SD-H Series

Honeycomb Dehumidifiers

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SHINI

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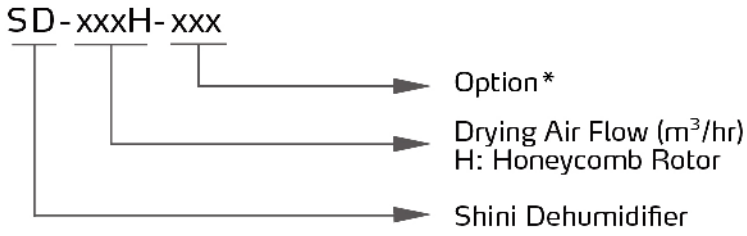
1. General Description

Please read through this operation manual before using the machine to prevent damages of the machine or personal injuries.

SD-H series honeycomb dehumidifiers are mainly used to dry hygroscopic engineering plastics. A honeycomb-rotor is used to offer effective drying, which under ideal conditions, can supply dehumidified dry air with a dew-point lower than -40℃.This series comprises 13 models of honeycomb dehumidifiers, the largest of which can provide dry air up to a quantity of 4,000 m^3/hr.

Model: SD-40H-D

1.1 Coding Principle



Notes:*

LC=Touch Screen D=Dew-point Monitor

PHC=Process Heater and Temperature Controller

CE=CE Conformity

1.2 Feature

1) Standard configuration

- Adopts P.I.D. temperature controller to accurately control regenerative temperature.
- The dehumidifying system of the SD-H series features two coolers to ensure a low return air temperature and low dew-point.
- Return air filter is mounted inside to ensure no contamination to the honeycomb.
- It is better to adopt molecular sieve structure honeycomb than silica gel adsorption one in dehumidifying.

2) Accessory option

- Centralized automatic control can be realized by optionally selected PLC touch screen controller.
- Optionally select dew-point monitor to realize dew-point real-time monitoring.
- Optionally select drying heater and its temp. controller to work with drying hopper for material dehumidifying and drying.
- Optional heat-resistant air pipe, cyclone dust separator with floor stand, oil filter are available.
- Dew-point -50℃ is optionally equipped.

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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1.3 Technical Specifications

1.3.1 Specifications

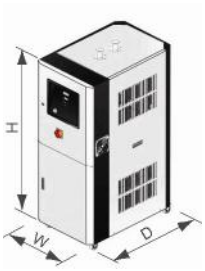
Table 1-1: Specifications

Model SD-	40H	80H	120H	200H	400H	700H	1000H	1500H	2000H	3000H	4000H
Regen. Heater (kW)	4	3	3	4	7.2	10	15	28	28	32	56
Regen. Blower (kW，50 / 60Hz)	0.2 / 0.3	0.2 / 0.3	0.2 / 0.3	0.4 / 0.5	0.75 / 0.9	1.5 / 1.8	2.4 / 3	5.5 / 6.3	5.5 / 6.3	9 / 11	5.5×2 / 6.3×2
Process Heater* (kW)	4	6	6	12	18	24	32	58	80	96	128
Process Blower (kW，50 / 60Hz)	0.12 / 0.12	0.75 / 0.9	0.75 / 0.9	1.5 / 1.8	3.75 / 4.5	5.5 / 6.3	9 / 11	9×2 / 11×2	13×2 / 15×2	13×3 / 15×3	13×4 / 15×4
Dry Air Capacity (m^3 / hr，50 / 60Hz)	40 / 45	80 / 95	120 / 130	200 / 220	400 / 450	700 / 780	1000 / 1150	1500 / 1750	2000 / 2300	3000 / 3400	4000 / 4500
Pipe Dia. (inch)	2	2	2	2.5	3	4	5	6	8	8	12
Cooling Water Quantity (L/min)	5	10	15	30	50	80	120	180	240	360	480
Dimensions											
H (mm)	1260	1360	1360	1560	1745	1935	2145	2060	2060	2240	2060
W (mm)	510	530	530	660	700	900	1300	1410	1410	2035	2750
D (mm)	860	820	820	1050	1255	1380	1550	2150	2150	2160	2250
Weight (kg)	145	170	170	265	330	480	700	1010	1300	1600	2200

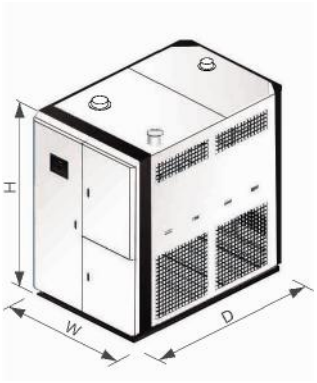
Note: 1) "*" Stands for drying heater is optional equipment for working with "European type" hoppers.
2) If equipped with drying heater and temp. controller, the model code should be followed by "PHC" (For example: SD-XXH-PHC).
3) For dew-point monitor install on the machine, add "D" at model behind.
4) Power: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

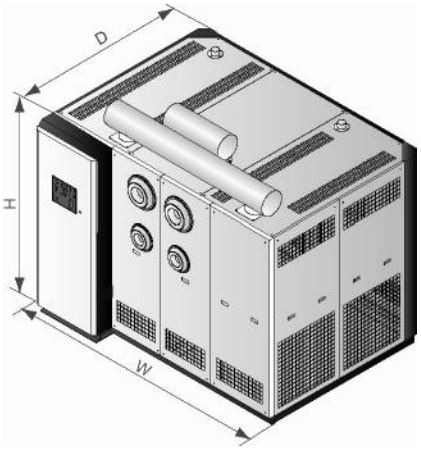
1.3.2 Durline Drawing



SD-40H~700H



SD-1000H~2000H



SD-3000H~4000H

Picture 1-1: Durline Drawing

1.3.3 Drying Capacity

Table 1-2: Specifications

Material	Drying temp. (℃)	Time (hr)	Specific Heat (J/kg.℃)	Material Specific Gravity (kg/dm^3)	Moisture Content Before Drying (%)	Moisture Content After Drying (%)	Drying capacity (kg/hr)										
							SD-40H	80H	120H	200H	400H	700H	1000H	1500H	2000H	3000H	4000H
ABS	80	2-3	0.34	0.6	0.3	0.02	16	27	35	105	210	355	425	710	1065	1500	1600
CA	75	2-3	0.5	0.5	1	0.02	12	22	30	90	180	295	355	590	885	1200	1330
CAB	75	2-3	0.5	0.5	0.8	0.02	12	22	30	90	180	295	355	590	885	1200	1330
CP	75	2-3	0.6	0.6	1	0.02	16	27	35	106	210	355	425	710	1060	1500	1600
LCP	150	4	0.6	0.6	0.04	0.02	11	20	27	80	160	265	320	530	800	1150	1200
POM	100	2	0.35	0.6	0.2	0.02	24	40	53	160	320	530	640	1060	1600	1800	2400
PMMA	80	3	0.35	0.65	0.5	0.02	17	29	38	115	230	383	460	767	1150	1530	1730
IONOMER	90	3-4	0.55	0.5	0.1	0.04	10	17	22	66	133	220	265	442	663	750	1000
PA 6/6.6/6.10	75	4-6	0.4	0.65	1	0.05	9	14	19	58	115	192	230	383	575	960	1040
PA11	75	4-5	0.58	0.65	1	0.05	10	17	23	69	138	230	275	460	690	780	1150
PA12	75	4-5	0.28	0.65	1	0.05	10	17	23	69	138	230	275	460	690	780	1150
PC	120	2-3	0.28	0.7	0.3	0.01	19	31	41	124	250	413	495	826	1238	1400	1860
PU	90	2-3	0.45	0.65	0.3	0.02	17	29	38	115	230	383	460	767	1150	1530	2080
PBT	130	3-4	0.3-0.5	0.7	0.2	0.02	13	23	31	93	186	310	372	620	930	1100	1600
PE	90	1	0.55	0.6	0.01	＜0.01	47	80	106	318	637	1062	1275	2125	3185	3600	4800
PEI	150	3-4	0.6	0.6	0.25	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PET	160	4-6	0.3-0.5	0.85	0.2	0.02	11	19	25	75	150	250	300	500	750	1150	1360
PETG	70	3-4	0.6	0.6	0.5	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PEN	170	5	0.85	0.85	0.1	0.05	13	23	30	90	180	300	360	600	900	1150	1360
PES	150	4	0.7	0.7	0.8	0.02	13	23	30	90	180	300	360	600	900	1050	1400
PMMA	80	3	0.65	0.65	0.5	0.02	17	29	28	115	230	385	460	765	1150	1530	1730
PPO	110	1-2	0.4	0.5	0.1	0.04	19	33	44	133	265	440	530	885	1330	1730	2660
PPS	150	3-4	0.6	0.6	0.1	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PI	120	2	0.27	0.6	0.4	0.02	24	40	53	160	320	530	640	1060	1600	1800	2400
PP	90	1	0.46	0.5	0.1	0.02	39	66	88	265	530	885	1060	1770	2655	3500	4000
PS(GP)	80	1	0.28	0.5	0.1	0.02	39	66	88	265	531	885	1062	1770	2655	3500	4000
PSU	120	3-4	0.31	0.65	0.3	0.02	12	22	29	85	173	290	345	575	865	1300	1485
PVC	70	1-2	0.2	0.5	0.1	0.02	19	33	44	135	265	442	530	885	1330	1730	2660
SAN(AS)	80	1-2	0.32	0.5	0.1	0.05	19	33	44	135	265	442	530	885	1330	1730	2660
TPE	110	3	0.7	0.7	0.1	0.02	18	30	40	125	250	413	495	826	1238	1650	1860

Notes: 1) Use separated drying hopper.

2) Moisture content lower than 0.005% after drying when in 20℃ ambient temperature and 65% relative humidity.

3) Specific model selection, please consult the letter easy service personnel.

1.4 Safety Regulations

Note!

Electrical installation of the machine should be done by qualified electricians.

Before connect through power supply, make sure that power switch specifications and security ratings are suitable and reliable, and also the main switch is turned to OFF. Turn off main switch and auto-start switch before service and maintenance.

1.4.1 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!

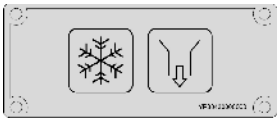
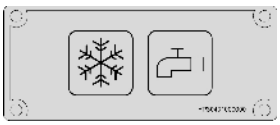
This label should be stick to the shell of heater.

Attention!

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

Picture 1-2: Safety Signs and Labels

1.4.2 Signs and Labels

	Water inlet: inlet for replenishing water and cooling water.
	Water outlet: drainage outlet.

1.4.3 Transportation and Storage of the Machine

Transportation

1) SD-H series honeycomb dehumidifiers 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) Do not 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) SD-H series honeycomb dehumidifiers 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

Indoors in a 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

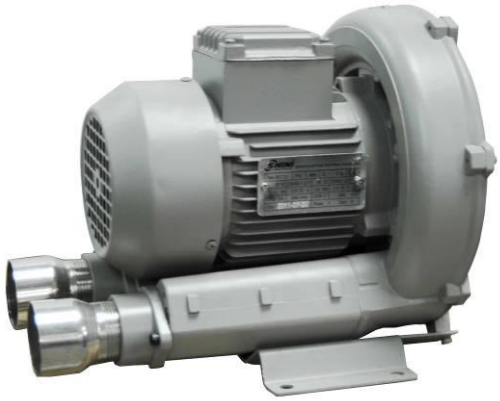
When the equipment has run out its life time and can not be used any more, unplug the power supply and dispose of it properly according to local code.

Fire hazard

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

1.4.4 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 blower motor's current loading will increase or reduce according to air pressure's change accordingly. While installation, an adequate motor overload protection switch should be installed with full loading test, to ensure operating safely under full-loading to avoid motor's damage.
3) To avoid any block materials, dust, powder, fiber particles and water drops entering the blower, and hence cause the deficiency of its performance. This machine is well designed with air filters, so please clean up the filter with any foreign particles (recommended to clean up this filter weekly).
4) Clean the blowers both internal and external parts (especially for the fan cooling path), and remove surface dust if necessary. If more dusts are accumulated, it will cause deficiency for ventilation, temperature rising, vacuum power reduced, vibration increased and so it will cause machine broke down.
5) Ball bearing, oil seal and soundproof are belonging to consumable parts and so it has a life period and requires regular replacement. Meanwhile, blade, external case, and metallic screen etc. 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 1-3: Safety Regulations for the Blowers

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

The moisture contained in the air which is waited for treating) will be absorbed by hygroscopic materials, hereafter, be de-absorbed by the regenerated hot air. And the two airstream work together in the rotation wheel. So, with the rotation of the wheel, moisture will be absorbed and de-absorbed continuously, and drain out via de-absorbing by regenerated air to form a steady low dew point airstream for using.

2.2 Relative Humidity and Dew-point

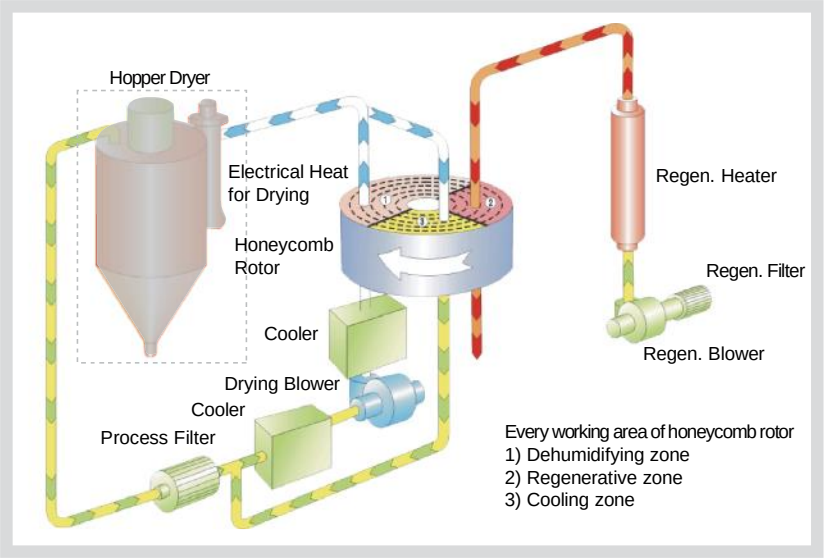
Relative humidity: Relative air humidity means real vapor content to saturated vapor at the same temperature in percentage.

