SCD Series

"All-in-One" Compact Dryer

Date: Dec. 2017

Version: Ver.F (English)

SHINI

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1. General Description

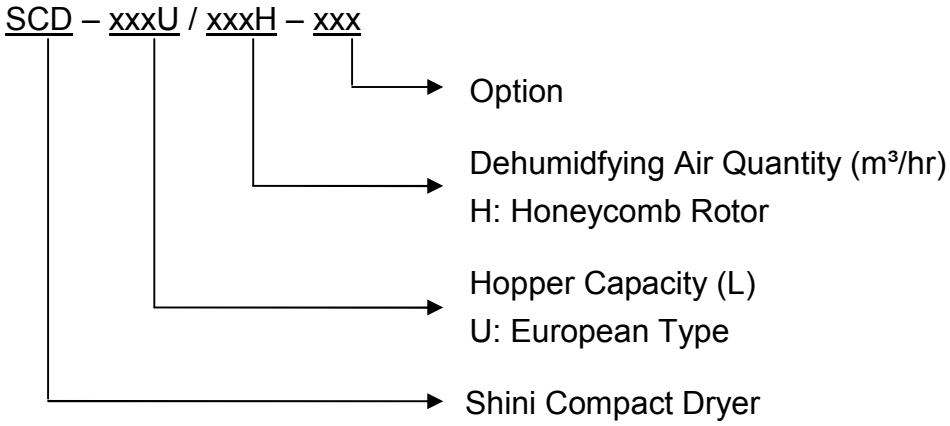
Read this manual carefully before operation to prevent machine damage or personal injuries.

SCD Compact Dryer has three functions of dehumidification, drying and two-stage conveying, which is especially suitable for processing engineering plastics materials with high hygroscopicity, such as PA, PC, PBT, PET. The optical SCD-OP can be used for lens, LCD backlight board and discs productions that reaches the dew-point below -40℃ under ideal condiction.

SCD-160U/120H

SCD-600U/400H-LC-D

1.1 Coding Principle



1.2 Features

- Combine the function of dehumidifying, drying and two-stage conveying into a single unit.
- SCD Dryer Loaders are equipped with honeycomb rotor to obtain stable low dew-point drying air, which have two models: semi-open and hermetic.
- Feeding system is equipped with shut-off valve to ensure no residuals in hopper tubes.
- Microprocessor is standard equipped for the control.
- Heat-preserved drying hopper adopts down-blow pipe design that collocates with cyclone air exhaust to avoid heat lost and improve drying efficiency.

All machine service should be performed by professional technicians. This manual is applicable to the operator and maintenance personnel on the field. The service instruction of Chapter 6 is intended for service engineers, and other chapters are for the operator.

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

Our company provides excellent after-sales service. If there's any problem during the application, please contact the company or local vendor.

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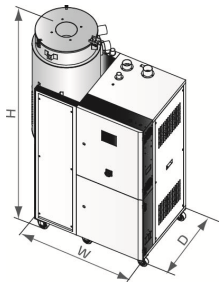
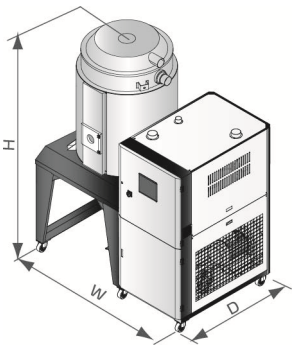
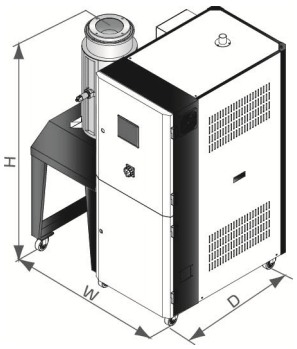
1.3 Technical Specifications



SCD Hermetic



SCD Semi-open



SCD-OP

Picture 1-1: Technical Specifications

Table 1-1: Specifications 1(Hermetic Design)

Model SCD-	20U/30H-OP	40U/30H-OP	80U/50H-OP	120U/80H-OP
Version	D	D	D	D
Drying System				
Drying Heater Power (kW)	3	3	3.9	6
Drying Blower Power (kW)	0.4	0.4	0.4	0.75
Hopper Capacity (L)	20	40	80	120
Dehumidifying System				
Regenerating Heater Power (kW)	3	3	3	3
Regenerating Blower Power (kW)	0.4	0.4	0.4	0.4
Dehumidifying Air quantity (m^3/hr)	30	30	50	80
Feeding System				
Feeding Blower Power (kW)	1.5	1.5	1.5	1.5
Dia. of Material Pipe (inch)	1.5	1.5	1.5	1.5
SHR-U-E Hopper (L)	3*	3*	3*	3*
SHR-U Hopper (L)	3	3	6	6
Dimensions				
H(mm)	1400	1500	1670	1710
W(mm)	1050	1050	1240	1240
D(mm)	900	900	1000	1000
Weight (kg)	235	280	330	385

Note: 1) Plastic materials can be completely dried by drying air with dew-point temperature ≤-20℃. When the ambient temperature ≤-25℃, and relative humidity≤-60%, the drying air dew-point temp. ≤-40℃.

2) "*" stands for hopper receiver SHR-CP-U.

3) Power supply: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

Table 1-2: Specifications 2 (Hermetic Design)

Model SCD-	40U/40H	80U/40H	120U/120H	160U/120H	230U/120H	300U/200H	450U/200H
Version	D	D	A	E	D	D	D
Drying System							
Drying Heater Power (kW)	4	4	6	6	6	12	12
Drying Blower Power (kW)	0.12	0.12	0.75	0.75	0.75	1.5	1.5
Hopper Capacity (L)	40	80	120	160	230	300	450
Dehumidifying System							
Regenerating Heater Power (kW)	3	3	4	4	4	4	4
Regenerating Blower Power (kW)	0.12	0.12	0.4	0.4	0.4	0.4	0.4
Dehumidifying Air quantity (m^3/hr)	40	40	120	120	120	200	200
Feeding System							
Feeding Blower Power (kW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Dia. of Material Pipe (inch)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SHR-U-E Hopper (L)	3	6	6	6	12	12	12
SHR-U Hopper (L)	3	6	6	6	12	12	12
Dimensions							
H(mm)	1672	1751	1957	2102	2012	2160	2350
W(mm)	1051	1066	1125	1125	1223	1460	1460
D(mm)	734	734	734	734	134	1020	1020
Weight (kg)	295	325	340	390	420	565	595

Note: 1) Plastic materials can be completely dried by drying air with dew-point temperature ≤-20℃. When the ambient temperature ≤-25℃, and relative humidity ≤-60%, the drying air dew-point temp. ≤-40℃.

2) "*" stands for hopper receiver SHR-CP-U.

3) Power supply: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

Table 1-3: Specifications (Semi-open Design)

Model SCD-	600U/400H	750U/400H	900U/700H	1200U/700H
Version	C	C	F	F
Drying System				
Drying Heater Power (kW)	18	18	24	24
Drying Blower Power (kW, 50/60Hz)	3.75 / 4.5	3.75 / 4.5	7.5 /8.6	7.5 /8.6
Hopper Capacity (L)	600	750	900	1200
Dehumidifying System				
Regenerating Heater Power (kW)	7.2	7.2	10	10
Regenerating Blower Power (kW, 50/60Hz)	0.75 / 0.9	0.75 / 0.9	1.5 / 1.8	1.5 / 1.8
Dehumidifying Air quantity (m^3/hr, 50/60Hz)	400 / 450	400 / 450	700 / 780	700 / 780
Feeding System				
Feeding Blower Power (kW)	1.5	1.5	3.75	3.75
Dia. of Material Pipe (inch)	1.5	1.5	2	2
SHR-U-E Hopper Receiver (L)	12	12	24	24
SHR-U Hopper Receiver (L)	12	12	24	24
Dimensions				
H(mm)	2380	2610	2640	3070
W(mm)	1745	1745	2140	2140
D(mm)	1255	1255	1380	1380
Weight (kg)	640	690	850	900

Note: 1) Plastic materials can be completely dried by drying air with dew-point temp. ≤-20℃. When ambient temperature ≤-25℃, and relative humidity ≤-60%, the drying air dew-point temp. ≤-40℃.

2) "*" stands for hopper receiver SHR-CP-U.

3) Power supply: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

1.3.1 Drying Capacity

Table 1-4: Drying Capacity 1

Material	Drying Temp. (℃)	Drying Time(hr)	Drying Capacity (kg/hr)							
			40U /40H	80U /40H	120U /120H	160U /120H	160U /120H	230U /120H	300U /200H	450U /200H
ABS	80	2-3	16		27		35		105	
CA	75	2-3	12		22		30		90	
CAB	75	2-3	12		22		30		90	
CP	75	2-3	16		27		35		106	
LCP	150	4	11		20		27		80	
POM	100	2	24		40		53		160	
PMMA	80	3	17		29		38		115	
IONOMER	90	3-4	10		17		22		66	
PA6/6.6/6.10	75	4-6	9		14		19		58	
PA11	75	4-5	10		17		23		69	
PA12	75	4-5	10		17		23		69	
PC	120	2-3	19		31		41		124	
PU	90	2-3	17		29		38		115	
PBT	130	3-4	13		23		31		93	
PE	90	1	47		80		106		318	
PEI	150	3-4	11		20		27		80	
PET	160	4-6	11		19		25		75	
PETG	70	3-4	11		20		27		80	
PEN	170	5	13		23		30		90	
PES	150	4	13		23		30		90	
PMMA	80	3	17		29		28		115	
PPO	110	1-2	19		33		44		133	
PPS	150	3-4	11		20		27		80	
PI	120	2	24		40		53		160	
PP	90	1	39		66		88		265	
PS(GP)	80	1	39		66		88		265	
PSU	120	3-4	12		22		29		85	
PVC	70	1-2	19		33		44		135	
SAN(AS)	80	1-2	19		33		44		135	
TPE	110	3	18		30		40		125	

Note: 1) Please refer to above drying capacity of the SCD, and select right model based on material dosage and drying capacity.

2) Please consult Shini service staff for model selection.

