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YOUR DEALER

647436 EN (03/02/2014)

TMM 20 S1-E3
TMM 25 S1-E3
TMM 20 4W S1-E3
TMM 25 4W S1-E3

OPERATOR'S MANUAL

(ORIGINAL INSTRUCTIONS)

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.

03/02/2014	**1st DATE OF ISSU**

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1 - OPERATING AND SAFETY INSTRUCTIONS

2 - DESCRIPTION

3 - MAINTENANCE

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1 - OPERATING AND SAFETY INSTRUCTIONS

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1 - OPERATING AND SAFETY INSTRUCTIONS

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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, is strictly forbidden.

-The foreseeable abnormal behavior resulting from ordinary negligence, but not from any intentional misuse of the machinery.

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

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

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

The person in charge of the equipment must take these criteria into account when assessing whether or not a person will make a suitable driver.

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 standard **EN 1726-1** for mast 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, etc.
- The operator must take into account the operating conditions to define the lift truck's signaling and lighting equipment. Contact your dealer.
- Take into account climatic and atmospheric conditions of the site of utilization.
  - 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 for 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...).

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.

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- The following are some tips for minimizing these vibration doses:
  - Select the most suitable lift truck and attachment for the intended use.
  - 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 own safety and that of others, you must not change the structure and settings of the various components used in your lift truck by yourself (hydraulic pressure, limiter calibration, engine speed, addition of extra equipment, addition of counterweights, unapproved attachments, alarm systems, etc.). In this event, the manufacturer cannot be held liable.

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-approved lift trucks 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 license plate.

E - LIFT TRUCK CAB PROTECTION

- All lift trucks comply with the requirements of ISO 3449 (Level II) regarding the protection of the cab against falling objects (FOPS).

⚠ IMPORTANT ⚠

Structural damage or overturning, a modification, changes or a poorly executed repair can reduce the protective efficiency of the cab, invalidating its compliance.

Do not weld or drill the cab structure.
Consult your dealer to determine the limits of this structure without invalidating its compliance.

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.

Operator's manuals and any plates or stickers which are no longer legible or are damaged, must be replaced.

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 TO THE OPERATOR

INTRODUCTION

⚠ IMPORTANT ⚠

The risk of accident while using, servicing or repairing your lift truck can be reduced if you follow the safety instructions and safety measures detailed in these instructions.

Failure to respect the safety and operating instructions, or instructions for repairing or servicing your lift truck, may lead to serious, even fatal accident.

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.

Only the operations and maneuvers described in this 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.

As operator, you must anticipate at all times the potential risks for yourself, for others and for the lift truck.

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 authorize 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 the tires are adapted to the nature of the ground (see ground contact area of the tires in chapter: 2 - DESCRIPTION: FRONT AND REAR TIRES). Optional solutions exist, consult your dealer.
  - SAND tires.
  - FARM tires.
  - Snow chains.

⚠ IMPORTANT ⚠

Do not use the lift truck if the tires 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 tires is prohibited and is not guaranteed by the manufacturer, excepting prior authorization.

D - MODIFICATION OF THE LIFT TRUCK

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

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).

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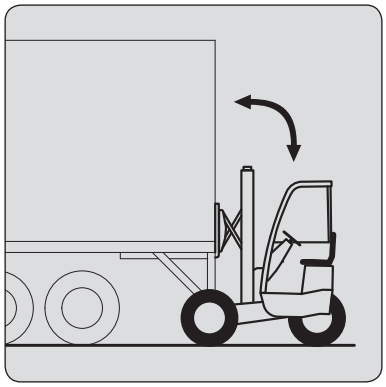
F - REAR OF VEHICLE ATTACHMENT SYSTEM

⚠ IMPORTANT ⚠

The use of any lift truck attachment system at the rear of the transport vehicle other than those recommended by MANITOU must be approved by MANITOU.

The use of any system for attaching the lift truck to the rear of the transport vehicle requires a special procedure.

- Optional solutions exist, please consult your dealer.
- The operator must follow the attachment procedures (see: 2 - DESCRIPTION: PROCEDURE FOR ATTACHING THE LIFT TRUCK ON THE REAR OF A LORRY OR TRAILER).



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

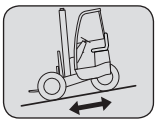
⚠ IMPORTANT ⚠

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

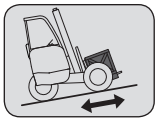
- Whatever his experience, the operator is advised to familiarize himself with the position and operation of all the controls and instruments before operating the lift truck.
- Wear clothes suited for driving the lift truck, avoid loose clothes.
- Make sure you have the appropriate protective equipment for the task to be performed.
- 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.
- 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 trucks on a transverse slope, before lifting the mast, follow the instructions given in the paragraph: INSTRUCTIONS FOR HANDLING A LOAD: C - 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 before lifting the load.
- 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.
- The load or the attachment must not be left just above a structure for long periods at a time because of the descending mast. In such a case, a constant watch must be kept and the height of the forks or the attachment readjusted if necessary.
- 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 jeopardizes 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 traveling with no load and with the mast 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 maneuver (while standing outside the truck's area of travel), making sure to keep this person clearly in view at all times,
  - In any event, avoid reversing over long distances.
- If visibility of your road is inadequate, ask someone to assist by directing the maneuver (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 maneuvered 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. (according to lift truck model)
- Ensure that the forward/reverse selector is set to neutral.
- Turn the ignition key to the position I to activate the electrical and pre-heating system.
- 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 ⚠

Operators' attention is drawn to the risks involved in using the lift truck, in particular:
- Risk of losing control.
- Risk of losing 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 300mm from the ground and the carriage sloping backwards.

NOTE: When moving sideways, the forks or the attachment must be over the wheel arms to avoid rubbing against the front wheels. (according to lift truck model)

- Only carry loads which are balanced and properly anchored to avoid any risk of a load falling off.
- Ensure that pallets, crates, etc, are in good condition and suitable for the load to be lifted.
- Familiarize yourself with the lift truck on the terrain where it will be used.
- Ensure that the service brakes are working properly.
- The laden 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 mast controls when the lift truck is moving.
- Never change the steering mode whilst driving. (according to lift truck model)
- Do not maneuver the lift truck with the mast 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 I.C. 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 voluminous 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 300mm from the ground and the carriage sloping backwards.

NOTE: When moving sideways, the forks or the attachment must be over the wheel arms to avoid rubbing against the front wheels. (according to lift truck model)

- Check that the stabilizers are fully raised.
- Select the steering mode appropriate for its use and/or working conditions (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) (as model of lift truck). (according to lift truck model)
- Release the hand brake.
- Shift the forward/reverse selector to the selected direction of travel and accelerate gradually until the lift truck moves off.

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.
- Apply the parking brake.
- 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 period of intensive operation, leave the engine idling for a few moments, to allow the coolant liquid and oil to cool the engine and the transmission. Take this precaution, in the event of frequent shutdown or hot stalling of the engine. The temperature of certain parts will rise considerably due to non-operation of the cooling system, with a risk of serious damage.
- 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

FRENCH ROAD TRAFFIC RULES

(or see current legislation in other countries)

- The driving of non-approved lift trucks 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 license plate.

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.
- Place the attachment 300 mm from the ground.

⚠ IMPORTANT ⚠

Never travel in neutral (forward/reverse selector in neutral) so as not to lose the lift truck's engine brake.
Failure to follow 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

- This lift truck is not intended for use with a trailer.

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).
- 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. There are optional solutions; contact your dealer.

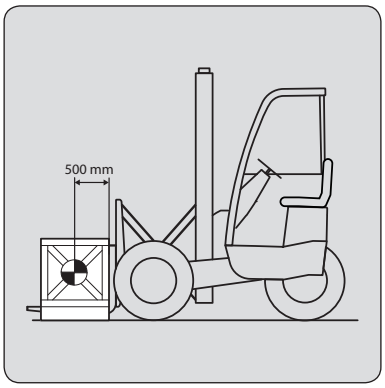
B - WEIGHT OF LOAD AND CENTER OF GRAVITY

⚠ IMPORTANT ⚠

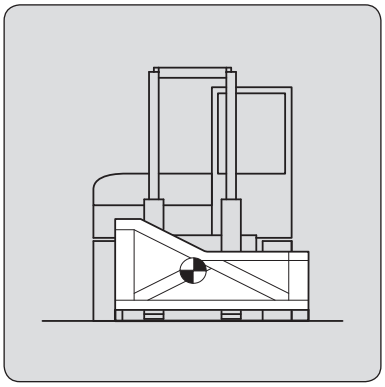
It is forbidden to move a load heavier than the effective capacity defined on the lift truck load chart.

For loads with a moving center of gravity (e.g. liquids), take account of the variations in the center of gravity in order to determine the load to be handled and be vigilant and take extra care to limit these variations as much as possible.

- Before taking up a load, you must know its weight and its center of gravity.
- The load chart for your lift truck is valid for a load whose center of gravity in the longitudinal direction is 500 or 600 mm from the heel of the forks (according to the model of lift truck). For loads whose center of gravity exceeds this distance, contact your dealer.



- For irregular loads, determine the transverse center of gravity before handling and position it within the longitudinal axis of the lift truck.



C - TRANSVERSE ATTITUDE OF THE LIFT TRUCK

The transverse attitude is the transverse angle of the frame relative to a horizontal plane.

Raising the mast reduces the lift truck's lateral stability. The transverse attitude must be set with the mast in down position as follows:

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

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D - PICKING UP A LOAD ON THE GROUND

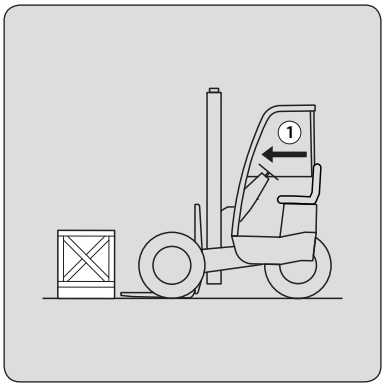
⚠ IMPORTANT ⚠

Before handling any loads, refer to the lift truck's load chart.

The extender must principally be used with the stabilizers.
(see: E - PRICKING UP AND SETTING DOWN A HIGH LEVEL LOAD).

Never lift a load with a single fork.

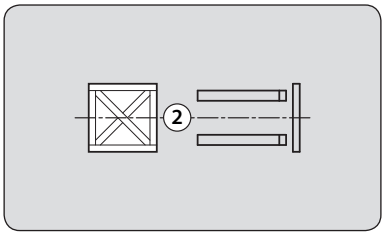
- Approach the lift truck perpendicular to the load (1), with the forks in a horizontal position.



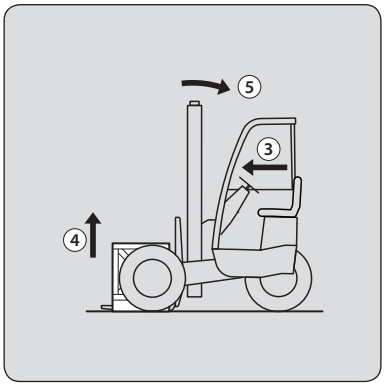
- Adjust the spread and centering of the forks (2) relative to the load to ensure its stability.

⚠ IMPORTANT ⚠

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



- Slowly move the lift truck (3) forward without extending the extender, and insert the forks all the way up to the front of the load. If necessary, raise the mast slightly while taking up the load.
- Carefully lift the load (4) then tilt the carriage (5) backwards to stabilize the load in the transport position.

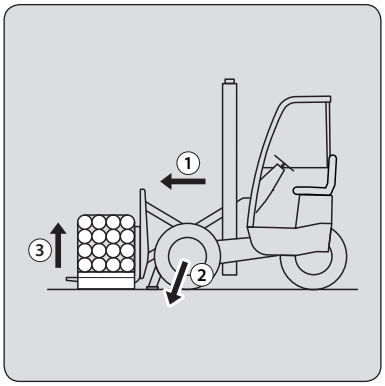


FOR A LARGE LOAD

- Extend the extender (1) and insert the forks all the way up to the front of the load. If necessary, raise the mast slightly while taking up the load.
- Apply the parking brake and place the forward/reverse selector in neutral.
- Lower the stabilizers to the ground (2).
- Carefully lift the load (3) and bring it just above the front wheels (300mm).

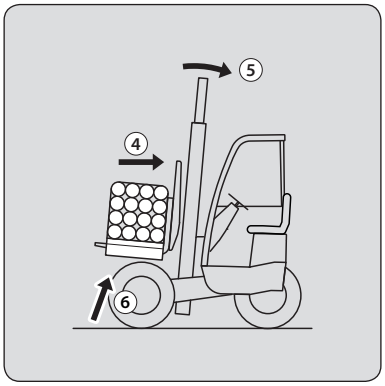
⚠ IMPORTANT ⚠

While the lift truck is moving, place the load high enough to avoid it rubbing against the front wheels.



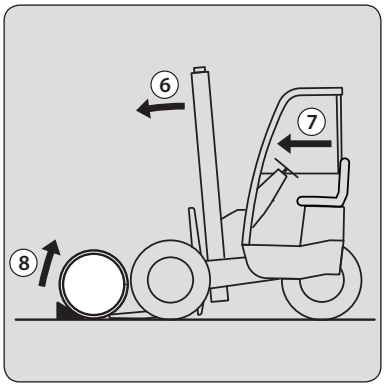
- Slowly retract the extender (4).
- Carefully tilt the carriage (5) backwards to stabilize the load.
- Retract the stabilizers (6).
- Release the parking brake then move the load as required.

NOTE: As the lift truck's stability is lower, maneuver with care.



FOR A NON-PALLETIZED LOAD

- Tilt the carriage (6) forwards and move the lift truck slowly forwards (7), to insert the forks under the load (block the load if necessary).
- Continue to move the lift truck forwards (7) tilting the carriage backwards (8) to position the load on the forks while ensuring the load's longitudinal and lateral stability.



FOR A SUSPENDED LOAD

⚠ IMPORTANT ⚠

Failure to follow the above instructions may lead the lift truck to loose stability and overturn.

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.
- Ensure that the wind speed does not exceed 36km/h (10 m/s).

HANDLING WITHOUT MOVING THE LIFT TRUCK

- Whether on stabilizers or tires:
  - The lateral attitude must not exceed 1 %.
  - The longitudinal attitude must not exceed 5 %.
  - The bubble of the level must remain at "0".
- Ensure that there is no one between the load and the lift truck.

TRAVELING WITH A SUSPENDED LOAD

- Before moving, inspect the terrain in order to avoid excessive slopes and cross-falls, bumps and potholes, or soft ground.
- 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 minimize swinging of the load.
- Carry the load a few centimeters off the ground (max. 300 mm), with the extender retracted.
- Do not exceed the offset indicated on the load chart.
- If the load begins to swing excessively, stop the lift truck and set the load down on the ground.
- While the lift truck is moving, a person on the ground (remaining a minimum of 3 m away from the load) must hold and prevent the load from swinging by means of a bar or a taut rope.
- Always ensure that you can clearly see this person.
- The lateral attitude must not exceed 5 %, the bubble in the level must be kept between the two "MAX" marks.
- The longitudinal attitude must be less than 15 %, with the load facing uphill, and 10 %, with the load facing downhill.

PICKING UP AND LAYING DOWN A HIGH-LEVEL LOAD

⚠ IMPORTANT ⚠

Before handling any loads, refer to the lift truck's load chart.

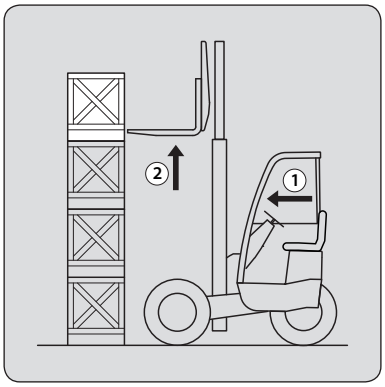
You must not, under any circumstances, raise the mast if you have not checked the transverse attitude of the lift truck (see: INSTRUCTIONS FOR HANDLING A LOAD: C - TRANSVERSE ATTITUDE OF THE LIFT TRUCK).

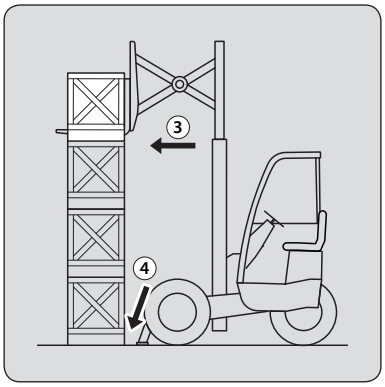
Never lift a load with a single fork.

