SAL-G-EB

“Budget” Separate-vacuum Hopper Loader

Date: Oct.,2023

Version: Ver.A

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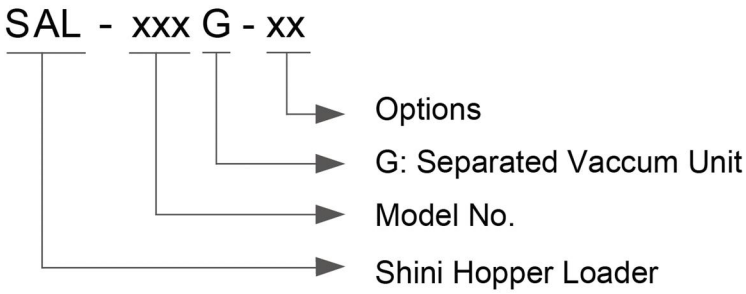
1. General Description

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

Picture 1-1: SAL-810G-EB&SMH-6L

1.1 Coding Principle



1.2 Features

1) Microprocessor control for ease of use and accurate control.
2) Motor overload protector ensures long service life of motor.
3) Audible material shortage alarm for quick notification of troubleshooting.
4) Filter designed for easy cleaning and the checking window can monitor filter condition easily.

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.

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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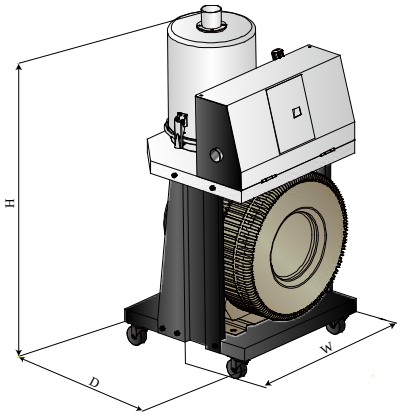
1.3 Technical Specifications

1.3.1 Outer Dimensions



Picture 1-2: Outer Dimensions

1.3.2 Specifications

Table 1-1:Specificationsss

Main Unit						Hopper				Conveying Hose Dia. (inch)	Air Suction Pipe Dia. (inch)	Conveying Capacity (kg/hr)
Model	Ver.	Blower Type	Blower power (kW)	Dimension (mm) H×W×D	Weight (kg)	Applied Model	Hopper Capacity(L)	Dimension (mm) H×W×D	Weight (kg)			
SAL -810G-EB	A	Induction	0.75 (3Φ)	740×400×410	58	SMH-6L	6	460×260×315	6	1.5	1.5	300
						SVH-6L		600×285×305	7			
						SHR-6U		420×285×360	6			
SAL -820G-EB	A	Induction	1.5 (3Φ)	740×400×410	65	SMH-6L	6	460×260×315	6	1.5	1.5	480
						SVH-6L		600×285×305	7			
						SHR-6U		420×285×360	6			
SAL -830G-EB	A	Induction	1.85 (3Φ)	785×400×410	68	SMH-12L	12	SMH-12L	7	2	2	700
						SVH-12L		SVH-12L	11			
						SHR-12U		SHR-12U	7			
SAL -840G-EB	A	Induction	2.2 (3Φ)	947×444×480	72	SMH-24L	24	720×325×375	9	2	2	820
						SVH-24L		1120×360×375	13			
						SHR-24U		690×315×400	9			
SAL -850G-EB	A	Induction	3.75 (3Φ)	947×444×480	75	SMH-24L	24	720×325×375	9	2	2	920
						SVH-24L		1120×360×375	13			
						SHR-24U		690×315×400	9			

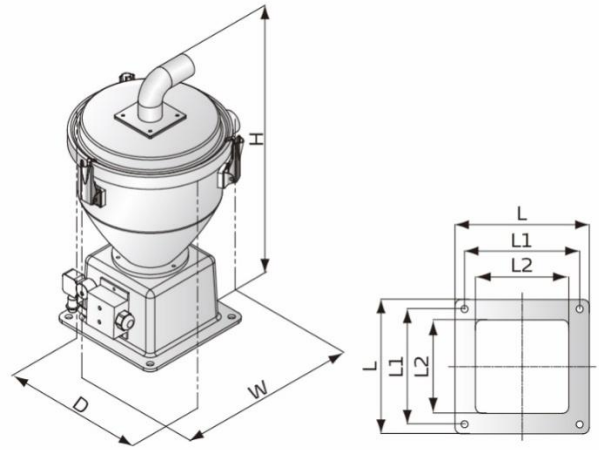
Notes: 1) " SMH" stands for vacuum hopper receiver, "SVH" stands for photo-sensor hopper receiver; " SHR-U " stands for Euro-Hopper receiver; We reserve the right to change specifications without prior notice.

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) All hoppers are equipped with 4P heavy-duty connector;

4) Power supply: 3Φ, 400VAC, 50Hz.

