



Telescopic Loader Operation Manual

GG613S



FORE WORD

Thank you for choosing the telehandler telehandler, which offers the highest level of efficiency, safety and comfort.

Remember that you play a key role in maintaining these features. Proper use of the telehandler will allow you to fully exploit all its capabilities.

Before starting work, read and understand this operating manual carefully. Its purpose is to provide all persons who come into contact with the machine, especially the operator. The contents of the manual will help you to better understand the telehandler and teach you everything you need to know about its start-up, driving techniques, maintenance and care, intended use and the safety regulations that must be observed.

Günter Grossmann is constantly improving its products and reserves the right to make changes without obligation to modify previously sold Loaders. Therefore, no claims can be made based on the data, illustrations and descriptions contained in this manual.

Only use original spare parts. Only then will you have the guarantee that the telehandler will continue to offer the same level of technical performance as at the time of purchase.

Do not make any changes to the telehandler without the prior consent of the manufacturer.

Keep the manual in a safe place even after reading it, so that you can return to it at any time and dispel any doubts. In case of any difficulties in understanding the content of the manual or its individual fragments, contact the GG613S dealer.

INTRODUCTION

The manual consists of five sections: Section 1

: GENERAL INFORMATION Section

Section 2: SPECIAL SAFETY INFORMATION Section

Section 3: OPERATING INSTRUCTIONS

Section 4: PERIODIC MAINTENANCE OPERATIONS Section

Section 5: DIAGRAMS AND CHARTS

Section 1, "GENERAL INFORMATION", includes general information on the main parts of the machine.

This section also lists details of part references and technical characteristics, etc.

Section 2, "SPECIAL SAFETY INFORMATION", is aimed at personnel in charge of the correct operation of the machine, repairs and maintenance, and, for companies with a large number of machines, the safety manager.

This section also includes the requirements which managers must satisfy and key items of indispensable safety information.

Section 3, "OPERATING INSTRUCTIONS" mainly targets operators. This section illustrates all control devices and instruments and includes instructions on how to use the Loader: from starting the engine, to parking and leaving the Loader.

Section 4, "PERIODIC MAINTENANCE OPERATIONS", mainly targets operators, and specifically the maintenance manager and personnel. This section includes information on the planned maintenance program, the regularity of operations, which liquids and lubricants to use, greasing points, etc.

Section 5, "DIAGRAMS AND CHARTS" includes tables and related documents: load charts, wiring and hydraulic diagrams, etc.

NOTE

Should conflict be identified between the content of this manual and the actual operation of the machine, this may be due to the manual relating to a more recent version of the machine or to the manual not having been updated since modifications to the machine.

In this case, contact your Official GG613S Representative or Dealer to clarify any doubts or obtain another version of this manual.

Optional equipment is indicated as follows: (if fitted).

Optional equipment will only be supplied at the express request of the customer, for specific versions or countries.



SYMBOLS

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Optional equipment is indicated as follows: (if fitted).

Optional equipment will only be supplied at the express request of the customer, for specific versions or countries.

	DANGER	
Indicates situations which, if the appropriate safety precautions are not taken for yourself and others, imply serious risks for the physical integrity of the people involved, and may even include a risk of death.		

	ELECTRIC HAZARDS	
Indicates situations which, if the appropriate safety precautions are not taken for yourself and others, imply serious risks for the physical integrity of the people involved, and may even include a risk of death.		

	WARNING	
Indicates situations relating to your safety and that of others, which imply low risks of accidents or injury, or the ineffective operation of the machine		

	ENVIRONMENTAL PROTECTION	
The text following this symbol includes information on recycling and environmental information.		

HOW TO IDENTIFY YOUR MACHINE

1. MACHINE DIRECTIONS

The terms right, left, forward and back, when used in this manual, refer to these positions from the operator's seat looking forwards. These references will be particularly useful to identify the different machine parts (front, rear, etc.) mentioned in this manual.

2. WARNING PLATES AND LABELS ON THE MACHINE

IMPORTANT: Take time to learn these plates and labels. Check that they are readable. Clean and replace damaged or unreadable (text or graphics) items. Use a clean cloth, water and soap to clean plates and labels. Do not use solvents, gasoline, etc. Should a plate or label be placed on a component to be replaced, check that the plate or label is transferred to the new component.



HOW TO IDENTIFY THE MACHINE

IMPORTANT: Check that the instructions manual is the right version for the machine in question. Please indicate model number, date of purchase and frame and serial number when consulting GG613S or your dealer for any matter. This information can be found on the identification plate. We recommend you make a record of these numbers in the spaces provided below for handy reference and keep it in your files.

1. IDENTIFICATION PLATES

·MACHINE IDENTIFICATION PLATE

Located inside the cab, to the right of the driver. This plate mentions information such as the machine model, frame number, engine number, year of manufacture, etc

Identification plates of the main components

Plates for all components which are not directly manufactured (e.g.: engines, pumps, etc.) will be directly attached to these components at the points where the respective manufacturers had originally located the plates.

·ENGINE NUMBER

The engine number is marked on the right hand block under the exhaust collector box and on a label on the upper part of the valve cover.

MODEL	<input type="text"/>	OPERATING WEIGHT	<input type="text"/> kg
SERIAL NO.	<input type="text"/>	RATED LOAD	<input type="text"/> kg
ENGINE MODEL	<input type="text"/>	ENGINE POWER	<input type="text"/> kW
SN OF FRAME (F R)	<input type="text"/>		
DIMENSIONS (L X W X H)	<input type="text"/> mm		
MANUFACTURING DATE	<input type="text"/>		

ACCEPTABLE USE

Telehandler are designed and manufactured for lifting, handling and transporting agricultural and industrial products using accessories and equipment manufactured or authorized by Günter Grossmann.

This does not include the following operations:

- Suspended loads. If the loader is used to move suspended loads, appropriate precautions must be taken or an authorized dealer must be consulted.

- Lifting people. If the loader is used to lift people, information must be obtained on the applicable regulations in each country and appropriate precautions must be taken or an authorized dealer GG613S must be consulted.

Any other use must be considered as not in accordance with the intended purpose and therefore improper.

Strict adherence to the operating, maintenance and repair conditions specified by the manufacturer is essential for the correct use of this machine.

The operation, maintenance and repair of the loader may only be entrusted to suitably trained personnel who have the required tools and are familiar with the intervention and safety procedures for the loader.

During all transport, maintenance or repair operations, occupational health and safety standards and risk prevention must be observed. When driving on public roads, observe applicable regulations (Highway Code).

CAUTION

No modifications or other interventions of any type may be carried out on the machine, with the exception of repairs and maintenance. Should the machine be handy reference and keep it in your files. modified any way without the authorisation an Official Representative or Dealer, this will automatically nullify compliance of the machine.

Improper use means using the charger in a manner that is inconsistent with the criteria and instructions contained in this manual and in a manner that may cause injury to persons or damage to equipment.

DANGER

Here are some of the most common and dangerous cases of misuse:

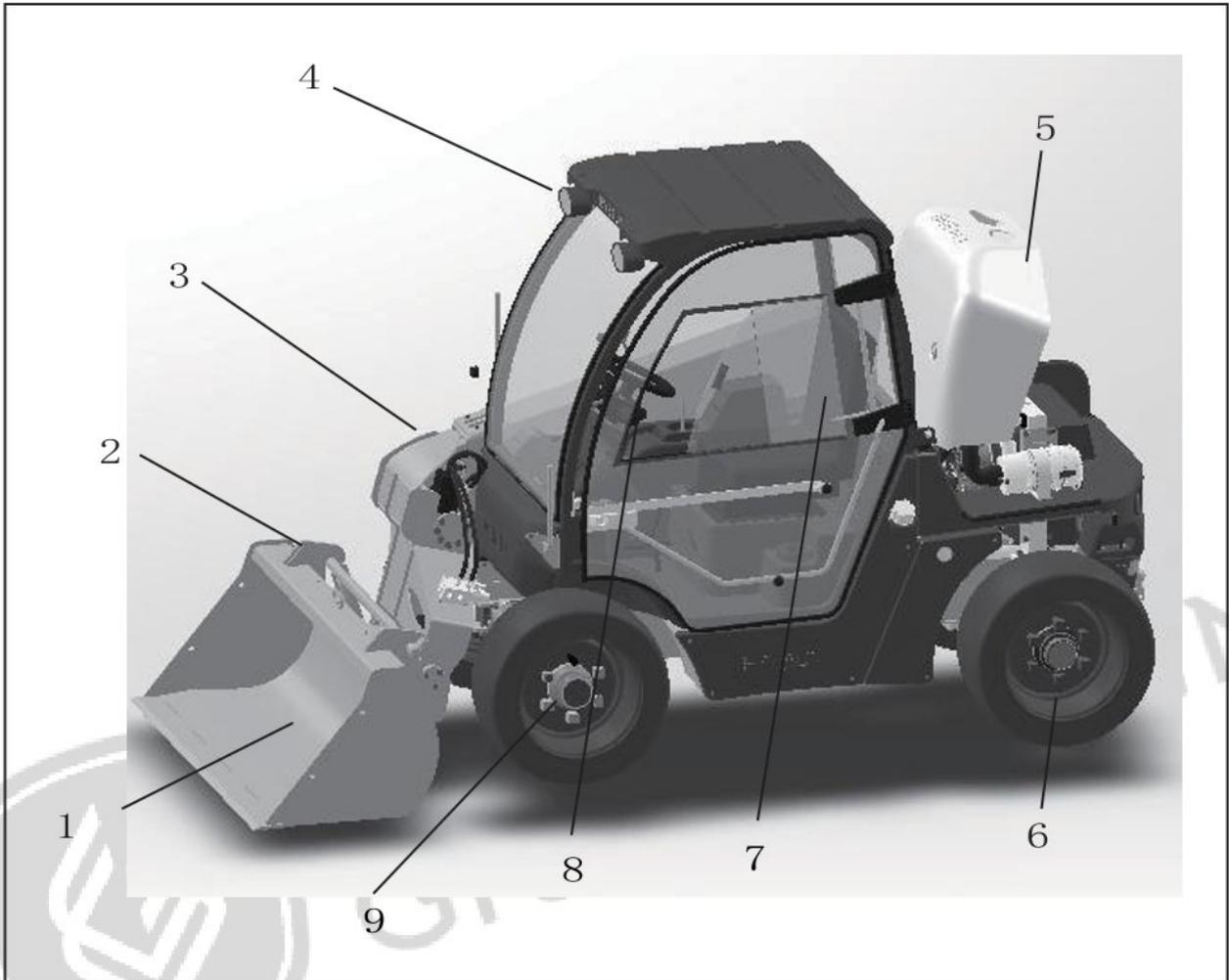
- Carrying people on the loader or on an accessory or piece of equipment.
- Failure to strictly follow the operating and maintenance instructions specified in this manual.
- Exceeding the loader's load limits.
- Operating on unstable, unpaved ground or on the edges of trenches and excavations.
- Operating across slopes.
- Operating during storms.
- Operating on slopes steeper than recommended.
- Using accessories or equipment for purposes other than those intended.
- Using accessories or equipment not authorized or manufactured by GG613S.
- Operating in areas where there is a risk of fire or explosion.
- Operating in enclosed or unventilated areas.

