



Operation Manual

**W11/W12/W13/T13 Series
Wheel Loader**

FOREWORD

W11,W12,W13,T13 Series loader is one of FIRST AVENUE self-developed new less than 2ton multi-function mini-loaders, this loader is a ideal product for material loading and unloading, short-distance transport, can be matched with many accessories, can be realized more kinds of uses, such as lifting, pulling, clamp hold, digging drill, ground, weeding, feeding fodder, etc. It can widely used in farm, ranch, infrastructure, road construction, stations, boatyard and other work places, this machine has the characteristics of the best economy, safety, and driving comfort. And these good characteristics depend on you, loaders and other operators to maintain, fully play during operating.

This manual covers all important knowledge of the starting use of the new loader, driving and operation, care and maintenance for W11,W12,W13,T13series wheel loaders. Please follow the instructions of the loaders, regular inspect and maintenance the working content specified on the table, and use the provisions of the working media.

This manual can be used for W11,W12,W13,T13 model.

For some special technical skills and knowledge about maintenance and repair, because of needing to use special accessories, be not mentioned in this statement, please contact the FIRST AVENUE dealer.

Loader maintenance and repair work is only allowed to be done by qualified professionals who are authorized by FIRST AVENUE.

In order to make your loader to obtain a valid warranty services, the maintenance must be must be done on time by qualified professionals who is authorized by FIRST AVENUE.

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SECTION1:RECORD OF REVISIONS

Continuing improvement and advancement of product design may cause changes to the model group which may not be included in this publication.

Each publication is reviewed and revised, as required, to update and include the changes in later additions.

We reserves the right to modify or make changes within a specific model group without notice and without incurring any liability to retrofit tractors previously shipped from the factory.

Contact your First Avenue Industry dealer for maintenance that is not covered in this publication.

	ISSUE DATE		
UPDATE NUMBER	DISASSEMBLY	INSERTED	DESCRIPTION OF CHANGE

SECTION2:GENERAL WARRANTY CONDITIONS

This document presents the warranty conditions offered to any customer for all the pieces of equipments manufactured in the First Avenue Industry facilities and sold to him through the authorized Sales and Service network.

The general warranty conditions hereunder described do govern the relationship between final customer of a First Avenue Industry product, hereunder called “the buyer” and First Avenue Industry factory, called “the manufacturer”.

The fact that the buyer places an order of a First Avenue Industry product means that he has read the present policy and does accept its provision. Any other general or particular provision, that differs from or contradicts one of the general or particular conditions described hereafter which may appear in any document from the buyer and especially in its general purchasing conditions, cannot be used against the manufacturer unless accepted by First Avenue Industry in a written agreement.

ARTICLE 1:

First Avenue Industry warrants that each new item of equipment is of good workmanship and is free from mechanical defects provided that:

- 1) The product is installed and operated in accordance with printed First Avenue Industry Equipment’s instructions.
- 2) The product is used under normal operating conditions, for which it is designed,
- 3) The product is not subject to misuse, negligence or accident,
- 4) The product receives proper care, lubrication, protection and maintenance under the supervision of trained personnel,
- 5) The product is normally protected from exterior aggressions whatever their origin.

ARTICLE 2:

This warranty expires, unless otherwise agreed by First Avenue Industry in a special provision, 15 months after shipment by the manufacturer, or 12 months after being placed in service, or after 1000 operating hours.

ARTICLE 3:

The First Avenue Industry Warranty is strictly limited to the replacement of defective parts and if the repair does justify it, to the assistance of a technician. Parts shipping expenses, traveling and housing expenses of personnel are to be paid by customer.

ARTICLE 4:

The First Avenue Industry Warranty does not apply to fluids, oils, fuses, bulbs, accumulators, paint, seals, tires, bumpers, pads and other consumables or normally wearing type items unless found to be defective prior to use.

ARTICLE 5:

All warranty claims from the Buyer must be sent by written to Seller who will be in charge of dealing with the Manufacturer to address the problem in a timely manner.

ARTICLE 6:

All the expenses related to a warranty claim will be invoiced to the buyer until First Avenue Industry employees have evaluated the claim. Whatever the circumstances, the buyer should not refuse or delay the payment. If the evaluation concludes to First Avenue Industry ' s full responsibility, a credit memo will be issued in favor of the buyer.

Under no circumstance other than those accepted by First Avenue Industry , the buyer of the defective parts at the manufacturer address can accept without a formal letter from the buyer and without the effective return no warranty claim.

ARTICLE 7:

This warranty is extended by First Avenue Industry only to the buyer of new products from First Avenue Industry or of its authorized distributors. The products purchased under this warranty are intended for use exclusively by the buyer and his employees and by no other person. Therefore, there shall be no third party beneficiary of this warranty.

ARTICLE 8:

This warranty does only apply to the primeval reason. In other words, the consequences on the product linked to its use after first problem are not covered by this warranty.

ARTICLE 9:

Under no circumstances whatever shall First Avenue Industry and the seller be liable for any special or consequential damages, whether based on lost goodwill, lost resale profits, work stoppage, impairment of other goods or otherwise, and whether arising out of breach of any express or implied warranty, breach of contract, negligence or otherwise, except only in the case of personal injury as may be required by applicable law

ARTICLE 10:

The warranty is automatically void in the following cases:

- 1) The product has received some modification, not advised by First Avenue Industry or not done following First Avenue Industry requirements
- 2) Some original parts have been replaced by parts not provided by First Avenue Industry .

ARTICLE 11:

This warranty and all undertaking of First Avenue Industry shall be governed by the laws of manufacturer's country and discussed in front of nearest court from the manufacturer's facility even in case of multiple of defenders.

SECTION3 GENERAL WARNING

FOREWORD

This instruction manual is intended for all users of the machine: the company manager, the Department Head, the driver, as well as the whole personnel who works with or near to the equipment



GENERAL WARNING:

1. Before using the machine, go through this manual and comply with all its instructions
2. Also carefully read the instructions that appear on the plates fixed onto the machine and keep them readable
3. Keep this instruction manual at the disposal of all operators
4. Make sure that any person to whom you entrust the machine is qualified to fulfill the safety requirements linked to its use
5. Avoid unsupervised interventions on your equipment when not being used
6. Never use a machine which does not look to be in good condition
7. Never apply a load or a stress exceeding the maximum operating load of the machine
8. Never use the machine for an operation it is not designed to perform
9. Become thoroughly familiar with the safety regulations applicable to the machine and enforce them scrupulously
10. The manufacturer declines his responsibility for the consequences of a disassembly of the machine or any modification made without his supervision

OBLIGATION TO GO THROUGH THE USER'S MANUAL



The company manager is compelled to make the operators fully acquainted with the regulations of the instruction manual.

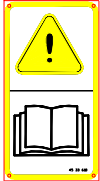
Read this entire chapter BEFORE attempting to operate this loader

The company manager is responsible for the enforcement of the applicable "user's regulation"

The user must imperatively read and assimilate this instruction manual in order to be able to comply with it during start-up and use

The instruction manual must be kept during the life-span of the machine, including in the event of a resale, of a change of user or manager

The instruction manual is not a training manual but it specifies, when required, if a training is necessary.

GENERAL INSTRUCTION	
	The company manager must make sure that the machine is delivered with the instruction manual and the certificate of conformity for the member states of the European Community * The location of the instruction manual is specified on the dispatch note when leaving the factory The certificate of conformity is placed with the dispatch note Only trained and qualified operators with appropriate driving license and accredited by the company manager may operate the vehicle within the scope of the use for which it has been designed The loader may only be used in accordance with the conditions established by the manufacturer in this instruction manual and declines the manufacturer his responsibility. Any use that does not comply with the regulations of this instruction manual might cause risks of injury to people, property and the environment The manufacturer's responsibility is limited to the assembly configuration of the equipment as described in the certificate of conformity. Before each use, the driver should check that the machine is in good condition The certificate of conformity is placed with the dispatch note

MACHINE NORMAL USING DOMAIN
810/820,850,850T LOADER – THE ALLOWED MAXIMAL LOAD AND THE GENERAL USING CONDITIONS ARE INCLUDED IN THIS DOCUMENTATION PROHIBIT THE USE OF LOADERS TO LOAD ANYTHING OTHER THAN THE SCOPE THE ADAPT TEMPERATURE RANGE OF THIS LOADER IS - 30°C-45°C MAKE IN THESE CIRCONSTANCES CAN'T BE HELD TO RESPONSIBILITY OF FIRST AVENUE INDUSTRY .

MODIFICATION OF THE LOADER
The manufacturer is not responsible in case of any modification, addition or combination with equipment from another origin. The manufacturer declines any responsibility for consequences resulting from changes in the characteristics or modifications made without his written consent, and concerning either the mechanical, electrical, hydraulic part or the mechanically welded structure. If the client wants a modification to be made, he must imperatively consult the manufacturer. For your safety and in order to benefit from the total guarantee of the manufacturer, you must only use guaranteed genuine spare parts.

NOTE

Safety is more than quality design and construction. It also requires proper operation and maintenance practices.

Every component is specifically designed and carefully built by First Avenue Industry to produce the safest equipment available

Your responsibility is operating safely.

Good understanding of the instructions mentioned below will enable operators to use the loader in safe

SAFETY INFORMATION

This manual provides important information to familiarize you with safe operating and maintenance procedures for First Avenue Industry loader.

Even though you may be familiar with similar equipment, you must read and understand this manual before operating this loader.

Safety is everyone's business and must be one of your primary concerns.

Knowing the guidelines covered in this manual will help provide for your safety, for the safety of those around you, and for the machine's proper operation

Safety is a very important aspect which affects the life of your loader. Before you operate, maintain or in any other way, use this loader, READ and STUDY this manual, KNOW how to safely use the loader's controls and what you must do for safe maintenance. If you have ANY QUESTION about the safe use or maintenance of this tractor ASK YOUR SUPERVISOR -NEVER GUESS - ALWAYS CHECK!

REMEMBER that a careful driver not only protects himself, but also other people with whom he works; at the same time, he avoids dangers which could damage the loader and the goods.

SECTION 4: INFORMATION AND OPERATION

A. STANDARD CONFIGURATION

The following features are standard equipment on the Loader series:

1. Diesel engine
2. Hydrostatic traveling drive system
3. Power steering
4. Recessed multi-function rear lights
5. Mechanically operated parking brake
6. Lighted transmission shift control
7. Multi-function hydraulic control joystick
8. Fast change and lock attachment system
9. Adjustable absorbing seat with belt
10. Eight linkage lifting system
11. Anti-skid floor
12. Combined head lights
13. Roll cage with shade cover
14. Turn signals with hazard warning
15. Working lights
16. Combination meter
17. Adjustable steering wheel
18. Double-ball hinge system

B. OPERATOR RESPONSIBILITIES

This chapter must be read and thoroughly understood prior to operating or performing any maintenance on this equipment.



WARNING:

FAILURE TO COMPLY WITH THE FOLLOWING SAFETY PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH AS WELL AS EQUIPMENT DAMAGE.

1. Always follow the global safety rules applicable in your field.
2. Before using this loader, always check for proper operation and condition of the lights, brakes, steering, transmission shifter, park brake and tires.
3. Do not operate a loader with defective features; refer to the maintenance section of the Operation and Service Manual.

4. Always wear suitable footwear when operating this equipment and avoid loose fitting clothing that might get caught in moving parts.

5. Before starting this loader, should wear seat belts, and confirm the lock had been fastened.

6. Always bring the unit to a complete stop, place the transmission in neutral, and set the park brake before quit the unit.

7. Always bring the unit to a complete stop before shifting from forward to reverse or from reverse to forward.

8. Always check the path clear prior to backing.

9. When loading the speed should be reduced to 5KM / H

10. Lift the bucket up to the transport position (about 20cm from the ground)

11. In crowded areas and when close to the Blind corners and a row of car ,be more careful. be vigilant to other equipment and personnel .

12. Do not operate when the speed does not meet the operational conditions. Always limit a good speed in order to ensure sufficient time for emergency braking.

13. Do not allow to use loaders to transport hazardous materials.

14. Do not allow to carry person by this loader.

15. The loader does not allow to drive on the soft road if do not know very clearly about the road condition.

16. Before operating this loader, the roll cage must be raised, and make sure the pin in the locking position.

17. In addition to the dragging outside hook, any form of traction is not allowed in loaders.

18. Do not remove the radiator cap when the engine is hot, otherwise, can cause severe burns. Allow to remove the radiator cap after cooling.

19. Do not try to touch the just being run or down engine exhaust pipe and muffler, otherwise it will cause serious burns.

20. After open the engine back cover, do not try to start the engine, if must start, take care the hurt from the fan to hand.

21. Never refuel the unit while the engine is running.

22. When injecting the fuel, it can stop when the refueling gun automatic cut off, don't inject too much. When refueling, no smoking, don't storage or use the fuel at fire place.

23. Do not check the engine oil while the engine is running.

24. Do not use the battery in this unit to start other vehicles.



Before starting this loader, should wear seat belts, and confirm the lock had been fastened.



The maximum ear noise measured value of this loader is 88dB, for your good health, pls wear personal protective equipment (such like the earplug isolated the noise) when controlling the machine, to reduce the hurt of the machine noise to your body.



Always exercise good common sense, stay alert and be aware of what is happening around the loader all times.



When a vehicle roll or roll-over, the loader roll cage can protect driver's safety completely, do not jump. At this point your hands should get hold of the steering wheel; feet clamp the mounting bracket under the Orientation column.



The damaged roll cage can't be reused after repair, unless get the written authorization or approval from First Avenue Industry.



The rated capacity of this manual mentioned is based on the machine located in the solid level ground, when operating on non-standard ground (such as the soft, uneven ground, or on slopes), should consider fully about those factors impact on the load capacity.

C.MECHANICAL RESPONSIBILITIES

This chapter must be read and thoroughly understood prior to performing any maintenance on this equipment.



WARNING: FAILURE TO COMPLY WITH THE FOLLOWING SAFETY PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH AS WELL AS EQUIPMENT DAMAGE.

1. Always follow the Station Safety Rules. If a written list of safety rules is not posted at the station, obtain one prior to operating this loader.
2. Always review the Operator Responsibilities Section prior to operating this equipment.
3. Always keep hands and feet away from rotating parts and tires. Wear secured clothing.
4. Always wear suitable footwear when operating or servicing this equipment. Avoid wearing loose-fitting clothing that might get caught in moving parts.
5. Always stop the engine when adjusting fan and alternator belts.
6. Always keep hands clear of the cooling fan.

7. Do not remove radiator cap when the engine is hot, as serious burns may result. Allow the radiator to cool before removing the cap.
8. Do not run the engine long time in the closed room.
9. Do not start the engine in the easy explosion environment.
10. Do not check the engine oil while the engine is running.
11. Always disconnect the battery positive cable when working on the engine or under the hood.
12. if electrolyte is spilled, always wash hands or clothing immediately.
13. Do not touch the engine, exhaust or hydraulic components when they are hot as serious burns may result.
14. Do not smoke near the battery. Fumes from charging electrolyte are explosive. Always keep the battery away from sparks, flame and smoking materials.
15. Always remove metal bracelets, watch bands, etc. prior to installing, removing or servicing the battery.
16. Do not short circuit the battery terminals.
17. When connecting the battery, the positive terminal must always be connected first prevent sparks from accidental grounding.
18. Do not substitute the throttle return springs with lighter or other springs.
19. Check all lights.
20. Check the horn operation.
21. Check the neutral start only switch for proper adjustment and operation.
22. Check tire and wheel condition along with proper inflation pressures. Unless beads are seated when mounting tires, over-inflation can result in explosion.
23. Torque all lug nuts to 130 ft-lbs. Check again the torque after 5 hours of operation.
24. Always use proper lifting equipment safely when removing or replacing heavy components.
25. When working underneath the loader, be sure it is supported properly on secure jack stands. Do not rely on hydraulic jacks to support the loader.
26. If the loader is on a hydraulic or air operated lift, always be sure the safety support or lock is in position prior to working under the loader.
27. Always use a proper transmission jack, and secure the transmission when removing or replacing it.
28. Always jack the drive wheels off the floor when troubleshooting the drive system.
29. Never refuel the unit when the engine is running.
30. Do not smoke while refueling.
31. Do not store, spill or use fuel near an open flame.

32. Do not use the battery in this unit to start other vehicles.
33. Do not attempt to install or adjust control cables with the engine running.
34. Always replace a control cable which exhibits any gradual or sudden increase in no-load friction or resistance or decrease in usable stroke, or which have moisture inside or have been frozen.
35. Do not use heat to attempt to dry or thaw a control cable.
36. Do not remove the seals from a control cable or attempt to lubricate it. Any control cable which exhibits possible lubrication problems should be replaced.
37. Do not attempt to repair or modify a control cable. Any damaged control cable should be replaced immediately.
38. Always avoid exposing control cables to fuels, oils, chemicals, paint, water or dirt as damage may result.
39. Always adjust each control cable so that the utilized stroke of the cable is centered within the cable's available stroke.
40. Always deflate a tire and wheel assembly prior to removing it for servicing or dismounting.
41. Do not use wheels or wheel components that are cracked, bent pitted or corroded. Insure that all wheel components are of the same type and size, and that wheel size and tire size match. Inspect all components carefully prior to use.
42. Do not attempt to seat a tire by using explosive substance.
43. Do not hammer, pry or weld on or near an inflated or partially inflated wheel and tire assembly.
44. Do not rework, weld, heat or braze any wheel parts for any reason.
45. Always use a safety cage and a clip-on air chuck with a remote valve and pressure gauge when inflating a tire. Insure the tire and wheel assembly is properly assembled prior to inflating it. Visually inspect it for proper seating of beads or sides or lock rings prior to removing it from the cage.
46. Do not add air to a tire that has been in service with less than 80% pressure without first fully deflating, removing, disassembling and inspecting the tire assembly for damage.
47. Overhead guard is the main part to prevent objects falling and protect the safety of operator. it will be very dangerous ,may lead to serious accident, if loose assembly, remove and remake.

