

# ***TAGRM***

## **M2000 COMPOST TURNER**

### **OPERATION MANUAL**



**NANNING TAGRM CO.,LTD.**

## **Introduction**

Dear customers:

Firstly, thank you very much for purchasing TAGRM compost turner. In order to make you correctly master and operate compost turner, familiar understanding of its maintenance, to make good operation of compost turner, please carefully read the instruction before using it.

Series M model compost turners are the specialized machines for composting fermentation in land. The series machines have advantages of little investment, low consumption, high output & instant effect, which is worth popularizing. Series M model compost turners are self-propelled; they are ideal equipment for transforming agricultural waste, animal excrement, and organic biological waste to high quality of microbial organic fertilizer by using high modern technology.

The manual should be kept by the operator and read repeatedly.

- The contents of this operation manual include: correct operation, simple maintenance and daily inspection.
- Before operation, please read this manual carefully to ensure safe and effective handling of materials through proper driving and maintenance.
- Due to product improvements, the contents of this manual may differ from the actual situation as the machine development.
- When drivers sell equipment, please bring this manual with machine together.
- If you have any questions, please contact our after-sales department.

# Contents

Introduction.....	1
Waring signs.....	3
I.Safety Caution.....	4
1. The main purpose of compost machine.....	4
2. Operation place and working site of compost turner.....	4
3. Safety caution before operate.....	4
4. Safety caution during operation.....	5
II. Work range size.....	6
III. Parameters.....	6
IV.How To Operate compost turner.....	7
1. Switch device.....	9
2. Roller clutch part.....	9
3. Walking gear part.....	10
4. Roller lifting section.....	10
V.Driving and operation.....	11
1. Operate new machine.....	11
2. Material accumulation during initial work.....	11
3. Before and after engine start.....	11
4. Operation.....	12
5. Machine store.....	12
VI.Regular inspection and maintenance.....	13
1. Checking contents.....	13
2. Maintenance items and schedule.....	14
2.1 Engine system.....	14
2.2 Traveling system.....	16
2.3 Mix roller system.....	16
2.4 Hydraulic system.....	17
2.5 Safety devices and accessories.....	17
VII.Lubrication.....	18
1. Lubrication System Diagram.....	18
2. Oil standard guide.....	19
VIII. Attachment.....	19
Contact Us.....	20
Warranty Card.....	20

Warning signs

	
	 <p>危險區域 請勿靠近 DANGEROUS ZONE Keep Clear</p>
<p>ROLLING KEEP HANDS AWAY 机器运转中请注意手</p>	
	<p>柴油 Diesel oil</p>
	
<p>危險注意 禁止碰觸 DANGEROUS DO NOT TOUCH</p>	  <p>此處定期加黃油 ADD INFUSE GREASE REGULARLY</p>

## **I.Safety Caution**

This chapter mainly introduces the basic safety regulations and warnings of the equipment in normal operate.

### **1.The main purpose of compost machine**

The main purpose of compost turner is to mix, pulverize, and increase the oxygen of the materials in pile; in addition, if the turner is equipped with a bacteria sprinkling device, it can also spray the bacteria.

### **2.Operation place and working site of compost turner**

#### (1) Ground condition

The operation place of compost turner should be flat and solid concrete floor with good ventilation.

#### (2) Climatic conditions

The compost turner should be carried out in a covered factory building, and the working environment temperature should be between 8-40 °C.

#### (3) Measures to cope with cold and hot weather

Oil: oil adapted to ambient temperature;

Coolant: use coolant adapted to ambient temperature

### **3.Safety caution before operate**

(1) Only those who are familiar with the operation manual are allowed to operate compost turner.

(2) Keep the cab and base plate clean.

#### **! Note**

① ) The base plate and cab should be kept clean at all times in order to find out hydraulic system failures in time.

② Regular maintenance

③ Strictly prohibited to be used as a transport machine

④ Site transfer request carry transport

⑤ Strictly forbidden to climb road

#### **4.Safety caution during operation**

##### **(1) Precautions before start machine**

###### **! Attention**

- The shift lever is in neutral position
- Roller clutch to the "Disengaging" position
- Depress the clutch pedal or brake pedal
- Adjust the seat for hand and foot manipulation
- Make sure no body is around

##### **(2) Violation operation are prohibited**

###### **! Attention**

- Put the throttle at idle position before starting
- The throttle is in idle position when the roller clutch engaging
- The roller is at the lowest position when the roller clutch engaging
- After roller clutch engaging, slowly raise the throttle

