Serafin ECO SERIES

Serafin Eco Speed Disc

20 - 32 Plate
User and Parts Manual

WARNING

Before using the machine, you must carefully read the relevant regulations and requirements in the instruction manual. If there is any violation of the operating regulations, all consequences will be borne by the operator. After receiving the machine, please check the warning label. If there is any error, please contact the manufacturing company in time.

Serafin MACHINERY

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ATTENTION

Before operating the machine, you should read, understand, and abide by these safety rules and operating instructions. Only well-trained and authorized personnel are allowed to operate the machine. This manual should be regarded as a part of the machine and kept with the machine at all times. If there is Any questions, please contact us.

Owners, Users and Operators: Thank you for choosing and using our machines. Our primary concern is the safety of our users, which can only be better achieved through our joint efforts. We believe that you, as the user and operator of the equipment, can greatly contribute to the safe use of the equipment if you comply with the following requirements: 1 Comply with user rules, workplace rules and government laws and regulations. 2 Read, understand, and follow the instructions in this manual and other manual for this machine. 3 Perform good safety work routine inspections on a regular basis. 4 The machine should only be operated by a trained/certified operator or under the direction of an experienced and informed supervisor. Please contact us if there is something ambiguous in this manual or something you think should be added.

SAFETY RULES

DANGER 

Failure to follow the instructions and safety rules in this manual Will result in death or serious injury.

Operations can not be performance unless:

You have learned and practiced the rules for safe machine operation in this operator's manual.

1 Avoid dangerous situations. Know and understand the safety rules before proceeding to the next step.

2 Always perform pre-operation checks.

3 Always perform a pre-use functional test.

4 Check the workplace.

5 Use the machine only for its design intent

✓ Manufacturer's instructions and safety rules should be read, understood and followed - Safety operation manual and machine label.

✓ User safety rules and job site regulations should be read, understood and followed.

✓ Read, understand and obey all applicable government laws and regulations.

✓ You are properly trained to operate the machine safely.

Hazard classification:

Symbols, colour codes and symbolic text meanings used by our products

As follows:

SAFETY ALERT SIGNS - Used to warn of immediate personal injury. Follow all safety instructions following this sign to avoid possible personal injury or death.

Red Indicates a hazardous situation. If not avoided, could result in death or serious injury.

Orange Indicates a hazardous situation. If not avoided, death or serious personal injury could result.

Yellow Indicates a hazardous situation. If not avoided, minor or moderate personal injury may result.

Blue Indicates a hazardous situation. If not avoided, property damage may result

MAINTENANCE OF SAFETY SIGNS

Replace any lost or damaged safety signs so that operators always keep safety in mind. Clean safety signs with mild soap and water. Do not use solvent-based cleaners, as such cleaners may damage the safety label material

Pressing, crushing hazards should be avoided.

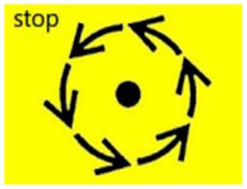
Avoid wrapping the rake around the arm!

Avoid tire crush

Do not enter the crush zone of movable parts!

Do not ride in the machine work area!

Refer to the instruction manual for correct maintenance procedures!



The machine can only be contacted when it is stopped

PRODUCT INTRODUCTION AND COMPONENTS

PRODUCT INTRODUCTION

ITEM	WORKING WIDTH (M)	WORKING DEPTH (MM)	DIAMETER OF DISC (MM)	NUMBER OF DISCS	WEIGHT (KG)
ECO SPEED DISC – 20	2.5	80-150	610	20	1,350
ECO SPEED DISC - 24	3	80-150	610	24	1,650
ECO SPEED DISC – 28	3.5	80-150	610	28	1,980
ECO SPEED DISC – 32	4	80-150	610	32	2,200

