: Daily.
3. Check whether the heater switch work normally.
Cycle: Daily.
4. Check whether all cables and wire connectors are loose.
Cycle: Weekly.
5. Check whether the solenoid switch works normally.
Cycle: Daily.
6. Check whether the thermocouple works normally.
Cycle: Daily.



Control box



heating case cover

pipe heater

heating case

1. Whether the heating case is loose.
Cycle: Monthly.
2. Whether the drying heater works normally.
Cycle: Monthly.

hopper flange

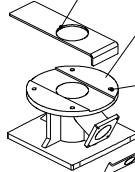
large shut-off plate

Check whether the screws of hopper and base are loose.
Cycle: Every six months.

base

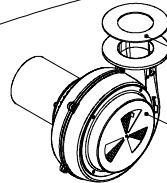
small shut-off plate

discharge port



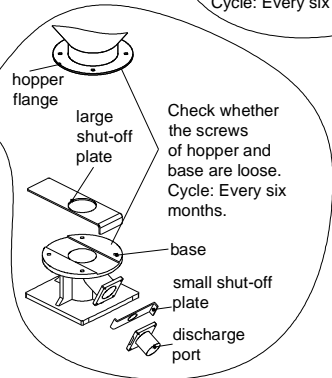
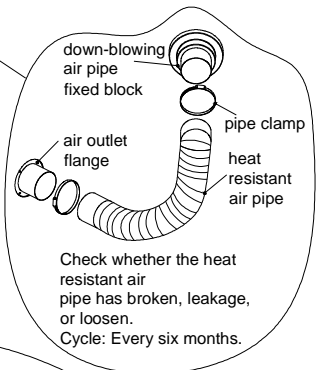
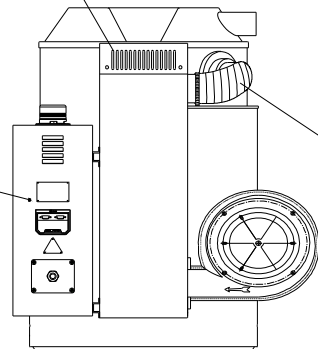
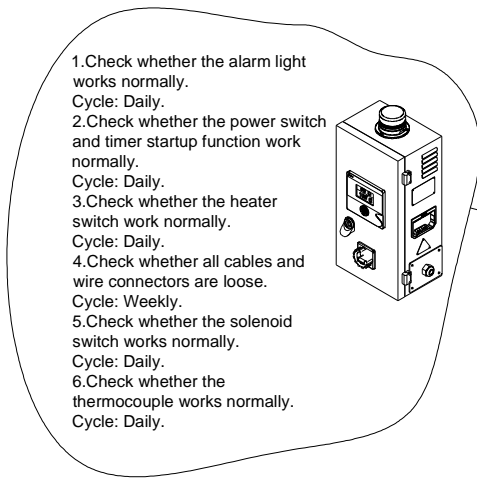
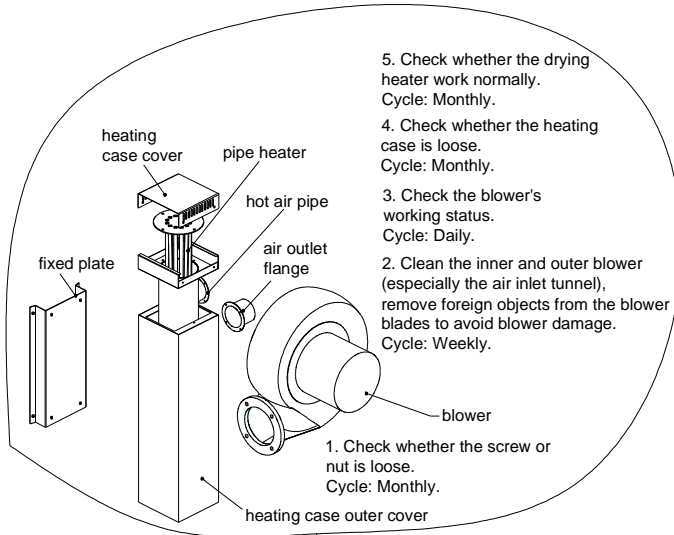
blower fastener

