

SDHJ SERIES SINGLE SHAFT HIGH-EFFICIENT MIXER

OPERATION MANUAL



江苏中天农牧机械有限公司

JIANSU ZHONGTIAN AGRO MACHINERY CO.,LTD

Important instruction:

1 This manual detailedly describes SDHJ series single shaft mixer 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. APPLICABLE SCOPE AND FEATURES

APPLICABLE SCOPE

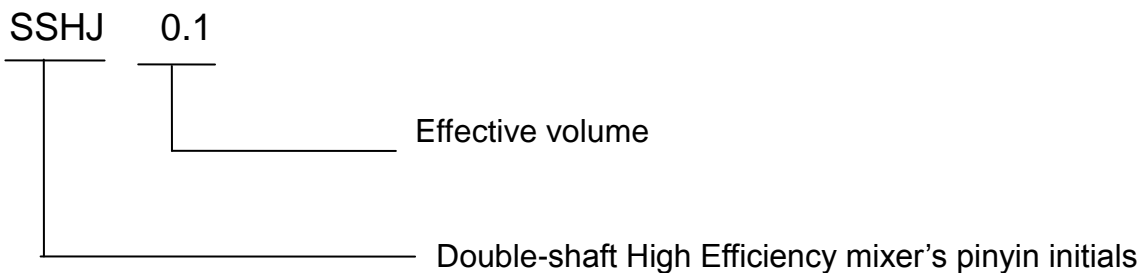
SDHJ Single-shaft Paddle High-efficient Mixer is widely used to mix the materials in the shape of powder, pellet, flake, piece and sticky materials in the industries of feed, food, chemicals, pharmacy, agricultural pharmacy, etc.

Features

Designed and manufactures by several scientific research units with the summing-up of essence of single-shaft paddle mixers at home and abroad, SDHJ Single-shaft Paddle High-efficient Mixer is an ideal mixing equipment with low speed, high efficiency, power saving and high quality. It has high mixing homogeneity and short mixing period without dead mixing corner. Each batch of material can generally by mixed to homogeneity within 60-200 seconds. Full-length open-door structure is adopted at the bottom for discharging, so discharging is quick without remainder. The seal of discharging door is reliable with out phenomenon of material leakage. The load has a wide changeable scope. There is a built-in oil-adding pipe and various liquids can be largely added. This machine has the features of compact structure, fine appearance, less occupying space than other mixing equipment, quick and gentle mixing, stable performance, low noise, no dust, no environmental pollution, etc.

2. MAIN SPECIFICATIONS AND TECHNICAL PARAMETER

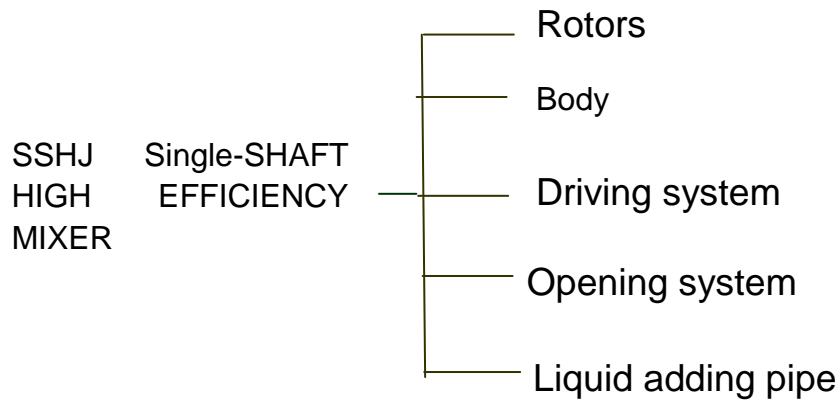
2.1 THE MEANS OF THE MODEL



2.2 MIAN TECHNICAL PARAMETERS (See Figure One)

Item Model	Inner Cubage	Capacity/B	Mixing time/B	C _v %	Power
	m ³	kg	s	C _v %≤	kW
SDHJ0.5a	0.5	25	60—180	5	7.5
SDHJ1a	1	500	60—180	5	11
SDHJ2a	2	1000	60--180	5	18.5
SDHJ4a	4	2000	60--180	5	30

