



1 L Y Q

1LYQ SERIES DRIVE DISK PLOUGH

MANUAL FOR APPLICATION

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## I. Preface

1LYQ series drive disk plough is a new - type drive cultivating machine which represents 80' advanced technology of the world. International specialists call it as a reform of plough and a important milestone in plough's development history.

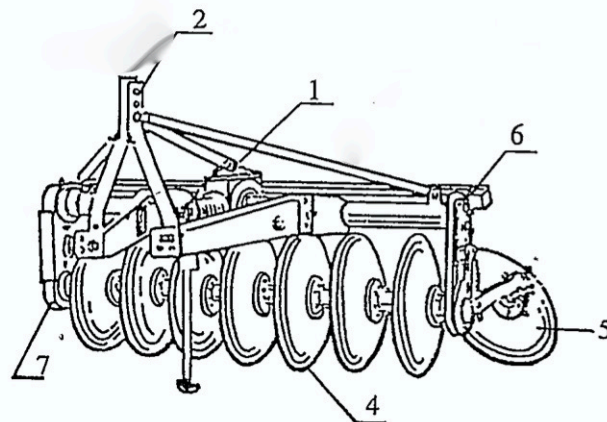
1LYQ series drive disk plough adopts three - point suspension central gear and side gear (chain) transmission structure, which can be matched to 15 - 100 power tractors. It uses pot - shape disk plough, adopts different cultivating width according to tractors of different power, and also adopts angular suspension that right wheel marks are all covered. So it can improve cultivating quality and reduce working cost. The machine fits for both paddy - field and dry - land. When it works in paddy - field it turns up soil to make soil upturned, in lines and level. Wheat - and - rice stubble and Chinese milk vetch are turned down and buried in the field; they are easy to rotten and increasing the organic - fertilizer of the field. It also has advantages of racing against time, saving labor, working efficiently and low cost etc.

For users to master the cultivator's operation, adjustment, repair and maintenance, to operate the machine correctly and to serve agricultural production better, so we edit the manual.

## II. Main Structure

1LYQ22 and 1LYQ25 series drive disk plough for paddy - field and dry - land, which adopts angular suspension, are expectively matched with 5~100 power roller tractors. It is composed

of transmission shaft assembly, suspension - frame assembly, central gearbox assembly, side gearbox assembly left sideboard, disk knife - shaft assembly, tail - wheel assembly etc. The transmission and work part is composed of transmission shaft assembly, central gearbox assembly, side gearbox assembly, disk knife - shaft assembly, tail - wheel assembly; the subsidiary part is composed of suspension frame assembly, vice beam and left, right sideboards. (Picture 1, 2)

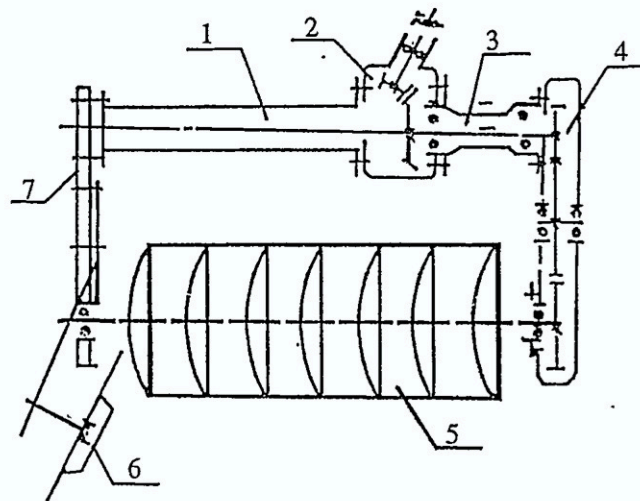


(Picture1) the drive disk plough structure diagram

1. Suspension frame 2. Vice beam unit 3. Brace - bar unit

#### 2.1 Transmission - shaft Assembly

It is composed of spline - fork, square - shaft (or lemon pipe) fork, square - shaft boss (or lemon pipe boss) fork square - shaft bush (or lemon pipe), centercross assembly etc.



(Picture 2) drive disk plough's transmission diagram

- 1. Left main beam    2. Central gearbox assembly
- 3. Transmission shaft assembly    4. Right main beam
- 5. Side gearbox assembly (by gears or chain - wheels)
- 6. Disk knife - shaft unit    7. Tail - wheel assembly
- 8. Left side - board

## 2.2 Suspension frame Assembly

It is composed of suspension draw bar, brace - bar, suspension key etc. The highest hole on the suspension frame is hitched to the top link of the tractor, and the suspension key is hitched to

the lower link.

### 2.3 Central Gearbox Assembly

The first-rate drive is composed of central gearbox, cover, the first shaft's bush, covering board, the second shaft bearing carrier, the spiral-bevel-gear shaft, the second shaft. There is a pair of driving, driven spiral-bevel-gears in the box. And there are oil-filler hole above the box-cover and oil-drain hole under the box.

### 2.4 Side gearbox assembly

The second-rate drive is composed of side gearbox, covering board, central bearing-cap, side-box bottom-cover, left main beam, left and central shaft of the second shaft, disk knife-shaft's welding part and left part. There are a pair of driving, driven gear for second-rate drive and a bridge-idler. And there are oil-filler hole, peep hole and drain hole on the body of gearbox.

