PELET PRESE ZLSP serije

UPUTSTVO ZA RUKOVANJE I ODRZAVANJE

Pellet Mill Manual

Catalogue

1.0 Overview

1.1 Acknowledgement

Dear Customer, thank you for purchasing our products. Please read and follow the instructions in this manual before operation and maintenance of the machine, for the benefit of full utilization of pellet mill, higher production efficiency, safe operation and longer service life. Operating the machine contrary to its instruction is forbidden.

1.2 Machine Application

This machine is designed to process animal feed, sawdust, straw, rice husk, bark, etc into high density pellets which are convenient for storage and transportation. Animal feed pellets are to raise livestock. Biomass pellets are widely used in house warming, power generation by burning. As alternative energy source of non-renewable energy, such as, coal, oil, gas etc, pellet is high efficient, clean renewable, saving energy and reducing carbon emissions.

1.3 Machine Categories

According to material, structure and power, we have different models:

1.3.1 Material: animal feed model and biomass model;

1.3.2 Structure: rotating die and rotating roller

1.3.3 Power: electric motor, diesel engine, gasoline engine, PTO

1.4 Safety Warnings

All machines are not lubricated. Please lubricate the machine

according to this manual and the marks on the machine.

Grind-in the die before making pellets.

Keep hands clear of moving parts during operation.

After pelletizing let oil mixture runs through the machine for 3 times

Disconnect the power source before service or internal inspection.

2.0 Machine Introduction

2.1 Machine Models and Specifications

Capacity may vary depending upon different material. Following information is based on pine (ZLSP-D sawdust) Mixed sawdust (ZLS-R). Electric motor can be customized according to purchaser's requirement, including voltage, hertz. Chinese; 380V, 50hz

Biomass Rotating Roller ZLSP-R

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

ZLSP200B	三相7.5KW	80-120	215/245	950*450*1050
		170-270	475/540	37*18*41
ZLSP300B	三相22KW	250-350	540/575	1350*750*1400
		550-770	1190/12	53*30*55
ZLSP400B	三相30KW	350-450	770/810	1400*800*1450
		770-990	698/1785	55*31*57
ZLSP200C	三相7.5KW	80-120	225/255	1050*550*1050
		170-270	496/562	41*21*41
ZLSP300C	三相22KW	50-350	550/585	1450*850*1400
		550-770	1212/1289	57*33*55
ZLSP400C	三相 30KW	350/450	780/820	1500*900*1450
ZLSP200P	≥15马力	770-990	1719/1807	59*35*57
		80-120	150/170	1000*540*1050
		170-270	330/375	39*21*41
ZLSP300P	≥36马力	250-350	375/400	1200*640*1400
		550-770	826/881	47*25*55
ZLSP400P	≥55马力	350-450	560/585	1400*700*1450
		770-990	1235/1289	55*27*57

Rotating Die ZLSP-D

Model	Power	Capacity(kg/lbs)/hr		Weight	Packing Size
		Sawdust	Feed	（kg/lbs）	（mm/inch）
ZLSP120A	8 hp	40-80	60-100	120/140	900x500x730
		90-180	132-220	265/310	35*20*29
ZLSP150A	8 hp	50-100	90-120	180/220	1000*500*750
		110-220	200-265	400/490	39*20*30
ZLSP200A	15 hp	80-120	200-300	210/240	1460*750*900
		180-265	440-660	460/530	58*30*35
ZLSP230A	22 hp	120-200	300-400	280/310	1560*850*1000
		245-440	660-880	620/680	61*33*39
ZLSP260A	35 hp	160-250	400-600	330/360	1200*500*1070
		350-550	880-1300	730/790	47*22*41
ZLSP300A	55 hp	250-400	600-800	410/450	1220*600*1000
		550-880	1300-1760	900/990	48*23*39
ZLSP120G	7.5 hp	40-80	60-100	120/140	900x500x730
		90-180	132-220	265/310	35*20*29
ZLSP150G	13 hp	50-100	90-120	180/220	1000*500*750
		110-220	200-265	400/490	39*20*30

