

1 Safety

1.1 Environmental 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 (-5~+40°C)
- . Relative humidity range for normal use: within 35%~85%.
- . Altitude: less than 1000.
- . 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 ≥ 0.4 Mpa.

(3) For easy use, operation and maintenance, please check this equipment and reserve enough space for it.




(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 this safety marks.

(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 Beware of electric shock: Do not open the junction box until the power supply is cut off.



② Carry out repair and maintenance according to the Operation Manual.



③ Beware of Mechanical injuries: Do not open the operating gate when the machine is running and until it has not been completely stopped.



④ Beware of scalding: Do not touch the machine with bare hands when it is normally working.



⑤ Do not remove the guard shield when the machine is running



⑥ Do wear protective gloves when inspecting and repairing the equipment.



- ⑦ Do not climb or stand on the equipment.



1.4 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 on the Operation manual.
- (3) For safety attention points, the owner has the duty and obligation to convey 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 regulations 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) 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.
- (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 Pellet Mill 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 is required to take responsibility, the Muyang will reserve the right to investigate and affix the responsibility of the operator.



1.5 Safety attention points in transport, storage and installation

- (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 handing, 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.



WARNING

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

(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 pellet mill respectively, so as to prevent the motor from accidental starting.



ATTENTION

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



WARNING

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

(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.



DANGER

(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.

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

(10) Except the maintenance of the equipment, it is not allowed to take off the guard shields of the belt pulley.



WARNING

(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 the principal machine 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 junction box for avoiding electric shock.

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

① The electric control system of the pellet mill must be supplied by Jiangsu Muyang Holdings Co., Ltd.

② The equipment must be checked up by an expert from Muyang Holdings Co., Ltd 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 Jiangsu Muyang Holdings Co., Ltd 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 Holdings Co., Ltd will refuse to take any responsibility. If the Muyang Holdings Co., Ltd is required to take responsibility, the Muyang Holdings Co., Ltd will reserve the right to investigate and affix the responsibility of the operator.

1.7 Personal protection



DANGER

(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.

(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.

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



DANGER

① The coupling shield should be mounted and kept close at any moment. It is very dangerous when they are opened or disassembled. It may cause a 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.

⑤ As for handling heated or cooled parts and components of the machine, especial care should still be taken for the danger of burning, to prevent any scald.

⑥ If 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.

⑧ The 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. Attention must be paid to safety measures for climbing.

⑨ Be 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.

⑪ If 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.

⑫ In 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 magnetic separators, 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

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



DANGER

- ① It is forbidden to use any flashlights and other lamps without shielding or explosion-proof glass.
- ② It is forbidden to use any lengthened cable or electric furnace.
- ③ It is necessary to immediately repair or replace the electric apparatus and equipment if any failure occurs.
- ④ The cables without conduits are not allowed to be installed on the floor.
- ⑤ Cut off the power supply of the machine after work.
- ⑥ An 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.
- ⑦ The machine should be grounded so as to avoid static sparks and the leakage resistance from all components to ground should not exceed $10^6\Omega$.
- ⑧ Power supply connection
 - a) The related regulations of local safety authorities department should be obeyed. For example, a breaker for circuit protection should be installed on power wire according to local regulation.
 - b) Check whether the operating voltage and frequency are in line with the data displayed on the machine nameplate and control cabinet.
 - c) All power wires of control system should be connected as per schematic diagram, so as to realize actual switch of the phase line when using a single-phase source.

(4)Smoking and welding



DANGER

- ① Smoking is forbidden which is applicable to all workers and staff of the enterprise as well as guests, customers, foreigners and drivers visiting the factory.
- ② If 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.
- ③ If 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 the completion of operation, the welding site and the surrounding area are to be monitored at least for 10h.
- ④ The 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 10m away in distance. If the sparks drop in dusts, fire hazard may occur at any time
- ⑤ Welding 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



DANGER

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

Muyang MUZL1610C Pellet Mill is an advanced machine for producing pellet feed. The entire manufacturing process is fully in line with international technical standards.