### 2.5 Disk knife-shaft unit

It is composed of disk knife-shaft's welding part, disk left right bearing-carrier etc. The right side of spline is connected with side gearbox unit, the left side of it is connected with left side-board.

### 2.6 Tail-wheel assembly

It is composed of bearing carrier and cover, tail-wheel's welding part, wheel-plate, wheel-face, wheel sway-bar and wheel linking-frame etc. There is an oil-cup on the bearing-carrier which needs filling up grease.

### III. Specifications

1. The disk assembly is the main working part of the machine, it's driven by tractor's power and turns initiatively to work; it can produce power that can push the equipment forward and reduce the slippery rate of the tractor when entering field. So the machine can produce a marked effect of the tractor's power and efficiency and that's a great reform to all the cultivating machines, which works by traditional principles. The drive disk plough processes soil by way of sliding - cut and tearing, make it twisted and stretched at the same time - that means it adopts easiest way of cutting soil. So that it can turn up soil slices by less power cost. The machine has high producing efficiency (20% higher than translation - motion cultivating machine), low oil cost (saved 15% than translation - motion cultivating machine). So its working - cost but economic benefit is good.
2. Its function of turning up and covering soil is good, cultivating depth is proper, tearing soil well, upturned soil is in line, and the surface of land is level and good for continuing working after it has cultivated.
3. It crosses stubbling blocks easily and it will not be blocked by weeds and stems, so it especially fits for fields of long wheat - and - rice stems, much Chinese milk vetch or much weeds. The machine is useful for returning wheat - and - rice stems to field and making field fertilier.
4. The length of the assembly is not long, the machine turns corner flexibly, the distance of entering land is short, and un-



cultivated – land is few.

5. Its structure is well designed, so it operates easily, its working quality is as required, moreover it has special function of processing and clearing walls of low – banks between fields.
6. The machine has three adjustable working declination angles to reach different cultivating needs of different soil and also can reach effects of proper cultivating – depth and turning up and cutting soil.
7. The machine has balancing tail – wheel whose declination angle can be adjusted, which is used to balance the lateral force while cultivating and make the machine go directly, operate easily, cultivating – width is stable.
8. The machine's applicability is good, the type for paddy – field is mainly used for dry – farming in paddy – field, which can also be used for water – farming in paddy – field and cultivating in dry – land. The type for dry – land is mainly used for cultivating in dry – land and it also can be used for reclaiming wilderness.
9. Because the disk – plate is crumbling, cultivating stably, without compact, with long working – edge, wearing evenly, made up of proper material and of good heat treatment, it has long using – time.
10. The machine can be equipped with subsidiary boards if users needs or special cultivating needs.

(Technical parameters are in chart 1)

Technical Parameter:

	Type for paddy-field					Type for dry-land		
	1LYQ-420 (322)	1LYQ-520	1LYQ-622	1LYQ-722	1LYQ-822	1LYQ-325	1LYQ-425	1LYQ-525
Tractor's power (power)	18-22(15)	25-30	40-50	60-80	70-80	30	40	
Cultivating width (cm)	88(66)	110	132	154	176	75	100	125
Cultivating depth (cm)	12-20					16-25		
Output speed (rin/min)	540/720					540		
Working speed (kg/acre)	3-5	4-6	5-8	6-10	7-11	3-5	4-6	5-8
Oil cost (kg/acre)	0.60-0.75					0.65-0.8		
Adjustable range of machines' declination angle	±5°					±5°		
Weight (kg)	240(216)	276	321	357	393	267	310	360
Overall dimension (length × width × height)	965 × 1365 × 1050	1075 × 1585 × 1050	1210 × 1805 × 1050	1325 × 2025 × 1050	1440 × 2245 × 1050	1195 × 1275 × 1050	1195 × 1525 × 1050	1325 × 1775 × 1050

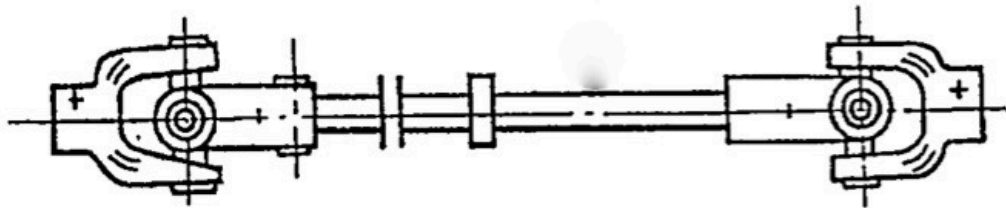
p. s. : 1LYQ-42 can be equipped to 1LYQ-325  
1LYQ-722 can be equipped to 1LYQ-625

## IV. Using and Adjustment

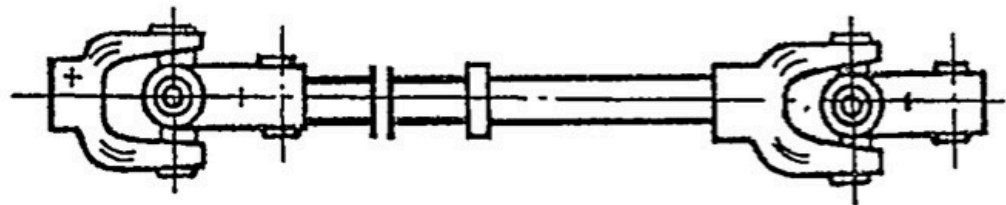
The drive disk plough should be in normal technical state while it works. Its all components should be complete and connected firmly, its central and side gearbox, tail - wheel, universal joint should be lubricate, all transmission parts turn flexibly.

