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YOUR DEALER

648920EN (10/11/2015)

MLT 845 ST3B

OPERATOR'S MANUAL

(ORIGINAL INSTRUCTIONS)

648920EN (10/11/2015)

IMPORTANT

Carefully read and understand this instruction manual before using the lift truck.

It contains all information relating to operation, handling and lift truck equipment, as well as important recommendations to be followed.

This document also contains precautions for use, as well as information on the servicing and routine maintenance required to ensure the lift truck's continued safety of use and reliability.

WHENEVER YOU SEE THIS SYMBOL IT MEANS:

⚠ IMPORTANT ⚠

WARNING ! BE CAREFUL ! YOUR SAFETY OR THE SAFETY OF THE LIFT TRUCK IS AT RISK.

- This manual has been produced on the basis of the equipment list and the technical characteristics given at the time of its design.
- The level of equipment of the lift truck depends on the options chosen and the country of sale.
- According to the lift truck options and the date of sale, certain items of equipment/functions described herein may not be available.
- Descriptions and figures are non binding.
- MANITOU reserves the right to change its models and their equipment without being required to update this manual.
- The MANITOU network, consisting exclusively of qualified professionals, is at your disposal to answer all your questions.
- This manual is an integral part of the lift truck.
- It is to be kept in its storage space at all times for ease of reference.
- Hand this manual to the new owner if the lift truck is resold.

10/11/2015	**1st DATE OF ISSUE**

THE TEXTS AND ILLUSTRATIONS IN THIS DOCUMENT MUST NOT BE REPRODUCED EITHER WHOLLY OR IN PART.

1 - OPERATING AND SAFETY INSTRUCTIONS

2 - DESCRIPTION

3 - MAINTENANCE

4 - OPTIONAL ATTACHMENTS FOR USE WITH THE RANGE

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1 - OPERATING AND SAFETY INSTRUCTIONS

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1 - OPERATING AND SAFETY INSTRUCTIONS

INSTRUCTIONS TO THE COMPANY MANAGER

THE SITE

Proper management of lift truck's area of travel will reduce the risk of accidents:

- ground not unnecessarily uneven or obstructed,
- no excessive slopes,
- pedestrian traffic controlled, etc.

THE OPERATOR

- Only qualified, authorized personnel can use the lift truck. This authorization is given in writing by the appropriate person in the establishment with respect to the use of lift trucks and must be carried permanently by the operator.

⚠ IMPORTANT ⚠

Experience has shown that there are a number of inappropriate ways in which the lift truck might be used. Such foreseeable misuse, of which the main examples are listed below, are strictly forbidden.

- The foreseeable abnormal behaviour resulting from ordinary negligence, but which does not result from any wish to put the machinery to any improper use.

- The reflex reactions of a person in the event of a malfunction, incident, fault, etc. during operation of the lift truck.

- Behaviour resulting from application of the "principle of least effort" when performing a task.

- For certain machines, the foreseeable behaviour of such persons as: apprentices, teenagers, handicapped persons, trainees tempted to drive a lift truck, operators tempted to operate a truck for the purposes of a bet, a competition or for their own personal experience.

The person in charge of the equipment must take these criteria into account when assessing the suitability of a person to drive.

THE LIFT TRUCK

A - THE TRUCK'S SUITABILITY FOR THE JOB

- MANITOU has ensured that this lift truck is suitable for use under the standard operating conditions defined in this operator's manual, with a **STATIC** test coefficient **OF 1,33** and a **DYNAMIC** test coefficient **OF 1**, as specified in harmonised standard **EN 1459** for variable range trucks.
- Before commissioning, the company manager must make sure that the lift truck is appropriate for the work to be done, and perform certain tests (in accordance with current legislation).

B - ADAPTATION OF THE LIFT TRUCK TO STANDARD ENVIRONMENTAL CONDITIONS

- In addition to series equipment mounted on your lift truck, many options are available, such as: road lighting, stop lights, revolving light, reverse lights, reverse buzzer alarm, front light, rear light, light at the jib head, etc. (according to the lift truck model).
- The operator must take into account the operating conditions to define the lift truck's signalling and lighting equipment. Contact your dealer.
- Take into account climatic and atmospheric conditions of the site of utilisation.
  - Protection against frost (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
  - Adaptation of lubricants (ask your dealer for information).
  - Engine filtration (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

⚠ IMPORTANT ⚠

For operation under average climatic conditions, i.e.: between -15 °C and +35 °C, correct levels of lubricants in all the circuits are checked in production.

For operation under more severe climatic conditions, before starting up, it is necessary to drain all the circuits, then ensure correct levels of lubricants using lubricants properly suited to the relevant ambient temperatures.

The same applies to the cooling liquid.

- A lift truck operating in an area without fire extinguishing equipment must be equipped with an individual extinguisher. There are solutions, consult your dealer.

⚠ IMPORTANT ⚠

Your lift truck is designed for outdoor use under normal atmospheric conditions and indoor use in suitably aerated and ventilated premises.

It is prohibited to use the lift truck in areas where there is a risk of fire or which are potentially explosive (e.g. Refineries, fuel or gas depots, stores of flammable products, etc.).

For use in these areas, specific equipment is available (ask your dealer for information).

- Our trucks comply with Directive 2004/108/EC concerning electromagnetic compatibility (EMC), and with the corresponding harmonized standard EN 12895. Their proper operation is no longer guaranteed if they are used within areas in which the electromagnetic fields exceed the limit specified by that standard (10 V/m).
- Directive 2002/44/EC requires company managers to not expose their employees to excessive vibration doses. There is no recognized code of measurement for comparing the machines of different manufacturers. The actual doses received cannot therefore be measured under actual operating conditions at the user's premises.
- The following are some tips for minimizing these vibration doses:
  - Select the most suitable lift truck and attachment for the intended use.

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- Adapt the seat adjustment to the operator's weight (according to lift truck model) and maintain it in good condition, as well as the cab suspension. Inflate the tires in accordance with recommendations.
- Ensure that the operators adapt their operating speed to suit the conditions on site.
- As far as possible, arrange the site in such a way as to provide a flat running surface and remove obstacles and harmful potholes.

C - MODIFICATION OF THE LIFT TRUCK

- For your safety and that of others, you must not change the structure and settings of the various components used in your lift truck (hydraulic pressure, calibrating limiters, engine speed, addition of extra equipment, addition of counterweight, unapproved attachments, alarm systems, etc.) yourself. In this event, the manufacturer cannot be held responsible.

D - FRENCH ROAD TRAFFIC RULES

(or see current legislation in other countries)

- Only one certificate of conformity is issued. It must be kept in a safe place.
- The driving of non EC type-approved tractors on the public highway is subject to the provisions of the highway code relating to special machines, defined in article R311-1 of the highway code, in category B of the Equipment Order of 20 November 1969 that determines the procedures applicable to special machines. The lift truck must be fitted with a licence plate.
- The driving of EC type-approved tractors on the public highway is subject to the provisions of the highway code regarding agricultural tractors, defined in article R311-1 of the highway code. The lift truck must be registered.

SPECIAL INSTRUCTION APPLYING TO "EC TRACTOR" TYPE-APPROVED LIFT TRUCKS

- All EC tractor type-approved lift trucks are supplied with an "EC tractor" certificate complying with directive 2003/37/EC, to be retained by the owner, and a page of administrative details together with a CNIT number (national type approval code) for registration at the prefecture.
- The lift truck owner is responsible for carrying out the necessary procedures for obtaining the vehicle registration document within the time limit defined by the regulations.
- The operator must hold an HGV licence, unless granted an exemption.
- The lift truck must be driven on the public highway in accordance with the instructions given in the manual supplied with the lift truck (Gross weight, Gross combination weight, towing load, axle loads, maximum speeds, etc. according to type/version). The operator must be in possession of the lift truck's registration document.

⚠ IMPORTANT ⚠

When towing a trailer or agricultural equipment, the travelling speed of the lift truck is limited to 25 km/h.
In this case, a "25" disc must be affixed to the rear of the convoy.

E - LIFT TRUCK CAB PROTECTION

- All lift trucks comply with the requirements of ISO 3471 (wheel loader code) regarding cab rollover protection (ROPS) and ISO 3449 (Level II) regarding the protection of the cab against falling objects (FOPS).
- "EC TRACTOR" type-approved lift trucks comply, in addition, with Directive 79/622/EC (OECD Code 4) regarding cab rollover protection (ROPS).

⚠ IMPORTANT ⚠

Structural damage or overturning, a modification, changes or a poorly executed repair can reduce the protective efficiency of the cab, cancelling its compliance.
Do not perform welding or drilling on the cab structure.
Consult your dealer to determine the limits of this structure without cancelling its compliance.

THE INSTRUCTIONS

- The operator's manual must always be in good condition and kept in the place provided on the lift truck and in the language used by the operator.
- The operator's manual and any plates or stickers which are no longer legible or are damaged, must be replaced immediately.

THE MAINTENANCE

- Maintenance or repairs other than those detailed in part: 3 - MAINTENANCE must be carried out by qualified personnel (consult your dealer) and under the necessary safety conditions to maintain the health of the operator and any third party.

⚠ IMPORTANT ⚠

Your lift truck must be inspected periodically to ensure that it remains in compliance.
The frequency of this inspection is defined by current legislation in the country in which the lift truck is used.

- Example for France "The manager in charge of the establishment using a lift truck must open and maintain a maintenance log for each machine (order of 2 March 2004) and undergo a general periodic inspection every 6 months (order of 1 March 2004)".

INSTRUCTIONS FOR THE OPERATOR

PREAMBLE

⚠ IMPORTANT ⚠

The risk of accident while using, servicing or repairing your lift truck can be restricted if you follow the safety instructions and safety measures detailed in these instruction.
Failure to respect the safety and operating instructions, or the instructions for repairing or servicing your lift truck may lead to serious, even fatal accident.

- Only the operations and manoeuvres described in these operator's manual must be performed. The manufacturer cannot predict all possible risky situations. Consequently, the safety instructions given in the operator's manual and on the lift truck itself are not exhaustive.
- At any time, as an operator, you must envisage, within reason, the possible risk to yourself, to others or to the lift truck itself when you use it.

⚠ IMPORTANT ⚠

In order to reduce or avoid any danger with a MANITOU-approved attachment, follow the instructions of paragraph:
4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE: INTRODUCTION.

GENERAL INSTRUCTIONS

A - OPERATOR'S MANUAL

- Read the operator's manual carefully.
- The operator's manual must always be in good condition and in the place provided for it on the lift truck.
- You must report any plates and stickers which are no longer legible or which are damaged.

B - AUTHORISATION FOR USE IN FRANCE

(or see current legislation in other countries).

- Only qualified, authorized personnel can use the lift truck. This authorization is given in writing by the appropriate person in the establishment with respect to the use of lift trucks and must be carried permanently by the operator.
- The operator is not competent to authorise the driving of the lift truck by another person.

C - MAINTENANCE

- The operator must immediately advise his superior if his lift truck is not in good working order or does not comply with the safety notice.
- The operator is prohibited from carrying out any repairs or adjustments himself, unless he has been trained for this purpose. He must keep the lift truck properly cleaned if this is among his responsibilities.
- The operator must carry out daily maintenance (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).
- The operator must ensure tyres are adapted to the nature of the ground (see area of the contact surface of the tyres in the chapter: 2 - DESCRIPTION: FRONT AND REAR TYRES). There are optional solutions, consult your dealer.
  - SAND tyres.
  - LAND tyres.
  - Snow chains.

⚠ IMPORTANT ⚠

Do not use the lift truck if the tyres are incorrectly inflated, damaged or excessively worn, because this could put your own safety or that of others at risk, or cause damage to the lift truck itself.
The fitting of foam inflated tyres is prohibited and is not guaranteed by the manufacturer, excepting prior authorisation.

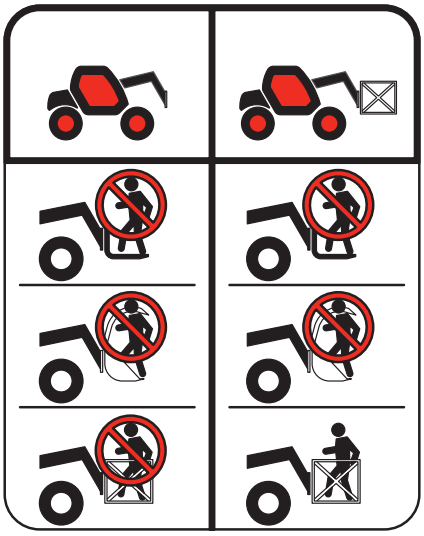
D - MODIFICATION OF THE LIFT TRUCK

- For your safety and that of others, you must not change the structure and settings of the various components used in your lift truck (hydraulic pressure, calibrating limiters, engine speed, addition of extra equipment, addition of counterweight, unapproved attachments, alarm systems, etc.) yourself. In this event, the manufacturer cannot be held responsible.

E - LIFTING PEOPLE

- The use of working equipment and load lifting attachments to lift people is:
  - either forbidden
  - or authorized exceptionally and under certain conditions (see current regulations in the country in which the lift truck is used).
- The pictogram posted at the operator station reminds you that:
  Left-hand column
  - It is forbidden to lift people, with any kind of attachment, using a non PLATFORM-fitted lift truck.

  Right-hand column
  - With a PLATFORM-fitted lift truck, people can only be lifted using platforms designed by MANITOU for the purpose.
- MANITOU sells equipment specifically designed for lifting people (OPTION PLATFORM lift truck, contact your dealer).



OPERATING INSTRUCTIONS UNLADEN AND LADEN

A - BEFORE STARTING THE LIFT TRUCK

- Perform the daily service (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).
- Make sure the lights, indicators and windscreen wipers are working properly.
- Make sure the rear view mirrors are in good condition, clean and properly adjusted.
- Make sure the horn works.

B - DRIVER'S OPERATING INSTRUCTIONS

- Whatever his experience, the operator is advised to familiarize himself with the position and operation of all the controls and instruments before operating the lift truck.
- Wear clothes suited for driving the lift truck, avoid loose clothes.
- Make sure you have the appropriate protective equipment for the job to be done.
- Prolonged exposure to high noise levels may cause hearing problems. It is recommended to wear ear muffs to protect against excessive noise.
- Always face the lift truck when getting into and leaving the driving seat and use the handle(s) provided for this purpose. Do not jump out of the seat to get down.
- Always pay attention when using the lift truck. Do not listen to the radio or music using headphones or earphones.
- Never operate the lift truck when hands or feet are wet or soiled with greasy substances.
- For increased comfort, adjust the seat to your requirements and adopt the correct position in the driver's cab.

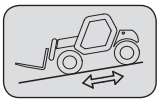
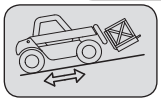
⚠ IMPORTANT ⚠

Under no circumstances must the seat be adjusted while the lift truck is moving.

- The operator must always be in his normal position in the driver's cab. It is prohibited to have arms or legs, or generally any part of the body, protruding from the driver's cab of the lift truck.
- The safety belt must be worn and adjusted to the operator's size.
- The control units must never in any event be used for any other than their intended purposes (e.g. climbing onto or down from the lift truck, portmanteau, etc.).
- If the control components are fitted with a forced operation (lever lock) device, it is forbidden to leave the cab without first putting these controls in neutral.
- It is prohibited to carry passengers either on the lift truck or in the cab.

C - ENVIRONMENT

- Comply with site safety regulations.
- If you have to use the lift truck in a dark area or at night, make sure it is equipped with working lights.
- During handling operations, make sure that no one is in the way of the lift truck and its load.
- Do not allow anybody to come near the working area of the lift truck or pass beneath an elevated load.
- When using the lift truck on a transverse slope, before lifting the boom, follow the instructions given in the paragraph: INSTRUCTIONS FOR HANDLING A LOAD: D - TRANSVERSE ATTITUDE OF THE LIFT TRUCK.

- Travelling on a longitudinal slope:
  - Drive and brake gently.
  - Moving without load: Forks or attachment facing downhill. 
  - Moving with load: Forks or attachment facing uphill. 
- Take into account the lift truck's dimensions and its load before trying to negotiate a narrow or low passageway.
- Never move onto a loading platform without having first checked:
  - That it is suitably positioned and made fast.
  - That the unit to which it is connected (wagon, lorry, etc.) will not shift.
  - That this platform is prescribed for the total weight of the lift truck to be loaded.
  - That this platform is prescribed for the size of the lift truck.
- Never move onto a foot bridge, floor or freight lift, without being certain that they are prescribed for the weight and size of the lift truck to be loaded and without having checked that they are in sound working order.
- Be careful in the area of loading bays, trenches, scaffolding, soft ground and manholes.
- Make sure the ground is stable and firm under the wheels and/or stabilizers before lifting or removing the load. If necessary, add sufficient wedging under the stabilizers.
- Make sure that the scaffolding, loading platform, pilings or ground is capable of bearing the load.
- Never stack loads on uneven ground, they may tip over.

⚠ IMPORTANT ⚠

If the load or the attachment must remain above a structure for a prolonged period of time, there is the risk that it will bear on the structure as the boom descends due to cooling of the oil in the cylinders.

To eliminate this risk:

- Regularly check the distance between the load or the attachment and the structure and readjust this if necessary.

- If possible use the lift truck at an oil temperature as close as possible to ambient temperature.

- When working near aerial lines, ensure that the safety distance is sufficient between the working area of the lift truck and the aerial line.

⚠ IMPORTANT ⚠

You must consult your local electrical agency.

You could be electrocuted or seriously injured if you operate or park the lift truck too close to power cables.

In the event of high winds, do not carry out handling work that jeopardises the stability of the lift truck and its load, particularly if the load catches the wind badly.

D - VISIBILITY

- The safety of people within the lift truck's working area, as well as that of the lift truck itself and the operator are depend on good operator visibility of the lift truck's immediate vicinity in all situations and at all times.
- This lift truck has been designed to allow good operator visibility (direct or indirect by means of rear-view mirrors) of the immediate vicinity of the lift truck while travelling with no load and with the boom in the transport position.
- Special precautions must be taken if the size of the load restricts visibility towards the front:
  - moving in reverse,
  - site layout,
  - assisted by a person directing the manoeuvre (while standing outside the truck's area of travel), making sure to keep this person clearly in view at all times,
  - in any case, avoid reversing over long distances.
- Certain special accessories may require the truck to travel with the boom in the raised position. In such cases, visibility on the right hand side is restricted, and special precautions must be taken:
  - site layout,
  - assisted by a person directing the manoeuvre (while standing outside the truck's area of travel).
  - replacement of a suspended load by a load on a pallet.
- If visibility of your road is inadequate, ask someone to assist by directing the manoeuvre (while standing outside the truck's area of travel), making sure to keep this person clearly in view at all times.
- Keep all components affecting visibility in a clean, properly adjusted state and in good working order (e.g. windscreens, windows, windscreen wipers, windscreen washers, driving and work lights, rear-view mirrors).

E - STARTING THE LIFT TRUCK

SAFETY INSTRUCTIONS

⚠ IMPORTANT ⚠

The lift truck must only be started up or manoeuvred when the operator is sitting in the driver's cab, with his seat belt adjusted and fastened.

- Never try to start the lift truck by pushing or towing it. Such operation may cause severe damage to the transmission. If necessary, to tow the lift truck in an emergency, the transmission must be placed in the neutral position (see: 3 - MAINTENANCE: G - OCCASIONAL MAINTENANCE).
- If using an emergency battery for start-up, use a battery with the same characteristics and respect battery polarity when connecting it. Connect at first the positive terminals before the negative terminals.

⚠ IMPORTANT ⚠

Failure to respect polarity between batteries can cause serious damage to the electrical circuit.
The electrolyte in the battery may produce an explosive gas. Avoid flames and generation of sparks close to the batteries.
Never disconnect a battery while it is charging.

INSTRUCTIONS

- Check the closing and locking of the hood(s).
- Check that the cab door is closed.
- Check that the forward/reverse selector is in neutral, and that the parking brake is applied.
- Press on the service brake pedal and maintain it down.
- Turn the ignition key to the position I to activate the electrical and pre-heating system.
- Whenever you switch on the lift truck, perform the automatic check on the longitudinal stability limiter and warning device (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS). Do not use the lift truck if it does not conform to the regulations.
- Check the fuel level on the indicator.
- Turn the ignition key fully, the engine should then start. Release the ignition key and let the engine run at idle.
- Do not engage the starter motor for more than 15 seconds and carry out the preheating between unsuccessful attempts.
- Make sure all the signal lights on the control instrument panel are off.
- Check all control instruments when the engine is warm and at regular intervals during use, so as to quickly detect any faults and to be able to correct them without any delay.
- If an instrument does not show the correct display, stop the engine and immediately carry out the necessary operations.

F - DRIVING THE LIFT TRUCK

SAFETY INSTRUCTIONS

⚠ IMPORTANT ⚠

The operators' attention is drawn to the risks involved in using the lift truck, in particular:
- Risk of loosing control.
- Risk of loosing lateral and frontal stability of the lift truck.
The operator must remain in control of the lift truck.
In the event of the lift truck overturning, do not try to leave the cabin during the incident.
YOUR BEST PROTECTION IS TO STAY FASTENED IN THE CABIN.

- Observe the company's traffic regulations or, by default, the public highway code.
- Do not carry out operations which exceed the capacities of your lift truck or attachments.
- Always drive the lift truck with the forks or attachment to the transport position, i.e. at 300 mm from the ground, the boom retracted and the carriage sloping backwards.
- Only carry loads which are balanced and properly anchored to avoid any risk of a load falling off.
- Ensure that palettes, cases, etc, are in good order and suitable for the load to be lifted.
- Familiarise yourself with the lift truck on the terrain where it will be used.
- Ensure that the service brakes are working properly.
- The loaded lift truck must not travel at speeds in excess of 12 km/h.
- Drive smoothly at an appropriate speed for the operating conditions (land configuration, load on the lift truck).
- Do not use the hydraulic boom controls when the lift truck is moving.
- Never change the steering mode whilst driving.
- Do not manoeuvre the lift truck with the boom in the raised position unless under exceptional circumstances and then with extreme caution, at very low speed and using gentle braking. Ensure that visibility is adequate.
- Take bends slowly.
- In all circumstances make sure you are in control of your speed.
- On damp, slippery or uneven terrain, drive slowly.
- Brake gently, never abruptly.
- Only use the lift truck's forward/reverse selector from a stationary position and never do so abruptly.
- Do not drive with your foot on the brake pedal.
- Always remember that hydrostatic type steering is extremely sensitive to movement of the steering wheel, so turn it gently and not jerkily.
- Never leave the engine on when the lift truck is unattended.

- Do not leave the cab when the lift truck has a raised load.
- Look where you are going and always make sure you have good visibility along the route.
- Use the rear-view mirrors frequently.
- Drive round obstacles.
- Never drive on the edge of a ditch or steep slope.
- It is dangerous to use two lift trucks simultaneously to handle heavy or bulky loads, since this operation requires particular precautions to be taken. It must only be used exceptionally and after risk analysis.
- The ignition switch has an emergency stop mechanism in case of an operating anomaly occurring in the case of lift trucks not fitted with a punch-operated cut-out.

INSTRUCTIONS

- Always drive the lift truck with the forks or attachment to the transport position, i.e. at 300 mm from the ground, the boom retracted and the carriage sloping backwards.
- For lift trucks with gearboxes, use the recommended gear (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Select the steering mode appropriate for its use and/or working conditions (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) (as model of lift truck).
- Release the hand brake.
- Shift the forward/reverse selector to the selected direction of travel and accelerate gradually until the lift truck moves off.

⚠ IMPORTANT ⚠

Starting and driving a lift truck on a slope can present a very real danger.
The lift truck being parked or stopped, scrupulously follow the following instructions for moving off:
- Press the service brake pedal.
- Engage 1st or 2nd gear and select forward or reverse.
- Check that there is nothing and no-one obstructing the lift truck's path.
- Release the service brake pedal and increase the engine revs.
The risk is increased if the lift truck is laden or towing a trailer, requiring extreme vigilance.

G - STOPPING THE LIFT TRUCK

SAFETY INSTRUCTIONS

- Never leave the ignition key in the lift truck during the operator's absence.
- When the lift truck is stationary, or if the operator has to leave his cab (even for a moment), place the forks or attachment on the ground, apply the parking brake and place the forward/reverse selector in neutral.
- Make sure that the lift truck is not stopped in any position that will interfere with the traffic flow and at less than one meter from the track of a railway.
- In the event of prolonged parking on a site, protect the lift truck from bad weather, particularly from frost (check the level of antifreeze), close and lock all the lift truck accesses (doors, windows, cowls, etc.).

INSTRUCTIONS

- Park the lift truck on flat ground or on an incline lower than 15 %.
- Set the forward/reverse selector to neutral.
- Engage the parking brake.
- For lift trucks with gearboxes, place the gear lever in neutral.
- Fully retract the boom.
- Lower the forks or attachment to rest on the ground.
- When using an attachment with a grab or jaws, or a bucket with hydraulic opening, close the attachment fully.
- Before stopping the lift truck after a long working period, leave the engine idling for a few moments, to allow the coolant liquid and oil to lower the temperature of the engine and transmission. Do not forget this precaution, in the event of frequent stops or warm stalling of the engine, or else the temperature of certain parts will rise significantly due to the stopping of the cooling system, with the risk of badly damaging such parts.
- Stop the engine with the ignition switch.
- Remove the ignition key.
- Lock all the accesses to the lift truck (doors, windows, cowls…).

H - DRIVING THE LIFT TRUCK ON THE PUBLIC HIGHWAY

(or see current legislation in other countries)

FRENCH ROAD TRAFFIC RULES

- The driving of non EC type-approved tractors on the public highway is subject to the provisions of the highway code relating to special machines, defined in article R311-1 of the highway code, in category B of the Equipment Order of 20 November 1969 that determines the procedures applicable to special machines. The lift truck must be fitted with a licence plate.
- The driving of EC type-approved tractors on the public highway is subject to the provisions of the highway code regarding agricultural tractors, defined in article R311-1 of the highway code. The lift truck must be registered.
- The lift truck must be driven on the public highway in accordance with the instructions given in the manual supplied with the lift truck (Gross weight, Gross combination weight, towing load, axle loads, maximum speeds, etc. according to type/version). The operator must be in possession of the lift truck's registration document.
- The operator must hold an HGV licence, unless granted an exemption.
- When towing a trailer or agricultural equipment, the travelling speed of the lift truck is limited to 25 km/h. In this case, a "25" disc must be affixed to the rear of the convoy. When driving with a trailer, the fact of not engaging 4th gear will ensure compliance with the towing speed limit (max. 25 km/h). On "POWERSHIFT" models, as 3rd gear is slower than on other models, it is preferable to use 5th gear and disable automatic upshifting to 6th gear (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

SAFETY INSTRUCTIONS

- Operators driving on the public highway must comply with current highway code legislation.
- The lift truck must comply with current road legislation. If necessary, there are optional solutions. Contact your dealer.

INSTRUCTIONS

- Make sure the revolving light is in place, switch it on and verify its operation.
- Make sure the lights, indicators and windscreen wipers are working properly.
- Switch off the working headlights if the lift truck is fitted with them.
- Select the steering mode "HIGHWAY TRAFFIC" (as model of lift truck) (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Fully retract the boom and set the attachment approximately 300 mm off the ground.
- Place the roll corrector in the central position, i.e. the transverse axis of the axles parallel to the chassis (as model of lift truck).
- Fully raise the stabilizers and turn the blocks inwards (according to model of lift truck).

⚠ IMPORTANT ⚠

Never coast in neutral (forward/reverse selector or gear lever in neutral or transmission cut-off button pressed) to preserve the lift truck engine brake. Failure to observe this instruction on a slope will lead to excessive speed which may make the lift truck uncontrollable (steering, brakes) and cause serious mechanical damage.

DRIVING THE LIFT TRUCK WITH A FRONT-MOUNTED ATTACHMENT

- You must comply with current regulations in your country, covering the possibility of driving on the public highway with a front-mounted attachment on your lift truck.
- If road legislation in your country authorizes circulation with a front-mounted attachment, you must at least:
  - Protect and report any sharp and/or dangerous edges on the attachment (see: 4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE: ATTACHMENT SHIELDS).
  - The attachment must not be loaded.
  - Make sure that the attachment does not mask the lighting range of the forward lights.
  - Make sure that current legislation in your country does not require other obligations.

OPERATING THE LIFT TRUCK WITH A TRAILER

- For using a trailer, observe the regulations in force in your country (maximum travel speed, braking, maximum weight of trailer, etc.).
- Do not forget to connect the trailer's electrical equipment to that of the lift truck.
- The trailer's braking system must comply with current legislation.
- If pulling a trailer with assisted braking, the tractor lift truck must be equipped with a trailer braking mechanism. In this case, do not forget to connect the trailer braking equipment to the lift truck.
- The vertical force on the towing hook must not exceed the maximum authorised by the manufacturer (consult the manufacturer's plate on your lift truck).
- The authorised gross vehicle weight must not exceed the maximum weight authorised by the manufacturer (see: 2 - DESCRIPTION: CHARACTERISTICS).

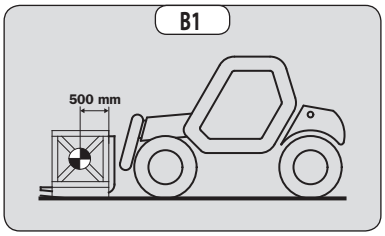
IF NECESSARY, CONSULT YOUR DEALER.

A - CHOICE OF ATTACHMENTS

- Only attachments approved by MANITOU can be used on its lift trucks.
- Make sure the attachment is appropriate for the work to be done (see: 4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE).
- If the lift truck is equipped with the Single side-shift carriage OPTION (TSDL), use only the authorised attachments (see: 4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE).
- Make sure the attachment is correctly installed and locked onto the lift truck carriage.
- Make sure that your lift truck attachments work properly.
- Comply with the load chart limits for the lift truck for the attachment used.
- Do not exceed the rated capacity of the attachment.
- Never lift a load in a sling without the attachment provided for the purpose, as the sling risks to slip (see: INSTRUCTIONS FOR HANDLING A LOAD: H - TAKING UP AND LAYING DOWN A SUSPENDED LOAD).
- Do not handle loads that are hung directly from the forks with straps (e.g.: big-bag), as there is a risk that the straps will shear against the sharp edges. Use an attachment designed for this purpose.

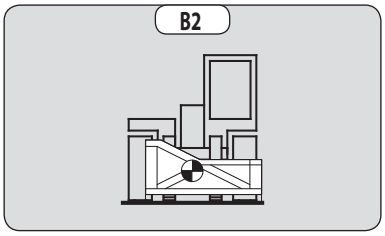
B - MASS OF LOAD AND CENTRE OF GRAVITY

- Before taking up a load, you must know its mass and its centre of gravity.
- The load chart for your lift truck is valid for a load in which the longitudinal position of the centre of gravity is 500 mm from the base of the forks (fig. B1). For a higher centre of gravity, contact your dealer.
- For irregular loads, determine the transverse centre of gravity before any movement (fig. B2) and set it in the longitudinal axis of the lift truck.



⚠ IMPORTANT ⚠

It is forbidden to move a load heavier than the effective capacity defined on the lift truck load chart.
For loads with a moving centre of gravity (e.g. liquids), take account of the variations in the centre of gravity in order to determine the load to be handled and be vigilant and take extra care to limit these variations as far as possible.

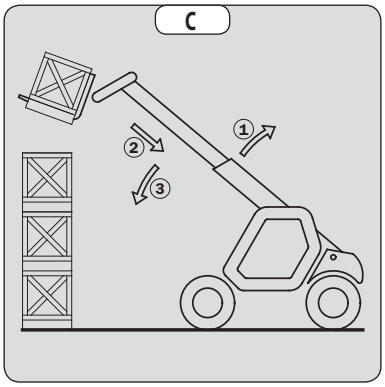


C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE

This device gives an indication of the longitudinal stability of the lift truck, and limits hydraulic movements in order to ensure this stability, at least under the following operating conditions:

- when the lift truck is at a standstill,
- when the lift truck is on firm, stable and consolidated ground,
- when the lift truck is performing handling and placing operations.

- Move the jib very carefully when approaching the authorized load limit (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Always watch this device during handling operations.
- In the event that "AGGRAVATING" hydraulic movements are cut-off, only perform de-aggravating hydraulic movements in the following order (fig. C): if necessary, raise the jib (1), retract the jib as far as possible (2) and lower the jib (3) to set down the load.



⚠ IMPORTANT ⚠

The instrument reading may be erroneous when the steering is at full lock or the rear axle is oscillated to its maximum extent.
Before lifting a load, make sure that the lift truck is not in either of these situations.

D - TRANSVERSE ATTITUDE OF THE LIFT TRUCK

Depending on the model of lift truck

The transverse attitude is the transverse slope of the chassis with respect to the horizontal.
Raising the jib reduces the lift truck's lateral stability. The transverse attitude must be set with the jib in down position as follows:

1 - LIFT TRUCK WITHOUT ROLL CORRECTOR USED ON TYRES

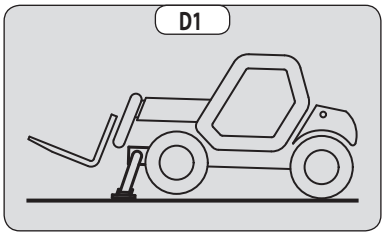
- Position the lift truck so that the bubble in the level is between the two lines (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

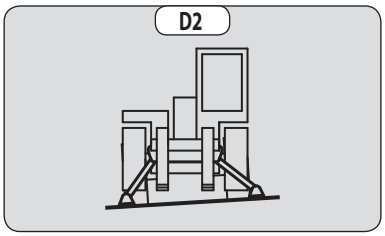
2 - LIFT TRUCK WITH ROLL CORRECTOR USED ON TYRES

- Correct the roll using the hydraulic control and check horizontality with the spirit level. The bubble in the level must be between the two lines (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

3 - LIFT TRUCK USED ON STABILIZERS

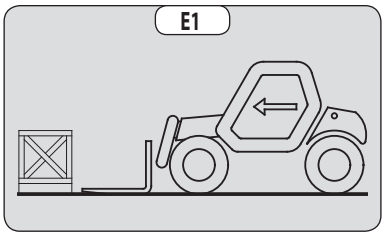
- Set the two stabilizers on the ground and raise the two front wheels of the lift truck (fig. D1).
- Correct the roll using the stabilizers (fig. D2) and check horizontality with the spirit level. The bubble of the level must be between the two lines (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS). In this position, the two front wheels must be off the ground.





E - TAKING UP A LOAD ON THE GROUND

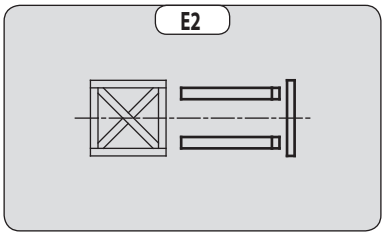
- Approach the lift truck perpendicular to the load, with the jib retracted and the forks in a horizontal position (fig. E1).
- Adjust the fork spread and centring relative to the load to ensure stability (fig. E2) (optional solutions exist, consult your dealer).
- Never lift a load with a single fork.



⚠ IMPORTANT ⚠

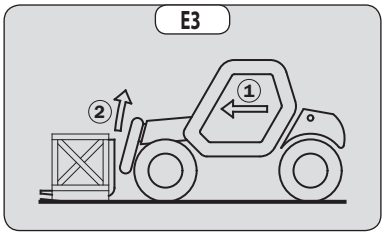
Beware of the risks of trapping or squashing limbs when manually adjusting the forks.

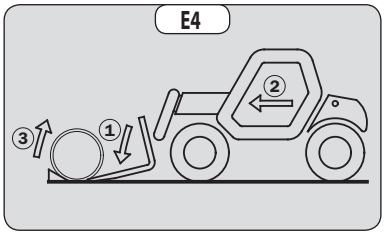
- Move the lift truck forward slowly (1) and insert the forks under the load as far as they will go (fig. E3). If necessary, slightly lift the jib (2) while taking up the load.
- Bring the load into the transport position.
- Tilt the load far enough backwards to ensure stability (loss of load on braking or going downhill).



FOR A NON-PALLETISED LOAD

- Tilt the carriage (1) forwards and move the lift truck slowly forwards (2), to insert the fork under the load (fig. E4) (block the load if necessary).
- Continue to move the lift truck forwards (2) tilting the carriage (3) (fig. E4) backwards to position the load on the forks and check the load's longitudinal and lateral stability.





F - TAKING UP AND LAYING A HIGH LOAD ON TYRES

⚠ IMPORTANT ⚠

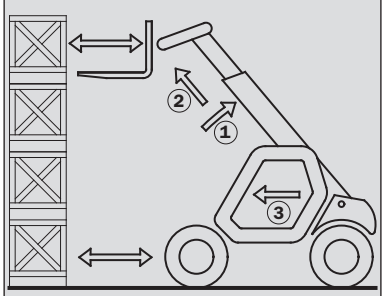
You must not raise the jib if you have not checked the transverse attitude of the lift truck (see: INSTRUCTIONS FOR HANDLING A LOAD: D - TRANSVERSE ATTITUDE OF THE LIFT TRUCK).

REMINDER: Make sure that the following operations can be performed with good visibility (see: OPERATIONS INSTRUCTIONS UNLADEN AND LADEN: D - VISIBILITY).

