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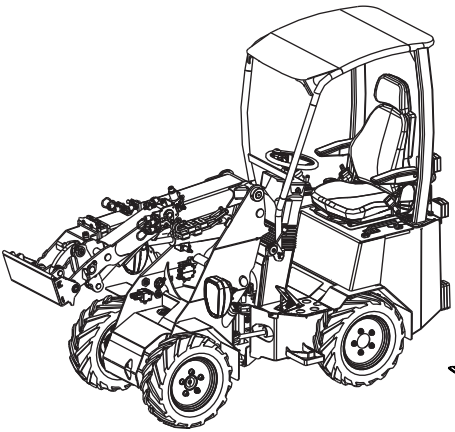
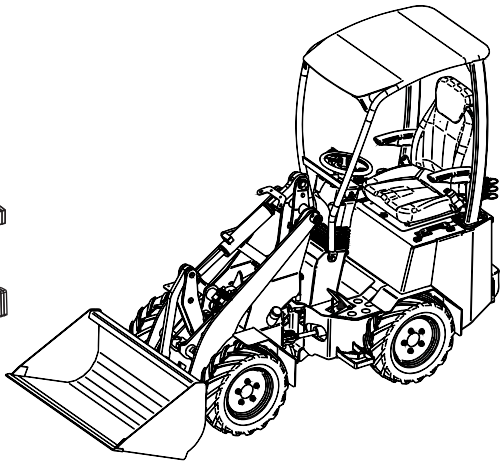
WHEEL LOADER

OPERATOR MANUAL





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1. GENERAL INFORMATION

PREFACE

You have chosen for a www.tobroco-giant.us Wheel Loader, ensuring versatile use and durability. Thank you for your confidence in our products.

You will get the best benefit of this Wheel Loader by carefully following the safety, maintenance and operation instructions in this manual.

We strongly recommend each operator to read this manual carefully before use. Ensure that the Wheel Loader is always accompanied by this manual. For the latest version of this manual, go to www.tobroco-giant.us.

Tobroco Machinery LLC is not responsible for damage and indirect damage caused by operator error, lack of (skilled) maintenance and any other use other than described in this manual. Tobroco Machinery LLC cannot be held liable for any damages resulting from unauthorized modifications and/or additions to the Wheel Loader, without our prior written consent.

Tobroco Machinery LLC continually strives to improve her products and services. We therefore reserve the right to change the specifications in this user manual at any time without prior notice. It is possible that the pictured drawings and photos do not exactly match your Wheel Loader.

We are confident that you will be very satisfied with your new GIANT Wheel Loader.

While the content of this manual has been prepared with the utmost care, some information may nevertheless be incomplete, incorrect or may become outdated in time. TO THE FULLEST EXTENT PERMISSIBLE BY LAW, Tobroco Machinery LLC MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WETHER EXPRESS OR IMPLIED, FOR THE CURRENCY, ACCURACY, OR COMPLETENESS OF ANY INFORMATION, AS DEFINED ABOVE. FURTHERMORE, Tobroco Machinery LLC MAKES NO REPRESENTATIONS OR WARRANTIES IN CONNECTION TO ITS PRODUCTS AND/OR SERVICES, INCLUDING WARRANTIES ABOUT ITS SERVICES' AND PRODUCTS' MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, UNLESS EXPLICITLY MADE AND PROVIDED BY Tobroco Machinery LLC IN WRITING TO THE PURCHASER OF THE SERVICES AND/OR PRODUCTS.

MANUAL USAGE

Contents and Use of this Manual

This operator manual provides detailed operating procedures for safe, effective and proper machine use. Safe operation is detailed in the Safety chapter of this manual. Specification, maintenance and troubleshooting information is also included in this manual.

Improper operation, inspection and maintenance of the machine can result in injury or death. Read and understand the contents of this manual completely and become familiar with the machine before operation. Contact your authorized dealer with any questions about information in this manual, if extra manuals are required, or about availability of manuals in other languages.

Throughout this manual, information is provided set in or italic type and introduced by the words Notice or Important. Carefully read and follow these messages to improve operating and maintenance efficiency, to avoid breakdowns and damage, and extend the life of the machine.

Note: Because of ongoing product improvements, illustrations and listings in this manual may not exactly match the machine. Tobroco Machinery LLC reserves the right to modify and improve products at any time without notice.

A storage facility is provided for manual storage. Store the operator manual in this facility at all times.

This manual is considered a permanent part of the machine and should be with the machine at all times. Replace this manual promptly if it becomes damaged, lost, or stolen.

Ownership Change

If the machine is resold, include this operator manual as part of the sale.

If the machine was purchased “used,” or if the owner's address has changed, please provide your dealer or Tobroco Machinery LLC with the owner's name and current address, along with the machine model and serial numbers. This will allow the registered owner information to be updated, so that the owner can be notified directly in case of an important product issue, such as a safety update program.

Manufacturer Information

Products described in this manual manufactured by Tobroco Machinery LLC.

Machine Designation

Earth-Moving Machinery / Loaders / Compact / Seated Operator

PROPER MACHINE USE

⚠ WARNING **Improper use of the machine can result in property damage, injury or death.**

The machine is designed only for digging, picking up, lifting, transporting and unloading materials. Use with approved attachments is also allowed. Use in any other way is considered as contrary to the intended use. Compliance with, and strict adherence to, the conditions of operation, service and repair, as specified by the manufacturer, also constitute essential elements of the intended use.

The machine was designed and built according to the best available technology and approved safety regulations in the countries where it is sold. However, it is impossible to completely safeguard against abusive and/or improper use. The operator must always consider potential safety risks and hazards during operation. Accident prevention regulations, all other generally recognized regulations on safety and occupational medicine, and all road traffic regulations, must be observed at all times.

The machine must be maintained in proper operating condition. Any damaged or malfunctioning parts must be repaired or replaced immediately.

Any arbitrary modifications carried out to the machine may relieve the manufacturer of liability for any resulting damage or injury.

Using Attachments

Read all documentation provided with attachments to learn how to safely operate and maintain them.

Do not use the machine for any applications or purposes other than those described in this manual or manuals supplied with attachments. Contact the Tobroco Machinery LLC Service Department before using attachments or equipment not approved by Tobroco Machinery LLC, or if there are any questions about approved attachments. Use of non-approved attachments or unauthorized modifications is prohibited.

SERVICE/DEALERSHIP NETWORK

Your dealership network stands ready to provide any assistance that may be required, including providing genuine service parts. All service parts should be obtained from your dealer. Provide complete information about the part and include the machine model and serial numbers. Record these numbers in the spaces provided in chapter "Serial Numbers".

Tobroco Machinery LLC strives to continuously improve its products and reserves the right to make changes and improvements in the design and construction of any part without incurring the obligation to install such changes on any previously delivered machine.

VIBRATION INFORMATION

Compact construction equipment is generally used in harsh environments. This type of usage can expose an operator to uncomfortable levels of vibration. It is useful to understand exposure to vibration levels when operating compact equipment and what can be done to reduce vibration exposure. As a result, equipment operation can be more efficient, productive and safe.

An operator's exposure to vibration occurs in two ways:
- Whole-Body Vibration (WBV)
- Hand-Arm Vibration (HAV)

WBV issues are primarily addressed in this manual, because evaluations have shown that operation of mobile compact construction equipment on work sites typically results in HAV levels less than the allowed exposure limit of 2.5 m/s2.

Member States of the European Union must comply with the Physical Agents (vibration) Directive, 2002/44/EC.

Effective control of vibration exposure for an operator involves more than just vibration levels on the machine. The work site, how the machine is used, and proper training all play important roles in reducing vibration exposure.

Vibration exposure results from:
- Work site conditions.
- How the machine is operated.
- The machine characteristics.

Common causes of high WBV levels:
- Using a machine that is improper for the task.
- Work site with potholes, ruts and debris.
- Improper operating techniques, such as driving too fast.
- Incorrect adjustment of the seat and controls.
- Other physical activities while using the machine.

Vibration Measurement and Actions

The vibration directive places the responsibility for compliance on employers.

Actions that should be followed by employers include:
- Assess the levels of vibration exposure.
- Determine from this assessment if operators will be exposed to vibration levels above the limits stated in the directive.
- Take appropriate actions to reduce operator's exposure to vibration.
- Provide operators with information and training to reduce their exposure to vibration.
- Keep good records and update operations and training on a regular basis.

If the assessment concludes that vibration level exposure is too high, one or more of the following actions may be necessary:
1. Train operators
- Perform operations (accelerating, steering, braking, etc.) in a smooth manner.
- Adjust the controls, mirrors and seat suspension for comfortable operation.
- Travel across the smoothest parts of the work site and avoid ruts and potholes.
2. Choose proper equipment for the job
- Use machines with the proper power and capacity.
- Select machines with good suspension seats.
- Look for controls that are easy to use.
- Ensure good visibility from the operator's position.

3. Maintain the work site
- Smooth ruts and fill potholes in traffic areas whenever possible.
- Clean up debris frequently.
- Vary traffic patterns to avoid exposure to rough terrain.

4. Maintain the equipment
- Ensure correct tire pressures.
- Check that seat suspension and all controls work smoothly and properly.

Vibration Level

The typical whole-body vibration level for the machine is listed in the declaration of conformity, see chapter “EC Declaration of conformity”.

2. APPLICATIONS

WHEEL LOADER APPLICATION

The Wheel Loader is designed for lifting and moving:
- Substances such as sand or gravel with closed or open bucket
- Materials and parts on pallets with pallet forks
- Manure with a manure fork
- Kerbs with kerb clamp
- Stones with stone clamp
- Trees with tree harvester
- Hay bales with bale fork

⚠ CAUTION:
Use the Wheel Loader only for the above work.

EXCLUSIONS

The Wheel Loader is not designed for the lifting and moving of:
- Persons and animals
- Products where toxic and / or explosive substances may be released during handling
- Products containing hazardous substances
- Tanks with liquid
- Combustibles
- Other liquids and dangerous substances not mentioned above

WORKING SURFACE

⚠ CAUTION:
Driving on slopes should be avoided at all times! the risk of tipping over increases extremely when driving on slopes.

- The Wheel Loader is designed for riding on flat, hard surfaces. Only drive on slopes when the loader attachment is empty. In the event that the wheel loader should drive on a slope, the maximum slope angle is 11.3º (20%).
- The stability of the Wheel Loader depends on the articulation angle, load and the lifting height. For the maximum load see chapter “Technical Data”.
- The Wheel Loader is not designed to tow other vehicles except trailers with specifications according to chapter “Technical Data”.

PUBLIC ROAD

⚠ CAUTION:
Be aware of the local traffic regulations. Make sure that your machine complies with the laws and regulations in your area.

⚠ CAUTION:
Use of public roads with the Wheel Loader is NOT allowed, unless the Wheel Loader is equipped with a GIANT road kit which includes automotive lighting.

Please note:

- Driving on public roads should be avoided wherever possible. The different dimensions and performance can result in unexpected situations for other road users.
- Driving on the highway is absolutely not allowed.
- Obey national and local traffic and road regulations on public roads. This might imply additional features on the Wheel Loader.
- Verify whether you need an insurance for driving on public roads, in addition to the standard insurance.
- The maximum allowable speed on public road depends on local law and regulations.
- Shield the attachments.
- Read the instructions that come with the attachment.
- Put the attachment in a position which does not block the vision of the driver and which will not endanger other road users.

- Use dimmed lights during the day where visibility is seriously restricted, and at night.

OPERATING THE MACHINE

⚠ CAUTION:
Driving on slopes should be avoided. The risk of tipping over increases extremely when driving on slopes.

⚠ CAUTION:
Only drive on slopes when the loader attachment is empty. In the event that the wheel loader should drive on a slope, the maximum slope angle is 11.3º (20%).

1. Get on and off safely when entering or leaving the operator's cab. Face the machine. Always maintain a three point contact with the steps and handrails. Do not use control levers as handles. Do not jump on or off the machine. Never try to get on or off a moving machine.
2. Do not start engine or operate levers from anywhere other than the seat.
3. Before starting the engine, fasten the seat belt, make sure that the direction lever is set in the neutral position, the parking brake switch is actuated and the bucket is lowered to the ground.
4. Do not start engine by shorting across starter terminals.
5. Watch where you are going at all times. Watch for and avoid obstacles.
6. Never permit passengers on the machine. Keep bystanders away from the machine during operation.
7. When working around other machines, let the other operators know what you are doing at all times.
8. Never allow anyone to get under or near the bucket or attachment when it is raised.
9. When raising the bucket or attachment, take extra caution to prevent it from touching overhead wires or other obstacles. Contact with wires may cause fatal injuries.
10. Keep away from the muffler while the engine is running and immediately after it has stopped.
11. Hazardous operation such as on dangerous terrain, beyond the load capacity or contrary to the intended use of the machine must be avoided as it may cause the machine to tip over.
12. Do not drive the machine close to edges of ditches or banks which may collapse under the weight of the machine, especially when the ground is loose or wet.

13. Slow down for turns, uneven terrain and slopes to avoid tipping over.
14. When transporting a load, keep the loader bucket as low as possible to avoid tipping over. Be extremely careful when working on inclines.
15. Operation on slopes can be dangerous. Rain, snow, gravel soft ground, etc. will change the surface conditions. Do not operate the machine in questionable surface conditions. If operating on a slope or ramp, always slow down, travel straight up and down the incline and not across. Keep the bucket as low as possible. If you do not follow these instructions, the machine can go out of control and tip over.
16. Avoid turning on a slope.
17. Never perform digging or shoveling with the machine in the articulated condition, or the machine may tip over.
18. Never dig or shovel at high speed. Such operation can cause the machine to lose stability and its rear wheels to lift off the ground, which may lead to serious personal injury or fatal accidents.
19. Do not go up or down a 20° or steeper hill. Otherwise, the machine may skid sideways or turn on its side. If the ground is not level or is soft, limit the slope below 11.3º (20%).
20. To avoid tipping over, do not operate the machine on any site where the terrain cannot be ascertained, such as ground covered with seeds or snow and check for hidden projections, dips, road shoulders, etc. beforehand, and take care not to approach them during work.
21. Be sure to ease off the accelerator pedal at the end of filling in trenches or areas at the edge of a steep slope or pond bank or at the brow of a hill. When the external load is reduced, the machine speed will automatically increase, therefore reduce speed to avoid entering ditches or tipping over.
22. To avoid the machine slipping or tipping over, do not operate the machine on ungraded or soft terrain, such as land fills. Grade and compact the site beforehand at all times.
23. Do not run the engine indoors. Carbon monoxide gas from exhaust is colorless, odorless and deadly.
24. Check that no one is near the machine before starting the engine to avoid danger from the machine. Check that there are no flammable objects, such as dead leaves, sheets of paper, or pieces of cloth near to the engine before starting the engine.
25. Be especially careful when reversing and watch the area behind the loader exactly before starting to drive.

Caution with children

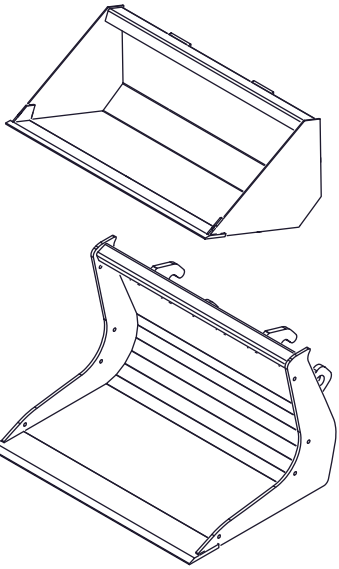
26. Serious accidents can occur if the operator does not pay attention to children in the vicinity of the machine. Children are unpredictable!
27. Always keep an eye on children as they change their location continuously.
28. Make sure no children are within the working range of the machine.

29. Be extremely cautious when children approach the working area; stop working, if necessary.
30. Do not carry children on the machine.
31. Do not allow children to operate the machine.
32. Do not allow children to play around the machine.

ATTACHMENTS

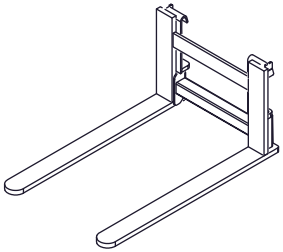
Only original GIANT attachments and options are allowed on the Wheel Loader.

- Earth bucket
- High-tip bucket
- Pallet fork
- Manure fork
- Feed- and manure scraper
- Auger bucket
- Kerb stone clamp
- Brick clamp
- Silage cutter
- Mixing bucket
- Straw blower
- Bucket brush
- Hay Bale Fork
- Bale grabber



Make sure that the quick-coupling system on the attachment is the same as that on the Wheel Loader.

Do not overload the attachment. Refer to the Technical data section of the attachment and of the Wheel Loader. The lowest load limit of the two is the one you must obey.



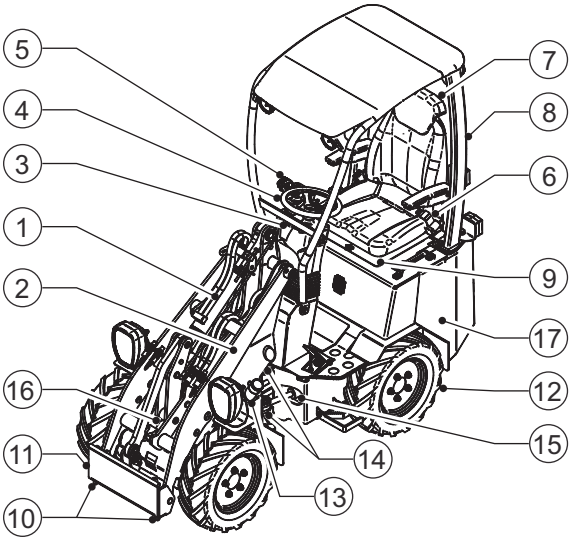
If you want to use a non-GIANT attachment, make sure that you have a written consent from Tobroco Machinery LLC that you can use this attachment safely.