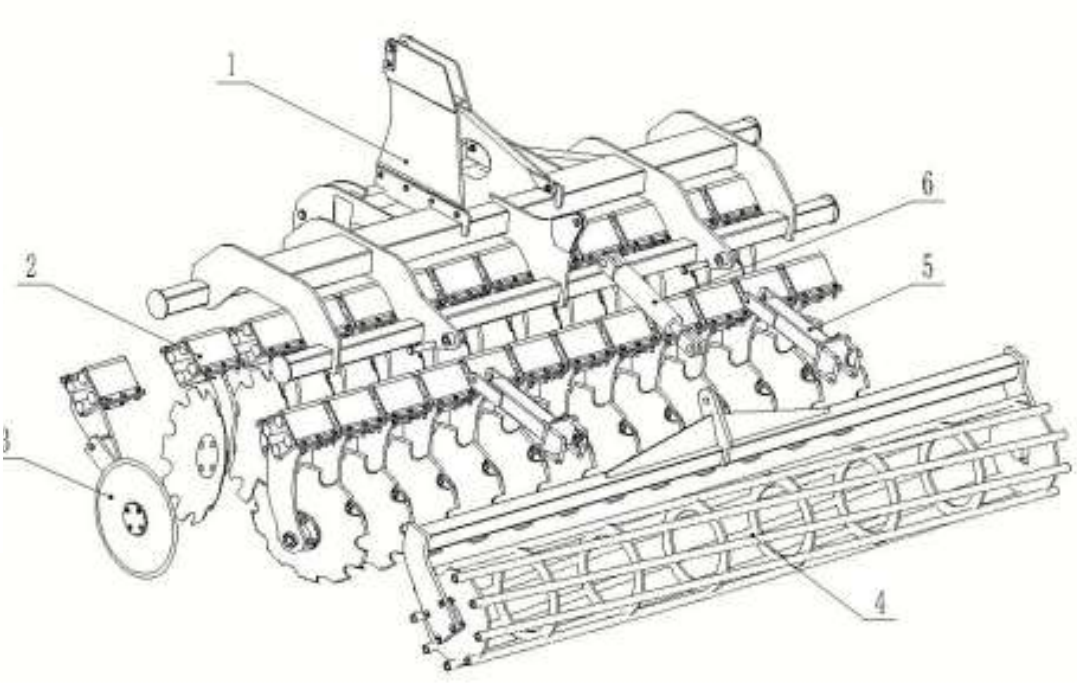
The disc harrow is suitable for crushed soil after ploughing in heavy clay soil and stubble removal before ploughing in "replacing ploughing with harrow" in medium and light soil. It is characterized by high operating efficiency, reasonable power utilization, strong soil penetration and crushing ability, smooth ground surface after raking, loose and broken soil, and strong adaptability to heavy clay soil, wasteland, and land with many weeds.

This kind of rake absorbs the advantages of similar foreign advanced products. The Item Working width (m) Wording depth (mm) Dia.of disc (mm) No.of disc Weight (kg) Matched power (kw) 1LZX-3.0G 3 100-250 560 24 1650 90-120 1LZX-3.5G 3.5 100-250 560 28 1950 120-150 1LZX-4.0G 4 100-250 560 32 2350 150-180 6 whole machine adopts a combined structure, with a square welded tube integral rigid rake frame as the main body and is equipped with an adjustable pressure wheel assembly.

It has a reasonable structure, is durable, and is easy to transport. The radius of gyration is small, easy to adjust and easy to maintain. It is currently the most advanced disc harrow product at home and abroad.

MAIN COMPONENT

1. Rake frame
2. Rake leg assembly
3. Moisture combiner
4. Pressure wheel assembly
5. Pressure wheel connection
6. Oil cylinder



1. Rake frame (Figure 3.1

The rake frame is used to connect with the tractor, adjust the traction point, and eliminate partial traction. Install the front and rear rake legs on the rake beam to form a rake string. When working, the front and rear rake strings are in the same plane to ensure that the front and rear rake depths are consistent, and the ground surface is flat after raking

