

SSLG 15/20 DOUBLE ROLLER CRUMBLER

OPERATION MANUAL



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Important instruction:

1 This manual detailedly describes SSLG15/20 series crumbler of each system structure, function and use and maintenance method. Before installation and use of the machine , customer should read the manual,and have a full understanding of the ministries and its structure and function ,then have operation and maintenance of the machine. Due to the continuous improvement of product structure, after a certain time period, the manual of narrative content and the actual situation of the products will have small changes.Users should pay attention to it.

2 Please propose your advice to us for melioration when finding quality problem or others.Thanks

1.USE, APPLICATION SCOPE

Different sized pellets for different animals in their different growth periods. Roll Crumbler is specially used for breaking big pellets into smaller particles. If smaller pellets are directly made in Pellet Mill, it will result in Crumbler can maintain a high output and only power consumption increases.

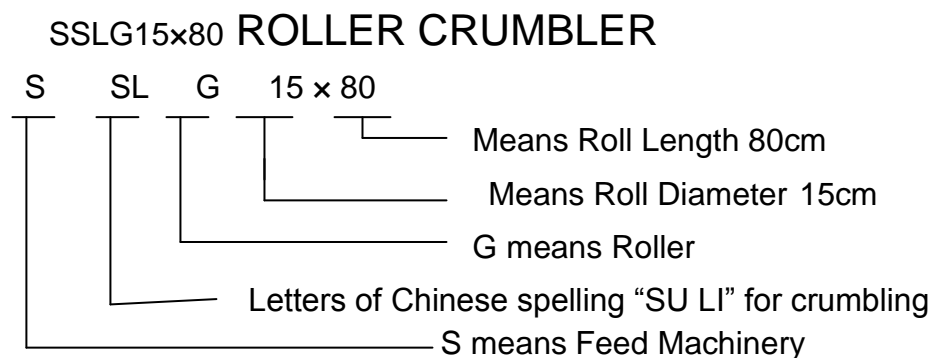
Compared with making smaller pellets directly in Pellet Mill, it can raise output by 3 to 4 times and decrease energy consumption by 3 to 4 times. Therefore, the Crumbler is the essential equipment in the pelleting section. Generally, bigger pellets made by Pellet Mill can be broken in to smaller ones of 0.7~1.5mm or 1~2.5mm in this machine.

1.2 PERFORMANCES

SSLG Roll Crumbler is compact in structure. The crumbling size can be conveniently adjusted. The different driving speeds of the two rolls allow a good crumbling effect. The pellet needn't to be broken passes through the bypass, and this machine can stop automatically. It adopts belt driving with balanced driving and low noise. It works reliably and can be operated conveniently.

2.MAIN SPECIFICATION AND TECHNICAL PARAMETERS

2.1 MODEL MEANING



2.2 MAIN SPECIFICATION AND TECHNICAL PARAMETERS

Capacity: 15-25t/h
Feeding Motor Power: 0.75kw
Slow Roll Speed: 360 rpm
Unloading Noise: <85dB(A)

Main Power: 18.5 KW
Fast Roll Speed: 470rpm
Roll Size: 250x170

Item \ Model	Model			
	SSLG15×80	SSLG15×100	SSLG15×150	SSLG20×170
Roller Size (D×L) mm	Φ150×800	Φ150×1000	Φ150×1500	Φ200×1700
Fast Roll Speed: rpm	725			560
Slow Roll Speed: rpm	477			392
Capacity (t/h)	2~4	3~6	5~10	10~20
Power (kw)	4	5.5	7.5/11	11/15
Model Of Motor	Y112M-4	Y132S-4	Y132M-4	Y160M-4
Appearance Size (L×W×H) mm	1175×985×379	1385×985×379	1845×985×379	2240×1200×605

3. MAIN STRUCTURE AND WORKING PRINCIPLE

Roll Crumbler mainly consists of fast and slow roll, drive, valve operation unit, roll gap adjusting unit and tensioner. See Figure 1.

The pellets enters the crumbler inlet after being cooled in the cooler and then enters between two rolls through the opened valve and retaining rod. There are fast roll and slow one. There is tooth groove on the roll surface. The pellets are broken through the pressing and shearing of the two rolls with different speeds. The size of crumbled feed depends on the gap of rolls.