3.WORKING PRICIPLES



4.1 MIAN STRUCTURE (See Figure One)

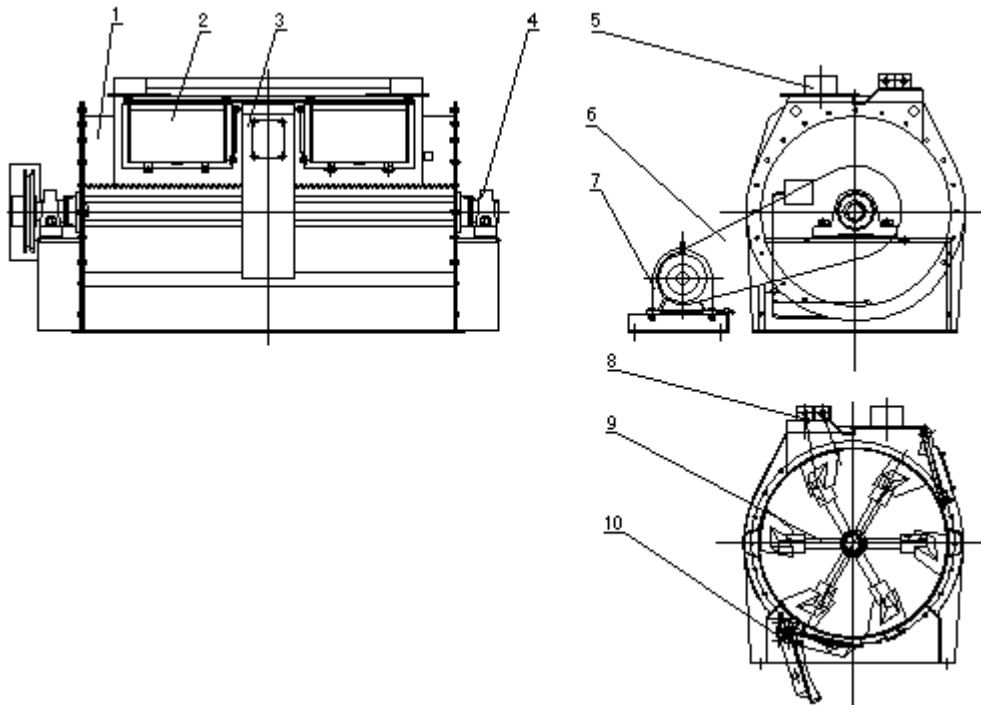


Figure 1: MIAN STRUCTURE

1.Machine Body
4.Bearing
7.Reducer Motor
10.Discharging Door

2.Inspection Door
5.Balance Cover
8.Oil Adding System

3. Air-circulation
6.Chain Cover
9.Main Shaft

4.2 MAIN SPARE PARTS

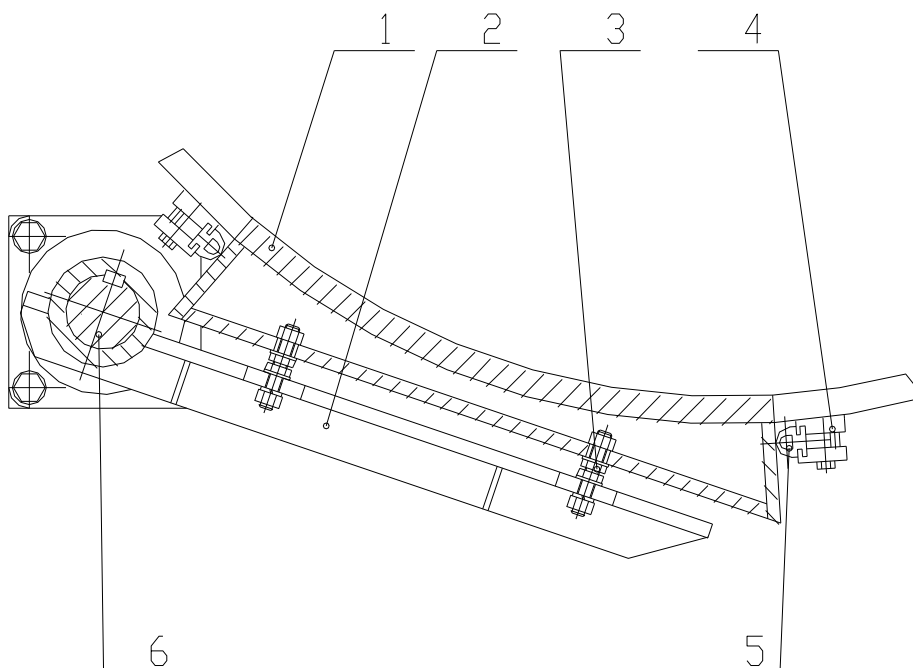
4.2.1 ROTOR

Rotor consists of paddles, shaft and supporting bar. The motor drives rotor to turn in a definite speed through reducer and chain. The paddles installed on the dual shaft in a definite angle cast the materials to whole spaces in the container. In the condition of instantaneous weightless, materials cross widely to form a flowing layer for mixing, meanwhile, materials are driven by paddles to turn axially and radically, thus forming a full-position compound circulation.

4.2.2 MACHINE BODY

The machine body is barrel-shaped. Each of the two ends of machine body has inside and outside wall plate, between which the space is interlinked to the whole machine body. While feeding and discharging, air exhausted by materials can circulate in this space so as not to flow over the machine body.

4.2.3 THE DISCHARGING DOOR AND ITS SEALING DEVICE (See Figure 2)



- | | | |
|-------------|------------------|------------------|
| 1.Door Body | 2.Supporting Arm | 3.Adjusting Nut |
| 4.Seal | 5.Seal Stripe | 6.Coupling Shaft |

Fig.2 HE DISCHARGING DOOR AND ITS SEALING DEVICE

