Preface

Welcome to the Huanghai Jinma YL254Y gardening wheel tractor. This model has reasonable structure, high-quality materials and perfect performance. It has characteristics of strong horsepower, low fuel consumption, light and flexible, easy operation, simple maintenance and is suitable for a variety of gardening or field operations. We have written this instruction manual to help the user better master the use, adjustment, repair and maintenance of this series of models and make full use of the effectiveness and superiority of this series of models. For engine maintenance methods, please refer to the diesel engine manual.

Notes for Owners

General information

This manual will help you to trial drive, drive and operate your new tractor and perform maintenance in the correct manner. Please read these instructions carefully. Your tractor is designed for normal gardening work.

Please contact your authorized distributors without hesitation at any time when you need suggestions about tractors. They can satisfy all your demands of maintenance requirements with professional trained personnel, original parts and necessary equipment.

Provided specifications for your reference and guidance. For more detailed information of your tractor and supporting equipment, please consult your authorized dealer.

The data provided by this manual would be changed due to the production changes. The numbers of dimension and weight are only approximate. The illustrations do not show necessarily the standard state of the tractor, nor does it imply in what areas these functions are available. For any specific and precise information, please consult your authorized dealer.

Your tractor is designed and constructed to suit a wide range of working conditions and to provide maximum performance, best economy and ease of operation. The tractor has been carefully inspected before delivery by factory and dealer to ensure that it is in good condition. It’s very important to be sure to perform routine maintenance at the recommended intervals specified in "Maintenance" of this manual to keep the best operating performance and ensure trouble-free

operation.

About this manual

This instruction manual provides information on the use of the tractors, such as the uses specified by the manufacturer and the conditions predicted by the manufacturer during normal operation and routine repairs and maintenance.

Please read and keep this manual in good condition for future reference.

Normal operation

Operators need to be familiar with the tractor and the equipment according to the intended use of the manufacturer. The should follow the information on the operation and safety practices specified by the manufacturer and the signs on the tractor and equipment in this instruction manual.

Normal operation includes preparing and storing the tractor, placing parts in the working position or vice versa, adding or removing counterweights and picking up and starting attachments.

Normal operation involves adjusting and setting up the tractor and equipment to suit the specific conditions of the field and/or crop.

Routine Maintenance

Routine maintenance refers to the activities that must be performed daily by operators who are familiar with the characteristics of the tractor and follow the information on routine maintenance and safety practices specified by the manufacturer or the signs on the tractor in this instruction manual. Routine maintenance includes oil filling, cleaning, washing, topping up fluid levels, lubrication, replacing consumable parts (e.g., light bulbs) and so on.

Conversion, regular maintenance and repairing.

Regular maintenance means that in order to maintain the expected service life of the tractor, a person who has been trained and familiar with the characteristics of the tractor must follow the periodical maintenance and safety practices information specified by the manufacturer in this manual or other company documents to execute it at specified intervals.

Conversion means that in order to assemble the tractor into a specific configuration, must be performed by professional service staff who are familiar with the characteristics of the tractor and follow the information on this manual, assembly instructions or other conversion information

partly specified by the manufacturer to execute.

Repairing refers to the purpose of restoring the tractor to normal operation after a malfunction or performance degradation, must be performed by professional service staff who are familiar with the characteristics of the tractor to perform in compliance with the repair information in the dealer's factory operating instructions specified by the manufacturer.

Cleaning of tractors

This machine is the latest high-tech machine with electronic control. Care should be taken when cleaning tractors, especially when using high-pressure water guns. Even if all precautions are taken to protect the electronic components and connectors, the pressure generated by some cleaning machines may still be too high to ensure complete protection against water ingress.

When using a high-pressure water gun, do not get too close to the tractor and avoid direct water spraying of electronic components, electronic connectors, vents, seals and fuel caps, etc. Do not spray a hot engine or exhaust pipe directly with cool water.

Failure to comply with these rules will invalidate the warranty or guarantee.

Safety

The precautions introduced in the first section must be taken to ensure your safety and the safety of others. Before operating the tractor, read the safety precautions and follow the advice provided.

First 50-hour maintenance

You will find the 50-hour maintenance report in the later part of this manual.

CAUTION: It is important to carry out the recommended 50-hour service to ensure that your tractor provides optimum performance and efficiency.

Spare parts

It should be emphasized that the original parts have been inspected and approved by the company. The installation and/or use of "non-original" products may have a negative impact on the tractor's design characteristics, thereby affecting its safety. The company will not be responsible for any damage caused by the use of non-genuine parts and accessories. Only genuine replacement parts can be used. The use of non-genuine parts may invalidate the legal approval related to this product.

Any modification to the tractor is prohibited unless specifically authorized in writing by the company's After Sales Department.

Warranty

Your tractor is warranted according to the contract agreement between the dealers in your area. If the use, adjustment and maintenance of the tractor not according to the instructions provided by the manual, the warranty will not apply.

Use of biodiesel fuel

CAUTION: Before using biodiesel in your tractor, please refer to the information on the storage and use of biodiesel on this manual.

Emission control

CAUTION: The engine and fuel system on the machine are designed to comply with government emission standards. Distributors, customers, operators and users are strictly prohibited from tampering in accordance with the law. Failure to comply with the standards will result in government fines, rework charges, warranty voids, litigation and possible confiscation of the machine until it is reworked to its original condition. Engine maintenance and/or repairs can only be carried out by certified mechanics!

Safety alert symbols

In this manual, the safety alert symbol prompts important safety information. When you see this symbol, you should be alert for possible injuries, read the information below the symbol carefully, and inform other operators.

"**WARNING**" and "**CAUTION**": emphasize the process or technique of correct operation which if ignored, can cause injury or death to the driver or bystanders.

"**IMPORTANT**": emphasize the process or technique of correct operation, which if ignored can cause damage to the tractor or equipment.

Jiangsu Yueda Intelligent Agricultural Equipment Company

June, 2021

Product Identification Mark Record Form

Please fill in the table below carefully when purchasing the machine. The number and other information (including letters) in the table should be recorded completely and clearly written. The content of the information refer to the tractor product label and the rear end number of the rear axle housing. Complete and correct information is convenient for users to quickly report for repairs when the tractor fails or as a basis when the tractor is lost. This manual is an integral part of the machine. It is recommended that the supplier of the new tractor or the second-hand tractor should keep relevant documents to prove that this manual and the tractor are provided to the user at the same time. The user should keep this instruction manual intact for a long time and store it separately from the tractor.

Huanghai Jinma YL254Y Gardening Wheeled TractorManual
Jiangsu Yueda Intelligent Agricultural Equipment Company Edited
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Brand name	Huanghai Jinma
Model	YL254Y
Machine number	
Chassis number	
Engine model	
Engine number	
Username	
Purchase time	
Purchase location	
Dealer	
Dealer contact number	
Company name	Jiangsu Yueda Intelligent Agricultural Equipment Company
Company address	9# NenJiang Road, Yancheng Economic and Technological Development Zone, Jiangsu,China
Company contact number	0086-515-68823978/68829666

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Common measurement units, symbols and names

Number	Type	International unit
1	Time	Second -s
2		Minute -min
3		Hour -h
4	Distance	Millimeter -mm
5		Centimeter -cm
6		Meter -m
7		Kilometer (km)-km
8	Power	New (ton)-N
9		Thousand Newtons (tons)-kN
10	Torque	Newton·meter -N.m
11	quality	Kilogram (kg)-kg
12	Pressure	Pa -Pa
13		KPa -kPa
14		MPa -Mpa
15	Temperature	Celsius -℃
16	Speed	Kilometer / Hour -km/h
17		Meter / Second -m/s
18	Rotating speed	Revolutions per minute -r/min
19	Power supply	kilowatt -kW
20		Watt -W
21	Current	Ampere -A
22	Voltage	Volt -V
23	Volume	Cubic meter - m^3
24		Liter - L
25		Milliliters -ml
26	Flow	Liters per minute -L/min
27	Displacement	Milliliters per revolution -ml/r
28	Area	Hectares -hm^2 or （ha）
29		Are- dam^2 or （a）

Content

Preface

Notes for Owners

Product Identification Mark Record Form

Table of common units

Chapter 1 Precautions for safe operation 1

Chapter 2 Overview 8

Chapter 3 Main technical specifications of tractor **9**

3.1 Complete machine parameters 9

3.2 Transmission system 10

3.3 Travelling, steering, braking 10

3.4 Working equipment 11

3.5 Perfusion capacity 11

3.6 Electrical components 12

Chapter 4 The use of tractor 13

4.1 Fuel and lubrication of tractor 13

4.2 Coolant of tractor 14

4.3 Running-in of tractor 14

4.4 Instruments and controls 15

4.5 Maneuvering and driving 15

4.6 Operation and use of tractor working device 18

4.7 Front traction mechanism 20

4.8 Front counterweight 20

4.9 The location and use of the battery 20

4.10 Operation of electrical equipment 21

Chapter 5 Technical maintenance of tractors 26

5.1 Shift technical maintenance 26

5.2 Level 1 technical maintenance 26

5.3 Level 2technical maintenance 27

5.4 Level 3technical maintenance 27

5.5 Level 4technical maintenance 27

5.6 Winter technical maintenance 27

5.7 Technical maintenance for long-term storage 28

Chapter 6 Main adjustments of the tractor 29

6.1 Clutch adjustment 29

6.2 Brake adjustment 30

6.3 Adjustment of central transmission and differential 31
6.4 Wheel track adjustment 34
6.5 Power output adjustment 34
6.6 Adjustment of the auxiliary gear lever 35
6.7 Adjustment of the front drive joystick 35
6.8 Adjustment of hydraulic steering 36
6.9 Structure and adjustment of the lifter 37
6.10 Intake and exhaust system 37
6.11 Anti-rolling protection structure 38
6.12 Traction device 38

Chapter 7 The main faults and troubleshooting methods of tractors 40
7.1 Diesel 40
7.2 Transmission system 41
7.3 Brake **42**
7.4 Steering and walking system 42
7.5 Hydraulic suspension system 43
7.6 Electrical system **44**
Chapter 8 Delivery, acceptance and transportation 48
Chapter 9 Dismantling and disposal 49
Chapter 10 Warranty matters 50
Chapter 11 Appendix 52
11.1 Electrical system circuit diagram 52
11.2 Distribution map of tractor transmission system and rolling bearing 53
11.3 Sketch of the movement of the tractor suspension system 53
11.4 On-board accessories 54
11.5 Consumable parts list 55
11.6 Implementation of standards, orders and laws 55

Chapter 1. Precautions for safe operation

1.1 The driver must be specially trained, get a driver's license and be tested on time, and then use the tractor after reading the instructions carefully.

1.2 It is strictly forbidden to drive the tractor without a license and to operate without a license. When driving on highways, pay attention to traffic signs and obey local traffic rules.

1.3 This machine can only be operated, maintained and repaired by personnel who are familiar with the characteristics of the machine and have relevant knowledge of safe operation. The driver should wear compact and safe clothes when driving and using the tractor and bare feet and slippers are strictly prohibited.

1.4 Keep children and non-tractor drivers away from the tractor under any circumstances to prevent injury.

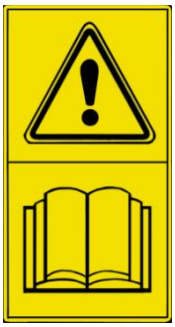
1.5 It is strictly forbidden to drive the tractor after drinking, fatigue or taking stabilized drugs, and it is strictly prohibited to overload, over driving and using the tractor.

1.6 ⚠ The driver should pay special attention to the safety warning signs on the machine.

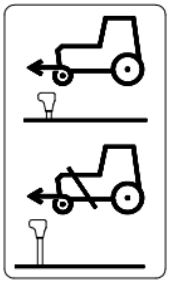
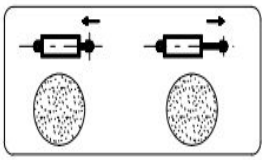
1.7 When using the tractor, the driver should strictly follow the safety warning signs to avoid accidents. When the safety signs are lost, contaminated or worn, they should be replaced in time.

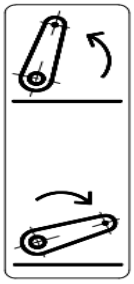
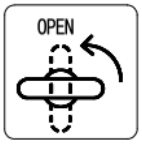
(The safety sign is shown in the picture 1-1 to 1-29)

Number	Meaning		Location	QTY
1-1		**Warning: Engine fan**	**On both sides of the radiator, clearly visible**	**2**

1-2		Warning: Heat source parts	Close to the muffler	1
1-3		Warning: Engine pulley	Close to the pulley	1
1-4		Warning: Please read the instruction manual before operating the machine	On the right side of the dashboard	1
1-5		Warning: PTO shaft	Above the PTO protective cover	1
1-6		Warning: When operating the lifter, do not stand between the tractor and the implement	At the center of the end of the machine	1

1-7		**Warning: Be sure to lock the safety frame in an upright position, unless it must be allowed to operate under trees or bushes**	**On the left side of the safety frame**	**1**
1-8		**Warning: Heat source parts**	**Both sides of the radiator are clearly visible.**	**2**
1-9		**Warning: Repair**	**On the right side of the meter**	**1**
1-10		**Warning: It is forbidden to sit in the non-passenger position**	**On two mudguards**	**2**
1-11		**Warning: The use of seat belts**	**On the right side of the safety frame**	**1**

1-12		**Diesel fuel**	**At the upper end of the fuel tank**	**1**
1-13		**Start control**	**Above the start switch**	**1**
1-14		**Engine stop button**	**Above the key**	**1**
1-15		**Parking brake control**	**Near the hand brake assembly**	**1**
1-16		**Two-wheel drive & four-wheel drive**	**Near the front drive handle**	**1**
1-17		**Hydraulic output**	**Near the multi-way valve**	**1**
1-18		**Differential lock**	**Close to the differential lock pedal**	**1**

1-19		**Oil filling**	**Engine oiling, front drive axle oiling**	**2**
1-20		**Lifter control**	**Near the lifter handle**	**1**
1-21		**Gearbox refueling**	**Close to the gearbox fuel port**	**1**
1-22		**Hood lock switch**	**Near the hood lock**	**2**
1-23		**(Near) Headlight**	**Control panel**	**1**
1-24		**(Far) Headlight**	**Control panel**	**1**
1-25		**Left and right turn signals**	**Control panel**	**1**
1-26		**Emergency warning sign**	**Control panel**	**1**
1-27		**Rear working light**	**Rear side of right guard plate**	**1**

1-28		**Outline light**	**Control panel**	**1**
1-29		**Horn**	**Control panel**	**1**

1.8 Before using a new tractor or an overhauled tractor, it must be run-in according to the running-in specification before it can perform normal load work.

1.9 When the tractor starts, pay attention to the obstacles on the road; whether there are people between the tractor and the agricultural implement or trailer.

1.10 Do not start or manipulate the tractor off the position of the driver's seat. Before starting the tractor, place the gear levers in the "neutral" position. Before leaving the driver's seat, the gear levers must be placed in the "neutral" position.

1.11 When the tractor is walking, no one is allowed to get on and off the tractor. Before inspecting, cleaning, adjusting, repairing and maintaining the tractor, the engine must be turned off, the key must be removed, the shift lever and the power output shaft control lever must be placed in the neutral position, and the parking brake must be locked so that all moving parts are in the static position. Do not climb under the tractor for inspection and repair while the engine is running.

1.12 Only after disconnecting the ground wire from the battery can electrical repairs be carried out to avoid burning electrical parts.

1.13 When the driver leaves the tractor, he must lower his agricultural implements to the ground, switch the gear levers to the "neutral" position, turn off the engine, and remove the key to prevent others from starting the tractor.

1.14 It is only allowed to use low gears to avoid overturning especially when driving on large slopes and muddy roads. It is strictly forbidden to press clutch pedal and coast in neutral while going down the slopes. Tractors cannot be driven close to the ditches to avoid cracking caused by self weight of tractors which will result in injuries and deaths accidents.

1.15 It is strictly forbidden to rest foot on the brake pedals and clutch pedals while driving.

1.16 It is strictly forbidden to use one-side braking for sharp turning when the tractor is running at high speed in case overturning and damaging components.

