

# Instruction Manual of PELLET MILL HANDBOOK





# Catalogue

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## **1.0 Overview**

### **1.1 Acknowledgement**

Dear customer, thank you for choosing our products, we are happy to provide you with satisfactory services. In order to fully develop the performance of the pellet mill, enhance productivity, ensure production safety and prolong the service life, please read this manual carefully in advance to ensure proper operation and maintenance. Please strictly abide by operation regulations and forbid wrong operation.

### **1.2 Machine Application**

The machine is designed to manufacture high-density pellets with raw materials of animal feed, sawdust, straw, rice husk and tree bark, etc. Biomass pellet, which is a kind of high efficient clean renewable energy with the advantages of saving energy and reducing carbon emissions, is widely used in the areas of heating and power generation. It is an alternative fuel for non-renewable energy resources of coal, oil, gas, etc. Animal feed pellets are used to feed livestock, which are also easy for storage and transportation,

### **1.3 Machine Categories**

Our equipments are classified into different models by raw materials, mechanical structures and driving forces:

1.3.1 By raw materials: animal feed and biomass;

1.3.2 By structures: die-turn and roller-turn types;

1.3.3 By driving forces: electrical motor, diesel engine, gasoline engine and PTO

### **1.4 Safety Warnings**

**All machines are not lubricated before leaving factory. Please lubricate**



**the machine before use according to this manual and the label on the machine.**

**Add oil and exert running-in immediately when operating machine.**

**Do not touch the rotating parts during running.**

**Add oil after pelletizing, let the oily mixture run through the machine 3 times, and then shut down the machine.**

**Cut off the power source or turn off the engine before maintenance or internal inspection.**

## **2.0 Machine Introduction**

### **2.1 Main specification and technical parameters**

The capacity depends on raw material you use, and the following data are based on animal feed. Animal feed die-turn model: corn flour 65%, oil crop cake 20%, rice and wheat bran 15%; biomass die-turn model: pine (ZLSP-D); biomass roller-turn model: mixed sawdust (ZLS-R). Electric motor can be ordered according to customer's requirement, and it includes voltage and hertz.

**(Industrial power supply in China is : 380V/50Hz, three phase).**

#### **Biomass roller-turn ZLSP-R**

| Model    | Power | Capacity      | Weight<br>(NW/GW) | Packing Size    |
|----------|-------|---------------|-------------------|-----------------|
| ZLSP200A | 15 HP | 80-120kg/h    | 320/350kg         | 1460*950*1100mm |
|          |       | 170-270lbs/h  | 705/772lbs        | 58*37*55inch    |
| ZLSP300A | 36 HP | 250-350kg/h   | 850/890kg         | 1100*700*2480mm |
|          |       | 550-770lbs/h  | 1874/1962lbs      | 43*28*98 inch   |
| ZLSP400A | 55 HP | 350-450 kg/h  | 1010/1050kg       | 1300*800*2600mm |
|          |       | 770-990 lbs/h | 2227/2315lbs      | 51*31*102 inch  |



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|          |        |               |              |                 |
|----------|--------|---------------|--------------|-----------------|
| ZLSP200B | 3phase | 80-120 kg/h   | 215/245kg    | 950*450*1050mm  |
|          | 7.5KW  | 170-270 lbs/h | 475/540lbs   | 37*18*41 inch   |
| ZLSP300B | 3phase | 250-350 kg/h  | 540/575kg    | 1350*750*1400mm |
|          | 22KW   | 550-770 lbs/h | 1190/1268lbs | 53*30*55 inch   |
| ZLSP400B | 3phase | 350-450 kg/h  | 770/810kg    | 1400*800*1450mm |
|          | 30KW   | 770-990 lbs/h | 1698/1785lbs | 55*31*57 inch   |
| ZLSP200C | 3phase | 80-120 kg/h   | 225/255kg    | 1050*550*1050mm |
|          | 7.5KW  | 170-270 lbs/h | 496/562lbs   | 41*21*41 inch   |
| ZLSP300C | 3phase | 250-350 kg/h  | 550/585kg    | 1450*850*1400mm |
|          | 22KW   | 550-770 lbs/h | 1212/1289lbs | 57*33*55 inch   |
| ZLSP400C | 3phase | 350/450 kg/h  | 780/820kg    | 1500*900*1450mm |
|          | 30KW   | 770-990 lbs/h | 1719/1807lbs | 59*35*57 inch   |
| ZLSP200P | ≥15 hp | 80-120 kg/h   | 150/170kg    | 1000*540*1050mm |
|          |        | 170-270 lbs/h | 330/375lbs   | 39*21*41 inch   |
| ZLSP300P | ≥36 hp | 250-350 kg/h  | 375/400kg    | 1200*640*1400mm |
|          |        | 550-770 lbs/h | 826/881lbs   | 47*25*55 inch   |
| ZLSP400P | ≥55 hp | 350-450 kg/h  | 560/585kg    | 1400*700*1450mm |
|          |        | 770-990 lbs/h | 1235/1289lbs | 55*27*57 inch   |