The discharging door consists of door body, supporting arm and adjusting nut. The installed seal around the discharging door frame at the lower part of the machine shell. When the door is closed tight, the side of discharging door body sticks close to the rubber sealing stripe of replaced when it is damaged. If necessary, the distance between the supporting arm and the door body can be changed by adjusting the position of the adjusting nut to make the discharging door on a level with round curve surface of the bottom of machine shell. The supporting arm is installed on the coupling shaft.

4.2.4 DISCHARGING CONTROL MECHANISM (See Figure Three)

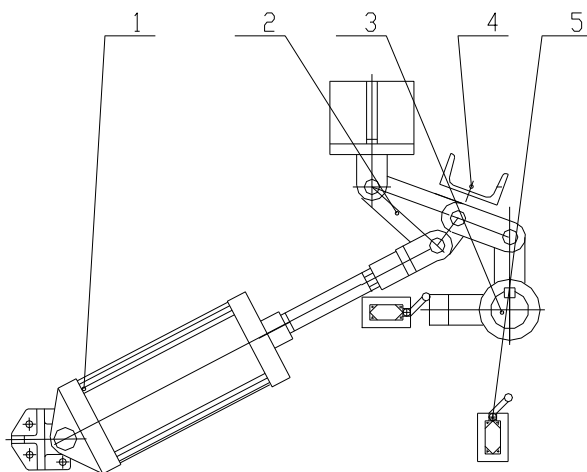


Fig.3 DISCHARGING CONTROL MECHANISM

- | | |
|------------------|----------------------------|
| 1.Cylinder | 2.Connecting Rod Mechanism |
| 3.Coupling Shaft | 4.Limit Bolt |
| 5.Limited Switch | |

The discharging control mechanism consists of cylinder, connecting rod mechanism, coupling shaft, limited switch. The discharging door is installed on the coupling shaft which is connected with the drive rocker rod of the connecting rod mechanism. The cylinder head is articulated with the driving rocker rod. Cylinder reciprocates to make the coupling shaft turn through the connecting rod mechanism, thus driving the discharging door to open or

close (when the piston rod of cylinder is pushed out, the discharging door is closed). See **Figure 4** for the pneumatic principle.

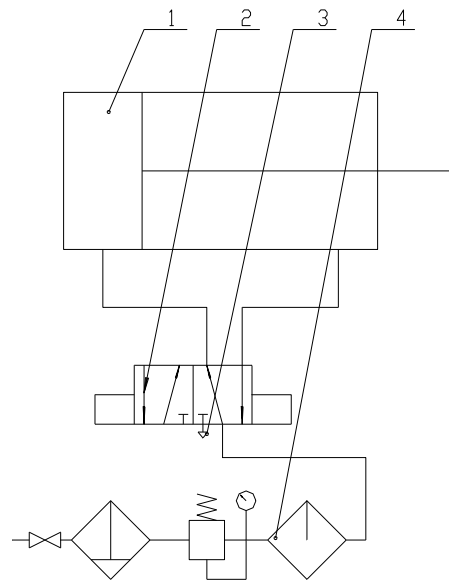


Fig.4 Pneumatic principle.