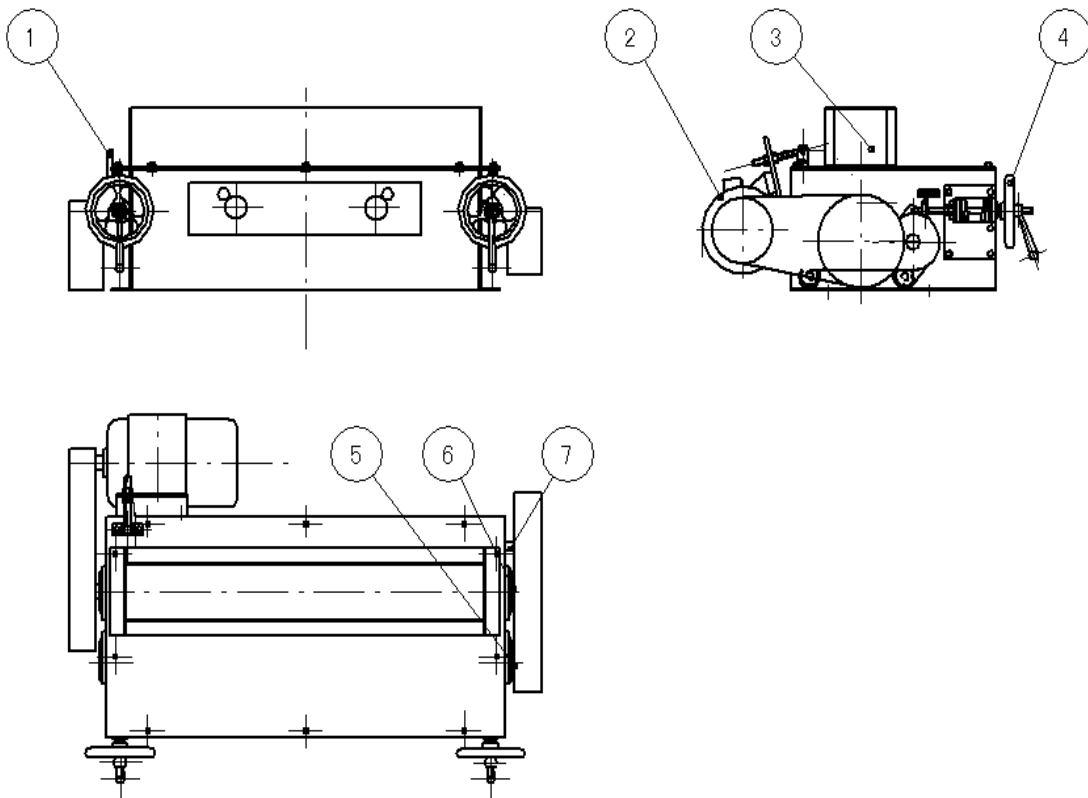
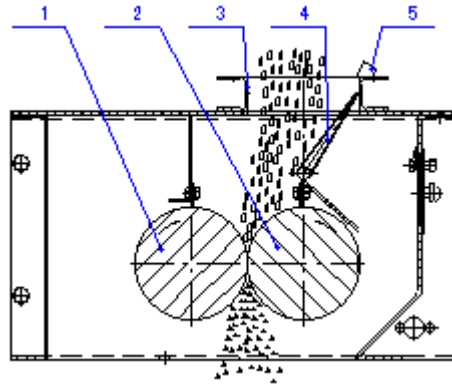
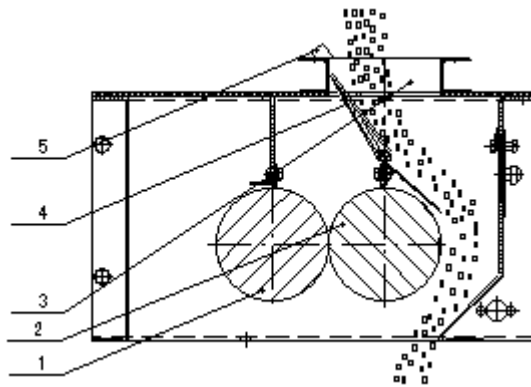


FIGURE 1 ROLLER CRUMBLER OVERALL DRAWING

1. Motor 2. Fast Roll 3. Slow Roll 4. Roll Gap Adjusting Unit
 5. Feeding roll 6. By-way Gate



a 破碎工作图



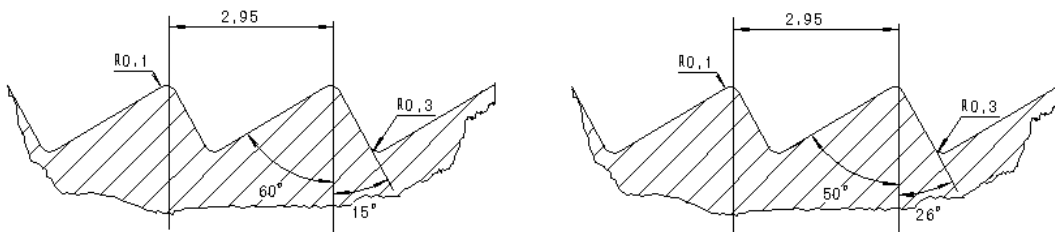
b 不必破碎旁流图

FIGURE 2 CRUMBLING FLOW CHART

When crumbling, turn on the cylinder to open the valve (See Figure 2), The pellet feed between the rolls is crumbled into smaller particles. If the pellets needn't to be broken, push the Opening Rod to close the valve so that the pellets pass through the bypass on the opposite sides. At this moment, it contacts the limit switch to make the motor stop running.