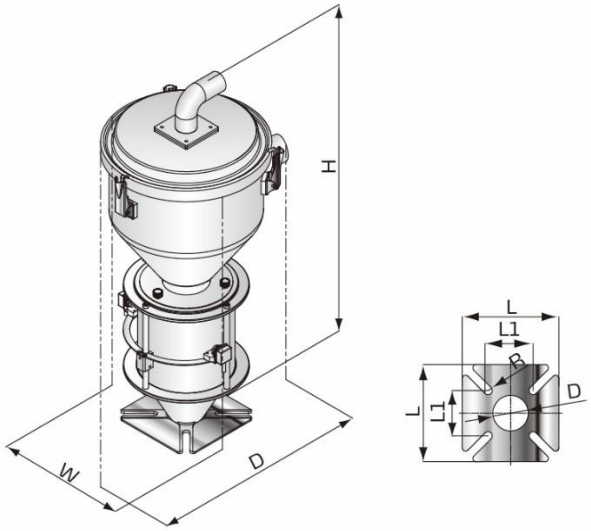
1.3.3 SMH Vacuum hopper receiver



L=210mm L1=180mm L2=148mm

Picture 1-3: SMH External Dimension

1.3.4 SVH photo-sensor hopper receiver

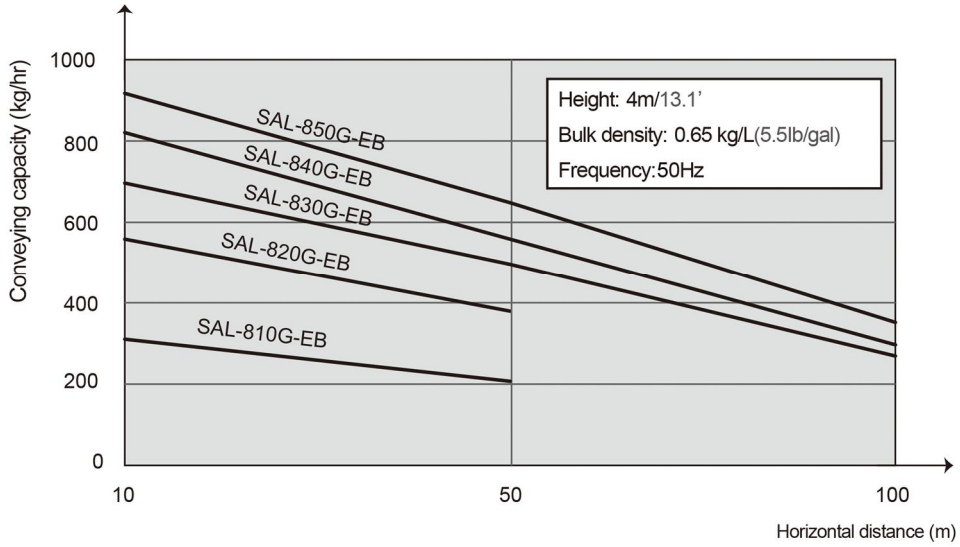


Picture 1-4: SVH External Dimension

Table 1-2：SVH Specification

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

1.3.5 Conveying Capacity



Picture 1-5: Conveying Capacity

1.4 Safety Regulations

1.4.1 Safety Regulations

Strictly abide by the following safety regulations to prevent damage of the machine or personal injuries.

All the electrical components should be installed by professional technicians.

Turn off the main switch and control switch during maintenance or repair.

Warning! High voltage!

This sign is attached on the cover of control box!

Warning! Be careful!

Be more careful at the place where this sign 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

	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.

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:

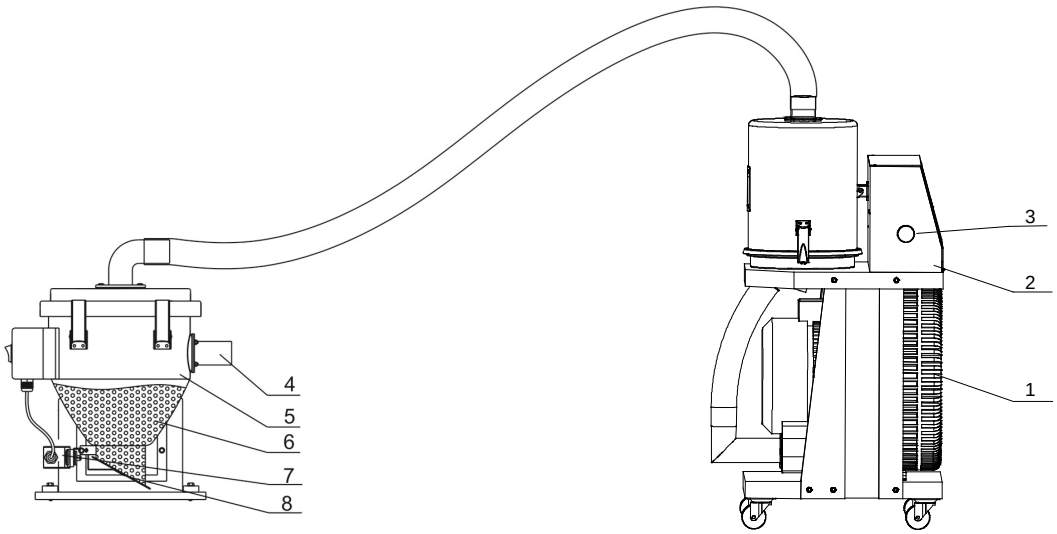
1. Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2. Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible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

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

2.1.1 Working Principle 1

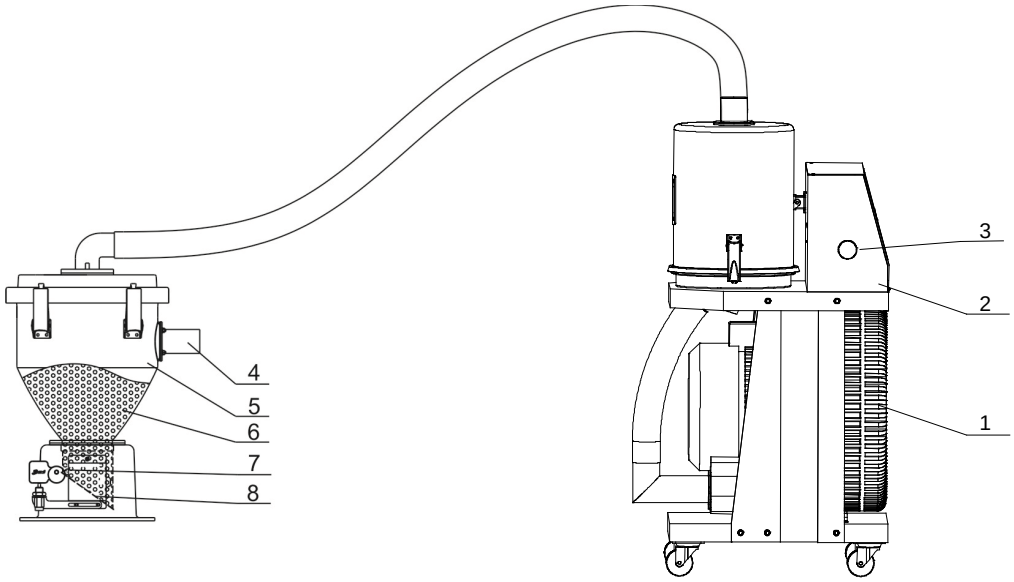


SHR-U SAL-G-EB

Picture 2-1: Working Principle

1. High-pressure blower
2. Control box
3. Buzzer
4. Material inlet pipe
5. Storage hopper
6. Materials
7. Reed switch
8. Discharging plate