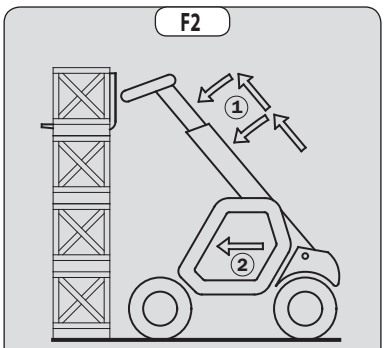
TAKING UP A HIGH LOAD ON TYRES

- Ensure that the forks will easily pass under the load.
- Lift and extend the jib (1) (2) until the forks are level with the load, moving the lift truck (3) forward if necessary (fig. F1), moving very slowly and carefully.
- Always remember to keep the distance necessary for inserting the forks under the load, between the stack and the lift truck (fig. F1) and use the shortest possible length of jib.
- Insert the forks under the load as far as they will go by alternately extending and lowering the jib (1) or, if necessary, moving the lift truck forward (2) (fig. F2). Apply the handbrake and place the forward/reverse selector in neutral.
- Slightly raise the load (1) and tilt the carriage (2) backwards to stabilize the load (fig. F3).
- Tilt the load sufficiently backwards to ensure its stability.
- Monitor the longitudinal stability limiter and warning device (see: INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE). If it is overloaded, set the load back down in the place from which it was taken.
- If possible lower the load without shifting the lift truck. Lift the jib (1) to release the load, retract (2) and lower the jib (3) to bring the load into the transport position (fig. F4).
- If this is not possible, back up the lift truck (1), manoeuvring very gently and carefully to release the load. Retract (2) and lower the jib (3) to bring the load into the transport position (fig. F5).

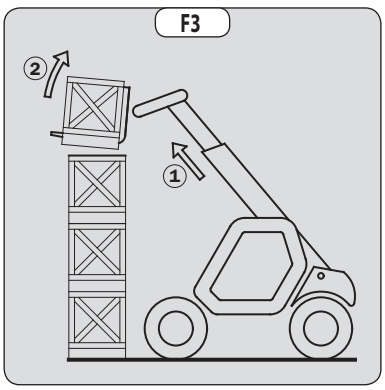
F1



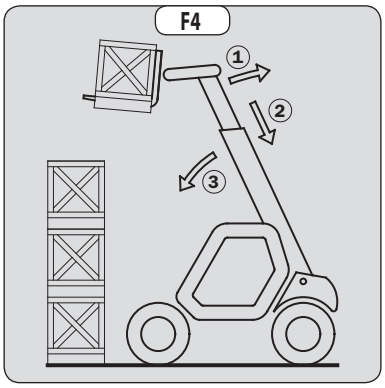
F2



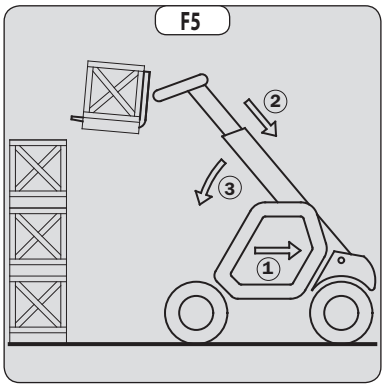
F3



F4



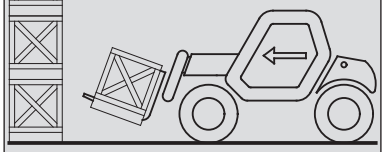
F5



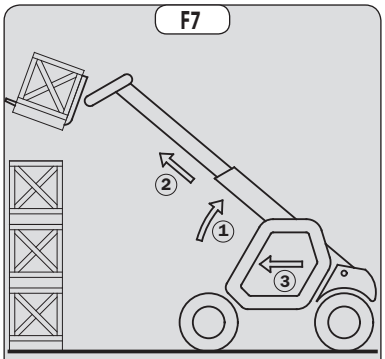
LAYING A HIGH LOAD ON TYRES

- Approach the load in the transport position in front of the stack (fig. F6).
- Apply the parking brake and place the forward/reverse selector in neutral.
- Raise and extend the jib (1) (2) until the load is above the stack, while monitoring the longitudinal stability limiter and warning device (see: INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE). If necessary, move the lift truck (3) forward (fig. F7), driving very slowly and carefully.
- Place the load in a horizontal position and lay it down on the pile by lowering and retracting the jib (1) (2) in order to position the load correctly (fig. F8).
- If possible, release the fork by alternately retracting and raising the jib (1) (fig. F9). Then set the forks into transport position.
- If this is not possible, reverse the lift truck (1) very slowly and carefully to release the forks (fig. F10). Then set them into transport position.

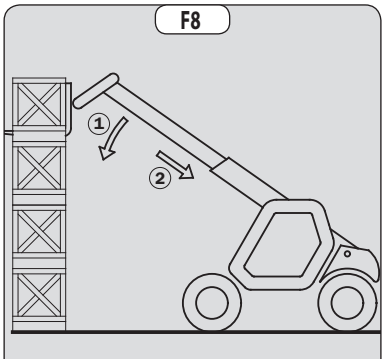
F6



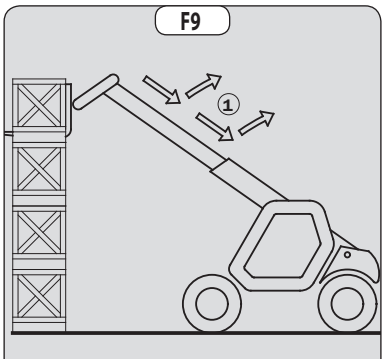
F7



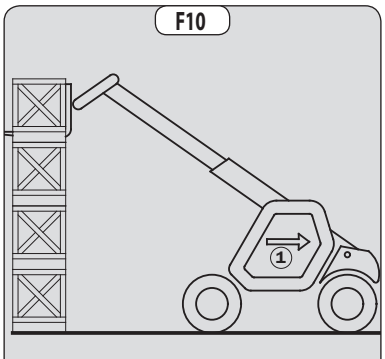
F8



F9



F10



G - TAKING UP AND LAYING A HIGH LOAD ON STABILIZERS

Depending on the model of lift truck

⚠ IMPORTANT ⚠

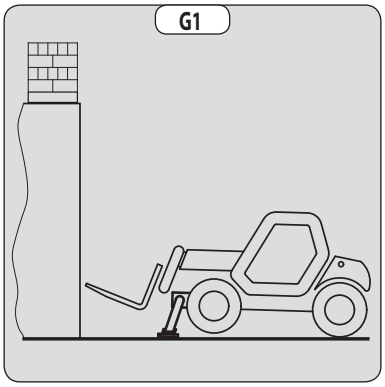
You must not raise the jib if you have not checked the transverse attitude of the lift truck (see: INSTRUCTIONS FOR HANDLING A LOAD: D - TRANSVERSE ATTITUDE OF THE LIFT TRUCK).

REMINDER: Make sure that the following operations can be performed with good visibility (see: OPERATIONS INSTRUCTIONS UNLADEN AND LADEN: D - VISIBILITY).

The stabilizers are used to optimise the lift truck's lifting performances (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

POSITION THE STABILIZERS WITH THE FORKS IN TRANSPORT POSITION (UNLADEN AND LADEN)

- Set the forks in transport position in front of the elevation.
- Stay far enough away to have room for the jib to be raised.
- Apply the parking brake and place the forward/reverse selector in neutral.
- Set the two stabilizers on the ground and lift the two front wheels of the lift truck (fig. G1), while maintaining its transverse stability.



RAISE THE STABILIZERS WITH THE FORKS IN TRANSPORT POSITION (UNLADEN AND LADEN)

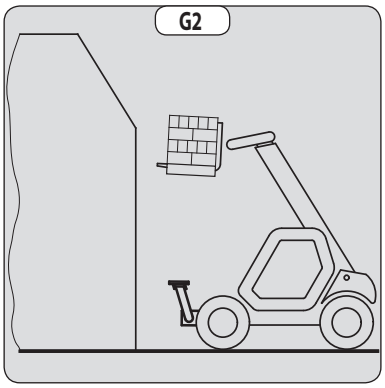
- Raise both stabilizers fully and at the same time.

LOWERING OF STABILISERS WITH JIB UP (UNLADEN AND LADEN).

⚠ IMPORTANT ⚠

This operation must be exceptional and performed with great care.

- Raise the jib and retract the telescopes completely.
- Set the lift truck in position in front of the elevation (fig. G2) moving very slowly and carefully.
- Apply the parking brake and place the forward/reverse selector in neutral.
- Move the stabilizers very slowly and gradually as soon as they are close to the ground or in contact with it.
- Lower the two stabilizers and lift the two front wheels of the lift truck (fig. G3). During this operation, transverse attitude must be permanently maintained: the bubble in the level must be kept between the two lines.

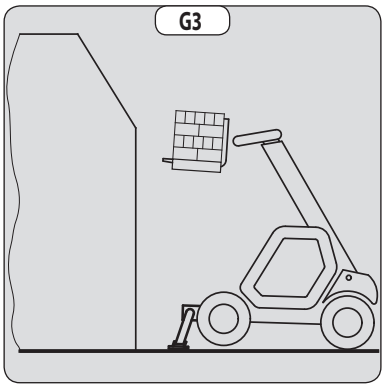


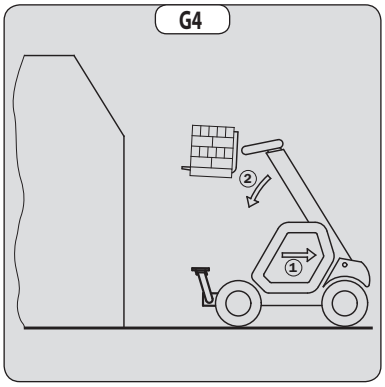
SETTING THE STABILIZERS WITH THE JIB UP (UNLADEN AND LADEN)

⚠ IMPORTANT ⚠

This operation must be exceptional and performed with great care.

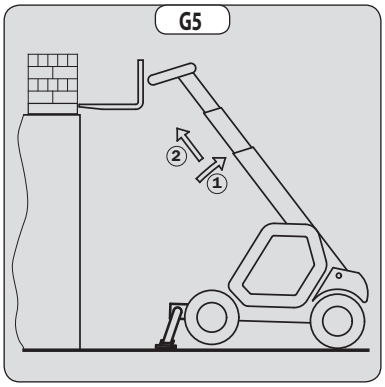
- Keep the jib up and retract the telescopes completely (fig. G3).
- Move the stabilizers very slowly and gradually as soon as they are in contact with the ground and when they leave the ground. During this operation, the transverse attitude must be permanently maintained: the bubble in the level must be kept between the two lines.
- Raise both stabilizers completely.
- Release the parking brake and reverse the lift truck (1) very slowly and carefully, to release it and lower the forks (2) into transport position (fig. G4).

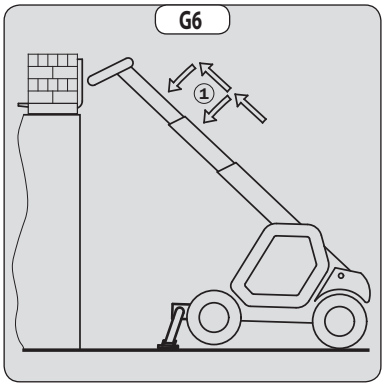


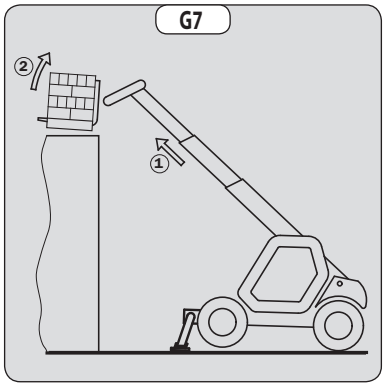


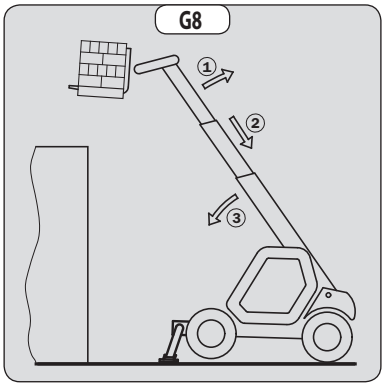
TAKING UP A HIGH LOAD ON STABILISERS

- Ensure that the forks will easily pass under the load.
- Check the position of the lift truck with respect to the load and make a test run, if necessary, without taking the load.
- Raise and extend the jib (1) (2) until the forks are at the level of the load (fig. G5).
- Insert the forks under the load as far as they will go by alternately extending and lowering the jib (1) (fig. G6).
- Lift the load slightly (1) and tilt the carriage (2) backwards to stabilise the load (fig. G7).
- Monitor the longitudinal stability limiter and warning device (see: INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE). If it is overloaded, set the load back down in the place from which it was taken.
- If possible lower the load without moving the lift truck. Raise the jib (1) to release the load, retract (2) and lower the jib (3) to set the load into transport position (fig. G8).



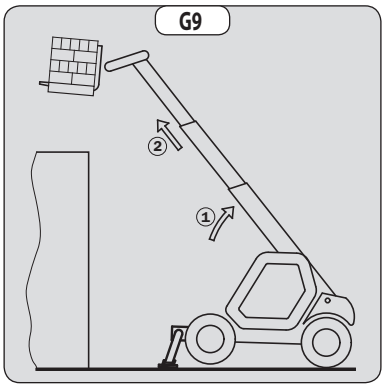


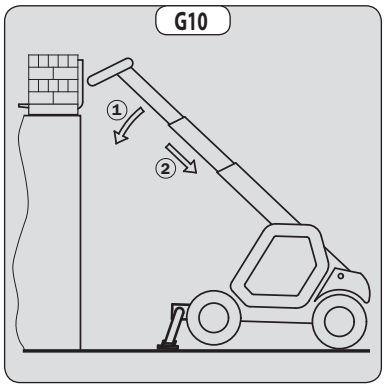


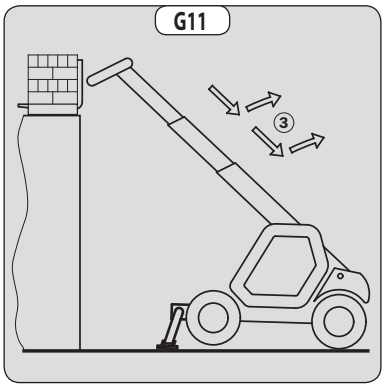


LAYING A HIGH LOAD ON STABILISERS

- Raise and extend the jib (1) (2) until the load is above the elevation (fig. G9), while monitoring the longitudinal stability limiter and warning device (see: INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE).
- Position the load horizontally and release it by lowering and retracting the jib (1) (2) to position the load correctly (fig. G10).
- Free the forks by alternating retracting and raising the jib (3) (fig. G11).
- If possible, set the jib in transport position without moving the lift truck.







648920EN (10/11/2015)

H - TAKING UP AND LAYING DOWN A SUSPENDED LOAD

⚠ IMPORTANT ⚠

Failure to follow the above instructions may lead the lift truck to loose stability and overturn.
MUST be used with a lift truck equipped with an operational hydraulic movement cut-out device.

CONDITIONS OF USE

- The length of the sling or the chain shall be as short as possible to limit swinging of the load.
- Lift the load vertically along its axis, never by pulling sideways or lengthways.

HANDLING WITHOUT MOVING THE LIFT TRUCK

- Whether on stabilisers or on tyres, the lateral attitude must not exceed 1 % and the longitudinal attitude must not exceed 5%, the bubble of the level must be held at "0".
- Ensure that the wind speed is not higher than 10 m/s.
- Ensure that there is no one between the load and the lift truck.

I - TRAVELLING WITH A SUSPENDED LOAD

- Before moving, inspect the terrain in order to avoid excessive slopes and cross-falls, bumps and potholes, or soft ground.
- Ensure that the wind speed is not higher than 36 km/h.
- The lift truck must not travel at more than 0,4 m/s (1,5 km/h, i.e., one quarter walking speed).
- Drive and stop the lift truck gently and smoothly to minimise swinging of the load.
- Carry the load a few centimetres above the ground (max. 30 cm) the shortest possible jib length. Do not exceed the offset indicated on the load chart. If the load begins to swing excessively, do not hesitate to stop and lower the jib to set down the load.
- Before moving the lift truck, check the longitudinal stability limiter and warning device (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS), only the green LEDs and possible the yellow LEDs should be lit.
- During transport, the lift truck operator must be assisted by a person on the ground (standing a minimum of 3 m from the load), who will limit swinging of the load using a bar or a rope. Ensure that this person is always clearly in view.
- The lateral attitude must not exceed 5 %, the bubble in the level must be kept between the two "MAX" marks
- The longitudinal attitude must not exceed 15 %, with the load facing uphill, and 10%, with the load facing downhill.
- The jib angle must not exceed 45°.
- If the first red LED of longitudinal stability limiter and warning device (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) comes on while travelling, gently bring the lift truck to a halt and stabilise the load. Retract the telescope to reduce the offset of the load.

648920EN (10/11/2015)

PLATFORM OPERATING INSTRUCTIONS

For lift trucks fitted with a PLATFORM

⚠ IMPORTANT ⚠

Installation of the platform on the lift truck is only possible if the shields "operating the platform" of the lift truck and the platform are identical (see: 2 - DESCRIPTION: OPERATING THE PLATFORM).

A - AUTHORISATION FOR USE

- Operation of the platform requires further authorisation in addition to that of the lift truck.

B - LIFT TRUCK SUITABILITY FOR USE

- MANITOU has ensured that this platform is suitable for use under the normal operating conditions defined in this operator's manual, with a **STATIC** test coefficient **OF 1,25** and a **DYNAMIC** test coefficient **OF 1,1**, as specified in harmonised standard **EN 280** for "mobile elevating work platforms".
- Before commissioning, the company manager must make sure that platform is appropriate for the work to be done, and perform certain tests (in accordance with current legislation).

C - PRECAUTIONS WHEN USING THE PLATFORM

- Wear suitable clothing when using the platform, avoid loosely-fitting garments.
- Never operate the platform when hands or feet are wet or soiled with greasy substances.
- Remain alert at all times when using the platform. Do not listen to the radio or music using headphones or earphones.
- For increased comfort, adopt the correct position at the platform's operator station.
- The platform's guard rail exempts the operator from wearing a safety harness under normal operating conditions. As a result, you are responsible for deciding whether to wear a safety harness.
- The control units must never in any event be used for any other than their intended purposes (e.g. climbing onto or down from the lift truck, portmanteau, etc.).
- Safety helmets must be worn.
- The operator must always be in the normal operator's position. It is prohibited to have arms or legs, or generally any part of the body, protruding from the basket.
- Ensure that any materials loaded onto the platform (pipes, cables, containers, etc.) cannot fall out. Do not pile these materials to the point where it is necessary to step over them.

D - USING THE PLATFORM

- However experienced they may be, operators must acquaint themselves with the emplacement and operation of all control instruments prior to operating the platform.
- Check before use that the platform has been correctly assembled and locked onto the lift truck.
- Check before operating the platform that the access gate has been properly locked.
- The platform should be operated in an area free of any obstructions or danger when it is lowered to the ground.
- The operator using the platform must be aided on the ground by a person with adequate training.
- You should stay within the limits set out in the platform load chart.
- The lateral stresses are limited pressure (see: 2 - DESCRIPTION: CHARACTERISTICS).
- It is strictly forbidden to hang a load from the platform or the lift truck jib without a specially designed attachment (see: INSTRUCTIONS FOR HANDLING A LOAD: H - TAKING UP AND LAYING DOWN A SUSPENDED LOAD).
- The platform cannot be used as a crane or a lift for permanently transporting people or materials, nor as jacks or supports.
- The lift truck must not be moved with one (or more) person(s) in the platform.
- It is forbidden to transport people on the platform using the hydraulic controls in the lift truck's driver's cab (except in case of rescue).
- The operator must not climb onto to off the platform when it is not on ground level (jib retracted and in the down position).
- The platform must not be fitted with attachments that increase the unit's wind load.
- Do not use ladders or improvised structures in the platform to gain extra height.
- Do not climb onto the sides of the platform to gain extra height.

E - ENVIRONMENT

⚠ IMPORTANT ⚠

It is forbidden to use the platform close to electricity cables. Maintain the specified safe distances.

RATED VOLTAGE	DISTANCE ABOVE GROUND OR FLOOR IN METRES
50 < U < 1000	2,30 M
1000 < U < 30000	2,50 M
30000 < U < 45000	2,60 M
45000 < U < 63000	2,80 M
63000 < U < 90000	3,00 M
90000 < U < 150000	3,40 M
150000 < U < 225000	4,00 M
225000 < U < 400000	5,30 M
400000 < U < 750000	7,90 M

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⚠ IMPORTANT ⚠

It is strictly forbidden to use the platform when the wind speed exceeds 45 km/h.

- To visually recognise this wind speed, refer to the empirical wind evaluation scale below:

BEAUFORT scale (wind speed at a height of 10 m on a flat site)						
Force	**Type of wind**	**Speed (knots)**	**Speed (km/h)**	**Speed (m/s)**	**Effects on Land**	**Sea conditions**
0	Calm	**0 - 1**	**0 - 1**	**< 0,3**	- Smoke rises vertically.	- Sea is like a mirror.
1	Light air	**1 - 3**	**1 - 5**	**0,3 - 1,5**	- Smoke indicates direction of wind.	- Ripples with appearance of scale, no foam crests.
2	Light breeze	**4 - 6**	**6 - 11**	**1,6 - 3,3**	- Wind felt on face, leaves rustle.	- Short wavelets, but pronounced.
3	Gentle breeze	**7 - 10**	**12 - 19**	**3,4 - 5,4**	- Leaves and small twigs in constant motion.	- Very small waves, crests begin to break.
4	Moderate breeze	**11 - 16**	**20 - 28**	**5,5 - 7,9**	- Wind raises dust and loose pieces of paper; small branches are moved.	- Small waves, becoming longer, numerous whitecaps.
5	Fresh breeze	**17 - 21**	**29 - 38**	**8 - 10,7**	- Small tees in leaf begin to sway.	- Wavelets form on inland waters; moderate waves, taking longer form.
6	Strong breeze	**22 - 27**	**39 - 49**	**10,8 - 13,8**	- Large branches in motion, whistling heard in overhead wires, umbrella use becomes difficult.	- Larger waves forming, whitecaps everywhere, some spray.
7	Near gale	**28 - 33**	**50 - 61**	**13,9 - 17,1**	- Whole trees in motion, inconvenience felt when walking against the wind.	- Sea heaps up; white foam from breaking waves begins to be blown in streaks along the direction of the wind.
8	Gale	**34 - 40**	**62 - 74**	**17,2 - 20,7**	- Wind breaks twigs off trees; impedes progress.	- Moderately high waves of greater length; edges of crests begin to break into spindrift.
9	Strong gale	**41 - 47**	**75 - 88**	**20,8 - 24,4**	- Wind damages roofs (chimneys, slates, etc.).	- High waves, crests of waves begin to topple, streaks of foam; reduced visibility.
10	Storm	**48 - 55**	**89 - 102**	**24,5 - 28,4**	- Seldom experienced inland; trees uprooted; considerable structural damage occurs.	- Very high waves; white streaks of foam; reduced visibility.
11	Violent storm	**56 - 63**	**103 - 117**	**28,5 - 32,6**	- Very rare, widespread damage.	- Exceptionally high waves able to hide medium sized ships from view, reduced visibility.
12	Hurricane	**64 +**	**118 +**	**32,7 +**	- Devastating damage.	- Sea completely white; air filled with foam and spray, very reduced visibility.

F - MAINTENANCE

⚠ IMPORTANT ⚠

Your platform must be periodically inspected to ensure its continued compliance.
The inspection frequency is defined by the legislation applying in the country in which the platform is used.
In France, a general periodic inspection every 6 months (order of 1 March 2004).

HOW TO USE THE RADIO-CONTROL

SAFETY INSTRUCTIONS

- This radio-control consists of electronic and mechanical safety elements. It cannot receive commands from another transmitter because the internal encoding is unique to each radio-control.

⚠ IMPORTANT ⚠

If it is used improperly or incorrectly, there is a risk of danger to:
- The physical and mental health of the user or others.
- The lift truck and other neighbouring items.

All those working with this radio-control:
- Must be qualified in line with current regulations and trained accordingly.
- Must follow this instruction manual as closely as possible.

- The system is used to control the lift truck remotely via radio waves. Commands are also transmitted if the lift truck is out of sight (behind an obstacle or a building for example), this is why:
  - After stopping the truck and removing the key switch (only possible when it is stationary), always place the transmitter in a safe, dry place.
  - Before performing any installation, servicing or repair work, always switch off power sources (in particular, electric welding devices and electric head units on hydraulic distributors must be disconnected at each section).
  - Never remove or alter the safety devices (such as the hand-guard frame, key, emergency stop button, etc.).

⚠ IMPORTANT ⚠

Never drive the lift truck if it is not continuously and perfectly within view of the operator!

- Before leaving the transmitter, the operator must make sure that it cannot be used by an unauthorized third person: either by removing the key button from the transmitter or locking it in an inaccessible place.
- The user must ensure that the instruction manual is accessible at all times and that operators have read and understood it.

INSTRUCTIONS

- Take up position in a stable place with no risk of slipping.
- Before using the transmitter, make sure there is nobody within the working area.
- Only use the transmitter with its carrying device or installed correctly on the platform.

⚠ IMPORTANT ⚠

When you remove the transmitter, remove the accumulator and key button so that it cannot be used accidentally or deliberately by anyone else.

PROTECTIVE DEVICES

- The lift truck will be immobilised within a maximum of 450 milliseconds (approx. 0.5 second):
  - If the emergency stop button of the transmitter is pressed (50 milliseconds), or that of the lift truck.
  - If the transmission distance of the radio waves is exceeded.
  - If the transmitter is faulty.
  - If an interfering radio signal is received from elsewhere.
  - If the accumulator is removed from its housing in the transmitter.
  - If the battery reaches the end of its autonomy.
  - If the transmitter is switched off by turning the key switch to the off position.
- These protective devices are provided for the safety of personnel and property and must never be altered, removed or bypassed in any way whatsoever!
- The hand-guard frame prevents external action on a manipulator (e.g. if the transmitter is dropped, or if the operator leans on a guard-rail).
- An electronic safety device prevents radio transmission from being initiated if the manipulators are not mechanically and electrically at rest and if the internal combustion engine speed selector is not set to idle.

⚠ IMPORTANT ⚠

In an emergency, press the transmitter emergency stop button immediately ; then follow the manual's instructions (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

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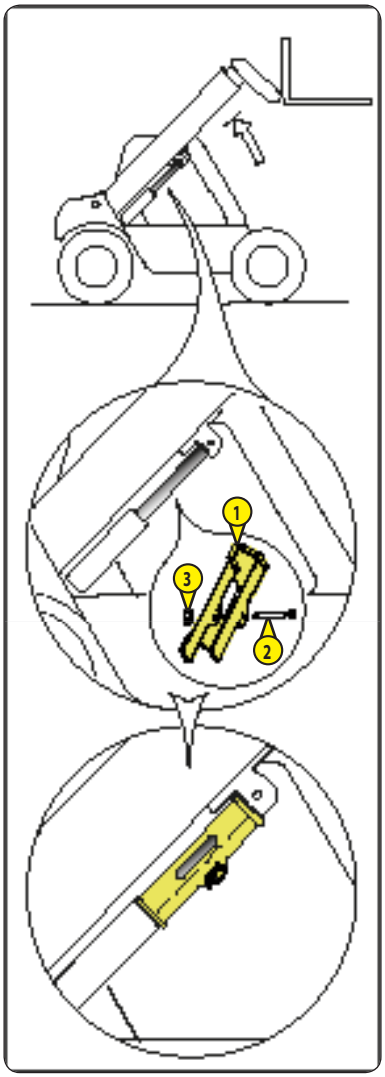
LIFT TRUCK MAINTENANCE INSTRUCTIONS

GENERAL INSTRUCTIONS

- Ensure the area is sufficiently ventilated before starting the lift truck.
- Wear clothes suitable for the maintenance of the lift truck, avoid wearing jewellery and loose clothes. Tie and protect your hair, if necessary.
- Stop the engine and remove the ignition key, when an intervention is necessary.
- Read the operator's manual carefully.
- Carry out all repairs immediately, even if the repairs concerned are minor.
- Repair all leaks immediately, even if the leak concerned is minor.
- Make sure that the disposal of process materials and of spare parts is carried out in total safety and in a ecological way.
- Be careful of the risk of burning and splashing (exhaust, radiator, engine, etc.).

PLACING THE JIB SAFETY WEDGE

- The lift truck is equipped with a jib safety wedge (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) that must be installed on the rod of the lifting cylinder when working beneath the jib.



FITTING THE WEDGE

- Fully raise the jib.
- Place the safety wedge 1 on the rod of the lifting cylinder and secure with the rod 2 and the pin 3.
- Slowly lower the jib then stop the hydraulic movements before it comes into contact with the wedge.

REMOVING THE WEDGE

- Fully raise the jib.
- Remove the pin and the rod.
- Return the safety wedge to the storage location provided on the lift truck.

⚠ IMPORTANT ⚠

Only use the wedge supplied with the lift truck.

MAINTENANCE

- Perform the periodic service (see: 3 - MAINTENANCE) to keep your lift truck in good working conditions. Failure to perform the periodic service may cancel the contractual guarantee.

MAINTENANCE LOGBOOK

- The maintenance operations carried out in accordance with the recommendations given in part: 3 - MAINTENANCE and the other inspection, servicing or repair operations or modifications performed on the lift truck or its attachments shall be recorded in a maintenance logbook. The entry for each operation shall include details of the date of the works, the names of the individuals or companies having performed them, the type of operation and its frequency, if applicable. The part numbers of any lift truck items replaced shall also be indicated.

LUBRICANT AND FUEL LEVELS

- Use the recommended lubricants (never use contaminated lubricants).
- Do not fill the fuel tank when the engine is running.
- Only fill up the fuel tank in areas specified for this purpose.
- Do not fill the fuel tank to the maximum level.
- Do not smoke or approach the lift truck with a flame, when the fuel tank is open or is being filled.

HYDRAULIC

- Any work on the load handling hydraulic circuit is forbidden except for the operations described in part: 3 - MAINTENANCE.
- Do not attempt to loosen unions, hoses or any hydraulic component with the circuit under pressure.

⚠ IMPORTANT ⚠

BALANCING VALVE: It is dangerous to change the setting and remove the balancing valves or safety valves which may be fitted to your lift truck cylinders. The HYDRAULIC ACCUMULATORS that may be fitted on your lift truck are pressurised units. Removing these accumulators and their pipework is a dangerous operation and must only be performed by approved personnel (consult your dealer).

ELECTRICITY

- Do not short-circuit the starter relay to start the engine. If the forward/reverse selector is not in neutral and the parking brake is not applied, the lift truck may suddenly start to move.
- Do not drop metallic items on the battery.
- Disconnect the battery before working on the electrical circuit.

WELDING

- Disconnect the battery before any welding operations on the lift truck.
- When carrying out electric welding work on the lift truck, connect the negative cable from the equipment directly to the part being welded, so as to avoid high tension current passing through the alternator.
- Never carry out welding or work which gives off heat on an assembled tyre. The heat would increase the pressure which could cause the tyre to explode.
- If the lift truck is equipped with an electronic control unit, disconnect this before starting to weld, to avoid the risk of causing irreparable damage to electronic components.

WASHING THE LIFT TRUCK

- Clean the lift truck or at least the area concerned before any intervention.
- Remember to close and lock all accesses to the lift truck (doors, windows, cowls…).
- During washing, avoid the articulations and electrical components and connections.
- If necessary, protect against penetration of water, steam or cleaning agents, components susceptible of being damaged, particularly electrical components and connections and the injection pump.
- Clean the lift truck of any fuel, oil or grease trace.

TRANSPORTING THE LIFT TRUCK

⚠ IMPORTANT ⚠

Transporting the lift truck involves real risks for the operator and others involved.

- Towing, slinging or transporting the lift truck (see: 3 - MAINTENANCE: G - OCCASIONAL MAINTENANCE).

IF THE LIFT TRUCK IS NOT TO BE USED FOR A LONG TIME

INTRODUCTION

The following recommendations are intended to prevent the lift truck from being damaged when it is withdrawn from service for an extended period.
For these operations, we recommend the use of a MANITOU protective product, reference 603726.
Instructions for using the product are given on the packaging.

⚠ IMPORTANT ⚠

Procedures to follow if the lift truck is not to be used for a long time and for starting it up again afterwards must be performed by your dealership.

PREPARING THE LIFT TRUCK

- Clean the lift truck thoroughly.
- Check and repair any fuel, oil, water or air leaks.
- Replace or repair any worn or damaged parts.
- Wash the painted surfaces of the lift truck in clear and cold water and wipe them.
- Touch up the paintwork if necessary.
- Shut down the lift truck (see: OPERATING INSTRUCTIONS UNLADEN AND LADEN).
- Make sure the jib cylinder rods are all in retracted position.
- Release the pressure in the hydraulic circuits.

PROTECTING THE ENGINE

- Fill the tank with fuel (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).
- Empty and replace the cooling liquid (see: 3 - MAINTENANCE: F - EVERY 2000 HOURS SERVICE).
- Leave the engine running at idling speed for a few minutes, then switch off.
- Replace the engine oil and oil filter (see: 3 - MAINTENANCE: D - EVERY 500 HOURS SERVICE).
- Add the protective product to the engine oil.
- Run the engine for a short time so that the oil and cooling liquid circulate inside.
- Disconnect the battery and store it in a safe place away from the cold, after charging it to a maximum.
- Remove the injectors and spray the protective product into each cylinder for two seconds with the piston in low neutral position.
- Turn the crankshaft once slowly and refit the injectors (see engine REPAIR MANUAL).
- Remove the intake hose from the manifold or turbocharger and spray the protective product into the manifold or turbocharger.
- Cap the intake manifold or turbocharger hole with waterproof adhesive tape.
- Remove the exhaust pipe and spray the protective product into the exhaust manifold or turbocharger.
- Refit the exhaust pipe and block the outlet with waterproof adhesive tape.

NOTE: The spray time is noted on the product packaging and must be increased by 50 % for turbo engines.

- Open the filler plug, spray the protective product around the rocker arm shaft and refit the filler plug.
- Cap the fuel tank using waterproof adhesive tape.
- Remove the drive belts and store them in a safe place.
- Disconnect the engine cut-off solenoid on the injection pump and carefully insulate the connection.

PROTECTING THE LIFT TRUCK

- Set the lift truck on axle stands so that the tyres are not in contact with the ground and release the handbrake.
- Protect cylinder rods which will not be retracted, from corrosion.
- Wrap the tyres.

NOTE: If the lift truck is to be stored outdoors, cover it with a waterproof tarpaulin.

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BRINGING THE LIFT TRUCK BACK INTO SERVICE

- Remove the waterproof adhesive tape from all the holes.
- Refit the intake hose.
- Refit and reconnect the battery.
- Remove the protection from the cylinder rods.
- Perform the daily service (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).
- Put the handbrake on and remove the axle stands.
- Empty and replace the fuel and replace the fuel filter (see: 3 - MAINTENANCE: D - EVERY 500 HOURS SERVICE).
- Refit and set the tension in the drive belts (see: 3 - MAINTENANCE: C - EVERY 250 HOURS SERVICE).
- Turn the engine over with the starter, to allow the oil pressure to rise.
- Reconnect the engine cut-off solenoid.
- Lubricate the lift truck completely (see: 3 - MAINTENANCE: SERVICING SCHEDULE).

⚠ IMPORTANT ⚠

Ensure the area is sufficiently ventilated before starting the lift truck.

- Start up the lift truck, following the safety instructions and regulations (see: OPERATING INSTRUCTIONS UNLADEN AND LADEN).
- Run all the jib's hydraulic movements, concentrating on the ends of travel for each cylinder.

LIFT TRUCK DISPOSAL

MANITOU complies with the regulations deriving from Directive 2000/53/EC relating to lift truck end-of-life.
This lift truck contains no substances or materials forbidden by Directive 2000/53/EC.

NOTE: Consult your dealer before disposing of your lift truck.

RECYCLING OF MATERIALS

METALS

- Metals are 100 % recoverable and recyclable.

PLASTICS

- Plastic parts are identified with a marking in accordance with current regulations.
- A limited range of materials is used to simplify the recycling process.
- The majority of plastic components are made of "thermoplastic" plastics, that are easily recycled by melting, granulating or grinding.

RUBBER

- Tyres and seals can be ground for use in cement manufacture or to obtain reusable granules.

GLASS

- Glass items can be removed and collected for processing by glaziers.

ENVIRONMENTAL PROTECTION

By entrusting the maintenance of your lift truck to the MANITOU network, the risk of pollution is limited and the contribution to environmental protection contribution is made.

WORN OR DAMAGED PARTS

- Do not dump them in the countryside.
- MANITOU and its network have signed-up to a scheme of environmental protection through recycling.

USED OIL

- The MANITOU network organises the collection and processing of used oil products.
- By handing over your waste oil to MANITOU, the risk of pollution is limited.

USED BATTERIES

- Do not throw away batteries, as they contain metals that are harmful for the environment.
- Return them to the MANITOU network or any other approved collection point.

NOTE: MANITOU aims to manufacture lift trucks that provide the best performance and limit polluting emissions.