Item	Name	Model			Qty.
		SDHJ0.5a	SDHJ1a	SDHJ2a, SDHJ4a	
1	Cylinder	QGS80×125-MT4-L2	QGS100×125-MP2-L2	QGS125×125MP2	
2	Electromagnetic Valve	2637050.0201	2636000.0201	2636000.0201	1 Pcs
3	Muffler	QXS-L12	QXS-L8	QXS-L8	2 Pcs
4	Triple Valve	398.363	398.223	398.223	1 Set

4.2.5 FIXING OF BEARING HOUSING OF MAINSHAFT

Three installed two pads between the bottom face of main shaft bearing and the supporting face of the machine body. The touching face between two pads is bevel face. The height of bearing housing, that is , the gap between outer diameter of the rotor and the machine shell can be adjusted by moving these two pads.

The bearing housing and both ends of two pads are pressed tight by the bolts installed in the machines.

4.2.6 LIQUID ADDING PIPEING

Being installed at the upper side of the machine, liquid adding pipeline consists of pipe and spray nozzles. Liquid is sparyed in the shape of fan through spray nozzle. Several spray heads are evenly distributed in the machine. A flange is installed at the inlet of pipe to be connected with the oil supplying system.

4.2.7 ELECTRICAL CONTROL PRINCIPLE

ELECTICAL PRINCIPLE OF THE MIXER(See Fig.5)

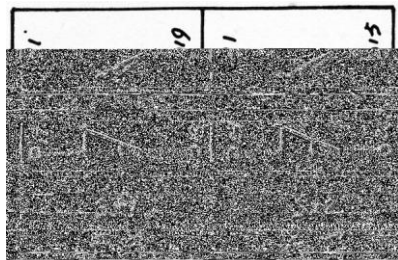
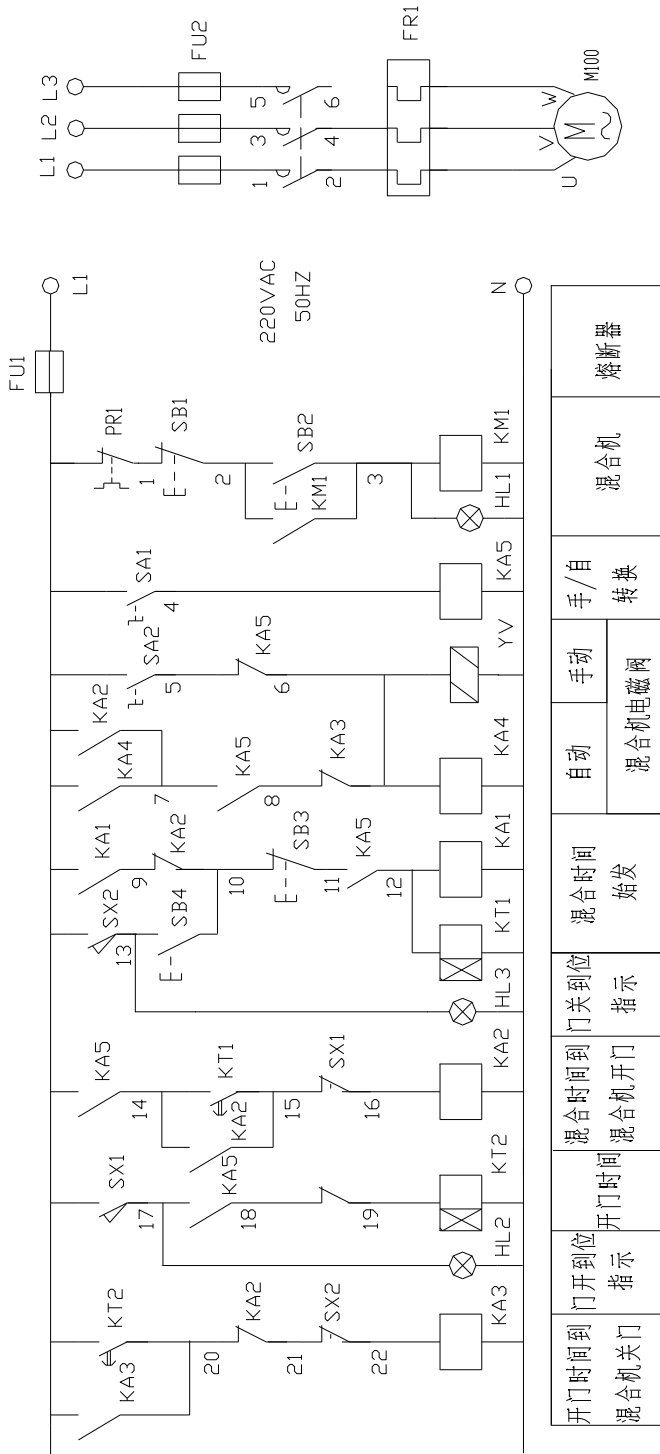


