SAL-900G

"Standard" Separate-vacuum Hopper Loader

Date: May, 2020

Version: Ver.C

Content

Table Index

Picture Index

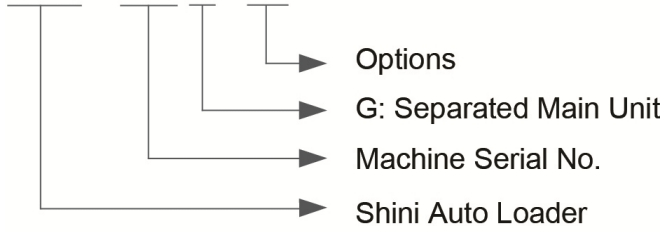
1. General Description

Please read through this operation manual before using and installation to avoid damage of the machine and personal injuries.

SAL-900G

1.1 Coding Principle

SAL - xxx G - xx



1.2 Features

- Microprocessor for ease of use and has multiple alarm indicators.
- Motor overload protector ensures long service life of motor.
- Audible material shortage alarm.
- Filter designed for easy cleaning and has filter status checking window for easier monitor of filter condition.
- SAL-900G/G2 has two-stage conveying function

All maintenance work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both operating and maintenance. Chapter 6 contains maintenance instructions 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 after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

Headquarter and Taipei factory：
Tel: + 886 (0)2 2680 9119

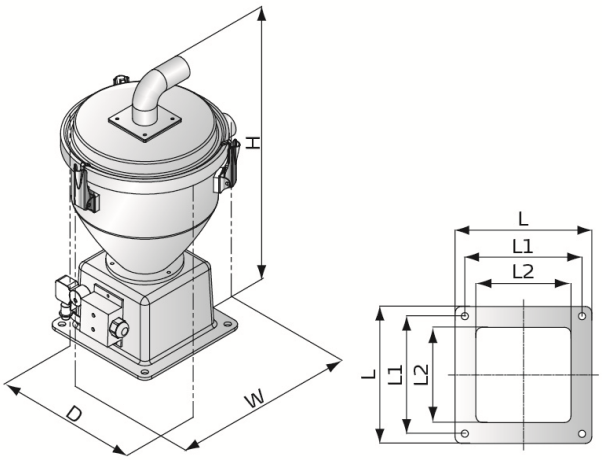
Shini Plastics Technologies (Dongguan), Inc：
Tel: + 86 (0)769 8111 6600
Email: shini@shini.com

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

1.3 Technical Specifications

1.3.1 External Dimension

SMH

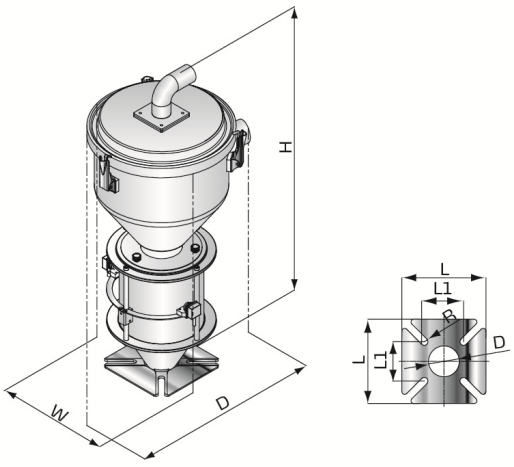


Picture 1-1: SMH External Dimension

Table 1-1: SMH Specification

Model	L(mm)	L1(mm)	L2(mm)
SMH-6L	210	180	148
SMH-12L			

SVH

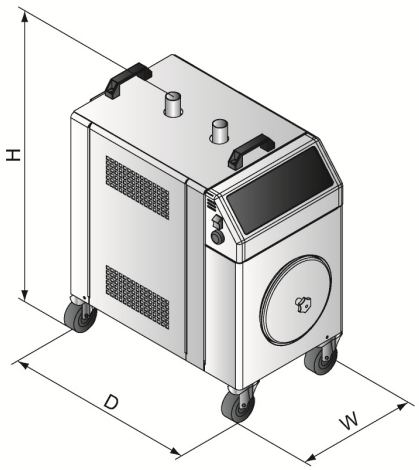


Picture 1-2: SVH External Dimension

Table 1-2: SVH Specification

Models	L(mm)	L1(mm)	D(mm)	R(mm)
SVH-6L	150	70	55	6.5
SVH-12L	180	80	55	6.5

SAL-900G/900G2(Main controller)