CHAPTER 1

GENERAL INFORMATION & OPERATING INSTRUCTIONS

SECTION 1: MAIN COMPONENTS

The LOADER is a four-wheel drive mini-loader. It contains:

- o 3 or 4-cylinder diesel engine,
- o Hydrostatic travel drive system,
- o Multi-function operating handle,
- o 12 Volt electrical system.

• A. ENGINE AND PUMP

The loader is powered with industrial engines, with four stroke cycle and direct injection. The engines are certified by the manufacturer to meet the more advanced emissions standards.

810/820,850,850T Series loader has an automatically variable piston pump.

• B. MOTOR AND DRIVE AXLE

The front and back drive axle for W11 are drive by two hydraulic motor cycloids, and

drive axle contains differential, reduction gears and axles.

The back drive axle for W12, W13, T13 is supplying power to front drive axle through piston motor driving to transmission axle.

The Front and rear axle of W13/T13 wheel loader have the function of hub reduction, which can make sure the good power transfer. It also have function of Differential lock which can make machines work well in bad working conditions.

• C.BRAKING SYSTEM

Hydrostatic drive can serve as a driving brake, and be installed on the input of the drive axle as a parking brake.

• D.WHEELS AND TIRES

Four bolts are used to fix the tires on the drive wheel. The LOADER tires are pneumatic type which gives a smooth ride combined with maximum drawbar pull. Remember to check the pressure of your pneumatic tires regularly. Uneven tire pressure will not only increase tire wear, but will also decrease tractive performance.

The size for W11 tire is 26x12-12AS, rated pressure is 300kpa; The size for W11 tire is 7.00-12AS, rated pressure is 360kpa The size for W12 tire is 10-16.5NHS, rated pressure is 520kpa;

The size for W12 tire is 31x15.5-15AS, rated pressure is 480kpa;

The size for W13 tire is 11.5/80-15.3AS, rated pressure is 520kpa;

The size for T13 tire is 19/45-17IMP, rated pressure is 280kpa

- **E.FUEL CELL**

The fuel cell is integrated in the front frame, and it is equipped with a filler cap and a fuel gauge.

- **F.ELECTRICAL SYSTEM**

The tractor uses a 12 Volt, automotive type, negative ground, electrical system. The system includes a 60/72 Ah battery, ignition switch, two headlights, amber flashing light, turn signals, taillight, horn, various gauges and other circuits.

- **G. QUICK REMOVAL DEVICE**

The demolition equipment of the accessories is controlled by a Joint Multi-way valve, which can realize a quick assembly and disassembly.

- **H.SEAT**

Seats of the loader with seat belts can be adjusted forward and backward. The class of seat is EM8. As an option the loader can be fitted with a comfortable suspended seat.

1. Adjusting the driver's seat

The standard driver's seat can be adjusted to the driver's height and weight.



Warning!

Only adjust the driver's seat when the loader is at a standstill. The engine should be switched off!

1.1 Driver's seat

1.1.1 Armrests

The armrests can be folded up if required and the height individually adjusted.

To adjust the armrests for height, separate the round cap (see arrow) from the cover, loosen the hexagon nut (size 13 mm) behind it. Adjust the armrests to the desired position (5-steps) and tighten the nut again (25 Nm). Replace the cap onto the nut.





Warning!

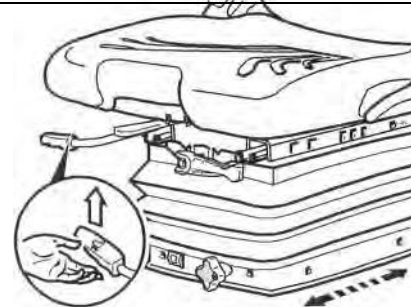
If the belt roller is fitted, do not install the armrest in the lowest position as otherwise the belt roller might not function correctly!

Carry out a functional test of the belt roller!

1.1.2 Backrest extension

The backrest extension can be individually adjusted for height by pulling it upwards over the various increments up to the end stop.

To remove the backrest extension, pull it over the end stop.



1.2 Standard seat (W13)

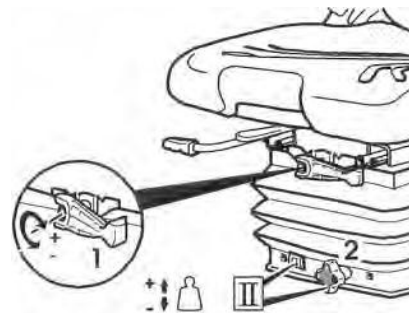
1.2.1 Weight setting

The seat should be adjusted for the drivers weight by turning the weight adjustment lever

(1) with the driver sitting on the seat.

The driver's weight is adjusted correctly when the adjusted height position of the height adjustment handle (at the bottom of the handle) (2) is displayed in the viewing window. The middle position of the spring travel of the respective height adjustment is displayed.

□ To prevent damage to the health and material, the setting for the driver's weight must be checked and adjusted individually before the vehicle is driven!



1.2.2 Height adjustment

The height adjustment can be set to three settings (I, II, III).

The respective height must be set with the driver sitting on the seat. Turn the handle for seat height adjustment to move the seat upwards or downwards.

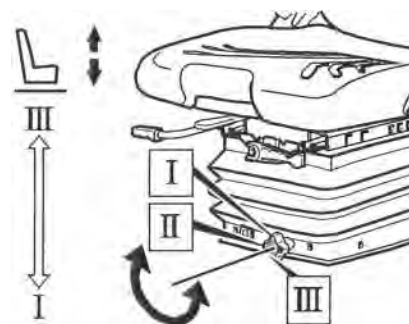
The seat position displayed at the bottom of the handle for seat height adjustment has been set.

I the lowest height position

II the middle height position

III the upper height position

□ Check and set the weight setting after every height adjustment!



The linear adjustment is released by lifting the locking lever.



Warning!

Risk of accident!

- Do not operate the locking lever while driving!
- After the adjustment, the locking lever must latch into the desired position with an audible click. It should not be possible to move the driver seat into another position when it is locked!
- Do not lift the locking lever with your leg or calf!

1.2.4 Fore/ aft isolator *

The fore/ aft isolator improves the absorption of shock impacts (e.g. when driving at high speed, in rough terrain or with a trailer attached) in the driving direction by the driver's seat.

The cushioning effect can be activated or deactivated with the help of the locking lever.

1 = fore/ aft isolator OFF

2 = fore/ aft isolator ON

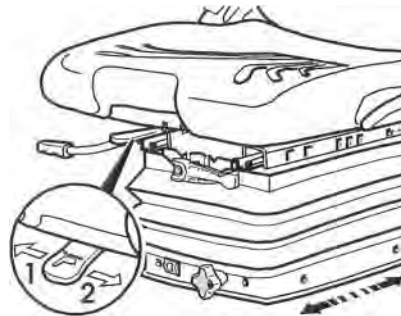
2 Safety belt

The driver's seat is fitted with a safety belt (lap belt).



Warning!

- Always wear safety belts during work!
- Do not carry persons!



- **I.MULTI-FUNCTIONAL CONTROL HANDLE**

The control handle is on the right of the driver's position. As a standard, the switches on the device can control the gears on the loader, there are three gears: forward, neutral, back and reset button. Handle can even control two-way multi-channel valve, to make raise and tilt movements can be separated or joint together

To model T13, front, rear, left, right (from driver's direction) operation of control handle corresponding action's lower, lift, upper tilt, dump. It is same as other models. There are two buttons on the back of control handle. Upper one and lower one are corresponding to stretch out and retraction of telescopic arm.

- **J.CAB**

1 .Cab door

The cab doors are to be kept locked during use. If required, the door can be opened a crack. To do this, the lever shown in the illustration is to be folded outwards and lock in place, in the door lock



On opening, the cab doors automatically lock into the door lock. Release this lock to close the door.

Press the button



Pull the lock



** Attention!**

- Lock the cab door after finishing work as well as on leaving the loader for longer periods, in order to prevent unauthorised of the machine!

- Always lock the doors in all positions! Open doors represent a danger as they swing open or closed!

2. Rear window

Swing both handles around at the same time, to open the rear window.

Push the both handles at the same time, to open the rear window.



Pull the both handles at the same time, to close the rear window.



3. Heater

The cab is equipped with an infinitely variable heater. The adjustment lever can be found to the right of the driver's seat. The switch for the ventilation fan must be switched on.

The cab is equipped with an infinitely variable heater. To heat, left switch must be set at least to "1"!

Switch "a": Fan levels



Switch "b": Temperature adjustment

Air-condition

The air conditioning system is switched on with left switch.

The switch for the ventilation fan must be switched on.



Attention!

- The air conditioning should be turned on once per month to ensure its operation!

4. Interior light (850)

On



Off



5 Storage bins

- A storage net is found on the behind of the driver's seat for the operating instructions



Warning!

- Always keep these operating instructions in this place to have them immediately available to hand if needed.

6 Battery isolating switch

This switch is be used to disconnect the entire electrical system from the battery. If the machine is switched off for a longer period of time, e.g. over night, the connection to the battery should be interrupted using the battery isolating switch. In this ways the uninten-

tionally discharging of the battery can be prevented.

Push the lever down and turn to switch on!

Switched on



Switched off



The lever can be removed when switched off. This provides additional protection from theft.

When the lever is removed the switch must be covered by the protective cap. This prevents moisture from penetrating into the switch. Lever removed

7.Warning buzzer

A warning buzzer is located on the rear of the steering column. It sounds when the engine is overheated. The engine must then be shut off immediately! If the engine is not shut off immediately, this may damage the engine or other parts of the machine!

8. Emergency exit

You should only climb onto and off the vehicle on the left-hand side of the vehicle, otherwise there is a risk of unintentional operation of the swing arm. The right-hand side of the vehicle is only intended to be used as an emergency exit.

The emergency exit is marked by the stickers fixed alongside it.

To open the door, pull the small lever on the underside



of the lock towards you. This unlocks the lock.

9.Adjusting the steering column

The steering column can be adjusted in a longitudinal direction.

To adjust the steering column loosen the lever at the left. The steering column can now be tilted in a longitudinal direction. Lock the steering column in the correct position with the lever.



Warning!

Only adjust the steering column when the loader is at a standstill!

10.PARKING BRAKE LEVER

The parking brake lever is connected by a rod to the park brake drum mounted on the drive axle. (W11 is with foot parking brake pedal, mounted lower left under the dashboard.)

The park brake is used for parking or holding the loader on grades and should always be set for parking and released before driving. (If with foot parking brake pedal, press down by foot.) The brakes are engaged as the lever is pulled toward the operator. Push the lever away from the operator (down) to release the brake. ((If with foot parking brake pedal, brake by pressing down by foot and press the pedal one more time to release the brake.)



For wheel loaders with two six-way valve, change-over button on the joystick can also realize electromagnetic change of attachment oil-way. Parking brake of W11 is installed to the left of the driver. It can be realized while the brake pedal is pushed down by the foot after stopping

The mechanical auxiliary and parking brake is located on the power divider of the front axle. The brake is on the front axle of loaders with an optional driving speed of up to 25 km/h and the models W12,W13,T13. This brake is designed as a multiple disk brake. The brakes are actuated hydraulically during travel. When the inch pedal is pressed, the brake piston is engaged via the brake cylinder. As a parking brake (hand brake) the brake is operated mechanically via a pull cable. A The parking brake is released in position "A". Move to position "B" to apply the brake. The parking brake can be adjusted with the cable. The driving pump does not operate when the parking brake is applied! The loader cannot be moved! B



Warning!

If the parking brake is used as an auxiliary brake in emergencies the lever

should be pulled up very carefully so that the brake cable does not tear!

- **K.PEDALS**

The accelerator pedal on the right of the driver is connected to the engine via a cable, which can control the engine speed, so as to control the speed of the loader.

The foot brake pedal on the left of the driver is connected to the Pump, which can control the oil supply, so as to control the speed of the loader.

The throttle pedal is used to move the loader. The axial piston pump is swung out according to the diesel engine speed and the driving speed thus automatically adjusted to the loader's load (automotive drive). The more the throttle is opened, the faster the loader goes.



The automatic system is deactivated when the inch pedal is pressed. The further the pedal is pressed, the further back the axial piston pump is swivelled. Thus, the force can be diverted from the travelling gear to the working hydraulics at high diesel engine speeds or the loader can brake.

When the pedal is fully depressed the axial piston pump is swivelled back to 0 and the multiple disk brake actuated. The loader is braked and comes to a stop.



Warning!

Never brake sharply with a raised load or in corners!

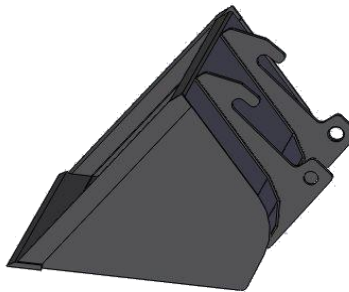
The loader could topple over!

- **L.ATTACHMENT**

We offer the different kinds of Attachments with different functions

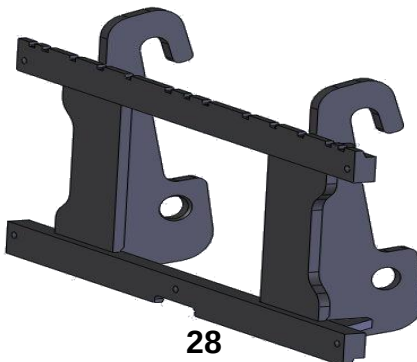
1.1 Bucket

It can be used for spading, unloading the bulk materials and working in short distance. We offer the different size bucket to load &unload different density materials more efficiently.



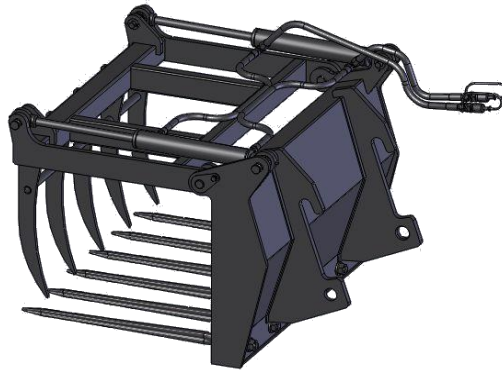
1.2 Forks

It can be used for spading, unloading the large-block materials and working in short distance. We offer the different size bucket to load &unload different size materials more efficiently.



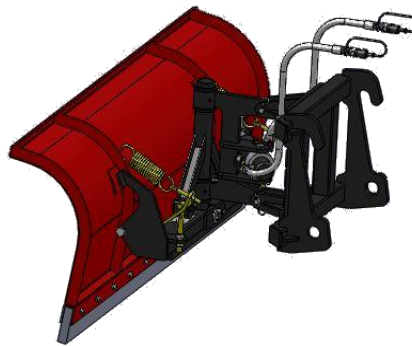
1.3 Grass Grab

It can be used for load & unload the Grass or Hay.



1.4 Snow shovel

It can be used for clean the snow on the road and ground when it snows in the winter.



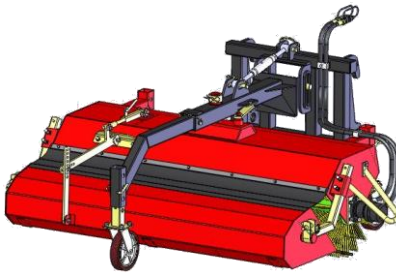
1.5 Soil auger

It can be used for drilling hole on the ground.



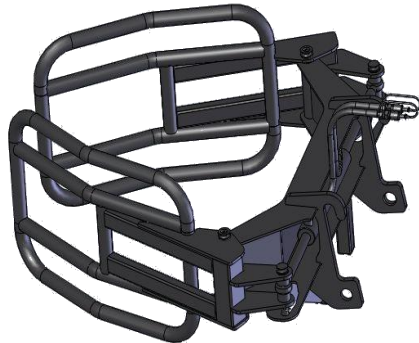
1.6 Sweeper

It can be used for sweeping and cleaning the ground.



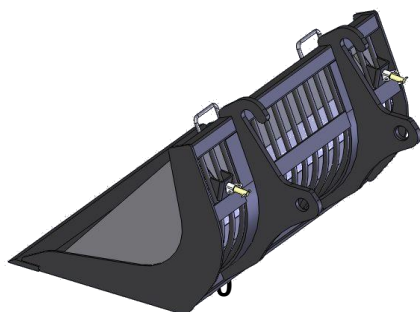
1.7 Bale gripper

It can be used for Gripping and transport Goods



1.8 Two-in-one bucket

It can be used for spading and transporting goods; and also can use for sorting out different Diameter materials.



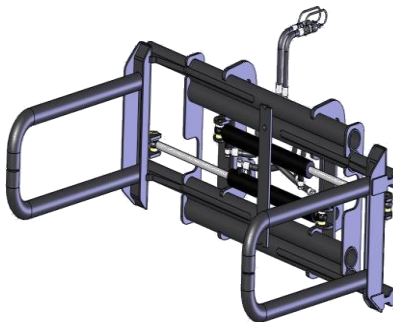
1.9 Bale forks

It can be used for Clamping and transporting the bale more efficiently.