### 1. Hitching to tractors

The drive disk plough is hitched to tractor by three - point suspension, at first install the universal joint - one side of it is connected to the output shaft of tractor, the other side is connected to the first shaft of disk plough, then insert universal joint and lemon pipe (or square shaft), finally install top and tow bar and insert lockpin.



The correct installation of universal joint



The wrong installation of universal joint

Picture 3 universal joint installation diagram

Attentions:

① When 1LYQ - 4(3)22 is hitched to Fengshou - 183 (180 -

3, 180-4, 184) tractor, the length of universal joint(L) = 395~544mm

② When 1LYQ-722 is hitched to Shanghai-50 tractor, the length of universal joint(L) = 550~625mm, if the tractor has had universal joint, just increase the lemon-pipe or square shaft to 400mm.

③ When 1LYQ-722 and 1LYQ-625 are hitched to Qingjiang-50 and Jiangsu-50 tractors, the length of universal joint (L) = 698~710mm.

## 2. Adjust drive disk plough

### I. Adjust on left-and-right front-and-back horizontal level

After the disk plough has been tested cultivating for the first time, it plows by walking cross furrows at the second time, and it should be adjusted on horizontal level and balanced completely by adjusting left and right rising-links' length and control-link's length. So that the left and right cultivating-depths are the same, and furrow bottom is flat-that's the key-point of drive disk plough's normal working. Don't neglect it!

### II. Adjust declination angles of tail-wheels and the spring force

To balance the lateral force, make the machine work well, avoid cultivating miss problem, its declination angle of tail-wheel and the spring force should be adjusted, and the tail-wheel plate should be 30mm lower than the disk plate. The declination angle means angle between tail-wheel plate and advancing direction, which is towards the land.

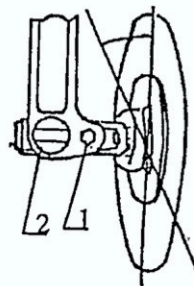
Adjustments are as picture 4 shows:

#### a. adjust the declination angle of tail-wheel ( $\alpha$ )

Do as Picture 4 shows, firstly loosen nut1 and nut under ec-

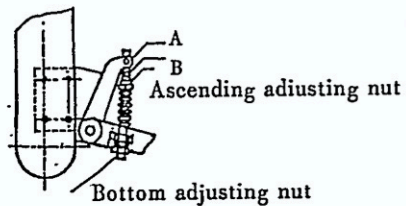
centric - bearing 2, then screw eccentric - bearing 2 by wrench, change the angle as needed. Screw up nuts after adjustment.

Advance direction



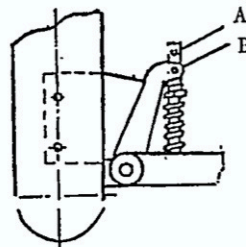
Picture 4

b. adjust spring force and the drooping state of tail - wheel, install adjusting threaded - rod hole ( see Picture 5,6)



Lower the adjusting nut

(Picture 5)



(Picture 6).

- ① Adjust the top adjusting nut upward, when the machine is dry - farming or the soil is hard;
- ② Adjust the nut down when the machine is water - farming or the soil is soft;

- ③ Install to holeA while cultivating;
- ④ To increase the drooping state of tail-wheel, adjust top and bottom adjusting nuts upward at the same time, whereas, adjust them down;
- ⑤ Install to holeB when the machine is stored.

### III. Adjust the disk plough's meshing



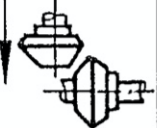

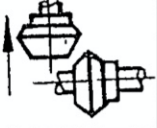

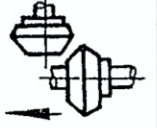

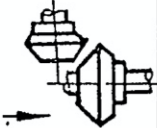
In order to increase the machine's using-time, new disk plough or disk plough which has been overhauled should be breaking-in without any burdens for 1~1.5 hours, before breaking-in prepare and pay attention as below:

- (1) Fix every linking part: disk knife-shaft should turn flexibly and without blocks, otherwise troubles should be eliminate;
- (2) Central-gearbox and side gearbox should be filled up with enough 1:4 mixed liquid of machine-oil and diesel-oil, fill enough grease where needs;
- (3) During breaking-in, stop and check as soon as abnormal noise is heard;
- (4) After breaking-in, drain the mixed oil, wash gearbox, and check gears' meshing state - if they mesh well fill up machine-oil in the box, if they mesh bad adjust again.

### IV. Adjust cone-gears' meshing

Check and adjust cone-gears' touching spots. Firstly paint red-lead-oil evenly on the working surface of the small cone-gear, then turn the gear to see whether the size of marks is 40% of gear's width and height, and whether the marks are distributed around larger part of the pitch circle.

Adjust according to the chart below if it is not up to the standard:

Small cone - gear's meshing spots and distribution		Adjustment	Adjusting diagram
	Normal meshing spots	The length of the spots should not be shorter than 40% of the gear's width, the width of them should not be shorter than 40% of gear's height; spots are close to smaller part of the pitch-circle, but the distance between them should not be shorter than 5mm.	
	Meshing spots are around smaller part of the pitch-circle	Reduce adjusting shims of the first shaft boss, make the small cone - gear moving ahead.	
	Deviate from larger part	Increase adjusting shims of the first shaft boss, make the small cone - gear moving back.	
	Deviate to gear's top	Reduce adjusting shims between the second shaft's carrier (right main beam, left flange) and the central gearbox, make the large cone - gear moving to the left (close to the small cone - gear).	
	Deviate to gear's bottom	Increase adjusting shims between the second shaft's carrier (right main beam, left flange) and the central gearbox, make the large cone - gear moving to the right (away from the small cone - gear).	