ZLSP120B	2.2/3kw	40-80	60-100	80/100	750*320*680
		90-180	132-220	175/220	30*13*27
ZLSP150B	4kw	50-90	90-120	95/110	800*450*700
		110-200	200-265	210/250	31*18*28
ZLSP200B	7.5kw	80-120	200-300	200/230	1050*480*930
		180-265	440-660	440/510	41*19*37
ZLSP230B	11k	120-200	300-400	290/320	1180*540*1000
		245-440	660-880	640/105	46*21*39
ZLSP260B	15kw	160-250	400-600	320/360	1240*540*950
		350-550	880-1300	705/800	49*21*37
ZLSP300B	22kw	250-400	600-800	350/380	1300*560*1100
		550-880	1300-1760	770/840	51*20*43
ZLSP150C	5.5kw	60-110	90-120	105/125	1000*480*780
		130-240	200-265	230/280	39*19*31
ZLSP200C	7.5kw	80-120	200-300	210/230	1050*550*830
		180-265	440-660	460/510	42*22*33
ZLSP230C	11kw	120-200	300-400	290/320	1200*560*950
		245-440	660-880	640/705	47*22*37

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

ZL: Pellet Mill

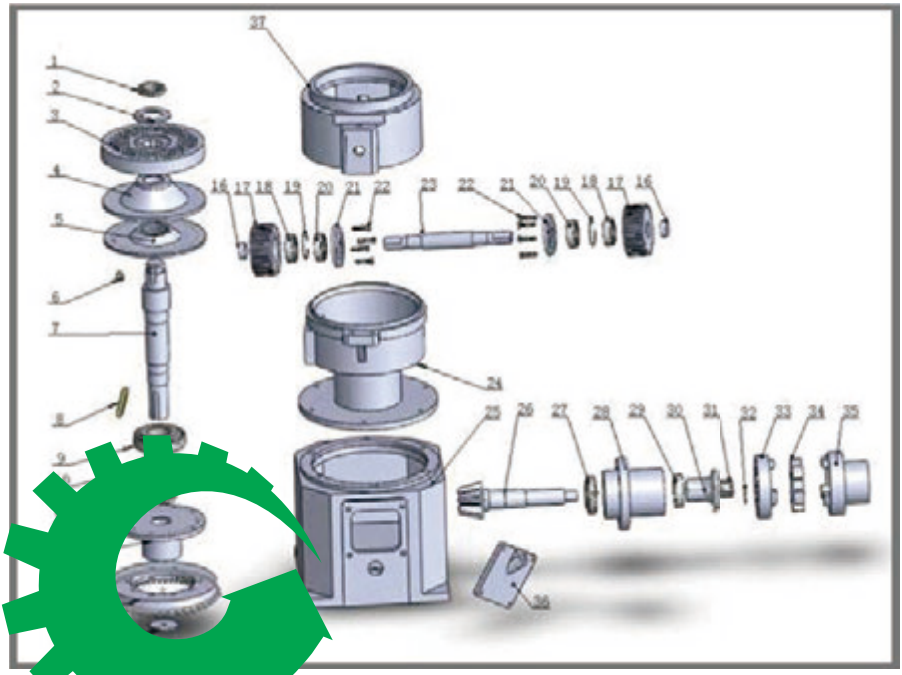
S: Animal Feed M: Wood biomass

P: Flat die

A: Diesel Engine B: Motor C: Covered Motor G: Gas Engine P: PTO

2.2 Machine Configuration and Main Part

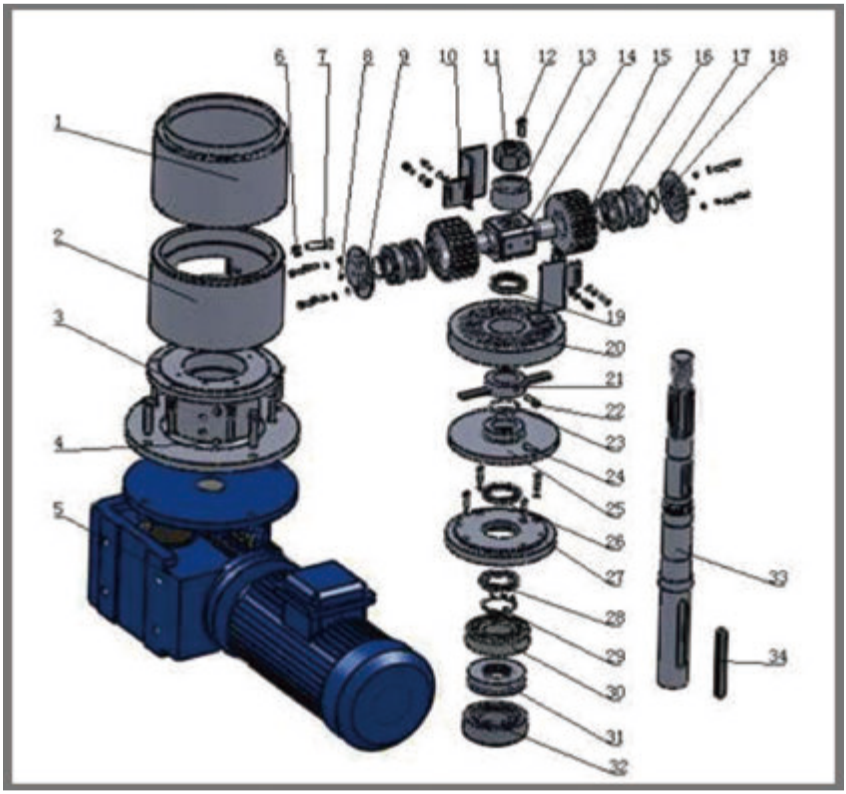
2.2.1 ZLSP-D Model Configuration and Main part



Item	Description	Qty	Item	Description	Qty
1	Round Nut	1	20	Bearing	2
2	Flat Pad	1	21	Bearing Cover of Roller	2
3	Die	1	22	Hex Bolt	8
4	Disc of Throwing pellet	1	23	Roller Shaft	1
5	Dust Cover of Principal Axis	1	24	Spindle Box	1
6	Flat Key of Type A	1	25	Gear Box	1
7	Principal Axis	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	Check Ring for Axis	1	33	Passive Coupling	1
16	Check Ring	2	34	Elastic Cushion	1
17	Roller	2	35	Active Coupling	1
18	Bearing	2	36	Cover of Observation Window	1
19	Check Ring for Hole	2	37	Upper Box Body	1

2.2.2 ZLSP-R Model Configuration and Main part