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 more lower of dew point temperature (than the ambient temperature) is, the more 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 SD-H

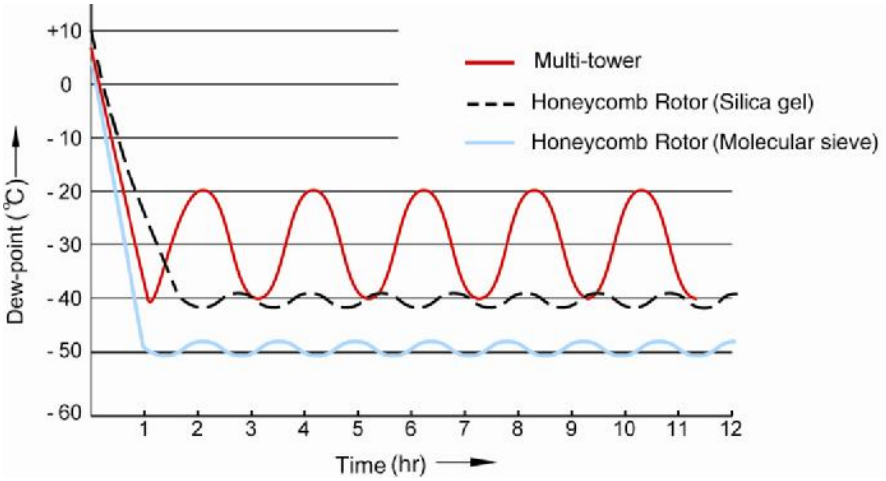
The main reason for the defects of plastic products, such as bubbles, silver lines, flaws, poor transparency, etc. is that plastic raw materials are not completely dried before moulding. Hygroscopic plastics, such as PA, PC, PBT, PET, NYLON and so on, can not be thoroughly dried through traditional methods. It is proved that heated and dehumidified air with low dew-point down to -40℃ can make moisture content of such materials over than 0.02% before moulding. SD-H honeycomb dehumidifiers, utilizing honeycomb-rotor in a full-closed system to dehumidify process air, can meet such requirements. Hot air with low dew-point produced by this unit is quickly and continuously blowed to plastic particles to completely absorb the moisture, thus to gain a good drying and dehumidifying effect.

2.4 Working Principle Illustration



Picture 2-1: Working Principle Illustration

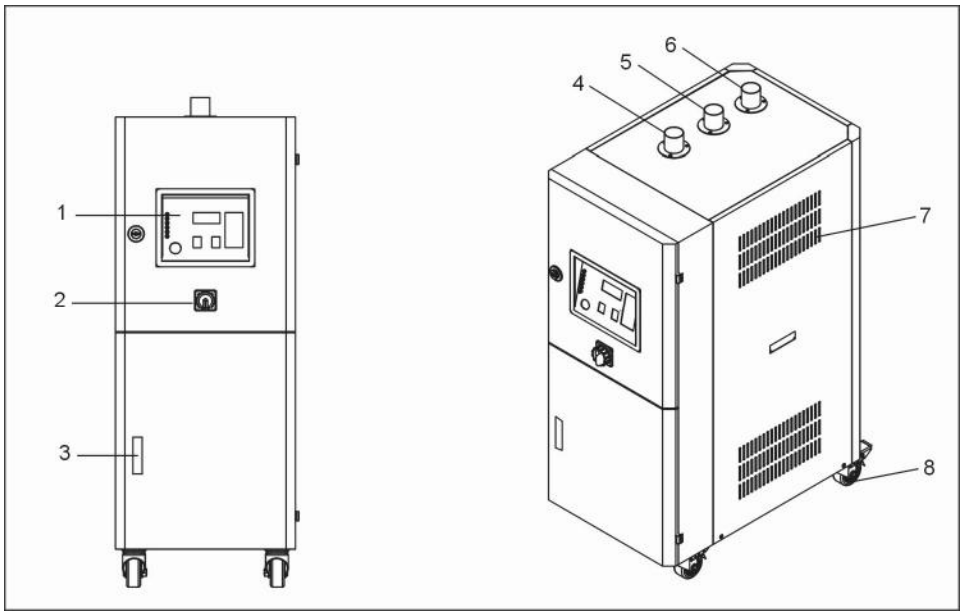
2.5 Dew-point Comparison



Picture 2-2: Dew-point Comparison

2.6 Drawing and Parts List

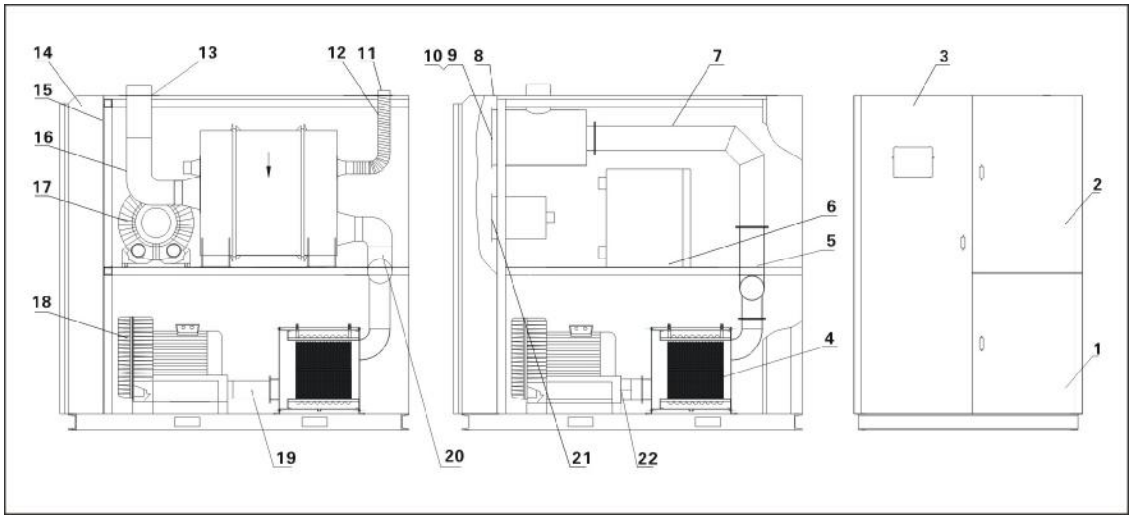
2.6.1 Structural Drawing



Parts name:

1. Control panel	2. Main switch	3. Lock	4. Air inlet
5. Air outlet	6. Wet air outlet	7. Cooling window	8. Castor

Picture 2-3: Structural Drawing (SD-40H~700H)

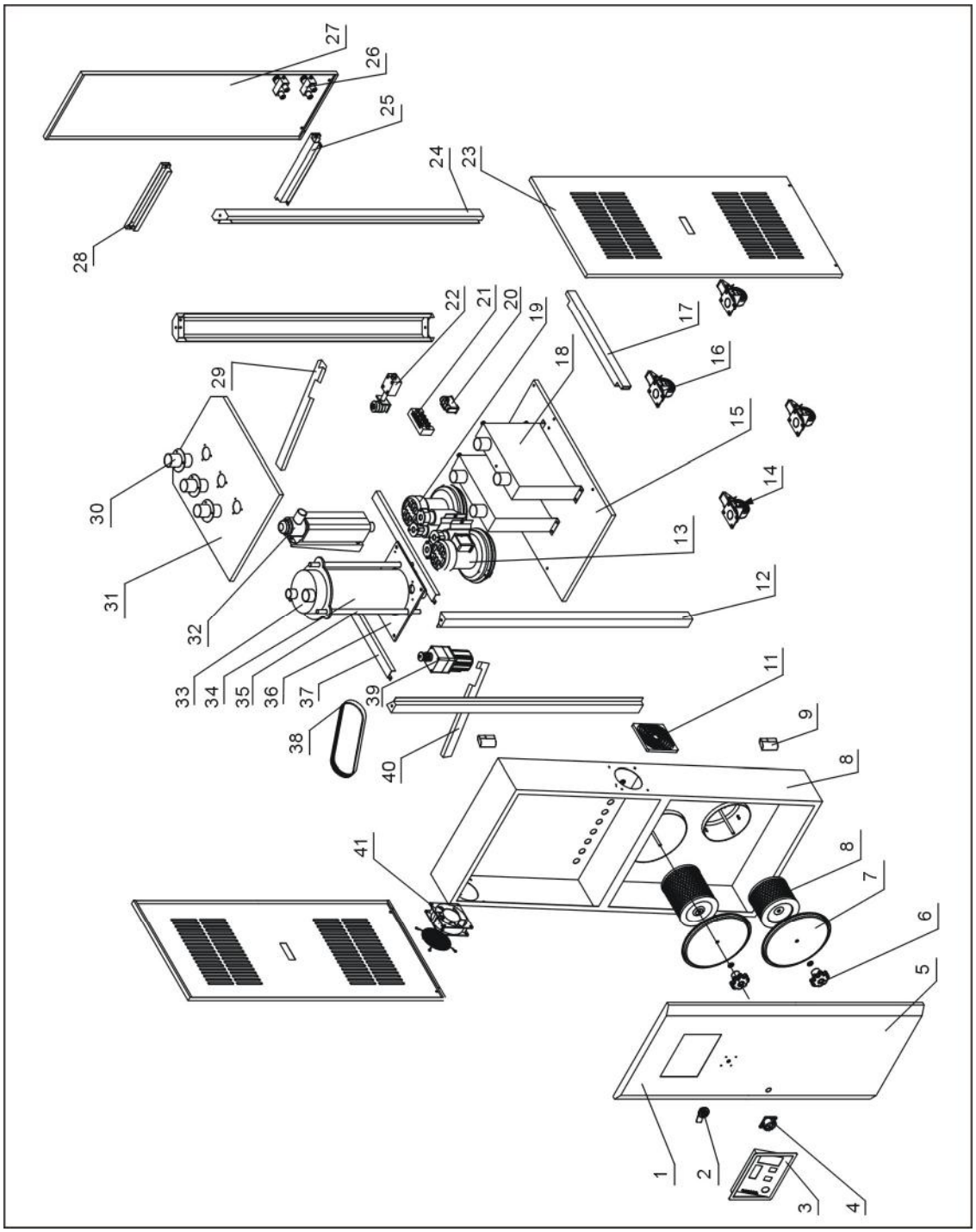


Parts name:

1. Right lower door	2. Right upper door	3. Right front door
4. Cooler	5. Air inlet pipe	6. Heating case components
7. Return air pipe	8. Filter component cabinet	9. Circulation filter barrel lid
10. Circulation filter barrel flange	11. Cooling flange	12. Heat-resistant air pipe
13. Outlet flange	14. Electrical control box	
15. Electrical component installation plate		16. Heat-resistant air pipe
17. Regenerative blower	18. Drying blower	19. Cooler connection flange 2
20. Air outlet pipe	21. Regenerative filter tank cover	22. Cooler connection flange 1

Picture 2-4: Structural Drawing (SD-1000H~4000H)

2.6.2 Assembly Drawing (SD-40H~700H)



Remarks: Please refer to material list 2.6.3 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-5: Assembly Drawing (SD-40H~700H)

2.6.3 Parts List (SD-40H~700H)

Table 2-1: Parts List (SD-40H~80H)

No.	Description	Part No.	
		SD-40H	SD-80H
1	Upper door	-	-
2	Short bolt door lock	YW00816100000	YW00816100000
3	Control panel	YR40000400500	YR40000400500
4	Main switch*	YE10200300000	YE10200300000
5	Lower door	-	-
6	Cross-head nut	YW09675100000	YW09675100000
7	Filtering bucket lid	YL21000300000	YL21000300000
8	Filter**	YR50128300000	YR50128300000
9	Control box	BH33404000050	BH33008000550
10	Hinge	YW06203100200	YW06203100200
11	Dust-proof net**	YR40120300000	YR40120300000
12	Front pole	-	-
13	Regenerated fan*	BM30012500050	BM30012500050
14	Movable truckle	YW03000300200	YW03000300200
15	Bottom plate	-	-
16	Brake truckle	YW03000300000	YW03000300000
17	Side fixed beam	-	-
18	Cooler	BW88030500020	BW88081200020
19	Dry fan*	BM40338000150	BM30031000150
20	Capacitance	YE25001500000	YE25001500000
21	Terminals strip	YE61250000000	YE61250000000
22	Belt adjustor	BH10005000040	BH10005000040
23	Side board	-	-
24	Rear pole	-	-
25	Middle beam	-	-
26	Water distributor	-	-
27	Rear board	-	-
28	Rear beam	-	-
29	Rear middle beam	-	-
30	2 inch flange	-	-
31	Cover board	-	-
32	Regenerated heater*	BH70150400050	BH70800300050
33	Honey comb upper lid	BA40508000110	BA40508000110
34	Honeycomb-rotor	YW71182000000	YW71183000000
35	Double end studs	BH10533000040	BH10543000040

No.	Description	Part No.	
		SD-40H	SD-80H
36	Honey comb lower lid	BA40508000010	BA40508000010
37	Side middle beam	-	-
38	Synchronized belt**	YR00202500000	YR00202500000
39	Motor	YM50102600000	YM50102600000
40	Front middle beam	-	-
41	Exhausting fan**	YM60121200400	YM60121200400

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

Table 2-2: Parts List (SD-120H~200H)

No.	Description	Part No.	
		SD-120H	SD-200H
1	Upper door	-	-
2	Short bolt door lock	YW00816100000	YW00816100000
3	Control panel	YR40000400500	YR40000400500
4	Main switch*	YE10200300000	YE10210300000
5	Lower door	-	-
6	Cross-head nut	YW09675100000	YW09675100000
7	Filtering bucket lid	YL21000300000	YL21000300000
8	Filter**	YR50708000100	YR50203000000
9	Control box	-	-
10	Hinge	YW06203100200	YW06203100200
11	Dust-proof net**	YR40120300000	YR40120300000
12	Front pole	-	-
13	Regenerated fan*	BM30012500050	BM30020500050
14	Movable truckle	YW03000300200	YW03000300200
15	Bottom plate	-	-
16	Brake truckle	YW03000300000	YW03000300000
17	Side fixed beam	-	-
18	Cooler	BW88081200020	BW88152000020
19	Dry fan*	BM30031000150	BM30042000050
20	Capacitance	YE25001500000	YE25001500000
21	Terminals strip	YE61250000000	YE61250000000
22	Belt adjustor	BH10005000040	BH10005000040
23	Side board	-	-
24	Rear pole	-	-
25	Middle beam	-	-
26	Water distributor	-	-
27	Rear board	-	-
28	Rear beam	-	-
29	Rear middle beam	-	-
30	2 inch flange	-	-
31	Cover board	-	-
32	Regenerated heater*	BH70800300050	BH70150400050
33	Honey comb upper lid	BA40508000110	BA40152000110
34	Honeycomb-rotor	YW71184000000	YW71250400000
35	Double end studs	BH10543000040	BH11100000040
36	Honey comb lower lid	BA40508000010	BA40152000010
37	Side middle beam	-	-

No.	Description	Part No.	
		SD-120H	SD-200H
38	Synchronized belt**	YR00202500000	YR00203400000
39	Motor	YM50102600000	YM50102600000
40	Front middle beam	-	-
41	Exhausting fan**	YM60121200400	YM60121200400

