

Safety attention points

1.1 Environment conditions

In order to operate this equipment safely, please install it according to following operating conditions.

(1) Please install this equipment indoors according to following conditions:

- . Ambient temperature range (-10~+40°C)
- . Relative humidity range: 0~85%
- . Altitude: less than 1000m
- . Guarantee indoor cleaning and ventilation
- . Guarantee that the equipment is far away from the corrosive gas, inflammable and explosive gas as well as steam

(2) Power source: as for Voltage and Frequency, please refer to the nameplate; pressure $\geq 0.6\text{Mpa}$.

(3) For easy use, operation and maintenance and inspection of the machine, please reserve enough space for it. (Please refer to scaled drawing for installation in chapter 4)

(4) Please place the equipment horizontally.

(5) The vibration to be borne under effects of many complicated environments may not exceed $12\text{mm}\cdot\text{s}^{-1}$.

1.2 Description of warning marks

(1) In order to well understand this operation Manual, the safety warning marks are divided into following kinds.

(2) These warning marks have been worked out according to the operating regulations and safety attention points for this equipment. In order to avoid dangerous accidents, this Operation Manual also includes concrete preventive measures. Please operate this equipment according to the instructions based on sufficient understanding of warning marks.

 DANGER	This mark expresses that in order to avoid death and serious injury accidents, please be sure to operate this equipment according to relevant stipulations of safety attention points.
 WARNING	This mark expresses that in order to avoid potential dangerous accidents and serious injury accidents, please operate this equipment according to relevant stipulations of safety attention points.
 ATTENTION	This mark expresses that in order to avoid slight wound and potential moderate injury accidents, please operate this equipment according to relevant stipulations of safety attention points.

1.3 Description of safety marks

(1) Relevant safety marks are pasted on different corresponding positions of this equipment, which are properly dangerous to personal safety.

(2) Please carefully understand and install, adjust, operate, maintain and inspect this equipment according to the contents .

(3) Please place these safety marks near the equipment.

(4) When these safety marks have fallen off or been damaged, please replace them with new marks.

(5) If you want to order new marks, please contact our company.

1

Safety marks near the access door



Beware of injury from the machine



2

Safety mark: Do not remove the safety guard shield



3

Safety mark "Beware of electric shock"



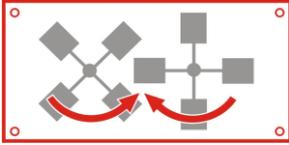
4

Safety mark "Beware of electric shock"



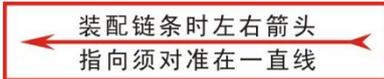
5

Rotation direction of double- shaft



6

Chain assembly instructions mark 1



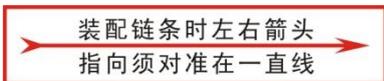
7

Clockwise direction



8

Chain assembly instructions mark 2



9

Counterclockwise direction



1.4 General safety attention points

- (1) The here said equipment operators refer to all personnel who participate in operation, inspection and maintenance etc.
- (2)The equipment operator must carry out the operation on the basis of sufficient understanding the Operation manual.
- (3) For safety attention points, the owner has the duty and obligation to deliver the contents of the Operation Manual for the equipment to all working personnel.
- (4) At the same time when obeying all the safety attention points, the users also must obey the safety regulation and stipulations to prevent accidents.
- (5) All related employees should receive safety education. The enterprise management should be in charge of it and respect the national, local and the other enterprise's safety regulations of the users.
- (6)This equipment is used for the mixing of powdery and specially granular materials.All the

responsibilities for any accidents or damage to the equipment shall not be borne by manufacture and commission agent if the equipment is not operated according to the stipulations.



DANGER

(7) Please install, use and operate the equipment correctly. Whoever takes off guard or makes it dysfunctional should be responsible for the safety result.

(8) Any reformation of the equipment may not affect the functions and safety performances of the equipment.

(9) Be sure to run the Mixer under strict obeying all regulations for prevention of accidents.

(10) If any accidents are caused due to not obeying the stipulations in the Operation Manual and the control system for Muyang equipment is not used as per the conditions mentioned above, the Muyang Holdings Co., Ltd will refuse to take any responsibility. If the Muyang Group is required to take responsibility, the Group will reserve the right to investigate and affix the responsibility of the operator.