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2 - DESCRIPTION

TABLE OF CONTENTS

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1) DECLARATION "CE" DE CONFORMITE (originale)
" EC" DECLARATION OF CONFORMITY (original)

2) La société, *The company* : **MANITOU ITALIA S.r.l.**
3) Adresse, *Address* : **Via Cristoforo Colombo 2, 41013 Cavazzona in Castelfranco Emilia –ITALIE**

4)Dossier technique,*Technical file* : MANITOU ITALIA S.r.l. Via Cristoforo Colombo 2, 41013 Cavazzona in Castelfranco Emilia (MO) , Italie

5) Constructeur de la machine décrite ci-après, *Manufacturer of the machine described below* :

CHARIOT TELESCOPIQUE ROTATIF MRT 2150 PRIVILEGE N° 763407
NACELLE ORH EXTENSIBLE 2,25/4M – Capacité 365 Kg p.n. 711204 (GSS POSITION B)
PFB p.n.709835 + FOURCHES FEM 4999 KG p.n.578097 (GSS POSITION I)
TREUIL 5 TON p.n.711934 (GSS POSITION J)

6) Déclare que cette machine, *Declares that this machine* :

☐ 7)- Est conforme aux directives suivantes et à leurs dispositions en droit national, *Complies with the following directives and their transpositions into national law*

2006/42/CE

8) - Pour les machines de l'annexe IV , *For annex IV machines* :
9) - Numéro d'attestation, *Certificate number*: ME.0017.10 REV.05 du, *of* 05/07/2011
10) - Organisme notifié, *Notified body* : **ECO s.p.a. EUROPEAN CERTIFYNG ORGANIZATION, Via Mengolina 33 48018 Faenza- Ravenna - Italia – Organismo notificato n° 0714**

2000/14/CE + 2005/88/CE

11) -Procédure appliquée, *Applied procedure* : **Annexe VI – 2000 / 14 / CE proc.I**
10) - Organisme notifié, *Notified body* : **ECO s.p.a. EUROPEAN CERTIFYNG ORGANIZATION, Via Mengolina 33 48018 Faenza- Ravenna - Italia – Organismo notificato n° 0714**
12) - Niveau de puissance acoustique, *Sound power level* :
13) Mesuré, *Measured* : 103 dB (A)
14) Garanti, *Guaranteed* : 104 dB (A)

2004/108/CE

☐ 15)-Normes harmonisées utilisées, *Harmonised standards used* : **EN 12895, EN 280 :2001+A2 :2009**

☐ 16)-Normes ou dispositions techniques utilisées, *Standards or technical provisions used* : /

17) - Fait à, *Done at* : CASTELFRANCO EMILIA 18) - Date, *Date* : 04/01/2013
19) - Nom du signataire, *Name of signatory* : IOTTI MARCO
20) - Fonction, *Function* : DIRECTEUR GENERAL
21) - Signature, *Signature* :

MANITOU ITALIA Srl
A Socio Unico - Sede Legale e Amm.va - Via C. Colombo, 2
Località Cavazzona - 41013 CASTELFRANCO E. (MO)
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P.IVA IT 02591050360 - N. Mecc. MO 033322 R.E.A. 148776

FAC-SIMILE

bg : 1) удостоверение за « CE » съответствие (оригинална), 2) Фирмата, 3) Адрес, 4) Техническо досие, 5) Фабрикант на описаната по-долу машина, 6) Обявява, че тази машина, 7) Отговаря на следните директиви и на тяхното съответствие национално право, 8) За машините към допълнение IV, 9)Номер на удостоверението, 10) Наименувана фирма, 15) хармонизирани стандарти използвани, 16) стандарти или технически правила, използвани, 17) Изработено в, 18) Дата, 19) Име на разписалия се, 20) Функция, 21) Функция.

cs : 1) ES prohlášení o shodě (původní), 2) Název společnosti, 3) Adresa, 4) Technická dokumentace, 5) Výrobce níže uvedeného stroje, 6) Prohlašuje, že tento stroj, 7) Je v souladu s následujícími směrnicemi a směrnicemi transponovanými do vnitrostátního práva, 8) Pro stroje v příloze IV, 9) Číslo certifikátu, 10) Notifikační orgán, 15) harmonizované normy použity, 16) Norem a technických pravidel používaných, 17) Místo vydání, 18) Datum vydání, 19) Jméno podepsaného, 20) Funkce, 21) Podpis.

da : 1) EF Overensstemmelseserklæring (original), 2) Firmaet, 3) Adresse, 4) tekniske dossier, 5) Konstruktør af nedenfor beskrevne maskine, 6) Erklærer, at denne maskine, 7) Overholder nedennævnte direktiver og disses gennemførelse til national ret, 8) For maskiner under bilag IV, 9) Certifikat nummer, 10) Bemyndigede organ, 15) harmoniserede standarder, der anvendes, 16) standarder eller tekniske regler, 17) Udfærdiget i, 18) Dato, 19) Underskrivers navn, 20) Funktion, 21) Underskrift.

de : 1) EG-Konformitätserklärung (original), 2) Die Firma, 3) Adresse, 4) Technischen Unterlagen, 5) Hersteller der nachfolgend beschriebenen Maschine, 6) Erklärt, dass diese Maschine, 7) den folgenden Richtlinien und deren Umsetzung in die nationale Gesetzgebung entspricht, 8) Für die Maschinen laut Anhang IV, 9) Bescheinigungsnummer, 10) Benannte Stelle, 15) angewandten harmonisierten Normen, 16) angewandten sonstigen technischen Normen und Spezifikationen, 17) Ausgestellt in, 18) Datum, 19) Name des Unterzeichners, 20) Funktion, 21) Unterschrift.

el : 1) Δήλωση συμμόρφωσης CE (πρωτότυπο), 2) Η εταιρεία, 3) Διεύθυνση, 4) τεχνικό φάκελο, 5) Κατασκευάστρια του εξής περιγραφόμενου μηχανήματος, 6) Δηλώνει ότι αυτό το μηχάνημα, 7) Είναι σύμφωνο με τις εξής οδηγίες και τις προσαρμογές τους στο εθνικό δίκαιο, 8) Για τα μηχανήματα παραρτήματος IV, 9) Αριθμός δήλωσης, 10) Κοινοποιημένος φορέας, 15) εναρμονισμένα πρότυπα που χρησιμοποιούνται, 16) Πρότυπα ή τεχνικούς κανόνες που χρησιμοποιούνται, 16) Είναι σύμφωνο με τα εξής πρότυπα και τεχνικές διατάξεις, 17) Εν, 18) Ημερομηνία, 19) Όνομα του υπογράφοντος, 20) Θέση, 21) Υπογραφή.

es : 1)Declaración DE de conformidad (original), 2) La sociedad, 3) Dirección, 4) expediente técnico, 5) Constructor de la máquina descrita a continuación, 6) Declara que esta máquina, 7) Está conforme a las siguientes directivas y a sus transposiciones en derecho nacional, 8) Para las máquinas anexo IV, 9) Número de certificación, 10) Organismo notificado, 15) normas armonizadas utilizadas, 16) Otras normas o especificaciones técnicas utilizadas, 17) Hecho en, 18) Fecha, 19) Nombre del signatario, 20) Función, 21) Firma.

et : 1) EÜ vastavusdeklaratsioon (algupärane), 2) Äriühing, 3) Aadress, 4) Tehniline dokumentatsioon, 5) Seadme tootja, [illegible]innitab, et see toode, 7) On vastavuses järgmiste direktiivide ja nende riigisisesesse õigusesse ülevõtmiseks vastuvõetud õigusaktidega, 8) IV lisas loetletud seadmete puh[illegible]mistuse number, 10) Sertifitseerimisasutus, 15) kasutatud ühtlustatud standarditele, 16) Muud standardites või spetsifikatsioonides kasutatakse, 17) [illegible]andmise k[illegible]18) Väljaandmise aeg, 19) Allkirjastaja nimi, 20) Amet, 21) Allkiri.

fi : 1) EY-vaatimustenmukaisuusvakuutus (alkuperäiset), 2) Yritys, 3) Osoite, 4) teknisen eri[illegible]n, 5) [illegible]essä [illegible]vatun [illegible]oneen valmistaja, 6) Vakuuttaa, että tämä kone, 7) Täyttää seuraavien direktiivien sekä niitä vastaavien kansallisten säännösten vaatimukset, [illegible]tteen [illegible]kon[illegible]saalta, 9) Todistuksen numero, 10) Ilmoitettu laitos, 15) yhdenmukaistettuja standardeja käytetään, 16) muita standardeja tai, 17) Paikka, [illegible]ka, 1[illegible] Al[illegible]rioitta[illegible]nimi, 20) Toimi, 21) Allekirjoitus.

ga : 1) « EC »dearbhú comhréireachta (bunaidh), 2) An comhlacht, 3) Seoladh, 4) [illegible]nhad [illegible]m[illegible]5) [illegible]éan[illegible]an innill a thuairiscítear thíos, 6) Dearbhaíonn sé go bhfuil an t-inneall, 7) Go gcloíonn sé le na treoracha seo a leanas agus a trasuímh isteach[illegible]í náisiúnta, 8) [illegible]hag[illegible]h inmill an aguisín IV, 9) Uimhir teastais, 10) Comhlacht a chuireadh i bhfios, 15) caighdeáin comhchuibhithe a úsáidtear, 16) caighdeáin eile nó so[illegible]ochtaí teic[illegible]a ú[illegible]tear, 17) Déanta ag, 18) Dáta, 19) Ainm an tsínitheora, 20) Feidhm, 21) Síniú.

hu : 1) CE megfelelőségi nyilatkozat (eredeti), 2) A vállalat, 3) Cí[illegible]ki d[illegible]mentáció, 5) Az alábbi gép gyártója, 6) Kijelenti, hogy a gép, 7) Megfelel az alábbi irányelveknek valamint azok honosított előírásainak, 8) A IV. melléklet gé[illegible]ez, 9) Bizonylati szám, 10) Értesített szervezet, 15) felhasznált harmonizált szabványok, 16) egyéb felhasznált műszaki szabványok és elő[illegible]ok hivatkozás[illegible]17) Ke[illegible]ely), 18) Dátum, 19) Aláíró neve, 20) Funkció, 21) Aláírás.

is : 1) (Samræmisvottorð ESB (upprunalega), 2) [illegible]yrirtækið, 3) Aðsetur, 4) Tæknilegar skrá, 5) Smiður tækisins sem lýst er hér á eftir, 6) Staðfestir að tækið, 7) Samræmist eftirfarandi stöðlum og staðfærslu [illegible]eð h[illegible]n af þ[illegible]rrétti, 8) Fyrir tækin í aukakafla IV, 9) Staðfestingarnúmer, 10) Tilkynnt til, 15) samhæfða staðla sem notaðir, 16) önnur staðlar eða forskrift[illegible]notað[illegible]17) [illegible]ur, [illegible]ing, 19) Nafn undirritaðs, 20) Staða, 21) Undirskrift.

it : 1) Dichiarazione [illegible] conformit[illegible]ginale), 2) La società, 3) Indirizzo, 4) fascicolo tecnico, 5) Costruttore della macchina descritta di seguito, 6) Dichiara che questa macchina, 7) È conform[illegible]ll[illegible]ettiv[illegible]eguenti e alle relative trasposizioni nel diritto nazionale, 8) Per le macchine Allegato IV, 9) Numero di Attestazione, 10) Organismo notificato, 15) norme armo[illegible]ate appli[illegible]e, 16) altre norme e specifiche tecniche applicate, 17) Stabilita a, 18) Data, 19) Nome del firmatario, 20) Funzione, 21) Firma.

lt : 1) CE atitikties deklaracija (originalas), 2) Bendrovė, 3) Adresas, 4) Techninė byla, 5) Žemiau nurodytas įrenginio gamintojas, 6) Pareiškia, kad šis įrenginys, 7) Atitinka toliau nurodytas direktyvas ir į nacionalinius teisės aktus perkeltas jų nuostatas, 8) IV priedas dėl mašinų, 9) Sertifikato Nr, 10) Paskelbtoji įstaiga, 15) suderintus standartus naudojamus, 16) Kiti standartai ir techninės specifikacijas, 17) Pasirašyta, 18) Data, 19) Pasirašiusio asmens vardas ir pavardė, 20) Pareigos, 21) Parašas.

lv : 1) EK atbilstības deklarācija (oriģināls), 2) Uzņēmums, 3) Adrese, 4) tehniskās lietas, 5) Tālāk aprakstītās iekārtas ražotājs, 6) Apliecina, ka šī iekārta, 7) Ir atbilstoša tālāk norādītajām direktīvām un to transpozīcijai nacionālajā likumdošanā, 8) Iekārtām IV pielikumā, 9) Apliecības numurs, 10) Reģistrētā organizācija, 15) lietotajiem saskaņotajiem standartiem, 16) lietotajiem tehniskajiem standartiem un specifikācijām, 17) Sastādīts, 18) Datums, 19) Parakstītāja vārds, 20) Amats, 21) Paraksts.

mt : 1) Dikjarazzjoni ta' Konformità KE (originali), 2) Il-kumpanija, 3) Indirizz, 4) fajl tekniku, 5) Manifattriċi tal-magna deskritta hawn isfel, 6) Tiddikjara li din il-magna, 7) Hija konformi hija konformi mad-Direttivi segwenti u l-liġijiet li jimplimentawhom fil-liġi nazzjonali, 8) Għall-magni fl-Anness IV, 9) Numru taċ-ċertifikat, 10) Entità nnotifikata, 15) l-istandards armonizzati użati, 16) standards tekniċi u speċifikazzjonijiet oħra użati, 17) Magħmul f', 18) Data, 19) Isem il-firmatarju, 20) Kariga, 21) Firma.

nl : 1) EG-verklaring van overeenstemming (oorspronkelijke), 2) Het bedrijf, 3) Adres, 4) technisch dossier, 5) Constructeur van de hierna genoemde machine, 6) Verklaart dat deze machine, 7) In overeenstemming is met de volgende richtlijnen en hun omzettingen in het nationale recht, 8) Voor machines van bijlage IV, 9) Goedkeuringsnummer, 10) Aangezegde instelling, 15) gehanteerde geharmoniseerde normen, 16) andere gehanteerde technische normen en specificaties, 17) Opgemaakt te, 18) Datum, 19) Naam van ondergetekende, 20) Functie, 21) Handtekening.

no : 1) CE-samsvarserklæring (original), 2) Selskapet, 3) Adresse, 4) tekniske arkiv, 5) Fabrikant av følgende maskin, 6) Erklærer at denne maskinen, 7) Oppfyller kravene i følgende direktiver, med nasjonale gjennomføringsbestemmelser, 8) For maskinene i tillegg IV, 9) Attestnummer, 10) Notifisert organ, 15) harmoniserte standarder som brukes, 16) Andre standarder og spesifikasjoner brukt, 17) Utstedt i, 18) Dato, 19) Underskriverens navn, 20) Stilling, 21) Underskrift.

pl : 1) Deklaracja zgodności CE (oryginalne), 2) Spółka, 3) Adres, 4) dokumentacji technicznej, 5) Wykonawca maszyny opisanej poniżej, 6) Oświadcza, że ta maszyna, 7) Jest zgodna z następującymi dyrektywami i odpowiadającymi przepisami prawa krajowego, 8) Dla maszyn załącznik IV, 9) Numer certyfikatu, 10) Jednostka certyfikująca, 15) zastosowanych norm zharmonizowanych, 16) innych zastosowanych norm technicznych i specyfikacji, 17) Sporządzono w, 18) Data, 19) Nazwisko podpisującego, 20) Stanowisko, 21) Podpis.

pt : 1) Declaração de conformidade CE (original), 2) A empresa, 3) Morada, 4) processo técnico, 5) Fabricante da máquina descrita abaixo, 6) Declara que esta máquina, 7) Está em conformidade às directivas seguintes e às suas transposições para o direito nacional, 8) Para as máquinas no anexo IV, 9) Número de certificado, 10) Entidade notificada, 15) normas harmonizadas utilizadas, 16) outras normas e especificações técnicas utilizadas, 17) Elaborado em, 18) Data, 19) Nome do signatário, 20) Cargo, 21) Assinatura.

ro : 1) Declaraţie de conformitate CE (originală), 2) Societatea, 3) Adresa, 4) cărtii tehnice, 5) Constructor al maşinii descrise mai jos, 6) Declară că prezenta maşină, 7) Este conformă cu directivele următoare şi cu transpunerea lor în dreptul naţional, 8) Pentru maşinile din anexa IV, 9) Număr de atestare, 10) Organism notificat, 15) standardele armonizate utilizate, 16) alte standarde si specificatii tehnice utilizate, 17) Întocmit la, 18) Data, 19) Numele persoanei care semnează, 20) Funcţia, 21) Semnătura.

sk : 1) ES vyhlásenie o zhode (pôvodný), 2) Názov spoločnosti, 3) Adresa, 4) technickej dokumentácie, 5) Výrobca nižšie opísaného stroja, 6) Vyhlasuje, že tento stroj, 7) Je v súlade s nasledujúcimi smernicami a smernicami transponovanými do vnútroštátneho práva, 8) Pre stroje v prílohe IV, 9) Číslo certifikátu, 10) Notifikačný orgán, 15) použité harmonizované normy, 16) použité iné technické normy a predpisy, 17) Miesto vydania, 18) Dátum vydania, 19) Meno podpisujúceho, 20) Funkcia, 21) Podpis.

sl : 1) ES Izjava o ustreznosti (izvirna), 2) Družba. 3) Naslov. 4) tehnične dokumentacije, 5) Proizvajalac tukaj opisanega stroja, 6) Izjavlja, da je ta stroj, 7) Ustreza naslednjim direktivam in njihovi transpoziciji v državno pravo, 8) Za stroje priloga IV, 9) Številka potrdila, 10) Obvestilo organu, 15) uporabljene harmonizirane standarde, 16) druge uporabljene tehnične standarde in zahteve, 17) V, 18) Datum, 19) Ime podpisnika, 20) Funkcija, 21) Podpis.

sv : 1) CE-försäkran om överensstämmelse (original), 2) Företaget, 3) Adress, 4) tekniska dokumentationen, 5) Konstruktör av nedan beskrivna maskin, 6) Försäkrar att denna maskin, 7) Överensstämmer med nedanstående direktiv och införlivandet av dem i nationell rätt, 8) För maskinerna i bilaga IV, 9) Nummer för godkännande, 10) Organism som underrättats, 15) Harmoniserade standarder som använts, 16) andra tekniska standarder och specifikationer som använts, 17) Upprättat i, 18) Datum, 19) Namn på den som undertecknat, 20) Befattning, 21) Namnteckning.

FAC-SIMILE

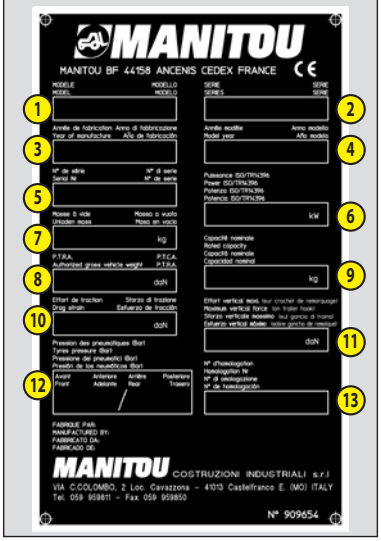
IDENTIFICATION OF THE LIFT TRUCK

As our policy is to promote a constant improvement of our products, our range of telescopic lift trucks may undergo certain modifications, without obligation for us to advise our customers.

When you order parts, or when you require any technical information, always specify:

NOTE: For the owner's convenience, it is recommended that a note of these numbers is made in the spaces provided, at the time of the delivery of the lift truck.

A



LIFT TRUCK MANUFACTURER'S PLATE (FIG. A)

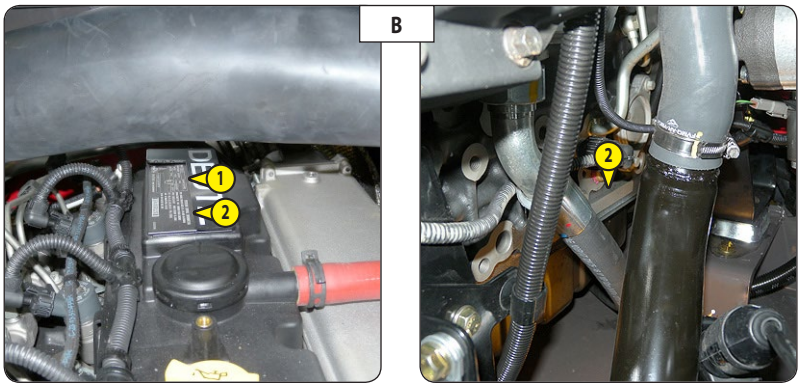
1 - MODEL
2 - SERIES
3 - Year of manufacture
4 - Model year
5 - Serial Nr
6 - Power ISO 3046
7 - Unladen mass
8 - Authorized gross vehicle weight
9 - Rated capacity
10 - Drag strain
11 - Maximun vertical force (on trailer hook)
12 - Tyres pressure (bar)
13 - Homologation Nr

For any further technical information regarding your lift truck refer to chapter: 2 - DESCRIPTION: CHARACTERISTICS.

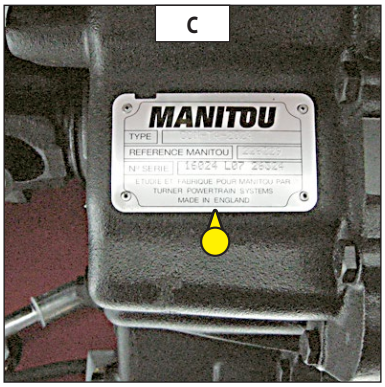
ENGINE (FIG. B)

1 - Type ..... .
2 - Engine Nr ..... .

B



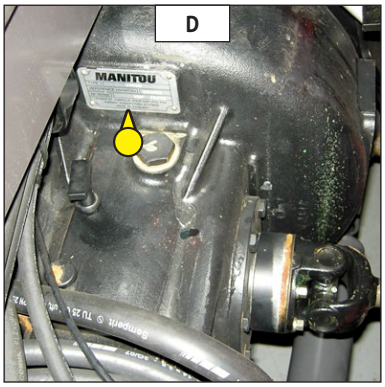
C



GEAR BOX (FIG. C)

- Type .....
- MANITOU reference .....
- Serial Nr .....

D

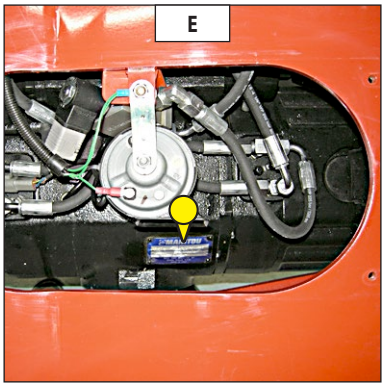


ANGLE GEAR BOX (FIG. D)

- Type .....
- MANITOU reference .....
- Serial Nr .....

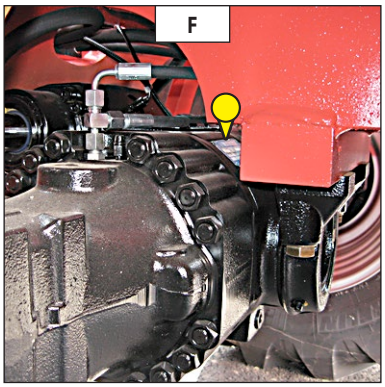
FRONT AXLE (FIG. E)

- Type .....
- Serial Nr .....
- MANITOU reference .....



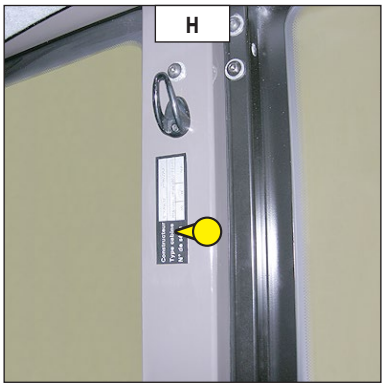
REAR AXLE (FIG. F)

- Type .....
- Serial Nr .....
- MANITOU reference .....



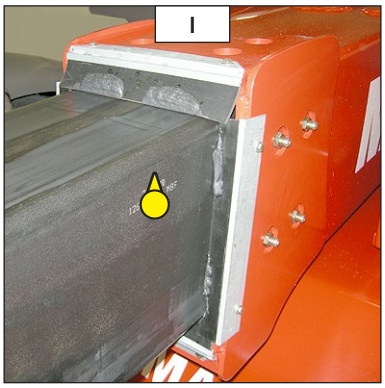
CAB (FIG. H)

- Type .....
- Serial Nr .....



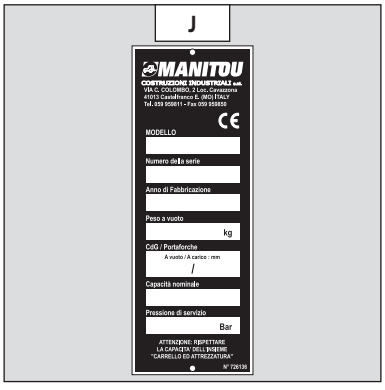
JIB (FIG. I)

- MANITOU reference .....
- Date of manufacture .....



ATACHMENT MANUFACTURER'S PLATE (FIG. J)

- Model .....
- Serial Nr .....
- Year of manufacture .....



CHARACTERISTICS

I.C. ENGINE		
Type		DEUTZ TCD3,6L/201
Fuel		Diesel
Number of cylinders		4 in line
Suction		Supercharged
Injection system		Direct
Ignition sequence		1.3.4.2
Capacity	cm^3	3621
Bore and stroke	mm	98 x 120
Compression ratio		18
Nominal speed laden	rpm	2200
Idling speed slow unladen	rpm	930
Max. speed unladen	rpm	2360
Power ISO/TR 14396	cv - kW	122 - 90
Power SAE J 1995	cv - kW	122 - 90
Maximum torque ISO/TR 14396	Nm	480 to 1600 rpm
Air cleaner	µm	3
Type of cooling		By water
Fan		Puller

TRANSMISSION		
Gear box		TURNER POWERTRAIN SYSTEMS
Type		Mechanical
Forward/reverse selector		Electro-hydraulic
Torque converter		SACHS
Number of forward speeds		4
Number of reverse speeds		4
Angle gear box		TURNER POWERTRAIN SYSTEMS
Front axle		DANA
Differential		45 % limited slip differential
Rear axle		DANA
Differential		45 % limited slip differential
Drive wheels		4RM Permanent
Switch for 2/4 drive wheels		No
Front tyres		ALLIANCE
Size		460/70R24 580 159B
Pressure	bar	4
Rear tyres		ALLIANCE
Size		460/70R24 580 159B
Pressure	bar	4

ELECTRIC CIRCUIT		
Battery	STANDARD	12 V - 180 Ah - 900 A EN
	OPTION	
Alternator		12 V - 120 A
- Type		ISKRA AAK3869
Starter		12 V - 4 kW
- Type		ISKRA AZF4302

SOUND AND VIBRATION		
Level of sound pressure in the driver's cab LpA (according to standard NF EN 12053)	dB	79,9 (cab closed)
Level of sound power ensured in the LwA environment (according to directive 2000/14/EC modified by directive 2005/88/EC)	dB	105 (measured) 106 (ensured)
Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	
The average weighted acceleration transmitted to the driver's hand/arm system (according to standard ISO 5349-2)	m/s^2	< 2,5

BRAKE CIRCUIT	
Service brake	Hydraulic power brake
Type of brake	Multidisk brake immersed in oil
Type of control	Foot-operated for the front and rear axles
Parking brake	Low pressure brake
Type of brake	Multidisk brake immersed in oil
Type of control	Electro-hydraulic

HYDRAULIC CIRCUIT		
Hydraulic pump		
Type		Variable volume piston pump
Capacity	cm^3	63
Max. rating capacity unladen	l/mn	149
Flow rate at 1600 rpm	l/mn	101
Filtration		
Return	µm	10
Suction	µm	125
Maximum service pressure	bar	270
Telescoping circuit	bar	200/270
Lifting circuit	bar	280/200
Tilt circuit	bar	190/280
Attachment circuit	bar	270
Steering circuit	bar	140

HYDRAULIC MOVEMENTS		
Longitudinal stability limiter and warning device		Electronic
Lifting motions (jib retracted)		
Unladen lifting	s	10
Laden lifting	s	-
Unladen lowering	s	6,50
Laden lowering	s	-
Telescoping motions (jib raised)		
Unladen extending	s	11
Laden extending	s	-
Unladen retracting	s	10
Laden retracting	s	-
Tilting movements		
Unladen digging	s	4
Forward tilting unladen	s	3

SPECIFICATIONS AND WEIGHTS		
Speed of movement for lift truck in standard configuration on flat ground (except particular conditions)		
Front unladen 1	km/h	5,3
2	km/h	8,6
3	km/h	18,2
4	km/h	32,4
Rear unladen 1	km/h	5,3
2	km/h	8,6
3	km/h	18,2
4	km/h	32,4
Standard attachment		TFF 45 MT1040
Weight of equipment	kg	228
Weight of forks (each one)	kg	71
Rated capacity with standard attachment	kg	4500
Tipping load at maximum reach on tyres	kg	
Distance from the centre of gravity from the load to the lug of the forks	mm	500
Standard lifting height	mm	7550
Lift truck weight without attachment	kg	8800
Lift truck weight with standard attachment		
Unladen	kg	9130
At rated load	kg	13590
Weight per axle with standard attachment (transport position)		
Front unladen	kg	4050
Rear unladen	kg	5080
Front rated load	kg	12120
Rear rated load	kg	1470
Weight per axle with standard attachment (jib extended)		
Front rated load	kg	9340
Rear rated load	kg	1060
Contact pressure on the ground for the whole surface of each stabilizer at maximum load when tilting	kg/cm2	
Drag strain on the coupling hook		
Unladen (sliding)	daN	6400
At rated load (transmission setting)	daN	9800
Pull strain with open carrier (according to standard ISO 8313)	daN	

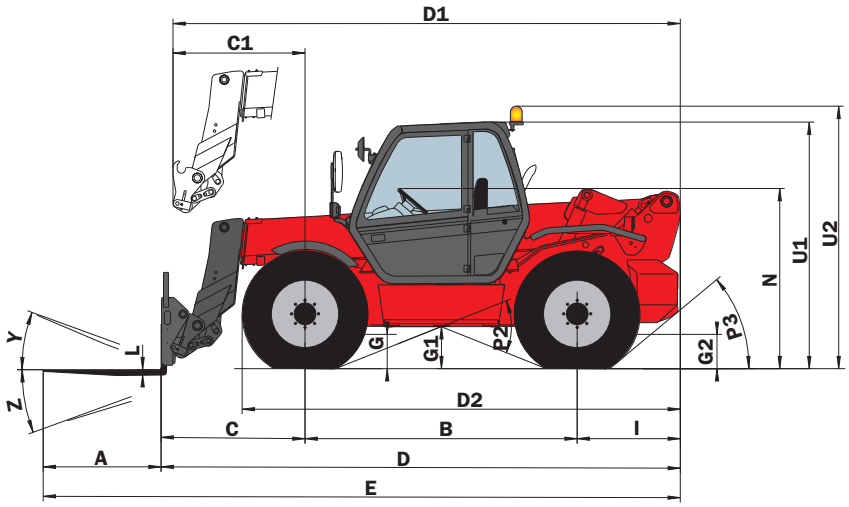
FRONT AND REAR TIRES

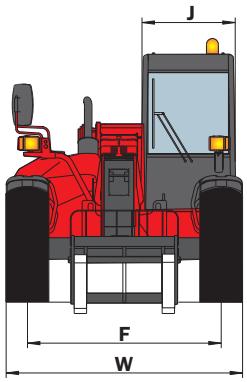
		PRESSURE (bar)	LOAD PER TYRE (kg)			
			FRONT UNLADEN	FRONT LADEN	REAR UNLADEN	REAR LADEN
ALLIANCE	460/70R24 XMCL 159A8 TUBELESS	4				
DUNLOP	**440/80-24 T37 STAB 158B TUBELESS**	**4,1**	1950	5800	2450	900
GOODYEAR	**15,5/25 12PR SGL DL 2A TUBELESS**	**4,5**				
	15,5/80-24 SGI 16PR TUBELESS	**5,1**				
	445/70R24 IT510 151G TUBELESS	**4,1**				
MICHELIN	**460/70R24 XMCL 159A8 TUBELESS**	**4**				
	1200R24 XKA	**7**				
	15,5R25 XHA TUBELESS	**4**				
	445/65R22,5 XZY 169K TUBELESS	**4,5**				
	500/70R24 XMCL 164A8 TUBELESS	**4,4**				
NOKIAN	**480/65R24 SF 151A8/146D TUBELESS**	**3,8**				

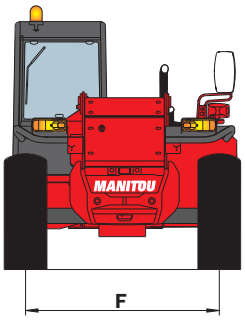
		PRESSURE (bar)	LOAD (kg)	GROUND CONTACT PRESSURE (kg/cm2)		GROUND CONTACT AREA (cm2)	
				HARD SOIL	LOOSE SOIL	HARD SOIL	LOOSE SOIL
ALLIANCE	460/70R24 XMCL 159A8 TUBELESS	4	900				
			1950				
			2450				
			5800				
DUNLOP	**440/80-24 T37 STAB 158B TUBELESS**	**4,1**	900	6,08	1,68	144	520
			1950	7,65	2,14	255	910
			2450	8,24	2,29	297	1070
			5800	12,10	3,34	480	1735
GOODYEAR	**15,5/25 12PR SGL DL 2A TUBELESS**	**4,5**	900	6,43	3,46	140	260
			1950	6,96	3,75	280	520
			2450	6,81	3,71	360	660
			5800	8,44	4,56	690	1278
	15,5/80-24 SGI 16PR TUBELESS	**5,1**	900				
			1950				
			2450				
			5800				
	445/70R24 IT510 151G TUBELESS	**4,1**	900				
			1950				
			2450				
			5800				
MICHELIN	**460/70R24 XMCL 159A8 TUBELESS**	**4**	900				
			1950				
			2450				
			5800				
	1200R24 XKA	**7**	900				
			1950				
			2450				
			5800				
	15,5R25 XHA TUBELESS	**4**	900	1,76	0,83	482	1030
			1950	2,77	1,29	675	1446
			2450	3,09	1,44	793	1699
			5800	3,63	1,64	1600	3540
	445/65R22,5 XZY 169K TUBELESS	**4,5**	900	2,64		339	
			1950	3,40		573	
			2450	3,66		669	
			5800	4,83		1200	
	500/70R24 XMCL 164A8 TUBELESS	**4,4**	900				
			1950				
			2450				
			5800				

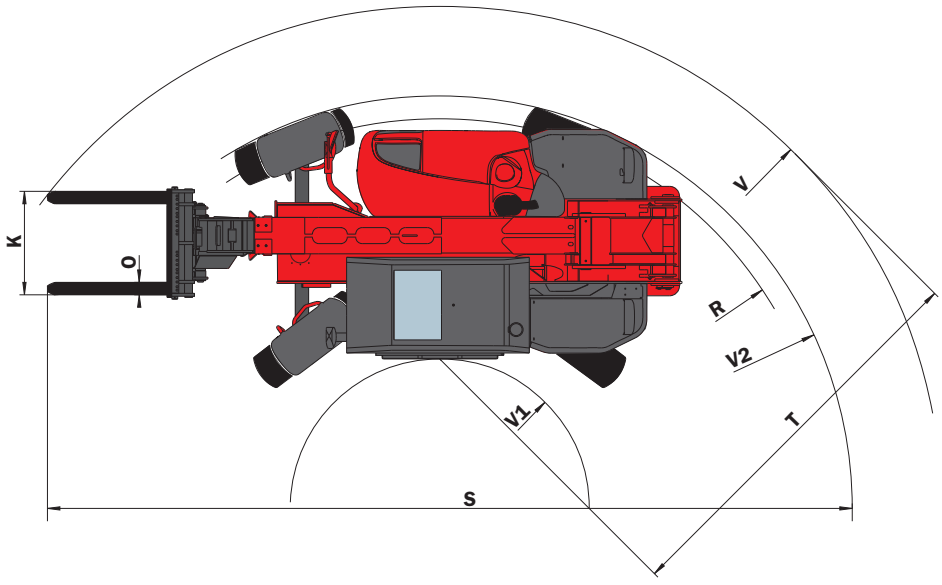
DIMENSIONS AND LOAD CHARTS

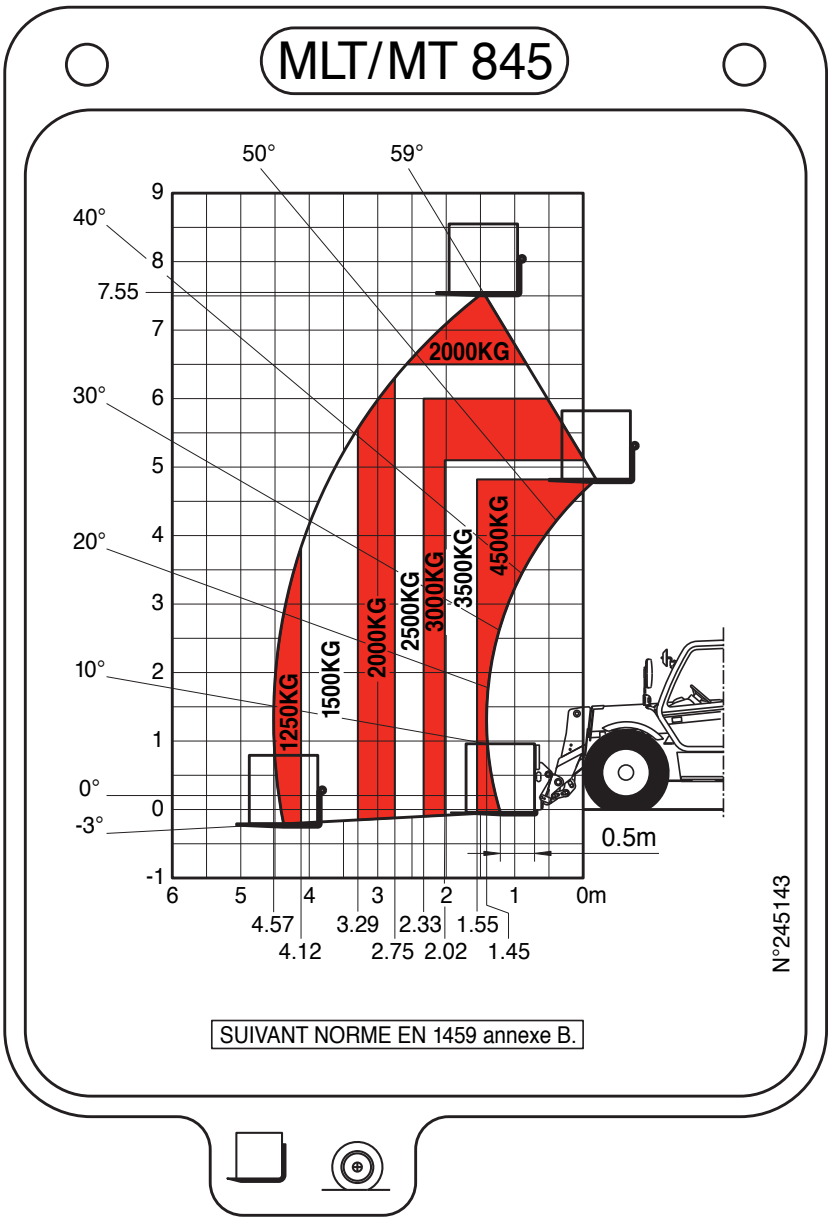
A	mm	1200
B	mm	2770
C	mm	1394
C1	mm	1487
D	mm	5214
D1	mm	5307
D2	mm	4410
E	mm	6414
F	mm	1950
F1	mm	1950
G	mm	455
G1	mm	450
G2	mm	455
I	mm	1050
J	mm	950
K	mm	1040
L	mm	50
N	mm	1865 - 1915
O	mm	125
P2	°	43,5°
P3	°	40°
R	mm	4008
S	mm	8164
T	mm	3620
U1	mm	2580
U2	mm	2760
V	mm	5090
V1	mm	1470
V2	mm	4185
W	mm	2460
Y	°	12°
Z	°	130°