#### V. Check and adjust the side - clearance of cone - gear

Proper side - clearance is one of the conditions for gears to work normally; if side - clearance is too big there will be impact and noise, if it is too small there will be no lubrication or worn - out is speeded up, and even inflating by heat will hold out the machine or reduce its using - time. So the side - clearance should be checked and adjusted after the machine has been used for a long time or overhauled. Do as below:

Put  $\infty$  - shape fuse in meshing surfaces of the gear, turn it and take out the fuse - the smallest thickness that squeezed is the side - clearance. The normal thickness is 0.15~0.25mm, if it is beyond the range, it should be adjusted. Adjustment is to reduce or increase the adjusting shims of the first shaft boss, if the clearance is too big reduce the shims, whereas increase.

#### VI. Adjust meshing state of zerol - gears

- (1) Begin to adjust the touching spots and clearance until axial - clearance of the first, second shaft have been adjusted. The axial - clearance should be adjusted by locking the round - nut;
- (2) When the zerol - gears are worn out after using for a long time, just adjust the side - clearance by moving small cone - gear ahead.

#### VIII. Adjust declination angle of the drive disk plough

Between the rotary turning - plane of the disk plate's edge and the machine's advancing direction there is an angle - it is called cultivating declination angle. The angle is designed  $\pm 5^\circ$  adjustable range to fit for different requirements such as cutting and turning up soil. It can be adjusted by inserting left and right suspension - pin to left and right suspension - link holes.

- a. Working in general soil, insert left suspension - pin to the front - top hole of itself, insert right suspension - pin to the



front - bottom hole of itself.

- b. While water - farming in paddy - field or soil is soft, the declination angle should be reduced (about 5km/hr), in order to increase cultivating speed; at the same time insert left suspension - pin to back - top hole.
- c. While dry - farming or soil is hard; the declination angle should be increased; at the same time insert left suspension - pin to front - top hole, and insert right suspension - pin to back - bottom hole. The machine should go at low speed (2~3km/hr).

### 3. Ways of cultivating

The drive disk plough, which is as furrow plough, can choose ways of inthrow, outthrow, two ploughs tillage according to size of the field. Generally we use inthrow so that the machine can cultivate around the edge of field at last, and can clear wall of ridges and remain ditches around the field. Furthermore it's the better way for drive disk plough to cultivate.

The outthrow will remain many ditches in the field. The two - plough tillage is efficient but remains many ditches and ridges in the field.

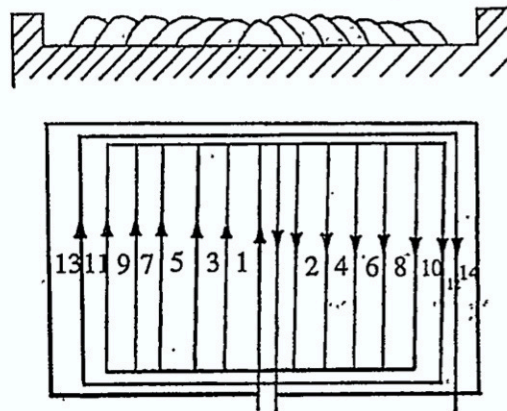
#### (1) Inthrow

Begin to cultivate at the left side of the left - and - right equidistance line, the tractor's right wheel is walking along the central line (clockwise), inverse soil to the central, strike soil to and fro, and extend cultivating from center to borders until uncultivated land on the left and right is as wide as the edge of field. Cultivate all around the field for 1~2 times, so as to clear low - banks and remain ditches around. Because drive disk plough is good at cutting and turning up soil, it adopts inthrow; there are almost no high ridges but a flat ditch around

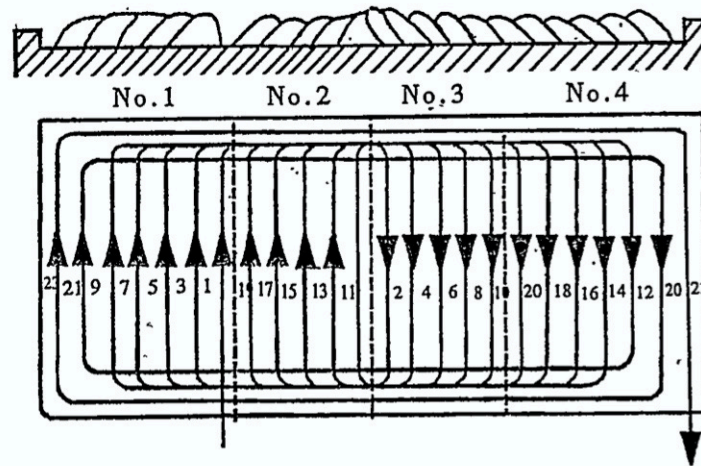
the field, weeds on wall of low - banks are also cleared. The whole piece of field seems very even after cultivating in this way.