OPERATOR RISKS

Certain risks could be caused by operators during their work. For example:

- Risks caused by working excessively fast or carrying loads at excessive heights in view of the load or working environment.
- Risks caused by applying methods incorrectly when controlling or replacing a hydraulic valve (residual pressure - uncontrolled movements).
- Risks caused by applying methods incorrectly when dismantling parts such as e.g. cylinders without having attached all mobile parts appropriately (risk of mobile parts accidentally falling).
- Risks caused by the machine accidentally tipping over without use of the seatbelt.

MAIN PARTS



- 1 - bucket
- 2 - Fork carriage for accessories and tools
- 3 - Horizontal arm
- 4 - Headlights and signal lights
- 5 - Engine cover
- 6 - Wheel
- 7 - Driver's seat with seatbelt
- 8 - Steering wheel
- 9 - Front axle

DESCRIPTION OF THE MAIN PARTS

1. HYDROS TATICTRANS MISSION

This is an assembly of components enabling the movement of the machine. The assembly mainly consists of:

- variable-flow hydrostatic pump connected to the combustion engine via an elastic coupling.
- a hydraulic unit fitted on the differential pinion of the front axle.
- two radial piston hydrostatic motors, one on each wheel, for the rear axle. A solenoid valve which ensures differential blocking, and can be selected using a button on the lower part of the joystick handle (only on 4WD versions).
- a hydraulic fluid filter in the tank suction line.
- a cooler for the hydraulic oil circuit

2. FRONT AXLE

The front axle transmits the movement from the hydraulic unit to the wheels

3. TYRES

The machine is equipped with tires of appropriate dimensions for the maximum load of the loader. When replacing tires, they should be systematically replaced with tires of the same dimensions and load-bearing properties.

4. THE PARKING BRAKE is a negative system and actuates the disk assembly of the service brake (hydraulic actuation).

This brake is activated using a switch located to the left of the instrument panel, facing the operator.

5. TOWING HOOK (IF FITTED)

The machine may be fitted with a rear connection and pull authorised trailers.

- Check if your machine is equipped with optional accessories

DURATION OF USE

Certain risks could be caused by operators during their work. For example:

-The effective life cycle of the machine is 8000 hours providing that all checks, periodic maintenance operations and overhauls defined in the manual are carried out.

DANGER

After this period, the loader must not be used without inspection and checking by an official/authorized representative or dealer.

SPECIAL SAFETY MESSAGES

The loaders comply with the relevant protection requirements specified in the applicable regulations for the countries of the European Economic Area, in relation to any type of hazard that may constitute a risk to health or life - provided that the machine is used and maintained in accordance with these directives.

Any hazards resulting from improper use, failure to follow these instructions or other recommendations supplied with the loader are the responsibility of the user.

This section contains instructions for using the loader in accordance with the provisions of the Machinery Safety Directive.

WARNING

More appropriate methods with equivalent safety levels for the start-up, use and repair of the machine may exist, in view of the area of operation, available resources at all times and the assessment of the risks inherent to the work station in question.

Most accidents occurring with machines, during operation, maintenance or repairs, are due to a lack of attention to basic safety precautions. Therefore,

it is necessary to pay constant attention to the reactions which may occur at each interaction with the machine.

This manual uses safety symbols to indicate the potentially most dangerous situations.

IMPORTANT

Identifying potentially dangerous situations before they happen can help to avoid accidents. Under all circumstances, should it be necessary to proceed in a manner differing from that described in the manual, ensure that:

- the procedures to be applied are not explicitly prohibited;
- these methods are safe, i.e. they satisfy the standards and descriptions mentioned in this section of the manual.

- these methods do not cause direct or indirect damage to the machine, making it unsafe.

If in doubt, always ask! Contact your Official GG613S Representative or Dealer should you have any questions.

PREREQUISITES FOR PERSONNEL

You are the "KEY" to the safety so think...

- Before you begin using a Loader that you are not familiar with, you should read this operator manual carefully and consult your superior if you have any doubts.

1. PREREQUISITES FOR OPERATORS

Operators which use the machine occasionally or regularly (e.g. for transport) must satisfy the following requirements:

Operators must not consume alcohol, drugs or other substances which may alter the physical or mental state of the person, and consequently their ability to operate the machine, prior to and during work.

2. PHYSICAL REQUIREMENTS

Operators must have normal hearing and visual abilities, satisfactory coordination and the ability to execute the functions required to operate the machine in a safe manner, as specified in this manual.

3. INTELLECTUAL REQUIREMENTS AND ATTITUDE OPERATORS

Operators must be able to understand and apply current standards and safety instructions; Operators must be able to pay attention and take the necessary decisions to ensure their safety and that of others; they must make every effort to execute tasks correctly and in a responsible manner.

4. PRIOR LEARNING

Operators must have carefully read and understood this manual and all graphics and diagrams therein, as well as all informative and warning plates and labels displayed both in this manual and on machines. Operators must receive specialist training on all elements of the operation and use of the machine.

PREREQUISITES FOR PERSONNEL

Personnel in charge of the maintenance of the machine must be qualified, and have received mechanical training in the maintenance of earth moving machines in general, and must necessarily satisfy the following prerequisites:

1. PHYSICAL REQUIREMENTS

Operators must have normal hearing and visual abilities, satisfactory coordination and the ability to execute the functions required to maintain the machine in a safe manner, as specified in this manual

2. INTELLECTUAL REQUIREMENTS AND ATTITUDES

Operators must be able to understand and apply current standards for preventive maintenance and safety instructions; Operators must be able to pay attention and take the necessary decisions to ensure their safety and that of others; they must make every effort to execute tasks correctly and in a responsible manner.

3. PRIOR LEARNING

Operators must have carefully read and understood this manual and all graphics and diagrams therein, as well as all informative and warning plates and labels displayed both in this manual and on machines. Operators must receive specialist

IMPORTANT

According to the applicable national legislation, operators may be required to validate prior training or aptitude to operate the machine in the form of a permit

(or log) issued either by the employer or a government or private body. Operators should obtain information locally.

Routine machine maintenance will not involve the execution of complex technical operations. Therefore, most of these operations may be carried out by the operator simply by following the instructions provided in this manual.

WORK AND MAINTENANCE CLOTHING

The appropriate equipment and material for the function in question and the prevention of accidents must be used when operating the machine or carrying out maintenance or repair operations. The final equipment will be selected on the basis of the assessment of risk for each work station; however, generally speaking, the following recommendations apply:



comfortable close fitting work suit or other clothing which cannot be caught in moving components.

Wear reflective clothing if appropriate.

- Protective helmet.
- Protective gloves.
- Safety boots.
- Ear protection
- Safety goggles, if applicable.

Make sure that you are issued with all the necessary personal protection equipment (PPE) to carry out your work safely, for instance: hard hat, ear protection, warm clothes, reflective equipment, safety goggles, masks, etc.

The operation of the Loader whilst wearing bracelets, chains, loose clothing, with long hair which is not tied back, etc. is not recommended due to the risk of catching in controls, rotating parts, cracks, etc.

The Loader should only be used by authorised and duly trained personnel.

•Only use approved accident prevention equipment in good condition

SAFETY STANDARDS

WORKING AREA

The Loader should only be used by authorised and duly trained personnel.

Depending on the work area, remember....

- If there is a risk of fire or explosion in the working area, either because of goods stored or because of possible fluid or gas leaks, check that the Loader is fitted with a sufficient degree of fire protection.
- If you have to work in closed spaces, make sure that the area is well ventilated in` off when it is not needed.
- To drive the Loader on public roads, all necessary approvals and licenses must be obtained in accordance with the current legislation in the country of use, and all signs and safety elements required by legislation must be satisfied.
- In some countries, the Loader may be used without lighting in full daylight or in areas which are sufficiently lit.

Always account for the characteristics of the planned working area. Carefully study the working area: consider the area in view of the dimensions and movements of the machine.



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PRIOR PREPARATION WHEN STARTING UP THE LOADER

Place the machine in its working position and check that the machine is on the level. Before starting operations:

- Check that maintenance operations are carried out carefully, and that the specified time intervals are applied (see section 4 on "MAINTENANCE").
- Check that enough fuel exists in view of autonomy, to avoid the risk of the engine stopping suddenly during a critical manoeuvre. Always stop the engine before refuelling and never smoke during the process. Do not mix gasoline or alcohol with the fuel.
- Carefully clean the instruments, plates and labels, lights, rear view mirrors and wing mirrors (if fitted).
- Check that all safety devices fitted on the machine operate correctly and in the working area.
- It is prohibited to make tieover repairs simply to be able to start work
- Should any difficulties or problems of any type arise, immediately notify your superior.

Do not start any job without complying with safety requirements. If you notice any anomaly while using the Loader, inform the maintenance service immediately.

Before starting work with the Loader, clean up any possible oil or fuel which may have leaked, clean and remove any grease from your hands and the soles of your shoes and remember to check the following items:

- Tyre pressure and tread condition.
- Check brake functioning.
- Check for any leaks in the hydraulics, fuel and cooling system, etc.
- Check that all protectors, covers and safety end stops props are correctly positioned and properly attached.
- Check that there are no cracks or other structural defects visible to the naked eye.
- Check the correct operation of all controls.
- Check levels of fluids and lubricants:
 - fuel.
 - inching circuit fluid. hydraulic fluid.
 - coolant.
 - engine oil
- Check the seatbelts and their mountings are in good condition and properly fixed. Carefully inspect the condition of this device paying special attention to:

·cuts or loose threads on the belt.

·wear or damage to fittings, including anchor points.

·incorrect functioning of the seat belt buckle or retracting roller.

·loose seams or stitching.

-Check that all covers, locks and other safety elements are correctly positioned. The removal of safety devices such as the engine cover is prohibited with the exception of for maintenance purposes. Should it be necessary to remove these devices, stop the engine, and pay close attention during the operation.

Replace

the devices before starting the engine and operating the machine.

-Check the correct functioning of alarms and signalling devices (for example: acoustic warning, obstruction indicator for the air admission filter, etc.)

-Check that all the information and safety plates on the Loader are clean and in good condition. Danger warning signals must not be removed, covered or unreadable.

- Check that the lighting and signalling system is clean and working properly (if fitted).

- Check the electric battery connections and the level of electrolyte.

- Adjust the seat position so that you are comfortable and can easily reach the controls.

- Do not start the Loader or operate the controls unless you are in the operator's seat.

- To ensure your safety should the machine roll over, do not forget to correctly adjust and fasten the seat belt.

DURING WORK AND MAINTENANCE

When operating the Loader, do not forget to ...

- Keep hands, feet and the whole body in general inside the area provided for the operator.
- Pay special attention to work on slopes, move slowly, avoid being situated crosswise and do not operate slopes which exceed the recommended gradient.

A slope within the recommended gradient does not mean that this slope can be manoeuvred on with absolute safety under any load, terrain or handling conditions. Descend slopes in reverse gear, i.e. with the load in the most stable direction.