1.17 The tractor must not be overloaded or used to avoid overloading the machinery and damaging the machinery.

1.18 The oil circuit, electric circuit, and cooling water must be checked before the tractor starts. Under no circumstances should the fuel tank be filled with fuel without precipitation and filtering. After starting, you must pay attention to the readings of the meters.

1.19 Before refueling the fuel tank, turn off the engine; when refueling and overhauling the fuel system, avoid flames and spark, and don’t smoke.

1.20 The grass clippings, dust and other debris on the heat dissipation water tank should be eliminated in time to ensure its heat dissipation effect. When the water tank is overheated, it is forbidden to pour the engine and water tank with cold water to prevent the cylinder from breaking. The load must be reduced. After the temperature of the coolant drops, add the coolant while the engine is running. When the engine is hot, do not screw the water tank cap to prevent scalding by the sprayed coolant.

1.21 Exhaust elbow and muffler are high temperature parts. Avoid getting close within half an hour of starting and stopping the engine to avoid burns.

1.22 When changing shifts, the successor should be informed of the tractor's failure. When working at night, there must be good lighting equipment.

1.23 After finishing work in areas where the temperature is lower than 0℃ in winter, the water should be drained out when the tractor is idling, so as not to drain the water and damage the parts (except for adding antifreeze).

1.24 When the tractor is driving or operating, if one of the drive wheels is found to be seriously slipping, the differential lock can be used according to the method of using the differential lock in the manual. In other situations, it is strictly forbidden to use the differential lock to prevent damages to the machine or other accidents.

1.25 Before using the power output shaft, the power output protective cover must be installed. When the tractor's power output shaft is working under load, the tractor should not turn sharply to avoid damaging the universal joint.

1.26 It is strictly forbidden for the tractor to park on a slope with a relatively large slope. When the tractor is parked on a slope, be sure to use the parking brake and block the rear wheel

with a wedge. When the driver needs to use the jack for maintenance, the jack can be placed in the front drive shaft housing or the rear drive shaft housing. The parking brake must be used and the rear wheel must be blocked with a triangular plug. (As shown below)

Position of front lifting jack

Position of rear lifting jack

1.27 When getting on or getting off the tractor, you need to use the tractor's pedals (C) and hold the handrails (A) and (B) to prevent falling (as shown in the right picture). When the tractor is moving, never getting on or getting off the tractor; when working in fields or muddy areas, remove the dirt on the soles of shoes before starting the tractor, and keep the pedals clean to avoid slipping and falling.

1.28 Tractors are not allowed to work "with failure", especially when there is no oil pressure, low oil pressure, high water temperature, or abnormal noises and smells. If the above conditions occur, stop and check in time and troubleshoot.

1.29 Frequently check and tighten the wheel spoke bolts, the bolts and nuts of other important parts to avoid personal injury and excessive damage to the machine.

1.30 Unauthorized modification of the tractor which results in reducing the reliability of the machine itself, damaging the machine or personal injury has nothing to do with the manufacturer.

1.31 When the three-point suspension device is running, the driver should stay away from the operating area to avoid bumps; when carrying a suspended agricultural implement for parcel transfer or operation, it is not allowed to drive at high speed to avoid damaging the lifting system and suspension system components.

1.32 The anti-overturning safety protection device in the driver’s driving area is optional, the tractor must be equipped with a safety belt when the safety protection frame is installed. If the

safety protection frame is removed, the safety belt must also be removed to prevent the driver from mistakenly use. It is forbidden to remove the anti-overturning safety frame when the tractor is in normal use.

1.33 Involved in a rotating transmission mechanism may cause personal injury or death, and the transmission mechanism protective cover must always be in position.

1.34 Check the hydraulic hoses for oil leakage, kinks, cuts, cracks, wear, corrosion, steel wire leakage or any other damage at least once every six months.

1.35 Welding or heating near high-pressure liquid pipelines or other combustible materials is prohibited. If the heat exceeds the heating zone, the high-pressure liquid pipeline may burst.

1.36 The gas overflowing from the battery has the risk of explosion, so the battery cannot be close to open flames (matches, lighters or cigarette fires, etc.); do not short-circuit the wires to generate sparks; contact with electrolyte is very dangerous. If eyes, skin, and clothes contact with electrolyte, should be rinsed with clean water immediately, or ask a doctor for treatment.

1.37 When charging the battery, ensure that the vent of the filling plug is unblocked, away from open flames, and cut off the power before charging to prevent explosion.

1.38 Slope is the main factor that causes loss of control and overturning accidents which can cause serious injury or death, so you need to be extra careful on the slope. It is not possible to enumerate every possibility that may cause the tractor to overturn, and attention must be paid to every situation that may affect stability.

1.39 The engine, radiator, exhaust components, and hydraulic lines may become hot during operation. Be careful when maintaining these components. Please process or disconnect the high-temperature parts after they have cooled down. Wear protective equipment when appropriate.

1.40 When working on the ground, please pay attention to buried cables or other service facilities. Please contact the public utility to determine the location of the cable equipment; pay attention to the wires and hanging obstacles above. For safety, keep a long distance from the high-voltage line.

1.41 Do not operate the machine during thunder and lightning. If you are standing on the ground at this time, stay away from the machine and hide in a permanently protected building.

Chapter 2 Overview

Huanghai JInma YL254Y is a new type of gardening tractor which is mainly suitable for a variety of home gardening operations developed according to the needs of a new generation of small gardening tractors. The characteristics of this model are: light, flexible, versatile and beautiful.

The tractor is powered by Perkins 403J-11 engine, single-stage clutch, static hydraulic variable speed transmission, middle and rear power output, four-wheel drive type. It is equipped with good adhesion, low-pressure and wide-width driving tires and with a relatively complete hydraulic suspension system, which can meet the operation needs of mowing, rotary tillage, spraying, etc. It has the advantages of appropriate power, large traction, compact structure, high transmission efficiency, light operation, simple maintenance, convenient supporting implements, economic use and good comprehensive utilization performance.

Warning:

（1） Unauthorized modification of the tractor which results in reducing the reliability of the machine itself, damaging the machine or personal injury has nothing to do with the manufacturer.

（2）The user should pay attention to the potential damages caused by the failure to configure the agricultural implements in accordance with the regulations which may cause damage to the machine or personal injury and has nothing to do with the manufacturer. The user should consult the manufacturer if he can't select and match agricultural implements correctly.

（3） This model will continue to improve certain structures in order to continuously meet customer requirements. Please forgive if the manual is inconsistent with the actual product.

（4） Thank you for choosing our company's products and we sincerely hope that you can put forward suggestions on our products as reference of improvements.

Chapter 3 Key technical specifications of tractor

3.1 Parameters of whole unit

Type		YL254Y
Engine model		403J-11
Type		4×4 (four-wheel drive)
Inlet type		Inhale naturally
Number of cylinders×bore×stroke mm		3×77×81
Displacement L		1.131
Rated power kW		18.4
Rated speed r/min		2800
Max torque/speed Nm/r/min		66.9/2100
Variable load average fuel consumption rate g/Kw•h		⩽365
Max no-load speed r/min		⩽3000
Emission requirements		EPA/Europe V
Stable idling speed r/min		1000
Intake resistance kPa		⩽3.0
Exhaust back pressure kPa		⩽10.2
Traction power rate kW		⩾11.04
Largest traction kN		⩾7.5
PTO shaft power factory specified value kW		14.8
Max lifting force kN		⩾3.4
Dimensions mm	Length (Without three-point suspension)	3213(2885)
	Width	1293
	Height	2290
Wheelbase mm		1606

Wheeltrack mm	Front		1010
	Rear		1000
Mini ground clearance mm			300
Turning radius m			3.50
Quality kg	Structure quality		1080
	Mini use quality		1267
	quality distribution	Front	572
		Rear	695
	Counter weight (standard)	Front	48
		Rear	0
Theoritical speed of each gear Km/h	Forward	Low	0～8.2
		High	0～20.0
	Reverse	Low	0～8.2
		High	0～20.0
Note: The tires are optional, and the parameters will vary with the selected components.			

3.2 Transmission system

Clutch	Single plate dry friction type
Gearbox	HST two-speed auxiliary transmission
Central transmission	A pair of spiral bevel gears
Differential	Two planetary gears closed
Differential lock	Dental Inlay
Final transmission	Single-stage spur gear external type
Front drive axle	Fully enclosed bevel gear type

3.3 Travelling, steering, braking

Frame type		No frame
Front drive axle type		Integral axle housing of bevel gear reducer
Tire type	Front wheel	Grass tire: 26×7.5-12 or Agricultural tires: 6.0-12

	Rear wheel	Grass tire: 11.2-20 or Agricultural tires: 11.2-20
Tire pressure kPa	Front wheel	120～160
	Rear wheel	80～120
Wheel alignment	Toe in mm	4～8
	Front wheel camber	3.5°
	main pin inclination	7.5°
	Caster angle	0°
Front axle swing angle		10°
Steering angle		45°
Steering	Type	Hydraulic steering
	Model	109R-1-50-08-D-YT
	Pressure MPa	8±0.5
	Flow L/min	50
Brake	Service brake	Double pedal disc brake
	Parking brake	Hand control

3.4Working equipment

Lifter type		Semi-divided positioned Type	
way to control		Resistance control, position control	
Safety valve to adjust pressure MPa		16±0.5	
Suspension mechanism		Rear three-point suspension	
PTO shaft	PTO position	Rear	Center
	Type	Dependent	Dependent
	Rotating speed r/min	540/1000	2000
	Rotation	Clockwise (Face to the forwarding direction)	Counterclockwise (Face to the forwarding direction)
	Shaft extension	6 teeth φ35 rectangular spline	11 tooth involute spline

3.5 Perfusion capacity

Fuel L	20.0
Engine sump capacity L L	4.0
Gearbox-rear axle lubrication oil L	18.8
Cooling water L	5.0
Front drive axle capacity L	5.0

3.6Electric components

Electrical System	12V， Negative ground
Battery	C603-80Ah，Maintenance-free
Combination instrument	164Y.48.042
Headlamp	C201-025/026
Rear tail light	C207-004
Horn	C502-015
Front position light	C202-007
working light	C203-012
Central electrical box	C703-006
Seven-hole socket	C604-014
Ignition Switch	C402-0041
Relay	C502-001
Fuel sensor	C302-025
Gravity switch	250.48.361
main power switch	C402-031

Chapter 4 The use of tractor

4.1 Fuel and lubrication of tractor

For tractor fuel and lubrication oil, see Table 4-1.

Application	Season and ambient temperature	Specification
Fuel tank	Summer (ambient temperature above 10℃)	0,-10 light diesel （GB/T 252-2000）
	Winter (ambient temperature below 10℃)	-10 light diesel （GB/T 252-2000）
Transmission box, front drive axle	All seasons	THF hydraulic transmission brake three-purpose oil
Engine sump	Summer (ambient temperature above 10℃)	CD-10W/40 Diesel engine oil （GB/T 5323-1994 ）
	Winter (ambient temperature below 10℃)	CD-15W/30 Diesel engine oil （GB/T 5323-1994 ）
Lifter, hydraulic steering gear	All seasons	THF hydraulic transmission brake three-purpose oil
Grease nozzles and bearings	All seasons	ZFG2 compound calcium grease （SH0370-1992）

Table4-1 Fuel and lubrication of tractor

Warning：

（1）Before refueling the fuel tank or repairing the fuel system, the engine should be turned off; smoke is strictly prohibited when refueling and repairing the fuel system.

（2）Never add gasoline or alcohol to diesel which can cause fire or explosion, and they are more explosive than pure gasoline. Oils of different grades cannot be mixed.

● Important：

（1）Strictly forbidden to use unclean fuel. The fuel must settle for more than 48 hours before being added to the fuel tank. Using the upper-middle layer of fuel and refueling with use

of a filter. Do not fill up the fuel to allow it to evaporate, and then tighten the fuel tank cap after refueling.

（2）Refuel before the fuel tank is empty. If the oil in the supply system runs out, the air must be drained before refueling.

（3）Fueling tools must be kept clean, diesel fuel must not be used for scrubbing and spilled diesel must be wiped off immediately.

（4）Clean the fuel tank regularly, release the precipitated oil and replace the diesel filter element.

（5）Do not use open oil drums to transport fuel.

（6）Put all sticky rags in a covered container to ensure that cigarette butts will not fall into it.

（7）Check the oil of each lubrication part frequently, add it in time when it is insufficient and add grease to the grease nipple regularly.

4.2 Coolant of tractor

4.2.1 Antifreeze liquid should be added to the cooling water tank to prevent the engine cooling system from generating scale and affecting the cooling effect.

Caution：

When the engine is working or when the engine is just turned off, the temperature of the water tank is very high. There is a risk of scalding when opening the cover of the water tank. The cover can be opened only after the water tank has cooled down. Before opening the water tank cover completely, loosen it slightly to release the air pressure in the water tank.

●Important：

（1）The grass clippings, dust and other debris on the heat dissipation water tank should be eliminated in time to ensure its heat dissipation effect. When the water tank is overheated, it is forbidden to pour the engine and water tank with cold water to prevent the cylinder from breaking. The load must be reduced. After the temperature of the coolant drops, add the coolant while the engine is running. Check the coolant in the water tank frequently, add it when it is insufficient, and ensure that the coolant in the water tank is not less than 2/3 of the volume of the water tank.

（2）When the coolant temperature in the water tank exceeds 100°C, the engine should be turned off immediately and necessary inspections and repairs should be made after the water tank has cooled down.

4.3 Running-in of tractors

New tractors or overhauled tractors must be run-in before use. There will be different degrees of knife marks on the upper surface after the parts are processed. If the tractor is used under heavy load without running-in, it will increase the abrasion of the mechanical parts which even can cause the mechanical parts to get stuck and damaged, thereby shortening the service life of the tractor.

4.3.1 Preparation before running-in

（1）Clean the exterior of the engine.

（2）Check and tighten external bolts and nuts.

（3）Check the oil level in each lubrication point and add to the specified place if it is insufficient.

（4）Add grease to each specified lubrication point.

（5）Fill fuel and coolant.

（6）Check the toe-in of the front wheels (2~7mm) and the front and rear tire pressures. Adjusting to the specified value if they do not match..

（7）Check the battery and electrical system circuit connection.

（8）The shift levers should be in the neutral position, the hand throttle should be in the idle position, and the hydraulic handle should be in the down position.

4.3.2 Engine idling running-in

After starting the engine according to the prescribed procedures, you have to carefully listen for abnormal noise, check for liquid leakage, air leakage, and oil leakage, check whether the readings of the various meters are normal. After confirming that the engine is working normally, the next running-in work can be carried out. The running-in runs from low speed to moderate speed and finally at high speed. The running time is 7 minutes, 5 minutes, and 3 minutes respectively, and the total idling running-in is 15 minutes.

4.3.3 Tractor idling and load running-in

The running-in of the tractor should be carried out at the rated speed of the engine.

During the running-in process, if there's an abnormal phenomenon or malfunction, the cause should be found out immediately and the running-in can be continued after troubleshooting.

After the tractor has been run-in, the following maintenance must be carried out before it can be delivered to use.

(1) Release the lubricating oil in the diesel sump while it is hot after parking, clean the sump, oil strainer and oil filter, and add new lubricating oil to the specified liquid level.

(2) Discharge the lubricating oil in the transmission box, hydraulic system and front drive axle while it is hot, then add an appropriate amount of diesel and drive back and forth at low speed for 2 to 5 minutes to clean it, then release the cleaning oil and add new lubricating oil.

(3) Clean or replace the diesel filter (including the strainer in the fuel tank) and air filter, HST and hydraulic line filter.

(4) Check and adjust the free stroke of the clutch pedal, the stroke of the brake pedal and the working condition of the brake.

(5) Check and tighten the bolts and nuts of each important connection part.

(6) Check the working condition of the electrical system.

(7) Check and adjust the toe-in of the front wheels.

(8) Grease all grease nipples.

●Important：

（1）Pay attention to whether the engine is running normally.