Picture 1-3: SAL-900G External Dimension

1.3.2 Specification

Table 1-3: Specification

Main Unit						Hopper Receiver(s)				RS-485 communication function	Conveying Hose Dia. (Inch)	Air Suction Pipe Dia. (Inch)	Conveying Capacity (kg / hr)
Model	Ver.	Motor Type	Motor Power (kW) (50/60Hz)	Dimensions (mm)H×W×D	Weight (kg)	Recommended Model	Hopper Capacity (L)	Dimensions (mm) H×W×D	Weight (kg)				
SAL -900G	C	Induction	0.75(3Φ)	670×390×740	50	1×SMH-6L	6	460×260×315	6	-	1.5	1.5	500
						1×SVH-6L		600×285×305	7				
						2×SMH-6L		460×260×315	11				
						2×SVH-6L		600×285×305	7				
SAL -900G2	C	Induction	1.5(3Φ)	670×390×740	57	1×SMH-12L	12	515×300×350	7	-	1.5	1.5	680
						1×SVH-12L		695×300×360	11				
						2×SMH-12L		515×300×350	7				
						2×SVH-12L		695×300×360	11				

Notes: 1) "SVH" stands for photosensor hopper receiver; " SMH " stands for vacuum hopper receiver. " SHR-U " stands for Euro-Hopper receiver.

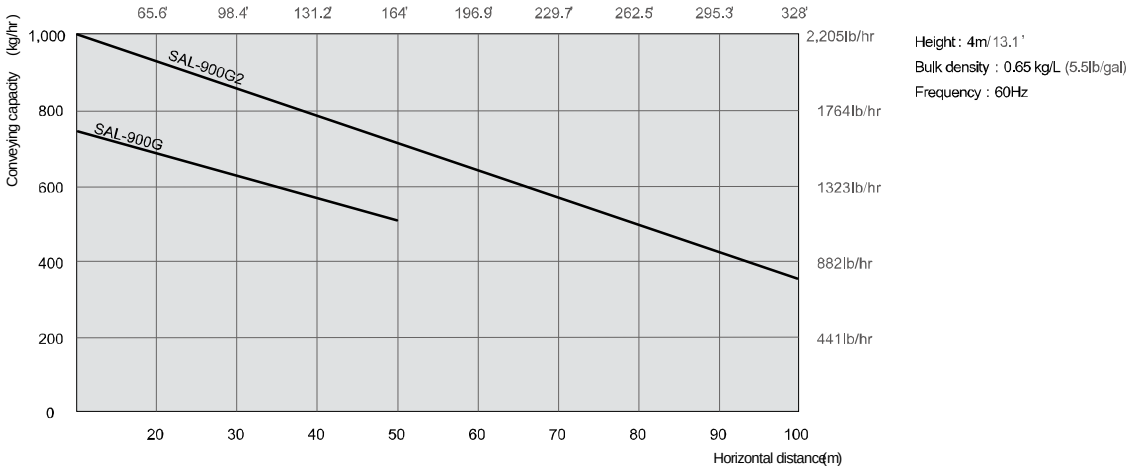
2) Test condition of conveying capacity：Plastic material of bulk density 0.65kg/L, dia. 3~5 mm, vertical conveying height: 4m, horizontal conveying distance: 5m.

3) "●" stands for standard, "○" stands for options, "-" stands for none.

4) Adopt the 4P heavy-duty connector.

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

1.3.3 Loading Capacity



Picture 1-4: Loading Capacity

1.4 Safety Regulations

Please abide by the safety guide when you operate the machine so as to prevent damage of the machine and personal injuries.

1.4.1 Safety Signs and Labels

All electrical components should be installed by qualified electricians.
Turn off main switch and control switch during repair and maintenance.