Tobroco Machinery LLC is excluded from any liability for damage and consequential damage due to non-GIANT products

3. OPERATION

MACHINE COMPONENTS

1. Tilt cylinder
2. Lifting arm
3. Dashboard
4. Steering wheel
5. Joystick control
6. Seatbelt buckle
7. Driver's seat
8. Safety roof
9. Engine cover
10. Coupling pins
11. Attachment bracket
12. Wheel
13. Fuel tank filler cap
14. Articulation point
15. Steering cylinder
16. Battery
17. Hydraulic oil tank



FUNCTIONS

This Wheel Loader is designed for lifting and moving loads. Do not exceed the maximum loads as shown in chapter ‘Technical data’. Various functions are powered by a diesel engine. All of these functions can be controlled by the driver by means of a joystick, steering wheel, pedals, and various buttons. These functions are:

- Forward and reverse drive.
- Articulated steering.
- Lifting and lowering.
- Tilting of the tool carrier.
- Locking the attachments.
- Controlling / powering of attachments.

The Wheel Loader is equipped with a dashboard, which contains various controls and indicators.

The Wheel Loader is equipped with a lifting arm. The forces that can be provided by the arm strongly depend on the position of the lifting arm and the position of the load.

Ensure at all times that the load is in the lowest possible position when driving and/or steering. As the driver you are responsible for the safe operation of the machine.

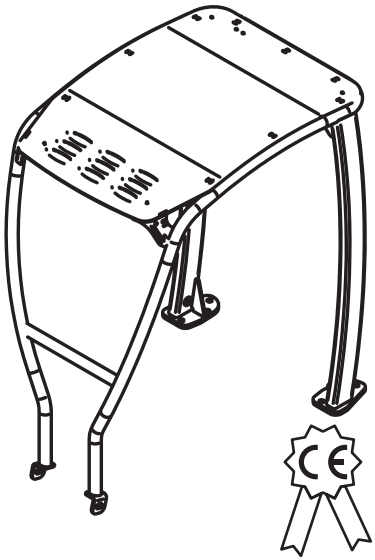
ROPS + FOPS PROTECTION

The Wheel Loader has a ROPS. The safety structure is tested according to the “EN ISO 3471" standard (ROPS: Roll-over protective structures).

The Wheel Loader has a FOPS. The safety structure is tested according to the “EN ISO 3449" standard (FOPS: Falling-object protective structures).

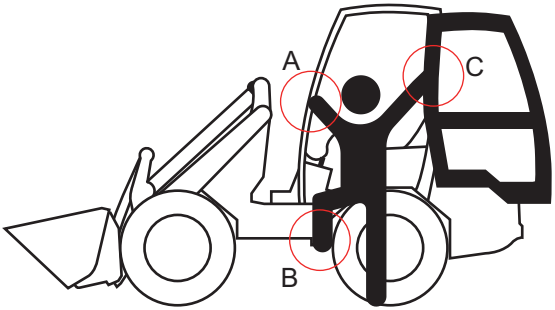
FOPS: **EN ISO 3449**

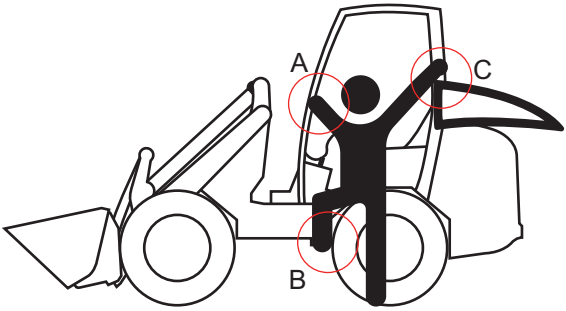
ROPS: **EN ISO 3471**



ENTERING AND EXITING

⚠ CAUTION:
Maintain three-point contact and face the machine at all times when entering and exiting. Do not use the steering wheel for entry or exit. Never enter or exit a moving machine. Failure to maintain three-point contact may result in injury.





4. SAFETY

SAFETY

This manual and decals on the machine warn of safety hazards and should be read and observed closely.

Before operating the machine, first read and study the safety information in this manual. Additionally, anyone who operates or works on the machine must be familiar with these safety precautions.

This safety alert symbol means ATTENTION! ALWAYS BE ALERT! YOUR SAFETY IS INVOLVED! This symbol is used throughout this operator manual and on the decals on the machine.

⚠ DANGER “DANGER” indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

⚠ WARNING “WARNING” indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

⚠ CAUTION “CAUTION” indicates a potentially hazardous situation, which, if not avoided, may result in minor injury or property damage. It is also used to alert users of unsafe practices.

It is essential that operators are thoroughly trained in the safe operation of the machine and handling loads. Operators must not be physically or mentally impaired. Do not allow minors or unqualified personnel to operate the machine, or to be near the machine unless they are properly supervised. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

Use of this machine is subject to certain hazards that cannot be eliminated by mechanical means, but only by exercising intelligence, care and common sense.

Such hazards include: hillside operation, overloading, load instability, poor maintenance, and using the machine for a purpose for which it was not intended or designed.

Tobroco Machinery LLC always takes operator's safety into consideration during the design process. Guards and shields are provided, which protect the operator and bystanders from moving parts and other hazards. Operators must be alert,

however, because some areas cannot be guarded or shielded without preventing or interfering with proper operation.

Different applications may require optional safety equipment. Be sure you know the work site hazards and equip the machine and the operator as necessary. The information in this manual does not replace any applicable safety rules and laws.

Before operating the machine, know the rules and laws for your area. Make sure the machine is equipped as required according to these rules/laws.

Remember that some risks of injuries may not be immediately apparent.

Exhaust gases and noise pollution may not be visible, but these hazards can cause permanent injuries.

Some photographs in this manual may show doors, guards and shields open or removed for the purposes of illustration only. Be sure that all doors, guards and shields are in the proper operating positions before starting the engine to operate the machine.

ROPS/FOPS

⚠ WARNING

The machine is for the safety of the operator always equipped with a four-post ROPS/FOPS, which may never be removed or modified. See chapter operation, section ROPS + FOPS.

Mandatory Safety Shutdown Procedure

BEFORE cleaning, adjusting, lubricating, fueling, or servicing the machine, or leaving it unattended:

1. Bring the machine to a complete stop on a level surface. Avoid parking on an incline or hillside, but if this is not possible, park along the slope, not across. Prevent the machine from moving, block the tires with wedges for example.
2. Be sure all working equipment and/or attachments are stopped and the auxiliary valve is in neutral.
3. Lower the lift arm and attachment completely.
4. Place forward/reverse drive switch (on top of the joystick) into the neutral position.
5. Apply the parking brake.
6. Move the throttle to low idle position and shut off the engine.
7. Wait for all movement to stop. Turn the ignition key to the "I" or RUN position and move the multi-purpose joystick in all directions to verify that the hydraulic system is de-pressurized.
8. If so equipped, press the auxiliary hydraulics pressure relief control. After pressing, make sure this control returns to the neutral position.
9. Turn off the ignition.
10. Unfasten the seat belt and remove the ignition key and take it with you. Exit the machine using the hand holds.

ONLY when these precautions have been taken can you be sure it is safe to proceed. Failure to follow this procedure could result in death or serious injury.

Before Starting

- Do not remove or modify the Roll-Over Protective Structure ("ROPS"). Modifications, such as welding, drilling or cutting, can weaken the structure and reduce the protection it provides. A damaged ROPS cannot be repaired - it must be replaced.
- Never operate the machine without a ROPS or FOPS installed.
- To ensure safe operation, replace damaged or worn-out parts with genuine service parts.
- The machine is designed and intended to be used only with approved attachments. To avoid possible personal injury, equipment damage and performance problems, use only attachments that are approved for use on and within the operating capacity of the machine, see chapter “Technical data”. Contact the Tobroco Machinery LLC service department for information on attachment approval and compatibility with specific machine models. Tobroco Machinery LLC cannot be responsible if the machine is used with a non-approved attachment.

- Remove all trash and debris from the machine every day, especially in the engine compartment, to minimize the risk of fire.
- Always face the machine and use the hand holds and steps when entering and exiting the machine. Do not jump off the machine. See chapter “Operation”.
- Do not use other starting aids than the engine pre-heating. Engine pre-heating can cause ether or other starting fluid to detonate, causing injury or damage.
- Walk around the machine and inspect it before using it. Look for damage, loose or missing parts, leaks, etc.
- Warn all nearby personnel before starting the machine.
- Check for proper tire pressure in all four tires before operating the machine and add air if necessary. Improperly pressurized tires adversely affect machine stability. Regularly check wheel fasteners for tightness. See chapter “Maintenance”.
- Contact the proper local authorities for utility line locations BEFORE starting to dig. In North America, contact the North American One-Call Referral System at 8-1-1 in the U.S., or 1-888-258-0808 in the U.S. and Canada.
- Below-ground hazards also include water mains, tunnels and buried foundations. Know what is underneath the work site before starting to dig.
- Before working near power lines (either above-ground or buried cable type), always contact the power utility and establish a safety plan with them.
- If temperatures are changing, be cautious of dark and wet patches when working or traveling over frozen ground. Stay away from ditches, overhangs and other weak support surfaces.
- The operator's area, steps and hand holds must be free of oil, dirt, ice and unsecured objects.
- If a lighting system is installed, check its operation before working in darkness.
- Always keep lights, mirrors and windows clean. Poor visibility can cause accidents.
- NEVER start the engine if there is any indication that maintenance or service work is in progress, or if a warning tag is attached to the controls.
- Replace damaged safety decals and a lost or damaged operator manual.
- Terrain and soil conditions at the work site, approaching traffic, weather-related hazards and any above-or below-ground obstacles and hazards should be observed and monitored by all work crew members.
- Adjust the seat to allow full actuation of all controls. Never adjust the seat during machine operation.
- Read the operator manual provided with each attachment used with the machine before starting the engine.
- Before working on or with the machine, remove jewelry, tie back long hair, and do not wear loose-fitting garments, such as, scarves, ties, unzipped jackets, etc., which could become caught in the moving parts of the machine and cause injury.

During Operation

- ALWAYS fasten the seat belt securely and properly. Never operate the machine without the seat belt fastened around the operator.
- Check indicators and displays for normal conditions after starting the engine. Listen for unusual sounds and remain alert for other potentially hazardous conditions.
- Control the machine cautiously and gradually until fully familiar with all the controls and handling.
- Do not overload the machine. See chapter “Technical data”.
- Do not raise or drop a loaded bucket or attachment suddenly. Abrupt movements under load can cause serious instability.
- Check that attachments are securely fastened to the attachment hitch before working.
- Never activate the float function with the bucket or attachment loaded or raised, because this will cause the lift arm to lower or bucket to dump rapidly.
- Never operate the machine without a ROPS or FOPS installed.Machine stability is affected by: the weight of the load being carried, height of the load, machine speed, turn angle, width of the machine across the tires, abrupt control movements and driving over uneven terrain.

⚠ WARNING **DISREGARDING ANY OF THESE FACTORS CAN CAUSE THE MACHINE TO TIP, THROWING THE OPERATOR OUT OF THE SEAT OR MACHINE, RESULTING IN DEATH OR SERIOUS INJURY.**

Therefore: ALWAYS operate with the seat belt fastened around the operator.

- Do not exceed the machine's rated operating capacity; see chapter “Technical data”. Be aware that effective operating capacity is reduced when the machine is turned.
- Machine stability is reduced when the machine is turned.
- Be aware that attachments effect the handling and balance of the machine. Adjust the operation of the machine as necessary when using attachments.
- Carry the load low. Move the controls smoothly and gradually, and operate at speeds appropriate for the conditions.
- Do not use the machine to lift or transport people. Do not allow others to ride on the machine or attachments, because they could fall or cause an accident.
- Always look to the rear, over both shoulders, before backing up.
- Only start the engine while seated in the operator's seat with the seat belt fastened around the operator.
- Only operate the controls while seated in the operator's seat with the seat belt properly fastened.
- Always keep hands and feet inside the operator's compartment while operating the machine.

- New operators must first operate the machine in an open area away from bystanders. Practice with the controls until the machine can be operated safely and efficiently.
- Wear safety goggles, ear and head protection as needed while operating the machine. Operator must wear protective clothing when appropriate.
- Exhaust fumes can kill. Do not operate the machine in an enclosed area without adequate ventilation. Internal combustion engines deplete the oxygen supply within enclosed spaces and may create a serious hazard unless the oxygen is replaced.
- Do not drive too close to an excavation or ditch. Be sure that the surrounding ground has adequate strength to support the weight of the machine and the load.
- Never allow anyone under a raised lift arm. Lowering the lift arm or a falling load can result in death or serious personal injury.
- Avoid slowing suddenly while carrying a load. Sudden slowing can cause the load to drop off the attachment, or cause the machine to tip over.
- Be aware of overhead obstacles. Any object near the lift arm could represent a potential hazard, or cause the operator to react suddenly and cause an accident. Use a spotter or signal person when working near bridges, phone lines, work site scaffolds, or other obstructions.
- Slow down the work cycle and use slower travel speeds in congested or populated areas. Use commonly understood signals so that other members of the work crew can warn the operator to slow or halt work in a potentially hazardous situation.
- Use a signal person if you cannot see the entire work area clearly, in high traffic areas and whenever the operator's view is not clear.
- Do not place limbs near moving parts. Severing of body parts can result.
- Do not use the loader to lift or transport people.
- Stay alert for people moving through the work area. When loading a truck, the operator should always know where the driver is.
- Do not drive into materials at high speeds to avoid being thrown forward and injured.
- Do not turn off the ignition switch while driving. Turning off the ignition will cause sudden hydrostatic braking, which may cause possible loss of control, injury and/or tipping of the machine.
- The engine hood must never be opened while the engine is running.
- In cold weather, avoid sudden drive movements and stay away from even slight slopes. The machine can slide sideways on icy slopes.
- Snow accumulation can hide potential hazards. Use care while operating and while using the machine to clear snow.
- If the machine becomes damaged or malfunctions, stop the machine immediately and lock and tag it. Repair the damage or malfunction before using the machine again.

- Never jump off the machine. Never get on or off a moving machine. Always leave the machine while facing the machine using the steps and hand-holds. See chapter “Operation”.

Provision for Stability / Avoiding Rollover Accidents

- Machine stability is affected by: the weight and center of gravity of the load being carried, height of the load, machine speed, turn angle, width of the machine across the tires, abrupt control movements and driving over uneven and/or soft terrain. DISREGARDING ANY OF THESE FACTORS CAN CAUSE THE MACHINE TO TIP, THROWING THE OPERATOR OUT OF THE SEAT OR MACHINE, RESULTING IN DEATH OR SERIOUS INJURY. Do not exceed the machine's rated operating capacity, especially when turning, because this reduces the load that will cause the machine to tip over. Carry the load low, and operate at speeds appropriate for the conditions.
- Operate the controls smoothly to prevent jerking or bouncing. Operate on level, stable surfaces. Load, unload and turn on solid, level ground.
- Drive up and down inclines, not across them. Drive slowly on inclines. Keep the heavy end of the machine pointed uphill.
- Evenly distribute the load on the attachment. Secure unstable loads so they do not shift or fall.
- Do not make sharp turns on inclines. Avoid steep inclines.
- Use care on loose ground. Loose, soft ground or uneven, broken terrain can cause dangerous side-load conditions and possible tip over and injury.
- If you must drive across railroad tracks, ditches, curbs or similar surfaces, cross straight up and down the slopes and drive slowly.
- Stay away from steep edges on loading docks, ramps, ditches, retaining walls and trenches.
- Avoid sharp turns and high speeds while carrying loads. The stability of the machine is greatly reduced during sharp turns. Additionally, the load may shift to the side during turns, greatly increasing the possibility of a rollover.
- When unloading trucks or lifting loads off elevated surfaces, approach the load straight ahead and back straight away with the load. Slowly lower the load to the lowest possible transport position before turning.
- To avoid tipping, keep loads as low as possible during transport and while turning. Keep the bottom of the bucket or load no higher than wheel axle height during transport and turning.
- Do not turn the machine when lifting loads. As loads are lifted, a drastic shift in stability can occur, which can greatly increase the possibility of a tip-over or rollover.
- Keep tires inflated to recommended pressure.
- If the machine becomes unstable and starts to tip, keep the seat belt fastened, hold on firmly and brace yourself. Lean away from the point of impact and stay with the machine. If tipping occurs, DO NOT jump from the machine. The

machine is equipped with rollover protection, which can only protect the operator while in the operator's seat. Trying to escape from a tipping machine can result in death or serious personal injury.
- The ROPS must be replaced if a overturn incident occurs. The protection offered by the ROPS will be impaired if it has been damaged in an overturn incident.
- Never operate the machine without a ROPS or FOPS installed.

Electrical Energy

- Stay away from high-voltage lines. Serious injury or death can result from contact or proximity to high-voltage electric lines. The machine does not have to make physical contact with power lines for current to be transmitted. Use a spotter and hand signals to keep away from power lines not clearly visible to the operator.
- Depending upon the voltage in the power line and atmospheric conditions, strong current shocks can occur if the bucket is closer than 3 m (10 ft.) to the power line. Very high voltage and rainy weather can further increase the safe operating distance.
- If the machine comes into contact with a live wire:
  - Do not leave the machine.
  - If possible, drive the machine out of the danger area.
  - Warn others not to approach or touch the machine.
  - Have the live wire de-energized.
  - Do not leave the machine until the wire has been safely de-energized.
- Work on the machine's electrical system must be performed only by licensed technicians.
- Inspect and check the machine's electrical equipment at regular intervals.
  - Problems found, such as loose connections or scorched cables, much be repaired before using the machine.
- Only use proper, original equipment fuses/circuit breakers with the specified current rating. Turn off the machine immediately if there is any indication of a problem with the electrical system.

