MANUAL BOOK

LGMA AUSTRALIA

For LM Series

Preface

Welcome to use the wheel loader produced by LUGONG AUSTRALIA PTY LTD（LGMA）. This manual can guide you to use and maintain the machine correctly. Please place it in the cockpit and all relevant personnel should read it at any time.

We always strive to improve and improve our products to make them more advanced and reliable. We reserve the right to make these changes, but make no commitment to introduce them into products that have already been delivered. We also reserve the right to change the data and the machine and the maintenance instructions. Changes in the design, operation and maintenance instructions are subject to change without prior notice. For the latest information about the machine or questions about this manual, please consult our company.

Security Matters

Operators should understand and follow current national and local Security regulations. Since it is impossible to foresee all possible hazards, the Security instructions in this manual and on the machine cannot cover all Security precautions. If you are not sure about the Security of certain operations, please contact our company or dealers for more information.

Contents

CHAPTER ONE SECURITY 6

1. Security Regulations 6

1.1 Security Provisions: 6

1.2 Security Device: 6

2. Security Inspection And Maintenance 7

2.1 General Knowledge: 7

2.2 Working In Closed Places: 7

2.3 Work Under The Machine: 7

2.4 Maintenance Work During Engine Operation: 7

2.5 Do Not Drop Foreign Bodies Into The Machine: 8

2.6 Welding Repair: 8

2.7 Maintenance Of Cooling System: 8

2.8 Maintenance Of Hydraulic System: 9

2.9 Battery Maintenance: 9

2.10 Maintenance And Storage Of Tires: 10

3. Security Transportation 11

3.1 Loading And Unloading Machine: 11

CHAPTER TWO OPERATION 12

1. Learning About Machinery 12

2. Wheel Loader Operation 14

2.1 Notes For Use: 14

2.2 Comprehensive Check Before Startup: 14

2.3 Starting Of Engine: 15

2.4 After Engine Start: 15

2.5 Driving: 15

2.6 Variable Speed · Forward And Backward Conversion: 16

2.7 Steering: 16

2.8 Brake: 16
2.9 Parking: 17
2.10 Shovel Loading Operation: 17
2.11 Product structure diagram: 17
2.12 Drive axle: 19
3. Malfunction precaution 20
CHAPTER THREE MAINTENANCE 29
1. Maintenance Descriptions 29
1.1 Engine Oil Supply: 29
1.2 Fuel Tank Filling: 29
1.3 Gearbox Oiling: 29
1.4 Drive Axle Oiling: 30
1.5 Filling Of Hydraulic Tank: 31
2. Maintenance regulations 33
2.1 Oil Selection Table: 33
2.2 Electrical System Maintenance Rules: 34
3. Maintenance Details 36
3.1 Maintenance Every 10 Hours (Daily): 36
3.2 Maintenance Every 50 Hours (Weekly): 36
3.3 Maintenance Every 100 Hours: 37
3.4 Maintenance Every 250 Hours: 37
3.5 Maintenance Every 500 Hours: 37
3.6 Maintenance Every 1000 Hours: 37
3.7 Maintenance Every 2000 Hours: 38

CHAPTER ONE SECURITY

1. Security Regulations

1.1 Security Provisions:

Only specially trained and qualified personnel can operate and maintain the machine. Be familiar with and follow all Security regulations, precautions and instructions when operating and maintaining the machine.

When working with other operators, or those responsible for site traffic directing tasks, ensure that all personnel understand the hand signals being used. Comply with all the rules concerning Security.

1.2 Security Device:

Ensure that all shields and shields are in correct position and repair damaged parts., proper use of Security devices such as parking brake handle, seat belt (when fitted), etc. Do not remove any Security device and ensure that it is in good working condition.

2. Security Inspection And Maintenance

2.1 General Knowledge:

The machine operation and maintenance personnel shall be trained and obtain corresponding qualifications; Personnel not connected with the ongoing maintenance and repair work are not allowed to enter the work area. Specialized guard should be designated if necessary.

In order to prevent personal injury, the working device should be lowered to the ground, the engine should be turned off, the parking brake handle should be pulled up, the vehicle should be in the parking brake state, and the car should be wedged.

Fuel and oil are dangerous goods, fuel, oil, grease and oil cloth cannot contact any open fire and flame, oilcloth cannot be stacked in the corner, may cause spontaneous combustion. Do not smoke when refueling or checking the battery.

2.2 Working In Closed Places:

The gas discharged from the engine can make people sick or even fatal. If the engine must be started in closed occasions, the exhaust device is needed to exhaust the gas in the area. If there is no exhaust device, the door should be opened for ventilation.

2.3 Work Under The Machine:

Park the machine on solid level ground and lower the working device to the ground level before starting maintenance or repairs under the machine. You have to wedge the tire in place. It is very dangerous to work under a machine if the tire is lifted off the ground and supported only by a working device. Never work under a machine that is poorly supported.

2.4 Maintenance Work During Engine Operation:

To prevent injury, do not perform maintenance work while the engine is running. If maintenance must be performed while the engine is running, the following precautions should be followed:

Have an operator in a seat, make sure all maintenance personnel are in contact with him, and be ready to shut down the engine at any time. Do not adjust parts you do not know.