1.5 Safety attention points in transport, storage and installation



DANGER

(1)The equipment must be placed and handled by professionals.

(2)Please use designated tools (steel cable, crane, hoisting machine etc.) for hoisting, and carry out the hoisting according to designated sequence and method.

(3) Staff only when carrying out hoisting.

(4) In order to prevent serious injury accidents, no one is allowed to be under the equipment when carrying out hoisting.

(5) The permissible load of hoisting tools should be more than total weight of the equipment.

(6) When the equipment is stored temporarily, please place the equipment horizontally and keep a normal temperature and clean indoors.

(7) For transportation and handling, it is not allowed to damage the equipment by binding. It should be reported to the manager immediately in case of any machine damage and missing of parts in transporting.

(8) In installation, enough space should be reserved for future maintenance and replacement of the equipment.

(9)Prior to installation, all machine parts must be kept in their original package. The machine parts and packing boxes should be properly covered and stored in places sheltered from rain, sunning and damp.



WARNING

(10)The cover plate, protecting hood or guard grating are usually installed and delivered together with the machine. They can only be disassembled with tools. And the machines with such kind of devices can never be put into work until the above-mentioned devices have been properly installed.

1.6 Safety attention points in operation, inspection and maintenance



DANGER

(1) The operation, inspection, repair and maintenance of the equipment shall be carried out only by the trained technical personnel according to different specifications provided together with the equipment. Electric installation shall be carried out only by professional persons according to relevant electric safety standards.

(2) Whenever maintenance or repairing is to be done, the power must be cut off so as to prevent the motor from accidental starting.



WARNING

(3) Operation and installation should be done after shutdown, Please be sure to cut off and lock the main supply switch, and place the execution mark plates on the workshop gateway, in front of the electric control cabinet in the control room and near the cooler respectively, so as to prevent the motor from accidental starting.

(4) In operation, a special attention shall be paid to the positions with attached safety marks.



ATTENTION

(5) Do not operate when the safety protection device and operating gate are open. It is prohibited to open the operating gate until the machine has been fully stopped.

(6) If any troubles occur in the operating gate and safety protection device, please repair or replace them at once.



WARNING

(7) The safety protection devices can never be dismantled, covered or overlapped at will. It can never be opened until the machine has completely stopped. And the machine can only be started when these safety protection devices are in good order.

(8) The security mechanism of the operating gate is equipped with the travel switch for opening, it must be correctly wired as per requirement to ensure the power-off when the access door is opened, and additionally in such case the machine cannot be started. Owing to the fact that this safety mechanism is related to life safety, it can never be removed or discarded! Whenever there is anything wrong with this mechanism, it should be repaired or renewed promptly.



DANGER

(9) When the machine is under stoppage, attention must be taken to prevent the mixer from being started by any accidental starting mode.



WARNING

(10) Except the maintenance of the equipment, it is not allowed to take off the guard shields of sprocket wheel and the two cylinders.

(11) When the safety guard shields or operating gates have to be opened or the safety devices have to be disassembled in order to inspect, adjust, repair and maintain the equipment or replace the parts, please well negotiate about the required safety attention measures and work out the safety countermeasures prior to the operations and then carry out the inspection work.



DANGER

(12) When the machine is running, it is strictly forbidden to put fingers near the running components, such work as inspection, maintenance and cleaning etc cannot be done until all the rotors in the mixer have been completely stopped.

(13) In case maintenance and inspection work should be done with a welder or other tools that can generate sparks, strict safety precautions must be taken against dust explosion and

combustion (see "Explosion protection").

(14) If the parts are damaged, please repair or replace them immediately.

(15) Guarantee the safety of the electric system. Before the electric circuit is cut off, it is strictly prohibited to open the terminal box for avoiding electric shock.

(16) The electric control system of the mixer must follow the following points. Otherwise, the technical safety responsibility of the supplier will be canceled.