2.1 Application and adaptability

(1)Application: This pellet mill is specially used for animal feed processing, generally for processing powdery, flowable and easily pelletized materials into feed pellets for poultry, livestock and fish.

(2)To ensure the efficient operation and safe use of the machine, the pellet mill should be installed at a region that, altitude is less than 1000m, temperature range is within $-5^{\circ}\text{C}\sim 40^{\circ}\text{C}$, and air relative humidity range is within 30%~ 85%.

(3)Do not use it for food processing.

(4)If the environment of the region to be served does not accord with the above conditions, please specify when ordering.

2.2 Main features and functions

(1)Muyang MUZL1610C Pellet Mill is an advanced machine for producing pellet feed. The entire manufacturing process is fully in line with international technical standards.

(2) Double-motor and V-belt driving system is adopted for this machine type, which is characterized by ideal drive ratio, great driving moment, smooth rotation, high output, low noise, and easy operation and maintenance.

(3)This type of machine can be fitted with many kinds of ring dies with $\phi 1.5\sim\phi 12$ die holes and different thickness, so customers can select them for use as required to achieve the optimum technical and economic efficiency.

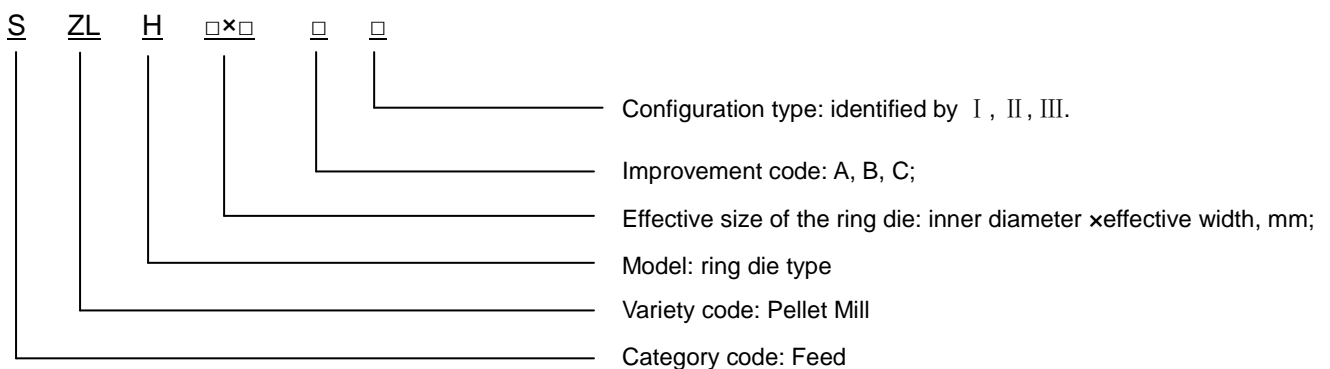
(4)Advanced frequency control motor is adopted for this machine type to feed material, also it is equipped with overload protection devices, outside discharging mechanisms and Magnetic separating device.

(5)Various conditioners feeders are available for option, such as single-pass conditioner, double-pass conditioner, triple-pass conditioner, different diameter cylinder conditioner and feeder etc.

2.3 Main structure and working principle

This machine mainly consists of a feeder, a conditioner and a principal machine of pellet mill (mainly including a main motor, an assembly of rotors, a ring die, press rollers, an assembly of cutting knives, a roller adjusting device, a lifting device for the ring die and a lubrication system).

Meanings of the model



Transport, installation and adjustment

Transport



DANGER

- ① A crane shall be used for unloading and transporting of the pellet mill.
- ② Please use the hoisting machine rope for unloading and transport of pellet mill.
- ③ Before ex work, whether to use a packing case or not can be determined according to actual conditions.
- ④ If a packing case is not used, rain-proof measures shall be taken and it shall be prevented against collision and overturn of the equipments during transport.
- ⑤ If 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.
- ⑥ During transport, any overturn, intense pressure or collision is not allowed on the machine body.