(2) Two - plough tillage

While cultivating in especially large rectangle field, two - plough tillage should be adopted to improve efficiency. At first divide the field into four parts along the length direction, then begin to tillage at left side of the delimitation of 1,2 part; cultivate the 1,3 part until the uncultivated land in 1 part is as big as the edge, then cultivate 2,4 part; at last cultivate around the field for 1~2 times.



Picture 7 Inthrow diagram



Picture 8 Outthrow Diagram

### V. Points For Attention

1. The limiting – chain of tractor’s towing link should be fixed properly so that it can prevent drive disk plough from swaying, at least the towing link can’t hit the wheels.
2. While cultivating in straw or wheat – straw field, piles of straw should be thrown apart, so that the disk plough can inverse and cover soil.
3. Pay attention to the rising height of the disk plough; in order to increase universal joint’s using time and reduce noise, the angle of universal joint should be less than  $10^\circ$  on work and should be less than  $30^\circ$  while turning corner at the edge of field.

The former one is guaranteed by design, the later one should be adjusted by drivers.

When the unit machine turns corner at edge of field, raise the disk plough a little until tail - wheel is away from ground; when moving in the field the disk plough's PTO shaft should be shut down as soon as the machine has raised to a certain height. The disk plough should also be raised up when backing up.

4. No man stands on the drive disk plough.
5. When the tractor leads the machine to work, dismantle the heavy - iron of back - wheel, and install enough heavy - iron to the front - wheel. Besides, the driver must obey the rules of tractor's operation, pay special attention to the pressure of the hydraulic system. Check it or change O - shape seal ring if needed, so as to keep enough rising power.
6. When the disk plough is hanged up or down to the truck, rope should be hanged to beams around central gearbox. When it is stored alone, use brace - bars to support it (brace - bars are in front of left suspension - link).

## VI. Repair and Maintenance

Proper repairing and maintenance is one of the important ways to ensure disk plough working properly, to improve efficiency and longer using time.

### 1. Maintenance per Shift (after working for 10 hours)

- a. Check and screw up every nut and bolt.
- b. Check whether there are notches on inserted pin and lynch-pin, replace new components if needed.
- c. Check gear oil, fill up to set position if it is not enough, or change with new oil if it is gone bad.
- d. Check whether bent knives are incomplete or worn out, whether bolts are loose or out of shape, fill up the vacancy, screw up bolts and change old ones.
- e. Change paper pad or oil seal if oil leaks.
- f. Transmission shaft and centercross shaft must be filled up enough grease, inside surface of the telescoping pipe must be painted with grease.

### 2. Maintenance every quarter of the year

- a. Check gear – oil, change it if it has gone bad or contained much iron – chipping.
- b. Check whether the universal joint is loose because of the needle roller's abrasion, open the joint and wash it if there is soil, or fill up with grease if it is inflexible.
- c. Check bearings on each side of the knife – shaft to see whether soil or water enters because of oil – seals being no use, then dismantle and wash them, install new oil – seals fill up new grease if needed.
- d. Check every bearing – clearance and cone – gear's meshing clearance in gearbox, adjust them if needed.

### 3. Maintenance every year

- a. Get rid of the flatlute of the machine completely.
- b. Drain the gear - oil and dismantle the machine to check, wash all the accessories and fill new gear - oil to set position before install the machine back.
- c. Wash the carrier of the knife - shaft, change oil - seals, install the machine back and fill grease.
- d. Dismantle transmission part, wash needle - roller of the centercross shaft, change it if it is broken.
- e. If store the machine for a long time, transmission shaft should be dismantled and stored inside house, the machine must be raised to make disk away from land; disks should be paint with grease against rust, every outside splines must be paint with antirust paint. If unworking surface's oil paint peeled off, spray paints it by primary color to avoid rust.

The drive disk plough is better to be stored inside house or covered out side house.

## Troubles and Elimination

— 19 —

The main method to prevent troubles beforehand is to strengthen repair and maintenance, but as soon as there are troubles, they should be eliminated immediately. Don't work with trouble that will cause more casualties.

Trouble	Cause	Elimination
Turning corner needs much strength	<ol style="list-style-type: none"> <li>1. the declination angle of tail - wheel is too small</li> <li>2. the drooping of tail - wheel is not enough</li> <li>3. tail - wheel is broken or linking - bolt looses</li> <li>4. one of the left and right limit chain of the tractor is fixed too short</li> </ol>	<ol style="list-style-type: none"> <li>1. increase the angle</li> <li>2. lower tail - wheel</li> <li>3. change or repair accessories of tail - wheel, fix the linking - bolt</li> <li>4. adjust limiting - chain properly</li> <li>5. reduce advancing speed properly</li> </ol>
Centercross shaft breaks	<ol style="list-style-type: none"> <li>1. universal joint is installed wrongly</li> <li>2. the deflection angle is too big</li> <li>3. be short of grease</li> </ol>	<ol style="list-style-type: none"> <li>1. install the two forks openings in a plane</li> <li>2. limit rising height</li> <li>3. fill up grease per shift</li> </ol>
Noise in gearbox	<ol style="list-style-type: none"> <li>1. something abnormal falls into the gearbox</li> <li>2. side - clearance of cone - gear is too big</li> <li>3. shaft breaks</li> <li>4. tooth of the gear breaks</li> </ol>	<ol style="list-style-type: none"> <li>1. take the things out of it</li> <li>2. adjust side - clearance</li> <li>3. change shaft</li> <li>4. change or repair</li> </ol>
Disk knife shaft turns inflexibly	<ol style="list-style-type: none"> <li>1. gear shafts breaks or meshes too tight</li> <li>2. the linking bolt is loose</li> <li>3. the knife shaft is tied up with grass</li> </ol>	<ol style="list-style-type: none"> <li>1. change gear or shaft, adjust washers on gearbox's cover</li> <li>2. screw up the linking - bolt</li> <li>3. get rid of weeds</li> </ol>
the floating of tail - wheel is not sensible	<ol style="list-style-type: none"> <li>1. the adjusting - link is out of shape</li> <li>2. the hinge of sway - bar key gets rusty</li> </ol>	<ol style="list-style-type: none"> <li>1. rectify it</li> <li>2. get rid of the rust, and paint oil</li> </ol>
Side of the central gearbox leaks oil	<ol style="list-style-type: none"> <li>1. oil - seal or paper - gasket is damaged</li> <li>2. the box cracks</li> </ol>	<ol style="list-style-type: none"> <li>1. renew</li> <li>2. repair or renew</li> </ol>