Service Safety Practices

- Only trained and authorized personnel, with a full awareness of safe procedures, should be allowed to operate or perform maintenance or service on the machine.
- Use warning tag/control lockout procedures during service. Alert others that service or maintenance is being performed by tagging operator's controls - and other machine areas if required - with a warning notice.
- Never attempt to bypass the key switch to start the engine.
- Always wear safety glasses with side shields when striking metal against metal. In addition, it is recommended that a softer (chip-resistant) material be

used to cushion the blow, otherwise, serious injury to the eyes or other parts of the body could result.

- Stay clear from underneath the operator's platform as it is tilted.
- Always secure the operator's platform in the tilted position with the tilt support. Never allow anyone under the operator platform if the tilt support is not in place.
- Always secure the operator's platform to the chassis with anchor bolts, nuts and washers before driving and using the machine.
- Check operator's platform tilt components and tilt support components at regular intervals. Replace damaged or worn parts immediately.
- Do not smoke or have any spark- or flame-producing equipment or materials in the area while filling the fuel tank or working on the fuel or hydraulic systems.
- Keep fuel and other fluid reservoir caps tight. Do not start the engine until caps have been secured.
- Always lower lift arm or elevated items, or securely support/secure them, before performing any maintenance or service on the machine.
- Do not attempt to remove the radiator cap after the engine has reached operating temperature or if it is overheated. At operating temperatures, engine coolant is extremely hot and under pressure. Always wait for the engine to cool before attempting to relieve pressure and remove the radiator cap. Failure to heed this warning could result in severe burns.
- Use solid support blocking. Never rely on jacks or other inadequate supports when maintenance work is being done. Never work under any equipment supported only by jacks.
- Refer to the parts manual for information about assembly of components. Always use the correct parts and the proper torques - incorrect fastener connections can dangerously weaken assemblies.
- Exhaust fumes can kill. Do not operate the machine in an enclosed area unless there is adequate ventilation.
- Operators should also be aware of any open windows, doors or ductwork into which exhaust gases may be carried, exposing others to danger.
- Do not run the engine if repairs are being performed alone. There should always be at least two people working together if the engine must be run during service.
- Always use adequate tools while working on the machine. Inappropriate tools could break or slip, causing injury, or they may not adequately perform intended functions.
- Unless necessary for servicing the engine, do not open the engine cover while the engine is running.
- Do not use the machine when maintenance is scheduled to be performed. Postponing maintenance can result in a serious reduction of the service life of the machine, more serious and costly equipment failures, and contribute to unsafe operating conditions.

- Only tow the machine as described in this manual (see chapter “Commissioning”).
- Do not work on hot engines, cooling systems or hydraulic systems. Wait for the engine to cool. When engine lubrication oil, gearbox lubricant or other fluids require changing, wait for fluid temperatures to decrease to a moderate level before removing drain plugs.
- All safety equipment must be maintained so it is always in good condition.
- Safety-critical parts must be periodically replaced. Replace the following potentially fire-related components as soon as they begin to show signs of deterioration:
  - Fuel system flexible hoses, fuel tank overflow drain hose and the fuel filler cap.
  - Hydraulic system hoses, especially the pump outlet lines. Replace hydraulic hoses every 6 years from the date of manufacture (month or quarter, and year) is indicated on the hydraulic hoses.
- Keep mounting brackets and hose and cable routing straps tight. Hose routing should have gradual bends.
- After cleaning the machine, examine all fuel, lubricant and hydraulic oil lines for leaks, chafe marks and damage. Tighten any loose connections and repair or replace parts as necessary.
- When handling oil, grease and other chemical substances, follow the product-related safety requirements Material Safety Data Sheet (MSDS) carefully to prevent burning or scalding.
- Do not use the machine in an environment where the hot muffler could present a fire hazard, such as hay or straw storage facilities.

Battery Hazards

- Use the battery disconnect switch, or disconnect the negative battery cable from the negative battery terminal, before performing electrical service or electrical welding on the machine (see chapter “Commissioning’).
- When disconnecting at the battery terminals, remove the cable connected to the negative terminal first. When installing a battery, connect the positive terminal cable first.
- Sparks and open flames can set off explosive battery gas from incidental contact or static discharge. Turn off all switches and the engine when working on batteries. Keep battery terminals tight. Contact between a loose terminal and post can create an explosive spark.
- When jump-starting from another machine, do not allow the machines to touch. Wear safety glasses or goggles while battery connections are made.
- Never jump-start the machine if it has a frozen battery. The battery could explode. Thaw a frozen battery before charging it or attaching jumper cables.
- Flush eyes with water for 10-15 minutes if battery acid is splashed in the face and consult a medical doctor immediately. Anyone swallowing battery acid

must have immediate medical aid. Call the Poison Control Center at 1-800-222-1222 in the United States.

Fire Hazards

- The machine must be cleaned on a regular basis to avoid the buildup of flammable debris, such as leaves, straw, etc. Accumulated debris, particularly in the engine compartment, creates a fire hazard.
- The machine has several components that operate at high temperatures under normal operating conditions, primarily the engine and exhaust systems. Also, the electrical system, if not properly maintained or if damaged, can arc or produce sparks. These conditions make it extremely important to avoid circumstances where explosive dust or gases can be ignited by arcs, sparks or heat.
- Add fuel, oil, antifreeze and hydraulic fluid to the machine only in well-ventilated areas. The machine must be parked with controls, lights and switches turned off. The engine must be turned off before fueling.
- Do not smoke while filling the fuel tank, while working on the fuel or hydraulic systems, or while working around the battery.
- Take care to avoid spilling combustible fluids, such as oil or fuel, on a hot engine.
- Static electricity can produce dangerous sparks at the fuel-filling nozzle. In very cold, dry weather or other conditions that could produce static discharge, keep the tip of the fuel nozzle in constant contact with the fuel filler neck, to provide a ground. Be sure that a ground wire is connected from the machine to the service truck before fueling begins.
- Keep fuel and other fluid reservoir caps tight and do not start the engine until caps have been secured.
- It is recommended that a 2.27 kg (5 lbs.) or larger, multi-purpose "A/B/C" fire extinguisher be mounted within reach of the operator. Check the fire extinguisher periodically and be sure that work site crew members are trained in its use.
- Oil leaks can ignite on hot components. Repair any damaged or leaking components before using machine.

Transporting the Machine

Obey federal, state and local over-the-road regulations. Check restrictions regarding weight, height, width and length of a load. The hauling vehicle, trailer and load must all be in compliance with applicable regulations (see chapter “Commissioning”).

Lifting the Machine with a Crane

Only lift the machine according to the following guidelines:

- The crane and rigging equipment must have sufficient capacity. See chapter "Technical Data”.
- Secure the machine against unintentional movement. Use taglines as needed.
- Do not lift the machine with persons on or in the machine.
- Any person guiding the crane operator must be within sight or sound of the crane operator.
- Lift the machine only with the standard bucket installed, with the bucket empty and in the transport position.
- Persons must stay clear of, and not under, the machine when it is lifted.
- Fasten the rigging equipment so the machine is horizontal when it is lifted.
- Do not lift the machine by the cab. Attach the rigging equipment only at the lift points identified with the safety decal for lifting points.
- Lift the machine according to "Lifting", see chapter “Commissioning”.

Hazard and Hazard Avoidance Symbols


Safety Hazard


Fire Hazard


Run-Over Hazard


Injected Fluid Hazard


Hot Liquids Hazard

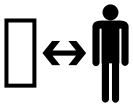

Poisonous Vapors Hazard


No Smoking

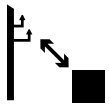

No Open Flame

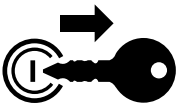

Read Operator Manual


Wear Seatbelt


Keep Distance


Waer Eye Protection


Avoid Power Lines


Remove Key


Crush Hazard


Read Maint-enance/Service Information


Crush Hazard


Hot Surface Hazard


Rotating Fan Keep Away


Safety Lock


Falling Object Hazard

Safety Decals

The machine has decals around the machine that provide safety information and precautions. These decals must be kept legible. If missing or illegible, they must be replaced promptly. Replacements can be obtained from your dealer. Refer to the Parts Manual for decal part numbers and ordering information.

SAFETY SIGNS

This chapter explains the machine sign (safety decals) on the machine. To work safely with the Wheel Loader and when carrying out maintenance it is essential that you follow all instructions in this manual.

Warning! Risk of injury if the safety decals are no longer clearly visible or legible. Immediately attach new safety decals!

The following icons indicate safety hazards for man and machine:

CAUTION:
Risk of accidents and personal injuries

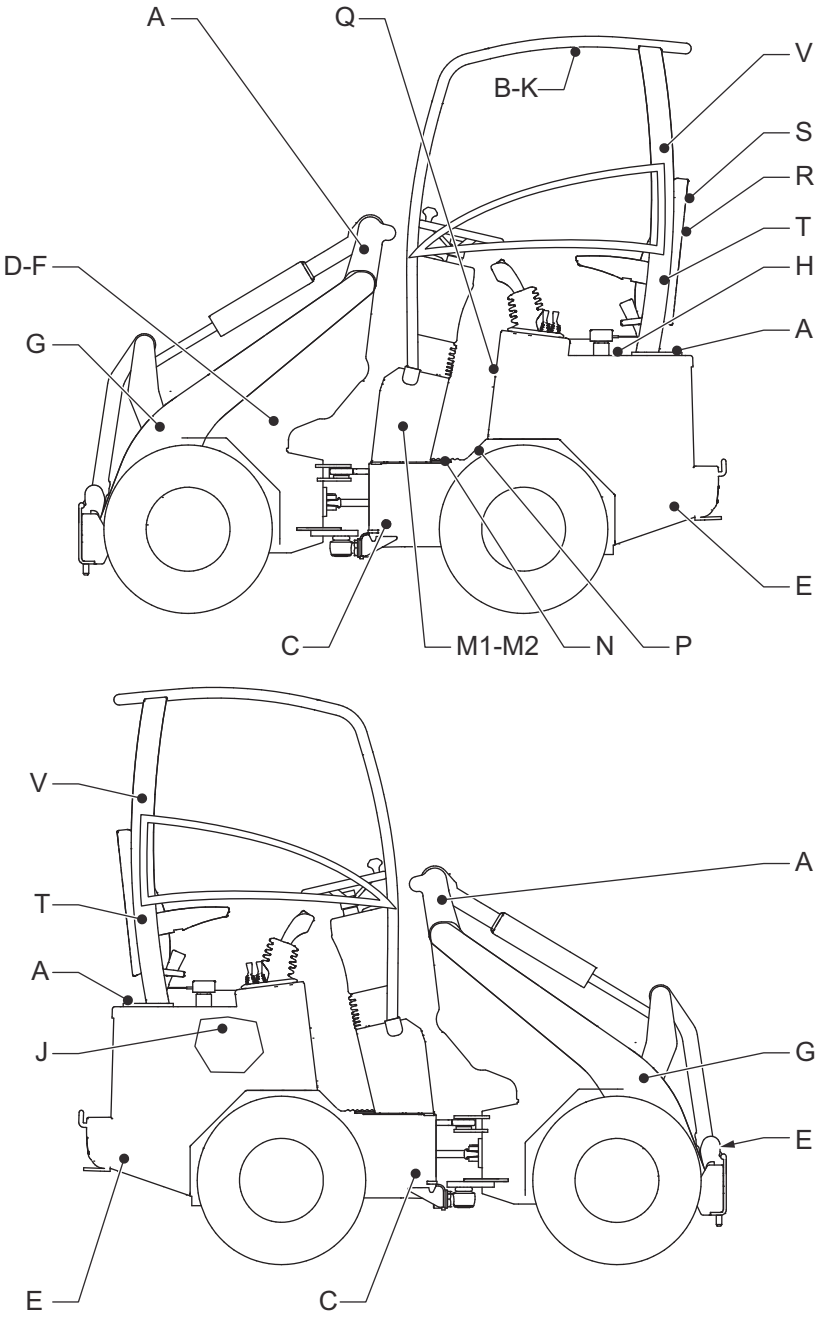
CAUTION:
Risk of technical damage to the Wheel Loader

New Decal Application

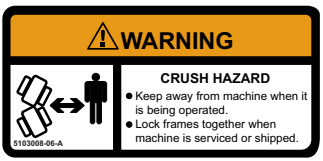
Surfaces must be free of dirt, dust, grease and foreign material before applying the decal. Remove the smaller portion of the decal backing paper and apply the exposed adhesive to the clean surface, maintaining proper position and alignment. Peel the rest of the backing paper and apply hand pressure to smooth out the decal surface. Refer to the following pages for proper decal locations.

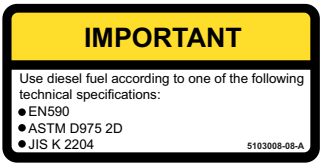
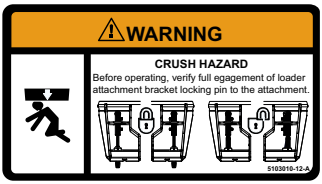
If replacing a part that has a decal on it, ensure that the replacement part has the same decal

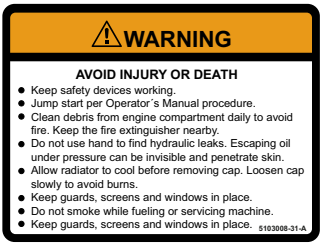
SAFETY DECAL LOCATIONS.



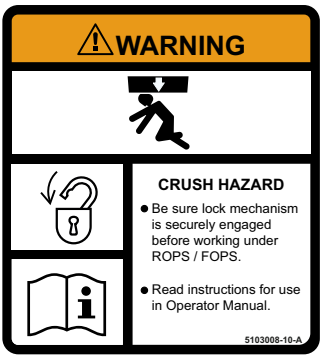
⚠ CAUTION:
Not all the decals are used on the machine

ANSI-Style and Common Safety Decal Location		
A		**Lift Point Decal** Located at the rear of the machine and near the lift holes/rods near the top of the front frame. • Apply lift hooks only in these location, See chapter “Commissioning”.
B		**WARNING: Do not modify ROPS; replace damaged ROPS; wear seat belt; NEVER REMOVE ROPS.** Located inside the ROPS structure. • The protection offered by this ROPS will be impaired if it has been subjected to any modification, structural damage, or has been involved in an overturn incident, this ROPS must be replaced after a roll-over. Seat belts must be worn while operating vehicle.
C		**WARNING: Crush Hazard** Located on top of the articulation joint on both sides. • Keep away from machine when it is being operated. • Lock frames together when machine is serviced or shipped.
D		**USE DIESEL FUEL ONLY!** Located next to the fuel filler neck.
E		Tie-down point, located on lift arm (front, both sides) and frame (rear, both sides). • Only use tie-down points indicated on loader when transporting loader.

ANSI-Style and Common Safety Decal Location		
F		**IMPORTANT** Located next to the fuel filler neck. • Use ONLY diesel fuel according to one of the following technical specifications: • EN590 • ASTM D975 2D • JIS K 2204. See chapter “Maintenance”.
G		**WARNING: Crush Hazard** Located on both side of the lift arm. • Before operating, verify full engagement of loader attachment bracket locking pin to the attachment.
H		**USE HYDRAULIC FLUID ONLY!** Located next to the hydraulic fluid reservoir filler neck.
J		**WARNING: Rotating Fan / Hot Surface Hazards** Located on the right side of the firewall inside the engine compartment. On machines with air conditioning, located on the back of the air conditioning enclosure. • Keep hands out or stop engine. • Do not touch hot engine or hydraulic system parts.

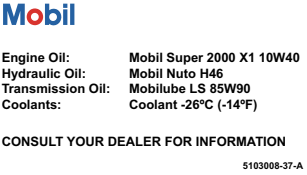
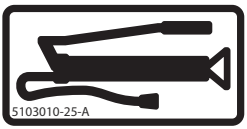
ANSI-Style and Common Safety Decal Location		
K		**WARNING: Avoid Injury or Death** Located on the left side of the firewall inside the engine compartment. On machines with air conditioning, located on the back of the air conditioning enclosure. • Keep safety devices working. • Jump start per Operator Manual procedure. • Keep guards, screens and windows in place. • Do not smoke while fuelling or servicing machine. • Clean debris from engine compartment daily to avoid fire. Keep fire extinguisher nearby. • Do not use hand to find hydraulic leaks. • Escaping oil under pressure can be invisible and penetrate skin. • Allow radiator to cool before removing cap. Loosen cap slowly to avoid burns.
L		**IMPORTANT** Located on top of the radiator inside the engine compartment. • Do not use ether or other starting fluids to start this engine — warranty may be voided.
M1		**WARNING: Avoid Injury or Death** Located on the left side of the control column. • ALWAYS wear seatbelt. • No riders! Never use work tool as work platform. • Keep out from under lift arm unless lift arm is supported. • Operate only from operator’s seat. • Prevent load rolling down lift arm onto operator.

ANSI-Style and Common Safety Decal Location		
M2		**WARNING: Avoid Overturn** Side stability is reduced when: 1) turning; 2) operating on rough terrain or side slopes; and 3) carrying load raised. • Carry load low. • Do not exceed Rated Operating Capacity. • Avoid steep slopes and high speed turns. • Travel up and down slopes with heavy end uphill.
N		**WARNING: Avoid Injury or Death** Located on the control column, facing the operator. Always follow "Mandatory Safety Shut down Procedure." 1) Lower equipment to ground. 2) Reduce throttle, apply parking brake. 3) Shift to neutral. 4) Stop engine, remove key.