**Biomass Die-turn ZLSP-D**

| Model    | Power | Capacity     |               | Weight<br>(NW/GW) | Packing Size   |
|----------|-------|--------------|---------------|-------------------|----------------|
|          |       | Sawdust      | Feed          |                   |                |
| ZLSP120A | 8 HP  | 40-80kg/h    | 60-100 kg/h   | 120/140kg         | 900x500x730mm  |
|          |       | 90-180lbs/h  | 132-220 lbs/h | 265/310lbs        | 35*20*29inch   |
| ZLSP150A | 8 HP  | 50-100kg/h   | 90-120 kg/h   | 180/220 kg        | 1000*500*750mm |
|          |       | 110-220lbs/h | 200-265 lbs/h | 400/490 lbs       | 39*20*30inch   |
| ZLSP200A | 15 HP | 80-120 kg/h  | 200-300 kg/h  | 210/240 kg        | 1460*750*900mm |



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|          |             |               |                |             |                 |
|----------|-------------|---------------|----------------|-------------|-----------------|
|          |             | 180-265lbs/h  | 440-660 lbs/h  | 460/530 lbs | 58*30*35inch    |
| ZLSP230A | 22 HP       | 120-200kg/h   | 300-400 kg/h   | 280/310 kg  | 1560*850*1000mm |
|          |             | 245-440lbs/h  | 660-880 lbs/h  | 620/680 lbs | 61*33*39inch    |
| ZLSP260A | 35 HP       | 160-250kg/h   | 400-600 kg/h   | 330/360 kg  | 1200*500*1070mm |
|          |             | 350-550 lbs/h | 880-1300 lbs/h | 730/790 lbs | 47*22*41inch    |
| ZLSP300A | 55 HP       | 250-400kg/h   | 600-800 kg/h   | 410/450 kg  | 1220*600*1000mm |
|          |             | 550-880 lbs/h | 1300-1760lbs/h | 900/990 lbs | 48*23*39inch    |
| ZLSP120G | 7.5 HP      | 40-80 kg/h    | 60-100 kg/h    | 120/140 kg  | 900x500x730mm   |
|          |             | 90-180 lbs/h  | 132-220 lbs/h  | 265/310 lbs | 35*20*29inch    |
| ZLSP150G | 13 HP       | 50-100 kg/h   | 90-120 kg/h    | 180/220 kg  | 1000*500*750mm  |
|          |             | 110-220lbs/h  | 200-265 lbs/h  | 400/490 lbs | 39*20*30inch    |
| ZLSP120B | 2.2/<br>3KW | 40-80 kg/h    | 60-100 kg/h    | 80/100 kg   | 750*320*680mm   |
|          |             | 90-180 lbs/h  | 132-220 lbs/h  | 175/220 lbs | 30*13*27inch    |
| ZLSP150B | 4KW         | 50-90 kg/h    | 90-120 kg/h    | 95/110 kg   | 800*450*700mm   |
|          |             | 110-200lbs/h  | 200-265 lbs/h  | 210/250 lbs | 31*18*28inch    |
| ZLSP200B | 7.5KW       | 80-120 kg/h   | 200-300 kg/h   | 200/230 kg  | 1050*480*930mm  |
|          |             | 180-265lbs/h  | 440-660 lbs/h  | 440/510 lbs | 41*19*37inch    |
| ZLSP230B | 11KW        | 120-200kg/h   | 300-400 kg/h   | 290/320 kg  | 1180*540*1000mm |
|          |             | 245-440lbs/h  | 660-880 lbs/h  | 640/105 lbs | 46*21*39inch    |
| ZLSP260B | 15KW        | 160-250kg/h   | 400-600 kg/h   | 320/360 kg  | 1240*540*950mm  |
|          |             | 350-550lbs/h  | 880-1300 lbs/h | 705/800 lbs | 49*21*37inch    |
| ZLSP300B | 22KW        | 250-400kg/h   | 600-800 kg/h   | 350/380 kg  | 1300*560*1100mm |
|          |             | 550-880lbs/h  | 1300-1760lbs/h | 770/840 lbs | 51*20*43inch    |
| ZLSP150C | 5.5KW       | 60-110 kg/h   | 90-120 kg/h    | 105/125 kg  | 1000*480*780mm  |
|          |             | 130-240lbs/h  | 200-265 lbs/h  | 230/280 lbs | 39*19*31inch    |
| ZLSP200C | 7.5KW       | 80-120 kg/h   | 200-300 kg/h   | 210/230 kg  | 1050*550*830mm  |
|          |             | 180-265lbs/h  | 440-660 lbs/h  | 460/510 lbs | 42*22*33inch    |