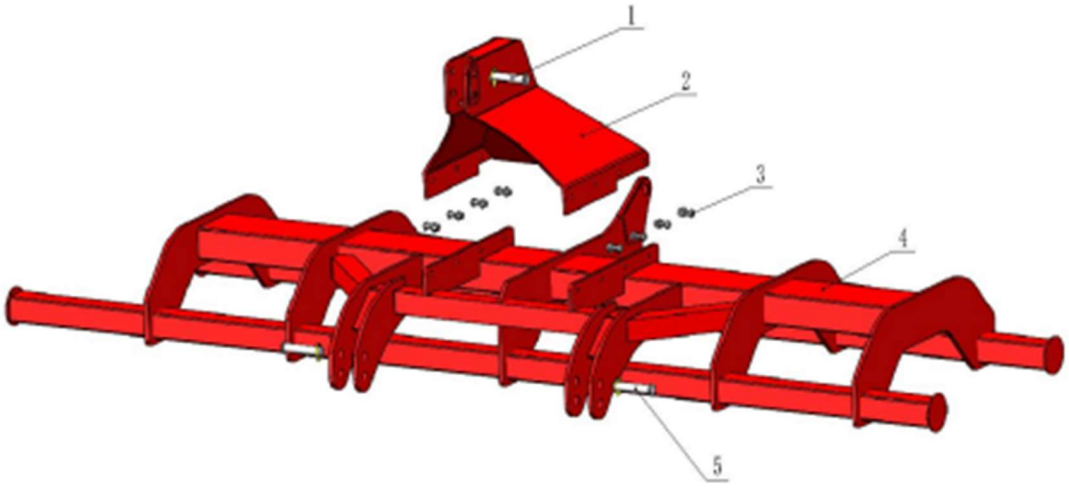


Figure 3.1

1. Upper suspension pin 2. Suspension plate 3. Fixing bolt 4. Rake rack 5. Lower suspension pin

2. Rake leg assembly (Figure 3.2)

The harrow leg assembly is the main working part of disc harrow, through which the soil is crushed and loosened, and the harrowing task is completed. The rake blades are made of 65Mn steel plate, and after heat treatment, they are strong and wear resistant. The harrow leg assembly is specially designed with a rubber rod buffer structure. If there are hard mud or stones in the working soil, when the harrow hits the mud or stones, the plow legs can move up slightly (Figure 3.3). Effectively reduce the risk of blade damage. The blade shaft head adopts maintenance-free bearings, which can effectively prevent foreign matter from entering, ensure the safe use of the shaft head, and prolong the service life.

Finger 3.2

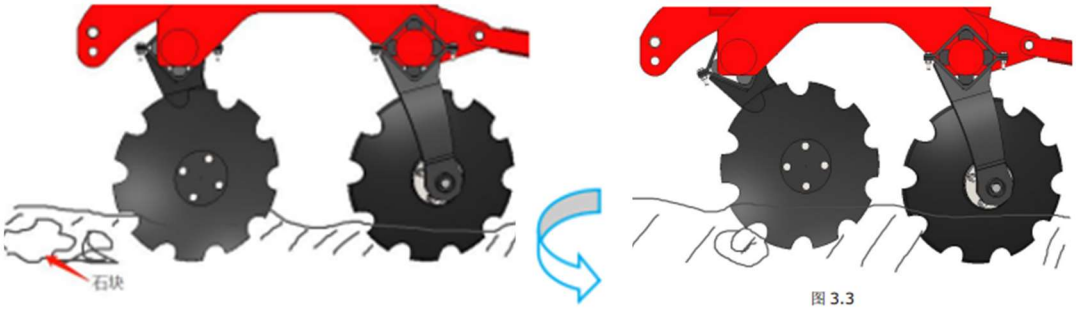


图 3.3

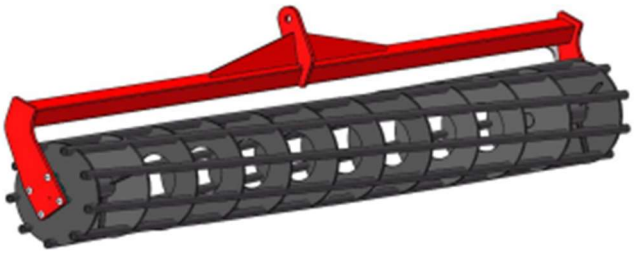
3. Batteries Disc（Figure 3.4)

The working height of the Batteries disc can be adjusted according to the needs of farming. Its main function is to block the soil turned up by the outermost rake blades and smooth the moisture ditch, which can effectively prevent the two cases from forming edges and make the ground surface smoother