MLT/MT 845
50°
59°
40°
30°
20°
10°
0°
-3°
9
8
7.55
7
6
5
4
3
2
1
0
-1
2000KG
1250KG
1500KG
2000KG
2500KG
3000KG
3500KG
4500KG
0.5m
6
5
4
3
2
1
0m
4.57
4.12
3.29
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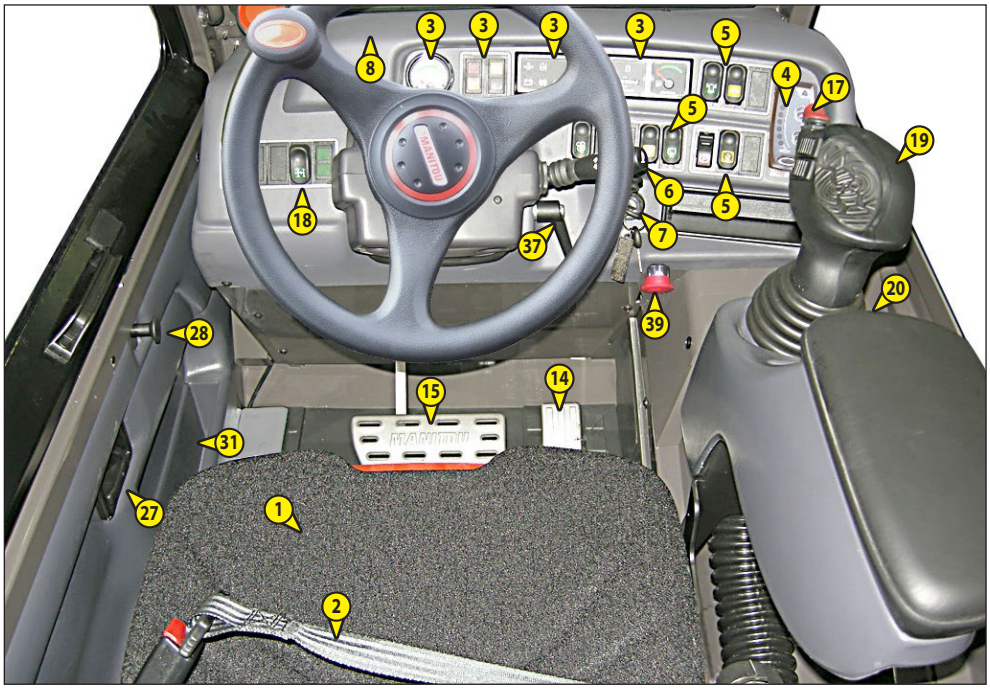
2.33
2.02
1.55
1.45
N°245143
SUIVANT NORME EN 1459 annexe B.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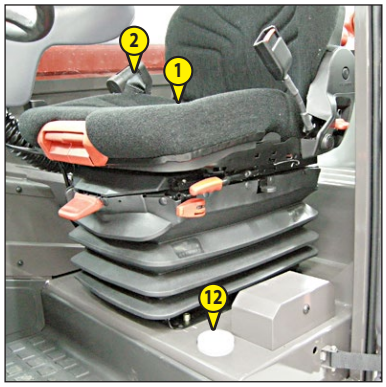
2
1
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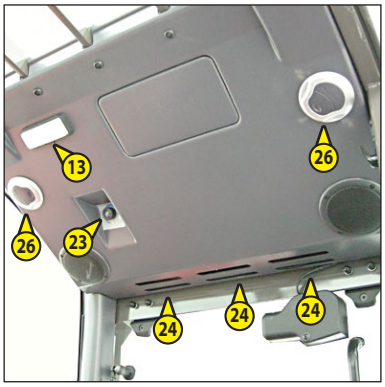
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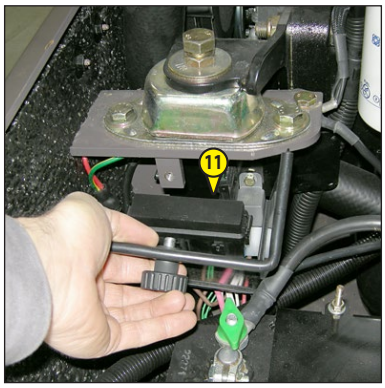

11

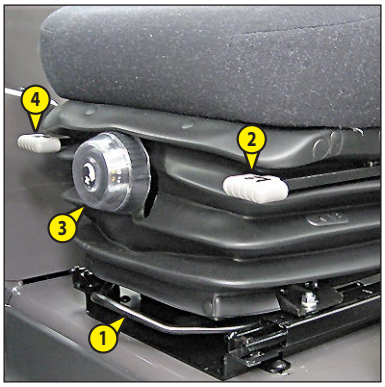

38

DESCRIPTION

1 - DRIVER'S SEAT
2 - SAFETY BELT
3 - CONTROL AND SIGNAL LIGHTS PANEL
4 - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE
5 - SWITCHES
6 - LIGHTR SWITCH, HORN AND INDICATOR SWITCH
7 - IGNITION SWITCH
8 - BRAKING OIL TANK, FUSES AND RELAY ACCESS PANEL
9 - BRAKING OIL TANK
10 - FUSES AND RELAYS IN THE CAB
11 - FUSES AND RELAYS UNDER THE ENGINE HOOD
12 - WINDSCREEN WASHER TANK
13 - ROOF LIGHT
14 - ACCELERATOR PEDAL
15 - SERVICE BRAKE PEDAL AND TRANSMISSION CUT-OFF
16 - GEAR LEVER AND TRANSMISSION CUT-OFF
17 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION
18 - STEERING SELECTION
19 - HYDRAULIC CONTROLS
20 - FUNCTION FILES
21 - HEATER CONTROL
22 - AIR CONDITIONING CONTROLS (AIR CONDITIONING OPTION)
23 - RECYCLING INTAKES (AIR CONDITIONING OPTION)
24 - WINDSCREEN DEMISTER VENTS
25 - HEATING VENTS
26 - BUTTON FOR OPENING HYDRAULIC FLUID AND FUEL FILLER ACCESS PANEL
27 - DOOR LOCK
28 - LOCKING HANDLE FOR UPPER HALF-DOOR
29 - UNLOCKING BUTTON FOR UPPER HALF DOOR
30 - HANDLE FOR REAR WINDOW OPENING
31 - DOCUMENT HOLDER
32 - FRONT LIGHTS (NOT ILLUSTRATED)
33 - REAR LIGHTS (NOT ILLUSTRATED)
34 - FLASHING LIGHT (NOT ILLUSTRATED)
35 - LEVEL INDICATOR
36 - INSIDE REAR-VIEW MIRROR
37 - STEERING WHEEL ADJUSTMENT LEVER
38 - DIAGNOSTIC CONNECTOR
39 - EMERGENCY STOP BUTTON
40 - TELESCOPIC BOOM SAFETY BLOCKS

NOTE: All the terms such as: RIGHT, LEFT, FRONT, REAR are meant for an observer seated on driver's seat and looking in front of him.

1 - DRIVER'S SEAT



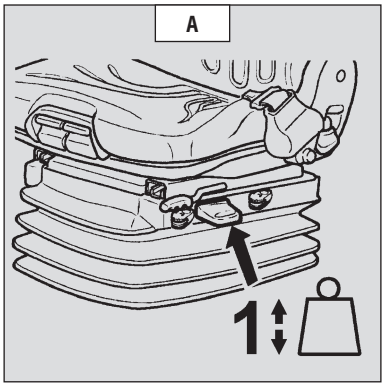
Designed for maximum comfort, this seat can be adjusted as follows.

LONGITUDINAL ADJUSTMENT
- Pull the locking lever 1 upwards.
- Slide the seat to the desired position.
- Release the lever and be sure it returns to the lock position.

SEAT CUSHION ADJUSTMENT
The front and the back of the seat cushion can be adjusted separately.
- To adjust the front, push the lever 2 downwards.
- Release it into one of the five possible positions.
- Same procedure to adjust the back by pulling the lever 2 upwards.

SEAT SUSPENSION ADJUSTMENT
- Turn the button 3 and adjust according to your weight.

ANGLE ADJUSTMENT OF THE BACK-REST
- Lean the back against the back-rest.
- Pull the lever 4 and place the back-rest into one of the possible positions.

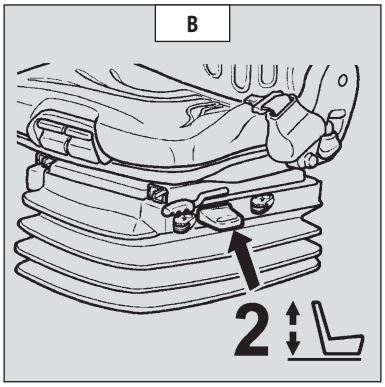


1 - DELUXE PNEUMATIC DRIVER'S SEAT (OPTION)

DESIGNED FOR MAXIMUM COMFORT, THIS SEAT CAN BE ADJUSTED AS FOLLOWS.

WEIGHT ADJUSTMENT (FIG. A)
It is advised that you adjust the seat according to your weight when sitting.
- Switch on lift truck ignition.
- Pull or push lever 1 briefly. Adjustment is automatic.

NOTE: To avoid any health problems, it is recommended that the weight should be checked and adjusted before starting up the lift truck.

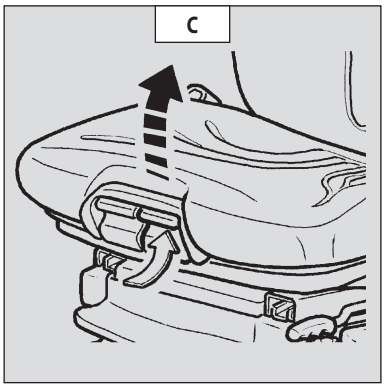


SEAT HEIGHT ADJUSTMENT (FIG. B)
When weight adjustment has been carried out, you can then modify seat height.
- Keep the ignition on in the lift truck.
- Pull or push lever 1 and adjust the seat height.

⚠ IMPORTANT ⚠

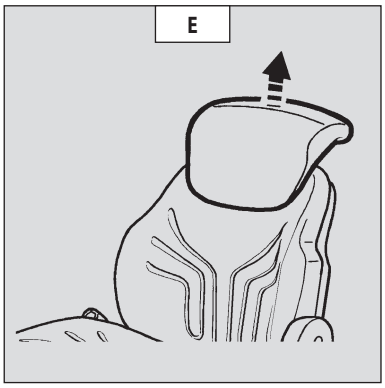
To avoid causing any damage, do not activate the compressor for over 1 minute.

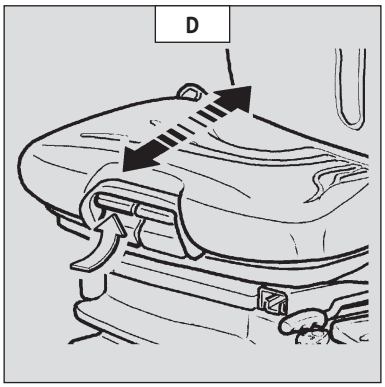
SEAT BACK-REST ANGLE ADJUSTMENT (FIG. C)
The back-rest angle of the seat may be adjusted to suit the individual.
- Press the left-hand button while pushing on the seat or relaxing pressure on the seat to find a comfortable position.



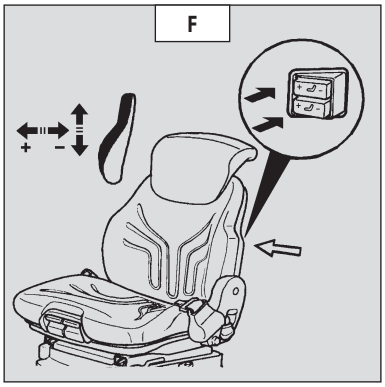
SEAT DEPTH ADJUSTMENT (FIG. D)
The depth of the seat may be adjusted to suit the individual.
- Press the right-hand button while raising or lowering the seat to find the desired position.

EXTENDING THE HEAD-REST (FIG. E)
- The height of the back-rest can be adjusted by pulling it upwards (the notches will click) up to the stop.
- The head-rest can be removed by applying sufficient pressure to pull it off the stop.





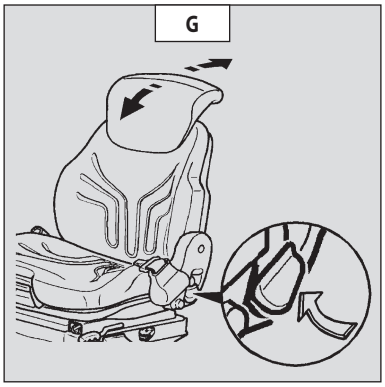
LUMBAR ADJUSTMENT (FIG. F)
This increases the comfort of the seat and the driver's freedom of movement.
- Press the raise and lower switches to adjust the curvature of the seat back to your requirements.



ADJUSTMENT OF THE ANGLE OF THE BACK-REST (FIG. G)
- Support the back-rest, pull the lever and position the back-rest to find the desired position.

⚠ IMPORTANT ⚠

If you do not support the back-rest when making adjustments, it swings completely forwards.

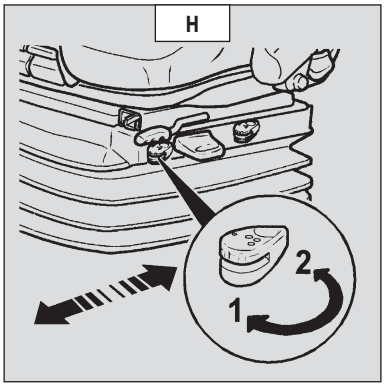


HORIZONTAL SHOCK ABSORBER (FIG. H)
In certain conditions (e.g. driving with a trailer) it is advised that a horizontal shock absorber be used. The driver's seat is thus better able to absorb jerks in the direction of travel.
- Position 1: Horizontal shock absorber fitted.
- Position 2: Horizontal shock absorber removed.

DAMPING (FIG. I)
The damping of the seat can be adjusted to suit the nature of the terrain. The comfort of the seat is thus adjustable to suit your requirements.
- Position 1: Soft damping.
- Position 2: Hard damping.

LONGITUDINAL ADJUSTMENT (FIG. J)
- Adjust the locking lever until you reach the position required. This then locks and the seat will not shift into another position.

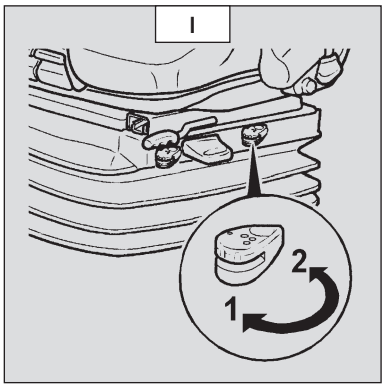
MAINTENANCE (FIG. K)
Dirt may adversely affect the correct functioning of the seat. For this reason, make sure your seat is always clean.
- To clean or change the cushions, simply remove them from the seat frame.

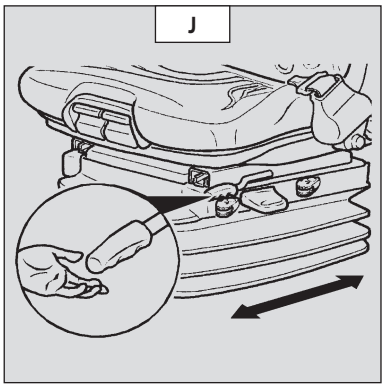


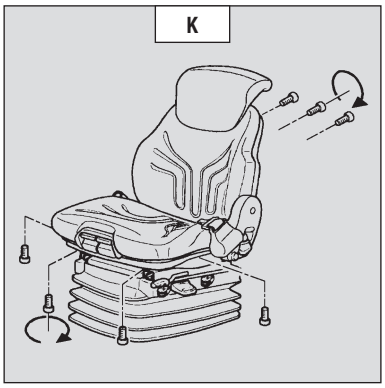
⚠ IMPORTANT ⚠

A rocking head-rest increases the risk of an accident!

Avoid wetting the cushion fabric when cleaning. Check the resistance of the fabric on a small hidden area before using any fabric or plastic cleaner.







2 - SAFETY BELT

- Sit correctly on the seat.
- Check that seat belt is not twisted.
- Place the seat belt at hip level.
- Attach the seat belt and check that it locks.
- Adjust the seat belt to your body shape without squeezing your hip and without over-slack.

⚠ IMPORTANT ⚠

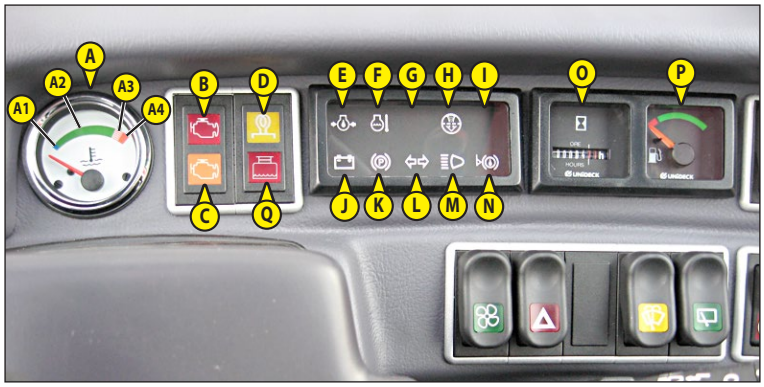
In no event should the lift truck be used if the seat belt is defective (fixing, locking, cuts, tears, etc.). Repair or replace the seat belt immediately.

3 - CONTROL AND SIGNAL LIGHTS PANEL

⚠ IMPORTANT ⚠

A permanently lit or flashing warning lamp, with the engine running, is the sign of an operating fault. The lighting of some lamps may be accompanied by an audible signal. Do not ignore this warning, consult your dealer without delay.
If one of the warning lamps comes on while the lift truck is in motion, stop the lift truck under the safest possible conditions.

When activating the electrical system of the lift truck, all the red and orange lamps and the panel's buzzer must light to indicate their good working order. If one of the red lamps or the buzzer does not function, carry out the necessary repairs.



A - I.C. ENGINE WATER TEMPERATURE

Temperature zone:

A1 - Blue zone (0° - 50°) Use the lift truck with moderation, wait for temperature to increase before normal operation.

A2 - Green zone (50° - 100°) Use lift truck normally

A3 - White/red zone (100° - 105°) Use lift truck with moderation, monitor the temperature.

A4 - Red zone (105° - 120°) Stop the lift truck, look for the cause of overheating.

NOTA: La spia rossa "F" si accende tra le zone A3 e A4.

B - STOP ENGINE INDICATOR LAMP

If the indicator lamp lights up or flashes, when the lift truck is running, stop the engine immediately and consult your dealer

C - ENGINE PREHEATING FAULT INDICATOR LIGHT

If the indicator lamp lights up on or flashes while the lift truck is in operation, a diagnostic fault has been detected. The lift truck will operate in reduced mode. Consult your dealer without delay.

D - **ENGINE PREHEAT INDICATOR LAMP**

Preheat is necessary. When the lift truck is switched on, the indicator lamp comes on for 2 seconds and goes off as soon as preheat is ended. Start the lift truck's engine.

E - ENGINE OIL PRESSURE INDICATOR LAMP

If the indicator lamp comes on when the lift truck is running, stop the engine immediately and look for the cause (see oil level in engine crankcase).

NOTE: After starting the engine, the indicator lamp remains lit for a few seconds then goes out when the correct engine oil pressure is reached. The full engine power is then available.

F - ENGINE WATER TEMPERATURE

If indicator lamp comes on when the lift truck is running, this means that the coolant temperature is high. Stop the engine immediately and seek the cause of the cooling system malfunction.

G - GEAR BOX OIL PRESSURE WARNING INDICATOR LAMP

The indicator lamp and buzzer come on when there is an abnormal drop in gear box pressure, in forward gear. Stop the engine and look for the cause (gear box oil level, possible leak, radiator, etc.).

NOTE: This indicator lamp operates in forward travel conditions only, and can be ignored when the lift truck is stopped with the engine idling.

H -AIR FILTER CLOGGING WARNING INDICATOR LAMP

The indicator lamp and buzzer come on when the air filter cartridge filter cartridge is clogged up. Stop the engine and carry out the necessary repairs (see cleaning and replacement requirements in chapter: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

I - GEAR BOX OIL TEMPERATURE WARNING INDICATOR LAMP

The indicator lamp and buzzer come on when the gearbox oil temperature is abnormally high. Stop the engine and look for the cause (gear box oil level, possible leak, radiator, etc.).

I - RED BATTERY CHARGE INDICATOR LIGHT

If the lamps F - G - H - I - J - N and the buzzer come on, when the lift truck is running, stop the I.C. engine immediately and check the electrical circuit as well as the alternator belt.

K - PARKING BRAKE INDICATOR LAMP

This indicator lamp comes on when the parking brake is applied.

L - INDICATOR LIGHTS INDICATOR LAMP

M - MAIN BEAM INDICATOR LAMP

N - BRAKING OIL LEVEL WARNING INDICATOR LAMP

If the indicator lamp and buzzer come on, when the lift truck is running, stop the engine immediately and look for the cause (braking oil level, possible leak, etc.). In the event of an abnormal drop in the level, consult your dealer.

O - REV COUNTER

P - FUEL LEVEL

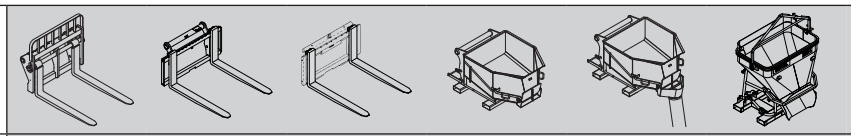
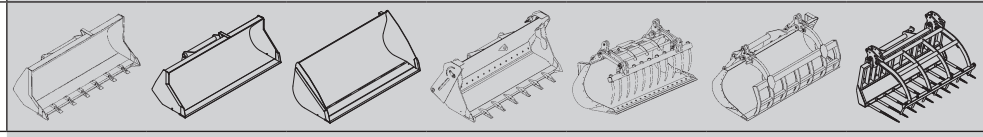
Q - ENGINE WATER LOW LEVEL WARNING INDICATOR LAMP

4 - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE

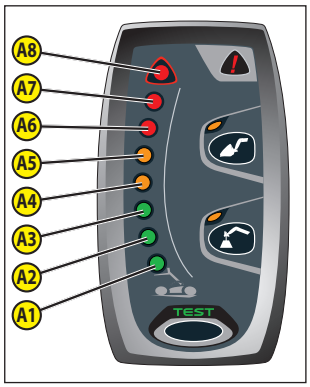
This device warns the operator of the lift truck's longitudinal stability limits. However, lateral stability can reduce the load chart in the upper part, and this reduction is not detected by the device.
According to the type of work required, the longitudinal stability limiter and warning device allows the operator to operate the lift truck in complete safety.

⚠ IMPORTANT ⚠

The operator must respect the lift truck's load chart, and the operating mode according to the attachment.

A	"HANDLING" MODE	
B	"BUCKET" MODE	
C	"SUSPENDED LOAD" MODE	

A - "HANDLING" MODE

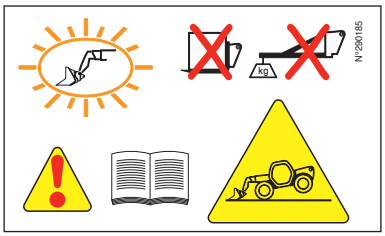


Use on forks (TFF, PFB, TDL), and adjustable accessories on forks (BB, GL).
- By default, the device is in "HANDLING" MODE when the lift truck is started-up, except if the "SUSPENDED LOAD" MODE has been selected before shutting-down the engine.

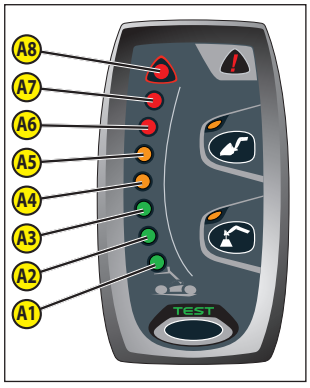
A1 - A2 - A3: There is a significant reserve of longitudinal stability.
A4 - A5: The lift truck is nearing the limit of longitudinal stability. The alarm sounds simultaneously with a very slow intermittent sound. Move with care.
A6: The lift truck is near at the limit of longitudinal stability. The alarm sounds with slow intermittent sound. Move with care.
A7: The lift truck is very near at the limit of longitudinal stability. The alarm sounds with fast intermittent sound. Move with extreme care.
A8: The lift truck is at the authorized limit of longitudinal stability. The alarm sounds with very fast intermittent sound. All "AGGRAVATING" hydraulic movements are cut-off. Cut-off may be preceded by automatic slowing of hydraulic movements. Only perform hydraulic movements that increase stability in the following order; retract and raise the jib.

NOTE: When the jib is retracted, the function for cutting-off "AGGRAVATING" hydraulic movements is disconnected.

B - "BUCKET" MODE



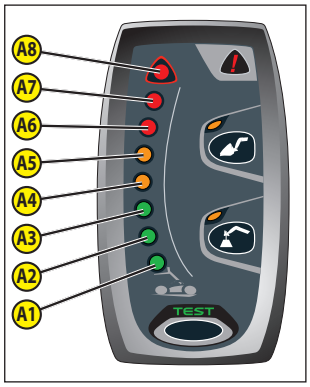
Use with a bucket (CB, CBA, CBC, CBG, CBR, CBM, FFGR).
- Place the lift truck in the transport position.
- Press the button for 2 seconds, the "BUCKET" MODE is confirmed by an audible beep and the lighting of the lamp.
- Return to "HANDLING" MODE by pressing the button , or loss of driver presence for a few seconds, or shutting down the engine.



A1 - A2 - A3: There is a significant reserve of longitudinal stability.
A4 - A5: The lift truck is approaching the limit of longitudinal stability. Move with care.
A6: The lift truck is approaching the limit of longitudinal stability. An audible beep is sounded. Move with care.
A7 - The lift truck is very close to the limit of longitudinal stability. Move with extreme care.
A8: The lift truck is at the authorized limit of longitudinal stability. Jib raising and lowering movements are cut-off, the other movements remain available. Cut-off may be preceded by an automatic slowing of hydraulic movement.

NOTE: When the jib is retracted, the function for cutting-off "AGGRAVATING" hydraulic movements is disconnected.

C - "SUSPENDED LOAD" MODE



Providing a higher margin of safety, use with short crane jib or lifting ring.
- Place the lift truck in the transport position.
- Press the button for 2 seconds, "SUSPENDED LOAD" MODE is validated by an audible beep and the lighting of the lamp.
- Return to "HANDLING" MODE by pressing the button .

A1 - A2 - A3: There is a significant reserve of longitudinal stability.
A4 - A5: The lift truck is nearing the limit of longitudinal stability. The alarm sounds simultaneously with a very slow intermittent sound. Move with care.
A6: The lift truck is near at the limit of longitudinal stability. The alarm sounds with slow intermittent sound. Move with care.
A7: The lift truck is very near at the limit of longitudinal stability. The alarm sounds with fast intermittent sound. Move with extreme care.
A8: The lift truck is at the authorized limit of longitudinal stability. The alarm sounds with very fast intermittent sound. All "AGGRAVATING" hydraulic movements are cut-off. Cut-off may be preceded by automatic slowing of hydraulic movements. Only perform hydraulic movements that increase stability in the following order; retract and raise the jib.

NOTE: When the jib is retracted, the function for cutting-off "AGGRAVATING" hydraulic movements is disconnected.

D - DISABLING "AGGRAVATING" HYDRAULIC MOVEMENT CUT-OFF

In certain cases, in order to get out of a difficult situation, the operator can bypass this safety system. Button D temporarily disables the cutting-off of "AGGRAVATING" hydraulic movements.
- Hold down button D, lamp D1 will light, and simultaneously perform the necessary "AGGRAVATING" hydraulic movement with extreme care. The combined use of these two actions is limited to 60 seconds.

⚠ IMPORTANT ⚠

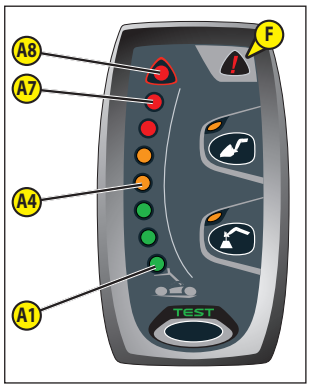
Remain very vigilant during this operation. The only information available to the operator is the lift truck's dynamic stability.

E - TESTING OF THE LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE

- Short press the button at any time to check the correct operation of the longitudinal stability warning device.
  • Correct operation: All the leds light for two seconds and an audible beep is sounded.

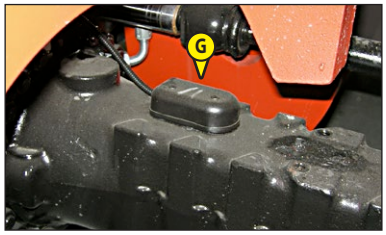
NOTE: This test does not check the proper adjustment of the longitudinal stability limiter device that must be inspected daily or after every 10 hours of service (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).

F - FAULT INDICATOR LAMP



A permanently lit fault indicator lamp F, together with a combination of illuminated leds, indicates a major fault liable to affect the safety of the lift truck. Refer to your agent or dealer.
- The fault indicator lamp plus leds A1 and A7 lighting alternately with A4 and A8 indicates a defective link in the operation of the longitudinal stability limiter and warning device.
- The fault indicator lamp plus continuously lit leds A7 and A8 indicate a faulty box.

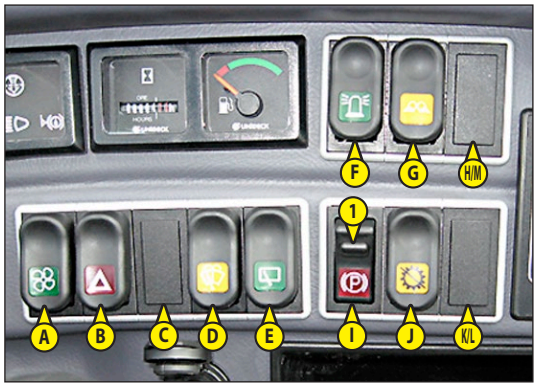
G - STRAIN GAUGE



⚠ IMPORTANT ⚠

Disassembly or calibration of the strain gauge is prohibited, this must only be done by specially trained personnel, consult your dealer.

5 - SWITCHES



NOTE: The location of the switches may vary depending on the options.

A - HEATER BLOWER
This two speed switch allows warm or cold air to pass through the heating ventilators.

B - WARNING LIGHTS
This switch enables the L.H. and R.H. Indicators to be switched on simultaneously, with the ignition off. The signal light indicates that the switch is being used.

C - OPTION ELECTROVALVE ON JIB HEAD + ATTACHMENT HYDRAULIC LOCKING DEVICE
See: 2 - DESCRIPTION: DESCRIPTION AND USE OF THE OPTIONS.

D - FRONT WINDSCREEN WIPER AND WINDSCREEN WASHER
This switch, when set to the "intermediate" position, the windscreen wiper to be operated and the "down" position and simultaneously pressed, the windscreen-washer to be operated.

E - REAR WINDSCREEN WIPER + OPTIONAL ROOF WINDSCREEN WIPER

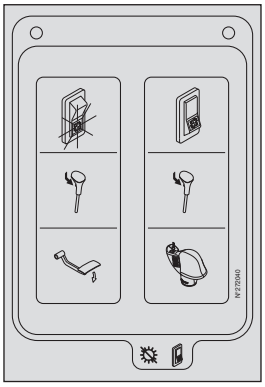
F - FLASHING LIGHT

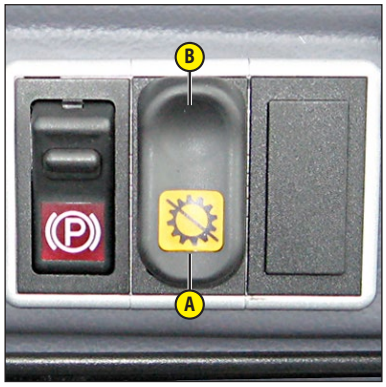
G - OPTION WORKING HEAD LIGHT

H - DISABLING "AGGRAVATING" HYDRAULIC MOVEMENT CUT-OFF
See: 2 - DESCRIPTION: 4 - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE.

I - PARKING BRAKE
- Lower the button 1 and press the bottom of the switch to connect the parking brake. The signal lamp shows it is being used.
- Press the top of the switch to disconnect the parking brake.

J - TRANSMISSION CUT-OFF
The switch sets transmission cut-off to the service brake pedal or the forward/reverse selector.
Position A: Indicator light on, transmission cut-off to service brake pedal effected.
Position B: Indicator light off, transmission cut-off to forward/reverse selector effected.





NOTE: In all cases transmission cut-off can be effected using the gear lever.

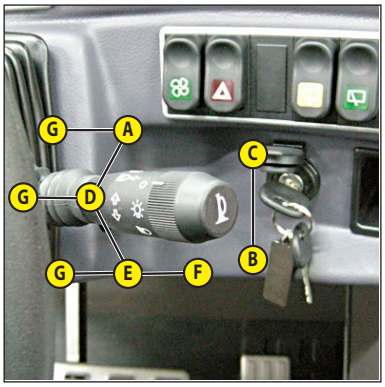
USE OF TRANSMISSION CUT-OFF
Transmission cut-off to brake pedal (position A).
• When loading.
Transmission cut-off to forward/reverse selector (position B).
• When driving.
• For inching and continuous stopping and starting (delicate handling). In order to optimise hydraulic movements, cut off transmission to the forward/reverse selector.
• Starting up on a slope.

K - OPTION WORKING TAIL LIGHT

L - OPTION SELF-CLEANING FAN
See: 2 - DESCRIPTION: DESCRIPTION AND USE OF THE OPTIONS.

M - OPTION JIB SUSPENSION
See: 2 - DESCRIPTION: DESCRIPTION AND USE OF THE OPTIONS.

6 - LIGHTR SWITCH, HORN AND INDICATOR SWITCH



The switch controls the visual and sound alarms.

A - All lights are off, the direction indicators do not flash.
B - The right hand direction indicators flash.
C - The left hand direction indicators flash.
D - The sidelights and the rear lights are on.
E - The dipped headlights and the rear lights are on.
F - The main beam headlights and the rear lights are on.
G - Headlight signal.

Pressing the switch sounds the horn.
NOTE: The positions D - E - F - G can be carried out without the ignition being on.

7 - IGNITION SWITCH

The key switch has five positions:

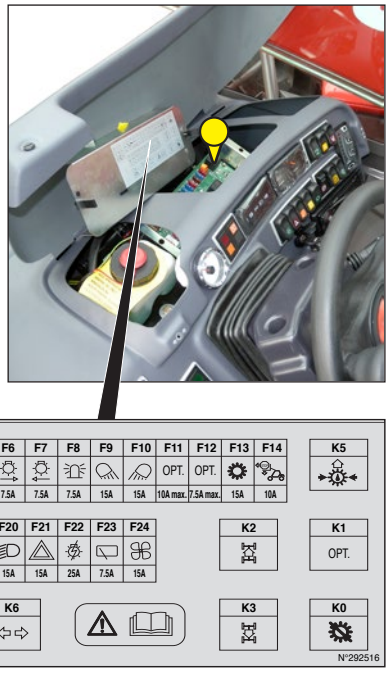
P - Ignition off, parking position.
O - Ignition switched off and I.C. engine stopped.
I - Ignition and pre-heating.
II - Not used.
III - The I.C. engine starts, return to position I as soon as the key is released.

8 - BRAKING OIL TANK, FUSES AND RELAY ACCESS PANEL

9 - BRAKING OIL TANK

See: 3 - MAINTENANCE: B - EVERY 50 HOURS SERVICE.

10 - FUSES AND RELAYS IN THE CAB



A sticker on the protective lid gives a quick indication of the use of the panel's components described below.

⚠ IMPORTANT ⚠

Always replace a faulty fuse with another of equivalent rating. Never use a fuse that has been repaired.

FUSE AND RELAY ELECTRONIC BOARD UNDER THE DASHBOARD

F1 - OPTION Pneumatic seat (10A).
F2 - Wheel alignment (5A).
- Electrical control unit (5A).
- Diagnostic connector (5A).

F3 - Sound alarm (10A).
- Stop switch (10A).

F4 - OPTION Self-cleaning fan (15A).
F5 - Left indicators (7,5A).
F6 - Right sidelight (7,5A).
- Fuel gauge lighting (7,5A).
- Engine water temperature lighting module (7,5A).
- Hour meter lighting (7,5A).
- OPTIONAL Number plate lighting (7,5A).

F7 - Left sidelights (7,5A).
F8 - Revolving light (7,5A).
F9 - OPTION Working tail light (15A).
F10 - OPTION Front working head light (15A).
F11 - Insulation of the compensation cylinders (10A).
- Brake pressure indicator (10A).
- OPTION Jib suspension (10A).

F12 - Parking brake electrovalve (7,5A).
F13 - Forward/reverse selector (15A).
- Transmission cut-off (15A).
- Reverse lights (15A).
- OPTION Reverse buzzer alarm (15A).

F14 - Longitudinal stability limiter and warning device (10A)
- Disable aggravating hydraulic movement cut-off (10A).
- Jib retraction and angle sensor (10A).
- OPTION Anti-theft device provision (10A).
- OPTION Anti-theft system (10A).
- OPTION Anti-start system (10A).