###### **➡ Attention**

- Do not engage the roller clutch at non-idle speed

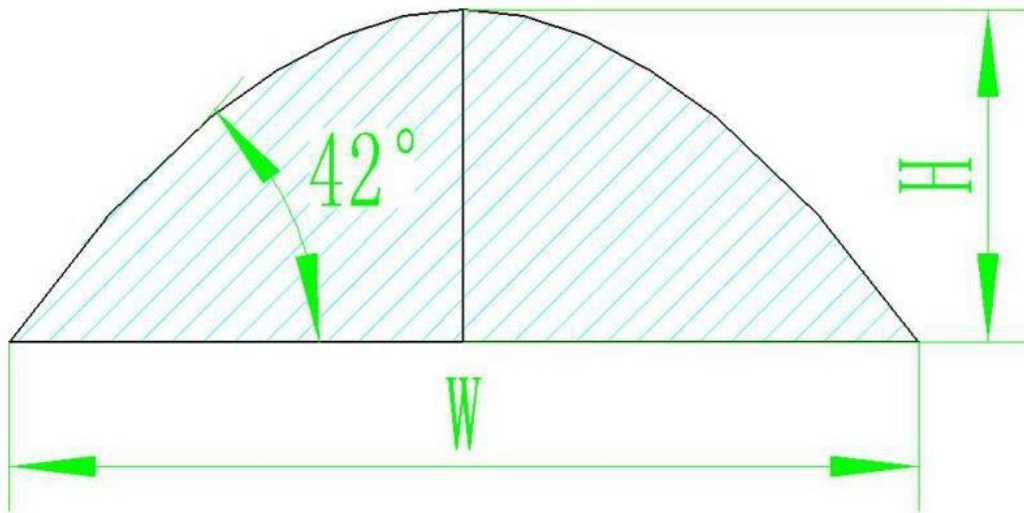
## II. Work range size

Working range compost pile:

W : width of pile

H : height of pile

42 ° refers to the natural pile angle of the material; the pile section is natural stacking (approximately parabolic), and it is not artificially trimmed.