- ① The electric control system of the mixer must be supplied by Jiangsu Muyang Group.
- ② The equipment must be checked up by an expert from Muyang before commissioning.
- ③ The electric control is a component part of the safety regulations for accident precaution.
- ④ Prior to commissioning the control system must be tested by an expert from Muyang in light of the testing list and a permit will be signed by him.
- ⑤ If the control system for Muyang machinery equipment is not used as per the conditions mentioned above, the Muyang will refuse to take any responsibility. If the Muyang is required to take responsibility, the Muyang will reserve the right to investigate and affix the responsibility of the operator.

1.7 Personal protection

(1) All the mechanical equipments manufactured by Jiangsu Muyang Holdings Co., Ltd are equipped with safety devices, which are consistent with modern technical level and universally effective safety rules prior to ex works, so that the customers can use the machines in accordance with the regulations.



DANGER

(2) If the operators employed cannot read or write, the owner has the duty to explain to them clearly where dangers exist and warn them that special attention should be paid.



ATTENTION

(3) In order to guarantee the safety and health of labors during production process, it is necessary to use labor protection articles (such as gloves, breathing masks and labor shoes) during operation.

(4) Please execute the special regulations on accidents prevention in the operation manual provided by us.



DANGER

(5) The enterprises are obligated to execute following regulations to guarantee operators' safety.

① The shield cap must be mounted at any moment and keep closing. It is very dangerous when they are opened or disassembled. It may cause casualty accident. This is also applicable for the preventive device of the manipulator.

② The safety limit switches should always be kept in good order. Overlap or discard of the safety limit switches is not allowed.

③ The driving motor must be switched off completely to make the machine stop when carrying out inspection, commissioning, repair and maintenance. This can be done through a full-phase separating and lockable switch which is installed near the machine or on the operation desk, or the control panel on the site. It is not enough only to screw off the fuse wire!

④ If the machine needs other energy like pneumatic, hydraulic, steam and hot water

energy, it is necessary to cut off their energy supply or turn off the switch, and eliminate the pressure in the internal pipeline system of the machine.

⑤As for handling heated or cooled parts and components of the machine, special attention should be paid to the danger of burning or scalding, frost-biting.

⑥If you have pressed the emergency stop switch to stop the machine and you want to reset the switch, so it is not permissible to only re-press this button to restart the machine.

⑦ If some machines are equipped with a local shutdown system, especial care should be taken. Read the instruction manuals attached with the machine carefully. In such machines with a local shutdown system, temperature will rise because pressure or vacuum will occur after they have been used for a period.

⑧The cleaning, lubricating and oiling of the machine or its parts and components may be carried out only when the machine is stopped. If you have to climb on or enter the machine to do such work, the mandatory provisions shall be made without exception: the power supply of motors must be cut off completely and the switch must be locked, fix the rotor of the mixer before entering the mixer. Attention must be paid to safety measures for climbing.

⑨Be careful, sampling from inside the machine can never be carried out unless there is not any danger. Usually, the samples can be taken from the pipe under the machine instead of inside machine.

⑩ Clear off the deposited dust, dirties and materials frequently. Keeping the machine clean can enhance production safety and the cleaning level of workshop, and is also beneficial to prevent dust explosion.

⑪If oil (grease) leakage occurs, clean it immediately and seal well the place where leakage occurs. For oil or grease leaked on the floor will easily bring about hazards to the operators.

⑫In production operation, the machine must be equipped with safety devices, which may be neither removed and abandoned nor reduced in functions. Otherwise, we are not responsible for any accidents resulted here from, and reserve the right to ascertain where the responsibility lies.

1.8 Explosion Protection: Countermeasures against dust explosion and fire hazard

(1) Common cleaning work

① Keeping the working site with combustible dust clean is an important condition for safe production.

② Try not to pile bagged or bulk materials between machines.

③ In order to reduce dust emission to surrounding areas, all conveying devices, air pipe, filtering bag should be kept in good condition. Especially, the unsealing of pipes or top covers should be avoided.

④ In order to reduce dust explosion hazard, dust everywhere must be cleaned out frequently and effectively.

⑤ Keep all motors free of deposited dust.

(2)Regular inspection and maintenance

① Check the safety devices such as speed monitor or the like regularly, at least once a week.

② Check and clean the connection of direct-coupling speed reducing motor and machine body, at least

once a day.