Storage

- ① If the machine or components can not be immediately installed after arriving job site, they should be stored carefully in a place of no-vibration and safety, and should be covered correctly to prevent dust and moisture from entering into the machine. The temperature of place in where to store the machine and components should be within $-25\sim 55^{\circ}\text{C}$.
- ② If the machine is stored in open air, they should be shelved on the wood.
- ③ Do not place them directly on the ground.

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 totally 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 are allowed to do works with danger-potential such as parts replacement and repair.
- (4) The replacement or maintenance of electric elements, circuit and electric control system should only be done by trained personnel.



WARNING

- (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 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



ATTENTION

work.

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

(8) When operation, installation, repair and maintenance, please be sure the execution mark boards [In Process of Maintenance and Inspection] are placed on the workshop gateway, so as to let other people know about it.



DANGER

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

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

Cleaning

To keep all rotating components clean is very important, so it necessary to thoroughly clean following components regularly:

Table6-1 Cleaning position and cleaning method

| Cleaning position | Cleaning method |
|---|---|
| Press roller, front plate, deflecting plate scraper, main shaft disc, cutting knives, ring die, die champ and pelletizing chamber of pellet mill. | Cut off the power whenever check or replace the components or assemblies in the pelletizing chamber or make maintenance, and then clean these components, especially the ring die, die clamp, press rollers and matched surface of main shaft disc, press roller and main shaft disc. |
| Feeding chute and by-pass gate | Use proper tools to clean away hard material deposited here weekly. |
| Pellet mill body (fasteners for ring die, rotor etc.) | Clean away dirt, material or fat possibly dropping into the chamber monthly. |
| Inner chambers of conditioner and feeder | Open the access doors of conditioner and the repair gate of feeder to carry out checking and maintenance works once a month. |
| V-belt hood | Clean away dirt or material on the hood monthly. |

Lubricating

Selection of lubricating grease

Lubricating grease selected shall be fit for the working conditions of pellet mill since it is working with great load, severe vibration, high temperature and in corrosive environment.

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

| No. | Position | Inspection item | Cycle | Method | Solution |
|-----|-------------------------------|---|----------|-------------|----------------------------------|
| 1 | Steam | Check whether the pressure is higher than 0.6Mpa before passing through pressure reducing valve | Everyday | Inspection | Increase steam supply pressure |
| | | Check whether the steam pressure is about 0.4Mpa after passing through a pressure-relief valve | Everyday | Inspection | Adjust the pressure-relief valve |
| | | Check for liquid leakage | Everyday | Inspection | Exhaust steam and repair |
| | | Check the drain valve for normal working condition | Everyday | Inspection | Exhaust steam and clean |
| 2 | Machine | Check for any abnormal noise | Everyday | Listening | Checking |
| 3 | Pneumatic assembly of by-pass | Make sure air supply is above 0.6Mpa | Everyday | Inspection | Adjust the air pressure |
| 4 | Bearing | Check whether the temperature rising is lower than 45°C | Everyday | Thermometer | Checking |
| 5 | Motor | Check whether the temperature rising is lower than 45°C | Everyday | Thermometer | Checking |
| | Motor | Check whether the current value is in rated range. | Everyday | Ammeter | Checking |
| | Motor | Check for any abnormal noise | Everyday | Listening | Checking |
| 6 | Temperature sensor | Check for any abnormality | Everyday | Inspection | Replacing |
| 7 | Cutting knives | Check for abrasion condition of cutting knives | Everyday | Inspection | Replacing |
| 8 | Ring die | Check whether the conic surface of ring die is installed correctly. | Everyday | Inspection | Checking |
| | | Check for the working condition of die hole. | Everyday | Inspection | Cleaning |
| | | Check if centering pins and bolts of ring die are working properly | Everyday | Inspection | Inspection and replacement |
| 9 | Roller | Check whether the position of roller is moved | Everyday | Inspection | Checking |
| | | Check the wear part for any abnormal condition | Everyday | Inspection | Checking |
| 10 | Tail locknut | Check for any loosening | Everyday | Inspection | Checking |