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

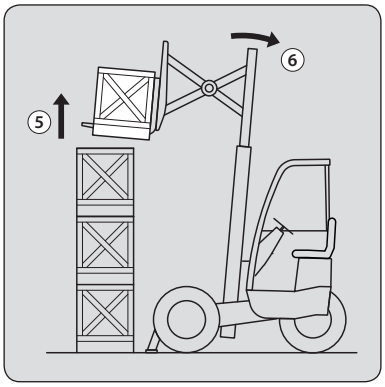
TAKING UP A HIGH-LEVEL LOAD

- Ensure that the forks will easily pass under the load.
- Keeping the mast vertical (1), advance the lift truck and raise the forks up to the level of the load (2).
- Extend the extender (3) and insert the forks all the way up to the front of the load.
- Apply the parking brake and place the forward/reverse selector in neutral.
- Lower the stabilizers to the ground (4).

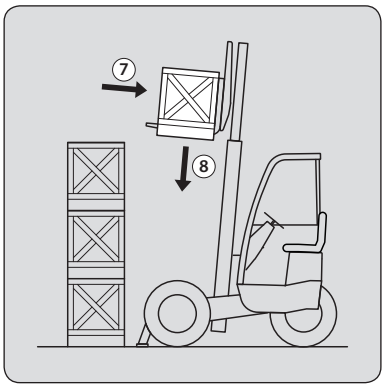




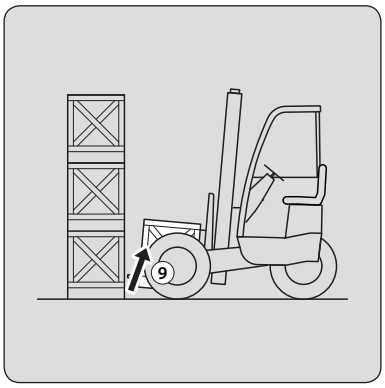
- Carefully lift the load (5) and tilt the carriage (6) backwards to stabilize it.



- Carefully retract the extender (7).
- Lower the load (8) and place it in the transport position.



- Retract the stabilizers (9).
- Release the parking brake then move the load as required.



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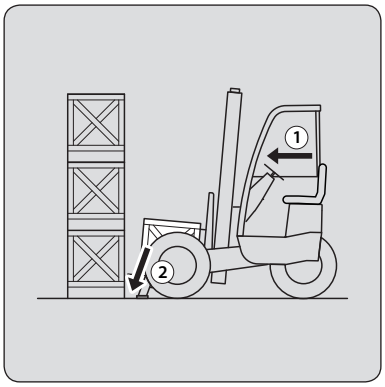
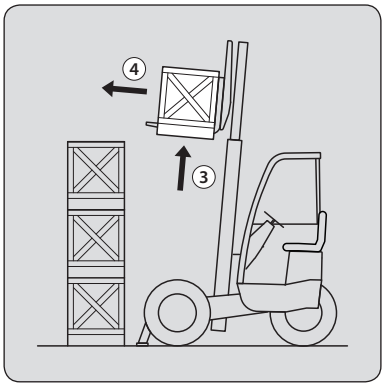
SETTING DOWN A HIGH-LEVEL LOAD

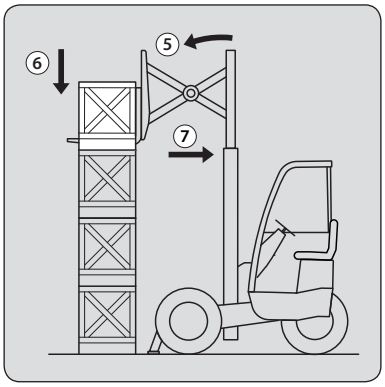
- Bring the load up to the front of the stack in the transport position (1).
- Apply the parking brake and place the forward/reverse selector in neutral.
- Lower the stabilizers to the ground (2).



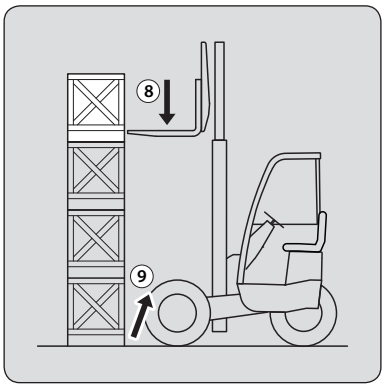
- Carefully raise the mast (3) until the load is higher than the top of the stack.
- Carefully extend the extender (4).



- Carefully place the load in a horizontal position by tilting the mast forwards (5) and set it down gently on the stack (6), while checking the correct positioning of the load.
- Carefully retract the extender (7) to free the forks.



- Lower the forks (8) and place them in the transport position.
- Retract the stabilizers (9).
- Release the parking brake then move the lift truck as required.



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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 jewelery 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.
- Ensure that process materials and of spare parts are disposed in all safely and in an ecological manner.
- Be careful of the risk of burning and splashing (exhaust, radiator, engine, etc.).

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 clean, recommended lubricants.
- Do not fill the fuel tank when the engine is running.
- Fill up the fuel tank only in areas provided 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 SYSTEM

- 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 when the circuit is under pressure.

⚠ IMPORTANT ⚠

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 pressurized units.
Removing these accumulators and their pipework is dangerous.

Such operations must only be performed by approved personnel (consult your dealer).

ELECTRICITY

- Do not short-circuit the starter relay to start the engine.
- Do not place metal items on the battery.
- Disconnect the battery before carrying out any work on the electrical circuit.

WELDING

- Disconnect the battery before any welding operations on the lift truck.
- If the lift truck is equipped with electronic control units, disconnect them before welding, or risk causing irreparable damage to the electronic components.
- 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 an intense current passing through the alternator.
- Never carry out welding or work which gives off heat on a tire assembly. The heat would increase the pressure which could cause the tire to explode.

WASHING THE LIFT TRUCK

- Clean the lift truck or at least the area concerned before any intervention.
- Close and lock all means of access to the lift truck (doors, windows, covers, etc.).
- Avoid washing hinges, electrical components and connections.
- Protect the components (alternator, starter, electrical connections, injection pumps, etc.) liable to be damaged by the ingress of water, steam or cleaning agents.
- Clean all traces of fuel, oil or grease from the lift truck.

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

PROTECTING THE ENGINE

- Fill the tank with fuel (see: 3 - MAINTENANCE: SERVICING SCHEDULE).
- Empty and replace the cooling liquid (see: 3 - MAINTENANCE: SERVICING SCHEDULE).
- Leave the engine idling for a few minutes, then switch off.
- Replace the engine oil and oil filter (see: 3 - MAINTENANCE: SERVICING SCHEDULE).
- Add the protective product to the engine oil.
- Run the I.C. 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 I.C. 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 tires are not in contact with the ground and release the parking brake.
- Protect cylinder rods which will not be retracted, from corrosion.
- Wrap the tires.

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

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: MAINTENANCE SCHEDULE).
- Put the handbrake on and remove the axle stands.
- Drain and replace the engine oil (see: 3 - MAINTENANCE: MAINTENANCE SCHEDULE).
- Replace the fuel filter (see: 3 - MAINTENANCE: MAINTENANCE SCHEDULE).
- Refit the drive belts and adjust the tension of each belt (see: 3 - MAINTENANCE: MAINTENANCE SCHEDULE).
- Turn the engine with the starter, to restore the engine oil pressure.
- 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 mast'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

- Tires 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 organizes 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

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2 - DESCRIPTION

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1) DÉCLARATION «CE» DE CONFORMITÉ (originale)

« EC» DECLARATION OF CONFORMITY (original)

2) La société, *The company* : **MANITOU BF**

3) Adresse, *Address* : **430, rue de l'Aubinière - BP 10249 - 44158 - ANCENIS CEDEX - FRANCE**

4) Dossier technique,*Technical file* : **MANITOU BF - 430, rue de l'Aubinière**
BP 10249 - 44158 - ANCENIS CEDEX - FRANCE

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

TMM 20 S1-E3
TMM 25 S1-E3
TMM 20 4W S1-E3
TMM 25 4W S1-E3

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

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

2006/42/CE

8) Pour les machines annexe IV , *For annex IV machines* :
9) Numéro d'attestation, *Certificate number* :
10) Organisme notifié, *Notified body* :

15) Normes harmonisées utilisées, *Harmonised standards used* :

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

17) Fait à, *Done at* : **Ancenis** 18) Date, *Date* : **22/01/2014**

19) Nom du signataire, *Name of signatory* : **Fabrice BESLIN**

20) Fonction, *Function* : **Président division IMH**

21) Signature, *Signature* :

647436EN (03/02/2014)

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, 6) Kinnitab, et see toode, 7) On vastavuses järgmiste direktiivide ja nende riigisisesesse õigusesse ülevõtmiseks vastuvõetud õigusaktidega, 8) IV lisas loetletud seadmete puhul, 9) Tunnistuse number, 10) Sertifitseerimisasutus, 15) kasutatud ühtlustatud standarditele, 16) Muud standardites või spetsifikatsioonides kasutatakse, 17) Väljaandmise koht, 18) Väljaandmise aeg, 19) Allkirjastaja nimi, 20) Amet, 21) Allkiri.

fi : 1) EY-vaatimustenmukaisuusvakuutus (alkuperäiset), 2) Yritys, 3) Osoite, 4) teknisen eritelmän, 5) Jäljessä kuvatun koneen valmistaja, 6) Vakuuttaa, että tämä kone, 7) Täyttää seuraavien direktiivien sekä niitä vastaavien kansallisten säännösten vaatimukset, 8) Liitteen IV koneiden osalta, 9) Todistuksen numero, 10) Ilmoitettu laitos, 15) yhdenmukaistettuja standardeja käytetään, 16) muita standardeja tai eritelmät, 17) Paikka, 18) Aika, 19) Allekirjoittajan nimi, 20) Toimi, 21) Allekirjoitus.

ga : 1) « EC »dearbhú comhréireachta (bunaidh), 2) An comhlacht, 3) Seoladh, 4) comhad teicniúil, 5) Déantóir 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 i ndlí náisiúnta, 8) Le haghaidh innill an aguisín IV, 9) Uimhir teastais, 10) Comhlacht a chuireadh i bhfios, 15) caighdeáin comhchuibhithe a úsáidtear, 16) caighdeáin eile nó sonraíochtaí teicniúla a úsáidtear, 17) Déanta ag, 18) Dáta, 19) Ainm an tsínitheora, 20) Feidhm, 21) Síniú.

hu : 1) CE megfelelőségi nyilatkozat (eredeti), 2) A vállalat, 3) Cím, 4) műszaki dokumentáció, 5) Az alábbi gép gyártója, 6) Kijelenti, hogy a gép, 7) Megfelel az alábbi irányelveknek valamint azok honosított előírásainak, 8) A IV. melléklet gépeihez, 9) Bizonylati szám, 10) Értesített szervezet, 15) felhasznált harmonizált szabványok, 16) egyéb felhasznált műszaki szabványok és előírások hivatkozásai, 17) Kelt (hely), 18) Dátum, 19) Aláíró neve, 20) Funkció, 21) Aláírás.

is : 1) (Samræmisvottorð ESB (upprunalega), 2) Fyrirtækið, 3) Aðsetur, 4) Tæknilegar skrá, 5) Smiður tækisins sem lýst er hér á eftir, 6) Staðfestir að tækið, 7) Samræmist eftirfarandi stöðlum og staðfærslu þeirra með hliðsjón af þjóðarrétti, 8) Fyrir tækin í aukakafla IV, 9) Staðfestingarnúmer, 10) Tilkynnt til, 15) samhæfða staðla sem notaðir, 16) önnur staðlar eða forskriftir notað, 17) Staður, 18) Dagsetning, 19) Nafn undirritaðs, 20) Staða, 21) Undirskrift.

it : 1) Dichiarazione CE di conformità (originale), 2) La società, 3) Indirizzo, 4) fascicolo tecnico, 5) Costruttore della macchina descritta di seguito, 6) Dichiara che questa macchina, 7) È conforme alle direttive seguenti e alle relative trasposizioni nel diritto nazionale, 8) Per le macchine Allegato IV, 9) Numero di Attestazione, 10) Organismo notificato, 15) norme armonizzate applicate, 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 technines 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 (oriġinali), 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) Declarație de conformitate CE (originală), 2) Societatea, 3) Adresa, 4) cărtii tehnice, 5) Constructor al mașinii descrise mai jos, 6) Declară că prezenta mașină, 7) Este conformă cu directivele următoare și cu transpunerea lor în dreptul național, 8) Pentru mașinile 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) Funcția, 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.

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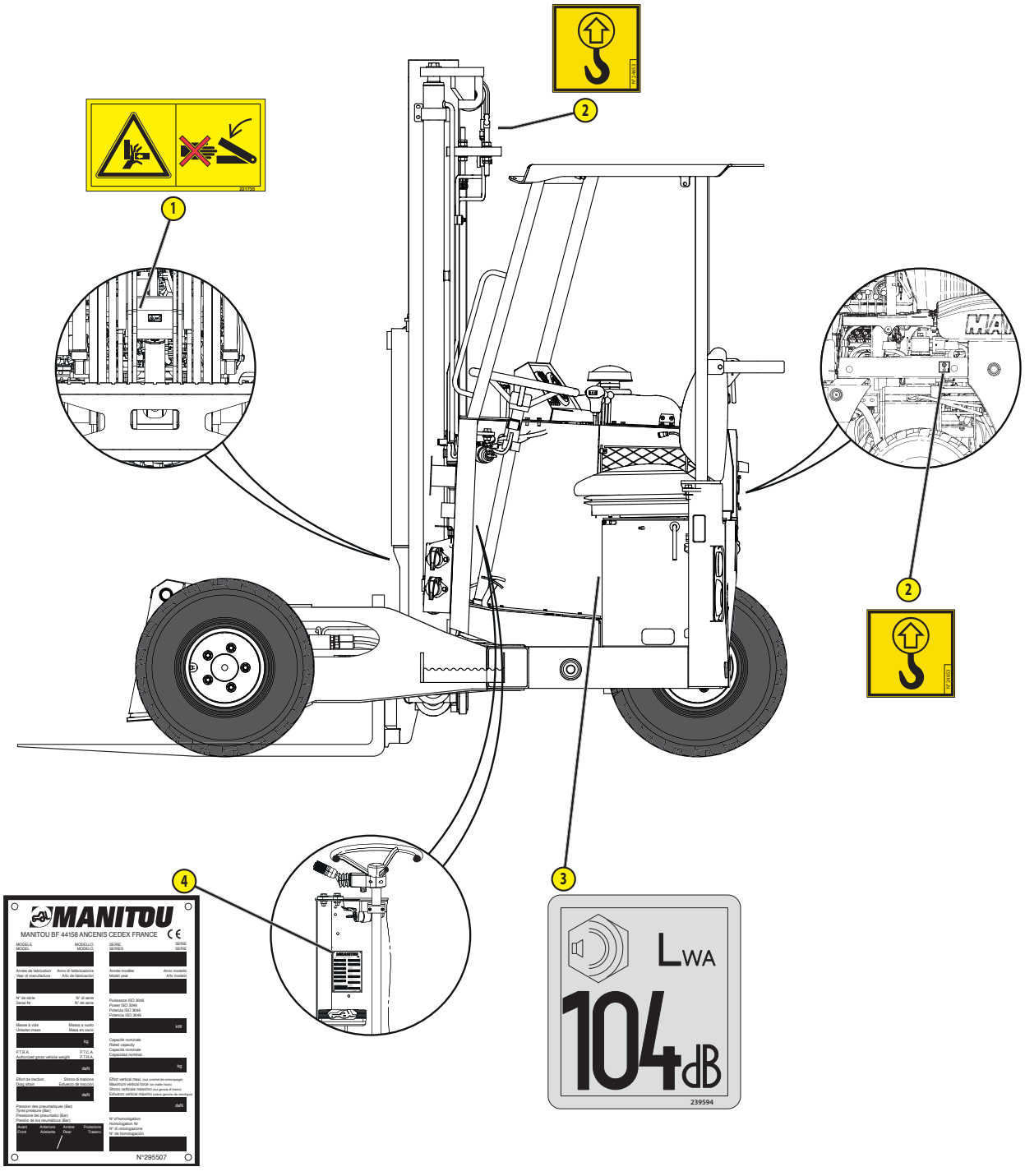
SAFETY PLATES AND STICKERS

⚠ IMPORTANT ⚠

Clean all of the stickers and safety plates to make them legible.
It is essential to replace stickers and safety plates which are illegible or damaged.
Check the presence of stickers and safety plates after replacing any spare parts.