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

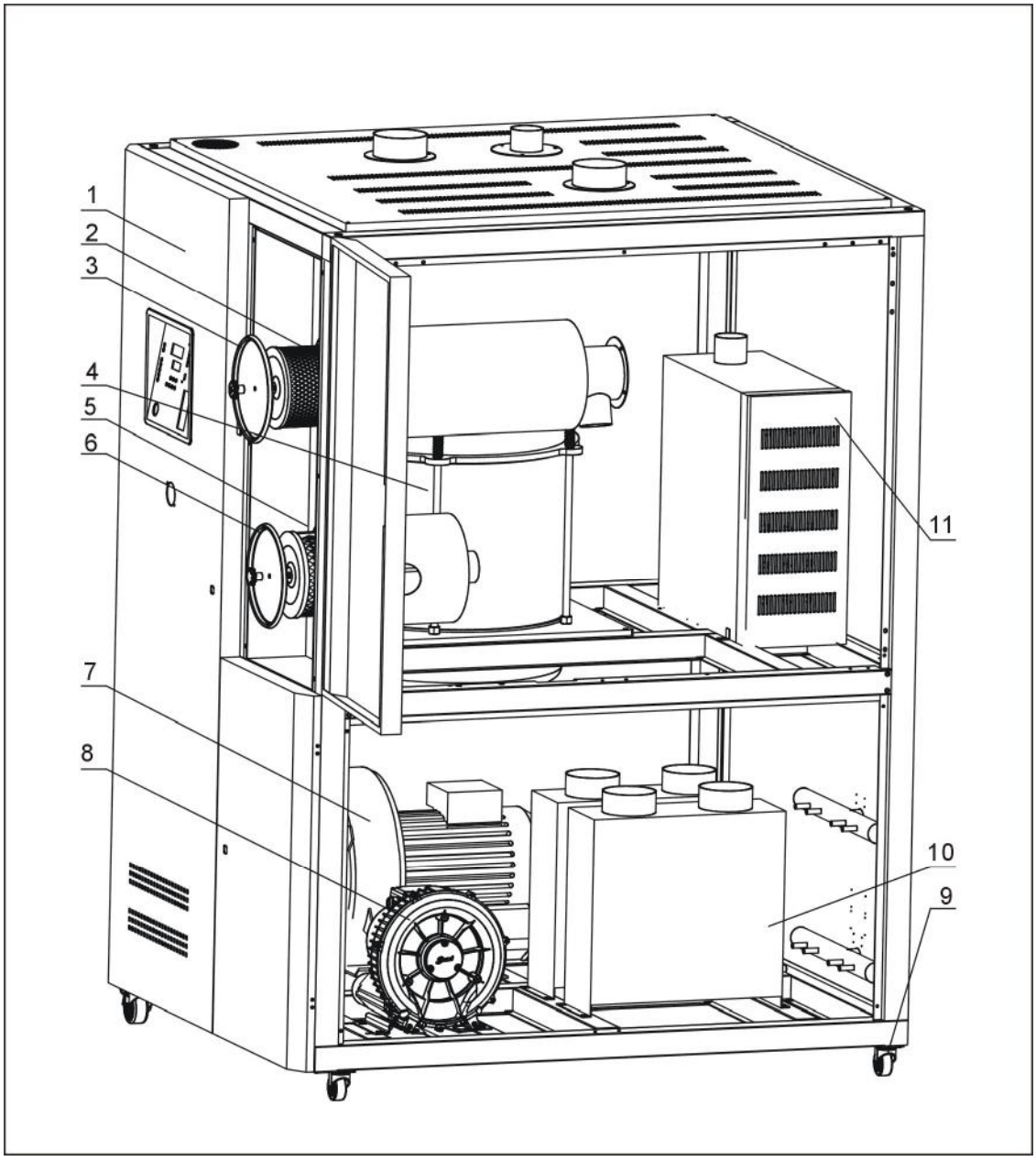
Table 2-3: Parts List (SD-400H~700H)

No.	Description	Part No.	
		SD-400H	SD-700H
1	Upper door	-	-
2	Short bolt door lock	YW00816100000	YW00816100000
3	Control panel	YR40000400500	YR40000400500
4	Main switch*	YE10220300000	YE40635000000
5	Lower door	-	-
6	Cross-head nut	YW09675100000	YW09675100000
7	Filtering bucket lid	YL21000300000	YL21000300000
8	Filter**	YR50241400100	YR5024140000
9	Control box	BH33040000250	-
10	Hinge	YW06203100200	YW06203100200
11	Dust-proof net**	YR40120300000	YR40120300000
12	Front pole	-	-
13	Regenerated fan*	BM30031000150	BM30042000050
14	Movable truckle	YW03000400200	YW03000400200
15	Bottom plate	-	-
16	Brake truckle	YW03000400000	YW03000400000
17	Side fixed beam	-	-
18	Cooler	BW88304000020	YR30010400000
19	Dry fan*	BM30055000050	BM30075000050
20	Capacitance	YE25001500000	YE25001500000
21	Terminals strip	YE61250000000	YE61250000000
22	Belt adjustor	BH10040000040	BH10040000040
23	Side board	-	-
24	Rear pole	-	-
25	Middle beam	-	-
26	Water distributor	-	-
27	Rear board	-	-
28	Rear beam	-	-
29	Rear middle beam	-	-
30	2 inch flange	-	-
31	Cover board	-	-
32	Regenerated heater*	BH70407200050	BH70501000050
33	Honey comb upper lid	BA40304000110	BA40507000110
34	Honeycomb-rotor	YW71354000000	YW71444000000
35	Double end studs	BH11100000040	BH11100000040
36	Honey comb lower lid	BA40304000010	BA40507000010

No.	Description	Part No.	
		SD-400H	SD-700H
37	Side middle beam	-	-
38	Synchronized belt**	YR00304700000	YR00305800000
39	Motor	YM50512600000	YM50512600000
40	Front middle beam	-	-
41	Exhausting fan**	YM60121200400	YM60121200400

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.6.4 Assembly Drawing (SD-1000H)



Remarks: Please refer to material list 2.6.5 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-6: Assembly Drawing (SD-1000H)

2.6.5 Parts List (SD-1000H)

Table 2-4: Parts List (SD-1000H)

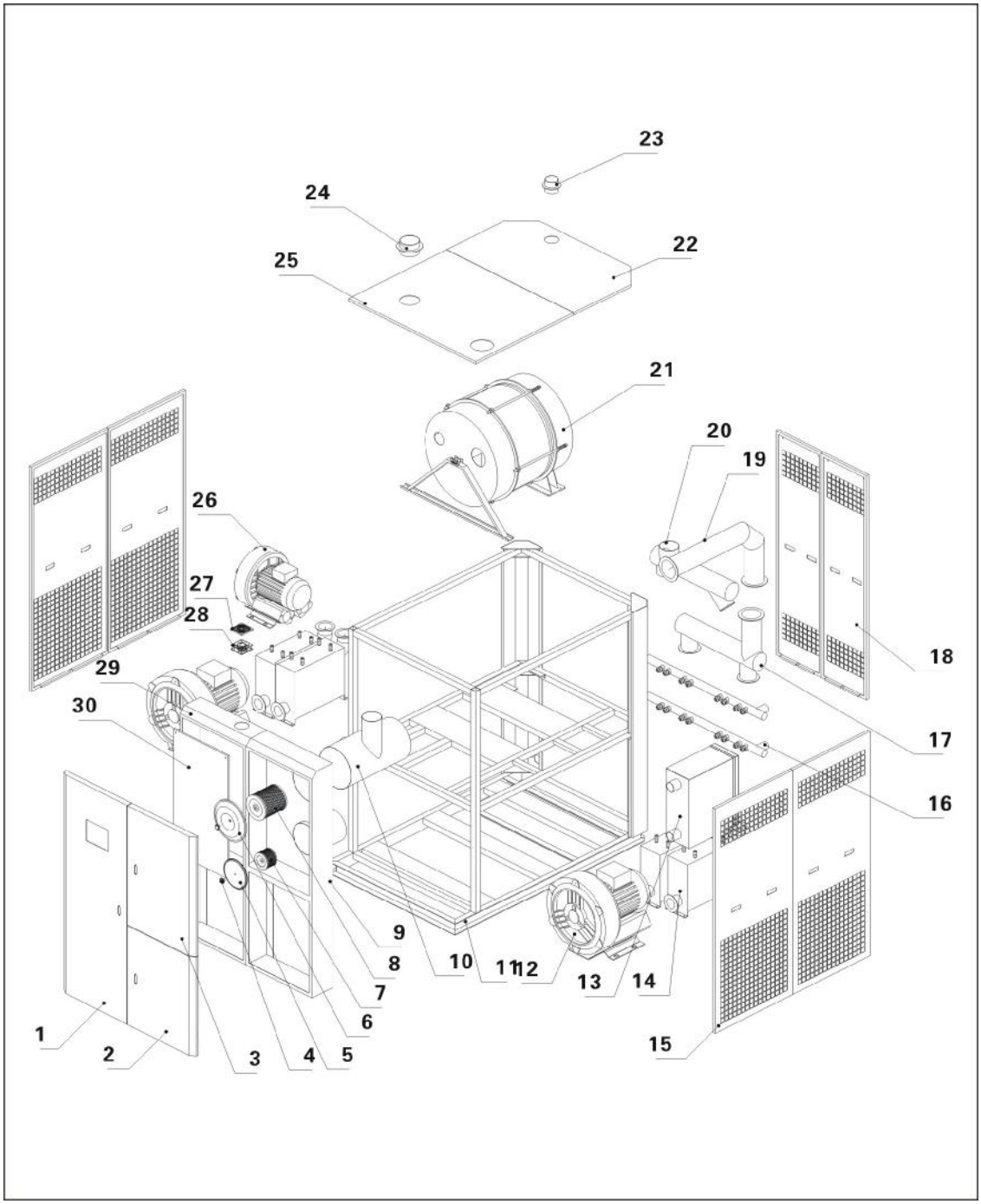
序号	名称	物料编号
1	Rack metal plate	-
2	Filter **	YR50241400100
3	Filter fastener	YR10026000000
4	Honeycomb assembly	-
5	Filter **	YR50203000000
6	Filter fastener	YR10026000100
7	Drying blower *	YM30150300300
8	Regeneration blower *	BM30053500050
9	Mobile castor	YW03000400200
	Castor with break	YW03000400000
10	Cooler	BL03100049220
	Cooler (with temperature gauge)	BW88100000020
11	Heating case	-

* means possible broken parts.

** means easy broken part. and spare backup is suggested.

Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.6.6 Assembly Drawing (SD-1500H)



Remarks: Please refer to material list 2.6.7 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-7: Assembly Drawing (SD-1500H)

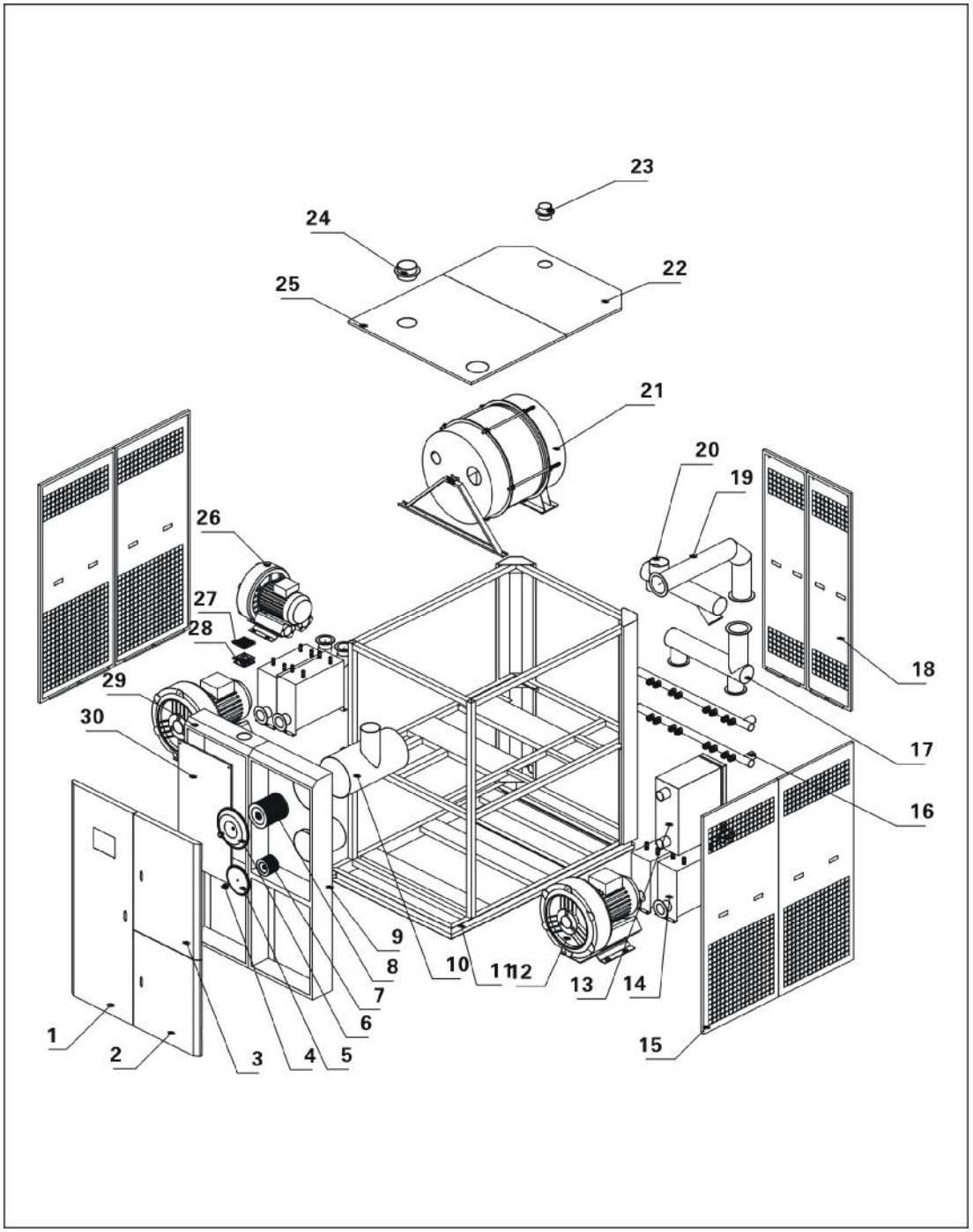
2.6.7 Parts List (SD-1500H)

Table 2-5: Parts List (SD-1500H)

No.	Description	Part No.	No.	Description	Part No.
1	Front plate left	-	16	Water flow regulator	-
2	Right lower door	-	17	Return air pipe	-
3	Right upper door	-	18	Rear plate	-
4	Star nut	YW09675100000	19	Return air pipe	-
5	Vacuum hopper cover 12l	YL21001200100	20	Air outlet pipe	-
6	Circulation filter barrel lid	-	21	Honeycomb components	YW71773000200
7	Filter **	YR50203000000	22	Rear cover plate	-
8	Filter **	YR50275700000	23	Air inlet flange	-
9	Filter component cabinet	-	24	Air outlet flange	-
10	Circulation filter barrel	-	25	Front cover board	-
11	Outer rest	-	26	High-pressure blower 7.5HP*	YM30072900000
12	High-pressure blower 15HP *	YM30150300300	27	Dust screen **	YR40120300000
13	Heating case components*	-	28	Exhaust fan **	YM60121200400
14	Cooler	-	29	Electrical control box	-
15	Side plate	-	30	Board of electric components cabinet	-

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.6.8 Assembly Drawing (SD-3000H)



Remarks: Please refer to material list 2.6.9 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-8: Assembly Drawing (SD-3000H)