Table 1-5: Drying Capacity 2

Material	Drying Temp. (℃)	Drying Time(hr)	Drying Capacity (kg/hr)			
			600U /400H	750U /400H	900U /700H	1200U /700H
ABS	80	2-3	210		355	
CA	75	2-3	180		295	
CAB	75	2-3	180		295	
CP	75	2-3	210		355	
LCP	150	4	160		365	
POM	100	2	320		530	
PMMA	80	3	230		383	
IONOMER	90	3-4	133		220	
PA6/6.6/6.10	75	4-6	115		192	
PA11	75	4-5	138		230	
PA12	75	4-5	138		230	
PC	120	2-3	250		413	
PU	90	2-3	230		383	
PBT	130	3-4	186		310	
PE	90	1	637		1062	
PEI	150	3-4	160		265	
PET	160	4-6	150		250	
PETG	70	3-4	160		265	
PEN	170	5	180		300	
PES	150	4	180		300	
PMMA	80	3	230		385	
PPO	110	1-2	265		440	
PPS	150	3-4	160		265	
PI	120	2	320		530	
PP	90	1	530		885	
PS(GP)	80	1	531		885	
PSU	120	3-4	173		290	
PVC	70	1-2	265		442	
SAN(AS)	80	1-2	265		442	
TPE	110	3	250		413	

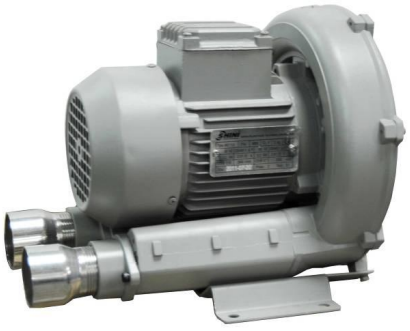
Note: 1) Please refer to above drying capacity and material dosage to select the right model of the SCD.

2) Please consult Shini service staff for model selection.

1.4 Safety Regulations

1.4.1 Safety Regulations for the Blowers

1) Under normal operation, the blowers will generate high temperature. Do not touch blower's case to avoid any physical injury.
2) Under normal operation, the current loading of blower motor will increase or reduce according to air pressure's change accordingly. During the wiring, adequate motor overload protection switch should be installed with full loading test, to ensure operating safely under full-loading and avoid motor damage.
3) As to avoid any block materials, dust, powder, fiber particles and water drops entering the blower that cause the deficiency of its performance. This machine is designed with air filter, clean up the foreign particles in the filter (recommended to clean up this filter weekly).
4) Clean the internal and external parts (especially for the fan cooling path) of the blower, and remove the dust on surface if necessary. If more dusts are accumulated, it will cause ventilation deficiency, temperature rising, vacuum power reduce, vibration increase that cause machine broke down.
5) Ball bearing, oil seal and soundproof are the consumable parts that have life period and equire regular replacement. Meanwhile, blade, external case, and metallic screen should be replaced regularly for best performance.
6) Under normal operation, if the blowers are not running smoothly or abnormal noise appeared. Please immediately shut down the machine for repair.



Picture 1-2: Blower

1.4.2 Safety Signs and Labels

Danger!

High voltage danger!

This label is stuck on the electrical boxes.

Attention!

This label means that this area should be taken care!

Warning!

High temperature, take care of hands!

This label should be stick to the shell of heater.

Attention!

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

Note!

The EGO over-temperature protection is only for process heater protection, not for material protection usage, and the default setting should not be changed.

1.4.3 Transportation and Storage of the Machine

Transportation

1) SCD series "All-in-one" compact dryer are packed in crates or plywood cases with wooden pallet at the bottom, suitable for quick positioning by fork lift.
2) After unpacked, castors equipped on the machine can be used for ease of movement.
3) Don’t rotate the machine and avoid collision with other objects during transportation to prevent improper functioning.
4) The structure of the machine is well-balanced, although it should also be handled with care when lifting the machine for fear of falling down.

5) The machine and its attached parts can be kept at a temperature from -25℃ to +55℃ for long distance transportation and for a short distance, it can be transported with temperature under +70℃.

Storage:

1) SCD series "All-in-One" compact dryer should be stored indoors with temperature kept from 5℃ to 40℃ and humidity below 80%.
2) Disconnect all power supply and turn off main switch and control switch.
3) Keep the whole machine, especially the electrical components away from water to avoid potential troubles caused by the water.
4) Plastic film should be used to protect the machine from dust and rains.

Working environment:

1) Indoor, in dry environment with max. temperature +45℃ and humidity no more than 80%.

Do not use the machine:

1) If it is with a damaged cord.
2) On a wet floor or when it is exposed to rain to avoid electrical shock.
3) If it has been dropped or damaged until it is checked or fixed by a qualified serviceman.
4) This equipment works normally in the environment with altitude within 3000m.
5) At least a clearance of 1m surrounding the equipment is required during operation. Keep this equipment away from flammable sources at least two meters.
6) Avoid vibration, magnetic disturbance at the operation area.

Rejected parts disposal

When the equipment has run out its life time and can not be used any more, unplug the power supply and dispose of it properly according to local code.
Fire hazard.

 In case of fire, CO_2 dry powder fire extinguisher should be applied.

1.5 Exemption Clause

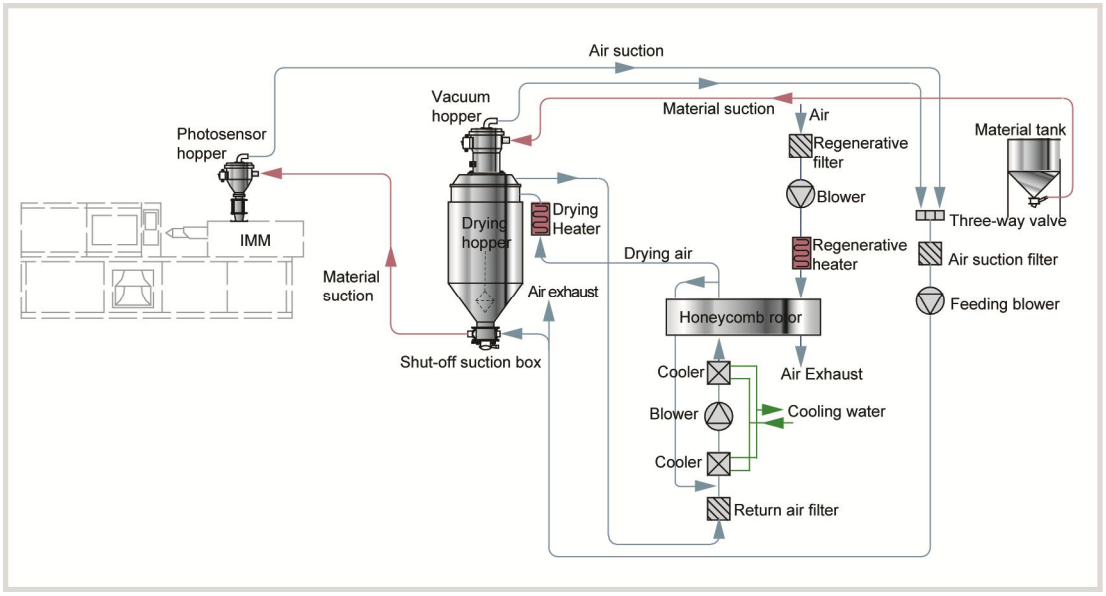
The following statements clarify the responsibilities and regulations born by any buyer or user who purchases products and accessories from Shini (including employees and agents).

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

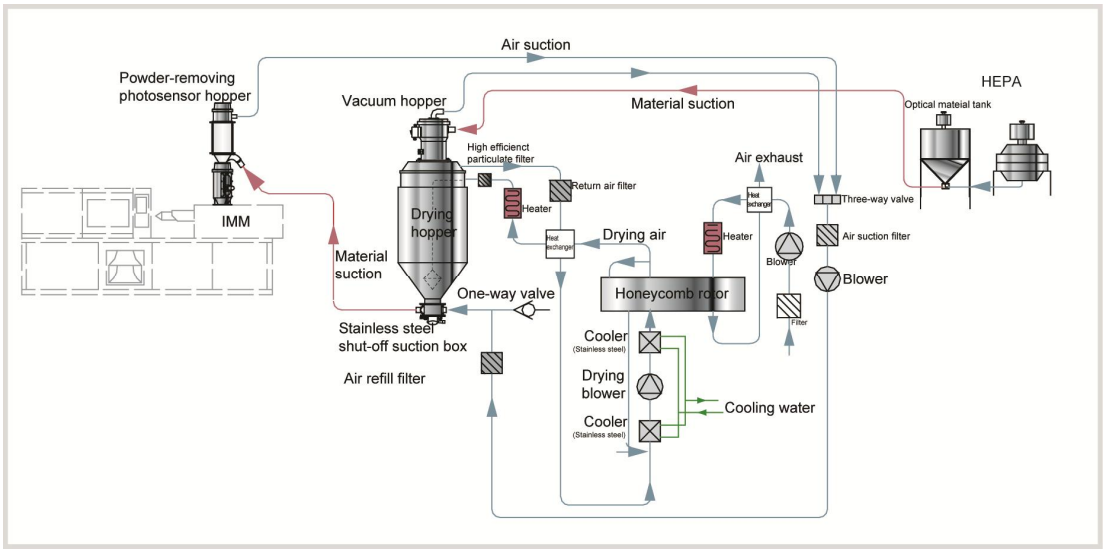
1) Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2) Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible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



Picture 2-1: SCD Working Principle



Picture 2-2: SCD-OP Working Principle (With plate Heat Exchanger) (Option)

Dehumidifying: damp and hot air from dry material barrel is blown into rotor after cooled. Moisture from the air is absorbed by rotor and is then adsorbed by

regeneration heating air. Two strands of airflow function on the rotor. And with the rotation, moisture from the air is absorbed and expelled after absorbed regeneration air to form stable low dew-point air, which is dried to the drying temperature and then is blown into material barrel to closed circle to dry material.

Suction: material is absorbed into barrel from storage barrel or other storage containers. When the magnetic reed switch detects no material, suction motor runs to produce vacuum inside vacuum hopper. Raw material in storage barrels is absorbed into suction hopper due to air pressure difference. When the time is completed, suction motor stops. Raw materials drop into drying hopper barrel due to gravity. The dried raw material after drying is taken out to the hopper by photosensor installed on molding machine or other hopper form drying hopper barrel.