（2）Whether the clutch adjustment is normal and whether the separation is complete.

（3）Whether the shifting of auxiliary transmission, front drive, power output, etc. is light and flexible, and whether there is any out of gear and interlock failure.

（4）Whether the brake is adjusted properly and whether it works reliably.

（5）Whether the steering gear is easy to operate.

（6）Whether electrical equipment and meters are working normally and reliably.

4.4 Instruments and controls

Familiar with the functions of various control devices, indicating instruments and

understanding their positions on the tractor (see Figure 4-1), which are necessary for the correct use of the tractor.

（1） Combination instrument—— indicating water temperature gauge, oil pressure gauge, tachometer, oil gauge, voltmeter, etc；

（2） Knob switch——main light switch, horn switch, steering switch, headlight switch, position light switch；

（3） Steering wheel——It controls the direction of tractor running；

（4） Clutch pedal——Step on the pedal to cut off the engine power and achieve power separation.

（5） Differential lock pedal——It is used to combine or separate the left and right rear drive shafts to make the drive shafts on both sides equal or differential speed.

（6） Power output joystick——Used to combine or separate the power output shaft power.

（7） High and low gear joystick——Used to manipulate the gears of the transmission box.

（8） Handbrake joystick——Pull up the hand brake control handle to reliably lock the tractor in the parked position.

（9） Hand throttle joystick——Used to adjust the fuel supply of the engine；

（10） Rocker switch——Emergency warning switch, rear work light switch；

（11） Start switch, preheat switch；

（12） Left and right brake pedal——Connect the left and right brake pedals with a brake interlocking plate, and step on the pedal to realize the left and right emergency stop at the same time； Separate the interlocking plate to realize one-side steering.

（13） Forward pedal——Depress to increase the speed and lift to decrease the speed.

（14） Reverse pedal——Depress to increase the speed and lift to decrease the speed.

（15） Front drive axle joystick——Used to combine or cut off the power of the front drive axle to achieve four-wheel drive or two-wheel drive.

（16） Output valve control handle——Control the working conditions of the oil cylinder on the agricultural implements.

（17） Lifter joystick——Push the lifter handle forward to lower the agricultural implement; pull the handle back to raise the agricultural implement.

Figure4-1 Control device and indicating instrument

4.5 Operating and driving

Caution：

（1）The driver must be specially trained, get a driver's license and be tested on time, then use the tractor after reading the manual carefully. It is strictly forbidden to drive the tractor without driving licenses, operate without license plates or overload.

（2）The driver should pay special attention to the safety caution signs on the machine and understand it correctly.

（3）When the tractor starts, pay attention to the obstacles on the road; if there is anyone between the tractor and the farm implements or trailers, sound the horn and start.

（4）When driving on highways, obey local traffic rules.

（5）Carefully check the operating conditions of the engine and tractor components to see if there’s abnormal sounds and noises. Especially check the technical conditions of the clutch and brake, tighten the bolts and nuts of the main parts. Check the tire pressure and inflate it if necessary.

（6）When the head tilt phenomenon occurs in operation, the speed should be decreased immediately and the load should be removed to prevent the tractor from overturning longitudinally.

（7）When the engine speeds up, the load is not allowed to be removed, the power supply should be turned off quickly and the fuel supply circuit should be disconnected.

（8）Pay attention to the color of the exhaust. Avoid overloading the engine which will cause frequent black smoke. If the clutch slips or the separation is not complete, and the brake fails, should stop for maintenance.

（9）In order to avoid the pollution of exhaust gas, do not start the diesel engine in a closed and unventilated building. When the diesel engine is running, keep people and animals away from the exhaust gas.

4.5.1 Start of engine：

Check the fuel, lubricating oil and coolant before starting. Check and make sure that all components and electrical circuits are normal, the oil circuit is unblocked and there is no air, and the shift lever is in the neutral position. The suspension system of the hydraulic system and the hydraulic steering system should pay special attention to check whether the hydraulic oil in the oil tank has been filled up. After the start-up preparations are completed, the driver sits on the seat and depresses the clutch pedal first to start.

Caution：

You can use the pre-heating device to help start when it is difficult to start in winter and the pre-heating device is not necessary in summer.

4.5.2 Use of HST operating mechanism

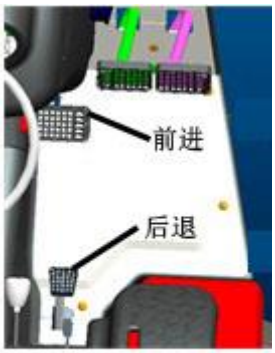


图 4-2 速度控制踏板

Speed control pedals (see Figure 4-2)

（1）Forward pedal: Depress the forward pedal with your right tiptoe and run forward.

（2）Reverse pedal：Depress the reverse pedal with your right heel and run backward.

Caution：

If the tractor is driving on flat ground, do not move your foot off the speed control pedal for fear of hurting yourself.

4.5.3 The start-up of the tractor：

Run the engine at a moderate speed for 5-10 minutes to warm up the engine till the water temperature rises above 70°C, the following steps can be used to start the engine：

（1）Lift up suspension agricultural implements.

（2）Depress the clutch pedal, place the shift lever in the required low gear and disengage the hand brake self-locking device.

（3）Observe whether there are obstacles around, and honk the horn to call attention.

（4）Slowly release the clutch pedal, depress the forward (reverse) pedal and gradually increase the speed then the tractor will start smoothly.

4.5.4 Driving of tractor:

（1）When the tractor is working, you should always pay attention to whether the readings of the various meters are normal.

（2）When the tractor is in operation, it is strictly forbidden for the driver to put his feet on the clutch pedal, so as to prevent the clutch from being in a semi-engaged state, overheating and burning.

（3）When transporting or driving on the road, the left and right brake pedals must be locked with interlocking plates.

（4）When working in the field, one-side brake can be used to reduce the turning radius. However, it is strictly forbidden to use one-side brake to make sharp turns in high-speed operation or road transportation to avoid overturning and damaging parts.

（5）Choice of driving speed:

This tractor adopts HST continuously variable speed.A low-speed section and a high-speed section are set up which are controlled by forward and backward pedals respectively to meet the requirements of different operations.

Forward speed range： Low gear is 0 ㎞/h~8.2 ㎞/h

High gear is 0 ㎞/h~20 ㎞/h

Reverse speed range： Low gear is 0 ㎞/h~8.2 ㎞/h

High gear is 0 ㎞/h~20 ㎞/h

(6) The tractor has a wide speed range that can meet the operation requirements of supporting a variety of agricultural complements:

Speed of working 0 ㎞/h~6 ㎞/h Mainly used for mowing, rotary tillage and other operations;

Speed of working 16 ㎞/h~20 ㎞/h Mainly used for field and road transportation or transfer;

Reverse working speed 0 ㎞/h~4 ㎞/h Mainly used to connect farm complements,

Reverse working speed 5 ㎞/h~16 ㎞/h Mainly used for fast idle driving and reversing.

The user selects the working speed of the tractor according to the above-mentioned principles, the scope of work, ground conditions and load conditions. The correct operating speed should be selected so that the tractor does not often work under overload conditions, thereby ensuring that the engine has a certain power reserve. The field operating speed should be selected so that the engine in a state of around 80% of load.

Caution:

When the engine sound is low, the rotational speed drops and the exhaust manifold emits black smoke during operation, you should change to a lower gear to prevent the tractor from being overloaded; when the load is lighter and the working speed is not too high, you can choose a higher gear to save fuel.

4.5.5 Braking, parking and engine stalling of tractor

Braking:

Generally you should first decrease the engine speed, depress the clutch pedal, then gradually depress the driving brake pedal according to the situation to make the tractor stop smoothly. In case of emergency braking, the clutch pedal and the driving brake pedal should be depressed at the same time, and the driving brake pedal should not be depressed alone, so as to avoid sharp brake wear or engine shutdown.

If the tractor is parked for a long time, turn off the engine according to the following steps:

(1) Decrease the engine speed to reduce the tractor driving speed.

(2) Depress the clutch pedal quickly and push the auxiliary transmission to the low gear position.

(3) Release the tractor forward (backward) pedal.

(4) Depress the brake pedal to stop the tractor.

(5) Idle for a period of time after the engine has come to a standstill to decrease the water temperature and lubricating oil temperature. Do not turn off the engine at high temperatures.

(6) Place the start switch in the "off" position, cut off the power supply and remove the key.

(7) Operate the handbrake device to reliably lock the tractor in the parked position.

(8) The fuel tank switch should be turned off when the parking time is long.

(9) The cooling water should be kept clean (the antifreeze can be kept) when parked in winter to avoid freezing the cylinder and the water tank.

●Important:

(1) Remove the dirt on the soles of the shoes and keep the pedals clean before starting the tractor when working in fields or muddy areas. Get on and off the tractor with the handrail.

(2) When changing shifts, the successor should be informed of the tractor's failures.

(3) Watch out and avoid roadblocks when driving a tractor.

(4) When driving on the highway, agricultural complements cannot work.

4.6 Operation and use of tractor working device

4.6.1 Operation and use of PTO shaft

The tractor is equipped with a rear-mounted and a center-mounted power output device. The rear-mounted power output speed is 540 r/min and 1000 r/min, and the middle-mounted power output speed is 2000 r/min. The power output shaft power is engaged and disengaged by operating the power output joystick on the left side of the transmission case.

Caution:

(1) A safety shield should be added when using the power output shaft and it is strictly forbidden to stand on the shield. The PTO shaft sleeve should be installed when the PTO shaft is not used,;

（2）When selecting farm tools, the rotation speed of the farm implements should match the rotation speed of the tractor's power output shaft;

（3）The engine should be turned off when linking with farm implements;

（4）When linking with the power output shaft, the deflection angle of the universal joint should not be too large, otherwise the universal joint will be easily damaged;

（5）Link the universal joint to the tractor after the clutch is thoroughly separated.

（6）When the tractor is running for long-distance operation, the power output control handle should be moved to the neutral position to cut off the power in case of agricultural implements damages and personal accidents.

（7）When the power output shaft is engaged, non-staff are not allowed to approach agricultural implements to ensure personal safety.

（8）When the engine is working, the clutch pedal must be depressed whether engaging or disengaging the power output shaft.

4.6.2 Operation and use of hydraulic suspension system

Before using the hydraulic suspension system, the agricultural implements to be connected to the suspension device should be adjusted and maintained according to the manual. When connecting agricultural implements to the tractor, push the control handles to the "down position", and slowly reverse the tractor to approach the agricultural implements. First connect the left and right pull rods, then the upper pull rod and lock them with a lock pin at the same time.

When the tractor unit is working on the field, the agricultural implements should be lifted up before turning and be lowered down when the tractor runs straightly.

Different tillage control methods should be selected according to soil conditions and types of operations during the using of tractor.

（1）Position adjustment：

When using the position adjustment, the lifting position of the agricultural implement is realized by flipping the distributor control handle and adjusting the position of the limit block on the return push rod. When the application requirements are met, the block is fastened to the push rod with bolts.

The adjustment of tillage depth can be carried out during the tillage process. Agricultural

implements do not need to install ground wheels when using position adjustment.

（2）Height adjustment：

Height adjustment can be used for dry land farming and agricultural implements need to be equipped with ground wheels. During the farming process, the operating handle of the distributor should be in the lower position (that is, control the operating handle of the distributor to lower the return block and the operating handle should not be returned to the neutral position). At this time, the hydraulic system oil circuit is in a "floating" state.

The depth of the cultivated land is controlled by adjusting the height of the ground wheel to the cultivated ground. This can obtain a uniform tillage depth for dry land with large changes in soil resistance.

（3）Descending speed adjustment：

Adjusting the descending speed can control the descending speed of agricultural implements. Choose the appropriate descending speed of the agricultural implements, which is according to the weight of the agricultural implements l and the softness of the ground to prevent from being severely impacted and damaged when it contacts with the ground.

Rotate the distribution upper limit speed valve clockwise, the descending speed of agricultural implements will decrease. Rotate the distribution upper limit speed valve counterclockwise, the descending speed of agricultural implements will increase.

（4）Use of suspension mechanism：

Before the agricultural implements are connected to the tractor suspension mechanism, necessary adjustments should be made in accordance with the manual.

The plow should be adjusted vertically and horizontally in order to ensure the same depth of ploughshare before and after in the process of plowing operation.

①Vertical adjustment：

Adjust the length of the pull rod to keep the plow frame horizontal in the longitudinal direction to achieve the same plough depth. When the front part plow is deep, the rear part plow or the plow heel leaves the bottom of the ditch, the upper pull rod should be extended; when the front part is shallow, the back part is deep or the plough heel presses the bottom of the ditch very tightly, the upper pull rod should be shortened.

②Horizontal adjustment：

Adjust the length of the right lift rod to keep the plow frame horizontal. The right lift rod is extended and the tilling depth of the first part is increased; the right lifting rod is shortened and the tilling depth of the first part is shallower. Under normal circumstances, the left lift rod doesn't have to be adjusted. Only when the adjustment amount of the right lift rod is not enough, the left lift rod should be adjusted to make the tillage depth of each part consistent.

It is necessary to adjust the tillage width according to the manual to ensure that there is no heavy plowing and missed tillage. Since the above adjustments are interrelated, they should be adjusted according to the specific conditions of soils to obtain good results.

The limit chain enables the unit to have good maneuverability in field operations and prevents the farmer from swinging excessively and hitting the rear wheel of the tractor when the agricultural implement is lowered on the ground. When the agricultural implement is in the farming position, the limit chain is in a relaxed state allowing a certain amount of swing between the tractor and the agricultural implements. When plowing the land, it is strictly prohibited to adjust the bias traction of the agricultural implements through tightening the limit chain.

③The length of the universal joint drive shaft should be cared when using agricultural implements. There should be an axial gap of about 10 mm between the front and rear drive shafts after connecting.

Caution：

（1）Keep away from the lifting area of the lift rod when operating the hydraulic lifter.

（2）The three-point suspension mechanism is only suitable for agricultural implements designed for the three-point suspension mechanism.

（3）When carrying suspension agricultural implements for land parcel transfer or operating, high-speed driving is not allowed. The parts of the agricultural implements must be raised off round to avoid damaging the lifting system and suspension system.

（4）When heavy agricultural implements are connected, the lift handle should be moved up slowly to prevent the tractor from overturning.

（5）The trailer should be connected to the traction plate.

（6）Before the person leaves the tractor, the suspended implement must be lowered to the ground.

4.6.3 Use of differential lock：

The correct use of differential locks in tractor operations is very useful. But it is also very dangerous if used improperly and will cause accidents. Normally, the differential lock can only be used under the following conditions.

①a rear wheel is stuck in the mud and the tractor cannot move forward.

②the two rear wheels slip,.

When the above two situations occur, please operate the differential lock according to the following methods：

（1）Depress the clutch pedal and engage the low gear.

（2）Open the hand throttle to the maximum position.

（3）Depress the differential lock pedal located behind the bottom of the right foot and slowly release the clutch pedal to engage the clutch. At this time, the two driving wheels of the tractor rotate at the same time to help the tractor pass through the skid zone.

（4）After the tractor has passed the skid zone, immediately release the differential lock pedal to allow it to return automatically. Otherwise, the tractor cannot turn and there is a risk of damaging components.

Caution：

（1）It is strictly forbidden to use the differential lock when the tractor is in normal driving and turning. Once the differential lock is used, it will prevent the tractor turning, damage the components, aggravate tire wear, and even cause the tractor overturning endangered personal safety.

（2）If one of the rear wheels is slipping, decelerate engine speed before depress the dif tial lock to avoid impact on the transmission box.

（3）After the tractor passes through the skid zone, immediately release the differential lock pedal to make it return automatically.

4.6.4 Use of front drive axle

Four-wheel drive tractors can be engaged with the front drive axle to achieve four-wheel drive when working under heavy loads or working on wet and soft soil. At this time, operate the front drive joystick on the right side of the driver's seat to engage the front axle power so that the power is transmitted to the front axle through the power input shaft.

Caution:

① Only after the clutch is thoroughly disengaged can the front drive control handle be operated (pull up or press down).

