

ZL918 Wheel Loader

Operator's Manual

Version No. : 1.0

Foreword

The ZL918 loader is one of the new multi-functional mini loaders under 2 tons developed; this loader is ideal for loading and unloading materials, transporting them over short distances, and can be equipped with multiple attachments to handle more applications such as lifting, pulling, squeezing, digging, weeding, feeding, etc.

These loaders can be used in a wide range of applications such as farms, road construction, railway stations, shipyards and other workplaces; the machines offer optimum cost-effectiveness, safety and driving comfort.

Depending on your needs, these positive characteristics of the loader and its maintenance by the operator are very important during use.

This manual contains all the important information about getting started, driving, operating and maintaining your ZL918 loader. Follow the loader's instructions, carry out regular inspections and perform the work shown in the tables, and observe health and safety regulations.

This manual applies to the ZL918 model.

Contact your ZL918 dealer for more information on maintenance and repairs that require specialized tools and are not listed in this manual.

Maintenance and repair of the loader should only be carried out by qualified personnel authorized by us. To maintain a valid warranty, service inspections must be performed on a regular basis by an authorized APS service center.

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Chapter 1: Pre-use Precautions

Section I: Inspection Records

The policy of continuous product improvement may result in some model changes that may not be included in this publication. Each publication is reviewed and revised for content updates and changes are introduced in subsequent editions. We reserve the right to make modifications or changes to specific model groups without notice and are not responsible for versions of the Owner's Manual that have already been shipped. For maintenance services not covered in this publication, contact your regional distributor.

Section II: General Warnings

This manual applies to all users of this machine: company managers, executives, drivers, and all persons working on or near the equipment.

General Warnings

1. read this manual and follow all operating instructions before using the equipment
2. also read all instructions on the equipment label and keep the label legible
3. Ensure that all operators have access to this manual at all times.
4. Anyone operating the equipment must be qualified to do so in accordance with the relevant safety requirements.

5. avoid unattended intervention when the equipment is not in use

6. stop using the equipment immediately if it is in abnormal condition

7. do not apply loads or tensions in excess of the maximum working load of the equipment

8. prohibit operation of the equipment for purposes for which it was not designed.

9. The equipment safety regulations must be fully understood and strictly enforced.

10. The manufacturer is not responsible for the consequences of unsupervised disassembly or modification of the equipment.

Obligation to read the user manual	
 	The person in charge of the company is required to briefly explain the guidelines in the user manual to the operator. Read this section completely before starting the loader. The manager is responsible for enforcing the provisions in this manual. The user must read and understand this manual to ensure that its operating recommendations are followed during commissioning and use of the

	equipment. Please keep this manual in a safe place for the duration of the equipment's ownership, including resale, change of user or change of management. This manual is not intended to be a training manual, but the circumstances in which training is required are clearly indicated.
General instructions	
	The person in charge of the company must ensure that the machine is delivered with the user manual and the certificate of conformity of the EU member states. * The location of the manual can be found on the delivery note; * The certificate of conformity is included with the delivery note; * Only trained and appropriately qualified operators, certified by the company manager, may operate the vehicle within the application for which the machine is designed; * The loader must be operated in strict compliance with the conditions of use specified in this manufacturer's manual; * Any operation contrary to the provisions of this manual may result in risk of damage to persons,

	property and the environment. The manufacturer's responsibility is limited to installation in accordance with the equipment configuration described in the Certificate of Conformity. The operator should verify that the machine is in good condition before each use.
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Normal use of the machine	
	The maximum permissible loads and the general conditions of use contained in this document state that the loader must not carry any other load outside the permissible temperature range of -30° C to 45° C. The loader must not be operated under any other conditions than those specified in this document. Keemah cannot be held responsible for the consequences of operation in such conditions.
Loader modifications	
	The manufacturer is not liable for any modifications, additions or combinations with non-originating attachments. The manufacturer shall not be liable for the consequences of any changes or modifications made without its written consent, whether they involve interference with mechanical, electrical, hydraulic or welded construction. If the customer wishes to make any modifications, he must consult the manufacturer beforehand. For safety reasons and to benefit from the full warranty offered by the manufacturer,

only original spare parts may be used.

Please note

Safety takes precedence over design and construction. The proper operation and maintenance of the equipment are equally essential.

Each component is specially designed and safely assembled by KIMA to ensure that the safest possible equipment is provided.

Safe operation is your responsibility.

It is vital that the operator fully understands the following instructions for the safe use of the loader.

Safety Information

This manual contains important information about the safe operation and maintenance procedures of this loader and must be read carefully. Even though you may have worked with similar equipment, it is important that you read and understand the contents of this manual before starting the loader. Safety is a common concern and must be a central consideration. Mastering the guidelines provided in this manual will help ensure your own safety, the safety of those around you, and the proper operation of your equipment.

Safety is a key factor in the longevity of your loader. Before operating, maintaining, or using the loader in any way, be sure to read through this manual, learn the safety practices, understand the necessary maintenance points, and if you have any questions about safe use or maintenance, consult your supervisor immediately – don't make assumptions – always! Verify! Please note: Careful operation not only protects the operator, but also ensures the safety of co-workers, and avoids dangerous situations that could lead to equipment damage or cargo destruction.

Safety and Health Guidelines for Front End Loader Operations

Conditions under which employees are permitted to work

- Employees must be sober and free of psychotropic substance use disorders at the time of starting work.
- When operating machinery and equipment with moving parts, employees are prohibited from working in clothing with loose (dangling) parts, such as loose cuffs, ties, scarves, hemlines; and must wear a protective cap that covers the hair.
- Employees are required to be mentally and physically fit for their jobs.
- Employees must be certified by a qualified medical practitioner as fit for the work to be performed.
- Employees must receive job training, occupational health and safety and fire safety training, and familiarize themselves with the operating procedures before starting work.
- The employee must have a vocational education in a relevant field or other qualifications required for the

occupation.

- Employees must be at least 18 years old (underage trainees undergoing practical vocational training must be supervised by an instructor)

****Pre-job preparation****

- Review the loader's operating documents and instructions.
- Test run the loader and check its working condition
- Test the parking brake system

Equipment starters should be carefully checked beforehand to ensure that there is no risk of accidents when starting the equipment

- Fill the fuel tank to the top
- Ensure that there are no bystanders in the working area
- Start the engine only from the operator's station
- To test the wheel steering, bring the steering wheel to a full stop in both directions.
- Set the wheels in a straight direction

Safe Work Practices and Operating Guidelines Never:

- Allow unauthorized persons to operate the loader
- Extend the key with another key or pipe
- Operate the equipment without proper authorization and training
- Remove guards from running machinery
- Maintain, clean, and lubricate operating machinery (except as specified in the maintenance and operation documentation)

- Starting with ether
- Carrying loads above the cab or personnel
- Carrying additional persons in the cab
- Standing across a tow rope
- Climbing the machine using the control lever as a handle
- Exceeding specified maximum load
- Remaining in cab to tow loader when steering and braking systems fail
- Adding coolant to a hot engine
- Performing any activity that involves operating, lubricating, maintaining, or repairing the machine until the person involved has read and understands what is involved
- Use of frayed ropes

Must be observed:

- Remove loaders that are out of service, damaged or being repaired from the work area and clearly identify them by means of information boards, and take measures to immobilize them to prevent them from starting up
- Tighten, repair, connect, shorten and lubricate drive belts and cables only when the loader is completely stationary.
- Use applicable personal protective equipment.
- Keep a safe distance from slope edges, overhangs and slippery terrain.
- Always wear your seat belt.
- Use the brake pedal locking lever correctly.
- Always lock the bucket before replacing fork tines.
- Wait 5 minutes after intensive operation before turning off the engine.
- Keep a minimum distance of at least 3 meters from power lines.

- Use a transport vehicle with a load capacity of at least 10 tons.
- Stand in a safe area behind the tires when inflating them.
- Use coolant with low silicate content and corrosion inhibitors (maximum concentration of ethylene glycol in the fluid is 50%).
- Keep signage legible.
- Respond to warning indications and caution signs on equipment.
- Do not smoke if air conditioning cooling system is leaking.
- Secure loose parts.
- Keep steps clean.

After Work Activities

- Leave the workstation and accessories and protective equipment in an organized condition.
- Secure the equipment in the transport position after work is completed.

Procedure in case of emergency

- First aid must be administered to the injured.
- Notify the supervisor immediately if defects and/or damage to the loader are discovered.
- Loaders found to be damaged during operation should be taken out of service immediately and marked accordingly.
- Clearly recognizable warning and alarm signals must be used when a loader malfunctions in a manner that may be hazardous to the environment.
- Every workplace accident needs to be reported to the supervisor and the workstation left in the same condition as

it was at the time of the accident.

- Alterations to the accident scene are permitted if necessary to rescue personnel or property, or to prevent imminent danger.

- In the case of fatal, major or mass accidents, work at the accident site is permitted only after consultation with the labor inspector and the prosecutor.

- The activation of machines and other technical equipment or alteration of the scene of an accident is carried out in consultation with the social labor inspector, and the scene of the accident shall be examined and diagrammed or photographic evidence shall be taken, if necessary.

- The following measures shall be taken to protect the accident scene until the causes and circumstances of the accident are identified:

- Unrelated persons shall be prohibited from entering the scene of the accident.

- Machines and other technical equipment stopped as a result of the accident shall not be started unless necessary.

- The machines, technical equipment and other objects that caused the accident must not be moved so that does not affect the reconstruction of the accident.

Remarks:

- Equipment presenting specific hazards is subject to technical inspection.

- When working at height, in tanks or in large pits, the relevant operating instructions must be observed.

- Safety belts must be replaced every three years

According to Article 210 of the Labor Code, employees have the right to discontinue work and immediately report it to their

supervisors when working conditions do not comply with occupational health and safety norms, when there is an immediate threat to the health or life of the employee, or when the work performed by the employee poses such a risk to others.

Section 3: Information and Operations

A. Standard Configuration

1. Diesel engine
2. Hydrostatic drive system
3. Multi-function rear taillights
4. Mechanically controlled parking brake
5. Multi-function joystick
6. Quick attachment change system
7. Adjustable seats (with seat belts)
8. Non-slip floor
9. Multi-function headlights
10. Instrument panel
11. Adjustable steering wheel
12. Dual ball hinge system

B. Operator Responsibilities

Always read and understand the contents of this chapter before using this equipment or performing any maintenance operations.



Failure to observe the following safety rules could result in serious injury or death, as well as equipment damage:

1. Always follow general industry safety practices
2. Before using the loader, you must check the lights, braking system, steering, variable speed slider, parking brake and tires for proper operating condition
3. Prohibit the use of malfunctioning loaders; refer to the maintenance section of the Operation and Maintenance Manual.
4. Wear proper footwear when operating the equipment and avoid loose clothing being caught in moving parts.
5. Before starting the loader, always fasten the safety belt and make sure that the buckle is correctly fastened.
6. Before leaving the machine, it must be stopped, in neutral and with the parking brake engaged.
7. Stop the machine completely when switching between forward and reverse gears.
8. Confirm the path of travel before reversing
9. Reduce speed to 5 km/h during loading operations.
10. The bucket should be raised to the transport position (approx. 20 cm above the ground).
11. Use extreme caution in congested areas, in blind spots and near vehicle queues, paying attention to other equipment and people.
12. Do not operate the machine when the speed does not correspond to the operating conditions. Always travel at an appropriate speed to ensure sufficient time for emergency braking.
13. It is prohibited to use the loader to transport hazardous

materials.