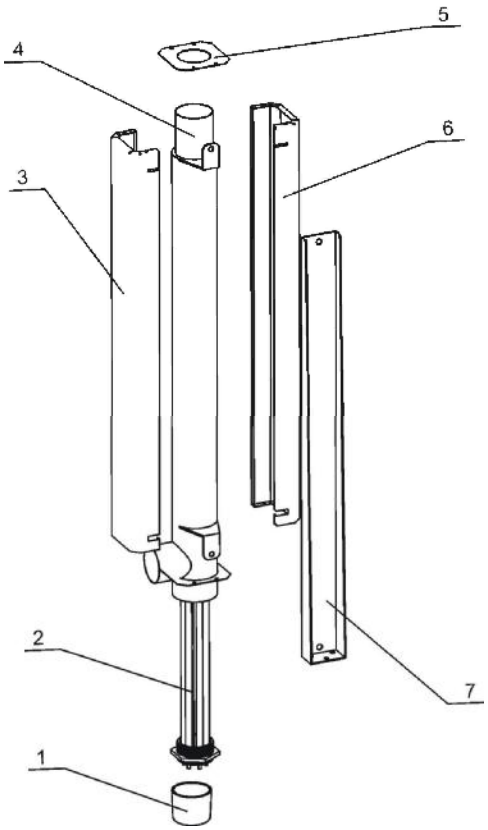
2.6.9 Parts List (SD-3000H)

Table 2-6: Parts List (SD-3000H)

No.	Description	Part No.	No.	Description	Part No.
1	Front plate left	-	16	Water flow regulator	-
2	Right lower door	-	17	Return air pipe	-
3	Right upper door	-	18	Rear plate	-
4	Star nut	YW09675100000	19	Return air pipe	-
5	Vacuum hopper cover 12l	YL21001200100	20	Air outlet pipe	-
6	Circulation filter barrel lid	-	21	Honeycomb components	YW71965400100
7	Filter Adc3 **	YR50241400100	22	-	-
8	Filter **	YR50277500000	23	Air inlet flange	-
9	Installation box of filter	-	24	Air outlet flange	-
10	Circulation filter barrel	-	25	-	-
11	Outer rest	-	26	High-pressure blower 15HP*	YM30150300300
12	High-pressure blower 20HP *	YM30200300300	27	Dust screen **	YR40120300000
13	Heating case components*	-	28	Exhaust fan **	YM60121200400
14	Cooler	-	29	Electrical control box	-
15	Side plate	-	30	Board of electric components cabinet	-

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.6.10 Pipe Heaters

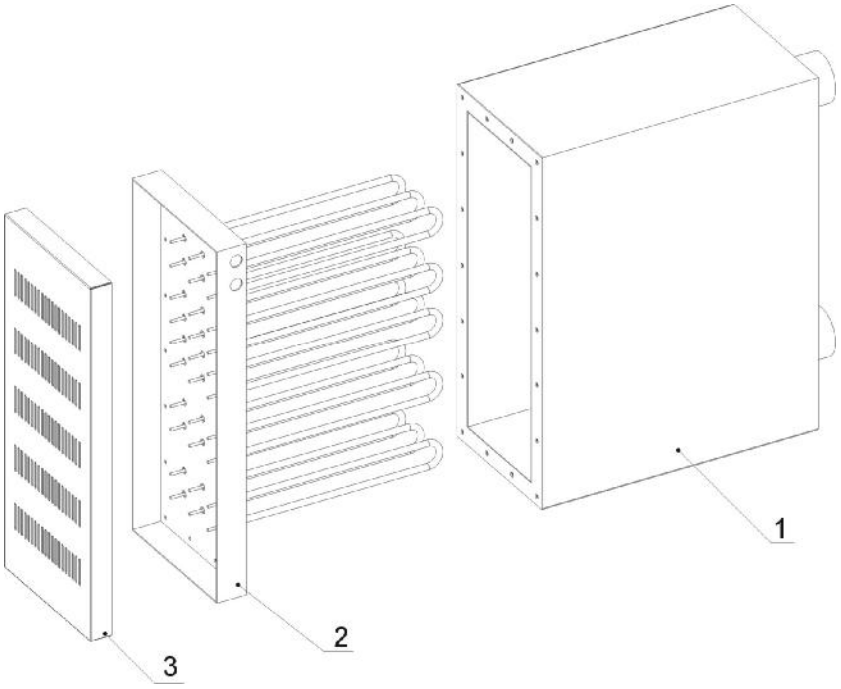


Parts name:

1. Electric wood cover	2. Pipe heater	3. Heater wrapper sheet 1
4. Heating tank	5. Heater cover plate	6. Heater wrapper sheet 2
7. Heater fixed seat		

Picture 2-9: Pipe Heaters

2.6.11 Heating Case



Picture 2-10: Heating Case

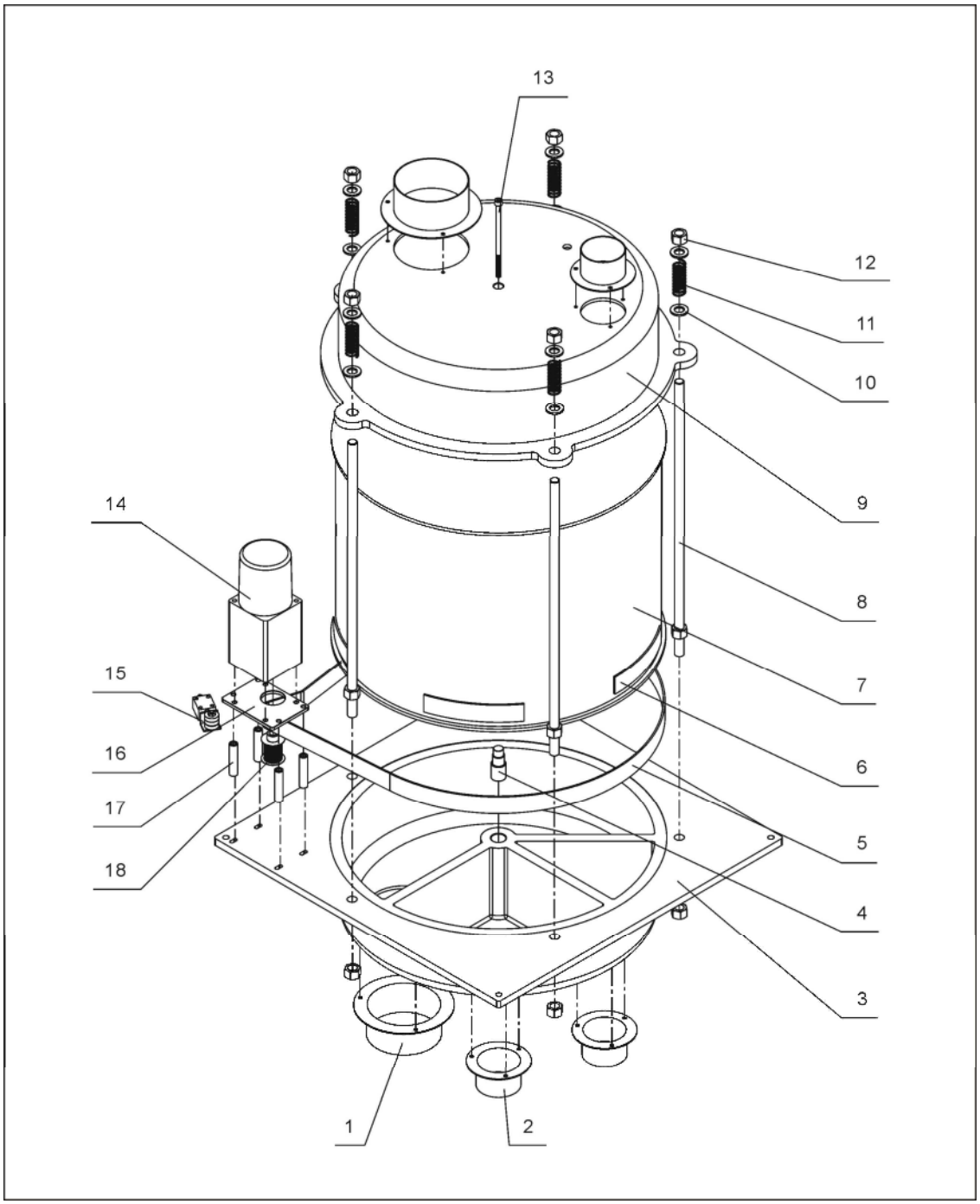
Table 2-7: Optional heating case spare parts list (SD-200H~700H-PHC)

No.	Description	Part No.		
		SD-200H	SD-400H	SD-700H
1	Heating case	-	-	-
2	Pipe heater	BH70124000550	BH70184000550	BH70244000850
3	Heating case cover	-	-	-

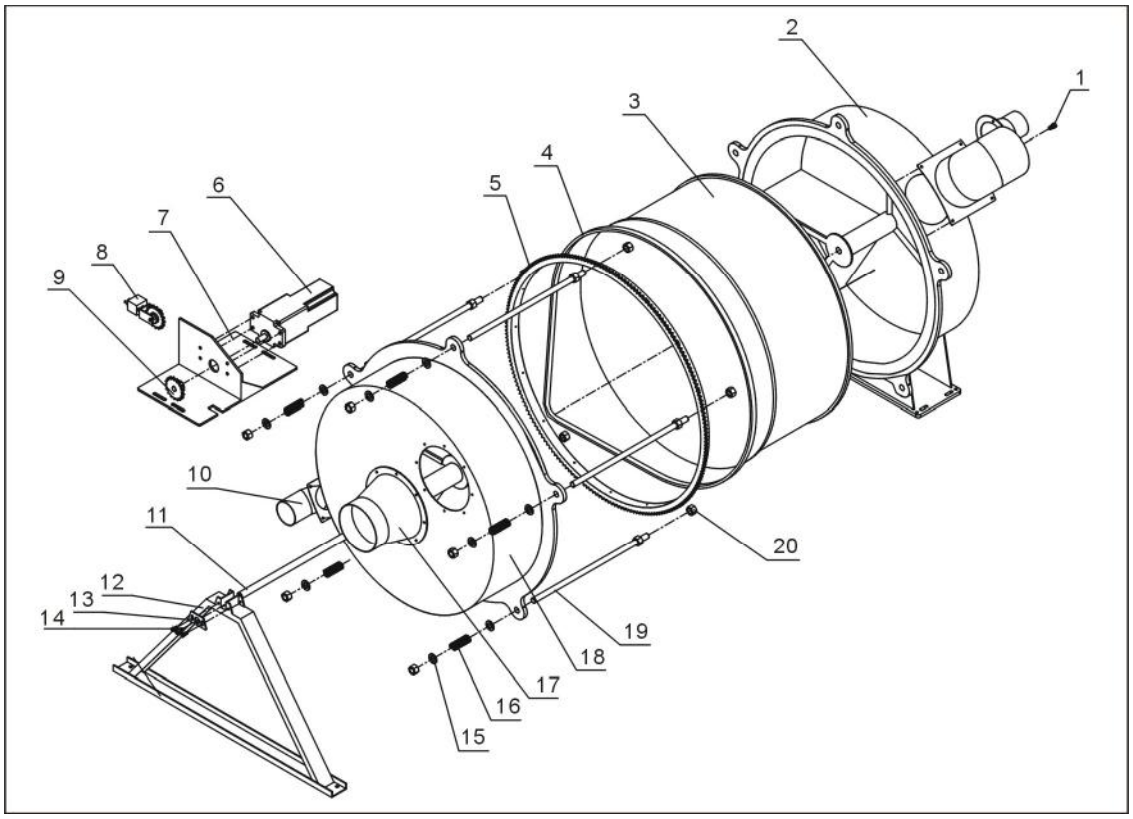
Table 2-8: Heating case spare parts list (SD-1000H~3000H)

No.	Description	Part No.			
		SD-1000H	SD-1500H	SD-2000H	SD-3000H
1	Heating case	-	-	-	-
2	Pipe heater	BH70154000550	BH70284000550	BH70284000650	BH70324000550
3	Heating case cover	-	-	-	-

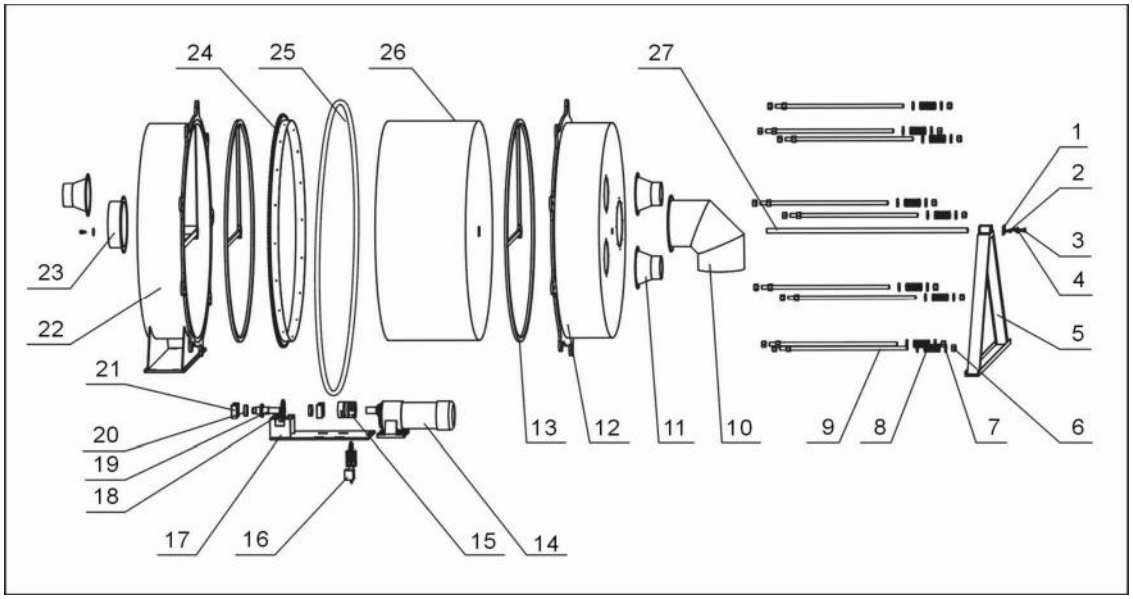
2.6.12 Honeycomb



Picture 2-11: Honeycomb Parts Drawing (SD-700H/1000H/2000H)



Picture 2-12: Honeycomb Parts Drawing(SD-1500H)



Picture 2-13: Honeycomb Parts Drawing (SD-3000H)

2.6.13 Parts List of Honeycomb (SD-700H/1000H/2000H/3000H)

Table 2-9: Parts List (SD-700H)

No.	Description	Part No.	No.	Description	Part No.
1	4” Honeycom flange	-	10	Flat washer 16	-
2	2.5” honeycomb flange	-	11	Spring	YW01201800000
3	Lower cover	-	12	Hex nut M16	-
4	Honeycomb shaft	-	13	Hexgon socket head cap screw M8	-
5	Sychronous belt	YR00305800000	14	Gear motor	YM50512600000
6	Synchronous pulley	YR00003000000	15	Belt adjustor	-
7	Honeycomb	YW71440400000	16	Mounting plate of gear motor	-
8	Double-end screw	BH10554500040	17	Locating tube	-
9	Upper cover	-	18	Synchronous pulley	-

* means possible broken parts. ** means easy broken part. and spare backup is suggested. Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

Table 2-10: Parts List (SD-1000H/2000H)

