

# SHD

## HOPPER DRYER



### Operation Instruction



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# 1.Foreword



Before using the equipment, please read the instruction carefully to avoid human body's injuring and the equipment's breakdown.

## 2.Install

Accoring to the installation dimentions of plastic injection machine's feeding inlet, drill holes on the base of the hopper dryer. Then fasten it with screws on th feeding inlet.

## 3.Choose Power Source

Pay attention to voltage. We provide different power sources, such as 1 $\Phi$  220V,3 $\Phi$ 220V and so on.

## 4.Connect with the Mains

Open the control box, connect power source according to the circuit diagram. Take notice if power source and voltage is correct. Take notice if the power switch specifications and rated load protection is appreciate and safe.

## 5.Adjust Air Door

The adjustment of air door has great effect on drying efficiency. Usually the drying performance will be the best when the air door is open completely. If there is not so much material in the hopper or high temperature is required, the air door can be adjusted accordingly. Otherwise, the actual temperature won't be the same as the set temperature.

## 6. Test Hopper Dryer

After all the wires are well connected, connect with the mains and then open the blower switch on the control box panel (the indicating light is on now). See if the rotating direction of the blower is the same as the arrow indicates. If not, change the two wires with each other which connect with the blower.

## 7. Set Temperature

According to the Plastic Materials Drying Temperature Table, set temperature. The temperature range is 0–199°C. After heating for a period of time, the indicating light flash in turn in red and yellow and yellow color. That means the set temperature is reached. See if the temperature meter shows the same as the set temperature. The tolerance of 2°C is allowed.

Attention: When the temperature is set, you must consult the reference drying temperature for the specific material. If the set temperature is too high, the material on the funnel-shaped mesh screen will curdle due to too heat, which will lead to severe breakdown. Therefore, the reference drying temperature for different materials should be paid attention to. Also experience in setting temperature can also be used.

**Plastic Materials Drying Temperatures Table:**

Material Name	Drying Temperature(°C)	Drying Hours(Hr)
PE.PP	80	2
PS	82	2
Acrylic ABS AS	82	2
Cellulose Series	71	3
Polycarbonate	120	3
Nylon	82	2.5
PVC	71	1.5

## 8.Usage Guide

The SHD series of hopper dryers are used to dry plastic material in granule shape. Please consult the Part 12 Drying Capacity Table to know about how to choose an appropriate hopper dryer, drying time and temperature for different materials. The cone-shaped mesh screen and the funnel-shaped mesh screen is fixed inside the hopper. The cone-shaped mesh screen is used to separate dried material from wait-to-dry material. According to the required wind strength, adjust the size of air door to dry quickly.

Attention: During drying, dust and particle in the material will eject from the exhaust pipe. Therefore it will have bad effect on the working surroundings. However, the problem can be solved if you buy our whirlwind dust-collector.

## 9.Attentions

- 1) It's ideal to use auto-loader to feed material. It can keep the hopper full and ensure the drying performance. If feeding is made by man, don't feed material when little material is left in the hopper.
- 2) When drying transparent materials such as acrylic, an air filter or a sponge must be fixed on the air inlet device to prevent dust entering.
- 3) Before feeding material, the hopper should be heated first for 10-20 minutes. In this way, the wet air inside can be made dry.
- 4) If production is required to begin as soon as the workers begin to work, material should be made dry ahead of time. Under this condition, RDM-AT type of hopper dryers can be adopted.

## 10.Maintenacne

### 1) Clear funnel-shaped mesh screen

The funnel-shaped mesh screen needs to check often and clear at regular intervals. If the mesh screen is blocked, the incoming wind will become weak. Therefore it will have bad effect on drying performance.

### 2) Clear cone-shaped mesh screen

When another material is changed to, the cone-shaped mesh screen should be made clear.

### 3) Clear Blower

Clear the foreign matters on the fans of the blower to avoid damaging the blower.

### 4) How to handle the curdled material on the cone-shaped mesh screen?

If the temperature is too high, material will curdle on the cone-shaped mesh screen and therefore can't fall. Under this condition, don't knock it with a hammer to avoid damaging the ventilating rack. You should disassemble the cylinder body from the lower cone-shaped part to take out the mesh screen and then clear it.

## 11.How to choose an apporprate model?

It's important to choose a hopper dryer accoring to the specifications of a molding machine.If a smaller dryer is used, the drying performance will not be so good. To achieve high-efficient drying performance, the following method can be used.

Injection volume per hour X 2.5=Hopper dryer capacity

For example: if the injection volume of a molding machine is 20kg/h, which hoppery dryer should be choosen?

20kg X 2.5=50kg

Therefore SHD-50 should be used.