14. It is prohibited to use the loader to transport persons.
15. Do not use the loader on soft surfaces if you are unsure of the road conditions.
16. Before starting the loader, the reinforced cage must be raised and the pin must be in the locked position.
17. Do not connect additional power sources to the loader except for towing with a hitch.
18. Do not remove the radiator cap when the engine is hot, as this may result in severe burns. Allow to cool before unscrewing the radiator cap.
19. Do not touch the engine exhaust and muffler of a running machine as this may cause severe burns.
20. Never start the engine with the rear engine cover open, if you have to do so, make sure you keep your hands away from the fan area.
21. It is forbidden to refuel the engine while it is running.
22. Fueling can be terminated when the fueling gun stops automatically. Do not overfill with fuel. Do not smoke while refueling. Do not store or use fuel in an open flame.
23. Do not check the oil level while the engine is running.
24. It is prohibited to use the battery installed in this equipment to start other vehicles.



Make sure the seat belt is fastened before operating

	the loader!
	The maximum noise level of this loader is 88 dB; to protect your health, please wear personal protective equipment (e.g. earplugs) when checking the machine to minimize the negative effects of machine noise on your body

	Always be alert and use common sense to be aware of what is going on around the loader.
	In the event that the loader rolls over or tilts, the roll cage completely protects the operator; do not jump. When this happens, hold the steering wheel firmly with both hands; place your legs against the steering column mounting bracket.
	Damaged roll cage may not be reused after repair without written permission and approval.
	The rated capacities stated in this manual are based on operating conditions when the machine is standing firmly on solid ground. If working on non-standard ground (such as soft, uneven terrain or slopes), all factors affecting the machine's load carrying capacity need to be fully considered.

C. Mechanical Duties

Always read and understand this chapter before performing any maintenance work on this equipment.



Failure to follow the following safety rules could result in serious injury or death, as well as equipment damage.

1. Always follow the equipment safety regulations. If the machine does not come with a written list of safety regulations, obtain it before starting the loader.
2. Always read the User Responsibility clause before starting operations
3. Keep hands and feet away from rotating parts and tires at all times. Protective clothing is required.
4. Wear specialized protective footwear when operating and maintaining the equipment. Avoid wearing loose clothing that could get caught in the moving parts of the machine.
5. The engine must be switched off when adjusting the fan and generator belts.
6. Never put your hands near a running fan.
7. Do not remove the radiator cap when the engine is hot, as this may cause severe burns.
8. Allow the radiator cap to cool sufficiently before removing it.
9. Do not run the engine for long periods of time in confined spaces
10. Do not start the engine in an explosive atmosphere
11. Do not check the oil level while the engine is running
12. Disconnect the positive battery cable when servicing the engine or engine compartment.
13. Wash skin and change clothes immediately when electrolyte is spilled.
14. High temperature engine, exhaust system or hydraulic components can cause serious burns, do not touch them.
15. Do not smoke in the vicinity of the battery. Electrolyte vapors from charging are explosive, keep away from sparks, open flames and flammable materials.

16. Remove metal bracelets, watches, etc. before installing/disassembling/replacing the battery.
17. Never short-circuit the battery electrodes
18. Priority must be given to the positive terminal when connecting the battery to prevent sparks from accidental grounding. Do not replace the throttle return spring with a spring of insufficient strength or another type.
19. Check all lighting fixtures
20. Test the horn operating condition
21. Check that the idle speed switch is properly adjusted and functions correctly.
22. Check the condition of tires and wheels to ensure proper air pressure. Over-inflation may cause a flat tire
23. All nuts must be tightened to 130 lb-ft of torque and rechecked after 5 hours of operation.
24. Specialized lifting equipment must be used when disassembling and reassembling heavy components.
25. When working on the bottom of the loader, it must be secured with specialized support devices. Do not rely solely on hydraulic jacks to support the equipment
26. If the loader is on hydraulic/pneumatic jacks, make sure the support locking device is in place before working on the bottom.
27. When removing or installing the gearbox, special lifters must be used and secured.
28. Lift the drive wheels off the ground when troubleshooting the drive train.
29. Do not refuel while the engine is running
30. No smoking during refueling
31. It is forbidden to store, spill or use fuel in the vicinity of open flames.

32. Do not use the battery of this equipment to start other vehicles
33. Installation and adjustment of the control cables while the engine is running is prohibited.
34. The control cable must be replaced immediately if it is found to have unattached friction or a gradual/sudden increase in resistance, a reduction in the available pitch angle, internal moisture or freezing.
35. Do not use heat to dry or thaw the control cable.
36. Do not remove control cable seals or attempt to add lubricant. Control cables with lubrication problems must be replaced.
37. Do not attempt to repair or modify the control cable. Replace all damaged control cables immediately.
38. Always avoid exposing the control cable to fuel, oil, paint chemicals, water, or dirt, which can cause damage.
39. Each control cable should be arranged so that the center conductor of the available conductors inside the cable is used.
40. Tires must be deflated before removing them for maintenance or disassembly.
41. Do not use cracked, bent or corroded wheel parts. Ensure that all wheel components are of the same type and specification, and that the wheel matches the tire size. Carefully inspect all parts before use.
42. It is prohibited to use explosive substances to mount the tire.
43. It is strictly forbidden to carry out hammering, prying or welding operations in the vicinity of an inflated or partially inflated tire.
44. Wheel components must not be modified, welded, heated or brazed for any reason whatsoever.
45. Tires must be inflated using a safety cage, clamp-on inflator with remote valve and pressure gauge. Ensure that the tire is

correctly mounted on the rim before inflation, and visually confirm that the lip is correctly positioned before removing it from the cage.

46. For tires with operating pressure below 80% of the standard value, it is prohibited to refill them directly without complete deflation, disassembly and damage inspection.
47. The roof guard cage is the core component to prevent injury from falling objects and to protect the operator's safety. Loosening, dismantling or modifying this device is extremely dangerous and could lead to a serious accident.

Chapter 2 GENERAL INFORMATION AND USER'S MANUAL

Section 1: Main Components

This 4x4 mini loader has the following features:

- Three-cylinder diesel engine
- Hydrostatic drive system
- Multi-function joystick
- 12-volt electrical system

A. Engine and pump

The loader is powered by an industrial-grade, direct-injection, four-stroke engine. The engine is certified by the manufacturer to meet more advanced emission standards. The loader is equipped with an automatic variable piston pump.

B. Axles

The front and rear drive axles of this model are driven by 2 hydraulic motors.

C. Braking system

The hydrostatic drive can be used as the main brake and can be mounted as a parking brake on the drive axle input.

D. Wheels and tires

Tires are secured to the drive wheels using five screws. The loader's tires are pneumatically designed to ensure a smooth ride and maximum traction. Remember to check the air pressure in the pneumatic tires regularly. Uneven tire pressure not only increases tire wear, but may also reduce traction performance.

The standard tire pressure is 300 kPa.

E. Electrical system

The loader has an automotive style electrical system with a 12V negative-pole lap.

F. Hydraulic quick connectors

Attachment and removal of attachments is controlled by a multi-function valve.

G. Driver's seat

The seat belt seat position can be adjusted by sliding it forward and backward. The loader can be equipped with a comfortable seat delivery with suspension system.

	When adjusting the driver's seat, it must be ensured that the loader is stationary. The engine must be switched off!
	The standard driver's seat can be moved forward and backward by pulling up on the lever underneath the seat and the seat can be moved forward and backward. Once adjusted to the right position, the seat position is fixed by pressing down on the joystick



H. Multi-function joystick

The control joystick is located on the right side of the driver's position, and switches on the unit provide standard control of the loader's gears; the loader has three gears: forward, neutral, and reverse. The joystick controls a bi-directional multi-way valve that allows synchronized or independent operation of the lift and tilt motions.

I. Knife Gate Switch

This switch is used to disconnect the entire electrical system from the battery. If the loader is out of service for an extended period of time (e.g. at night), the battery should be disconnected via the ground switch to prevent accidental battery discharge.



J. Steering

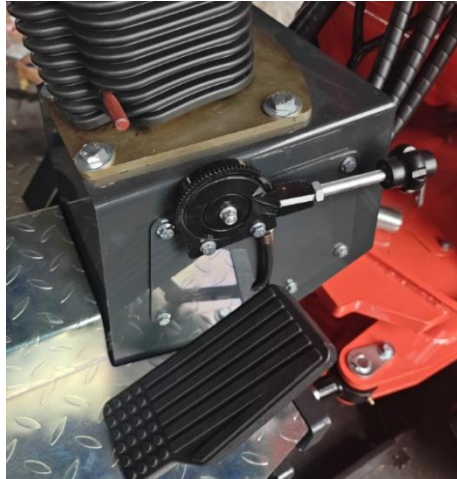
The steering can be adjusted longitudinally. To adjust the steering, first depress the joystick. At this point the steering can be adjusted by tilting it in the longitudinal range. Subsequent release locks the steering in the correct position.



Adjustment of the steering is only possible when the loader is stationary!

K. Parking brake handle

The parking brake handle is connected to the parking brake drum mounted on the drive shaft by means of a linkage. Always use the parking brake when parking and release the brake before driving. The brake is applied by pulling the lever toward the operator. Push the lever away (down) from the operator to release the brake.



If the parking brake is used as a secondary brake in an emergency, use extreme caution when pulling the lever to avoid damage to the brake line!

L. Gas pedal

The accelerator pedal on the driver's right side is connected to the engine via a pull cable to control the engine speed. This gas pedal is used to operate the loader to move



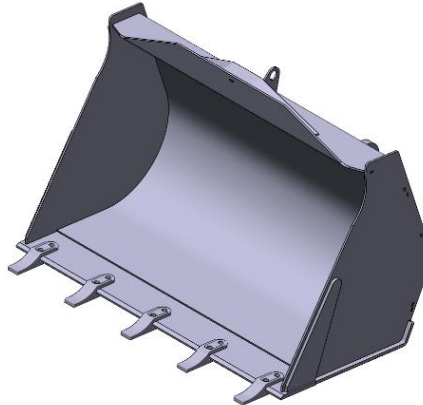
Never brake sharply when lifting a load; the loader may tip over!

M. Attachments

We offer a wide range of attachments with different functions. (The following illustrations are for reference only)

1. Shovel

This equipment can be used for digging and unloading bulk materials and is suitable for short distances. We offer a wide range of bucket sizes for the most efficient loading and unloading of different materials.