List of regular inspection items

| No. | Position | Inspection item | Cycle | Method | Solution |
|-----|----------------------|---|----------------------|-------------------------------|-----------------------|
| 1 | Belt | Cleaning | Once a half year | Cleaning | |
| 2 | Filter | Cleaning | Once a half year | Cleaning | |
| 3 | Bearing | Cleaning and adding lubricant | Every month | Cleaning and adding lubricant | (see Fig.6-1) |
| 4 | Belt and belt pulley | Check whether chain is in good tensioning condition | Once every two weeks | | Adjusting |
| 5 | Sealing elements | Cleaning and aging conditions | Every month | Cleaning | Replace it if failure |
| 6 | Safety device | Check the warning marks for missing or abrasion | Every month | Inspection | |
| | | Safety switch and safety pin | Every month | Cleaning | |

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

Tools for repair and maintenance

Common Tools

| No. | Tool name | Spec. | Function |
|-----|----------------------------------|-----------------|---|
| 1 | Wrench | | Adjusting clearance between roller and ring die |
| 2 | A group of inner hexagon spanner | M20 | dismantling ring die |
| 3 | A group of inner hexagon spanner | Width (mm):4~22 | Tightening bolts |
| 4 | Rotating rod | random | Rotating the rotor |
| 5 | Nut | M30×40 | dismantling ring die |
| 6 | A group of socket wrench | | Roller adjustment nut |
| 7 | Lifting frame of press roller | random | Roller dismantling |
| 8 | Chain block (2T) | | Used for heavy parts |
| 9 | Steel rope | | dismantling ring die |
| 10 | elevator | random | dismantling ring die |
| 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 | Scissors | | Cutting |
| 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.) |
| 31 | Dial indicator | | Measuring the clearance of roller bearings and main shaft bearings |
| 32 | Oiler | | Filling lubricating grease in Main shaft bearing and roller bearing |
| 33 | Angle Ruler | | Adjust the paddle angle of conditioner |

Malfunction and troubleshooting

| No. | Trouble | Cause | Solutions |
|-----|--|--|--|
| 1 | Feed cannot enter ring die. | <ol style="list-style-type: none"> 1. Bridging at the inlet of the feeder 2. The conditioner is clogged 3. Failure of the feeder driving device | <ol style="list-style-type: none"> 1. Vibrate or clean the inlet 2. Clean the conditioner 3. Check the driving device for feeder |
| 2 | Material can enter the ring die, but cannot be pelletized. | <ol style="list-style-type: none"> 1. The press rollers and ring die are worn 2. Too many die holes are clogged 3. The feed formula is changed 4. The clearance between the press rollers and ring die is too large 5. Improper water content in feed | <ol style="list-style-type: none"> 1. Replace the press rollers and ring die 2. Remove the feed and impurity from the die holes 3. Install the ring die properly for the feed formula 4. Readjust the clearance between the press rollers and ring die 5. Adjust steam amount correctly |