Turn on the machine, the high pressure blower(1)starts work, it makes storage hopper (5) generate the vacuum. Discharging plate(8) closed, materials in silo get into the storage hopper(5) through material inlet pipe(4) by air pressure. When the loader finishes the work, the high pressure blower(1) stop working, materials (6) will drop off due to gravity. When the reed switch (7) detects there's no material, the high pressure blower (1) will start working again. When the loader can't suck the material or material shortage, the buzzer (3) on control box(2) will alarm.

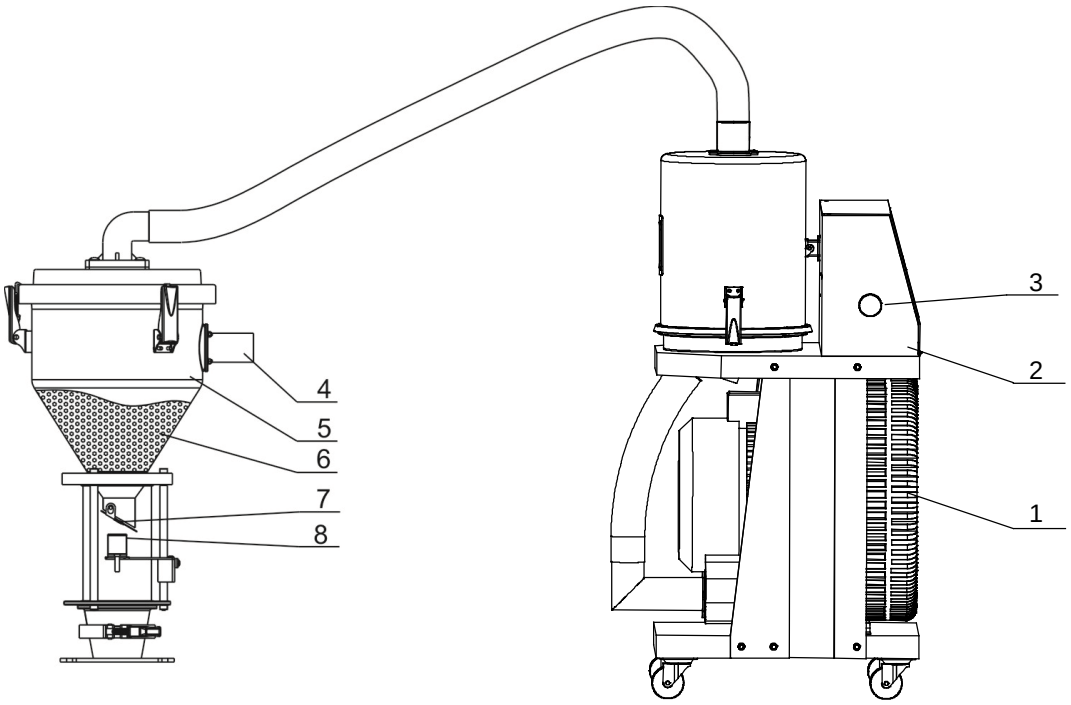


SMH SAL-G-EB

Picture 2-2: Working Principle 2

1. High-pressure blower
2. Control box
3. Buzzer
4. Material inlet pipe
5. Storage hopper
6. Materials
7. Micro switch
8. Discharging plate

When the machine is on, the high pressure blower (1) starts to work, and it makes storage hopper(5) generate the vacuum. The discharging plate (8) is closed, and then materials in silo get into the storage hopper (5) through material inlet pipe(4) owing to air pressure. When the loader finishes its work, high pressure blower (1) stops working, and materials(6) will drop off because of gravity. When the micro switch (7) detects there's no material, high pressure blower(1) will start to work again. When the loader can't suck the material or there is material shortage, buzzer (3) on the control box(2) will sound an alarm.



SVH SAL-G-EB

Picture 2-3: Working Principle 3

1. High-pressure blower
2. Control box
3. Buzzer
4. Material inlet pipe
5. Storage hopper
6. Material
7. Discharging plate
8. Photoelectric switch

