HA

Hot Air Dryer

Date: Dec., 2020

Version: Ver.D (English)

SHINI

Contents

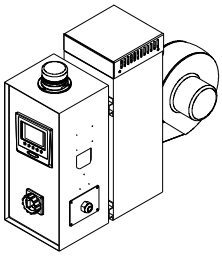
Table Index

Picture Index

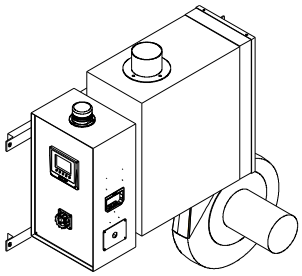
1. General Description

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

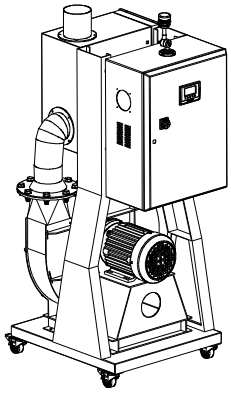
HA series which is with simple structure and in light weight is particularly suitable for working with heat-preservation hopper to dry engineering plastics. This series is capable of offering air volume within 30m^3/hr~700 m^3/hr; there are 8 models.



HA-30~400



HA-600~700



HA-1000 and above

1.1 Coding Principle

HA - xxx

- xxx → Drying Air Volume m^3/hr
- HA → Shini Hot Air Dryer

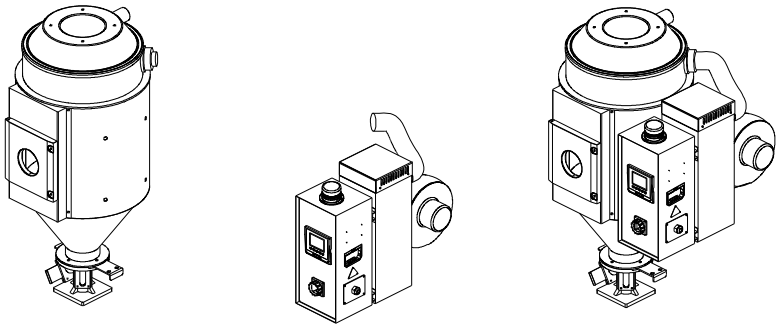
Notes: It's of CE conformity.

1.2 Features

- Microcomputer control helps to control temperature accurately.
- Using P.I.D. temperature controller, LCD status display, with RS485 communication
- With overheat protection, it can avoid accidents caused by man or machine failure.
- 7-day automatic start/stop timer helps to save power.

1.3 Accessory option

- Exhaust cyclone, exhaust air filter, hot air recycler and blower inlet filter are optional.
- Collocate with DH-U to constitute SHD-U dryer.



DH-U + HA = SHD-U

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 operators.

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.

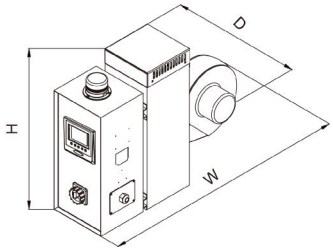
Our company provides excellent after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

Headquarter and Taipei factory：
Tel: (886) 2 2680 9119

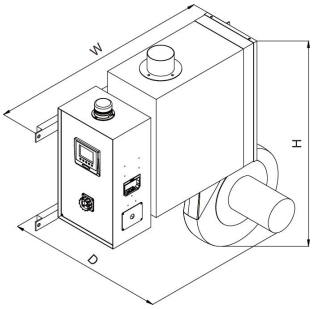
Shini Plastics Technologies (Dongguan), Inc：
Tel: (86) 769 8111 6600