F15 - Signal lamp panel (5A).
- Fuel gauge (5A).
- Hour meter (5A).
- Engine water temperature module (5A).

F16 - Indicator power supply (10A).
F17 - Front windscreen wiper and windscreen washer (10A).
F18 - Main beam (15A).
- Main beam lamp (15A).

F19 - Right indicators (7,5A).
F20 - Low beam (15A).
F21 - Hazard warning lights power supply (15A).
- Roof light (15A).
- OPTIONAL (+)permanent (15A).

F22 - Light switch power supply, horn and indicators (25A).
F23 - Rear windscreen wiper (7,5A).
- OPTION Roof windscreen wiper (7,5A).

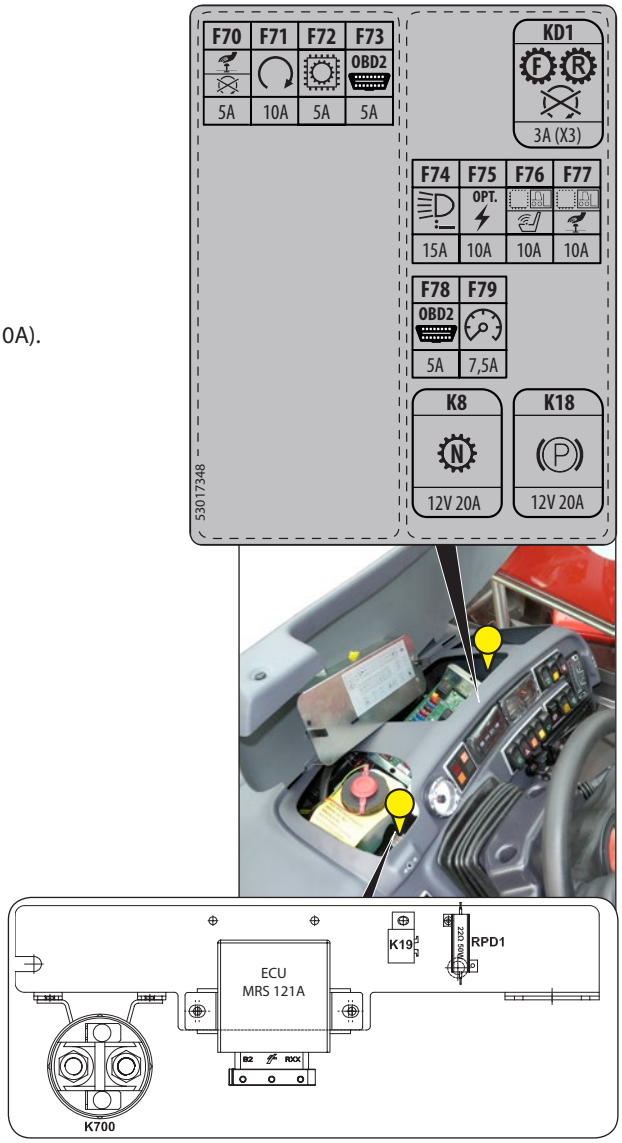
F24 - Heating (15A).
- OPTION Air conditioning (15A).

F32 - Engine control unit power supply (30A).

FUSE AND RELAY MODULES UNDER THE DASHBOARD

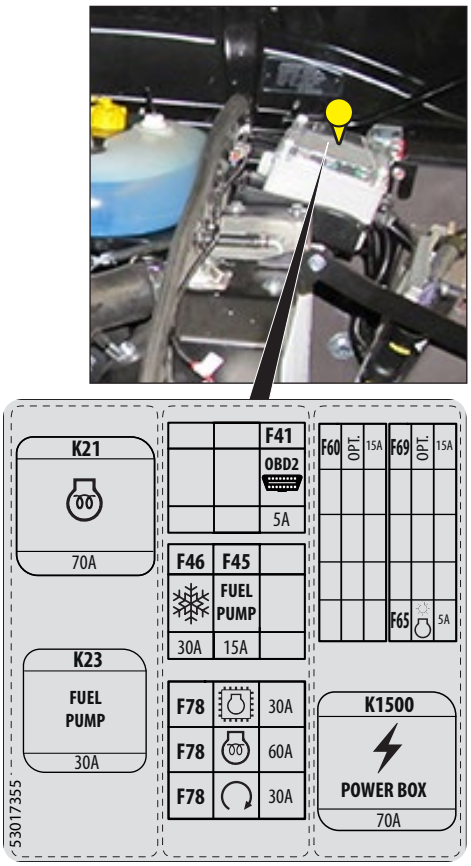
F71 - Starter (10A).
F72 - Transmission electronic control unit (5A).
F73 - OBD2 Diagnostic socket (5A).
F74 - OPTION Spotlight boom-head (15A).
F75 - Solenoid OPTION boom-head (10A).
- Solenoid OPTION + boom-head accessory hydraulic lock (10A).
- OPTIONAL electric on the Boom (10A).
F76 - Power control unit ACTIA hydraulic movements (10A).
- Seat Sensor (10A).
F77 - Power control unit hydraulic movements + button emergency stop (10A).
F78 - OBD2 Diagnostic socket (5A).
- Control unit hydraulic movements (5A).
F79 - Power Module MRS (5A)
KD1 - Micro-relay diodes 3 (3A)
K8 - Relais speed in neutral (12V 20A)
K18 - Parking brake relay (12V 20A)

K700 - Relay Service
K19 - Relais
RPD1 - resistance (22Ω 50W)



FUSE AND RELAY POWERBOX UNDER THE ENGINE COMPARTMENT

F41 - Diagnostic engine (5A)
F45 - Diesel pump (3A)
F46 - Air conditioning (30A)
F48 - Engine Control Unit (30A)
F49 - Starter (30A)
F60 - Optional (15A)
F65 - Engine warning lamps (15A)
F69 - Optional (15A)
K21 - Preheat the engine (70A)
K23 - Diesel pump (30A)
K1500 - Powerbox (70A)
.



12 - WINDSCREEN WASHER TANK

See: 3 - MAINTENANCE: B - EVERY 50 HOURS SERVICE.

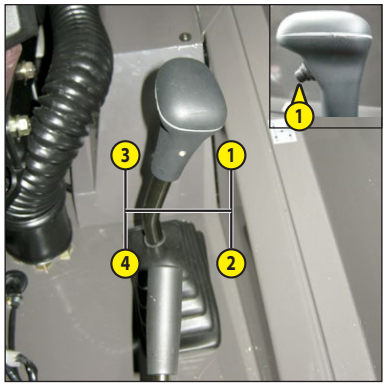
13 - ROOF LIGHT

14 - ACCELERATOR PEDAL

15 - SERVICE BRAKE PEDAL AND TRANSMISSION CUT-OFF

The pedal acts on the front and rear wheels by a power assisted hydraulic brake system, and allows the lift truck to be slowed down and stopped. Depending on the position of the transmission cut-off switch, it enables the transmission to be cut off during the free travel (see: 2 - DESCRIPTION: 5 - SWITCHES).

16 - GEAR LEVER AND TRANSMISSION CUT-OFF



In order to change speeds, it is necessary to cut the transmission by pressing the button 1 on the lever.

1st gear: To the right, forwards.
2nd gear: To the right, backwards.
3rd gear: To the left, forwards.
4th gear: To the left, backwards.

Using the gears on the gearbox
- On these lift trucks with a torque converter, it is not necessary to automatically start up in 1st speed and progress up the gears.

⚠ IMPORTANT ⚠

The choice of transmission gear ratio should be made carefully according to the nature of the work being carried out. A poor choice may result in the extremely rapid rise of the transmission oil temperature through excessive slipping of the converter, which could lead to serious damage to the transmission (it is essential to stop and change the working conditions if the transmission oil temperature indicator light comes on). This poor choice may also result in a reduction in the lift truck's performance in forward gear. When the forward force increases, the forward speed in the r gear (for example, in 3rd gear) may be lower than the forward speed that could be obtained with the r-1 gear (in 2nd instead of 3rd).

In general, we would advise you to use the following gears according to the nature of the work being carried out.
- On the road: Set off in 3rd gear and go up to 4th if the conditions and state of the road permit it. In hilly areas, set off in 2nd gear and go up to 3rd if the conditions and state of the road permit it.
- With a trailer on the road: Set off in 2nd gear and switch to 3rd if the conditions and state of the road permit it.
- Handling: 3rd gear.
  2nd gear in restricted spaces.
- Earth moving: 1st gear.
- Loading (reclaiming with bucket, manure fork, etc.): 2nd gear.

17 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION

FORWARD: Push the knob forward (position A).
REVERSE: Pull the knob backwards (position B).
NEUTRAL: The knob must be in the intermediate position to start the lift truck (position C).

When operating this control, the lift truck should be travelling at slow speed and not accelerating.

NOTE: The reverse lights indicate that the lift truck is running in reverse motion. An OPTIONAL audible reversing alarm can also be fitted.

SAFETY FOR MOVING THE LIFT TRUCK

Authorization to move the lift truck is controlled by an electronic unit. The operator must observe the following sequence to move the truck forwards or backwards:

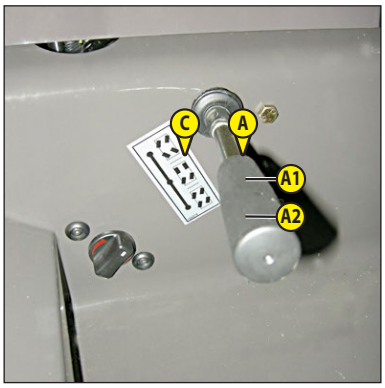
1 - sit down correctly in the driver's seat,
2 - release the parking brake,
3 - engage forward or reverse movement.

To stop the lift truck, he must observe the following sequence:

1 - set the forward/reverse selector to neutral.
2 - engage the parking brake,
3 - get out of the lift truck.

NOTE: If the operator leaves the driving cab with forward or reverse engaged, a continuous alarm will sound. While this alarm sounds, the operator can simply sit back in the seat and continue advancing or reversing.
If the alarm becomes discontinuous, the operator must sit back in the seat, put the forward/reverse selector back in neutral and select forward or reverse if he wishes to continue moving.

18 - STEERING SELECTION



A - GREEN WHEEL ALIGNMENT LAMPS

These lamps come on to indicate the alignment of the wheels in relation to the lift truck. Lamp A1 for the front wheels and lamp A2 for the rear wheels.

⚠ IMPORTANT ⚠

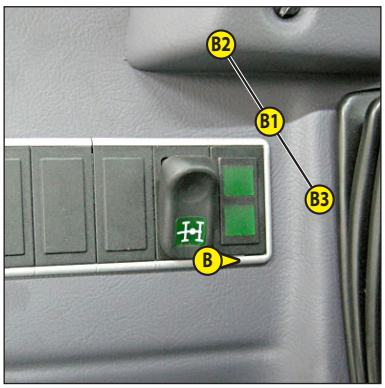
Before selecting one of the three possible steering positions, bring all 4 wheels into alignment with regards to the lift truck axle. Never change the steering mode whilst driving.

B - STEERING SELECTION LEVER

B1 - Front drive wheels (highway traffic). 

B2 - Front and rear drive wheels in opposite direction (short steering lock). 

B3 - Front and rear drive wheels in the same direction (crab steering). 



C - SWITCH FOR ALIGNMENT OF THE WHEELS

This switch enables the use or not of the device for alignment of the wheels. The indicator light indicates its use.

CONTROL FOR ALIGNMENT OF THE WHEELS

- Connect the switch (signal light ON).
- Shift the steering selection lever B into position B2 (short steering lock).
- Turn the steering wheel and bring the rear wheels into alignment until lamp A2 lights up.
- Shift the steering selection lever B into position B1 (highway traffic).
- Turn the steering wheel and bring the front wheels into alignment until lamp A1 lights up

.

⚠ IMPORTANT ⚠

Before driving on roads, it is necessary to check the alignment of the rear wheels and to drive in front wheel steer. The control of the alignment of the rear wheels must be regularly done with the help of the green lamps, while driving the lift truck. In case of anomalies, consult your dealer.

19 - HYDRAULIC CONTROLS

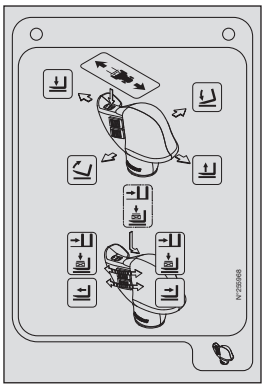
⚠ IMPORTANT ⚠

Do not attempt to alter the hydraulic system pressure by interfering with the pressure regulating valve. In the event of suspected malfunction, contact your dealer. ANY ALTERATION MAY RENDER THE WARRANTY NULL AND VOID.

⚠ IMPORTANT ⚠

Use the hydraulic controls carefully without jerking, to avoid accidents caused by shaking the lift truck.

NOTE: If necessary use the steering to reset the hydraulic control steering accumulator.



A - Lifting and tilting control lever.
B - Telescoping control button.
C - Attachment control button.
D - Attachment control button.

LIFTING THE LOAD
- The lever A backwards when lifting.
- The lever A forwards when lowering.

TILT OF CARRIAGE
- The lever A to the left for reverse tilt.
- The lever A to the right for forward tilt.

TELESCOPING
- Button B forwards for extending.
- Button B backwards for retracting.

ATTACHMENT
- The button C forwards or backwards.

OPTION JIB HEAD ELECTROVALVE
- Button D (see: 2 - DESCRIPTION: DESCRIPTION AND USE OF OPTIONS).

NOTE: When driving on the road, it is highly recommended that you cut-off all the hydraulic movements (see: 2 - DESCRIPTION: 5 - SWITCHES).

20 - FUNCTION FILES

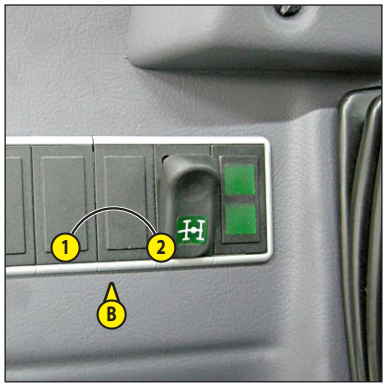
These files contain the description of the hydraulic controls and the load charts for the attachments used on the lift truck.

21 - HEATER CONTROL

A - HEATING FAN CONTROL

This 2-speed control regulates warm or cold air through the heating ventilators.

In position 0, the fan is off.
In position 1, the fan is set to minimum speed.
In position 2, the fan is set to maximum speed.



B - HEATING TEMPERATURE CONTROL

Allows the temperature inside the cab to be adjusted.

In position 1, the valve is closed, the fan delivers fresh air.
In position 2, the valve is fully open, the fan delivers warm air.

The intermediate positions allow the temperature to be adjusted.

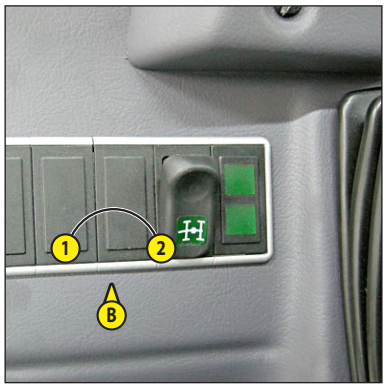
22 - AIR CONDITIONING CONTROLS (OPTION AIR CONDITIONING)

⚠ IMPORTANT ⚠

The air conditioning only comes on when the forklift truck has been started up. When using your air conditioning, you must work with the doors and windows closed.
In winter: So as to ensure correct operation and complete efficiency of the air conditioning unit, start up the compressor once a week, if only for a short spell, so as to lubricate the internal seals.
In cold weather: Warm the I.C. engine before switching on the compressor, so as to allow the coolant that has collected in the liquid state at the lowest point of the compressor circuit to turn into gas under the effect of the heat given off by the I.C. engine, as the compressor is liable to be damaged by coolant in the liquid state.

⚠ IMPORTANT ⚠

If your air conditioning does not seem to be working properly, have it examined by your dealer (see: 3 - MAINTENANCE: F - EVERY 2000 HOURS OF SERVICE). Never try to repair any possible problems by yourself.



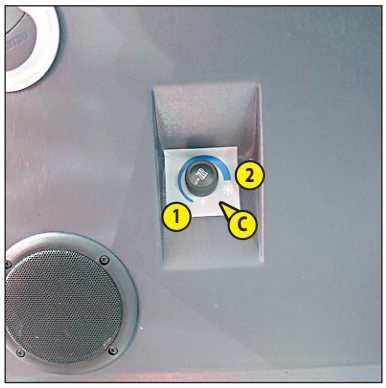
C - CONDITIONED AIR TEMPERATURE CONTROL

Allows the temperature inside the cab to be adjusted.

In position 0, the air-conditioning system is switched off.
In position 1, the air-conditioning system runs on minimum.
In position 2, the air-conditioning system runs on maximum.

The intermediate positions allow the temperature to be adjusted.

NOTE: Possible losses of water under the lift truck are due to condensate discharges caused by the drying effect of the installation, especially with high outside temperatures and high relative humidity.
For the air conditioning to perform properly, the air intakes must not be blocked by frost, snow or leaves.
When the facility is running, at least one of the cab air grilles must be open so as to avoid any risk of freezing to the evaporator.



CONDITIONED AIR MODE

The controls must be adjusted in the following way:

A - At the required position 1 or 2.
B - At the position 1 (heater valve closed).
C - At the required temperature.

DEMISTING MODE

The controls must be adjusted in the following way:

A - At the required position 1 or 2.
B - At the required temperature.
C - At the required temperature.

23 - RECYCLING INTAKES (AIR CONDITIONING OPTION)

24 - WINDSCREEN DEMISTER VENTS

For optimum effectiveness, close the heating ventilators.

25 - HEATING VENTS

These heating vents enable the air to be directed to the interior of the cabin and onto the side windows.

26 - BUTTON FOR OPENING HYDRAULIC FLUID AND FUEL FILLER ACCESS PANEL

- Push the button to open the access panel.
- Push the panel to close it.

27 - DOOR LOCK

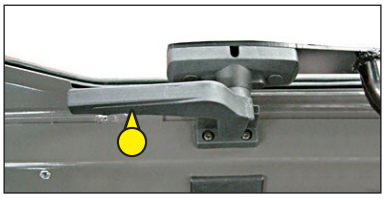
Two keys are provided with the lift truck to enable the cabin to be locked.

28 - LOCKING HANDLE FOR UPPER HALF-DOOR

29 - UNLOCKING BUTTON FOR UPPER HALF DOOR

30 - HANDLE FOR REAR WINDOW OPENING

EMERGENCY EXIT
Use the rear window as an emergency exit, if it is impossible to leave the cab by the door.

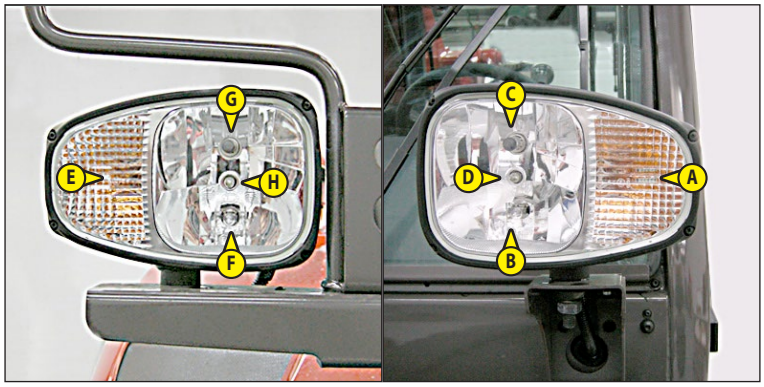


31 - DOCUMENT HOLDER

Ensure that the operator's manual is in its place in the document holder.

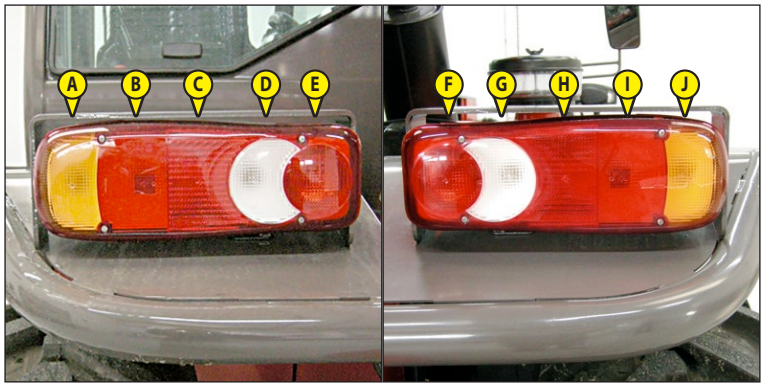
32 - FRONT LIGHTS

A - Left front indicator.
B - Left front dipped headlight.
C - Left front main beam.
D - Left front sidelight.
E - Right front indicator.
F - Right front dipped headlight.
G - Right front main beam.
H - Right front sidelight.



33 - REAR LIGHTS

A - Left rear indicator.
B - Left rear stoplight.
C - Left tail light.
D - Left rear reverse light.
E - Left rear fog light. (OPTION)
F - Right rear fog light. (OPTION)
G - Right rear reverse light.
H - Right tail light.
I - Right rear stoplight.
J - Right rear indicator.

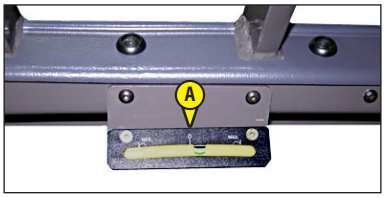


34 - REVOLVING LIGHT

The revolving light is dismountable to make it possible, for example, to reduce the bulkiness of the lift truck or to avoid being stolen.
- Loosen nut 1 and remove the revolving light.
- Protect mounting 2 with cap 3.

35 - LEVEL INDICATORS

A - SPIRIT LEVEL
Enables the operator to check that the lift truck is in the horizontal position.

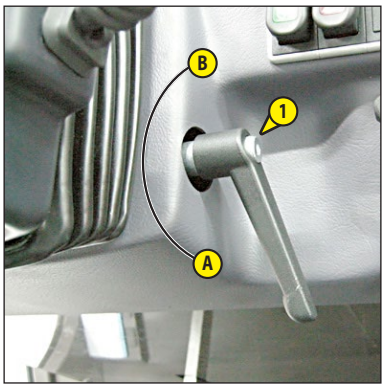


36 - INSIDE REAR-VIEW MIRROR

37 - STEERING WHEEL ADJUSTMENT LEVER

This handle enables the angle and height of the steering wheel to be adjusted.

- Turn handle 1 towards A to loosen and adjust steering wheel.
- Turn handle 1 towards B to lock steering wheel in the position required.



38 - DIAGNOSTIC SOCKET

39 - EMERGENCY STOP BUTTON

- In the event of danger, it lets you stop the I.C. Engine and thereby cut out all hydraulic movements.
- Pull the button to disable it before restarting the lift truck.

⚠ IMPORTANT ⚠

Be ready for hydraulic movements suddenly stopping when you press this button.

40 -TELESCOPIC BOOM SAFETY BLOCKS

The forklift truck is provided with two safety blocks for the telescopic boom to be installed on the compensation cylinder rods in case of operations under the boom (see: 1 - INSTRUCTIONS AND SAFETY STANDARDS).

⚠ IMPORTANT ⚠

Use only the safety blocks supplied with the forklift truck.

TOWING PIN AND HOOK

Located at the rear of the lift truck, this device is used to attach a trailer. Its capacity is limited for each lift truck by the authorised gross vehicle weight, tractive effort and maximum vertical force on the coupling point. This information is given on the manufacturer's plate fixed to each lift truck (see: 2 - DESCRIPTION: IDENTIFICATION OF THE LIFT TRUCK).

- To use a trailer, see current regulations in your country (maximum running speed, braking, maximum weight of trailer, etc.).
- Verify the trailer's condition before using it (tyre condition and pressures, electrical connection, hydraulic hose, brake system…).

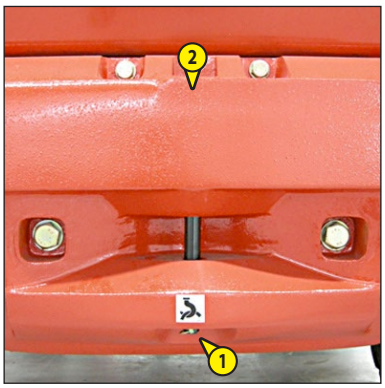
⚠ IMPORTANT ⚠

Do not tow a trailer or attachment which is not in perfect working order. Using a trailer in poor condition may affect the lift truck's steering and braking, and hence safety.

⚠ IMPORTANT ⚠

If a third party helps in coupling or uncoupling the trailer, this person must be permanently visible to the driver and wait until the lift truck has stopped, the handbrake is on and the I.C. engine is switched off before performing the operation.

NOTE: There is an OPTIONAL rear-view mirror which allows the lift truck to be approached more closely to the trailer ring.



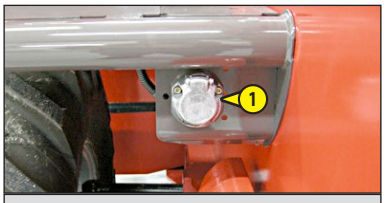
A - TOWING PINROCHE (STANDARD)

COUPLING AND UNCOUPLING THE TRAILER

- To couple the trailer, position the lift truck as close as possible to the trailer ring.
- Put the handbrake on and switch off the I.C. engine.
- Remove the clip 1, lift the trailer pin 2 and place or remove the trailer ring.

⚠ IMPORTANT ⚠

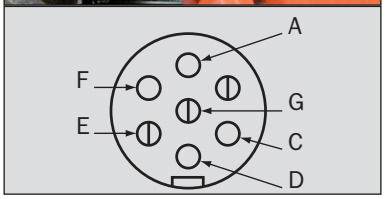
Be careful not to get your fingers caught or crushed during this operation.
Do not forget to put clip 1 back in place.
When uncoupling, make sure that the trailer is supported independently.

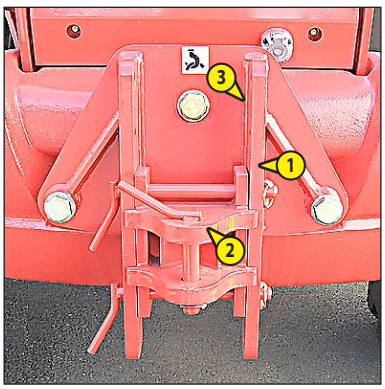


B - REAR ELECTRIC SOCKET (STANDARD)

- Connect the male plug to the female socket 1 on the lift truck and make sure the lights of the trailer or the light bar are working properly.

A - Left rear indicator.
C - Earth.
D - Right rear indicator.
E - Right tail light.
F - Rear stoplight.
G - Left tail light.





C - ADJUSTABLE PROJECTING HOOK (OPTION)

COUPLING AND UNCOUPLING THE TRAILER

- To couple the trailer, position the lift truck as close as possible to the trailer ring.
- Put the handbrake on and switch off the I.C. engine.
- Set the coupling fitting 1 according to the height of the trailer ring.

⚠ IMPORTANT ⚠

Do not forget to put rods and clip back in place.

- Remove the clip 2, lift the trailer pin 3 and place or remove the trailer ring.

⚠ IMPORTANT ⚠

Be careful not to get your fingers caught or crushed during this operation.
Do not forget to put clip 2 back in place.
When uncoupling, make sure that the trailer is supported independently.

D - ADJUSTABLE PROJECTING HOOK (OPTION)

COUPLING AND UNCOUPLING THE TRAILER

- To couple the trailer, position the lift truck as close as possible to the trailer ring.
- Put the handbrake on and switch off the I.C. engine.

ON THE FIXED PIN

- Remove pin 1, remove rod 2 and raise latch 3.
- Insert or remove the trailer ring, lower latch 3 and refit rod 2.

⚠ IMPORTANT ⚠

Be careful not to get your fingers caught or crushed during this operation.
Do not forget to put clip 1 back in place.
When uncoupling, make sure that the trailer is supported independently.

ON THE COUPLING LADDER

- Set the coupling fitting 4 according to the height of the trailer ring.

⚠ IMPORTANT ⚠

Do not forget to put rods and clip back in place.

- Remove the clip 5, lift the trailer pin 6 and place or remove the trailer ring.

⚠ IMPORTANT ⚠

Be careful not to get your fingers caught or crushed during this operation.
Do not forget to put clip 5 back in place.
When uncoupling, make sure that the trailer is supported independently.

E - HYDRAULIC TRAILER HOOK (OPTION)

NOTE: The rear-view mirror OPTION is mandatory with the hydraulic trailer tow hook.

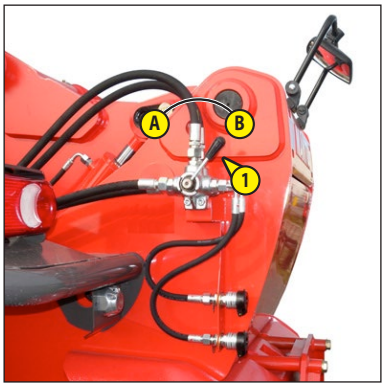
⚠ IMPORTANT ⚠

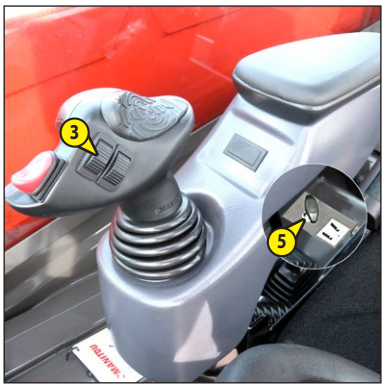
Never use the tow hook to raise the rear of the lift truck (when changing the rear wheel for example).

- Valve 1 in position B.
- Raise the hydraulic tow hook to release the hook lock 4 by moving switch 3 forwards.
- Pull knob 5, hold in this position and move switch 3 backwards to lower the tow hook.
- Release knob 5.
- Couple or uncouple the trailer.

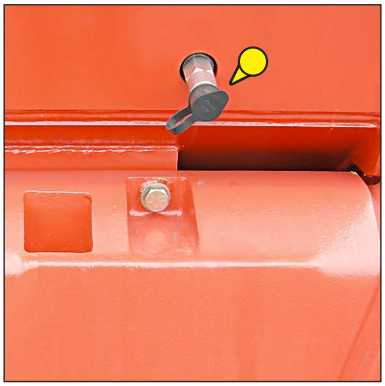
⚠ IMPORTANT ⚠

When uncoupling, make sure that the trailer is supported independently.





- Raise the hydraulic tow hook by moving switch 3 forwards.
- Lower the hook slightly to verify that the lock pin is in proper contact with the hook lock 4.

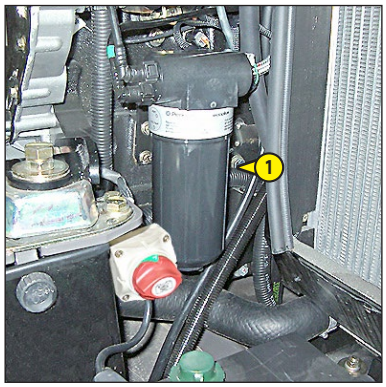


F - CONNECTING THE BRAKE SYSTEM (OPTION)

- Connect the brake hose to the provided brake unit 1 on the lift truck.
- Make sure the trailer brakes are working properly and test the effects of braking before taking the trailer onto the public highway.

DESCRIPTION AND USE OF THE OPTIONS

1 - BATTERY CUT-OFF



2 - REVERSE BUZZER ALARM

3 - NUMBER PLATE

4 - NUMBER PLATE LIGHTING

5 - PREHEATING ELEMENT

Enables the engine to be kept warm during prolonged periods of stoppage and thus improves engine starting.

Supply characteristics of preheating system:

- Rated range of power: 220-240V; 50-60Hz
- Current consumed: 4,5A
- Equipment in class 1
- Equipment connectable only on feeder circuit TT or TN
- Category of insulation 2

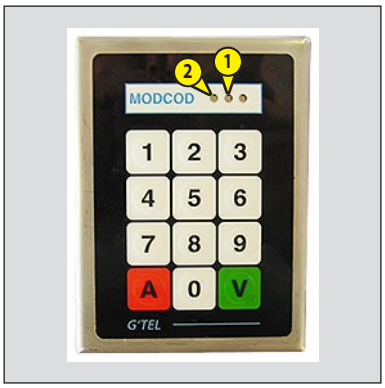
Environmental conditions for use:

- Maximum ambient temperature for using preheating: +25° C
- Pollution level 2

Conditions for connection and use of preheating:

- The preheating system should not be used for an external ambient temperature higher than + 25° C.
- It is essential that the power supply to the preheating system is:
  - Effected with a cable that conforms to the installation standards in force and contains a protective earth conductor.
  - Contains an appropriate sectioning system.
  - Incorporates an appropriate safety system against short circuits (fuses or circuit breaker) and a differential circuit breaker with 30mA sensitivity.
- Only connect to and disconnect from the power supply while the unit is off and the I.C. engine is stopped.

6 - MODCOD ANTI-THEFT SYSTEM



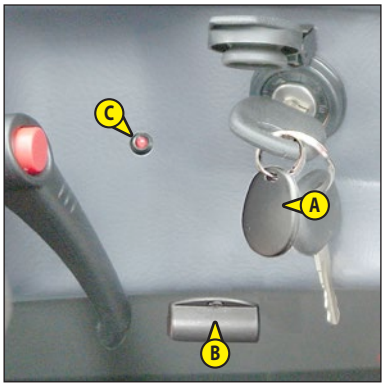
OPERATION

- Switch on the lift truck: the red indicator 1 will flash.
- Enter your user code followed by "V" to validate: the green indicator 2 will come on.
- Start the lift truck within the next 60 seconds; otherwise the anti-theft system will be reactivated and the red indicator will flash.

NOTE:

- If you make a mistake when entering the code, press key "A" to cancel and re-enter the code in full.
- If you wait more than 5 seconds between key presses or do not complete entering the code, the anti-theft system will be reactivated and the red indicator will flash.

7 - FINTRONIC ANTI-START SYSTEM

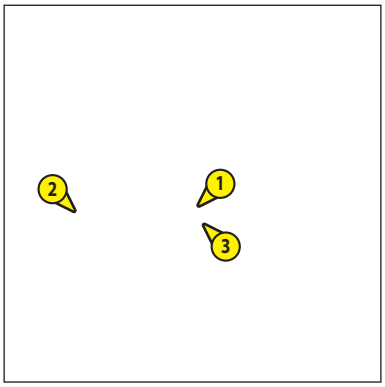


OPERATION

- Switch on the lift truck and set the black key A next to the antenna B (maximum 80 mm).
- Wait a few seconds for red LED C to go out before starting the lift truck.

NOTE: You can restart the lift truck within 20 seconds of stopping it: after this time, the anti-start system reacts and LED C flashes red.

8 - MODCLÉ ANTI-START SYSTEM



OPERATION

- Switch on lift truck ignition, red led 1 will flash.
- Apply key 2 to its base 3, and withdraw the moment the system emits a continuous beep, and led 1 turns green.
- Start the lift truck within the next 20 seconds; otherwise the anti-theft system will be reactivated and red led 1 will flash.

NOTE: You can restart the lift truck within 20 seconds of stopping it; after this time, the anti-start system reacts and red led 1 flashes.

9 - CLEANFIX SELF-CLEANING FAN

This system, operated by switch 1, cleans the radiator core and the grille of the engine cover by reversing the air flow.

⚠ IMPORTANT ⚠

When in use, beware of the risk of projection into the eyes.

Position A: The indicator light is on, the fan operates in self-cleaning mode for a few seconds once every 3 minutes.

Position B: The indicator light is off, the fan is in normal operating mode.

10 - ELECTRICAL JIB PROVISION

Enables an electrical function to be used at the head of the jib foot.

OPERATION
- Hold button 2 down and button 3 forwards or backwards.

11 - EXTERIOR DRAIN-BACK

Enables connection of an attachment for which drain-back is required.

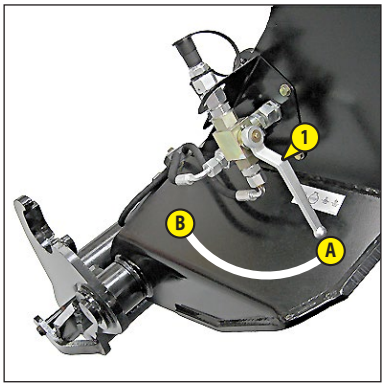
12 - HYDRAULIC ATTACHMENT LOCKING

Enables the attachment to be locked onto the carriage and a hydraulic attachment to be used by the same hydraulic circuit.

ATTACHMENT LOCKING CONTROL
- Set valve 1 to position A.
- Push button 3 forward to lock the attachment and backward to release it.

⚠ IMPORTANT ⚠

Once the attachment is locked, return valve 1 to position B to prevent accidental release of the attachment.



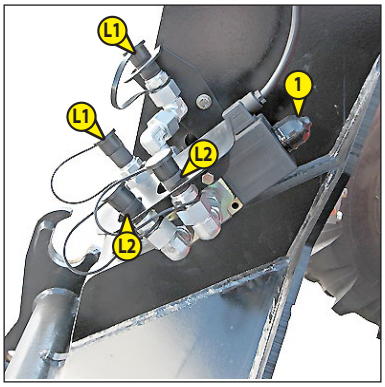
HYDRAULIC ATTACHMENT CONTROL
- Set valve 1 to position B.
- Push button 3 forward or backward.

13 - JIB HEAD ELECTROVALVE

Enables use of two hydraulic functions on the attachment circuit.

⚠ IMPORTANT ⚠

To make connection of the rapid connectors easier, decompress the hydraulic circuit by pressing button 1 on the electrovalve.



ATTACHMENT LINE L1 CONTROL
- Push button 3 forward or backward.

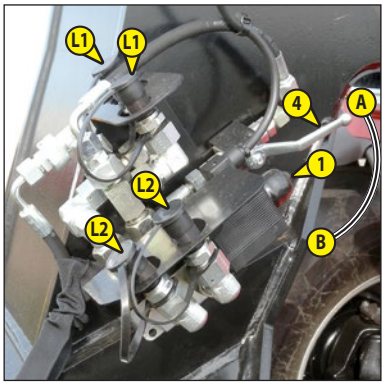
ATTACHMENT LINE L2 CONTROL
- Hold button 2 down and button 3 forwards or backwards.