Item	Description	Qty	Item	Description	Qty
1	Upper Box Body	1	18	Check Ring	2
2	Spindle Box	1	19	Grease Seal	1
3	Bearing Seat	1	20	Die	1
4	Forced Filling 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 pellet	1
8	Plus Fit Force Filling Oil Cup	2	25	Hex Bolt	1
9	Cover of Roller	2	26	Grease Seal	1
10	Feeding Scraper	2	27	Dust Cover of Axis	1
11	Hex Bolt	1	28	Round Nut	1
12	Nut	1	29	Lock Ring	1
13	Check Ring for Hole	1	30	Bearing	1
14	Roller Shaft	1	31	Grease Seal	1
15	Roller	2	32	Bearing	1
16	Felt	2	33	Principal Axis	1
17	Cylindrical Roller Bearing	4	34	Flat Key	8

2.3 Machine Maintenance and Service

2.3.1 Lubrication

Before initial operation make sure gearbox is added with oil and all bearings are properly 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	Principal Axis	Lithium Base Grease	Once every 8 hours	
3	Gear Box	Hypoid Gear Oil	Up to the Set Site （take oil meter as reference）	Three Month for First Time; Six Month Later

Diesel engine: Please read and follow Diesel Engine Manual Instruction.

Gas engine: Please read and follow Gasoline Engine Manual Instruction.

PTO: Lubricate bearings and splines with lithium base grease.

2.3.2 Die and Roller Inspection & Maintenance

Inspection of Roller:

The roller should be visually inspected prior to each start-up. Make sure no foreign objects affect roller normal running. Service life of the die is supposed to be 300-500 hours. Replace roller and die at same time will be better.

Inspection of Die:

The die should be visually inspected prior to start-up. Make sure no foreign objects are lodged in bearings and no loosened parts. Service life of roller is expected to be 300-500 hours under normal circumstances. Most of dies can be used on both sides.