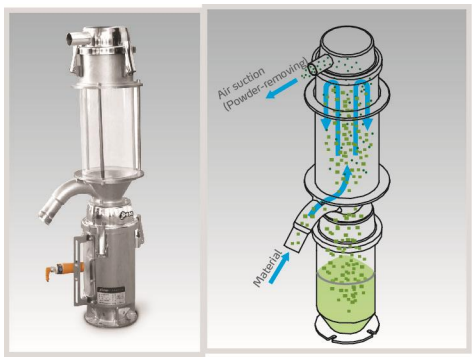
2.2 Relative Humidity and Dew-point

Relative humidity: Relative air humidity means real vapor content to saturated vapor at the same temperature in percentage. Dew point: it means that temperature when the saturation vapor begins to dew. When the relative humidity is 100%, the ambient temperature is the dew point temperature. The lower of dew point temperature (than the ambient temperature) is, the less possible to dew, that also means the more drier the air is. The dew point will not be influenced by temperature, but influenced by pressure.

2.3 Why Choose "All-in-One" Compact Dryer

For these quality deficiencies as bubble, crazing, cracking, poor transparency are due to insufficient drying of plastic materials before molding, and the engineering plastics such as: PC, PA, PBT, PET, Nylon, etc. The hygroscopic materials used in the plastics industry such as PC, PA, PBT, PET, Nylon, etc. cannot be dried effectively by conventional hot air drying systems because the moisture enters inside the particles. According to suggestion of the manufacturer, the plastic materials can be completely dried by drying air with dew-point temperature ≤-20 ℃. However, the SCD sufficiently dehumidifies and dries the air inside the closed-loop system, and the dry air eliminates the moisture fast and completely as to reach the drying and dehumidifying effect.

2.4 Options



Optical Powder-removing Hopper

SCD-OP High-efficiency Filter

- Optical SCD-OP series equipped with powder-removing hopper which can avoid powders in production; material contact surfaces are stainless-steel polished that collocate conveying system with closed loop to avoid contamination and moisture regain; system has standard configuration of high-efficiency filter, which can filter tiny ion of 0.3μm with filter ratio of 99.995%. (Only Apply to SCD-20U/30H~SCD-120U/80H)

High-efficiency Filter HEPA (0.3μm)

Optical Material Tank (5μm)

- Available to option with human-machine interface (LCD control with HMI), and add "LC" at the end of the model code.
- Built-in type, which meas that dew-point monitor is installed on the machine, is convenient to monitor dew-point temperature. Add "D" at the end of the model code.
- Portable type, which meas that dew-point monitor is separate from the machine, is convenient to test dew-point temperature of different machines. Add "PD" at the end of the model code.

- Optical-class models can select high-efficient filter (left) and optical-class storage hopper (right) to avoid material contamination in the conveying process.
- Built-in type, which meas that dew-point monitor is installed on the machine, is convenient to monitor dew-point temperature. Add "D" at the end of the model code.

Dew-point Monitor (portable)

- For models with energy-saving drying management, add “ES” at model behind,and standard equipped with HMI touch control ,which can save up to 41% of total power consumption. Volume used per hour is settable between 40~100% as drying capacity to save the totally power consumption of 35%~0; Standard equipped with heat regenerative recycler which recycles the regeneration air exhausted heat via plate heat exchanger and can save 3%~6% of total power consumption.
- For models optional with drying heat recycler, add “HE” at model behind. Dehumidified low temperature air via plate heat exchanger to recycle the heat of hot-wet return air, which can higher the air temperature in drying heater and lower the power consumption of the heater, the total power consumption can save 0%~19%.
- Three-stage conveying function is available to feed two sets of injection molding machines. Add "M2" at the end of the model code.
- Three-stage conveying function is available to feed two sets of injection molding machines. Add "M2" at the end of the model code.
- Polished surface inside of hopper, Plus “P” at the end of the model code.

3. Installation Testing

This series of models only could be applied in working environment with good ventilation.

3.1 Machine Location

Picture 3-1: Installation Drawing

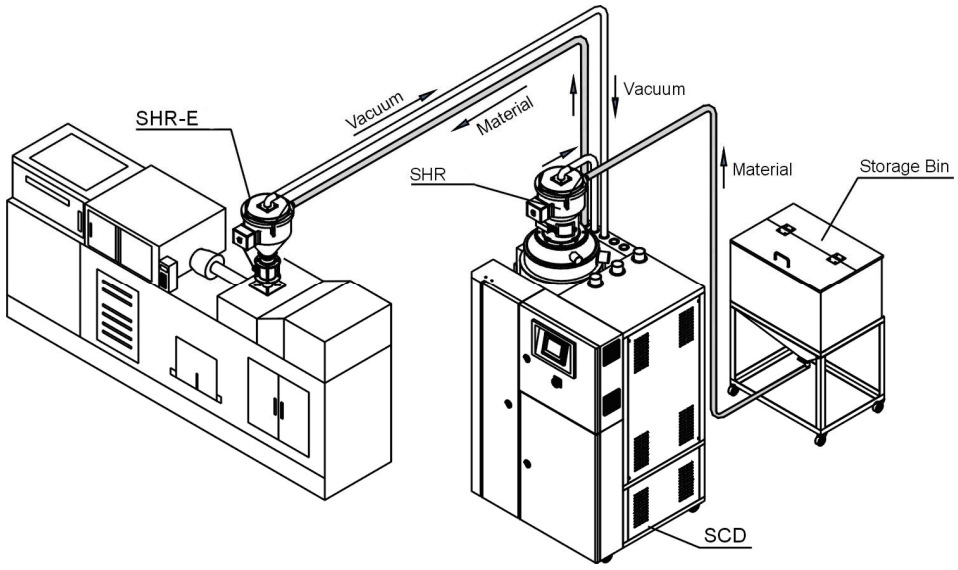
Installation Notice:

1) The machine can only be installed in vertical position, make sure there's no pipeline, fixed structure and other object that may obstruct machine installation or cause item damage, human injuries above the selected location and adjacent areas.
2) For easy maintenance, leaving 1m space around machine is suggested.

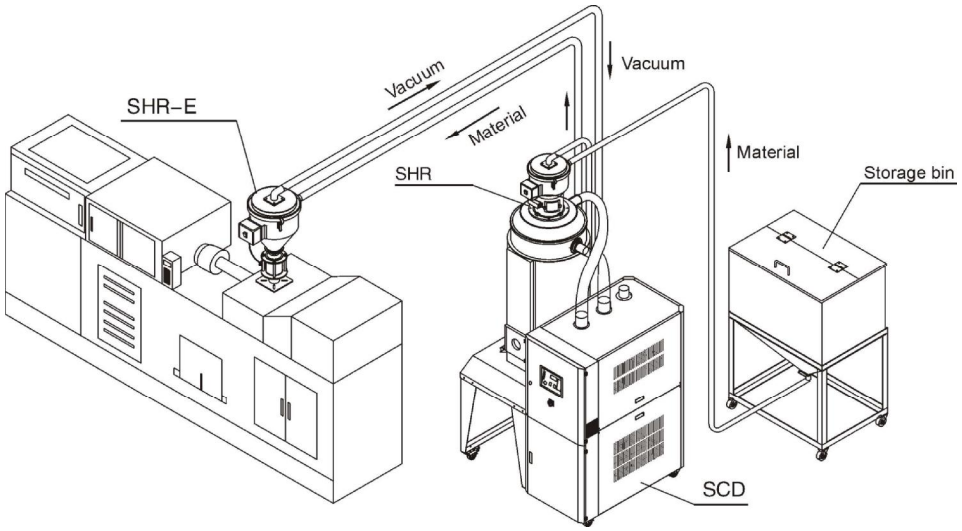
   Important: Keep machine 2m away from the inflammable materials.

3) The machine must be placed on the ground level to ensure balance state, and to remove the accumulated condensing water. If machine is need to install on a higher level (scaffolding or interlayer), it should make sure that the structure and size could withstand the machine.

3.2 Air Pipe and Material Pipe Connection



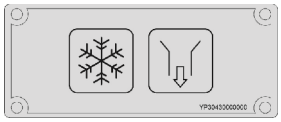
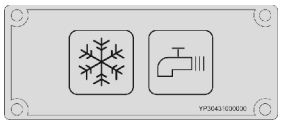
Picture 3-2: Schematic Drawing of Installation (Hermetic Design)



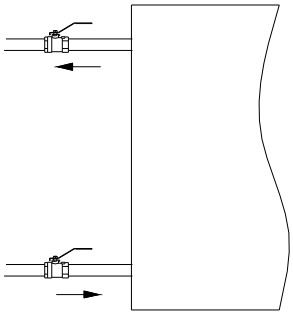
Picture 3-3: Schematic Drawing of Installation (Semi-integral Design)

3.3 Cooling Water Connection

Table 3-1: Cooling water connection table

	Cooling water outlet
	Cooling water inlet

Cooling water needs to be connected the before operation. The water port is at the back of the machine.



Picture 3-4: Cooling Water Connection

3.3.1 Cooling Water Connection

Connect through the cooling water before machine operation. For the efficiency, please follow below suggestions:

1) For easy maintenance and safety, install the ball valve at cooling water inlet and outlet.
2) Water pipe diameter should not less than the diameter of cooling water inlet and outlet.
3) For water quality, it needs to sediment or filter the water before it gets into the pipe, to prevent the deposits accumulated on pipeline of cooler and performance degradation.