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|          |       |              |                |              |                 |
|----------|-------|--------------|----------------|--------------|-----------------|
| ZLSP230C | 11KW  | 120-200kg/h  | 300-400 kg/h   | 290/320 kg   | 1200*560*950mm  |
|          |       | 245-440lbs/h | 660-880 lbs/h  | 640/705 lbs  | 47*22*37inch    |
| ZLSP260C | 15KW  | 160-250kg/h  | 400-600 kg/h   | 340/370 kg   | 1240*580*1000mm |
|          |       | 350-550lbs/h | 880-1300 lbs/h | 750/815 lbs  | 49*23*39inch    |
| ZLSP300C | 22KW  | 250-400kg/h  | 600-800 kg/h   | 425/465 kg   | 1300*620*1100mm |
|          |       | 550-880lbs/h | 1300-1760lbs/h | 940/1025 lbs | 51*24*43inch    |
| ZLSP120P | ≥8 HP | 40-80 kg/h   | 60-100 kg/h    | 80/100 kg    | 900*540*900mm   |
|          |       | 90-180 lbs/h | 132-220 lbs/h  | 175/220 lbs  | 35*21*35inch    |
| ZLSP150P | ≥8 HP | 50-100 kg/h  | 90-120 kg/h    | 90/110 kg    | 900*540*1020mm  |
|          |       | 110-220lbs/h | 200-255 lbs/h  | 200/245 lbs  | 35*21*40inch    |
| ZLSP200P | ≥15HP | 80-120 kg/h  | 200-300 kg/h   | 130/150 kg   | 1000*540*1020mm |
|          |       | 180-265lbs/h | 440-660 lbs/h  | 290/330 lbs  | 39*21*40inch    |
| ZLSP230P | ≥22HP | 120-200kg/h  | 300-400 kg/h   | 175/200 kg   | 1000*540*1020mm |
|          |       | 245-440lbs/h | 660-880 lbs/h  | 385/440 lbs  | 39*21*40inch    |
| ZLSP260P | ≥30HP | 160-250kg/h  | 400-600 kg/h   | 235/260 kg   | 1050*540*900mm  |
|          |       | 350-550lbs/h | 880-1300 lbs/h | 518/580 lbs  | 41*21*35inch    |
| ZLSP300P | ≥55HP | 250-400kg/h  | 600-800 kg/h   | 305/330 kg   | 1100*540*1000mm |
|          |       | 550-880lbs/h | 1300-1760lbs/h | 680/730 lbs  | 43*21*39inch    |

