

SAL-300EB

“Budget” Hopper Loader

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1. General Description



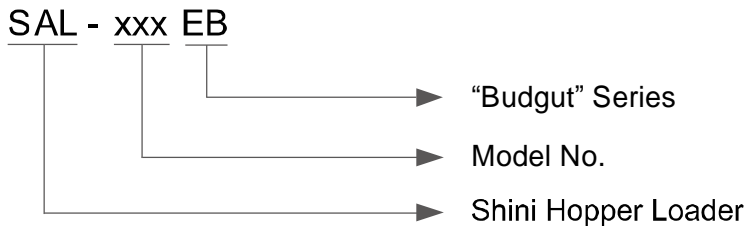
Please read through this operation manual before using and installation to avoid damage of the machine and personal injuries.

The SAL-300EB series use a high-speed motor in this lightweight and compact unit. With superior suction power and easy installation. It is particularly suitable for conveying new materials.



Picture 1-1: “Budget” Hopper Loader SAL-300EB

1.1 Coding Principle



1.2 Features

- 1) SAL-EB integrated design features compact structure and light weight.
- 2) Equipped with stainless steel filter screen.
- 3) Equipped with manual control switch, which is convenient to switch the power when installing the machine in high places.
- 4) Hopper lid fixed by snap hook is easy for detaching.
- 5) Audible alarm function.
- 6) Dust collective bag is for easy dust cleaning.

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 12, 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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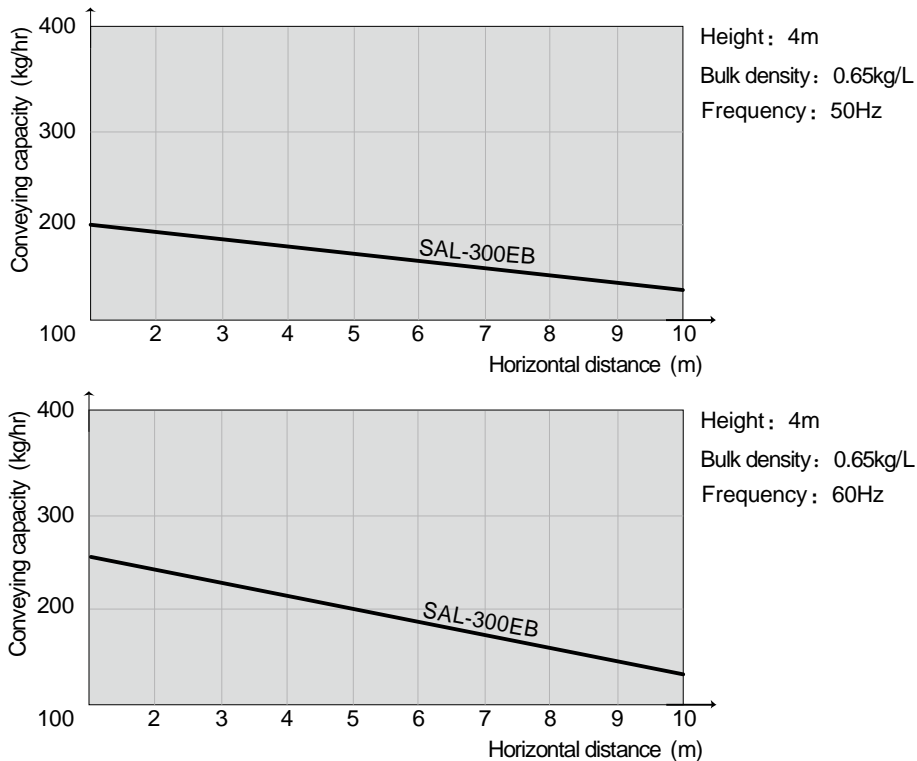
Shini Plastics Technologies (Pinghu), Inc.:

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Shinden Precision Machinery (Chongqing), Inc.:

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1.2.1 Loading Capacity



Picture 1-2: Loading Capacity

1.3 Safety Regulations

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



Attention!

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.

Transportation and Storage of the Machine

Transportation

- 1) SAL series hopper loader are packed in paper cartons. Handle with care when to move the machine by hands.
- 2) Do not rotate the machine and avoid collision with other objects during transportation to prevent improper functioning.
- 3) 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.
- 4) The machine and its attached parts can be kept at a temperature from -25°C to $+55^{\circ}\text{C}$ for long distance transportation and for a short distance, it can be transported with temperature under $+70^{\circ}\text{C}$.

Storage

- 1) Hopper loader should be stored indoors with temperature kept from 5°C to 40°C 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

The machine should be operated:

- 1) Indoors in a dry environment with max. temperature $+45^{\circ}\text{C}$ and humidity nomore 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, CO₂ dry powder fire extinguisher should be applied.