Table 3-2: Cooling Water Specifications

Cooling Water Specifications							
Temperature Difference between Water Inlet and Outlet		Cooling Water Pressure		Cooling Water Temperature			
5℃		3~5kgf/cm^2		10~30℃			
Suggested cooling water flow rate and pipe diameter:							
Model	Flowrate of Cooling Water (L/min)	Interface specification		Model	Flowrate of Cooling Water (L/min)	Interface specification	
		Inlet	Outlet			Inlet	Outlet
30H	4	Ø23	Ø23	700H	80	Ø25	Ø25
40H	5	Ø23	Ø23	1000H	120	$R_2$1.5"	$R_2$1.5"
50H	6	Ø23	Ø23	1500H	180	$R_2$2"	$R_2$2"
120H	15	Ø23	Ø23	2000H	240	$R_2$2"	$R_2$2"
200H	30	Ø23	Ø23	3000H	360	$R_2$2"	$R_2$2"
400H	50	Ø23	Ø23	4000H	480	2X $R_2$2"	2X $R_2$2"

3.3.2 Condensation Drainage Pipe

During normal operation, it will generate condensation water. Connect the water pipe at drainage outlet to remove the condensation water is necessary. As to ensure high machine efficiency, following suggestions must be observed:

1) Drainage pipe inner diameter should not less than the diameter of drainage outlet.
2) Drainage pipe should be long enough to approach the drainage channel, and be the hose. Be careful not to press or bend the pipe for smooth water flow (Use the rigid pipe if there's need to press or bend the hose).
3) As condensation water drainage is in terms of gravity, make sure the drainage outlet is above the pipe. Otherwise the water can't be drained out and will flow back to the machine.

Note: The size of discharging port for all models is Rc1/2" .

3.4 Power Connection

1) Make sure the voltage and frequency of the power source comply with those indicated on the manufacturer nameplate that attached to the machine.
2) Power cable and earth connection should conform to your local regulations.
3) Use independent electrical wires and power switch. Diameter of electrical wire should not be less than those used in the control box.

4) The power cable connection terminals should be tightened securely.
5) The machine requires 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) ***Please refer to electrical drawing of each model to get the detailed power supply specifications***

3.5 Compressed Air Supply

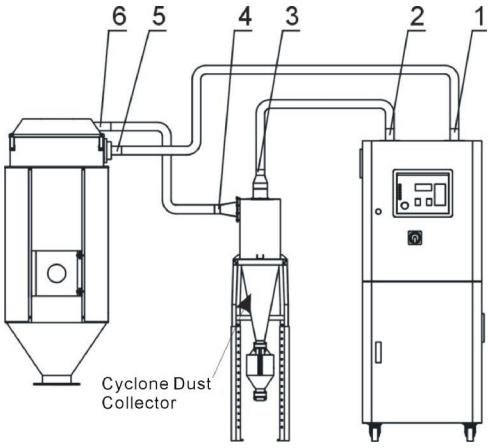
Table 3-3: Compressed Air Specification

Items	Value	Remark
Quality Grade	335	Solid particle content ≤ 5mg/m^3, dew-point temperature ⩽ -20℃， oil content ≤ 25mg/m^3, oil content ≤ 25mg/m^3. (Chinese standard: GB/T 13277-1991)
Air pressure (bar)	3~5bar	
Air quantity (L/hr)	~10L/hr	
Pipe dimension	PM20	Quick coupler(Chinese standard)

3.6 Option Installation

3.6.1 Installation Steps of Cyclone Dust Collector

1) Connect 1 and 5 with a heat-resistant duct and fixed both the ends with stainless steel tubes.
2) Connect 2 and 3 with a heat-resistant duct and fixed both the ends with stainless steel tubes.
3) Connect 4 and 6 with a heat-resistant duct and fixed both the ends with stainless steel tubes.

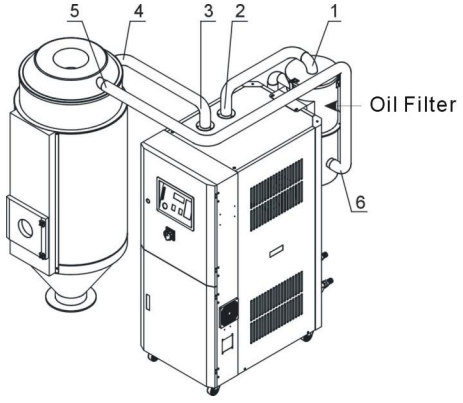


Picture 3-5: Installation Diagram of Cyclone Dust Collector

3.6.2 Installation Steps of Oil Filter

Oil Filter Installation Steps:

1) Screw the oil filter on the top plate of the honeycomb dehumidifier.
2) Connect 1 and 2 with a heat-resistant duct and fixed both the ends with stainless steel tubes.
3) Connect 3 and 4 with a heat-resistant duct and fixed both the ends with stainless steel tubes.
4) Connect 5 and 6 with a heat-resistant duct and fixed both the ends with stainless steel tubes.



Picture 3-6: Installation Diagram of Oil Filter

3.6.3 Material storage bin (MST-80U-OP)

1) Check whether internal bin and connecting pipe are clean or not before using.
2) Optional with high-efficient HEPA to collocate with optional grade series.
3) If customer doesn't equip with HEPA, filter with accuracy of 5um is available, which is installed inside storage bin.

Picture 3-7: Material Stage Bin of Optical Grade MST-80U-OP

4. Application and Operation

4.1 Operation Procedure for HMI

Picture 4-1: Description of Touch Panel

1) Avoid violent collision of the touch screen when operating it.
2) In dry environment, static electricity may be produced on the touch screen, so a metal wire is needed to discharge it before operating.
3) Use alcohol or eleoptene to clean the touch screen, because other solvents may fade it.
4) Do not tear down the touch screen or take away any PCB from it. Otherwise, the component will be damaged.

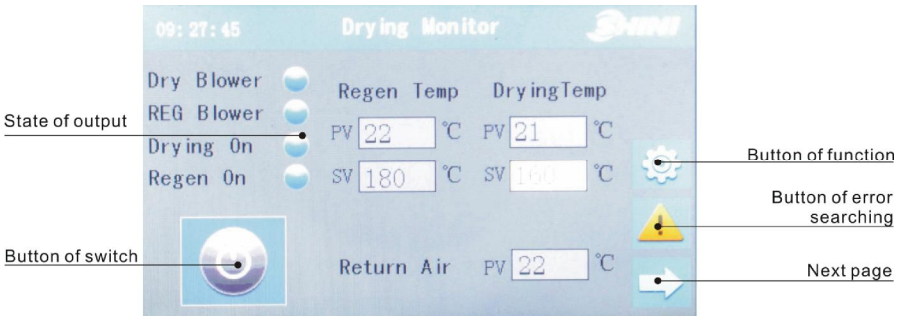
4.1.1 Initial Page of the System

After the system is powered on, the touch penal displays initial page. As below figure:

Picture 4-2: System Initialization Page

4.1.2 Drying Monitor Page

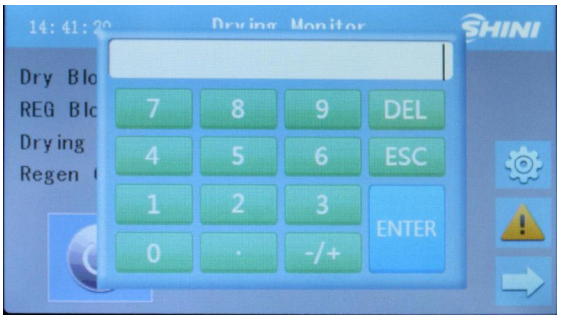
After a few seconds of countdown, the system initialization interface will enter the dehumidification and drying monitoring screen, as below figure:



Picture 4-3: Drying Monitor Page

4.1.2.1 Modify the Set Temperature

Click the <SV> for drying temperature in the Drying Monitor page, and numerical keypad will pop up. Input the requested drying temperature and then press <ENTER> to confirm.



Picture 4-4: Modify Drying Temperature Page

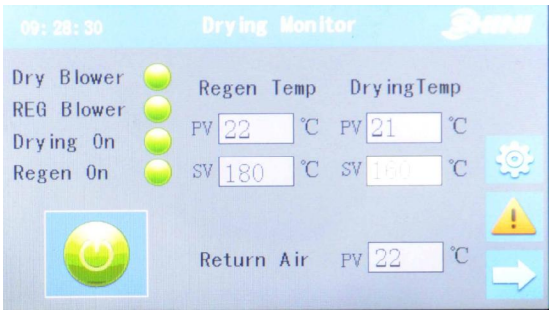
Note: The drying and regenerating temperatures all have the maximum and minimum values. The default setting of regenerating temperature is set to 180℃. No resetting is permitted without permission!

4.1.2.2 Start-up and Shutdown

Press once the <Button of Switch> in Drying Monitor page to start machine, and press once again the <Button of Switch> to stop the machine.

Click the <Button of Switch> to make it turn green. At this time, the system starts automatic operation. Then, click <Button of Switch> to make it turn grey, the system stops operation.

Note: in order to prolong the life of honeycomb-rotor, never stop the machine by cutting down the main power supply directly, you should turn off the machine by pressing <Button of Switch> firstly. The later operation ensures honeycomb-rotor continuously run for a delaying time to cool down the rotor. This rotating time always is 3 minutes. After the delaying time is reached, main power supply can be switched off.



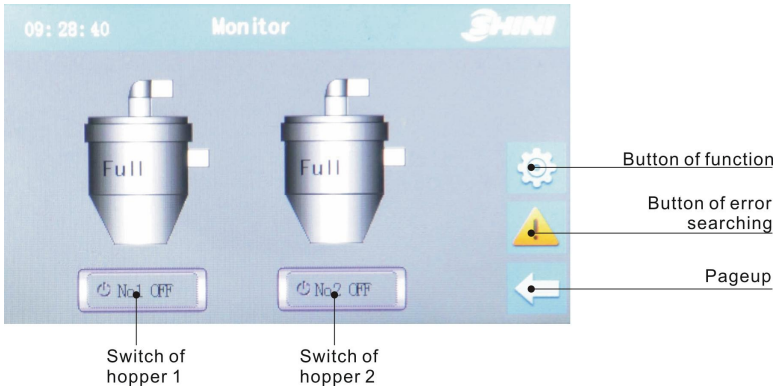
Picture 4-5: Start-up and Shutdown Screen

4.1.2.3 Main Screen Switch

There are two main screens: Drying Monitor Sceen and Monitor Sceen to cope with different functional operations. It displays drying monitor screen directly after initialization screen, which can switch to conveying monitor screen by pressing <Next page> button.

4.1.3 Conveying Monitor Screen (Only Suitable for SCD Model)

It is possible to switch the working state (ON/OFF) of each hopper through pressing the <hopper switch> below each hopper icon.