ANSI-Style and Common Safety Decal Location		
O		**WARNING: Avoid Injury or Death** Located on the control column, facing the operator. • Maintain 3-point contact during entry and exit. • Inspect work area; avoid all hazards. • Look in the direction of travel. Keep children and bystanders away. • Start and operate machine only from seat. • Never carry riders. Do not lift personnel in bucket. • Operate only in well ventilated area. • Keep away from electric power lines, avoid contact. • Do not wear loose clothing while operating or servicing machine. • Wear any needed Personal Protective Equipment.
P		**WARNING: Crush Hazard** Located under the operator's platform on top of the left rear wheel well. • Be sure lock mechanism is securely engaged before working under ROPS/ FOPS. • Read instructions for use in Operator Manual.

ANSI-Style and Common Safety Decal Location		
Q		**WARNING: Read Operator Manual** Located behind the operator's seat on the document box cover. • Read Operator Manual and all safety signs before using machine. • The owner is responsible to ensure all users are instructed on safe use and maintenance. • Check machine before operating. Service per Operator Manual. • Contact dealer (or manufacturer) for information and service parts.
R		**WARNING: Falling Object Hazard** Located under the parking hand brake lever. • Falling-Object Protective Structure (FOPS) must be installed if there is a risk of falling objects.
S		**WARNING: Avoid Injury or Death** Located on the control column, facing the operator. • Hold on to the steering wheel if the loader tips over. • NEVER jump out the loader.

ANSI-Style and Common Safety Decal Location		
T		**WARNING: Avoid Injury or Death** Located under the parking brake lever. • When parked; driving or working the doors must always be closed. • NEVER remove the doors.
U		**WARNING: Avoid Injury or Death** Located under the parking brake lever. • When parked; driving or working the doors must always be closed. • NEVER remove the doors.
V		**WARNING: Avoid Injury** Located along the door. • By entry and exit of the operator keep a safe distance. • Maintain 3-point contact during entry and exit. Do not grasp steering wheel during entry and exit.

ANSI-Style and Common Safety Decal Location		
W		**WARNING: Avoid Injury** Located along the door. • By entry and exit of the operator keep a safe distance. • Maintain 3-point contact during entry and exit. Do not grasp steering wheel during entry and exit.
X		**Oil specification**
Y		**Break fluid specification**
Z		**Escape route**
AA		**Indicates the grease points**

SLOPES

⚠ CAUTION:
If possible, do not drive on slopes. Do not drive across slopes.

When you drive on slopes, there is a risk of injury due to these causes:
- The machine can tip over.
- There is less traction and braking force of the wheels which can cause unexpected movement of the machine.

Only drive on slopes in these conditions:
- The attachment is empty.
- The lift arm is in the lowest position.
- The maximum angle of the slope is not more than 11.3° (20%).
- You drive straight up and down the slope.
- The machine is unarticulated.
- You drive up and down the slope with the heaviest end uphill.

When you operate the machine, including loads, the maximum slope at maximum load at the lowest speed is limited to 3° (5.3%). Steeper slopes are possible with smaller loads, at your discretion and responsibility. The maximum angle of the slope depends on these factors:
- The loading, weight, position and balance of the load.
- Your driving style and speed.
- Circumstances and the capacity of the surface, such as loose sand, and humidity of the surface.

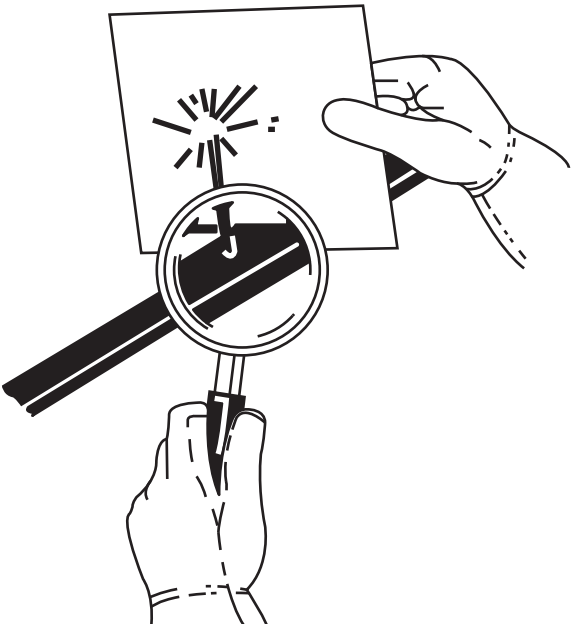
Stay at the ‘high’ side during transport on a slope.

When you load or unload the machine from a trailer, obey the instructions in the chapter ‘Commissioning’.

SAFETY - HYDRAULIC PARTS

- Exposed hydraulic hoses could react with explosive force if struck by a falling or overhead items. NEVER allow hoses to be hit, bent or interfered with. Replace any hoses that are damaged.
- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak.
- Do not smoke or have any spark- or flame-producing equipment or materials in the area while working on the hydraulic systems.
- Do not attempt to loosen or disconnect any hydraulic lines, hoses, fittings, covers or caps without first relieving hydraulic circuit pressure. Relieve hydraulic pressure by performing the Mandatory Safety Shutdown Procedure of the machine, and then slowly loosening the hydraulic reservoir filler cap. Be careful not to touch any hydraulic components that have been in recent operation, because they can be hot and cause burns.
- Do not work on hot hydraulic systems. Wait for the systems to cool. When fluids require changing, wait for fluid temperatures to decrease to a moderate level before removing drain plugs.
- Prior servicing, the system has to be depressurized completely!
- Safety-critical parts must be periodically replaced. Replace hydraulic system hoses as soon as they begin to show signs of deterioration, especially the pump outlet lines. Replace hydraulic hoses every 6 years from the date of manufacture (month or quarter, and year) is indicated on the hydraulic hoses.
- After cleaning the attachment, check all hydraulic oil lines for leaks, chafe marks and damage. Tighten any loose connections and repair or replace parts as necessary.
- Add hydraulic fluid to the attachment only in well-ventilated areas.
- Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid must be surgically removed by a doctor or gangrene may result. If your doctor is not familiar with this type of injury, ask him or her to research it immediately to determine proper treatment.

- Wear safety glasses, protective clothing and use a piece of cardboard or wood when searching for hydraulic leaks. DO NOT USE YOUR HANDS! SEE ILLUSTRATION.



SAFETY PRECAUTIONS

⚠ CAUTION:
Risk of serious injury.

Read the operator manual of the Wheel Loader thoroughly before using the machine. This way you know exactly how to operate the Wheel Loader safely.

⚠ CAUTION:
Risk of serious injury.

For maintenance work: Stop engine, remove the ignition key and put the Wheel Loader on the parking brake. See the operator manual. This prevents dangerous situations which can arise if the Wheel Loader suddenly moves or when the lifting arm suddenly goes down. Also think about unforeseen actions by others.

⚠ CAUTION:
Risk of serious injury by collision.

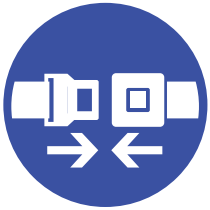
Ensure that bystanders keep at least 10 meters (11 yards) distance from the travel path of the Wheel Loader. Large bulky loads can interfere with the driver's sight.

⚠ CAUTION:
Risk of injury due to entrapment by moving parts.

Operate the controls only from the driver's seat. Ensure that bystanders keep clear within a radius of 4 meters (4.4 yards) from the Wheel Loader.

⚠ CAUTION:
Risk of serious injury.

Before driving, make sure you sit correctly in the driver's seat and always have your seat belt fastened. Make sure the seat, pedals and your shoes are free of contaminants which can cause accidents caused by slipping.



⚠ CAUTION:
Risk of serious injury when overloading the Wheel Loader.

The load on the Wheel Loader must not weigh more than indicated in section 'Technical Data'. Make sure the tool is evenly loaded and balanced.

⚠ CAUTION:
Risk of serious injury.

Hold the attachment approximately 30 cm (11.8 in) above the ground when driving over the road.

⚠ CAUTION:
Risk of serious injuries on slopes.

The Wheel Loader is designed for working on flat and hard surfaces. The maximum gradient is 3° at maximum load, driving with the lowest speed. Larger inclinations are possible with smaller loads, at the discretion and responsibility of the driver. Stay at the "high" side during transport on a slope.

⚠ CAUTION:
Risk of injury from involuntary movement.

Injury may result due to lack of traction and braking force of the Wheel Loader. Never drive across a slope. Only drive straight up or down a slope.

⚠ CAUTION:
Risk of serious injury when tipping over.

The Wheel Loader can tip over when riding on an uneven or damaged surface. Only drive straight up and down a slope, never across. The maximum angle of inclination to ride is highly dependent on:

- The loading, weight and balance of the load.
- The driving style and speed of the driver.
- Circumstances and the capacity of the soil (such as loose sand) and soil humidity.

⚠ CAUTION:
Pay attention to your surroundings!

Wear clothes in which you feel good and in which you can move easily.

⚠ CAUTION:
Risk of hearing damage.

This Wheel Loader can produce sound louder than 80 dB(A). The driver is therefore obliged to be wearing ear protection.

⚠ CAUTION:
Risk of serious injury from entrapment or fall.

It is not allowed to lift or transport persons with or on the Wheel Loader.

⚠ CAUTION:
Risk of serious injury from electrical power lines and other conductors.

Keep a safe distance from electrically conductive objects such as power lines, pylons and lamps. Nominal voltage safety distances:

- 0 to 1000 V: 1.0 m (1.1 yd)
- 1 kV to 110 kV: 3.0 m (3.3 yd)
- 110 kV to 220 kV: 4.0 m (4.4 yd)
- 220 kV to 380 kV: 5.0 m (5.5 yd)
- When unknown: 5.0 m (5.5 yd)

⚠ CAUTION:
Risk of serious injury.

The hydraulic system operates under high pressure. A leaky hose, pipe or coupling can cause serious injuries. Prior servicing, the system has to be depressurised completely!

A high pressure jet (up to 400 bar (5802 psi)) easily penetrates gloves, clothing and skin which causes serious injury and poisoning.

CAUTION:
Risk of injury by burning.

The hydraulic components, hoses, piping, engine and exhaust are very hot at operating temperatures.

CAUTION:
Risk of damage.

When hearing an unusual noise: Immediately shut down the engine and check the Wheel Loader and the hydraulic system for leaks. Check the lift and tilt parts for damage, cracks and bends. Lower lift arm before inspection!

CAUTION:
Prevent damage.

Tighten nuts and bolts periodically. See section ‘Maintenance’.

CAUTION:
Prevent damage.

Check daily:
- Fixings and hinges of the lift and tilt parts of the Wheel Loader
- The attachment bracket for damage and bends
- Lift and tilt cylinders
- The hydraulic system for any damage or leaks

CAUTION:
Risk of injury.

Ensure the Wheel Loader and its parts are fully and correctly supported when doing maintenance. Make sure the handbrake is applied.

⚠ CAUTION:
Risk of crushing.

- Avoid entrapment by the fan of the radiator.
- Risk of burns from hot engine parts, radiator or exhaust.

⚠ CAUTION:
Fire hazard!

- Stay away from the fuel tank with cigarette lighter, match or other open fire.
- Only fill the fuel tank in a well-ventilated area (preferably in the open air).
- Keep the Wheel Loader free from combustibles.

⚠ CAUTION:
Fire hazard!

Danger in flammable working environment. The Wheel Loader produces hot exhaust gases and possible sparks from the exhaust. Keep the Wheel Loader free of combustible substances. Be aware of flammable substances in the environment such as dust, straw etc.. The Wheel Loader can optionally be equipped with a holder for a fire extinguisher.

⚠ CAUTION:
Risk of carbon monoxide (CO) suffocation.

People can be seriously injured when the exhaust gases are not sufficiently removed. Always provide fresh air in the surroundings of the Wheel Loader.

⚠ CAUTION:
Danger when charging battery.

An explosive gas is being formed during charging of the battery. Cigarettes and open flames are prohibited! Only charge the battery in a well-ventilated area.

When handling batteries:

- Avoid skin contact with battery fluid. Wear protective clothing, such as safety glasses and gloves. The liquid is a highly corrosive acid. Upon contact, wash immediately with soap and water.
- In case of contact with eyes, rinse immediately with running water for at least 10 minutes and immediately get medical attention. Provide sufficient water and soap and make sure there is assistance in vocal range when performing work.
- Prevent shorting (sparking), ensure that no electrical connection between the battery poles is made. Make sure that no metal objects touch the battery, causing a spark or short circuit with the possible consequence of explosion.
- Any conductor (metal) contacting both poles will get extremely hot. Remove personal items such as rings, bracelets, necklaces and watches when handling batteries.

⚠ CAUTION:
Danger of personal injury.

One can be injured if the cable diameter or the electrical connection of the rectifier, fuses, earth connection etcetera has not been carried out correctly.

⚠ CAUTION:
Risk of serious injury!

Do not let the Wheel Loader be controlled by:

- Persons under the age of 16.
- Persons between the age of 16 to 18 years without supervision from any (experienced) person over 18 years.
- Persons without Wheel Loader experience and without supervision.
- Persons of who can be expected that they are not aware of the dangers of a Wheel Loader, such as for example a temporary workforce.

The Wheel Loader may only be driven by experienced drivers who have read this manual thoroughly and after you, the owner of Wheel Loader, have given a complete instruction on the operation and safety of the Wheel Loader.

The owner of the Wheel Loader is responsible for the fact that only trained and authorized persons are allowed to drive Wheel Loader.

⚠ CAUTION:
Risk of serious injury.

If safety instructions are not passed to other drivers, it can lead to serious injury. Let other drivers at all times read this manual thoroughly before they control the Wheel Loader.

⚠ CAUTION:
Prevent injury.

Use of public roads with the Wheel Loader is NOT allowed, unless the Wheel Loader is equipped with the country-specific “Roadway Package”, supplied by the manufacturer. Driving on public roads with a loaded attachment (bucket, pallet fork etc.) is NOT allowed.

Please note:
- The different dimensions and handling cause unexpected situations for other road users. Driving on public roads should therefore be avoided as much as possible.
- Driving on the highway is not permitted.
- When driving on public roads, the Wheel Loader is subject to the governmental and local traffic rules and requirements.
- In addition to the current insurance policies, an insurance for driving on public roads may be required.
- The maximum speed of an earthmoving machine is 25 km per hour (15.5 mph).
- Attachments should be protected. Read the manual of the attachment.
- The attachment should be in a position such that it will not interfere with the driver’s sight or endanger other road users. Also make sure that the vehicle lighting remains visible for other road users. Read the manual of the attachment.

⚠ CAUTION:
Risk of serious injury.

Adjust your speed according to road conditions.
- Make sure you always have control of the Wheel Loader.
- Reduce your speed on rough terrain and when taking sharp turns.
- Be especially careful when manoeuvring and reversing.
- Ensure a good overview of the work environment.

⚠ CAUTION:
Risk of injury.

When the safety icons are not (longer) clearly visible or legible, immediately apply new decals (contact your dealer).

⚠ CAUTION:
Risk of injury.

Maintenance and repair work may only be performed by professionals who are approved by Tobroco Machinery LLC.

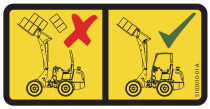
Only original and Tobroco Machinery LLC approved components are allowed to be used on the Wheel Loader.

⚠ CAUTION:
Risk of injury.

The driver provides the limits for ‘safe working’ with the Wheel Loader. Do not take any risks. Take care with obstacles, uneven terrain and in crowded areas.

⚠ CAUTION:
Risk of injury by falling load.

- The driver can be struck by falling objects.
- It is not allowed to stack and lift (multiple) objects or loose cargo above the attachment’s height.



CAUTION:
Risks when handling cargo.

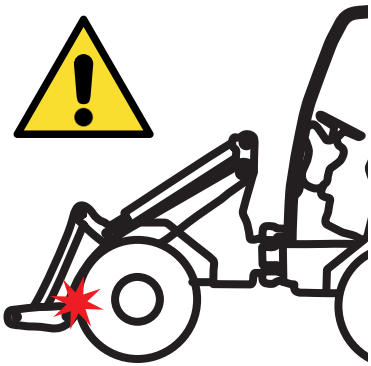
Working with the Wheel Loader may entail additional risks. Through the load it is also possible that driving characteristics and responsiveness of the Wheel Loader is strongly influenced.

Therefore observe the following precautions:

- The load on the Wheel Loader must not weigh more than indicated in section “Technical data”. Make sure the load in/on the tool is evenly balanced.
- Move the Wheel Loader with the tool up to 30 cm above the ground.
- Adjust your speed according to road and environmental conditions.
- Make sure you always have full control over the Wheel Loader.
- Reduce your driving speed on rough terrain and sharp turns.
- Be especially careful when manoeuvring and reversing.
- Provide a good overview on the work environment.
- The driver determines the limits for ‘safe working’ with the Wheel Loader.
- Do not take risks. Take care with obstacles, uneven terrain and crowded areas.
- It is not allowed to transport (multiple) objects or loose cargo that protrudes above the attachment. The Wheel Loader requires a (FOPS) safety roof or cabin when using certain attachments. The Wheel Loader can tip over when driving over uneven or damaged terrain. Moderate your speed.
- There is a risk of injury from involuntary movement due to lack of tension and braking force of the Wheel Loader.
- Only drive straight up and down a slope. Do not drive across slopes.

CAUTION:
Danger of technical damage!

Never tilt the attachment bracket when driving without attachment and with fully retracted lifting arm. Especially when the Wheel Loader is equipped with a special attachment bracket (e.g. Euro bracket). This can severely damage the tyre!



CAUTION:
Danger of technical damage!

Welding activities should only be performed by qualified personnel! Ensure supervision by qualified personnel when welding on or nearby containers which contain flammable materials! Contact your dealer if you have any questions.

- Disconnect the positive terminal from the alternator before starting any welding activities on the loader.
- Turn the main mass switch OFF.
- Attach the welding clamp as close as possible to the welding area.
- The welding current may not pass through any bolt, joint, gear or hydraulic cylinder.
- After welding, reconnect all the electrical connections and check their function.