Warning! High voltage!
This mark is attached on the cover of the control box.

Warning! Be careful!
Be more careful when this mark appears.

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

1.4.2 Signs and Labels

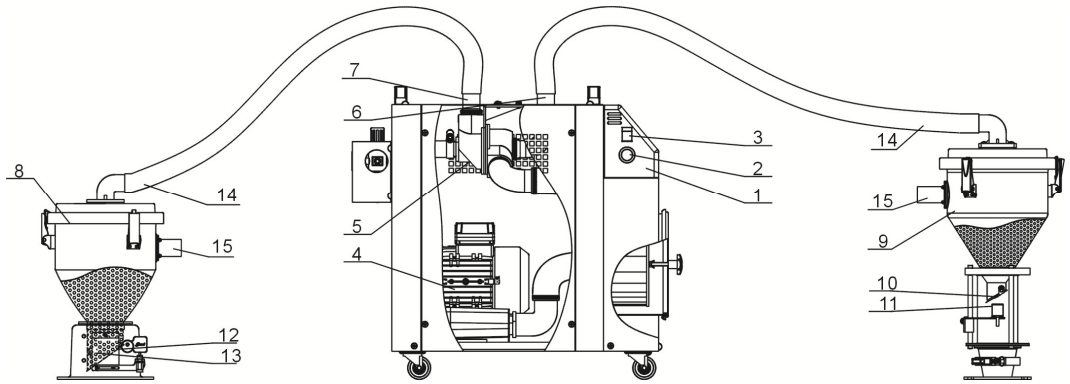
Table 1-4: Labels description

Label	Explain
	1. Please clean the suction filter regularly to avoid clogging and ensure proper loading capacity and long life span. 2. The one year warranty does not cover the suction filter, please clean the filter carefully.

2. Structure Characteristics and Working Principle

2.1 Working Principle

SAL-G series are suitable for conveying plastic granules over long distance. Utilizing high efficiency vacuum blower to produce vacuum in material hopper, plastic materials will then be fed into material hopper by air pressure.



Picture 2-1: Working Principle

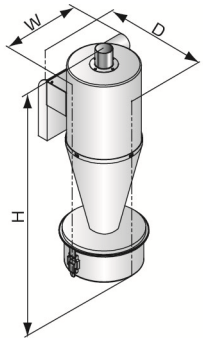
1. Control box
2. Buzzer
3. Alternative switch 。
4. High-pressure blower
5. Three way valve
6. Air suction inlet 1
7. Air suction inlet 2
8. Storage hopper 1
9. Storage hopper 2
10. Discharging plate1
11. Photosensor
12. Discharging plate2
13. Microswitch
14. Hopper suction pipe
15. Material inlet pipe

Turn on the alternative switch (3), via the operation panel to set the suction time of the storage hopper 1 (8) and storage hopper 2 (9), then press the start button and the high pressure blower (4) starts work. The air suction inlet 1 (6)of three way valve (5) opens and the air suction inlet 2 (7) closes, discharging plate (10) closes, and then storage hopper 1(8) starts suctioning material, after material suction finishes, the high pressure blower(4) stops. Because of deadweight, materials in storage hopper 1(8) drops down. When the microswitch (13) detects that there is no material in the storage hopper 2 (9), blower (4) works again. And solenoid valve works, three way valve (5) controlled air suction inlet 2 (7) opens, and discharging plate2 (12) closes, storage hopper 2 (9) begins

suctioning material, when finished, if photosensor (11) detect that there is no material in storage hopper 1 (8), via the solenoid valve alternative, the high pressure blower (4) start working again. The machine works according to this cycle. The buzzer (2) on control box (1)will give an alarm when material can not be sucked or there is no material.

2.2 Options

- Cyclone dust collector



It is suggested to opt cyclone dust collector to reduce cleaning times of filter when regrind material occupies over 30% of total raw material.