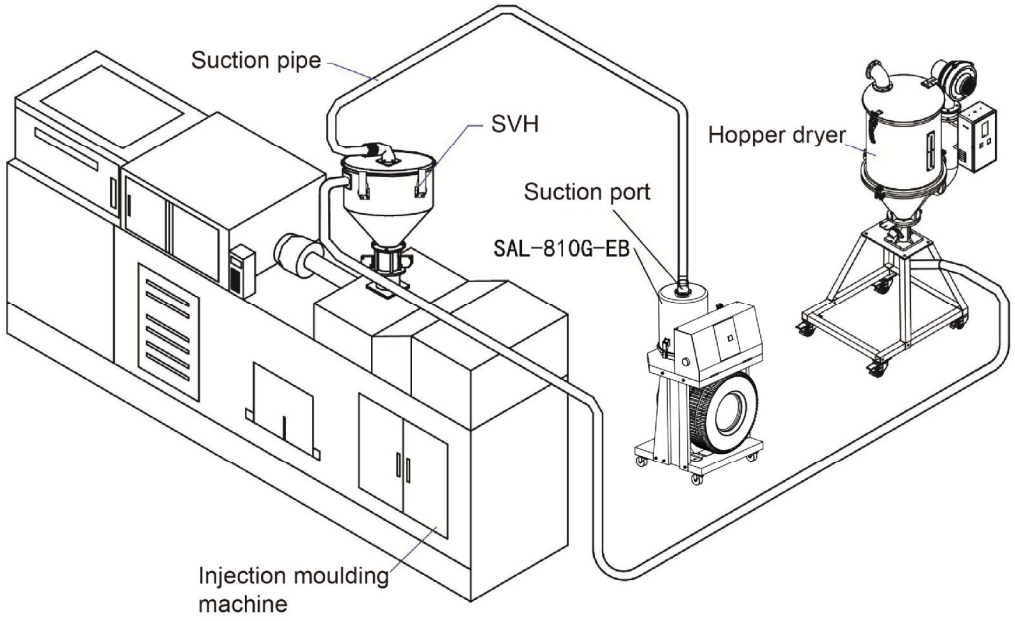
When the machine is on, the high pressure blower(1) starts to work, and it makes storage hopper(5) generate the vacuum. The discharging plate(7) is closed, and then materials in silo get into the storage hopper(5) through material inlet pipe(4) owing to air pressure. When the loader finishes its work, high pressure blower (1) stops working, and materials (6) will drop off because of gravity. When the photoelectric switch (8) detects there's no material, high pressure blower (1) will start to work again. When the loader can't suck the material or there is material shortage, buzzer (3) on the control box(2) will sound an alarm.

3. Installation and Debugging

3.1 Notes for 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 Installation Diagram 1



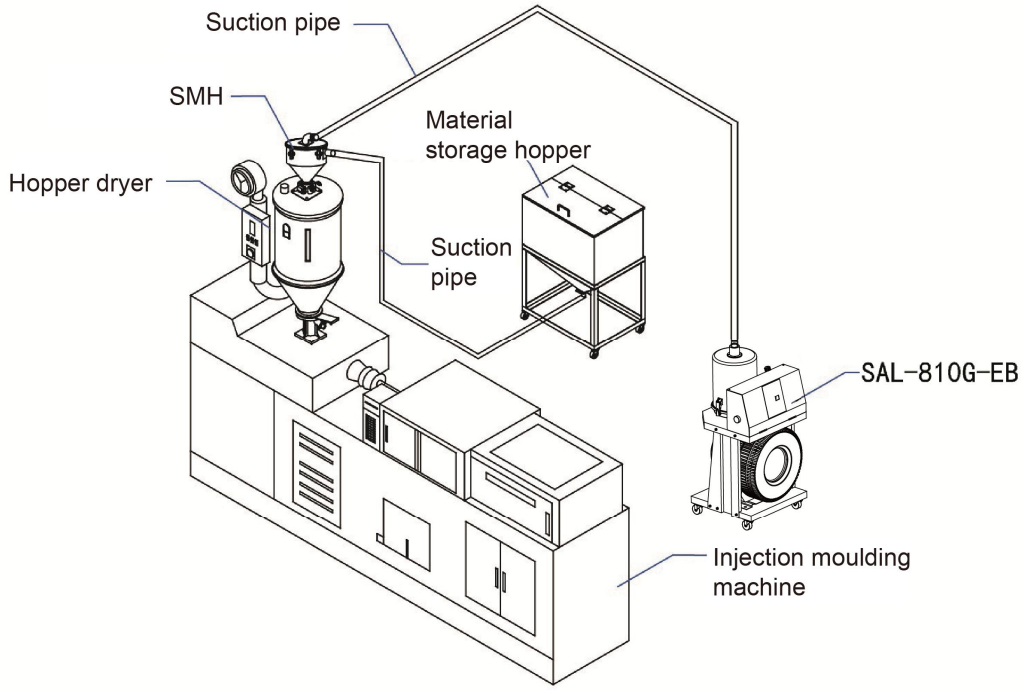
Picture 3-1: Installation Diagram 1

Installation Steps：

1) Place the SAL-810G/820G/830/840/850G-EB machine at a proper position on the ground, and connect to the power cable.
2) Install the material hopper (SMH) on the hopper dryer, and the material hopper (SVH) on the injection moulding machine, and connect the signal cord to the machine SAL-810G/820G/830G/840G/850G-EB.
3) Use the steel wire soft hose, connect the air suction inlet of vacuum hopper

(SVH) to corresponding air inlets of the SAL-810G/820G/830G/840G/850G-EB.Then connect the material inlets of vacuum hopper to the storage hopper (SVH).

3.3 Installation Diagram 2

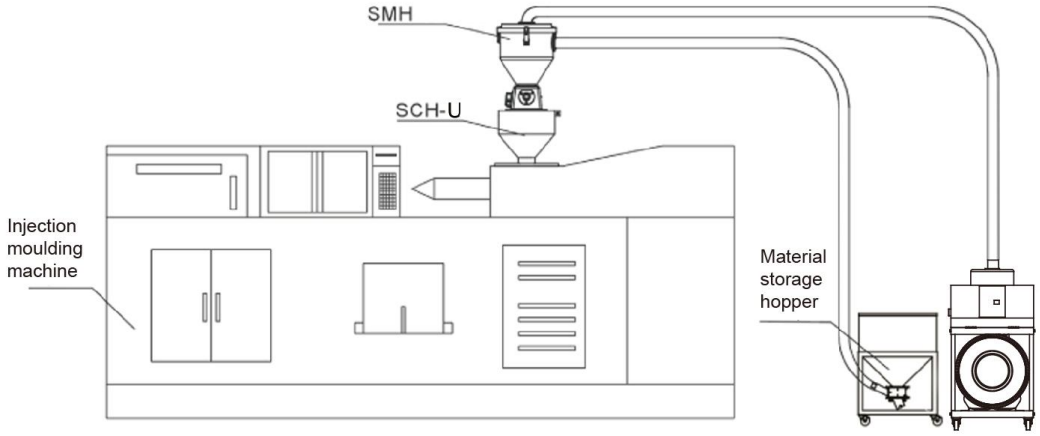


Picture 3-2: Installation Diagram 2

Installation Steps:

1) Place the SAL-810G/820G/830/840/850G-EB machine at a proper position on the ground, and connect to the power cable.
2) Install the material hopper (SMH) on the hopper dryer, and connect the signal cord to the machine SAL-810G/820G/830G/840G/850G-EB.
3) Use the steel wire soft hose, connect the air suction inlet of vacuum hopper (SVH) to corresponding air inlets of the SAL-810G/820G/830G/840G/850G-EB.Then connect the material inlets of vacuum hopper to the storage hopper (SMH).