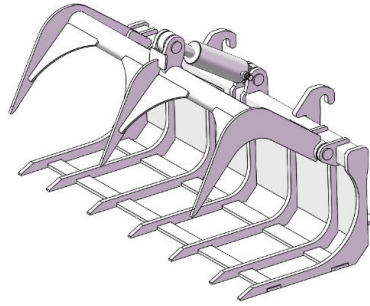
2. Fork support

This equipment is used for unloading bulky materials and for short distances.



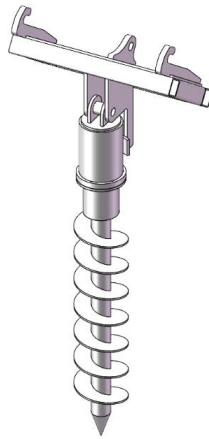
3. Grass Clamp

This unit can be used for loading and unloading grass or hay.



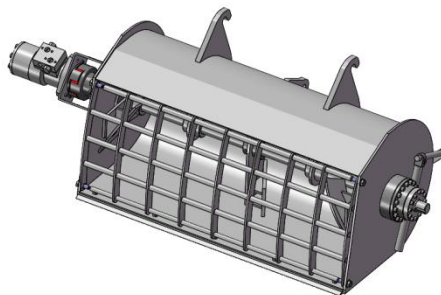
4. Auger

It is used to drill holes in the ground



5. Mixer Bucket

Used for mixing materials such as sand and soil.



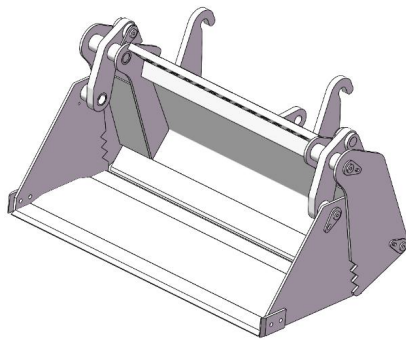
6. Strapping jig

It can be used for gripping and transporting various items



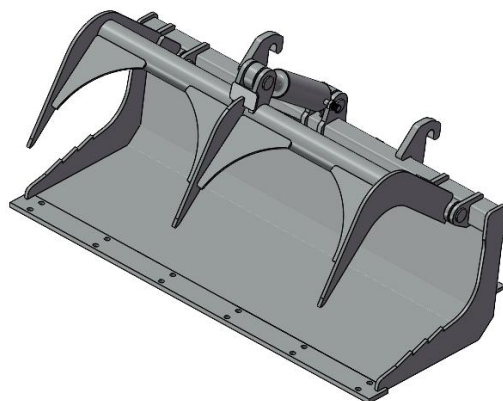
7. 4-in-1 Bucket

It can be used for scooping and transporting various materials, as well as for sorting materials of different diameters.



8. Wood Grabber Fork

This attachment is used for grabbing and efficiently transporting bundles.



9. Dashboard

The control system is designed to combine the ultimate in driving comfort with outstanding performance.



1. Voltage

Signal type: analog. System supply voltage	Display: LCD numerical display.	Unit: Volt Symbol: V
Remarks:		

1. Working time

Signal type: system timing	Display mode: LCD numerical display (0.0~99999.9h)	Unit: Hour Symbol: H
Remarks:		

2. Engine speed

Signal type: Pulse	Display mode: Dashboard pointer indication (0~ 3000rpm)	Unit: rpm Symbol: rpm
Remarks:		

3. Preheat

Signal type: Level signal	Display mode: icon display	Icon: 
Remarks: When the preheat signal is high level, the preheat icon is displayed.		

4. Near light

Signal type: level signal	Display mode: icon display	Icon: 
Remarks: When the near-light signal is high level, the near-light icon is displayed		

5. High speed (optional)

Signal type: level signal	Display mode: icon display	Icon: 
Remarks: When the high speed signal line is high level, high speed icon indicates		

6. Forward

Signal type: level signal	Display mode: Icon display	Icon: 
Remarks: Indicated when the forward signal line is high.		

7. Backward

Signal type: level signal	Display mode: Icon display	Icon: 
Remarks: Indicated when the backward signal line is high.		

8. Neutral

Signal type:	Display mode: icon display	Icon: N
Remarks: Indicated when there is no forward or reverse signal.		

9. Park (not displayed on this model)

Signal type: level signal	Display mode: Icon display	Icon: 
Remarks: Indicated when the park signal line is low level.		

10. Engine coolant temperature (water temperature)

Signal type: resistance type	Display mode: LCD numerical value indication Indicated by water temperature gauge pointer.	Icon: 
	Related alarms: short circuit alarm, broken circuit alarm, high temperature ($\geq 102^{\circ}\text{C}$) alarm	
Alarm mode: in the state of engine not started, only icon is displayed when fault information is detected, engine After the engine is started and the fault information is detected for 3 seconds continuously, the buzzer intermittent sound alarm is output and the icon flashes.		
Remarks		

11. Fuel oil level

Signal type: resistive	Display mode: LCD display, 8-segment fuel level marking.	Icon: 
	Related alarms: short circuit alarm, disconnection alarm, fuel level too low ($\leq$ 1/8) alarm	
Alarm mode: icon flashing on LCD screen, buzzer intermittent sound alarm.		
Remarks:		

12. Hydraulic oil temperature

Signal type: level signal	Display mode: icon display	Icon: 
	Related alarms: hydraulic oil temperature over high alarm	
Alarm mode: in the engine is not started, when the fault information is detected, only the icon is displayed. After the engine is started and fault information is detected, the fault icon flashes and a buzzer intermittent sound alarm is output.		
Remarks: Alarm when the signal line of hydraulic oil temperature is low level.		

13. Oil pressure

Signal type: level signal	Display mode: Icon display	Icon: 
	Related alarms: low oil pressure alarm	
Alarm Mode: In the state of engine not starting, only the icon is displayed when the fault information is detected; when the fault information is detected for 3 consecutive seconds after the engine is started, the fault icon blinks and the buzzer intermittent sound is output. Alarm		
Remarks: Alarm when the oil pressure signal line is low level.		

14. Charging Alarm

Signal type: level signal	Display mode: Icon display	Icon: 
	Related alarms: icon display when not charging.	
Alarm mode: when the charging alarm signal line is low level, the instrument panel alarm light is displayed.		



Section 2: Operating Procedures



Read this section in its entirety before starting the loader

Unauthorized personnel are not allowed to operate the loader

Check the indicator lights and their functions before starting the loader

Make sure the equipment is in proper condition by checking it before operation

Control the maximum weight of the goods to be loaded and unloaded

Maintain the loader according to the manufacturer's instructions

Repair or replace damaged/missing parts before use

Ensure that full maintenance has been completed

Check that all safety instruction labels are intact and legible

These labels are as important as any other part of the loader.

The following must be checked and completed before sending the loader in for repair

Before you start driving

At the start of each team job, check the battery status, pneumatic system and hose insulation, and make sure tire

pressures are correct. Verify that all drive components are in good working order and replenish all fluids immediately if necessary. Any defects found should be pointed out immediately.

Check braking distance

- Apply parking brake
- Fully inspect the exterior of the loader for damage and missing parts, focusing on verification:
 - Inflated tire pressure and condition of integrity
 - Sidewall cuts, cracks, and the presence of foreign objects in the tread.
 - Wheel nut clearance
 - Damage to lights
 - Fire extinguishers are fully equipped and accurately positioned (if configured)
- Check the bottom of the loader for leaks of coolant, hydraulic oil, transmission fluid or grease. If leaks are found, they must be eliminated immediately. Verify engine oil level
- Check engine coolant level. Replenish coolant if necessary, but do not exceed the allowable upper limit. Visually check for leaks
- Check for adequate working oil level by removing the hydraulic system tank cap
- A low oil level indicates a serious leak in the system and requires immediate service.

- Check the engine compartment for loose parts, disconnected wiring harnesses and leaking hoses/fittings.
- After completing all mechanical checks, test the taillights, controls, and instrument panel functions while the loader is stationary.
- Check the fuel gauge to make sure the tank is full.
- Verify that the guard frame is raised and in place
- Check that the driver's seat is undamaged (replace if damaged) and adjust the position as required
- Verify that all controls function properly



Please note: Do not unscrew or remove the radiator cap when the coolant is hot, high pressure coolant can cause severe burns!



Fuel contamination due to moisture condensation on the inside surface of the fuel tank can be mitigated or eliminated by keeping the tank as full as possible. It is recommended that the fuel tank be filled promptly at the end of each day's work (as part of routine maintenance after closing).

Driving Rules



- Move the shift lever to park gear
- Adjust the driver's seat and steering wheel to a comfortable position and fasten the seat belt
- Make sure the parking brake is engaged
- Before starting the wheel loader, make sure there are no people or obstacles in front of you; also check that: the driver's seat is in a comfortable position; the parking brake handle is in the locked position; and the forward/reverse gearshift lever is in neutral.
- Turn the ignition key to start the engine
- Apply light pressure to the micro pedal (left pedal)
- Release the parking brake
- Push the shift lever to the desired forward or reverse gear
- Release the micro pedal and tap the accelerator pedal, keep pedaling until the desired speed is reached. The micro loader's pedals provide precise control of fine movements
- To decelerate, slowly release the accelerator pedal and depress the micropedal. For emergency braking, immediately

release the accelerator pedal and depress the micropedal. Sharp braking or smooth braking of the wheel loader can be achieved by quickly or slowly releasing the accelerator pedal. Always depress the micropedal during emergency braking

- When parking, pull up the handbrake, turn the starter switch to the off position and move the gearshift lever to the park position

	Depress the micro pedal during emergency braking (left side)
	Please note: The maximum daily working hours of the operator must not exceed 6 hours
	Please note: Adjust the traveling speed according to the weight of the loaded goods and weather conditions. Slow down when loaded, and also reduce speed when the road is slippery or icy.
	Please note: When loading cargo, reduce the speed to 5 km/h and place the bucket in the transport position (about 20 cm above the ground).
	Please note: If temporary stopping is necessary when traveling uphill. The driver must not leave the driver's seat and shift gears. The right foot should lightly step on the pedal to eliminate any skidding that may be caused by technical reasons, and at the same time pull up the handbrake. When stopping temporarily downhill. The driver must not leave the

	driver's seat and must not shift into reverse gear; the right foot must be pressed lightly on the pedal and the vehicle must be parked slowly, with the handbrake on.
	Please note: Parking is prohibited on ramps. If the loader must be parked in case of breakdown, park the loader on the slope, tighten the handbrake and place wheel chocks under the wheels.
	Please note: Ensure that the safety barriers are fitted and fixed in place before starting the machine, otherwise the operator will not be protected.