Table 2-1: ACF Specification

Model	H×W×D	Pipe diameter (inch)
ACF-1	550×220×235	1.5

Picture 2-2: ACF External Dimension

- For SHR,SCH-6U/12U/24U and SICH-6U/12U/24U are optional (Temperature redution is below 30˚Cwithin 30min).
- SMH can be matched with SCH-12U/24U to facilitate the temporary storage of materials.

2.3 Options

- For folished hopper inside ones,add “P” at the end of model code.

3. Installation Layout

3.1 Installation and Positioning

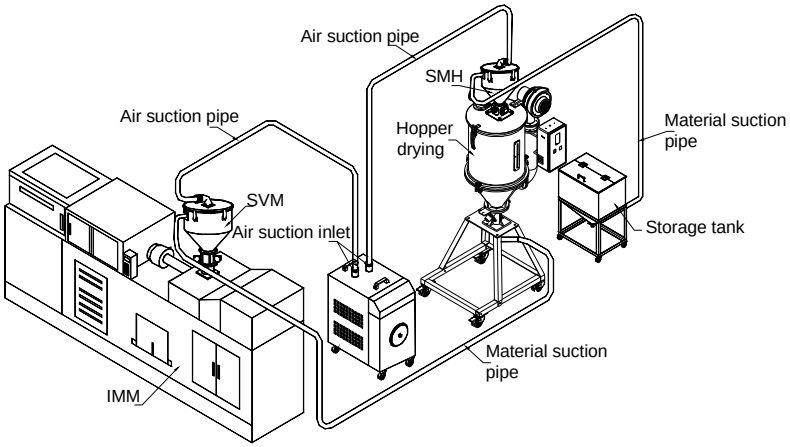
1) Machine just can be mounted in vertical position. Make sure there's no pipe, fixed structure or other objects above the installing location and around the machine which may block machine's installation, hit objects or injure human person.
2) For easy maintenance, it's suggested to leave 1m space around the machine.
3) Machine should be placed on water-level surface. If it needs to be mounted on a higher surface (e.g. the scaffold or the interlayer), should ensure its structure and size could bear the weight and size of the machine.

3.2 Power Connection

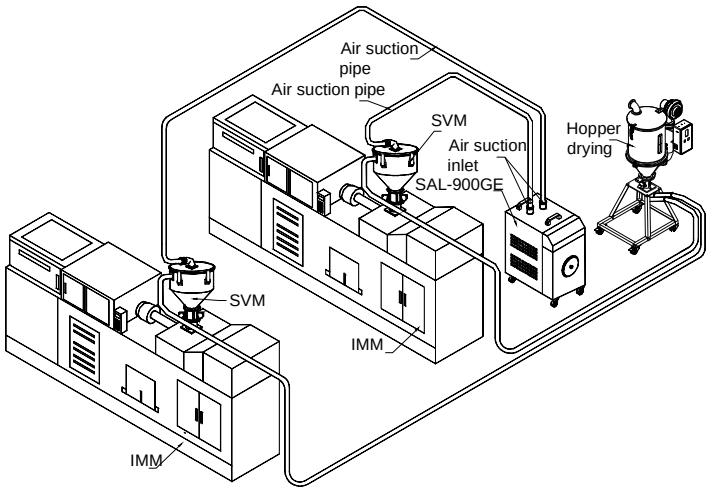
1) Make sure the voltage and frequency of the power source comply with those indicated on the manufacturer nameplate that attached to the machine.
2) Power cable and earth connection should conform to your local regulations.
3) Use independent electrical wires and power switch. Diameter of electrical 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 3-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***