- It is not recommended to operate on slopes greater than 15% under any circumstances.
- Give way to any pedestrians you might come across while driving.
- The Loader must not be used to carry people, other than the driver, or to lift people if approved and authorised systems are not fitted for this purpose.
- Do not overload the Loader or handle loads which displace the centre of gravity of the Loader outside of limits. Carry out manoeuvres gently, especially when changing direction on slippery ground.
- Do not carry unstable, unfastened or overlarge loads. If very large or wide loads must be handled, take all possible precautions to avoid hitting items in the surrounding area and other potential accidents.
- Before handling loads from a lorry or trailer, ensure that the latter is appropriately positioned and that the brakes are set.
- If using an accessory, check acceptable loads for the Loader + accessory configuration (which will differ from figures for the standard configuration) prior to use.
- Ensure that you have good visibility of the track, if the load obstructs visibility, drive in reverse gear and increase precautions.
- When approaching a crossroads with poor visibility, slow down, sound your horn and move forwards slowly in accordance with the amount of visibility available.
- The speed of the Loader should be adjusted to the working conditions and area at all times. Systematically driving the machine at maximum speed may represent a danger to the operator and the surrounding area.
- Check that the resistance of the ground on which you are driving is sufficient for the loaded Loader, in particular when accessing bridges, embankments, slabbed areas, loading areas, etc.
- Before reversing the Loader, the operator should check that doing so will not put at risk either the machine itself or nearby people or objects.
- Do not drive with the horizontal arm lifted.
- Do not activate two horizontal arm movements simultaneously.
- Keep your mind completely on the job in hand. The safety of both the driver and others depends on the care taken when driving.
- Depending on the ground, try to raise as little dust as possible while moving about driving.
- The Loader is not designed to tow other machines. If, for any reason, this operation is indispensable, check that the machine has sufficient pulling power.
- Advance carefully and slowly; If the trailer is not fitted with an inertia brake, make sure that the brakes are strong enough for both the Loader mass and that of the trailer. If the machine rolls over, it is important that the driver avoids being trapped between the machine and the ground.

To prevent this we recommend the following:

- Try to remain within the operator cab.
- Grasp the steering wheel firmly

Push feet firmly against the floor plate of the cab.

- Try to keep as far away from the point of impact as possible. Take care when loading and unloading the Loader

- If concrete spills onto the road surface, remove it before it hardens. While working, carrying out maintenance or repairs, extreme precaution must be taken. Your safety depends on it...

While working, carrying out maintenance or repairs, extreme precaution must be taken. Your safety depends on it.

- Never stop carrying out Loader maintenance. Specialised personnel should be assigned to this job, equipped with the necessary tools and appropriate instructions. Only authorised personnel should carry out maintenance and repair work.

- Check the best route to reach the working area.

- It is prohibited to transit or remain under suspended weights or machine parts which are only supported by hydraulic pistons, chains or cables.

- Maintain the handles and footholds used to enter and operate the machine clean and free of oil and grease to avoid slipping or falling.

- Face the machine when entering or exiting the cab or other raised parts. Never face away from the machine.

- It is prohibited to enter or exit the machine during operation.

- It is prohibited to leave the control panel when the machine is operating.

- Unless unavoidable, all interventions on the Loader should be carried out with the engine switched off, without any load and with all blocking and locking devices engaged.

- It is prohibited to stop or undertake any kind of intervention in the area between the wheels of the machine while the engine is running. The engine must be stopped.

- Some operations are easier to carry out with the horizontal arm lifted.

Before doing so, precautions must be taken to prevent the arm from accidentally lowering using the devices designed for this purpose for each specific Loader model.

- Maintenance or repairs may not be carried out without the appropriate lighting.

- Direct the spot light beams to ensure that personnel are not blinded.

- Before handling cables or electric devices, check that connections are correct and that the devices are operational.

- Before carrying out any electrical welding on the Loader, disconnect the battery to avoid possible damage to electric and electronic equipment.

- It is prohibited to lubricate, clean or adjust mechanical components while moving.

- Operations which require the use of specific tools may not be carried out without these tools.

- Do not use tools in an unsatisfactory condition or in an improper manner (e.g. use a clip instead of a fixed clamp).

- Regular checks should also be carried out on all those elements whose excessive wear or aging could lead to a risk of accident, for example: hydraulic pipes, brake lining, tyre tread, etc.

- Should operator protection suffer an impact that induces a crack or permanent deformity, as this is a safety element, it must be replaced with a new item.

- All modifications which affect the capacity and safety of the Loader must be authorised by the manufacturer or by an official industrial actor, with an update to instruction manuals and plates if necessary.

-The manufacturer will not be held responsible for any incidences or accidents caused by the use of non-original spare parts or by repairs carried out by unauthorised workshops.

- When replacing tyres, ensure that they are the correct replacements and follow the tyre manufacturer's safety instructions. For safety reasons, split rim wheels must not be used (wheels consisting of two rims bolted together).

- The Loader should be lifted for handling or inspection purposes using the points on the machine designed for this purpose, as indicated in this manual, and using devices with an adequate capacity.

- If the Loader needs to be towed, use a tow bar whenever possible, or if none is available, a cable that is strong enough for the job. In either case, it should be fixed onto the point indicated by the manufacturer and the manoeuvre should be carried out at a speed of no more than 10 Km/h. When driving a towed Loader, pay attention to the position of your hands on the steering wheel, to ensure that an unexpected turn of the wheel does not cause you injury.

- Ensure that the towing truck has adequate towing and braking capacities to be able to perform this operation.

- If the Loader needs to be transported on a lorry platform:

Ensure that only a minimum amount of fuel remains in the tank.

- Apply the Loader brakes.

- Apply chocks to the wheels and fix them to the truck bed.

- Anchor the machine firmly to the truck bed using slings or other methods to prevent any kind of movement.

- This Loader is hydrostatically controlled, should it be necessary to tow the machine, before doing so, follow the instructions indicated in this manual for the disconnection of the hydrostatic unit, therefore facilitating towing and eliminating any risk for the hydrostatic unit.

- When changing a tyre, make sure that it is fitted with the tread pattern facing the right way.

- Before carrying out any work on the engine cooling system, wait for the temperature of the coolant to drop enough for the coolant reservoir cap to be removed safely.

- In order to avoid allergic reactions and other hazards affecting the skin, replenishing of fuel or other fluids should be carried out wearing protective gloves.

- Before disconnecting fluid systems, make sure there is no pressure in them, that they no longer contain hot fluid, and take steps to avoid unexpected spills.

- Checks should be periodically carried out on the hydraulic system to detect any possible leaks or misalignment on the safety valves which could lead to a risk situation.

- It is prohibited to smoke or use flames in locations with a risk of fire or in the presence of fuel, oil or batteries.

- Avoid leaving containers or tanks containing fuel in areas which are not designed for the storage of fuel.

- Handle inflammable or dangerous substances with care.

- After maintenance or repair operations, before starting up the machine, check that no tools, gates or other materials remain between moving parts, in the suction air ducts or in the cooling air circuit.

- When executing manoeuvres with guidance from a person outside the Loader, only one person must transmit signals and indications.

- All orders issued by managers must be complied with. Avoid interference during complex operations or manoeuvres,

- Avoid distracting or frightening operators without reason.

- When completing an operation, do not leave the machine in a potentially dangerous configuration.
- Be environmentally friendly. When changing oil, fluids, tyres, batteries, etc., take the used materials to the corresponding recycling centres. If you handle or scrap silencers or catalytic silencers which contain mineral fibre-based absorbent materials, protect your skin with the appropriate gloves and clothing and take the materials to approved disposal sites for this class of materials.
- Similarly, at the end of the useful life of the machine, hand it to an authorised scrap centre.



DURING WORK AND MAINTENANCE

When operating the Loader, do not forget to ...

- Keep hands, feet and the whole body in general inside the area provided for the operator.
- Pay special attention to work on slopes, move slowly, avoid being situated crosswise and do not operate slopes which exceed the recommended gradient.

A slope within the recommended gradient does not mean that this slope can be manoeuvred on with absolute safety under any load, terrain or handling conditions. Descend slopes in reverse gear, i.e. with the load in the most stable direction.

- It is not recommended to operate on slopes greater than 15% under any circumstances.
- Give way to any pedestrians you might come across while driving.
- The Loader must not be used to carry people, other than the driver, or to lift people if approved and authorised systems are not fitted for this purpose.
- Do not overload the Loader or handle loads which displace the centre of gravity of the Loader outside of limits. Carry out manoeuvres gently, especially when changing direction on slippery ground.
- Do not carry unstable, unfastened or overlarge loads. If very large or wide loads must be handled, take all possible precautions to avoid hitting items in the surrounding area and other potential accidents.
- Before handling loads from a lorry or trailer, ensure that the latter is appropriately positioned and that the brakes are set.
- If using an accessory, check acceptable loads for the Loader + accessory configuration (which will differ from figures for the standard configuration) prior to use.
- Ensure that you have good visibility of the track, if the load obstructs visibility, drive in reverse gear and increase precautions.
- When approaching a crossroads with poor visibility, slow down, sound your horn and move forwards slowly in accordance with the amount of visibility available.
- The speed of the Loader should be adjusted to the working conditions and area at all times. Systematically driving the machine at maximum speed may represent a danger to the operator and the surrounding area.
- Check that the resistance of the ground on which you are driving is sufficient for the loaded Loader, in particular when accessing bridges, embankments, slabbed areas, loading areas, etc.
- Before reversing the Loader, the operator should check that doing so will not put at risk either the machine itself or nearby people or objects.
- Do not drive with the horizontal arm lifted.
- Do not activate two horizontal arm movements simultaneously.
- Keep your mind completely on the job in hand. The safety of both the driver and others depends on the care taken when driving.
- Depending on the ground, try to raise as little dust as possible while moving about driving.
- The Loader is not designed to tow other machines. If, for any reason, this operation is indispensable, check that the machine has sufficient pulling power.
- Advance carefully and slowly; If the trailer is not fitted with an inertia brake, make sure that the brakes are strong enough for both the Loader mass and that of the trailer. If the machine rolls over, it is important that the driver avoids being trapped between the machine and the ground.

PARKING THE LOADER AND CUTTING THE ENGINE

When leaving the Loader...

- Turn the engine off and switch off the ignition. Place the horizontal arm in the horizontal position.
- Place all controls in the neutral (standby) position.
- Put the parking brake on.
- Block all mechanisms which impede use of the Loader by unauthorised persons; the starter circuit in particular, by removing the ignition key.

If you must leave the Loader on a slope, block the wheels with suitable chocks in addition to putting the parking brake on.

- Leave the Loader parked in areas specifically designated for this purpose, and not in locations where it prevents people from passing or blocks exits or access to stairways or emergency equipment.

SAFETY DEVICES

Various safety devices are fitted on the machine and must never be modified or removed.

Regularly check the effectiveness of these devices. Should these devices not be in perfect operating order, stop work immediately and repair or replace.

For information on how to check safety devices.

OVERLOAD SYSTEM

The overload system assists operators in using the machine safely via the use of visual and back-up alarm if the machine is reaching roll-over limits and the situation is therefore dangerous.

This device only indicates the forwards roll-over point; other factors play a role in the stability and safety of the machine, therefore, under no circumstances should the overload system be used as a guide when assessing the load to be handled. Acceptable loads are indicated on the load charts shown on the machine and in this manual. Under no circumstances may this device replace the operator's judgment. Operators are responsible for working in safe conditions and complying with the safety standards defined. While working, carrying out maintenance or repairs, extreme precaution must be taken. Your safety depends on it...

PREAMBLE

This section aims to supply the operator with a basis to gradually learn how to operate the Loader. Learn to use and predict the reactions of the Loader.

Once seated in the driver's cab and having made preliminary adjustments, the operator must identify and learn the position of the different controls and instruments.