3.0 Getting started

3.1 Material Requirement

Moisture Content

Due to different kinds of raw materials, the requirements to the moisture are

different. Usually we require sawdust moisture content 10%-18% while mix the materials evenly.

Particle Size

The length of the material cannot exceed the diameter of the die hole. For example, if the diameter of the die hole was 6mm, the length of the saw dust could not be longer than 6mm. Please ensure the right size of raw material according to the diameter of the die hole.

Composition

Both of single raw material and mixed material can be processed. While iron ore briquette, stone or other hard

objects cannot be mixed into the raw material, or else, they will easily damage the machine.

Additive Binder

Our machine is designed to pelletize without binder. However we recommend binder which can increase capacity and prolong service life of die, roller and other wearing parts.

3.2 Inspection before Operation

3.2.1 Check whether the spare parts connect firmly or not.

Before operation, please firstly make sure the bolts screwed on both side of the roller are tight enough to avoid falling bolts damage the roller. After that, please check whether other parts are loosened or not.

3.2.2 Checking whether the safety protection is complete or not

Before operation, please check electric motor, electric cabinet and wires to prevent the possibility of electricity leakage. Make sure safety shield work well; check the floor is wet or not, so as to avoid accident.

3.3 Adjust the Gap between Die and Roller

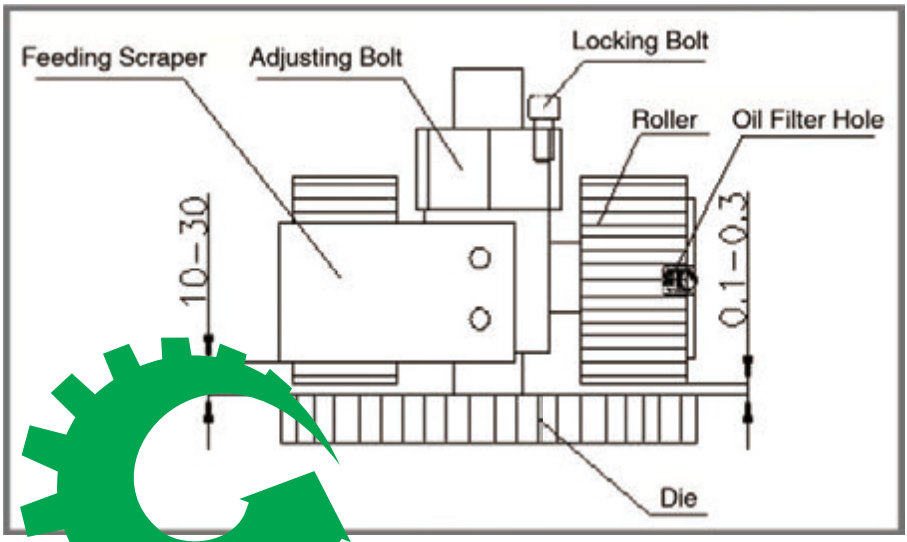
3.3.1 Gap Requirement

Gap between die and roller has great influence on pellet quality. The best gap is 0.1mm - 0.3mm. This gap depends on different material. When the gap is over 0.3m, the capacity will be reduced by thick material on die. When the gap is less than 0.1mm, it will aggravate the wear of die and roller and reduce service life.

3.3.2 How to Adjust the Gap for ZLSP-R Rotating Roller

Adjust before operation: As shown in following drawing.

Before inputting material to machine, release the locking bolt, screw the adjusting bolt clockwise till it cannot be screwed by hands, then screw the adjusting bolt anticlockwise 15°-30°, at last tighten the locking bolt.