Finger 3.4

4. Pressing wheel assembly (Figure 3.5)

The pressing wheel assembly crushes the ploughed soil with the front and rear rakes for the second time, and compacts the surface to ensure consistent raking depth and smooth ground surface after raking



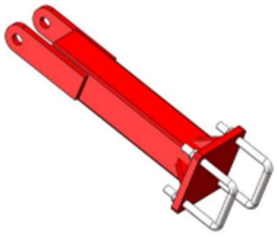
Finger 3.5

4. Oil cylinder (Figure 3.6)

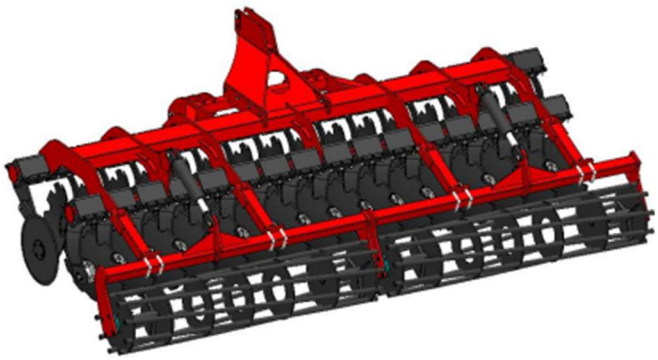
4. It is mainly used for the lifting of the pressure wheel, which is convenient for adjusting the working height of the pressure wheel when it is working, so as to achieve the effect of intensive cultivation.

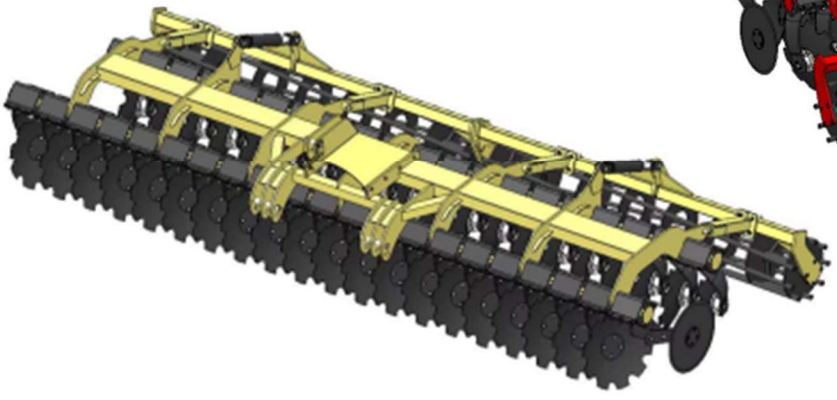
Finger 3.6

6. Pressure wheel connection (Figure 3.7)



Finger 3.7





USE AND ADJUSTMENT

1. Mount

(1) Pull the tractor back slowly, link the traction point at the rear of the tractor with the rake frame with a pin, and pay attention to driving safety.

(2) Connect the oil pipe quick connector to the hydraulic output port of the tractor.

2. Precautions for use

(1) Before use, check whether all fasteners are tight and whether the rotating parts are flexible.

(2) Operate the hydraulic handle of the tractor, raise, and lower the rake several times, check whether the lifting mechanism is normal, and whether there is any oil leakage at the connecting parts of the hydraulic oil circuit.

(3) After the rake works on a certain area, it is necessary to check whether the round shaft nut and other fasteners of the rake group are loose, so as to prevent the rake blades from loosening and causing damage to the rake group.

(4) It is strictly forbidden to retreat or make a sharp turn when the rake is working. When it is necessary to retreat or make a sharp turn, the rake must be raised in advance.

(5) It is strictly forbidden to maintain, repair, and adjust the rake during operation, and it is strictly forbidden to rake the superior person.

3. Shipping status adjustment

When the harrow is transported over a long distance, the front and rear of the harrow body should be basically level, or the tail should be slightly higher to ensure smooth transportation and good possibility.

4. Job status adjustment

When the rake is working, it should be adjusted to the following conditions: the rake depth meets the operation requirements; the front and rear of the rake body are in a horizontal state or the head is slightly higher; the tractor is running straight, and the rake frame longitudinal beam is in the same direction as the tractor; the unit has no obvious traction phenomenon.