1.10 Bale clamp

It can be used for clamping and transporting the low density package more efficiently.



- **M.INSTRUMENT PANEL**

The control layout is designed to combine maximum driving comfort with maximum efficiency.



IT IS ESSENTIAL THAT THE OPERATOR BECOMES ACCUSTOMED TO BOTH THE LOCATION AND OPERATION OF THE CONTROLS, BEFORE ATTEMPTING TO DRIVE THE loader FOR SAFE OPERATION.



The root mean square value of machine vibration acceleration to the arm is lower than 2.5m/s²
The root mean square value of machine vibration acceleration to the body is lower than 0.5m/s²

Ignition Switch	• Waterproof loader ignition switch, including the anti-re-start function.
Horn control switch	• Installed in the back of the instrument panel
Working lamp Switch	• Installed in the back of the instrument panel
Warning lamp switch	• Installed in the back of the instrument panel
Quick hitch switch(850)	• Installed in the back of the instrument panel (W13)
Turn light switch	• Installed in the left of the instrument panel
Automatic light switch	• Installed in the left of the instrument panel
Clearance light switch	• Installed in the left of the instrument panel

light	
Preheat indicator light	• Instructs when the engine is warm
Parking brake lamp	• Show if the parking brake brings
Low battery capacity light	• Show when the battery level is low
Turn signal / warning lights	• Show when the turn signal / warning lights are light
Low oil pressure light	• Show when the engine pressure is low
High-temperature light	• Show when the coolant temperature is above 115 °C
Diff-lock light	• Show when press the diff-lock switch

Hydraulic oil blocking light(W13/T13)

- Show when hydraulic oil blocking(W13/T13)

Indicator

Fuel Level Indicator

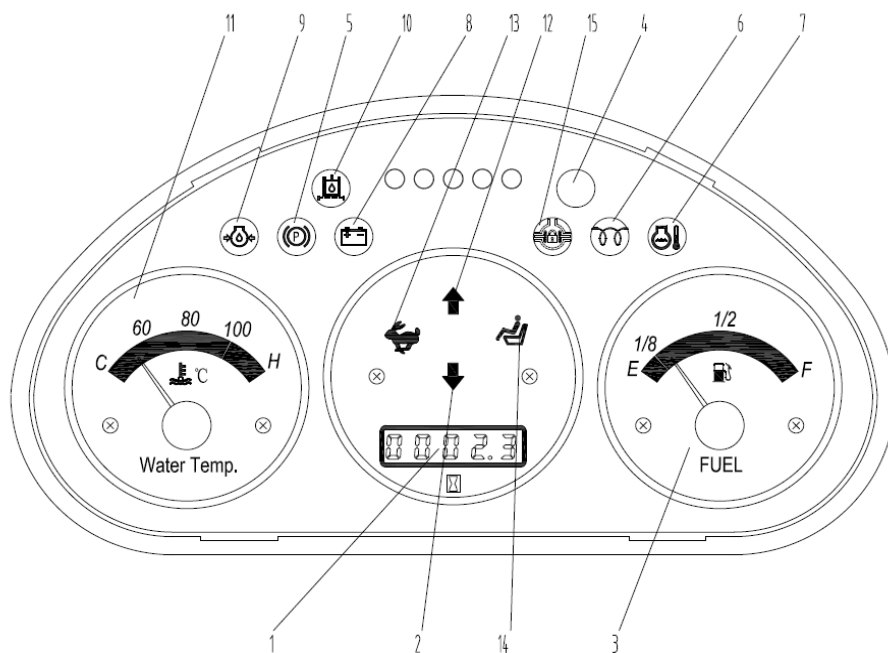
- Read the status of the remaining fuel

Engine timer

- Read the cumulative time when the vehicle is running

The engine coolant temperature indicator

- Measure the temperature of the engine cooling system



1—Hourmeter

2—Backward indication light

3—Fuel meter

4—Turning right

/spare(W13/T13)

5—Parking brake lamp

6—Preheat indicator light

7—High temp, water alert light

8—Battery charging, voltmeter

9—Low-oil pressure light

10—Turning left/Hydraulic oil blocking (W13/T13)

11—Temperature meter

12—Forward indication light

13—High&low speed indication

14—Seat switch indication light

15—Diff-lock light (W13/T13)

Turn light switch
Automatic light
switch
Clearance light
switch



Warning lamp
switch

Horn switch



Working lamp
switch

Quick hitch
switch

Front wiper
switch



Front washer switch

Diff -lock switch

SECTION 2: OPERATING PROCEDURE

Read this entire chapter BEFORE attempting to operate this loader

- No unauthorized person may drive this loader
- Be familiar with the controls and their functions before you start the loader
- Inspect your machine by doing a pre-operational inspection
- Observe the limits on weight of the loads to be towed and unloaded weight of the loader



- Maintain the loader in accordance with the instructions of the manufacturer
- Have any broken or missing parts, correct or replace before use
- Verify that all maintenance has been performed
- Verify that all the instruction and safety labels are in a place and readable

These are as important as any other equipment on the loader

Before putting the loader into service, the following items must be checked and executed

BEFORE DRIVING

- At each team work beginning, check condition of the battery, pneumatic and bandages of trails and be sure that tire pressures are correct .Be sure that all driving parts are in good working condition and fill all the fluid levels if necessary .Advise immediately all defects and use a defective trail before it is not repaired Verify the brakes of trails
- Set parking brake
- Walk around and inspect the loader for damage or missing equipment

Check for :

- Pressure and the good state of the pneumatic tires
- Look for cuts, cracks in side walls, foreign objects in treads
- Look for loose wheel nuts
- Damage to lights
- Fire extinguishers fully loaded and in place (if have)
- Look underneath loader for leaks of coolant, hydraulic fluid, transmission fluid, or lubricating oil. If leaks are detected, repair as soon as possible
- Check engine oil level
- Check engine coolant level. Add coolant as necessary, but do not overfill. Make a visual check for leaks
- Check hydraulic system reservoir by removing filler cap to ensure there is enough fluid for operation

A very low fluid level indicates a serious leak in the system. Repair as soon as possible

- Inspect engine compartment for loose hardware, loose wires, and leaking lines or fittings
- When all mechanical checks are completed, check the operation of the stop and tail lights, and dash panel lights
- Check fuel level gauge to make sure tank is full
- Make sure the roll cage arise and fasten.
- Check that the driving seat whether damaged (change the seat if damaged), adjusted to your requirements
- Check that all controls are in working order



WARNING: DO NOT LOOSEN OR REMOVE RADIATOR CAP WHILE COOLANT IS HOT, HOT COOLANT UNDER PRESSURE CAN CAUSE SEVERE BURNS



Fuel contamination due to moisture condensing on the inner surfaces of fuel tank can be minimized or eliminated by keeping the fuel tank as full as possible. The fuel tank should always be filled up at the end of the day's operation (as part of the post- operation maintenance routine)

DRIVING INSTRUCTION

- Place shift lever in park.
- Adjust the driver seat and steering wheel to the comfortable location, fasten the seat belt.
- Make sure parking brake is set.
- Verify that nobody and nothing is ahead of you BEFORE starting any motion of the wheel loader.
- Turn ignition switch and engage starter.
- Press the micro-pedal (left pedal).
- Release the parking brake.
- Move the transmission shift lever into the required position, Forward or Reverse. Press a garden-type reset button on the handle
- Proposal on the drivers' own facility with the empty wheel loader.
- Loose micro-pedal and gently press the accelerator pedal, further press the accelerator until the required speed is obtained. Micro-loader pedal can control the movement of small.
- To slow the wheel loader, slowly release the accelerator pedal and press the micro-pedal. For an emergency stop, release the accelerator pedal and press micro-pedal. Release the accelerator pedal slowly or quickly, wheel loader can be controlled flat or sharp braking. Press the micro-pedal when emergency brakes.

- Each time you park, apply the hand brake, turn off the starter switch to the OFF position and return the transmission shift lever to Neutral position (the model W11 is with the foot parking brake).

OFF manual triple valve in a vertical downward "OFF" position



- While the double pump optional with W13, the handle of manual triple valve should be in a vertical downward position (OFF) before start, then to press to startup normal



Press the micro-pedal (left pedal) when emergency brakes .



WARNING: THE MAXIMUM DURATION OF CONTROL FOR AN OPERATOR SHOULD NOT EXCEED 6H PER DAY



WARNING: MATCH DRIVING SPEEDS TO LOADS BEING TOWED AND WEATHER CONDITIONS. SLOW DOWN WHEN TOWING HEAVY LOADS AND WHEN ROAD SURFACE IS WET OR ICY, ESPECIALLY ON GRADES.



WARNING: WHEN LOADING THE GOODS , THE SPEED SHOULD BE LOWERED TO 5KM/H AND THE BUCKET SHOULD BE RAISED TO THE TRANSPORTATIONAL POSITION(ABOUT 20CM FROM THE GROUND)



WARNING: IN THE COURSE OF RAMPING ON THE ROAD (UPHILL),FOR THE TEMPORARY PARKING ,Drivers are not allowed to leave the driver's seat and change gear switch ,right foot should press the micro-pedal gently to remove any slipping phenomenon due to technical reasons, At the same time pull up hand brake.
Downhill FOR THE TEMPORARY PARKING, Drivers are not allowed to leave the driver's seat and switch to a reverse gear shift, right foot should press the micro-pedal gently and park slowly, at the same time pull up hand brake



WARNING: PARKING ON THE RAMP IS NOT ALLOWED. IF NECESSARY THE CAR SHOULD BE PARKED ON A SLOPE (DUE TO BREAKDOWNS).WE MUST PULL HAND BRAKES AND PAD THE WEDGE UNDER WHEELS OF THE LOADER.



WARNING: MAKE SURE THE ROLL CAGE ARISES AND FIXED BEFORE DRIVING, IT CAN'T PROTECT THE DRIVER IF THE ROLL CAGE DON'T ARISE OR FIXED INSECURE.

LOADING INSTRUCTION

- Lift devices and attachments (bucket is standard) are only used for a specified purpose.
Ensure the wheel loader is secure and is within the rated drawbar pull of the loader (See the specification on page 38) . For T13 telescopic wheel loader with strength limiter, it should be operated strictly according to requirements and hint of strength limiter.
- Ensure the rapid removal device in a locked position before filling.
- When driving with a set, the speed should be reduced to 5KM / H
- When driving with a set, the bucket should be raised to the transformational position (about 20cm from the ground).
- When driving on the ramp, goods shall be towards the uphill direction. Driving or U-turn ramping on the horizontal should be avoided.
- When the view is obstructed, we should work together with the Wizard.
- When uninstalling, raise the bucket to an appropriate height, as carefully as you can accurately to drive the wheel loader to the truck or the place for goods storage ;Carefully control the master control lever, uninstall, reset; Confirming that the bucket and the truck (shelf) is completely separated, the loader moves slowly back to leave the shelf.
- Ensure that the width of the road is not wider than that of the road.
- When reaching the parking spot, shift it into neutral position, raise the parking brake, and turn off the ignition switch.



SAFE AND EFFICIENT LOADING, DEPENDS ENTIRELY ON THE OPERATOR. IF YOU ARE AN EXPERIENCED DRIVER, THE FOLLOWING RULES WILL REFRESH YOUR MEMORY. IF YOU ARE A STUDENT, THEY WILL HELP YOU TO BECOME A PROFESSIONAL DRIVER.



WARNING: ONLY QUALIFIED AND LICENSED DRIVERS ALLOWED TO DRIVE.



WARNING: BEFORE STARTING LOADING, PLEASE MAKE SURE THE CYLINDER OF THE QUICK REMOVAL DEVICE IN THE LOCKING POSITION, SET THE LOCKING TOOLS, AND CUT THE TWO-WAY BALL VALVE OFF



WARNING: WHEN DRIVING ON THE RAMP (FORWARD OR BACKWARD), GOODS SHALL BE TOWARDS THE UPHILL DIRECTION. DRIVING OR U-TURN RAMPING ON THE HORIZONTAL SHOULD BE AVOIDED.

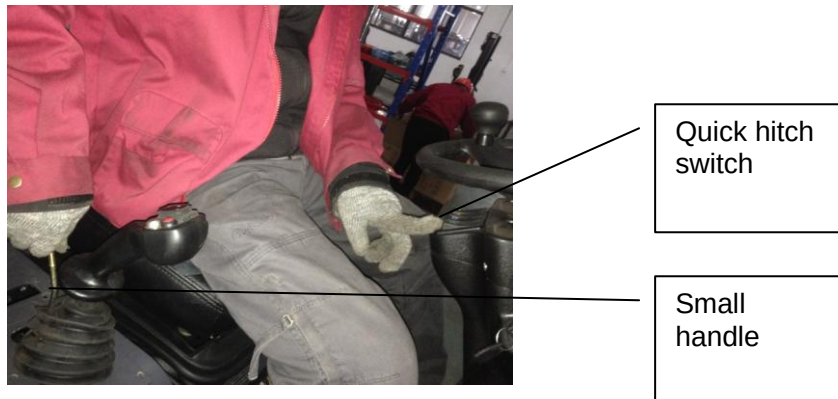


WARNING: WHEN THE GOODS ARE IN A LIFTING STATE, DO NOT LEAVE THE LOADER.



WARNING: WHEN THE GOODS ARE IN A LIFTING STATE, THE LOADER CAN NOT TURN AROUND AND CAN NOT RUN AT HIGH SPEED.

Releasing accessories – push the small handle which is back of joystick to the left and press the quick hitch switch on the dashboard(W13)



Telescopic arm retraction – press the lower back button of joystick.

The step is reversing as changing attachment step.





WARNING: LIFTING DEVICES AND TOOLS ARE ONLY USED FOR A SPECIFIED PURPOSE. DRIVERS MUST COMPLY WITH THE "CORRECT AND USE THE LIFTING DEVICES AND TOOLS". DO NOT ENTER OR REACH INTO THE SPACE BETWEEN THE ARM AND THE FRAME.



WARNING: BEFORE THE OPERATION OF HYDRAULIC SYSTEMS, CHECK IF THE FUNCTIONS OF THE VARIOUS HYDRAULIC JOYSTICKS ARE CORRECT.



WARNING: NOTE THAT THE SIGN OF THE OPERATION MARKED WITH THE DIRECTION OF THE ARROW SYMBOLS.



WARNING: BEFORE DISASSEMBLE THE PIPE OF ATTACHMENT, SHOULD RELEASE THE REST PRESSURE OF THIS PIPE, THEN DISASSEMBLE THE QUICK CHANGE CONNECTOR,. THE DETAILED METHOD OF RELEASE REST PRESSURE IS: SWING THE FIRST VALVE HANDLE (SMALL HANDLE) OF MULTI-VALVE LEFT AND RIGHT SIDE SEVERAL TIMES



WARNING: EVEN IF THE ENGINE FLAMEOUT CAN ALSO LOWER THE LIFTING DEVICES AND TOOLS.



WARNING: IF THE TOOL IS NOT DELIVERED TOGETHER WITH THE LOADER, IT CAN BE ONLY USED AFTER THE AUTHORITY OF STABILITY AND LOAD CAPACITY BY THE DEALER OF FIRST AVENUE INDUSTRY .

General preventive measures

- Do not operate any levers or pedals if anyone is in any position to be hurt by the machine's movement.
- Pay extra attention when working in narrow congested areas or in case of blind-travel.
- Always look around in all directions BEFORE changing your direction of travel.
- Always follow all safety rules or each particular site during operation.
- Maintain a running speed which is compatible with the load and the ground conditions.
- Slow down when approaching corners
- Observe pedestrians carefully and do not follow the vehicle in front too closely.
- Do not brake sharply and only select neutral once the loader has effectively stopped.
- Maintain a safe distance from the edge of loading wharf.

- When turning, pay close attention to the trajectory of the buckets.
- Make sure that bridges and ramps are able to withstand the weight of the loader and the load being towed.
- Before climbing or descending from vehicles (trucks, trailers etc), ensure that the adequate precautions have been taken to avoid all movements including the dumping.
- Stop, look at and listen when arriving to a rail way then to cross it in diagonal, slowly and only to the authorized points.
- Always park at more than 2,5m of the rails.
- Hold the wheel steering in hand during the operation.
- When loading a larger load, more space for the overtaking of parked vehicles, objects or pedestrians should be predicted.
- Never overtake another vehicle on crossroad or on bifurcations or when something affects the visibility for you.
- Never drive in elevators, truck or other until you have received the order and you are sure that they can stand the combined weight of loader and the load.
- Doesn't brake roughly.
- pay attention to the driving speed and be careful to the pedestrians approaching and other vehicles and to the passage heights.
- Slow down on wet, irregular grounds and in the turning.
- Remove all objects in your way.
- On the crossroad, in the passages and the corridors, slow down and horn and drive on the right side of the road.
- Be careful to the pedestrians which can appear suddenly in the way.
- If your trip involves crossing road bridge, ensure they are secure and are strong enough to withstand the combined weight of the loader and load.
- When approaching the destination, reduce the speed to ensure a smoothly slow stop in the far enough distance. A sudden halt could cause the load displacement.
- Do not impede the fire fighting equipment from use before parking or depositing the equipment of loading.
- Report any mechanical or electrical irregularities immediately.
- Always be alert; Watch out for pedestrians and never drive too close to the vehicles in front.
- Travel at a speed consistent with load and road conditions.
- Never operate the loader with any part of your body outside of the operator's

compartment.