14 - JIB HEAD ELECTROVALVE + HYDRAULIC ATTACHMENT LOCKING

The addition of these two options on the attachment line allows two hydraulic functions to be used and locks the attachment onto the carriage.

⚠ IMPORTANT ⚠

To make connection of the rapid connectors easier, decompress the hydraulic circuit by pressing button 1 on the electrovalve.



ATTACHMENT LINE L1 CONTROL
- Set valve 4 to position B.
- Set switch 2 to position A (indicator light off).
- Push button 3 forward or backward.

ATTACHMENT LINE L2 CONTROL + HYDRAULIC ATTACHMENT LOCKING

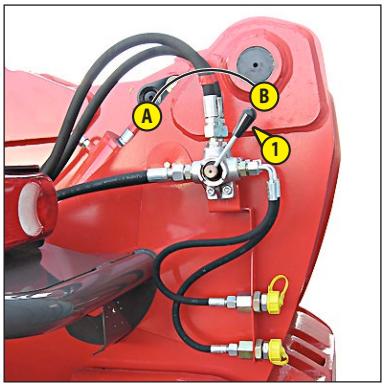
LOCKING AN ATTACHMENT
- Set valve 4 to position A.
- Set switch 2 to position B (indicator light on).
- Hold button 5 down and push button 3 forward to lock the attachment and backward to release it.

⚠ IMPORTANT ⚠

Once the attachment is locked, return valve 4 to position B to prevent accidental release of the attachment.

HYDRAULIC ATTACHMENT
- Set valve 4 to position B.
- Set switch 2 to position B (indicator light on).
- Hold button 5 down and push button 3 forwards or backwards.

15 - SINGLE OR DUAL EFFECT REAR HYDRAULIC CONTROL PREDISPOSITION



Enables the use of a hydraulic rear hook or of a trailer with hydraulic tipping.

- Single or double effect rear hydraulic control functions with hydraulic control of the additional attachment (see chapter: 2 - DESCRIPTION: 19 - HYDRAULIC CONTROLS) according to the position of tap 1.
  - Position A: Hydraulic control of the additional attachment at the front of the lift truck.
  - Position B: Hydraulic control of the additional attachment at the rear of the lift truck.

16 - ATTACHMENT HYDRAULIC CONTROL FORCED OPERATION

⚠ IMPORTANT ⚠

This OPTION must only be used with an attachment requiring continuous hydraulic movement of type: brush, supply bucket, mixer, spray… It is strictly forbidden in handling operations and at all other events (winch, crane jib, crane jib with winch, hook, etc.).

CONTINUOUS HYDRAULIC MOVEMENT OF THE ATTACHMENT

- Make sure the potentiometer C is set to 0 %.
- Switch button A to the front or the back (depending on the type of attachment), press button B and release button A. The red indicator 1, flashes to indicate that it is in operation.
- Set the required flowrate using potentiometer C.

- To stop continuous hydraulic movement of the attachment, move switch A forwards or backwards or press button B. Indicator 1 goes out.
- Set potentiometer C to 0 %.

⚠ IMPORTANT ⚠

Never leave the driver's cab without resetting the potentiometer C to 0 %. Before starting the lift truck, make sure the potentiometer is set to 0 %.

NOTE: If the operator leaves the driver's cab, the continuous hydraulic movement will automatically stop and must be restarted.

17 - JIB SUSPENSION

The jib is suspended to reduce shaking of the lift truck on rough ground (e.g. moving straw in a field).

OPERATION

- Set the forks or attachment on the ground and relieve the front wheels a few centimetres only.
- Press switch 1 set to position A, the visual indicator comes on indicating that jib suspension is activated.
- Press switch 1 set to position B, the visual indicator goes out indicating that jib suspension is deactivated.

⚠ IMPORTANT ⚠

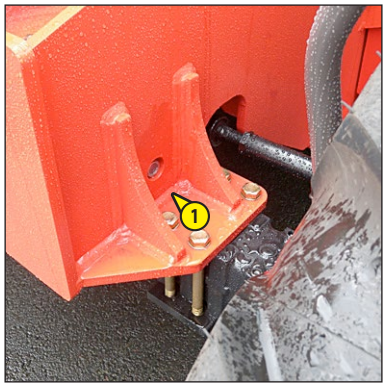
Jib suspension is active to a lifting height of 3m00 from the axis of articulation of the carriage with respect to the ground with the jib retracted. When you move beyond this height or make another hydraulic movement (tilting, telescoping, attachment), jib suspension is momentarily deactivated and the visual indicator of switch 1 goes out.

- When the I.C. engine is off, jib suspension is automatically deactivated.

18 - ATTACHMENT EASY HYDRAULIC CONNECTION

For easily connecting and disconnecting the attachment.

OPERATION
- Switch on lift truck ignition.
- Press the push-button 1 to release the attachment circuit hydraulic pressure.
- Connect or disconnect the rapid connectors of the hydraulic attachment.



19 - ANGULAR SECTOR ON JIB

The angular sector displays the jib angle, and thus improves the reading of the load charts.

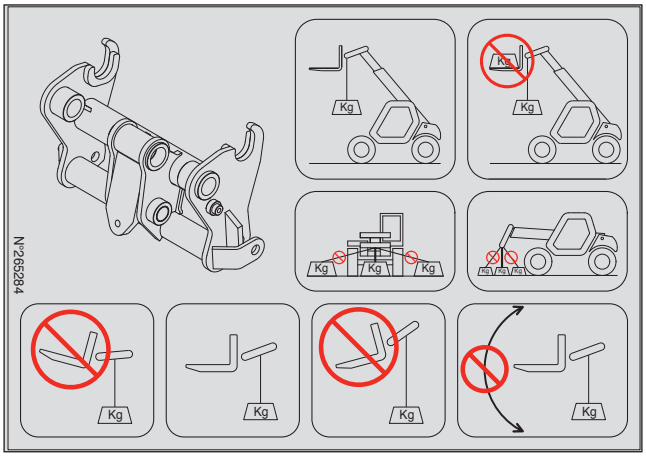
20 - LIFTING RING ON SINGLE CARRIAGE

CONDITIONS OF USE

⚠ IMPORTANT ⚠

Follow the instructions given in your lift truck's instruction manual (see: 1 - OPERATING AND SAFETY INSTRUCTIONS ON HANDLING LOADS), in addition to those given below.

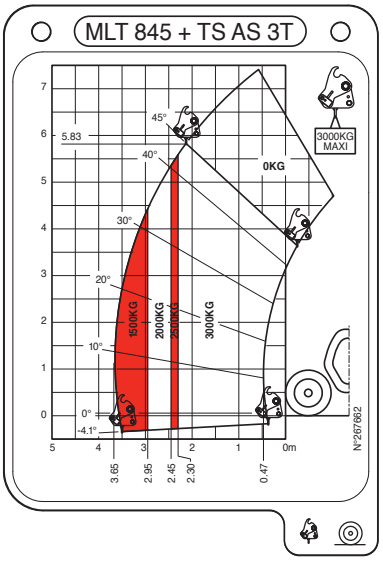
- The lifting ring must be used WITHOUT FORKS AND ATTACHMENTS, but the angle of inclination of the carriage must be same as when the forks are used in the horizontal position.
- Check the maximum permitted angle, which is 45°.
- Do not change the angle of the carriage while using the lifting ring.
- The lifting hook, the chains and slings shall have a minimum capacity of 3000 kg with a factor of safety against breakage of 4.

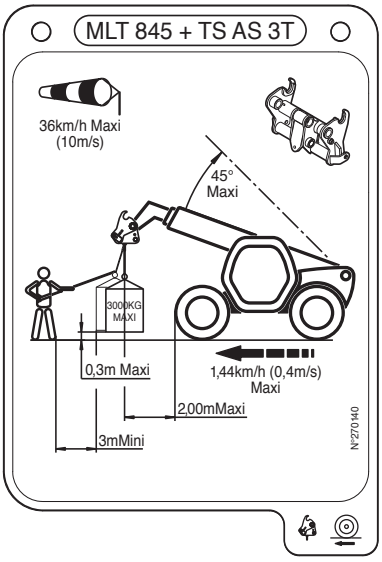


LOAD CHARTS AND FUNCTION SHEETS

⚠ IMPORTANT ⚠

The load charts are given for use without forks and without attachments.





3 - MAINTENANCE

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3 - MAINTENANCE

648920EN (10/11/2015)

ORIGINAL MANITOU SPARE PARTS AND EQUIPMENT

OUR LIFT TRUCKS MUST BE SERVICED USING ORIGINAL MANITOU PARTS.

BY ALLOWING THE USE OF NON ORIGINAL MANITOU PARTS, YOU RISK:

- Legally -to be held responsible in the event of an accident.
- Technically - to cause operating malfunctions or shorten the life of the lift truck.

⚠ IMPORTANT ⚠

THE USE OF COUNTERFEIT PARTS OR COMPONENTS NOT APPROVED BY THE MANUFACTURER, WILL CAUSE YOU TO LOSE THE BENEFIT OF THE CONTRACTUAL GUARANTEE.

BY USING ORIGINAL MANITOU PARTS FOR MAINTENANCE OPERATIONS, YOU BENEFIT FROM OUR KNOW-HOW

Through its network, MANITOU provides the user with,

- Know-how and competence.
- The guarantee of high-quality work.
- Original replacement parts.
- Help with preventive maintenance.
- Efficient help with diagnosis.
- Improvements due to experience feedback.
- Operator training.
- Only the MANITOU network has detailed knowledge of the design of the lift truck and therefore the best technical ability to provide maintenance.

⚠ IMPORTANT ⚠

ORIGINAL REPLACEMENT PARTS ARE DISTRIBUTED EXCLUSIVELY BY MANITOU AND ITS DEALER NETWORK.

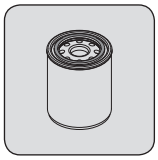
The dealer network list is available on the MANITOU web site www.manitou.com

648920EN (10/11/2015)

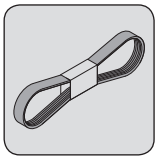
FILTERS CARTRIDGES AND BELTS

ENGINE

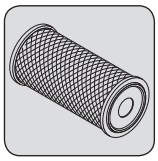
ENGINE OIL FILTER
Part number: 799966
Change: 500 H



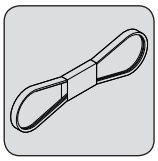
ALTERNATOR BELT
Part number: 940221
Change: 3000 H



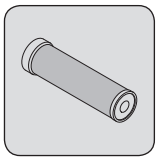
DRY AIR FILTER CARTRIDGE
Part number: 563416
Clean: 50 H*
Change: 500 H *



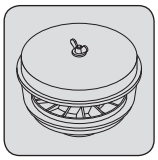
COMPRESSOR BELT
(AIR CONDITIONING OPTION)
Part number: 310260
Change: 3000 H



SAFETY DRY AIR FILTER CARTRIDGE
Part number: 563415
Change: 1000 H *

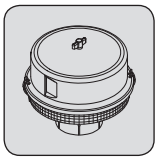


CYCLONIC PRE-FILTER
Part number: 224713
Clean: 10 H

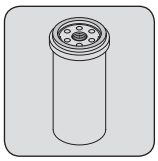


FUEL PRE-FILTER
Part number: 799968
Change: 1000 H

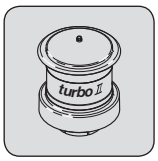
AUTOMATIC VACUUM-CLEANING PRE-FILTER (OPTION)
Part number: 226611



FUEL FILTER
Part number: 799967
Change: 1000 H

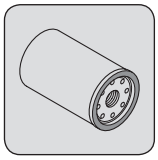


TURBO 2 SELF-CLEANING PRE-FILTER (OPTION)
Part number: 266360



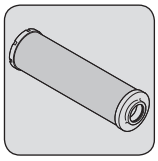
TRANSMISSION

GEAR BOX OIL FILTER
Part number: 561749
Change: 1000 H

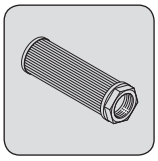


HYDRAULIC SYSTEM

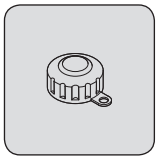
HYDRAULIC RETURN OIL FILTER CARTRIDGE
Part number: 236094
Change: 500 H



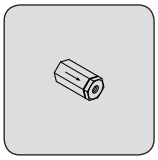
SUCTION STRAINER FOR HYDRAULIC OIL TANK
Part number: 224726
Clean: 1000 H



HYDRAULIC FLUID TANK FILTER CAP
Part number: 62415
Change: 1000 H

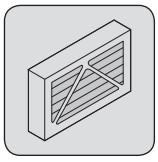


DISTRIBUTOR CONTROL HEAD FILTER
Part number: 254780
Change: 1000 H



CAB

CAB VENTILATION FILTER (WITHOUT AIR CONDITIONING)
Part number: 282619
Clean: 500 H



LUBRICANTS AND FUEL

⚠ IMPORTANT ⚠

USE THE RECOMMENDED LUBRICANTS AND FUEL:

- For topping up, oils may not be miscible.

- For oil changes, MANITOU oils are perfectly appropriate.

DIAGNOSTIC ANALYSIS OF OILS

If a service or maintenance contract has been organized with the dealer, a diagnostic analysis of engine, transmission and axle oils may be requested depending on the rate of use.

(*) RECOMMENDED FUEL SPECIFICATION:

Use a high-quality fuel to obtain optimal performance of the engine.

- Type of diesel fuel EN590
- Type of diesel fuel ASTM D975

ENGINE

ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
ENGINE	10 L	MANITOU Oil GOLD **"API CJ-4 ; ACEA E9"**	20l 209l	786745 787729
COOLING CIRCUIT	20,5 L	Cooling liquid (protection - 35°)	4l 20l 210l	894967 894968 894969
FUEL TANK	135 L	Diesel fuel (*)		

TRANSMISSION

ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
GEAR BOX	15,1 L	MANITOU Oil Automatic transmission	1 l 20 l 55 l 209 l 1000 l	62148 546332 546217 546195 720148
ANGLE GEAR BOX	2 L	MANITOU Oil SAE80W90 Mechanical transmission	1 l 20 l 55 l 209 l 1000 l	62148 546332 546217 546195 720148
TRANSMISSION UNIVERSAL JOINT		MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161589 720683 554974 499233 489670

BOOM

ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
BOOM PADS	MANITOU Grease BLACK multi-purpose	400G 1Kg 5kg	545996 161590 499235
GREASING OF THE BOOM	MANITOU Grease BLUE multi-purpose	400G 1Kg 5kg 20kg 50kg	161589 720683 554974 499233 489670

HYDRAULIC

ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
HYDRAULIC OIL TANK	131 Litres	MANITOU Oil Hydraulic ISO VG 46	5l 20 l 55 l 209 l	545500 582297 546108 546109

BRAKE			
ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
BRAKE CIRCUIT	MANITOU Oil Mineral brake fluid	1l	490408

CAB			
ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
CAB DOOR	MANITOU Grease BLUE multi-purpose	400G 1Kg 5kg 20kg 50kg	161589 720683 554974 499233 489670
WINDSCREEN WASHER TANK	Windscreen washer liquid	1l 5 l	490402 486424

FRONT AXLE				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
FRONT AXLE DIFFERENTIAL	6,7 L	MANITOU Oil Special immersed brakes	5l 20l 209l 1 000l	545976 582391 546222 720149
FRONT WHEELS REDUCTION GEARS	1,8 L	MANITOU Oil SAE80W90 Mechanical transmission	2l 5l 20l 55l 209l	499237 720184 546330 546221 546220
FRONT WHEELS REDUCTION GEAR PIVOTS		MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161589 720683 554974 499233 489670

REAR AXLE				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
REAR AXLE DIFFERENTIAL	7,3 L	MANITOU Oil Special immersed brakes	5l 20l 209l 1 000l	545976 582391 546222 720149
REAR WHEEL REDUCTION GEAR	1,8 L	MANITOU Oil SAE80W90 Mechanical transmission	2l 5l 20l 55l 209l	499237 720184 546330 546221 546220
REAR WHEEL REDUCTION GEAR PIVOTS REAR AXLE OSCILLATION		MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161589 720683 554974 499233 489670

SERVICING SCHEDULE

⚠ IMPORTANT ⚠

(1): MANDATORY 500 HOUR OR 6 MONTH SERVICE. This service must be carried out after approximately the first 500 hours of operation or within the 6 months following the start-up of the machine (whichever occurs first).

(2): Every 10 hours during the first 50 hours then a final time at 250 hours.

(3): Contact your dealer.

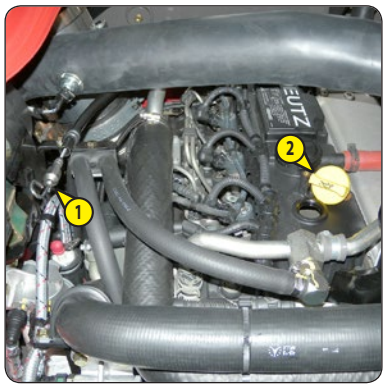
A = ADJUST, C = CHECK, G = GREASE, N = CLEAN, P = BLEED, R = REPLACE, V = DRAIN	PAGE	(1)	DAILY OR EVERY 10 HOURS OF SERVICE	EVERY 50 HOURS OF SERVICE	EVERY 250 HOURS OF SERVICE	EVERY 500 HOURS OF SERVICE OR EVERY YEAR	EVERY 1000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 2000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 3000 HOURS OF SERVICE	EVERY 4000 HOURS OF SERVICE	OCCASIONALLY
ENGINE											
- Engine oil level	3-10		C								
- Cooling liquid level	3-10	C	C								
- Fuel level	3-10	C	C								
- Fuel pre-filter	3-11		C								
- Cyclonic pre-filter	3-11	N	N								
- Dry air filter cartridge	3-14/23	R		C/N		R					
- Radiator cores	3-14	N		N							
- Engine oil	3-22	V				V					
- Engine oil filter	3-22	R				R					
- Fuel pre-filter cartridge	3-26	R					R				
- Fuel filter cartridge	3-26	R					R				
- Fuel tank	3-27						N				
- Fuel tank breather	3-27						R				
- Safety dry air filter cartridge	3-27						R				
- I.C. engine silent blocks							C (3)				
- I.C. engine rates							C (3)				
- Valves clearances		C					C (3)				
- Cooling liquid	3-32							V			
- Radiator								C (3)			
- Water pump and the thermostat								C (3)			
- Alternator and the starter motor								C (3)			
- Turbocompressor								C (3)			
- Alternator belt	3-34								R		
- Compressor belt (Air conditioning OPTION)									R (3)		
TRANSMISSION											
- Gear box oil level	3-14			C							
- Angle gear box oil level	3-20				C						
- Gear box oil filter	3-24	R				R					
- Gear box oil	3-28/29	V					V				
- Gear box sump strainer	3-28/29	N					N				
- Angle gear box oil	3-30	V					V				
- Silentblocks in the gear box							C (3)				
- Gear box controls							C (3)				
- Transmission pressures								C (3)			
- Wear of the brake pads and the brake disk										C (3)	
TYRES											
- Tyre pressures	3-15	C		C							
- Wheel nut torques	3-15	C		C							
- Wheel nut tightening torque	3-33	C						C			
- Wheel	3-36										R
BOOM											
- Boom pads	3-11		N/G (2)								
- Boom	3-16	G		G							
- Boom pad wear							C (3)				
- Condition of boom unit		C						C (3)			
- Bearings and articulation rings								C (3)			
HYDRAULICS											
- Hydraulic oil level	3-17	C		C							
- Hydraulic return oil filter cartridge	3-24	R				R					
- Hydraulic oil	3-30						V				
- Suction strainer for hydraulic oil tank	3-30						R				
- Filter cap for hydraulic oil tank	3-30						R				
- Distributor control head filter	3-30						R				
- Condition of hoses and flexible pipes							C (3)				
- Condition of cylinders (leakage, shafts)							C (3)				
- Hydraulic circuit pressures								C (3)			

A = ADJUST, C = CHECK, G = GREASE, N = CLEAN, P = BLEED, R = REPLACE, V = DRAIN	PAGE	(1)	DAILY OR EVERY 10 HOURS OF SERVICE	EVERY 50 HOURS OF SERVICE	EVERY 250 HOURS OF SERVICE	EVERY 500 HOURS OF SERVICE OR EVERY YEAR	EVERY 1000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 2000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 3000 HOURS OF SERVICE	EVERY 4000 HOURS OF SERVICE	OCCASIONALLY
- Hydraulic oil tank								N (3)			
BRAKE											
- Brake oil level	3-17	C		C							
- Parking brake	3-20	C/R			C/R						
- Parking brake lever mechanism	3-24	G				G					
- Parking brake mechanism on the transmission		G				G (3)					
- Brake oil							V (3)				
- Brake system							P (3)				
- Brake system pressure							C (3)				
- Brake							A (3)				
STEERING											
- Steering								C (3)			
- Steering swivel joints										C (3)	
CAB											
- Cab door	3-16	G		G							
- Windscreen washer liquid level	3-17	C		C							
- Cab ventilation filter (Air conditioning OPTION)	3-18/20	R		N	R						
- Condenser core (Air conditioning OPTION)	3-18	C/N		C/N							
- Heating block non-return valve	3-21	N			N						
- Cab ventilation filters	3-24	N				N					
- Seat belt	3-31						C				
- Condition of the rear view mirrors							C (3)				
- Structure							C (3)				
- Air conditioning (OPTION)	3-33							N/C			
ELECTRICITY											
- Longitudinal stability limiter and warning device	3-12/37	C	C								XXX
- Condition of wiring harness and cables							C (3)				
- Lights and signals							C (3)				
- Warning indicators							C (3)				
- Front headlights	3-38										A
- Battery failure	3-38										R
FRONT AXLE											
- Front wheel reduction gear pivots	3-16	G		G						G/C (3)	
- Front axle differential oil level	3-21				C						
- Front wheels reduction gear oil level	3-21				C						
- Front axle differential oil	3-25	V				V					
- Front wheel reduction gear oil	3-31	V					V				
- Wear of front axle brake discs										C (3)	
- Front wheel reduction gear universal joint										C (3)	
- Front wheel reduction gear clearance										C (3)	
REAR AXLE											
- Rear wheel reduction gear pivots	3-16	G		G						G/C (3)	
- Rear axle oscillation	3-16	G		G				G/C (3)			
- Rear axle differential oil level	3-21				C						
- Rear wheel reduction gear oil level	3-21				C						
- Rear axle differential oil	3-25	V				V					
- Rear wheel reduction gear oil	3-31	V					V				
- Wearing of rear axle brake discs										C (3)	
- Rear wheel reduction gear universal joint										C (3)	
- Rear wheels reduction gear clearance										C (3)	
CHASSIS											
- Structure							C (3)				
- Bearings and articulation rings								C (3)			
ATTACHMENTS											
- Forks wear		C				C (3)					
- Attachment carriage							C (3)				
- Condition of attachments							C (3)				
LIFT TRUCK											
- Tow the lift truck	3-38										XXX
- Sling the lift truck	3-39										XXX
- Transport the lift truck on a platform	3-40										XXX

A - DAILY OR EVERY 10 HOURS OF SERVICE

A1 – ENGINE OIL LEVEL

CHECK



Place the lift truck on level ground with the engine stopped, and let the oil drain into the sump.

- Open the engine bonnet.
- Pull out dipstick 1.
- Clean the dipstick and check the correct level between the two notches.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2.
- Visually check that there is no leakage or seepage of oil in the engine.

A2 – COOLING LIQUID LEVEL

CHECK

Place the lift truck on level ground with the engine stopped, and allow the engine to cool.

⚠ IMPORTANT ⚠

To avoid any risk of spraying or burning, wait until the engine has cooled down before removing the cooling circuit filler plug.
If the cooling liquid is very hot, add only hot cooling liquid (80°C).
In an emergency, you can use water as a cooling liquid, then change the cooling circuit liquid as soon as possible (see: 3 - MAINTENANCE: F1 - COOLING LIQUID).

- Open the engine bonnet.
- The liquid must be at the MAXIMUM level on the expansion tank 1.
- If necessary, add cooling liquid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2.
- Visually check that there is no leakage in the radiator and pipes.

A3 – FUEL LEVEL

CHECK

As far as possible, keep the fuel tank well filled in order to minimize condensation due to the atmospheric conditions.

⚠ IMPORTANT ⚠

Never smoke or approach with a flame during filling operations or when the tank is open.
Never refill while the engine is running.

- Check the fuel gauge on the instrument panel.
- If necessary, add diesel (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Remove cap 1.
- Fill the fuel tank with clean diesel filtered through the filler port 2.
- Refit the cap.
- Visually check that there is no leakage in the tank and pipes.

NOTE: A locking tank cap is available as an OPTION.

A4 – FUEL PRE-FILTER

CHECK

⚠ IMPORTANT ⚠

Carefully clean the outside of the pre-filter and its holder, to prevent dust from getting into the system.

- Open the engine bonnet.
- Disconnect electrical wiring harness 1 from the fuel pre-filter.
- Place a receptacle under the drain plug 2 and unscrew by two to three turns.
- Allow the diesel fuel to flow out until it is free from impurities and water.
- Re-tighten drain plug 2 and reconnect the wiring harness 1.

A5 – CYCLONIC PRE-FILTER

CLEAN

The cleaning interval is given as a guide, however the pre-filter must be emptied as soon as impurities reach the MAX level on the tank.

⚠ IMPORTANT ⚠

When cleaning, take care not to let impurities into the dry air filter.

- Loosen nut 1 remove cover 2 and empty the tank.
- Clean the pre-filter unit with a clean dry cloth and reassemble the unit.

A6 – BOOM PADS

CLEAN - GREASE

To be carried out every 10 hours during the first 50 hours service, then once at 250 hours.

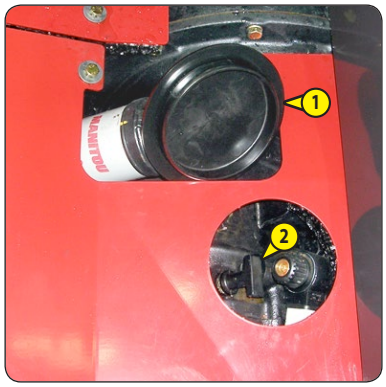
⚠ IMPORTANT ⚠

If the lift truck is used in an abrasive environment (dust, sand, coal) Use lubricating varnish (MANITOU part no.: 483536). Please consult your dealer. Fully extend the boom.

- Apply the grease with a brush (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) to the 4 sides of the telescope(s).
- Telescope the boom several times in order to spread the coat of grease evenly.
- Remove the surplus of grease.

A6 - GEAR BOX OIL LEVEL

CHECK



Park the lift truck on level ground with the jib raised, the I.C. engine cold and stopped. Carry out the control within 5 minutes of the I.C. engine being stopped.

- Remove the plastic cap 1 (fig. A6).
- Remove the dipstick 2 (fig. A6).
- Wipe the dipstick and check the correct level between the two MIN and MAX. marks.
- If necessary, add oil (see: 3 - MAINTENANCE: E3 - GEAR BOX OIL).
- Check visually that there is no leakage or seepage of oil in the transmission.

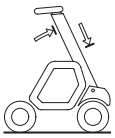
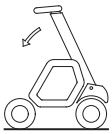
⚠ IMPORTANT ⚠

Use the test button only when requested to do so, applying short presses (less than 1 second) and long presses (5 seconds) as instructed.

If in doubt during the test procedure, exit cleanly by short pressing the "BUCKET" or "SUSPENDED LOAD" MODE buttons.

These tests are essential for checking correct operation and adjustment of the various system components.

- Place the lift truck on flat, level ground with the wheels straight.
- Hold down the test button.

STEP 1	 - A beep. - First green LED flashing. - Test button lit.	→	 - Place the lift truck with no attachment, with the boom fully retracted and raised.	**Short press the test button.** 	**TEST OK** - Beeps once and progresses to stage 2. **TEST NOT OK** - Beeps twice and warning indicator lamp comes on. - Exit test mode. - Go to stage 4.
STEP 2	 - First green LED continuously lit. - Second green LED flashing. - Test button lit.	→	 - Lower with the engine running at full revs and the hydraulic control at the maximum setting. Slow the rate of descent until movement is cut-off.	**Short press the test button.** 	**TEST OK** - Beeps once and progresses to stage 3. **TEST NOT OK** - Beeps twice fault indicator lamp comes on. - Exit test mode. - Go to stage 4.
STEP 3	 - First and second green LEDs continuously lit. - Third green LED flashing. - Test button lit.	→	- Lower the boom until the movement is cut off. - Request, in the following order: a reverse tilt, a forward tilt (dumping) and a telescope extension. None of these 3 movements should be possible.	**Short press the test button.** 	**TEST OK** - Conformity of aggravating movement cut-off. - Exit test mode. All the LEDs will light for 2 seconds and a beep will be sounded. **TEST NOT OK** - Fault indicator lamp comes on. - Exit test mode. - Go to stage 4.
STEP 4	 - The fault warning light remains permanently on until the error is repaired.	→	- The warning indicator lamp and a beep indicate a fault. - To view this error code (see: 2 - DESCRIPTION: 3B - SCREEN DISPLAY). NOTE: A faulty fuse can generate several error codes. If this is the case, check the fuses (see: 2 - DESCRIPTION: 11 - FUSES AND RELAYS IN THE CAB). - If error codes 520499, 520742, 520743 or 520754 are displayed, adjusting the longitudinal stability limiter and warning device may solve the problem (see: 3 - MAINTENANCE: G - OCCASIONAL MAINTENANCE). NOTE: For the stage 3 test, specify the non-conforming aggravating hydraulic movements, if necessary.		

B - EVERY 50 HOURS SERVICE

Carry out the operations described previously as well as the following operations.

B1 – DRY AIR FILTER CARTRIDGE

CHECK - CLEAN

In case of use in a heavily dust laden atmosphere, there are pre-filtration cartridges (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS). Also, the checking and cleaning periodicity of the cartridge must be reduced.

⚠ IMPORTANT ⚠

If the clogging indicator light comes on, this operation must be carried out as quickly as possible (1 hour maximum). The cartridge must not be cleaned more than seven times, after which it must be changed. Never use the lift truck without an air filter or with a damaged air filter.

Respect the safety distance of 30 mm between the air jet and the cartridge to avoid tearing or making a hole in the cartridge. The cartridge must not be blown anywhere near the air filter box. Never clean the cartridge by tapping it against a hard surface. Your eyes must be protected during this intervention.

Never clean the dry air filter cartridge by washing it in liquid. Do not clean by any means the safety cartridge located inside the filter cartridge, change it for a new one if it is clogged or damaged

- For the disassembly and reassembly of the cartridge, see: 3 - MAINTENANCE: D3 - DRY AIR FILTER CARTRIDGE.
- Clean the filter cartridge using a compressed air jet (max. pressure 3 bar) directed from the top to the bottom and from the inside towards the outside at a minimum distance of 30 mm from the cartridge wall.
- Cleaning is completed when there is no more dust on the cartridge.
- Clean the cartridge seal surfaces with a damp, clean lint-free cloth and grease with a silicone lubricant (MANITOU reference: 479292).
- Check visually the outer condition of the air filter and its mounts. Verify the condition of the hoses and their mounts also.

B2 – RADIATOR CORES

CLEAN

⚠ IMPORTANT ⚠

In a polluting atmosphere, clean the radiator cores every day. Do not use a water jet or high-pressure steam as this could damage the radiator fins.

- Open the engine bonnet.
- If necessary, clean the intake grille on the engine hood.
- Using a soft cloth, clean the radiator cores in order to remove as much dirt as possible.
- Clean the radiator using a compressed air jet aimed from the engine towards the radiator, in the opposite direction to the cooling air flow.

B3 – TYRE PRESSURE AND WHEEL NUT TORQUES

CHECK

⚠ IMPORTANT ⚠

Check that the air hose is correctly connected to the tire valve before inflating and keep all persons at a distance during inflation. Follow the recommended tire pressures.

- Check the condition of the tires, to detect cuts, blisters, wear, etc.
- Check the torque load of the wheel nuts. Non-compliance with this instruction can lead to damage and failure of the wheel bolts and distortion of the wheels.
- Check and restore tire pressures if necessary (see: 2 - DESCRIPTION: TIRES).

NOTE: There is an OPTIONAL wheel toolkit.

648920EN (10/11/2015)

To be carried out weekly, if the lift truck has been operated for less than 50 hours during the week.

⚠ IMPORTANT ⚠

In the event of prolonged use in an extremely dusty or oxidizing atmosphere, reduce this interval to every 10 hours of service or every day.

Clean and lubricate the following points with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

BOOM

1 - Lubricators of the boom axle (2 lubricators).
2 - Lubricators of the carriage axle (2 lubricators).
3 - Lubricator of the tilt cylinder foot axle (1 lubricator).
4 - Lubricator of the tilt cylinder head axle (1 lubricator).
5 - Lubricators of the carriage connecting rod axles (3 lubricators).
6 - Lubricator of the lifting cylinder foot axle (1 lubricator).
7 - Lubricator of the lifting cylinder head axle (1 lubricator).
8 - Lubricator of the compensation cylinder foot axle (1 lubricator).
9 - Lubricator of the compensation cylinder head axle (1 lubricator).

CAB DOOR

10 - Door lubricators (4 lubricators).

FRONT AND REAR WHEEL REDUCTION GEAR PIVOTS

11 - Lubricators of the wheel reduction gear pivot pins (8 lubricators).

REAR AXLE OSCILLATION

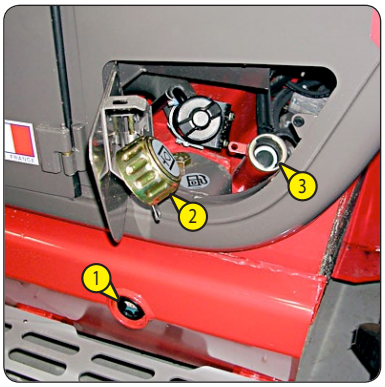
12 - Rear axle oscillation lubricators (2 lubricators).

TRANSMISSION UNIVERSAL JOINT

13 - Lubricators of the universal joint Gear box/Front axle (3 lubricators).
14 - Lubricators of the universal joint Gear box/Rear axle (3 lubricators).
15 - Lubricators of the universal joint I.C. engine/Angle gear box (2 lubricators).

B5 – HYDRAULIC OIL LEVEL

CHECK



Place the lift truck on level ground with the engine stopped, and the boom retracted and lowered as far as possible.

⚠ IMPORTANT ⚠

Use a clean funnel and clean the underside of the oil drum before filling.

- Check dipstick 1, the correct level must stand at the level of the red point.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Remove cap 2.
- Add oil through filler port 3.
- Refit the cap.
- Visually check that there is no leakage in the tank and pipes.

B6 – BRAKE OIL LEVEL

CHECK

Place the lift truck on level ground.

⚠ IMPORTANT ⚠

If the brake oil level is abnormally low, consult your dealer.

- Loosen screw 1 and lift up the brake fluid and windscreen washer tank access panel 2.
- The level is correct when it is at the MAX level on the tank 3.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) via the filler port.
- Pivot the tank 3 to access filler cap 4.
- Visually check that there is no leakage in the tank and pipes.

B7 – WINDSCREEN WASHER LIQUID LEVEL

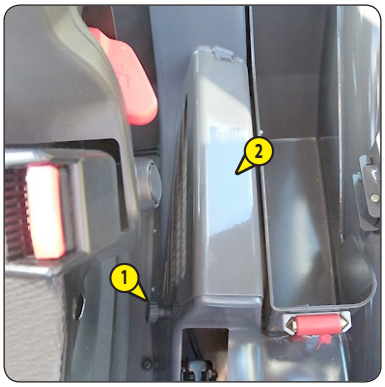
CHECK

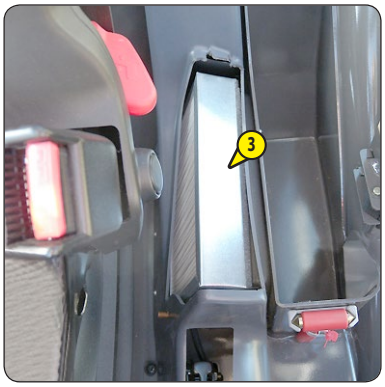
- Visually check the level.
- If necessary, add windscreen washer fluid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 1.
- Refit the brake oil and windscreen washer tank access panel 2 and re-tighten screw 1.

B8 – CAB VENTILATION FILTER (AIR CONDITIONING OPTION)

CLEAN

- Unscrew thumbscrew 1 and remove protective casing 2.
- Lift out cab ventilation filter 3.
- Clean the filter with a compressed air jet.
- Check its condition and change if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the filter and protective casing.





B9 – CONDENSER CORE (AIR CONDITIONING OPTION)

CHECK - CLEAN

⚠ IMPORTANT ⚠

In a polluting atmosphere, clean the radiator core every day. Do not use a water jet or high-pressure steam as this could damage the condenser fins.

- Remove the protective grid 1 and clean it if necessary.
- Visually check whether the condenser is clean and clean it if necessary.
- Clean the condenser using a compressed air jet aimed in the same direction as the air flow.
- Clean with the fans running for best results.

C - EVERY 250 HOURS OF SERVICE

Carry out the operations described previously as well as the following operations.

C1 – ANGLE GEAR BOX OIL LEVEL

CHECK

Park the lift truck on level ground with the boom raised and the engine stopped.

⚠ IMPORTANT ⚠

Raise the boom and place the boom safety wedge on the rod of the lifting cylinder (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: LIFT TRUCK MAINTENANCE INSTRUCTIONS).

- Pull out dipstick 1.
- Wipe the dipstick and check the correct level between the MIN and MAX marks.
- If necessary, add oil (see: 3 - MAINTENANCE: E9 - ANGLE GEAR BOX OIL).