No.	Description	Part No.	No.	Description	Part No.
1	5” Honeycom flange	-	10	Flat washer 16	-
2	3” honeycomb flange	-	11	Spring	YW01201800000
3	Lower cover	-	12	Hex nut M16	-
4	Honeycomb shaft	-	13	Hexgon socket head cap screw M8	-
5	Sychronous belt	YR00357300000	14	Gear motor	YM10940000200
6	Synchronous pulley	YR00003800000	15	Belt adjustor	-
7	Honeycomb	YW71554000100	16	Mounting plate of gear motor	-
8	Double-end screw	BH10554500040	17	Locating tube	-
9	Upper cover	-	18	Synchronous pulley	-

* means possible broken parts. ** means easy broken part. and spare backup is suggested. Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

Table 2-11: Parts List (SD-1500H)

No.	Description	Part No.	No.	Description	Part No.
1	Hexgon socket head cap screw M8×20	YW61082000000	11	Honeycomb shaft	-
2	Fixed honeycomb	-	12	Honeycomb support	-
3	Honeycomb	YW71773000100	13	Lag	-
4	Roller chain	YW09085100000	14	Hexgon socket head cap screw M6×10	YW61061000100
5	Driven sprocket	-	15	Flat washer 16	YW66163000000
6	Gear motor	YM10916000000	16	Spring	YW01318365000
7	Motor base	-	17	6” honeycomb flange	
8	Tensioner	-	18	Movable honeycomb cover	-
9	Drive sprocket	-	19	Double-end screw	BH10543000040
10	3” honeycomb flange	-	20	Hex nut M16	YW64001600000

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

Table 2-12: Parts List (SD-3000H)

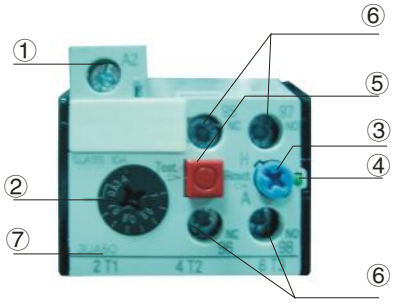
No.	Description	Part No.	No.	Description	Part No.
1	Cleading	-	15	Shaft coupler	YW90263700000
2	Hexgon socket head cap screw M6×10	YW61061000100	16	Tensioner	-
3	Hexgon socket head cap screw M8×35	YW61083500000	17	Motor cabinet	-
4	Flat gasket 8×19	YW66081900000	18	Drive sprocket	-
5	Honeycomb frame	-	19	Bearing	-
6	Nut M16	YW61083500000	20	Bearing	YW11600500000
7	Flat gasket 16×30	YW66163000000	21	Bearing block	-
8	Spring	YW01140400000	22	Set honeycomb cover	-
9	Double-headed screw bolt	-	23	Temperature reducing flange	-
10	Air inlet bend	-	24	Driven sprocket	-
11	Reproduce flange	-	25	Roller chain	YW09121600000
12	Flexible honeycomb cover	-	26	Honeycomb	YW71965400100
13	Seal washer	-	27	Honeycomb shaft	-
14	Gearmotor	YM10281500000			

* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.7 Main Electrical Components Description

Overload Relay

At delivery, the overload relay is set for manual reset. (The reset button pointing to H). Manually reset the relay at the tripping of the switch. When motor overload occurs, stop the machine, then check and solve the problem. After that open the door of control box, press down the reset button of overload relay (if you can not press down the reset button, wait for one minute.)



Picture 2-14: Overload Relay

1) Terminal for contact coil A2.
2) Setting current adjusting scale.
3) Reset (blue).

H: manual reset

A: automatic reset

4) Switch position indication (green).
   Tripping of a manual-resetting is indicated by a pin projecting from the front plate.
5) Test button (red).
6) Auxiliary contact terminals shown in 95.96.97.98. NC and NO contacts are shown in position 95.96. and 97.98. respectively.
7) Main circuit connection No. must be correspond with terminal Number of contactor.

2.8 Operation Procedures

Before connecting electrical power source, the main power switch must be turned to OFF position. After the machine connected with power source, turn the main power switch to ON position. According to your applications, operate drying and loading system respectively.

2.8.1 Operation Regulations

Picture 2-15: Operation Regulations

1) Do not use keen-edged object instead of hands to operate the touch screen, and prevent violent collision of it.
2) In a dry environment, static electricity may accumulated on the touch screen. Use a metal wire to discharge it before operating.
3) Use alcohol or eleoptene to wipe off the pollutants on the screen. Other solvent may cause the color of the screen to fade out.
4) Do not tear down any parts of the touch screen or take away any PCBs attached to it.

2.8.2 Description of Touch Screen

Picture 2-16: Description of Touch Screen

A: Display
B: Touch panel
C: LED status indicator

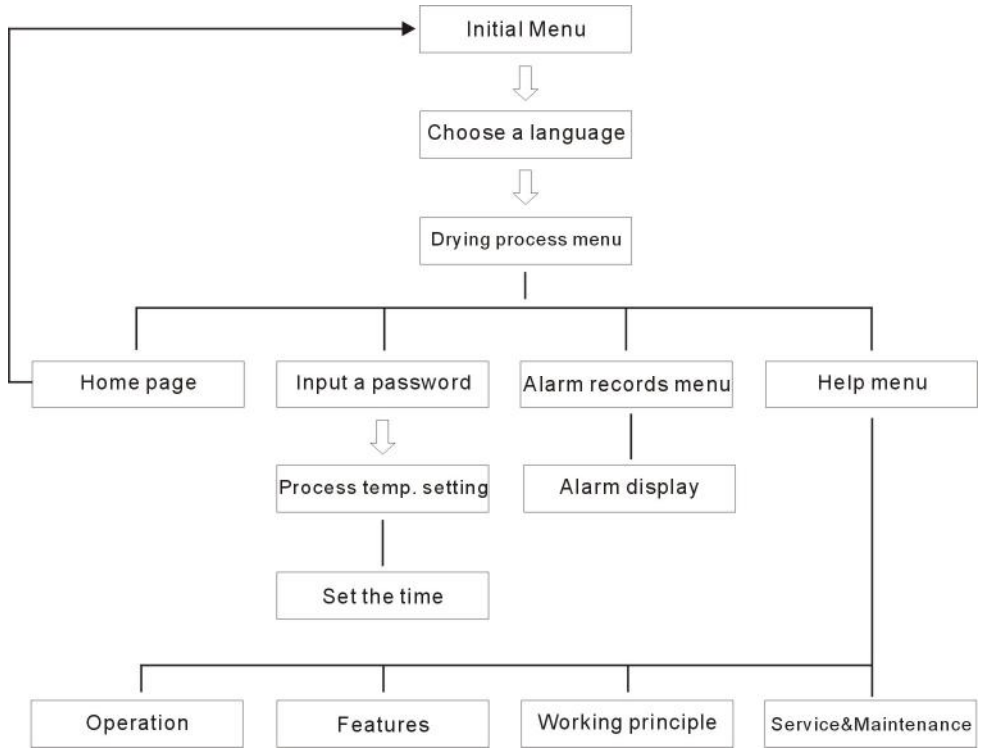
2.8.3 Touch Panel Appear Error

Table 2-13: Touch Panel Information

LED indicator light	XBT GT State
Green (light)	Work welled
Orange (light)	Backlight lamp burning
Orange (shine)	During software startup
Red (light)	Power status
No shine	Power break off

3. System Operation Process

The system consists of five main menus. They are: drying process, temperature parameters, time setting, alarm records and help menu. Please refer to the following flow Table for operation.



Picture 2-17: Screen Operation Flow Table

4. Explanation of the Menus

1) Initial menu

When the system is connected with power source, the initial default screen will display as shown below. Touch the button of "English" or "Chinese" to select either English or Chinese languages to login "Drying Process" screen.

Picture 2-18: System Default System

2) Drying process menu.

Drying process menu is as shown below:

Picture 2-19: Drying Process Screen

A. Operation of the menu

Start the system:

Touch the start switch to make it show ON, then the system starts.

Stop the system:

Touch the start switch again to make it show OFF, then the system stops running.

(Attention: In order to prolong the life of honeycomb-rotor, it's necessary to delay the stop time of the rotor for cooling. Set the delayed time at about 2~3 minutes. Please see more details of setting on the time parameter setting screen.)

Setting of regeneration temp.; Touch the preset value of regeneration temp. A keypad will appear. Use the keypad to input temperature values.

Note!

Regeneration temp. value is set between a certain limits. The systen has set its regeneration temp in the ranges of 130--180℃ and 00--130℃! The Factuary Default is130℃ or 180 ℃. Do not reset except in special circumstances.

B. Four functional keys

Home page:

Press this button to enter into the initial screen.

Parameter setting:

Press this button to enter into "Parameters Setting" screen. (Input correct password to log-in.)

Alarm Display:

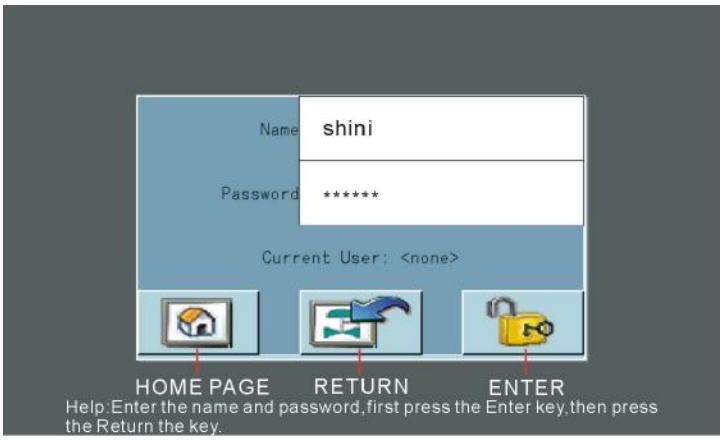
When system appears warning message, press this button to check the details and related help message.

Help:

Press this button to enter into “Help Menu” screen.

3) Temperature parameters menu

Touch parameter setting button at the right side of Conveying Proccess Screen. Then, the system will pop out a password window for inputing user name: Shini, and passwords 3588. Press "ENTER" button to confirm. By then, the numeric keypad will turn off and return to the password window. After that, press “Sure” and "Return" key by turn to go back to the drying process or conveying process screen. By pressing the "parameter setting" button again, you can log in and change parameters.



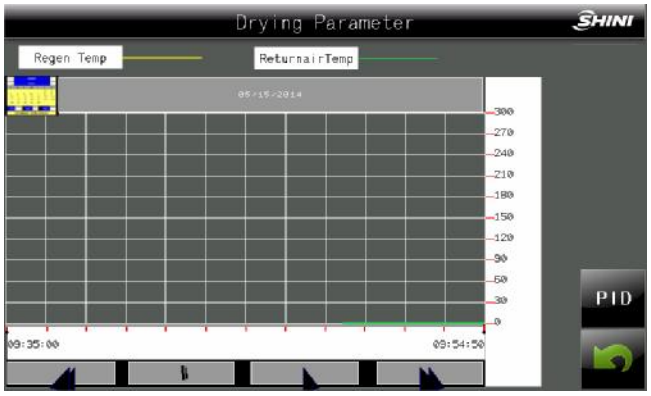
Picture 2-20: Temperature Parameters Setting 1

Note!

Please keep this password securely and safely. If the password is

missing, then the operator won't be able to log into the system parameter setup screen. It is better to preserve this password either by system administrator or senior operator.

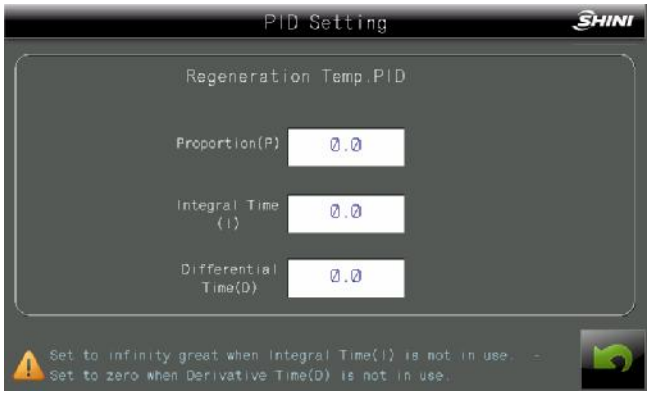
After input correct password, the screen will show the following "temperature parameter setting" screen. Shown as below:



Picture 2-21: Temperature Parameters Setting 2

Regeneration Temperature Parameter Setting:

By touching "PID" button, the system will pop up the temperature control PID screen in which three parameters can be set, such as: Proportion, Integral Time and Differential Time.



Picture 2-22: Process temp. Parameters Setting 1

If to change any parameters, it’s only need to touch the corresponding "input area" and then a numeric keypad will pop up. Input a new parameter and press

"ENTER" to confirm the new parameter.

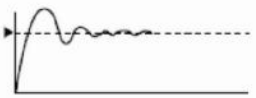
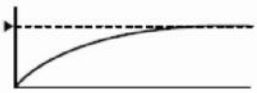
Picture 2-23: Process temp. Parameters Setting 2

The max. and min. display area of the numeric keypad shows the present max. and min. setting value. If the setting value exceeds the limits, it would be invalid to press "ENTER".

P.I.D. control: When temperature control is inaccurate, users can manually adjust temp. control parameters to achieve the best temperature control effect.

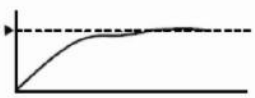
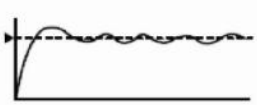
Adjustment of Proportion (P)

Table 2-14: Adjustment of Proportion (P)

P increases		After the oscillation, the curve will be settled and back to setup point.
P decrease		The curve increases gradually in order to maintain a long reliable period against over oscillation.

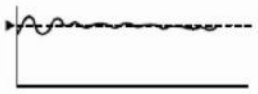
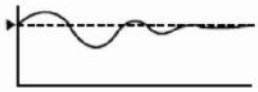
Adjustment of Integral Time (I)

Table 2-15: Adjustment of Integral Time (I)

I increases		For default value requires a longer time for steady status. But, it still has over pulse/under pulse and oscillation occurs.
I decrease		After the occurrence of over pulse/under pulse and oscillation, but the curve tends to rise rapidly.

Adjustment of Differential Time (D)

Table 2-16: Adjustment of Differential Time (D)

D increases		Over pulse/under pulse and steady time become less, but the curve has small oscillation.
D decrease		Over pulse/under pulse increases, the duration for setup value requires certain time.

4) Time Setting

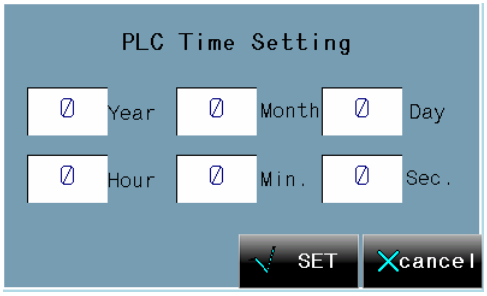
A. Touch the "Time Setting" button to enter into Time Setting screen as shown below:

Picture 2-24: Time Setting

Note!

After setting the auto-start time, the button OFF will be on. By then, the machine will run according to the set time.