MAINTENANCE

1. Maintenance

(1) Before and after the operation of the rake, check whether the fasteners are fastened and whether the rotating parts are flexible.

(2) The surface of the parts of the hydraulic system should always be kept clean.

2. Maintenance

(1) After one season of operation, the whole rake should be disassembled for maintenance once to remove the clay on the machine.

(2) After one working season, replace the lubricating oil in the bearing, release the old oil and then add new lubricating oil.

(3) Paint peeling off due to bumps should be repaired in order to prevent rust.

(4) After the rake blades are cleaned, they should be coated with antirust agent or waste engine oil.

(5) The connection between the oil cylinder and the oil pipe should be checked for looseness and oil leakage. If there is oil leakage, the wearing parts should be replaced in time and placed in a clean and dry place indoors.

(6) The rake should be placed in the warehouse during the leisure season to prevent the sun and rain, and the oil tank should be put away.

COMMON TROUBLESHOOTING

1. The soil is too loose, and the soil is too deep to cause blockage

Because the soil is too loose, it is generally not possible to work at a large angle or deep ploughing, otherwise the rake group will penetrate too deep into the soil due to the large deflection angle, and even the entire rake group will sink into the soil and cause blockage. At this time, stop immediately and use the hydraulic mechanism Raise the harrow to remove the choked soil, and then control the reasonable ploughing depth for operation.

2. The soil is too hard, and the soil is shallow

Because the soil is too hard, generally adjust the angle of the rake group to the maximum to enhance the ability of the rake blades to penetrate into the soil. If the effect is still not good after ploughing, it can be ploughed twice.

3. The soil humidity is too high, and too much clay on the rake sheet will cause blockage Due to too much soil moisture, the rake blades are heavily clayed, causing clogging. Stop immediately and raise the rake to remove clay and choked soil.

4. There are too many residual plants and fat blocks on the surface, which cause drag piles

When the tow pile is caused by too many stumps and blocks on the ground, it is not necessary to stop the machine and raise the rake over the accumulation to continue the operation.

OPERATION PRECAUTION

1. The operator must be familiar with the structure, performance, and adjustment methods of the rake.

2. The rake must be inspected before operation to prevent loosening of fasteners or immobility and failure of rotating parts. 14

3. When tractors and harrows are working, maintenance, repair, adjustment, etc. are not allowed on the harrow, and idlers are not allowed to approach, let alone sitting on the harrow.

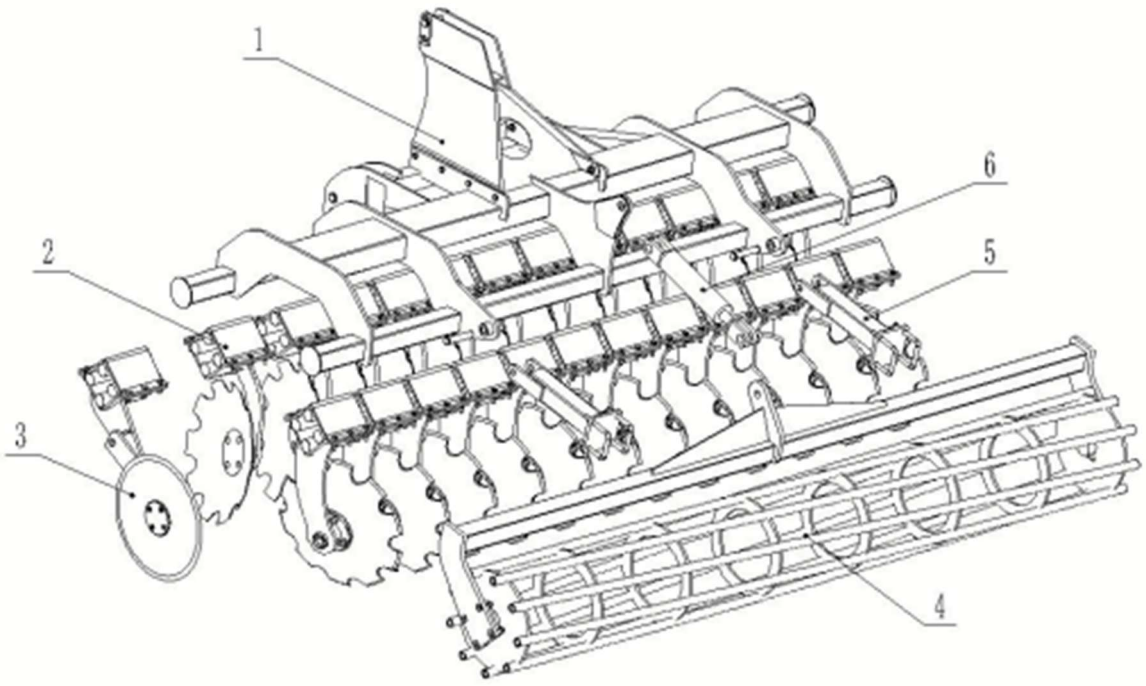
4. When the rake is working, the handle of the hydraulic distributor of the tractor must be placed in the floating position, and the rake must be raised when turning or reversing on the ground