- DO NOT leave the driver's cab with the loader running.
- ALWAYS properly shut down the loader before leaving the loader.
- ALWAYS park the loader on solid, level ground.

On severe slopes

- ALWAYS park the loader perpendicular to the steepest slope to prevent accidental movement.
- Use proper flags, warning marks or barriers when parking in areas of traffic.
- Do not park your vehicle in the access points where obstruct the fire brigade.
- During parking, use the parking brake and put the key on the STOP position.
- If the tractor must leave with nobody watching it, remove the ignition key.
- Never park your vehicle on a slope.
- If it is necessary to park tractor on a slope (break down etc), use the wedge under the wheels of loader.



WARNING:

IF PROBLEMS OR EQUIPMENT MALFUNCTIONS OCCURRS WHILE OPERATING THE LOADER, IT MUST BE PROPERLY TO SHUT DOWN AND CORRECT THE PROBLEM. CONTINUING TO USE MALFUNCTIONING EQUIPMENT CAN NOT ONLY BE UNSAFE FOR THE OPERATOR AND OTHER PERSONNEL, BUT CAN LEAD TO FURTHER DAMAGE TO THE LOADER AS WELL.



WARNING:

IN CASE OF AN ACCIDENT, REPORT TO YOUR SUPERIOR IMMEDIATELY. NEVER NEGLECT AN INJURY EVEN IF IT APPEARS INSIGNIFICANT, GO IMMEDIATELY TO THE DOCTOR, WHICH COULD AVOID COMPLICATIONS.

AREA	RISK	SAFETY STEPS
CAUSES OF FAILURE	WHAT CAN HAPPEN IF PRECAUTIONS AND SAFEGUARDS ARE NOT OBEYED	HOW TO PREVENT THE FAILURE
ENTIRE MACHINE	A moving tractor can run over or crush body parts between tractor and other object and cause irreparable injury or death.	Keep away all people from around tractor and always switch off the engine before leaving the driver's cab.
DRIVING STATION	Personnel injuries may happen if parts of the body or members (hands, legs, ect) are outside of the driver's cab.	Keep head, arms, hands, legs and feet inside the operator's compartment all the time.
UNDERNEATH DURING SERVICE	Unit lifted for service could fall and injure or kill personnel around.	If loader must be lifted for service, it must be securely blocked so that all 4 (four) wheels may safely turn.
ENGINE	Hot (engines) will cause severe burns And cause serious injuries if persons are struck by moving parts or caught in belts.	DURING SERVICE : The engine must be turned off. If procedures require the engine to be running during service, care must be taken to avoid touching the moving objects. The battery should be disconnected if possible to avoid having the engine accidentally started. Care should be

		taken to avoid the hot surfaces.
BATTERIES	Batteries produce flammable gasses that could be ignited causing burns and explosions .Batteries contain strong acid substances that may cause severe burns if spilled or splashed on body parts or in the eyes. A contact with batteries plug or all electric parts without protection (or when the protection has been removed) can cause an electric chock.	Batteries should be well ventilated before using particularly when welding is required near the batteries. Protective clothing, gloves and eyewear must be worn when working on batteries. Avoid to remove the plastic protection, and avoid to touch electric parts where current can be.
ROLLING OR ROLLING-OVER OF VEHICLE	When a vehicle rolls or rolls over, do not jump off the tram, as the loader is installed with a safety roll cage, which may lead the driver's death.	At this point your hands should hold the steering wheel, and feet hold the mounting brackets under the direction of column.
TYRE	Welding near the tyre may damage the tyre or lead the lead an explosion and bring damages or dangers for people.	If welding has to be done on the wheel or near the wheel, remove the tyre first.

To avoid in a crowded area when after-sales service、clean、or test machines as long as possible.

To avoid loaders' accidental movement, put some wedge blocks under tires when provide services and maintenance vehicles.

Always stop the engine when working after the wheels.

Don't try to repair the machine by yourself if you haven't been approved by FIRST AVENUE INDUSTRY .

Don't carry out any maintenance works in no reference maintenance manuals and driving under the condition of attention.

FIRST AVENUE INDUSTRY is not responsible in case of any modification, addition or combination with equipment from another origin, which maybe cause danger.

Don't change the structure and performance of vehicle when FIRST AVENUE INDUSTRY is not informed.

Electrical equipment

Don't change the electronic or hydraulic settings, because the factory has been set. To prevent short circuit when working in the electrical system disconnection with battery; similarly, it also can to prevent un-expected start-up when the engine is working.

Ensure storage area of battery well ventilated (remove the smoke), fumes from charging electrolyte are explosive. Always keep the battery away from sparks, flame and smoking materials.

Don't check the battery near the open fire, especially in the battery charging.

Don't smoke in the area of battery charging.

Welding

Before any welding operations of loader, the specific operation as follows:

Disconnect the battery.

Disconnect the electric control system and electrical equipment.

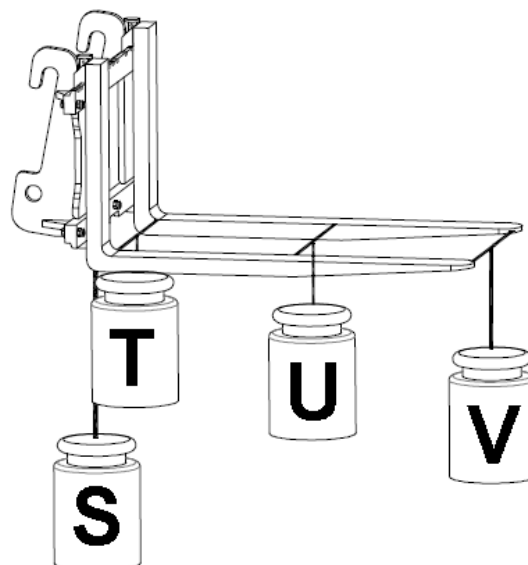
The earth wire clip in the welding place.

Section 3: Specifications and Performance

Technical Data					
Model	W11	W11	W12	W13	T13
Engine data					
Manufacturer	Kubota				
Engine type	D1105-E3B	D1105-T-E3B	V1505-E3B	V2403-E3B	
Cylinder	3		4		
Max.power(kw)	18.5kw/3000rpm	24.5kw/3000rpm	26.5kw/3000rpm	36.5kw/2600rpm	
Cooling	Water cool				
Electrical system					
To weld as close as the earth wire possible. Operating voltage(V)	12V				
Battery(Ah)	60Ah			72Ah	
Generator(A)	40A		60A	40A	
Weights					
Self weight (standard)	1700		2280	3300	3400
Rated loads in bucket (0.2m³ bucket) (KG)	400		600	1000	800/400
Max.lifting force (daN)	1100		1750	2780	2500
Tipping loads in bucket (ISO8313)					
Lifting frame horizontal /machine straight (KG)	850		1200	2000	1600
Lifting frame horizontal /machine articulated (KG)	550		800	1500	1200
Vehicle data					
Driving speed (km/h)	0-12		0-16 (Double speed 0-11/0-24)	Double speed 0-8/0-25	Double speed 0-8/0-25
Capacity of fuel tank (L)	26		55	60	60
Hydraulic oil(L)	40		36	80	80

Hydraulic system						
Hydraulic driving						
Output (l/min)		84		102	88.4	
Working pressure (bar)		300		380	380	
Hydraulic operation						
Output (l/min)		32		45	52	
Working pressure(bar)		180		180	185	
Dimension						
	Dimension(m m)	standard	heighten			
A	Bar width	830	830	1048	1048	1048
B	Ground clearance	174	174	250	270	255
C	Track width	803	803	795	870	1110
D	Total width	1110	1110	1080	1160	1592
E	Total working height	3440	3440	3728	4010	5010
F	Max. height of bucket pivot	2556	2900	3100	3220	4270
G	Overhead loading height	2238	2596	2775	2257	4060
H	Max dumping height	1694	2066	2110		3460
I	Operating distance for M	482	613	484	566	958
J	Digging depth	183	170	200	124	96
K	Axle centre up to bucket hinge pin	430	550	590	658	843
L	Wheelbase	1370	1370	1600	1860	1860
M	Rear overhang	960	960	1094	1247	1200
N	Total length without bucket	2840	2960	3440	3870	3898
O	Total length with bucket	3650	3780	4360	4855	4928
Q	Seat height	1128	1128	1165	1249	1249
R	Height to top of FOPS bar	2210	2210	2225	2255	2255
S	Rollback angle at Max.lifting height	48°	49°	45°		45°

T	Max. dumping angle	45°	43°	45°		38°
U	Backroll angle on the ground	48°	50°	46°		35°
v	Departure angle	25°	25°	27°		28°
W	Turning angle	45°	45°	45°		45°
X	Max. turning radius	2530	2590	3085	3510	3200
Y	Radius at the outer edge	2220	2220	2597	2975	2730
Z	Inside turning radius	1110	1110	1450	1598	1636
Tyre size						
Width of tyre						
27×8.50-15		970				
26×12-12 AS		1110				
10-16.6NHS		1080				
31×15.5-15AS		1320				
11.5/80-15.3		1340				
19/45-17 IMP					1592	



The max. capacity of fork with load centre 400mm

	W11
S	860kg
T	800kg
U	600kg
V	480kg

W12 capacity of fork with load centre 400mm (machine straight, tipping load):

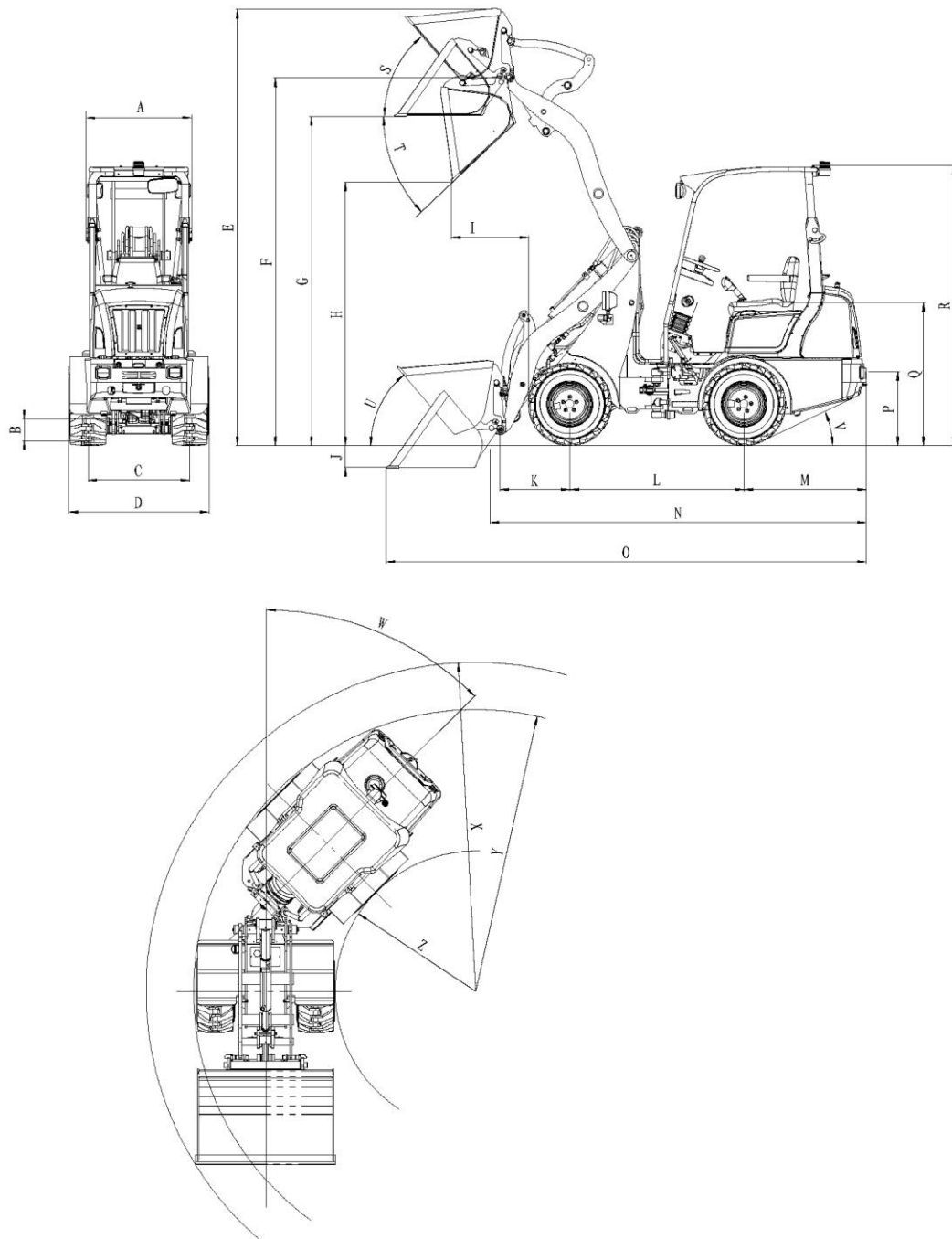
	W12
S	1500kg
T	1420kg
U	1120kg
V	900kg

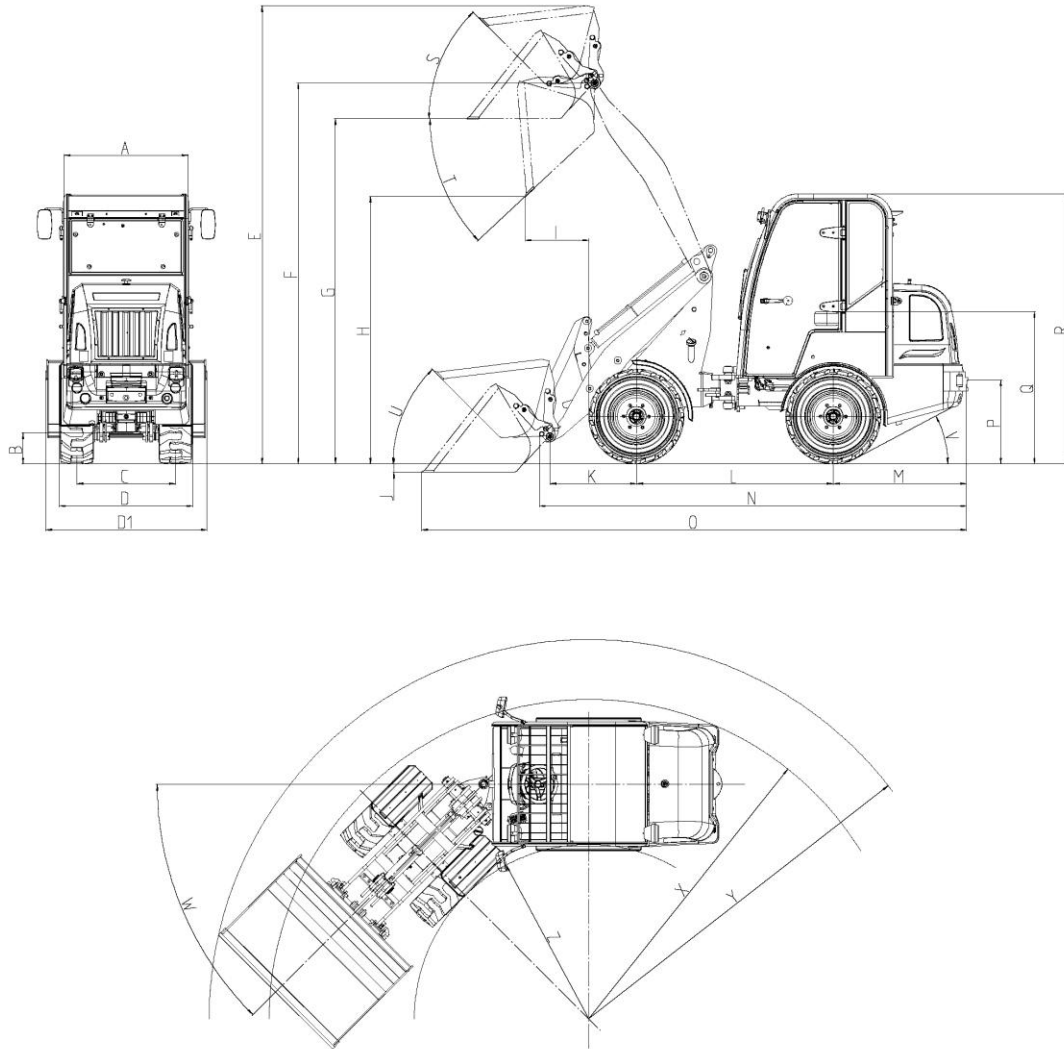
W13 capacity of fork with load centre 400mm (machine straight, tipping load):

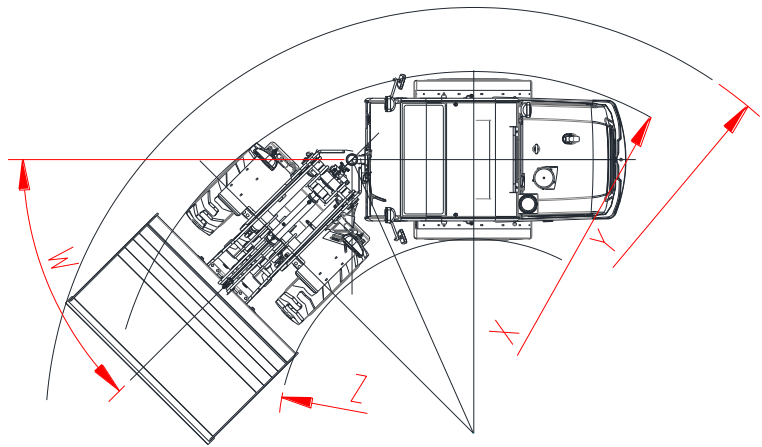
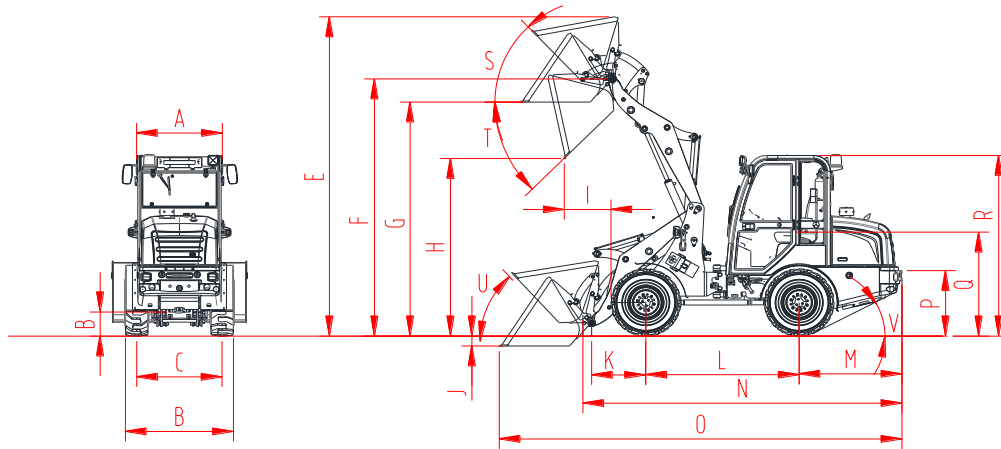
	W13
S	2938kg
T	2510kg
U	2119kg
V	1508kg

T13 capacity of fork with load centre 400mm (machine straight, tipping load):

	T13
S	2350kg
T	2008kg
U	1695kg
V	1206kg







SECTION 4: SHIPPING PROCEDURE



WARNING: EXTREME HAZARD EXISTS WHEN REFUELING AND DE-FUELING THE LOADER - NO SMOKING, NO OPEN FLAMES, NO ELECTRICAL DEVICES.