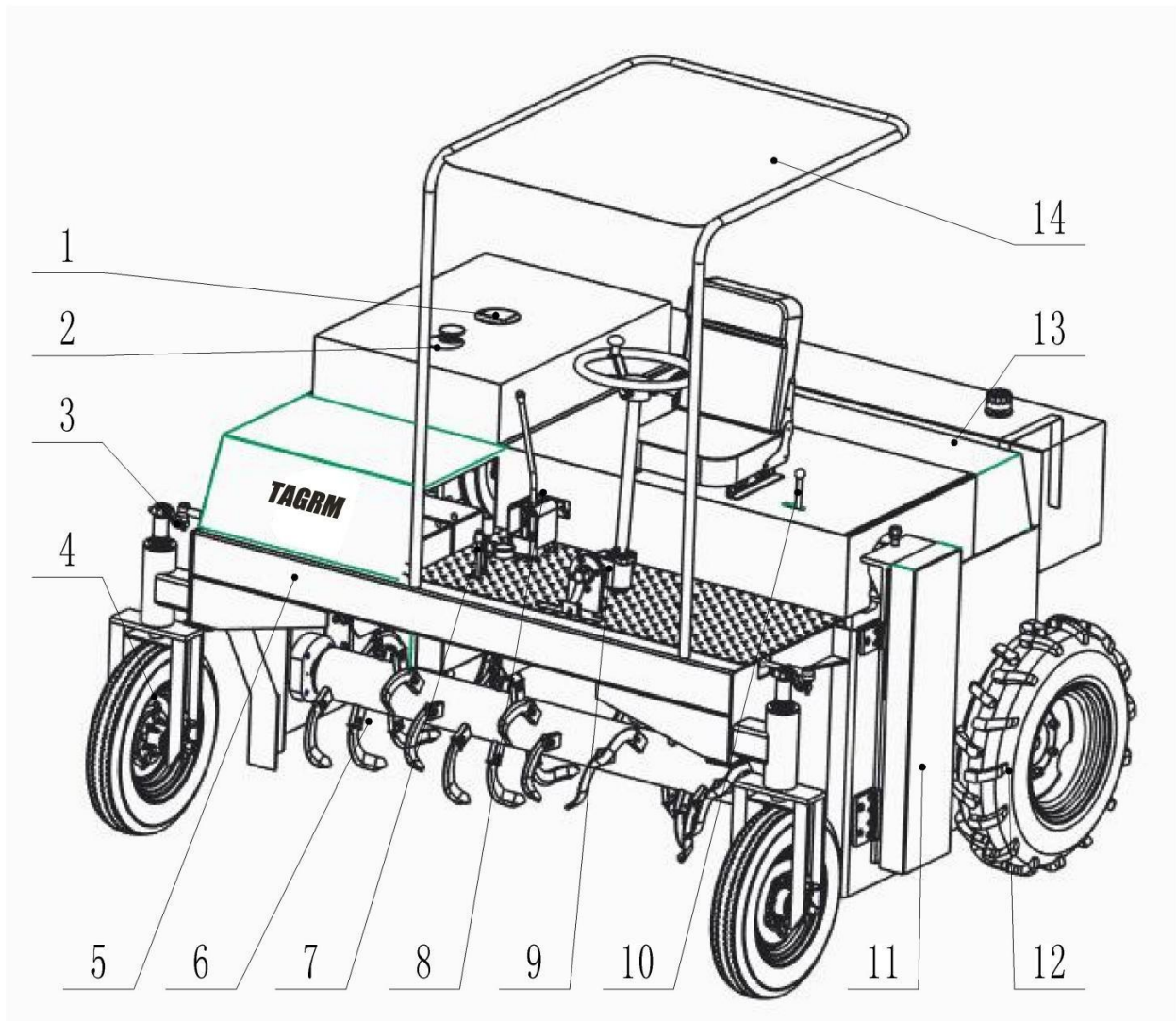


## III. Parameters

M2000 compost turner:

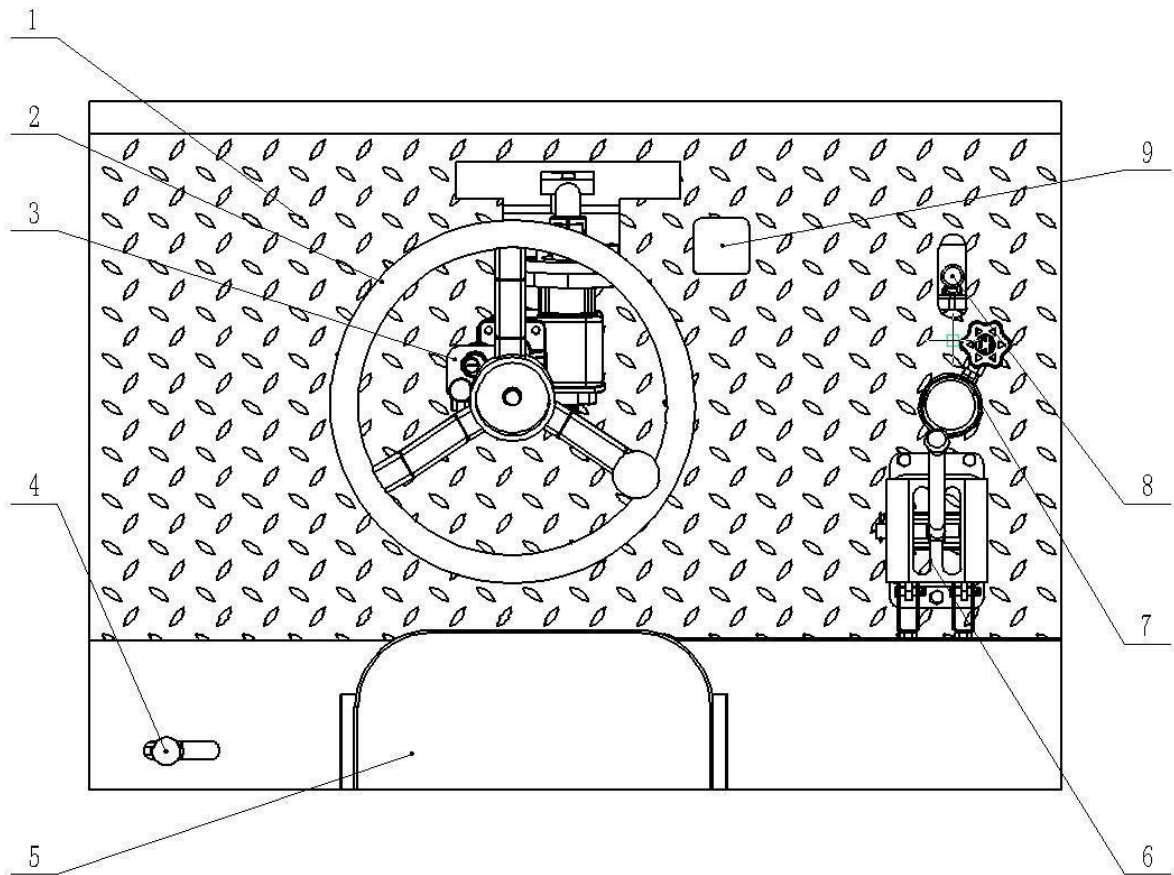
Item	Spec	Item	Spec
Working width	2000mm	Mate power	20.22KW/24.10kw
Working height	500-800mm	Rate speed	2200r/min
Working row space	0.6-0.8m	Productivity	400-500 cbm/h
Working speed	6.5—8m/min	Running speed	40m/min
Max diameter of material	250mm	Gears	Forward:3 Rear:1
Diameter of roller /with blade	273mm/581mm	Weight	1500 kg
Unit Size	2100mm×2600mm×2700mm		