1.4 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).

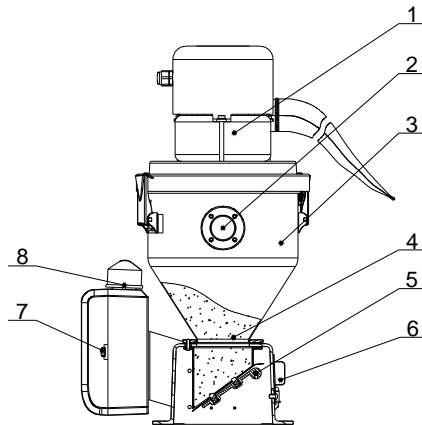
Shini is exempted from liability for any costs, fees, claims and losses caused by reasons below:

- 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-300EB is suitable for conveying plastic particles. The blower runs and sucks the air out from the hopper to generate the vacuum. Thus, the air is sent inside the hopper as the air flows under negative pressure.



Picture 2-1: Working Principle

- | | | | | |
|-----------------------|----------------|----------------------|------------------|--------------------|
| 1. Carbon bursh motor | 2. Mat. pipe | 3. Mat. storage tank | 4. Material pipe | 5. Discharge plate |
| 6. Microswitch | 7. Control box | 8. Alarm light | | |

After turning on the manipulator, when the microswitch (6) detects that there's no material in the material storage hopper (3), the carbon brush blower will (1) start to work, thus generating a vacuum in the material storage tank(3). Meanwhile, the discharge plating (5) will close. Then, the materials in the silo will enter the material storage tank (3) through the material pipe (2) under the action of negative pressure and air flow. When the microswitch (6) detects that the material storage tank (3) is full or after the power is cut off, the carbon brush blower (1) will start to work again. When the machine can't suck materials from the material storage tank, the alarm light (8) on the control box (7) will flicker to indicate no materials.

3. Installation and Debugging

This series of models can only be used in well-ventilated working environment.



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

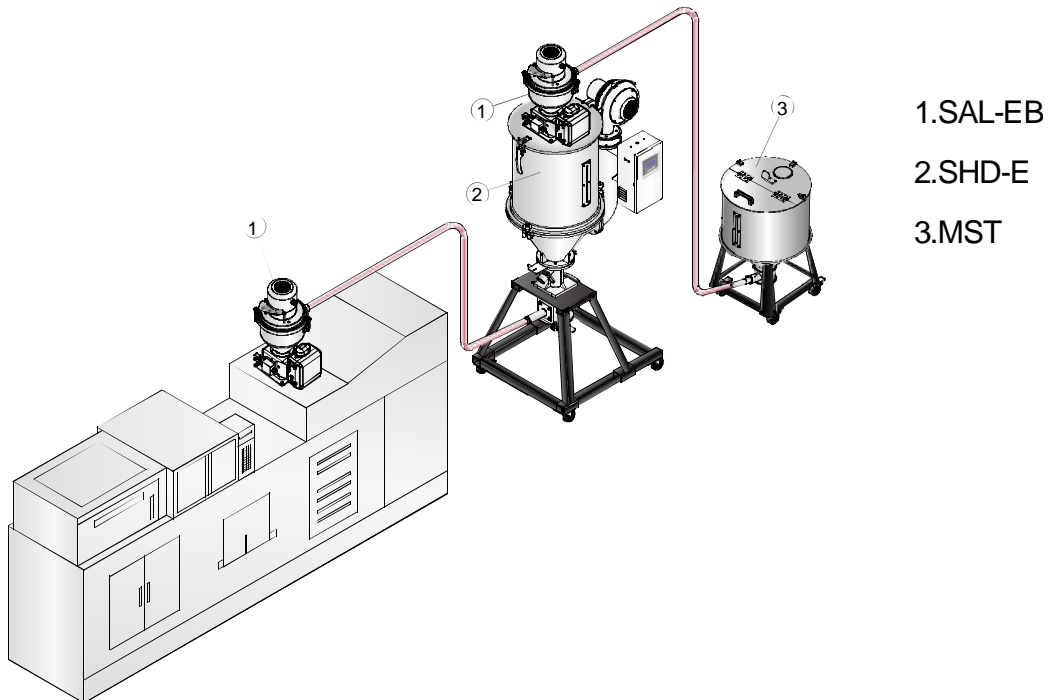
Power supply should be fixed by qualified technicians!