Loading instructions

- Lifting equipment and attachments (standard bucket) are for specific use only.
- Ensure that the wheel loader is in a safe condition and that the rated load is not exceeded.
- Make sure the quick coupler is in the locked position before loading.
- Reduce speed to 5 km/h when traveling under load
- The bucket should be raised to the transport position (approx. 20 cm above the ground) when traveling with a loaded load
- Ramps should be driven with the load facing the direction of the ramp rise. Steering or traveling sideways on the ramp is strictly prohibited

- When the line of sight is obstructed, it is necessary to have auxiliary personnel to work together.
- Raise the bucket to a suitable height during unloading, drive the loader as carefully as possible close to the truck or cargo stacking position control the joystick, unload, reset. Ensure that the trucks (racks) are completely separated and then slowly reverse the loader away from the racks.
- When you reach the parking space, shift to neutral, pull the handbrake and turn off the ignition switch.

Safe and efficient loading operations depend entirely on the operator. If you are an experienced driver, these rules will help you to review the essentials; if you are learning, they will help you to grow as a professional.



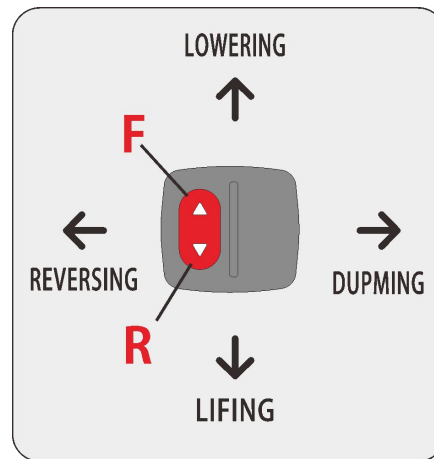
Please note: Only qualified drivers are allowed to operate the loader.

PLEASE NOTE: Before loading, make sure the quick-change locking pin is in the locked position.

PLEASE NOTE: When traveling on a ramp (forward or backward), the load should be facing in the upward direction. Avoid steering or moving horizontally on a ramp.

PLEASE NOTE: If the load is in an elevated position, the loader is strictly prohibited from turning or traveling at high speeds.

Multi-way valve control of lifting equipment and tools

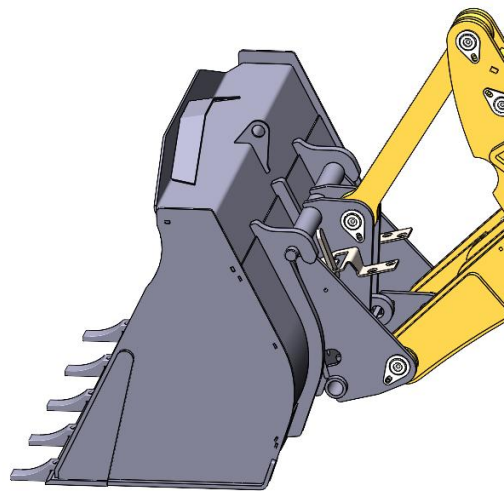
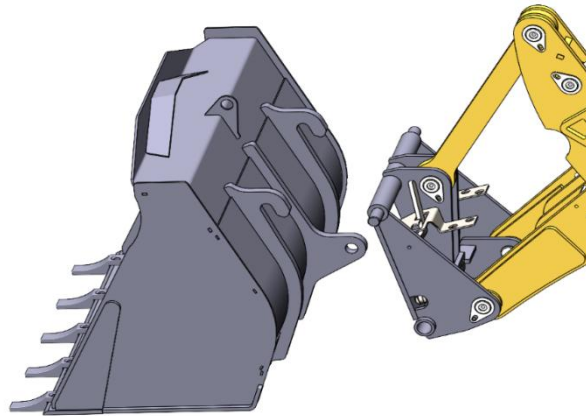


Replacing the Attachment

1. Tilt the loader's quick change device 45 degrees. Start the loader and move it forward slowly so that the loader's quick change head engages the flatbed chassis lugs.
2. Reset the loader's quick change unit to 45 degrees so that the unit is perpendicular to the ground.
3. Dismount the vehicle and operate the manual locking lever to lock the implements in place.

Removing the Attachment

Perform the steps in reverse order, just as you would when replacing the implements.



	Please note: Lifting equipment and tools are intended for specific use only. The operator must observe the "Code of Practice for the Proper Use of Lifting Gear". Do not enter the space between the boom and the frame.
	Please note: Before operating the hydraulic system, make sure that all hydraulic functions of the joystick are in proper condition!
	Please note: Check that the direction of movement is marked with an arrow symbol.
	Please note: Before removing the attachment pin, first reduce its pressure and then disconnect the

	quick coupling; the specific decompression method is as follows: extend the first lever (small lever) of the valves on the left and right sides of the multivalve several times
	Please note: if the attachment is not delivered with the loader, its stability and load-bearing capacity must be confirmed by the dealer before it is used

General safety measures

- Never use any levers or pedals if someone is in an area where the movement of the machine could cause injury.
- Special care is required when working in narrow crowded areas or moving in areas with restricted visibility.
- Always look around before changing direction of travel.
- Follow all safety procedures at all times while working.
- Maintain the appropriate speed for the load and terrain conditions.
- Slow down in advance when turning
- Watch out for pedestrians and keep a safe distance from the vehicle in front of you.
- Avoid hard braking and shift into neutral when the loader comes to a complete stop.
- Keep a safe distance from the edge of the loading platform
- Pay special attention to the trajectory when turning
- Confirm that bridges and ramps can support the total weight of the loader and cargo.

- Before entering or exiting a vehicle (car, trailer, etc.), measures must be taken to prevent movement and falls.
- Stop and observe when approaching the railroad track, and pass through the designated crossing slowly.
- Stop at least 2.5 meters from the railroad tracks.
- Keep both hands on the steering wheel during operation
- When loading large quantities of goods, allow more space to overtake parked vehicles, objects or pedestrians.
- Overtaking is not permitted at intersections, switchbacks or when visibility is obstructed.
- Do not enter an elevator until you have been instructed to do so and have confirmed the load capacity.
- Watch your speed and be alert for pedestrians and other vehicles when approaching [blurred area].
- Slow down on slippery surfaces, uneven terrain and when making turns
- Remove all obstacles from the roadway
- Slow down at intersections, crosswalks and corridors, and sound your horn when driving on the right
- Beware of sudden pedestrians
- If you need to cross a highway bridge, make sure it can safely carry the loader and the total weight of the cargo.
- Slow down early when approaching your destination to ensure a smooth stop at a safe distance. Rapid stopping may cause the load to shift
- Prohibit parking that obstructs the use of fire-fighting equipment

- Report mechanical or electrical abnormalities immediately
- Stay alert at all times
- Watch out for pedestrians and keep a distance from the vehicle in front
- Adjust speed according to load and road conditions
- Do not extend any part of your body out of the cab during operation
- Do not leave the driver's seat when the loader is running.
- Turn off the equipment before leaving the machine
- Must be parked on solid and level ground
- Park vertically to prevent slippage when parking on ramps.
- Warning flags/placards/rails must be installed when parking in traffic areas.
- Prohibit parking in a position that obstructs the fire escape
- When parking: use the parking brake, turn the key to STOP position and remove the ignition key when unattended.
- Parking on slopes is strictly prohibited. If you need to park the loader on a slope, use wheel chocks to secure the loader wheels



If a problem or equipment malfunction occurs while using the loader, it must be properly corrected and troubleshooted and the problem resolved by shutting down the loader. Continued use of faulty equipment not only poses a danger to the operator and other personnel.

	It may also cause further damage to the loader.
	Report any accidents to your supervisor immediately. Never ignore any injury, even if seemingly minor, contact a physician immediately to avoid complications.

AREA	Risks	Safety measures
Cause of malfunction	What happens if safety rules are not followed?	How to avoid malfunctions
The whole machine	A moving machine may run over or crush body parts, causing permanent injury or death between the machine and another object.	Keep all personnel away from the loader work area and always turn off the engine before leaving the operator's cab.
Drive unit	Body parts (arms, legs, etc.) or persons who are on the outside of the cab can cause personal injury.	Always keep your head, shoulders, arms, hands, legs and feet inside the operator's compartment.
Stay underneath the equipment during operation	Tipping over of commissioned equipment. May cause injury or death to people in the vicinity	If the loader must be raised for servicing, it must be securely locked to ensure that all 4 wheels can be rotated safely.
Engines	An engine running at high temperatures can cause severe	During Maintenance: The engine must be turned off. If

	burns. Its running parts or belts may also cause serious injury to those struck or involved.	the maintenance procedure requires . The engine is left running, special care needs to be taken to avoid contact with running parts. If conditions permit, disconnect the battery connection to prevent the engine from accidental starting. Also take care to avoid high temperature surfaces.
Batteries	Batteries produce flammable gases that can cause combustion and explosion. Batteries contain strong acids that can cause severe burns if leaked or come into contact with body parts and eyes. Unprotected (or guard removed) contact with the battery plug or other electrical parts may result in a risk of electric shock.	Batteries should be well ventilated before use, especially if welding operations are required in their vicinity. Protective clothing, gloves and goggles must be worn when handling the battery. Do not remove the protective plastic covering and avoid touching electrical parts that may conduct electricity.
Loader rolls over or tips over	If the loader rolls over or tips over. DO NOT jump out of the vehicle. The loader is equipped with a safety cage, and jumping may even result in the death of the operator.	Keep your hands on the steering wheel and your feet on the mounting brackets under the steering column.

Tires	Welding operations near tires could damage the tires or cause an explosion that resulting in injury or danger to persons.	If welding operations are required on or near the wheels, the tires must be removed first.
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- To avoid accidental movement of the loader, wedge stops need to be placed under the wheels when servicing the vehicle, and the engine must be turned off when operating the wheels.
- Do not attempt to service the equipment yourself without our approval.
- Do not perform any maintenance work not covered by the service instructions. The Company is not responsible for any danger caused by modifications, additions or combinations with equipment from other sources.
- The structure and performance of the vehicle must not be altered without prior notification to the Company.

Electrical equipment

- To avoid short circuits during work on the electrical system, disconnect the battery. Ensure that the battery storage area is well ventilated and that vapors from charging are explosive. Always keep the battery away from sparks, flames and sources of smoke. Never check the battery near an open flame, especially when charging.
- Do not smoke in the vicinity of a charging battery.