#### IV.How To Operate compost turner



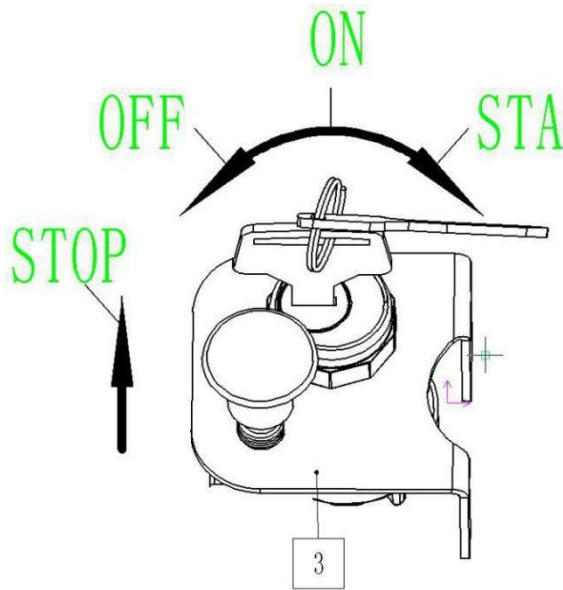
1	Cool water injection port	8	Gear lever
2	Fuel injection port	9	Steering gear box
3	Turning device	10	Roller clutch lever
4	Front wheel assembly	11	Roller transmission device
5	Frame	12	Rear wheel assembly
6	Working roller	13	Sprinkling device
7	Roller lifting lever	14	Canopy





1	Driver room	5	Seat
2	Steering wheel	6	Gear lever
3	Switch device	7	Gauge of hydraulic pressure
4	Roller clutch lever	8	Walking clutch pedal

## 1. Switch device

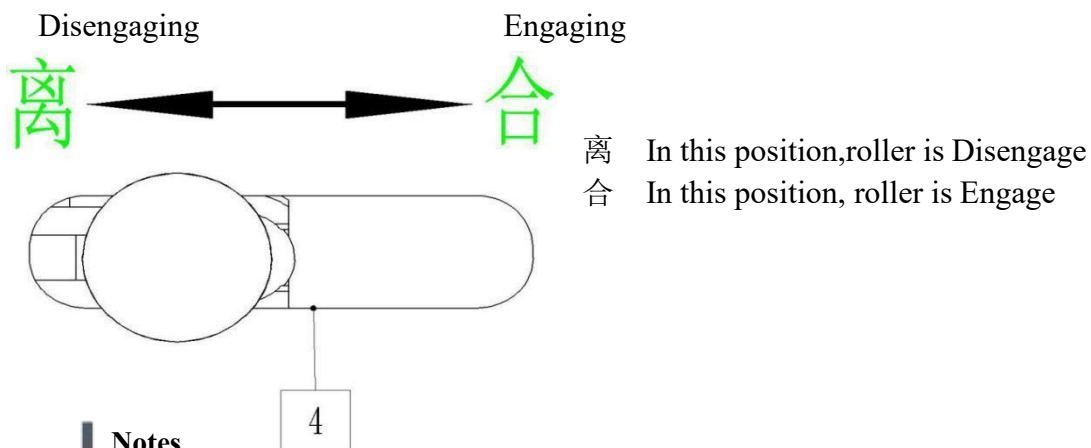


- (1) OFF The key is inserted or pulled out, at this position all vehicles are powered off
- (2) ON When in this position, the circuit is closed and the key is in this position after the engine started
- (3) STA Turn the key to this position to start the motor
- (4) STOP Pull up, the engine will stop

### Notes

- After finish working, the key should in the OFF position or removed, otherwise it will cause battery power leakage.
- Do not turn the switch to "STA" when the engine is running, it may damage for the starter motor.
- Each starting time should not exceed 15 seconds, wait about 20 seconds before starting again.