### Meanings of the model name:

**ZL:** Pellet mill

**S:** Animal feed

**P:** Rotating die

**A:** Diesel Engine

**G:** Gasoline Engine

**M:** Sawdust biomass

**G:** Rotating roller

**B:** Motor

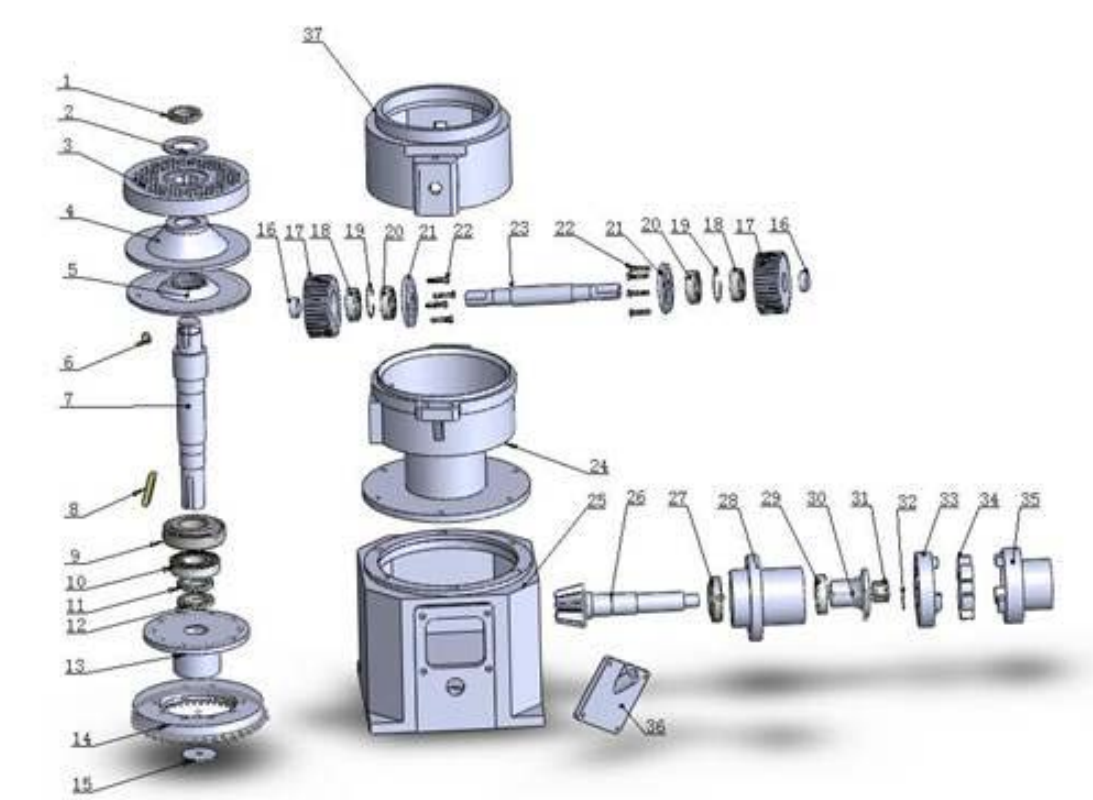
**P:** PTO

**C:** Covered motor

## 2.2 Machine structure and main parts

### 2.2.1 Structure and main parts of die-turn ZLSP-D



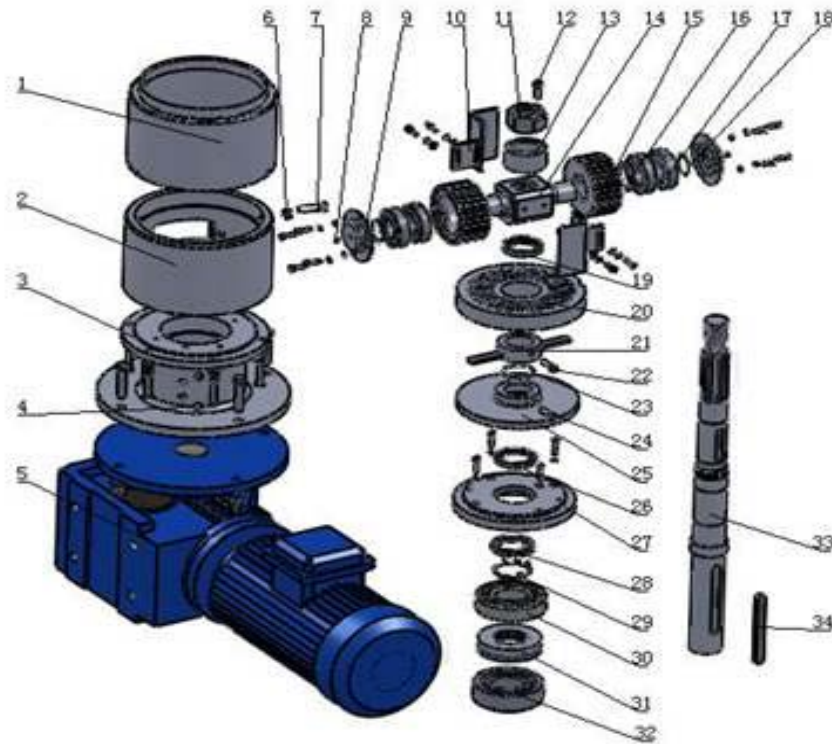


| No.  | Name                     | Qty | No. | Name                      | Qty |
|------|--------------------------|-----|-----|---------------------------|-----|
| 1    | Round Nut                | 1   | 20  | Bearing                   | 2   |
| 2    | Flat Washer              | 1   | 21  | Bearing Cover of Roller   | 2   |
| 3    | Die                      | 1   | 22  | Hex Bolt                  | 8   |
| 4    | Disc of Throwing Pellets | 1   | 23  | Roller Shaft              | 1   |
| 5    | Dust Cover of Main Shaft | 1   | 24  | Shaft Box                 | 1   |
| 6    | Flat Key of Type A       | 1   | 25  | Gear Box                  | 1   |
| 7    | Main Shaft               | 1   | 26  | Gear Shaft                | 1   |
| 8    | Flat Key                 | 1   | 27  | Bearing                   | 1   |
| 9,10 | Bearing                  | 1   | 28  | Pinion Seat               | 1   |
| 11   | Round Nut                | 1   | 29  | Bearing                   | 1   |
| 12   | Round Nut                | 1   | 30  | Splined Sleeve            | 1   |
| 13   | Big Gear Seat            | 1   | 31  | Castle Nut                | 1   |
| 14   | Big Gear                 | 1   | 32  | Cotter Pin                | 1   |
| 15   | Washer                   | 1   | 33  | Passive Coupling          | 1   |
| 16   | Check Ring               | 2   | 34  | Elastic Washer            | 1   |
| 17   | Roller                   | 2   | 35  | Active Coupling           | 1   |
| 18   | Bearing                  | 2   | 36  | Cover of Observation Hole | 1   |
| 19   | Washer                   | 2   | 37  | Upper Box Body            | 1   |





### 2.2.2 Structure and main parts of roller-turn ZLSP-R



| No. | Name                     | Qty | No. | Name                     | Qty |
|-----|--------------------------|-----|-----|--------------------------|-----|
| 1   | Upper Box Body           | 1   | 18  | Check Ring               | 2   |
| 2   | Shaft Box                | 1   | 19  | Grease Seal              | 1   |
| 3   | Bearing Seat             | 1   | 20  | Die                      | 1   |
| 4   | Straight-through Oil Cup | 2   | 21  | Cutter                   | 1   |
| 5   | Reducer                  | 1   | 22  | Hex Bolt                 | 1   |
| 6   | Hex Nut                  | 1   | 23  | O Shape Seal Ring        | 1   |
| 7   | Hex Bolt                 | 1   | 24  | Disc of Throwing Pellets | 1   |
| 8   | Pressure Oil Cup         | 2   | 25  | Hex Bolt                 | 1   |
| 9   | Cover of Roller          | 2   | 26  | Grease Seal              | 1   |
| 10  | Discharge Scraper        | 2   | 27  | Dust Cover of Shaft      | 1   |
| 11  | Hex Bolt                 | 1   | 28  | Round Nut                | 1   |
| 12  | Nut                      | 1   | 29  | Lock Ring                | 1   |
| 13  | Washer                   | 1   | 30  | Bearing                  | 1   |
| 14  | Roller Shaft             | 1   | 31  | Grease Seal              | 1   |