Picture 4-6: Conveying Process Screen

4.1.4 Menu Screen

Enter Menu Screen by pressing the <Button of function> on Drying Monitor Screen or Conveying Monitor Screen. It has three functional options: time setting, parameter setting and multi-language.

Picture 4-7: Meun Screen

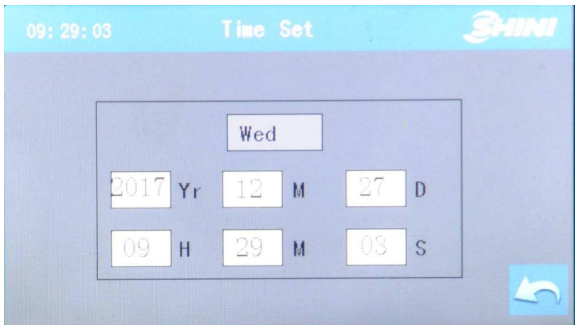
4.1.4.1 Timer Setting

Enter into the Timer Screen by pressing the <Time Set> once on Menu screen. There are two options in this page, Time Set and WSET.

Picture 4-8: Timer Screen

1. System Time Setting

Enter timer screen by pressing <Time Set> on this screen, which can set current date and time of this system.



Picture 4-9: System Time Setting

2. Weekly Timer Setting

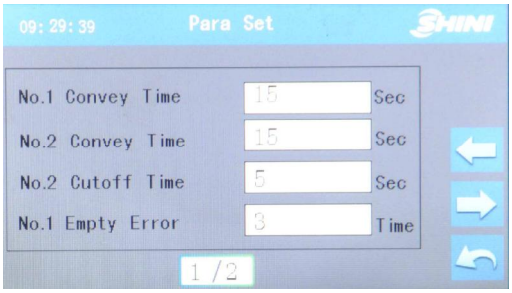
Enter into this page by pressing <WSET> once on Timer Screen. It is possible to set the starting and stopping time for each day in one week, and press <OFF> to activate weekly timing function after setting.

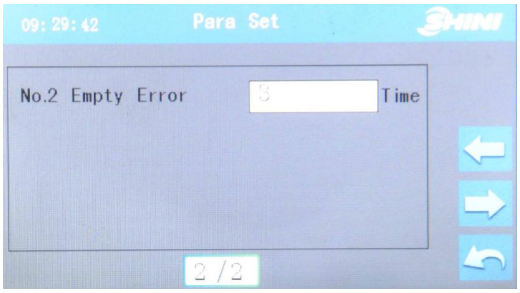
Picture 4-8: WSET Screen

Note: As to ensure normal working for weekly timing function, it is necessary to set the current time and date of system correctly before activating the weekly timing function.

4.1.4.2 Para. Set Screen (Conveying parameters)

Enter into this page by pressing the <Para Set> once on Menu screen. It is possible to set the suction time, shut-off time and shortage alarm times according to actual using condition.





Picture 4-9: Para. Set Screen

Table 4-1: Conveying Parameter's Category

Paramters	Unit	Description
Material feeding time	Second	When system detects material shortage, it will count down for 3 seconds. After that, PLC will send out signals to start the suction motor for feeding the molding machine. At the same time, it will time the loading. When it's up to the set loading time, loading stops and material loading times will increase.
Times of material shortage		When feeding of the molding machine is going on, the material loading times is limited if there is a material shortage signal. When it's up to the set loading times, the system will stop feeding the machine. Furthermore, it will sound an alarm of material loading error to remind users to check whether the storage tank is lack of material or whether there is any other error resulting in loading failure.
Shut-off time	Second	Shut-off time refers to opening time of relative shut-off valve. The longer the shut-off time, the more material will be discharged.

Note: All parameter default value has been set before delivery. Therefore, please DO NOT reset the values under normal condition, especially the conveying time, so as not to block up the pipeline.

Note: Shut-off time should not be set for too long. Otherwise, some materials will remain in the material line, which will affect the material drying effect.

Parameters	Factory Default and Setting Range	Remark
NO.1 Suction time	15s (0 ~ 999s)	One stage conveying (by main hopper)
NO.2 Suction time	15s (0 ~ 999s)	NO.2 Conveying time of the convey blower
NO.3 Suction time	15s (0 ~ 999s)	NO.3 Conveying time of the convey blower
NO.2 Shut-off time	5s (0 ~ 99s)	No. 2 Direction of secondary conveying (to the forming machine 1).
NO.3 Shut-off time	5s (0 ~ 99s)	No. 3 Direction of secondary conveying (to the forming machine 2).

No.1 Times of material shortage alarm	3 times (0 ~ 999 times)	Error of No.1 conveying occurs if there is no signal of full material when suction times reach the peak. The function is invalid when it is set as 0.
No.2 Times of material shortage alarm	3 times (0 ~ 999 times)	Error of No.2 conveying occurs if there is no signal of full material when suction times reach the peak. The function is invalid when it is set as 0.
No.3 Times of material shortage alarm (Optional)	3 times (0 ~ 999 times)	Error of No.3 conveying occurs if there is no signal of full material when suction times reach the peak. The function is invalid when it is set as 0.

4.1.4.3 Multilingual Setting

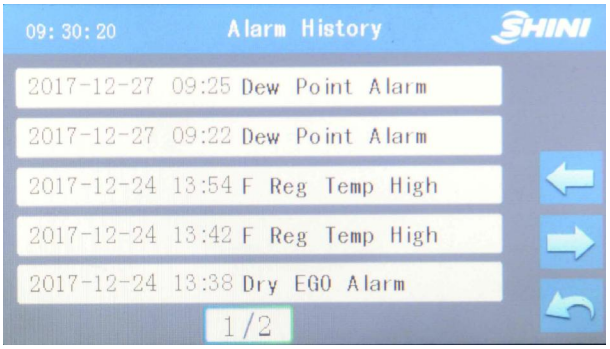
Chinese, English or Turkish can be switched at any time.

Picture 4-10: Multilingual Setting Screen

4.1.5 Alarm Message Checking

Enter into this page by pressing <Button of Error Searching> once in Drying Monitor Screen or Conveying Monitor Screen. It is possible to check alarm history, reset alarm or mute alarm.

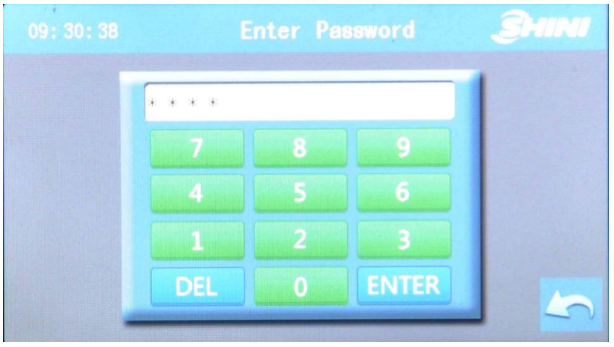
Picture 4-10: Alarm Message Screen



Picture 4-11: Alarm History Screen

4.1.6 Project Setting

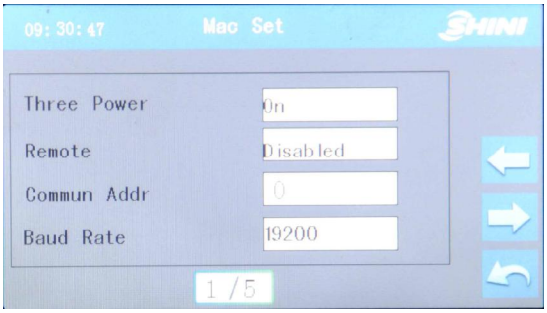
Quickly and continuously click the top-left corner four times on Drying Monitor Screen, and a password input window will appear. Input the correct password (Default password: 3588) to enter into this page, which consists of Nor. Setting, Out Time and Password Setting.

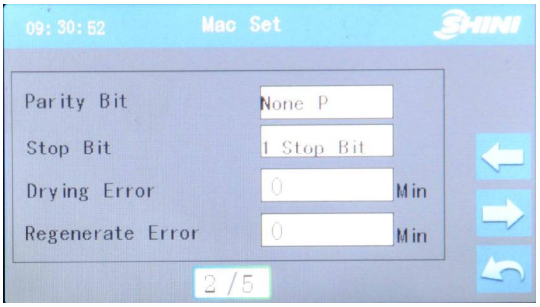


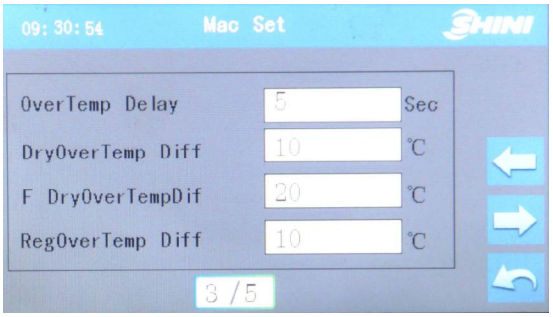
Picture 4-11: Password Input Interface

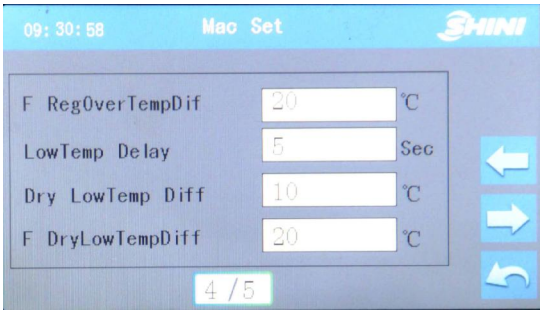
Note: Please keep this password securely and safely. If the password is missing, then the operator won't be able to log into this page. It is better to let this password known only by system administrator or senior operator.