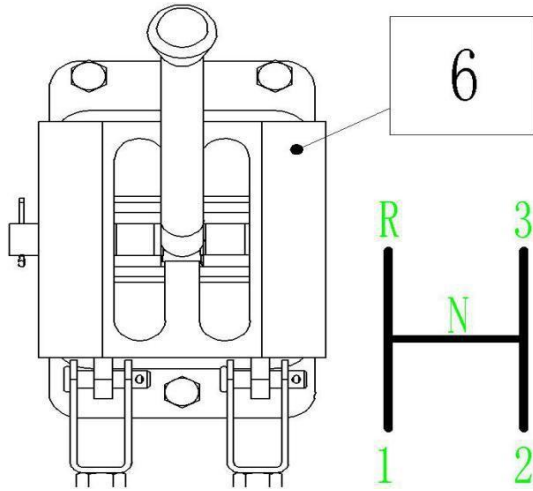
## 2. Roller clutch part



### Notes

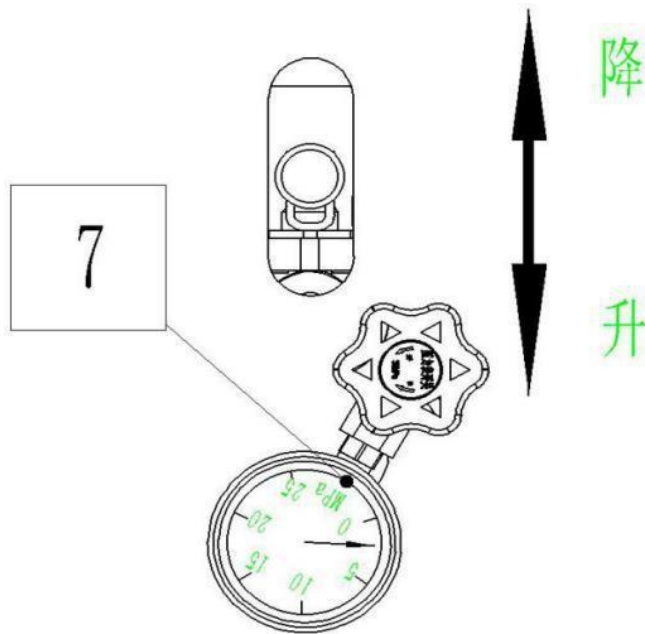
- When the clutch is engaged or disengaged, the engine must be at idlespeed
- When the clutch is engaged or disengaged, the roller must be at the lowest position

### 3. Walking gear part



- (1) R      Reverse
- (2) N      Neutral
- (3) 1.2.3      Drive

### 4. Roller lifting section



- (1) 降      Roller down
- (2) 升      Roller raise

#### Notes

- If pressure gauge pointer suddenly increases when the drum is raised and lowered, it reaches the specified position
- The general lifting pressure is 5-8MPa

## V. Driving and operation

In order to maintain good performance, safe use and economic operation of your equipment, here are some correct driving operation precautions.

### 1. Operate new machine

The service life of your equipment depends on the right operation of the new machine. During the first 200 hours of operation, please pay attention to the following items.

#### ! Notes

- **Regardless season, the engine should be preheating start before operation.**
- **Maintenance do as request**
- **Don't violation operation or unreasonable operate.**
- **Add lubricating oil, grease and change oil in time.**
- **Don't let the engine run in super high speed.**

### 2. Material accumulation during initial work

During the initial work, the materials should not be stacked too high or too wide, in case cause damage the engine when the engine is not completed.

#### ! Notes

- **Stacked piles are naturally piled, and the pile angle is generally 42 °. It is strictly forbidden to pile up into rectangles.**

### 3. Before and after engine start

(1) Before starting the engine, check the roller clutch is in "离"Disengage position, the walking gear is in "N", the hand throttle is in idle state, and there are no other body around the equipment.

(2) Turn the key to "STA", start the engine, and release the key after starting.

(3) Increase the throttle properly for 5 minutes, and check the engine rotation (sound or gear) during this process.

(4) After the engine is fully warmed up, operate all working components throughout the process to check their working conditions.