C2 – PARKING BRAKE

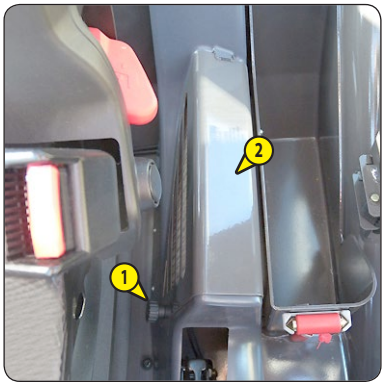
CHECK - ADJUST

Place the lift truck on level ground with the rated load in the transport position.

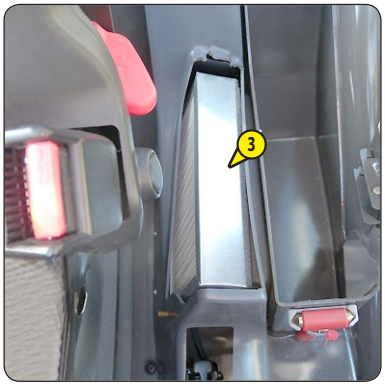
- Check the tightening adjustment by locking the parking brake "1".
- Pull on the lift truck rear towing pin with a minimum force of 3500 daN. The wheels of the lift truck must not rotate.
- Adjust if necessary.

C3 – CAB VENTILATION FILTER (AIR CONDITIONING OPTION)

CHANGE

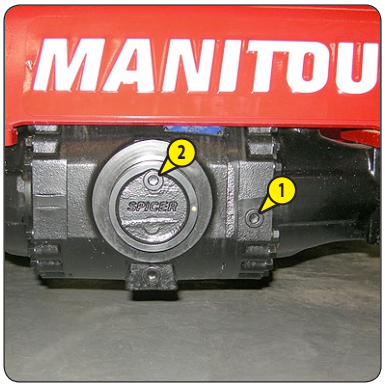


- Unscrew thumbscrew 1 and remove protective casing 2.
- Lift out cab ventilation filter 3 and replace it with a new one (see: 3 - MAINTENANCE: FILTERS, CARTRIDGES AND BELTS).
- Refit the protective casing.



C4 – FRONT AND REAR AXLE DIFFERENTIAL OIL LEVEL

CHECK



Place the lift truck on level ground with the engine stopped.

- Remove the level plug 1; the oil should be flush with the edge of the hole.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2.
- Refit and tighten the level plug 1 (tightening torque 34 to 49 N.m).

C5 – FRONT AND REAR WHEEL REDUCTION GEAR OIL LEVEL

CHECK

Place the lift truck on level ground with the engine stopped.

- Check the level on each wheel reduction gear.
- Place level plug 1 in a horizontal position.
- Remove the level plug; the oil should be flush with the edge of the opening.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the same port.
- Refit and tighten the level plug (tightening torque 34 to 49 N.m).

D - EVERY 500 HOURS OF SERVICE OR EVERY YEAR

Carry out the operations described previously as well as the following operations.

Depending on the model of lift truck.

MACHINE INSPECTION

In order to minimize unexpected downtime or critical fault of the machine, the inspections and checks following need to be carried out on a regular basis.

The interval between the inspections or checks depends on some factors:

- Operating conditions of the machine (working place environment conditions),
- Severity of the application (heavy loading and stress work cycles)
- Age of machine,
- Traveling for long distance on roads.

The part to be inspect or check are:

- Main frame
- Boom
- Cab
- Axles supports
- Engine supports

For each part inspects all welded joints and mounting points.

In case of founding some damage part, contact your dealer.

Manitou suggest to inspects the above machine's parts in case of the machine has been involved in any accident or every 500 working hours.

More frequent inspections will be required for older machines and machines that are used in particularly severe applications.

D1 – ENGINE OIL

DRAIN

D2 – ENGINE OIL FILTER

CHANGE

Place the lift truck on level ground, let the engine run at idle for a few minutes, then stop the engine.

⚠ IMPORTANT ⚠

Dispose of the waste oil in an ecological manner.
Hand-tighten the oil filter and lock in place with a quarter turn.

DRAINING THE OIL

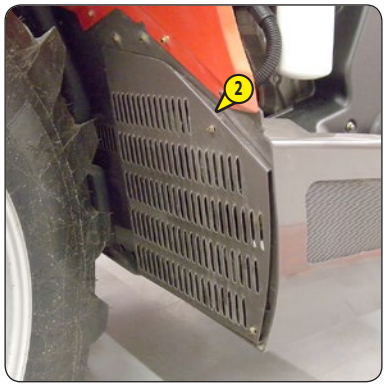
- Open the engine bonnet.
- Remove access panels 1 and 2.
- Place a container under the drain port and unscrew the drain plug 3.
- Take drain hose 4.
- Place the end of the drain hose in the container and screw the hose fully to the drain connector 3.
- Remove filling plug 5 to ensure that the oil is drained properly.

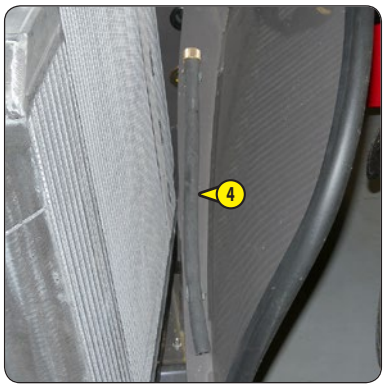
REPLACEMENT OF THE FILTER

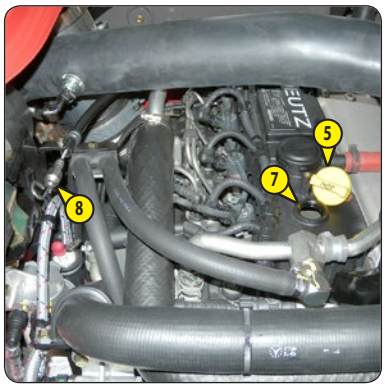
- Unscrew and discard the engine oil filter 6, together with its seal.
- Clean the filter bracket with a clean, lint-free cloth.
- Lightly grease the new seal before refitting the new oil filter (see: 3 - MAINTENANCE: FILTERS, CARTRIDGES AND BELTS) on its bracket (tightening torque 15-17 N.m).

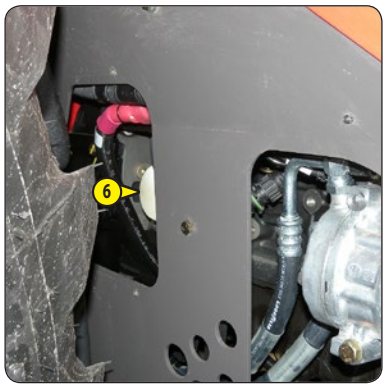
FILLING UP THE OIL

- Remove, clean and refit drain hose 4.
- Refit and tighten the drain plug 3.
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 7.
- Wait a few minutes to allow the oil to flow into the sump.
- Start the engine and let it run for a few minutes.
- Check for possible leaks from the drain plug and the oil filter.
- Stop the engine, wait a few minutes and check the correct level between the two level marks on the dipstick 8.
- Top up the level if necessary.
- Refit access panels 1 and 2.



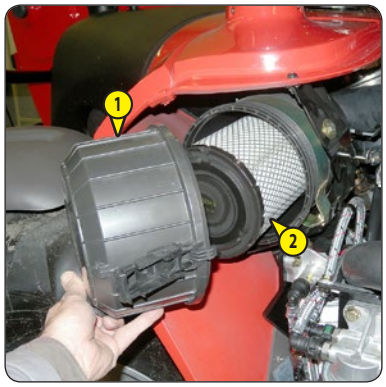






D3 – DRY AIR FILTER CARTRIDGE

CHANGE



In case of use in a heavily dust laden atmosphere, there are pre-filtration cartridges, see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS. Also, the checking and cleaning periodicity of the cartridge must be reduced (up to 250 hours in a heavily laden dust atmosphere and with pre-filtration).

⚠ IMPORTANT ⚠

Change the cartridge in a clean location, with the engine stopped. Never operate the lift truck with the air filter removed or damaged.

- Open the engine bonnet.
- Loosen the bolts and remove cover 1.
- Gently remove the cartridge 2 taking care to avoid spilling the dust.
- Leave the safety cartridge in place.
- The following parts must be cleaned with a damp, clean lint-free cloth.
  - The inside of the filter and cover.
  - The inside of the filter inlet hose.
  - The gasket surfaces in the filter and in the cover.
- Check pipes and connections between the air filter and the engine and the connection and state of the clogging indicator on the filter.
- Before mounting check the condition of the new cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Insert the cartridge within the axis of the filter and push it home, pressing against the outer edge and not the center.
- Reassemble the cover, guiding the valve downwards.

D4 – HYDRAULIC RETURN OIL FILTER CARTRIDHGE

CHANGE

Stop the I.C. engine and remove the pressure from the circuits by acting on the hydraulic controls.

⚠ IMPORTANT ⚠

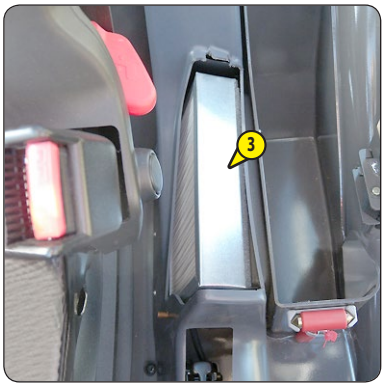
horoughly clean the outside of the filter and its surroundings before any intervention in order to prevent any risk of polluting the hydraulic circuit.

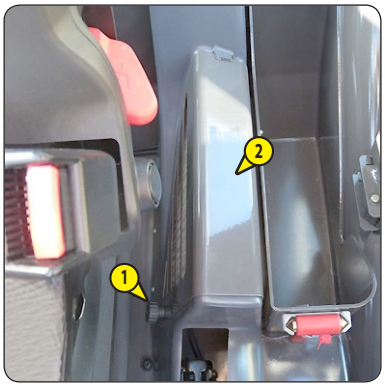
- Remove the shroud 1.
- Unscrew the locking screws of the cover 2.
- Remove the hydraulic return oil filter cartridge 3, and fit new replacement cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Make sure that the cartridge is correctly positioned and refit cover 2.
- Perform the operation on both filters.
- Put back the shroud 1.

D5 – CAB VENTILATION FILTER

CLEAN

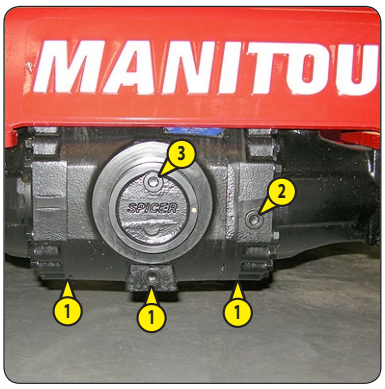
- Unscrew thumbscrew 1 and remove protective casing 2.
- Lift out cab ventilation filter 3.
- Clean the filter with a compressed air jet.
- Check its condition and change if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the filter and protective casing.





D6 – FRONT AND REAR AXLE DIFFERENTIAL OIL

DRAIN



Place the lift truck on level ground with the I.C. engine stopped and the differential oil still warm.

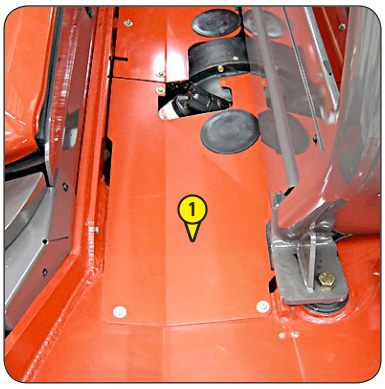
⚠ IMPORTANT ⚠

Dispose of the drain oil in an ecological manner.

- Place a container under drain plugs 1 and unscrew the plugs.
- Remove level plug 2 (fig. D8) and filler plug 3 in order to ensure proper emptying.
- Refit and tighten drain plugs 1 (fig. D8) (tightening torque 34 to 49 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 3 .
- The level is correct when the oil level is flush with the edge of port 2 .
- Check for any possible leaks at the drain plugs.
- Refit and tighten level cap 2 (tightening torque 34 to 49 N.m) and filler port 3 (tightening torque 34 to 49 N.m).
- Repeat this operation for the rear axle differential.
- Put back the cover plate 1 (fig. D9/1).

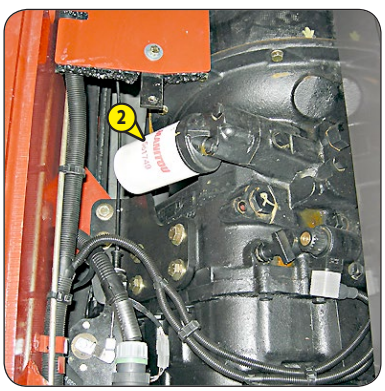
D7 – GEAR BOX OIL FILTER

CHANGE



⚠ IMPORTANT ⚠

Lift the telescopic boom and place the safety blocks on the rods of the compensation cylinders (see: 1 - INSTRUCTIONS AND SAFETY STANDARDS: FORKLIFT TRUCK MAINTENANCE INSTRUCTIONS).

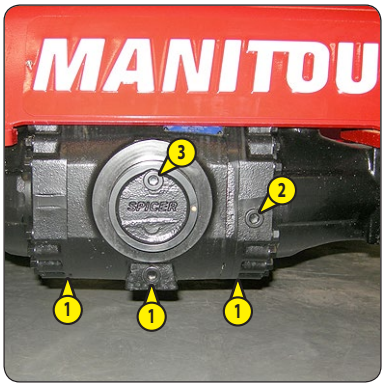


- Remove the cover plate 1.
- Unscrew and discard gear box oil filter 2.
- Carefully clean the filter head with a clean, lint-free cloth.
- Slightly lubricate the new seal and fit the seal on the filter.
- Fill up the new gear box oil filter (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS) with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Refit the filter, making sure that the seal is correctly positioned and tightened.

⚠ IMPORTANT ⚠

Tighten the gear box oil filter by hand pressure only and lock the filter in place by a quarter turn.

D8 – FRONT AND REAR AXLE DIFFERENTIAL OIL



DRAIN

Place the lift truck on level ground with the engine stopped and the differential oil still warm.

⚠ IMPORTANT ⚠

Dispose of the drain oil in an ecological manner.

- Place a container under the drain plugs 1 and unscrew them.
- Remove level plug 2 and filling plug 3 to ensure that the oil is drained properly.
- Refit and tighten the drain plugs 1 (tightening torque 34 to 49 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 3.
- The level is correct when the oil level is flush with the edge of opening 2.
- Check for any possible leaks at the drain plugs.
- Refit and tighten level plug 2 (tightening torque 34 to 49 N.m) and filler plug 3 (tightening torque 34 to 49 N.m).
- Repeat this operation for the rear axle differential.

E - EVERY 1000 HOURS OF SERVICE OR EVERY TWO YEARS

Carry out the operations described previously as well as the following operations.

E1 – FUEL PRE-FILTER

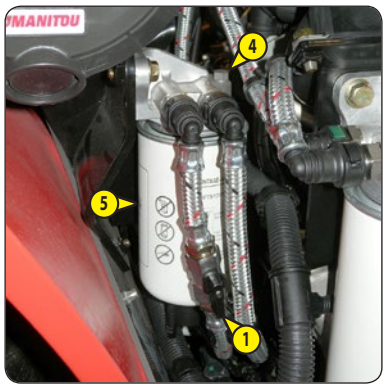
CHANGE

⚠ IMPORTANT ⚠

Carefully clean the outside of the pre-filter and its holder, to prevent dust from getting into the system.

Tighten the fuel filter by hand only and lock in place by a quarter turn.

- Switch off the lift truck's ignition.
- Open the engine bonnet.
- Shut off the fuel supply turning the thumbwheel 1 clockwise.
- Disconnect electrical wiring harness 2 from the fuel pre-filter.
- Place a receptacle under the drain plug 3 and unscrew by two to three turns.
- Open bleed screw 4 to ensure proper emptying.
- Retighten bleed screw 4 once the pre-filter is emptied.
- Loosen pre-filter 5 and discard it, together with its seal.
- Clean the inside of the pre-filter head using a brush immersed in clean diesel oil.
- Refit a pre-filter and a new seal lubricated with clean diesel beforehand (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Reconnect the fuel pre-filter wiring harness 2.
- Replace the fuel filter.



E2 – FUEL FILTER

CHANGE

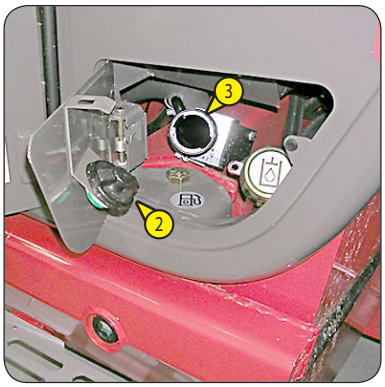
⚠ IMPORTANT ⚠

Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.

- Unscrew and discard the fuel filter 1.
- Clean the inside of the filter head using a brush immersed in clean diesel oil.
- Refit a filter and a new seal lubricated with clean diesel beforehand (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Tighten the filter, making sure that the seal is correctly positioned (tightening torque 10-12 N.m).
- Turn on the fuel supply by turning the thumbwheel 2 anti-clockwise.
- Open the bleed screw 4 of the fuel pre-filter and the bleed screw 3 of the fuel filter.
- Switch on the lift truck's ignition, and close the bleed screw as soon as the diesel flows with no air.

E3 – FUEL TANK

CLEAN



Place the lift truck on level ground with the engine stopped.

⚠ IMPORTANT ⚠

While carrying out these operations, do not smoke or approach with a flame.
Never try to carry out welding or any other operation by yourself, as this could cause an explosion or a fire.

- Inspect the parts susceptible to leaks in the fuel circuit and in the tank both visually and by touch.
- In the event of a leak, contact your dealer.
- Place a container under drain plug 1 and unscrew the plug.
- Remove filling plug 2 to ensure that the oil is drained properly.
- Rinse out with ten liters of clean diesel through filler port 3.
- Refit and tighten the drain plug 1 (tightening torque 29 to 39 N.m).
- Unscrew the breather 4 and replace with a new one (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Fill the fuel tank with clean diesel filtered through the filler port.
- Refit the filler plug.
- If necessary, bleed the fuel supply system (see: 3 - MAINTENANCE: H1 - FUEL SUPPLY SYSTEM).

E4 – SAFETY DRY AIR FILTER CARTRIDGE

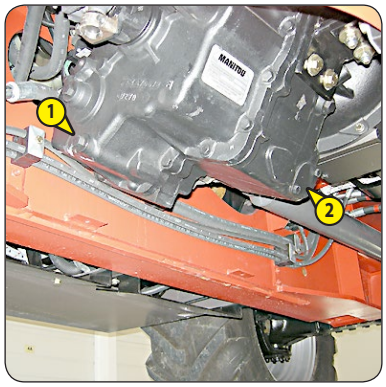
CHANGE

- For the disassembly and reassembly of the dry air filter cartridge, see: 3 - MAINTENANCE: D3 - AIR FILTER CARTRIDGE.
- Gently remove the dry air filter safety cartridge 1, taking care to avoid spilling the dust.
- Clean the gasket surface on the filter with a damp, clean lint-free cloth.
- Check the condition of the new safety cartridge before fitting (see: 3 - MAINTENANCE: FILTERS AND BELTS).
- Insert the cartridge in the filter axis and push it home, pressing against the outer edge and not the center.

NOTE: The safety cartridge replacement frequency is given for information only. It must be changed every second time the dry air filter cartridge is changed.

E5 – GEAR BOX OIL

DRAIN



E6 – GEAR BOX SUMP STRAINER

CLEAN

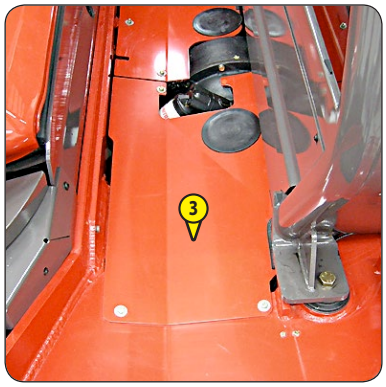
⚠ IMPORTANT ⚠

Lift the telescopic boom and place the safety blocks on the rods of the compensation cylinders (see: 1 - INSTRUCTIONS AND SAFETY STANDARDS: FORKLIFT TRUCK MAINTENANCE INSTRUCTIONS).

Place the lift truck on level ground with the I.C. engine stopped, the gear box oil still warm.

DRAINING THE OIL

- Place a container under drain plug 1 and under cover 2 and unscrew the drain plug.
- Remove cover plate 3 .
- Remove dipstick 4 and unscrew filler cap 5 in order to ensure that the oil is drained properly.



⚠ IMPORTANT ⚠

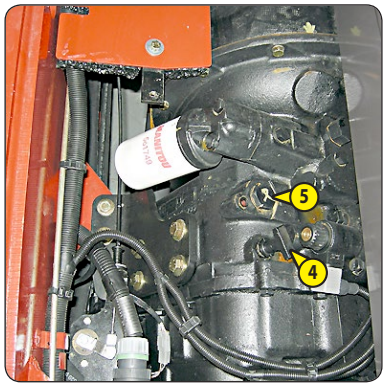
Dispose of the drain oil in an ecological manner.

CLEANING THE STRAINER

- Remove cover 2 and set aside the O-ring joint and sealing washer.
- Allow the rest of the oil to drain away.
- Remove and clean the strainer using a compressed air jet.
- Clean the magnetic section on the plate.
- Refit the assembly and tighten up plate 2 (tightening torque 18 to 31 N.m).

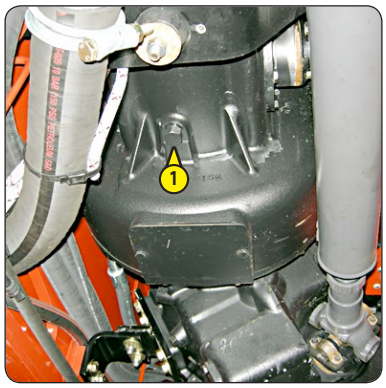
FILLING UP THE OIL

- Refit and tighten drain plug 1 (tightening torque 34 to 54 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) by filler port 5 and refit the filler cap.
- Start the I.C. engine and let it run for a few minutes.
- Check any possible leaks from the drain plug or cover.
- Stop the I.C. engine, and within 5 minutes of the I.C. engine being stopped, check on the dipstick 4 the correct level between the two MIN and MAX. marks.
- Top up the level if necessary.
- Refit the shroud 3.



E7 – ANGLE GEARBOX OIL

DRAIN



⚠ IMPORTANT ⚠

Lift the telescopic boom and place the safety blocks on the rods of the compensation cylinders (see: 1 - INSTRUCTIONS AND SAFETY STANDARDS: FORKLIFT TRUCK MAINTENANCE INSTRUCTIONS).

Place the lift truck on level ground with the I.C. engine stopped, the angle gear box oil still warm.

- Place a container under drain plug 1 and unscrew the plug.
- Remove the plastic cap 2.
- Remove dipstick 3 and unscrew filler cap 4 in order to ensure that the oil is drained properly.

⚠ IMPORTANT ⚠

Dispose of the drain oil in an ecological manner.

- Refit and tighten drain plug 1 (fig. E5/1) (tightening torque 20 to 29 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) by filler port 4 and refit the filler cap.
- Check the correct level between the MIN and MAX marks on dipstick 3.

-

E8 – HYDRAULIC OIL

DRAIN

E9 – HYDRAULIC OIL TANK SUCTION STRAINER

CLEAN

E10 – HYDRAULIC FLUID TANK FILTER CAP

CHANGE

E11 – DISTRIBUTOR CONTROL HEAD FILTER

CHANGE

Place the lift truck on level ground with the engine stopped, and the boom retracted and lowered as far as possible.

⚠ IMPORTANT ⚠

Before carrying out any work, thoroughly clean the area around the filter, the drain plugs and the inlet cover on the hydraulic tank.
Dispose of the drain oil in an ecological manner.
Use a very clean container and funnel and clean the top of the oil drum before filling.

DRAINING THE OIL

- Place a container under the drain plugs 1 and unscrew them.
- Remove level and filling plug 2 to ensure that the oil is drained properly and discard.

CLEANING THE STRAINER

- Remove the inlet cover 3.
- Remove and clean the suction strainer using a compressed air jet, check its condition and replace if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the strainer and tighten the inlet cover 3 (tightening torque 81 N.m) making sure the seal is in the correct position.

REPLACING THE DISTRIBUTOR CONTROL HEAD FILTER

⚠ IMPORTANT ⚠

NOTE: Be careful to mount the filter 6 in the same direction as the arrow.

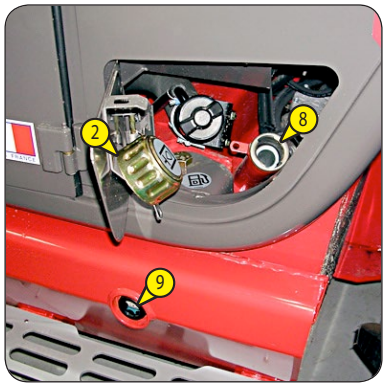
- Remove the half clamp 4.
- Undo the two couplings 5 and replace the filter 6.
- Refit half clamp 4.

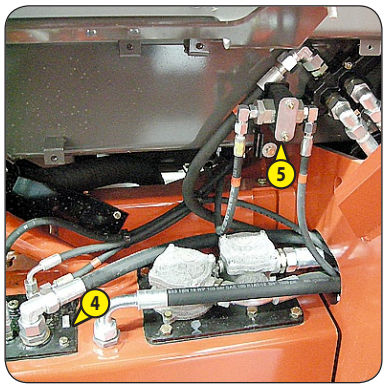
FILLING UP THE OIL

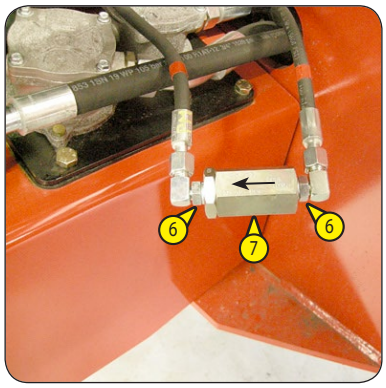
- Clean and refit the drain plugs 1 (tightening torque 29 to 39 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 7.
- Observe the oil level on dipstick 8, the oil level should be at the level of the red point.
- Check for any possible leaks at the drain plugs.
- Replace filler plug with a new filler plug 2 (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

HYDRAULIC CIRCUIT DECONTAMINATION

- This should be carried out by your dealer after each oil change.
- The hydraulic oil used in the circuit must be at least equal in quality to class 8 (according to NAS 1638). Your dealer will be able to clean the hydraulic circuit using an external unit and check the quality of the oil in order to ensure the long life of hydraulic components and particularly of the main pump.







E12 – SEAT BELT

CHECK

⚠ IMPORTANT ⚠

In no event should the lift truck be used if the seat belt is defective (fixing, locking, cuts, tears, etc.).
Repair or replace the seat belt immediately.

SEAT BELT WITH TWO ANCHORING POINTS

- Check the following points:
  - Fixing of the anchoring points on the seat.
  - Cleanness of the strap and the locking mechanism.
  - Triggering of the locking mechanism.
  - Condition of the strap (cuts, curled edges).

REELED SEAT BELT WITH TWO ANCHORING POINTS

- Check the points listed above together with the following points:
  - The correct winding of the belt.
  - Condition of the reel guards.
  - Roller locking mechanism when the strap is given a sharp tug.

NOTE: After an accident, replace the seat belt.

E13 – FRONT AND REAR WHEEL REDUCTION GEAR OIL

DRAIN

Place the lift truck on level ground with the engine stopped and the oil of the reducers still warm.

⚠ IMPORTANT ⚠

Dispose of the drain oil in an ecological manner.

- Drain and change the oil of each wheel reduction gear.
- Place drain plug 1 in position A.
- Place a container under the drain plug and unscrew the plug.
- Let the oil drain fully.
- Place the drain port in position B, i.e. in a level port.
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through level port 1.
- The level is correct when the oil level is flush with the edge of the hole.
- Refit and tighten the drain plug (tightening torque 34 to 49 N.m).

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F - EVERY 2000 HOURS OF SERVICE OR EVERY TWO YEARS

Carry out the operations described previously as well as the following operations.

F1 – COOLING LIQUID

DRAIN

These operations are to be carried out whenever necessary or once every two years at the approach of winter. Place the lift truck on level ground with the engine stopped and cold.

⚠ IMPORTANT ⚠

The engine does not contain any corrosion resistor and must be filled during the whole year with a mixture containing 25% of ethylene glycol-based antifreeze.

DRAINING THE LIQUID

- Open the engine bonnet.
- Remove access panel 1.
- Place a container under radiator drain plug 2 and unscrew the plug.
- Take drain hose 3.
- Place the end of the drain hose in the container and screw the hose fully to the drain connector 2.
- Remove filler plug 4 from the expansion tank and fully open the heating control to ensure proper emptying.
- Let the cooling circuit drain entirely while ensuring that the ports do not get clogged.
- Check the condition of the hoses as well as the fastening devices and change the hoses if necessary.
- Rinse the circuit with clean water and use a cleaning agent if necessary.

FILLING THE LIQUID

- Remove, clean and refit drain hose 3.
- Refit and tighten the radiator drain plug 2.
- Slowly fill the circuit with cooling liquid through the filler port (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) up to the middle of the expansion tank 5.
- Refit the filler plug 4.
- Run the engine at idle for a few minutes.
- Check for any possible leaks.
- Refit access panel 1.
- Check the level and refill if necessary.

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F2 – WHEEL NUTS TIGHTENING TORQUE

CHECK

- Check the condition of the tires, to detect cuts, blisters, wear, etc.
- Check the tightening torque of the wheel nuts with a torque wrench.
  - Front wheels: 630 N.m ± 15%
  - Rear wheels: 630 N.m ± 15%

F3 – AIR CONDITIONING (OPTION)

CLEAN – CHECK

CLEANING CONDENSER AND EVAPORATOR COILS (*)

CLEANING CONDENSATE TRAY AND RELIEF VALVE (*)

COLLECTING COOLANT TO REPLACE FILTER-DRIER (*)

REFILLING WITH COOLANT AND CHECKING THE THERMOSTATIC CONTROL AND PRESSURE SWITCHES (*)

NOTE: When opening the evaporator unit, remember to replace the cover seal.

(*): (CONSULT YOUR DEALER).

⚠ IMPORTANT ⚠

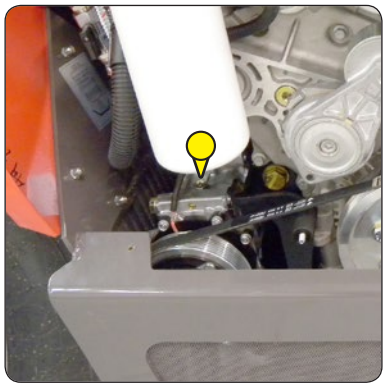
DO NOT ATTEMPT TO REPAIR ANY FAULTS BY YOURSELF. ALWAYS REFER TO YOUR DEALER WHEN REFILLING CIRCUITS, AS THEY HOLD THE CORRECT SPARE PARTS, AS WELL AS HAVING THE NECESSARY TECHNICAL KNOWLEDGE AND TOOLS.

In the event of inhalation, take the victim into fresh air, give oxygen or artificial respiration if necessary and call a doctor.

In the event of contact with the skin, wash immediately with copious amounts of water and remove any contaminated garments.

In the event of contact with the eyes, rinse with clear water for 15 minutes and call a doctor.

- Do not open the circuit under any circumstances as this would loss of coolant.
- The cooling circuit contains a gas which can be dangerous under certain conditions. This gas, coolant R-134a, is colorless, odorless and heavier than air.
- The compressor has a fluid level gage; never unscrew this gage because it would depressurize the system. The fluid level should only be checked when draining the system.

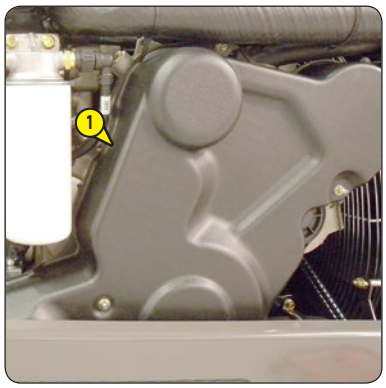


G - EVERY 3000 HOURS OF SERVICE

Carry out the operations described previously as well as the following operations.

G1 – ALTERNATOR BELT

CHANGE

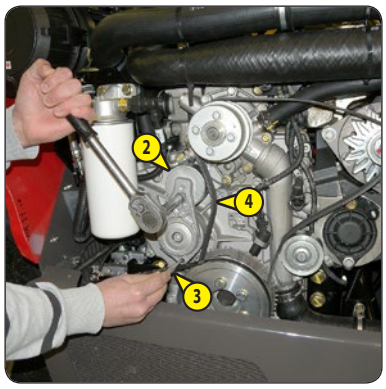


- Open the engine bonnet.
- Remove the protective casing 1.

REMOVING THE BELT

- Place a 1/2 in. socket wrench in the square of the automatic tensioner 2.
- Turn the socket wrench anti-clockwise, and block the tensioner with a tool 3 (pin punch) to slacken and remove the belt.
- Remove the alternator belt 4.

NOTE: Take advantage of belt removal to check the correct operation of the pulleys and bearings (noise, rubbing, play, etc.).



REFITTING THE BELT

- Refit a new alternator belt if required (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS). Ensure that it is properly seated in the grooves of each pulley.
- Continue to apply force to the socket wrench, remove the tool 3 (pin punch) and release the force on the socket wrench.
- Check that the belt is correctly positioned.
- Refit the protective casing 1.

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H - OCCASIONAL MAINTENANCE

H1 – WHEEL

CHANGE

For this operation, we advise you to use the MANITOU hydraulic jack, part no. 505507 and the MANITOU safety support, part no. 554772.

⚠ IMPORTANT ⚠

In the event of a wheel being changed on the public highway, secure the lift truck vicinity:

- Stop the lift truck, if possible on firm, level ground.
- Shut-down the lift truck (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: DRIVING INSTRUCTIONS UNLADEN AND LADEN).
- Switch on the hazard warning lights.
- Immobilize the lift truck in both directions on the axle opposite to the wheel to be changed.
- Loosen the nuts of the wheel to be changed.
- Place the jack under the flared axle tube, as near as possible to the wheel and adjust the jack.
- Raise the wheel until it is clear of the ground and place the safety support under the axle.
- Completely unscrew the wheel nuts and remove them.
- Free the wheel by reciprocating movements and roll it to the side.
- Slip the new wheel on the wheel hub.
- Hand-tighten the nuts, grease them if necessary.
- Remove the safety support and lower the lift truck with the jack.
- Tighten the wheel nuts with a torque wrench (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS OF SERVICE for tightening torque).

RESET

According to the use of the lift truck, the device may require to be periodically reset.

This procedure allows this operation to be easily done.

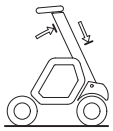
- Provide a fork carrier or a bucket and a load corresponding to at least half the lift truck's rated capacity.
- Preferably perform the reset when the lift truck is still cold (before it is used) or ensure that the temperature of the rear axle is not more than 50°C.
- Place the lift truck on flat, level ground with the wheels straight.

⚠ IMPORTANT ⚠

Carefully follow the boom positioning instructions. Two audible beeps and lighting of the warning indicator lamp will inform you if you have failed to follow these instructions correctly. If in doubt, contact your dealer.

When the reset is complete, check correct operation of the longitudinal stability limiter and warning device (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS OF SERVICE).

STEP 1 START

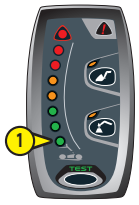


- Without attachments.
- Boom fully retracted and raised.

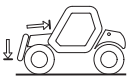
Simultaneously press and hold down the "BUCKET" MODE and TEST buttons.

- Two beeps will sound and all the LEDs will flash twice to confirm the start of the procedure.

STEP 2



- An audible beep.
- First green LED flashing.
- Test button flashing.

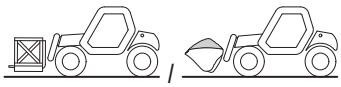


- Without attachments.
- Carriage tilted fully backwards.
- Boom fully retracted and in the down position a few centimeters off the ground.

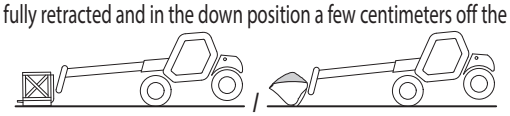
Short press the test button.

STEP 3

- First green LED continuously lit.
- Second green LED flashing.
- Test button flashing.



- With the fork carrier or the bucket and a load (keep boom retracted to allow all other hydraulic movements).
- Boom fully retracted and in the down position a few centimeters off the ground.



⚠ IMPORTANT ⚠

Keep the load as close to the ground as possible throughout this operation.

- Hold down the disable the "aggravating" hydraulic movement cut-off button (indicator lamp lit), and telescope the boom until the rear wheels leave the ground.

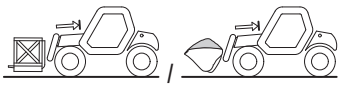
NOTE: This stage consists in unloading the rear axle. It can be done using a jack but without bearing on the rear axle.

Short press the test button.

Two beeps will sound and all the LEDs will flash twice to confirm the end of the procedure.

STEP 4 END

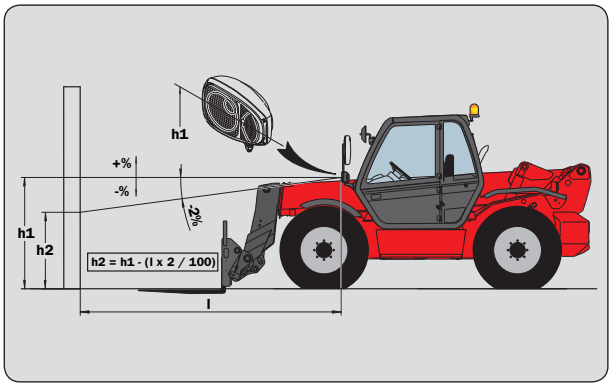
- All LEDs lit.
- A continuous audible beep.



- After completing the resetting procedure, the lift truck is in an overloaded condition. Retract the telescope to restore the situation.