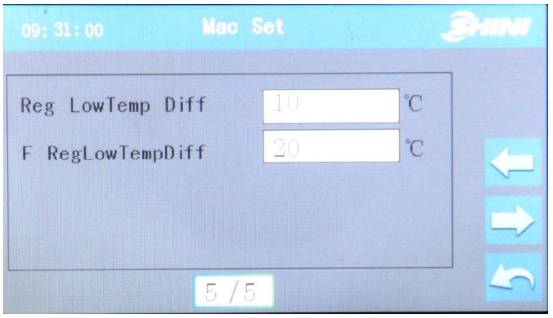
Picture 4-12: Project Setting Screen



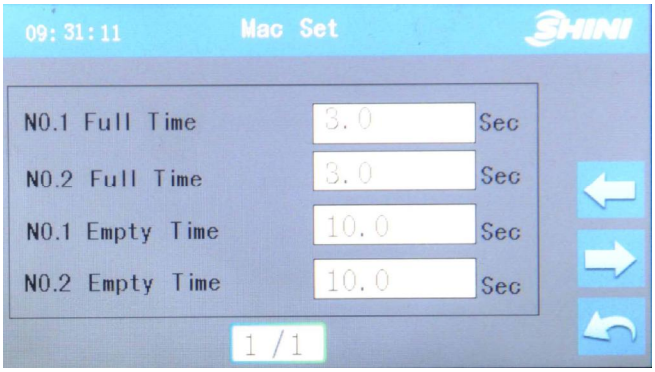




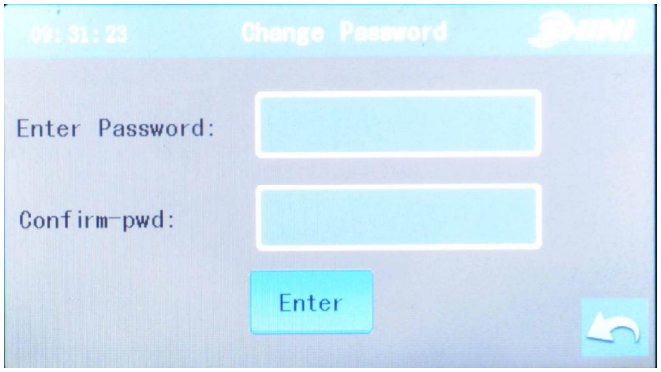




Picture 4-13: Project General Setting Screen



Picture 4-14: Detection Time Setting Screen



Picture 4-15: Password Modification Setting Screen

Table 4-2: Project Parameter Setting

Catalog	Parameter	Setting Range	Remark
Nor. Set (Normal parameters setting)	Three-phase detection	Use (use~forbidden)	Open or close the onboard three-phase detection
	External startup	Forbidden (use~forbidden)	Use: The dehumidification and drying system works when remote signal is given Forbidden: external startup is forbidden. [J3-10 input definition] Visible only when the definition is “external startup and shutdown”.
	Communication address	0 (0~32)	Address of communication devices
	Baud rate	19200 (4800/9600/19200)	Communication Baud rate
	Parity Bit	No parity (no parity, odd parity and even parity)	Setting of parity bit
	Stop bit	One stop bit (one stop bit, two stop bits)	Setting of stop bit
	Monitoring of drying heating error	0m (0 ~ 999min)	Drying heating disconnection
	Monitoring of regenerative heating error	0m (0 ~ 999min)	Regenerative heating disconnection
	Delayed overheat alarm	5s (0 ~ 999s)	Delayed time of overheat alarm
	Drying overheat	10.0℃ (0.0 ~ 40.0℃)	Drying overheat deviation

	deviation		
	First drying overheat deviation	20.0℃ (0.0 ~ 60.0℃)	First drying overheat deviation
	Regenerative overheat deviation	10.0℃ (0.0 ~ 40.0℃)	Regenerative overheat deviation
	First regenerative overheat deviation	20.0℃ (0.0 ~ 60.0℃)	First regenerative overheat deviation
	Delayed low temp alarm	5s (0 ~ 999s)	Delayed low temp alarm
	Drying low temp. deviation	10.0℃ (0.0 ~ 40.0℃)	Drying low temp deviation
	First drying low temp. deviation	20.0℃ (0.0 ~ 60.0℃)	First drying low temp deviation
	Regenerative low temp deviation	10.0℃ (0.0 ~ 40.0℃)	Regenerative low temp. deviation
	First regenerative low temp deviation	20.0℃ (0.0 ~ 60.0℃)	First regenerative low temp. deviation
Out Time (Detecting time for each hopper)	N0.1 Full material detection time	3.0s (0.1 ~ 99.9s)	N0.1 Delayed time of full material detection
	NO.2 Full material detection time	3.0s (0.1 ~ 99.9s)	N0.2 Delayed time of full material detection
	NO.3 Full material detection time(Optional)	3.0s (0.1 ~ 99.9s)	N0.3 Delayed time of full material detection
	N0.1 Material shortage detection time	10.0s (0.1 ~ 99.9s)	N0.1 Delayed time of material shortage detection
	N0.2 Material shortage detection time	10.0s (0.1 ~ 99.9s)	N0.2 Delayed time of material shortage detection
	NO.3 Material shortage detection time (Optional)	10.0s (0.1 ~ 99.9s)	N0.3 Delayed time of material shortage detection

5. Trouble-shooting

Symptom	Possible causes	Solution
EPROM Error	1. The machine halts when alarm rings, and it is manually reset after faults are removed. 2. The ROM will be detected after being electrified, and error occurs when ROM can't read right datum.	Re-power on. If the alarm rings again, there is something wrong with the controller. Please replace the controller or contact us.
Three-phase power source error	1. The machine halts when alarm rings, and it is manually reset after faults are removed. 2. The part will be detected after being electrified, and error occurs when power line has reversed-phase connection or suffers default phase. 3. The machine will be detected after being electrified. If the [J3-10 input definition] is three-phase electrical detection, alarm rings two seconds after J3-2 input proves to be effective. Alarm will ring when either 2 or 3 is met.	1. Turn off the power switch, change the three-phase AC power cord connection and set a positive phase. After re-powering on, observe whether the fault prompt has disappeared or not. 2. If the [J3-10 input definition] is three-phase electric power detection, check whether the setting of "always on" and "always off" of the [external/three-phase power] is correct or not.
No.1 Conveying Fault (to hopper)	1. NO.1 conveying stops when alarm rings, and it is manually reset after faults are removed. 2. Start the No.1 conveying. If there is no signal of full material after the conveying times reach the [times of NO.1 conveying fault], error will occur.	1. Check whether the setting of [No.1 times of conveying error] is right. 2. Detect whether there are materials in the hopper.
No.2 Conveying Fault (to IMM1)	1. NO.2 conveying stops when alarm rings, and it is manually reset after faults are removed. 2. Start the No.2 conveying. If there is no signal of full material after the conveying times reach the [times of NO.2 conveying fault], error will occur.	1. Check whether the setting of [No.2 times of conveying error] is right. 2. Detect whether there are materials in the hopper.
No.3 Conveying Fault (to IMM2)	1. NO.3 conveying stops when alarm rings, and it is manually reset after faults are removed. 2. Start the No.3 conveying. If there is no signal of full material after the conveying times reach the [times of NO.3 conveying fault], error will occur.	1. Check whether the setting of [No.3 times of conveying error] is right. 2. Detect whether there are materials in the hopper.
Regenerative Blower Overload	1. When alarm rings, drying blower/ regenerative blower (rotor motor) close and heating stops. And they are automatically reset after faults are removed. 2. The blower will be detected after being electrified, and error occurs when the regenerative blower overload input signal proves to be effective and delays for two seconds.	Open the electronic control box and press the reset button on the thermorelay. Check the machine if problem arises again.
Drying Blower Overload	1. When alarm rings, drying blower/ regenerative blower (rotor motor) close and heating stops. And they are automatically reset after faults are removed. 2. The blower will be detected after being electrified, and error occurs when the drying blower overload input signal proves to be effective and delays for two seconds.	Open the electronic control box and press the reset button on the thermorelay. Check the machine if problem arises again.
Conveying Blower Overload	1. Conveying stops when alarm rings, and it is automatically reset after faults are removed. 2. The blower will be detected after being electrified,	Open the electronic control box and press the reset button on the thermorelay. Check the machine if problem arises again.