## **4. Operation**

- 4.1 First lift the roller to the top position and drive the compost turner in front of pile about 1m.
- 4.2 Drop down the roller to the bottom position and adjusted throttle of engine to idle speed.
- 4.3 Release the roller clutch lever and engage the roller clutch.
- 4.4 Move forward in 1st gear, and gradually increase the throttle to 3/4 position to mix working.
- 4.5 During working, adjust the working speed and throttle according to the size of the pile to avoid overload and flame out.
- 4.6 When working about 1m at the end of the pile, reduce the throttle, and then adjust to idle speed after finish, disconnect the power of the roller; lift the roller to the top position after 5s.
- 4.7 Repeat the above steps to continue working next pile.

## **5. Machine store**

- 5.1 Before storing, clean and check as following procedures:
  - 5.1.1 According to condition of machine, use a scraper and water to remove the materials adhere to the car body, and use a cloth and water to remove the attached oil.
  - 5.1.2 When clean the car body, check the overall status of the equipment, especially check the transmission parts and rotating parts, whether the tires are worn, and whether the roller teeth are missing or broken.
  - 5.1.3 Fill the fuel tank with the specified fuel.
  - 5.1.4 Check for oil leakage.
  - 5.1.5 Add grease if needed.
  - 5.1.6 Check whether the nuts of the hub and the bolts of the roller mixing knife are loose.
  - 5.1.7 Check the transmission chain and adjust the chain tightness.
  - 5.1.8 In winter or cold season, drain the cooling water or replace the antifreeze.

## **Warming**

- **As long as it is found that the equipment needs to be repaired, fails or has unsafe factors, it should report the situation to the management personnel and stop using it until it returns to a safe state.**

## 5.2 Daily storage

5.2.1 Park at the flat ground.

5.2.2 Put the gear lever handle in the "N" neutral position.

5.2.3 The key switch is in the "OFF" position to turn off the engine

5.2.4 Remove the key and store it in a safe place.

## 5.3 Long-term storage

5.3.1 Add rainproof facilities on the basis of daily storage.

5.3.2 The battery is charged once a month.

5.3.3 The equipment is activated at least once a week.

## **VI.Regular inspection and maintenance**

### **1.Checking contents**

#### 1.1 Inspection of hydraulic oil, fuel oil and water leakage

Check the hydraulic pipe joints, engine, water tank and drive system for oil or water leaks, touch or visually check with your hands.

#### 1.2 Tire pressure check

Check the condition of the tires. Too low or high air pressure will reduce the service life of the tires. Generally, the front wheel is 300kpa and the rear wheel is 400kpa.

#### 1.3 Battery and circuit inspection

Check the battery terminals are firm or not and the wires are intact or not.

#### 1.4 Inspection of Engine oil level and water level

Check that the engine tank coolant is full, and add it in time if necessary.

The engine vernier ruler is located on the left side of the machine body. Pull out the vernier ruler, wipe the ruler head again, insert and pull it out again, and check the oil level is between the two scales or not.

#### 1.5 Inspection of tightening degree of fan belt and gearbox belt

Press the middle of the belt. Generally, adults can press down 0.5-1cm, and adjust the tightness if necessary.

#### 1.6 Inspection of Hydraulic oil level

Check the hydraulic oil tank, with a liquid level gauge, generally requires the liquid level not less than 2/3 scale.

#### 1.7 Transmission shaft inspection

Check the fixing bolts of the transmission shaft and tighten them in time; regularly add grease to the expansion joint and the cross shaft.

#### 1.8 Bearing inspection

Check the walking parts and roller bearings to check whether there is any escape, if there is timely repair; add grease regularly and check the bearing gap is too large or not.

#### 1.9 Inspection of gear lever

Check the gear lever is loose or not and feel of operation.

#### 1.10 Roller clutch inspection

Check the roller clutch is in right place or not, the sliding is smooth and the lubrication is good or not.

#### 1.11 Inspection of roller and walking drive chain

Press the middle of the transmission chain by hand. Adults can push down 1-1.5cm with a little force, and adjust the tightness if necessary.