Fig.5 ELECTRICAL PRINCIPLE

NOTE:

1. This figure is only a reference one of the operation of the single mixer.
2. For this control plan, catch mixing of a batch of materials in the “manual” mode needs to start SB4 one time.
3. When it is designed systematically in factory, the interlocking relation of all upstream and downstream equipment of mixer should be considered.

5. INSTALLATION, ADJUSTMENT AND THE PREPARE BEFORE THE OPERATION

- 5.1 A complete safety check should be made before installing the equipment.
- 5.2 The machine discharges the material through a full-open door. The flange edge of machine shell is the connecting port for discharging. A hopper with equivalent volume should be installed under the machine.
- 5.3 The reducer motor is installed on the slide guide, and adjust the position of the main motor according the position of the big chain wheel.
- 5.4 Install the driving chain and adjust the position of motor to make chain drive smoothly, and make the rotation direction of mainshaft the same as that shown by arrow on the machine. Then install the chain cover.
- 5.5 Install the feeding pipe on the upper cover plate according to the technical demand.
- 5.6 Connect the liquid adding pipe as per the technical demand and adjust the position of the spray nozzles, ensure the liquid will be sprayed to the raw materials.
- 5.7 Before use it, check the opening and the closing condition of the discharging door, adjust the pressure of cylinder and position of limit switch to make the discharging door on a level with the bottom of machine shell when it is closed, reach a definite angle when it is opened, and make the cylinder operate smoothly.

6. OPERATION AND POINTS FOR ATTENTION

- 6.1 Before use it, race the machine first, The run should be smooth without abnormal vibration. And check if the discharging mechanism is closed tight.
- 6.2 When use the machine, start the reducer motor first, then feed after rotor turns normally.
- 6.3 The material level in the machine must not be lower than shaft line plane of main-shaft and higher than the diameter of outer ribbon.
- 6.4 Additives should be fed after half batch of main material has entered the machine, and oil should be sprayed after all main material has entered the machine, the material should be mixed for some time before being discharged.
- 6.5 Metal impurities cannot be mixed into the material to avoid damaging the rotor ribbon.
- 6.6 The operation of the reducer motor, cylinder and auxiliary components should accord with the stipulations of the operation manual.
- 6.7 The working current of mixer cannot exceed the rated current of motor.

6.8 When the machine is stopped, the oil-adding pipe cannot have any oil remained to prevent oil from blocking the pipe after it solidifies.

7. MAINTANCE

7.1 The discharging mechanism should keep flexible and it's accumulated dust should be often cleared away.

7.2 Periodically replace the lube for all bearings. Sodium radical lube (GB492-65) Zn-3 is a good choice.

7.3 The driving chain should be lubricated with appropriate #30 machine oil and cleaned periodically.

7.4 The #40-#50 machine oil is recommend for lubricating. After the first addition of oil and run of 500 hours, oil should be changed once every half a year continuous run (8 hours work system). If the work time is prolonged, the oil change time can be properly shortened.

8.TROUBLE AND REMOVEL

8.1 It a sudden machine stoppage occurs during the operation, motor should be started after the discharging door is opened and material is discharged.

8.2 If the discharging door leaks, check the contact of seals between the discharging door and machine shell. If the discharging door is not closed tight or sealing stripe ages, limit switch or the adjusting nuts of the supporting arm should be adjusted or the sealing stripe should be replaced.