EXTERNAL PLATES AND STICKERS

ITEM	PART NUMBER	DESCRIPTION
1	221735	- Crushing risk
2	24653	- Slinging point
3	239594	- Sound power level 104dB
4	Consult your dealer	- Manufacturer's plate



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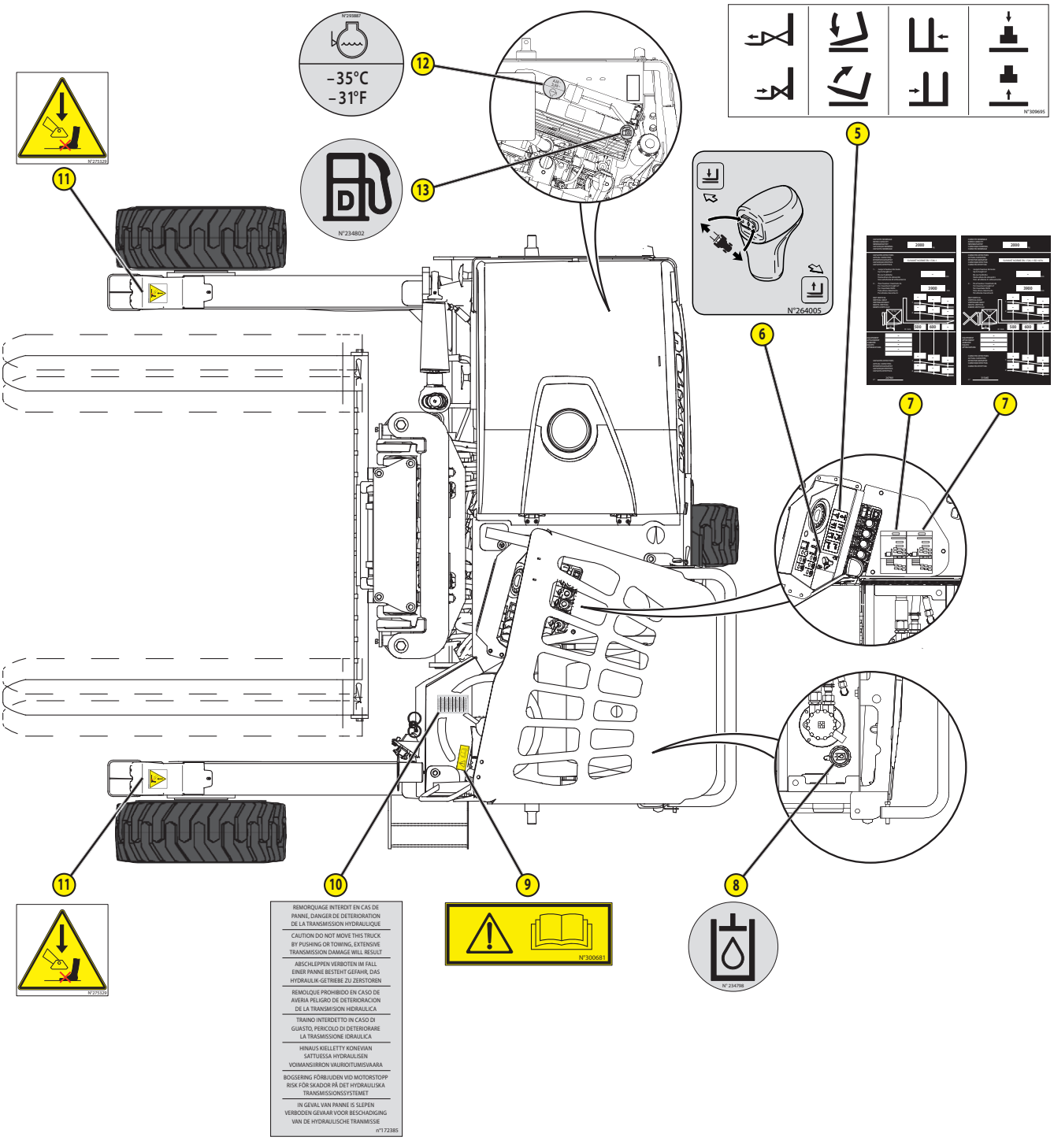
EXTERNAL PLATES AND STICKERS (continued)

ITEM	PART NUMBER	DESCRIPTION
5	309695	- Manipulator function
6	264005	- Manipulator function
7	Consult your dealer	- 2000kg load chart (according to model) *
7	Consult your dealer	- 2500kg load chart (according to model) *
8	234798	- Hydraulic oil
9	300681	- Safety instruction
10	172385	- Towing forbidden
11	275329	- Stabilizer crushing risk
12	293887	- Anti-freeze
13	234802	- Diesel fuel

* The load chart referred to in the notice is a standard or blank chart. Each lift truck which can be used with an attachment has a specific chart. To obtain this, consult your dealer.



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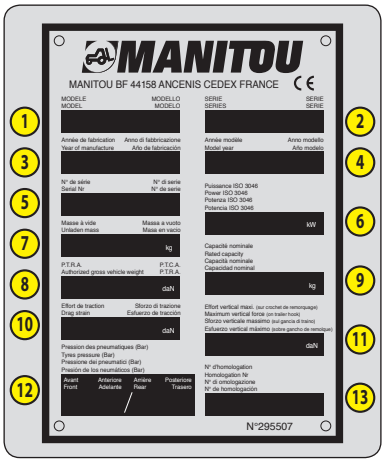
IDENTIFICATION OF THE LIFT TRUCK

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.

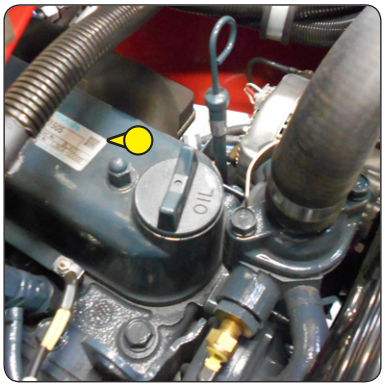
LIFT TRUCK MANUFACTURER'S PLATE



1 - MODEL
2 - SERIES
3 - Year of manufacture
4 - Model year
5 - Serial No.
6 - Power ISO 3046
7 - Empty ground
8 - Authorised gross vehicle weight
9 - Rated capacity
10 - Pulling force
11 - Maximum vertical force (on trailer hook)
12 - Tyre pressure (bar)
13 - Homologation No.

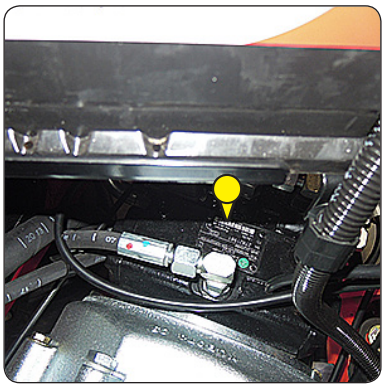
For any further technical information regarding your lift truck refer to chapter: 2 - DESCRIPTION: CHARACTERISTICS.

ENGINE



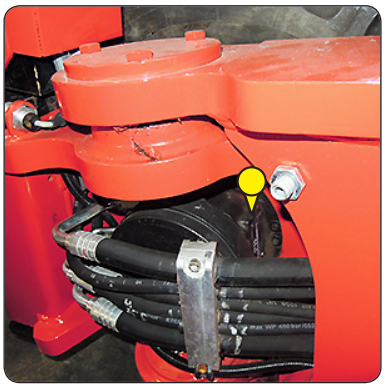
• I.C. engine No.

HYDROSTATIC PUMP



• MANITOU Part no.
• Type of codification
• Serial No.
• Manufacturer's Nr
• Year of manufacture

FRONT WHEEL REDUCING GEAR



• Type
• Code
• Serial No.

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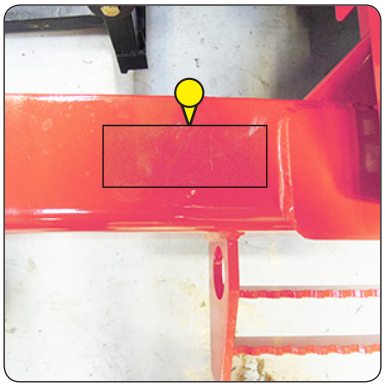
REAR WHEEL REDUCING GEAR

- Type
- Code
- Serial No.

FRAME

- Lift truck serial No.



MASTS WITH ROLLERS

- Mast identification No.

CONNECTION MANFACTURER'S PLATE

- Model
- Serial no.
- Year of manufacture

CHARACTERISTICS TMM 20 S1-E3 / TMM 25 S1-E3

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		TMM 20	TMM 25
	1.3	Propulsion: battery, diesel, petrol, LPG, mains		Diesel	
	1.4	Type of operation: manual, pedestrian, standing, seated		Seated	
	1.5	Rated capacity/load on forks (basic capacity)	Q (t)	2	2.5
	1.6	Center of gravity of load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the center of the front axle	x (mm)	500	500
	1.9	Wheelbase	y (mm)	1598	1598
WEIGHT	2.1	Kerb weight of truck	kg	2310	2310
	2.2	Front axle load laden	kg		3540
	2.2.1	Rear axle load laden	kg		1270
	2.3	Front axle load unladen	kg	1010	1010
	2.3.1	Rear axle load unladen	kg	1300	1300
RUNNING CARRIAGE	3.1	Tire equipment: bandage (V), super-elastic (SE), pneumatic (L)		L	L
	3.2	Size of front wheels	" or mm	23x9-10 IC30	27x10-12 IC30
	3.3	Size of rear wheels	" or mm	23x9-10 IC30	27x10-12 IC30
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		1x	1x
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	2103	2151
DIMENSIONS	4.1	Tilt of mast forward	α(°)	8	8
	4.1.1	Tilt of mast backward	β (°)	7	7
	4.2	Height of mast lowered	h1 (mm)	2352	2392
	4.4	Lift height	h3 (mm)	2960	3000
	4.5	Height mast extended	h4 (mm)	4455	4495
	4.7	Height of driver protection (cab)	h6 (mm)	2000	2040
	4.8	Height of seat	h7 (mm)	960	1000
	4.19	Total length	l1 (mm)	2598	2638
	4.20	Length of forks at heel	l2 (mm)	1398	1438
	4.28	Distance with extender extended	l4 (mm)	1005	1005
	4.21	Overall width	b1 (mm)	2323	2406
	4.22	Section of fork arms	e / s (mm)	125/40	125/40
	4.22.2	Length of fork arms	l (mm)	1200	1200
	4.23	Fork carriage to DIN 15173 A/B		FEM 2A	FEM 2A
	4.24	Width of fork carriage	b3 (mm)	1270	1270
	4.25	Distance between forks	b5 (mm)	1250	1250
	4.26	Distance between support arms	b4 (mm)	1600	1600
	4.31	Ground clearance of mast	m1 (mm)	205	245
	4.32	Ground clearance at center of wheel-base	m2 (mm)	230	270
	4.33	Aisle width for 1000x1200 pallet widthways	Ast (mm)	3363	3363
	4.34	Aisle width for 800x1200 pallet lengthways	Ast (mm)	3363	3363
	4.35	Turning radius	Wa (mm)	2463	2463
	4.36	Inner turning radius	b13 (mm)	672	672

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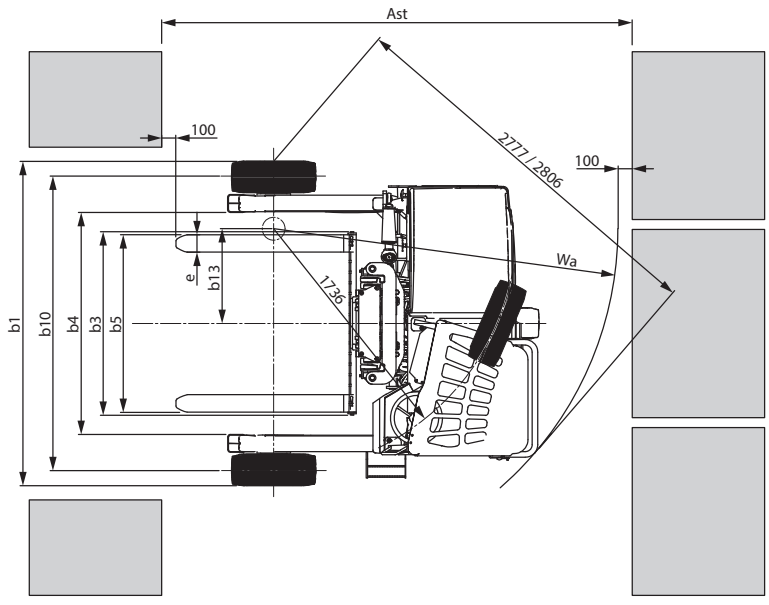
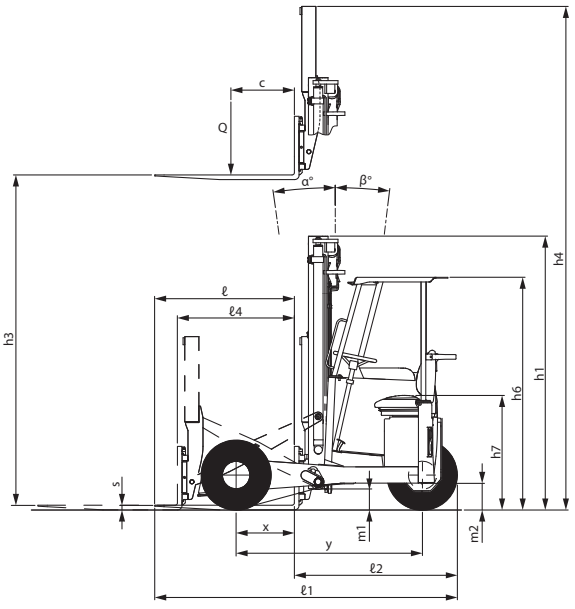
PERFORMANCE	5.1	Speed of travel laden	km/h		
	5.1.1	Speed of travel unladen	km/h	11.2	11.2
	5.2	Rate of lift (laden)	m/s		0.2
	5.2.1	Rate of lift (unladen)	m/s	0.3	0.3
	5.3	Speed of lowering laden	m/s		0.2
	5.3.1	Speed of lowering unladen	m/s	0.4	0.4
	5.5	Nominal towing power laden	daN		2200
	5.5.1	Nominal towing power unladen	N		
	5.7	Slope laden	%		43
	5.7.1	Slope unladen	%		26
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Low pressure hydraulic brake	
ENGINE	7.1	Engine manufacturer / Type		Kubota V1505-E3B	
	7.2	Engine power rating to ISO 1585	kW	26.5	26.5
	7.3	Nominal speed	min-1	3000	3000
	7.4	Number of cylinders / Capacity	cm3	4 / 1498	4 / 1498
	7.5	Fuel consumption according to VDI cycle	l/h		
MISCELLANEOUS	8.1	Speed control		Cable	
	8.2	Working hydraulic pressure for attachments	Bar	190	190
	8.3	Oil flow rate for attachments	L / min	43	43
	8.4	Sound level at driver's ears according to DIN 12053	dB (A)	86	86
	8.5	Traction controller			





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TMM 20	Lifting mast	Height of mast		Tilting		VALUES ON FORKS							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

TMM 20	Lifting mast	Height of mast		Tilting		VALUES WITH TDL							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

TMM 20	Lifting mast	Height of mast		Tilting		VALUES WITH TELESCOPIC FORKS							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

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TMM 25	Lifting mast	Height of mast		Tilting		VALUES ON FORKS									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

TMM 25	Lifting mast	Height of mast		Tilting		VALUES WITH TDL									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

TMM 25	Lifting mast	Height of mast		Tilting		VALUES WITH TELESCOPIC FORKS									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

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CHARACTERISTICS TMM 20 4W S1-E3 / TMM 25 4W S1-E3