Do not contact the exhaust tail pipe, muffler and other high temperature parts to prevent scald.

Never allow any tool or any part of the body to come into contact with the fan blade or fan belt. Otherwise, it can lead to serious trauma.

2.5 Do Not Drop Foreign Bodies Into The Machine:

Be careful not to drop any foreign matter inside the machine when opening the repair window or the fuel port of the oil tank for maintenance, otherwise it will cause damage to the machine, operation error and other faults. If any foreign matter falls into the machine, be sure to remove it safely from the machine.

2.6 Welding Repair:

Disconnect the terminals of the battery to prevent it from exploding. Remove paint from areas that need to be soldered to prevent harmful gas production. Sparks from welding can fall directly on rubber hoses, wires, or pressurized pipes. These pipes can suddenly break and the insulation of the wires can be damaged, so cover with a fireproof shield. When welding near tires, special care should be taken because the tires may explode when heated.

No alterations that affect the performance, Security or strength of the vehicle or operating device shall be made.

2.7 Maintenance Of Cooling System:

The temperature of the hydraulic fluid, the engine, the oil and water in the radiator were still high and the pressure was still there when the operation was just completed. At this point, any operation to open the tank cap, the radiator cap, pour the oil and water, or change the filter can result in serious burns. The above operation should be carried out after the temperature drops.

2.8 Maintenance Of Hydraulic System:

Before overhauling the hydraulic system, lock the cylinder and other hydraulic devices safely, cool the hydraulic oil, and release all system pressure from the hydraulic system.

Do not bend or hammer high pressure lines, and do not install abnormal bent or damaged hard pipes or hoses on the machine. Repair in time any loose or damaged fuel and lube lines, hydraulic system hard pipes and pipes hose. Please carefully check the piping (hard pipes and hoses) and tighten all joints with specified torque. Do not check for leaks with bare hands. Use a board or cardboard to check for leaks. Even a pressurized fluid the size of a pinhole can leak through a muscle and even cause death.

2.9 Battery Maintenance:

Battery electrolyte contains sulfuric acid, and batteries can produce hydrogen and oxygen when charged, so mishandling batteries can lead to serious injury or fire. Therefore, the following precautions should be absolutely observed:

The battery contains sulfuric acid liquid, which is highly corrosive, so keep it away from children. Users should wear protective glasses and rubber gloves when operating the battery. Once eyes, skin and clothes are spattered with sulfuric acid, rinse immediately with clear water.

When the battery is charged, it will produce hydrogen and oxygen. It should be regularly checked that the exhaust hole on the battery is not blocked. A fire or vent plug will cause an explosion, so the battery should be away from the open fire to avoid short circuit and congestion.

The battery should be stored in 5-25 ℃ dry, clean and well-ventilated environment, should not be exposed to direct sunlight, at least 2m from the heat source above the ring, the environment temperature is too high, will have a great impact on the performance of the battery. The battery shall not be placed upside down or lying down, and shall not be subjected to any mechanical impact or heavy pressure.

An indicator indicating the battery's state of charge is mounted on the battery cover. When the indicator is green, the battery can be used normally. When the display shows black, the battery should be charged in time, and when the indicator shows white, it should be replaced immediately.

2.10 Maintenance And Storage Of Tires:

High pressure can cause a tire to explode, so make sure the tire pressure is normal and do not inflate above the designated pressure. When adjusting the pressure, move as far away from the tires as possible, and be sure to stand behind the tire face when adjusting.

Check the tires, wheels daily, do not operate under low pressure, check whether the tire cracks, blisters and other damage phenomenon. Check whether the hub connecting bolts and nuts are missing, and check whether the tightening torque of the connecting nuts meets the actual demand.

3. Security Transportation

3.1 Loading And Unloading Machine:

The handling of machinery is always potentially dangerous and should be handled with extreme care. When loading and unloading machines, the engine should run at a low speed and the machine should run at a low speed.

State and local laws on weight, height, width, and length must be observed when the machine is shipped in a trailer. All l relevant traffic laws should also be observed.

When the loader needs to be transferred to the ship or train, the lifting hook on the front and rear frame is used for lifting. According to the weight of the loader, choose the right spreader. It is very dangerous to exceed the load limit of the spreader, so special attention should be paid to it.

CHAPTER TWO OPERATION

1. Learning About Machinery

The use of new cars must be advanced walking, starting from idling, gradually increase the load, the purpose is to make the friction parts for full running-in, in order to extend the service life of the machine. The total walking time of the new car is 60 hours. During the walking time, comply with the following regulations:

After starting the engine, run it in low speed and neutral for 5 minutes to make the engine fully preheat.14. You cannot suddenly accelerate the engine during the warm-up phase.

Empty car running, each gear respectively from low speed to high speed, driving should be smooth left, right steering and braking. During walking, forward gear, back gear, each gear should be evenly arranged walking.