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|    |                            |   |    |            |   |
|----|----------------------------|---|----|------------|---|
| 15 | Roller                     | 2 | 32 | Bearing    | 1 |
| 16 | Felt                       | 2 | 33 | Main Shaft | 1 |
| 17 | Cylindrical Roller Bearing | 4 | 34 | Flat Key   | 8 |

## 2.3 Maintenance

### 2.3.1 Lubrication

Make sure oil is added to gearbox and all bearings are properly lubricated before initial operation.

Check and make sure each rotating part is well lubricated.

Lubricate the machine according to following chart.

| No. | Lubrication Part | Oil Type            | Lubrication Period  | Oil-Change Period                             |
|-----|------------------|---------------------|---|---|
| 1   | Roller           | Lithium Base Grease | Once every 8 hours  |   |
| 2   | Main Shaft       | Lithium Base Grease | Once every 8 hours  |   |
| 3   | Gear Box         | Hypoid Gear Oil     | The initial oiling should reach the designated position.(measure with dipstick) | Three Months for First Time; Six Months Later |

Driven by Diesel engine: Please read and follow *“Diesel Engine Instruction Manual.”*

Driven by Gas engine: Please read and follow *“Gasoline Engine instruction Manual.”*

Driven by PTO: Lubricate bearings and splines with lithium base grease once every 8 hours.



### **2.3.2 Inspection & maintenance of the die and rollers**

#### **Inspection of Rollers:**

The roller should be visually inspected prior to each start-up. Make sure there are no foreign materials affecting roller running. Service life of the die is 300-500 hours under normal running condition. Replacing roller and die at the same time is recommended.

#### **Inspection of the Die:**

The die should be visually inspected prior to start-up. Make sure there are no foreign materials clogging the in bearings and each part is tightened. Service life of roller is 300-500 hours under normal running condition. Most of dies can be used on both sides.

## **3.0 Getting started**

### **3.1 Material requirement**

#### **Moisture content**

The requirement of moisture depends on different kinds of raw materials. The moisture content of sawdust for the die-turn pellet machine ZLSP-D is specified to 10%-18%, and that for roller-turn pellet machine ZLSP-R is 10%-14%. The materials should be mixed evenly.

#### **Requested size**

The maximum size of the materials cannot exceed the diameter of the die hole. For example, if the diameter of the die hole is 6mm, the length of the saw dust can not be more than 6mm. Please ensure the proper size of raw material according to the diameter of the die hole.



## **Composition**

Both simple raw material and mixed material can be processed. Pieces of stone and iron or other hard substances cannot be mixed into the feedstock, or they will damage the machine.

## **Binder**

Our machines are designed to pelletize without adding an additive. However we recommend using a binder, it can increase capacity and extend service life of die, roller and other wearing parts.

## **3.2 Inspection before Operation**

### **3.2.1 Check whether each fastening piece is tightened**

Before operation, make sure the bolts are screwed on both sides of the roller are tightened enough to avoid the bolts coming off and damaging the roller. Overall check other parts to make sure there are no loosened or missing bolts.

### **3.2.2 Check whether the safety protection measure is completed**

Before operation, check electric motor, electric cabinet and wires to prevent the possibility of electricity leakage. Make sure safety shield works well; make sure the floor is dry to avoid an accident.