## 12.Hopper Dryer Capacity Table(kg/hr) (For reference only.)

Plastic Material Name	SHD series							Actual Drying Time	Drying Temp- erature
	12	25	50	100	200	400	600		
PS	8	20	50	100	200	400	600	0.75hrs	80℃
<b>PE</b>	8	20	50	100	200	400	600	0.75hrs	80℃
Poly propylene	8	20	50	100	200	400	600	0.75hrs	80℃
Polystyrene H • D	6	14	38	80	150	300	440	1hrs	80℃
ABS	4	8	20	40	80	160	240	1hrs	80℃
Nylon 11、 12	2	4	10	20	35	80	120	4hrs	75℃
Nylon6/6、 6/10	1.5	3.2	8	16	30	65	100	5hrs	75℃
Nylon 6	1	2	5	10	20	50	70	7hrs	75℃
Acrylic	2.5	6	15	30	60	140	200	2.5hrs	75℃
CA	2.5	6	17	35	70	150	220	2.25hrs	80℃
Butyrate	4	10	25	50	100	220	330	1.5hrs	75℃
Polycarbonate	1.5	4	10	20	40	90	120	3hrs	120℃
Rigid PVC	5	12	30	60	120	250	380	1.25hrs	70℃

Attention: Under the condition of 20℃ ambient temperature and 65% humidity, the moisture content of the dried material is within 0.2%.

## 13.Specifications for Hopper Dryer Series

Model	Capacity	Heat Power	Blower Power	Applicable Injector	Weight	Dimensions W × L × H(mm)
SHD-12	12Kg	1.6KW	90W	1oz	25Kg	650 × 350 × 750
SHD-25	25Kg	3.0KW	90W	3oz	40Kg	750 × 400 × 950
SHD-50	50Kg	4.0KW	200W	5~8oz	50Kg	850 × 500 × 1100
SHD-75	75Kg	4.0KW	200W	5~8oz	60Kg	900 × 550 × 1150
SHD-100	100Kg	5.5KW	250W	10~20oz	95Kg	950 × 600 × 1400
SHD-150	150Kg	6.0KW	250W	10~20oz	100Kg	950 × 600 × 1700
SHD-200	200Kg	12.0KW	400W	20~30oz	150Kg	1250 × 800 × 1550
SHD-300	300Kg	15.0KW	400W	20~30oz	160Kg	1250 × 800 × 1900
SHD-400	400Kg	18.0KW	400W	30oz	230Kg	1350 × 900 × 1900
SHD-600	600Kg	22.0KW	960W	30~50oz	250Kg	1400 × 950 × 2100

Attentions: The capacity changes a little with the density of different materials.