Shini Plastics Technologies India Pvt.Ltd.：
Tel: (91) 250 3021 166

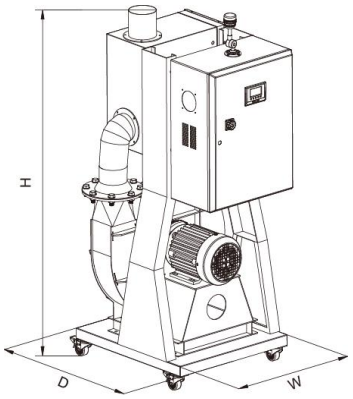
1.4 Technical Specifications



HA-30~400



HA-600/700



HA-1000 and model aboves

Picture 1-1：Outline Drawing

Table 1-1：Specifications

Model	Ver.	Drying Air Volume (m^3/hr)	Drying Heater (kW)	Blower (kW)	Dimensions H×W×D (mm)	Air Outlet Pipe Dia. (inch)
HA-30	D	30	2.2	0.05	437×558×284	2"
HA-40	C	40	3	0.12	437×608×334	2"
HA-60	C	60	3.9	0.12	505×669×334	2.5"
HA-100	C	100	6	0.12	613×725×347	3"
HA-200	C	200	12	0.18	755×817×363	3"
HA-400	C	400	18	0.55	645×975×442	4"
HA-600	C	600	18	0.55	1030×1110×410	4"
HA-700	C	700	24	1.1	1090×1190×430	4"
HA-1000	B	1000	32	3.7	1650×815×930	5"
HA-1500	B	1500	58	5.5	1950×950×970	8"
HA-2500	A	2500	80	11	2395×1035×1050	8"
HA-3000	A	3000	96	15	2475×1160×1175	8"
HA-4000	B	4000	128	22	2725x1180x1210	8”

Power supply: 3Φ, 230 / 400 / 460 / 570V, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

1.5 Safety Regulations

Note!

Electrical installation should be done by qualified electrician.

Before connecting to power source, make sure that specifications and overload protection rating of the power switch are suitable and reliable; what's more, turn power switch to OFF position. When maintaining, turn off both power switch and automatic operation switch.

1.5.1 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.

Attention!

All screws for installating the electrical components inside the control box are locked tight. There is no need to check on them regularly.

Attention!

The EGO protection value has been set before delivery. Please don't adjust it.

Attention!

When starting up, all hot air pipes of all models should be connected well to avoid damage of the blower.

Attention!

When starting up, adjust the air-in valve of the blower to half-open sate to prevent it from damage.

1.6 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:

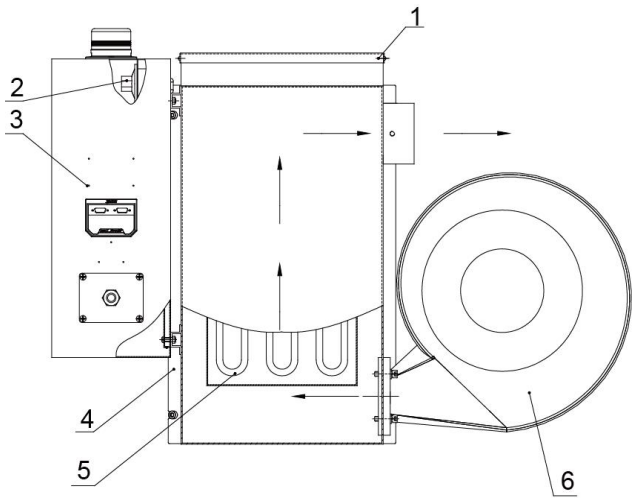
1. Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2. Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible 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 Function

HA hot air dryer offers constant high temperature air to material tank by blower.

2.1.1 Working Principle



Picture 2-1：Working Principle

Table 2-1：Working Principle

No.	Names of Parts	No.	Names of Parts
1	Heating box cover	4	Heating box fixing plate
2	Over temperature protection EGO	5	Pipe heater
3	Control box	6	Blower