③ In order to avoid heat generation, it is necessary to regularly check the functions of all main shafts and bearings, at least once a week, and to regularly fill up lubricating oil.

(3)Electric apparatus



DANGER

Regularly check the electric apparatus and articles, and special attention should be paid to the following points:

- ①It is forbidden to use any flashlights and other lamps without shielding or explosion-proof glass.
- ②It is forbidden to use any lengthened cable or electric furnace.
- ③It is necessary to immediately repair or replace the electric apparatus and equipment if any failure occurs.
- ④The cables without conduits are not allowed to be installed on the floor.
- ⑤ Cut off the power supply of the machine after work.
- ⑥An electrician should be assigned to check the insulation of all the lines of electric network according to relevant regulations on heavy current, at least once a year.

(4)Smoking and welding



DANGER

- ①Smoking is forbidden, which is applicable to all workers and staff of the enterprise as well as guests, customers, foreigners and drivers visiting the factory.
- ②If the tools such as welding machine or soldering lamp (flame soldering lamp) etc. are required for repair or installation, do as best as possible to arrange the work in a special workshop or on a special site.
- ③If it is necessary to carry out welding or the like directly in production area or storehouse once in a while, written applications must be submitted to a related supervisor in advance for written approval. The above mentioned operations can be carried out only when special safety measures have been taken, such as laying pieces of water soaked canvas or canvas special for covering on the surrounding area and preparing fire extinguishers. After completion of the operation, the welding site and the surrounding area are to be monitored at least for 10h.
- ④The gas cutting sparks are very dangerous, for people can't see where they will fly on earth. They can cross through the narrow clearance of walls and drop downstairs or to the next rooms, or even fly off 10 m away in distance. If the sparks drop in dusts, fire accidents may occur at any time.
- ⑤Welding is prohibited on a running conveyor. If the welding work is necessary, shut down the machine first, and then make a thorough cleaning and isolate both sides of the welding site tightly with materials like mineral wool to avoid connecting with other conveying devices, silos or tanks. If the work is to be done on the chutes or conveying pipes, it is necessary to disassemble them or divert their lower ends and seal them to avoid welding sparks entering the conveying pipes or silos.

(5) Effect of static electricity



① In order to ensure the safety of electric circuits and avoid explosion resulted from spark discharge.

DANGER

② The paint coat at the electric connections must be removed.

1.9 Other attention points (environmental protection measurements)

If you decide not to use the machine any longer after it is used for a certain number of years (about 8-10 years), the measures for environmental protection and reutilization should be taken.



ATTENTION

(1) Drain the liquids inside the machine (like motor oil, gearbox oil, brake oil and coolant etc.) into special containers and send them to the preparation workshop.

(2) The plastic parts shall be picked out for reutilization.

(3) The metal parts shall be sorted out so as to be ground or scraped.

General

2.1 Application and adaptability

The SLHSJ (A) series Direct-drive Double-Shaft Mixer developed independently for mixing powdery and special granular materials in feed industry.

2.2 Main features and functions

(1) Short mixing time and high homogeneity

The mixing homogeneity of material within 45~60S amounts to $CV \leq 5\%$, (the testing method is Methyl Violet Stain GB/T5918), which largely reduces the mixing time and improve the productivity of feed factory.

(2) No mixture segregation

After homogeneous mixing, the mixture will not be graded in further mixing, therefore segregation due to the great difference in specific gravity or granularity of materials will not occur, resulting in a mixture with highly accurate proportions;

(3) Fast discharging and little residues

The full-bottom double-leaf discharge gate features fast discharging with little residues;

(4) Great amount of liquid addition

Several kinds of liquid can be added according to demands;

(5) With gentle mixing action, it can also be used for drying or cooling

The mixing action is so gentle and free of damage to the original properties of materials that it can be used for drying or cooling through adding a hot or cold air system;

(6) Three-row chains are used for the sprocket & chain system, and two rotors that rotating in opposite directions are driven by a cycloid-pin gear speed reducer, featuring unique driving mechanism, smooth running, high torque and low abrasion;

(7) The unique W-shaped trough structure

The unique W-shaped trough structure with small opening, big middle part and narrow lower part make the machine fine and unique shape and appearance with small floor space required and reduced residue;

(8) High sealing reliability of discharging gate

With Muyang's mature technology, the discharge gate sealing mechanism is of reliable sealing performance.