② It is not allowed to use the front drive axle during transportation operations on hard roads, otherwise it will cause early wear of the front tires. The front drive axle can be used when the road is slippery because of rain or snow or when the rear wheel skids on a large slope. But when the tractor passes through the difficult section, it should immediately disengage the front drive.

4.7 Front traction mechanism

When towing the tractor, the pin A on the front traction should be used and the driver should control the steering and braking of the tractor

Caution:

The tractor can only be towed for a short distance. Do not use trailers to transport tractors on the road.

4.8 Front counterweight

Caution:

Use suitable lifting equipment for installation and dismantling;

12 kg/piece, the standard is to install 4 pieces;

4.8.1 Installation

1、Install (A) front counterweight bracket;

2、Use lifting equipment to install (D) counterweight;

3、Install the fixing bolt (C) and nut (B);

4.8.2 Dismantling

1、Dismantle the fixing bolt (C) and nut (B);

2、Use lifting equipment to remove (D) counterweight;

3、Put it on level ground;

Caution:

When the implement is suspended, the front wheels of the tractor may lift up. Please ll a suitable front counterweight as required to prevent the risk of tipping.

4.9 The location and use of the battery

The battery is located under the radiator. Lift the hood to check the battery,.

4.9.1 Charge

Keep the battery fully charged, especially in cold weather.

1、Turn off the charger, connect the lead of the positive battery charger to the positive (+) terminal of the battery, fix the lead of the negative charger to the tractor frame and get away from the battery.

2、Turn on the charger. Follow the manufacturer's instructions when using the charger. Check the battery state as described below.

3、Disconnect the battery charger and turn off the charger. First remove the negative pole of the charger and then remove the positive pole of the charger.

Positive (+) battery terminal and insulating protective cover;

Negative (-) battery terminal and insulating protective cover;

4.9.2 Maintenance

The battery maintenance interval is 50 hours. Wipe the battery with a cloth to keep it clean. Keep terminals (A) and (B) clean and safe. Apply a little grease to the terminals and cover them with insulating caps.

Caution:

The gas released by the battery can cause an explosion, keeping the battery away from sparks and flames.

4.10 Operation of electrical equipment

Tractor electrical equipment is mainly used for the starting of the tractor to meet the requirements of sending out signals and night lighting. The electrical system adopts 12V negative ground single wire control. In order to ensure the normal operation of the tractor electrical system, the electrical system should be used correctly and maintained regularly. Always check whether each electrical component is working properly, the electrical connector is loose and the insulation layer of the wire is damaged. Problems should be troubleshot in time if being found. The following key components should be maintained regularly during operation.

4.10.1 Battery

The battery is maintenance-free and has been fully charged. Model: 6-QW-80. It should be removed and recharged if it is difficult to start during operation. The battery has the advantages of convenient charging, short charging time, long storage time (250 days with 50% of the electricity left) and no need to add any electrolyte.

The tractor should be regularly inspected and maintained according to the technical maintenance in daily use.

(1) Charge a new battery for 1-2 hours before use can extend its service life.

(2) Always keep the surface of battery clean, especially the top, to ensure good contact between battery terminals and connectors. Always observe the charging state of the densitometer on the surface of the battery. If it is green, it means that the battery's electricity exceeds 65% and the battery is normal. If it is black, it means that the electricity is less than 65% and needs to be charged. If it is white, it means the battery has been scrapped. When the whole vehicle is stagnant for a long time, remove the battery and fully charge it, clean its surface and apply grease to the pole posts to reduce self-discharge, which prevent vulcanization of the pole plates and reducing the capacity. The battery should be store in a dark, ventilated room with the temperature not lower than 10℃.

Warning:

(1) It is strictly forbidden to disassemble the battery when the engine is running. Do not let your eyes, hands or clothes contact with electrolytes. If you contact accidentally, please wash them thoroughly with clean water.

(2) Maintenance of electrical equipment can only be performed after disconnecting the grounding cable and the battery.

(3) The gas discharged by the battery is explosive. Keep the battery away from electric sparks to avoid damages to the battery.

(4) It is not easy to charge in enclosed space and proper ventilation can prevent the accumulated gas from exploding.

Important:

The electrical system is negative hitch iron and the battery must be connected to the correct polarity. If the polarity is reversed, electrical equipment will be destroyed. When installing the battery wires, connecting the positive cable first and then the negative cable.

4.10.2 Generator

The generator on the tractor is an integral silicon rectifier alternator with an electronic voltage regulator on the back cover. The working state of the generator can be indicated by the charging indicator light. After the engine is started, the charging indicator light turns off to indicate that the generator is generating electricity； If the light keeps on, it indicates that the generator is faulty and should be checked and repaired in time. Always remove the dust and oil stains on the surface of the generator during use, especially the dust and oil stains on the terminals and keep the wiring in good condition. The tension of the V-belt of the generator should be proper. Too loose it will be easy to cause the triangular belt to skid resulting in insufficient power generation, and too tight will accelerate the wear of bearing. Generally, it's appropriate for the tension of the triangular belt to be 10～15mm when depressing in the middle of the belt.

The generator is maintained every 1000 hours of use, and the maintenance methods are as follows:

A. Check whether the mounting bolts of the generator are firm, whether the wire insulation is damaged, and whether the wire connection is good and reliable.

B. Check the commutator and brushes. If the surface of the commutator is severely ablated, it can

be polished with fine sandpaper. The brushes should be replaced when they are excessively worn or broken. Lubricate the moving parts such as bearings.

4.10.3 Starter

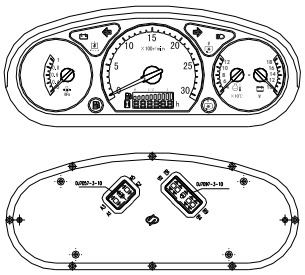
(1) The contact points of the starter and all wires should be kept clean regularly during use.

(2) At each start, the time to turn on the ignition switch shall not exceed 10s and the time interval of continuous start shall not be less than 2min. If the engine fails to start three times in a row, stop the start and check the cause of the failure. Do not use the starter for a long time or multiple times in succession to avoid damage to the starter and battery.

(3) During the start-up process, if the starter electromagnetic switch cannot be automatically powered off and continues to rotate when the starter switch is released, immediately cut off the connection between the battery and the starter to check the cause and restart after troubleshooting.

4.10.4 Combination instrument

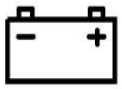
Oil pressure gauges and water temperature gauges are mainly used for engine operating condition monitoring. The tachometer is used to display the engine speed and the accumulated operating hours of the engine. The fuel gauge is used to monitor the capacity of fuel in the fuel tank. Therefore, the working conditions of the instrument should be observed frequently. If there is any abnormality, the machine should be shut down for inspection and troubleshooting.



4.10.5 Lighting and signaling devices

Lighting and signal devices which play a very important role in the safety of the tractor are mainly used for tractors to work at night or for transportation operations. Therefore, the machine should be shut down for inspection in time in the event of a failure. If it is damaged, the accessories

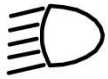
of the same model should be replaced as required and other substitute accessories should not be used.



Battery charging warning light (red): After the engine is started, the light turns from on to off indicating that the generator is working normally. If the light is always on indicating that the charging circuit or the generator is faulty and should be overhauled.

Brake failure indicator light (red): When the brake system fails, the indicator light is on.

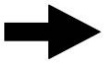
Headlamp high beam indicator (blue): When this light is on, it indicates that the Headlamp is high beam.



Headlamp low beam indicator (green): When this light is on, it indicates that the Headlamp is low beam.

Clearance lamp indicator light (green): When the clearance lamp on the combination switch is turned on, the indicator light is on.

Left turn indicator light (green): When the tractor turns to the left, pull the handle of the combination switch back, the left turn signal and the indicator light will flash.



Right turn indicator light (green): When the tractor turns to the right, push the handle of the combination switch forward, the right turn signal and the indicator light will flash.

Oil level alarm indicator light (red): When the oil level is less than or equal to 1/8,

the indicator light is on and the buzzer sounds intermittently; when the fuel sensor has an open circuit or short circuit fault, the indicator light is on.

Parking brake indicator light (red): When the parking brake handle is in the braking position, this light is on which indicating that the tractor is in the braking state.

Water temperature alarm indicator light (red): When the water temperature is higher than or equal to 115 degrees, the alarm light is on and the buzzer sounds intermittently.

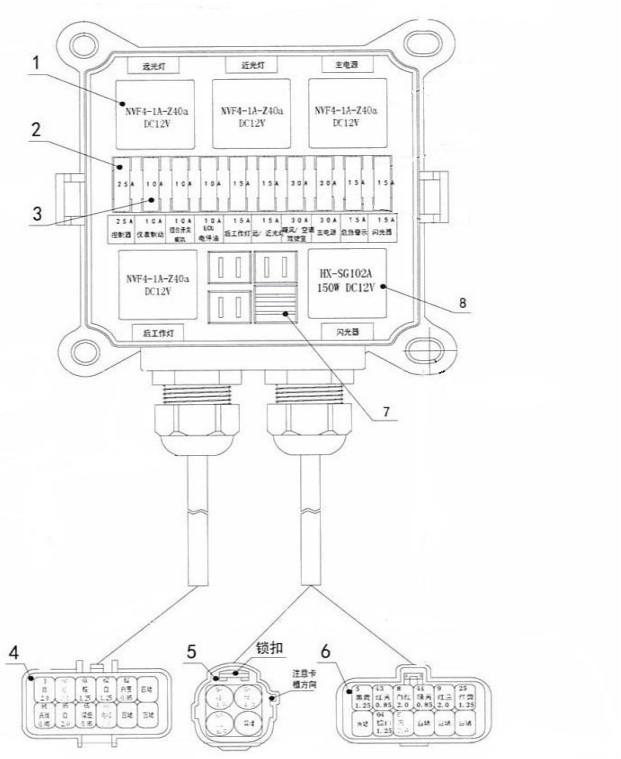
Oil pressure alarm indicator light (red): When the oil pressure is less than 0.1Mpa or more than 0.8Mpa, the oil pressure alarm light is on and the buzzer sounds intermittently.

Engine failure indicator light (yellow): When the engine fails, the indicator light is on.

Oil-water separation signal indicator (red): When the oil-water separation alarm signal is valid, the alarm light is on.

Exhaust brake indicator light (red): When the exhaust system fails, the indicator light is on.

4.10.6 Central electrical box



1--Relay　　2、3--Fuse　　4、5、6--Connector　　7—Fuse clip　　8--Flasher

4.10.7 Warm-up start switch

接线柱 / 档位	1	2	3	4
OFF	○	○	○	○
I	○	○		
预热	○	○	○	
START	○	○		○

The warm-up start switch is used to connect the whole vehicle circuit to start and warm up the engine. Insert the start key into the start switch, rotate the switch clockwise to I gear to connect the whole vehicle circuit. The hydrostatic continuous variable speed pedal (HST), the centre PTO switch and the rear PTO switch is in neutral. Rotate the key clockwise to II gear to turn on the preheater, shift to III gear to start the starter. And the key will automatically return to the first gear after the engine is started. During the working process of the tractor, the key is always in the first gear and if it is not working, the key should be removed to disconnect the whole vehicle circuit.

4.10.8 Two-way switch

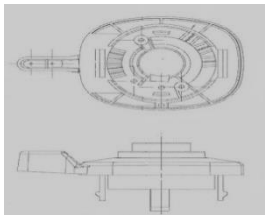
Hazard warning light switch： "POS1": When the vehicle is in a critical situation, press the switch to the POS1. Then the left and right turn signals are flashing and the left and right turn indicators on the instrument also flash.

"POS3": cut off the power supply.

Rear working light switch：“POS1”： Rear working light on

“POS3”： Rear working light off

4.10.9 Combination Switch



The combination switch is installed at the bottom left of the steer wheel and has a handle switch, a knob switch and a button switch. Move the handle back and forth to control the left and right turn signals; rotate the knob to turn on the clearance lamp, the low beam and high beam of headlamp in turn; press the button to connect the horn.

Chapter 5 Technical maintenance of tractors

It is very important for the user to grasp the state of the tractor every time before driving in order to ensure that the tractor is always in good condition, which avoid sudden failures during the use of the tractor and cause components damage and personal injury. Therefore, users are required to conduct a comprehensive inspection of the tractor and carry out necessary maintenance before use every day.

The technical maintenance cycle of the tractor is divided into the following levels according to the accumulated working hours:

Table 5-1 Periodic table of technical maintenance

Maintenance level	Working hours (h)
Shift technical maintenance	After each shift or work 10~12
Level 1 technical maintenance	50
Level 2 technical maintenance	250
Level 3 technical maintenance	500
Level 4 technical maintenance	1000

The content and methods of maintenance can be added and perfected according to the specific situation.

5.1 Shift technical maintenance

After each shift or after every 10 to 12 hours of work, maintain the tractor as followings:

(1) Remove dust and sludge from tractors and agricultural implements, clean the air filter when working in a dusty environment.

(2) Check all exterior fixing bolts and nuts of the main parts, and especially the joint bolts and nuts of the front and rear wheels. Tighten them if necessary.

(3) Check the liquid level in the oil sump, water tank, fuel tank and lifter. Refill as necessary. Wait until the engine has stopped at least 15 minutes to check the liquid level in the oil sump.

(4) Check the tractor for air leaks, oil leaks, and liquid leaks. If there are "three leaks", they should be eliminated in time.

(5) Check whether the coolant in the radiator is full, wash and clean the weeds and clippings between the radiators so as not to affect the effect of the radiator.

(6) Check whether there is dirt and water in the fuel sedimentation cup. Eliminate it if necessary and exhaust the air in the oil pipes.

(7) Check whether front and rear tires pressure is normal.

(8) Add grease to the specified parts in Figure 4-1 "Fuel and Lubricant for Tractors". All the muddy water must be squeezed out until yellow oil is out before adding grease,.

(9) Check whether the lights, horns and meters are working normally.

(10) Check whether the implements with the tractor are complete.

5.2 First-class technical maintenance

Carry out the following maintenance after every 50 hours of work:

(1) Complete the shift maintenance project.

(2) Clean the air filter and replace the oil in the oil sump.

(3) Check the tension of the fan belt, press down the middle of the longest side of the belt with your hand. It is appropriate for the belt sagging from 15mm to 25mm under the force of about 10 N (1 kg force). Adjust if necessary.

(4) Check and adjust the free stroke of the clutch pedal and brake pedal.

(5) Check the oil level in the transmission case and the front drive axle. Refill it if it is insufficient.

(6) Check the electrolyte in the battery. The liquid level should be 10mm-15mm higher than the polar plate. Fill distilled water if it is insufficient. Add an electrolyte with a specific gravity of 1.28 to the specified height if the specific gravity of the electrolyte does not meet the normal value.

5.3 Second-class technical maintenance

The following maintenance should be carried out after every 250 hours of work:

(1) Finnish the first-level technical maintenance project.

(2) Replace the oil in the oil sump of diesel engine , clean the oil sump and sucking disc as well as the oil filter.

5.4 Third-class technical maintenance

Carry out the following maintenance after every 500 hours of work:

(1) Finish the second-class technical maintenance project.

(2) Check and adjust the valve clearance, injector pressure and spray atomization of the injector according to the requirements of the diesel engine operating manual.

(3) Flush the fuel tank and fuel filter.

(4) Flush the transmission box and replace the lubricating oil.

(5) Flush the filter of the hydraulic lifter and the cleanliness of oil. Clean the inside of the lifter housing if necessary and replace with fresh oil.

(6) Check and adjust the front wheels toe-in (it should be 4~10 mm). Check the tension of the front wheel bearings and adjust if necessary. Replace the grease in the front wheel hubs.

(7) Check the free travel of the steering wheel (the idling angle is required to be no more than 15°) and adjust it if necessary.

(8) Check the oil level in the redirector and refill it if necessary.

(9) Rinse and wipe the battery with boiling water. Check that the electrolyte density in the battery should not be less than 1.24. If abnormal recharging and discharging of the battery are found, overhaul and recharge it outside of the tractor.