**VIII. Standard spares  
and Wearing spares Menu**

NO.	NAME	SPECIFICATION	AMOUNT	
1	Bearings	308	2	
		310	1	
		220	1	
		36310	1	
		7109	1	
		7206	1	
		7207	1	
		7310	1	
		7509	1	
2	Centrecross shaft	CA - 10	2	JieFang Truck
3	Oil seals	SD40×62×12	1	
		SD55×80×12	5	
		FB40×62×12	2	



## IX .Main Accessories Chart

1	The first shaft (small cone-gear)	13	Left cover - board of bearing,	30	Bearing-carrier
2	Cover - board of the first shaft	14	Bearing(308)	31	Bearing(36310)
3	Oil seal(SD40 × 62 × 12)	15	Central shaft	33	Left cover - board of bearing
4	Round nut(M39 × 1.57)	16	Intermediate bear- ing's cover	34	Clamping plate
5	Bearing (7109)	17	Idler	35	Safety shim
6	Shaft - boss	18	Gear of final drive	36	Right main beam
7	Bearing(7509)	21	Bottom - cover of side box	37	The second shaft
8	Oil seal (SD55 × 80 × 12)	22	Bearing (310)	38	Clamping plate, lock - plate of the second shaft
9	Side gearbox	23	Right bearing car- rier	39	Big cone - gear
10	Bearing (7310)	24	Oil seal (P55 × 80 × 12)	40	Bearing (220)
11	Small gear	25	Disk plate	41	Left main beam
12	Round nut(M45 × 1.5)	26	Linking flange of disk	42	Left side plate
	Washer (45)	27	Disk shaft	43	
	Clip of the second shaft	29	Oil seal(SD55 × 80 × 12)		