3.4 Installation of Vacuum Hopper Receiver SMH Optional Storage Collective Hopper SCH-U



Picture 3-3: Optional SCH-U Installation Layout

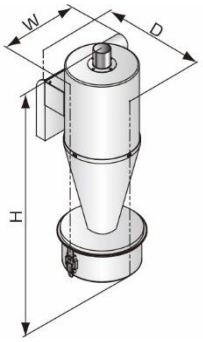
SMH vacuum hopper can option with collection hopper SCH-U for direct mounting at material inlet of the moulding machine.

Installation steps：

1) Mount the SCH-U at material inlet of moulding machine, point to the holes and lock the screws.
2) Put the SMH on the SCH-U, point to the holes and lock the screws, then connect the signal wire to the hopper loader of SAL-G-EB.
3) Connect the air inlet of vacuum hopper with steel wire hose separately to corresponding air inlet of SAL-G-EB. Connect the material inlet of storage silo to the material inlet of vacuum hopper.

3.5 Installation of SAL-G-EB Optional Cyclone Dust Separator

When conveying plastics contain dusts in high proportion, optional dust cyclone separator is recommended to reduce the purging times of main machine filter.

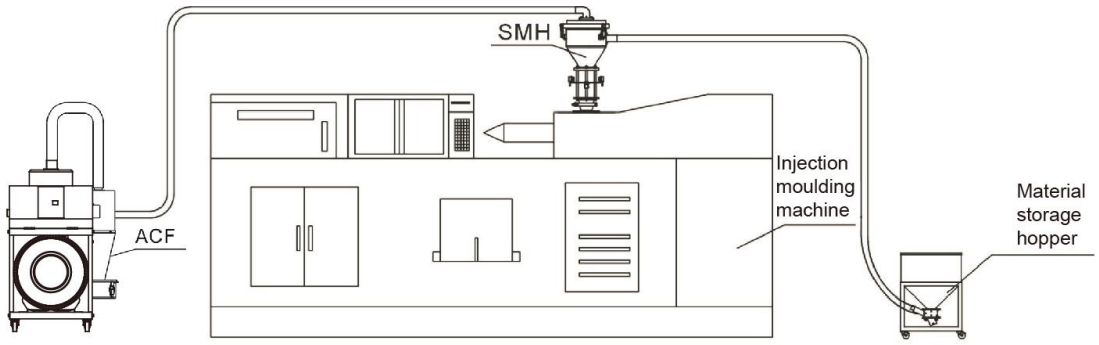


Picture 3-4: Optional ACF Installation Layout

Table 3-1：ACF Specifications

Model	External Dimensions (H×W×D)	Pipe Dia.(inch)
ACF-1	550×220×235	1.5
ACF-2	550×220×235	2.0

1) SHR can work with the standard storage collective hopper SCH-6U/12U/24U and insulated storage collective hopper SICH-6U/12U/24U (The material temp. should not exceed 30 ℃ within 30 mins.).
2) SMH can work with the storage collective hopper SCH-U for easy material storage.
3) For models with hopper polished inside, add “P” at the end of the model code.



Picture 3-5: Optional ACF Installation Layout

Installation Steps：

1) Mount the ACF on cover plate of SAL-G-EB and lock up the screws(There’s two holes on cover plate of SAL-G-EB main machine for ACF installation);
2) Connect the air inlet of SAL-G-EB main machine with steel wire hose to air outlet of ACF.
3) Connect the air inlet of ACF with steel wire hose to air inlet of the hopper;
4) Connect one end of steel wire hose to hopper material inlet, and connect to the suction inlet of storage tank.