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		TMM 20 4W	TMM 25 4W
	1.3	Propulsion: battery, diesel, petrol, LPG, mains		Diesel	Diesel
	1.4	Type of operation: manual, pedestrian, standing, seated		Seated	Seated
	1.5	Rated capacity/load on forks (basic capacity)	Q (t)	2	2.5
	1.6	Center of gravity of load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the center of the front axle	x (mm)	500	500
	1.9	Wheelbase	y (mm)	1598	1598
WEIGHT	2.1	Kerb weight of truck	kg		
	2.2	Front axle load laden	kg		
	2.2.1	Rear axle load laden	kg		
	2.3	Front axle load unladen	kg		
	2.3.1	Rear axle load unladen	kg		
RUNNING CARRIAGE	3.1	Tire equipment: bandage (V), super-elastic (SE), pneumatic (L)		L	L
	3.2	Size of front wheels	" or mm	23x9-10 IC30	27x10-12 IC30
	3.3	Size of rear wheels	" or mm	23x9-10 IC30	27x10-12 IC30
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		1x	1x
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	2095	2143
DIMENSIONS	4.1	Tilt of mast forward	α(°)	8	8
	4.1.1	Tilt of mast backward	β (°)	7	7
	4.2	Height of mast lowered	h1 (mm)	2352	2392
	4.4	Lift height	h3 (mm)	2960	3000
	4.5	Height mast extended	h4 (mm)	4455	4495
	4.7	Height of driver protection (cab)	h6 (mm)	2000	2040
	4.8	Height of seat	h7 (mm)	960	1000
	4.19	Total length	l1 (mm)	3603	3643
	4.20	Length of forks at heel	l2 (mm)	2403	2443
	4.28	Distance with extender extended	l4 (mm)	1005	1005
	4.21	Overall width	b1 (mm)	2315	2398
	4.22	Section of fork arms	e / s (mm)	125/40	125/40
	4.22.2	Length of fork arms	l (mm)	1200	1200
	4.23	Fork carriage to DIN 15173 A/B		FEM 2A	FEM 2A
	4.24	Width of fork carriage	b3 (mm)	1270	1270
	4.25	Distance between forks	b5(mm)	1250	1250
	4.26	Distance between support arms	b4(mm)	1600	1600
	4.31	Ground clearance of mast	m1 (mm)	205	245
	4.32	Ground clearance at center of wheel-base	m2 (mm)	230	270
	4.33	Aisle width for 1000x1200 pallet widthways	Ast (mm)	3363	3363
	4.34	Aisle width for 800x1200 pallet lengthways	Ast (mm)	3363	3363
	4.35	Turning radius	Wa (mm)	2463	2463
	4.36	Inner turning radius	b13 (mm)	672	672
	5.1	Speed of travel laden	km/h		
	5.1.1	Speed of travel unladen	km/h		

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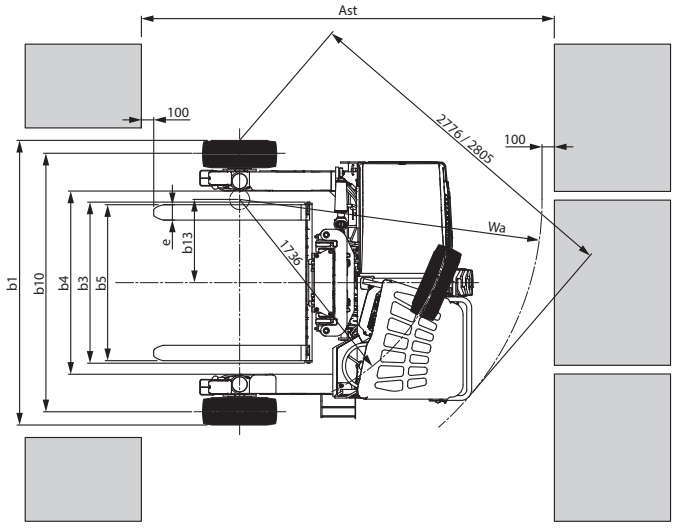
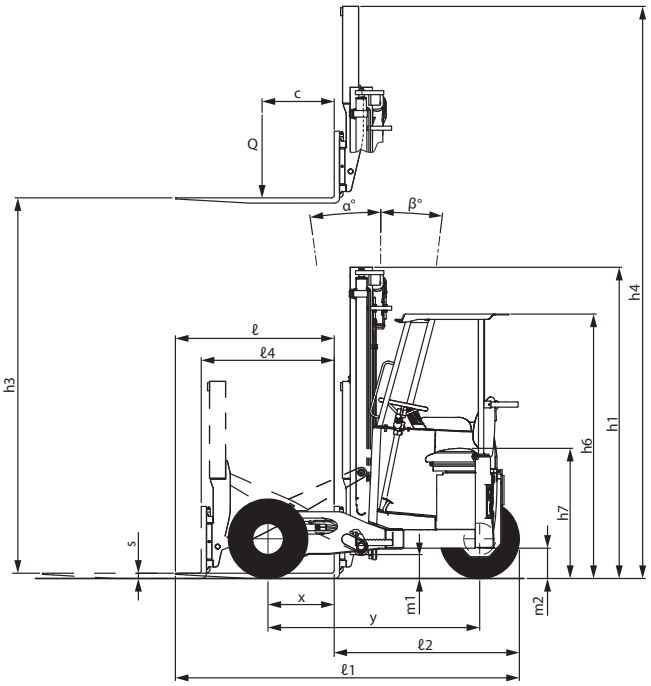
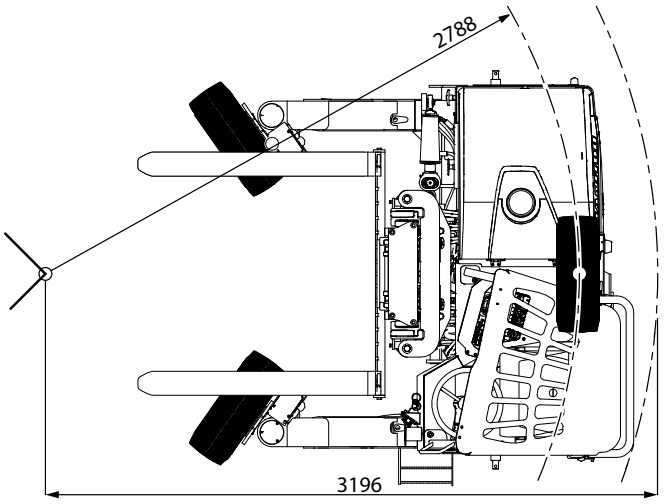
PERFORMANCE	5.2	Rate of lift (laden)	m/s		
	5.2.1	Rate of lift (unladen)	m/s		
	5.3	Speed of lowering laden	m/s		
	5.3.1	Speed of lowering unladen	m/s		
	5.5	Nominal towing power laden	daN		
	5.5.1	Nominal towing power unladen	N		
	5.7	Slope laden	%		
	5.7.1	Slope unladen	%		
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Low pressure hydraulic brake	
ENGINE	7.1	Engine manufacturer / Type		Kubota V1505-E3B	
	7.2	Engine power rating to ISO 1585	kW	26.5	26.5
	7.3	Nominal speed	min-1	3000	3000
	7.4	Number of cylinders / Capacity	cm3	4 / 1498	4 / 1498
	7.5	Fuel consumption according to VDI cycle	l/h		
MISCELLANEOUS	8.1	Speed control		Electronic	Electronic
	8.2	Working hydraulic pressure for attachments	Bar	190	190
	8.3	Oil flow rate for attachments	L / min	43	43
	8.4	Sound level at driver's ears according to DIN 12053	dB (A)	86	86
	8.5	Traction controller			







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TMM 20 4W	Lifting mast	Height of mast		Tilting		VALUES ON FORKS							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

TMM 20 4W	Lifting mast	Height of mast		Tilting		VALUES WITH TDL							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

TMM 20 4W	Lifting mast	Height of mast		Tilting		VALUES WITH TELESCOPIC FORKS							
						Height at max. capacity (mm)				Capacity at max. height CoG at 500 mm (KG)			
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	1,5 t	1,6 t	1,8 t	2 t
Duplex total visibility	3000 std	2352	4455	8°	7°								
	3600			8°	7°								
	3900			8°	7°								

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TMM 25 4W	Lifting mast	Height of mast		Tilting		VALUES ON FORKS									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

TMM 25 4W	Lifting mast	Height of mast		Tilting		VALUES WITH TDL									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

TMM 25 4W	Lifting mast	Height of mast		Tilting		VALUES WITH TELESCOPIC FORKS									
						Height at max. capacity (mm)					Capacity at max. height CoG at 500 mm (KG)				
	mm	lowered H1	extended H4	F	R	1,5 t	1,6 t	1,8 t	2 t	2,5 t	1,5 t	1,6 t	1,8 t	2 t	2,5 t
Duplex total visibility	3000 std	2392	4495	8°	7°										
	3600			8°	7°										
	3900			8°	7°										

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FRONT AND REAR TIRES

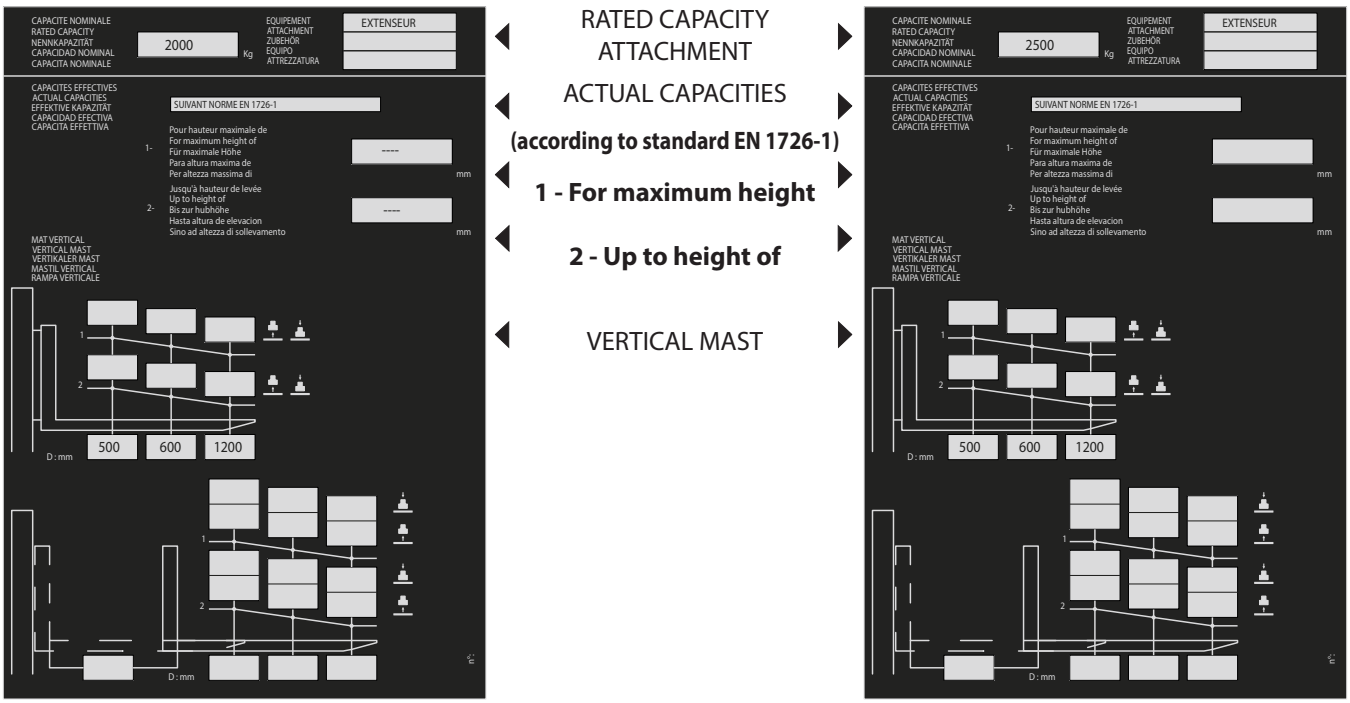
TMM 20 S1-E3		PRESSURE (bar)	LOAD PER TYRE (kg)			
			FRONT UNLADEN	FRONT LADEN	REAR UNLADEN	REAR LADEN
CONTINENTAL	23x9-10 14PR IC 30	7		?	1300	1250
CONTINENTAL	27x10-12 14PR IC 30	7				
SOLIDEAL	10-16,5 10PR SKS XTRA TUBELESS	5,3				

TMM 25 S1-E3		PRESSURE (bar)	LOAD PER TYRE (kg)			
			FRONT UNLADEN	FRONT LADEN	REAR UNLADEN	REAR LADEN
CONTINENTAL	27x10-12 14PR IC 30	7	500	1750	1300	1250
SOLIDEAL	10-16,5 10PR SKS XTRA TUBELESS	5,3				

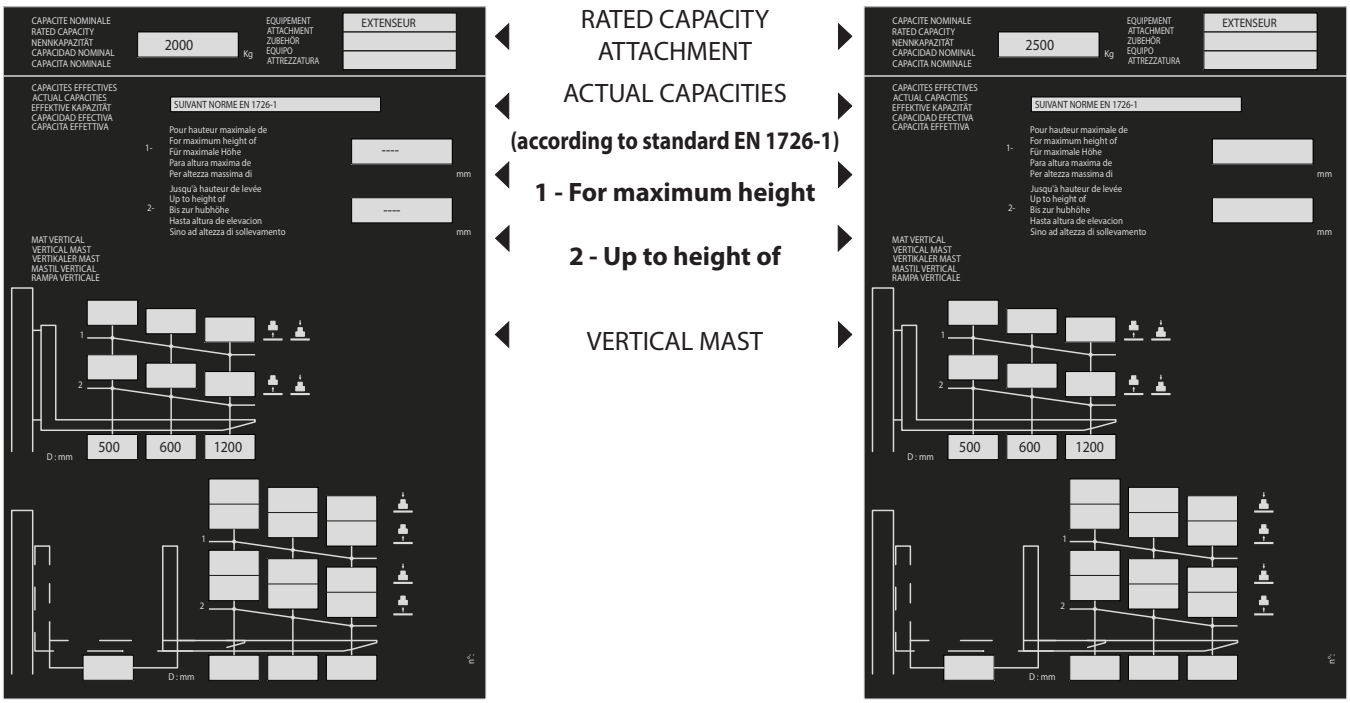
TMM 20 4W S1-E3		PRESSURE (bar)	LOAD PER TYRE (kg)			
			FRONT UNLADEN	FRONT LADEN	REAR UNLADEN	REAR LADEN
CONTINENTAL	23x9-10 14PR IC 30	7			1300	1250
CONTINENTAL	27x10-12 14PR IC 30	7				
SOLIDEAL	10-16,5 10PR SKS XTRA TUBELESS	5,3				

TMM 25 4W S1-E3		PRESSURE (bar)	LOAD PER TYRE (kg)			
			FRONT UNLADEN	FRONT LADEN	REAR UNLADEN	REAR LADEN
CONTINENTAL	27x10-12 14PR IC 30	7			1300	1250
SOLIDEAL	10-16,5 10PR SKS XTRA TUBELESS	5,3				