5. TECHNICAL DATA

GENERAL

Engine	Kubota diesel engine
Power train	Hydrostatic with automotive control
Drive hydraulics	64 l/min (16.9 gpm), 320 bar (4641 psi)
Work hydraulics	29 l/min (7.7 gpm), 150 bar (2176 psi)
Driving speed	12 km/h (7.46 mph)
Differential lock	0% / 100%
Operating weight	1530 kg (3373 lb.)
Shipping weight	1000 kg (2205 lb.)

DIESEL ENGINE

	D204SW	**D254SW**
Make / Model	Kubota D722	Kubota D902
Power	15 kW / 20 hp	18 kW / 22 hp
Rotational speed min.	1400 rpm	1400 rpm
Rotational speed max.	3600 rpm	3200 rpm
Displacement	719 cm³ (43.9 CID)	898 cm³ (54.8 CID)
Torque	45 Nm (33 ft-lbf) @ 2200 rpm	55 Nm (41 ft-lbf) @ 2600 rpm

TIPPING LOADS

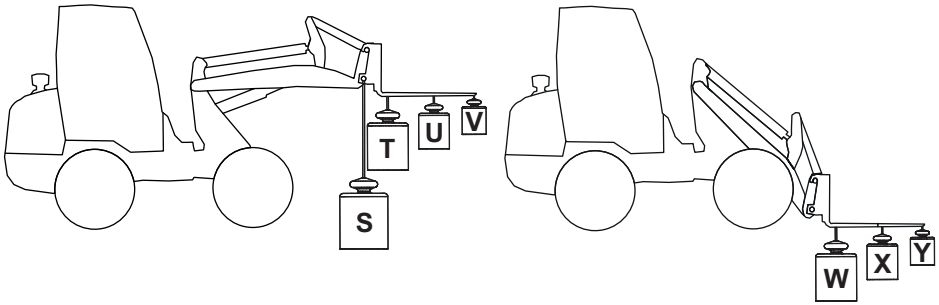
Lifting arm drift

⚠ CAUTION:
The lifting device slowly drops. Depending on the load can be up to 1 cm (0.4 inch) per minute (measured at the point “U”). Keep this in mind when parking the machine with a raised load.

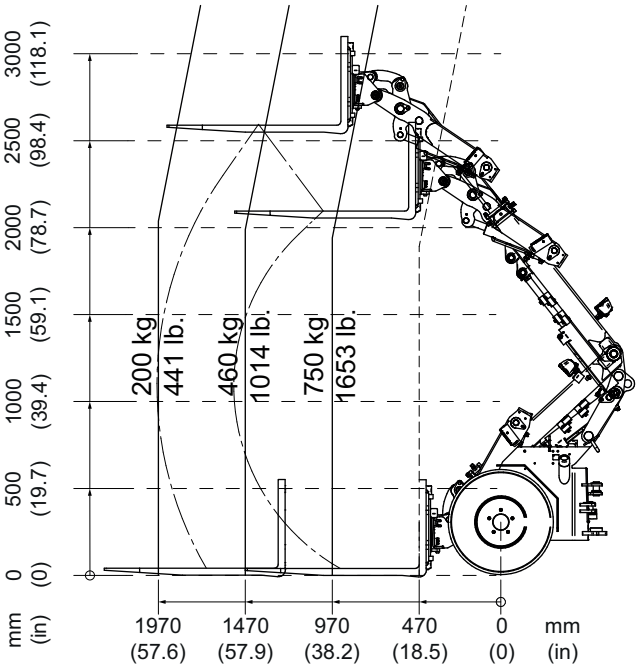
⚠ CAUTION:
Tipping loads are measured in straight position, without additional counter weights

D204SW - D254SW.

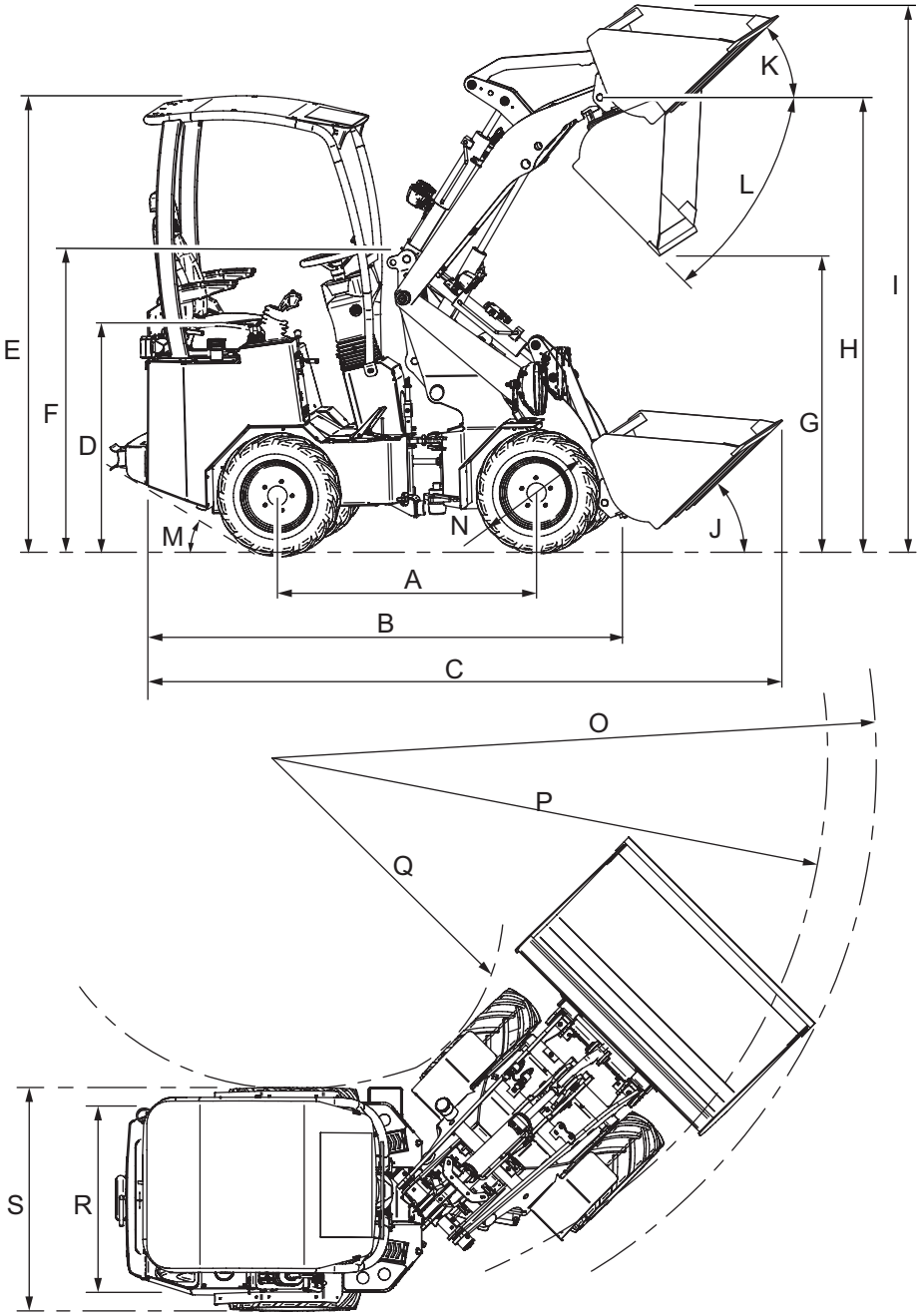
S	900 (1984)
T	750 (1653)
U	450 (992)
V	325 (716)
W	1200 (2645)
X	600 (1322)
Y	385 (848)
All values are displayed in kg (lb.)	



D204SW TELE - D254SW TELE



DIMENSIONS



Nº	Dimension	D204SW-D254SW	D204SW-D254SW TELE
A	Wheel base	1230 (48.4)	1230 (48.4)
B	Total length	2210 (87)	2210 (87)
C	Length with bucket	2900 (114,2)	2900 (114,2)
D	Seat height	1020 (40.2)	1020 (40.2)
E	Height	2070 (81.5)	2070 (81.5)
F	Frame height	1380 (54.3)	1310 (51.6)
G	Dump height	1410 (55.5)	2060 (81.1)
H	Height of pivot point	2170 (85.4)	2740 (107.9)
I	Height with bucket	2980 (117.3)	3300 (129.9)
J	Rollback angle, low	43º	43º
K	Rollback angle, high	45º	50º
L	ump angle	46º	40º
M	Angle of departure	34º	34º
N	Diameter of standard wheel	570 (22.4)	570 (22.4)
O	Turning radius with bucket	2230 (87.8)	2230 (87.8)
P	Outside turning radius	1970 (77.6)	1970 (77.6)
Q	Inside turning radius	980 (38.6)	980 (38.6)
R	Track width	740 (29.1)	740 (29.1)
S	Total width	925 (36.4)	925 (36.4)

All dimensions in mm (in), measured on standard wheels.

TRAILER

⚠ CAUTION:
Drive at walking pace with attached trailer.

⚠ CAUTION:
Driving with a trailer on public roads is NOT allowed.

Max. vertical load coupling towing device.	100 kg (220 lb.)
Max. trailer weight unbraked.	750 kg (1653 lb.)

TYRES

Type	**Tire pressure**			**Wheel Loader width**	
	bar	**kPa**	**psi**	**mm**	**in**
23x8.5-12 AS *	2.3	230	33	920	36.2
23x8.5-12 SK	3.5	350	51	960	37.8
23x8.5-12 LG	2.3	230	33		
23x10.5-12 AS	2.2	220	32	1100	43.3
23x10.5-12 LG	2.2	220	32		
24x13-12 LG	2.2	220	32	1220	48.0

* Standard tyres

6. COMMISSIONING

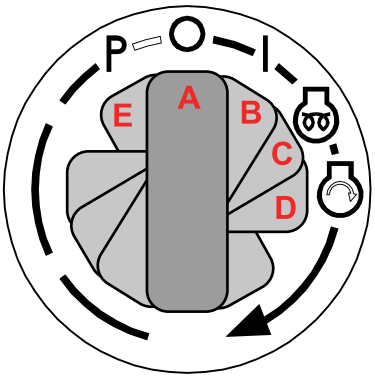
FIRST INSPECTION

- Before use, remove the articulation lock bar (transport protection).
- The Wheel Loader is powered by a diesel engine. This engine is equipped with an electric starter.
- Always check the oil levels before you start (see section 'Maintenance').
- Make sure the fuel tank contains sufficient fuel.
- Beware of fire! Stay away from the fuel tank with cigarette lighter, match or other spark-inducing items. Keep the articulated loader free of combustibles.
- The Wheel Loader is top heavy and tilt sensitive. Especially with the loaded tool in the upper position. Make sure the centre of gravity of the load to be lifted is in the middle of the tool. Note that the ground under the Wheel Loader is sufficiently load bearing and flat.
- Contact your dealer in case you have any questions.

IGNITION SWITCH

CAUTION:
Never press the accelerator all the way when you start. This causes damage to the engine.

A. Stop engine.
B. Contact on.
C. Glowing (preheating, spring loaded).
D. Start engine (spring loaded).
E. Parking (unused).



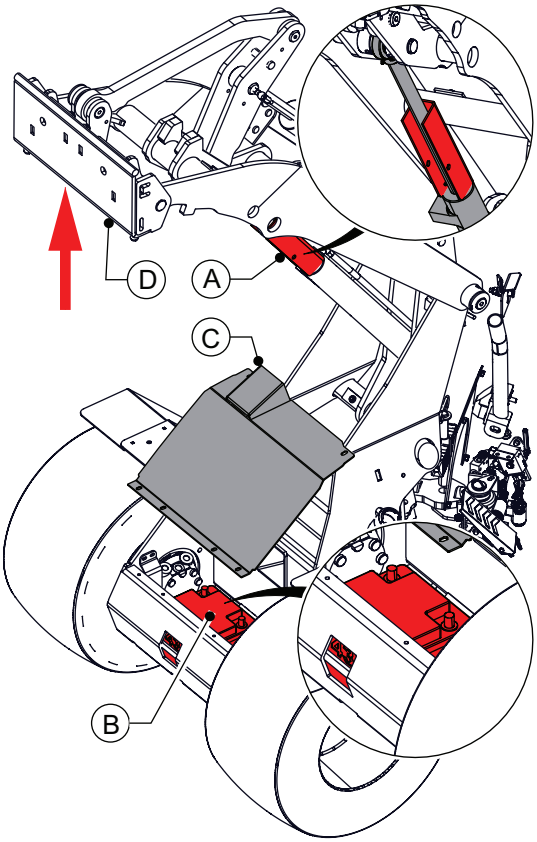
Starting order:

1. Check whether the direction switch is set to neutral.
2. Turn the ignition switch to position C and hold this for about 5 seconds.
3. Turn the ignition switch to position D and hold this position until the engine has started.
4. Release the ignition switch; it will return to position B (contact on).

DISCONNECT BATTERY

⚠ CAUTION:
Before performing electrical service or electrical welding on the Wheel Loader disconnect the negative battery cable from the negative battery terminal and tie the cable away from the negative battery terminal to prevent sparking and accidental re-connection

1. Raise the lifting arm (D) to it's maximum.
2. Stop the engine and wait for it to cool down.
3. Install the cylinder safety support (A).
4. Lower the lifting arm untill it rests on the cylinder safety support.
5. Remove the cover (C)
6. Disconnect the negative battery cable from the battery (B).



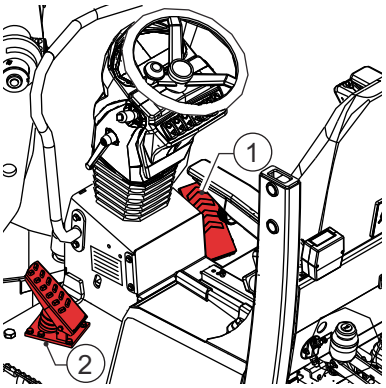
DRIVING

Make sure you are aware of all hazards and operation of the Wheel Loader before driving. Make sure you are familiar with the control devices of the Wheel Loader:

- Parking = parking brake
- Braking = left foot pedal
- Accelerating = right foot pedal (inching pedal)

Accelerator pedal

Upon depressing the accelerator pedal (1), the coupling with the engine is automatically made and the selected function is powered. Releasing the accelerator pedal will automatically slow down the Wheel Loader.



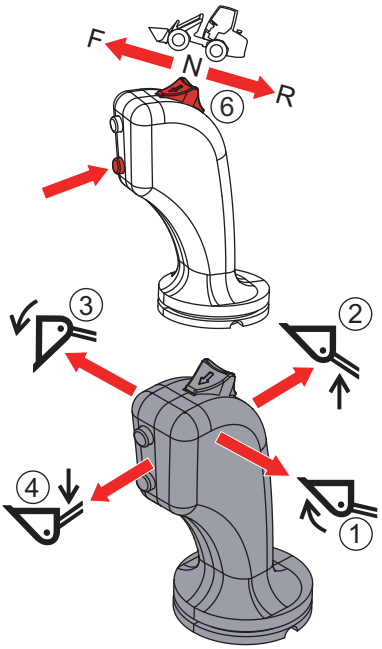
Inching pedal

Depressing the inching pedal (2) disconnects the hydraulic drive. This way the vehicle speed can be adjusted while keeping a constant engine speed. This pedal also functions as brake pedal.

JOYSTICK

The joystick controls the following functions:

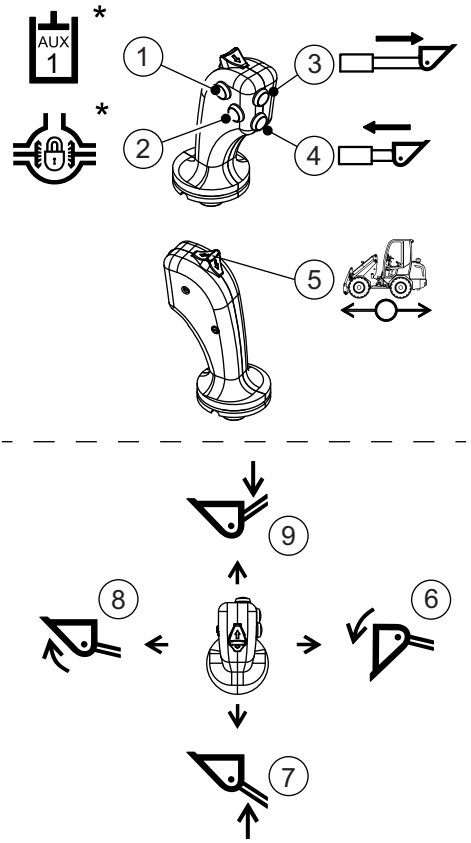
1. Tilt bucket upwards
2. Raise bucket
3. Tilt bucket downwards
4. Lower bucket
5. High / low gear (optional)
6. Forward (F) / neutral (N) / reverse (R)
7. Drive reset switch, 4th function electrical (optional)



JOYSTICK - TELE

The joystick for the TELE variant comprises the following functions:

1. Hydraulic auxiliary 1
2. Differential lock
3. Extend lifting arm
4. Retract lifting arm
5. Direction of travel
6. Tilt attachment forward
7. Raise lifting arm
8. Tilt attachment backward
9. Lower lifting arm



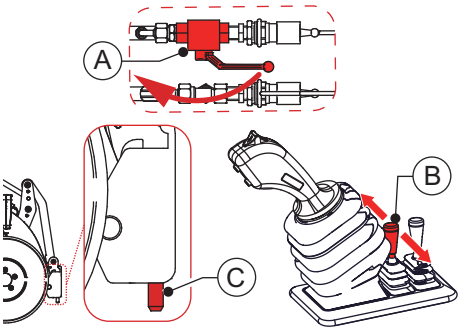
ATTACHMENT LOCKING

mechanical lock

⚠ CAUTION:
Verify whether the attachment has been locked correctly.