B. If there are some deviations with the system date and time, touch the “Real-time clock setting” to enter into the time setting interface to modify the system time. The screen is as below:

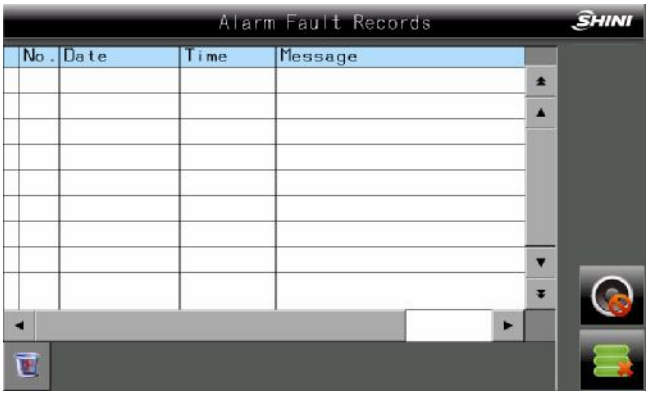


Picture 2-25: Time Setting 2

After touching any parameter setting menu, a numeric keypad will appear. Input each parameter and then press “SET”. Then, the new setting comes into effect. The setting can be cancelled by pressing “cancel”.

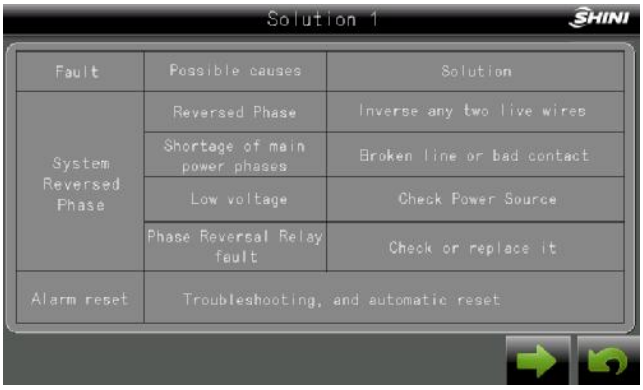
5) Alarm Fault Records

Touch "Alarm Display" button at the right side of "Drying Process" screen or "Conveying Process" screen to enter into Alarm Fault Records screen. The screen is shown as below:



Picture 2-26: Alarm Fault Records

Touch the alarm fault records to enter into the help menu. The screen is as below:



Picture 2-27: Help Menu

1. When alarm fault records cover more than displaying space, touch "Up" or "Down" keys to read more records.
2. According to the alarm information, the operator could get the troubleshooting information from the instruction book.
3. Press "EXIT" button to exit from this screen.
4. System Alarm Information List.

Table 2-17: System Alarm Information List

Alarm message	Results	Possible reasons
System reversed phase	The system can not be started, and flickering of red alarm light.	Voltage of power supply is too low, or phase shortage, or mistakes of phase sequence
Process blower overload	Dryer and dehumidifier stop working, and flickering of red alarm light.	Voltage of power supply is too low, or blower problems, or mistakes of setting current.
Regenerating blower overload	Dryer and dehumidifier stop working, and flickering of red alarm light.	Voltage of power supply is too low, or blower problems, or mistakes of setting current.
Process over-heat	Dryer and dehumidifier stop working, and flickering of red alarm light.	Temp. control parameters mistakes, or contactor failures, or regenerating thermocouple problems.
Regenerating over-heat	Dryer and dehumidifier stop working, and flickering of red alarm light.	Temp. control parameters mistakes, or contactor failures, or regenerating thermocouple problems.
Return air over-heat	Dryer and dehumidifier stop working, and flickering of red alarm light.	Cooling water circulation problems
Drying thermocouple break	Dryer and dehumidifier stop working, and flickering of red alarm light.	Thermocouple is not connected or poor connection or wrongly connected.

Alarm message	Results	Possible reasons
Regeneration thermocouple break	Dryer and dehumidifier stop working, and flickering of red alarm light.	Thermocouple is not connected or poor connection or wrongly connected.
Return air thermocouple break	Dryer and dehumidifier stop working, and flickering of red alarm light.	Thermocouple is not connected or poor connection or wrongly connected.
Rotor has no action.	Dryer and dehumidifier stop working, and flickering of red alarm light.	Motor is halted or burned out. Belt broken or damage of speed controller or parameter mistakes or rotor.
PLC is not in running mode.	The system can not work.	PLC was not set to RUN mode

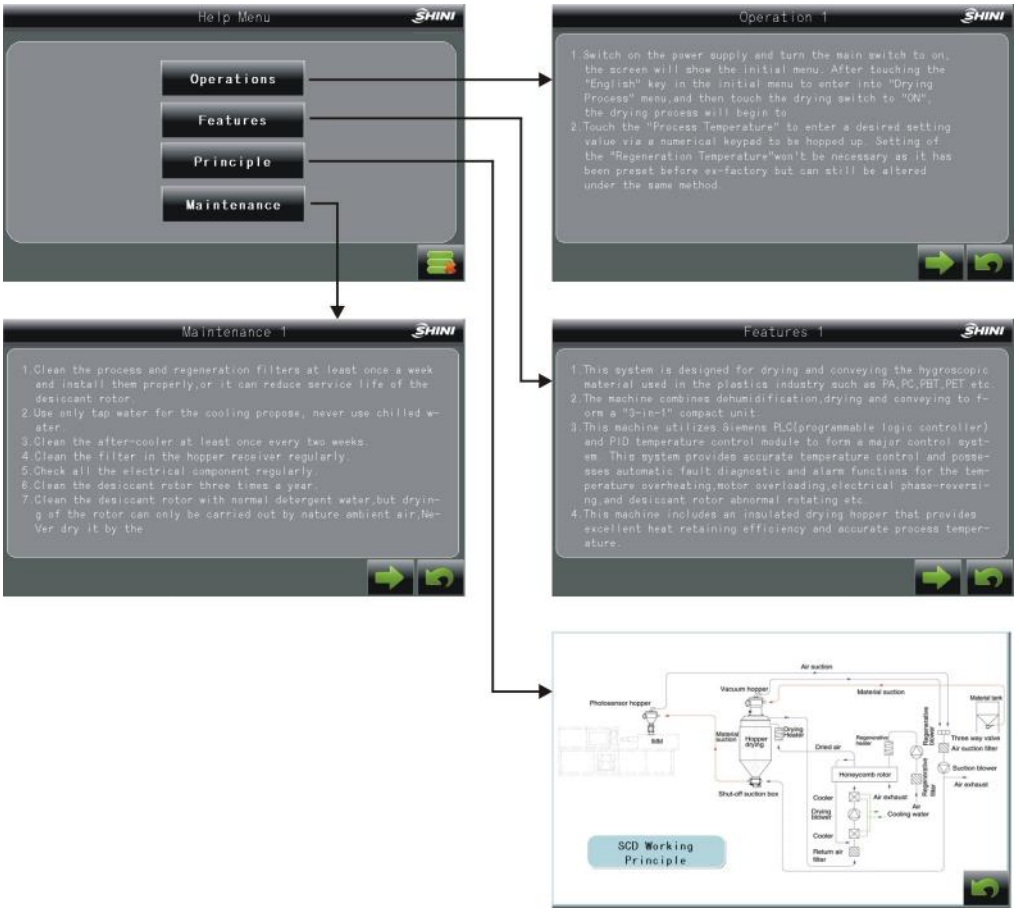
Note: 1) Overload Alarm reset: Open control box, press "RESET" button on the corresponding overload relay.

2) Rotor Failure Alarm reset: Turn off the Drying Switch and then turn it "ON" again.

3) Over Temperature Alarm reset: Turn off the Drying Switch and then turn it "ON" again after the temperature drops down.

6) Help menu

Touch "Help" button at the right side of Drying Proocess or Conveying Process screen to enter into system help menu screen. Touch the menu button to get corresponding help message.



Picture 2-28: Help Menu

2.8.4 Dew-point Monitor

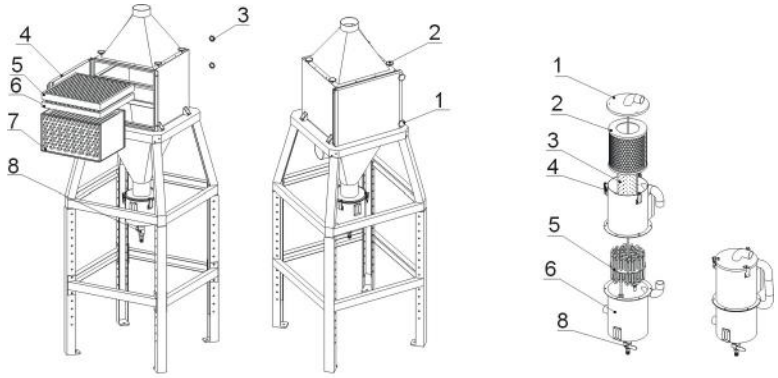
1. Embedded Dew-point Monitor

Picture 2-29: Embedded Dew-point Monitor

2. Portable Dew-point Monitor

Picture 2-30: Portable Dew-point Monitor

2.8.5 Oil Filter



EOF-1000~4000 EOF-30~500

Picture 2-31: Oil Filter

Type	Applicable Model
EOF-30	SD-40H~120H
EOF-150	SD-150H/200H
EOF-300	SD-300H/400H
EOF-500	SD-700H
EOF-1000	SD-1000H
EOF-1500	SD-1500H
EOF-2000	SD-2000H
EOF-3000	SD-3000H
EOF-4000	SD-4000H

1. Selection Aim:

There is much oil in dehumidifying air return, oil filter is selected to ensure dehumidifying function and prolong service life of honeycomb.

Note:

Please clean oil filter every week, can increase or decrease cleaning frequency according to oil quantity of return air. Oil filter equip with material clearance door, oil is discharged from ball valve 8 when full. The service life of activated carbon and middle efficient filter is generally two months. Service life can be adjusted properly according to oil quantity in return air.

2. Filter cleaning steps of EOP-30~500:

1) Open snap hook 4, take out tank cover 1, stainless steel filter 2 and activated carbon filter 3.
2) Loose butterfly nut, take out stainless steel filter 2, and remove away dust and oil from it by pressured air.
3) Loose butterfly nut, take out activated carbon filter 3 and replace activated carbon.
4) Open oil storage bin 6, take out cooler 5 and remove away dust and oil from it by pressured air.
5) Install oil filter after cleaning.

3. Filter cleaning steps of EOF-1000~4000:

1) Loose hexagon nut 1 and open material clearance door 4.
2) Loose hexagon nut 2, take out stainless steel filter 6 and middle efficient filter 5, remove away dust and oil from stainless steel filter and middle efficient filter by pressured air.
3) Loose fixed nut 3, take out cooler 7 and remove away dust and oil from it by pressured air.
4) Install oil filter after cleaning.

3. Installation Testing

Read this chapter carefully before installation. Install the machine by following steps.

Power supply of the machine should be handled by qualified electricians!

Notes!

Keep the machine 2m from the combustible distance.

3.1 Attention

1) Make sure voltage and frequency of the power source comply with those indicated on the manufacturer nameplate, which is attached to the machine.
2) Power cable and earth connections should conform with your local regulations.
3) Use independent electrical wires and power switch. Diameter of the wire should not smaller than those used in the control box.
4) The electrical wire connection terminals should be tightened securely.
5) The machine requires a 3-phase 4-wire power source, connect the power lead (L1, L2, L3) to the live wires, and the earth (PE) to the ground.
6) Power supply requirements:
   Main power voltage: ± 5%
   Main power frequency: ± 2%
7) The cooling water pressure is 3~5 kgf/cm^2 ,the pressure gap between the inlet water and the outlet water is 3~5 kgf/cm^2, and the cooling water temperature is 10~30℃.

Power Supply

Make sure that the power supply conforms with required specifications before installation. SD-H honeycomb Dehumidifiers are generally set to be used with 3Φ400V 50Hz power supply or other specifications if required.

3.2 Honeycomb-rotor

3.2.1 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, honeycomb-rotor offer unlimited long life and can be cleaned when it is polluted. 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.

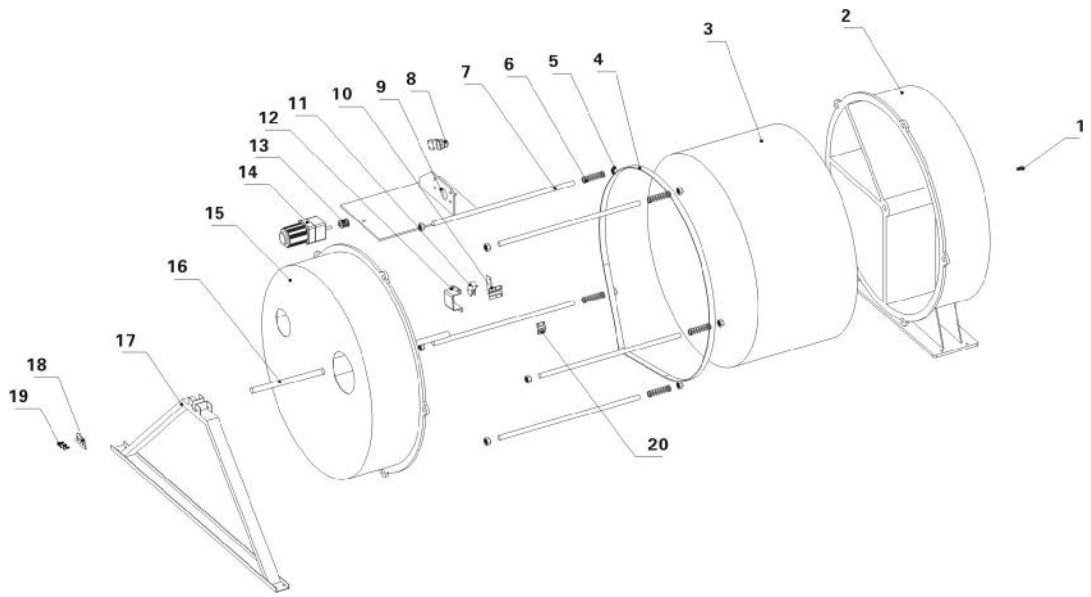
Picture 3-1: Honeycomb Rotor

3.2.2 Installation of the Rotor (SD-40H~700H)

Picture 3-2: Installation of the Rotor (SD-40H~700H)

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).

3.2.3 Installation of the Rotor (SD-1000H~4000H)



Picture 3-3: Installation of the Rotor (SD-1000H~4000H)

1) Use one solid strap or applicable washer to lifted or block up to the wheel 3 to align the wheel bearing bore and fixed honeycomb lid 2 center hole.
2) Use honeycomb shaft 16 to penetrate the wheel 3 and fixed honeycomb lid 2, and install synchronic belt 4 on the rotor 3.
3) Install removable lid 15 on the honeycomb shaft 16, and use honeycomb mounting bracket 17 to sustain the shaft.
4) Use inner hexagonal screw 1 to fix the plate 18 on the shaft 16.
5) Use hexagonal nut 5、double-headed screw bolt 7 and spring 6 to fix the removable lid 15, which ensures good seal at the ends of the honeycomb-rotor.
6) Use fixed iron sheet 20、fixed iron sheet 10 to fix microswitch 10, this ensures that the direction of shell fragment of microswitch 10 is the same as rotating rotor 3, and then install the box of microswitch 12.
7) Use two solid straps to fix honeycomb lid 2 and honeycomb mounting bracket 17, then install components on the bracket.
8) Install motor cabinet 9 on the bracket, then install gearmotor 14 and synchronic wheel 13 and synchronic belt 4.
9) Install belt tightener on the motor cabinet to make belt tightener rotate without slipping.