## **3.3 Adjust the clearance between die and rollers**

### **3.3.1 Requirement**

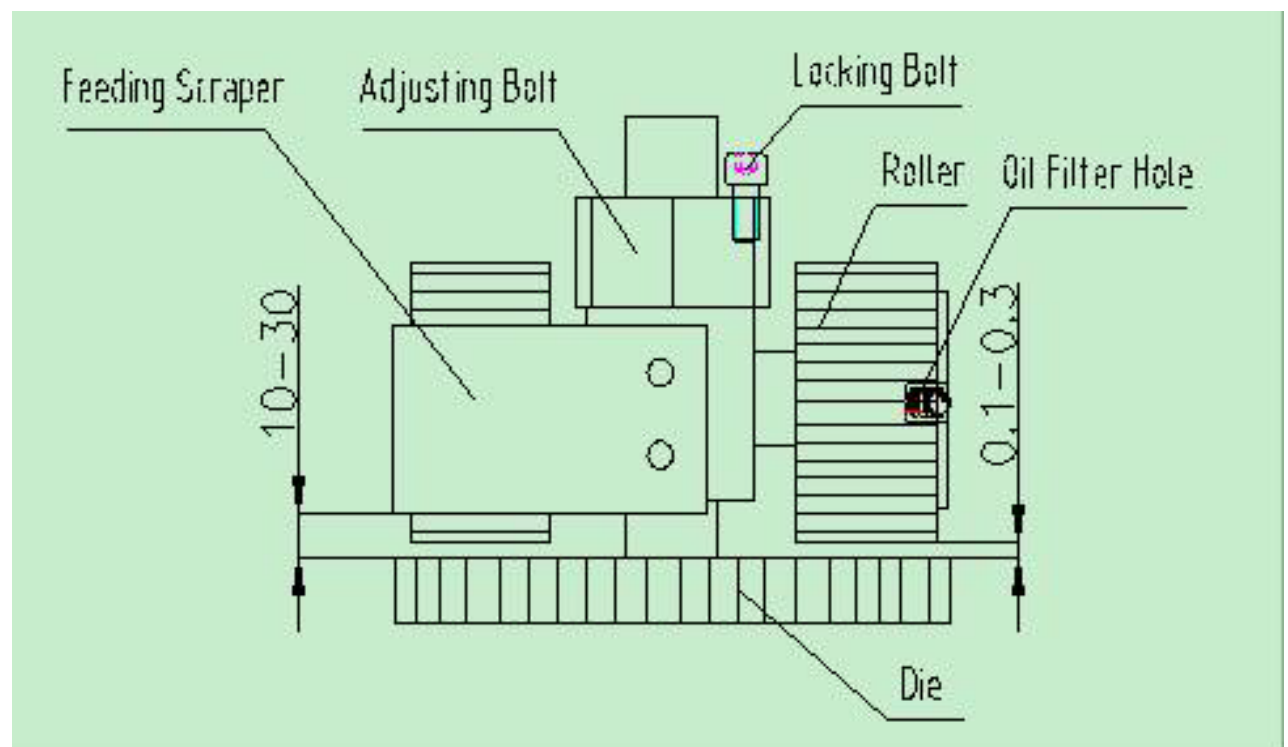
Clearance between die and roller has great influence on pellet quality. The best range of clearance remains 0.1mm - 0.3mm. The clearance depends on specific materials. When the clearance is over 0.3mm, the capacity will be



reduced by thick material on die. When the clearance is less than 0.1mm, it will aggravate the wear and tear between die and rollers and shorten the service life.

### 3.3.2 How to adjust the clearance for roller-turn pellet machine ZLSP-R

Adjustment before operation: As shown in the following drawing. Loosen the locking bolt before adding materials into the hopper, turn the adjusting bolt clockwise until it cannot be turned tighter by hand, then turn the adjusting bolt counter-clockwise  $15^{\circ}$  -  $30^{\circ}$  , and at last tighten the locking bolt.



### 3.3.3 How to adjust clearance between feeding scraper and die of ZLSP-R

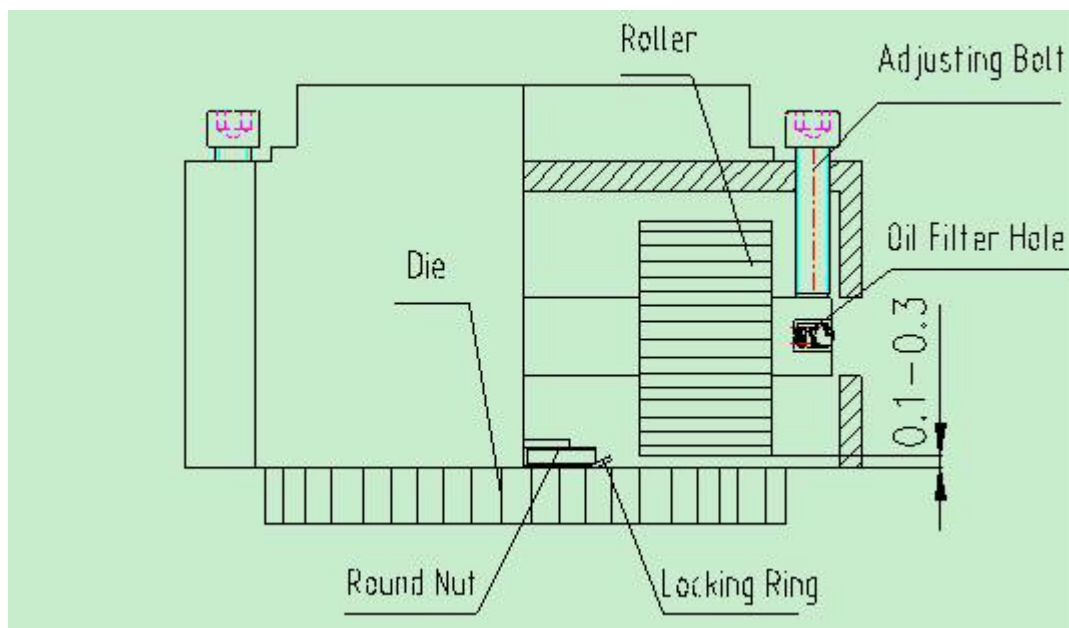
Adjustment before operation: the clearance between the discharge scraper and the flat die will greatly influence the output. If the clearance is too short, the material will not flow freely into die holes, resulting in lower output and high powder yield. If the clearance is too long, the motor will be overloaded, or even be burn out. As shown in the above drawing, the suitable clearance between



the discharge scraper and die is 10-30mm.