This process is essential in ensuring that the operator is able to work effectively or carry out rapid punctual operations if suddenly required to guarantee the safety of the operator and the machine.

Learn to use controls in an open area, free of obstacles, in a safe manner without people nearby. Never use controls suddenly, apply caution until certain of the effect of the controls on the machine. Before entering the machine Check and clean

- Clean all windows, lights, rear view mirrors (if fitted).
- Check that bolts, joints and screws are tightened and positioned as appropriate.
- Check that no oil, fuel or coolant leaks exist.
- Check tyre pressure.

Refer to the "Tyre pressure" chapter in the "PERIODIC MAINTENANCE OPERATIONS" section.

- Check that tyres have no cuts and that the tyre fabric has no visible breakages with deformation. The explosion of a tyre can cause serious injury. Do not use the machine with damaged or low-pressure tyres or tyres with excessive wear.

ACCESSING THE MACHINE

Always check that your hands and sole are dry and clean before entering the driver's cab. Do not hold on to or pull on the steering wheel to access the operator's cab. Hold the handle provided for this purpose and always place your foot on the cab step to avoid slipping both when entering and exiting the cab.

Access the Loader cab from the left side

The Loader should only be used by authorised and duly trained personnel.

ADJUSTING THE SEAT

The seat must be carefully adjusted to provide a safe and comfortable driving position for the operator.

- Adjusting the distance of the seat from the pedals:

A device is fitted enabling the seat to be moved forward or back to adjust the distance from the pedals. To adjust the seat, turn the lever (1) and push the seat in the desired direction. Once in position, release the lever and ensure that the seat remains blocked in the selected position.



To fasten the seatbelt, insert the anchor point (1) into the buckle (2) until you hear the locking "click". To unfasten the seat belts, press button (3). The seat belt adapts to the

body of the passenger using it, giving them freedom of movement but adjusting the belt to the physical constitution of the road. If the machine is parked on a steep slope, the reel retracting roller could become locked; this is normal. Additionally the reel retracting roller blocks the strap belt every time the strap belt is suddenly pulled or in case of sharp braking, collisions or turning operations at high speed.

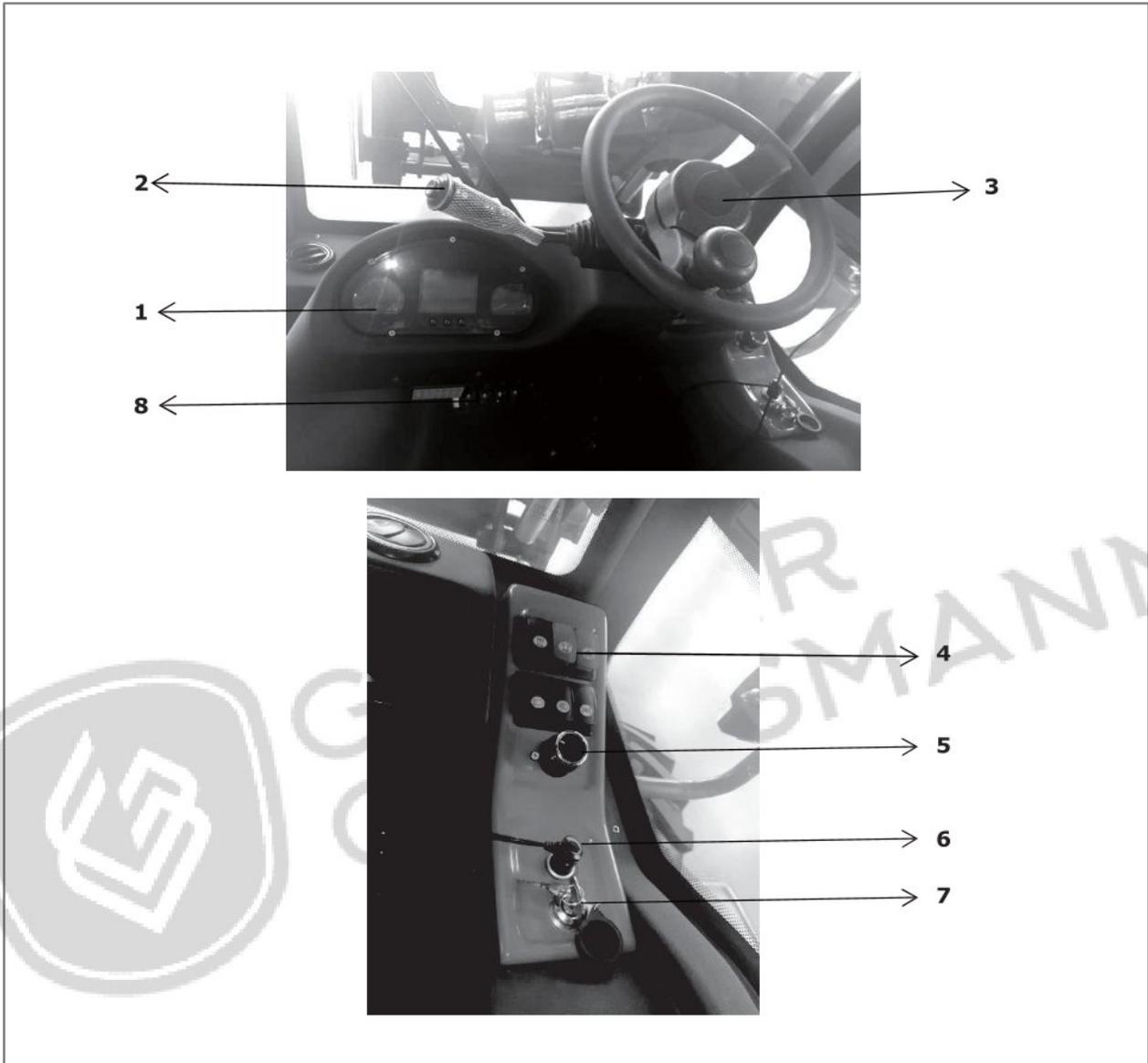
ADJUSTING THE REAR VIEW MIRRORS

The machine is equipped with two external rear view mirrors:

- The lefthand mirror (1) is fitted on the upper lefthand upright of the cab and provides a view of the area behind and to the left of the machine. Adjust the position by manually turning the mirror.



CONTROL PANEL



1 - The dashboard

2 - Wiper controller

3 - The steering wheel

4 - Light switch

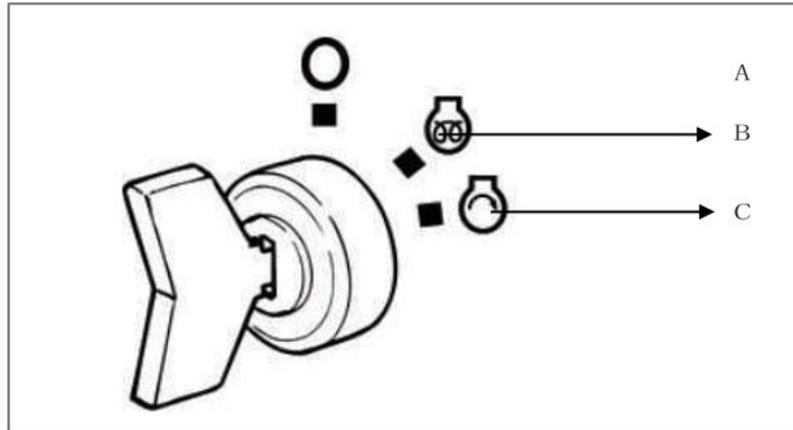
5 - Risk control system

6 - Cigarette lighter

7 - Engine controls

8 - The fuse

ENGINE CONTROLS



A: Neither circuit is supplied. You may remove the key and the engine is stopped.

B: Circuits are supplied, ready to start the engine. Engine oil pressure, battery charge and pre-heating lamps all light up. If the pre-heating lamp is lit, this indicates that the pre-heating resistances are operational and heating the combustion chamber to a temperature which will enable the firing of the vaporised diesel fuel. Wait until this light goes out before starting the engine.

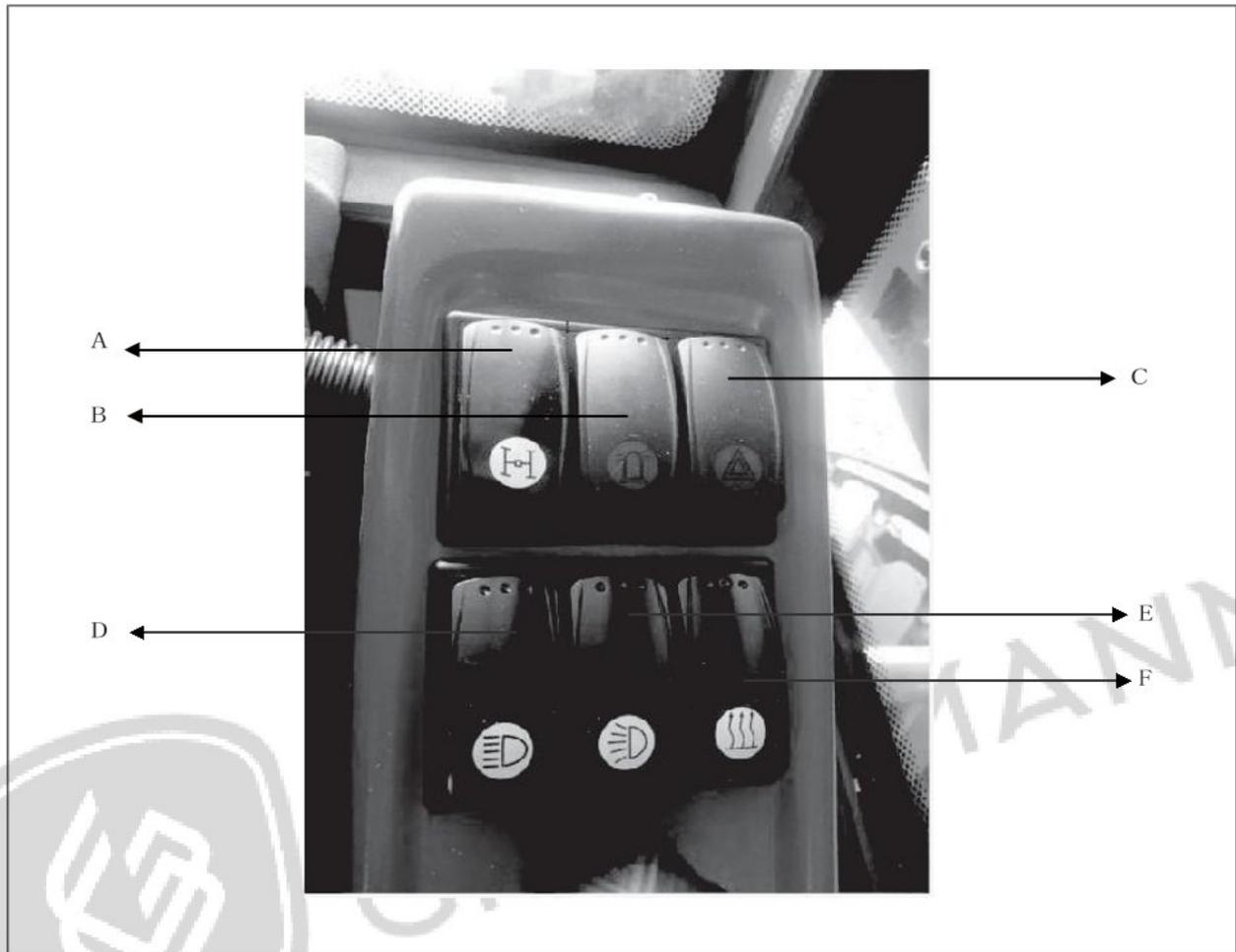
C: Start the engine. When the key is released, it will automatically return to its initial position.