H3 – FRONT HEADLIGHTS

ADJUST



RECOMMENDED SETTING

(as per standard ECE-76/756 76/761 ECE20)

Adjustment of -2 % of the dipped beam relative to the horizontal axis of the headlight.

ADJUSTMENT PROCEDURE

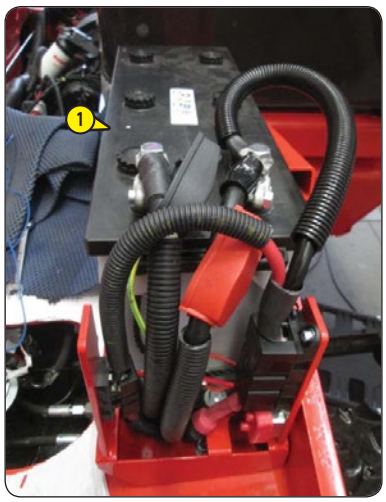
- Place the unladen lift truck in the transport position and perpendicular to a white wall on flat, level ground.
- Check the tyre pressures (see: 2 - DESCRIPTION: FRONT AND REAR TYRES).
- Place the forward/reverse selector in neutral.

CALCULATING THE HEIGHT OF THE DIPPED BEAM (H2)

- h1 = Height of the dipped beam in relation to the ground.
- h2 = Height of the adjusted beam.
- l = Distance between the dipped beam and the white wall.

H4 – BATTERY FAILURE

CHANGE



⚠ IMPORTANT ⚠

Operate the battery cut-off no less than 30 seconds after having switched off the ignition with the ignition key.

Handling and servicing a battery can be dangerous, take the following precautions:

- Wear protective goggles.

- Keep the battery horizontal.

- Never smoke or work near a naked flame.

- Work in a well-ventilated area.

- In the event of electrolyte being spilled onto the skin or splashed in the eyes, rinse thoroughly with cold water for 15 minutes and call a doctor.

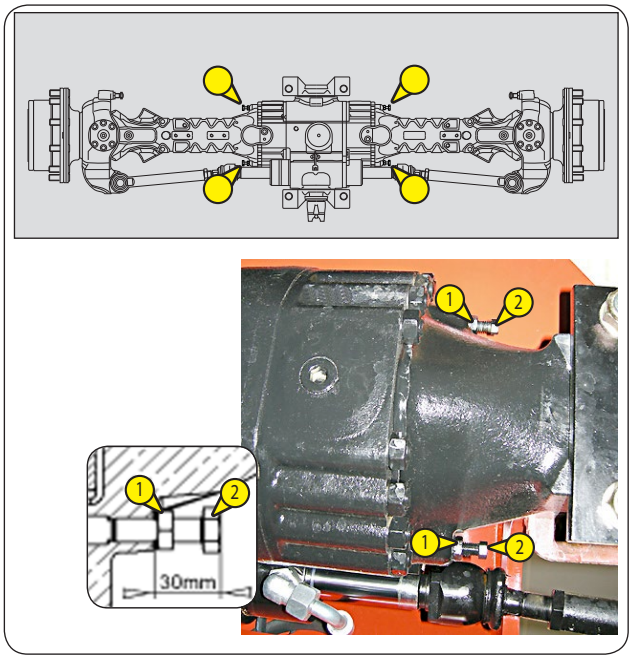
- Remove the protective casing and the toolbox 1.
- Bring a backup battery of the same type as that of the lift truck, together with battery cables.
- Connect the backup battery with the correct (-) (+) polarity.
- Start the lift truck and remove the cables as soon as the engine is running.

⚠ IMPORTANT ⚠

Raise the boom and place the boom safety wedge on the rod of the lifting cylinder (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: LIFT TRUCK MAINTENANCE INSTRUCTIONS).

H5 – PARKING BRAKE

UNBLOCKING



This procedure is to be performed in the event of parking brake malfunction.
If the lift truck is not on a horizontal ground, to fix so that it does not descend the slope.

MANUALLY UNBLOCKING THE PARKING BRAKE

- First perform this operation on the left-hand side (fig.G2/1) of the front axle, then on the right-hand side (fig.G2/1).
- Unscrew locknuts 1 (fig. G2/2) by approximately 8 mm.
- Alternately tighten the screws 2 (fig. G2/2) by a 1/4 turn at a time up to a maximum of 1 turn in order to free the brake discs.
- If the I.C. engine is not running there will be no steering or braking assistance. Operate the steering and pedal slowly avoiding sudden jerky movements.
- Once this operation is completed, adjust the parking brake.

ADJUSTING THE PARKING BRAKE

- First perform this operation on the left-hand side (fig.G2/1) of the front axle, then on the right-hand side (fig.G2/1).
- Completely unscrew screws 2 (fig. G3/2) by alternately unscrewing them a 1/4 turn at a time.
- Grease the threads with a silicone lubricant (MANITOU reference: 479292).
- Retighten the screws 2 (fig. G2/2) to obtain a dimension of 30 mm (fig. G3/2).
- Lock the locknuts 1 (fig. G2/2) while holding the screw 2 (fig. G2/2) in position.

H6 – LIFT TRUCK

TOWING

⚠ IMPORTANT ⚠

Do not tow the lift truck at more than 25 km/h.

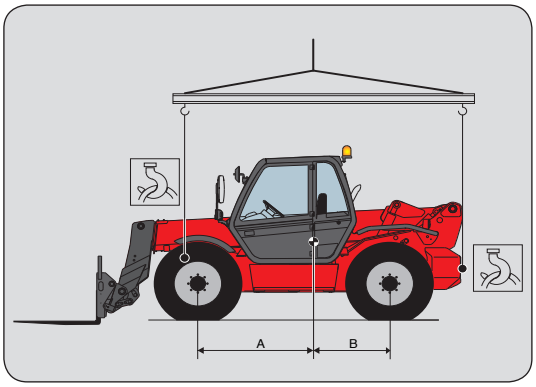
- Place the forward/reverse selector in neutral and the gear shift in neutral (according to model of lift truck).
- Release the hand brake.
- Switch on the hazard warning lights.
- Since there will be no steering or braking hydraulic assistance, operate the steering and pedal slowly avoiding sudden or jerky movements.

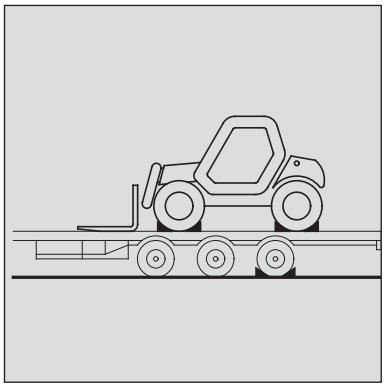
SLINGING

- Take into account the position of the lift truck center of gravity for lifting.

  A = 1560 mm B = 1210 mm

- Place the hooks in the fastening points 1 provided.





⚠ IMPORTANT ⚠

Ensure that the safety instructions associated with the platform are complied with before loading the lift truck and that the driver of the carrier vehicle is informed of the dimensions and the ground of the lift truck (see: 2 - DESCRIPTION: CHARACTERISTICS).

Ensure that the platform is of sufficient size and load capacity for transporting the lift truck.

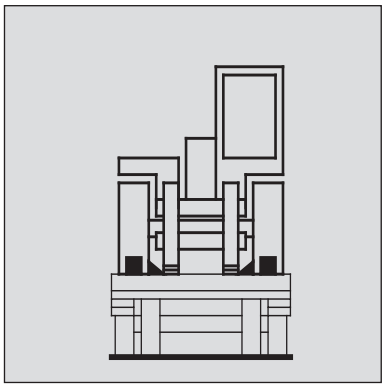
Check also the allowable ground contact pressure of the platform relative to the lift truck.

⚠ IMPORTANT ⚠

For lift trucks equipped with a turbo-charged engine, block off the exhaust outlet to avoid rotation of the turbo shaft without lubrication when transporting the vehicle.

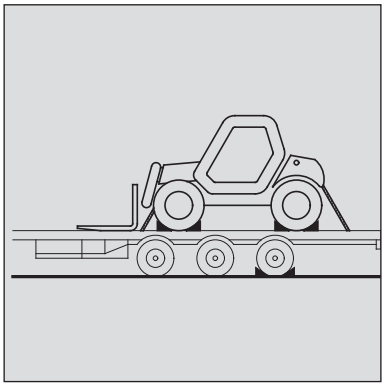
LOADING THE LIFT TRUCK

- Block the wheels of the platform.
- Attach the loading ramps to the platform in such a way as to give the shallowest possible ramp angle for the lift truck.
- Load the lift truck parallel to the platform.
- Shut down the lift truck (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: DRIVING INSTRUCTIONS UNLADEN AND LADEN).



STOWING THE LIFT TRUCK

- Fix the chocks to the platform at the front and the rear of each tire.
- Also fix the chocks to the platform on the inside of each tire.
- Secure the lift truck to the platform with sufficiently strong ropes to the anchoring points 1 provided.
- Tighten the ropes.



4 - OPTIONAL ATTACHMENTS FOR USE WITH THE RANGE

TABLE OF CONTENTS

INTRODUCTION

- Your lift truck must be used with interchangeable equipment. These items are called: ATTACHMENTS.

- A wide range of attachments, specially designed and perfectly suitable for your lift truck is available and guaranteed by MANITOU.

- The attachments are delivered with a load chart concerning your lift truck. The operator's manual and the load chart should be kept in the places provided in the lift truck. For standard attachments, their use is governed by the instructions contained on this notice.

- Some particular uses require the adaptation of the attachment which is not provided in the price-listed options. Optional solutions exist, consult your dealer.

⚠ IMPORTANT ⚠

All attachments with a suspended load (winch, crane jib, crane jib with winch, hook, etc.) MUST be used with a lift truck equipped with a hydraulic movement cut-out device. In this case, the movement cut-out must be switched on and the transverse attitude perfectly horizontal.

⚠ IMPORTANT ⚠

Only attachments approved by MANITOU are to be used on our lift trucks (see: 4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE: TECHNICAL SPECIFICATIONS OF ATTACHMENTS). The manufacturer's liability will be denied in case of modification or of attachment adaptation carried out without his knowing it.

⚠ IMPORTANT ⚠

Depending on their size, certain attachments may, when the jib is lowered and retracted, come into contact with the front tyres and cause damage to them, if reverse tilt is activated in the forward tilt direction. TO REMOVE THIS RISK, EXTEND THE TELESCOPE TO A SUFFICIENT EXTENT FOR THE PARTICULAR LIFT TRUCK AND ATTACHMENT SO THAT THIS CONTACT IS NOT POSSIBLE.

⚠ IMPORTANT ⚠

Maximum loads are defined by the capacity of a lift truck taking account of the attachment's mass and centre of gravity. In the event of the attachment having less capacity than the lift truck, never exceed this limit.

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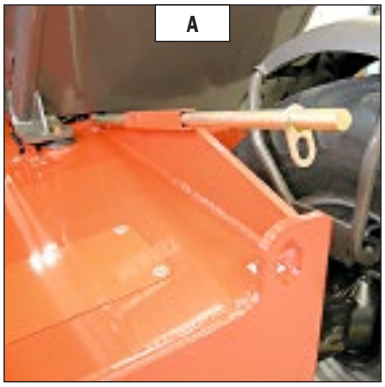
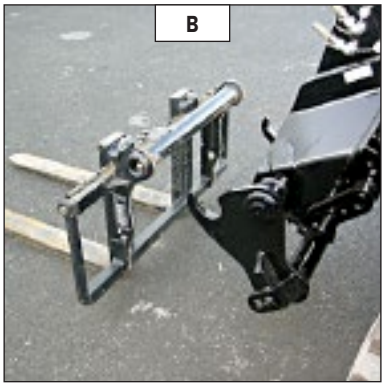
PICKING UP THE ATTACHMENTS

A - ATTACHMENT WITHOUT HYDRAULICS AND HAND LOCKING DEVICE



TAKING UP AN ATTACHMENT

- Ensure that the attachment is in a position facilitating the locking to the carriage. If it is not correctly oriented, take the necessary precautions in order to move it safely.
- Check that the locking pin and the clip are in position in the bracket (fig. A).
- Place the lift truck with the jib fully lowered in front of and parallel to the attachment, tilt the carriage forwards (fig. B).
- Bring the carriage under the locking tube of the attachment, slightly lift the jib, incline the carriage backwards in order to position the attachment (fig. C).
- Lift the attachment off the ground to facilitate locking.

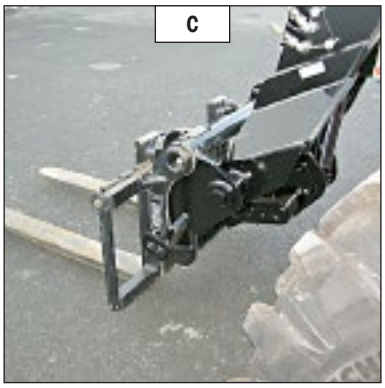


HAND LOCKING

- Take the locking pin and the clip on the bracket (fig. A) and lock the attachment (fig. D). Do not forget to refit the clip.

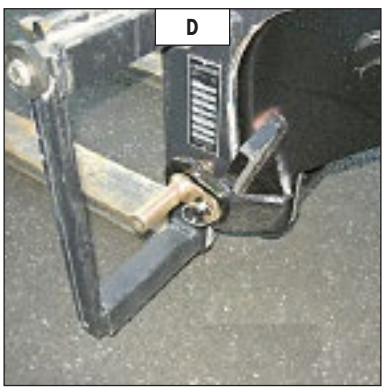
HAND RELEASING

- Proceed in the reverse order of paragraph HAND LOCKING while making sure you put back the locking pin and the clip in the bracket (fig. A).



LAYING AN ATTACHMENT

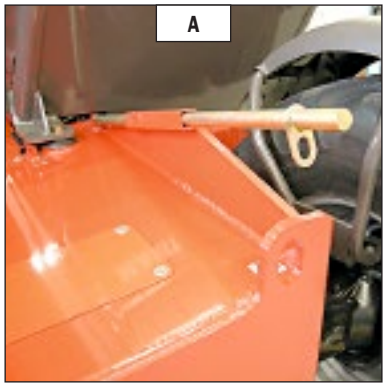
- Proceed in the reverse order of paragraph TAKING UP AN ATTACHMENT while making sure you place the attachment flat on the ground and in closed position.



B - HYDRAULIC ATTACHMENT AND HAND LOCKING DEVICE

TAKING UP AN ATTACHMENT

- Ensure that the attachment is in a position facilitating the locking to the carriage. If it is not correctly oriented, take the necessary precautions in order to move it safely.
- Check that the locking pin and the clip are in position in the bracket (fig. A).
- Place the lift truck with the jib fully lowered in front of and parallel to the attachment, tilt the carriage forwards (fig. B).
- Bring the carriage under the locking tube of the attachment, slightly lift the jib, incline the carriage backwards in order to position the attachment (fig. C).
- Lift the attachment off the ground to facilitate locking.



MANUAL LOCKING AND CONNECTION OF THE ATTACHMENT

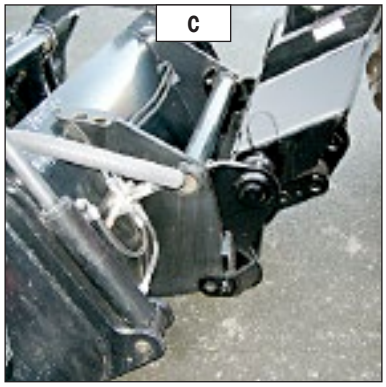
- Take the locking pin and the clip on the bracket (fig. A) and lock the attachment (fig. D). Do not forget to refit the clip.
- Stop the I.C. engine and keep the ignition on the lift truck.
- Remove the pressure of the hydraulic circuit by operating switch 1 (fig. E) on the distributor lever backwards and forwards 4 or 5 times.
- Connect the rapid connectors according to the logic of the attachment's hydraulic movements.

⚠ IMPORTANT ⚠

Make sure that the rapid connectors are clean and protect the holes which are not used, with the caps provided.

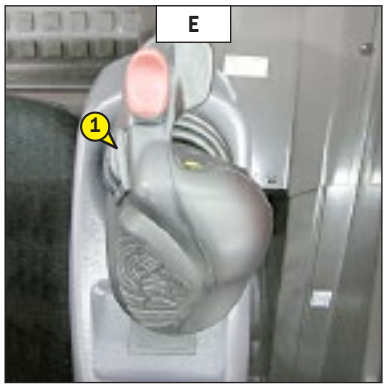
HAND RELEASING AND DISCONNECTING THE ATTACHMENT

- Proceed in the opposite order to that described in MANUAL LOCKING AND CONNECTION OF THE ATTACHMENT while making sure you put the locking pin back into the bracket (fig. A).



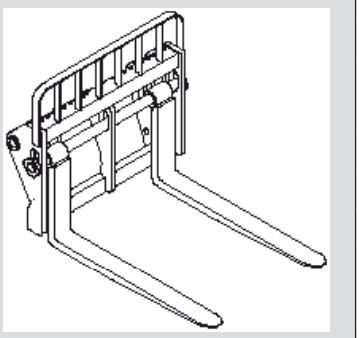
LAYING AN ATTACHMENT

- Proceed in the reverse order of paragraph TAKING UP AN ATTACHMENT while making sure you place the attachment flat on the ground and in closed position.

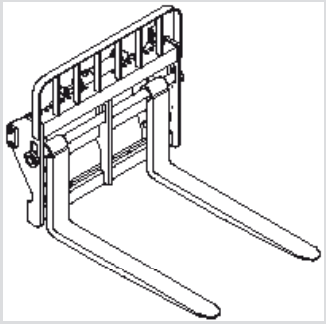


TECHNICAL SPECIFICATIONS OF ATTACHMENTS

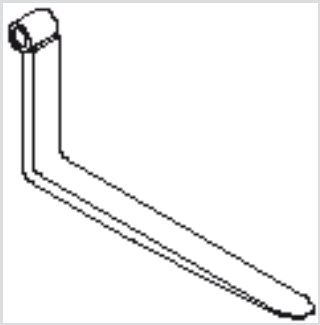
FLOATING FORK CARRIAGE			
	TFF 45 MT-1040	TFF 45 MT-1300	
PART NUMBER	**653344**	**653345**	
Rated capacity	4500 kg	4500 kg	
Width	1040 mm	1300 mm	
Weight	370 kg	400 kg	



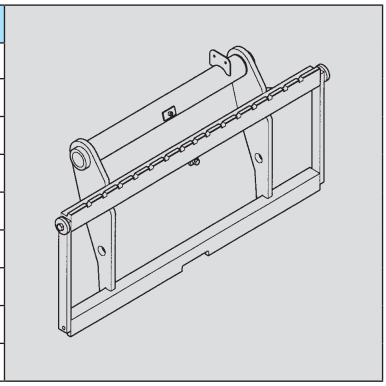
FLOATING FORK SIDE-SHIFT CARRIAGE			
	TFF 45 MT-1040 DL	TFF 45 MT-1300 DL	
PART NUMBER	**751545**	**751546**	
Rated capacity	4500 kg	4500 kg	
Side-shift	2x100 mm	2x100 mm	
Width	1040 mm	1300 mm	
Weight	410 kg	450 kg	



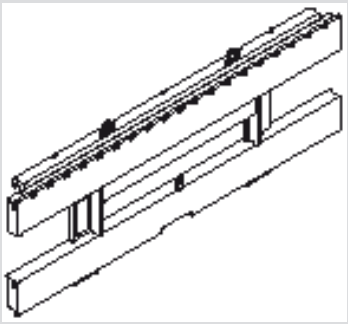
FLOATING FORK			
PART NUMBER	**211922**		
Section	125x50x1200 mm		
Weight	71 kg		



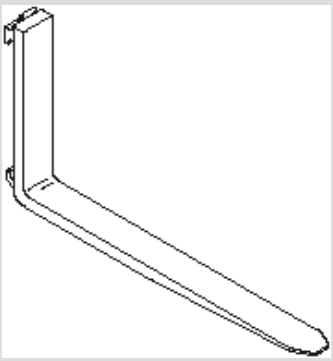
STANDARDISED TILTING FORK CARRIAGE			
	PFB 45 N MT-1260 S2	PFB 45 N MT-1670 S2	PFB 45 N MT-2000 S2
PART NUMBER	**654407**	**653747**	**653748**
Rated capacity	4500 kg	4500 kg	4500 kg
Width	1260 mm	1670 mm	2000 mm
Weight	200 kg	255 kg	300 kg



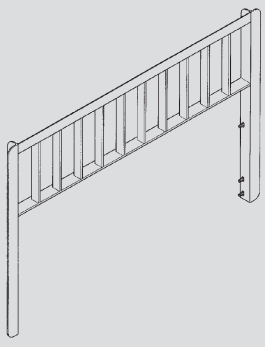
STANDARDISED SIDE-SHIFT CARRIAGE			
	TDLA 40 N MT-1670	TDLA 40 N MT-2000	
PART NUMBER	**751542**	**751369**	
Rated capacity	4300 kg	4300 kg	
Side-shift	2x100 mm	2x100 mm	
Width	1670 mm	2000 mm	
Weight	265 kg	305 kg	



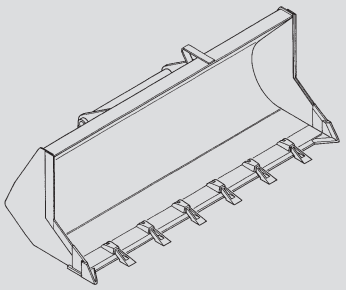
STANDARDISED FORK			
PART NUMBER	**415652**		
Section	125x50x1200 mm		
Weight	78 kg		



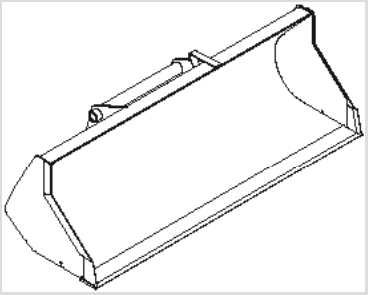
LOAD BACK REST			
PART NUMBER	**727035**	**572788**	**572790**
Width	1260 mm	1670 mm	2000 mm
Weight	46 kg	56 kg	63 kg



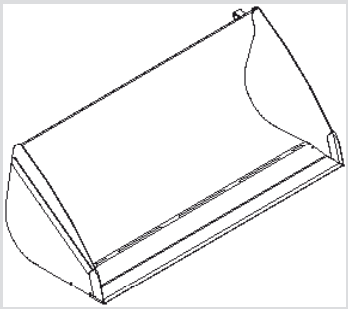
BUILDING BUCKET			
	CBC 700 L1950 S2	CBC 800 L2250 S3	CBC 900 L2450 S3
PART NUMBER	**654472**	**654471**	**654470**
Rated capacity	697 l	814 l	893 l
Width	1950 mm	2250 mm	2450 mm
Weight	330 kg	385 kg	410 kg



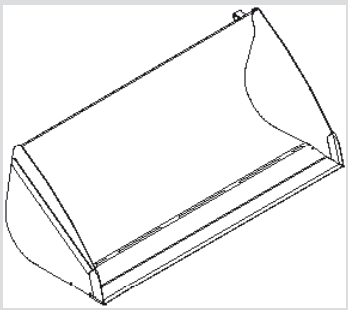
LOADING BUCKET			
	CBR 780 L1950 S2	CBR 900 L2250 S2	CBR 1000 L2450 S2
PART NUMBER	**570613**	**653749**	**654716**
Rated capacity	778 l	904 l	990 l
Width	1950 mm	2250 mm	2450 mm
Weight	340 kg	390 kg	410 kg



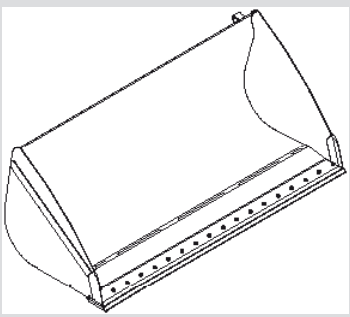
GRAIN BUCKET			
	CBA 1500 L2450 S3	CBA 2000 L2450 S3	
PART NUMBER	**570547**	**570551**	
Rated capacity	1502 l	1998 l	
Width	2450 mm	2450 mm	
Weight	514 kg	607 kg	



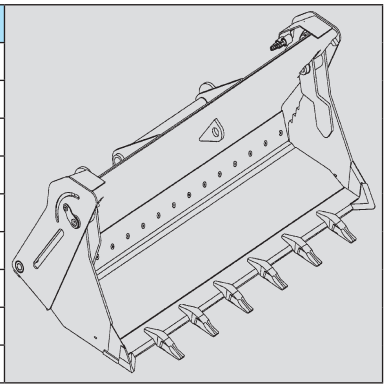
GRAIN BUCKET			
	CBA 2500 L2450 S3	CBA 3000 L2500 S3	
PART NUMBER	**570553**	**570555**	
Rated capacity	2508 l	3003 l	
Width	2450 mm	2500 mm	
Weight	701 kg	774 kg	



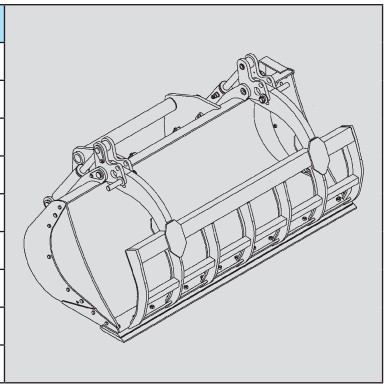
GRAIN BUCKET (REVERSING AND DISMOUNTABLE CUTTING EDGE)			
	CBA 1500 L2450 LDR	CBA 2000 L2450 LDR	CBA 2500 L2450 LDR
PART NUMBER	**570548**	**570552**	**570554**
Rated capacity	1502 l	1998 l	2508 l
Width	2450 mm	2450 mm	2450 mm
Weight	585 kg	678 kg	772 kg



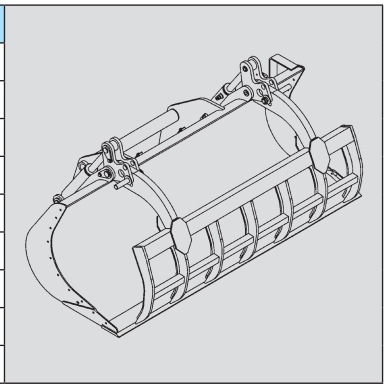
BUCKET 4X1			
	CB4x1-700 L1950	CB4x1-850 L2300	CB4x1-900 L2450
PART NUMBER	**751402**	**751401**	**751465**
Rated capacity	700 l	850 l	900 l
Width	1950 mm	2300 mm	2450 mm
Weight	640 kg	735 kg	765 kg



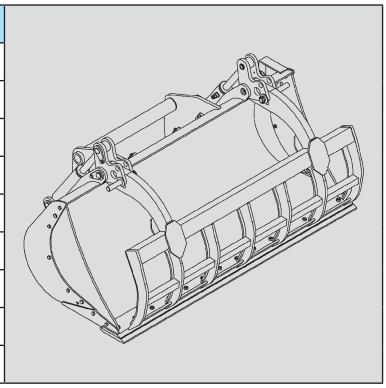
MULTIPURPOSE BUCKET (REVERSING AND DISMOUNTABLE CUTTING EDGE)			
	CBM 2450 LDR S5		
PART NUMBER	**752195**		
Rated capacity	1,03 m3		
Width	2450 mm		
Grab	11		
Weight	790 kg		



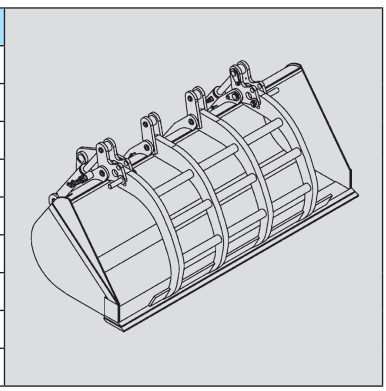
GRAB BUCKET			
	CBG 1950 S4	CBG 2300 S4	CBG 2450 S4
PART NUMBER	**751407**	**751414**	**751418**
Rated capacity	1 m3	1,2 m3	1,26 m3
Width	1950 mm	2300 mm	2450 mm
Grab	7	8	8
Weight	555 kg	615 kg	635 kg



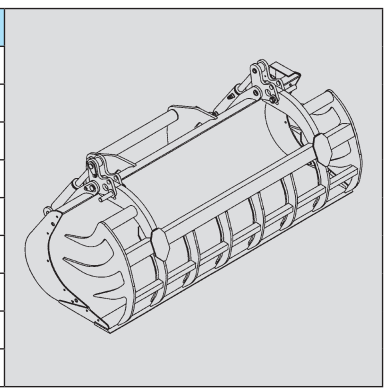
GRAB BUCKET (NON-HAZARDOUS INDUSTRIAL WASTE)			
	CBG 1950 DIB S4	CBG 2300 DIB S4	CBG 2450 DIB S4
PART NUMBER	**653016**	**653018**	**653020**
Rated capacity	1 m3	1,2 m3	1,26 m3
Width	1950 mm	2300 mm	2450 mm
Grab	7	8	8
Weight	678 kg	740 kg	767 kg



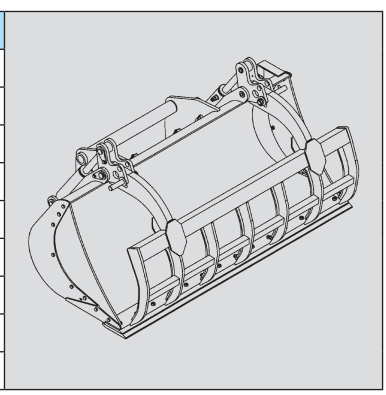
GRAB BUCKET (NON-HAZARDOUS INDUSTRIAL WASTE)			
	CBG 2450 DIB 1,4		
PART NUMBER	**654817**		
Rated capacity	1,4 m3		
Width	2450 mm		
Grab	4		
Weight	1100 kg		



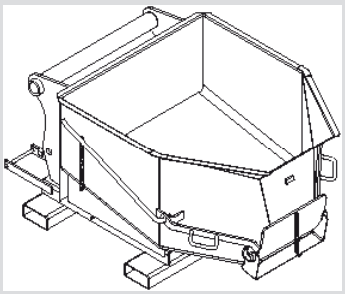
GRAB BUCKET (GRAB CLOSED)			
	CBG 2300 GF S4		
PART NUMBER	**653008**		
Rated capacity	1,2 m3		
Width	2300 mm		
Grab	8		
Weight	637 kg		



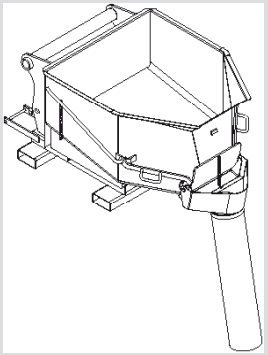
GRAB BUCKET (CLOSED JAWS AND REVERSIBLE REMOVABLE BLADE)			
	CBG 1950 JFD-LDR S4	CBG 2300 JFD-LDR S4	CBG 2450 JFD-LDR S4
PART NUMBER	**653003**	**653006**	**653009**
Rated capacity	1 m3	1,2 m3	1,26 m3
Width	1950 mm	2300 mm	2450 mm
Grab	7	8	8
Weight	655 kg	715 kg	742 kg



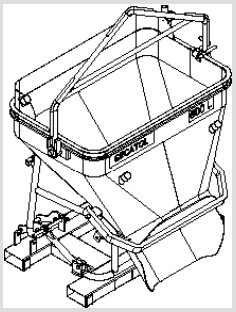
CONCRETE BUCKET (ADAPTABLE ON FORKS)			
	BB 500 S4	**BBH 500 S4**	
PART NUMBER	**654409**	**751462**	
Rated capacity	500 l/1300 kg	500 l/1300 kg	
Width	1100 mm	1100 mm	
Weight	205 kg	220 kg	



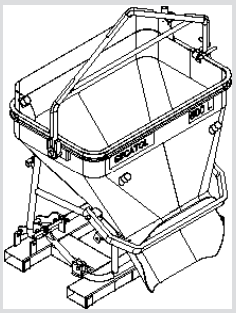
CONCRETE BUCKET (ADAPTABLE ON FORKS)			
	BBG 500 S4	**BBHG 500 S4**	
PART NUMBER	**654411**	**751464**	
Rated capacity	500 l/1300 kg	500 l/1300 kg	
Width	1100 mm	1100 mm	
Weight	220 kg	235 kg	



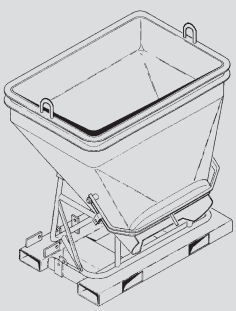
SPOUT BUCKET (ADAPTABLE ON FORKS)			
	GL 300 S2	**GL 400 S2**	
PART NUMBER	**174371**	**174372**	
Rated capacity	300 l/725 kg	400 l/969 kg	
Weight	150 kg	166 kg	
HYDRAULIC KIT TO OPEN THE SPOUT			
PART NUMBER	**653750**		



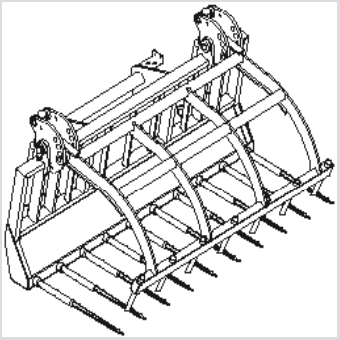
SPOUT BUCKET (ADAPTABLE ON FORKS)			
	GL 600 S2	**GL 800 S2**	
PART NUMBER	**174373**	**174374**	
Rated capacity	600 l/1440 kg	800 l/1920 kg	
Weight	290 kg	325 kg	
HYDRAULIC KIT TO OPEN THE SPOUT			
PART NUMBER	**653750**		



SPOUT BUCKET (ADAPTABLE ON FORKS)			
	GL 1000 S2	**GL 1500 S2**	
PART NUMBER	**174375**	**174376**	
Rated capacity	1000 l/2440 kg	1500 l/3591 kg	
Weight	360 kg	409 kg	
HYDRAULIC KIT TO OPEN THE SPOUT			
PART NUMBER	**653750**		

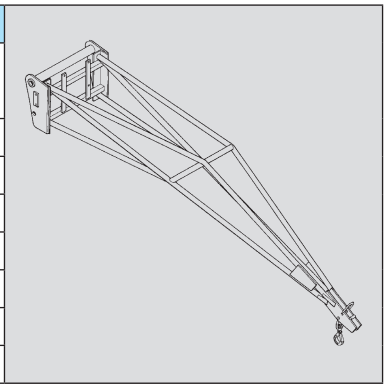


MANURE FORK WITH GRAB			
	FFGR 30 MT 2100 S5	**FFGR 30 MT 2400 S5**	**FFGR 30 MT 2100 DR**
PART NUMBER	**556843**	**570594**	**570728**
Rated capacity	1700 Kg	1700 Kg	1700 Kg
Width	2100 mm	2400 mm	2100 mm
Finger	10	12	10 (round finger)
Grab	7	8	7
Weight	567 kg	606 kg	567 kg



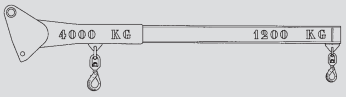
CRANE JIB

	P 600 MT S3		
PART NUMBER	**653228**		
Rated capacity	600 kg		
Weight	170 kg		



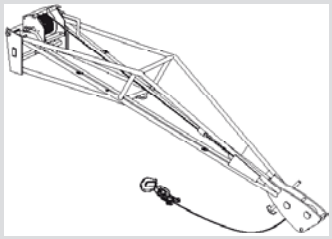
CRANE JIB

	P 4000 MT S2		
PART NUMBER	**653226**		
Rated capacity	4000 kg/1200 kg		
Weight	210 kg		



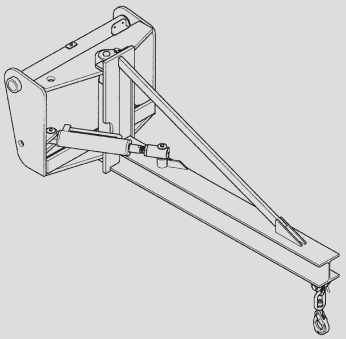
CRANE JIB WITH WINCH

	PT 600 MT S6		
PART NUMBER	**708538**		
Rated capacity	600 kg		
Weight	288 kg		



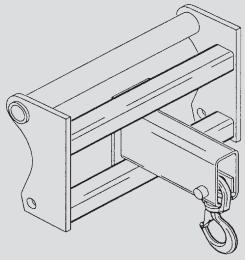
15°/15° MULTI-DIRECTIONAL CRANE JIB

	P0 600 L2500 S2	P0 1000 L1500 S2	P0 2000 L1000 S2
PART NUMBER	**751547**	**751548**	**751549**
Rated capacity	600 kg	1000 kg	2000 kg
Weight	320 kg	275 kg	255 kg



CRANE JIB

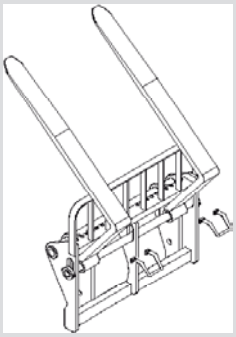
	PC 50		
PART NUMBER	**708544**		
Rated capacity	5000 kg		
Weight	120 kg		



ATTACHMENT SHIELDS

FORK PROTECTOR			
PART NUMBER	**227801**		

FORK BLOCK FOR FLOATING FORK CARRIAGE			
PART NUMBER	**261210**		



BUCKET PROTECTOR			
NOTE: Always ensure that the width of the protector you choose is less than or equal to the width of the bucket.			
PART NUMBER	**206734**	**206732**	**206730**
Width	1375 mm	1500 mm	1650 mm
PART NUMBER	**235854**	**206728**	**206726**
Width	1850 mm	1950 mm	2000 mm
PART NUMBER	**223771**	**223773**	**206724**
Width	2050 mm	2100 mm	2150 mm
PART NUMBER	**206099**	**206722**	**223775**
Width	2250 mm	2450 mm	2500 mm

MANURE FORK PROTECTOR			
PART NUMBER	**230689**