## **2.Maintenance items and schedule**

The timetable is set based on standard working hours and operating conditions. If works under tough conditions, please maintenance in advance according machine condition (“●” means replacement)

### **2.1 Engine system**

Check Items	Checking contents	Tool	Day (8h)	Month (200h)	Season (600h)	Half Year (1200h)	Year (2400h)
Engine	1. Visual inspection 2. Engine 3. Running condition		○	○	○	○	○
	Sound		○	○	○	○	○
	Exhaust color		○	○	○	○	○
	Clean or replace the air filter			○	○	●	●
Lubrication system	Whether the engine leaks oil		○	○	○	○	○
	Check oil quantity, cleanliness		○	○	○	○	○
	Change engine oil			●	●	●	●
	Replace the engine oil filter			●	●	●	●
Fuel System	Visually check the oil pipe, oil pump, and oil tank for leaks		○	○	○	○	○
	Check if the fuel filter is blocked				○	○	○
	Change Fuel Filter				●	●	●
	Fuel tank drainage				○	○	○
	Cleaning the fuel tank					○	○
	Checking the oil volume		○	○	○	○	○
cooling system	Coolant volume		○	○	○	○	○
	Leak status		○	○	○	○	○
	Hose aging status				○	○	○
	Performance and installation of water tank cover			○	○	○	○
	Clean and replace the coolant				●	●	●
	Check fan belt tension and damage		○	○	○	○	○



## 2.2 Traveling system

Check Items	Checking contents	Tool	Day (8h)	Month (200h)	Season (600h)	Half Year (1200h)	Year (2400h)
Mechanical gearbox	Whether the operation of the gear lever is loose			○	○	○	○
	Check for leaks		○	○	○	○	○
	Change oil					●	●
Wheel	Inflation pressure	barometer	○	○	○	○	○
	Crack or damage		○	○	○	○	○
	Abnormal wear and tear		○	○	○	○	○
	Walking wheel bearing			○	○	○	○
	Damage situation of rim, rim spoke and roulette		○	○	○	○	○

## 2.3 Mix roller system

Check Items	Checking contents	Tool	Day (8h)	Month (200h)	Season (600h)	Half Year (1200h)	Year (2400h)
Roller and transmission	Mixing knife and fixing bolt	Torque wrench	○	○	○	○	●
	Roller bearing		○	○	○	○	○
	Drive chain / sprocket		○	○	○	○	●
	Drum power switching clutch		○	○	○	○	●
Reducer	Check for leaks		○	○	○	○	○
	Check oil quantity or change oil				○	○	●
	Transmission gear lubrication			○	○	○	○

## 2.4 Hydraulic system

Check Items	Checking contents	Tool	Day (8h)	Month (200h)	Season (600h)	Half Year (1200h)	Year (2400h)
Oil pump	Check for leaks		○	○	○	○	○
	Operating temperature	thermo meter	○	○	○	○	○
	Coupling			○	○	○	○
Control valve	Check for leaks		○	○	○	○	○
	Measuring pressure	Oil pressure gauge				○	○
Hydro cylinder	Check for leaks		○	○	○	○	○
	Piston rod deformation / smoothness and pressure retention			○	○	○	○