During the period of loading loose materials is appropriate, the operation shall not be too fierce too urgent. The loading weight shall not exceed 70% of the rated weight. Driving speed shall not exceed 70% of the maximum speed.

Pay attention to the lubrication condition of the machine, replace or add lubricating oil according to the specified time.

Attention must be paid to the temperature of the gearbox, torque converter, front and rear axles, hub and brake drum. If there is overheating, the reason should be found out to eliminate it.

The following work should be carried out after the new car closes for 10 hours and the end of the closing period:

(1) Check the fastening of bolts and nuts of all parts. Especially diesel engine cylinder head bolts, exhaust pipe bolts, front and rear axle fixing bolts, hub nuts, drive shaft connecting bolts, etc.

(2) Clean rough and fine oil filters and fuel oil filters.

(3) Check the tightness of fan belt, generator belt and air conditioner compressor belt.

(4) Check the electro-hydraulic specific gravity and storage of the battery, and tighten the battery connector.

(5) Check the transmission oil

(6) Check the tightness of hydraulic system and brake system.

(7) Check the connection and flexibility of each control handle.

(8) Check the temperature and connection of the components of the electrical system, the power supply status of the generator, the instrument, the light and the steering signal and other working conditions.

(9) Open the water discharge valve at the bottom of the gas tank to discharge water.

Attending cleaning of transmission oil sump filter screen and torque converter oil filter element. Check the filter element of the oil return filter of the hydraulic tank. Change the engine oil.

2. Wheel Loader Operation

2.1 Notes For Use:

(1) The diesel oil used by the loader must be pure and have been sedimentation for at least 72 hours. The grade of diesel oil should meet the requirements of the regulations.

(2) The hydraulic transmission oil used by gearbox and torque converter and the hydraulic oil used by the hydraulic system must be clean.

The loader must be regularly maintained and lubricated according to the provisions.

(3) After the engine starts, the braking pressure reaches 0.35MPa before starting running.

(4) When the control arm and rotary bucket to reach the required position, should make the working device control handle back to the middle position.

(5) Changing the front and rear direction of driving is required after stopping.

(6) The engine water temperature is higher than 60°, and the oil temperature is higher than 100 ° to allow full load operation. When operating, the engine water temperature and oil temperature should not exceed 95°, and the torque converter oil temperature should not exceed 120°. When the temperature exceeds the allowable value, the engine should stop for cooling.

(7) The bucket shall not be lifted to the highest position to transport materials. When transporting materials, the twisting point under the boom should be kept about 400~500mm above the ground to ensure stable driving.

2.2 Comprehensive Check Before Startup:

Check the bottom and exterior of the vehicle for loose bolts, dirt, oil leakage, coolant leakage or parts damage, and check the condition of accessories and hydraulic parts.

2.3 Starting Of Engine:

(1) Before starting, the loader's working device control handle must be placed in the middle position, the variable speed control handle in the neutral position, and the switch in the original position.

(2) The starting moment is not allowed to add the throttle to the maximum position, so as not to damage the diesel engine parts in the moment.

(3) Turn the starting key clockwise to the ON position, connect the main switch of the power supply, and honk the horn. Press the gas pedal a little and then start.

2.4 After Engine Start:

(1) Make the engine rotate at low speed, if the engine oil pressure indicator cannot point to the normal range within 10 seconds, find out the reason, and then start, otherwise it will lead to engine failure.

(2) The oil pressure does not reach the specified value, the engine speed is too high will damage the turbocharger.

(3) After the diesel engine starts, idle operation for a few minutes, gradually improve the speed to 1000-1200r /min, and then enter the partial load operation. During operation, you must pay attention to the change of the meter reading at any time. Do not allow the engine to run at high speed or low speed in neutral position for more than 20 minutes.

2.5 Driving:

(1) In order to prevent accidents, before driving should ensure that the car or the vehicle around no miscellaneous personnel, and the vehicle is in control at all times. Lift the arm, turn the bucket back and maintain the walking posture.

(2) Put the variable speed control handle in forward 1 or backward 1.

(3) Remove the parking brake.

(4) Release the brake pedal, step down the accelerator pedal slowly, and start the loader forward or backward.

(5) Only when the braking pressure reaches the prescribed value (0.45MPa), can the vehicle ensure driving safety.

2.6 Variable Speed · Forward And Backward Conversion:

(1) When changing gears, properly step on the accelerator to avoid excessive impact of the transmission system.

(2) In order to provide the driver's comfort and maximize the life of the transmission components, change the driving direction, to be carried out after the car stops.

(3) When changing from low speed to high speed, first loosen the throttle and operate the high and low speed control handle, and then step on the throttle. When changing from high speed to low speed, loosen the throttle first, slow down and then shift gears.

2.7 Steering:

(1) When driving, the steering wheel will be turned to the direction of the change, the vehicle can turn.

(2) The vehicle is centered on the hinge pin, and the front and rear frames bend to turn.

2.8 Brake:

(1) Do not put your foot on the brake pedal unless necessary.

(2) Don't tread the pedal repeatedly unless it is necessary.

(3) When walking downhill, do not extinguish the engine, and never put the high/low speed control handle or the front/rear gear control handle in neutral.