		PRESSURE (bar)	LOAD (kg)	GROUND CONTACT PRESSURE (kg/cm2)		GROUND CONTACT AREA (cm2)	
				HARD SOIL	LOOSE SOIL	HARD SOIL	LOOSE SOIL
CONTINENTAL	27x10-12 14PR	7					
SOLIDEAL	10-16,5 10PR SKS XTRA TUBELESS	5,3	500	6,8	3,6	74	139
			1250	7,9	4	158	313
			1300	8	4	163	324
			1750	8,6	4,2	204	415



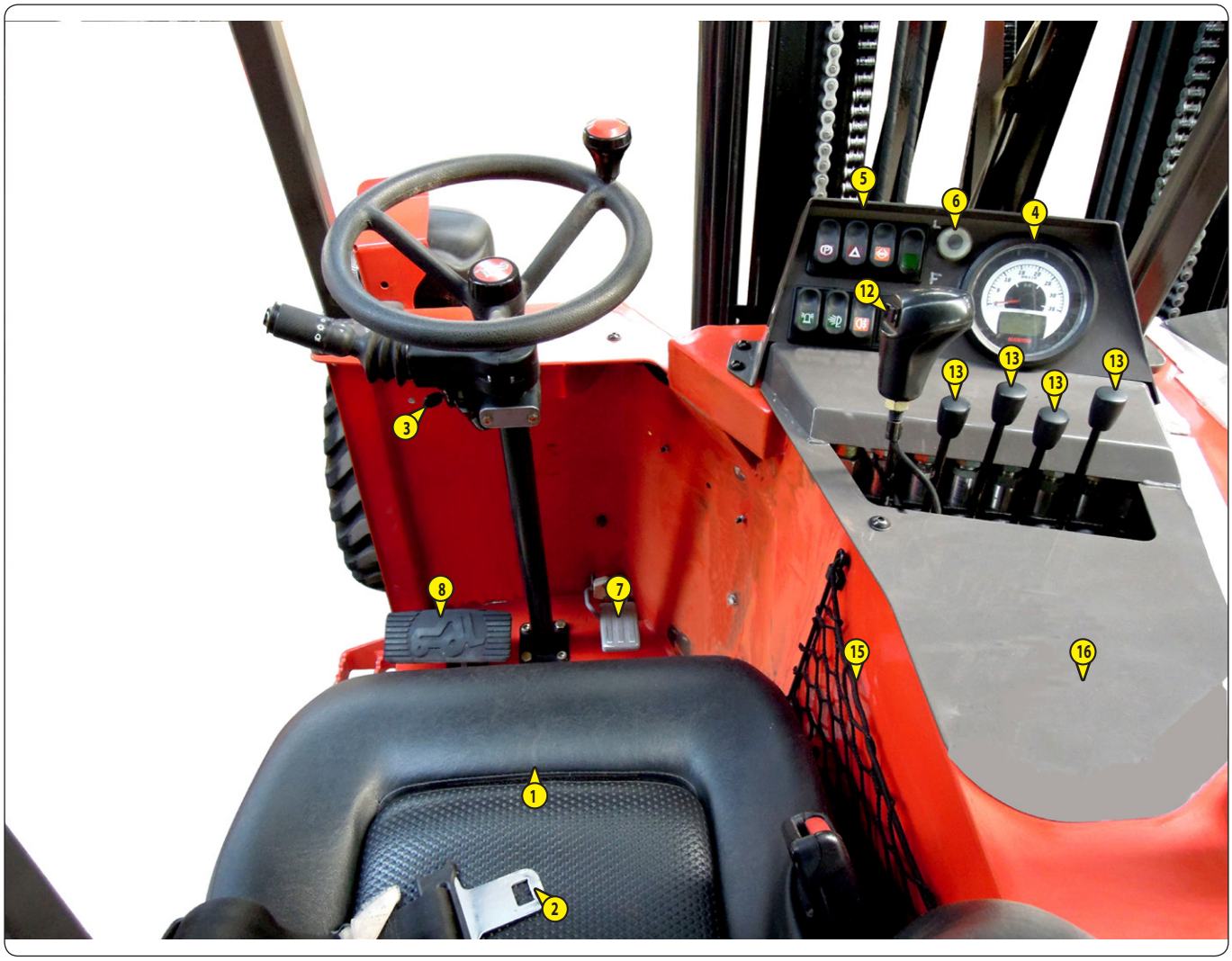
NOTE The load chart referred to in the notice is a standard or blank chart. Each lift truck which can be used with an attachment has a specific chart. To obtain this, consult your dealer.

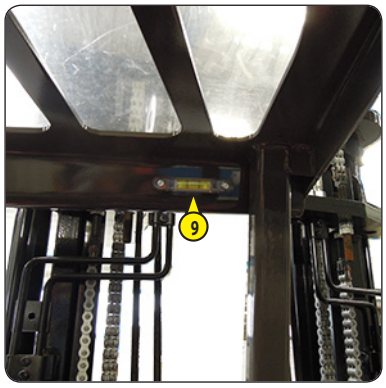


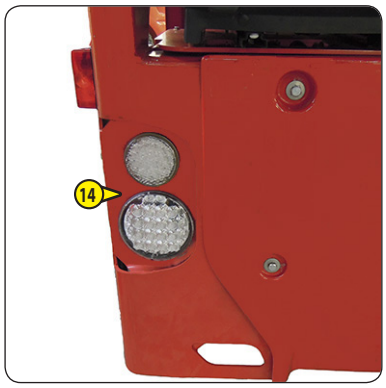
NOTE The load chart referred to in the notice is a standard or blank chart. Each lift truck which can be used with an attachment has a specific chart. To obtain this, consult your dealer.

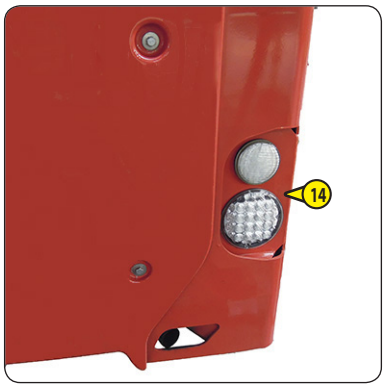
DESCRIPTION

1 - DRIVER'S SEAT (STANDARD)
2 - SEAT BELT
3 - IGNITION SWITCH
4 - CONTROL AND SIGNAL LIGHTS PANEL
5 - SWITCHES
6 - HORN SWITCH
7 - ACCELERATOR PEDAL
8 - SERVICE BRAKE PEDAL AND TRANSMISSION CUT-OFF
9 - LEVEL INDICATOR
10 - TRAILER SOCKETS
11 - FUSES AND RELAYS
12 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION
13 - HYDRAULIC CONTROLS
14 - REAR LIGHTS
15 - DOCUMENT HOLDER NET
16 - LOAD CHARTS
17 - BATTERY CUT-OFF









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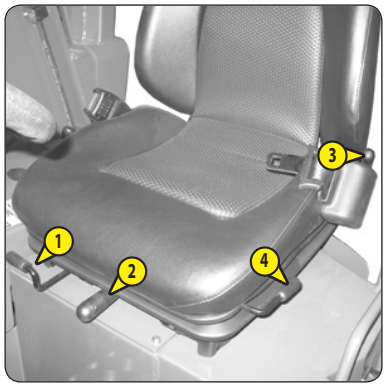
1 - DRIVER'S SEAT (STANDARD)

DRIVER'S SEAT (STANDARD)

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

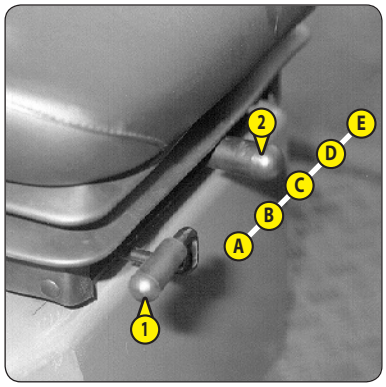


LONGITUDINAL ADJUSTMENT

- Pull the locking lever 1 upwards.
- Slide the seat assembly to achieve a good driving position.
- Release the lever and be sure it returns to the lock position.

SEAT SUSPENSION ADJUSTMENT

- Pull and lift up the locking lever 2 so as to place it into one of these five positions.
  - Position A: Light-weight driver (50 kg).
  - Position B: Intermediate.
  - Position C: Medium-weight driver.
  - Position D: Intermediate.
  - Position E: Heavy-weight driver (120 kg).



BACK-REST ANGLE ADJUSTMENT

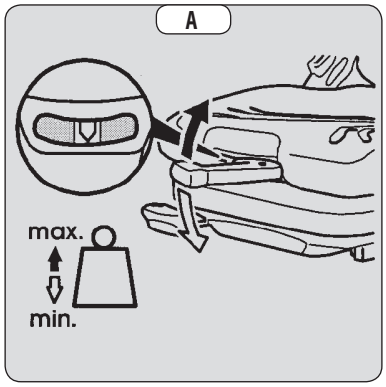
- Pull the locking lever 3 backwards.
- Tilt the back-rest into one of the three possible positions.
- Release the lever and be sure it returns to the lock position.

ANGLE ADJUSTMENT OF THE WHOLE SEAT

- Lift up the locking lever 4.
- Tilt the seat forwards or backwards.
- Release the lever and be sure it returns to the lock position.

DRIVER'S SEAT (OPTION)

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

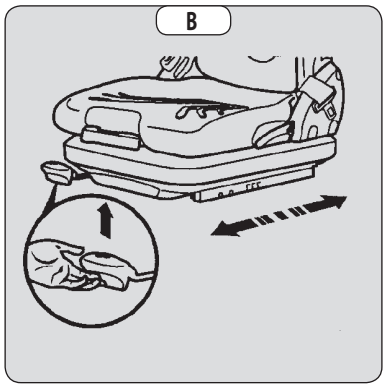


WEIGHT ADJUSTMENT (FIG. A)

Adjust the weight when the driver is sitting on the seat.

- Pull the weight adjustment lever 1 fully out.
- Move the weight adjustment lever 1 up to increase the weight or down to reduce it.
- There are ten possible positions between the min and max weights. Before each run, return the lever to the central position. The max. or min. position is indicated by a freely traveling lever.
- he driver's weight is correctly adjusted when the arrow is in the center of indicator 2.
- After completing weight adjustment, fully lower the lever 1.

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



LONGITUDINAL ADJUSTMENT (FIG. B)

- Engage the locking lever in the desired position. This then locks and the seat will not shift into another position.

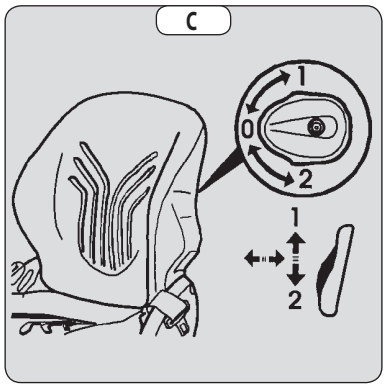
⚠ IMPORTANT ⚠

Only operate the lever by its recessed section and do not grasp from below, at the risk of crushing the hand.

LUMBAR ADJUSTMENT (FIG. C)

This increases the comfort of the seat and the driver's freedom of movement.

- Turn knob to 1 to adjust the height and depth of the lumbar support of the upper part of the back-rest.
- Turn knob to 2 to adjust the height and depth of the lumbar support of the lower part of the back-rest.

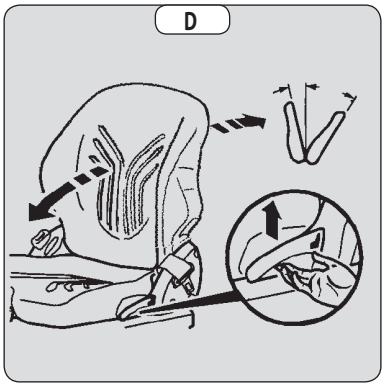


ANGLE ADJUSTMENT OF THE BACK-REST (FIG. D)

- 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 will swing forwards.



MAINTENANCE

Dirt may adversely affect the correct functioning of the seat. For this reason, make sure your seat is always clean.

- The cushions do not require to be removed from the seat frame for cleaning.

⚠ IMPORTANT ⚠

A moving backrest increases the risk of an accident!

First check the resistance of the fabric on a small concealed area before using any fabric and plastic cleaner.

2 - SEAT BELT

⚠ IMPORTANT ⚠

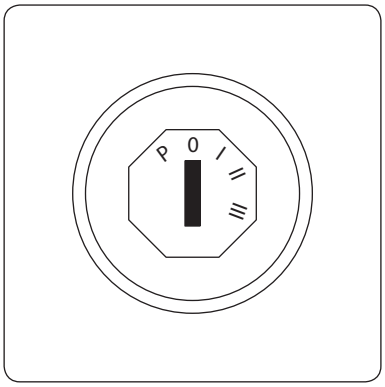
You should not, under any circumstances use the lift truck if the seat belt is defective (fixing, locking, cuts, tears, etc.). Repair or replace the seat belt immediately.

- Sit down correctly in the seat.
- Check that seat belt 1 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.

NOTE: If the belt is not properly locked, the lift truck will not be able to move in forward or reverse. A warning is displayed (see: 2 - DESCRIPTION: SCREEN DISPLAY - DESCRIPTION OF PAGES).

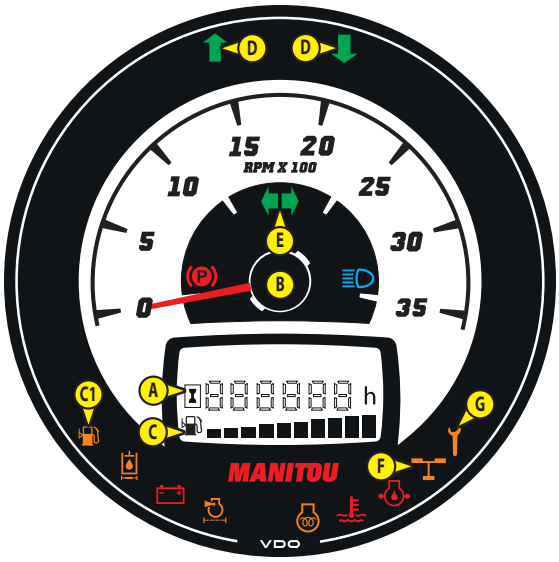
3 - IGNITION SWITCH

The ignition switch has five positions:



- P - Not used.
- O - Ignition switched off and engine stopped.
- I - Ignition on.
- II - Preheating (Hold the position)
- III - Start-up and returns to position I as soon as the key is released.

4 - CONTROL AND SIGNAL LIGHTS PANEL



SIGNAL LIGHTS

When the lift truck ignition is switched on, all the red lamps and the panel's buzzer must come on to indicate that they are working correctly. If one of the red lamps or the buzzer fails to operate, carry out the necessary repairs.

A - HOURMETER

B - REV COUNTER

C - FUEL LEVEL GAUGE

The yellow indicator lamp C is lit to indicate that you are using the reserve supply and that time of use is limited.

D - FORWARD/REVERSE GEAR INDICATORS

See: 2 - DESCRIPTION: 12 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION.

E - DIRECTION INDICATOR LAMP

ONLY FOR TMM 20 4W S1-E3 AND TMM 25 4W S1-E3

F - FRONTAL OR LATERAL STEERING MODE INDICATOR

G - FRONTAL OR LATERAL STEERING MODE OPERATING FAULT

PARKING BRAKE INDICATOR LAMP

This indicator lamp lights up when the parking brake is applied.

MAIN HEADLIGHTS INDICATOR LAMP (ROAD LIGHTS OPTION)

FUEL GAGE LEVEL INDICATOR LAMP

Indicator lamp C1 indicates that you are using the reserve supply and that running time is limited.

HYDROSTATIC TRANSMISSION OIL FILTER CLOGGING INDICATOR LAMP

The light and buzzer come on when the oil filter cartridge is clogged or damaged. When this light remains continuously lit the cartridge needs changing. Stop the lift truck and carry out the necessary repairs (see: 3 - MAINTENANCE: SERVICING SCHEDULE).

NOTE: This lamp may come on when starting the fork lift truck in cold weather, it should go out when the hydraulic oil reaches its normal operating temperature.

BATTERY LOAD INDICATOR LAMP

If the indicator lamp and the buzzer come on when the lift truck is in operation, immediately stop the engine and check the electrical circuit as well as the alternator belt.

AIR FILTER CLOGGING INDICATOR LAMP

The light and buzzer come on when the air filter cartridge is clogged. When this light remains continuously lit the cartridge needs changing. Stop the lift truck and carry out the necessary repairs (see: 3 - MAINTENANCE: SERVICING SCHEDULE).