1LYQ SERIES DRIVE DISK PLOUGH

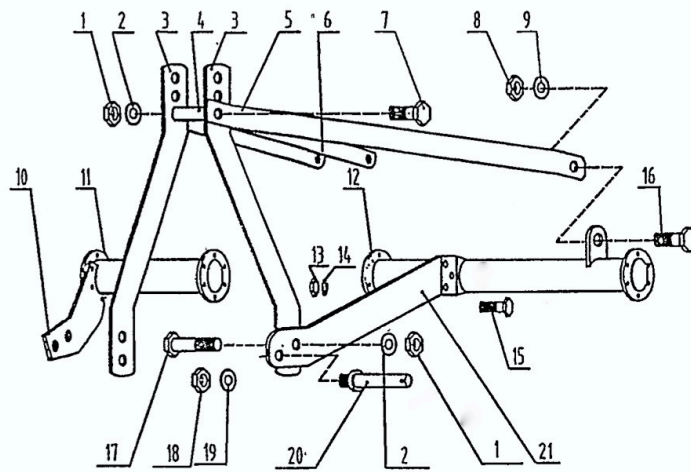


SPARES DRAFTS HANDBOOK



### suspension main beam assembly

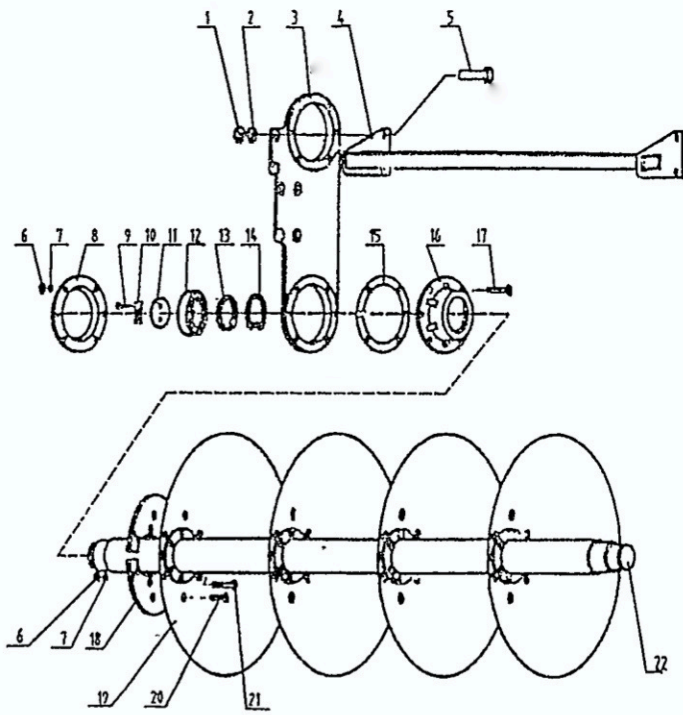
No.	Draft No.	Name and specifications	Amount
1	GB6170 - 86	nut M20	1
2	GB93 - 87	washer 20	1
3	1LYQ422(522)A - 01	front brace - bar	2
4	1LYQ422(522)A - 05	Bush	1
5	1LYQ422(522)A - 01	left brace - bar	1
6	1LYQ422(522)A - 01	back brace bar	2
7	GB5783 - 86	boit M20 × 130	1
8	GB6170 - 86	nut M16	2
9	GB93 - 87	washer 16	2
10	1LYQ422(522)A - 04	right suspension board	1
11	1LYQ422(522)A.03 - 13	right main beam	1
12	1LYQ422(522)A.03 - 01	left main beam	1
13	GB6170 - 86	nut M12	5
14	GB93 - 87	washer 12	7
15	GB5782 - 86	bolt M12 × 50	3
16	GB5782 - 86	bolt M16 × 45	1
17	GB5783 - 86	bolt M12 × 60	2
18	GB6170 - 86	nut M24	2
19	GB93 - 87	washer 24	2
20	1LYQ422(522)A.02 - 03	suspension pin	2
21	1LYQ422(522)A.01 - 02	left suspension arm	1



suspension main beam assembly

## II . disk of side plate assenbly

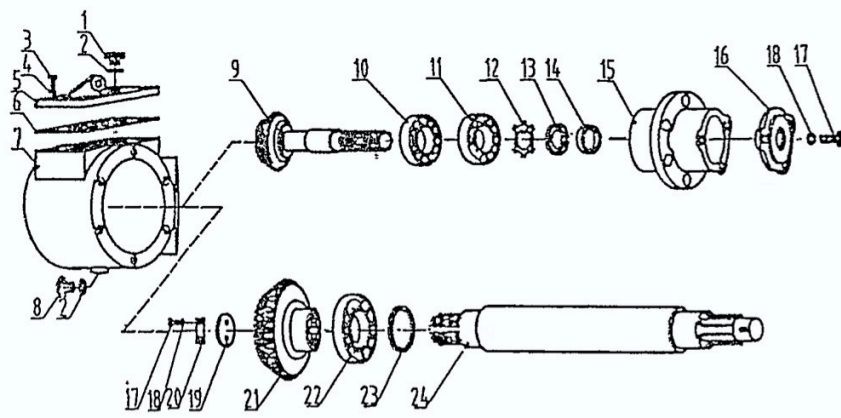
No.	Draft No.	Name and specifications	Amount
1	GB6170 - 86	nut M16	2
2	GB93 - 87	washer 16	2
3	1LYQ722A.04 - 04	left side plate	1
4	1LYQ422(522)A.06	vice beam	1
5	GB5783 - 86	bolt M16 × 90	2
6	GB6170 - 86	nut M12	72
7	GB93 - 87	Washer 12	60
8	1LYQ722A.04 - 03	left bearing - cap	1
9	GB5783 - 86	bolt M8 × 22	2
10	1LYQ722A.03 - 12	end retainer of II shaft	1
11	1LYQ722A.03 - 11	clamping board of II shaft	1
12	GB292 - 93	bearing 36310	1
13	GB9877.1 - 88	oil seal SD55 × 80 × 12	2
14	1LYQ722A.04 - 07	spacing collar of oil seal	1
15	1LYQ722A.04 - 05	paper shim of bearing - seat	1
16	1LYQ722A.04 - 06	bearing - seat	1
17	GB5782 - 86	bolt M12 × 65	6
18	1LYQ722A.04 - 08	linking flange of disk	14
19	1LYQ722A.04 - 09	disk piare	7
20	GB11 - 88	coumersunk heab bolt M12 × 25	24
21	GB5782 - 86	bolt M12 × 35	36
22	1LYQ722A.04 - 10	disk shaft	1



disk of side plate assembly

### III . components of contral gearbox

No.	Draft No.	Name and specifications	Amount
1	1GQN.02.01-02	oil-fill bolt	1
2	GB95-85	shim 16	2
3	GB5783-86	bolt M12×30	6
4	GB93-87	shim 12	6
5	11YQ-722A.03-21	top cover	1
6	1LYQ-722A.03-20	paper shim of top cover	1
7	1LYQ-722A.03-03	central transmission box	1
8	1G125.03-08	oil-drain bolt	1
9	1LYQ-722A.03-04	small rotary cone-gear	1
10	GB297-93	bearing 7509	1
11	GB297-93	bearing 7109	1
12	GB858-88	lock shim 45	1
13	GB812-88	lock nut M45×1.5	1
14	GB9877.1-88	oil seal SD40×62×12	1
15	1LYQ-722A.03-05	shaft boss	1
16	1LYQ-722A.03-07	Cover board of I shaft	1
17	GB5783-86	bolt M8×25	5
18	GB93-87	Washer 8	5
19	1LYQ-722A.03-11	clamping plate of II shaft	1
20	1LYQ-722A.03-12	end retamer of II shaft	1
21	1LYQ-722A.03-09	small circular rotary cone-gear	1
22	GB276-93	bearing220	1
23	GB9877.1-88	oil seal SD55×80×12	1
24	1LYQ-722A.03-16	II shaft	1