2.9 Parking:

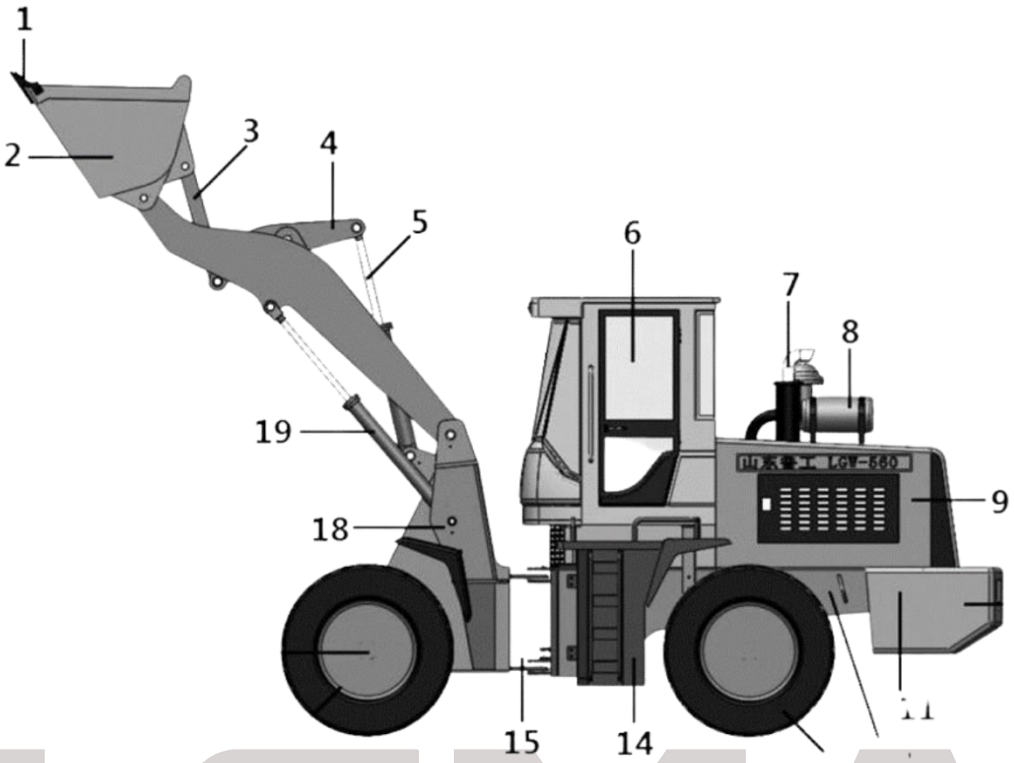
Release the accelerator pedal and press down the brake pedal to stop the vehicle, then hang each gearshift control handle into neutral. The vehicle came to a safe stop. Pull up the parking brake handle to put the parking brake in the braking state. Bucket or other working device to the ground and lay flat.

If the machine must be temporarily parked on a slope, a wedge should be applied against the wheel to prevent the machine from moving.

2.10 Shovel Loading Operation:

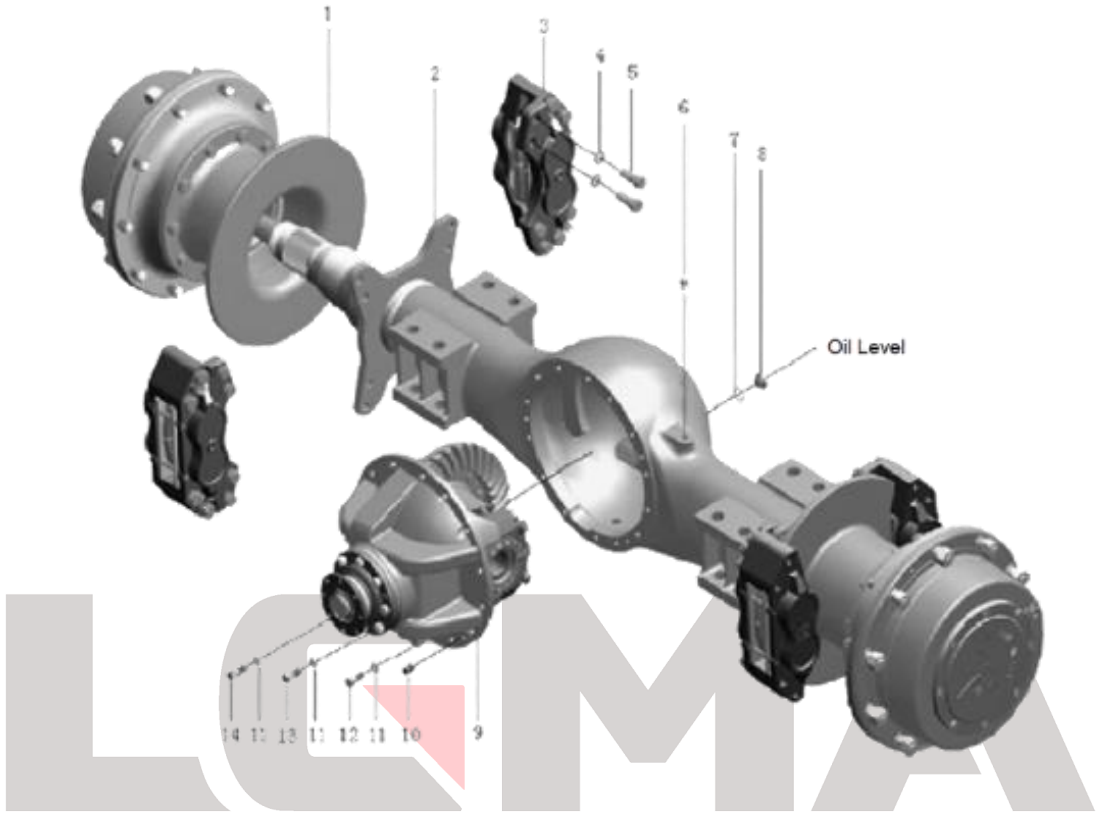
When the shovel loading operation is carried out, the two sides of the bucket should be cut evenly, and the unilateral cutting operation should be avoided as far as possible, so that the loader is facing the front, and the front and rear frames should not be hit at an Angle.