ENGINE PREHEATING INDICATOR LAMP

This lamp comes on and should go out as soon as preheating is finished. If it comes on while the lift truck is in operation, immediately stop the engine and find the cause.

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COOLING LIQUID TEMPERATURE INDICATOR LAMP

This lamp and buzzer will come on when the temperature of the engine cooling liquid is too high. Stop the lift truck and carry out the necessary repairs (see: 3 - MAINTENANCE: SERVICING SCHEDULE).

ENGINE OIL PRESSURE INDICATOR LAMP

If the lamp and the buzzer come on when the lift truck is in operation, immediately stop the engine and find the cause (see oil level in engine crankcase).

ONLY FOR TMM 20 4W S1-E3 AND TMM 25 4W S1-E3

FRONTAL OR LATERAL STEERING MODE INDICATOR LAMP

This indicator lamp comes on to indicate that a change of steering mode has been selected by means of switch E (see: 2 - DESCRIPTION: 6 - SWITCH PANEL). It remains lit for the entire duration of the steering mode changeover cycle.

⚠ IMPORTANT ⚠

The maintenance key flashes during mode changeover.

FRONTAL OR LATERAL STEERING MODE OPERATING FAULT INDICATOR LAMP

If the lamp comes on when the lift truck is in operation or during a steering mode changeover, immediately stop the engine and find the cause according to the following indications:

- Two flashes: forward/reverse selector not in neutral during frontal or lateral steering mode changeover.

⚠ IMPORTANT ⚠

The steering mode can only be changed if the forward/reverse selector switch is in neutral.

- 3 flashes: the stabilizers are extended or not completely retracted.

⚠ IMPORTANT ⚠

Steering mode can only be changed-over if the stabilizers are retracted.

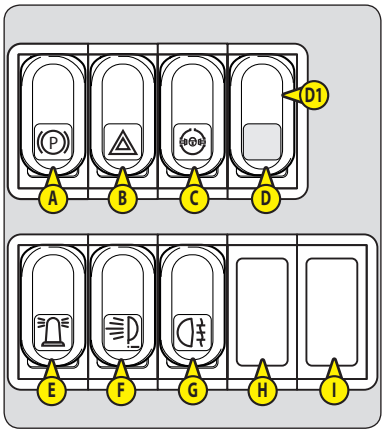
⚠ IMPORTANT ⚠

If the steering mode changeover cycle is not been correctly completed, the operation of the steering becomes erratic. You must return to the initial steering mode and restart the procedure. (The wheel movements must be complete).

- 5 flashes: a front wheel alignment fault was detected when changing-over to frontal steering mode.

NOTE: If steering mode changeover has not been correctly completed, the maintenance key indicator light flashes at first then becomes steady. Run a new cycle.

5 - SWITCHES



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

A - PARKING BRAKE

B - WARNING LIGHT OPTION

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 - DIFFERENTIAL LOCK

⚠ IMPORTANT ⚠

Always drive in a straight line when the differential lock is engaged.

The differential lock allows the driving wheels to rotate at the same speed regardless of ground conditions. Press on the top of the switch to engage.

- Hold this position for as long as the differential lock is required. To disengage, simply release the switch that will automatically return to its initial position.

D - FRONTAL OR LATERAL STEERING MODE (ONLY FOR TMM 20 4W S1-E3 AND TMM 25 4W S1-E3)

The single-position switch selects the desired steering mode.

*** LATERAL STEERING MODE**

- Hold the switch in position D until lateral steering mode changeover is completed and the indicator lamp comes on and the maintenance key stops flashing. The operator can then release the position. The switch will return to its initial position

*** FRONTAL STEERING MODE**

- Hold the switch in position D1 until lateral steering mode changeover is completed and the indicator lamp goes out and the maintenance key stops flashing. The operator can then release the position. The switch will return to its initial position

⚠ IMPORTANT ⚠

To change over from frontal to lateral steering mode or vice versa,

hold the switch down in position D1 until the indicator lamp goes off

and all front and rear wheel rotational movements are completed.

⚠ IMPORTANT ⚠

The steering mode changeover can only take place if the forward/reverse switch is in neutral and the stabilizers are retracted.

⚠ IMPORTANT ⚠

If the steering mode changeover cycle is not been correctly completed, the operation of the steering becomes erratic. The indicator lamp will continue flashing.

You must return to the initial steering mode and restart the procedure. (The wheel movements must be complete)).

E - ROTATING BEACON LIGHT OPTION

F - FRONT WORKING LIGHT OPTION

G - FOG LIGHT OPTION (ROAD LIGHT OPTION)

H - NOT USED

I - NOT USED

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6 - HORN SWITCH

Pressing switch 1 will sound the horn.

7 - ACCELERATOR PEDAL

8 - SERVICE BRAKE PEDAL AND TRANSMISSION CUT-OFF

The pedal acts on the front and rear wheels by means of a hydraulic brake system that slows down the lift truck and brings it to a halt. During clearance travel it gradually cuts off the transmission allowing a slow approach (delicate handling) to be made with full engine power.

By pushing down harder on the fully depressed pedal, the braking system is activated to bring the lift truck to a complete standstill.

9 - LEVEL INDICATOR

Enables the operator to check that the lift truck is in the horizontal position.

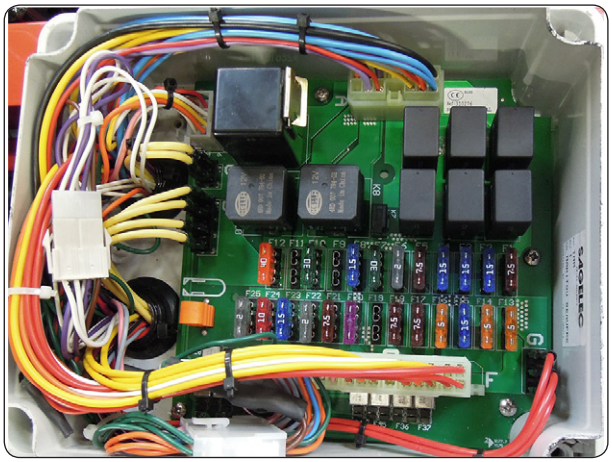
10 - TRAILER SOCKETS

The two sockets are to be connected to the lorry when transporting the lift truck on the back of the trailer.

11 - FUSES AND RELAYS

- Open the engine cover to access the fuses and relays.

NOTE: Replace a used fuse with a new fuse of the same quality and capacity. Never reuse a repaired fuse.



FUSES

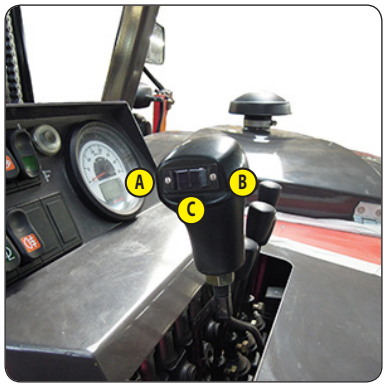
- F1 - OPTION Rear working lights (7,5A).
- F2 - Travel (15A).
- F3 - OPTION Dipped headlights (15A).
- F4 - OPTION Main headlights (15A).
- F5 - OPTION Hazard warning lights power supply (15A).
- F6 - Control panel "+Batt" supply (2A).
- F7 - Ignition switch (30A).
- F8 - ISO3691 hydraulic movement cut-off (15A).
  - Brake electrovalve (15A).
  - Forward/reverse relay control
- F9 - Not used (15A).
- F10 - Starter (30A).
- F11 - Not used (10A).
- F12 - Preheating (40A).
- F13 - OPTION Indicator lights power supply (5A).
- F14 - OPTION Light switch power supply (5A).
- F15 - OPTION Front working lights (15A).
- F16 - OPTION Rear fog light (5A).
- F17 - Sound alarm (7,5A).
- F18 - OPTION Revolving light (7,5A).
- F19 - Not used (15A).
- F20 - OPTION Stop switch (3A).
- F21 - Transmission cut-off electrovalve (7,5A).
- F22 - Safety belt contactor power supply (2A).
- F23 - 4W module power supply (15A).
- F24 - Fuel pump shutdown electrovalve (10A).
- F24 - Control panel "+APC" (post contact) supply (2A).

RESETTABLE FUSES

- F26+F27 - OPTION Front and rear left-hand indicator lights (3A).
- F28 - Rear left-hand indicator light (1,5A).
- F29 - Rear left-hand sidelights (1,5A).
- F30+F31 - OPTION Front and rear right-hand indicator lights (3A).
- F32 - Rear right-hand indicator light (1,5A).
- F33 - OPTIONAL Front and rear sidelights (1,5A).
- F34 - Stop switch (1,5A).
- F35 - Rear fog light (1,5A).
- F36 - Reverse lights and alarm (1,5A).
- F37 - OPTION Reverse lights and alarm (1,5A).
- F38 - Rear left-hand sidelights (1,5A).

- **RELAYS**
- K1 - Front/side working light (OPTION) **(ONLY FOR TMM 20 4W S1-E3 AND TMM 25 4W S1-E3)**.
- K2 - Reverse travel.
  - Rear working light.
  - Reversing lights and alarm
- K3 - Dipped beam headlights.
- K4 - Front translation.
- K5 - Belt contact.
- K6 - Main beam headlights.
- K7 - Ignition safety.
- K8 - Starter
- K9 - Flashing unit.
- K10 - Preheat resistance.

12 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION



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

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

NOTE: OPTIONALLY, reverse lights and a reversing sound alarm indicate that the lift truck is running in reverse.

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 in neutral,
- 2 - engage the parking brake,
- 3 - get out of the lift truck.

If these sequences are not observed (for example, leaving the driver's seat without applying the parking brake), an acoustic alarm sounds. You must then return the forward/reverse selector to the neutral position and repeat the sequence.

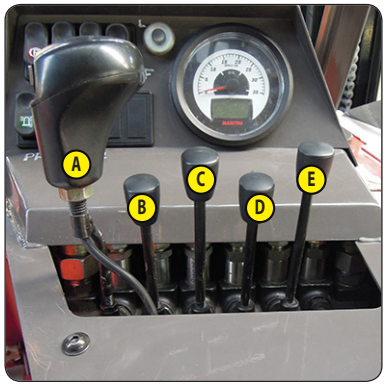
13 - HYDRAULIC CONTROLS

⚠ 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.

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

Using the hydraulic controls is only possible if the driver is present and correctly sat on his seat. Otherwise, the hydraulic controls are blocked.



LIFTING THE LOAD

- The lever A backwards when lifting.
- The lever A forwards when lowering.

NOTE: The engine r.p.m. automatically increases when lifting the load.

EXTENDER

- Lever B forwards to move the carriage forward.
- Lever backward to move the carriage backward.

TILTING THE MAST

- Lever C forwards for forward tilting.
- Lever C backwards for backward tilting.

MAST SIDE-SHIFT

- Lever D forwards to move sideways to the left.
- Lever D backwards to move sideways to the right.

STABILIZERS

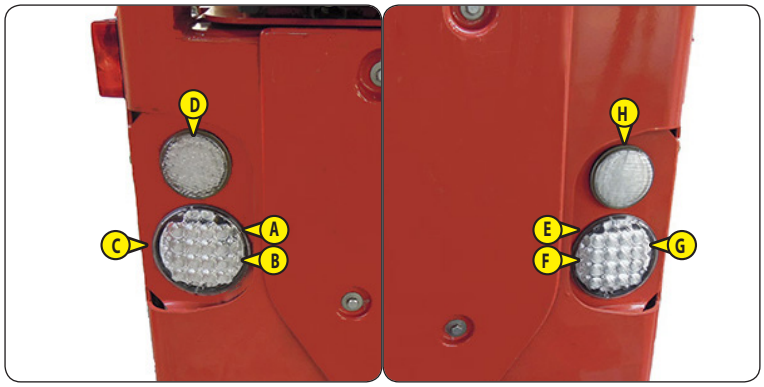
- Lever E forwards to raise.
- Lever E backwards to lower.

ATTACHMENT (OPTION)

- Lever forwards or backwards.

14 - REAR LIGHTS

Works only in the rear of lorry or trailer transport position.



A - Rear left-hand indicator light.
B - Rear left-hand stop light.
C - Rear left hand headlight.
D - Rear fog light.
E - Rear right-hand indicator light.
F - Rear right hand headlight.
G - Rear right-hand stop light.
H - Rear reverse light.

15 - DOCUMENT HOLDER NET

Make sure that the operator's manual is in the right place, i.e. in the document holder net.

16 - LOAD CHARTS

This sheets include the load charts of the attachments used on the lift truck.

17 - BATTERY CUT-OFF

Enables the battery to be rapidly cut off from the electric circuit in the event of a short circuit or a fire.

Note: When the operator stops the lift truck, the screen may remain switched on for a few moments to save various data (Engine Hours, Maintenance, etc.). This data storage phase is essential for the proper operation of the screen and the battery power supply must not be cut-off during this sequence.

⚠ IMPORTANT ⚠

Any sudden disconnection of the battery power supply risks corrupting the saved data and will cause all or part of the saved parameters to be lost.

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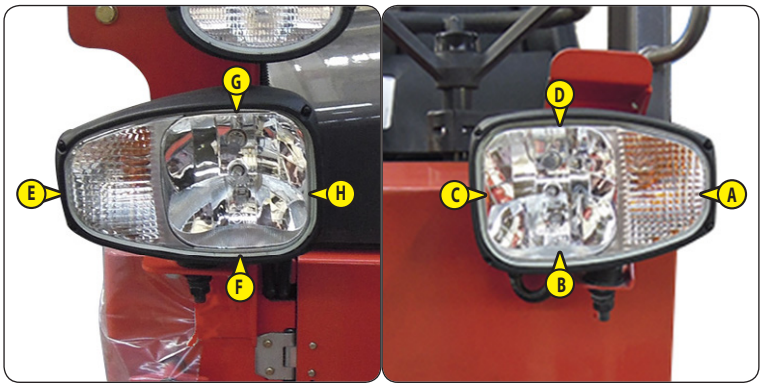
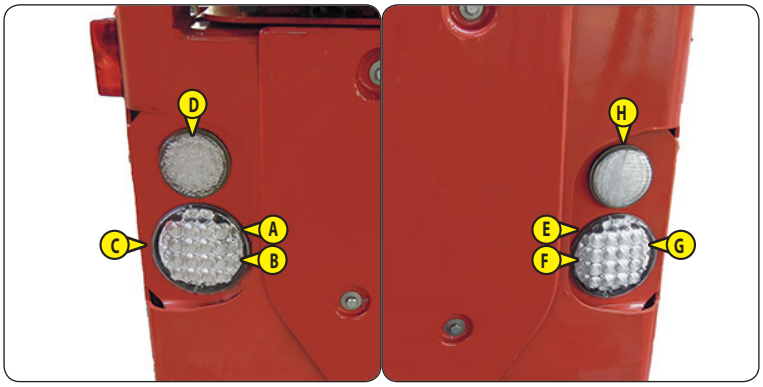
1 - FRONT HEADLIGHTS (ROAD LIGHT OPTION)

A - Front left-hand indicator light.
B - Front left-hand dipped headlight.
C - Front left-hand headlight.
D - Front left-hand sidelight.
E - Front right-hand indicator light.
F - Front right-hand dipped headlight.
G - Front right-hand headlight.
H - Right front sidelight.



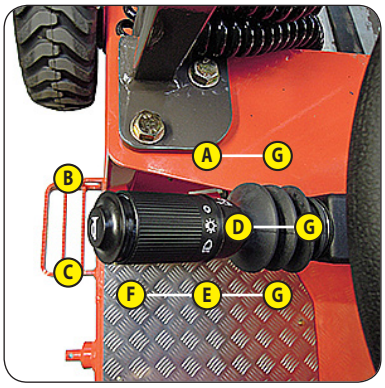
2 - REAR LIGHTS (ROAD LIGHT OPTION)

A - Rear left-hand indicator light.
B - Rear left-hand stop light.
C - Rear left hand headlight.
D - Rear fog light.
E - Rear reverse light.
F - Rear right hand headlight.
G - Rear right-hand stop light.
H - Rear right-hand indicator light.



3 - LIGHT, HORN AND INDICATOR SWITCH (ROAD LIGHT OPTION)

• The switch controls the visual and sound signaling.
A - All lights are off, the indicator lights do not flash.
B - The right hand indicator light flash.
C - The left hand indicator light 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 end of the switch sounds the horn.