3.3 Installation diagram

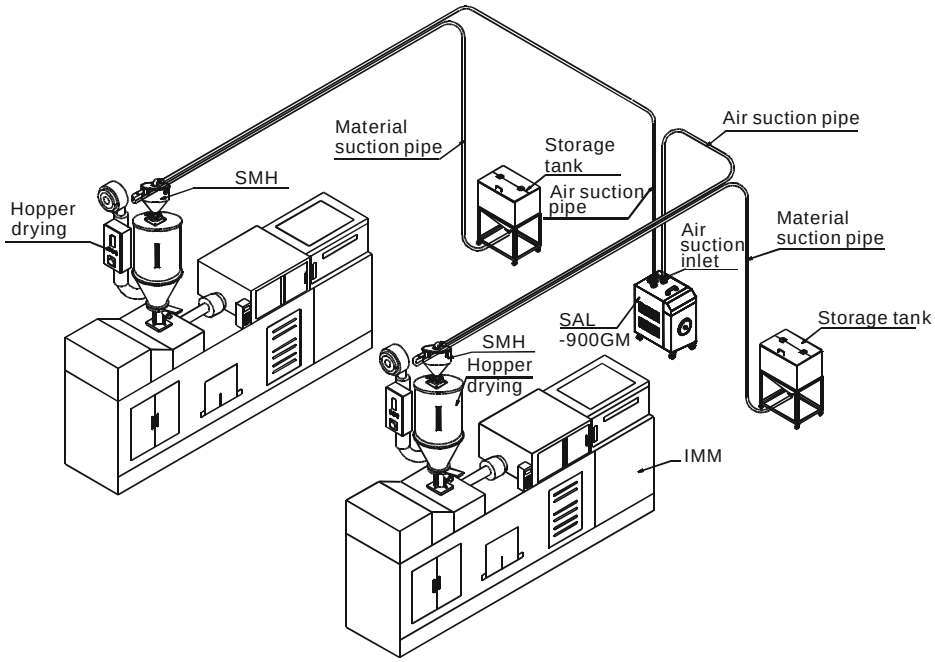
Picture 3-1: suction outlet



Picture 3-2: Installation Layout 1



Picture 3-3: Installation Layout 2



Picture 3-4: Installation Layout 3

3.4 Installation Steps

1) Place the SAL-900G/900G2 in proper place
2) Install the photosensor hopper receiver and vacuum hopper receiver, and connect the signal wire to the loader SAL-900G/900G2.
3) Connect the photosensor hopper suction inlet and vacuum hopper suction inlet to corresponding suction inlet of loader SAL-900G/900G2 with the steel wire hose, and connect the vacuum hopper suction inlet and photosensor hopper suction inlet to the suction box (usually under the dryer or storage hopper).

3.5 Shut-off Suction Box

The shut-off valve is linked with the photosensor hopper receiver. When the photosensor hopper receiver sucks materials, the shut-off valve will open for a period of time (adjustable) and close immediately. Then, the loader will continue to suck materials till all materials in the suction pipe are getting into the photosensor hopper receiver.

1) Connect the signal line of the connection point on the suction box to the signal connection point of the host shut-off valve.

2) Connect the suction box's suction inlet and hopper's feed port with the steel wire hose.