To (un)lock attachments; turn ball valve (A) upwards.

- Locking: Move lever (B) to the right to move the locking pins (C) outward.
- Unlocking: Move the lever (B) to the left to move the locking pins (C) inward.
- Verify whether the attachment has been locked correctly.

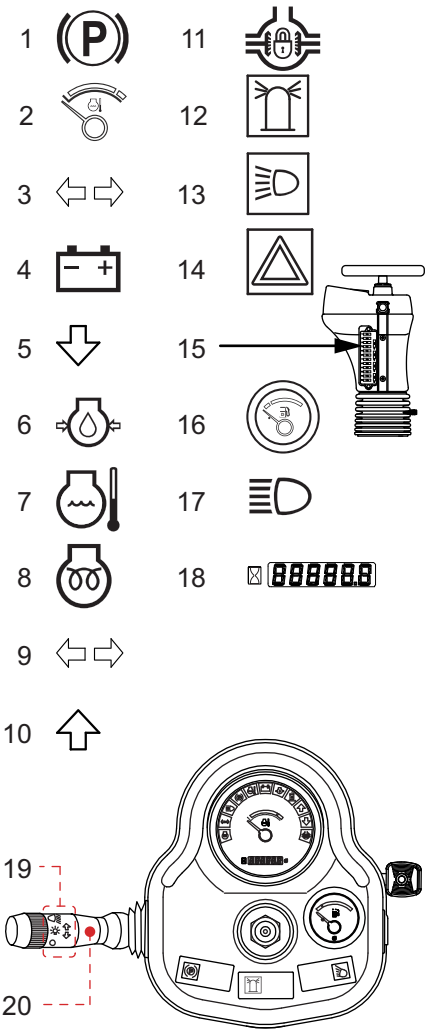


DASHBOARD

The following switches, instruments and warning lights are placed on the dashboard:

1. Handbrake
2. Engine temperature
3. Direction indicator, left *
4. Alternator warning light
5. Reverse drive
6. Engine oil pressure warning light
7. Engine temperature warning light
8. Glow plug indicator
9. Direction indicator, right
10. Forward drive
11. Differential lock *
12. Rotating beacon switch *
13. Work light switch
14. Alarm light switch *
15. Lighting fuses
16. Fuel gauge
17. High beam *
18. Hour meter
19. Road lights *
20. Combination switch *

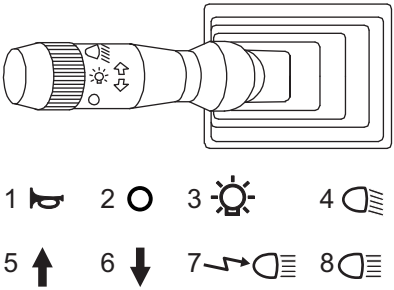
* optional



Once you turn on the ignition, all indicator lights will be lit. Once the engine is running, the warning lights will go out.

COMBINATION SWITCH

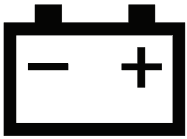
(option, otherwise horn button)
1. Klaxon
2. Road lights off
3. Parking lights
4. Dipped-beam headlamps
5. Right turn signal
6. Left turn signal
7. Headlamp flasher
8. Main-beam headlamps



ALTERNATOR WARNING LIGHT

When this warning light turns on, the alternator is malfunctioning or the machine is not running!

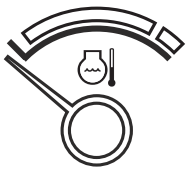
Stop the engine and check the V-belt, if necessary contact your GIANT dealer.



ENGINE TEMPERATURE

During normal operation the meter is pointing in the middle, between 40 °C and 90 °C.

Stop the engine if the meter reaches the red zone. Check the coolant level and the V-belt which powers the water pump. Check cooling system for leaks.



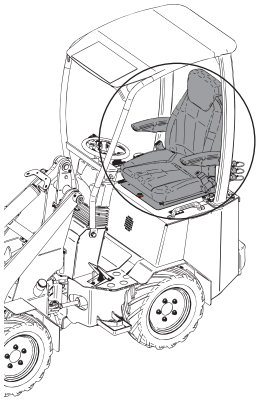
ENGINE TEMPERATURE WARNING LIGHT

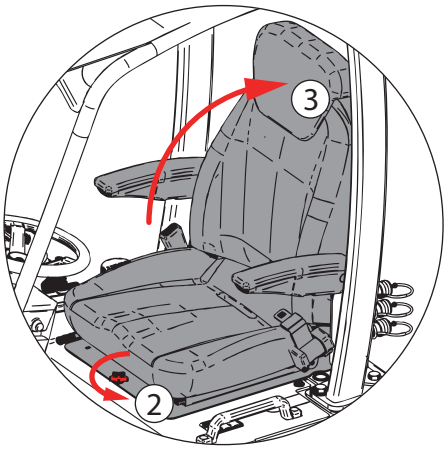
This warning light indicates that the engine is too hot. Stop the engine, check the coolant level and fan belt. Check the cooling system for leaks and/or refill with coolant. See section “Maintenance”.

ENGINE OIL PRESSURE WARNING LIGHT

This warning light indicates an insufficient oil pressure. Stop the engine immediately. Check the oil level every day with the dipstick and add oil if necessary. See section ‘Maintenance’.

ENGINE COMPARTMENT





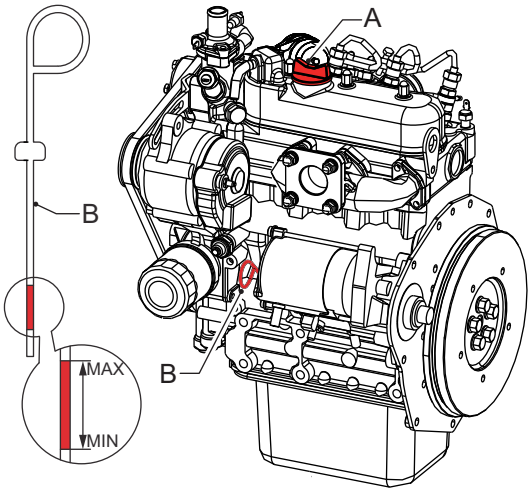
To open the engine compartment:
1. Stop the engine and remove the key.
2. Unlock driver’s seat with the star grips.
3. Lift the driver’s seat by hand.

To close the engine compartment:
1. Lift the driver’s seat in the opposite direction.
2. Lock driver’s seat with the star grips.

ENGINE OIL

CAUTION:
Check only with the Wheel Loader on a level surface and the engine is turned off for at least 3 minutes. The oil level should be between the markers. Refill if needed.

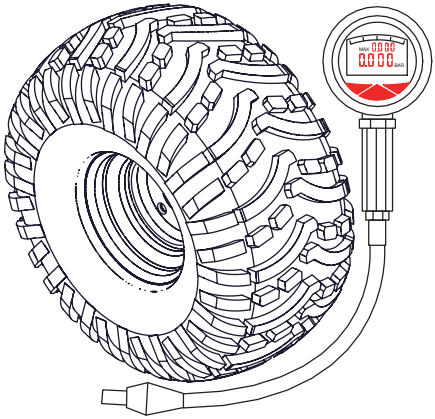
Adding engine oil



- Pull out the oil level dipstick (B) and clean it with a lint-free, clean cloth,
- Reinstall the oil level dipstick in the oil level pipe,
- Pull out the oil level dipstick again and measure the oil level (MIN - MAX),
- Oil level must be between the MIN and MAX markings,
- If the oil level is to low, remove the oil filler cap (A) and fill with recommended oil to the upper level mark,
- After adding oil, wait for more than five minutes. It takes some time for the oil to come down to the oil pan,
- Pull out the oil level dipstick again and measure the oil level.

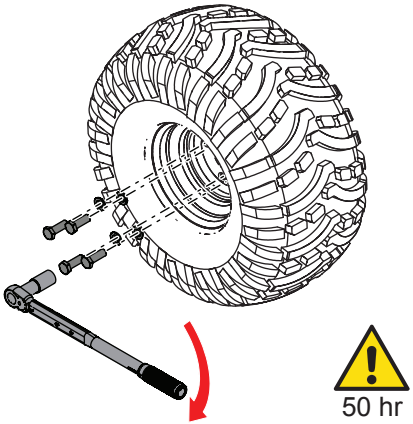
TIRE PRESSURE

Tire pressure seriously affects fuel consumption as well as steering and driving characteristics. It also affects the live span of tires and axes. See section “Technical Data” for the correct tire pressure.



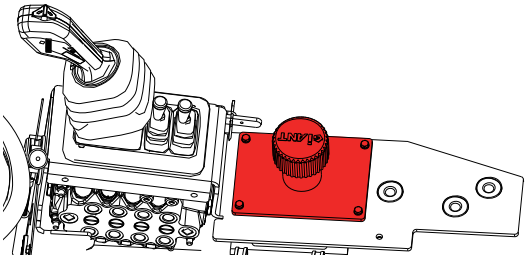
WHEEL MAINTENANCE

Wheel bolts have to be re-tightened every 50 hours. For the right torque value, see section “Maintenance”.

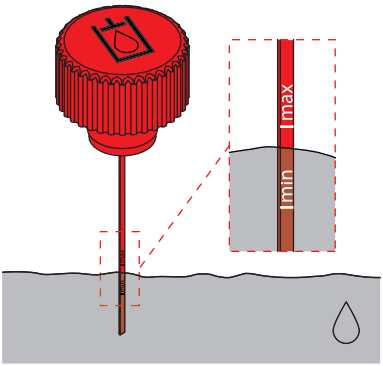


HYDRAULIC OIL LEVEL

⚠ CAUTION:
Check only when the engine is cold and the Wheel Loader is without attachments with hydraulic functions.

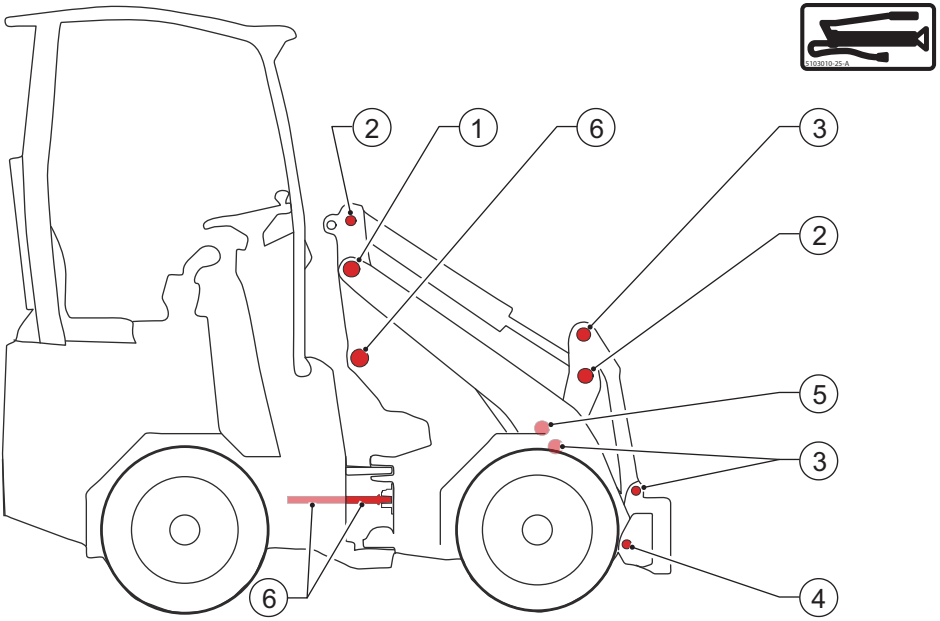


The lifting arm is in lower position. Check the oil level with the dipstick (at the right of the driver seat). The level must be between the MIN and MAX mark. Refill when necessary (for oil specifications see chapter “Maintenance”)



GREASE POINTS

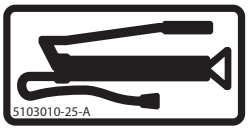
⚠ CAUTION:
Grease all indicated grease points daily. Oil all other moving parts regularly, such as pedals, handles and hinges according to the intensity of use.



Item	Grease point	Qty.
1	Main pivot linkage	2
2	Boom cylinder	2
3	Boomerang	3

Item	Grease point	Qty.
4	Tool bracket hinge	2
5	Lifting cylinder	2
6	Steering cylinder	2

All lubrication points are indicated by a white decal with a grease pump:



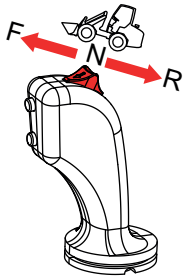
PARKING

⚠ CAUTION:
When parked remove the key out of the ignition switch.

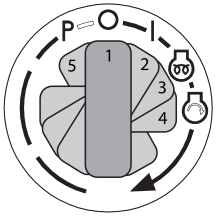
Make sure you stop at the desired location.

1. Set the selector switch to “neutral” (N)
2. Turn the ignition switch to “O” and wait until the engine has stopped.
3. Remove the key and take it with you.

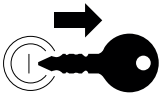
①



②

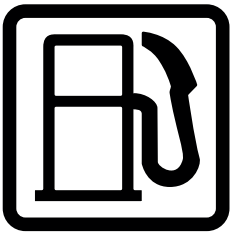


③



REFUEL

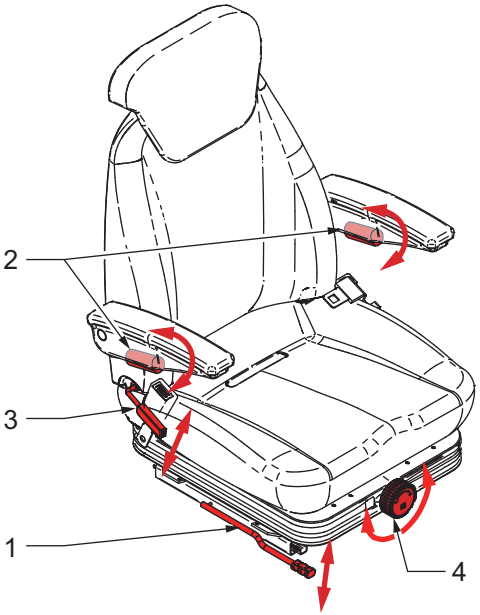
CAUTION:
Use only clean, high quality fuel for the Wheel Loader. It is recommended to use an additional filter when refuelling.



Use your key to unlock and remove the fuel cap.
1. Fill the tank with fuel.
2. Close the fuel cap tightly and lock with key.

DRIVER'S SEAT

Adjust the seat to suit your personal preference:
1. Horizontal adjustment
2. Armrest adjustment
3. Backrest adjustment
4. Suspension adjustment

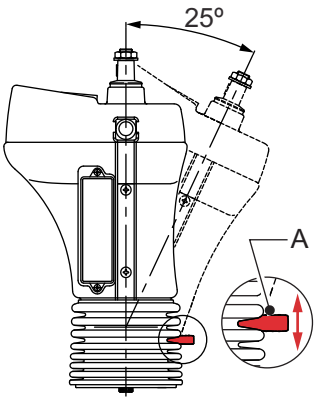


STEERING COLUMN

Never adjust the steering column when the engine is running.

Adjust the steering column to your personal needs:

1. Take place on the driver's seat
2. Push the lever (A) downwards
3. Tilt the steering column in position
4. Release the lever (A)



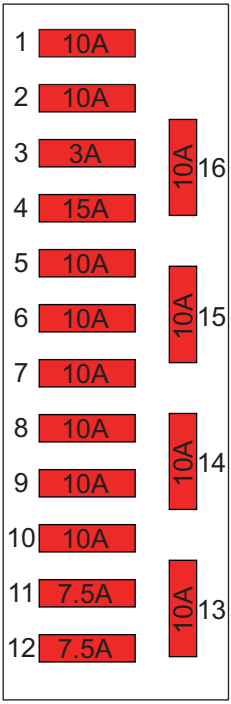
FUSES

CAUTION:
Prevent major damage: Check whether a technical malfunction can be caused by a blown fuse. Never replace a fuse with one of a higher amperage.

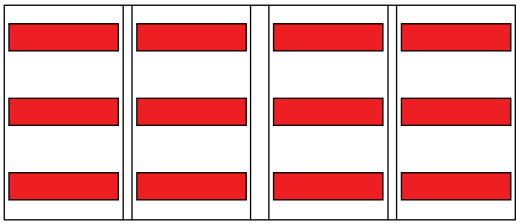
The following fuses are located in the steering column:

1. Ignition switch
2. Electric parking brake
3. Dashboard lights and meters
4. Automotive lighting *
5. Reset / Differential lock, Fourth function *
6. Joystick
7. Fuel feed pump
8. Dynamo
9. Work light
10. Horn, Rotating beacon *
11. Road light *
12. Road light *
13. High beam *
14. High beam *
15. Low beam *
16. Low beam *

* = Optional



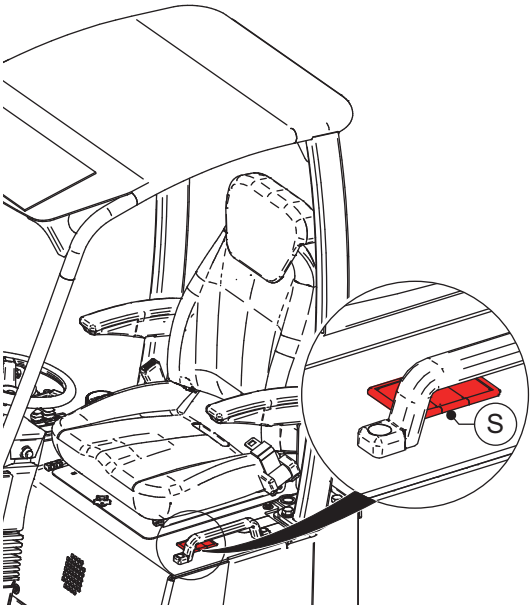
Fuses right side of seat for various additional options



SWITCHES

Switches (S) located at the left side of the seat.