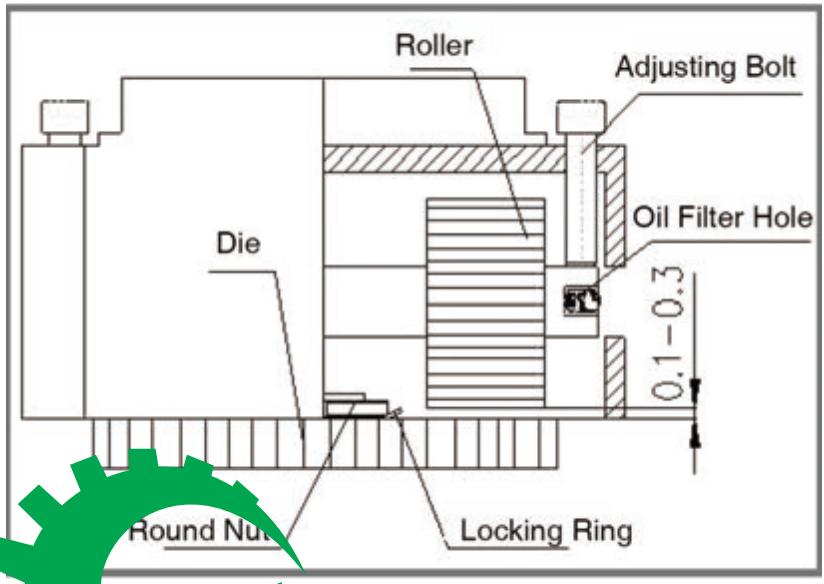
3.3.3 How to Adjust Gap between Feeding Scraper and Die for ZLSP-R

Adjust before operation: the gap between the feeding scraper and the flat die will greatly influence the output. If the gap is too small, the material is hard to squeeze into the die holes, leading to low output and high flour yield. If the space is too big, the motor will be overload, or even burn out. As shown in above drawing suitable distance between feeding scraper and die is 10-30mm.

3.3.4 How to Adjust the Gap for ZLSP-D

Adjust after starting the machine: As shown in following drawing. After starting the machine, screw the adjusting bolts on both sides of roller evenly until the die drives the roller to

run. When raw material is added to the machine adjusting bolts can be tightened gradually depends on pellet quality.



3.4 Start the Machine

3.4.1 Electric Motor

Before initial operation, check whether running direction of machine is same with the arrow on the machine. If the direction is opposite please adjust the electric wire connection.

Connect breaker, press the start button then the machine starts to run.

3.4.2 Diesel Engine (without electric starter) Start Procedures

1. Turn the speed controlling handle to the “start” position.

2. Inset the start crank into the hole of the start shaft. The press down

decompression handle with the left hand. Roll the start crank with right hand.

till you hear normal diesel engine running sound.

3. Roll the start handle fast. When fly wheel gets enough power, then release

the decompression handle quickly, and roll the start crank continually till the

diesel engine is started.

4. When the engine starts to run, the start crank may drop away from the start

hole automatically. So pull back the start handle in time to avoid accident.

3.4.3 Diesel Engine (with electric starter) Start Procedures

1. Turn the speed controller to the “start”position.

2. Turn the key to the gear“Ⅰ”, then the starter is connected with the storage

battery. Turn the key to gear “Ⅱ”, then the engine starts.

3. After starting diesel engine please turn the key to gear“Ⅰ”

3.4.4 Gasoline Engine Start Procedure

1. Turn the fuel valve to the “ON” Position.

2. Move the throttle level slightly to the left.

3. Turn the choke lever to the close position.

4. Turn the engine switch to the “ON” position.

5. Pull the starter grip lightly until resistance is felt, then pull briskly.(without 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 desired position.

3.5 Warm up the Pellet Mill

3.5.1 Before making pellet every time, machine needs to be

warmed up by oil mixture repeatedly for 5 minutes or so. When the temperature reaches 80-100℃ you can make pellet.

3.5.2 Oil mixture receipt: mix 3-5kg raw material with 10% oil evenly.

3.5.6 Warm up procedure

1. Place a bucket under discharge of the pellet mill. Material collected will be re-run through the mil to aide in warming the mill.
2. Turn the power on to the machine.
3. Input oil mixture to mill and do not overflow the chamber.
4. The die will prove to be warm enough to produce pellets discharged are durable and compressed. At this time the die is now ready for continued pellet production.

3.6 New Die Conditioning for First Time

3.6.1 New die is sent to you in pre-conditioned state. Please grind-in the die.

3.6.2 Oil mixture receipt： Mix 20% fine sand, 65% biomass material(sawdust) and 15% waste oil evenly. Total weight can be 10% of the feed capacity

3.6.3 Die conditioning procedure

1. Place a bucket under discharge of the pellet mill. Material collected will be re-run through the mil to aide in warming the mill
2. Turn the power on to the mill
3. Input oil mixture to mill and do not overflow the chamber
4. Continue to pour oil mixture and let it run through die hole.