8.3 If the discharging mechanism cannot work normally, check if cylinder and air supplying system are in trouble.

9.VULNERABLE PARTS (See Figure Two)

Item	Description	Quantity	Contact Way
1	Chain	2	Service Hot Line: 86-519-7309801 86-519-7309828
2	Bearing	4	
3	Limit Switch	4	
4	Seal Ring	4	
5	Seal Stripe	4	

10.PNEUMATIC CONTROL

10.1 WORKING PPRINCIPLE (See Fig6)

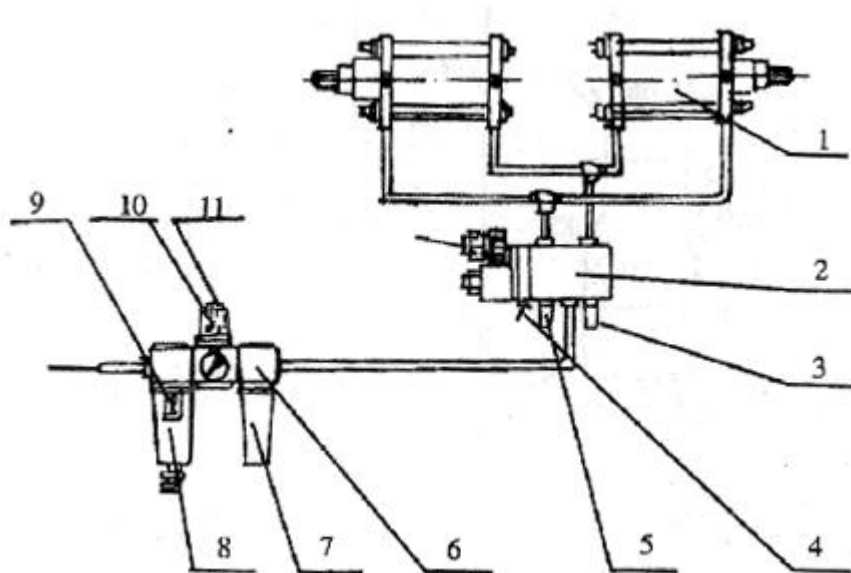


Figure Six:WORKING PPRINCIPLE

10.1.1 Use the air compress with 0.7-0.8Mpa rated working pressure. Its produced compressed air is the power source, ensuring the working pressure of cylinder is 0.63Mpa.

10.1.2 Connect the air source pipe and check if pipes are reliably connected. Injected appropriate lubricating oil into sprayer 7 in accordance with the stipulations

10.1.3 Before air is inducted, turn the reducing valve handwheel 10 counter-clockwise to inload the rating spring of this valve, then open the air source and turn the hand-wheel clockwise, thus pressure rises gradually until the pressure shown on the pressure gauge is the needed working pressure. At this moment, lock hand-wheel through stop knob 11 to make the system work under the working pressure.

10.1.4 If without load and under the working pressure, use the manual 2-position 5-way solenoid change valve to make cylinder one operate through the manual switch 4, and check it cylinder and air supplying system are normal.

10.1.5 If with load, first adjust the openness of one-way through knob 5 to adjust the flow to make cylinder piston adjust speed in a wider speed range.

10.1.6 If with normal load, solenoid valve is electrified and receives the electric signal or air signal to change the flow direction of the compressed air and drive the cylinder to operate, thus realizing the automatic control of air pressure driving.

10.1.7 Periodcally check the oil level and water level in sprayer 7 and moisture separator 8 when oil level is near the lowest oil level, oil should be added in time. Select oil in the range

of 2.5-7 F viscosity. When water level is near the filter core 9, water should be drawn off. When water will be completely drawn off, shut the drain valve at once.

10.2 MAINTENANCE

10.2.1 Periodically clean the discharging control mechanism of the accumulated dust.

10.2.2 Periodically clean the filter core, water filter and oil filter.

10.4 Periodical Disassembly Checking and Points for Attention when Assembling Again.

10.4.1 Clean with mineral oil for metal parts, with Soap liquid for rubber parts. Oil filler and water filler should be soaked in the petroleum solution for rinsing. Never use the solutions of acetone, ethyl acetate and toluene.

10.4.2 All the disassembled parts should be handled with care to avoid damage.



江苏中天农牧机械有限公司

JIANGSU ZHONGTIAN AGRO MACHINERY CO.,LTD

ADD: No.7 ZhongDaLi Road,New industrial Park,
DaiBu Town,LiYang,JiangSu,China.

P C: 213300

Tel: 13814760009

Fax: 0086-519-87256670

[Http://www.jsztmt.com](http://www.jsztmt.com)

E-mail:info@jsztmt.com