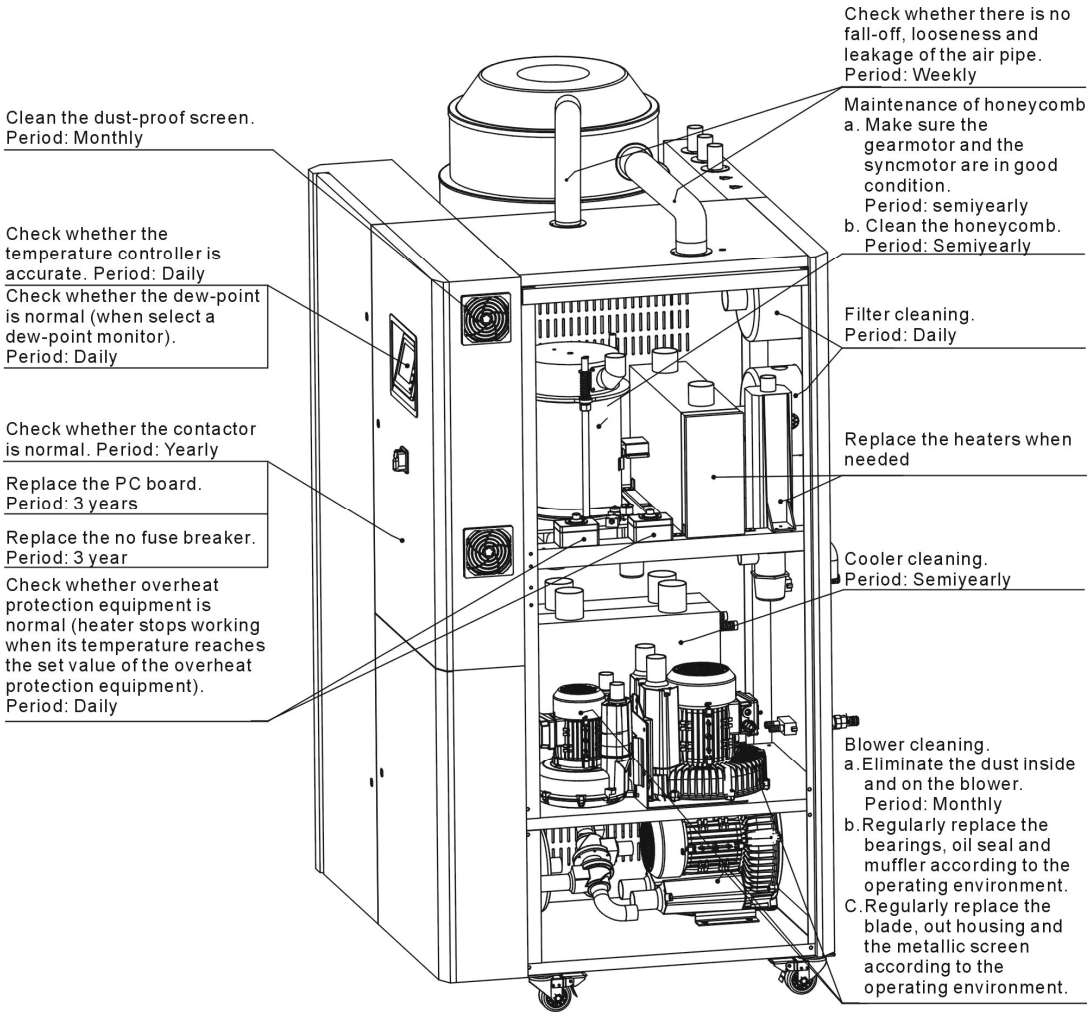
	and error occurs when the conveying blower overload input signal proves to be effective and delays for two seconds.	
Regenerative EGO Overheat	1. Regenerative heating and overheat alarm output close when alarm rings, and they are automatically reset after faults are removed. 2. The part will be detected after being electrified, and error occurs when the regenerative EGO overheat input signal proves to be effective and delays for two seconds.	Check whether the setting of [regenerative EGO overheat] and that of “always on” and “always off” of overheat signal are correct or not. Examine the regenerative blower, filter, air pipes and air damper.
Drying EGO Overheat	1. Drying heating and overheat alarm output close when alarm rings, and they are automatically reset after faults are removed. 2. The part will be detected after being electrified, and error occurs when the drying EGO overheat input signal proves to be effective and delays for two seconds.	Check whether the setting of [drying overheat] and that of “always on” and “always off” of overheat signal are correct or not. Examine the drying blower, filter, air pipes and air damper.
Return air EGO Overheat	1. Drying heating closes when alarm rings, and it is automatically reset after faults are removed. 2. The part is detected after being electrified, and error occurs when the return air EGO overheat input signal proves to be effective and delays for two seconds.	Check whether the setting of [return air overheat] and that of “always on” and “always off” of overheat signal are correct or not. Examine the drying blower, regenerative blower, filter, air pipes and air damper. After addressing the problem, press the key of “reset” or reset by re-powering on.
Rotor Error	1. The rotor automatically gets into the state of “timed cooling” when alarm rings, and it is manually reset after faults are removed. 2. Error occurs when the rotor can’t be detected in the [rotor monitoring time] and the valid time of its input signal exceeds 10 seconds.	Set the parameters according to the rotor conditions: time for the rotor to run a cycle [rotor monitoring time], and set aside a certain volume. If you want to disable this alarm, you can set the parameter [rotor monitoring time] as 0. After addressing the problem, press the key of “reset” or reset by re-powering on.
Regenerative Heating Pipe Disconnection	1. Regenerative heating closes when alarm rings, and it is manually reset after faults are removed. 2. The error occurs when the regenerative heater is turned on and its temp can not reach the set temp during the period of [regerative heating error monitoring].	Examine the regenerative heating pipe and its control circuit as well as heating contactor; If you do not use the alarm function, you can set the detection time of disconnection [regerative heating error monitoring] as 0. After addressing the problem, press the key of “reset” or reset by re-powering on.
Drying Heating Pipe Disconnection	1. Drying heating closes when alarm rings, and it is manually reset after faults are removed. 2. The error occurs when the drying heater is turned on and its temp can not reach the set temp during the period of [drying heating error monitoring].	Examine the drying heating pipe and its control circuit as well as heating contactor; If you do not use the alarm function, you can set the detection time of disconnection [drying heating error monitoring] as 0. After addressing the problem, press the key of “reset” or reset by re-powering on.
Regenerative Probe Error	1. Regenerative heating closes when alarm rings, and it is automatically reset after faults are removed. 2. The part is detected after being electrified, and error occurs when there is something wrong with the	Examine the wire and check whether the probe matches with the controller.

	probe.	
Drying Probe Error	1. Drying heating closes when alarm rings, and it is automatically reset after faults are removed. 2. The part is detected after being electrified, and error occurs when there is something wrong with the probe.	Examine the wire and check whether the probe matches with the controller.
Return Air Probe Error	1. Drying heating closes when alarm rings, and it is automatically reset after faults are removed. 2. The part is detected after being electrified, and error occurs when there is something wrong with the probe.	Examine the wire and check whether the probe matches with the controller. Examine the machine and press the key of “reset” after faults are removed.
Regenerative Temp Overheat	1. When alarm rings, regenerative heating and overheat alarm output close. They are automatically reset when the regenerative temp < (regenerative set temp+ [regenerative overheat deviation]-1℃). 2. Detection when the machine is running: A. Error occurs when regenerative temp– regenerative set temp > [regenerative overheat deviation] and [overheat alarm] is delayed. B. If the temp difference exceeds the [regenerative ceiling deviation] in modification of the set temp or when the unit just starts running, the alarm would not be given. The alarm rings only when the conditions listed in (1) are met even after the current temp goes up and down for several times at the set temp point.	Check whether the setting of parameter [regenerative ceiling deviation] is reasonable. If you want to disable it, set the [regenerative ceiling deviation] as 0.
First Regenerative Overheat	1. When alarm rings, regenerative heating and overheat alarm output close. They are automatically reset when the regenerative temp < (regenerative set temp+ [regenerative overheat deviation]-1℃). 2. (1) Error occurs when regenerative temp– regenerative set temp > [first regenerative overheat deviation] and [overheat alarm] is delayed.	Check whether the setting of parameter [first regenerative overheat deviation] is reasonable. If you want to disable it, set the [first regenerative overheat deviation] as 0.
Too-low Regenerative Temp	1. When alarm rings, the machine keeps running. It is automatically reset when the regenerative temp > (regenerative set temp- [regenerative low temp deviation]+1℃). 2. Detection when the machine is running: A. Error occurs when regenerative set temp– regenerative temp > [regenerative low temp deviation] and [low temp alarm] is delayed. B. If the temp difference exceeds the [regenerative low temp difference] in modification of the set temp or when the unit just starts running, the alarm would not be given. The alarm rings only when the conditions listed in (1) are met even after the current temp goes up and down for several times at the set temp point.	Check whether the setting of parameter [regenerative low temp deviation] is reasonable. If you want to disable it, set the [regenerative low temp deviation] as 0.
First Too-low Regenerative Temp	1. When alarm rings, the machine keeps running. It is automatically reset when the regenerative temp > (regenerative set temp- [first regenerative low temp	Check whether the setting of parameter [first regenerative low temp deviation] is reasonable.

	deviation]+1℃). 2. (1) Error occurs when regenerative set temp– regenerative temp > [first regenerative low temp deviation] and [low temp alarm] is delayed.	If you want to disable it, set the [first regenerative low temp deviation] as 0.
Drying Overheat	1. When alarm rings, drying heating and overheat alarm output close. They are automatically reset when the drying temp < (drying set temp+ [drying overheat deviation]-1℃). 2. Detection when the machine is running: A. Error occurs when drying temp– drying set temp > [drying overheat deviation] and [overheat alarm] is delayed. B. If the temp difference exceeds the [drying overheat difference] in modification of the set temp or when the unit just starts running, the alarm would not be given. The alarm rings only when the conditions listed in (1) are met even after the current temp goes up and down for several times at the set temp point.	Check whether the setting of parameter [drying overheat deviation] is reasonable. If you want to disable it, set the [drying overheat deviation] as 0.
First Drying Overheat	1. When alarm rings, drying heating and overheat alarm output close. They are automatically reset when the drying temp < (drying set temp+ [first drying overheat deviation]-1℃). 2. (1) Error occurs when drying temp– drying set temp > [first drying overheat deviation] and [overheat alarm] is delayed.	Check whether the setting of parameter [first drying overheat deviation] is reasonable. If you want to disable it, set the [first drying overheat deviation] as 0.
Too-low Drying Temp	1. When alarm rings, the machine keeps running. It is automatically reset when the drying temp > (drying set temp- [drying low temp deviation]+1℃). 2. Detection when the machine is running: A. Error occurs when drying set temp– drying temp > [drying overheat deviation] and [low temp alarm] is delayed. B. If the temp difference exceeds the [drying low temp difference] in modification of the set temp or when the unit just starts running, the alarm would not be given. The alarm rings only when the conditions listed in (1) are met even after the current temp goes up and down for several times at the set temp point.	Check whether the setting of parameter [drying low temp deviation] is reasonable. If you want to disable it, set the [drying low temp deviation] as 0.
First Too-low Drying Temp	1. When alarm rings, drying heating and overheat alarm output close. They are automatically reset when the drying temp > (drying set temp- [first drying low temp deviation]+1℃). 2. (1) Error occurs when drying temp– drying set temp > [first drying low temp deviation] and [low temp alarm] is delayed.	Check whether the setting of parameter [first drying low temp deviation] is reasonable. If you want to disable it, set the [first drying low temp deviation] as 0.
Dew- point Meter Error	There is something wrong with the dew point transducer, and the machine keeps running after error occurs.	Check whether the connection of dew point transducer is right, and whether the range is from 4 to 20 mA.
Rotor 2 Error	1. The rotor automatically gets into the state of “timed cooling” when alarm rings, and it is manually reset after faults are removed.	Set the parameters according to the rotor conditions: time for the rotor to run a cycle [rotor monitoring time], and set aside a