PACKING LIST

NUMBER	Part name	3m G qyt in a unit	3.5m qyt in a unit	4m qyt in a unit	Packaging method and material
1	rake frame	1	1	1	film packaging
2	Rake leg assembly	24	28	32	Box
3	Combiner	1	1	1	Box
4	Pressure wheel assembly	1	1	2	film packaging
5	Crackdown Wheel Links	2	2	4	Box
6	cylinder	1	1	2	Box
7	standard parts	1bag	1bag	1bag	bagged

PARTS DETAILS

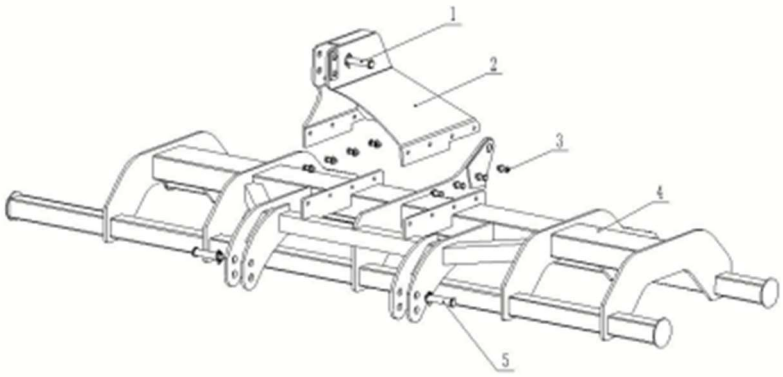
1.Parts Details



COMPACT DISC HARROW -parts details				
Serial number	**Code Name**	Frame	**Quantity**	Note
1	1LZX-3.0G-1	rake frame	1	
2	1LZX-3.0G-2	Rake leg assembly	24	Before 12 sets; after 12 sets
3	1LZX-3.0G-3	Combiner	1	
4	1LZX-3.0G-4	Pressure wheel assembly	1	
5	1LZX-3.0G-5	Pressure wheel connection	2	
6	1LZX-3.0G-6	cylinder	1	