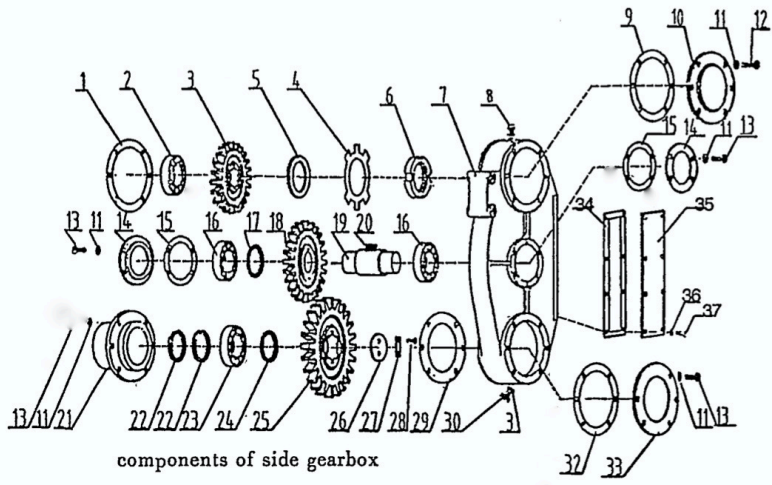
components of central gearbox



#### IV . components of side gearbox

No.	Draft No.	Name and specifications	Amount
1	1LYQ722A.03-19	right paper shim of II shaft	1
2	GB297-93	bearing 7310	1
3	1LYQ722A.03-18	Small side transmission gear	1
4	GB858-88	spacer 39	1
5	1LYQ722A.03-17	spacer of II shaft	1
6	GB812-88	round nut M39	1
7	1LYQ722A.04-11	side gearbox	1
8	1G125.03-18	oil-fill bolt	1
9	1LYQ722A.04-22	paper shim of II shaft's end cover	1
10	1LYQ722A.04-21	end cover of II shaft	1
11	GB93-87	Washer 8	6
12	GB5783-86	bolt M8×18	6
13	GB5783-86	bolt M8×22	18
14	1LYQ722A.04-20	cover board of central bearing	2
15	1LYQ722A.04-19	paper shim	2
16	GB272-93	anti-friction bearing 308	2
17	1LYQ722A.04-18	retaining ring II	2
18	1LYQ722A.04-15	idler	1
19	1LYQ722A.04-17	lay shaft	1
20	GB1096-79	key 10×20	1
21	1LYQ722A.04-06	left and right bearing seat	2
22	GB9877.1-88	oil seal SD55×80×12	4

No.	Draft No.	Name and specifications	Amount
23	GB272-93	anti-friction bearing 310	1
24	1LYQ722A.04-14	retaining ring I	1
25	1LYQ722A.04-12	gear of final drive	1
26	1LYQ722A.03-11	elamning piaie of II shaft	1
27	1LYQ722A.03-12	end retainer of II shaft	1
28	GB5783-86	bolt M8×25	2
29	1LYQ722A.04-05	paper shims of left and right bearing seat	2
30	1G125.03-08	oil-drain bolt	1
31	12.72.118	spacer 16	1
32	1LYQ722A.04-16	paper shim of bottom cover	1
33	1LYQ722A.04-13	cover of side gearbox	1
34	1LYQ722A.04-01	paper shim of cover board	1
35	1LYQ722A.04-02	cover board	1
36	GB93-87	washer 6	8
37	GB5783-86	bolt M6×20	8



### V. tail wheel components

No:	Draft No.	Name and specifications	Amount
1	1LYQ722A.02-09-1	spring pin	1
2	GB95-85	spacer 14	1
3	1LYQ722A.05-07	tail wheel linking frame	1
4	1LYQ722A.05-09	leader	1
5	1LYQ722A.05-10	leader pin	1
6	GB91-86	linchpin 5×30	1
7	GB95-85	spacer 20 <sup>+</sup>	1
8	1LYQ722A.05-04	pin of sway bar	1
9	1LYQ722A.05-08	adjusting nut	1
10	1LYQ722A.05-06	tail wheel spring	1
11	1LYQ722A.05-05	spring retainer	1
12	1LYQ722A.05-02	sway bar	1
13	GB95-85	spacer 18	1
14	GB6170-86	nut M18	1
15	GB91-86	linchpin 3×30	1
16	GB5782-86	bolt M16×90	2
17	GB6170-86	nut M16	2
18	GB93-87	washer 16	2
19	GB95-85	spacer 16	1
20	1LYQ722A.05-01-8	tail wheel shaft	1
21	GB5782-86	bolt M12×45	4
22	1LYQ722A.05-07	bearing cap	1
23	GB9877.1-88	oil seal FB40×62×12	2
24	GB297-93	bearing 7207	1
25	GB5782-86	bolt M12×30	4
26	1LYQ722A.05-01-5	tail wheel disk	1
27	1LYQ722A.05-01-4	edge of tail wheel	1
28	1LYQ722A.05-01-5	bearing seat	1
29	GB93-87	washer 12	8
30	GB6170-86	nut M12	8
31	GB297-93	bearing 7206	1
32	GB59-66	small crown nut	1
33	GB91-86	linchpin 5×40	1
34	1LYQ722A.05-01-1	end cover of tail wheel	1

tail wheel components