blower

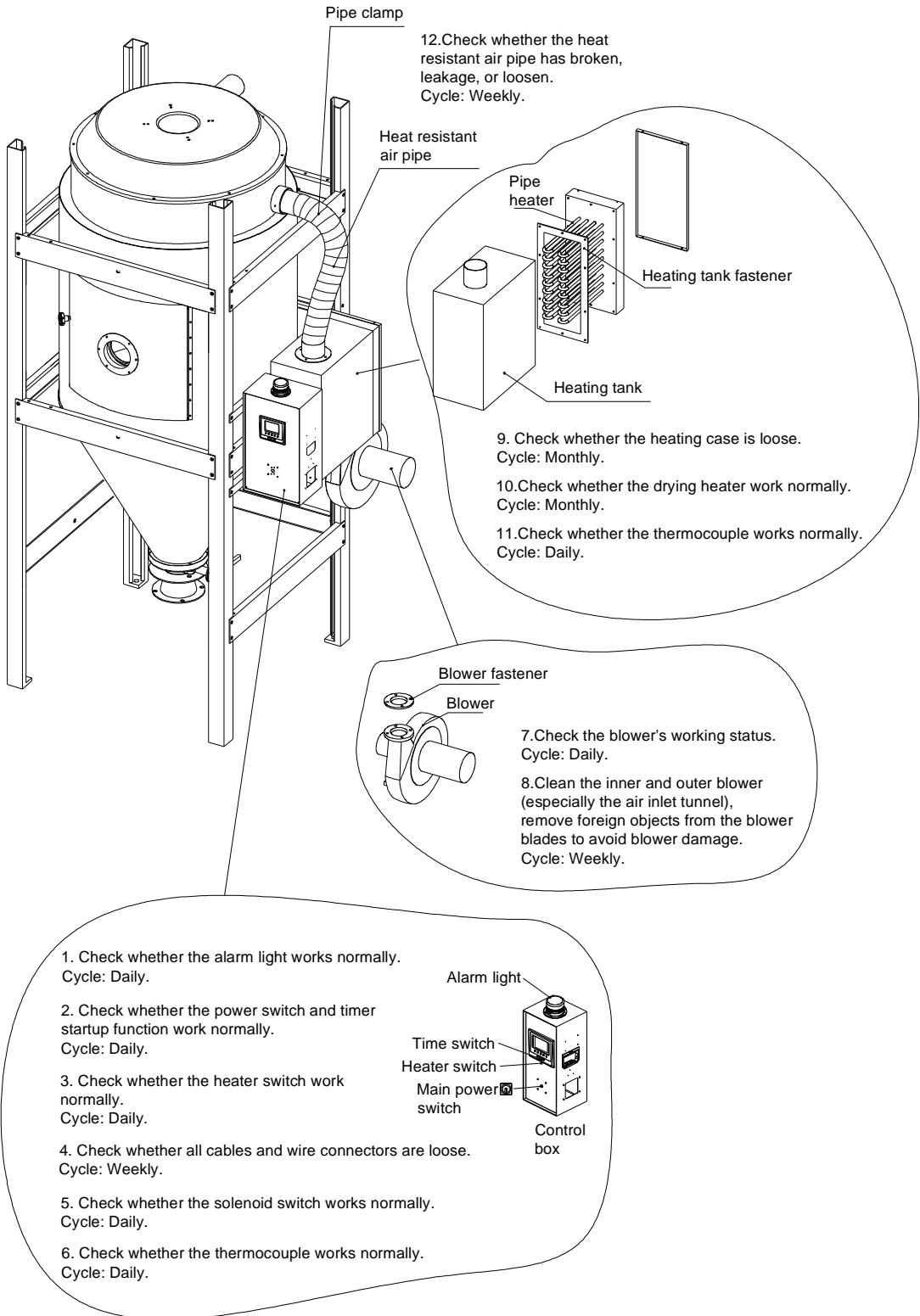


1. Check whether the screw or nut is loose.
Cycle: Weekly.
2. Clean the inner and outer blower (especially the air inlet tunnel), remove foreign objects from the blower blades to avoid blower damage.
Cycle: Daily.
3. Check the blower's working status.
Cycle: Daily.