Transport, installation and adjustment

Transport

- ①When leave the factory, whether to use a packing case is determined according to actual conditions.
- ②If a packing case is not used in transport, rain-proof measures shall be taken and it shall be prevented against collision and overturn of the equipments.
- ③If a packing case is used, the complete machine and accessories shall be fixed securely in the case and a certain distance shall be reserved from the plate of the packing case, so as to avoid collision and damage in transport. If the height is in excess of the standard, the whole packing shall be separated into parts.
- ④During transport, any overturn, intense pressure or collision are not allowed on the machine body.
- ⑤ SLHSJ 4A and the mixers smaller than 4A can be transported in a container.

Storage

- ①When the machine equipment is to be stored in the open air, the facilities for prevention of rain, sunshine and water accumulation should be available. When the machine equipment is to be stored indoors, the measures for ventilation and damp proof shall be taken.
- ②The equipment should be stored in ventilated, dry and cool place for long-time storage, and damp proof measures should be taken, the exposed surface without painting should be painted with rust-proof oil.

Inspection, repair and maintenance

Attention points for inspection, repair and maintenance

Besides those mentioned in Chapter 1, following attention points should be obeyed when carrying out inspection, repair and maintenance.



DANGER

- (1)Whenever inspection, commissioning, repair and maintenance is to be done the power must be cut off first.
- (2) Directly open operating gates and air inlet only can be done when the power is off and the machine is completely stopped.
- (3)Only trained technical personnel is allowed to do works with danger-potential such as parts replacement and repair.
- (4)The replacement or maintenance of electric control system, circuit and electric parts and components should only be done by trained personnel.
- (5)The machine can only be started when all protection devices, including cover plate, protecting hood, guard grating, etc., are installed and in good order



WARNING

functionally.

(6) When the safety guard shields or access doors have to be opened or the safety devices have to be disassembled in order to inspect, adjust, repair and maintain the equipment or replace the parts, please well negotiate about the required safety attention measures and work out the safety countermeasures prior to the operations and then carry out the inspection work.



ATTENTION

(7) Be sure that the above said safety devices and guards are installed to their positions after inspection, adjustment, repair and maintenance.

(8) When maintenance and inspection, please be sure the execution mark boards [In Process of Maintenance and Inspection] are placed on the gate, so as to let other people know about it and prevent the motor from accidental starting.



DANGER

(9) Attention! Improper operation and maintenance may cause accident.



DANGER

Note: The machine must be operated in the light of operating regulations, and necessary checking and cleaning should be conducted for each working shift.

The internal of conditioner could be cleaned by flushing with material such as corn. It can also be cleaned by blowing with air if an air-sac blowing device is adopted.

Daily inspection and regular inspection



WARNING

In daily and regular inspection, stop the machine rapidly and take on proper measures in case of any abnormality in machine operation.

Re-use the machine after confirming that the machine is recovered to normal operation.

6.2.1 List of daily inspection items (prior to each running or during each running)

No.	Position	Inspection item	Cycle	Method	Solution
1	Air-filter unit	Make sure air supply is above 0.6Mpa	Everyday	Inspection	Adjust the air pressure
		Check whether the water level in the atomized lubricator is lower than half of the max. water level	Everyday	Inspection	Drain water
		Check whether the oil for lubricating in the air-filer is higher than 1/3 of the max. oil level	Everyday	Inspection	Filling oil
2	Air hose	Air leakage	Everyday	Listening	Repair and correct it

3	Machine	Check for any abnormal noise	Everyday	Listening	Checking
4	Bearing	Check for temperature lower than 80°C	Everyday	Thermometer	Checking
5	Motor	Check for temperature lower than 80°C	Everyday	Thermometer	Checking
	Motor	Check for the amount of lubricating grease and the abnormal noise	Everyday	Inspection	Checking
	Reducing motor	Electric current	Everyday	Ammeter	Cleaning
6	Machine housing	Check the noise resulted from the collision between paddles and machine bottom trough.	Everyday	Listening	Checking
7	Surge bin	Check whether the closure state is in good condition	Everyday	Inspection	Checking