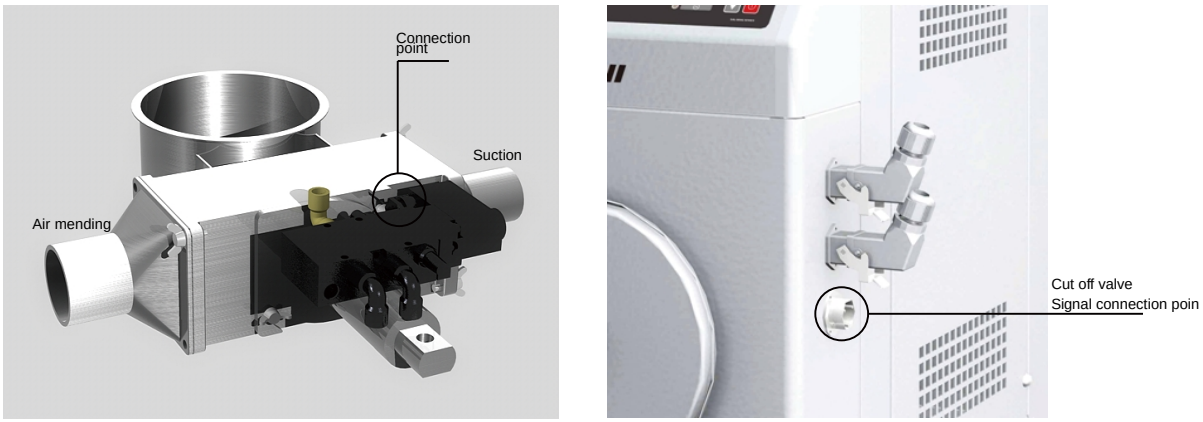
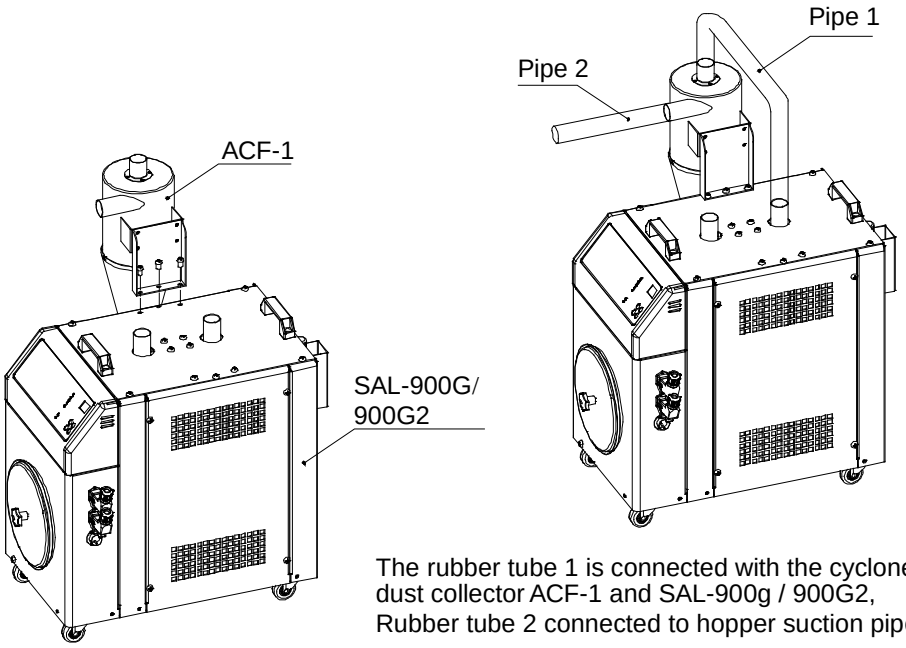


Fig. 3 5: Suction Box Wiring Points

3.6 Installation with the Cyclone Dust Collector ACF-1

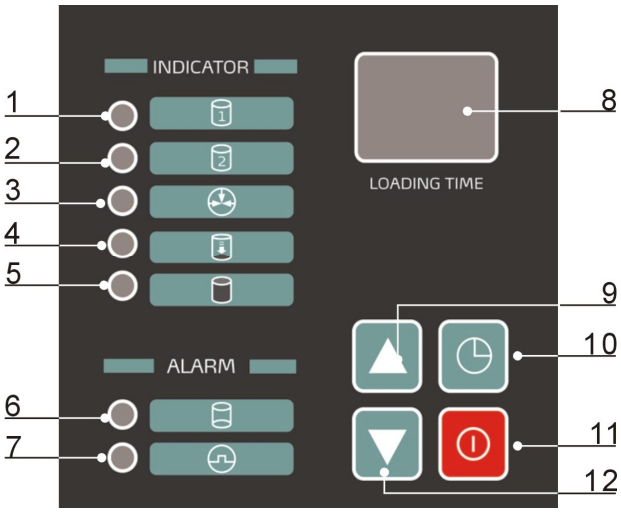
1) Find the installation hole as shown in below Fig. 3-6.
2) Remove the bolts.
3) Install the ACF-1 on the cover plate of SAL-G and locked with screws.
4) Connect the suction inlet of SAL-G's host unit and ACF-1's exhaust outlet with the steel wire hose.
5) Connect the ACF-1's air inlet and hopper's suction inlet with the steel wire hose.



The rubber tube 1 is connected with the cyclone dust collector ACF-1 and SAL-900g / 900G2, Rubber tube 2 connected to hopper suction pipe.