4. Operation Description

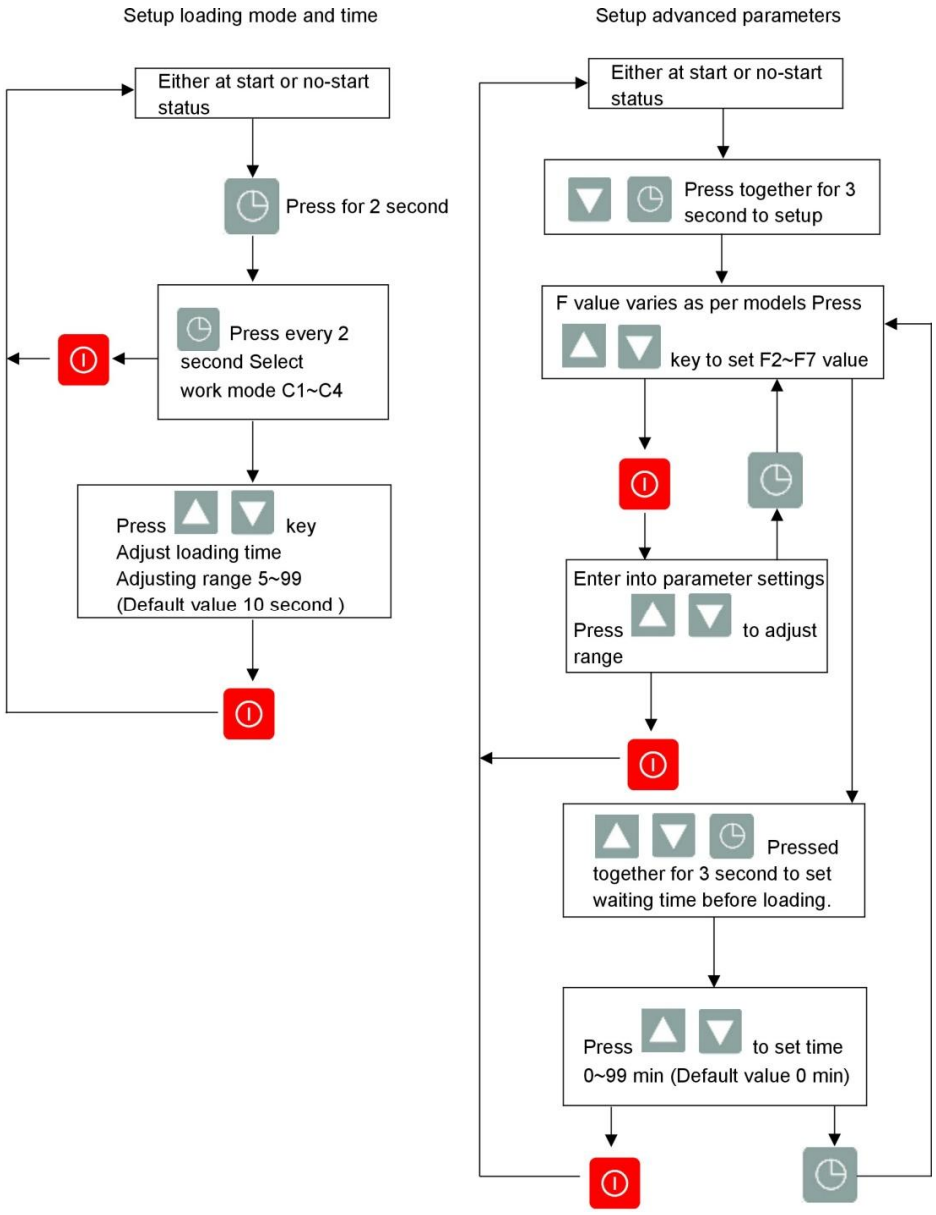
4.1 Machine Start and Stop

1) Press the button to set appropriate conveying time. For most common materials, set the conveying time to 20 secs.
2) Press the button to start the machine for conveying. Then, press the button to stop the machine.

When the hopper is short of materials, the machine will stop and give an alarm. Press the button to stop the machine. After feeding or troubleshooting, press the key again to restart the machine.