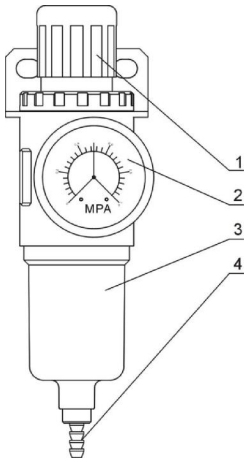
	2. Error occurs when the rotor can't be detected in the [rotor monitoring time] and the valid time of its input signal exceeds 10 seconds.	certain volume. If you want to disable this alarm, you can set the parameter [rotor monitoring time] as 0 or define the [J3-10 input] to be forbidden. After addressing the problem, press the key of "reset" or reset by re-powering on.
Too-high Temperature of Dewpoint	1. When alarm rings, the machine keeps running. It is automatically reset when dewpoint temp< [dew point alarm temp]. 2. Detection when the machine is running: A) Press [dewpoint temp alarm delay] and start detecting; B) Dewpoint temp> [dew point alarm temp] and the condition lasts for 10 seconds. C) The parameter of [delayed detection of dewpoint alarm] is not 0. Alarm will be given when A), B) and C) are all met.	If you want to disable it, set the parameter [delayed detection of dewpoint alarm] as 0

6. Maintenance and Repair



6.1 Filter & Pressure Regulating Valve

6.1.1 Filter & Pressure Regulating Valve Drawing



Picture 6-1: Filter & Pressure Regulating Valve Drawing

Table 6-1: Filter & Pressure Regulating Valve Assembly

No.	Component	Function
1	Pressure adjusting knob	Used for adjusting the air pressure at the outlet
2	Pressure gauge	Used for displaying air pressure at the outlet
3	Cup	Used for storage the moisture filtered from the air
4	Water outlet	Used for discharging the moisture in the glass

6.1.2 Filter & Pressure Regulating Valve Operation steps

1) Switch on the air source.
2) Pull the black pressure adjusting knob 1 upward and rotate it, observe the pressure gauge 2, generally a 0.5 Mpa pressure is advisable.
3) Push back the black knob 1.

6.2 Air Filters

Please periodically clean the dust on the air filters, once per week.

Cleaning steps:

1) Take out the air filter carefully.
2) Blow off the dust on the air filter screen and the cover with pressure air.
3) Wipe off the barrel wall of air filter with cloth.
4) After cleaning, place all parts in reversed order carefully.

5) Please ensue that the filter is well seal with metal frame.

Picture 6-2: Filter Clearning

Note!

Don't let foreign object enter into the barrel, when taking out the air filter.

6.3 Blower Motors

6.3.1 Drying Blower

1) Fix inlet/outlet flange of blower, and tighten four screws securely.
2) Connect the blower with electrical source.
3) Install the blower on the Machine frame.

Picture 6-3: Installation of Blowers

6.3.2 Regeneration Blower

1) Fix inlet/outlet flange of blower, and tighten 4 screws securely.
2) Install the blower on the machine frame.
3) Connect the blower with electrical source.

6.3.3 Conveying Blower

1) Fix inlet/outlet flange of blower, and tighten 4 screws securely.
2) Connect the blower with electrical power source.
3) Install the blower on the machine frame.

4) Fix the three-way valve (See Figure. 1).
5) Install the solenoid valve, and then tighten 2 screws on the machine frame (See Figure. 2).

Picture 6-4: Conveying Blower

6.3.4 Blower Cleaning

1) To clean blower both internal and external parts (especially the fan cooling path), by removing surface dust. If more dusts are accumulated, it will cause deficiency for ventilation, temperature rising up, blower power reduced, vibration increased and so it will cause machine broke down.
2) Ball bearing, oil seal and sound-proof are belonging to consumable parts and so it has a life period and requires regular replacement.

Picture 6-5: Blower

6.4 The Service Life of the Key Parts of the Product

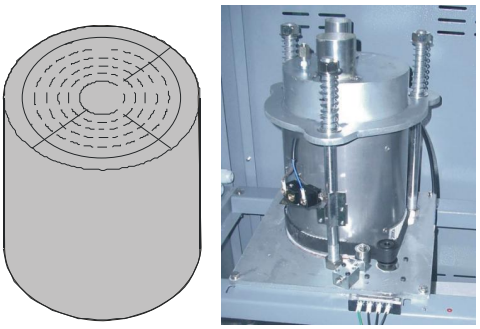
Table 6-2: The Service Life of the Key Parts of the Product

No.	Name of the Parts	Useful Life
1	Blower	Above 5 years
2	Process heater	Above 1 year
3	Regen. herter	Above 1 year
4	Contactor	Above 2000,000 act
5	Honeycomb	5 years
6	Filter	1 year

6.5 Honeycomb-rotor

6.5.1 What is Honeycomb-rotor

The main body of the honeycomb-rotor is a honeycomb, made by ceramic fibre and organic additives, sintered under high temperature with molecular sieve and silica gel, to be strongly bonded together and form a solid and hard surface. Not like common molecular sieve, which will produce dusts and fines to pollute raw materials when aging or become saturated requiring regular replacement, the moisture of return air is quickly absorbed by numerous tunnels before coming out of the rotor to form low dew-point air. At the same time, regenerating blower takes dry air into the honeycomb-rotor from an opposite direction to regenerate the rotor.



Picture 6-6: Honeycomb Rotor

6.5.2 Installation Steps of the Rotor

1) The upper and lower lid of honey-comb should install Teflon gasket (Fig. 1).
2) Use 4 screws to fix the rotor base on the machine frame firmly, and then install the shaft accordingly (Fig. 2).
3) Install the gearmotor and transmission gear (Fig. 4).
4) Install and fix the main support screws (Fig. 3).
5) Fit the transmission belt in proper position (Fig. 6).
6) Install the honeycomb-rotor (Fig. 9) and transmission belt (Fig. 12).
7) Fix the rotor top cover (Fig. 8).
8) Fit all springs and tighten the screws (Fig. 7).
9) Install both the transmission belt (Fig. 13) and belt tension regulator (Fig. 14).

10) Install micro-switch and fixed board firmly (Fig. 10).

Picture 6-7: Rotor Installation Diagram

Honeycomb Rotor Cleaning Steps:

Use a vacuum-cleaner with brush to suck up the dust on rotor surface.

Blow off the dust in the rotor channels with compressed air.

If there is dirt sticking to the channel walls inside the rotor, cleaning steps as follows:

1). Saturate the rotor by blowing humid air (higher than 60%RH) through the rotor without having regeneration circuit on. This can be done by just turning the regeneration heater off and still have the process blower running if process air has high humidity. If the process air is too dry try to put a humidifier in the air stream. Do this for one hour.

2). Depending on the character of the dirt, sink the rotor into water with cleaning agent in it (PH value 3~2 liquid is applied to silica gel, PH value 7~10 applied to molecular valve). Greasy dirt should be put into a detergent solution with xylene. 15 minutes cleaning is suggested.

3). Take the rotor out of the liquid and let it rest with the channels vertically for 5 minutes so the liquid can run out.

4). Blow off the residual liquid in the channels with compressed air.

5). Put the rotor back into the dehumidifier and run the unit with regeneration circuit (the regeneration temperature between 50℃ and 60℃) on for at least one hour.

Note: In the dry air and wet air outlets, there will be high concentrations liquid out for some time. If a solvent has been used, there will be a residual smell for several days.

Note: For some dirt which is greasy and sticky in the rotor, 100% elimination is impossible. The only one thing you can do is to replace the rotor for the cleaned rotor performance can only be recovered partly.

6.6 EGO

Table 6-3: EGO Default Value

No.	Category	Default Value
1	Drying	200℃
2	Regenerating	200℃

Picture 6-8: EGO

Note: EGO is mainly used for protecting highest heating temperature, other than drying temperature. EGO has been set before delivery，unauthorized modification is not permitted!

6.7 Cooler

1) Clean the cooler and eliminate the leakage regularly.
2) Please do the above-mentioned job once a month for cooling by chilled water.
3) As for the cooling by normal water, do the same job once a quarter.

Cooler Cleaning Step

1) Disassemble the cooler's pipe and screw, and remove the cooler out of the chiller.
2) Release the fixed screw on the upper and lower cover of cooler and disassemble the cover.
3) Use brushes, compressed air or low pressure water to clean the dust and sundries on the cooler fan and copper pipe.
4) Make the cooler's upper and lower cover junction clean enough and smear the silica gel then fixed the covers with screws.
5) Put the cooler on the air at least four hours to make the silica gel drying enough then fix the cooler on the chiller and connect all pipes.

6.8 Maintenance Schedule

6.8.1 General Machine Information

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

6.8.2 Installation & Inspection

☐Check if the air pipe are tightly connected.

☐Check if the material clearance door tightly closed.

☐Check if the air pipes are correctly connected.

☐Check if there are damages of the honeycle.

Inspection of Electric Components

☐Voltage _____ V _____ Hz

☐Fuse melt current：1 Phase _____A 3 Phases _____ A

☐Check phase sequence of the power supply.

☐Check the rotating direction of regeneration blower.

☐Check the rotating direction of conveying blower.

Check Air Supply of Compressor

☐Compressed air pressure _____ bar

☐Air flow _____ L/nun

☐Check if the compressed air purified or not

6.8.3 Daily Checking

☐Check the switch of the machine.

☐Check auto start-up of the machine.

☐Check the temperature controller.

☐Clean the filter.

☐Check whether overheat protection is normal.

☐Check whether dew-point is normal.

6.8.4 Weekly Checking

- ☐ Check all the electric wires.
- ☐ Check loose electric connections.
- ☐ Check and clean compressed air filter and regulator.
- ☐ Check magnetic valve.
- ☐ Check motor overload relay and phase-reversed prevention function.
- ☐ Check whether air pipe is shed, leaked and loose.

6.8.5 Monthly Checking

- ☐ Check if the belt is loose or not.
- ☐ Check gear box working conditions.
- ☐ Check if there are leakages in the honeycomb.

6.8.6 Half-yearly Checking

- ☐ Check if hot air pipe is broken or not.
- ☐ Check dehumidifier heater.
- ☐ Check regulation blower/material conveying blower/fans.
- ☐ Check whether honey-comb rotor belt is damaged.
- ☐ Clean the cooler.

6.8.7 Yearly Checking

- ☐ Check whether the contactor is normal [1].

6.8.8 3 year Checking

- ☐ PC board renewal.
- ☐ No fuse breaker renewal.

Note: 1. Manufacturer laboratory data for AC contactor is two million times in life. we suggest service life for one million four hundred thousand times, if work eight hours per day, recommended replacing frequency is 1.5 years, if work day and night, replacement is suggested to be done every six months.