5.5 Fourth-class technical maintenance

Carry out the following maintenance after every 1000 hours of work:

(1) Finish the third-class technical maintenance project.

(2) Carry out the maintenance items specified in the diesel engine manual.

(3) Clean the oil tank thoroughly with 25% hydrochloric acid solution and then rinse it with clean water.

(4) Disassemble the generator and starter, clean off the grease in the bearings and replace it with fresh grease. Simultaneously check the transmission mechanism of starter.

(5) Clean the carbon that has collected in the exhaust manifold and muffler.

(6) Immerse the release bearing of the clutch in dissolved high-temperature grease and refill with fresh grease.

(7) Check and adjust the gear backlash and contact mark of the central drive bevel gear as well as the clearance and pre-load of bearing.

(8) Clean the filter in the hydraulic lifting system and replace the oil in the system with fresh oil.

(9) Clean the steering gear and replace the lubricating oil.

(10) After the above maintenance is completed, a short-time test run is carried out to check for normal operation.

5.6Technical maintenance in winter

When operating the tractor below 5℃, special technical maintenance must be carried out on it. In addition to the technical maintenance mentioned above, the following regulations should be strictly complied with:

(1)It is not allowed to start the engine when there is no coolant in the cooling system. It should be warmed up for easy start.

(2)The engine should be warmed up for a period of time until the coolant temperature is higher than 60℃ then can start the operation.

(3) Choose fuel and lubricating oil according to temperature or season.

(4) It is best to park the tractor in an insulated hangar in order to make the diesel engine easy to start in the severe cold season.

5.7 Technical maintenance for long-term storage

Before placing the tractor in long-term storage, it should be given a thorough inspection to be sure that it is in good condition.

(1) It is best to park the tractor in a dry hangar and support the front and rear wheels off the ground with wooden blocks. If conditions are limited and the tractor have to be parked in the open air, cover it with tarp and make sure water drains away from it. The storage site should be far away from fire (such as oil depots, kitchens, etc.).

(2) Clean the outside of the tractor before parking and refill lubricating grease according to the section specified in Table 4-1 "Tractor Fuel and Lubricant".

(3) Remove the battery and keep it separately. Cover the outlet of exhaust manifold.

(4) Start the engine every three months to run it at various speeds for 20 minutes and observe whether there is any abnormality.

Caution：

‘1) This machine can only be maintained and repaired by personnel who are familiar with the tractor and have relevant knowledge of safety operation.

(2) Should read this manual and the parts catalogue of diesel engine carefully before maintenance.

Chapter 6 Main adjustments of the tractor

6.1 Clutch adjustment

The clutch should be checked and adjusted frequently during use. The clearance between the release pawl and the end face of the release bearing is gradually reduced which will cause the head of release pawl contacts with release bearing. The clutch will be unable to operate normally due to the burnout of release bearing.

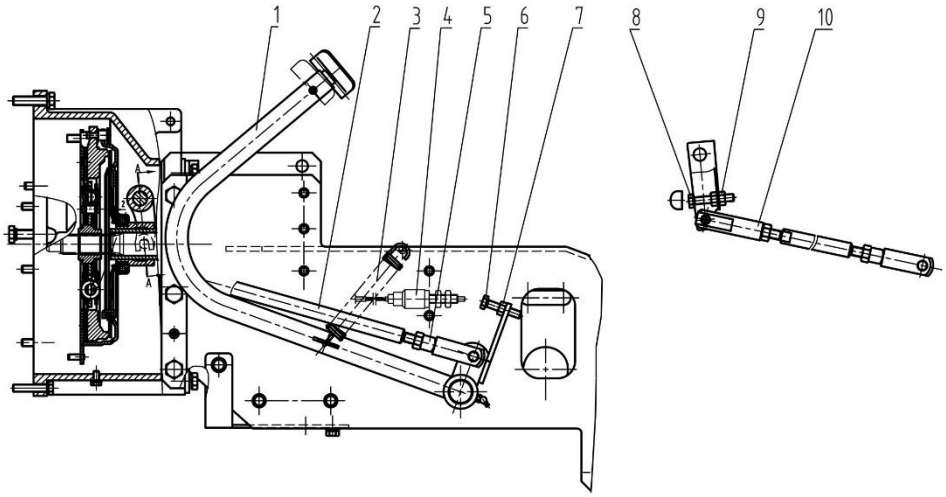


Figure 6-1 Single-stage clutch

1 Clutch pedal 2 Adjusting rod 3 Restraint spring 4 Start switch 5 Adjusting fork

6 Rear stop screw 7 Nut 8 Front stop screw 9 Nut 10 Adjustment fork

6.1.1 Adjusting free travel of clutch

Loosen the nut and rotate the adjusting rod (2). When the distance between the front end of the release bearing and the release pawl is about 2-3mm, tighten the nut (see Figure 6-1).

6.1.2 Adjusting working travel of clutch

Rotate the adjusting rod (2), the adjusting fork (5) and the adjusting fork (10). Adjust the front stop screw (8) and the rear stop screw (6), and then depress the clutch pedal (1). Tighten the nut (9) and the nut (7) when the clutch can be completely separated When. The adjusting rod (2) needs to be readjusted after the tractor has been used for a period of time (see Figure 6-1).

6.1.3 Adjusting safety start switch of clutch

Loosen and adjust lock nut (7), adjust the safety start switch (4). Shorten the distance between the clutch control board and the start switch contact by 2~3mm after the clutch pedal is depressed and then tighten the nut (7) (See Figure 6-1).

6. 1.4 Lubrication of clutch system

The front bearing of the clutch should be fully greased when assembling. The release bearing does not need to be refilled grease under normal conditions. Refill grease into the oil cup, step on the clutch pedal repeatedly until the bearing is filled with grease after the tractor has been working for 1000 hours or when the bearing is found to make abnormal noises. Regularly check the oil cup at the clutch pedal shaft. You need to add enough grease when it is jammed.

Notice：

（1） The engine must not be started before the clutch is disengaged.

（2） The clutch pedal must disengage quickly and engage slowly. Depress the clutch pedal to the end before shifting.

（3） Do not rest your feet on the clutch pedal when working which will accelerate the wear of the clutch.

6.2 Brake adjusting

The clearance between the friction disc and the brake drum or the friction disc, the brake case and brake cover will increase which will affect the braking performance after the brake being used in the tractor for a period of time. The brake should be adjusted frequently to ensure safe walking because excessive free travel will cause brake failure.

The brakes must be adjusted when one of the following phenomena occurs regardless of the new or old tractors.

①The free travel of the brake pedal is too large which results in the brake failure.

②The brake is often in a semi-brake state and the brake case heats up because the free travel of the brake pedal is too small.

③The braking force of the left and right pedals is inconsistent which leads to the tractor appears "off-track" phenomenon.

Brake adjusting:

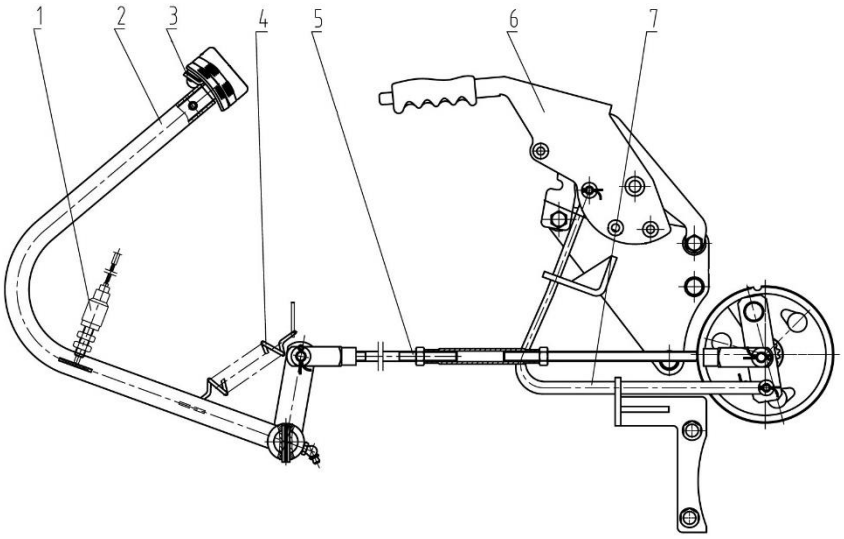


Figure 6-2 Brake operating

1 Brake switch 2 Brake pedal 3 Brake interlock 4 Return spring 5 Pull rod 6 Hand brake 7 Hand brake cable

6.2.1 Adjusting free travel of brake pedal

The free travel of the pedal is the displacement measured from the highest position of the pedal to the position where you are begin to feel resistance when pressing the pedal. It should be in the range of 55~65mm (see Figure 6-2).

Loosen the nut on the pull rod (5) and rotate the adjusting screw to change the length of the brake pull rod. Then press the brake pedal (2) from the highest position to eliminate the gap between the brake disc and the brake shoe. Make the adjustment of the left lever and the right pull rod adjustments identical, then secure them by tightening the lock nut (see Figure 6-2).

6.2.2 Adjusting the working stroke of the brake pedal

Loosen the nut on the pull rod, adjust the stop bolt and then depress the brake pedal (2). Tighten the nut when the brake can be fully applied. You need to readjust the pull rod after using the tractor for a period of time (see Figure 6-2).

Notice:

The left and right brake pedals must be interlocked with the lock plate when the tractor is running on the road.

6.2.3 Adjusting brake switch and hand brake switch

Adjust the working stroke of the brake pedal and the nut on the pull rod before you can adjust the brake switch (1) so that the contact between the pedal control board and the brake switch is compressed by 2~3mm and always in a constant engagement state. Then tighten the nut (see Figure 6-2).

6.2.4 Adjusting Tractor's "Wandering"

When the left and right brake adjustment is not consistent, inconsistent left, right tyre brake marks and wandering phenomenon will occur if the tractor brakes abruptly during driving at high speed. At this point, the adjusting pull rod (5) on the long side of the mark should be lengthened appropriately and the adjusting pull rod (5) on the short side of the mark should be shortened appropriately. Shorten the adjusting pull rod appropriately until the left and right tyre marks are basically the same length and can ensure reliable braking, then tighten the lock nut and check at low speed, recheck at high speed after adjustment (see Figure 6-2).

Warning:

One-side braking will cause sharp turns and overturn when interlock the left and right brake pedals before starting.

●Important:

The tractor will deflect sharply to one side during emergency brake which will cause an accident if the free strokes of the left and right brake pedals didn’t adjust to be consistent.

6.3 Preload adjustment of central drive and differential conical bearing

The two bearings (12) at both ends of the differential and the bearing on the driving conical gear shaft should have a certain pre-load during assembly in order to reduce the axial displacement of the central drive conical gear pair under working conditions and increase their supporting rigidity. But the original preload will gradually disappear due to the wear of the bearings after the tractor has been used for a period of time. There will be a gap between the two pairs of bearings. The bearings should be re-tensioned when the gap is greater than 0.1mm (see Figure 6-3).

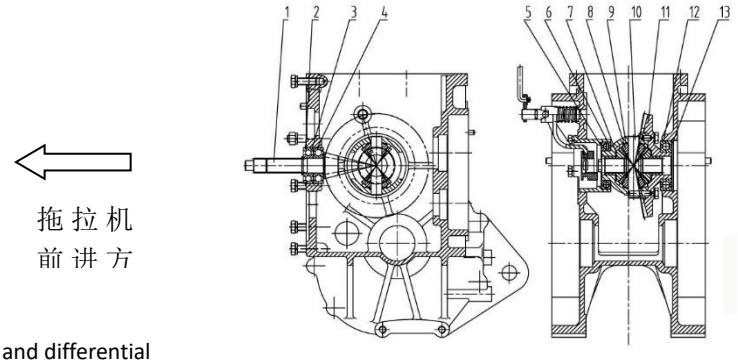


Figure 6-3 Central drive and differential

1 Driving conical gear 2 Stop ring 3 Deep groove ball bearings 6305N 4 Deep groove ball bearings 6305 5 Adjusting shim 6 Deep groove ball bearings 6010 7 Differential side gear gasket 8 Planet gear 9 Planet gear shaft 10 Planet Gear Gasket 11 Passive conical gear 12 Deep groove ball bearings 6209 13 Adjusting shim

6.3.1 Preload adjustment of the conical bearing

When the pre-load of the bearing 6305N (3) of the driving conical gear needs to be readjusted during regularly maintenance(every three class of maintenance), loosen the lock washer and tighten the round nut to make the two conical bearings produce a certain amount of pre-load force, the torque to rotate the conical gear shaft (the frictional resistance torque of the bearing) is (2.5～5) N•m and then lock the round nut with a lock washer (see Figure 6-3).

6.3.2 Pre-load adjustment of differential bearings

Add an equal amount of adjusting shim (13) between the two sides of the rear axle housing and the bearing seat of the differential bearing, tighten the bolts of the two bearing seats and rotate the drive conical gear shaft. If the torque is 0.4~0.7N.m larger than the differential when the differential is not mounted, the preload is more appropriate. At this time, there should not be any displacement when pushing the big conical gear in the axial direction.

Caution：

The left and right are determined by the operator facing the forward direction of the tractor.

6.3.3 Adjusting meshing prints of second conical gear and backlash

（1）Standards for meshing prints and backlash

The backlash of the spiral gear is required to be 0.10~0.25 mm. The ideal meshing prints is distributed in the middle of the teeth surface and near the small end. The meshing prints is spot-like but the length is not less than 60% of the teeth length and the height is not less than 50% of

the teeth height.

（2） Inspection of backlash and meshing prints

①Backlash inspection

There are two inspection methods： One is the dial gauge inspection. Place the contact of the dial indicator on the tooth surface of the big end of the large bevel gear, fix the small bevel gear and swing the large bevel gear in the direction of rotation. At this time, the backlash is correct if the reading of the dial indicator is 0.14~0.3 mm (axial clearance). Another method is to use a lead wire of 15-20 mm long and 0.5 mm thick or a fuse bent into "∽" shape, put it between the unmeshed tooth surfaces of the two gears (that is, the convex surface of the pinion bevel gear and the concave surface of big bevel gear) and rotate the gear pair, then the thickness of the lead wire being squeezed near the big end is the normal tooth backlash at that place. The backlash should be in the range of 0.1 to 0.25 mm (normal clearance). For the sake of accuracy, it is advisable to evenly distribute three points or more on the entire circumference of the gear.

②Inspection of tooth surface meshing prints

The inspection of meshing prints is performed by the coloring method. That is, apply a thin and uniform layer of red lead oil on the tooth surface of the big bevel gear and then rotate the gear for several turns. At this time, the print imprinted on the surface of the pinion bevel gear is the meshing print. Since the spiral direction of the pinion bevel gear is right-handed, the concave surface of the gear is stressed and red lead oil should be painted to the convex surface of the large bevel gear when the tractor is moving forward; the convex surface of the pinion bevel gear is stressed and red lead oil should be painted to the concave surface of the large bevel gear when reversing.

③Adjustment of backlash and meshing prints (see Table 6-4 for adjustment method)

The axial displacement of the large and pinion bevel gears will change the backlash and meshing prints when adjusting. If there is a contradiction between the backlash and meshing prints requirement, it is mainly necessary to ensure that the meshing prints are correct and the backlash adjustment range can be appropriately enlarged especially when the gear and bearing are re-adjusted after wear, the backlash is about 0.1~0.15 mm at this time.

Both the gear backlash and meshing prints will change during the normal use of the tractor.

In this case, there is no need to readjust the gear backlash as long as the meshing print is normal and only the gear backlash increases. However, careful adjustments must be carried out after an overhaul of the tractor or replacing a new pair of central drive gears or conical bearings to ensure the gear backlash and meshing prints.

- **Important:**

The large and pinion bevel gears of the central transmission are a pair of matched gears which should not be confused during assembly. It is best to replace them together with the bearing otherwise it will affect its service life.