6.2.2 List of regular inspection items

No.	Position	Inspection item	Cycle	Method	Solution
1	Air-filter unit	Cleaning	Once a half year	Inspection	Cleaning
2	Bearing of the main shaft	Cleaning	Once a half year	Inspection	Cleaning
	Bearing of the main shaft	Filling grease	Once a half year	Filling grease	Filling grease
3	Chains and sprockets	Cleaning	Once a half year	Inspection	Cleaning
	Chain and sprocket	Filling grease	Once a half year	Inspection	Filling grease
4	Sealing elements	Cleaning	Every month	Inspection	Cleaning
5	Chains and sprockets	Check whether chain is in good tensioning condition	Once every two weeks	Inspection	Adjusting
6	Safety device	Check the warning marks for missing or abrasion	Every month	Inspection	Replacing
		Safety switch on access door	Every month	Inspection	Cleaning
7	Discharge outlet	Check the closing and sealing condition	Once every two weeks	Inspection	Adjusting
8	Machine housing	Cleaning	Once every two weeks	Inspection	Cleaning

Note1: The above-mentioned cycle applies 12h a day and 25 days a month. Customers can adjust it by themselves according to actual conditions

Note2: Three frequently-used greases for lubricating bearing:

① LITEAEP6-077 (ASEOL)

② BEACOMPZ (ESSO)

③ ARALUBHLP (ARAL)

Chain: GB492-65Zn-3

Speed reducing motor: ZL-2lithium lubricating grease or ISOV9220

Note3: List of the power and current of the mixers

Model	Rated power	Rated current	Working current
SLHSJ10A	55KW	105A	<95A
SLHSJ8A	45KW	86A	<78A
SLHSJ7A	45KW	86A	<78A
SLHSJ4A	37KW	71A	<64A
SLHSJ4W	37KW	71A	<64A
SLHSJ4W	30KW	59.2 A	<54A
SLHSJ3A	22KW	44.7 A	<40A
SLHSJ2A	22KW	44.7 A	<40A
SLHSJ2A	18.5KW	38.6A	<35A
SLHSJ1A	15KW	28.6A	<26A
SLHSJ1A	11KW	21.2A	<19A
SLHSJ0.5A	7.5KW	14.9 A	<13.5A
SLHSJ0.5A	5.5KW	11 A	<10A
SLHSJ0.2A	2.2KW	4.85 A	<4.4A
SLHSJ0.1A	2.2KW	4.85A	<4.4A

Note:

1. The above mentioned working current is the current of the mixer when normally running.
2. If current of motor is larger than the normal working current, it is needed to check the bearings of main shaft and make sure the pellet mill is not overloaded.
3. Exclude the momentary current of machine when startup, feeding material or adding liquid.

Machine stoppage



DANGER

- (1) Before carrying out any maintenance or repairing work, the machine and other related equipment must be shut down.
- (2) When the machine is under stoppage, attention must be taken to prevent the mixer from being started by any accidental starting mode.

Mechanical maintenance

(1) The discharge mechanism should move flexibly, and the joint parts should be brushed with proper amount of machine oil.

(2) Lubricating grease should be replaced regularly for each bearing; the lubricating grease applied should be the sodium base grease (GB492-65) Zn-3.

The driving chain should be brushed over with proper amount of 30# machine oil and cleaned regularly; (see Fig.6-1).

(3) Lubricating of reducing motor. Grease type: molybdenum sulfide -2 or ZL - 2 lithium base grease. For the detail lubricating amount and maintenance of the reducer please refer to Operation Manual of Speed Reducer. Before the machine leaves the plant ZL-2 lithium base

grease has been added into the geared motor, so it is not necessary to add lubricating oil any longer, otherwise, there may be oil leakage at the end cover. If using the Mitsubishi lubricating oil, adopt model ISO VG220; Some of the existing models installed the gear reducer should be lubricated with thin oil, model ISO VG220.

(5) If the equipment to be out of use for a long time, it needs to make a complete cleaning and take measures for corrosion and rust prevention.