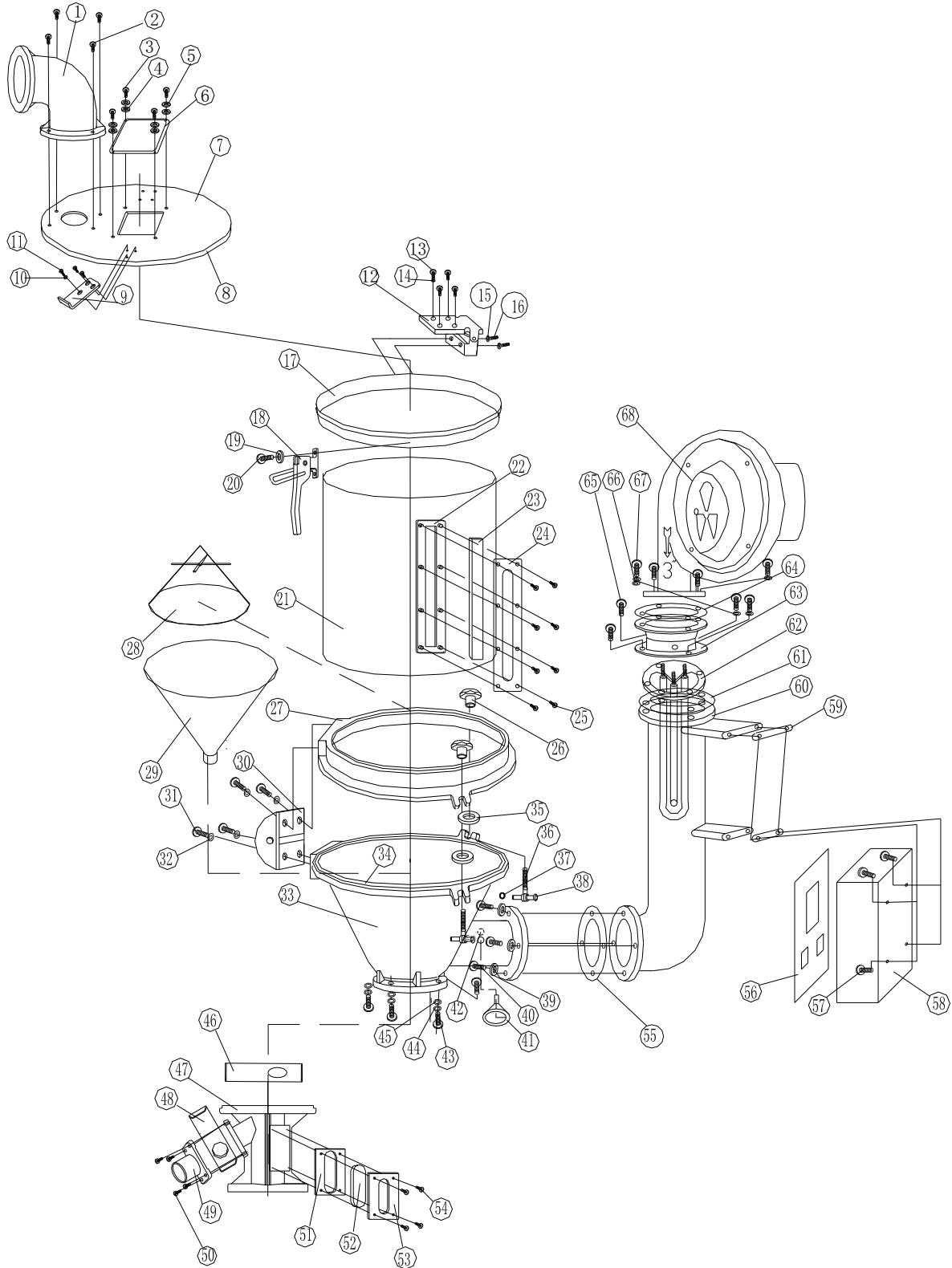


## 14.Trouble–shooting

Breakdown	Causes	Trouble–shooting
Blower rotate in an opposite direction to the arrow.	①Blower wires connect phase reversal.	①Change the two wires with each other.
Blower stops. Hot air with smoke.	①Motor breaks down. ②Contactor breaks down.	①Inspect and change it. ②Inspect and change it or repair it.
Blower stops No heating.	①Overload device bounces. ②Transformer breaks down. ③Fuse has blown. ④Power breaks down.	①Inspect and change it. ②Inspect and change it. ③Inspect and change it. ④See if it is short of phase.
Blower turns, but no temperature.	① Lead slices in electrothermal pipes have be melted broken. ②Contactor breaks down. ③Electrothermal pipes break down. ④Temperature controller out of order, no output. ⑤Thermocouple out of order.	①Inspect and change it. ②Inspect and change it or repair it. ③Inspect and change it. ④Replace temperature controller. ⑤Replace thermocouple.
Blower runs, but low temperature.	①Inferior electrothermal pipes or lead plates. ②Temperature controller disconnect or bounces off. ③Contactor short of phase. ④Temperature controller out of order or with too big tolerance.	①Inspect and replace it. ②Inspect or reset it. ③Inspect and replace it. ④Replace temperature controller.
Blower runs, but temperature extra high.	①Hot air pipe blocks. ②Temperature controller breakdown or too big tolerance	①Clear it. ②Replace it or adjust fine turing botton.

Attention: Make sure to shut off power before inspecting or replacing components.

# 15.Components Drawing



## 16.BOM

NO.	Name	NO.	Name
01	exhaust pipe	35	flat spacer
02	flat-head screw	36	plum-shaped bolt
03	hexagonal screw	37	stopping ring
04	spring spacer	38	bolt
05	flat spacer	39	spring spacer
06	square plate	40	hexagonal screw
07	hopper cover	41	temperature meter
08	cover sealing ring	42	thermocouple
09	handle hook	43	hexagonal screw
10	spring spacer	44	spring spacer
11	thick-head screw	45	flat spacer
12	back hinge	46	shut-off plate
13	hexagonal screw	47	base
14	spring spacer	48	material-falling throttle valve
15	spring spacer	49	material-falling hole
16	hexagonal screw	50	flat-head screen
17	upper hopper ring	51	base window sealing ring
18	handle	52	acrylic glass
19	spring spacer	53	window
20	thick-head screw	54	flat-head screw
21	storage bucket	55	hot-air pipe asbestos lining
22	window frame	56	nameplate
23	acrylic glass	57	flat-head screw
24	eight-hole-fastened window	58	control box
25	plum-shaped handle	59	control box asbestos lining
26	low hopper ring	60	hot-air pipe
27	hopper ring	61	blower-fastening asbestos lining
28	cone-shaped mesh screen	62	electrothermal pipes
29	funnel-shaped mesh screen	63	blower-fastening base
30	back hinge	64	blower-fastening asbestos lining
31	hexagonal screw	65	hexagonal screw
32	spring spacer	66	spring spacer
33	hopper	67	hexagonal screw
34	hopper sealing ring	68	blower