BRAKE



Press the pedal (1) to bring the machine gradually to a stop. You may accelerate the engine to move the horizontal arm more rapidly. Press the pedal to the floor to gradually activate the service brake. Slowly release the pedal. The machine will start to move.

WARNING LIGHT FUNCTION



A - Differential lock
D - headlamps

B - Warning lamp
E - Working light

C - Emergency light
F - Heat

START-UP

BEFORE STARTING THE ENGINE

- Check tyre pressure and condition.
- Familiarise yourself with the controls and ensure that they function correctly.
- Verify that steering operates freely.
- Activate the throttle pedal various times to ensure it operates freely. It must return to the original position when released.
- Activate the brake pedal to ensure that the brakes function correctly. The pedal must return to the original position when released.
- Ensure that the joystick operates freely.
- Check fuel, engine oil, hydraulic oil, coolant and inching circuit fluid levels.
- Check for oil leaks on the engine, in the transmission components or in the hydraulic circuit.
- Clean the lights and the lamps (if fitted).
- Ensure that the engine cover is correctly covered.
- Ensure that the seatbelt is correctly secured.

Before starting the day, carefully inspect this device with special attention to:

- Cuts or threading on the belt.
- Wear or damage to anchor points.
- Poor functioning of the seat belt buckle or the retracting roller.
- Loose threads or poor stitching.
- If transporting cargo, respect the load capacity. Ensure that the cargo is properly distributed.
- Review the engine parts while it is off. Check fixings.
- Check that the starter switch, headlights, turning lights, lamps and the back-up alarm are functioning correctly.
- Start the engine and drive forward slowly a short distance and press the brake pedal to check the brakes.

Correct any problem you may have found before operating the Loader. Consult an authorised GG613S dealer if necessary.

START-UP CHECK LIST

With the ignition, check the correct operation of the following devices:

- Forward/reverse selector.
- Starter switch.

START-UP

For safety reasons when starting the Loader, the operator must be seated with the seat belt fastened, the parking brake must be applied, and the operator must check that the joystick and the FNR switch are in the neutral position.

Insert the key into the starter switch and turn it to position (B) until the pre-heat indicator turns off, press the throttle pedal a 1/4 of the way and turn the key to position (C) until the engine starts. Do not hold this position for more than 15 seconds. If the engine does not start repeat the previous operations. Wait for 30 seconds between each try.

CAUTION

If the indicators / warning lights do not go out when the engine starts to run, stop the engine immediately and identify the causes of the incorrect operation.

IMPORTANT

It is not possible to start the engine if the FNR switch is not in a neutral position.

DANGER

After starting the engine, the engine will continue to run if the operator leaves the driver's cab. Do not go far from the driver's cab without stopping the engine, lowering the arm to the ground, and applying the parking brake.

START THE ENGINE USING AN EXTERNAL SOURCE

DANGER

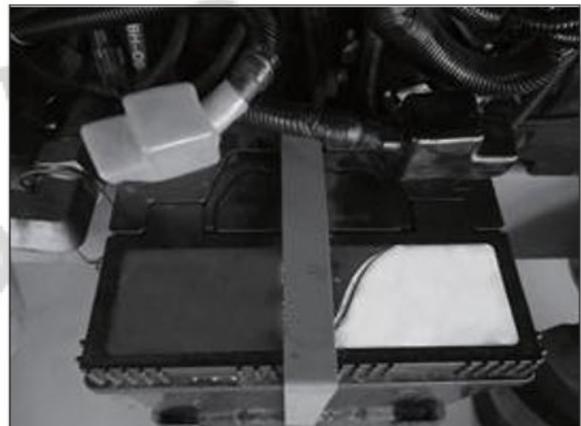
When starting the engine using an external source of energy, by connecting to the battery of another machine, check that the two resources do not enter into contact to avoid the possible production of sparks. The batteries emit a flammable gas which sparks could ignite, leading to the battery exploding.

Do not smoke when checking the level of electrolyte.

Keep metal items such as buckles, watch straps, etc. at a distance from the positive cable (+) of the battery, as they may cause a short circuit between this pole and nearby metal components, and consequently the operator may be burnt. The external or emergency battery must have the same nominal voltage and capacity as the Loader battery.

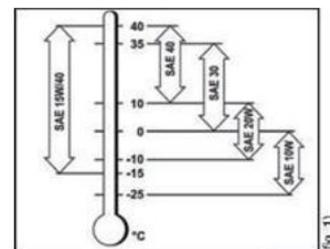
If the engine cannot start due to a flat battery, another 12V booster battery can be used together with the corresponding jump leads to connect the two batteries. If you use the battery of another machine or Loader, avoid the two machines touching.

1. Apply the Loader's parking brake.
2. Remove the right side cover.
3. Connect the positive (+) cable to the positive (+) battery terminal and connect the negative (-) cable to the negative (-) battery terminal (fig. 1).
4. Start the Loader in the normal way.
5. Disconnect the cables from the terminals and the connections, starting with the positive (+) terminals.



DANGER

Only use a 12V battery, as all other devices (battery chargers, etc.) could lead to the battery exploding or damage to the battery unit.



The use of oils with suitable SAE viscosity in view of ambient temperatures is recommended for cold starts. Consult the instructions and maintenance manual of the manufacturer of the engine for this purpose.

Cold starting the engine:

- Set the FNR switch to neutral.
- Select the starter switch to ignition and wait until the resistance pre-heating indicator goes out. Press the accelerator pedal to the floor and start the engine by turning the starter switch to the start position. Once the engine has started, release the switch and reduce engine speed to idle.

Wait for a few minutes before starting operation, to allow the engine oil to heat gradually and optimise lubrication.

START-UP OF THE MACHINE

Once the engine has reached service temperature, check that all controls are set to their resting positions and that the FNR switch is set to neutral. Proceed as follows:

- Select forward/reverse as required.
- Release the parking brake.
- Gradually apply pressure to the accelerator pedal to start movement.

WARNING

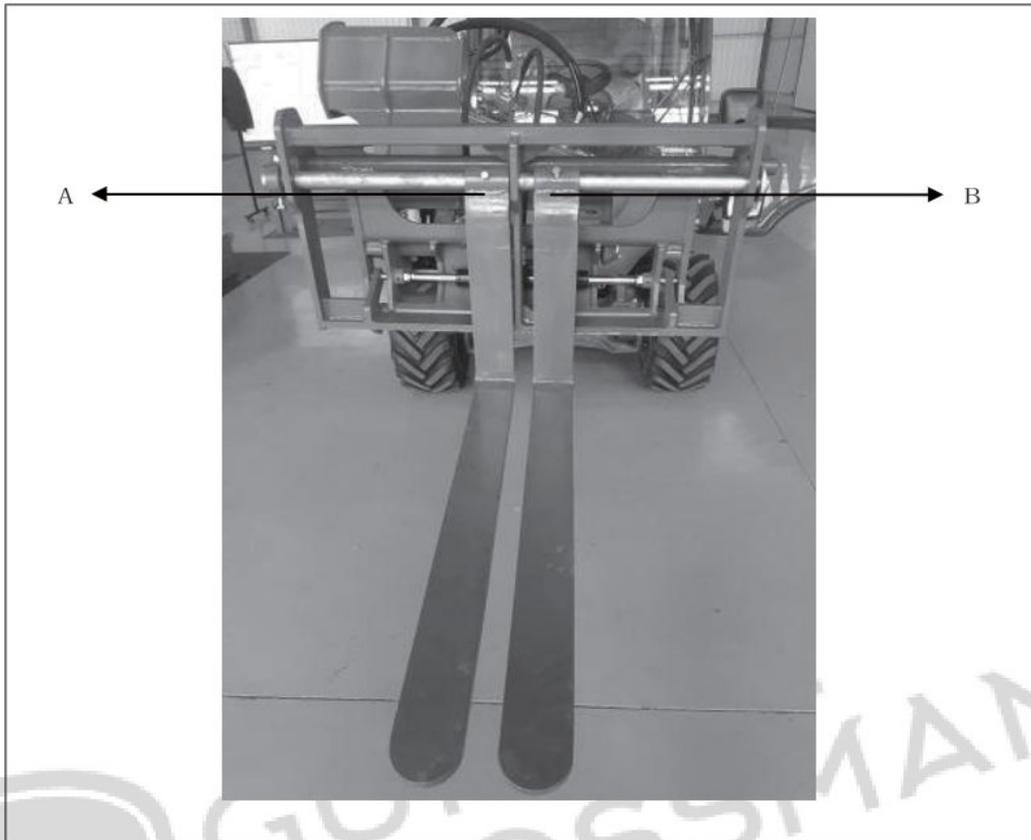
Do not activate the forwards/reverse selector while the machine is moving. The machine would suddenly change direction, putting the operator in real danger.

PARKING THE LOADER AND CUTTING THE ENGINE

Always park the Loader on level ground, either at the end of the day or in order to carry out any maintenance work, as follows:

- Gradually release the accelerator pedal and apply light pressure on the service brake pedal.
- Set the FNR switch to neutral.
- Put the parking brake on.
- Release the service brake pedal.
- Lower the attachment fitted on the horizontal arm to the ground.
- Run the engine at idle for 1 minute, if the Loader has been working at full load. Turn the starter key to position "0", remove the key and take the key with you. Never leave the key in the parked Loader.
- Lower the driver's cab and lock using the cab door key (if fitted).
- Chocking the wheels with suitable blocks is also recommended.

USE OF THE LOADER



DANGER

Always exit the driver's cab backwards. Make sure that your boots and hands are clean and dry. Hold on to the supports and handles to avoid falling or tripping.

Set the parking brake whenever the Loader stops, to prevent any undesired movements.

This chapter defines a few techniques and procedures for the use of the machine equipped with a standard fork in safe conditions. Apply the indications of the "OPTIONAL EQUIPMENT" chapter when using different equipment.

WARNING

Examine the working area and check the possible presence of dangerous situations before using the Loader. Check that no holes, embankments, or border areas exist which could sink in, and check for other factors which could compromise the control of the Loader.

ELECTRIC HAZARDS

Pay special attention to electric lines. Check the position, ensuring that no part of the Loader moves less than 6 metres from any electric line.

WARNING

To ensure maximum safety when using the Loader, always weigh the loads to be handled. Refer to the load chart located inside the cab, to the right of the driver.