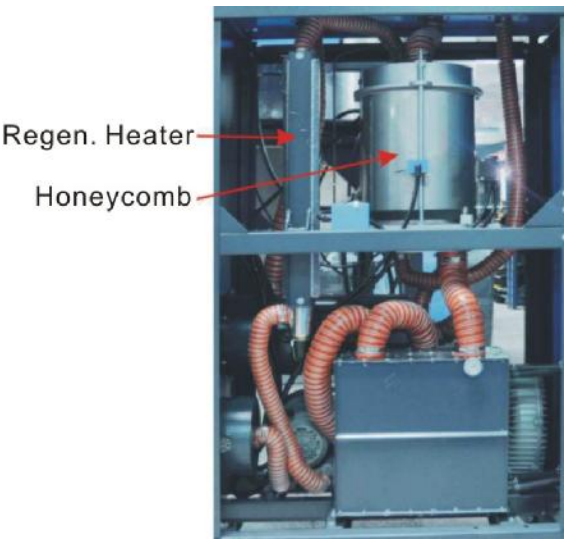
3.3 Heater Assemblies

1) Install the heating pipe in the heater.
2) Fix the heater into the housing. (See right picture)

Warning!
Hot surfaces could burn hands. Take care of high temperature!
This label should be stick to the shell of heater.

1

2



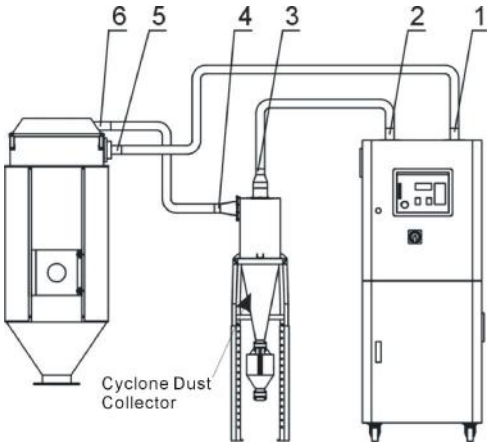
Picture 3-4: Heater Assemblies

3.4 EGO

The EGO value has been setting before out factory, Don't modify it.

Picture 3-5: EGO

3.5 Cyclone Dust Collector

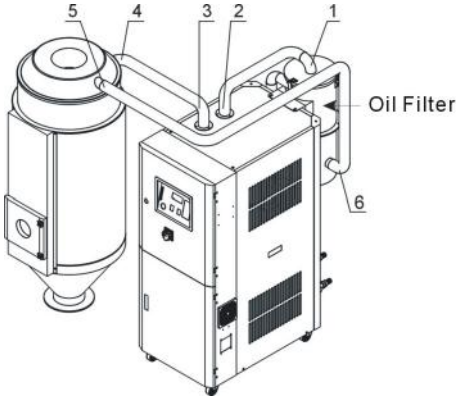


Picture 3-6: Installation Diagram of Cyclone Dust Collector

Cyclone Dust Collector Installation steps:

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

3.6 Oil Filter

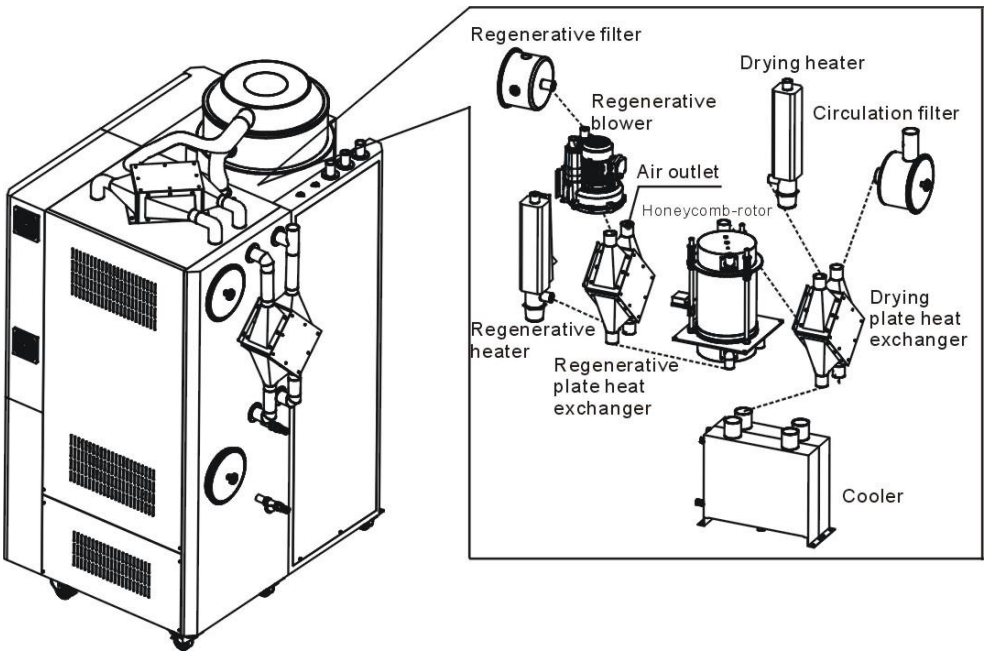


Picture 3-7: Installation Diagram of Oil Filter

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 tube.
3. Connect 3 and 4 with a heat-resistant duct and fixed both the ends with stainless steel tube.
4. Connect 5 and 6 with a heat-resistant duct and fixed both the ends with stainless steel tube.

3.7 Plate Heat Exchanger

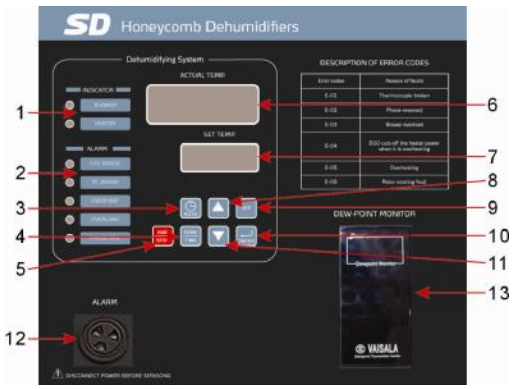


Picture 3-8: Plate Heat Exchanger over Figure

Each part is connected by heat-resistant air pipes and fixed by stainless steel pipes as shown in the diagram.

4. Operation

4.1 Control Panel



Picture 4-1: Control Panel

Table 4-1: Control Panel Table

No.	Name	Function description	Remarks
1	Running indicating	Indicates the working status of blower and heater	Green light on indicates working status Green light off indicates stop status
2	Fault indicating	Indicates current alarm message	Red light on indicates fault occurs
3	Time start	Set weekly start or intermittent start/stop	When time has been set, press this key to set time start mode
4	Temp/time shift key	Display alternatively in between temp. And time for temp or time set up	
5	Start/stop key	Control the start and stop of the machine	Press to start at stop status. Press to stop at working status.
6	Real value indicated by LED	Display real drying temperature or parameter code	
7	Set value indicated by LED	Display the set drying temperature	
8	Increase set value	Increase set value	
9	Set key	Enter or exit value setting	
10	Confirm key	Confirm the input of data	
11	Decrease set value	Decrease the set value	
12	Buzzer	Buzzer keeps on when fault exists	Buzzer only silence after trouble shooting
13	Dew-point	Dew-point display	Display real timely the moisture con within the material

4.2 Panel Operation

1) Open the main switch.

2) Press "RUN/STOP "key to start loading.

4.3 Temperature Setup

1) The setup number will flicker after pressing "SET" key, add or decrease temperature by pressing▲ ▼key.
2) Press "ENTER" key to confirm the input value.

4.4 PID Auto-tuning Setting

1) Press “SET” and the digits flash. At this time press “SET” and ”Enter” meanwhile for 1.5 seconds to enter auto-tuning mode. Then two values of “At” and “Present temperature” will display alternatively in PV and the set temperature value displays in SV till auto-tuning is finished. After that, system goes back to the normal operation directly.
2) If auto-tuning setting could not be finished within 1 hour, the parameters will not be altered and system goes back to normal operation.
3) Pressing “ON/OFF” to go back normal operation amid automatic calculation would not alter the original parameters.

4.5 Intermittent Running Setup

Drying periods(0-ON) ⇄ Stop periods(0-OFF)

1) Press "SET" key to change temp. setup value into time setup value，press "TEMP/TIMER" key to enter into setup mode, at this time "SV/setup value" flickers，"PV/setup value"displays"0-ON".

Picture 4-2：Intermittent running setup 1

2) PV displays "0-ON" to stand for drying periods. "0-OFF" stands for machine stop time. Press ▲▼ key to add or decrease time value of "SV/setup value". Each press of ▲▼ can add or decrease 15 mins set time.

3) Press "ENTER" to confirm the input time value and enter into "0-OFF" time setup items, then repeat step 2.

Picture 4-3: Intermittent running setup 2

Note: If set 0-ON as 04:00, 0-OFF as 05:00, which means drying periods is 4 hours stop time is 5 hours，then working for 4 hours and being stopped for 5 hours and repeat this so long.

4) Cancel intermittent running by entering 00.00 at "0-ON" or "0-OFF" press "ENTER" to confirm input value after time setup and enter into time setup items from "1-ON" "week-ON".

Picture 4-4: Intermittent running setup 3

4.6 Weekly Time Start Setup

1) Press ▲▼ key to add or decrease the time value in "SV/setup value " from "1-ON". Press "ENTER" to confirm the input value and comes into the time setup items of "1-OFF" "MON-OFF".

Picture 4-5: Weekly Time Start Setup 1

2) Press ▲▼ key to add or decrease the time value in "SV/setup value " from "1-OFF" . Press "ENTER" to confirm the input value and comes into the time setup items of "2-ON""TUE-ON".

Picture 4-6: Weekly Time Start Setup 2

3) Do the same setup again and again to setup the ON/OFF time from Monday to Sunday.

Picture 4-7: Weekly Time Start Setup 3

4) Press "SET" key to back to normal status, after finish all the setup.

5) Setup all the "ON" to 00:00 if it is not for time start/stop.

Note:

1. F-20 functions as an password lock，hold on"SET"till the"PV"displays F-20.

2. Press▲▼ key and only after input 0021 in the SV，can you press "ENTER"to come into F-03 and other settings，so F-20 functions as an passwordlock for entering into next parameters setup, which prevents the modification from unprofessionals.

Picture 4-8: Weekly Time Start Setup 4

3. F-03 stands for the selection of temperature unit. Press ▲▼ to shift between ℃/℉ then press “ENTER” to confirm.

4. F-04 is data lockup function, press ▲▼ key to shift between OFF / LOCK，LOCK is for locking up information，not able to input or change any data: OFF is for lockup cancellation.

Picture 4-9: Weekly Time Start Setup 5

5. F-05 stands for the function of temperature protection. Alarm will be launched if actual temperature were equal to or higher than the addition of setting temperature value and setting value. This temperature range is between 0 to 50, and default value is 15.

4.7 Present Time Modification

1) Repeat the above steps until PV displays "TIME" to stand for present time.

2) Press ▲ ▼ key to add or decrease time.

3) Press "ENTER" key and PV displays "DAY" to stand for week days.

4) Press ▲ ▼ key to add or decrease days.

5) Press "SET" key to back to normal status after finish all the setup.

4.8 Weekly Time Start

1) Activate the weekly time start after finish the time setup and the present time setup.

2) Press "AUTO" key at working or stop status to preset the time start/stop, the "PV" will display the time and temp. alternatively.

3) Press "AUTO" again if want to cancel that weekly time setup.

4.9 Lock Setup Way

1) Press "SET" key down and release it till "PV" displays F-20.

2) Press ▲ ▼ key to make "SV" to 0021, then press "ENTER" key，the "PV" will display F-04.

3) F-04 are for LOCK function selection, press ▲ ▼ key to select LOCK or OFF.

4) Press ENTER or "SET" key after setup.

5) If select LOCK, the "SV" will display "LOCK" when pressing "SET" key, which means the parameters have been setup and not accessible to any change.

4.10 The Second level of Advanced Setting

1) Enter the first level of advanced setting and press “SET” and ”Enter” meanwhile for 3 seconds till F-06 displays in PV.

2) Press ▲ ▼ to set SV into 0003 and press “ENTER”, at this time F-06 displays in PV.

3) Now pressing ▲▼ can alter value, press “ENTER” to input after confirming then jump to F-07.

4) If you want to leave the function setting, just press “SET”.

1. F-06 stands for the passwords of second level.

2. F-07 stands for proportional band of heating side (P); it is a preset value before delivery.

3. F-08 stands for integration time of heating side (I); it is a preset value before delivery.

4. F-09 stands for differential time of heating side (D); it is a preset value before delivery.

5. F-10 stands for switch cycle of heating side; its preset value is 15 sec.

6. F-16 stands for power deliver delay time of heater, it is adjustable, the unit is Sec..

7. F-17 stands for blower power-off delay time, it is adjustable, the unit is Sec..

8. F-18 stands for the protection of maximum temperature. Its setting range is 140~250.

9. F-19 stands for microswitch timeset of honeycomb rotor. “OFF” functions as shut-off and “ON” functions as open. The setting range is 0~9999 with the unit is Sec..

4.11 Wrong Codes Remark

Table 4-2: Wrong Codes Remark

Wrong codes	Remark
E-01	Break of temperature-sensed line
E-02	Inverse phase
E-03	Overload input
E-04	Overheat input for regen. EGO
E-05	Maximum temperature protection
E-07	Thermal protection temperature
E-08	Memory errors
E-09	Rotor Microswitch input
E-11	Reversed-phase of temperature sensed line
E-12	Auto-tuning errors

4.12 Installation for Dewpoint Monitor

1) Use blade to cut off the film and outline the reserved hole site on the SCD control panel.

Picture 4-10: Hole Site

2) Check if there are complete parts for dewpoint monitor including:

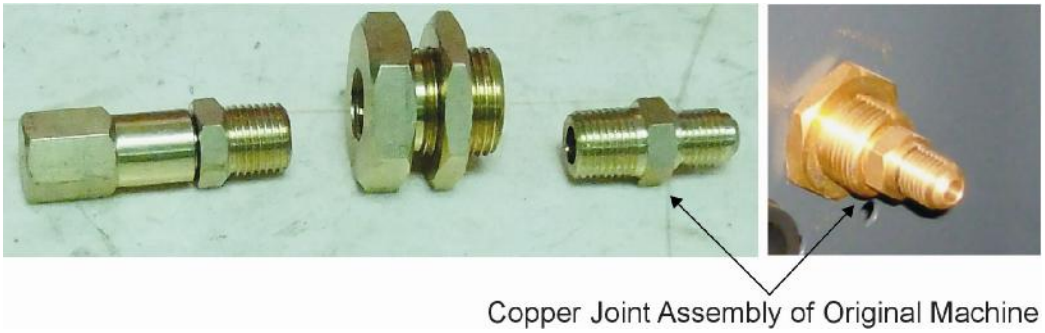
Dew-point monitor

Dew-point transmitter assembly (dew-point detector, detection cable, washer and installation guide)

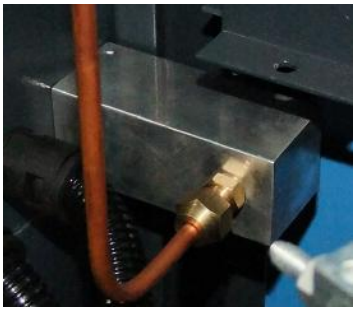
Copper joint, installation seat for dew-point monitor

Picture 4-11: Parts of Dew-point Monitor

3) Dismantle the copper joint of original machine and replace it with installation seat for dew-point monitor. Then dismantle straight form bushing from copper joint of original machine and install it on the installation seat, and connect copper pipe with straight form bushing.