Welding

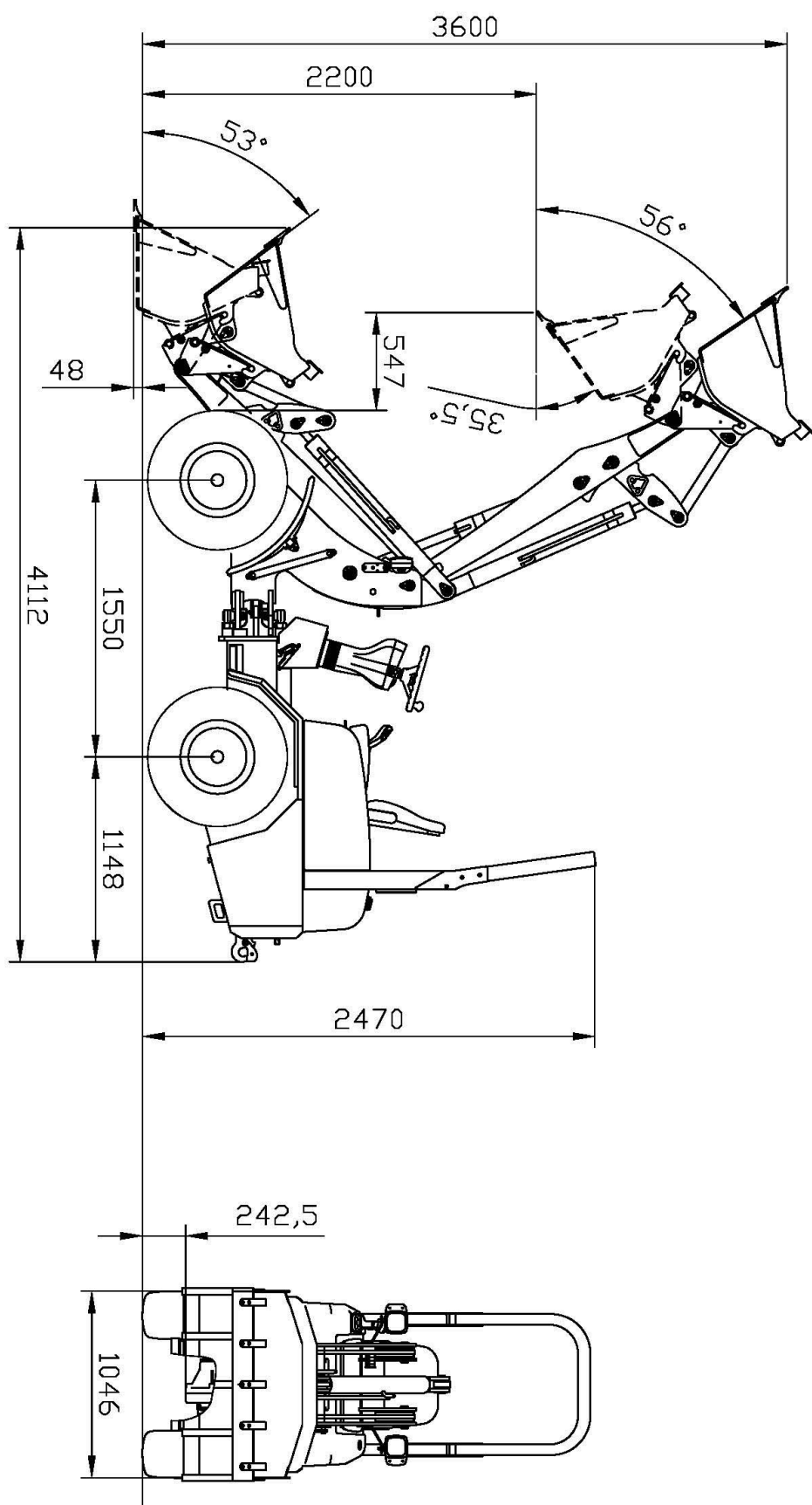
Perform the following before performing any welding operations on the loader:

- Disconnect the battery.
- Disconnect the electrical control system and electrical equipment.
- Set up a grounding device to connect to earth at the welding site.

Chapter 3 Component Specifications and Performance

Performance	Rated load kg	800
	Net weight (kg)	2000
	Overall dimensions l×w×h mm	4112×1046×2470
	Rated barrel capacity (m³)	0.3
	Maximum slope capacity	30%
	Maximum lifting height (mm)	3600
	Maximum discharge height (mm)	2200
	Minimum turning radius (mm)	1365
Engine	Mode	KUBOTA D1105
	Displacement	1.123
	Rated power	18.2
Transmission	Transmission type	Closed piston
	Shift	Motorized
	Maximum speed	12Km/h
Drive axle	Main reduction mode	I-stage speed
	Wheelbase mm	1550
	Ground clearance (mm)	242.5
Hydraulic system	System working pressure (Mpa)	16
	Lifting time s	4
	Total time s	7.5

	Fuel tank capacity L	30
	Maximum working flow rate (l/min)	42
	Maximum driving flow rate (l/min)	84
	Automatic leveling function	yes
Braking system	Traveling brake	Hydrostatic brake
	Parking brake	Manual drum
Tires	Model	10.0 x 75-15.3



Chapter 4 PARTIAL SHIPPING PROCEDURES



Serious danger when refueling and emptying the tank
– no smoking, open flames or use of electrical
equipment is permitted

- **Lifting operations**

Use strong ropes to lift the loader at the marked lifting points.

- **Battery**

Disconnect the battery cables.

Keep the battery in place.

- **Radiator**

Drain coolant from radiator and engine block.

- **Fuel tank**

Drain fuel to a dedicated container.

Disconnect fuel line at lowest point and drain line.

Reconnect fuel line.

Keep the fuel tank cap loosely capped (do not screw it on).

- **Checks**

Make sure fuel line connections are intact.

Make sure radiator shutoff valve is closed.

Make sure the fuel tank drain valve is closed.

- **Protective measures**

Secure the front and rear frames with locking plates.

When using strong ropes at loader tie-down points, take care to avoid

scratching the paintwork.

Wedge front and rear tires with wooden blocks to prevent movement.

Chapter 5 Towing Procedures

When the loader requires assistance, towing is permitted only for short distances, but the following steps must be followed before towing



The loader being towed will have its brakes and steering wheel disabled, and it must be ensured that the tow vehicle has sufficient traction to tow and control the loader, which has no braking system. Only rigid components (tow bars) are allowed to be attached to the trailer.

Towing Procedure

1. Place skid pads (wheel stops) behind the sliding edge of the machine wheels.
2. Lower the load during operation until the cargo hold touches the ground.
3. Remove cargo and accessories.
4. Start the towing vehicle
5. Attach the tractor (which needs to have sufficient traction and braking power) to the towing pins at the rear of the loader using the rigid tow bar.
6. Release the handbrake

7. Manually open the bypass valve on the ram pump
8. When towing is complete
9. Use wheel chocks to prevent wheel slip
10. Tighten the handbrake
11. Restore braking power
12. Tighten the manual bypass valve
13. Install the seat mounting plate

After the repair is complete, check the operation of the brakes

	The point of concentration of the force on the rescue machine can be selected from the lifting point of the vehicle (see Exhibit 3), and the towing point when towing is located behind the counterweight block. Maximum permissible force: 20 kN
	The machine can only be towed for short distances: The towing position is located at the back of the counterweight block; Maximum towing value of the machine: 7,5 kN; Maximum traction speed ≤ 5 km/h; Only rigid traction is allowed; It is forbidden to tow over long distances; The temperature of the hydraulic oil must be observed during the towing process and must not exceed the maximum permissible temperature of the piston pump.

Chapter 6 Supplementary storage program

	Once a month	Unspecified time period
Transmission system	No special attention required	Drain hydraulic tank oil... Refill
Transaxle	No special attention required	Drain the drive axle oil by removing the drain plug located at the bottom of the distributor housing. After draining, reinstall the plug.
Tires	The loader should be raised and the axles locked to prevent the tires from touching the ground Tire air pressure should be reduced to 15 psi	Loader should be raised and axles locked to prevent tires from contacting the ground. Tire pressure needs to be lowered to 15 psi and sprayed with tire protector.
Lubrication	Make sure all points are	Make sure all points are lubricated with the correct

	lubricated with the correct lubricant.	lubricant
Fluid Levels	Check all fluid levels and refill as needed	Drain all fluids (oil)
Wheel bearings	Wheel bearings should be re	Wheel bearings should be regreased
Battery	Disconnect the battery terminals	Remove the battery and store it separately. Batteries should be stored in a cool, dry place and should not be exposed to direct sunlight. If the battery is stored outdoors, it must be protected from dust and moisture. Every two months the battery should be recharge the battery every two months.



1. Machine storage temperature range: -30° C to 50° C.
2. Long-term storage may damage seals in the hydraulic system.

Chapter 7 Noise Levels

Noise intensity level [2000/14/EG] (A) LWA=101DB
Sound pressure level without cabin [German Industrial Standard EN ISO 11201] LPA=84DB (A)
Sound pressure level with cabin [German Industrial Standard EN ISO 11201] LPA=85DB (A)

Chapter 8 Maintenance

Service Schedule

To ensure proper operation of the equipment, the first inspection must be carried out after 30 hours of operation and at the latest three months after commissioning and must be done by a mechanic appointed by an authorized dealer or factory sales representative. Proof of inspection must be sent back to us, otherwise all warranty benefits will be automatically void.

Work to be completed (please mark (0))	First Service
Check transmission, engine and hydraulic system for leaks	
Check hydraulic oil and engine oil cooler and radiator for cleanliness	
Check coolant and antifreeze levels	
Check V-belt tension and condition	

Check for proper installation of lines and conduits	
Check hydraulic cylinder positioning rods	
Tighten all screws and double-check engine and axle mounts and cardan shafts.	
Check gauges and audible alarms	
Check electrical system	
Check hydraulic steering system	
Check lighting equipment (if equipped)	
Check idle speed rpm	
Check and adjust (if required) tappet clearance - Perkins 1004-4 engines only	
Check locking function of doors and engine compartment lid	
Check tire condition	
Change oil and oil filter	
Clean air filter and replace as required	
Replace hydraulic oil return filter	
Make sure all nozzles are lubricated	
Lubricate universal drive shafts (universal joints)	
Lubricate all levers, Bowden cables and hinges	
Check all oil levels, including gears and axles	

Observe engine operation manual

Date and Location

Dealer Signature/Stamp

Please complete and return the service schedule on the reverse side

Vehicle Details/Customer Information

Type:

Chassis number:

Delivery date:

Customer Address _____ Dealer Address _____

Name: _____ Name _____

Street: _____ Street _____

Zip code & Town _____ Postcode & Town _____

Phone _____ Phone _____

Fax _____ Fax _____

Type of Use:

Mouth	Agricultural Farming	Mouth	Construction	Mouth	Community
Mouth	Industry	Mouth	Other...		

Machine data

The most important vehicle data is contained on the nameplate on the right side of the front compartment near the center joint. When ordering spare parts, these data should be filled in in the following format.

Model number:	Vehicle identification
number:	

Engine type:	Engine
number:	

Delivery date:	Operating weight (including
bucket):	

Importer (name and address):

Name and address of service workshop:

Additional description:

.

Section I: General Provisions

A. Vehicle immobilization

The vehicle must be immobilized as follows before any maintenance or repairs are performed:

1. Parking the vehicle on a level and load-bearing surface
2. Placing tool attachments on the ground
3. Locking the center pivot steering system
4. Turn off the engine

5. Removing the key from the ignition switch
6. Prevent the vehicle from sliding by blocking the wheels
7. Disconnecting the battery before working on the electrical system or welding

B. Safe support of the load arm



**A raised load arm can fall suddenly and cause serious injury.
Secure the load arm with a suitable support before carrying
out maintenance and repairs!**

C. General safety checks

1. Check steel parts for damage and record any damage to the enamel coating for subsequent repair.
2. Ensure that all pivot pins are in the correct position and properly secured by the locking mechanism.
3. Check the condition and correct position of the steps and straps.
4. Check windows for cracks and replace damaged windows.
5. Check condition and correct position of shovel teeth.
6. Check brake discs for damage.
7. Check tires for damage or punctures from sharp objects.
8. Make sure all warning signs are in place. If necessary, install new warning signs.