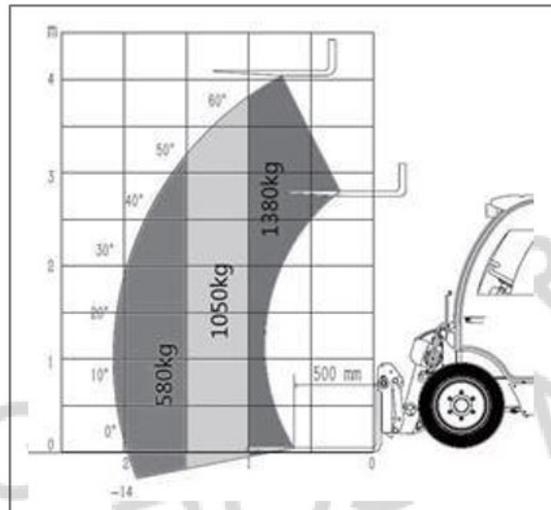
HANDLING LOADS

ADJUSTMENT OF FORKS

The forks must be adjusted in terms of width depending on the load to be handled. Proceed as follows:

Floating forks (standard configuration):

- Loosen the attachment screws (1).
- Lift the forks and slide over the bolts until the desired distance is reached.
- Re-tighten the attachment screws (1).



WARNING

- The centre of the load must always be between the two forks.
- Make sure that you know the weight of the load before starting handling.
- Do not exceed allowable load.
- Refer to and apply the maximum loads indicated on the load chart.
- Separate the forks as far as the load to be handled allows.

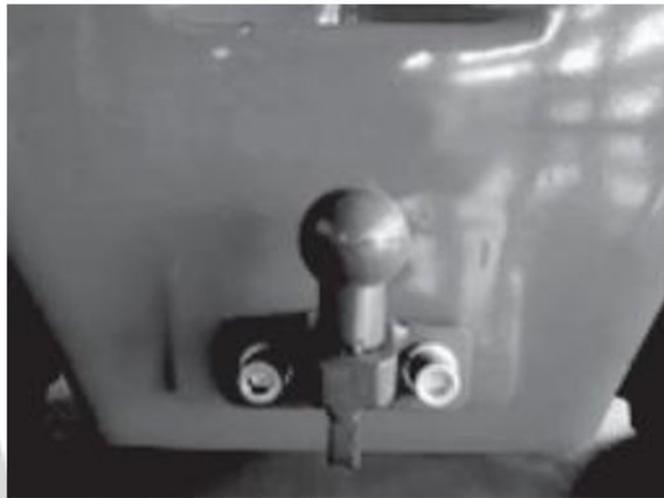
Once the width of the forks has been adjusted correctly, the Loader is prepared for use. This process involves three phases: loading, transport and unloading.

LOADING PHASE

- Approach the load to be moved perpendicularly.
- Introduce the full length of the forks under the load and lift a few centimetres from the ground.
- Tilt the forks backwards to ensure the correct loading of the Loader.

UNBALANCED LOADS

- Identify the centre of gravity of the load. When handling packaged loads, this may be actually marked on the box.
- Place the Loader to move the centre of gravity of the load to the centre of the forks.
- Grip/release the load. This will depend on the type of load handled. If the load is on a pallet, apply the procedure for palletized loads. Should no pallet be used, it may be necessary to secure the load on the forks using the appropriate fastening devices. Stop the engine before allowing anybody to come near to the forks.



WARNING

If it is not possible to identify the centre of gravity of the load, do the following: attempt to lift the load from various different positions until the load remains securely stable on the forks. Do not lift the load more than a few centimetres from the ground, when considering how to lift the load.

Pay close attention when using the horizontal arm and the fork carriage with an unbalanced load.

TRANSPORT PHASE

- Avoid starting to transfer or braking in a sudden manner.
- Move up to the unloading point while paying maximum attention and maintaining the load a maximum of 20-30 cm from the ground.
- Select the appropriate speed for the type of ground over which the machine moves to avoid jumps or skids and losing the load.

- Pay special attention to work on slopes, move slowly, avoid being situated crosswise and do not operate slopes which exceed the recommended gradient.

A slope within the recommended gradient does not mean that this slope can be manoeuvred on with absolute safety under any load, terrain or handling conditions. Descend slopes in reverse gear, i.e. with the load in the most stable direction.

TRANSPORTING TOWED LOADS

The Loader can be equipped with a tow ball with a diameter of 50 mm as an option.

WARNING

Towed masses on flat ground must not exceed: Trailer without brakes: 750 kg. Trailer with brakes: 1250 kg.

- Avoid attaching excessively heavy trailers.
- The load on the towing hook must never exceed 100 kg.
- Do not apply sudden translation movements due to the high risk of accidents.
- For safety reasons, do not tow trailers without an independent braking system.
- Before reversing to secure a trailer, check that nobody is present between the machine and the trailer. Those in charge of signalling must be located at the safety distance and clearly visible for the operator.

Then remove the seat as follows:

- Move the seat cushion backwards and loosen the front screws (B) from the base.
- Move the seat cushion forwards and loosen the rear screws (C) from the base.
- The central screws of the hydrostatic pump's maximum (D) pressure valves must be fully tightened (but not excessively). Loosen the locking-nuts for this purpose.

Once the Loader is repaired, loosen the screw (A) in the hydraulic unit and

re-loosen the screws (D) on the maximum pressure valves of the hydrostatic pump again and re-tighten the locking-nuts.

CAUTION

The Loader is fitted with a hook for future towing should the machine be damaged.



PARKING AND NON-OPERATIONAL MACHINES

SHORT STOPS

Whenever the Loader is parked, either at the end of the day or in order to carry out any maintenance work, it should be parked on level ground.

Apply the Loader's parking brake. Run the engine at idle for 1 minute, if the Loader has been working at full load. Then turn the ignition key to position "A" to stop the engine. Chocking the wheels with suitable blocks is also recommended in case the parking brake fails. Remove the key from the ignition, close the cab, and take it with you. Never leave the key in the parked Loader.

EXTENDED STOPS

Should it be necessary to park the Loader for an extended period of inactivity, the following is recommended in addition to the guidance mentioned for short stops:

- Wash the Loader carefully.
- After washing, carefully dry all parts using a pressurised air jet.
- Completely lubricate the Loader.
- Carry out a general inspection and replace any damaged parts.
- Paint damaged areas.
- Dismantle the battery and place in a dry location after having lubricated the terminals with vase-line. If the battery is temporarily used for other purposes, regularly check the charge level.
- Fill the fuel tank to avoid inner parts rusting.
- Park the Loader in a dry, covered and ventilated location.
- Start the engine at least once monthly, and run at idle for approximately 10 minutes. In extreme climates, empty the coolant from the radiator.
- Forward/reverse selector.
- Starter switch.

START-UP

For safety reasons when starting the Loader, the operator must be seated with the seat belt fastened, the parking brake must be applied, and the operator must check that the joystick and the FNR switch are in the neutral position. Insert the key into the starter switch and turn it to position (B) until the pre-heat indicator turns off,

press the throttle pedal a 1/4 of the way and turn the key to position (C) until the engine starts. Do not hold this position for more than 15 seconds. If the engine does not start repeat the previous operations. Wait for 30 seconds between each try.

A device is fitted enabling the seat to be moved forward or back to adjust the distance from the pedals. To adjust the seat, turn the lever (1) and push the seat in the desired direction. Once in position, release the lever and ensure that the seat.

IMPORTANT

During extended periods of inactivity, also remember that periodic maintenance must be carried out and close attention must be paid to all liquids and elements which may age.

In all events, before starting the Loader, carry out a complete overhaul checking all mechanical, hydraulic and electric parts.

CLEANING AND WASHING THE MACHINE CLEANING

INSTRUCTIONS

Comply with the following instructions to clean the machine in a satisfactory manner:

- Clean parts of oil or grease using solvents or volatile mineral alcohol.
- Remove all protective substances (rust inhibitor, grease, wax, etc.)
- If signs of rust appear on metal parts of the Loader, clean using an emery board and cover with an appropriate protection substance (rust inhibitor, varnish, oil, etc.).
- When the Loader is used in salt water areas (beach areas, etc.), rinse with clean water to preserve the Loader and its components.
- When the Loader is operated in muddy conditions, rinsing the dumper is recommended to preserve the Loader and its components.

Lubrication of metallic parts is highly recommended.

This must be performed at the end of each operation day.

WASHING THE MACHINE

External washing

During the washing process, care must be taken to avoid aiming the pressurised water jet at the air intake (air filter), battery, instrument panel, alternator and other electrical equipment since this can damage the components.

INTERIOR WASHING

Wash the inside of the machine using, water, a bucket and a sponge. Do not use low-pressure water

jets. Finish by wiping with a clean cloth.

WASHING THE ENGINE

Wash the engine after having covered the air suction filter to protect against water.

ELIMINATION

ELIMINATION OF BATTERIES

ENVIRONMENTAL PROTECTION

Dispatch all used batteries to the appropriate recycling centres. Should leaks of substances such as acid or lead occur, which may be dangerous for individuals or the environment, take the emergency action required to reduce impact.



GÜNTER
GROSSMANN

ERIODIC MAINTENANCE OPERATIONS

PREAMBLE

Careful and regular maintenance is necessary to ensure a safe and operational machine for the operator. Therefore, after work in extreme conditions (muddy ground, dusty area, heavy work, etc.) the washing, greasing and maintenance of the vehicle is recommended.

Always check that all parts are in correct working order, that oil has not leaked, that protective and safety devices are effective. Should this not be the case, identify and eliminate the causes of the incident. Scheduled maintenance operations are carried out on the basis of the hours of operation carried out by the machine. Check and ensure that the hour counter remains operational to ensure the correct definition of maintenance intervals. Should the scheduled maintenance standards indicated in this manual not be complied with, the GG613S warranty will automatically be cancelled.

IMPORTANT

Carefully comply with the specific instructions and maintenance manual supplied with the loader for engine maintenance standard

LUBRICANTS ,SAFETY AND HYGIENE STANDARDS

HYGIENE

Should oils come into extended contact with the skin, this may cause irritation. Therefore, it is recommended to use protective goggles and rubber gloves.

After having handled oils it is recommended that you wash your hands carefully using water and soap.

STORAGE

Always store oils in a closed location out of the reach of children. Never leave lubricants in open containers, and without a label indicating content.

ELIMINATION

Oil left in the environment, whether new or used, is serious pollution.

Carefully store new oil, and store waste oil in special containers for future elimination by specialist collection centres.

SPILLAGE

In case of the accidental loss of oil, intervene to enable absorption with sand or aggregates of an appropriate type. Collect the compound created and ensure it is eliminated as chemical waste.

EMERGENCIES

Eyes: In case of contact with the eyes, rinse abundantly with running water. Should the irritation continue, contact the nearest Emergency centre.

Ingestion: Should oil be ingested, do not force the person to vomit. Call a doctor.

Skin: Should the skin come into excessive and extended contact with oil, wash with soap and water. Fire: Should a fire start, use carbon dioxide, dry powder or foam extinguishers. Do not use water.

SCHEDULED MAINTENANCE

- In maintenance operations only use original GG613S spare parts.

This is the only way to guarantee that your Loader will remain as technically efficient as when it was purchased.

- On this Loader as with any other, there are parts and systems which are subject to wear and misalignment, which may affect reliability and operator safety, the environment and the area, e.g. exhaust fume emissions, etc. Necessary maintenance must be carried out periodically to ensure that the machine is kept in a condition similar to when it left the factory.

In accordance with Work Group Directives, inspections of these systems must be carried out periodically and the results recorded on the forms provided by the Work Authorities of each country. (89/655/EEC and RD1215/97).

Even if repairs must be carried out with the engine running, perform all repairs and maintenance operations on the Loader while unloaded, with the forward/ reverse selection set to neutral and the wheels blocked to prevent the Loader from moving.