(6) If it is used for mixing premix or concentrate, residues in the machine bottom trough must be removed frequently, so as to avoid machine corrosion.

Malfunction and troubleshooting



Note: If the machine is suddenly stopped during operation, the motor should be restarted only after the materials have been discharged. Start up the Mixer with load is not allowed.

(1) Malfunction of main shaft and bearing, refer to Table 6-3.

Table 6-3 Malfunction and troubleshooting of main shaft and bearing

Trouble	Causes	Solutions
Material leakage at shaft end	The nut of seal strip is loose	Tightening the nuts
	The seal at shaft end has been aged.	Refer to Fig.6-2 in Section 6.3.2 Replacement of main shaft end seal, and replace the aged seal with a new one.

(2) Material leakage and abnormality of the discharge gates, refer to Table 6-4.

Table 6-4 Malfunction and troubleshooting for material leakage and abnormality of the discharge gates

Trouble	Causes	Solution (e.g.)
Material leakage of discharge gate	The sealing strips have been aged or worn out.	Refer to Fig.6-5, 6-6 in Section 6.3.4 Inspection and replacement of discharge gate seal.
	Improperly closed of discharge gates.	Refer to Fig.4.6 and Section 4.3[Pneumatic installation], or Fig.4-7 and Section 4.4[Electric installation]. Check the seal between machine housing and discharge gates. Firstly loosen the nuts at the ends of the connecting rod, and then adjust the length of connecting rod properly.
The discharge control mechanism can not work normally.	Cylinder	Refer to Fig.4-9, 4-10 in Section 4.3 Pneumatic installation, check the pneumatic control system for any troubles, and have them correct if any.

	Air supply system	Refer to Fig.4-6 in Section 4.3 Pneumatic installation check whether the air hose is connected as that required in Fig.4-10.
	No signal is sent out when closing the gates.	The limit switch is not installed at the right place or there is a break in the electric circuit. In this case, adjust the limit switch (see Fig. 2-2 and check the electric circuit.)

(3) Abnormal noise during mixing, please refer to Table 6-5

Table 6-5 Malfunction and troubleshooting for abnormal noise during mixing

Trouble	Causes	Solution (e.g.)
Abnormal noise from mixing chamber	Friction between the two rotors	Refer to Fig.2-1in Section 2.3 Working principle and overall structure, adjust the position of rotor.
		or polish the paddles if necessary.
Abnormal noise from motor fan during mixing	The fixing screws of motor fan are unfastened	Tightening screws.
	Friction between fan blades and its hood.	Adjust the fan hood
	There is dirt on the fan hood	Clean up the dirt
	The blades of fan is damaged	Replace the blade
	Machine oil for motor bearing is not enough	Fill with proper amount of machine oil or butter
	Motor bearing is damage	Replace the bearing or the motor (This is the most unlikely situation)
Abnormal noise from reducing motor (not from the fan)	Bad lubricating	Replace the grease

(4) Vibration during mixing, refer to Table 6-6

Table 6-6 Malfunction and troubleshooting for vibration during mixing

Trouble	Causes	Solution (e.g.)
Vibration during mixing	The foundation is not level	Flat the foundation
	Insufficient rigidity of foundation	Ensure the foundation with enough rigidity
	The foundation bolts are unfastened	Tightening bolts
	Bad lubricating for bearing of main shaft	Replace the grease
	Main shaft bearing is damage	6. Replace the bearing

(5) Material leakage at the top cover of mixer, refer to Table 6-7

Table 6-7 Malfunction and troubleshooting for material leakage at upper cover of mixer

Trouble	Causes	Solutions
Material leakage at upper cover of mixer	The bolts of upper cover are unfastened	Tightening bolts
	The sealing pad has been aged	Replace the sealing pad in time