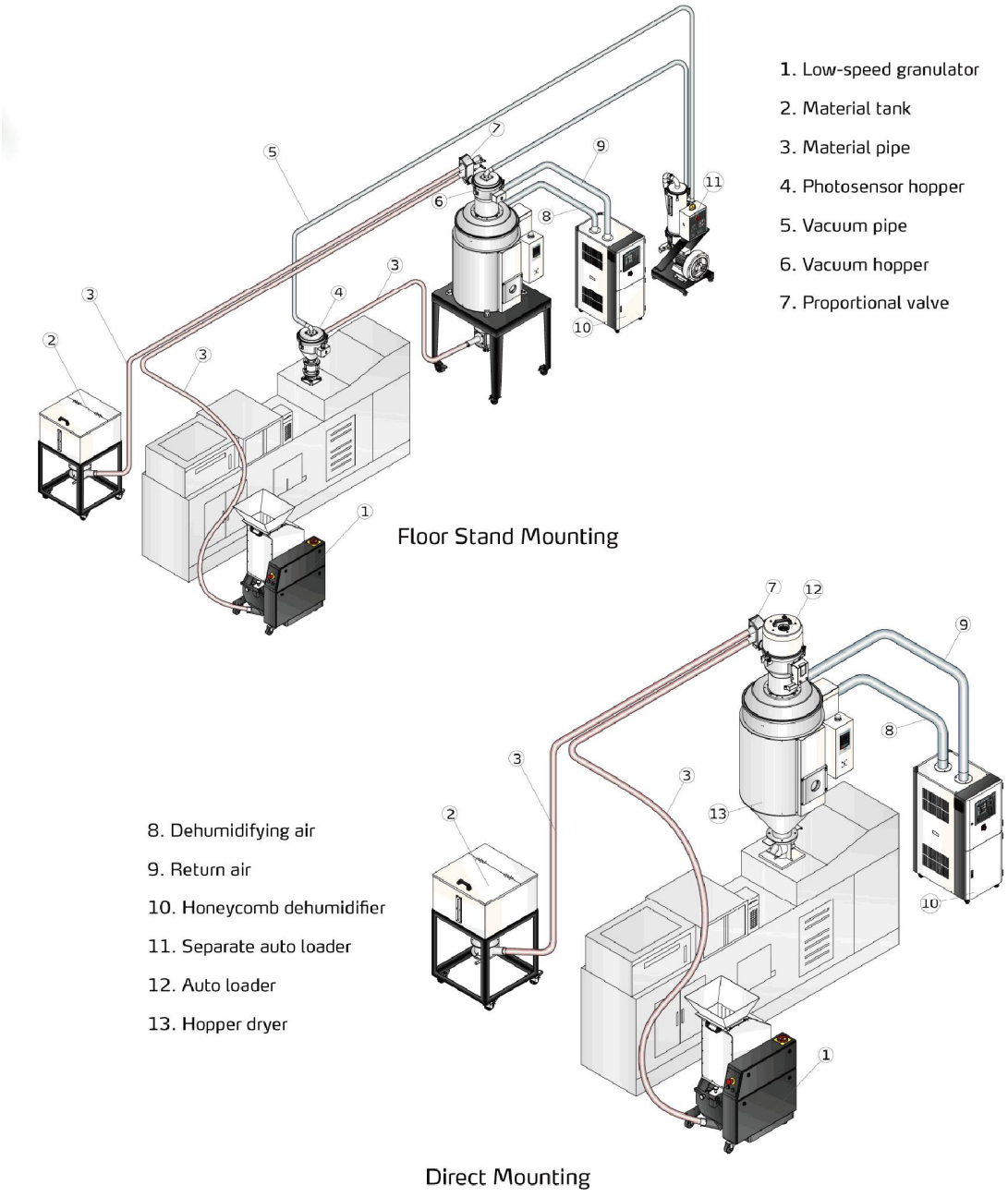
2.1.1 Alarm Indicator Description

Table 2-2：Alarm Indicator Status

Three-color Alarm Indicator Description	
Color	Stands for the status
Yellow light	Standby status（Stands for machine is powered on, please be noted! ）
Green light	Running status（The machine starts up , and is in running）
Red light	Alarm status (stands for the machine is giving alarm, please check corresponding alarm descriptions or codes for the detailed problems).
Buzzer	

2.2 Installation Diagram

2.2.1 Installed on the injection molding machine with heat preservation hopper.



Picture 2-2：Installation on the Injection Molding Machine

3. Application and Operation

3.1 Control Pane

Picture 3-1：Control Panel

3.1.1 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.

3.1.2 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.

3.1.3 Temperature Lock

1) Press “Menu” key for 2 seconds, it displays “TIME”.
2) Press “Up” key repeatly, 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.

3.1.4 PID Setting

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

2) Press the < set > button, the number will flicker, and press the < Up > or < Down > button at the time to increase or decrease the setting 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!

Parameters	Codes	Factory Default
Proportion	P	40
Integral time	I	120
Differential time	D	20
Over-temp alarm	OTP	15℃
Control cycle	HCLE	15

Blower delay	FDLY	180
Temp. unit	UNIT	℃

3.1.5 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.

3.1.6 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).hhhhh

3.1.7 Communication Setting (optional functions)

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”.