2.11 Product structure diagram：



1. Bucket teeth 2. Bucket 3. Small boom 4. S boom 5. Bucket cylinder 6. Cab 8. Air filter 9. Back hood 10. Counterweight 11. Battery case 12. Back frame 13. Tires 14. Fuel tank 15. Steering cylinder 16. Rim 17. Drive axle 18. Front frame 19. Lift cylinder

2.12 Drive axle：



1. Brake disc 2. Brake clamp bracket 3. Brake clamp assembly 4. Combination pad 5. Drainage screw 6. Breathing 7. Combination pad 8. Oil level bolt 9. Main reducing gear 10.12.13.14. Bolt 11. Gasket

3. Malfunction precaution

Wheel loader		
Malfunction	Reason	Method
The diesel engine cannot run after it has started	1. The gear is not put up or the gear control mechanism is not adjusted properly 2. The stop stem of the variable speed distribution valve is not returned 3. the transmission system mechanical failure, there are stuck or off the phenomenon 4. shift pressure oil no pressure or low pressure 5. Hand brake or pincer disc brake is not released 6. Torque converter failure	1.Put on file or check and adjust 2.Disassembly and troubleshooting 3.Check and exclude 4.See below 5.Check to loosen it 6.maintenance
Insufficient driving force	1. Diesel engine power is insufficient 2. Torque converter inlet oil pressure is insufficient or too high 3. The oil temperature of the torque converter is too high 4. Insufficient shift pressure clutch slip 5. The hand brake or the pincer disc brake is not completely released 6. There is leakage or blockage in the internal oil passage of the torque converter or gearbox	1.See the diesel engine instruction 2.Maintenance 3.Shut down and wait for it to cool down 4.Check the oil pressure and piston seal 5.Release or overhaul 6.Dredge or more sealing torquer gearbox oil channel leakage or blockage

Brake braking system		
Malfunction	Reason	Method
Turn the steering after wheel is back	1. The return spring in the steering gear is damaged 2. The oil distribution sleeve and the oil distribution shaft are stuck or the oil distribution sleeve and the valve body are stuck	1. Change the return spring 2. Open check and reset manually
Turn the steering wheel slowly and lightly, turn fast and heavy	Oil supply is insufficient	Adjust priority valve
Unable to steering	Low working oil pressure	Adjust the overflow valve on the priority valve
Turn the steering wheel and the cylinder does not move	There is insufficient air or oil in the system	Expel air or replenish oil
Oil leak	Loose tubing joints or damaged seals	Tighten or replace

Gear transmission system		
Malfunction	Reason	Method
Low or no pressure in each gear	1.Variable speed oil pump suction is insufficient, internal leakage or high-pressure pipeline leakage 2.Improper adjustment of the main pressure regulating valve or failure of the spring 3.The cut-off valve is stuck 4.The piston or oil passage of the shift clutch leaks oil, and the oil passage is blocked 5.Variable speed oil pressure gauge failure or oil pipe block	1.Clean the strainer or replace the oil pump and refuel to the correct position 2.Readjust or replace the spring 3.Maintenance 4.Replace the seal or dredge 5.Replace the oil pressure gauge and dredge the pipeline
Low oil pressure in a certain gear	1.The piston type O ring of this gear is damaged 2.The sealing ring in the oil circuit is damaged 3.The oil duct is blocked or leaked	1.Change 2.Change 3.Change
Random file	Leakage of seal ring at shaft end	Change
Oil leak	1.The seals are damaged, aged or deteriorated 2.Loose joint	1.Change 2.Tighten up

Torque converter oil temperature is too high	1.The gearbox oil level is too low or too high 2.Oil radiator and oil circuit are blocked 3.Clutch slip 4.Continuous high load operation time is long	1.Refueling to the specified position 2.Cleaning or replacement 3.Maintenance and correction of variable speed oil pressure 4.Stop cooling or idle cooling