Unless otherwise specified, do not start the engine during maintenance operations. Never use a flame to check fluid levels.

- Be environmentally friendly.

When changing oils or other fluids, use an appropriate container to collect the fluid and ensure that you are not harming the environment during the operations and take all replaced materials (batteries, coolant, tyres, etc.) to the appropriate Recycling centres.

In cases of leaks of substances which could be harmful to people or the environment, urgently take the necessary actions to reduce the impact, e.g. in oil leaks, plug the leak, place a container to collect the oil, spread absorbent material or pick up and remove the contaminated ground if necessary.

- Roadside breakdown.

In the case of a breakdown when driving on a road, you must use the warning triangles (if fitted).

MAINTENANCE OPERATIONS

DANGER

All maintenance interventions must be carried out with the engine stopped, the parking brake set, the tools on the ground and the FNR switch in the neutral position.

WARNING

Before carrying out any maintenance operation requiring the hoisting of a component, e.g. the horizontal arm or the cab, attach the hoisted component in a stable and secure manner, before carrying out any action. Interventions on the hydraulic circuit must be carried out by personnel with basic knowledge of hydraulics and with the appropriate tools. Pressure should never exceed the figures indicated in the "TECHNICAL DATA" section of this Manual.

Before carrying out operations on hoses or on hydraulic components, check that there is no pressure in the system. Proceed as follows:

- Stop the machine engine. Leaving the driver's seat is not recommended.
- Re-energize the ignition.
- Release the parking brake and move the joystick towards the possible positions to discharge the pressure from the hydraulic circuit.

DANGER

The high pressure conducts in the hydrostatic unit may only be replaced by qualified personnel. Any impurity in the closed circuit may cause the rapid deterioration of the transmission.

Before intervening on any component in the hydraulic circuit, carefully clean the surrounding area.

ENVIRONMENTAL PROTECTION

The handling and elimination of used oil is regulated by applicable standards. Dispatch all used oil to the appropriate recycling centres.

ACCESS TO ENGINE, CAB AND TANK COMPARTMENTS

ENGINE COMPARTMENT

You must open the engine protective cover to carry out any intervention inside the engine compartment. In addition, the side walls of the rear wheel can be removed.

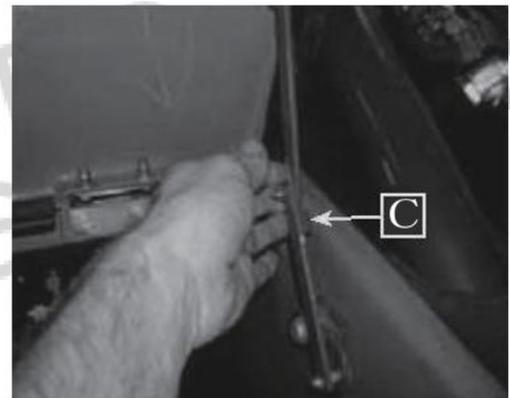
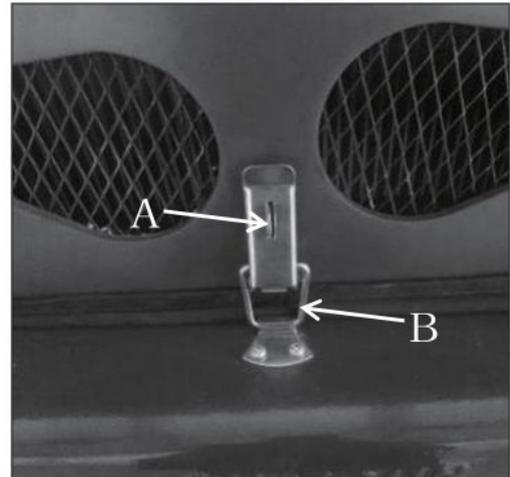
The rear part of the cover is fitted with a lock. The inner right part of the cover is also fitted with a mechanical catch to hold the cover open.

The following may be accessed from the engine compartment:

- Combustion engine.
- Engine air filter.
- Engine oil fill plug.
- Fuel filter
- Fuel pre-filter
- Coolant circuit reservoir.

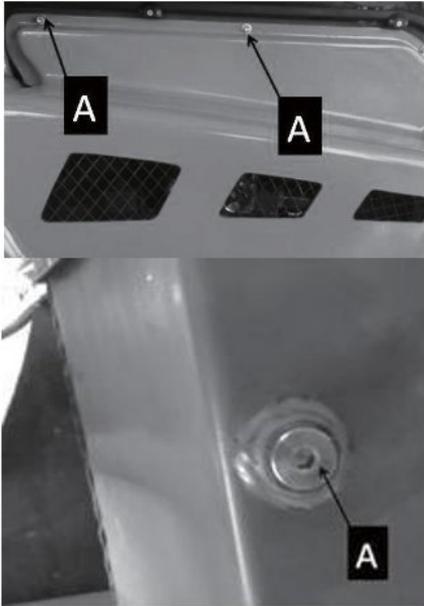
To access the engine compartment:

- Cut the engine and set the parking brake.
- Open the lock by pulling the tab backwards (A). The lock is fitted with a tamper-proof system (B) requiring a padlock not supplied with the Loader.
- Lift the cover by holding the lock until the mechanical blocking device is actuated (C).
- To close the cover: pull the mechanical blocking device (C) and hold the cover until it is closed and positioned for reblocking with the lock (A).



DANGER

Approach with care. Some engine parts could be very hot. Use protective gloves.



The right side cover may be removed to simplify maintenance operations. An inspection gate also exists in each cab floor panel

To access components located behind the right side cover:
 - Loosen the 4 attachmentscrews (A) located in the upper flap and remove the Cover

HYDRAULIC FLUID AND FUEL TANK

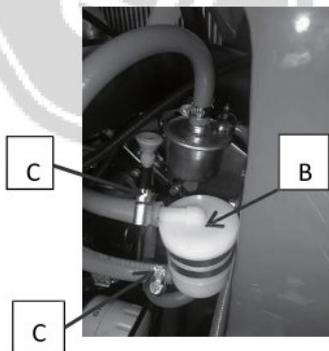
The fuel and hydraulic fluid tanks are located on the left side of the Loader.

- Fuel tank (C) .
- Hydraulic fluid tank (D).

SUPPLY CIRCUIT

WARNING

Never mix oil with the fuel. The Loader has a 4-stroke engine. Oil must be added in the engine only.

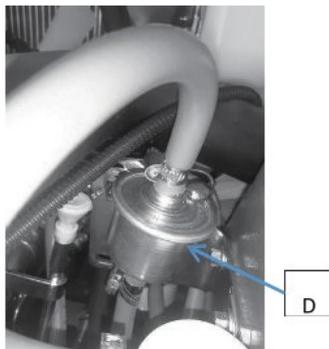


Draining the fuel tank. Tank drainage plug

Fuel can be drained via the plug situated on the lower part of the tank.

- Clean the area around the fuel drainage cap plug.
- Place a container underneath the fuel drain plug.
- Unscrew the plug.
- Change the seal in the fuel drain plug. Clean the tank seal area and the oil drainage plug and replace the plug.

Ensure that there are no leaks from the fuel drain plug.



WARNING

Clean any fuel spillage.

Changing the fuel pre-filter.

Lift the cover and access the left side of the engine. Locate the fuel pre-filter. (B) Pre-filter

(C) Flanges

Remove the fixing flanges brackets and the filter. Ensure that the new filter is located in the correct direction as indicated by the arrow marked on the filter housing.

WARNING

Always replace this component. Under no circumstances should you attempt to clean it.

Changing the fuel filter.

Unscrew the fuel filter cartridge located on the left part of the engine and remove it from its support.

(D) Fuel filter

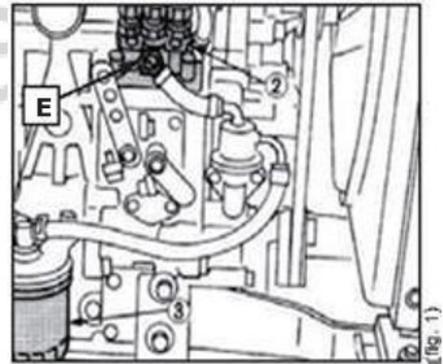
Clean the base and cover the joint of the new filter with clean oil. Screw in the filter element once again and tighten, do not use mechanical tools.

FUEL SYSTEM AIR VENT

(E) Fuel pump air vent plug To avoid accidents:

WARNING

Do not drain the engine while hot, as the drain can lead fuel to fall in the hot exhaust collector box, possibly causing fire.



The fuel system air vent is necessary if:

The fuel filter and pipes have been disconnected and then re-connected

2. The fuel tank is empty

3. Before using the engine after an extended period of storage.

PROCEDURE:

1. Loosen the fuel filter air vent with a few rotations. 2. Tighten the plug again when bubbles cease to appear.

3. Open the air vent plug in the upper part of the injection pump. 4. Re-tighten the plug when bubbles cease to appear.

IMPORTANT

Always maintain the fuel injection pump airvent plug closed, except when draining. The engine may suddenly cut out if the plug is open.

GREASE

CAUTION

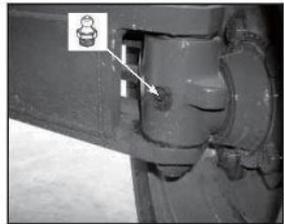
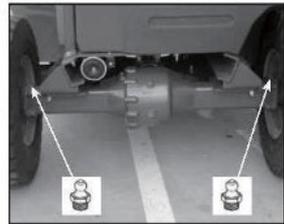
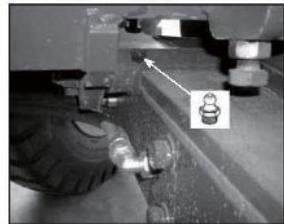
Before injecting lubricating grease in the grease nipples, clean carefully to prevent, mud, dust or other foreign bodies mixing in the grease thereby reducing or even cancelling out lubrication properties.

Regularly grease the Loader to ensure it is effective and extend its life. Inject lubricating grease via the grease nipples using a pump.

Stop greasing as soon as fresh grease appears in the filling holes.

Greasing points are indicated in the following figures:

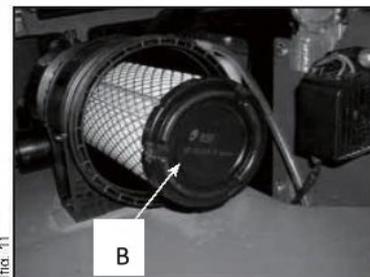
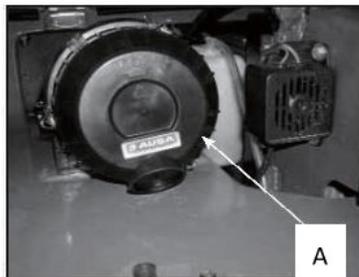
The symbol  indicates greasing points for the pump.