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

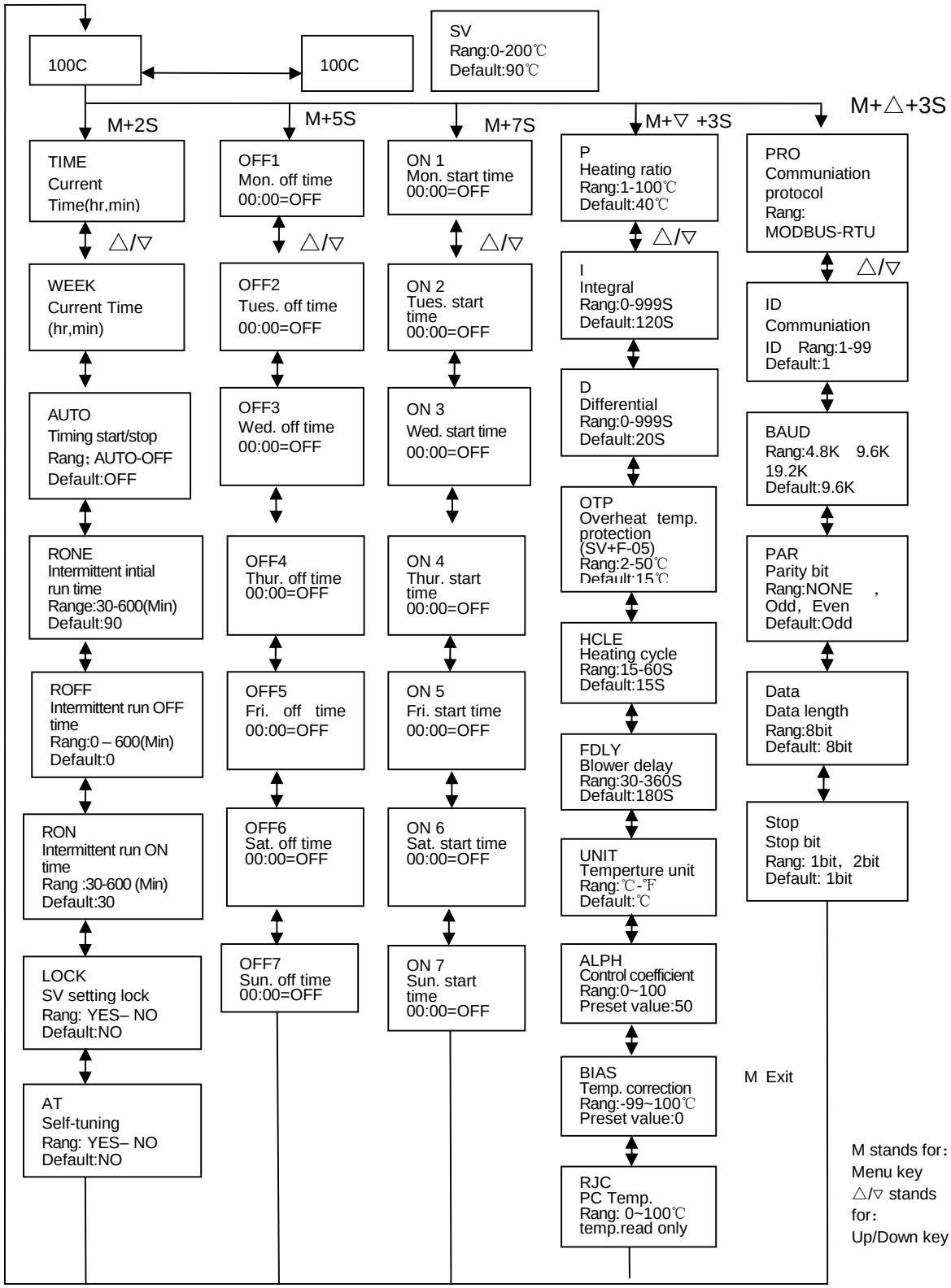
Notes: The communication address of every controller in the same system must be the only one, no repeat use. In principle: communication address of hopper 1 is 1, communication address of hopper 1 is 2, and so on.