Picture 4-12: Copper Joint Assembly of Original Machine



Picture 4-13: Installation Seat

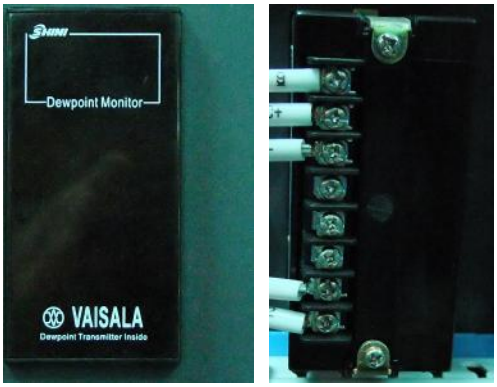
4) Install dew-point transmitter assembly to copper joint.

Picture 4-14: Installation for Transmitter

5) Connect signal wire. Particular shape of signal wire joint would avoid the wrong insert and connection.

Picture 4-15: Connection of Signal Wire

6) Match dew-point monitor with holes on the panel and fix the installation.



Picture 4-16: Installation for Dew-point Monitor

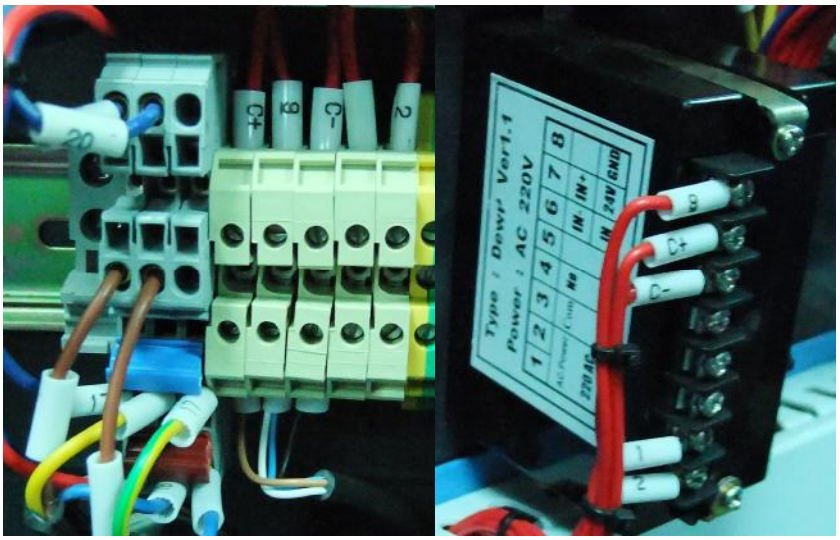
7) Connect signal wires of the transmitter and power lines of dew-point monitor with the according terminals.

Connet contact No.1 and No.2 with power, supply is 220VAC.

Contact No.3, No.4 and No.5 are idle.

Connect contact No.6, No.7 and No.8 with the signal of transmitter. (C- Connects contact No.6, C+ connects contact No.7 and wire No.9 connects contact No.8.

Transmitter conection (White and blue wire connect wire No9, black wire connect C- and gray wire connect C+)



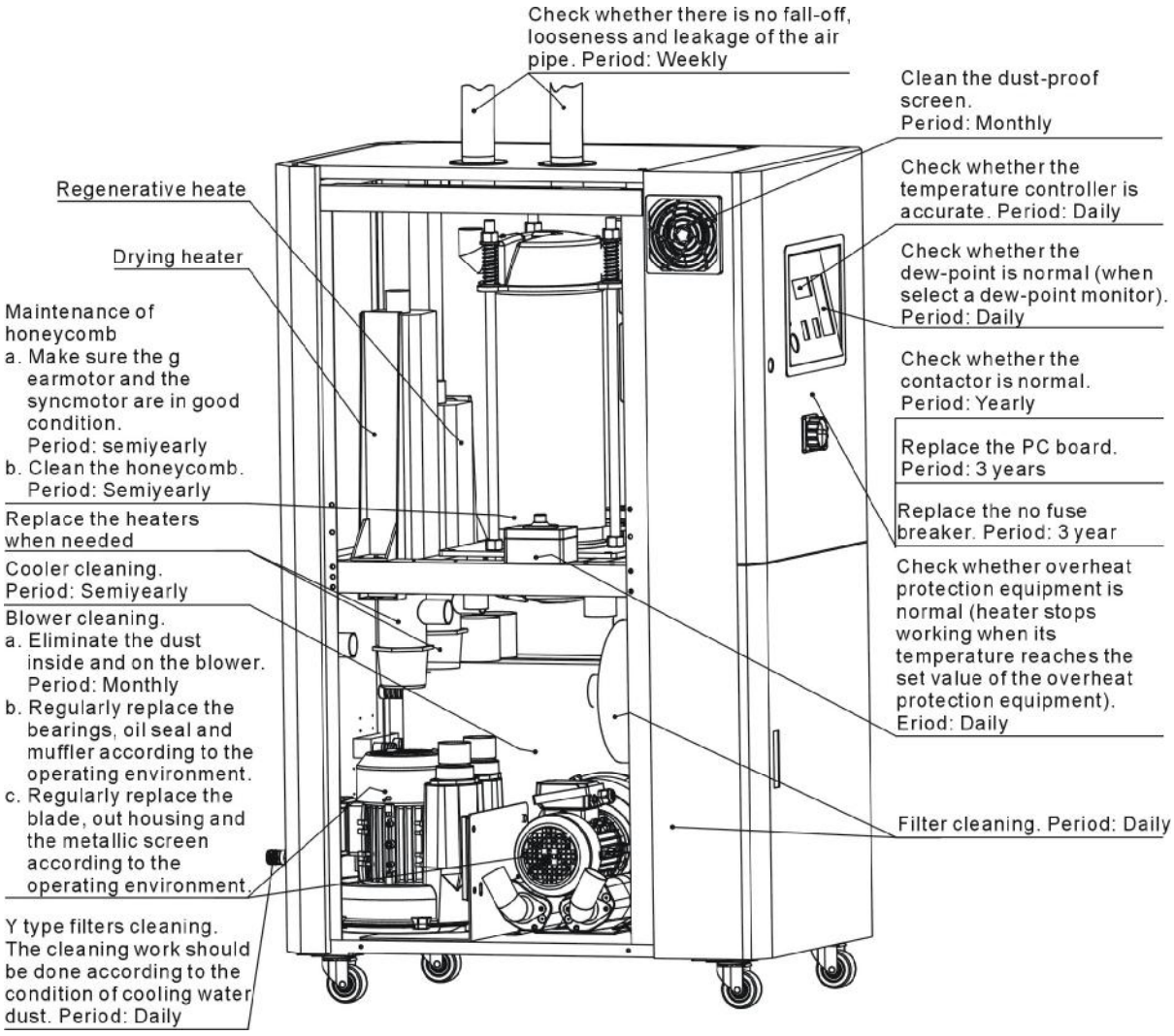
Picture 4-17: Connection of Dew-point Monitor

5. Trouble-shooting

Troubles	Possible causes	Solutions
Main power indicator does not light after turn on main power switch.	1. Does not connect through power supply.	1. Connect through power supply.
	2. Main power switch breakdown.	2. Replace main power switch.
	3. Problems of electrical wires.	3. Check electrical wires.
	4. Fuse of control circuit melted.	4. Check electrical wires and replace fuse.
	5. Transformer problems.	5. Replace the transformer.
E-02 is shown at PV, buzzer sounds and machine stops.	1. Voltage of power supply is too low.	1. Check the power supply.
	2. Phase shortage.	2. Check the power supply.
	3. Phase frequency mistakes.	3. Exchange the connection of two of the electrical wires.
Overload alarm of blower lit up, buzzer sounds and machine stops.	1. Abnormal fluctuation of voltage.	1. Check power supply.
	2. Blower being stalled.	2. Check the blower.
	3. Failures of blower motor.	3. Check the motor.
	4. Setting current of overload relay (F1) is too low.	4. Set the current of overload relay 1.1 times of rated current of the motor. Reset overload relay: Press down the blue button on the relay after 1 minutes.
Pipe heater overheat alarm is lit up, and the buzzer sounds and machine stops working.	1. Temperature setting mistakes.	1. Correctly set the parameters of temp.controller.
	2. Temp. measuring mistakes.	2. Replace thermocouple.
	3. Overheat relay of pipe heater failures.	3. Replace the contactor.
E-04 is shown at PV, buzzer sounds and machine stops	1. Heater contactor seized up.	1. Check or replace the heater contactor.
	2. EGO parameter setting wrong.	2. Set EGO parameter correctly.
	3. EGO fault.	3. Replace EGO.
	4. Circuit fault.	4. Check circuit.

Troubles	Possible causes	Solutions
E-09 is shown at PV, buzzer sounds and machine stops	1. Problems of rotor motor.	1. Check or replace the motor.
	2. Rotor belt broken.	2. Replace the belt.
	3. Problems of electrical circuit.	3. Check the electrical circuit.
	4. Micro switch of the rotor failures.	4. Replace.
	5. Parameter mistakes of timer for control of rotor.	5. Reset the timer. (Set time should be bigger than rotor rotating time in one turn and plus 1 minute.)
Abnormal temp. fluctuations.	1. Too short of time since start of the machine.	1. Wait for a while.
	2. Improper parameters for temp. controller.	2. Check the parameters of temp. Controller.
Heater temp. can not rise up.	1. Temp. Setting is too high.	1. Set heater temp. under 180℃.
	2. Contactor of heater is bad.	2. Replace contactor.
	3. Pipe heater is damaged.	3. Replace pipe heater.
	4. Problems of thermocouple.	4. Replace thermocouple.
	5. Parameter of temp. controller is set to STOP.	5. Set temp. controller under working mode.
	6. Temp. controller output problems.	6. Replace or repair temp. controller.
Breaker tripping off when connects with power supply.	1. Short circuits of main circuit.	1. Check the circuit.
	2. Short circuit of transformer.	2. Replace the breaker.
	3. Problems of breaker.	3. Replace the breaker.
Circuit breaker trips right after system switch on.	1. Short circuit of pipe heater.	4. Check the circuit.
	2. Problems of the breaker.	5. Replace the breaker.

6. Maintenance and Repair



Note!

1) Turn off the main switch and control switch and unplug the cord from power supply before service and maintenance.
2) Be sure not to modify electrical wiring or reassemble the electrical components inside of the control box.
3) Always refer to the electrical diagram of this manual to check and maintain the electrical wiring problems.
4) Service and maintenance of the electrical parts should only be carried out by qualified electricians.

6.1 Honeycomb

Honeycomb Rotor cleaning steps:

1) Use a vacuum-cleaner with brush to suck up the dust on rotor surface.
2) Blow off the dust in the rotor channels with compressed air.
3) If there is dirt sticking to the channel walls inside the rotor, cleaning steps as follows:
   a. 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.
   b. 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.
   c. Take the rotor out of the liquid and let it rest with the channels vertically for 5 minutes so the liquid can run out.
   d. Blow off the residual liquid in the channels with compressed air.
   e. 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:

1. Note that 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.
2. 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.

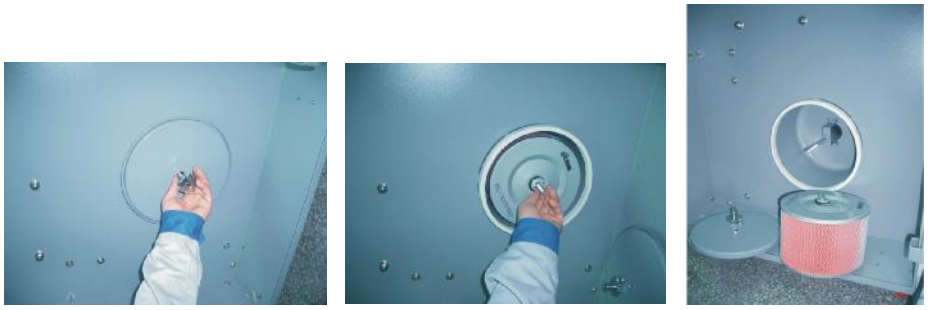
6.2 Filter

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 dishcloth.
4) After cleaning, place all parts in reversed order carefully.



Picture 6-1: Filter

Note**!**

Do not let any impurities fall into filter container.

6.3 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. As for the cooling by normal water, do the same job once a quarter.

Cooler clear 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 ed air or low pressure water to clean the dust and sundries on the cooler fan and copper pipe.
   Notes: water residue on the cooler fan and copper pipe should be dried with compressed air.
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 4 hours to make the silica gel drying enough then fix the cooler on the chiller and connect all pipes.

6.4 Clean of Y type strainer

The cleaning work should be done according to the condition of cooling water dust. Clean it in time in such situations, such as hot air and insufficient cooling water flow.

6.5 Maintenance Schedule

6.5.1 General Machine Information

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

6.5.2 Check After Installation

☐Check that pipe connections are firmed locked by clips.

☐Check that the piping system is correct.

☐Check if the honeycomb-rotor is damaged or not.

Electrical Installation

☐Voltage: _____ V _____ Hz

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

☐Check phase sequence of the power supply.

☐Check the rotating direction of blower fans.

6.5.3 Daily Checking

☐Check power supply wires.
☐Check the start/stop function.
☐Check the temperature controller.
☐Clean the filter.
☐Check whether overheat protection is normal.
☐Check whether dew-point is normal.
☐Check whether cooling water circulation and Y-type fitter are normal[1].

6.5.4 Weekly Checking

☐Check if there are loose connections of electrical components.
☐Check and clean air filter.
☐Check the function of solenoid valve.
☐Check motor overload relay and anti-phase function.

☐Check whether air pipe is shed, leaked and loose.

6.5.5 Monthly Checking

☐Check if the transmission belt is loose or not.
☐Check the performance of gear motor.
☐Check if there are leakages in honeycomb-rotor.

6.5.6 Half-yearly Checking

☐Check if there are damages of heat-resistant hoses.
☐Check the pipe heaters.
☐Check regen./process blower and blower fans.
☐Check whether honey-comb rotor belt is damaged.
☐Clean the cooler.

6.5.7 Yearly Checking

☐Check whether the contactor is normal [2].

6.5.8 3 year Checking

☐PC board renewal.
☐No fuse breaker renewal.

Note: 1. Y-type filter has the function of filling water cooling protection effect, be sure the waterway are clear to avoid cooling failure.
2. 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.