4.2 Function Setting

4.2.1 Setting method



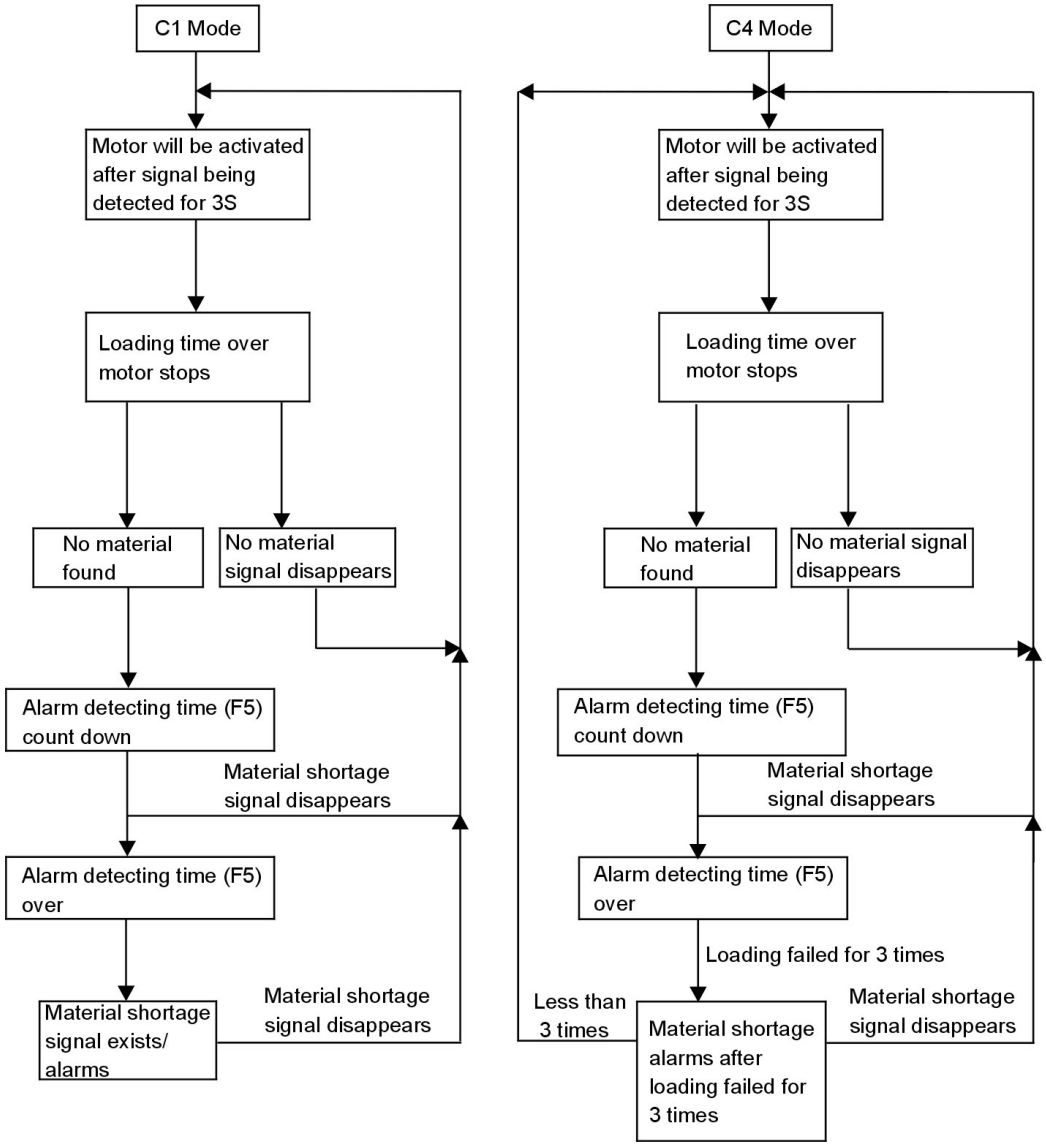
4.2.2 Operation Description

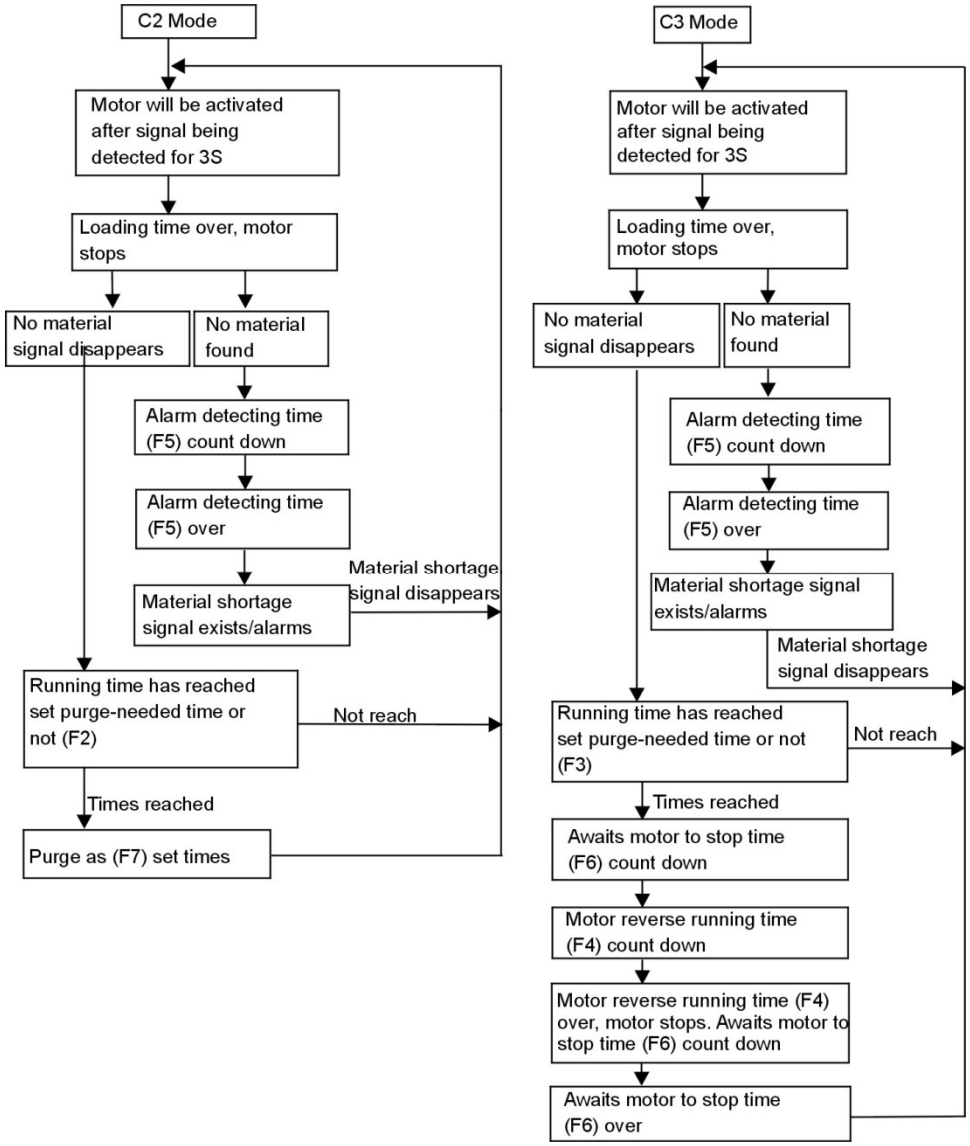
1. Press the  button to switch on/off
2. Select working mode

Working Mode	Meaning	Applicable Model
C1	Auto suction, output the shortage alarm when there is no material in one suction.	SAL-G-EB series
C2	After auto suction, the purge according to the set cycle and frequency	SAL-330/360 series
C3	With auto motor reverse de-dusting function	SAL-430/460 series
C4	Auto suction, output the shortage alarm only when there is no material after three consecutive suctions.	SAL-G-EB series

3. Under standby mode, the seven-stage displayer shows the suction time.

4. Action Flow:





4.2.3 Parameter Description

Code	Status	Default Value	Adjusting Range	Mode
F2	Necessary spray washing times every several times for operation	3 times	1~10 times	C2
F3	Necessary cleaning times for reverse running every several times of operation	3 times	1~10 times	C3
F4	Motor reverse running time	10 secs.	5~30 secs.	C3
F5	Alarm detecting time	20 secs.	10~40 secs.	C1,C2,C3,C4

F6	Awaits motor to stop time	30 secs.	30~99 secs.	C3
F7	Purge times	2 times	1~5 times	C2
F8	Suction awaits time	0	0~99 times	C1,C2,C3,C4

4.2.4 Other Settings

1. For any settings in shutdown status, if waiting for 5 secs. without action, it will return to the shutdown automatically, and the set parameters will be saved automatically
2. For any settings after startup, if waiting for 5 secs. without action, it will return to the standby automatically, and the set parameters will be saved automatically
3. After all actions are completed and no shortage signal is detected, if pressing the ▲ ▼ buttons more than three secs., the motor will enter the reverse purging status at the moment. After releasing the ▲ ▼ buttons, the motor will stop, and it will count down when waiting the motor to stop. After the countdown, it will return to the standby mode to detect the shortage signal (This function is only suitable for the SAL-430/460 model).
4. Short connector function: After short circuiting, C1, C3, and C4 functions can be selected, which are suitable for SAL-700G/800G/430/460 models. When the circuit is disconnected, only C1, C2, and C4 functions can be selected, which are suitable for SAL-700G/800G/330/360 models.