4 - ROTATING BEACON LIGHT

5 - FRONT WORKING LIGHTS

6 - SIDE WORKING LIGHTS

7 - REVERSING SOUND ALARM

8 - REVERSE LIGHT

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PROCEDURE FOR ATTACHING THE LIFT TRUCK TO THE REAR OF A LORRY OR TRAILER

IDENTIFICATION OF DISTRIBUTOR LEVERS

- Lever A - Lifting of the load.
- Lever B - Extender
- Lever C - Tilting of the carriage.
- Lever D - Mast side-shift.
- Lever E - Attachment (option).

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1 - INSTALLING THE LIFT TRUCK ONTO THE BACK OF THE LORRY OR TRAILER

PREPARING THE TRAILER:

- Apply the lorry parking brake.
- Move the trailer lights (fig. 1A and 1B).
- Retract the underrun guards (fig. 1C). (Trailer light protection)

INSTALLING THE LIFT TRUCK ON THE TRAILER:

- Adjust the spacing and center the forks on the lift truck carriage (identical spacing to that of the lorry sockets).
- Get into the lift truck driver's cab and start the engine.
- Center the mast (lever D).
- Fully retract the extender (lever B).
- Align the forks of the lift truck with the lorry sockets and engage fully (fig. 1D).
- Place the forward/reverse selector in neutral.

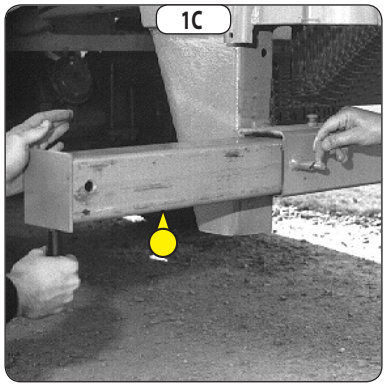
⚠ IMPORTANT ⚠

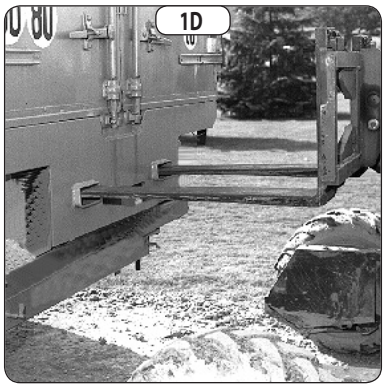
Only for raising or lowering the lift truck from the back of the lorry or a trailer.

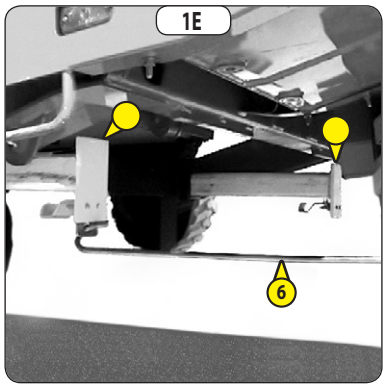
- Raise the lift truck to its maximum extent by pushing forward on distributor lever A.

· FOR A FOR A TELESCOPIC SUPPORT ATTACHMENT SYSTEM

- Tilt the lift truck forward by pulling back on distributor lever C.
- Using the hook 6, pull out the 2 sliding supports to their maximum extent (fig. 1E).
- Pull distributor lever A back to lower the lift truck to its maximum down position.
- Push distributor lever B forward to set down the lift truck on the supports.







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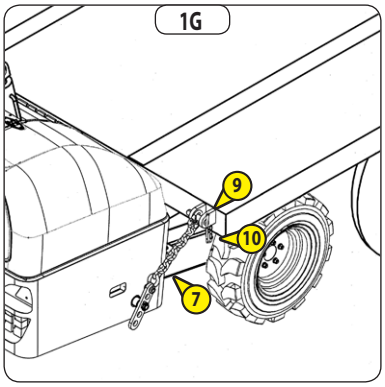
• FOR A CHAIN-BASED ATTACHMENT SYSTEM

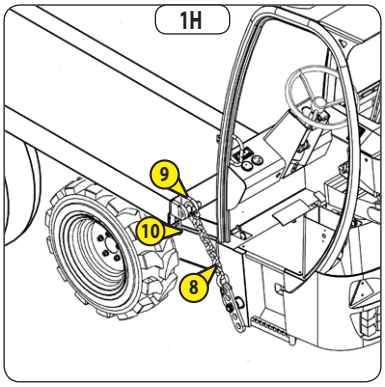
- Tilt the lift truck forward by pulling back on distributor lever C.
- Attach the two chains (7) (fig. 1G) and (8) (fig. 1H) to the lorry's clevis fittings (9). Block the clevis pins (10) (fig. 1G and fig. 1H) with the locking pins.
- Pull back distributor lever A to tension the chains.

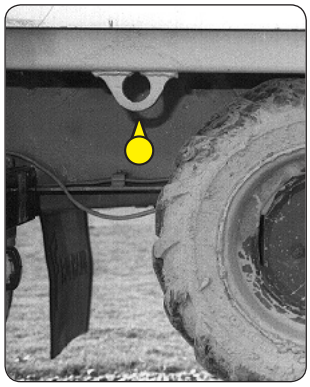
⚠ IMPORTANT ⚠

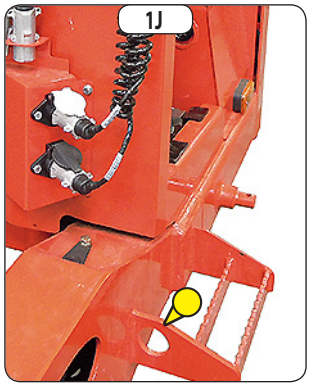
Adapt the length of the chains to avoid them deforming when tensioned.

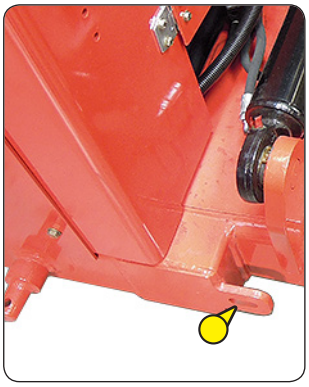
- Turn the steering wheel fully to the left to place the back wheel in the transport position (fig. 1I).
- Stop the engine and remove the key from the ignition.
- Strap the lift truck to the trailer by means of the hooks provided (fig. 1J) (only applies to the telescopic support attachment system).
- Connect the light power supply leads 11 and 12 to the lorry (fig. 1K) and check the operation of the lift truck lights.
- The seat must be tilted forward to fit the seat protection in position (fig. 1L).
- Place the license plates and the maximum laden and unladen weights on the lift truck in order to comply with the requirements of the highway code.

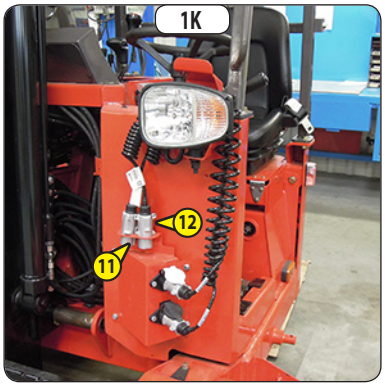


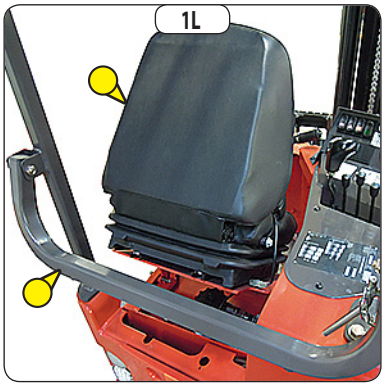












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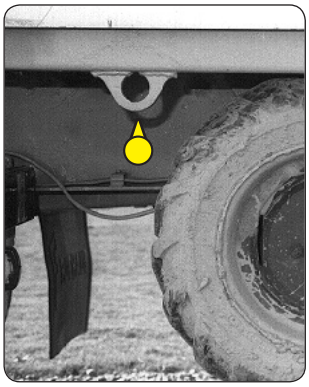
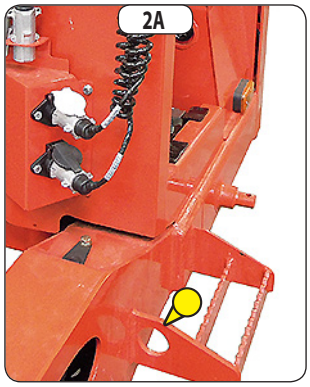
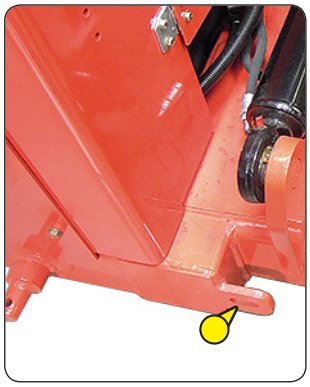
2 - LOWERING THE LIFT TRUCK FROM THE BACK OF THE LORRY OR TRAILER

- Apply the lorry parking brake.
- Unhook the strap (fig. 2A) (only applies to the telescopic support attachment system).







- Disconnect the lorry light supply plugs 11 and 12 and place them on their support on the lift truck (fig. 2B).
- Seat protection: unfolded position when using the on-board trolley (user protection). Driver's seat: down position.
- Climb into the driver's position. Adjust the seat.
- Switch on the engine.

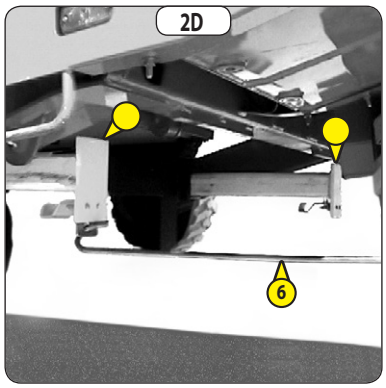
⚠ IMPORTANT ⚠

Only for raising or lowering the lift truck from the back of the lorry or a trailer.

- Straighten the rear wheel (fig. 2C).

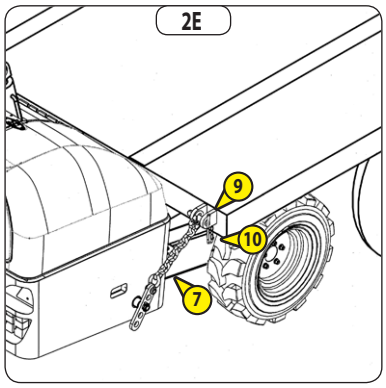
• FOR A FOR A TELESCOPIC SUPPORT ATTACHMENT SYSTEM

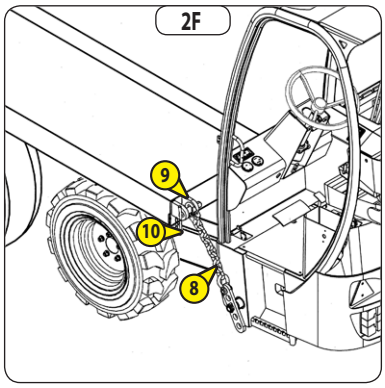
- Push distributor lever A forwards to raise the lift truck off the sliding supports.
- Using the hook 6, fully retract the sliding supports in order to lock them in place (fig. 2D).



• FOR A CHAIN-BASED ATTACHMENT SYSTEM

- Push distributor lever A forwards to slacken the two chains.
- Remove the locking pins from the clevis pins (10) (fig. 2E and fig. 2F). Unhook the two chains (7) (fig. 2E) and (8) (fig. 2F) from the lorry's clevis fittings (9).





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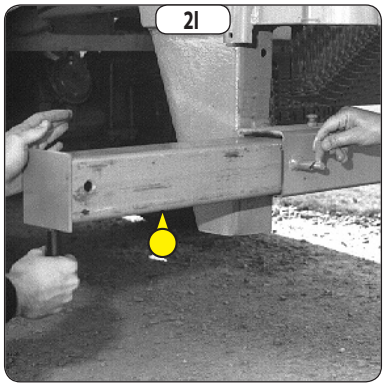
- Lower the lift truck by pulling back on distributor lever A.
- Set the rear wheel down on the ground by pushing distributor lever C forward.
- Reverse the lift truck to extract the forks from the lorry sockets.
- Refit the trailer lights (fig. 2G - fig. 2H).
- Extend the underrun guards (fig. 2 I).

⚠ IMPORTANT ⚠

It is formally forbidden to telescope the jib during the lift truck installation or removal operations.



3 - MAINTENANCE

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3 - MAINTENANCE

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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:

⚠ IMPORTANT ⚠

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

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

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

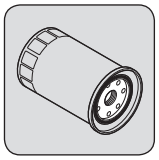
647436EN (03/02/2014)

FILTERS CARTRIDGES AND BELTS

ENGINE

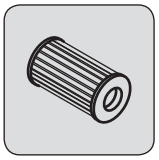
ENGINE OIL FILTER

- Part number: 894 022
- Change: 500 H



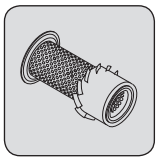
FUEL FILTER CARTRIDGE

- Part number: 272 193
- Change: 500 H



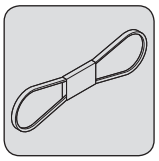
DRY AIR FILTER CARTRIDGE

- Part number: 227 959
- Clean: 50 H
- Change: 500 H



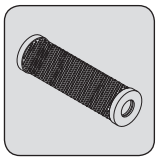
ALTERNATOR BELT

- Part number: 565 257
- Change: 500 H



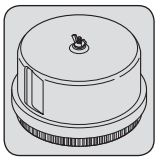
SAFETY DRY AIR FILTER CARTRIDGE

- Part number: 227 960
- Change: 1000 H



AUTOMATIC VACUUM-CLEANING PRE-FILTER (OPTION)

- Part number: 240 334



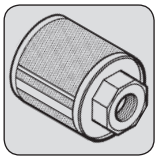
HYDRAULIC SYSTEM

HYDRAULIC RETURN OIL FILTER CARTRIDGE (15µ)

- Part number: 686 237
- Change: 500 H

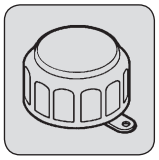
SUCTION STRAINER FOR HYDRAULIC OIL TANK

- Part number: 721 939
- Clean: 1000 H



FILTER CAP FOR HYDRAULIC FLUID TANK

- Part number: 52 506 028
- Change: 1000 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 optimum engine performance.