Section 2: Maintenance

- Proper and regular maintenance is a prerequisite for continued optimum performance of the vehicle.
- Use only genuine APS parts.
- An improperly maintained vehicle will pose a safety hazard to your employer.
- Keep your vehicle running efficiently through regular maintenance and lubrication. Maintenance intervals depend on the number of hours worked and the intensity of the daily operation, so check the running time counter regularly to determine the intervals.
- Vehicles that have not been serviced when due are prohibited. All faults must be thoroughly serviced immediately. The first maintenance after 30 hours of operation should be performed by an authorized dealer or our authorized service point.



Maintenance work must only be carried out by professionally trained personnel. Before starting maintenance, make sure that the vehicle is properly secured. Lower the load arm and park the vehicle on a level surface. If the load arm has to be raised during maintenance, a safety support must be installed.

A. Maintenance Intervals

The intervals shown apply to average operating conditions and loads. Different maintenance intervals must be observed (whichever comes first and may be calculated on a monthly basis). The intervals shown are based on the quality of operating material specified in this manual.

1. Routine Maintenance



Routine maintenance (performed daily or at least every 10 operating hours)

- Clean the vehicle
- Clean the air filter
- Check overall damage
- Check coolant level and condition
- Check cleanliness of hydraulic oil cooler, radiator and oil cooler
- Check engine oil level and condition
- Check engine for leaks
- Check hydraulic oil level
- Check hydraulic system
- Check tire condition and pressure
- Make sure all screws are tightened
- Check wheel nuts
- Check brake system function
- Check seat belts
- Check instrument panel, control lights and audible warning

devices

- Check electrical system
- Check foot brakes
- Check hydraulic steering system
- Check hydraulic functions
- Check auxiliary equipment
- Check exhaust system for defects or excessive smoke
- Check lubrication of all pivot pins
- Lubricate according to lubrication chart
- Lubricate tool accessories
- Lubricate center connector
- Lubricate steering cylinder pivot pins
- Verify that all screws in the ROPS structure are tightened.

2. Weekly Maintenance

CAUTION:

When checking the hydraulic oil level, the vehicle must be parked on level ground with the loading arm lowered.



Weekly maintenance (weekly or at least every 30-50 hours of operation)

- Clean the fuel filter oil-water separator
- Check front and rear axles for oil leaks and check oil level
- Check the condition of the radiator and its lines
- Check the tension and condition of the fan belt

- Check auxiliary equipment
- Check hydraulic cylinder piston rods
- Check position of pipes and hoses
- Check air filter piping
- Check location of cables
- Lubricate universal joint shafts (universal joints)
- Lubricate all levers
- Lubricate all Bowden wires and hinges
- Tighten all screws
- Double check engine and axle mounts

3. Inspect after 500 hours of operation (or after 6 months of initial operation)

The inspection and maintenance personnel must be fully aware of the inspection and maintenance tasks to be performed on this or similar vehicles.

Maintenance (hours of operation) or after the first 12 months at the latest: Maintenance tasks to be performed:	500 hours
Check for leaks in the gearshift, engine and hydraulic system	×
Check hydraulic system and hydraulic oil cooler and radiator for cleanliness	×
Check coolant and antifreeze levels	×
Check the position of pipes and tubes	×
Check piston rods of hydraulic cylinders	×

Check air filter piping	×
Check Bowden cables and cable laying	×
Tighten all screws. Double-check the engine and axle mounts and the cardan shafts.	×
Check the rubber cushions of the engine mounts	×
Check the acid level of the battery	×
Check instruments, control lights and audible alarms	×
Check the electrical system	×
Check and adjust foot and parking brakes (if necessary)	×
Check hydraulic steering system	×
Check lighting equipment (if fitted)	×
Check exhaust system	×
Check driveshaft pivot pins and bushings	×
Check center joint bolts and bearings	×
Check idle speed rpm	×
Check and adjust hood and door latch mechanisms (if required)	×
Check tire condition and pressure	×
Check engine oil and change filter	×
Change fuel filter – clean primary filter	×
Clean or replace air filter (if required)	×
Change hydraulic oil	×
Replace hydraulic oil return filter	×
Replace oil in transmission gearbox	×
Replace axle lubricant	×
Check that all lubrication nozzles are lubricated	×
Lubricate all levers, cables and hinges	×
Check all oil levels	×

CAUTION!

Observe the engine operating instructions

4. Further maintenance intervals

The inspection and maintenance personnel must be fully

aware of the inspection and maintenance tasks to be carried out on this or similar vehicles.

Maintenance working hours	At least every 200–250 hours per month	At least every 1000 hours per year
Check shift gears, engine and hydraulic system for leaks	×	×
Check hydraulic cooler and radiator for cleanliness	×	×
Check coolant and antifreeze levels	×	×
Check V-belt tension and condition	×	×
Check location of pipes and tubes		×
Check air filter ducts		×
Check Bowden cables and cable routing	×	×
Tighten all screws. Double-check engine and axle mounts and universal joints.		×
Check battery acid level	×	×
Clean battery terminals and check acid density	×	×
Check: instruments, control lights and audible warning devices	×	×
Check electrical system	×	×
Check and adjust foot brake and parking brake as necessary	×	×
Check hydraulic steering system	×	×
Check lighting equipment (if	×	×

fitted)		
Check exhaust system	×	×
Check driveshaft pivot pins and bushings		×
Check center joint bolts and bearings		×
Check hydraulic system pressure control valves		×
Check idle RPM	×	×
Check speed at maximum load/no load		×
Check starter motor and generator (refer to engine manual)		×
Maintenance working hours	Check at least every 200–250 hours per month	At least every 1000 hours per year
Check heater plugs and injectors (refer to engine operator's manual)		×
Check and adjust valve lash (if needed)		×
Tighten cylinder head bolts		×
Check and adjust engine cover locking mechanism, if necessary	×	×
Check roll cage/cab		×
Check tire condition and pressure	×	×
Change oil and oil filter	×	×
Change fuel filter – Clean primary filter		×
Clean or replace air filter (if necessary)	×	×

Change hydraulic oil		×
Replace hydraulic return filter		×
Pressure filter (1-inch element needs to be replaced after 500 hours of operation and subsequently as required)		
Replace oil in transmission		×
Replace axle lubricant		×
Replace coolant every 2 years		×
Check that all lubrication nozzles are lubricated	×	×
Lubricate all cardan shafts (universal and sliding joints)	×	×
Lubricate all levers, Bowden cables and hinges	×	×
Check all oil levels	×	×
Check in accordance with accident prevention rules		×

The maintenance interval can be extended to 200 operating hours if the weekly operating time exceeds 30 hours and if high quality mineral oil (size CF or CG) is used.

Note

Refer to the engine operation manual

Please fill in the following periodic inspection records:

After_____ hours of operation

Date of first inspection:

Hours of operation: _____

Stamp/Signature: _____

After_____ hours of operation

Date of first inspection:

Number of hours of operation: _____

Stamp/Signature: _____

After running_____ hours

Date of first inspection:

Number of hours of operation: _____

Stamp/Signature: _____

After running_____ hours

Date of first inspection:

Number of hours of operation: _____

Stamp/Signature: _____

After running_____ hours

Date of first inspection:

Number of hours of operation: _____

Stamp/Signature: _____

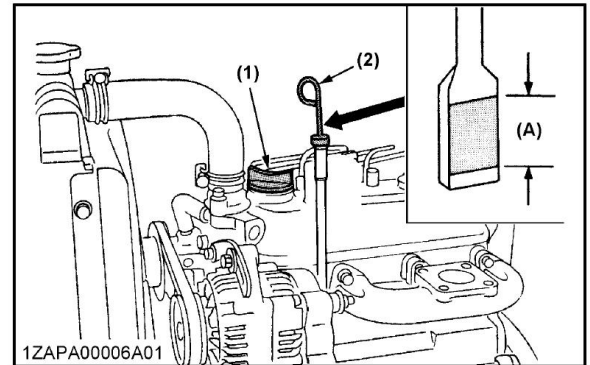
B. Engine Maintenance

Maintain the engine as specified in the operator's manual and engine manual, paying particular attention to the maintenance interval schedule.

1. Engine oil change

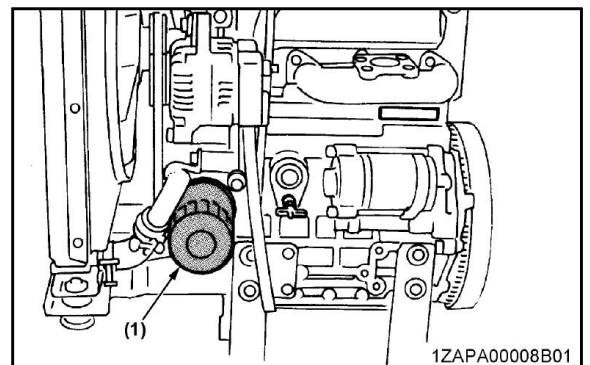
	There is a danger of scalding from the high temperature of the engine oil!
	Collect used oil and dispose of it in an environmentally friendly manner.

Danger of scalding from high engine oil temperature.
Collect used oil and dispose of it in an environmentally friendly manner.



(1) 油位计 (2) 加油塞 (A) 所需机油液位范围 (发动机机油尺下端)

- Start the engine until it reaches normal operating temperature.
- Park the vehicle on a level surface and wait for 5 minutes to prevent oil from skidding.
- Turn off the engine.
- Place an oil catching container under the oil drain, refer to the capacity chart in this manual for the required capacity.
- Unscrew the oil cap and drain the oil.
- After engine oil is completely drained, replace the oil filter.
- Replace the engine oil filter.
- Install the oil pan cover in place and torque the screws.



(1) 机油过滤器滤芯

- Torque the screws to the correct torque.
- Refill the engine oil through the oil filler until the oil level reaches the "maximum" mark.
- Start the engine and run it at idle speed for approx. 2 minutes.
- Check the oil level and, if necessary, replenish the oil.

up to the "Max" mark.

- Check the engine for leaks.

NOTE: The filter element is equipped with a bypass valve that opens when the filter element is clogged.

2. Air Filter Maintenance

The wheel loader is equipped with a dry filtration system consisting of a main filter and a safety filter.

Warning!

- Engine components may cause a risk of injury!
- Always stop the engine before starting work near the air intake.
- Never start the engine with
- the air intake system components removed.
- If the engine draws in unfiltered air, equipment damage may result.