5. Recycle oil mixture to mill for 40-60 minutes

3.7 Make Pellet

3.7.1 After warming up the mill, raw material can be processed.

3.7.2 Low moisture content may cause soft or powdery pellet; High moisture content may cause rough pellet;.

3.7.3 If no pellet come out please adjust adjusting bolts.

Please contact us if still no pellet comes out after adjusting bolts.

3.8 Stop the Machine

Before stopping the machine, please let oil mixture run through machine at lease 3 times. This procedure is to prepare for next operation, saving much time and avoid material block the die holes.

Electric Motor: Press “Stop” button

Diesel Engine: Switch clutch to separate state with no material inside machine and move speed control handle to “Stop” position.（clutch models）

Gas Engine: 1.Move the throttle lever to the right fully

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

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

4.0 Trouble Shooting

Troubles	Possible Causes	Solutions
Pellet will not form	1.New die has not been grinded-in by oil mixture or grinded-in insufficiently 2.Material contains too much moisture 3. Material is not rganic in nature or do not contain proper amount of lignin	1. Clear the material out machine first and grind-in die with oil mixture 2. Adjust material to proper moisture content. 3.Add 3-5% additive binder to the material
Motor halt suddenly	1. Voltage is low 2. Pressure between roller and die is too big	1. Start the machine again when the voltage is normal. 2.Increase the gap between die and roller
Pellets are soft or powdery	1. Material is too dry 2. Die is worn	1. Add water to material 2. Replace the die
Roller is damaged too fast	1. Machine runs without material between roller and die 2. Impurity of iron, stone or sands, metal in material	1. Input material to machine in time and make sure machine run with material in it 2. Get rid of impurity

5.0 Warranty and Conditions

5.1Warranty Policy

We hereby warrant each new product to be free from defects in material and workmanship for a period of 12 month from the date of shipment. We will replace without charge product, part or component thereof, which is defective in material or workmanship (other than transportation charges, which shall be borne by the purchaser).

We reserve the right to require the purchaser to return the defective product or part thereof to factory for inspection.

5.2 Clauses Not Covered by Warranty

1. The machine is not purchased from us or an authorized representative of our company

2. Any part of the product has been altered, modified or changed, except by 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, roller, die, bearing, grease seal, belt, are not covered by warranty

5. Any loss or damage directly or indirectly arising from purchaser improper
operation will be borne by purchaser.

Notes:

With technology renewal our product is improved continuously. We are not liable for informing purchaser about product change in structure, and performance.

6.0 Main Wearing Part

6.1 ZLSP-D Model Main Wearing Part

Parts	Model						Qty	Installation site
	120	150	200	230	260	300		
Bearing	6204RZ	6204RZ	6205RZ	6206RZ	6306RZ	4pc roller		
Bearing	6206	6206	6208	6209	6312	6312	1pc	principal axis
Bearing	30207	30207	30309	32309	30312	32313	1pc	principal axis
Bearing	6203	6204	6206	6307	6305	6207	1pc	gear axle
Bearing	30205	30205	30207	31309	30309	31309	1pc	gear axle
Bearing					30209	30209	1pc	gear axle
Bearing						6207RZ	6pc	roller
Grease seal	28*50*10	28*50*10	42*70*11	47*84*12	58*90*12	55*90*12	1pc	gear axle
Grease seal	Felt cylinder						2pc	roller
Grease seal	Felt cylinder						2pc	roller
Cushion	80	80	105	105	150	150	1pc	coupling
Roller							1set	upperbox body
Mold							1pc	upperbox body

6.2 ZLSP-R Main Wearing Part

Parts	Model			Qty	Installation Site
	200	300	400		
Bearing	32310	33216	33218	1pc	principal
Bearing	6310	6216	6218	1pc	principal
Bearing	NJ207E	30211	30213	4pc	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 45*3.55	O shape	O shape	1pc	Disc of throwing pellet
Anti dust felt	O shape 60*3.55	O shape 70*3.55		2pc	roller
Anti dust felt	felt	felt		1pc	principal
roller				1set	Upper box body
die				1pc	Upper box body