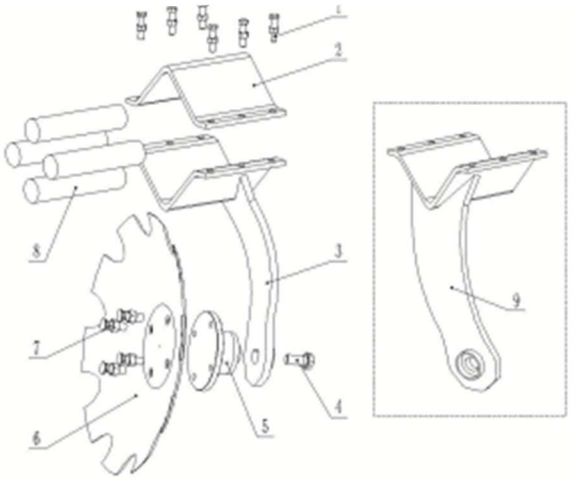
COMPACT DISC HARROW-Standard parts				
Numb	**Code Name**	**QYT**	**USED FOR**	**NOTES**
1	Bolt M12*60	144sets	Rake leg assembly upper/lower pressure plate	With self-locking nut/flat washer/spring washer
2	Mushroom Nail Square Neck Bolt M12*40	96 sets	rake	With nut/flat washer/spring washer
3	Countersunk head hexagon socket bolt	8 sets	Pressure wheel UF210 bearing seat	With nut/flat washer/spring washer
4	3/4-16UNF*38 bolt	24 sets	Rake leg maintenance-free	With flat pad/ spring pad
5	Hex bolt M14*45	8 sets		With nut/flat washer/spring
6	U-bolt (for square tube 80)	4 sets	Pressure wheel connecting beam and	With nut/flat washer/spring washer
7	Tubing 1	3m	Roller cylinder	Bend all the way (imperial)
8	tubing 2	3.2m	Roller cylinder	Bend all the way (imperial)
9	UCF210 seated bearing	2	pressure wheel	Need to be equipped with grease nipple and top wire
10	Rubber rod φ40*190	100	Rake leg assembly	
11	Upper suspension pin	1	traction	Matching washer/spring pin
12	Bottom suspension	2	traction	Matching washer/spring pin
13	Connecting pin φ25*125	2	Crackdown Wheel	Matching pad/cotter pin
14	Cylinder pin Φ35*85	2	Roller cylinder	Matching pad/cotter pin
15	Bolt M16*60	1 set	Batteries disc	With nut/flat washer/spring
16	Bolt M20*60	1set		With nut/flat washer/spring
17	M22*1.5 self-locking nut	1		With flat pad
18	M12*60 bolt	6 sets		With self-locking nut/flat/spring
19	Hex bolt (M12*1.25) x30	4 pcs		With flat pad/ spring pad
20	cylinder	1		
21	G1/2 pair wire	4		
22	Quick Connector	2 sets		
23	Quick connector handle (+	2		
24	Shaft head BAA-0026	24		
25	Moisture combiner shaft head BAA-0004	1		

2. Harrow frame – Parts details



harrow frame --parts details				
No.	**Code number**	Name	Qyt	Notes
1	1LZX-3.0G-1-1	upper suspension pin	1 item	Matching washer/spring
2	1LZX-3.0G-1-2	hanging board	1 item	
3	Stand parts	Hex bolt 14*45	8 sets	With nut/flat
4	1LZX-3.0G-1-3	rake rack	1 item	
5	1LZX-3.0G-1-4	lower suspension pin	2	Matching washer/spring