- **Remove the main filter for inspection and cleaning**
 - 1) Loosen the spring clamp (Figure 1) and remove the cover (Figure 2).
 - 2) Pull out the main filter element (Figure 3). The safety cartridge (Figure 4) does not need to be removed.
 - 3) Clean or replace the cartridge.
 - 4) Install the new or cleaned cartridge in reverse order. If the filter paper or seals are damaged, the cartridge will need to be replaced.
 - 5) Check the intake tube between the filter and the engine to make sure it is securely connected and properly installed. The outside of the intake tube must not be damaged. The hose fitting between the filter and the intake tube must also be free from external damage.

- **Checking/replacing the safety filter**

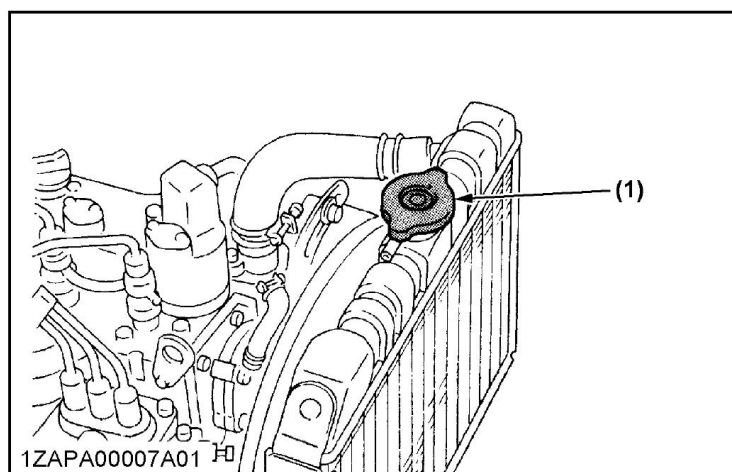
Replace the safety filter element (Figure-4) if necessary, but at the latest after the main filter element has been cleaned.

The safety filter element must be replaced when a maintenance error is evident in the dry filter element during service

operations or when the main filter element is damaged

3. Maintenance of the cooling system

- The oil cooler is mounted at the rear of the diesel engine.
- It can be serviced when you lift the tailgate.
- If you feel that the hydraulic system is overheating during a long drive or in a hot environment, check that the cooler is clean and that the fan V-belt tension is normal.
- The coolant level needs to be checked periodically. The radiator fins must be submerged in coolant when viewing the radiator opening from above. When replenishing the coolant, make sure that sufficient antifreeze has been added. Antifreeze prevents the coolant from freezing at low temperatures and protects the engine block and radiator from internal corrosion.
- The higher the level of dust in the air, the more frequently the cooling system needs to be inspected. When you shine a hand-held light behind the cooler, you should be able to see light through all openings. Use compressed air to clean the cooler. If the cooler is heavily contaminated, use a high-pressure water rinse to remove accumulated dirt. Be careful not to bend the cooler fins. Bent fins must be straightened.



(1) 散热器压力盖

4. Maintenance of the hydraulic system



Warning!

Ensure that maintenance work must be carried out in an extremely clean environment. Contaminants or moisture in the oil may cause premature wear or even complete failure of the system. Use only specialized hydraulic oil (see selection chart), which must be taken from a sealed container. Always thoroughly clean the inside of the hydraulic lines before installation.

A hydraulic variable pump is flange-mounted to the diesel engine. The displacement of the pump is automatically and infinitely adjustable, but is controlled by the speed and load. The speed of the vehicle is determined by the engine speed and the load: forward drive is achieved by depressing the accelerator pedal and the maximum speed is limited by the maximum engine speed.

Depending on the load of the loader, the variable pump is automatically adjusted to maintain the optimum torque output of the engine. The higher the load on the vehicle (e.g. during loading operations or driving uphill), the lower the driving speed. This design ensures maximum efficiency throughout the entire operating range. By depressing the inch pedal (left pedal in driving direction), the loader can be throttled progressively over the full speed range until the vehicle comes to a complete stop, which further influences the pump

displacement.

The loader's operating hydraulics are supplied by a hydraulic gear pump. This gear pump is flange-mounted to the variable pump and supplies pressurized oil to the steering system and the movable arm control valve. The temperature of the hydraulic oil must not exceed 80° C. Please change the hydraulic oil and filter as required by the maintenance intervals.

- Hydraulic oil level

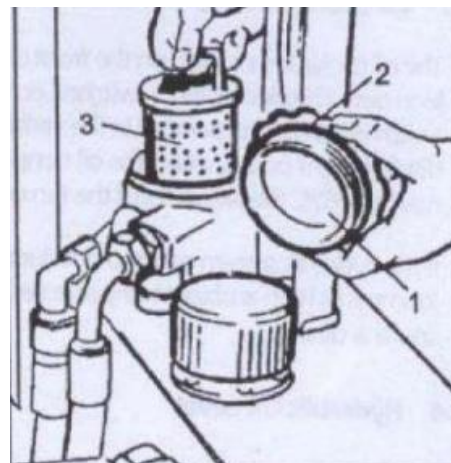


Park the wheel loader on a level surface and lower the work unit to the ground. Apply the parking brake. Turn off the engine. Operate the work unit control levers until all work unit movement is completely stopped to relieve pressure in the hydraulic system. Secure the vehicle as described in the "Parking the vehicle" section.

- Oil return filter

The hydraulic system is equipped with an oil return filter (Figure-3). A built-in bypass valve protects the return filter from overpressurization. When the bypass valve opens, the filter will fail. Therefore, the filter element must be replaced as soon as possible.

- 1) Unscrew the top cover (Figure-1) and remove the filter element (Figure-3)
- 2) Install the new filter element
- 3) Check the seals (Figure-2)



and replace them if any damage is found.

4) Tighten the top cover

- Replace the hydraulic oil



High-temperature hydraulic fluid poses a scalding hazard. Collect and dispose of the fluid in an environmentally friendly manner.

Read and follow the "Inspection, Maintenance and Safety" procedures. Do not start the engine without filling the hydraulic tank to prevent unauthorized use of the vehicle.

- 1) Lower tool attachments to the ground
- 2) Turn off the engine and engage the parking brake
- 3) Place a container under the hydraulic tank (see capacity chart for required capacity)
- 4) Unscrew the drain filter
- 5) Unscrew the drain plug at the bottom of the hydraulic tank
- 6) Unscrew the tank cap (Figure 1). Clean the bottom and inside of the tank with hydraulic oil or recycled oil and subsequently tighten the drain plug
- 7) Refill the hydraulic oil through the screen below the drain filter up to the upper limit mark of the oil level gauge. Tighten the drain filter and vent the entire

system

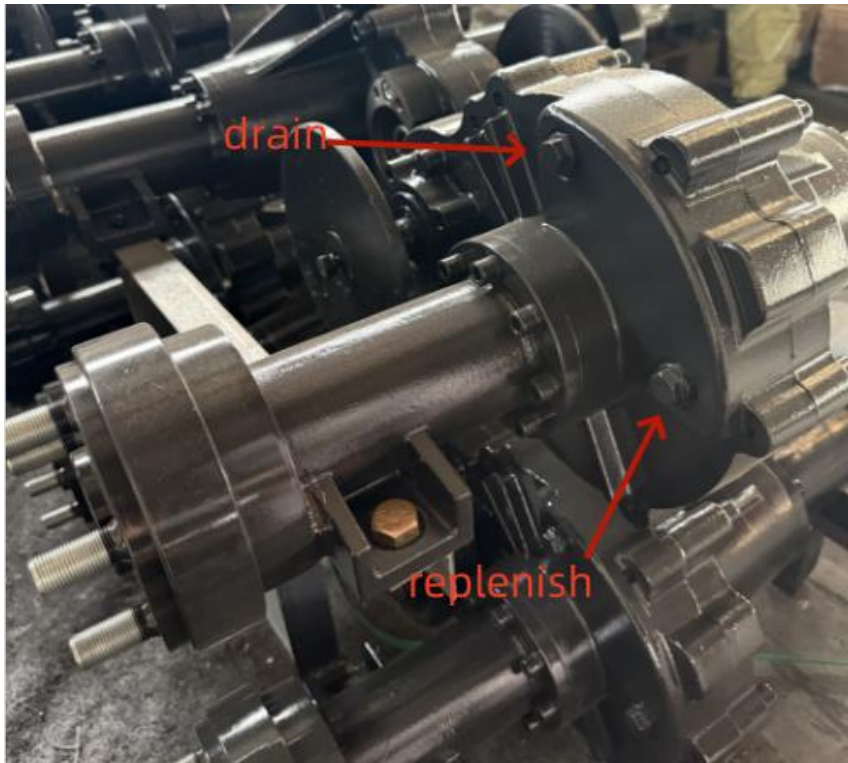
5. Maintenance of the axle



Park the vehicle on a level surface and lower the tool attachment to the ground. Switch off the engine and apply the parking brake firmly. Danger of scalding from high temperature fluids – collect and dispose of the fluid in an environmentally friendly manner.

Maintain the axle according to the maintenance intervals.

- Check the gear oil level and change the oil



- 1) Unscrew the hexagonal screw plug on the side of the housing. The oil level should reach the bottom edge of the threaded hole.
 - 2) Unscrew the hexagonal screw plug on the lower right side of the differential case cover.
 - 3) Drain and collect the oil.
 - 4) Install hex plug with sealant.
 - 5) Refill oil until level reaches top edge of hole.
 - 6) Install oil filler neck port
- 6. Anti-roll bar construction**

This vehicle is equipped with a roll cage structure (ROPS). Use of an uninstalled or defective roll cage could result in a fatal accident or serious injury. Modified or improperly repaired roll cages are dangerous. If the roll cage is damaged as a result of an accident, a repair inspection must be

completed by a professional before continuing to use the vehicle.

Contact your APS dealer or our authorized service point. Ignoring these instructions could result in a fatal accident or serious injury.

- Check the roll cage for damage
- Make sure all bolts are tight
- Check bolt torque values and torque tighten if necessary
- If the roll cage is to be dismantled, special instructions must be followed.

7. Vehicle cleaning

In the early stages of a new vehicle's life (the first three months), sponge cleaning is only to be used. High-pressure water jet rinsing may cause damage to the paintwork as the surface coating is not fully cured.

Special attention should be paid to the undercarriage area. Do not allow sludge to accumulate in the engine and gearbox area. Ensure that the radiator grille is free from obstruction. The vehicle is splash-proof.

It is prohibited to use a high-pressure water gun (pressure washer) to directly wash the instrument panel, generator, compact connector or radiator. Cover the multifunction joystick before cleaning.

8. Seat belts

- Seat belts must be replaced after damage, wear and tear or after an accident. In addition, seat belts should be renewed

every three years.

- Check the seat belts for wear and elongation. Make sure the stitching is not damaged and check the latch function.
- Make sure that the screws are installed correctly and tightly.

9. Tires and wheels



Pneumatic tires can become very hot, explode and cause fatal accidents. Do not cut or weld the wheel. Repairs should be performed by a tire or wheel specialist.

- **Tire inflation**

The following operating instructions describe the process of inflating a tire after it has lost pressure. When the tire is completely out of pressure, this operation must be done by a trained tire technician using specialized equipment.