Lifting device system		
Malfunction	Reason	Method
Lift and skip slowly or without action	1.Cylinder oil seal is damaged 2.pipeline system oil leakage 3.Serious internal leakage of working oil pump 4.Improper adjustment of the safety valve. Low pressure of the system 5.The suction tubing and oil filter of the working oil pump are blocked 6.The priority valve spool is stuck 7.multi-way valve excessive wear, with clearance is too large	1.Replace the oil seal 2.Check and repair 3.Repair or replace 4.Adjust to the specified value 5.Cleaning or replacement 6.Maintenance 7.Maintenance
Lift and sink by itself	1.Leakage in the boom cylinder 2.multi-way valve in the middle of the leakage	1.Change the sealing ring 2.Maintenance
Empty pump or foaming oil	1.The oil level is too low 2.The oil filter is blocked 3.Leakage of suction pipe or damage of oil pump seal 4.Poor oil or oil deterioration	1.Refuel to the specified oil level 2.Clean the oil filter 3.Maintenance 4.Replace according to regulations
The oil temperature is too high	1.Working at full load for too long 2.The system pressure adjustment is too high 3.Insufficient oil is measured in the tank 4.Internal friction of working oil pump	1.Stop cooling 2.According to the regulation of pressure adjustment 3.Refuel to the specified oil level

		4.Maintenance

Drive axle		
Malfunction	Reason	Method
Traffic noise	1. Main reduction gear whistle joint point is not good 2. Bearing wear exceeds limit or loosens 3. Gear wear exceeds the limit	1. Adjust or change bevel gears 2. Change the bearing or adjust 3. Replace the gear
Sound when braking	1. Brake bottom bending 2. Brake friction lining rivet loose 3. Brake drum is damaged	1. Repair or replace 2. Repair 3. Repair or replace
The car swerved when braking	1. There is oil on the surface of brake shoes 2. Improper gap adjustment 3. Tire pressure imbalance	1. Clean 2. Realign 3. Make the air pressure consistent
Poor braking	1. Improper adjustment of gap between brake drum and brake shoe 2. Oil stains 3. Brake plate wear heavy	1. Realign 2. Cleaning 3. Replace

Steering system		
Malfunction	Reason	Method
Turn the steering after wheel is back	1.The return spring piece of the steering gear is damaged 2.The oil distribution sleeve and the oil distribution shaft are stuck or the oil distribution sleeve and the valve body are stuck	1.Change 2.Open inspection
Turn the steering wheel slowly and lightly, turn fast and heavy	Oil supply is insufficient	Adjust priority valve
Unable to steering	Low working oil pressure	Adjust the overflow valve on the priority valve
Turn the steering wheel and the cylinder does not move	There is insufficient air or oil in the system	Expel air or replenish oil
Oil leak	Loose tubing joints or damaged seals	Tighten or replace

Electric system		
Malfunction	Reason	Method
The engine is normal and the battery does not charge or charge inefficiently	1. Battery plate vulcanization 2. The generator belt is too loose or damaged 3. Wiring is not strong, bad contact 4. Improper adjustment or damage of the regulator	1. Desulfurization treatment or replacement plate 2. Readjust or replace 3. Check and eliminate them 4. Readjust or repair
Lack of battery capacity	1. Electrolyte specific gravity or liquid level is too low 2. Short circuit between plates 3. Plate vulcanization 4. Bad wire contact 5. The active material of the plate falls off	1. Readjust the specific gravity or add electrolyte 2. Eliminate sediment, replace the electrolyte 3. Desulfurization treatment or replacement plate 4. Check and eliminate them 5. Replace the plate
Generator out of operation	1. The remanence disappeared 2. The magnetic field coil loop is broken 3. Bad commutator contact	1. According to the original polarity of the generator, the battery is connected to ends of the magnetic field coil magnetization 2. Check and connect 3. Use sandpaper polishing

CHAPTER THREE MAINTENANCE

1. Maintenance Descriptions

1.1 Engine Oil Supply:

Oil check must be performed before operation or 15 minutes after engine shutdown. Park the loader on a flat place, put the variable speed control handle in neutral position, pull up the parking brake handle to put the vehicle in the parking brake state, and place wedges in front and back of the tires.

(1) Open the hood and pull out the dipstick, wipe it off and insert it, then pull it out and check it for at least 2 times.

(2) The oil level is between the upper limit and lower limit of dipstick refueling. It is the right amount of oil. Put back the dipstick and close the engine hood.

Oil change

(1) Unscrew the oil drain plug at the bottom of the engine to release the oil and replace the oil filter. Drain out the old oil and reinstall the drain plug.

(2) Inject the specified oil from the engine oil refueling port. Run engine at idle, check oil filter and drain plug for oil leakage.

(3) The engine is turned off for about 15 minutes, so that the oil fully returns to the oil plate, and the engine oil level is checked again.

1.2 Fuel Tank Filling:

Park the loader on a flat ground and check the oil level from the outside of the tank by observing the level gauge. Fuel is added from the tank port when the level gauge reading is below 0.