Fig. 3-5: ACF Installation Diagram

4. Operation



Picture 4-1: Control Panel

Table 4-1: Control Panel Description

No.	Description	Function
1	Hopper 1	Hopper 1 is at operation/setting state
2	Hopper 2	Hopper 2 is at operation/setting state
3	Shut off valve	Shut off valve is at open/closed state
4	Suction	Machine is at suction state
5	Full of material	Hopper is full of material
6	Shortage alarm	Material shortage alarm
7	Overload alarm	Motor at alarm state
8	Time display	Display time/parameter
9	Increase key	Parameter increase
10	Set key	Enter parameter setting
11	Start/stop key	Machine is at start/stop control
12	Decrease key	Parameter decrease

Operation:

1. Connect the power supply, "--" is displayed on LED, then enter to set loading time.
2. Press key "", the lamp of LOAD1 turns red. Then press key "" to set

the loading time of LOAD1.

3. Press the key "  " again, the lamp of LOAD2 turns red. Then press the key "  " to set the loading time of LOAD2.
4. Press the key "  " once more, the lamp of GATE turns red. Then press the key "  " to set the loading time of shut-off valve.
5. After setting, press key "  " to confirm.
6. Press once the key "  ", the LOAD1 starts auto-working. Press twice the key "  ", both the LOAD1 and LOAD2 start auto-working. Press three times the key "  ", only the LOAD2 starts auto-working. Then press four times the key "  ", the machine stops.

Notes:

When running out of material, the operation will auto-stop and sound the alarm. Press  button for closing the alarm sound and stoppage. After refilling the material, Press the  button to start the operation.

5. Troubleshooting

Fault	Possible reasons	Solutions
When shortage lasts long, and suction blower don't run.	The main switch and control switch don't open or the above two don't connect well.	Close the main switch and control switch and check their connecting.
	The microswitch on hopper don't connect well .	Adjust or replace.
	The signal wire is break off.	Re-connect.
The suction blower still running when the hopper is full.	The touch point is conglutinated	Repair or replace.
After several times of loading the material hopper still empty or the material shortage alarms.	The storage tank is empty.	Add the material
	The pipe is air leak.	Lock tightly and replace the vacuuming pipe.
	The filter is blocked.	Clean the filter.
The motor can’t run.	Short-phase or motor was burnt out.	Check and replace.
The fuse always burnt out after start-up.	Short circuit or connect the ground.	Check the circuit.
Motor overload alarms	The filter is blocked.	Clean the filter and reset the overload relay.
	One of three phase is lacking.	Check the circuit and reset the overload relay.kkk
Poor material liquidityin the pipe	Over or lack of air quantity	Adjust air inlet location of the suction box. Avoid small bending of the elbow.

6. Maintenance

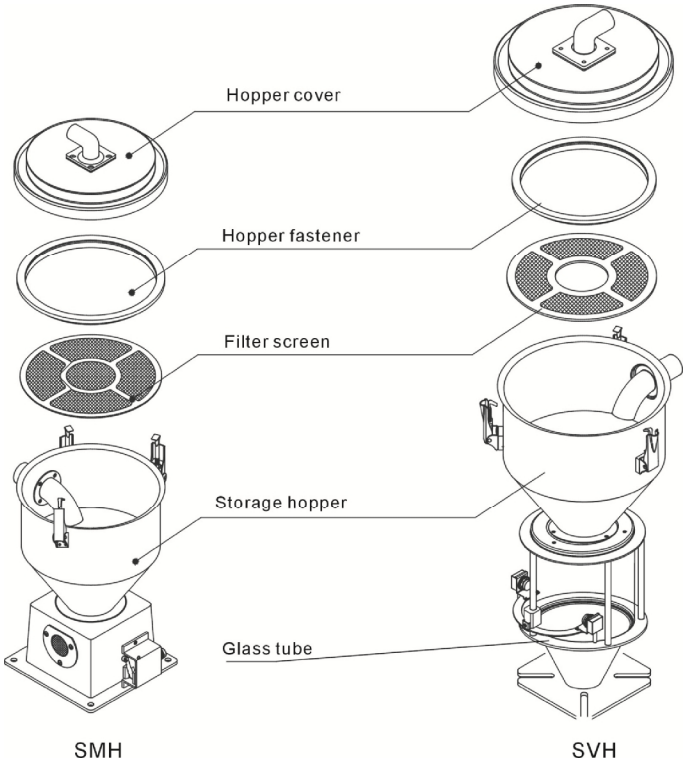
6.1 Hopper Cleaning(Take SVH as an example)

SMH Cleaning: In order to avoid air-blocking and to get smooth conveying.