LIFTING

Using a reliable cable to lift the loader on the label location which marked lifting.
(See Annex 3)

BATTERY

Disconnect battery terminals from battery plugs.

Leave battery in battery box.

RADIATOR

Drain engine coolant from radiator and engine block.

FUEL TANK

Drain fuel from fuel tank into appropriate container.

Disconnect fuel line at lowest readily accessible connection and drain fuel from fuel line.

Reconnect fuel lines.

Leave fuel cap on tank, but loosened.

CHECKS

Make certain fuel line is connected.

Make certain shut-off valve on radiator is closed.

Make certain fuel cell drain valve is closed.

FIXATION

With the locking plate lock the front and rear frame

Using the sturdy rope package on the loader banding point, be careful not to damage the paint surface (See Annex 3)

Using the wood block to stop moving of the front and rear tyre.

SECTION 5: TRAILER PROCEDURE

When the loader needs help, just only allow dragging short-distance, but should according to the following step before drag the loader:



Warning: This dragged loader has been unable to implement the brake and steering, the tractor should have sufficient traction, in order to pull and control the loaders without braking system. Only allow to use the rigid parts (draw bar) to connect with trailer.

Trailer Steps

- Place the skids (wedge) after the slip edge at the wheel.
- Lower the goods until the cargo compartment does not hit the ground while working.
- Removing the goods and attachments.
- Starting the tractor.
- Using the rigid drawbar to connect the tractor (with adequate traction and braking force) with the traction pin which located on the counterweight back side of the loader.

Release hand brake

Open the manual bypass valve on the plunger pump

After traction

- Use the wedge to wedge the wheel slip.
- Tighten hand brake

Restore the braking force

- Tighten the manual bypass valve
- Install a the seat mounting plate

After repairing, check the brake function.



The focus point of the machine salvage can be the vehicle lifting point (see Annex 3), the traction point when dragged is in the back of counterweight. The allowed maximum force points value : 20KN.



This machine can be used for short-drag powerless trailer:

1. The location of Traction is at the rear of counterweight.
2. The maximum traction value of this machine is: W 1 1 is 7.5KN; W 1 2 is 10KN; W13/T13 is 20KN
3. Maximum traction speed is $\leq 5\text{km / h}$
4. Just only allows rigid drawbar traction
5. Not for long traction
6. When used as a tractor, please pay close attention to the hydraulic oil temperature, can't exceed the maximum temperature of piston pump.

SECTION 6: STORAGE PROCEDURE

	FOR ONE MONTH	FOR INDEFINITE PERIOD
Transmission	No special attention needed	Drain transmission fluid. Refill transmission.
Drive axle	No special attention needed	Drain drive axle by removing drain plug located on the underside of the differential carrier housing. Reinstall plug after draining.
Tires	The loader should be raised and axles chocked to prevent tire contact with ground. Tire pressure should be reduced to 15PSI.	The loader should be raised and axles chocked to prevent tire contact with the ground. Tire pressure should be reduced to 15PSI, and sprayed with a rubber preservative.
Lubrication	Ensure that all points are lubricated with specified grease oil.	Ensure that all points are lubricated with specified grease oil.
Fluid levels	All fluid levels should be checked and topped up as necessary.	Release all fluid (oil)
Wheel bearings	Wheel bearings should be repacked.	Wheel bearings should be repacked.
Battery	Disconnect battery terminals	The battery should be removed and stored separately. The battery must be stored in a cool dry place and must not be exposed to direct sunlight. If the battery is stored in the open, it must be covered for protection against dirt and moisture. A slow charge should be given to the battery every one and two months.

Note:

- 1. The environment weather storage scope of this machine: -30°C-50°C**
- 2. Long-term storage may damage the seals within the hydraulic system**

SECTION7: Noise levels:

Sound intensity level [2000/14/EG]	LWA = 101 dB (A)
Acoustic sound level without cab [DIN EN ISO 11201]	LpA = 84 dB (A)
Acoustic sound level with cab [DIN EN ISO 11201]	LpA = 85 dB (A)

CHAPTER 2

MAINTENANCE SECTION

GENERAL DESCRIPTION

By definition, preventive maintenance includes regular maintenance and checking operations which should prevent failures occurring.

Preventive maintenance operations should enable the operator to discover premature wear or deterioration of the equipment.

GENERAL CLEANING INSTRUCTIONS

For a complete cleaning of the loader, clean normally (High pressure cleaning should be avoided). Make sure electrical components, safeties, name plates and stickers, are well protected. For electrical components, dry air of 29 psi maximum is recommended.

For mechanical parts cleaning, use degreasing products and then blow air.

Batteries must be cleaned in order to prevent serious damages due to chemical reactions and current branching off.



WARNINGS:

SOLVENT MAY AFFECT SKIN, EYES, AND RESPIRATORY TRACT.
USE ONLY IN WELL VENTILATED AREA.
AVOID PROLONGED BREATHING OF VAPORS.
KEEP AWAY FROM SPARKS AND FLAME.
TO AVOID POSSIBLE PERSONAL INJURY, NEVER EXCEED 30 PSI AIR PRESSURE FOR CLEANING AND DRYING PURPOSES. USE EYES PROTECTION WITH SIDE GUARDS AND APPROVED NOZZLES ON AIR HOSES.



WARNING: LOOSEN THE FUEL CAP AND RELEASE THE RESET PRESSURE IN THE OIL TANK BEFORE DISASSEMBLE THE HYDRAULIC PIPE.



CAUTIONS:

NEVER IMMERSE ELECTRICAL COMPONENTS, PACKING, OR RUBBER, PLASTIC OR TEFLON PARTS IN DRY-CLEANING SOLVENT.
WIPE PARTS WITH A CLEAN, LINT-FREE CLOTH.
DRY CLEANING SOLVENT CAN REACT WITH MATERIALS AND RESULT IN SEVERE DAMAGE OR DESTRUCTION OF PARTS.

- Clean parts in a tank or spray using dry-cleaning solvent
- Wash cleaned parts by flushing or spraying. When necessary, use a soft bristle, non metallic moistened in dry-cleaning solvent.
- Except for bearings, dry parts use compressed air after cleaning.
- Unless specifically called for in maintenance procedures, do not use metal scrapers, wire brushes, abrasive wheels, or abrasive compounds when cleaning part
- Clean electrical parts such as relays or switches with a lint-free cloth moistened with dry-cleaning solvent.

- Clean the heat exchanger coil by reverse flushing with a steam cleaner or with a pressure washer and soap solution. Do not use a cleaner that will attack aluminum or copper.
- Clean the exterior surface of the batteries with a weak solution of baking soda and water.
- Apply the solution with a non metallic brush to remove corrosive build-up on the battery cable terminals.
- Wash painted surfaces of the unit with a solution of ¼ pound of soap chips to one gallon of water. Rinse with clean water and dry with a lint-free cloth or allow to air dry.

First Maintenance Program

- The first maintenance should be done between 10 and 125 hours.
- For the maintenance of engine, see operation manual (every machine has the engine operation manual)
- Check oil tank and take correct action in case of oil leakage
- Check hose , attachment and electrical wire
- Check wheels nut torque after 10 operations hours, also after 50 operation hours, and after each wheel replacement.

SECTION 1: SERVICE

A. Preparation for Use

Fuel System

Check all fuel line connections to make sure they are properly connected, from fuel tank to fuel pump to carburetor. (Gasoline only)

Make sure that oil extraction plug of fuel tank is screwed down.

inject proper fuel to fuel tank

Battery

Check battery liquid level. Top up with distilled or approved drinking water, as necessary

Connect the battery cables, if disconnected, positive first.

Engine and Plunger Pump

Check engine oil level, add oil if needed.

Check connectors of hydraulic components, such as plunger pump and motor, etc in case of leakage.

Tire Inflation

Check air pressure in tires and add air if needed.

After remove wheels, it's recommended to strengthen the nuts tightening.

After 2 hours, then 50 hours, and every 200 hours periodically:

Recommended for wheel nuts tightening: 130 ft.lbs (148 N.m)

Recommended pressure for wheels:

The size for W11 tire is 26x12-12AS, rated pressure is 300kpa;

The size for W11 tire is 7.00-12AS, rated pressure is 360kpa

The size for W12 tire is 10-16.5NHS, rated pressure is 520kpa;

The size for W12 tire is 31x15.5-15AS, rated pressure is 480kpa;

The size for W13 tire is 11.5/80-15.3AS, rated pressure is 540kpa;

The size for T13 tire is 19/45-17 IMP, rated pressure is 280kpa;

Hydraulic liquid

Check oil level at reservoir. A dipstick in strainer indicates the minimum required level.



Warning: Because of the pressure in the hydraulic tank, before open the fuel cap after loosen, should release the pressure slowly.

Grease Addition

Add grease in every grease valve.

1. All joint bearings
2. All articulated bodies
3. All axle sleeve

B Regular maintenance form

The loader should be maintained in accordance with the following schedules.

	Daily check	Weekly or 50hours check	Monthly or 200 hours	Two months or 400hours	Six months or 1200 hours	Yearly or 2400 hours
Fuel level	•					
Engine oil level	•					
Tire pressure 4.5BAR	•					
Examine tire thread ;remove stones inside clearance ,etc	•					
Adjustment of the headlights to aim correctly.	•					
Operation of work, tail, stop and turn lights	•					
Operation of the cab marker lights, the heater, the wiper and cab light(if equipped)	•					
Horn	•					
Hydraulic oil level.		•				
The wheel lug nuts are tightened, 148N.M		•				
Drive axle fixed bolts and tighten if required.		•				
Cylinder head bolt torque and all nuts and bolts for tightness. If required, adjust to specified torque.		•				
Drive axle and reduction gear box oil level.		•				
Exhaust system for leaks and holes.		•				
Change drive axle oil. (First change only after using 50 hours; then yearly thereafter)		•				
Hydraulic oil.		•				
Hydraulic return-suck oil filter element			•			
Parking Brake With the parking brake handle in 'lock 'position, the loader should not move			•			

on an 8 or less percent grade, but if the loader rolls, then manual brake is advised.						
Dynamo belt: tighten it if needed			•			
Hydraulic oil			•			
Remove water from fuel separator(If equipped)			•			
Inspect engine oil cooler hoses.			•			
Change: Intake air filter element			•			
The adjusting Slides beneath the operator's seat.			•			
The service brake pedal pivot.			•			
Parking brake linkage.			•			
The throttle cable linkage.			•			
jogging cable			•			
Change fuel filter			•			
Fill all grease fittings with grease			•			
Cab door lock (if equipped)			•			
Change fuel filter				•		
Replace Engine oil and filter				•		
Idle RPM and mixture, adjust if necessary.				•		
Change the engine belts				•		
Change parking brake shoes				•		
Drain, flush and refill the hydraulic system						•
Replace drive axle oil						•

(*)Lug nuts must be retightened to 148N.M.After any change of a wheel and anytime the lug nuts have been loosened for any reason, and at the intervals specified in this Preventive Maintenance Section.

A proper and regular maintenance will allow operator to avoid any mechanical failures. Pay attention to lubrication schedule.

Check engine oil level

Check engine oil level weekly or every 50 hours

Identify if the oil addition is necessary according to dipstick indication

Attention: Use matched oil in accordance with engine specification

Air cleaner cleaning

The cover can be taken out after de-tighten the screw located at the side of it.

Element cleaning

Tap element filter paper lightly without any damage

Note:

1. Replace the element if the filter is damaged
2. Wash the element if badly polluted

How to wash the element

1. Soak the element in water containing neutral detergent during approximately 30 minutes and then wash. Care not to scratch the filter paper
2. After washing, rinse the element with clean water
3. Allow to dry naturally or use a dryer (cold air). Never use compressed or hot air

Note:

Element should be replaced after being used for one year or washing six times

Battery electrolyte check

(The following steps are unnecessary if maintenance—free battery is used)

1. The battery electrolyte should be between the upper and lower levels
2. If the electrolyte level is below the lower mark, remove the cap and add distilled water to the upper level through the water inlet port.

Caution:

Be sure to use distilled water

Wear protective glass when working on battery

Tyre replacement

Note:

1. Never enter the loader after jacking it up.
2. Tightening torque of the hub nuts, 148 N.M
3. Adjust the air pressure after tire replacement, W11:3.0Bar; W12: 5.2Bar/4.8Bar;

W13: 5.4Bar, T13: 2.8Bar

4. Pay attention of rim deformation, cracks and loose matching bolt nuts
5. Never increase air-pressure exceeding specified range

Front wheel

1. Locate the loader at a horizontal place
2. Apply the parking brake and insert the jack under the body
3. Jack the body up until tires are almost raised from the ground and loosen hub nuts
4. Jack the body up until tires are lifted from the ground and remove hub nuts and wheels
5. Reinstall the wheels in the reverse procedure after repairing and replacing the tires.
Tighten the hub nuts uniformly in diagonal directions and in the sequence shown
6. Check and adjust the air pressure of the tires after the wheels are reinstalled

Maintenance of the hydraulic system

1. Hydraulic oil replacement.



1. Drive the loader to trench
2. Get down the attachments completely.
3. Put a container under the bottom of loader
4. Open rear cap
5. Unscrew hydraulic oil filler
6. Unscrew return-suck oil filter
7. Remove the drain plug of hydraulic oil tank
8. Drain hydraulic oil thoroughly
9. clean nearby area of drain plug
10. Re-insert drain plug
11. Add hydraulic oil to the tank from oil filler till it reaches oil filler.
12. Screw filler cap
13. Add hydraulic oil into tank from return-suck oil filter till filled
14. Screw return-suck strainer cover
15. Start the engine under idle speed, turn over the steering from dead side to dead side several times , run slowly for several meters ,lift and descend several times ,then recheck the oil-level.



Caution:

The dumped engine oil should be disposed in accordance with relevant laws and regulations. The kid should be kept off indisposed oil. Also prevent the oil from flowing into gully drain or flowing on the ground.



Attention!

During maintenance of the hydraulic system and when changing hydraulic aggregates keep everything meticulously clean to avoid a premature failure of the system!

The hydraulic filter system consists of:

1.return-suction filter for the working and driving hydraulics

☐ **2.filling-vent valve.**

These filters are integrated in the tank. The filling amount in the hydraulic oil tank should be checked daily. The loader should be on even ground and all cylinders must be retracted.

The return-suction filter element should be replaced at the following intervals under normal working conditions:

- a) 50 operating hours after initial commissioning
- b) 800 operating hours after initial commissioning
- c) subsequently every 800 operating hours.

The filling-vent valve should be cleaned every month and replaced after 800 operating hours; the complete filling cover should hereby be exchanged.

The following intervals are prescribed for changing the hydraulic oil:

- a) 50 operating hours after initial commissioning
- b) 800 operating hours after initial commissioning
- c) all further 800 operating hours.

The hydraulic oil should be drained while still warm during an oil change. Any oil sludge must be removed by rinsing the tank.

Top up with oil through the filling-vent valve.

The hydraulic oil used is HLP 46 (ISO VG 46, acc. to DIN 51519). If other hydraulic fluids are used, these must be approved by the manufacturer.

Check the hydraulic system for leaks during all service and maintenance work. Leaky union pieces and screw connections are to be tightened when depressurised and then checked again.



Attention!

- Following major repairs (e.g. changing pumps or motors) the suction area of the hydraulic pump has to be filled with oil before starting to vent the hydraulic system!
- The hydraulic tank is pressurised when warm and in use. To prevent spillage of the hydraulic oil when changing the filter the pressure must be relieved by opening the filling vent valve!