## 2.5 Safety devices and accessories

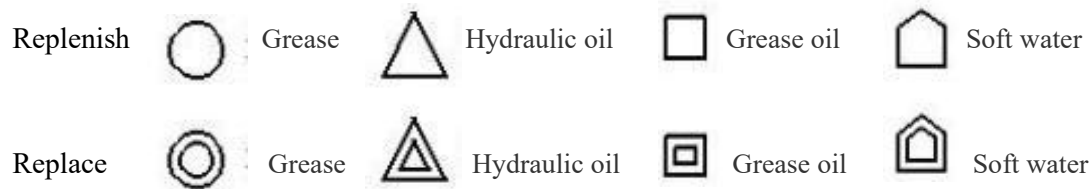
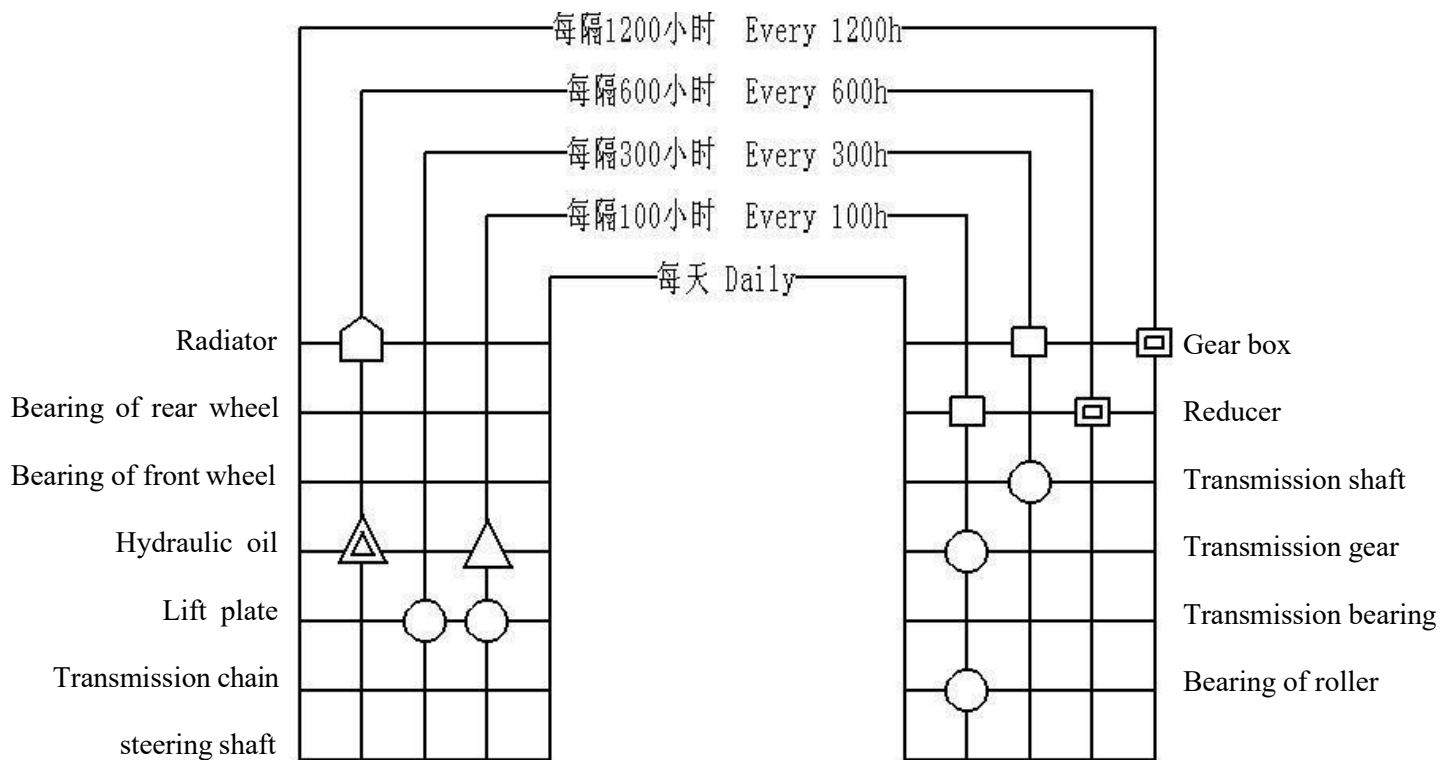
Check Items	Checking contents	Tool	Day (8h)	Month (200h)	Season (600h)	Half Year (1200h)	Year (2400h)
Guard and shield	Is the installation reliable						
Seat	Check if the bolt is loose or damaged					○	○
Machine body	Whether the frame is damaged or cracked						○
	Comprehensive inspection						○
Add grease or change oil	Check all lubrication parts after cleaning	oil gun		○	○	○	○
	Check the oil in the tank						○

## VII.Lubrication

### 1.Lubrication System Diagram

润滑系统提示

#### LUBRICATION SYSTEM DIAGRAM



## 2.Oil standard guide

Name	Brand, code and operating temperature				
<b>Diesel</b>	Diesel Brand	0#	-10#	-20#	-35#
	Temperature (°C)	≥4	≥-5	≥-5~-14	≥-14~-29
<b>Diesel oil</b>	SAE Viscosity Grade	5W/30	10W/30	15W/40	20W/50
	Temperature (°C)	-30~+30	-25~+30	-20~+40	-15~+50
<b>Hydraulic oil</b>	SAE Viscosity Grade	L-HM32 Anti-wear hydraulic oil		L-HM46 Anti-wear hydraulic oil	
	Temperature (°C)	25≥Temperature≥-5		40≥Temperature≥25	
<b>Grease</b>					
<b>Heavy-duty vehicle gear oil</b>	SAE Viscosity Grade	85W/90GL-5		80W/90GL-5	
	Temperature (°C)	-15~+49		-25~+49	
<b>Antifreeze</b>	Code	FD-1	FD-2	FD-2A	FD-3
	Temperature (°C)	≥-25	≥-35	≥-45	≥-50

## VIII. Attachment

- 1, Quality Certificate
- 2, operation manual
- 3, Attachment tools

## Contact Us

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## Warranty Card

Model and specification 产品型号		Mating power 配套动力	
Factory No. 工厂号码		Purchasing date 采购日期	
Sale depart. 销售公司	Name 名称		
	Address: 地址		
	Telephone 电话		Post code 邮编
Maintenance record 维修记录			