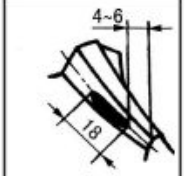
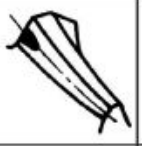
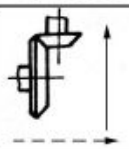
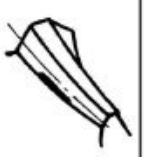
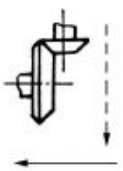
前进档	倒退档	调整方法	
		正常印痕	前进档时，小弧齿锥齿轮凹面所得印痕总长不小于齿宽的60%，高度不小于齿高的50%，而且分布在齿高中部靠近小端，倒退档时，小弧齿锥齿轮凸面所得印痕与上述相同
		不正常印痕	减小第二轴的调整垫片1，使小弧齿锥齿轮后移（见图6-3）
			增加第二轴的调整垫片1，使小弧齿锥齿轮前移（见图6-3） 
			增加右侧面大弧齿锥齿轮的调整垫片5，左侧面减少数量相等的调整垫片，使大弧齿锥齿轮右移（见图6-3）
			增加左侧面大弧齿锥齿轮的调整垫片5，右侧面减少数量相等的调整垫片，使大弧齿锥齿轮左移（见图6-3） 
注：实线箭头表示调整印痕，虚线箭头表示调整啮合间隙。			

Table 6-4

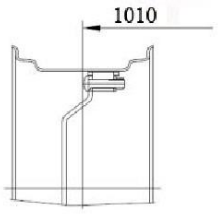
Adjustment of backlash and meshing prints

6.4 Adjustment of wheel track

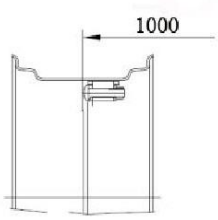
6.4.1 Model of front tire：Grass tire 26x7.5-12 or agricultural tires 6.0-12，the wheel track of the two types is the same.

Model of rear tire：Grass tire 11.2-20 or agricultural tires 11.2-20，the wheel track of the two types is the same.

Front wheel：



Rear wheel：



Caution：

The service life of tires mainly depends on whether they are used and maintained correctly, so the following rules should be strictly observed during use:

(1) Maintain the normal tire pressure and the tire pressure should not be too low or too high during use.

Low air pressure will cause serious tire deformation, tire breakage and at the same time will increase driving resistance, laborious maneuvering and increase fuel consumption; high air pressure will reduce the contact area between the tire and the ground, cause serious slippage, accelerate tire wear and shorten the service life.

(2) Drive correctly. The tractor should start and shift gears smoothly and avoid unnecessary sudden brakes, sharp turns and starting tractor by dragging.

(3) Keep the tires clean and do not allow the tires to get oily.

(4) Maintain the correct toe-in.

(5) It can be used in the left and right positions when the tire wear is inconsistent.

(6) The front and rear wheels of the tractor should be set off the ground when the tractor is stored for a long time.

(**7**) Avoid prolonged exposure to the sun when parking.

(8) Pay attention to safety and use special tools when dismantling tires. The inner and outer tires should be clean, dry and coated with talcum powder.

6.5 Adjustment of power output

6.5.1 Power output gear shift adjustment

The position II shown in Figure 6-6 is the power output neutral gear. When shifting to the I position by pushing and pulling the power output control lever (3) as instructed, the rear PTO of 540r/min and the middle PTO are engaged; when the shift operation is to the III position, the rear is engaged 1000r/min of PTO (see Figure 6-6).

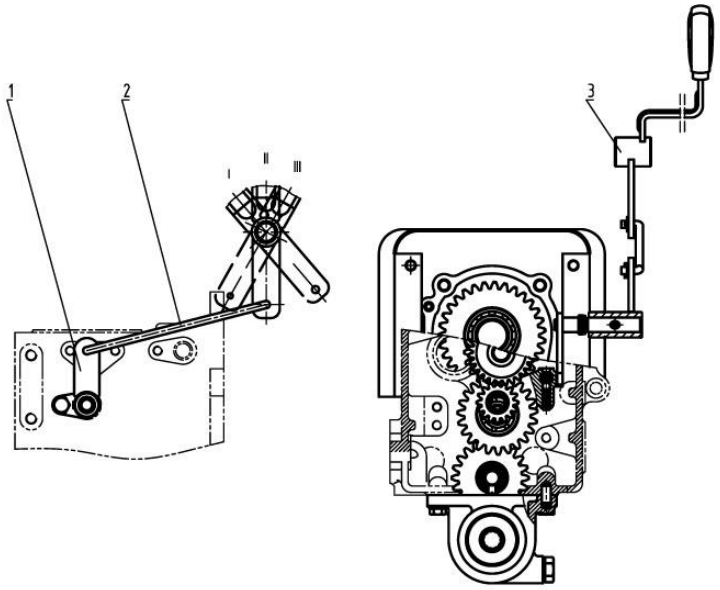


Figure 6-6 Power output adjustment

1 Power output rocker arm 2 pull rod 3 pull rod 4 Power output joystick

6.6 Adjustment of the auxiliary shift control lever

Move the auxiliary shift control lever (1) to make the auxiliary shift control lever (3) in the neutral position. Follow the instructions by pushing and pulling the auxiliary shift control lever (1) to shift to the high and low gears to ensure smooth shifting (see Figure 6-7).

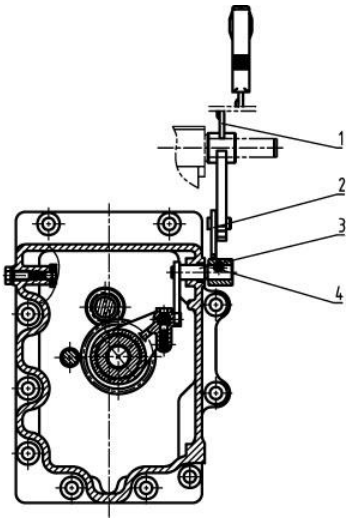


Figure 6-7 Adjustment of the auxiliary shift control lever

1 Auxiliary shift control lever 2 Rocker 3 Auxiliary shift lever 4 Elastic cylindrical pin

6.7 Adjustment of the front drive joystick

Pull the front drive control lever (1) to rotate the front drive control rocker arm, the front drive lever rocker arm in the gearbox connected to it will slide axially before the drive driven gear is moved. That is, push and pull the front drive joystick (1) as instructed to ensure smooth gear shifting (see Figure 6-8).

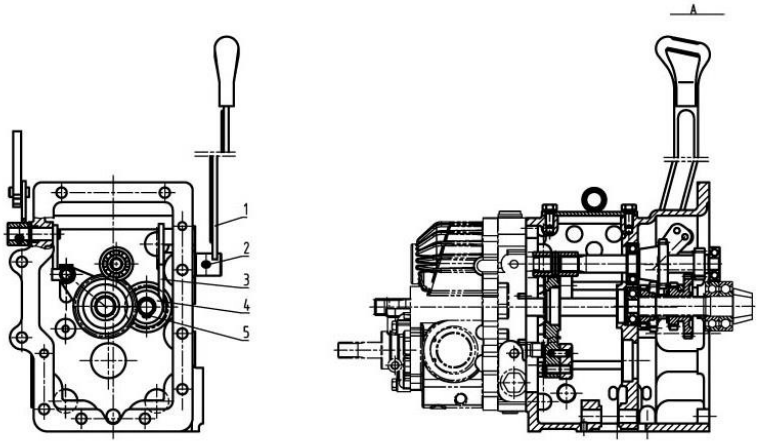


Figure6-

8Adjustment of the front drive joystick

1 Front drive joystick 2 Elastic cylindrical pin 3 Front drive gear shift lever welded parts 4 Front drive passive gear 5 Circlip for shaft 20

6.8 Adjustment of hydraulic steering

6.8.1 Installation of steering gear

1. Install the steering gear on the steering gear bracket and check whether the spring washer is in good condition. Mount the spring washer and fasten screw, tighten the fasten screw and place the steering gear in the neutral position.

2. Connect the joints and oil pipes to the steering gear and then tighten all the oil pipe joints. Pipe connection: Port P should be connected to the pump's oil supply pipe and port T should be connected to the pipe to the tank. Ports L and R should be connected to the left and right pipes separately.

3. Check whether the steering wheel can return to the neutral position smoothly to ensure its flexibility after installation.

6.8.2 Use and maintenance of steering gear

1. The oil of the steering gear must be changed after driving 3000km in the first phase and the oil must be changed every 20,000km thereafter. The power steering fluid of the specified specifications must be replaced when changing the oil.

2. The connecting parts must be tightened according to the specified repair tightening torque when the steering gear is repaired,.

3. The steering system must be inspected regularly at least once at 10,000km: ①The couplings must not be loose within the specified torque range and also each ball pin; ②Whether the oil in the oil tank reaches the specified liquid level.

4. Points to note when replacing the steering gear: ①Avoid collision; ②Keep the steering system clean and strictly prohibit foreign objects from entering; ③Make the assembly position mark of the mating part before disassembling to avoid incorrect installation.

Caution：

1. The steering gear is a sophisticated hydraulic part produced by a professional manufacturer. It cannot be easily removed if unfamiliar with the structure and the fault judgment is unclear. It should be disassembled and adjusted by professionals or trained personnel when it must be disassembled.

2. Overloading is strictly prohibited since the steering gear is suitable for a certain load, otherwise it will lead to insufficient power assistance.

3. Collision may cause damages to the steering gear. Check whether the steering gear is cracked and good in time. Inspect at specified maintenance station if necessary, otherwise it will cause a steering accident.

4. It is necessary to keep the oil clean in order to prevent the internal parts of the steering gear from being locked by any dirty debris which may cause steering failure. Filters and oils should be checked frequently.

5. If the operator feels steering effort or failure during operation, the operator should carefully check and look for the cause. It is forbidden to turn the steering wheel or disassemble the steering wheel to prevent damage to the components. It is forbidden for two operators to turn the steering wheel at the same time.

6. The number of turns of the steering wheel is related to the rated displacement of the steering gear and it has been determined during the design. If the radial or axial gap between the stator and rotor pairs is too large resulting in steering without manpower, the stator and rotor need to be replaced and others generally do not need to be adjusted.

6.9 Structure of lifter and adjustment

6.9.1 Structure of lifter

The lifter is mainly composed of oil cylinder assembly, distributor assembly, lifter handle, lifting shaft, outer lifting arm, inner lifting arm and piston rod assembly, position adjustment feedback mechanism, lifter case and other parts.

6.9.2 Adjustment of lifter

In the process of using the newly assembled lifter, the user is recommended to use tools to adjust the lifter if the original state has changed due to troubleshooting or reassembly parts due to the maintenance and replacement, etc. Follow the steps below to adjust and inspect the lifter. Please contact your local Huanghai Jinma supplier if necessary.

（1）Connect the lock nuts on both sides of the connecting plate before loosen the neutral position feedback of the position feedback mechanism.

（2）Adjust the total length of the position feedback mechanism.

（3）Tighten the lock nut.

Caution：

（1）Before checking the hydraulic system, turn off the engine and push the hydraulic handle to reduce the pressure in the system.

（2）High-pressure oil will penetrate into the skin and cause injury. Be very careful when handling high-pressure oil and pay special attention not to spray the high-pressure oil to the eyes and other body parts.

（3）The hydraulic oil must be filled in the hydraulic lifter case as required before starting the engine to prevent the hydraulic gear pump from burning out.

（4）The handle of the hydraulic lifter should be in the "neutral" position when the suspended agricultural implement is transferred. When carrying suspended agricultural implement for land parcel transfer or operation, high-speed driving is not allowed to avoid damaging components of the lift system and suspension system. Before the driver gets off the tractor, he must lower down the agricultural implement to the ground.

6.10 Air intake and exhaust system

6.10.1 Air intake system

The air filter adopts k1317 dry paper filter element and its structure and air flow diagram are shown in Figure 6-14. The air is absorbed from the air inlet (3) in the front of the air filter and the twisting angle causes the air to rotate. Larger particles are thrown to the bottom dust outlet (2) due to centrifugal force and pass through the filter element before being sucked into the cylinder. The clean air makes it possible to extend the service life of the cylinder sleeve and piston.

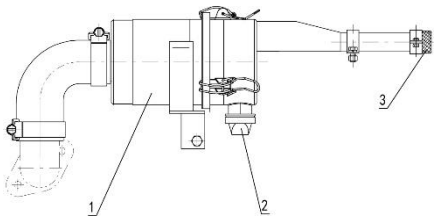


Figure 6-14 Air filter

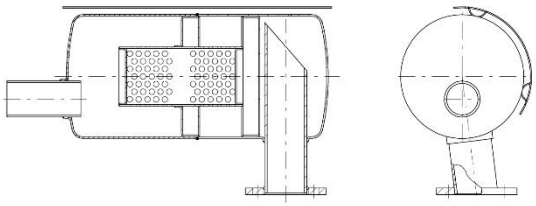
Figure 6-15 Filter element maintenance

According to the dust level of the ambient air and the tractor service requirements, the filter

ent needs to be maintained for a period of time. (If it is in a dusty environment, it needs to be maintained as soon as possible). Take out the filter element, use a soft brush to remove dust (Figure 6-15) and gently tap the surface. Seal both ends of the filter element and blow compressed air from the inside to the outside to remove the dust. Do not clean it with oil or water.

6.10.2 Exhaust system

The muffler is fixed on the exhaust elbow. The exhaust gas enters the muffler, moves into the muffler cavity through the eyehole on the lower side and then goes out through the eyehole on the filter components. After several "turning", " clogging " and "expansion", the noise is greatly reduced. After about 1000 hours of use, the dust needs to be removed by knocking on the side of the muffler to avoid clogging or affecting the function of the engine (see Figure 6-16)



6.11 Rollover protective structure

The tractor is equipped with a safety frame to protect the tractor operator and minimize serious operation injuries caused by accidental rollover. These frames called safety frames form a safe area in which the operator can get protect if the tractor is overturned. The tractor driver must wear a seat belt to be protected by the safety frame.

Figure 6-17 Safety frame

The installation structure and fasteners that form the installation connection with the tractor are parts of the safety frame.

6.11.1 Installation of safety frame

It can be disassembled when the tractor needs to pass through low spaces or stationary positions. Dismantle the bolts and nuts A on both sides and loosen the bolts and nuts on both sides (see Figure 6-17).

Caution:

It will not protect people when the safety frame is folded. Please use the safety frame during operation, otherwise the tractor may roll over and cause personal injury.

6.11.2 Maintenance and inspection of safety frame

This safety frame has been certified by industry and government standards. Any damages or changes to the hardware or seat belts installed in the safety frame will invalidate the certification and will reduce or eliminate the protection of operators.

The hardware and seat belts of the installed safety frame should be checked after the first 100 hours and the safety frame must be replaced before further operation of the tractor if there's damage or alteration.

When operating the machine, you must wear a seat belt and be equipped with a certified safety frame. Failure to do so will reduce or eliminate the protection of the operator.

6.11.3 Damage to the safety frame

If the tractor has been turned over or damaged (for example, it hits an object on the top of the head during transportation), please carefully check the damage of the safety frame, seat, seat belt and seat installation components after the accident. .

Caution:

(1) Do not tie chains or ropes to the safety frame for towing purposes as this will cause the tractor to tilt backwards. Be careful when driving through doors or low overhead obstacles and make sure that the safety frame has enough top clearance.

(2) The tractor will roll over when the operation is improper. The safety frame is foldable and for low-clearance storage only. If the safety frame is in the folded state, it will not have the effect of protection. The safety frame should be lifted immediately after storage in low clearance. When the safety frame is lifted, be sure to use a seat belt. Safety belts can save lives when in use. Do not use seat belts when the safety frame is lowered.

6.12 Drawbar

The tractor can be equipped with a drawbar which connects and fixes the rear agricultural implements through a connecting pin. The dimensions at each position are manufactured according to standard requirements.

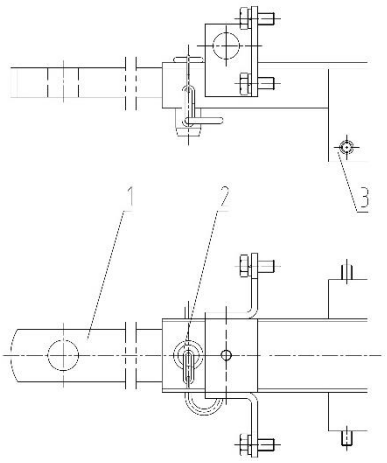


Figure 6-18 Drawbar

Certain heavy equipment, such as loaded single-axle trailers can put excessive pressure on the tow bar which would be greatly increased through rough roads and pressure of high-speed. The static vertical load on the hook should not exceed that shown on the chart.