3.1 ROLL

The fast roll and slow roll have the same diameter and same booth. The only difference is their rotational speeds. The fast roll and the slow rotate oppositely with the speed ratio 1.5:1. The tooth shape have common type and fine type. They are different in tooth shape and number. Fine tooth has smaller pitch and more number, See Figure 3. Generally, common tooth breaks pellets into particles of 1-2.5mm and fine tooth breaks pellets into to particles of 0.7-1.5mm
The fine tooth is usually used in processing prawn feed.



(a) 普通型齿形

(b) 细碎型齿形

Figure 3 ROLL TOOTH SHAPE

(a) Common tooth shape

(b) Fine crumbling tooth shape

The roll with the length 1700mm and diameter 250mm is made by the hardened alloy cast iron which needn't be heat-treated. The tooth hardness is HRC45~50. Roll can be repaired for reuse after being worn. That is, wire draw the roll again according to the original tooth after it is machined. Generally, roll can be repeated used for 2-3times.

3.2 ROLL GAP ADJUSTING DEVICE

Roll gap adjusting devices are mounted at both ends of the roll shaft. User can adjusted the rolls gap according to the needed particle size. The nip gap must be the same at both ends of the roll. Turn the gap adjusting wheel clockwise to make the roller gap smaller, or vice versa. Additionally, a compressible spring is mounted on the adjusting screw rod. When there is foreign material, two roll can make way and reset quickly so that rolls are prevented from being damaged.

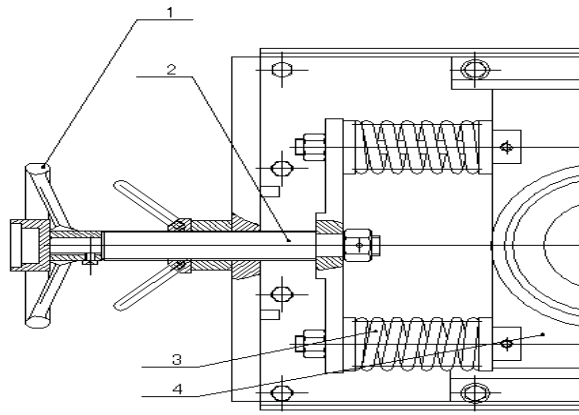


FIGURE 4 ROLLS GAP ADJUSTING DEVICE OF **20×170** CRUMBLER

1. Roller Gap Adjusting Handle Wheel
2. Roller Gap Adjustor
3. Compressible spring
4. Slide Block

3.3 DRIVE

See Figure 5 for the drive. It adopts V-belt drive. The first step belt tension is adjusted by the live bolt on the motor base and the second belt tension can be obtained by adjusting the spring tension with tensioner.