(6) Failures of pneumatic control, refer to Table 6-7

Table 6-7 Malfunction and troubleshooting for failures of pneumatic control

Trouble	Causes	Troubleshooting
Air escaped from cylinder	Seal ring of cylinder is damaged	Replace the seal ring
Air leaking from the adjusting rod of the buffering stop valve of the cylinder	Seal ring of cylinder is damaged	Replace the seal ring
The power output by cylinder is not strong enough	Bad lubricating	Check whether the air filter unit is in good working condition
	Air supplied insufficiently	Enlarge the inner diameter of the air hose or that of the connector
Air pressure can be increased by the pressure-relief valve	The spring is broken	Replace the spring
No oil drops from the oil mist lubricator when it working	There is not enough lubricating oil	Filling grease
	Blockage in the oil needle	Cleaning or replacing
Abnormal noise from the magnet	There is dirt between attracting faces of iron;	Remove the dirt
	The electric voltage is lower than the rated voltage	Adjust the voltage
The main switch doesn't reverse or reverse inflexibly	Bad wiring of the main valve	Check the electric circuit
	The solenoid valve exhausts air slowly or does not exhaust air	Cleaning the solenoid valve
	Bad lubricating and low air pressure	Check and clean the solenoid valve. Increase the air pressure that supplied to the oil mist lubricator, check for air leakage.
The pneumatic drive access door can not be opened	Deficient air supply	Adjust the air pressure and increase it to 0.6MPa
	The stop valve is locked tightly	Adjust the throttle valve (see part 3 in Fig.4-6) and accelerate air exhausting ,

6.5 Tools for repair and maintenance

No.	Tool name	Spec.	Function
1	Torque wrench		Hexagon socket head cap screw on chain wheel of taper sleeve, according to the parameter list of chain wheel of taper sleeve for the moment of force
2	Hook spanner		Tightening the round nuts of bearing pedestal.
3	A group of inner hexagon spanner	Width (mm):4~22	Tightening bolts
4	Double-ended wrench	Opening width (mm): 8x10, 12x14, 17x19;	Tightening bolts and nuts
5	Monkey wrench	Max. opening width(mm)46	Used for bolt M24 on motor base
6	A group of socket wrench		Tightening bolts M8 of air-return duct (the upper row of bolts)
7	Single-ended wrench Two pieces	Max. opening width (mm): 65	For bolts and nuts of tensioning device(model SLHSJ2A and above)
8	Chain block (2T)		Hoisting or lifting heavy parts
9	Steel rope		Hoisting or lifting heavy parts
10	Scissors		Cutting
11	Screwdriver		Tightening bolts
12	Ammeter		Measuring the current of motor
13	Thermometer		Measuring the temperature of motor and bearing
14	Knife		Cutting
15	Vernier caliper		Length measuring
16	Flexible ruler		Length measuring
17	Long straight ruler		Length measuring
18	Oil gun		Filling oil
19	Iron hammer		Knocking
20	Rubber hammer		Knocking
21	Portable electric driller (0~13mm)		Drilling hole
22	Electrical heating device for bearing		Heating bearing
23	Retainer pliers		Retaining rind disassembling
24	Glass cement gun		Filing glass cement
25	Multimeter	Resistance, voltage	Measuring
26	Hearing needle		Checking

27	Scraper		Cleaning
28	Metal bush		Cleaning
29	Air gun		Cleaning
30	Barrel	20L/piece	Cleaning (bearing, etc.)

6.6 Long-term stoppage

If the machine is to be halted for a long time, it must be thoroughly cleaned both inside and outside and the dustiness must be removed to avoid rusting of the machine and aging of rubber parts.

Spare parts

Important note:

Our works is responsible for repairing or replacing parts (exclusive wearing parts) which are faulted due to manufacturing quality within one year from the date of leaving the factory under normal use and safekeeping by the customer, excluding the operations not in accordance with the operating instructions and human factor.

Our works continues to undertake maintenance and repair after one year from the date of leaving the factory, to ensure normal use of the customer, but the expenses shall be borne by the customer.

Some parts and components in this equipment are worn off gradually when in use. If these parts are still used after worn to a certain degree, the property of equipment will be affected and dangerous accidents will occur probably. Therefore, these parts and components shall be replaced timely after used for a certain period. The spare parts in this Operation Manual is also called wearing parts.

Whether the spare parts can be ordered timely and accurately will influence your production. So in order to purchase right spare parts, when place an order, please mention the corresponding serial number, code, description of the spare part and the quantity needed in the order list.

And provide us the order list via mailing or e-mail. If it is possible, please attach a sketch of the spare part to be ordered.