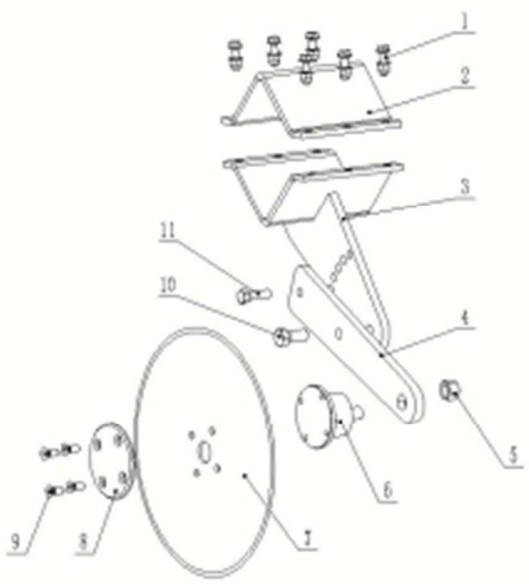
3. Harrow leg assembly – parts details



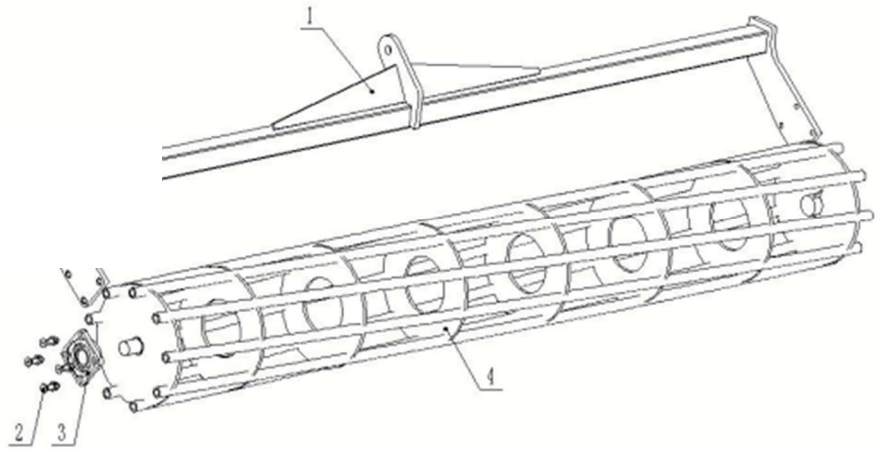
harrow frame -parts details				
No.	code name	name	qyt	Remark
1	Standard Parts	Bolt M12*60	6set	With self-locking nut/flat
2	1LZX-3.0G-2-1	Platen	1pcs	
3	1LZX-3.0G-2-2	front rake legs	1	
4	Standard Parts	3/4-16UNF*38 bolt	1	With flat pad/ spring pad
5	1LZX-3.0G-2-3	Shaft head BAA-0026	1	
6	1LZX-3.0G-2-4	rake	1	
7	Standard Parts	Mushroom Nail Square Neck Bolt	4	With nut/flat washer/spring washer
8	1LZX-3.0G-2-5	rubber stick	4	
9	1LZX-3.0G-2-6	Back Rake Legs	1	

4. Batteries disc – parts details

Batteries disc -Parts Details				
No.	code name	name	quantit	备注
1	Standard Parts	Bolt M12*60	6 sets	With self-locking nut/flat pad/ spring pad
2	1LZX-3.0G-2-1	Platen	1 item	
3	1LZX-3.0G-3-1	Entropy support	1 item	
4	1LZX-3.0G-3-2	Moisture fixation plate	1 item	
5	Standard Parts	M22*1.5 self-locking	1 item	flat pad
6	1LZX-3.0G-3-3	Moisture combiner shaft head BAA-0004	1 item	
7	1LZX-3.0G-3-4	Flat disc harrow	1 item	
8	1LZX-3.0G-3-5	gland	1 item	
9	Standard Parts	Hex bolt (M12*1.25) x30	4 pieces	flat pad/spring pad
10	Standard Parts	Bolt M16*60	1 set	nut/flat pad/spring pad
11	Standard Parts	Bolt M20*60	1 set	nut/flat pad/spring pad

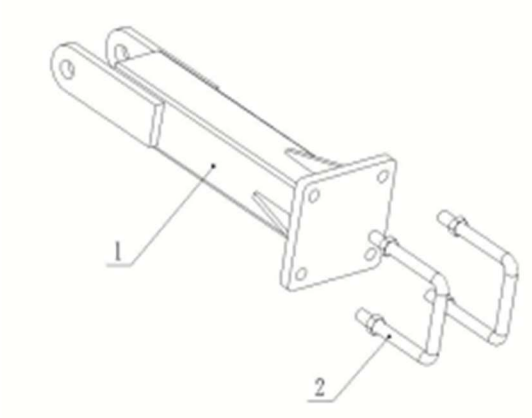


5. Pressing wheel assembly – parts details



Pressing wheel assembly - parts details				
No.	code name	name	quantit	Remark
1	1LZX-3.0G-4-1	wheel frame	1 item	
2	Standard Parts	Countersunk head hexagon socket bolt	8 sets	With nut/flat washer/spring washer
3	Standard Parts	UCF210 seated bearing	2 pieces	Need to be equipped
4	1LZX-3.0G-4-2	wheel	1 item	

6. Pressure wheel connection - parts details



5. Pressure wheel connection - parts details				
No.	code name	name	quantity	Remark
1	1LZX-3.0G-5-1	Connecting seat	1 item	
2	Standard Parts	U-bolt	2 sets	With nut/flat

Note: Cotter pins, washers and corresponding standard kits are not clearly shown in the figure and cannot be omitted during installation. This manual is for reference only, and the actual product shall prevail for matters not covered

MAINTENANCE RECORDS

Serial number	Fault type	Solution	Repair man	Date
1				
2				
3				
4				
5				
6				
7				
8				