## 17.Circuit Diagram

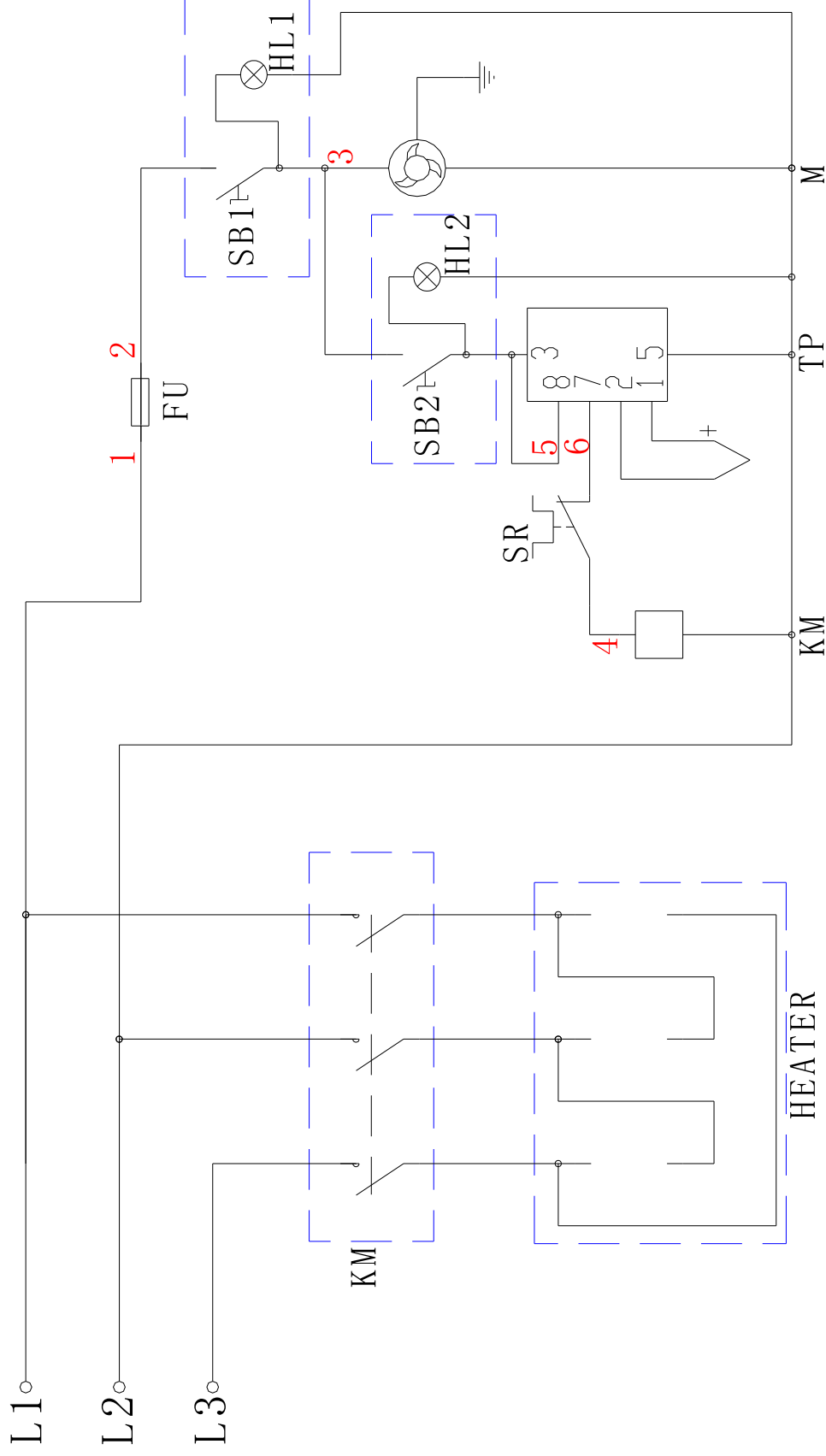
Without our company's permission, the circuit can't be changed. If it is changed and the equipment is damaged, our company won't be responsible for it. All the repair and maintenance should be done by a professional. The circuit should be connected by an electrician.

### \*Electrical components

NO.	Symbol	Name
1	KM	contactor
2	M	blower
3	HEATER	thermo-wire
4	FU	fuse
5	HL	indicating light
6	SB	button switch
7	SR	ultra-heating protector
8	TP	temperature controller

# \*Circuit Diagram

AC 220V 60Hz 3?



## Main Product

- Hopper Dryer
- Dehumidifying Dryer
- Mold Temperature Controller
- Vacuum auto-load device
- Proportional Valve
- Central Conveying System
- Chamber dryer
- Plastics Granulator
- Plastics Color-Mixer
- Industrial Chiller