Warning!

When connecting accessories or trailers with a hydraulic connection, make sure that the hydraulic oil in and the loader are the same. Mixing different oil with the loader's hydraulic oil can cause the hydraulic system to fail. In addition, it will void your warranty!

3.CONNECTING THE HYDRAULIC HOSES AND DISCONNECTING THE HYDRAULIC HOSES

3.1CONNECTING THE HYDRAULIC HOSES

- a.Make sure that the hose is not twisted, Pressure applied to a twisted hose can cause the hose to fail or the connections to loosen.
- b.Make sure that hose does not touch hot parts.
- c. Make sure that hose does not touch parts which can rub or cause abrasion.
- d.Use the hose clamps (where possible) to support long hose runs and keep the hoses away from moving parts.

3.2Check for leaks

- a.Start the engine .
- b.Operate the related control to increase the pressure in the hydraulic system.
- c.Stop the engine then remove the starter key.
- d.Check for indications of leakage at the hose connections .Correct,as necessary.

3.3Disconnecting the Hydraulic Hoses

- a.Make the machine safe .Refer to Routine Maintenance ,Prepare the Machine for Maintenance.
- b.Vent the hydraulic system.Refer to Routine Maintenance ,Releasing the Hydraulic Pressure.

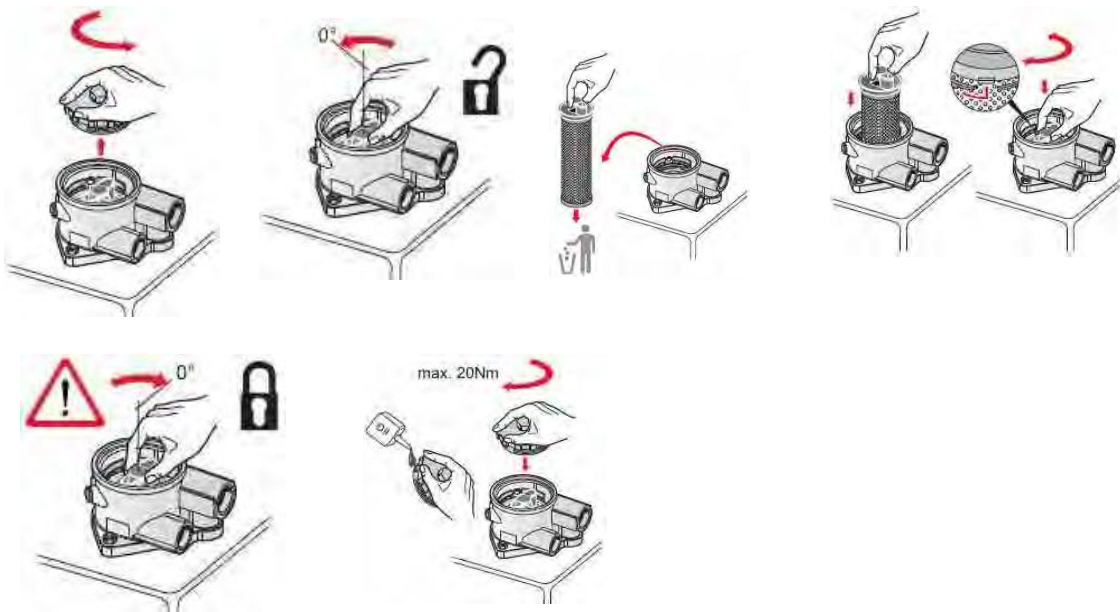
c. Disconnect the hoses. If the hoses have quick releases couplings, then refer to Quick Release Couplings.

d. Check the hoses and adaptors for damage. Refer to Routine Maintenance ,Checking for Damage.

e. If necessary, install the blanking caps.

4. Hydraulic filter system

Return-suction filter



Filling-vent valve



Attention!

- Using filter elements from other manufacturers causes serious damage or failure of the axial piston pump!

5. Replacing the return suction filter



Attention!

- Only the original Schäffer element 070-200-012 may be used as filter element for the return suction filter 070-200-011!
- Using filter elements from other manufacturers causes serious damage or failure of the axial piston pump!

Pressure filter

The pressure filter should be replaced at the following intervals under normal working conditions:

- a) 50 operating hours after initial commissioning
- b) 800 operating hours after initial commissioning
- c) subsequently every 800 operating hours.

All of the oil pumped by the gear pump is passed through the pressure filter before reaching the steering and control unit.

To change the pressure filter, release the clips on the filter and unscrew the hoses. The filter is replaced as a complete unit.

When fitting the new filter take care to ensure the correct direction of flow! This is indicated by an arrow on the

housing. The filter must be fitted so that the arrow points forwards from the rear of the loader. An incorrectly fitted filter can lead to damage to the gear pump!

Rear Axle and Reduction Gear Box

Check oil level in the rear axle and gear reduction box and add oil, if needed.

Maintenance interval:

- Check the oil level every 400 operating hours. For this purpose, the loader must be standing on even ground and should have been inoperative for approx. 10 min before checking. The oil must be up to the screw "A". Top up with oil as necessary.

- Change the oil every 800 operating hours, for the first time after 50 operating hours.

Run the gear until warm and then drain the oil via plug "B". Top up with fresh oil in the specified quantity and grade.

- Visual inspection for possible leakage should be carried out on a daily basis.

Dispose of the waste oil in accordance with statutory regulations!



Attention!

- Using other lubricants can lead to significant noises in the self-locking differential and changes in the locking values!



Attention!

- In the event of damage, we retain the right to analyse the oil.

Axle W13/T13

1. Gear axle,

front Axle bridge 5,5

Schäffer Axle Fluid SB

Planetary gear each 0,25

Total 6,0

Gear axle, rear with power divider

Axle bridge 5.5

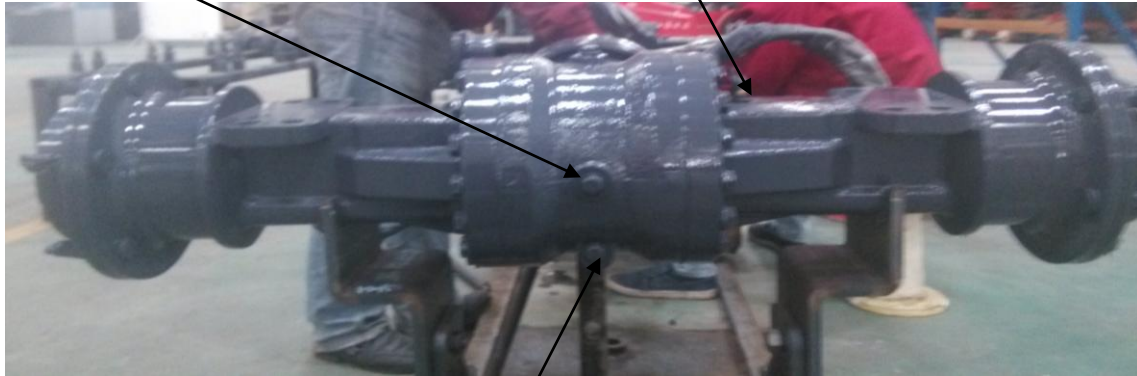
Planetary gear each 0,25

Total 6 .0

Front axle

A = Top up with oil

B = Venting screw brake



C = Drain oil



Drain oil



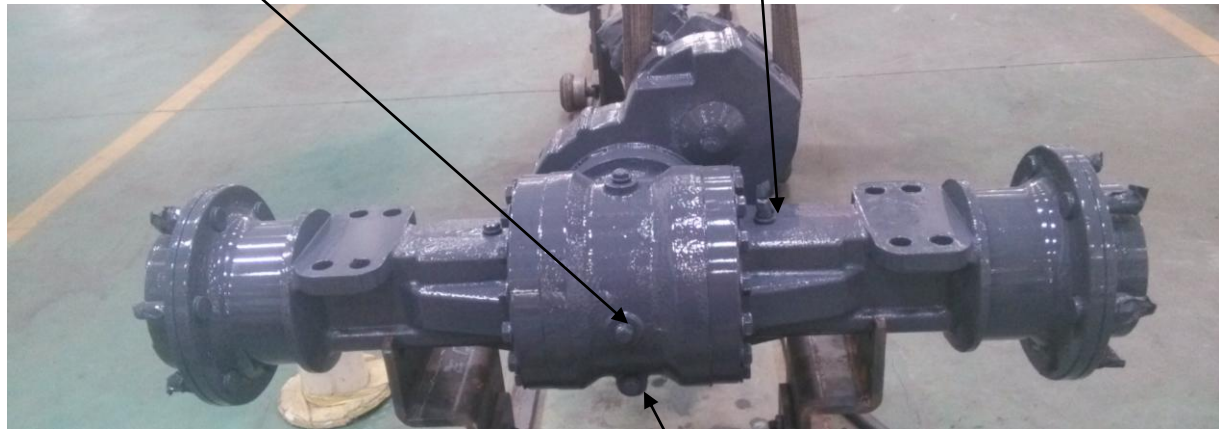
A fill and Top up with oil(turning 90)

Rear axle

Power divider:

A = Top up with oil

B = Venting screw brake



C = Drain oil



Drain oil



A fill and Top up with oil(turning 90)

2 Changing the oil in the planetary gears



Warning!

When the planetary gears are hot the oils is pressurised! Carefully unscrew the drain plug!

1. Turn wheel so that the drain plug (A) is pointing downwards. Unscrew screw and drain oil.
2. Turn wheel by 90° and fill with oil. The oil level must be up to the screw hole.
3. Replace drain plug.

Planetary gear:

Turn the bore hole so that is pointing downwards to drain oil.

Turn the bore hole into a horizontal position when filling with oil.

Maintenance of the brake system

The front axle of the loader is fitted with a multiple disk brake which runs in an oil bath. This simultaneously acts as the parking brake via a cable pull and as a hydraulic service brake in connection with the inch pedal.

The multiple disk brake is practically maintenance-free. The brake lines and brake fluid have to be replaced after 2 years. The brake fluid used by the works is ATF-oil AVIA Fluid ATF 86; this oil fulfils the requirements of Dexron II D, Caterpillar TO - 2 or ZF-TE-ML 03D, 04D, 11A, 14A, 17C.



Attention!

- Only fill the brake system with ATF oil!.

The system is vented with the vent screws on the axial piston pump and front axle.



Warning! This work should only be carried out by a qualified workshop!

Check the brake lines and cable every 400 operating hours and replace as necessary. Check the level in the brake fluid reservoir during daily maintenance. The fluid should be between MIN and MAX.



Attention!

If you detect a loss of fluid from the brake fluid reservoir during your daily maintenance work consult a qualified workshop!

C. LIQUID & LUBRICANTS

Engine		
MODEL	Capacity	Specification
D1105-E3B/D1105-T-E3B	5.1L	15W-40 API CF-4/SG CCMC D2
V1505-E3B/V1505-T-E3B	6.7L	15W-40 API CF-4/SG CCMC D2
V2403-M-DI-E3B	9.5L	15W-40 API CF-4/SG CCMC D2

COOLING CIRCUIT	
TYPE	
	ANTI-FREEZE -35°
W11	11L
W12	13L
W13/T13	15L

Hydraulic Circuit	
TYPE	
SPECIFICATION	CALTEX HDZ-46#
W11	66L
W12	50L
W13/T13	80L

Drive Axle	
TYPE	
SPECIFICATION	GEAR OIL L-CKC
W11	2L
W12	7.5L
W13/T13	12L

Fuel Tank	
TYPE	
SPECIFICATION	Diesel fuel 0# -10# or according to the local temperature to determine the oil
W11	26L
W12	42L
W13/T13	60L



- 

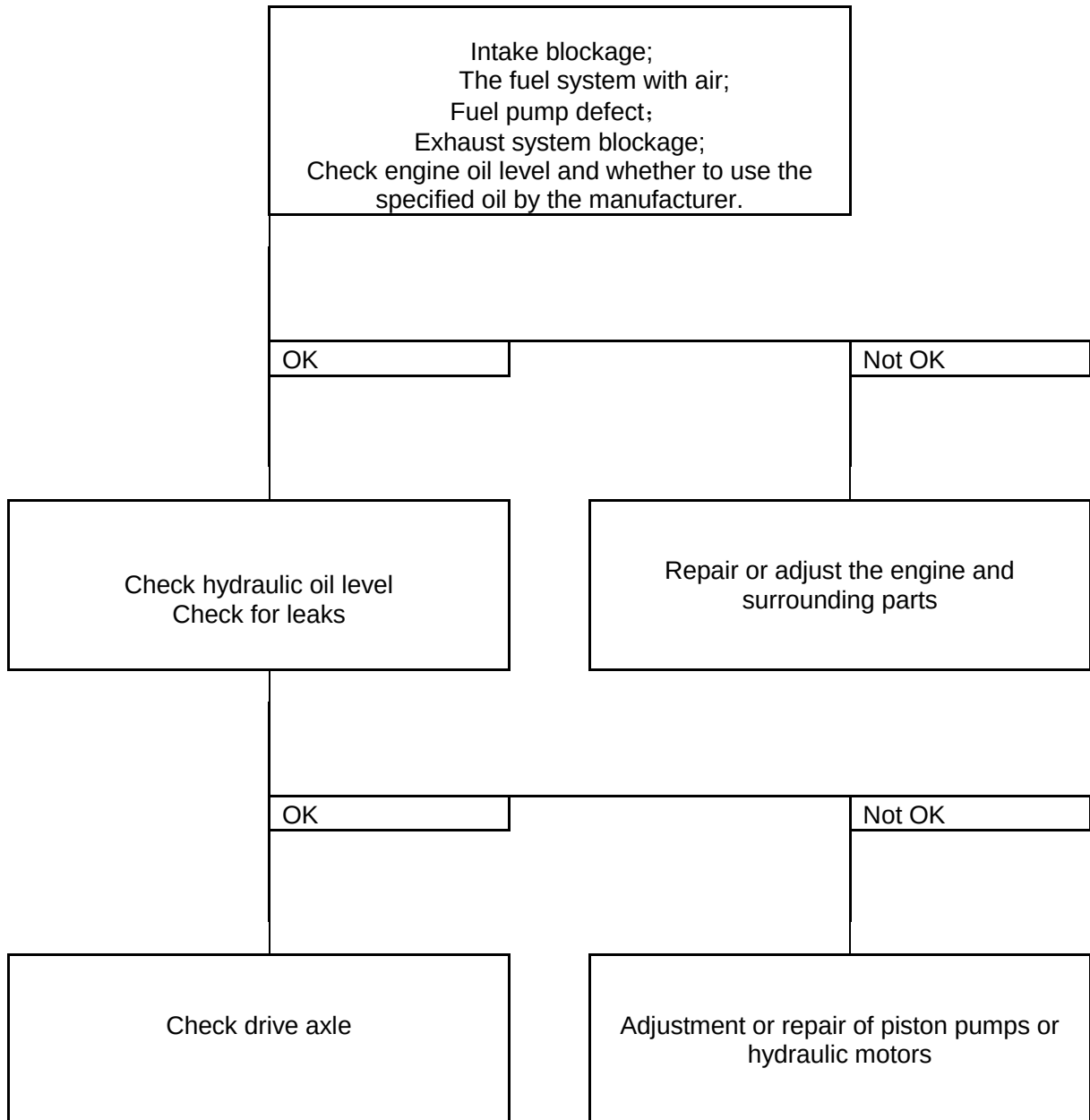
1- WHEN REPLACING HYDRAULIC PARTS OR COMPONENTS, IT IS INDISPENSABLE TO FILTER AND CHECK THE HYDRAULIC OIL BEFORE REUSING IT, IN ORDER TO AVOID DETERIORATION OF THE COMPONENTS

2- IT'S FORBIDDEN TO MIX TWO OILS

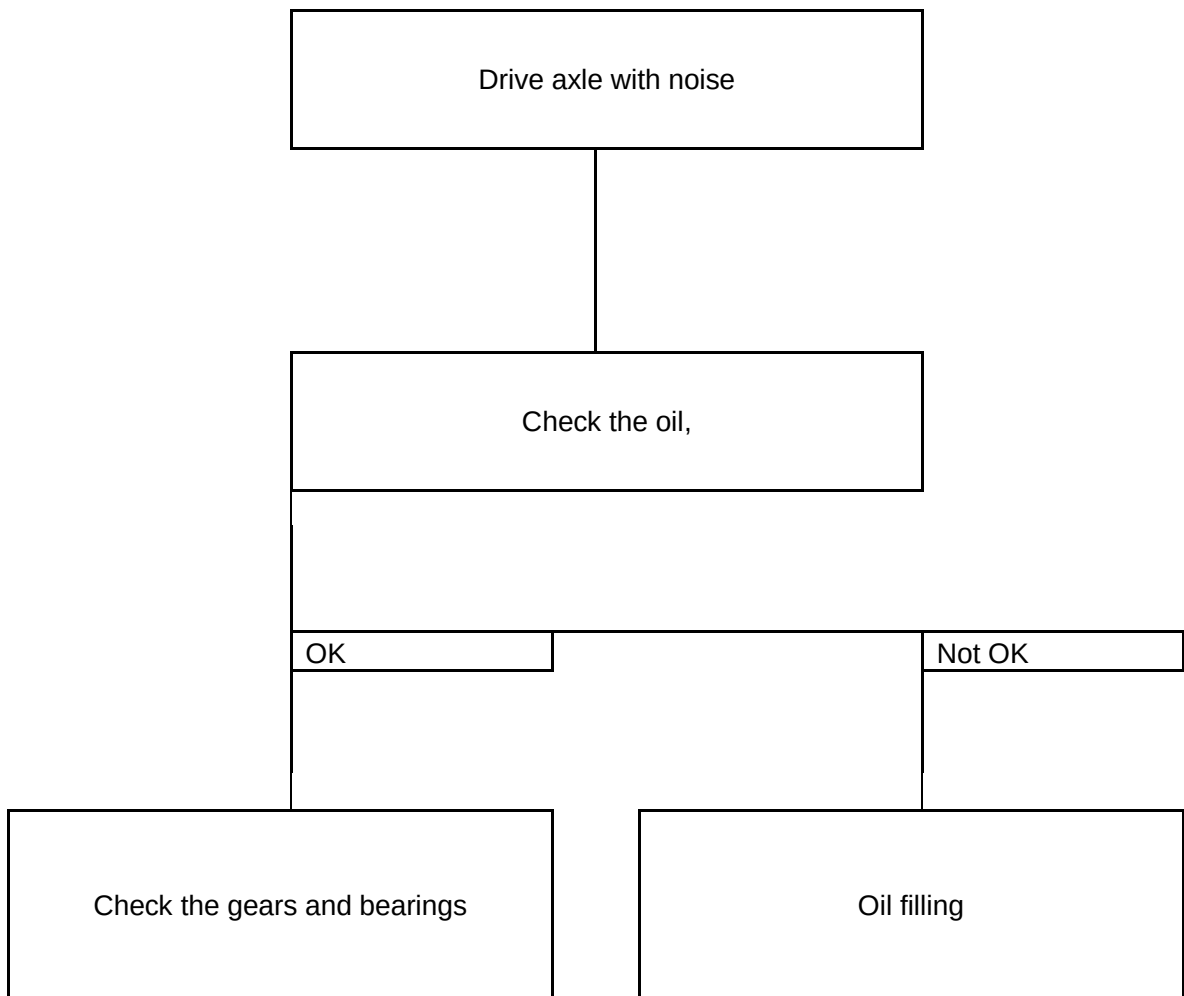
DRIVE SHAFT	
TYPE	NLGI Grade No.2 Lithium grease
BEARING ROD END	
TYPE	Lithium grease Every 500 hours.