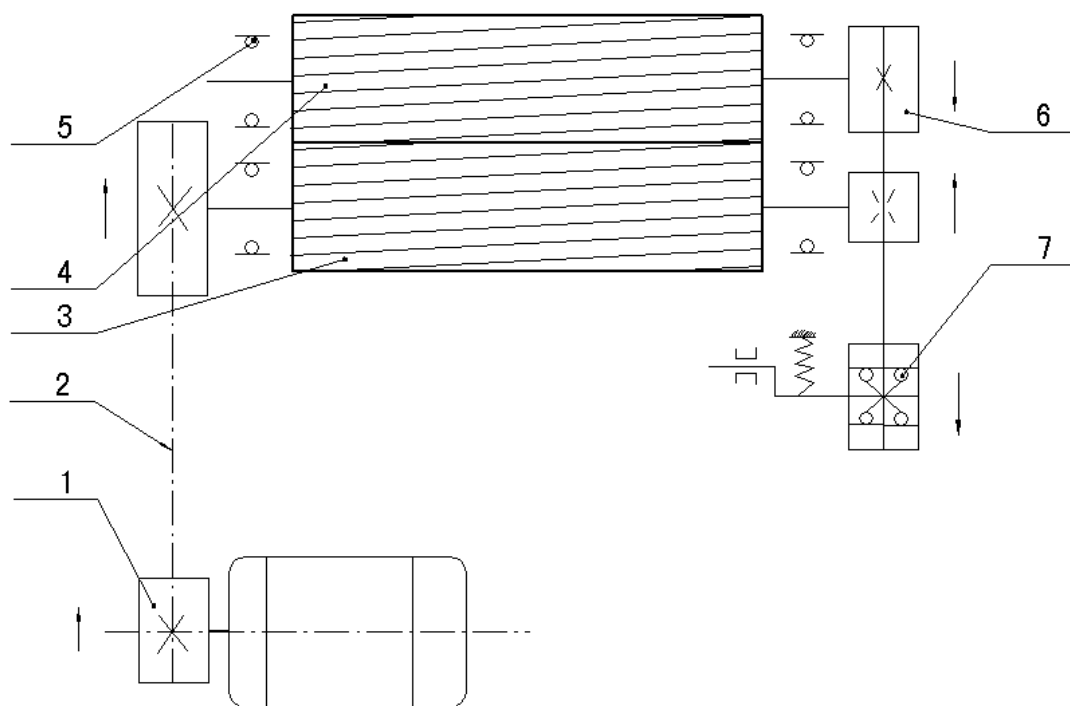


FIGURE 5 DRIVING SCHEMATIC DIAGRAM

- | | | | |
|--------------|------------------------------|-------------------------------|------------|
| 1.Motor | 2. First step V-belt Driving | 3. Fast Roll | 4. Bearing |
| 5. Slow Roll | 6.Tensioning idle pulley | 7. Second step V-belt Driving | |

4. INSTALLATION AND ADJUSTMENT

4.1 The axis of pellet inlet of Crumbler should be in alignment with the axis of discharge opening of cooler. See Figure 7 for the installation position. Finally, fasten the machine with nuts and advanced laid bolts.

4.2 ADJUSTMENT

4.2.1 ROLL GAP ADJUSTMENT

Roll gap must be adjusted to obtain the different sizes. Turn the adjusting wheel clockwise to make the roller gap smaller, or vice versa. You can get the sample from sampling port to check if the adjustment is suitable or not. Normally, the gap size is about 2/3 of the pellet being crumbled. When the sample is qualified, lock the handle (8). When the gap is adjusted very small while plenty of pellet not being crumbled, fasten the nut(6) accordingly so that the material can crumbled smoothly. But do not press fully the spring. See Figure 8.

4.2.2 LIMIT SCREW ADJUSTMENT

See Figure 8 for the position of limit screw. There is a limit screw each in the front of the two side bearing housings. When the rolls gap adjusting devices at both ends are adjusted to “0” position (the scale of indicator and dial indicator is 0), that is, the gap between fast roll and slow roll is zero while fast roll and slow roll do not contact with each other.

At this moment, adjust the limit screw (2) so that the screw head is against the bearing housing, then lock the limit screw with nut. The function of limit screw is to ensure that fast roll and slow roll do not collide.