Caution:

Pulling from the wrong position on the tractor can lead to roll over. Avoid overloading the tow bar. Keep the clutch steady, avoid emergency brake and use the brakes carefully to avoid breakage.

Chapter 7 Main faults and troubleshooting methods

Once the tractor breaks down in use, it should be stopped for inspection immediately and the cause should be found and eliminated according to the relevant content in the following table.

Caution：

① The user should contact the maintenance station set up by the factory or ask an exp nced person for help when the work requires a high level of skill such as dismantling before overhauling or replacing new parts..

② Please refer to the engine maintenance manual for checking and troubleshooting supporting engine faults.

7.1 Diesel

Cause of failure	Troubleshooting methods
1. Low temperature 2. Poor circulation of diesel 3. Air enters the fuel line 4. The fuel injection pump, fuel injection nozzle, access valve and other parts are stuck or worn 5. Intake and exhaust valve have leakage, washer of air cylinder cover is damaged, piston rubber ring is abraded, or the air valve has no clearance. These cause inefficient pressure 6. Insufficient battery voltage	Fill the radiator with hot water or preheat the oil into the crankcase Check and clean the fuel pipes and filter element Exhaust the air from the fuel line and tighten each joint Clean, repair or replace the couple parts Grind intake and exhaust valves, adjust air valve clearance, replace cylinder head gaskets and piston rings Charge the battery or replace it with a new battery

7.1.1 Difficult starting of diesel engines

7.1.2 Insufficient power

Cause of failure	Troubleshooting methods

1. The air filter or diesel filter is clogged	Clean the filter element with diesel or kerosene
2. The fuel supply advance angle is wrong	Readjust to the specified value
3. Diesel contains water	Drain water or replace diesel
4. The injector needle valve is stuck or the nozzle hole is blocked	Overhaul or replace the fuel injector coupler
5. The intake and exhaust valves are leaking or the valve clearance is wrong	Grind the valve and adjust the valve clearance
6. The main bearing or connecting rod bearing bush is excessively worn or burned	Overhaul or replace
7. Serious uneven working of the two cylinders of the diesel engine	Check and adjust the fuel supply and fuel injection pressure of the two cylinders of the fuel injection pump, Improve uniformity

7.1.3 The engine stops suddenly

（1）Crankshaft and bearing are locked, repair or replace crankshaft and bearing

Cause of failure	Troubleshooting methods
1. Insufficient or interrupted engine oil	Check whether the oil level in the oil sump is normal, refill oil if the oil level is too low
2. The engine oil is too thin or deteriorates after long-term use	Replace with new engine oil, check whether the plunger pair of the fuel injection pump leaks too much diesel oil to dilute the engine oil and repair it if there are signs
3. Sudden failure of the oil pump or blockage of the oil filter element, safe valve and bypass valve malfunction	Overhaul or replace the oil pump and oil filter

（2）Piston and cylinder are locked, repair or replace cylinder, piston and other parts

Cause of failure	Troubleshooting methods

1. The diesel engine lacks water so that it overheats and locks the cylinder 2. Too much scale in the water jacket of the cylinder body causes the cylinder to overheat 3. The engine works with overloaded 4. The fan belt is too loose	Pay attention to refill cooling water Eliminate scale Strictly comply with the operation rules Adjust the belt tension or replace the belt

（3）If the flywheel can still rotate, there are the following reasons

Cause of failure	Troubleshooting methods
1. The diesel fuel in the fuel tank is used up or the fuel pipe is broken 2. Air is sucked in the fuel pipe 3. The diesel filter or pipeline is clogged 4. The plunger spring of the fuel injection pump suddenly breaks	Fill diesel or replace the fuel pipe Exhaust the air in the fuel line Clean the diesel filter element or fuel pipe Replace the plunger spring with a new one

7.1.4 Abnormal exhaust fume

Cause of failure	Troubleshooting methods
1. Diesel engine works with overloads 2. Exhaust gas with a lot of smoke which is caused by the reverse installation of the second gas ring or the severe wear of the oil ring 3. White smoke in the exhaust gas which is caused by water in the fuel, poor atomization of the fuel injector or low fuel injection pressure	Reduce the load. If it does not meet the matching requirements, adjust and reinstall the gas ring. Pay attention that the side marked with "Up" on the ring end faces the piston crown or replace the oil ring Clean the fuel tank, diesel filter, replace the diesel fuel, overhaul the fuel injector couplings and calibrate the fuel injection pressure

7.1.5 Diesel overheated

Cause of failure	Troubleshooting methods
1. The fan belt is too loose 2. Diesel works with overload for a long term. 3. The fuel supply is not in time or the fuel injection nozzle drips oil which makes the exhaust gas test too high	Adjust the belt tension or replace the belt Reduce diesel load Check and repair

7.2 Transmission system

7.2.1 Clutch skids

Cause of failure	Troubleshooting methods
1. There is oil stained on the surface of the friction plate 2. The compression spring force is reduced or broken 3. The free travel is small or disappears and the release levers are not in the same plane 4. The friction plate is severely worn	Clean with diesel oil and troubleshoot oil leakage Replace the spring Readjust as required Replace friction plate

7.2.2 The clutch is not completely separated and the gear lever is difficult to shift

Cause of failure	Troubleshooting methods
1. The free travel is too large or the working stroke is small 2. The clearance between the three release levers and the bearings are inconsistent	Readjust as required Readjust as required

7.2.3 There is abnormal noise in the transmission case

Cause of failure	Troubleshooting methods

1. The tooth surface of the gear is severely worn or peeled off 2. Broken gear teeth 3. The bearing is severely worn or damaged 4. The backlash of the central transmission gear is broken	Replace gear Replace gear Replace the bearing Readjust to the specified value

7.2.4 Overheated transmission case

Cause of failure	Troubleshooting methods
1. The bearing clearance or conical gear backlash is too small 2. Insufficient oil 3. Poor oil quality	Readjust to the specified value Fill lubricating oil to the specified oil level Fill the specified lubricating oil after cleaning with diesel oil

7.3 Brake

7.3.1 Brake failure

Cause of failure	Troubleshooting methods
1. Excessive wear of the friction belt on the brake shoe 2. Friction belt on brake shoe contains oil 3. Improper adjustment	Replace with new brake shoes Use gasoline to clean and troubleshoot oil leakage Readjust as required

7.3.2 Wandering when braking

Cause of failure	Troubleshooting methods

1. The travel of the middle left brake pedal is inconsistent 2. Friction belt on single -side brake shoe is stained with oil 3. The wear of the friction belt on the left and right brake shoes is inconsistent	Readjust to the same Use gasoline to clean and troubleshoot oil leakage Readjust or replace with new brake shoes

7.3.3 Incomplete separation, overheat

Cause of failure	Troubleshooting methods
1. Brake shoe return spring has no full force 2. The clearance between the friction belt on the brake shoe and the drum is too small	Replace the spring Adjust free travel of pedals

7.4 Steering gear and walking system

7.4.1 Difficulty steering

Cause of failure	Troubleshooting methods

1. The clearance is too large or severely worn between the finger pin and the worm, or the screw nut assembly and the rocker gear fan, or the spherical worm and the roller 2. The front tire pressure is too low 3. Insufficient oil supply from the oil pump 4. There is air in the steering system 5. The oil tank is not full	Adjust the clearance or replace the wearing parts Inflate as required Choose a suitable oil pump or check whether the oil pump is normal Exhaust the air in the system and check the suction pipeline Refuel oil to the specified oil level

7.4.2 The tractor goes off-track automatically

Cause of failure	Troubleshooting methods
1. The air pressure of the left and right tires is inconsistent 2. Inconsistent wear of left and right tire treads	Adjust to the same Replace tires

7.4.3 Swing of front wheel

Cause of failure	Troubleshooting methods
1. Bearing clearance of front wheel shaft is too large or severely worn 2. The ball head pin or ball head seat is severely worn 3. Wear of swing shaft sleeve 4. Wear of steering knuckle sleeve	Adjust the clearance or replace the bearing Replace ball head pin or ball head seat Replace the shaft sleeve Replace the shaft sleeve

7.4.4 Tire wear at early time

Cause of failure	Troubleshooting methods

1. Improper adjustment of the front toe-in 2. Low tire air pressure 3. Driving wheels are assembled wrongly	Readjust to the specified value Inflate as required Re-assemble

7.5 Hydraulic suspension system

7.5.1 Farming implements cannot be lowered or raised

Cause of failure	Troubleshooting methods
1. The adjusting valve is locked 2. The main valve is stuck	Loosen the adjusting valve Clean valve

7.5.2 Rapid static dropping of farm implements

Cause of failure	Troubleshooting methods
1. The oil cylinder and piston are severely worn 2. The oil seal on the piston is damaged 3. Wear of distributor slide valve	Overhaul or replace the cylinder piston assembly Replace the oil seal Change distributor

7.6 Electrical system

7.6.1 Starter

Cause of failure	Troubleshooting methods
1. The starter does not rotate	Welding or screwing the contact point
①Broken or poor connection of the connecting wire	Recharge or replace the battery
②Insufficient battery charge	Clean the commutator surface or replace the brush
③Poor connection between brush and commutator	Repair after inspection
④The internal short circuit or open circuit of the starter	Clean the commutator contact surface
2. The starter is idling but there is no starting power	Use emery cloth to repair commutator or remove oil stains
①Poor connection between brush and commutator	Clean and screw contact points
②The commutator surface is burned or oily	Overhaul switch
③Poor joint connection	Charge after inspection
④Poor connection of electromagnetic switch	Screw the electromagnetic switches armature connecting screw into 2-3 teeth
⑤Insufficient battery charge	
3. The starter will rotate before the starter pinion gear enters into meshing and the gear will collide. Electromagnetic switch armature travel is too small	

7.6.2Battery

Cause of failure	Troubleshooting methods
1. The battery often has insufficient power ①The generator or regulator is faulty and there is no charging current ② Loose or rusty wiring in the charging circuit increases the resistance ③Pole plate short circuit	Repair generator or regulator Check whether the electric clamping chuck and connecting wiring bolt are loose and tighten or eliminate the rust Overhaul
2. The battery discharges by itself; the impurity in the plate material is too high or the electrolyte is impure	Completely discharge or over-discharge the battery make the impurities of the pole plate enter the electrolyte, then release the electrolyte and clean it with distilled water and then refill the new electrolyte to recharge
3. The battery capacity is significantly reduced (low discharge voltage, high charging voltage, low electrolyte density) plate vulcanization ①Charging is always no sufficient ②Long-term low current discharge fails to recharge in time	Use low current and long time charging method or use full charge and full discharge cycle Rejuvenate the active substance

7.6.3 Generator

Cause of failure	Troubleshooting methods

1. The battery charging alarm light does not light up after turning on the ignition start switch	Check and repair
①Fuse blown	Check and repair
②The excitation circuit is open	Replace the bulb with the same specification
③The filament of the charging alarm light is broken	Repair, replace
④The excitation coil is open	Replace the voltage regulator of the same model
⑤The electronic voltage regulator is damaged	
2. After turning on the ignition start switch and starting the engine, the battery charging warning light is always on and the generator does not generate electricity	Replace the voltage regulator of the same model
①The electronic voltage regulator is damaged	Repair, replace
②Short circuit of generator excitation coil	Repair, replace
③The generator rectifier diode is damaged	Repair, replace
④Other faults of the generator	
3. Insufficient charging of generator	Adjust its tension according to regulations
①The generator belt is loose	Repair, replace
②Poor contact of carbon brush for excitation and oil stains	Replace the voltage regulator of the same model
③The electronic voltage regulator is damaged	
④The battery electrolyte is too little and the vulcanization is serious	Adjust the height of the electrolyte level according to the requirements and replace the batteries that are severely vulcanized and cannot recover their capacity.
	Replace the voltage regulator of the same model
4. Easy to burn bulbs	Replace a good quality bulb
①The electronic voltage regulator is damaged and out of regulation	Repair, replace
②The quality of the bulb is too poor	

5. The generator makes an abnormal noise ①Improper assembly of generator and damaged bearings	

7.6.4 Dashboard

Cause of failure	Troubleshooting methods

1. Abnormal indication of water temperature meter	Overhaul
①The circuit from the dashboard to the water temperature sensor is open; the connector is in poor contact	replace
②Internal open circuit of water temperature sensor	Overhaul and replace
③Internal failure of water temperature meter	Overhaul
④The circuit from the dashboard to the water temperature sensor is short-circuited	Overhaul and replace
⑤ Internal short circuit of water temperature sensor	Overhaul and replace
⑥ Internal failure of water temperature meter	Overhaul
2. The fuel gauge indicates abnormally	Overhaul and replace
①The connector is in poor contact at where there is a short circuit or open circuit	Replace generator
②The fuel sensor is faulty	Overhaul
③ Internal failure of fuel gauge	Overhaul and replace
3. The tachometer indication is abnormal	Overhaul and replace
① The connector is in poor contact at where there is a short circuit or open circuit in the circuit	
② Internal failure of the tachometer	
③No output voltage at point W of the generator	
4. The oil pressure gauge displays abnormally	
① The connector is in poor contact at where there is a short circuit or open circuit in the circuit	
②The fuel sensor is faulty	
③ Internal failure of fuel gauge	

7.6.5Light

Cause of failure	Troubleshooting methods
1. The headlights have no high and low beam	Replace
①Fuse blown	Overhaul
②The circuit is broken	Replace a good quality bulb
③The bulb is damaged	Repair and replace
④The light switch is broken and the contacts are burnt	Replace
2. The brake light does not light up	Overhaul
①Fuse blown	Replace a good quality bulb
②The circuit is broken	replace
③The bulb is damaged	
④The brake light switch is broken	Replace
3. Turn signal does not light or flash	Overhaul
①Fuse blown	Replace a good quality bulb
②The circuit is broken	Repair and replace
③The bulb is damaged	
④The turn signal switch and flasher are broken	Replace
4. The electric horn does not sound or the sound quality is poor	Overhaul Adjust the tuning screw
①Fuse blown	Maintain
②The circuit is broken	
③The electric horn is out of tune	
④Electric horn switch contacts burnt out	

Chapter 8 Delivery, acceptance check and transportation

8.1 Delivery and acceptance check

When a user purchases a tractor, he/she should check the purchased machine and focus on the following aspects:

8.1.1 Attachment

It contains: "Tractor Instruction Manual", "Qualification Certificate", "Delivery List", "Engine Technical Documents", "Parts Catalogue", please check whether it is consistent with the whole machine number.

8.1.2 Check whether the attachment is available

Check the "Delivery List", it should include accessories and toolboxes. (If you have any questions, please contact the dealer)

8.1.3 Check the condition of the tractor

The technical conditions may be changed after the machine is consigned or shipped. The user needs to get further confirmed when buying it.

8.2 Transportation

You should strictly obey the traffic rules when you drive the tractor by yourself. The distance between the two vehicles should be kept at least 60 meters to avoid accidents caused by collisions;

If transport with loads, the following points should be achieved:

Loading and unloading tractors should be at a flat place and a dedicated unloading platform with the guidance of an assistant on site. Irrelevant personnel should stay away from the site.

After loading the tractor, place the suspender in the lowest position, put the handbrake on, put into reverse gear, pull out the key and turn off the battery main switch. Fix the front and rear tread of the four tires with iron wires, fix them with wedges and pull the rear axle with iron wires. Remove

the rearview mirror and close the engine hood if necessary. The protective structure can be placed in the folded position and secured firmly. When crossing culverts or bridges, pay attention to heights and slow down when turning.

First release the hand brake, put into forward gear and drive at the lowest speed when

ading.

Caution

1. The parking brake should be put on and the front and rear wheels should be firmly wedged to prevent the tractor and the operator from tilting or falling due to the sudden start of the tractor during loading and unloading.