SECTION 2: TROUBLESHOOTING

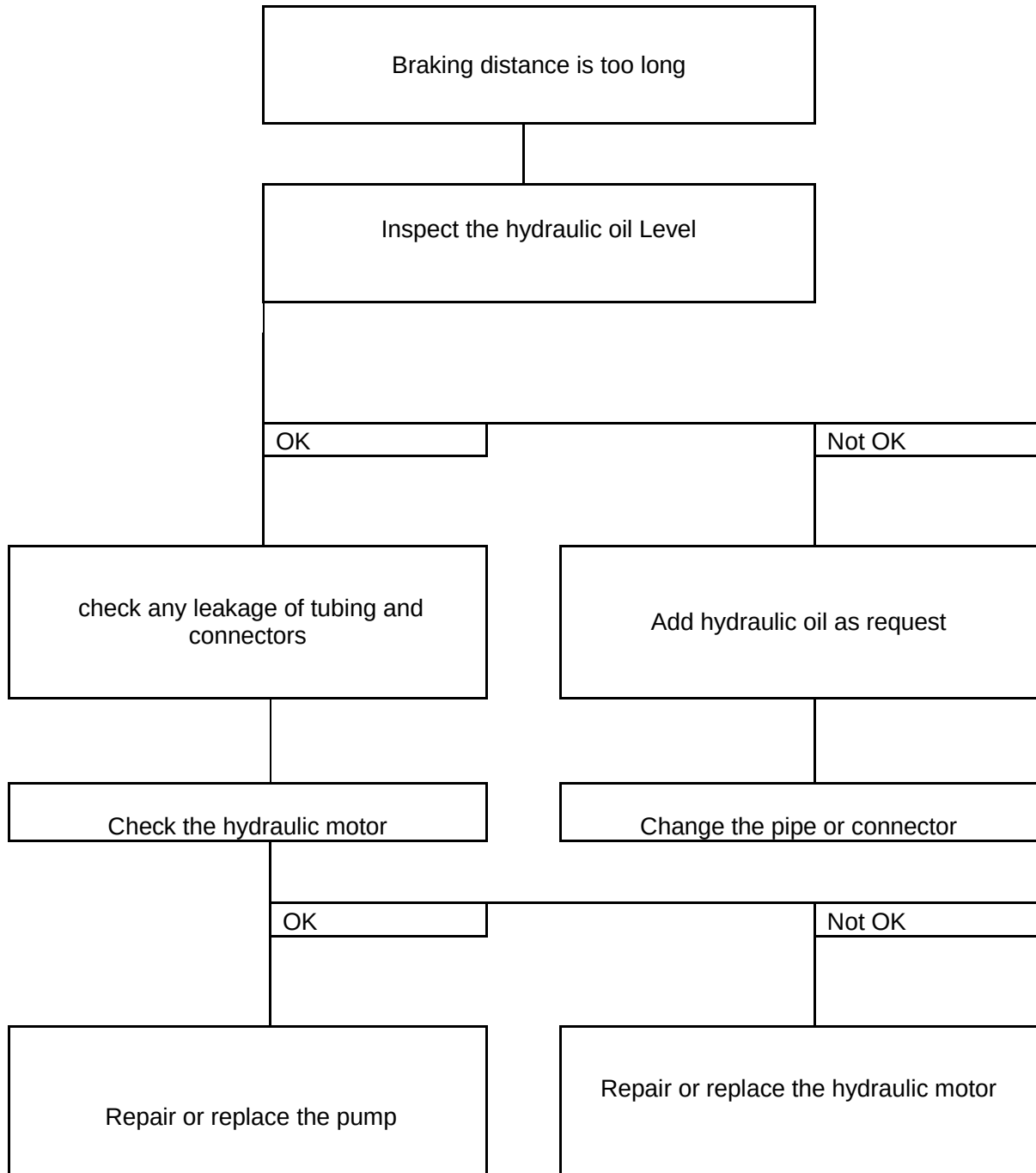
A- Energy to reduce



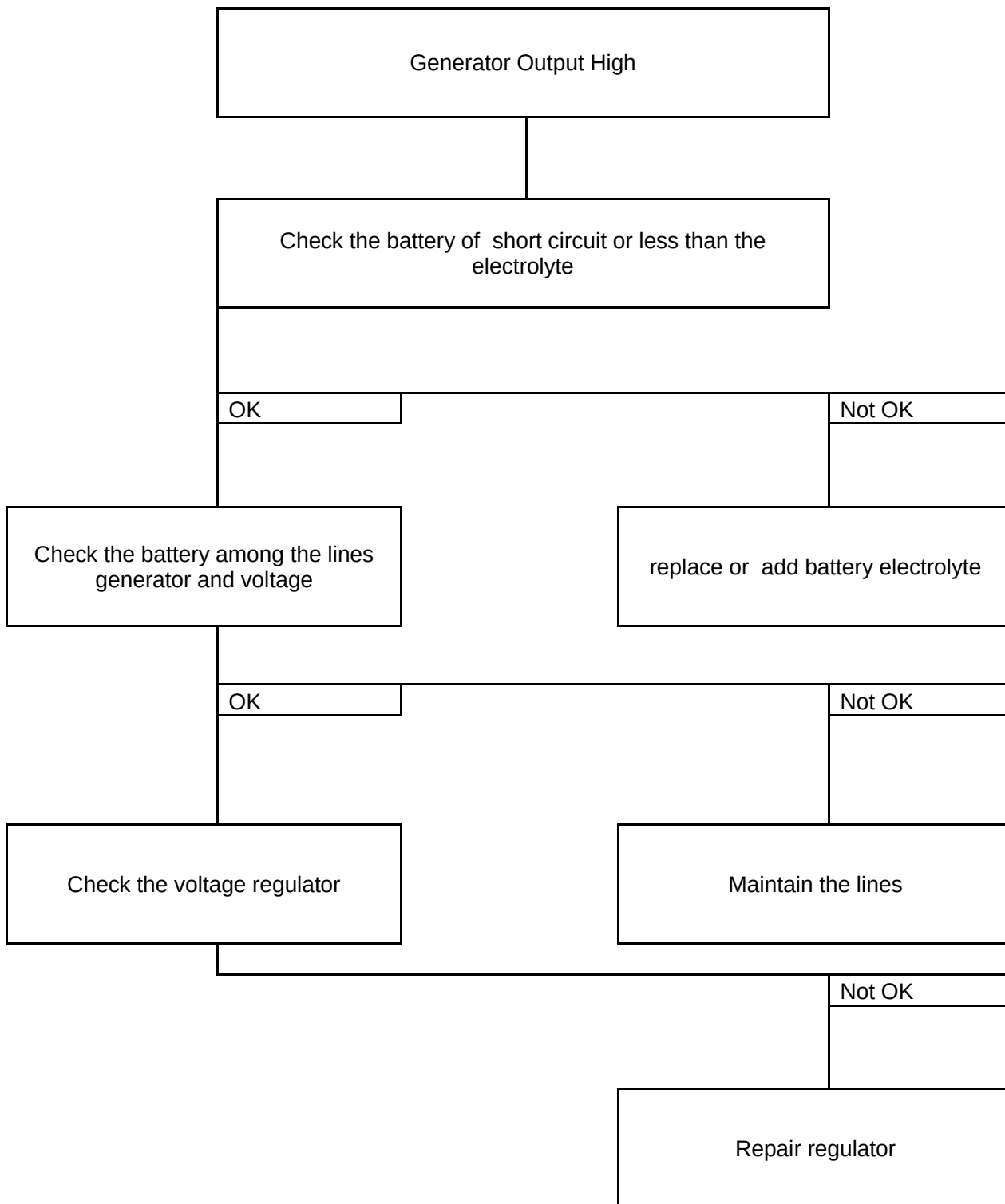
B-Drive axle



C-Brake System

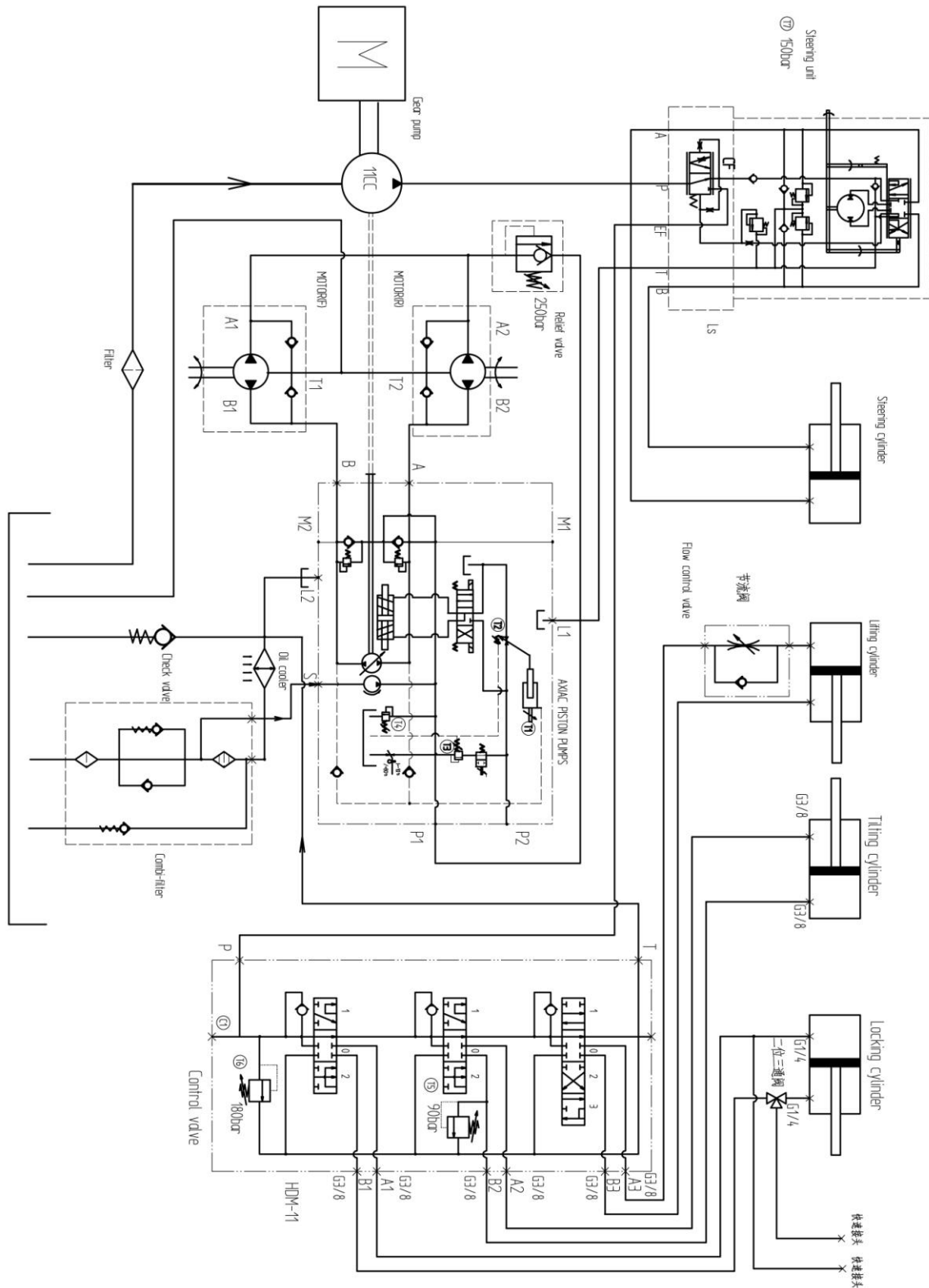


D-Generator

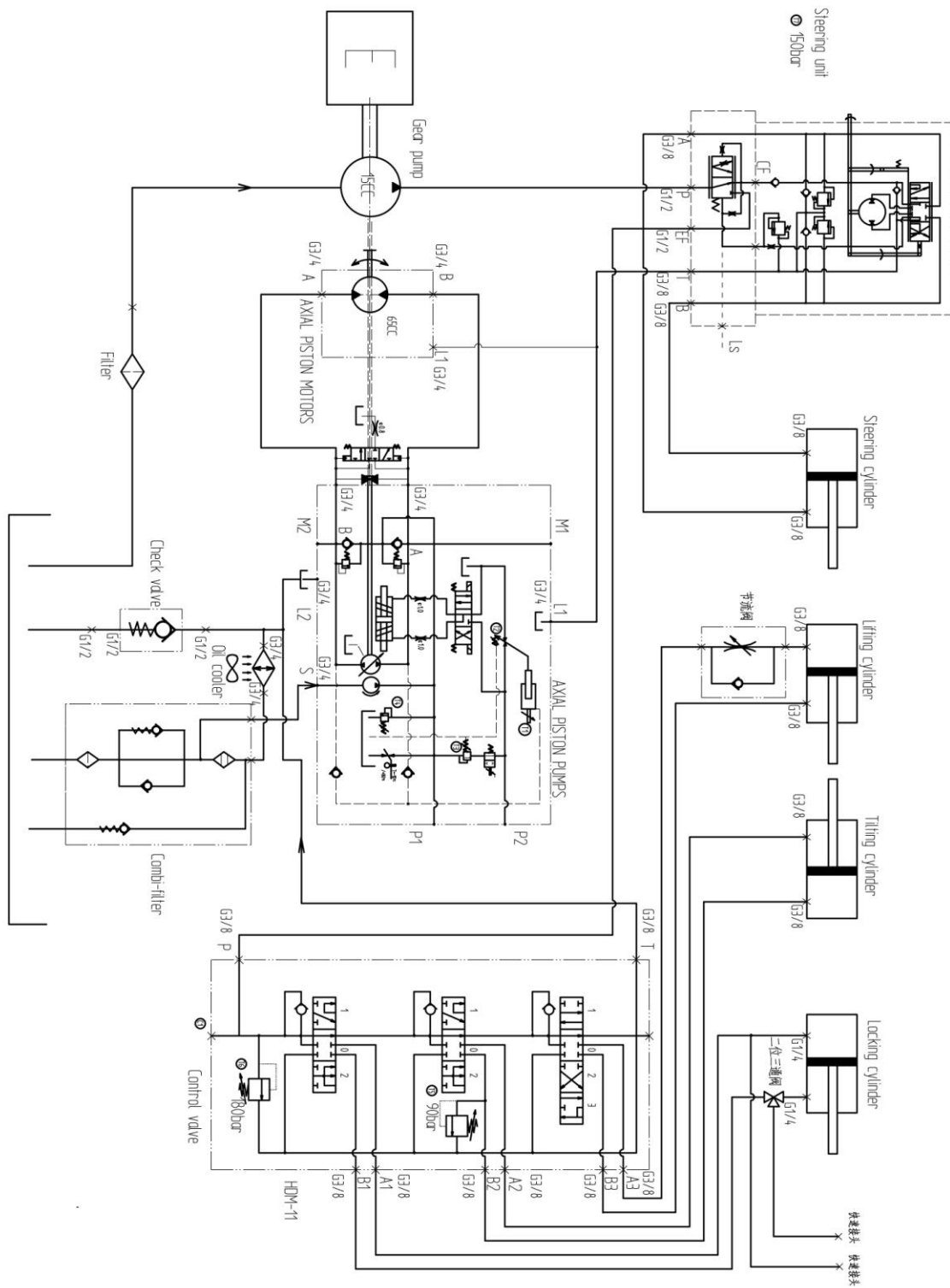


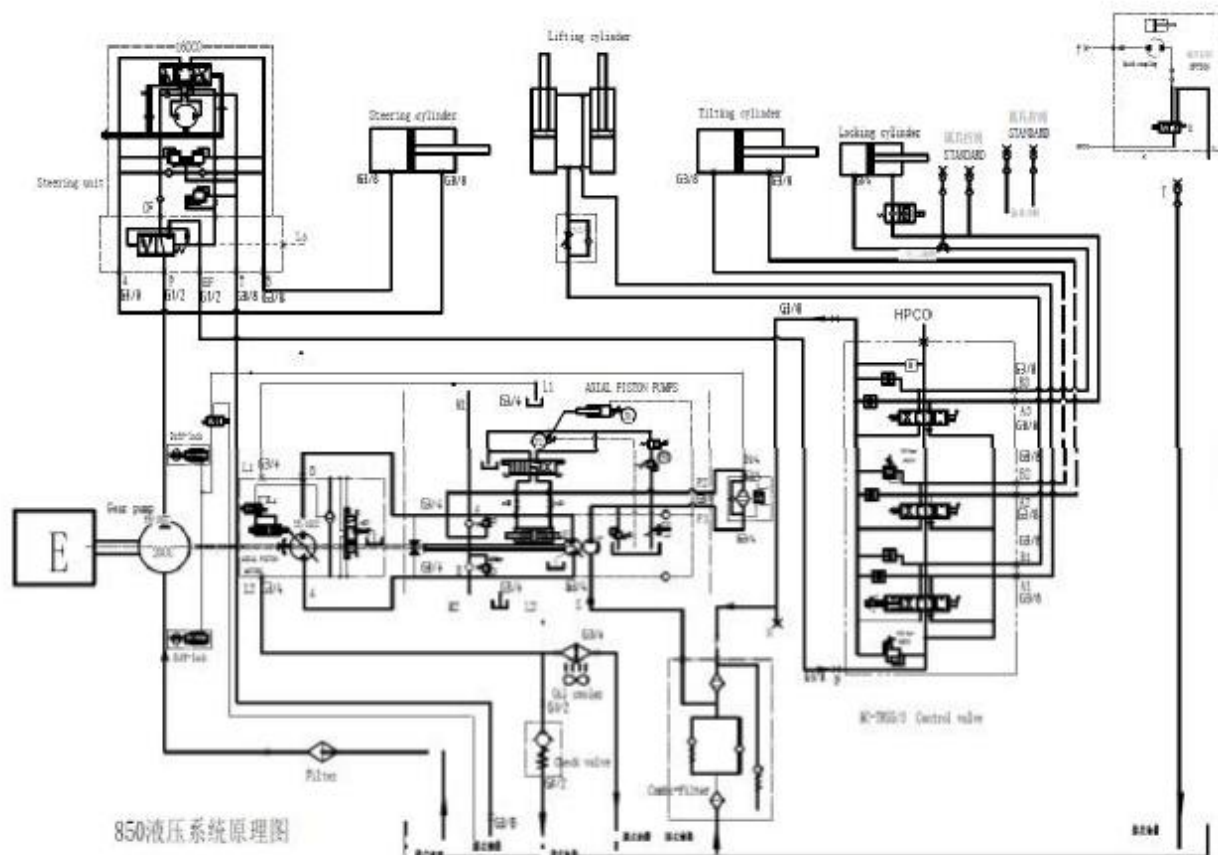
ANNEX 1: HYDRAULIC DIAGRAM

W11 HYDRAULIC DIAGRAM

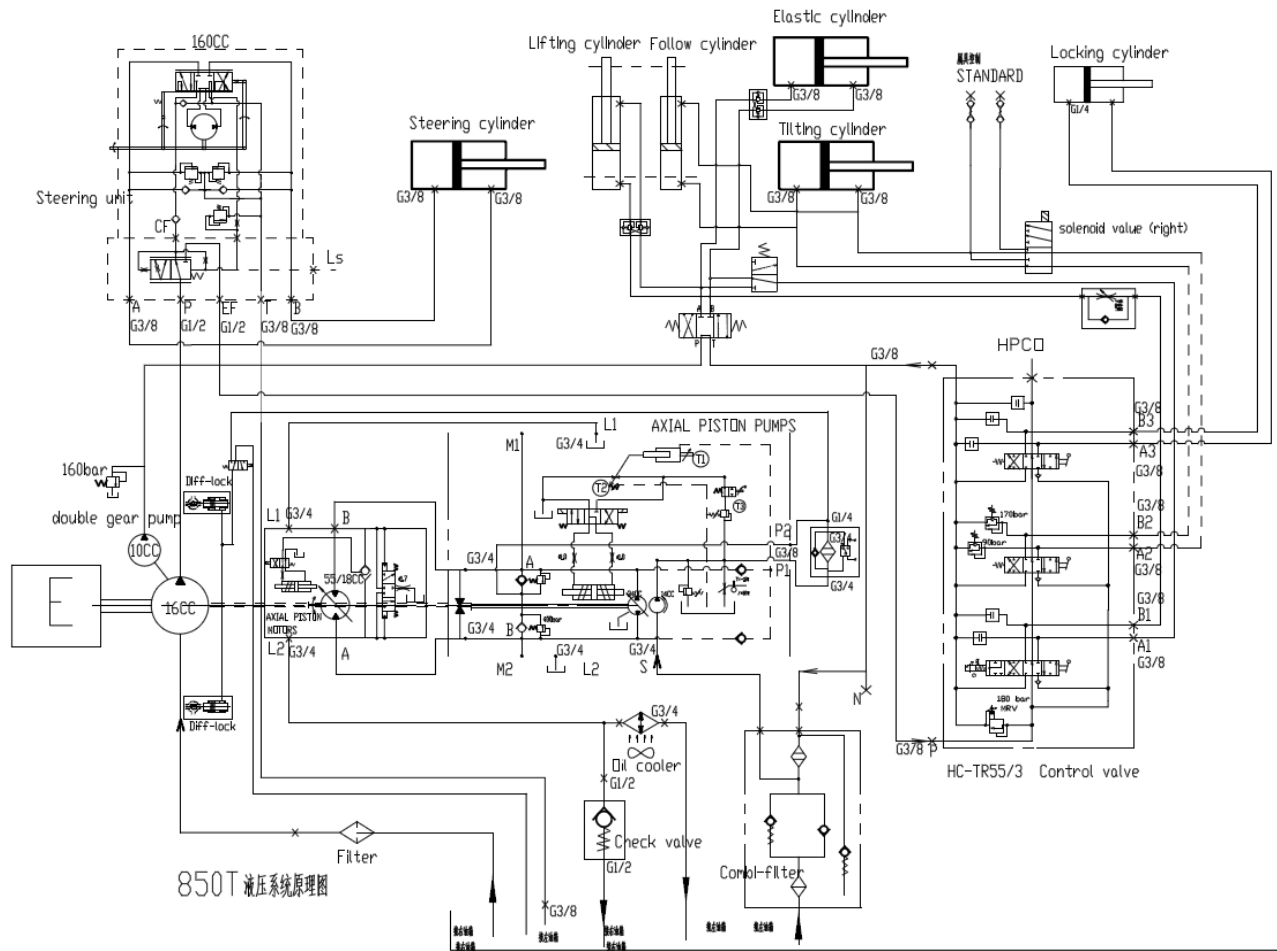


W12 HYDRAULIC DIAGRAM

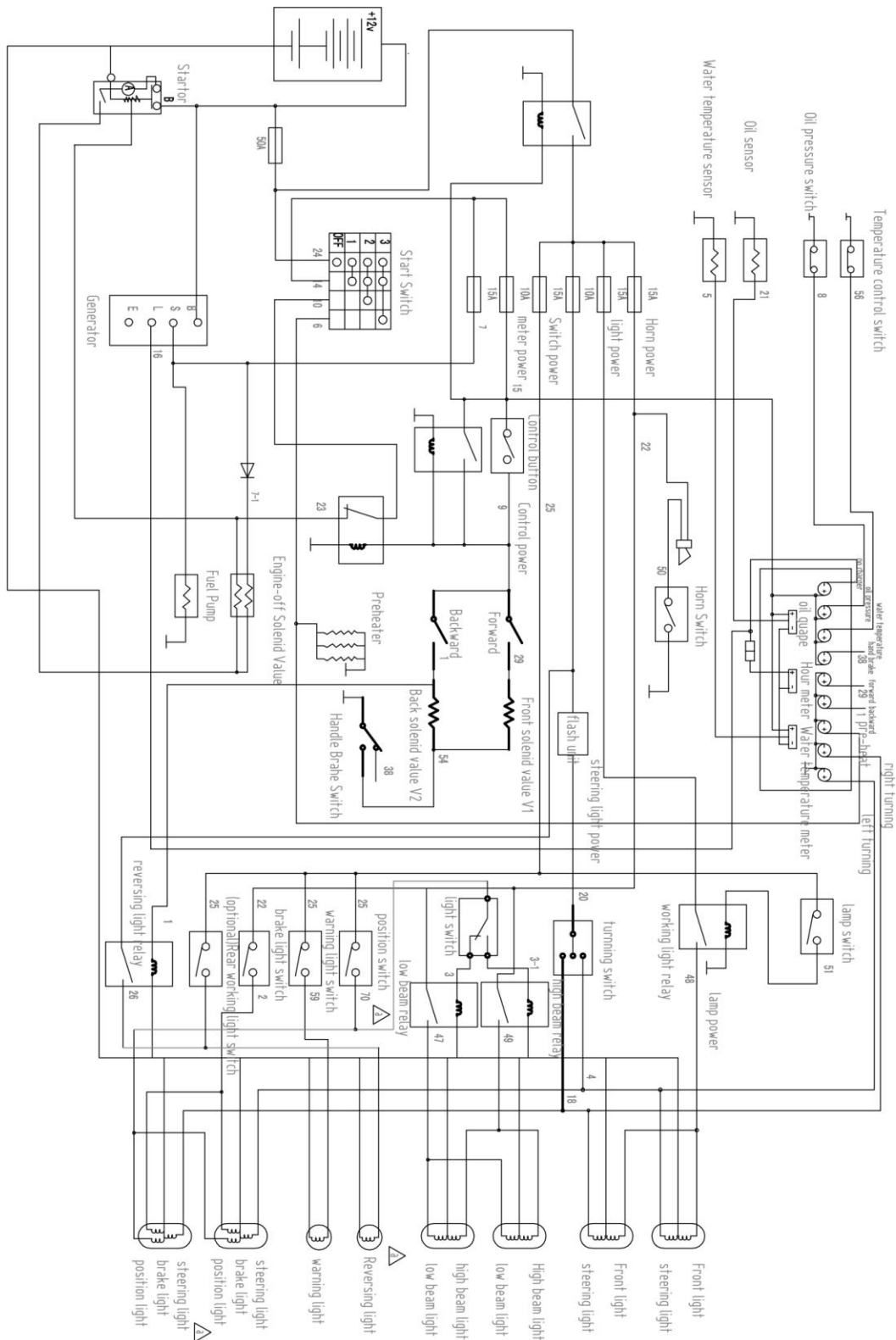




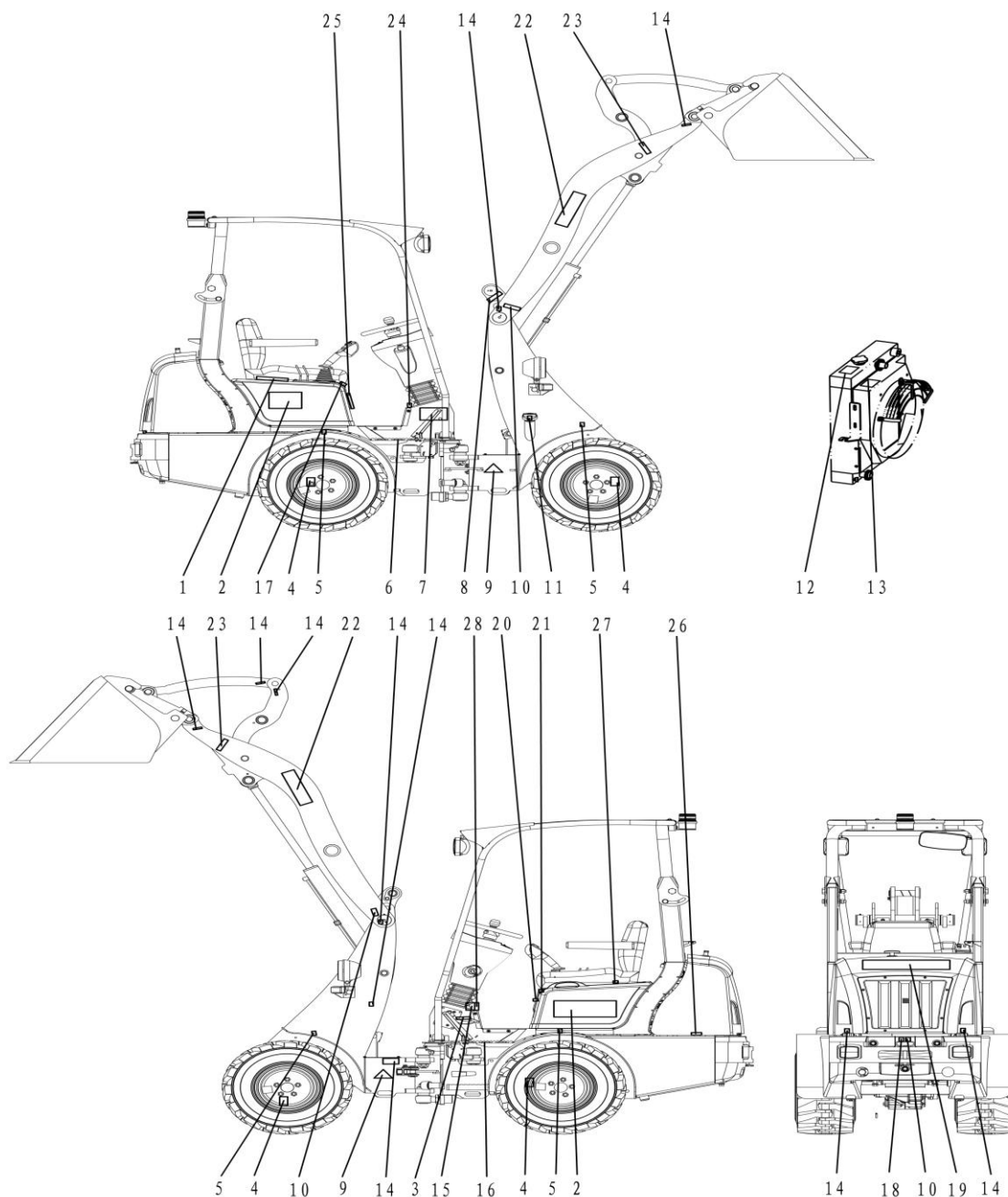
T13 HYDRAULIC DIAGRAM:



ANNEX 2 ELECTRIC DIAGRAM W820 ELECTRIC DIAGRAM



ANNEX 3 THE LABEL LOCATION CHART OF MACHINE



1. Hydraulic control prompt
5. Tire pressure label
9. Notice hurt label
13. Notice hurt hand
17. Restoration button label
21. Operation warning
25. Decal, name

2. Model
6. Abrasive mat
10. Notice hurt hand
14. Add butter label
18. Decal, sling
22. Model label
26. Oil label

3. Decal, parking brake
7. Nameplate
11. Decal, fuel
15. Notice declaration
19. Model label
23. Prevent tip label
27. Safety belt

4. Tyre label
8. Decal, sling
12. Notice heat label
16. Abrasive mat
20. Ride warning
24. Notice tip label
28. Notice distance

ANNEX 4: DAILY EQUIPMENT INSPECTION

	WHILE OPERATORS SHOULD NOT ATTEMPT TO PERFORM REPAIRS, THEY DO HAVE THE RESPONSIBILITY TO REPORT IMMEDIATELY ANY PROBLEMS TO THEIR SUPERVISOR, SO THAT REPAIRS CAN BE MADE IN A TIMELY FASHION BY QUALIFIED MAINTENANCE PERSONNEL.