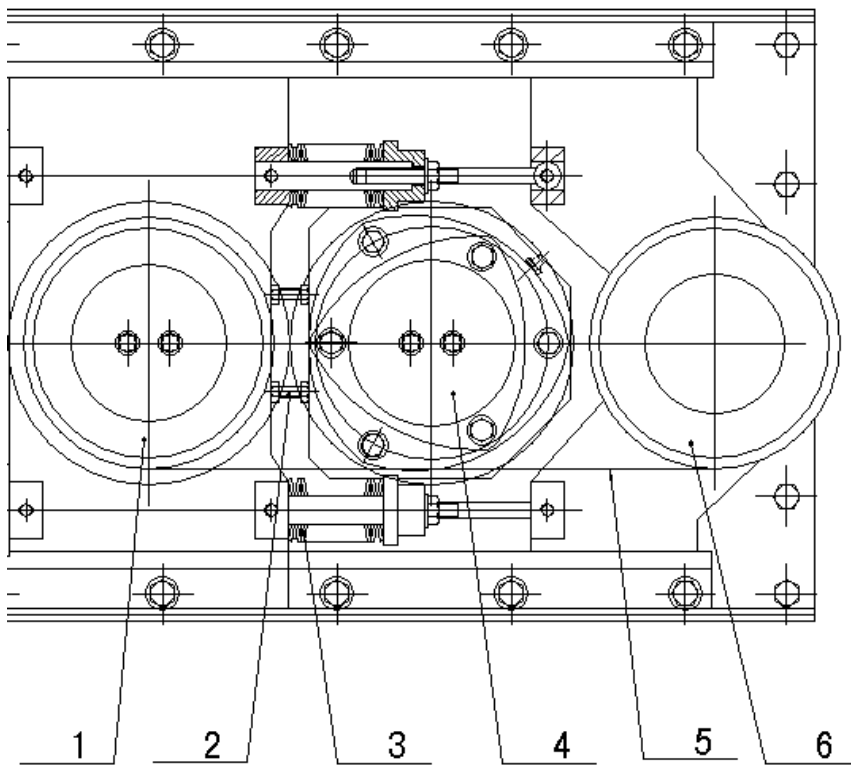


FIGURE 8 LIMIT SCREW ADJUSTING

- | | | | |
|------------------------|----------------|---------------------|------------------|
| 1. Belt Wheel | 2. Limit screw | 3. Adjust Screw Rod | 4. Bearing House |
| 5. Compressible spring | 6. Round Nut | | |

4.2.3 BELT TENSION ASJUSTMENT

To keep machine in a best condition, you must adjust the tensioner so that the belt has proper tension. See section 3.3 Drive unit. For adjusting method. See figure 6.

4.2.4 ADJUSTMENT OF THE FEEDING AMOUNT

Properly adjusted feeding amount can make the crumbled particle more evenly and reduce material returning back and prolong the roll life. The feeding amount can be adjusted the distance between the control plate

(3) and the feeder roll(2) as well as the speed of the feeding motor.

Store some material in the lower hopper of the cooler so that the crumbler does not run without load. When the material needn't to be broken, adjust the live gate 1 to reach the position of the twin dashed by adjusting the cylinder, the material will drop into the next section with out be broken.

4.3 Trial Run

NOTE: Turn off the power when making any adjustment or inspection to ensure personal safety.

Take care about the roll shaft rotating direction when connecting the motor. Make the two rolls rotate towards the middle. See the attached electric connection diagram.

After installing the machine, make trial run first. Steps as follows.

4.3.1 Check that the fasteners are reliably connected.

4.3.2 Clean away the impurities and the materials between the rolls and the check that the roll gap is proper.

4.3.3 Turn on the main motor first and check that the roll rotation directions are correct and correct and there is not abnormal noise.

4.3.4 Turn on the cylinder and check that the by-way live gate can move flexibly and is in position. When it is at the by-way position, the machine can stop.

4.3.5 Turn on the feeder motor so that the motor speed increase gradually. Check that the size of the material after being crumbled is qualified.

4.3.6 After the machine is tried run normally, you can make normally production, Whenever abnormal is found, solve the problem in time.

5.OPERATION

5.1 The operator must read this Operation Manual to be familiar with the machine performance and the structure.

5.2 Check carefully that all the connection parts are not loose before starting the machine.

5.3 Check if the roll driving direction is right and if it rotates flexibly. Make sure that there is no abnormal noise of sticking, collision and friction.

5.4 Adjust the roll gap limit screw to ensure that two rolls do not collide at minimum gap.

5.5 When operation, turn on the main motor first and then the feeder motor. Properly adjust the feeder motor speed and the distance of the feeder roll according to the pellet size. To operate, run the machine for 2~3 minutes before turning on the feeder motor to feed material.

5.6 When the pellet is not to be crumbled, turn on the cylinder so that the by-way live gate is at the by-way position and the main motor stops working.

6.REPAIR AND MAINTENANCE

6.1 Perform checking and cleaning working carefully before and after work.

6.2 Fill a certain amount of ZG-2 calcium radical grease into 5 oil fillers with oil gun every 3 months or so.

6.3 Repair or replace the roll in time if its teeth are worn.

6.4 Check that the limit switch is functioning every week.

6.5 Clean out the material inside the machine when the machine is not working. Loose the V-belt and keep the equipment clean and dry.

7.TROUBLE REMOVE

Item	Description	Cause	Solution
1	The crumbled particles are too big and uneven. There are Even pellet not crumbled	Too big of rool gap. Too rolls are not parallel, too big roll gap and material leaks. Too large feeding amount	Adjust the rolls gap. Adjust the parallelism of rolls. Reduce feeding amount.
2	Too much Powders	Too small of rolls gap. Serious wearing of the roll tooth. Poor hardness and cohesiveness of the incoming pellet.	Adjust the rolls gap. Wire draw again or replace the roll Improve the feed Formula.

9.Wear parts

Item	Description	Qty	Remark
1	Bearing I	4	
2	Bearing II	2	
3	V-Belt	9	Except SSLG20*170
4	3V V-Belt	5+6	For SSLG20*170
5	Fast Roll	1	
6	Slow Roll	1	



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