| | | | |
|---|---|--|--|
| 3 | The pellet mill can't be started up. | <ol style="list-style-type: none"> 1. The press rollers and ring die in pelletizing chamber are clogged. 2. The limit switch cannot contact with brake disc or operating arm on gate. 3. Circuit failure | <ol style="list-style-type: none"> 1. Remove the feed from the pelletizing chamber. 2. Check the limit switch for mounting status. 3. Check the electric circuit |
| 4 | Load on pellet mill fluctuates unreasonably or the pellets quality is nonuniform. | <ol style="list-style-type: none"> 1. Steam supply is not enough or the pressure is changed 2. Unstable conveying of material 3. Deflecting plate scraper is worn which causes uneven feeding | <ol style="list-style-type: none"> 1. Check the steam pipelines 2. Adjust the feeding speed 3. Replace the deflecting plate scraper |
| 5 | Pellet mill is stopped during working. | <ol style="list-style-type: none"> 1. Tension of V-belt is not enough which makes the speed controller act. 2. The parameter setting of speed control instrument is unreasonable. 3. V-belt is worn partially or completely or broken. 4. The main shaft is rotated due to overload or impurity blocked between press roller and ring die, the limit switch is released. 5. Circuit failure | <ol style="list-style-type: none"> 1. Readjust the tension of V-belt or check the pressure value on the pressure gauge of hydraulic system, reset the pressure value if necessary (Take care when adjusting). 2. Reset the parameter. 3. Replace the V-belt completely as a group instead of partially. 4. Reset the main shaft and limit switch. 5. Check the electric circuit |
| 6 | The pellet mill is clogged frequently. | <ol style="list-style-type: none"> 1. Deflecting plate scraper is worn and material is distributed unevenly. 2. Press roller is worn. 3. A press roller gets stuck. 4. The installation location of deflecting plate scraper is incorrect. 5. The moisture content in feed is too high. | <ol style="list-style-type: none"> 1. Replace with a new deflecting plate scraper. 2. Replace with a new press roller. 3. Check the press rollers. 4. Reassemble the deflecting scraper. 5. Decrease the moisture content if feed mash. |
| 7 | Pellet mill is smoking. | <ol style="list-style-type: none"> 1. The scraper is worn and there is a layer of hard material formed between the supporting plates of the press rollers and rotors. 2. Tension of V-belt is not enough. 3. Hard material deposited behind the back supporting plate, which makes the main shaft lack of lubrication. | <ol style="list-style-type: none"> 1. Install a new scraper. 2. Tighten the V-belt. 3. Clear away hard material and lubricate the main shaft till lubricating grease overflows from the back supporting plate. |
| 8 | Ticks are heard when the pellet mill rotates every circle. | Metal impurity in the ring die | Check the inner surface of ring die and clear away metal impurity. |

| | | | |
|----|--|--|---|
| 9 | V-belt is slipping when under full loading or slightly overload a bit | <ol style="list-style-type: none"> 1. Tension of V-belt is not enough. 2. The length of V-belt in a group is different. 3. V-belt is contaminated by grease. 4. Wrong location of V-belt 5. The external form of V-belt is incorrect | <ol style="list-style-type: none"> 1. Readjust the tension of V-belt 2. Replace with a group of belt in the same size. 3. Clean the V-belt and pulley. 4. Correct the motor and middle pulley. 5. Use qualified V-belts. |
| 10 | Output of the pellet mill is not enough, but the main motors have already worked in full load. | <ol style="list-style-type: none"> 1. Too much steam (only for materials sensitive to temperature and humidity) 2. The ring die is too thick 3. Bad steam quality and too much water content 4. Material is not sufficiently conditioned 5. The clearance between the press roller and ring die is too big 6. The press roller and ring die are over worn 7. Bad formula or too big grinding pellet | <ol style="list-style-type: none"> 1. Reduce the steam amount 2. Use the ring die with a depth proper for material 3. Readjust the steam supply system 4. Increase the steam amount or the delay conditioning time 5. Readjust the clearance 6. Replace the press roller and ring die 7. Adjust the formula or replace with a sieve with small aperture |
| 11 | The ring die is broken when worn to a certain degree. | <ol style="list-style-type: none"> 1. Foreign material in press die 2. Ring die is too thin. 3. The Driving flange of ring die is worn. | <ol style="list-style-type: none"> 1. Perfect the cleaning of material. 2. Use a thicker ring die with shoulder holes. 3. Check the abrasion of driving flange of ring die and the fastening blot is locked or not, replace the driving flange of ring die if necessary. |
| 12 | The bearing of the press roller is vulnerable. | <ol style="list-style-type: none"> 1. There are hard foreign materials in the feed. 2. The clearance between the press roller and ring die is too small. 3. Improper lubricating grease is used. 4. Lubricating grease applied for press roller is insufficient. 5. Bad bearing end cover and seal ring are used. 6. Unqualified press roller bearings provided by other manufacturers are used. | <ol style="list-style-type: none"> 1. Perfect the cleaning of material. 2. Adjust the clearance between the press roller and ring die. 3. Apply lubricating grease as designated (Section 7.2.1). 4. Apply enough lubricating grease as designated (Section 7.2.2). 5. Replace the end cover of bearing and seal ring. 6. Use bearings provided by Muyang Holdings Co., Ltd |

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(subject to the invoice date)under normal use and safe keeping 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.

Spare parts

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.