- 1) **Tire Preparation:**

Check to make sure the tire is properly seated.

- 2) **Equipment Preparation:**

Use only air supply units with pressure regulators. Set the regulator to a maximum of 1.38 bar above the recommended tire pressure. Equipped with inflator hose with self-locking pneumatic chuck and remote shut-off valve.

- 3) **Inflating operation:**

Ensure that the inflation hose is correctly connected to

the valve nozzle. Clear the operating area. Inflate by standing on the side and rear of the tire until the recommended tire pressure is reached (see tire pressure comparison table).

- **Wheel Seating Inspection**

For new vehicles or where wheels have been replaced, wheel nut torque values should be checked every two hours until values stabilize. It is important to verify that all wheel nuts are tightened in place before using the vehicle each day.

The correct torque values are shown in the table below

Wheel Nuts	Front Wheel	Rear wheel
M18×15	310±45Nm	310±45Nm



When replacing wheel bolts, it is important to replace all the bolts of that wheel at the same time, as other bolts may have been damaged as well.

10. Brake system maintenance

Damage to the brake system may result in a fatal accident.

Therefore, have your brake system checked regularly through your dealer. During maintenance, the brake system function should be checked and brake adjustments made as necessary. Do not continue to operate the vehicle until the fault has been rectified.

Hydrostatic actuators are used as service brakes. The vehicle's

service brake is operated by inching the brake pedal, which applies the brakes to the rear wheels by releasing hydraulic actuating pressure. The loader is equipped with both a foot brake and a parking brake. Its braking system consists of drum brakes on the rear axle input differential.

11. Electrical System

- **Maintenance of the electrical system**

- 1) The electrical system has a nominal voltage of 12 volts and is powered by an alternator.
- 2) The battery capacity is 60 AH.
- 3) The battery is located in the vehicle cabin and can be operated when tilted.
- 4) The electrical loads and their supply lines are protected by fuses mounted in the fuse box on the right side of the steering column.
- 5) The vehicle is splash proof. Do not use a high-pressure water gun (pressure washer) to clean the instrument panel, generator, or compact connectors.
- 6) The electrical system requires maintenance as needed.

When servicing the electrical system it is important to avoid short circuits by first disconnecting the negative battery terminal or operating the battery disconnect switch. To prevent internal short circuits, do not place any tools on the battery. Keep the electrode terminals and terminals clean and coated with anti-rust grease. Do not touch bulbs and headlight reflectors with your fingers.

Refer starter and alternator malfunctions to dealer for service. Small devices such as relays, regulators, ignition switches, turn indicators, etc. should be replaced directly if faulty. Make sure that the connecting wiring and fuses are properly connected. Blown fuses are usually caused by short circuits, check the cables and make sure the fuse contacts are in place.



To avoid damage to the electrical system, observe the following operating instructions:

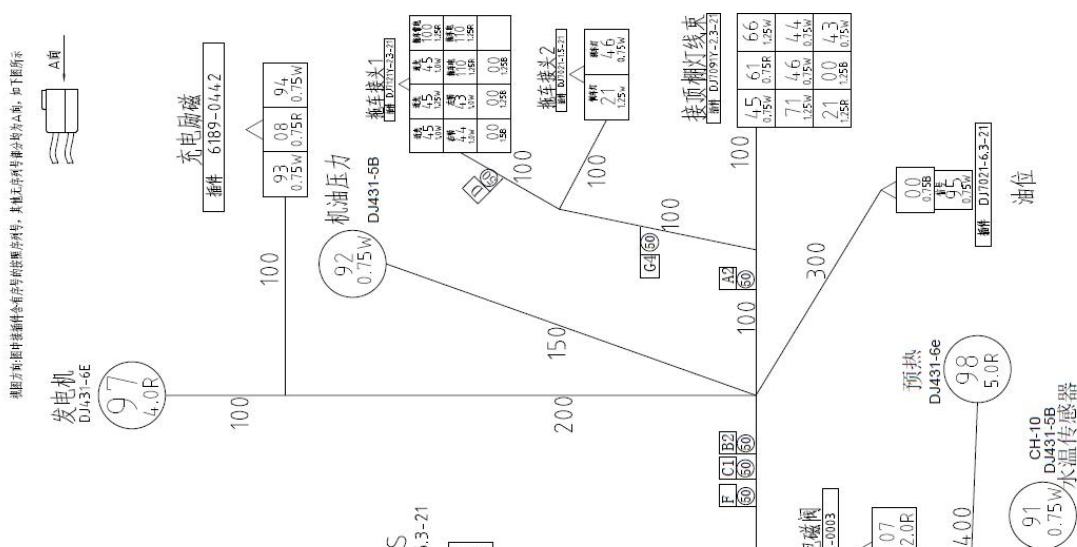
- 1) When performing welding operations, the welding equipment ground terminal must be connected directly to the part to be welded. The generator must be disconnected and the battery removed before starting welding.
- 2) It is forbidden to disconnect the electrical wiring while the engine is running.
- 3) It is forbidden to short the fuse and preheat controller. Replacement of damaged parts must be done with original parts of the same specification.

● **BATTERY**

- 1) Batteries can emit explosive gases. Do not smoke and keep the battery away from sparks and flames.
- 2) Battery electrolyte contains sulfuric acid, which may irritate skin and eyes. Wear protective eyewear. Take care to avoid spilling the electrolyte. Keep metal parts away

当图上方、圆中或圆外有点时,此时于点所标数字均为△前,如下图所示:

- Electrical Wiring Diagram



12. Troubleshooting and Correction

Troubleshooting Problems	Troubleshooting Causes	Troubleshooting
Engine won't start	Fuel tank empty	Refill fuel tank and clean fuel system as necessary
	Fuel filter clogged, winter	Replace fuel filter, use low

	paraffin deposits	temperature fuel
	Fuel solenoid valve not released.	Check fuses
	Fuel line leaks	Tighten all screws and clamps.
	Starting RPM too low	Check and charge the battery, the Check battery terminal fit
Vehicle will not move with engine running	Parking brake applied	Release handbrake
	Damaged parking brake switch	Replace parking brake switch
	Faulty power supply to drive pump solenoid	Make sure that the multifunction joystick and electronic system Have multifunction joystick and electronic system workshop serviced
Engine overheating	Dirty radiator/oil cooler	Clean
	Coolant level too low	Replenish coolant
	Thermostat stuck	Have shop replace thermostat
	V-belt loose	V-belt tension
	Oil level too high or too low	Correct oil level
Hydraulic system overheated	Dirty hydraulic oil cooler	Clean
	Hydraulic oil level too low	Hydraulic oil replenishment
	Load too high	Reduce vehicle load, stop working
Reduced vehicle performance	Dirty air filter Dirty fuel filter	Replacement
	Incorrect fuel type	Replacement of fuel type
	Stuck left pedal	Inspection and Repair
	Engine speed too low	Adjust speed

Follow the engine operation manual!

13. Capacity and Fuel/Oil Type

Item	Capacity	Lubricating Oil	Specification
Fuel	30L	Diesel oil	Standard DIN 51601 See Engine Operation manual
Engine oil	Refer to engine manual	Engine oil SAE 15w/40 Ambient temperature -20° C to over 30° C	API CD-ROM, see Engine Operation Manual
Axle	1.5L	Gear Oil SAE 85W 90GL5	for hypoid gears
Hydraulic oil tank	30L	Hydraulic oil HLP	ISO VG46
Lubrication points		Multi-Purpose Grease	Waterproof



To all vehicle users, we recommend the following

lubricant types:

Gear oil AFI-GL5

Fuchs Renogier LS lubricant

80W90 / 85W90



**When changing to environmentally friendly hydraulic oil, the
The hydraulic system must be flushed several times. Do not mix with
mineral oil!**

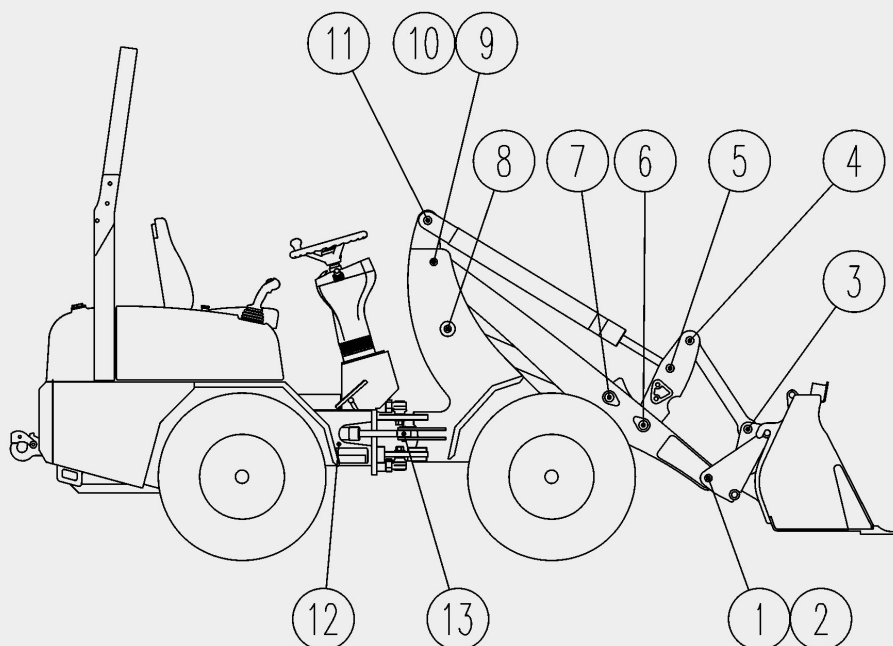
14. Lubrication schedule

Lubricate all lubrication points daily with waterproof multi-purpose grease. Lubricate all movable parts, such as the parking brake lever, foot pedals, etc., with a grease can.



Make sure all cylinder lubrication nipples are lubricated!!!.

Lubrication Indicator Diagram of The Whole Machine



Lubricating Oil Grade	Number 3 Lithium-based lubrication MoS2
Oil Injection Interval	50 hours or one week

Ordering spare parts

To ensure smooth order processing and delivery, please provide the following information when ordering spare parts:

- Vehicle model
- Vehicle and chassis identification number (see identification plate) and corresponding engine number
- Item photo and name of the spare part
- Your address and contact telephone number (for contact if necessary)
- Customer number (if any)
- Name of person ordering
- Method of shipment (see below for details)

Please note that the illustrations in our spare parts lists may differ from the actual original parts. We reserve the right to make changes due to technical improvements. For parts for which the item number cannot be determined, please send the

actual part to us to avoid wrong shipment. Parts not requested to be returned will be treated as scrap. For new customers, please inform us of your address information to ensure accurate subsequent shipments. First time orders will be shipped on a cash on delivery basis. If free reimbursement is requested for special reasons, return parts will be shipped prepaid.

When placing an order, please be sure to indicate the shipping method selected: .

1. Overnight
2. Parcel Delivery
3. Road freight please

Use only original spare parts manufactured by our factory to ensure optimal installation and superior quality.