2. Drive the tractor at the lowest speed to avoid t tilting or falling caused by high speed when loading and unloading tractors.

Chapter 9 Dismantling and disposal

In order to protect the social environment and your personal safety, please send the machine to a recycling company with professional dismantling capabilities when the entire service life of the machine expires.

Please disassemble the tractor from top to bottom, first outside and then inside. You must use professional slings when disassembling large or heavy objects. Please hand over the battery to a professional battery recycling company and dispose of waste engine oil in a centralized and proper r er. Do not dump it randomly and pollute the environment.

Warning:

The battery electrolyte is corrosive and should not be splashed into the eyes, skin or clothes. If there's acid splashed, flush with water immediately and get medical help as soon as possible to avoid accidental injury.

Important:

1. The acid of the replaced battery should not be dumped randomly which will pollute the environment and cause accidental injury.

2. The replaced engine oil which is waste oil cannot be discarded at will to avoid accidental injury.

We're here to remind you that without professional dismantling tools and actual operating experience, improper placement while-dismantling or post- dismantling may cause personal injury.

Warning:

A professional sling must be used when disassembling large or heavy objects! Pay attention to personal safety.

Chapter 10 Warranty matters

10.1 Basis of product warranty

YL254Y garden wheeled tractors are guaranteed in accordance with the following documents and regulations.

"Provisions on Responsibilities for Repair, Replacement and Return of Agricultural Machinery Products" Order No. 126 of the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

"Product Quality Law of the People's Republic of China";

"Law of People's Republic of China on the Protection of Consumer Rights and Interests"

10.2 Circumstances without warranty

Warranty will not be implemented in some cases according to relevant laws and regulations. For details, please refer to the "Three Guarantees Service Certificate".

10.3 Warranty Service Procedure

10.3.1 Warranty overview

1. The company implements the principle of "people who sell it are responsible for the warranty".

2. Under the premise of normal operation, use and maintenance, the user shall implement the warranty (except for wearing parts) for quality problems caused by product design, processing, assembly and other reasons during the warranty period.

3. The warranty principle is: repair first to meet the requirements. If not, you can replace parts or components.

4. We will inspect and recycle parts and components after replacement

5. The user should carefully check all the parts and components before purchasing the machine. If the product parts are damaged during the storage and transportation of the distributor,

our company will not bear the warranty responsibility.

10.3.2 Warranty period and scope:

1. Warranty period: For complete machines of 18.4 kilowatts or more (18.4 kilowatts), 12 months, 24 months for main components, 9 months for machines below 18.4 kilowatts and 18 months for main components. From the date of shipment (the warranty period for goods sold on credit in installments starts from the date of delivery).

2.Main parts: Engine body, cylinder head, flywheel, frame, gear box, semiaxle housing, steering gear housing, differential housing, main reducer housing, brake hub, drawplate, lifter housing.

3. See the table for other parts. Each manufacturer is responsible for the warranty for various engines. The warranty period and scope are determined by the engine manufacturer in accordance with relevant national regulations. Please refer to the engine specifications for more details. The user can directly contact the diesel engine manufacturer or contact our company if any failure occurs during the warranty period.

10.3.3 The warranty is not implemented in the following cases but the repair cost should be reasonable:

1. Wear and failure at early time caused by improper use and maintenance, such as damages caused by improper loading and unloading during transportation after the user purchases the machine; operating conditions exceed the range specified in the product manual, overspeed and overload; fail to operate, overhaul, adjust and fasten the products in accordance with the product operating instructions; unsuitbale matching of the internal combustion engine; use of engine oil that does not meet the specified requirements.

2. The manual does not allow the parts to be modified, adjusted or disassembled on their own which will cause failure.

3. It cannot prove that the product purchased is a product within the warranty period without the warranty certificate and valid invoice,.

4. The product specifications and models on the warranty certificate or invoice are inconsistent or changed with the products required by the warranty.

5. After the failure, the damage is not maintained in the original state or which was disposed

of on his own without the consent of the seller. The repairer cannot make technical appraisal and disposal of the problem but looks forward to the provisions of Article 22 of the "Regulations on Responsibility for the Repair, Replacement and Return of Agricultural Machinery Products".

6. The driver and the operator have not obtained a driving operation license in accordance with the law.

7. Caused by force majeure.

10.3.4 Other

If there is a conflict between this warranty rule and the "Regulations on Responsibilities for Repair, Replacement and Return of Agricultural Machinery Products", the "Regulations on Responsibilities for Repair, Replacement and Return of Agricultural Machinery Products" shall p il.

Warning:

1. Certain actions may invalidate the warranty conditions. See "Three Guarantees Service Certificate" for details.

2. Please pay attention that it will not be covered by the manufacturer’s warranty if the user modifies the tractor by himself or uses it for purposes other than those specified in the uction manual.

Caution:

1. The three-guarantee service certificate must be presented when the user accepts the warranty, so please keep it properly.

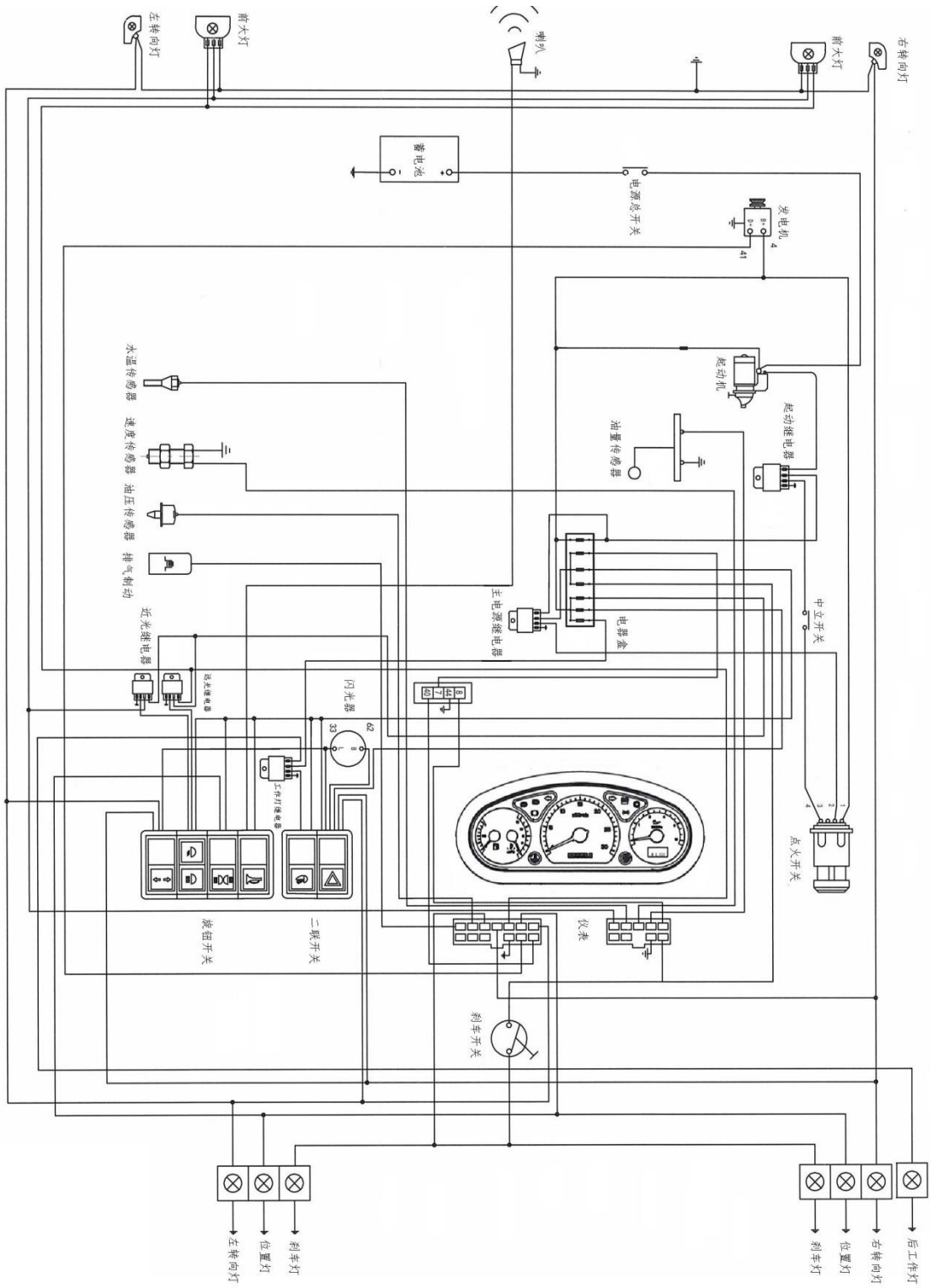
2. If the machine fails, you must inform the dealer several things for the warranty, such as the machine product model, product code, engine model and type, how long it has been used and a detailed description of the malfunction.

3. Three-guarantee repair parts supply period description: guarantee that the products will continue to supply and repair the three-guarantee parts within five years of discontinuation, but during the three-guarantee period, the delivery date of special parts needs to be negotiated and determined; the price and delivery date of the supplied parts need to be negotiated if the three-guarantee parts exceed the supply deadline.

4. Be sure to use product-specific parts and accessories and engine oil.

Chapter 11 Appendix

11.1 Electrical system circuit diagram



11.2 Distribution of tractor transmission system and rolling bearing

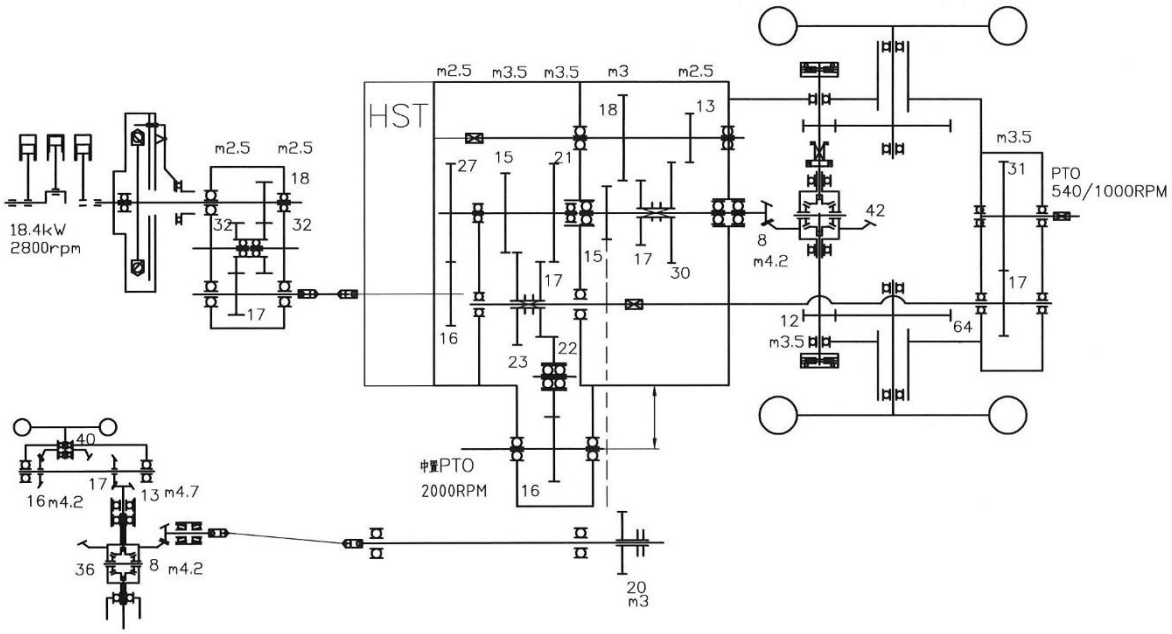


Figure 11-2 Diagram of tractor transmission system

11.3 Motion diagram of the tractor suspension system

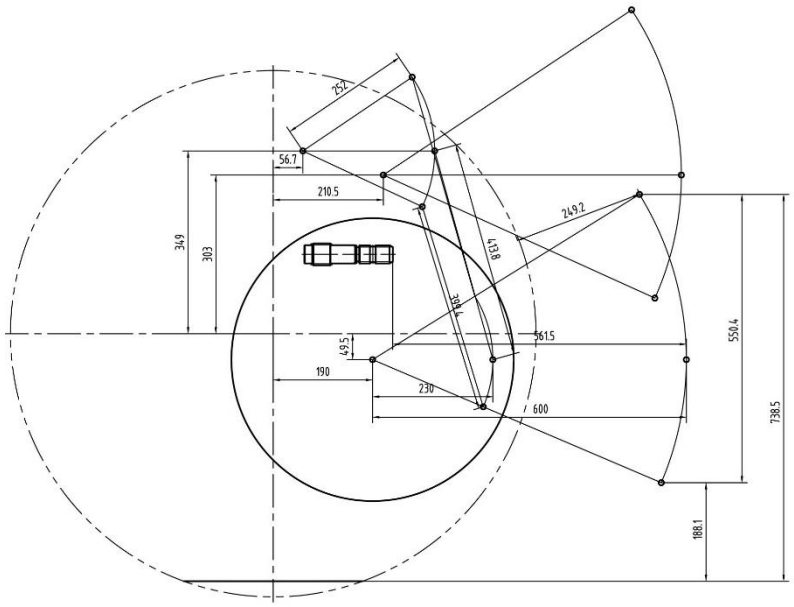


Figure 11-3 Motion diagram of the tractor suspension system

11.4 Accessories list

No.	Code	Name	QTY
1	Z04-024 Double-headed solid wrench GB/T4393	Wrench 8×10	1
2		Wrench 13×16	1
3		Wrench 18×21	1
4		Wrench 22×24	1
5	Z03-016	C type protection cover of canopy	1
6	Z03-0211	Rain cover of 254 tractor（230x137x120）	1
7		Manual of diesel attachments etc.	1set
8	Z02-YL-001	YL254Y garden wheeled tractors parts list	1
9	Z01-YL-001	YL254Y garden wheeled tractors	1
10	Z03-303	18-28P tool box(Suzhou,include tools etc.)	1

11.5 Fragile parts list

No.	Code	Name	QTY
1	C906-004	Filter assembly	1
2	D07-13871-FB25X40X7	Oil seal FB25×40×7	1
3	D07-9877.1-20X35X7-F	Oil seal 20×35×7-F	1
4	D07-9877.1-FB50X68X8	Oil seal FB50×68×8	4
5	B254Y.37.021	seal ring 20X40X7	1
6	B254Y.41.114	seal ring FB35X55X9	1
7	B254Y.41.124	seal ring FB25X52X9	1
8	D07-3452.1-16X2.65	O seal ring 16×2.65	6
9	D07-3452.1-12.5X2.65	O seal ring 12.5×2.65	1
10	D07-3452.1-17X2.65	O seal ring 17×2.65	1
11	D07-3452.1-20X2.65	O seal ring 20×2.65	3
12	D07-3452.1-11.2X1.8	O seal ring 11.2×1.8	4
13	D07-3765-11.3X2.2	O seal ring 11.3×2.2	2
14	D07-3452.1-42.5X2.65	O seal ring 42.5×2.65	2

15	D07-3452.1-13.2X1.8	O seal ring13.2×1.8	4

11.6 Implementation of standards, orders and laws

1.GB/T 18447.1 Agricultural tractor safety requirements

2.GB/T 3871 Agricultural tractor test procedure

3.Q/320901 YNT 112.1-2021 YL254Y Garden wheel tractor technical conditions

4.GB 6376 Tractor noise limit standard

5.GB/T 19040 Agricultural tractor steering requirements

6.GB/T 9480-2001 Rules for writing manuals for agricultural and forestry tractors and machinery, lawn and gardening power machinery

7.GB/T 24648.1 Tractor reliability assessment

8.JB/T 6712 Tractor appearance quality requirements

9.JB/T 7734 Test method for muddy water tightness of tractors

10. "Regulations on Responsibilities for Repair, Replacement and Return of Agricultural Machinery Products"

11. "Product Quality Law of the People's Republic of China"

12. "Law of People’s Republic of China on the Protection of Consumer Rights and Interests"