Clean the filter screen inside of material hopper. Unlock the snap hook on the hopper, remove the hopper cover and take out the filter screen, then clean it. Clean the filter periodically or when the suction force is reduced.

SVH Cleaning:

1. Clean the filter screen, in order to avoid air-blocking and to get smooth conveying. Clean the filter screen inside of material hopper. Unlock the snap hook on the hopper, remove the cover and take out the filter, then clean it. Clean periodically or when the suction force is reduced.
2. Clean the glass pipe, when the dust accreted on the tube. Clean the dust in time for machine normal working.

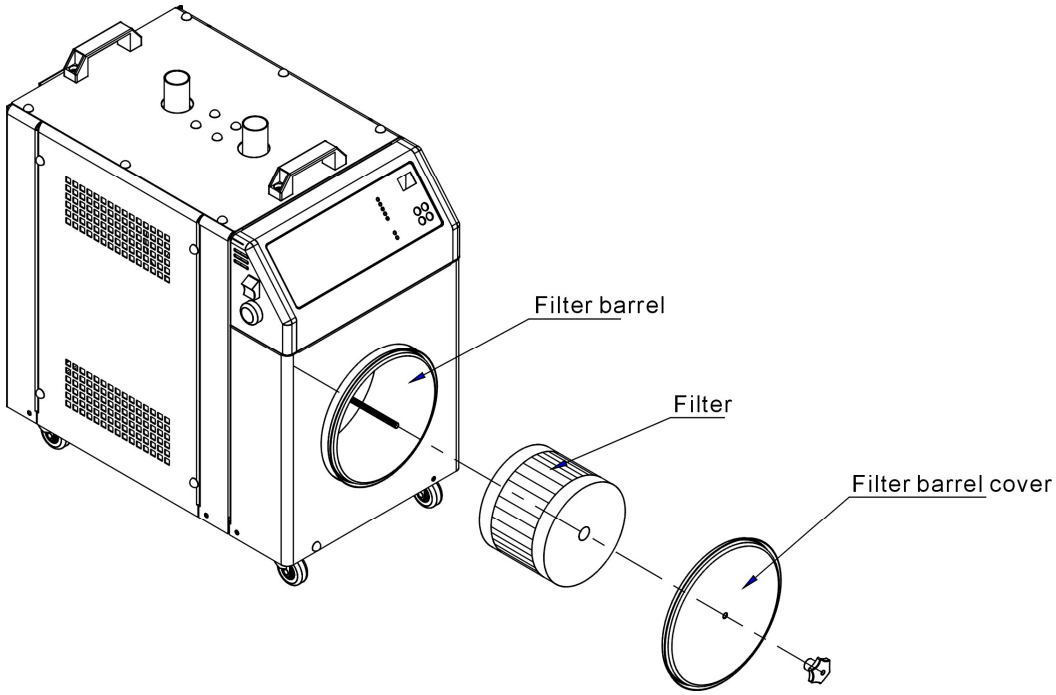


Picture 6-1: Hopper Cleaning

6.2 Main Body Cleaning

When machine in use, clean the filter periodically or when the suction force is reduced. Take out the filter from the main body, clean the dust accreted on it to ensure good ventilation of the air and to enhance loading capacity.

Filter Inspection and Storage Hopper Cleaning



Picture 6-2: Main body Cleaning

1. Open the filter barrel cover and take out the filter; blow off the dust with a high pressure air gun from the inside to outside; take down the filter barrel lid and remove the dust in it.
2. Clean the filter. Period: daily