1.3 Gearbox Oiling:

Park the loader on a flat place, put the variable speed control

handle in neutral position, pull up the parking brake handle to put the vehicle in the parking brake state, and place wedges in front and back of the tires.

(1) Unscrew the oil drain screw plug on the right side of the bottom of the gearbox to drain oil. Note: when discharging oil, not only the oil in the gearbox should be drained clean, but also the oil radiator of the torque converter should be drained clean.

(2) Unscrew the gearbox refueling port at the hinge on the right side of the loader, and inject the specified hydraulic transmission oil.

(3) Start the engine and idle running, the oil level is required to be above the oil check plug. All gears are selected once. Check the oil level again and add again if necessary.

1.4 Drive Axle Oiling:

(1) Unscrew the refueling plug in the center of the front and rear drive axle housing. If the oil level is at the lower edge of the refueling port, it is appropriate to add the specified gear oil. After refueling, it should be observed for about 5 minutes.

(2) Open the loader to a flat site, idle operation for about 10 minutes, the small throttle slowly moves the loader, so that the front drive axle wheel edge end face of the oil discharge plug in the lowest position.

(3) The engine is flamed off, unscrew the oil discharge screw plug on the side of the two wheels and the oil discharge screw plug at the bottom of the axle housing center, carry out the oil discharge, exhaust the old oil, screw the oil discharge screw plug at the bottom of the axle housing center.

(4) Start the engine, slowly move the loader, so that the oil outlet on the side of the wheel edge is in the horizontal axis position of

the tire. The oil discharge port on the sides of the two-wheel sides of the front drive axle and the refueling port in the center of the axle housing are added with the prescribed gear oil to check the oil level again.

1.5 Filling Of Hydraulic Tank:

Check the level gauge on the left side of the hydraulic tank. The oil level in the range of 8±2 is moderate. When the oil level is lower than the 6-scale line, please add the specified hydraulic oil.

(1) Clear out clutter from the bucket, the loader parked on flat, open ground, variable speed control lever in the neutral position, pull up the parking brake handle, the vehicle in the parking brake state, start the engine, idle running for 10 minutes, repeatedly to promote movable arm, movable arm, forward and backward of bucket.

(2) Lift the boom to the highest position, tilt the bucket back to the maximum position, and then turn off the engine.

(3) Push the bucket control handle forward, so that the bucket turns forward under the action of its own weight, and discharge the oil in the bucket cylinder; After the bucket is in place, push the arm control handle forward to make the arm drop down under the action of the dead weight and eliminate the oil in the arm cylinder.

(4) Remove the oil discharge screw plug at the bottom of the hydraulic tank, discharge the dirty oil, and unscrew the fuel filler cover to speed up the oil discharge process.

(5) Remove the flange cover at the bottom of the tank and clean the inside of the tank. Remove the flange cover at the top of the tank, clean the oil suction port, oil return port and the filter element at the refueling port. If the filter element is damaged, it

must be replaced.

(6) From the top of the oil tank to add the specified hydraulic oil, to the middle scale position of the level gauge, it is not allowed to take off the filter element of the oil port directly into the oil tank.

Start the engine, 2-3 times of lifting arm and forward tilt, back tilt bucket and left and right turn to the maximum Angle, so that the hydraulic oil is filled with cylinder, tubing. Then run the engine at idle for 5 minutes to expel air from the system

2. Maintenance regulations

2.1 Oil Selection Table:

Please give priority to use special oil. You can choose the type and grade of oil according to the table below.

All standard oil products are indicated	
Oil tank **（ Neutral position of level gauge）**	L-HM46 / L-HS46(T<-25℃)
Diesel tank **（Level gauge）**	Winter diesel (T<-5℃)
Gearbox & Torque converter **（Neutral position of level gauge/ 16~18L）**	ATF+4
Drive axle **（2L/side reducer; 3.5~4L/ main reducer）**	GL-5 Heavy duty vehicle gear oil

Engine lubricating oil **（Neutral position of level gauge/ 7.5~8L）**	Above 10 ℃： 15W-40 engine oil	Below 10℃： 10W-30 engine oil
Brake oil **（Midpoint of tick mark）**	DOT 3	
Lubricating oil for pin **（Add before every operate）**	Lithium-based grease	
Antifreeze **（Full）**	Based on weather	

2.2 Electrical System Maintenance Rules:

If the wires are in a humid environment or the insulators are damaged, the electrical system is prone to power surges, resulting in dangerous accidents.

(1) Check the tightness and damage of the fan belt.

(2) Check the liquid level of the electrolyte in the battery.

(3) Do not arbitrarily remove any installed electrical components.

(4) In addition to the provisions of our company, it is not allowed to add any electrical components.

(5) When cleaning the machine or in the rain and snow

environment, to keep the electrical system dry.

Except for special circumstances, the following table should be strictly followed.