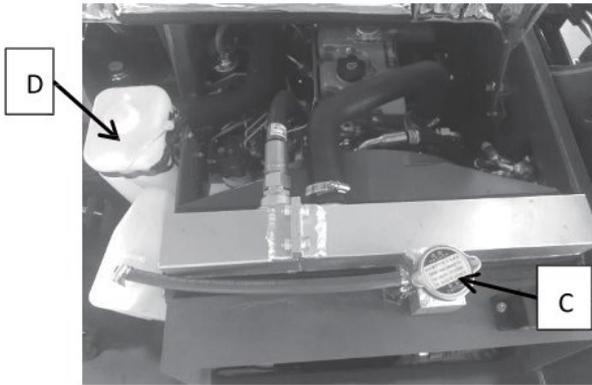


ENGINE AIR FILTER

Clean the engine air filter on a daily basis and replace the cartridge if necessary. Clean or replace the air filter cartridge

- Cut the engine and set the parking brake.
- Open the cover (A).
- Extract the air filter cartridge (B)





ENGINE COOLANT CIRCUIT

Consult the “LIQUIDS AND LUBRICANTS” section of this Manual for the specifications of the coolant liquid to be used.

WARNING

Never remove the tank plug if the engine is hot. Wait until the engine is cold. Wait for approximately 20 minutes.

COOLANT LEVEL

(C) Upper radiator cap. Check via the tank.

(D) Reservoir

Lift the cover.

With the Loader on a level surface, the liquid must be between the MIN. and MAX. levels marked on the tank.

CAUTION

When checking the level at a temperature lower than 20°C (68°F), the level may be below the MIN mark.

Add coolant up to MAX. mark if required. Never exceed the maximum level. Use a funnel to avoid spills.

Place and tighten the filling cap correctly and close the cover.

A cooling system which requires coolant frequently indicates that there are leaks or engine problems. See an authorised GG613S dealer.

RADIATOR FINS

Periodically check the radiator area for its cleanliness.

Inspect the radiator fins. They must be clean, free of mud, dirt, leaves or any other deposit that

would prevent the radiators cooling properly. Never clean the radiators when hot with your bare hands. Use gloves to remove external dirt. Allow the radiators to cool down before cleaning.

If water is available in the working area, rinse the radiator fins with a hose and low pressure water.

WARNING

Do not use high pressure water, only use low pressure water.

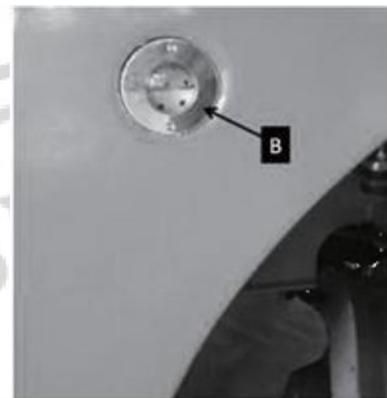
Be careful not to damage the radiators when cleaning the fins. Do not use any sharp object or tool that could damage the fins. The fins are purposely thin parts to allow efficient cooling.

See an authorised GG613S dealer to check the correct performance of the cooling system.

OIL TANK LEVEL CHECK

DANGER

Fine jets of pressurised hydraulic fluid can penetrate the skin. Never use your



Check the level of hydraulic fluid on a daily basis via the optical level (B).

WARNING

Check the level of oil with the Loader in road translation configuration (horizontal arm lowered).

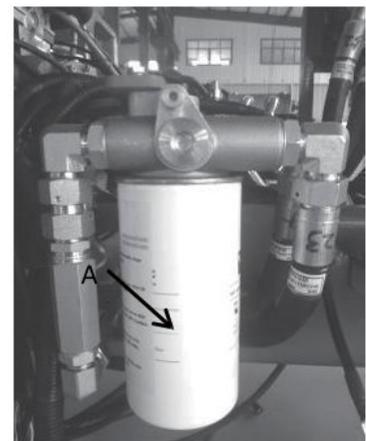
REPLACING THE HYDROSTATIC TRANSMISSION FILTER CARTRIDGE

MISSION FILTER

changed at the intervals indicated in the "LUBRICATION AND MAINTENANCE CHART" A.- Filter cartridge To

replace the cartridge filter:

1. Stop the machine on flat ground and check that the parking brake is activated.
2. Place a container under the filter to collect oil leaks.
3. Unscrew the cartridge filter and remove from the support.



4. Clean the base and cover the seal joint of the new filter element with clean oil.
5. Fill the new filter cartridge with clean hydraulic fluid.
6. Screw in the filter element once again and tighten by hand, do not use mechanical tools.

WARNING

Take particular care when tightening the filter cartridge in its support because if it is incorrectly tightened, it could cause the suction circuit to take in external air causing transmission failure.

Clean any oil spillage.

Start the engine and leave running idle for a few minutes. Stop the engine.

Wait for a few seconds and then check the level of hydraulic fluid. Refill if necessary. Dispose of the fluid and filter cartridge in authorised centres.

IMPORTANT

Hydraulic fluid filter cartridges cannot be re-used after washing under any circumstances.

They must be replaced by new cartridges of the type recommended by the manufacturer (see paragraph 4.5.2.2).

Drain oil while hot and contamination is in suspension.

ENGINE OIL ENGINE OIL

LEVEL CAUTION:

Frequently check the level and refill if necessary. Do not exceed the maximum level. Operating the engine with an inappropriate oil level could severely damage the engine. Clean any spills.

With the vehicle on a level surface and the engine stopped and cold, check the oil level in the following way.

ALTERNATOR BELT

Adjusting fan belt tension CAUTION! To avoid personal injury:

- Be sure to stop the engine and remove the key before checking the belt
- Be sure to reinstall all components already removed after maintenance or checking.





Proper fan belt tension is when a deflection of between 7 and 9 mm (0,28 to 0,35 in.), when the belt is under a load of 10 kgf (22,1 lbs) in the middle of the span.

Stop the engine and remove the ignition key.

Apply moderate thumb pressure to the belt between the pulleys.

If the tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until belt falls within acceptable limits.

Replace the belt if damaged.

BATTERY

- Check the level of electrolyte in the battery after every 250 hours of operation; top up with distilled water if necessary.
- Ensure that the fluid covers the elements by 5-6 mm (2-2'3 in) and that all cells have the necessary level.
- Check that all cables are firmly secured to the battery terminals. Always use a fixed clamp to tighten connectors rather than alligator clips.
- Protect the terminals by covering with pure vaseline.
- If the machine is liable to not be used for a lengthy period, it is recommended to dismantle the battery and place in a dry location.

DANGER

- The electrolyte in the battery contains sulphuric acid which may cause burns if it comes into contact with the skin or eyes. Wear protective goggles and gloves and move the battery carefully to avoid electrolyte leakage. Keep all metal objects (watches, rings, chains) at a distance from the battery, as they may cause a short circuit and burns.
- Before connecting or disconnecting the battery, turn off all of the switches in the cab.
- To disconnect the battery, remove the negative terminal (-) from the ground.
- Connect the positive terminal (+) first.
- Recharge the battery at a distance from the machine in a well ventilated area.
- Never approach the battery with objects which may produce sparks, bare flames or with cigarettes.
- Avoid placing metal objects on the battery. This could cause dangerous short circuits, especially during recharging.
- Given that electrolyte is highly corrosive, avoid any contact with the Loader chassis or with electric or electronic components. Should contact occur, contact your authorised GG613S dealer.

DANGER

Danger of explosion or short circuit. An explosive mixture of hydrogen gas will form during the recharging of the battery.

LIQUIDS AND LUBRICANTS

COMPONENT	PRODUCT	CAPACITY (litres)	DETAILS OF THE PRODUCT IN THE PARAGRAPH
Diesel engine	Engine oil	5.1	4.5.2.1
Fuel tank	Diesel	55	4.5.2.3
Hydraulic system tank	Hydraulic fluid	32	4.5.2.2
Front differential	Transmission oil	1.6	4.5.2.2
Inching and brake fluid tank	Hydraulic fluid	1	4.5.2.5

LIQUIDS AND LUBRICANTS ENGINE OIL

Use the oil defined by the manufacturer of the diesel engine (consult the instructions handbook with machine documentation).

Use oil for four stroke engines which meets requirements MIL-L-2104C / API CD or above.

Always check the API quality on the oil container label to ensure that it is the required quality. Your Loader leaves the factory with SAE 20W40 oil viscosity. However, depending on the climate, consult the chart to select the most appropriate viscosity (fig.1). If oils of different brand names are used, ensure that you completely empty the oil pan before adding the new oil.

REF. recommends oil for Diesel engines REPSOL GG613S EFFICIENT Reference 461.00099.00. Lubricants, oils and filter cartridges

The machine is refuelled with the following lubricant oils:

USE	SPECIFICATIONS
Differential	Transmission oil SAE 80W90 or SAE 90 as per API GL5 /MIL-L-2105B
Hydraulic installation	Hydraulic oil ISO grade VG-46 as per ISO 6743/4-HV DIN-51544 Part 3HVLP
	VG46 for ambient temperatures between 10°C and 40°C
	VG68 for ambient temperatures normally higher than 40°C

FUEL

Use automotive cleandiesel (class A), which preferably meets 98/70/EEC standard amended by standard 2003/17 or the equivalent EN 590 standard. In Spain RD 1728/1999 applies. For the USA market, it must meet Grades 1D and 2D of the ASTM D975 standard, in supplies which do not meet these standards, the sulphur content should never exceed 0.5% mass. In principal, the use of REM type bio diesel or similar is not recommended. In case of use, the proportion used should not exceed 5% of the fuel mix. Consult the details included in the instructions for the diesel engine.

SCREW TORQUES

Specify torques for screw junctions using new screws with a friction coefficient of $\mu_{ges} = 0.12$. Screw junctions with normal metric thread screws and fin metric thread screws (DIN 13), without grease, for which no actual specification exists.

NORMAL PITCH SCREWS (as per DIN 13)

NORMAL THREAD	SCREW CHARACTERISTIC					
	8.8		10.9		12.9	
	Nm	kpm	Nm	kpm	Nm	kpm
M4	2.8	0.3	4.1	0.4	4.8	0.5
M5	5.5	0.6	8.1	0.8	9.5	1
M6	9.5	1.0	14	1.4	16.5	1.7
M7	15.5	1.6	23	2.3	27	2.8
M8	23	2.3	34	3.5	40	4.1
M10	46	4.7	68	6.9	79	8
M12	79	8	117	12	135	14
M14	125	13	185	19	215	22
M16	195	20	280	29	330	34
M18	280	29	390	40	460	47
M20	390	40	560	57	650	66
M22	530	54	750	76	880	90
M24	670	68	960	98	1120	114
M27	1000	102	1400	143	1650	168
M30	1350	138	1900	194	2250	229

FINE THREAD	SCREWCHARACTERISTIC					
	8.8		10.9		12.9	
	Nm	kpm	Nm	kpm	Nm	kpm
M8×1	24.5	2.5	36	3.7	43	4.4
M9×1	36	3.7	53	5.4	6289	6.3
M10×1	52	5.3	76	7.7	89	9
M10×1.25	49	5	72	7.3	84	8.6
M12×1.5	87	8.9	125	12.7	150	15.3
M14×1.5	83	8.5	122	12.4	145	14.8
M16×1.5	135	13.8	200	20	235	24
M18×1.5	205	21	300	31	360	37
M18×2	310	32	440	45	520	53
M20×1.5	290	30	420	43	490	50
M22×1.5	430	44	620	63	720	73
M24×1.5	580	59	820	84	960	98
M24×2	760	77	1090	111	1270	129
M27×1.5	730	74	1040	106	1220	124
M27×1.5	1110	113	1580	161	1850	189
M27×2	1070	109	1500	153	1800	183
M30×1.5	1540	157	2190	223	2560	361
M30×2	1490	152	2120	216	2480	253