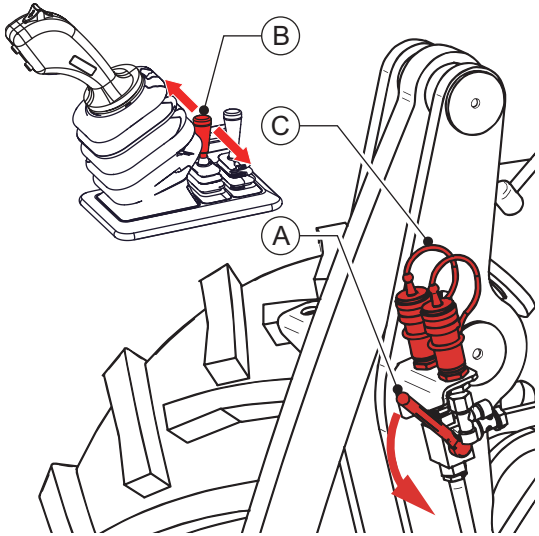
Optional:
- Main power switch (ground / mass).
- Work lights rear (roof).
- Work lights front (roof).



THIRD FUNCTION

To activate the 3rd function, move ball valve (A) down.

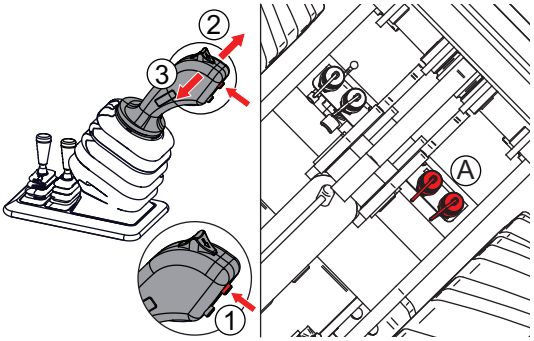
Move the lever (B) to operate the 3rd function (C).



FOURTH FUNCTION (ELECTRICAL)

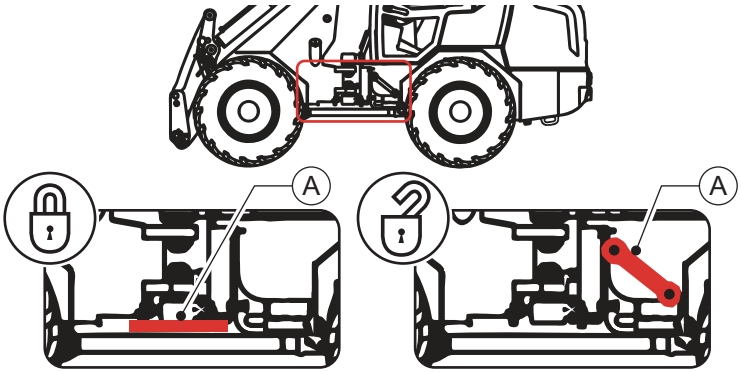
(Optional)

- Press the button (1) on the joystick and move joystick left (2) or right (3) to operate the 4th function (A).



ARTICULATION LOCK BAR

The articulation lock bar (A) must be mounted before transporting the Wheel Loader (i.e. on a conveyor). This is also applicable when lifting the Wheel Loader.



Before commissioning the Wheel Loader you must remove the articulation lock bar and place it in the appropriate holder.

TIE DOWN

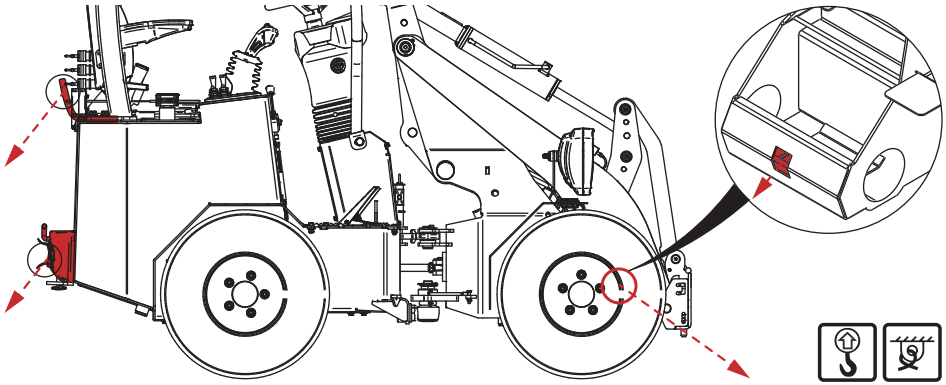
⚠ CAUTION:
Caution! Lower the lifting arm for transport!

The Wheel Loader is equipped with eyelets for fixation to a trailer or other transport platform.

Preparations

Make sure you have addressed all issues stated:

- Place the Wheel Loader in a straight position on the trailer
- Turn off the engine and apply the parking brake
- Mount the articulation lock
- Tie down the machine at the front and rear, using the appropriate eyelets.

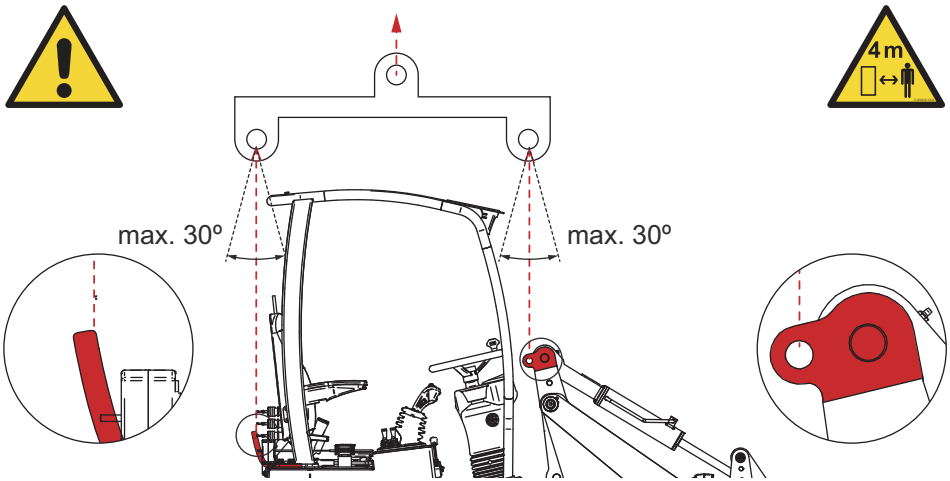


LIFTING

⚠ CAUTION:
The Wheel Loader must be lifted evenly (horizontally) by using the front and rear lifting points.

The lifting of the Wheel Loader is only permitted if the following conditions are met:

- The transport lock has been fitted correctly
- The lifting device has sufficient lifting capacity (minimum operating weight)
- The lifting chains has sufficient lifting capacity (minimum operating weight)
- All attachments are disconnected
- There is no loose lying object present on the Wheel Loader (danger of falling objects during lifting)
- There are no bystanders near the Wheel Loader when lifting.
- A safe distance is kept from the machine when lifting.



Lifting points are marked with the following symbol:

TOWING

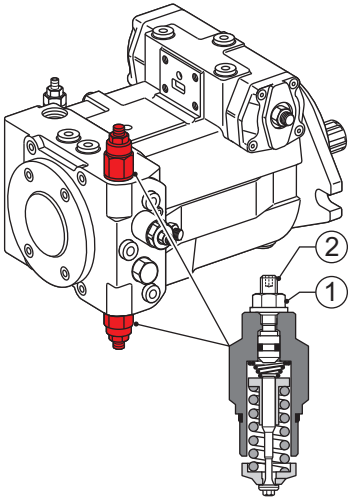
CAUTION:
Towing the Wheel Loader is only allowed to remove it out of a danger zone.

CAUTION:
The pump may become hot during towing!

Preparations

Before towing you need to open the bypass of main drive pump:

1. Turn off the engine.
2. Open the engine cover.
3. Fold the seat forward.
4. Turn nut (1) loose, making a half turn counter clockwise.
5. Loosen the hex bolt (2) clockwise until the bolt touches the spring plate (this is the case if you feel resistance).
6. Now turn the hex bolt (2) another half a turn in. The spring is now pressed and the bypass is activated.
7. Turn the nut (1) clockwise to secure with a force of 22 Nm (16 lbf.ft) “hand tight”.

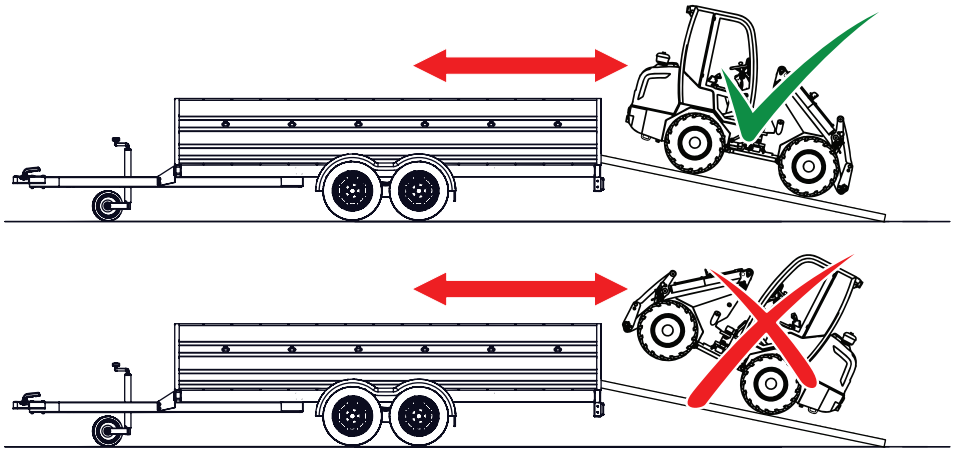


How to tow

- Mount the towing cable to the trailer coupling (back of machine) or the towing eyelets (front or rear).
- Tow with a maximum speed of 3 km/h (2 mph) “walking speed”
- Tow the articulated loader until the danger zone has been left, max. 200 m (max 656 ft)
- Turn the bolt of the bypass back to the old position.

LOADING - UNLOADING

The correct way to load and unload the Wheel Loader on and off a trailer.



7. MAINTENANCE

PERFORMING MAINTENANCE

Periodic maintenance should be performed by a licensed and qualified dealer. An overview of all GIANT dealers can be found at www.tobroco-giant.us.

You can perform the following maintenance tasks yourself:
- Pivot points - greasing
- Wheel nuts - tightening
- Coolant - add or replace
- Engine oil - add or replace
- Engine oil filter - replace
- Hydraulic filter - replace
- Hydraulic oil - add or replace
- Air filters - clean or replace
- Radiator and fan - clean
- Check dashboards lights, dashboard instruments, lightning and battery cables

Contact your dealer in case of any doubt.

WHEEL NUTS

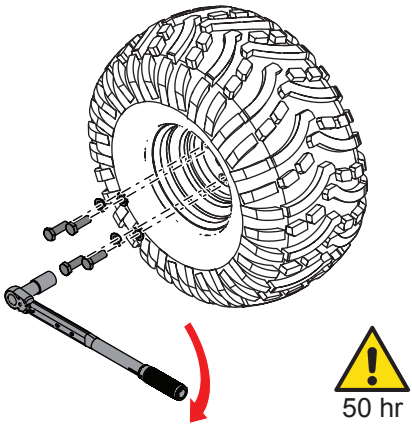
CAUTION:
Keep the thread clean and free from damage.

CAUTION:
Wheel bolts have to be re-tightened every 50 hours

Maintenance according to schedule

Correct tightening torque:

Wheel nut	Torque
M14	150 Nm (111 lbf.ft)
M16	200 Nm (148 lbf.ft)
M18	280 Nm (207 lbf.ft)
M20	450 Nm (332 lbf.ft)

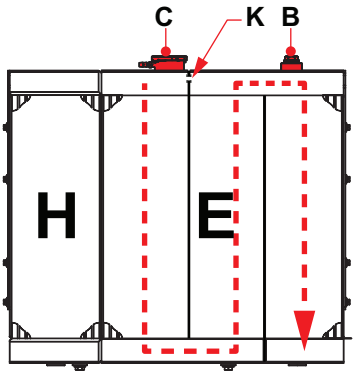


COOLANT LEVEL

⚠ CAUTION:
Do not remove the radiator cap until the coolant temperature is below its boiling point. Then loosen the cap slightly to relieve any excess pressure before removing the cap completely.

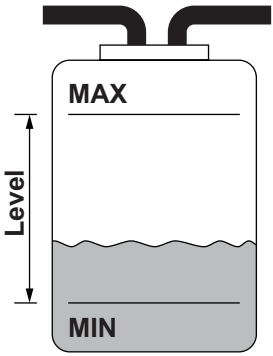
⚠ CAUTION:
During filling the coolant, air must be vented from the engine coolant passages. Contact your GIANT dealer if necessary. Be sure to close the radiator cap securely. If the cap is loose or improperly closed, coolant may leak out and the engine could overheat.

Without recovery tank:



Check the coolant level of the cooler when the engine is cold by opening the cooler filler cap (C). The cooler is located under the hood. The internal bleeding bore hole (K), makes sure the coolant has been divided equally and free of any airlocks throughout the chambers of the cooler. Whilst filling the cooling system, open the bleeding valve (B) until coolant appears. The cooler has a double function: it cools the engine coolant (E) as well the hydraulic oil (H).

With recovery tank:



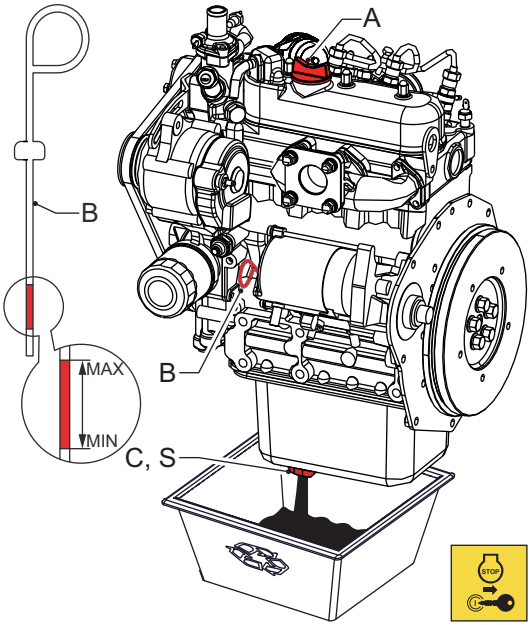
First check the coolant level of the cooler. Then check if the level of the recovery tank is between MIN and MAX.

ENGINE OIL AND FILTER

Adding engine oil

⚠ CAUTION:
Always use the oil as described in chapter “Maintenance”, never mixture with oils of other kinds. This causes damage to the engine.

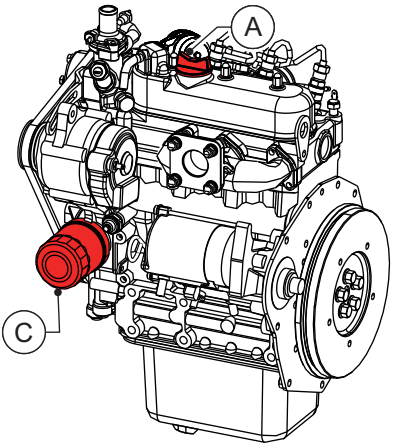
Replace engine oil

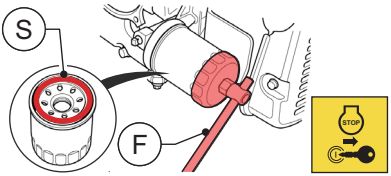


- Warm up the engine, engine oil temperature > 80°C (>176°F).
- Place the engine in a horizontal level position.
- Switch off the engine.
- Place a collecting receptacle underneath the engine oil drain plug (C).
- Unscrew the engine oil drain plug (C).
- Wait until the crankcase is completely empty.
- Reinstall the engine oil drain plug. Always use a new sealing ring (S). Tightening torque = 55 Nm (41 lbf.ft).
- Open the oil filler cap (A) and fill up with new engine oil. (see chapter liquids for oil specifications).
- Close the oil filler cap, warm up the engine, engine oil temperature > 80°C (>176°F).
- Perform engine oil level check. Check for leakage and add oil if necessary.

Replace oil filter

1. Place a collecting receptacle underneath the engine.
2. Loosen and unscrew the engine oil filter (C) with a filter wrench (F).
3. Collect draining lubricating oil in a collecting receptacle.
4. Clean the sealing surface of the filter support with a lint-free, clean cloth.
5. Oil the gasket of the new GIANT original filter cartridge (S) lightly (Do not use grease).
6. Fasten the new filter by hand until the gasket touches the oil filter support. Fasten with a torque of approximately 12 Nm (9 lbf.ft) hand tight.
7. Open the oil filler cap (A) and fill up with new engine oil. (see chapter liquids for oil specifications).
8. Perform engine oil level check. (see replace engine oil).