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 3-1：Communication Parameters

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

3.1.8 Operation Flow

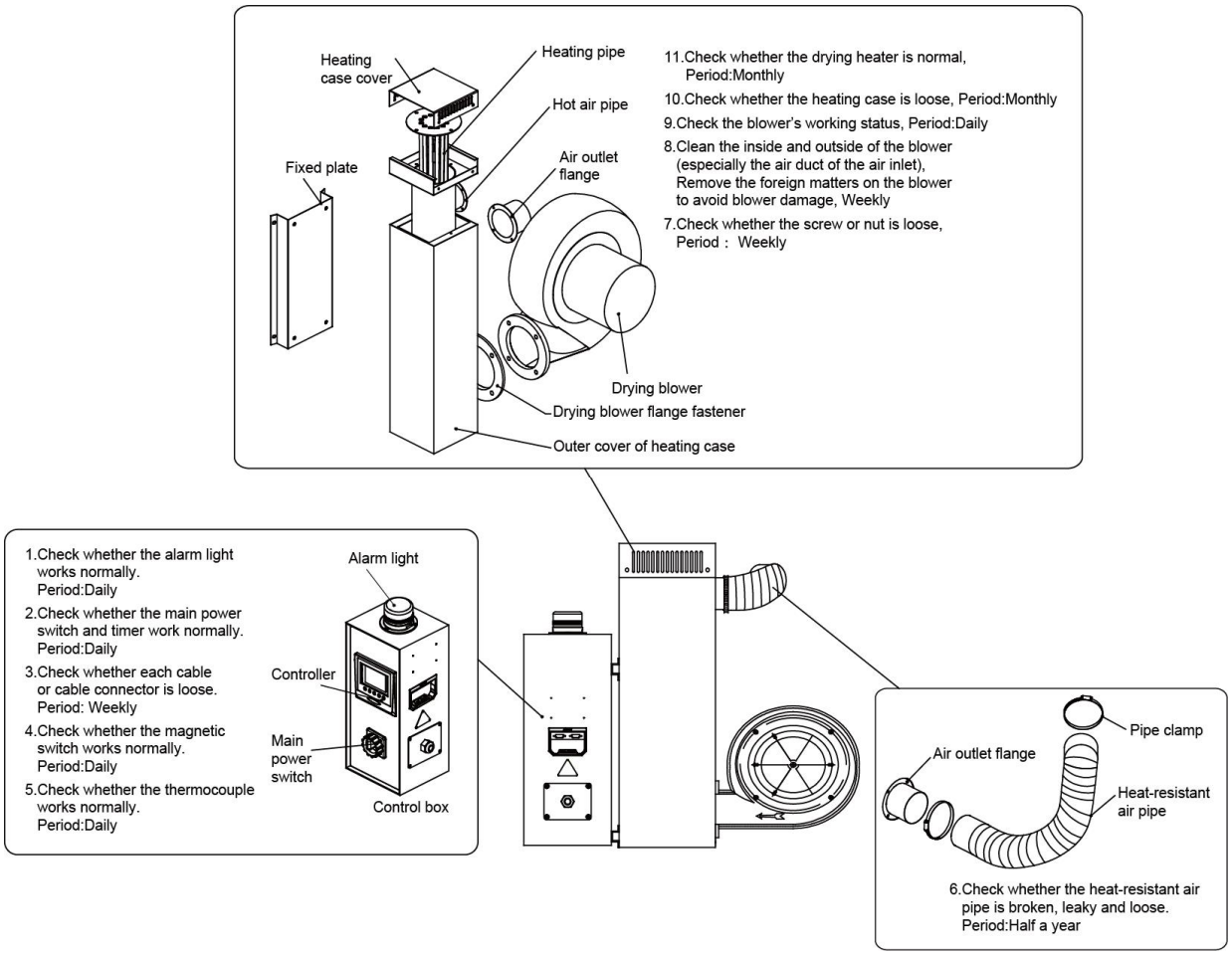


3.1.9 Wrong Codes Remark

Table 3-2：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

4. Maintenance and Repair



4.1 Blower

1) Clean the inner and outer parts (especially the air pipes at air inlet) of the blower regularly to remove dust on surface.
2) Remove foreign material on leaves of the blower to prevent it from damage.

4.2 Maintenance Schedule

4.2.1 General Machine Information

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

4.2.2 Installation & Inspection

☐ Check if the connecting pipe is tightly locked or not.

☐ 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.

4.2.3 Daily Checking

☐ Check the switches of the machine.

☐ Check the auto-start function of the machine.

4.2.4 Weekly Checking

☐ Check all the electrical cables of the machine.

☐ Check if there are loose electrical connections.

☐ Check whether overheat protection is normal.

4.2.5 Monthly Checking

☐ Check if the pipe heater is working properly.

☐ Check the performance of blower.

☐ Check the performances of electrical components.

4.2.6 Half-yearly Checking

☐ Check if there are damages with heat-resistant pipe or not.

☐ Check the drying heater.

☐ Check the blower.