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DAILY EQUIPMENT INSPECTION – W11,W12,W13,T13 wheel load			
Vehicle S/N: _____		Date: ____/____/____	
Operator: _____			
[✓] Good		[A] Adjustments Completed	
		[N] Needs Repairs	
[]	Check the engine oil and ensure that the level is within operating range.	[]	Check the power steering fluid level by opening the cap to inspect the level. Ensure that the level is within operating range and then replace the cap.
[]	On water-cooled systems, inspect the coolant/water level at the coolant surge tank. (Do not remove the radiator cap to perform a routine coolant level check.)	[]	Check the inflation pressure of each pneumatic tire. wheels require 4.5bar. Adjust tire pressure as required.
[]	Inspect the tire surface for damage or wear. Remove stones from the surface and report any damage, cracked sidewalls, limited tire tread, or unusual wear.	[]	Make sure the headlights are working and properly
[]	Check that other lights are working, including the rear light, tail stop and turn signal lights, (if the wheel load install this equipment)	[]	Ensure that the cab heater, wiper and the cab dome light and other are working, (if the wheel load install this equipment)
[]	The horn should be clearly heard in noisy voices.	[]	Ensure that all controls are in good working. Report the faulty and do not use the equipment until repairs have been completed.
[]	Check the fuel level.	[]	The correct position of the driver's seat, adjusting it to meet your requirements.