### 3.3.4 How to adjust the clearance for ZLSP-D

As shown in the following drawing. Shortly after starting the machine, feed a few materials and turn the adjusting bolts on both sides of the roller evenly until the die drives the roller to run. Feed materials gradually and adjust bolts according to pellets quality.



## 3.4 Start the machine

### 3.4.1 Electric motor

Before initial operation, check whether rotating direction of the machine is same with the label on the machine. If not, correct it. For normally use, please switch on the breaker, press the start button and then the machine will start running.





### **3.4.2 Setting up procedures of diesel engine (By manual)**

1. Turn the speed controller to the “startup” position.
2. Inset the starter crank into the hole of the startup shaft. Press down decompression handle with left hand. Roll up the start crank with right hand until normal running sound of the diesel engine can be heard.
3. Turn the start handle up fast. When flywheel gets enough power, release the decompression handle immediately, and then rotate the starter crank continuously till the diesel engine is started.
4. When the engine starts to run, the starter crank may drop away from the starter hole automatically. So pull back the start handle in time to avoid an accident.

### **3.4.3 Setting up procedures of diesel engine (startup with electric)**

1. Turn the speed controller to the “startup” position.
2. Turn the key to the gear “ I ” , then the starter will be connected to the battery. Turn the key to gear “ II ” , the engine will then start.
3. After starting the diesel engine, turn the key to gear “ I ” immediately.

### **3.4.4 Setting up procedures of gasoline engine**

1. Turn the fuel valve to the “ON” position.
2. Move the speed controller from “low” to “high”, which is about one third from the “high”.
3. Turn the choke lever to the “CLOSE” position.
4. Turn the engine switch to the “ON” position.
5. Pull the starter grip slowly until you feel resistance, and then pull it up swiftly.  
(Without an electric starter);  
Turn the engine switch to the “START” position. (With electric starter)
6. Turn the choke lever to the “OPEN” position.



7. Set the throttle at the required position.

### **3.5 Preheating the pellet mill**

3.5.1 Before starting up each time, the machine needs to be preheated with an oily mixture repeatedly for 5 minutes or so. When the temperature reaches 80-100°C (Fahrenheit), you can make pellets.

3.5.2 Oily mixture proportion: mix 3-5kg/7-12lbs raw material with 10% oil evenly.

#### **3.5.3 Preheating procedure**

1. Place a bucket under the discharge outlet so that the material can be collected and repute into the machine several times to help preheat the machine itself.
2. Starting up.
3. Feed oily mixture into the machine and do not make materials out of the pelletizing chamber.
4. The die will prove to be heated enough to produce pellets when there is vapor above the hopper and pellets being discharged are durable and compressed. At this time the die is ready to produce pellets continuously.

### **3.6 The first breaking-in of new die**

3.6.1 The die you have received has never been used. Therefore you will need to “break it in” Please break-in it before the first use.

3.6.2 Oily mixture ingredients : Mix 10kg fine sand, 32kg/70lbs biomass material (sawdust) and 8kg/18lbs used oil evenly. (That is to say, fine sand 20%, biomass material 65%, used oil 15%)

#### **3.6.3 Die breaking-in procedures**

1. Place a bucket under the discharge outlet. Material collected will be repute



into the pellet mill to preheat the machine .

2. Start up.
3. Feed oily mixture into mill and do not get feedstock out of the pelletizing chamber.
4. Continue to pour oily mixture in and let it run through die holes.
5. Reuse the oily mixture in a recycling manner for 40-60 minutes.

### **3.7 Pelletizing**

3.7.1 Feed materials and run the machine after preheating.

3.7.2 Low moisture content may result in producing soft or powdery pellets; High moisture content may lead to producing rough pellets.

3.7.3 Adjust the adjusting bolts if it can not produce pellets.

Please contact us if it still can not work well after adjusted.

### **3.8 Shut down the machine**

Before stopping the machine, please let oily mixture run through the machine at least 3 times. This procedure is the prerequisite for following operations, to save as much as starting time and avoid material blocking the die holes.

3.8.1 Electric Motor: Press “Stop” button.

3.8.2 Diesel Engine: Switch off the clutch to separate state when the machine is idly running and move speed controller to “Stop” position. (for the clutch model)