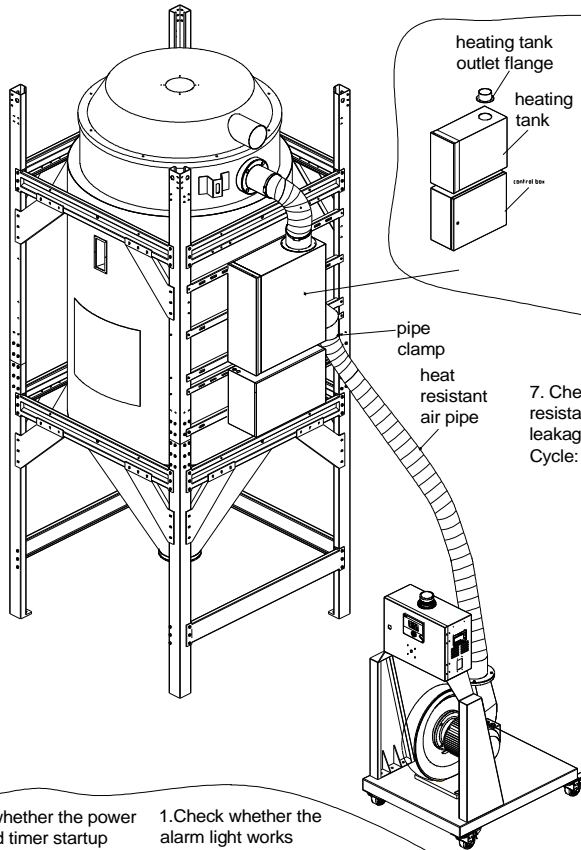
SHD-20U~750U(Except SHD-80U/120U)



SHD-900U~1200U



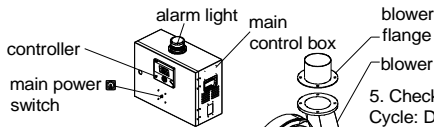
SHD-1500U~8000U



- 8. Check whether the heating case is loose.
Cycle: Monthly.
- 9. Check whether the drying heater work normally.
Cycle: Monthly.
- 10. Check whether the thermocouple works normally.
Cycle: Daily.

- 7. Check whether the heat resistant air pipe has broken, leakage, or loosen.
Cycle: Weekly.

- 2. Check whether the power switch and timer startup function work normally.
Cycle: Daily.
- 1. Check whether the alarm light works normally.
Cycle: Daily.

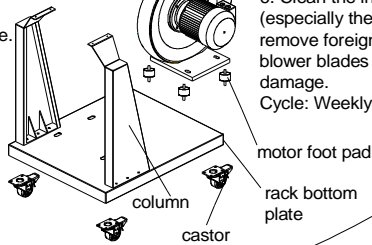


- 3. Check whether all cables and wire connectors are loose.
Cycle: Weekly.

- 4. Check whether the solenoid switch works normally.
Cycle: Daily.

- 5. Check the blower's working status.
Cycle: Daily.

- 6. Clean the inner and outer blower (especially the air inlet tunnel), remove foreign objects from the blower blades to avoid blower damage.
Cycle: Weekly.



6.1 Blower

- 1) Clean inner and outer parts (especially at blower inlet) of the blower periodically.
- 2) Remove the dusts on leaves of the fan for protection.

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: 1Phase _____ 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.