3.1 Installation and Positioning

The SAL-EB series of models are mainly used beside injection moulding machines, extrusion machines or other machines to dry the plastic materials, which are installed on the drying hopper directly. It also can collocate with the SICH or SCH collective hoppers to work on the inlet of the injection moulding machine. After setting, the machine can work automatically and independently without frequent adjustment.

Installation Steps:

- 1) Place the SAL-300EB ("Budget" Hopper Loader) on top of the injection moulding machine and hopper dryer, and connect to the power cable.
- 2) Connect the feed port of the SAL-300EB ("Budget" Hopper Loader) with the steel wire hose and connect the other end of the steel wire hose to the feed port under the dryer and the feed port under the material storage tank respectively.



Picture 3-1: Installation Methods

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 2-phase 3-wire power source, connect the power cable (L, N) to the live wires, zero 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***

Note: Please confirm that the power is switched off before power cable connection!

4. Application and Operation

4.1 Machine Start and Stop

- 1) Press the RUN/STOP key to start the machine for feeding. Press the RUN/STOP key again to stop the machine.
- 2) Press the SET key to select the mode (C1, C2, C3) first, and then press the INC/DEC key within 3 secs. in C1 mode to set the proper suction time and shutdown time. For most common materials, set the feeding time to 15 secs.



When the machine is short of materials, it will stop running and issue an alarm. Press the RUN/STOP key to shutdown the machine. After feeding or troubleshooting, press the RUN/STOP key again to re-start the machine.

4.2 Function Setting

4.2.1 Mode description

Table 4-1: Mode Description

Mode	Suction Time	Shutdown Time	Alarm
C1	5-99S	18S	Alarm of no material after three times of suction
C2	=suction time of C1	10-99S	Alarm of no materials after once suction
C3	=suction time of C1	10-99min	Alarm of no materials after once suction

Note: The suction time can only be adjusted in C1 mode.



Picture 4-1: Control Panel

5. Troubleshooting

Failures	Possible Causes	Solutions
Motor does not work long after material discharged	Did not turn on main power or control switch or poor connection of the switches	Turn on main power switch and control switch and make sure they keep good contact.
	Poor connection of microswitch or photoelectrical sensor	Adjust or replace
	Signal wire broken	Refix signal wire
Can not full-load the material for several times or alarm indicating material shortage	Material is used up	Add material to storage bin
	Leakage in conveying hose	Lock up or replace conveying hose
	Filter screen is blocked	Clear up filter screen
Blower can't work	Blower break down or check whether the carbon brush in the brush blower is used up	Repair or replace
Fuse melt after machine startup	Short circuit	Check electrical circuit
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 elbow.

6. Maintenance and Repair



All repair work should be done by professionals to prevent personal injuries and damages of the machine.

6.1 Service Life of Product Key Part

Name of the Parts	Service Life
Motor	Above 5 years
Contactora	Above 100,000 act

6.2 Hopper

- 1) Loose the snap hook, and take out hopper cover.
- 2) Use high pressure air to blow away all the material remains.
- 3) Re-fix the hopper cover and fasten the snap hook.



Note!

please make sure that the main switch is shut off before cleaning.

6.3 Stainless Steel Filter Screen

- 1) Loosen the snap hook on the loader and lift up the hopper cover, and then rotate the hopper cover outward along the shaft. Take out the stainless steel filter screen and remove any dust on it.
- 2) Clean the stainless steel filter screen: Cycle: daily



Stainless steel
filter screen

Picture 6-1: Stainless Steel Filter Screen

6.4 Blower

- 1) Clear the blower from inside out regularly. If there are too much dirts accumulated on the blower, the function of the blower will be affected, such

as temperature rising, reduced air volume, higher noise level and vibration.
All the above factors are liable to cause mechanical problems.

- 2) The bearing, seal ring and silencer are consumable parts. They should be replaced after a period of time. The fans, covers, and metal screen also need to be replaced when necessary.

6.5 Maintenance Schedule

6.5.1 About the Machine

Model: _____ SN: _____ Manufacturing date: _____

Voltage: _____ Φ _____ V Frequency: _____ Hz Total power: _____ Kw

6.5.2 Check after Installation

- Check that the conveying hose is correctly connected.
- Check that the conveying hose is tightly connected.
- Check that the mounting base is tightly fixed.

Electrical Specifications

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

6.5.3 Daily Checking

- Check main power switch
- Check filter screen
- Check motor performance

6.5.4 Weekly Checking

- Check if there are damaged electrical wires
- Check if there are loose connections of electrical components
- Check if the screws of flange at material inlet are loose or not

6.5.5 Monthly Check

- Check the spring lock on the hopper cover is loosed or not.
- Check the non-return valve is deformed or not.
- Check the performance of magnetic proximity switch/photoelectrical sensor.