3.8.3 Gas Engine: 1. Move the throttle lever to “Low” position.

2. Turn the engine switch to “Off” position.

3. Turn the fuel valve to “Off” position.

3.8.4 PTO: please refer to the diesel engine model for reference.



## 4.0 Common troubles and solutions

| Fault                       | Cause  | Solution   |
|-----------------------------|--|--|
| No pellets are produced     | 1. New die has not been ground by oily mixture or ground insufficiently.<br>2. Material contains too much moisture.<br>3. Material is not organic in nature or does not contain proper amount of lignin. | 1. Clean feedstock out of the machine first and grind the die with oily mixture.<br>2. Adjust material moisture content.<br>3. Add 3-5% additive binder into the material. |
| Motor halts suddenly        | 1. Voltage is low.<br>2. Pressure between roller and die is too high.  | 1. Start the machine again when voltage is stable.<br>2. Adjust the clearance between die and rollers.   |
| Pellets are soft or powdery | 1. Material is too dry.<br>2. Die is worn out.   | 1. Add water to material.<br>2. Change the die.  |
| Rollers are damaged fast.   | 1. Machine runs for a long time without materials between rollers and the die.<br>2. Small hard impurities of iron, stone, sands and metal are mixed in materials.                                       | 1. Charge materials in time and make sure materials fill between the die and rollers.<br>2. Clean away impurities.   |

## 5.0 Quality assurance

### 5.1 Warranty policy

We hereby warrant each new product to be free from defects in material and workmanship for a period of 12 months from the date of shipment. We will replace defective parts or components without charge, transportation charges shall be the responsibility of the purchaser.

We reserve the rights of requiring the purchaser to return the defective



products or parts to our factory for inspection.

## 5.2 Exceptions

1. The machine is not purchased from us or an authorized franchisee of our company.
2. Any part of the product has been altered, modified or changed without our written authorization.
3. The machine has not been installed, used or serviced in accordance with the instruction manual.
4. Wearing parts, such as electric parts, rollers, dies, bearings, grease seals, belts, are not covered by warranty.
5. Any loss or damage directly or indirectly caused by improper operation will be borne by purchaser.

### Notes:

As technology advances, our products are updated regularly. We are not liable for informing purchaser of product changes in structure and performance.

## 6.0 Wearing parts list

### 6.1 Main wearing parts of ZLSP-D

| Parts              | Model    |          |          |          |          |          | Qty  | Installation site |
|--------------------|----------|----------|----------|----------|----------|----------|------|-------------------|
|                    | 120      | 150      | 200      | 230      | 260      | 300      |      |                   |
| <b>Bearing</b>     | 6204RZ   | 6204RZ   | 6205RZ   | 6206RZ   | 6306RZ   |          | 4pcs | roller            |
| <b>Bearing</b>     | 6206     | 6206     | 6208     | 6209     | 6312     | 6312     | 1pc  | Main shaft        |
| <b>Bearing</b>     | 30207    | 30207    | 30309    | 32309    | 30312    | 32313    | 1pc  | Main shaft        |
| <b>Bearing</b>     | 6203     | 6204     | 6206     | 6307     | 6305     | 6207     | 1pc  | gear axle         |
| <b>Bearing</b>     | 30205    | 30205    | 30207    | 31309    | 30309    | 31309    | 1pc  | gear axle         |
| <b>Bearing</b>     |          |          |          |          | 30209    | 30209    | 1pc  | gear axle         |
| <b>Bearing</b>     |          |          |          |          |          | 6207RZ   | 6pcs | roller            |
| <b>Grease seal</b> | 28*50*10 | 28*50*10 | 42*70*11 | 47*84*12 | 58*90*12 | 55*90*12 | 1pc  | gear axle         |



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|                    |                      |    |     |     |     |     |      |                |
|--------------------|----------------------|----|-----|-----|-----|-----|------|----------------|
| <b>Grease seal</b> | <b>Felt retainer</b> |    |     |     |     |     | 2pcs | roller         |
| <b>Grease seal</b> | <b>Felt retainer</b> |    |     |     |     |     | 1pc  | Main shaft     |
| <b>Washer</b>      | 80                   | 80 | 105 | 105 | 150 | 150 | 1pc  | coupling       |
| <b>Roller</b>      |                      |    |     |     |     |     | 1set | Upper box body |
| <b>Mold(die)</b>   |                      |    |     |     |     |     | 1pc  | Upper box body |

## 6.2 Main wearing parts of ZLSP-R

| <b>Parts</b> | <b>Model</b>       |                    |                    | <b>Qty</b> | <b>Installation Site</b> |
|--------------|--------------------|--------------------|--------------------|------------|--------------------------|
|              | 200                | 300                | 400                |            |                          |
| Bearing      | 32310              | 33216              | 33218              | 1pc        | Main shaft               |
| Bearing      | 6310               | 6216               | 6218               | 1pc        | Main shaft               |
| Bearing      | NJ207E             | 30211              | 30213              | 4pcs       | roller                   |
| Grease Seal  | 42*62*8            | 60*80*8            | 70*90*10           | 1pc        | die                      |
| Grease       | 45*65*8            | 75*95*10           | 85*105*10          | 1pc        | Dust cover               |
| Grease seal  | O shape<br>45*3.55 | O shape            | O shape            | 1pc        | Discharge disc           |
| Anti dust    | felt               | O shape<br>60*3.55 | O shape<br>70*3.55 | 2pcs       | roller                   |
| Anti dust    | felt               | felt               | felt               | 1pc        | Main shaft               |
| roller       |                    |                    |                    | 1set       | Upper box body           |
| die          |                    |                    |                    | 1pc        | Upper box body           |





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