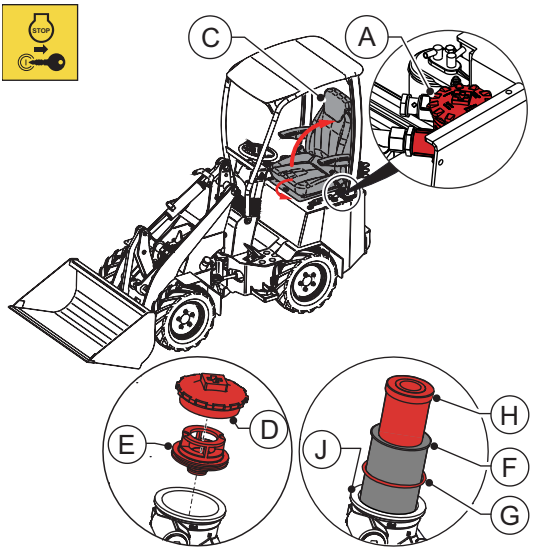




HYDRAULIC FILTER

⚠ CAUTION:
After a big repair job and an afterwards test run, a change of the hydraulic filters is needed.

Change the hydraulic oil filter

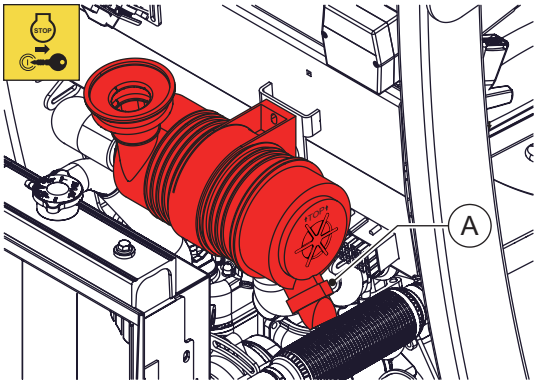


1. The hydraulic oil filter (A) is located in the engine compartment on the left side under the driver's seat (C).
2. Switch off the engine and lift the driver seat (C). See chapter "Commissioning".
3. Clean the area around the hydraulic oil filter (A). Remove all contamination. Remove the filter cap (D) to enter the hydraulic oil filter.
4. Remove the hydraulic oil with a suction gun.
5. Remove the suction pre-filter part (E) on top of the hydraulic oil filter.
6. Pull out the oil filter (H) slowly so that the oil can flow back in to the tank. Remove the inlet connection tube (F) and check the o-ring (G), replace if necessary. Clean inlet connection tube (F) and filter housing (J)
7. Replace the inlet connection tube (F) and O-ring (G).
8. Insert a new original GIANT filter (H).
9. Clean and install suction pre- filter part (E) on the hydraulic filter (H). See to it, that the spring is installed correctly.
10. Clean filter cap (D).
11. Fill up the filter with hydraulic oil.
12. Tighten the filter cap (D).
13. Check hydraulic oil level, if necessary top up.Operate all hydraulic functions and check for any leaks.
14. Switch off the engine and check hydraulic oil level, if necessary top up.
15. Close the engine compartment.

AIR FILTER

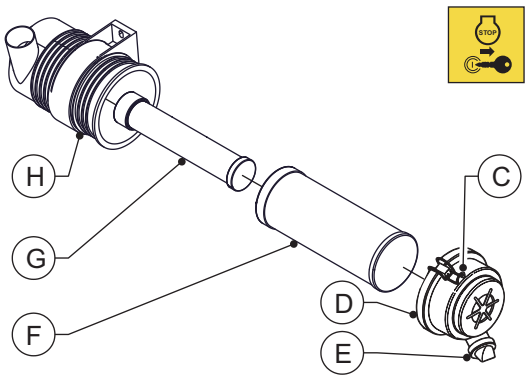
Location air filter..

1. Shut off the engine and remove the key
2. Open the engine cover. See section “commissioning”.
3. Locate the air filter (A).



Remove main and safety air filter

1. Unlatch the clamps (C) en remove the service cover (D)
2. Check the pre-cleaner tubes and evacuator valve (E).
3. Take out the main filter cartridge (F).
4. Remove the safety filter (G) from the main filter cartridge.
5. Clean or replace the main filter cartridge (F)
6. Check the inside of the evacuator valve (E) for large particles.



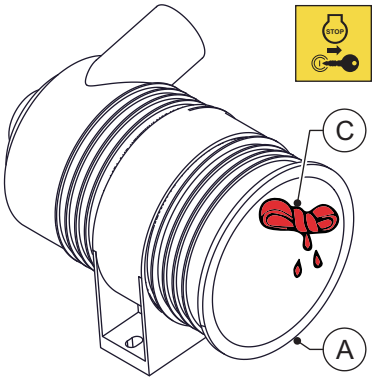
7. Clean the inside of the filter housing (H), service cover (D) and evacuator valve (E).

Cleaning the filter house

CAUTION:
If there is no safety filter or the safety filter is removed, make sure it isn't possible for contamination to enter the engine.

Wipe the inside of the air filter housing (A) with a clean damped cloth (C)..

Visually check for cuts, tears, or indentations on the sealing surfaces before installation. If any damage is visible, do not install.



Inspect the new filter before installing

Visually check for cuts, tears, or indentations on the sealing surfaces before installation. If any damage is visible, do not install.

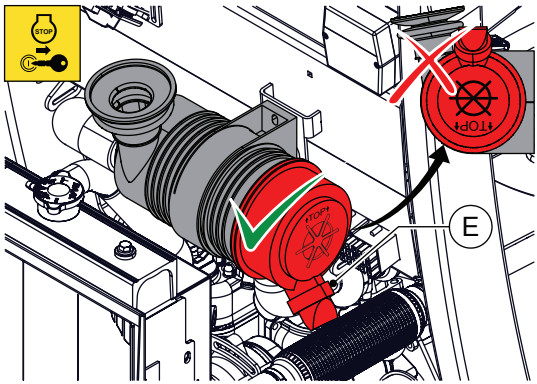
Mount the service cover

CAUTION:
If the cover doesn't fit properly, remove and re-check the filter position. The cover will be difficult to install if the filter isn't installed correctly.

Tilt the service cover into place and secure latches. Make sure the TOP mark is at the upper side!

Visually inspect the air filter in- and outlet connections.

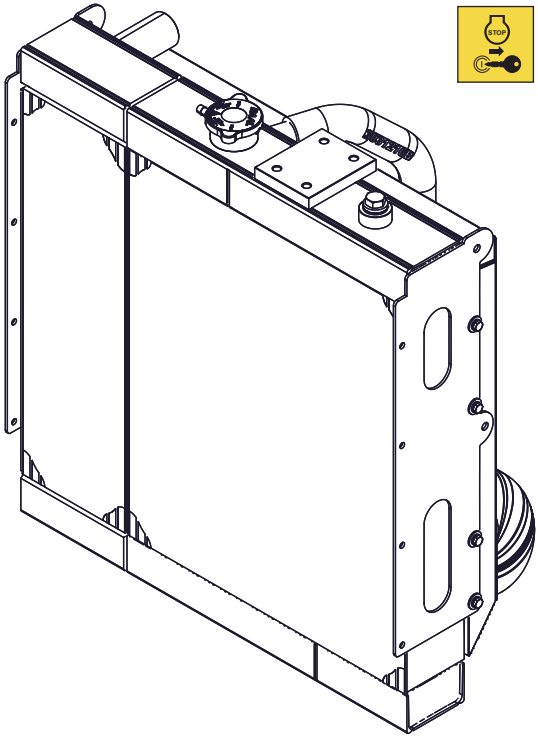
If your air cleaner has an evacuator valve (E), inspect the valve. Replace if any signs of wear or damage are visual.



RADIATOR

Cleaning radiator.

1. Open the engine cover (see chapter “commissioning”).
2. Check the radiator for ware, cracks and damage.
3. Make sure all bolts and hose clamps are tightened.
4. Repair or replace if necessary.
5. When contaminated with sand, dust or other contamination, clean the radiator with running water or compressed air.
6. Do not clean radiator with firm tools. They could damage the tubes and or fins. Leaks and a decrease of cooling performance could be a result.



LIQUIDS

Overview

Engine oil	SAE 10W-40	API CF // MIL-L-2104C // ACEA A2/B2, A3/B3
Fuel	Diesel	EN 590 // GB 252 // ASTM D975 2-D // JIS K 2204
Hydraulic oil	VG 46	DIN 51524: part 3 // ISO 11158: type HV
Axles and gearbox oil	SAE 85W-90 LS	API GL-5 // ZF TE-ML 05C/12C/16E
Brake fluid	VG 46	DIN 51524: part 3 // ISO 11158: type HV
Coolant	-24°C (-12°F)	Standard engine coolant

BRAKE FLUID

CAUTION:
Use absolutely no standard brake fluid (like DOTx)!

The braking system of the wheel loader works with ordinary hydraulic oil.

COOLANT

Add or replace coolant in the cooling system.

- See chapter “commissioning”

Standard used coolant gives protection up to -24°C (-12°F). There are generally two types of anti-freeze; use the permanent type (PT) for this engine. When the anti-freeze is mixed with water, the antifreeze mixing ratio must be less than 50%.

Vol % Anti-freeze	**Freezing Point**		**Boiling Point**	
	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-37	108	226

ENGINE OIL

The engine oil should have properties of API classification “CF” or ACEA A3/B3 grades or higher. Change the type of engine oil according to the ambient temperature:

above 25°C (77°F)	SAE30 or SAE10W-30 / SAE 15W-40
0°C to 25°C (32°F to 77°F)	SAE20 or SAE10W-30 / SAE 15W-40
below 0°C (32°F)	SAE10 or SAE10W-30 / SAE 15W-40

FUEL

Standard diesel fuel according to one of the following technical specifications:

- EN590
- ASTM D975 2D
- JIS K 2204

HYDRAULIC OIL

Add or replace hydraulic oil.

- See chapter “commissioning”

The standard hydraulic oil used has viscosity class “VG 46”. Change the type of hydraulic oil according to the (average) ambient temperature:

above 25°C (77°F)	VG 68
0°C to 25°C (32°F to 77°F)	VG 46
below 0°C (32°F)	VG 32

MAINTENANCE SCHEDULE

⚠ CAUTION:
Intensive use or use in extreme conditions requires shorter maintenance intervals! In all cases, check with your authorized GIANT dealer.

C = Check and clean if necessary **R = Replace** **F = First time / initial interval** *** = Only for vehicles with wheel motors** **** = If applicable**		**Operating hours**							
		First 50	**Every 100**	**Every 250**	**Every 500**	**Every 750**	**Every 1000**	**Every 3000**	**Yearly**
Engine	Engine oil	**R**		**R**					**R**
	Engine oil filter	**R**		**R**					**R**
	Main air filter		**C**		**R**				**R**
	Engine cooler		**C**						**C**
	Coolant						**R**		**R**
	Coolant level	**C**	**C**						**C**
	Oil level	**C**	**C**						

C = Check and clean if necessary R = Replace F = First time / initial interval * = Only for vehicles with wheel motors ** = If applicable		Operating hours							
		First 50	Every 100	Every 250	Every 500	Every 750	Every 1000	Every 3000	Yearly
Electrics	Dashboard warning lights	C	C						
	Dashboard instruments	C	C						
	Lighting	C	C						
	Battery		C						
Hydraulics	Hydraulic oil filter	R		R*	R				R
	Hydraulic oil						R		R
	Oil Cooler		C						C
	Hydraulic oil level	C	C						
	Hydraulic fittings (tighten)	C	C						
	Filler cap						R		R
	Auxiliary connection dust plugs	Check daily							
Frame	Tyres, wheels and wheel nuts	Every 50 hours							
	Bushings and bolts	C	C						
	Lubrication of pivot points	Lubricate daily							

MAINTENANCE LOG

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

Model: ..... **Serial number: .....**

Date	Maintenance provided by	Hours	Service procedure

8. MALFUNCTIONS

POSSIBLE MALFUNCTIONS

Problem	Solution
Engine will not start	
No fuel in the tank	Fill tank with fuel
Ventilation opening of the fuel cap is partially clogged	Clean the fuel cap
Battery is empty	Recharge battery
Other causes	Contact your dealer

Problem	Solution
Engine has not enough power	
Air filter clogged	Clean or change the filter
Fuel is old / outdated	Drain fuel tank and fill with 'fresh' fuel
Fuel filters are (partially) blocked	Replace fuel filters
Ventilation opening of the fuel cap is partially clogged	Clean or replace the fuel cap

Problem	Solution
The Wheel Loader will not drive	
Too little hydraulic oil in reservoir	Add hydraulic oil
Broken hydraulic hose between engine and hydraulic pump	Consult your GIANT dealer
Control valve (s) of joystick defective	Consult your GIANT dealer

When experiencing other problems or malfunctions, contact your GIANT dealer

9. ENVIRONMENT

CARE FOR THE ENVIRONMENT

General

The remains of old oil, oiled rags, filters, batteries and any cleaners must be disposed off as chemical waste.

Environmental Implications

The life of the Wheel Loader depends on maintenance, operating hours, use and environmental conditions (dust, pollution, humidity, temperature, etc.). Good maintenance is the key for keeping your Wheel Loader in good and reliable condition for a long time.

Decommissioning

Let the dismantling be carried out by a qualified decommissioning and demolition company that has the required permits. Assign a competent responsible person for monitoring the decommissioning.

Waste disposal

Assign a competent person responsible for monitoring the disposal of waste. Sort dismantled materials on material properties and pollution. Separate all materials that fall into the category of chemical waste such as batteries, oil, lubricants and some electrical components. Dispose of these materials as chemical waste. Bring waste materials to approved waste disposal companies which have the required permits.

10. SERIAL NUMBERS

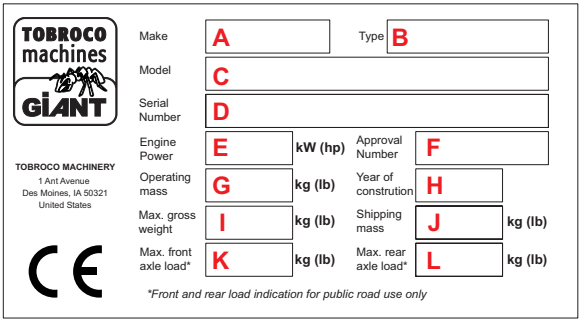
SERIAL NUMBER REGISTRATION

Serial numbers are located on the nameplates of the main components. To order parts or components it is required to specify serial numbers. You can also find the serial numbers on the EC-declaration. To ensure that you always have the required serial numbers at hand, the following fields can be filled in with these serial numbers.

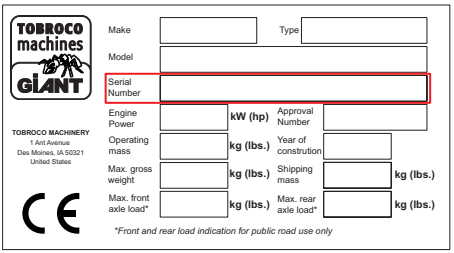
Vehicle identification plate

The vehicle can be identified by the label on the right side of the machine, below the steering column. The serial number of the machine is also printed in the frame. These are located at the upper side of the left hydraulic tank and on top of the fuel tank.

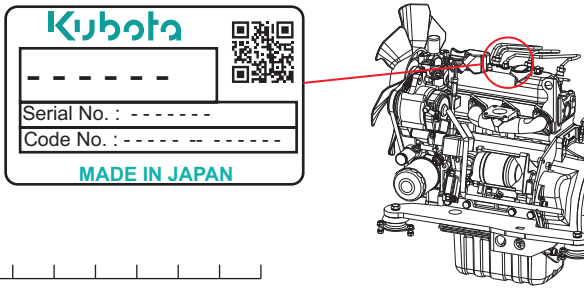
A. Make
B. Type
C. Model
D. Serial number
E. Engine power
F. Approval number
G. Operating mass
H. Year of construction
I. Maximum gross weight
J. Shipping mass
K. Maximum front axle load
L. Maximum rear axle load



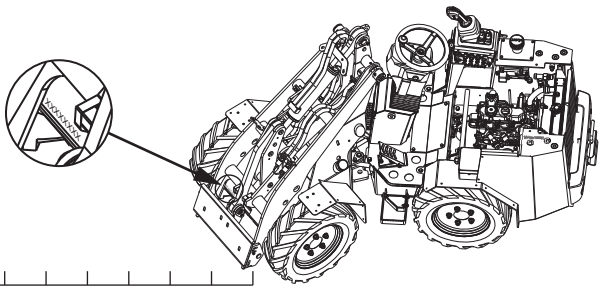
Vehicle serial number



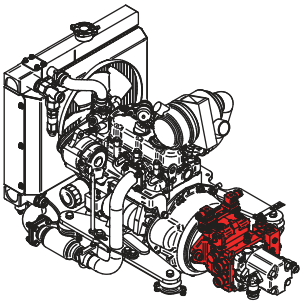
Diesel engine



Frame



Drive pump



11. INDEX

EC DECLARATION OF CONFORMITY

Tobroco Machinery LLC herewith declares that the stated Wheel Loader is in conformity with the requirements of the listed European Directives:

Machine data:

Model:	GIANT D204SW (TELE) / D254SW (TELE)
Category:	Wheel Loader

Directives:

2006/42/EC:	Machinery directive
2000/14/EC:	Noise emission
2004/108/EC:	Electromagnetic compatibility

The machine has the following technical characteristics:

Noise level (LWA):	< 101 dB(A)
Vibration level:	< 2,5 m/s2
Engine emission:	This machine is equipped with an engine that meets U.S. EPA 40 CFR 1039.625 and California title 13 CCR 2423 (d) emission standards.

Authorised representative:

TOBROCO Machinery LLC

5130 Park Avenue
Des Moines, IA 50321
United States
www.tobroco-giant.us

⚠ WARNING ⚠

THIS OPERATOR MANUAL IS PROVIDED FOR OPERATOR USE
DO NOT REMOVE FROM THIS MACHINE

Do not start, operate or work on this machine until you carefully read and thoroughly understand the contents of this Operator Manual.

Failure to follow safety, operating and maintenance instructions can result in serious injury to the operator or bystanders, poor operation, and costly breakdowns.

If you have any questions on proper operation, adjustment or maintenance of this machine, contact your dealer or the TOBROCO Machinery Service Department before starting or continuing operation.