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. Motor fault or reed switch fault .	Turn on the main switch and control switch and confirm that they are in good contact. Maintain or replace.
	The micro-switch on hopper don't connect it well .	Adjust or replace.
	The signal wire is break off.	Re-connect the signal.
The motor is still running when the hopper is full.	Contactor fault.	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 to the hopper.
	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.	Check the circuit.
Motor overload alarms	The filter is blocked.	After cleaning the filter screen, press the reset button on the overload relay.
	Phase shortage	After connecting the circuit, press the reset button on the overload relay.
Poor material liquidity in the pipe	Over or lack of air quantity	Adjust air inlet location of the suction box. Avoid small bending of the hopper elbow.

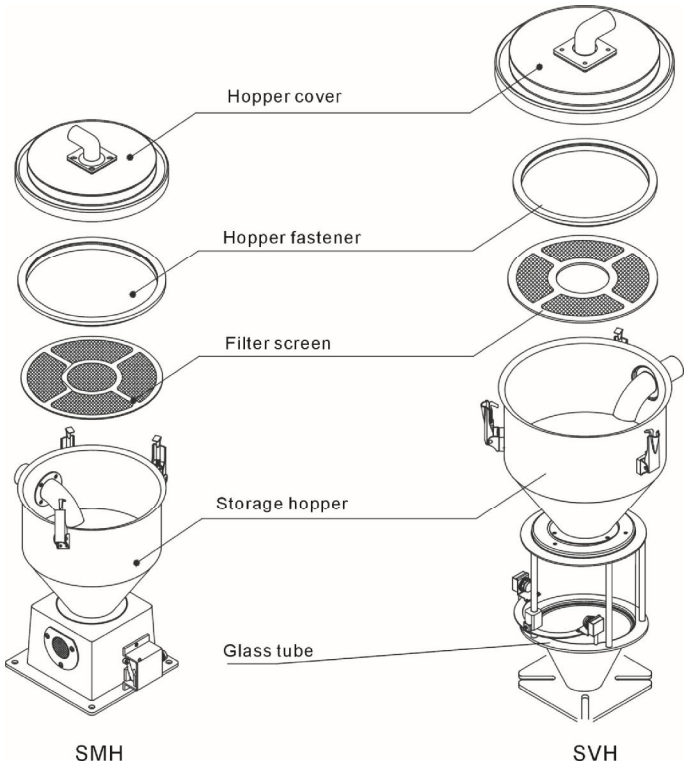
6. Cleaning and Maintenance

6.1 Hopper Cleaning

SMH Cleaning: The storage hopper is equipped with the filter screen. If it is found that the suction amount has reduced, unlock the snap hook on the hopper, remove the hopper cover, take out the filter screen, eliminate the dust attached to it to maintain the good ventilation, and enhance the suction ability.

SVH Cleaning:

1. Filter screen cleaning. If it is found that the suction amount has reduced, unlock the snap hook on the hopper, remove the hopper cover, take out the filter screen, eliminate the dust attached to it to maintain good ventilation, and enhance the loading capacity.
2. Clean the glass pipe, when the dust is attached on the tube. Clean the dust in time for machine normal working.

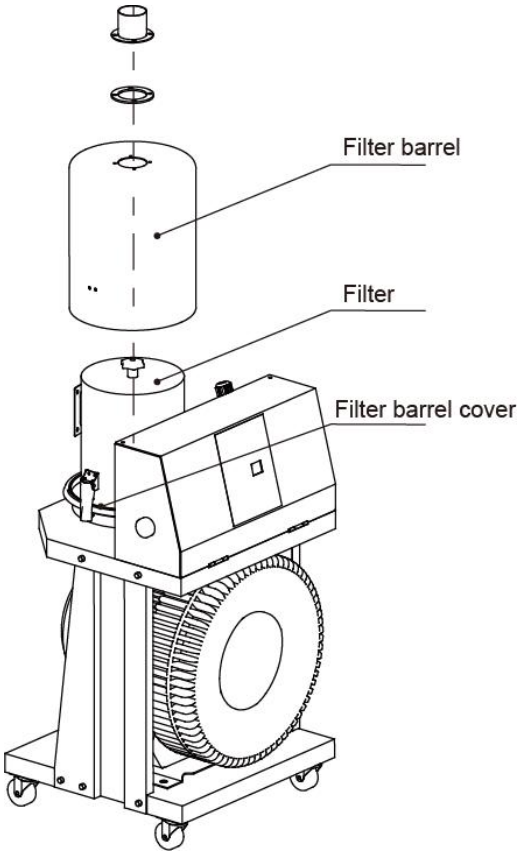


Picture 6-1: Hopper Cleaning

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



SAL-G-EB

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

6.3 Maintenance Schedule

6.3.1 About the Machine

Model: _____ SN: _____ Manufacturing date: _____

Voltage: Φ_____V _____ Frequency: _____ Hz Total power: _____ kW

6.3.2 Installation Inspection

- ☐ Check whether the conveying pipe is properly connected
- ☐ Check whether the conveying pipe is tightly connected.
- ☐ Check whether the installation plate is properly fixed.

Electrical Specifications

- ☐ Voltage: _____ V _____Hz
- ☐ Fuse burnt current: One phase _____ A Three-phase _____ A
- ☐ Check phase sequence of power supply

6.3.3 Daily Inspection

- ☐ Check the main power switch.
- ☐ Check the filter screen.
- ☐ Check the motor running status.

6.3.4 Weekly Inspection

- ☐ Check whether there is any wire damage.
- ☐ Check whether there is any looseness of electrical components.
- ☐ Check whether the flange screws of the feed pipe are loose.

6.3.5 Monthly Inspection

- ☐ Check whether the hopper cover clamp is loose.
- ☐ Check whether the check valve has deformed.
- ☐ Check the functions of micro-switches or photoelectric sensors.