NO.	Specification	Material	Torque (N. m)
1	M16 x 1.5 x 70	8.8	70 ~ 100
2	M18 x 1.5	8	265 ~ 355
3	M20 x 1.5 x 70	8.8	380 ~ 460
4	M12 x 1.25 x 45	8.8	75 ~ 105
5	M16 x 35	8.8	185 ~ 265
6	M20 x 2 x 60	8.8	250 ~ 360
7	Ml6 x 70	45	193 ~ 257

3. Maintenance Details

Regular maintenance is divided into every 10 hours, every 50 hours, every 100 hours, every 250 hours, every 500 hours, every 1000 hours.

3.1 Maintenance Every 10 Hours (Daily):

(1) Check whether the fasteners are loose and lost, and tighten and repair them

(2) There is no damage to the parts of the machine.

(3) Check whether the lubrication place is full of grease.

(4) Check the fuel tank, hydraulic tank, brake oil can oil level, whether the engine cooling water is full.

After starting to check whether there is oil gassing, water leakage, whether there is abnormal sound.

Test whether the brake is reliable, whether the steering is flexible.

3.2 Maintenance Every 50 Hours (Weekly):

Every 10 hours of maintenance at the same time.

(1) Check whether the stroke of the brake pedal meets the requirements. If not, it will be adjusted.

(2) Tighten the front and rear drive shaft connection lei bolt, drive axle connecting bolts, tire nuts.

(3) The grease nipple is pressed with lithium grease.

In addition, add the following maintenance for the first 50 hours:

Check and clean the transmission vent. Check e whether there is leakage in the hydraulic system, check and clean the vent of the hydraulic tank, and check the filter element of the oil return filter of the hydraulic tank. Check whether there is leakage in all parts of the brake system, clean the filter screen of the oil storage cup of the after pump, clean the air outlet, check the brake fluid, and add it when it is lacking.

3.3 Maintenance Every 100 Hours:

Every 10 hours every 50 hours maintenance at the same time.

(1) Clean the radiator group.

(2) Clean the fuel tank filter.

In addition, add the following maintenance for the first 50-100 hours: Check and clean the breathable port of the gearbox, clean the oil pan of the gearbox, replace the torque converter, filter element of the gearbox oil system, and replace the gearbox oil. Replace the front and rear axle gear oil.

3.4 Maintenance Every 250 Hours:

Every 10 hours, 50 hours, 100 hours at the same time.

(1) Measure tire pressure. If insufficient, it should be replenished.

(2) Cleaning fuel oil, hydraulic oil filter.

(3) Check whether there is oil leakage or damage to the brake system

(4) Check and tighten hub bolts, brake disc and bearing cover bolts.

3.5 Maintenance Every 500 Hours:

Every 10 hours, 50 hours, 100 hours at the same time.

(1) Check the multi-way valve, all kinds of cylinder surge loss, if there is a serious decline in the working device phenomenon, it should be repaired and excluded.

(2) Check whether the brake pump leather bowl is damaged.

(3) Adjust the hub bearing clearance, and make the outer end face of the brake disc runout less than 0.20mm.

3.6 Maintenance Every 1000 Hours:

Every 10 hours, every 50 hours, every 250 hours, every 500 hours maintenance at the same time.

(1) Replace all fuel and oil system oil, hydraulic system oil, gearbox, front and rear axle gear oil and brake oil, etc. And the pipeline, tubing, filters and so on clean, and then injected after

purification of the new oil.

(2) Disassemble and clean the brake main pump, and check the brake effect.

(3) Check the front and rear axle, the main transmission gear meshing situation, if the main and driven bevel gear clearance is too large, it should be adjusted to within 0.2~0.34mm.

(4) There is no deformation and weld fracture phenomenon of the working device and the machine frame.

In addition, add the following maintenance for the first 1000 hours:

Check whether there is leakage in the hydraulic system, check and clean the vent of the hydraulic tank, replace the filter element of the oil return filter of the hydraulic tank and the filter element of the pilot filter (when installed). Check the hydraulic oil level and cleanliness, filter when conditions are available, add when lack, replace when necessary.

Check whether there is leakage in the brake system, clean the filter screen of the oil storage cup of the aftershock pump, clean the air outlet, and replace the brake fluid.

3.7 Maintenance Every 2000 Hours:

Every 10 hours, every 50 hours, every 250 hours, every 500 hours, every 1000 hours maintenance at the same time.

(1) Replace antifreeze, or replace once a year, to the first time shall prevail.

(2) Check the performance of torque converter, gearbox, front and rear axle differential and wheel side reducer.

(3) By testing the natural settlement of the hydraulic cylinder, check the tightness of the multi-way valve and hydraulic cylinder, and measure the working pressure of the system.

(4) Check the vehicle weld and stress parts, and correct its

deformation.

The above maintenance provisions are the basic requirements under normal use, and the maintenance work shall be carried out according to the first time period due in the above two-time requirements. If the working conditions are bad, users should shorten the maintenance cycle and increase the number of maintenance times according to actual needs.

Product designs, specifications and/or data in this document are provided for informational purposes only and are not warranties of any kind. Product designs and/ or specifications may be changed at any time without notice. The only warranties that apply to sales of products and services are LGMA standard written warranties, which will be furnished upon request.

lgma.com.au

2022 LGMA Pty. Ltd. All rights reserved. Printed in Australia