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

ENGINE

PARTS TO BE LUBRICATED	CAPACITY	RECOMMENDED LUBRICANT	PACKAGING	PART NUMBER
ENGINE	6 Liters	MANITOU oil GOLD **"API CI-4 ; ACEA E9"**	6 l	52 502 444
COOLING CIRCUIT	7 Liters	Cooling liquid (protection - 35°)	5 l 20 l 210 l	894 967 894 968 894 969
FUEL TANK	26 Liters	Diesel fuel (*)		

MAST

PARTS TO BE LUBRICATED	RECOMMENDED LUBRICANT	PACKAGING	PART NUMBER
MAST LIFTING CHAINS	MANITOU Lubricants Chain special (aerosol)	400 ml	554 271
GREASING OF THE MAST	MANITOU Grease BLACK multi-purpose	400 g 1 kg 5 kg	545 996 161 590 499 235

HYDRAULIC SYSTEM

PARTS TO BE LUBRICATED	CAPACITY	RECOMMENDED LUBRICANT	PACKAGING	PART NUMBER
HYDRAULIC OIL TANK	35 Liters	MANITOU oil Hydraulic ISO VG 46	5 l 20 l 55 l 209 l	545 500 582 297 546 108 546 109

REAR AXLE

PARTS TO BE LUBRICATED	RECOMMENDED LUBRICANT	PACKAGING	PART NUMBER
STEERING PIVOT PIN STEERING CYLINDER	MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161 589 720 683 554 974 499 233 489 670

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SERVICING SCHEDULE

⚠ IMPORTANT ⚠

(1): COMPULSORY 500 HOURS 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): Consult 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 4000 HOURS OF SERVICE	OCCASIONALLY
ENGINE										
- Engine oil level	3-10	C	C							
- Cooling liquid level	3-10	C	C							
- Fuel level	3-10	C	C							
- Cyclonic pre-filter (option)	3-11	N	N							
- Dry air filter cartridge	3-12/3-20	C/N/R		C/N						
- Radiator core	3-12	N		N						
- Fuel filter	3-18	N			N					
- Engine oil	3-20	V				V				
- Engine oil filter	3-20	R				R				
- Fuel filter cartridge	3-21	R				R				
- Fuel tank	3-24						N			
- Safety dry air filter cartridge	3-24					R				
- Engine silent blocks							C (2)			
- Engine speeds							C (2)			
- Valve clearances		C					C (2)			
- Cooling liquid	3-26							V		
- Radiator								C (2)		
- Water pump and the thermostat								C (2)		
- Alternator and the starter motor								C (2)		
- Alternator/fan/crankshaft belt tension	3-18/3-22	C/A/R			C/A	R				
- Fuel circuit	3-28									P
TRANSMISSION										
- Hydrostatic transmission circuit pressures								C (2)		
- Governing start of the hydrostatic transmission								C (2)		
- Hydrostatic transmission cut-off								C (2)		
TYRES										
- Tire pressures	3-13	C		C						
- Wheel nut tightening	3-13	C		C						
- Wheel nut tightening torques	3-26	C						C		
- Wheel	3-29									R
MAST										
- Tension and alignment of the mast lifting chains	3-13	C/A		C/A						
- Mast	3-14	G		G						
- Mast lifting chains	3-22	N/C/G				N/C/G		C (2)		
- Condition of mast unit								C (2)		
- Chain rollers								C (2)		
- Mast guide rollers								C (2)		
- Mast bearing rollers								C (2)		
- Thickness of the mast wearing plates								C (2)		
HYDRAULIC SYSTEM										
- Hydraulic oil level	3-15	C		C						
- Complete hydraulic return oil filter cartridge	3-22	R				R				
- Hydraulic oil	3-24						V			
- Suction strainer for hydraulic oil tank	3-24						N			
- Filter cap for hydraulic oil tank	3-24						R			
- Speeds of hydraulic movements							C (2)			
- Hydraulic pump tubular filter / Counterbalance vale							N (2)			
- Condition of hoses and flexible pipes							C (2)			
- Condition of cylinders (leakage, shafts)							C (2)			
- Hydraulic circuit pressures								C (2)		
- Hydraulic circuit outputs								C (2)		
- Hydraulic oil tank								N (2)		
BRAKE										
- Disc brake wear on wheel motors									C (2)	

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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 4000 HOURS OF SERVICE	OCCASIONALLY
CAB										
- Seat belt	3-25						C			
- Condition of the rear view mirrors							C (2)			
ELECTRICITY										
- Condition of wiring harness and cables							C (2)			
- Lights and signals							C (2)			
- Warning indicators							C (2)			
- Front headlights	3-30									A
- Battery failure	3-30									R
REAR AXLE										
- Rear wheel steering pivot pins	3-15	G		G					G/C (2)	
- Rear wheel steering cylinder	3-16	G		G					G/C (2)	
- Steering	3-16	G		G				G/C (2)		
FRAME										
- Structure							C (2)			
- Bearings and articulation rings								C (2)		
ATTACHMENTS										
- Fork wear		C				C (2)				
- Attachment carriage							C (2)			
- Condition of attachments							C (2)			
LIFT TRUCK										
- Tow the lift truck	3-31									XXX
- Sling the lift truck	3-32									XXX
- Transport the lift truck on a platform	3-32									XXX

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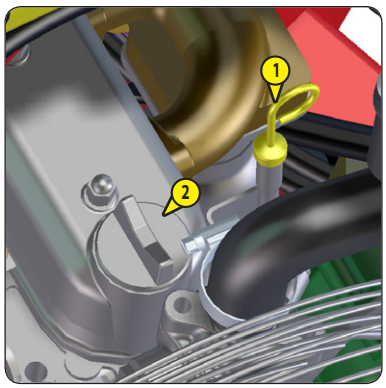
A - DAILY OR EVERY 10 HOURS SERVICE

A1 – ENGINE OIL LEVEL

CHECK

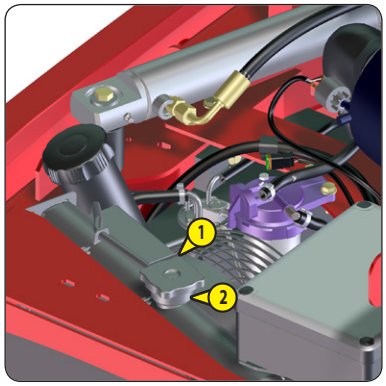


Place the lift truck on level ground with the engine stopped, and let the oil drain into the sump.

- 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.

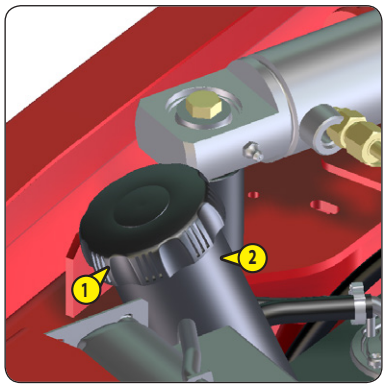
⚠ IMPORTANT ⚠

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.
- Slowly turn the cap of the radiator 1 up to the safety stop.
- Allow the pressure and the steam to escape.
- Press down and turn the cap so as to release it.
- If necessary, add cooling liquid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) up to 12 mm below the filler port 2.
- Lubricate slightly the filler neck in order to facilitate the setting and the removal of the radiator cap.
- Visually check that there is no leakage in the radiator and pipes.

A3 – FUEL LEVEL

CHECK



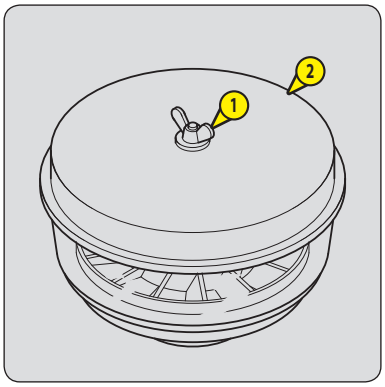
Keep the fuel tank full, to reduce as much as possible any condensation due to the atmospheric conditions.

⚠ IMPORTANT ⚠

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

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

A4 – CYCLONIC PRE-FILTER (OPTION)



CLEAN

The cleaning interval is given as a guide, however the prefilter must be emptied and cleaned 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 prefilter unit with a clean dry cloth and reassemble the unit.

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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 the cartridge must be changed.
Never use the lift truck without an air filter or with a damaged air filter.

- For the disassembly and reassembly of the cartridge, see: 3 - MAINTENANCE: D1 - 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.

⚠ IMPORTANT ⚠

Observe a 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 operation.

- 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.

⚠ IMPORTANT ⚠

Do not clean the dry air filter cartridge by washing it in liquid.
Do not, under any circumstances, clean the safety cartridge located inside the filter cartridge, replace it with a new one if it is clogged or damaged.

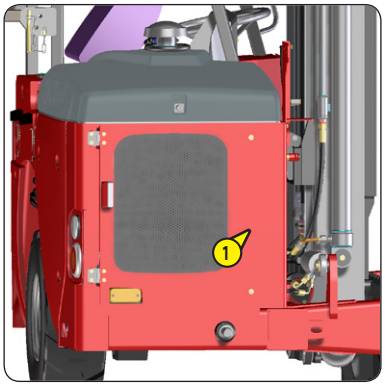
B2 – RADIATOR CORE

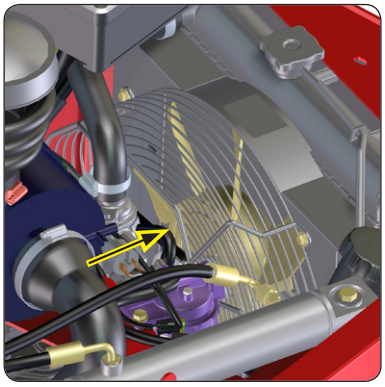
CLEAN

⚠ 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 radiator fins.

- Open the engine bonnet.
- Open the radiator side door 1.
- Using a soft cloth, clean the radiator in order to remove as much dirt as possible.
- Clean the radiator with jet of compressed air directed from the inside towards the outside. This is the only effective way of removing impurities (opposite direction to the cooling air flow).
- Clean the radiator side door if required.





B3 – TIRE PRESSURE AND WHEEL NUT TORQUES

CHECK

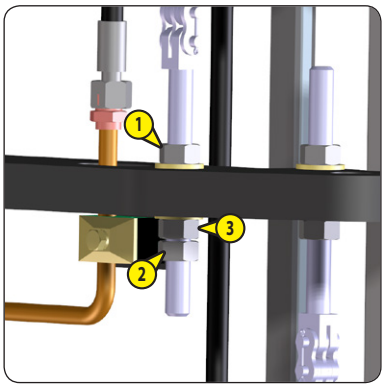
⚠ IMPORTANT ⚠

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

- Check the condition of the tires, to detect cuts, protuberances, wear, etc.
- Check the torque load of the wheel nuts. Non-compliance with this instruction can cause damage and rupture to the wheel bolts and distortion to the wheels.
- Check and, if necessary, adjust the tyre pressures (see: 2 - DESCRIPTION: TYRES).

B4 – TENSION AND ALIGNMENT OF THE MAST LIFTING CHAINS

CHECK - ADJUST



Place the lift truck on level ground with the mast in a vertical position and the forks raised approximately 200 mm.

⚠ IMPORTANT ⚠

These checks are important for the good working operation of the mast.
In case of technical faults, consult your dealer.

- Check the alignment of the mast lifting chains between the carriage chain fasteners and the chain rollers.
- Manually verify the chain tension and, if necessary, adjust as indicated below while ensuring that the carriage is perpendicular to the mast.
- Loosen nut 1.
- Loosen the chain tensioner lock nut 2.
- Adjust the tension by tightening or loosening nut 3 while checking the alignment of the lifting chains.
- Then tighten lock nut 2 and nut 3.
- Retighten the nut 1.

GREASE

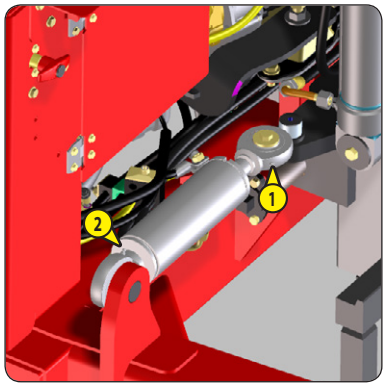
To be carried out weekly, if the lift truck has been operated for less than 50 hours during the week.

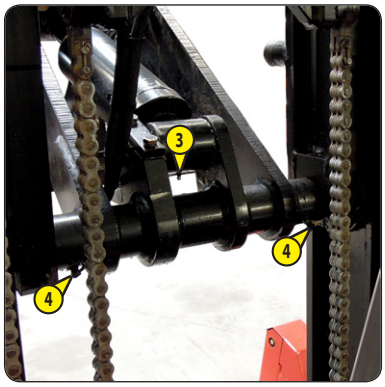
⚠ IMPORTANT ⚠

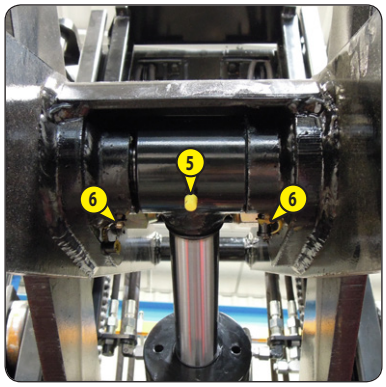
In the event of prolonged use in an extremely dusty or oxidizing atmosphere, reduce this interval to 10 hours of service or every day.
In case of technical faults, consult your dealer.

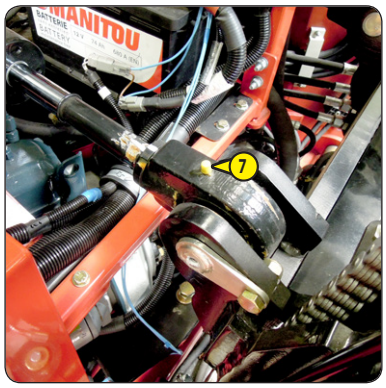
Clean, then lubricate the following points with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

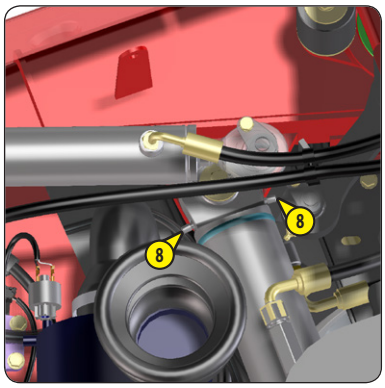
- 1 Side shift cylinder head axle (1 lubricator).
- 2 Side shift cylinder foot axle (1 lubricator).
- 3 Extender cylinder head (1 lubricator).
- 4 Extender / mast axle (2 lubricators).
- 5 Extender cylinder foot (1 lubricator).
- 6 Extender internal hinged connection (2 lubricators).
- 7 Tilt cylinder head axles (2 lubricators).
- 8 Tilt cylinder foot axles (2 lubricators).
- 9 Articulation axles at the foot of the mast (2 lubricators).
- 10 Extender external articulation axles (2 lubricators).
- 11 Mast upper guide rollers (2 lubricators).
- 12 Extender / carriage axle (1 lubricator).

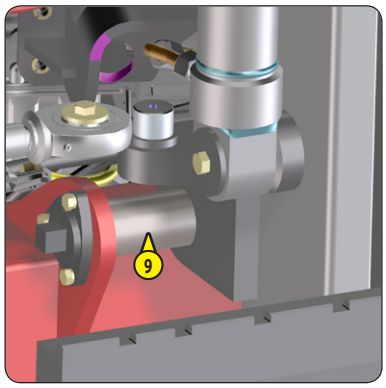


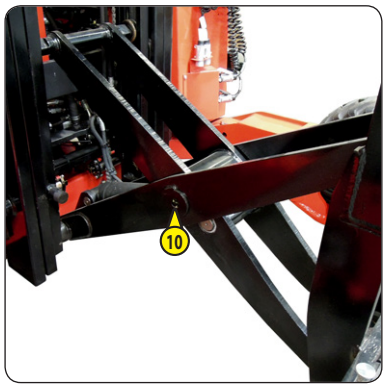


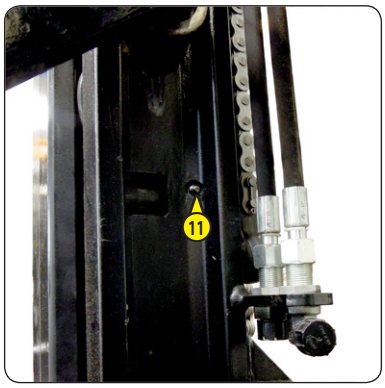


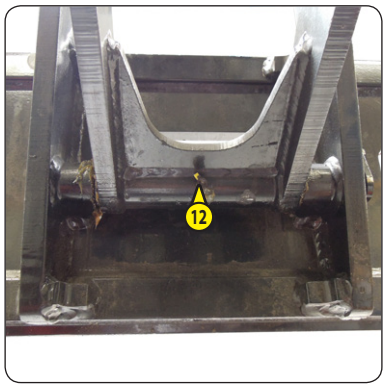












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B6 – HYDRAULIC OIL LEVEL

CHECK

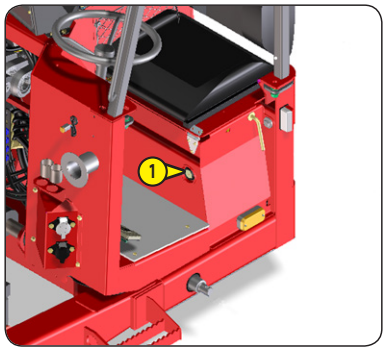
Place the lift truck on level ground with the engine stopped and mast tilted backward and lowered as far as possible, the extender retracted and the mast shifted to the right.

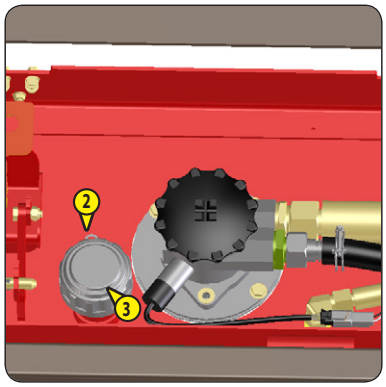
⚠ IMPORTANT ⚠

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

- Refer to the dipstick 1.
- The oil level is correct when it is at the level of the red point.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Lift the driver seat access panel.
- Remove cap 2.
- Add oil through filler port 3.
- Refit the cap.
- Visually check that there is no leakage in the tank and pipes.

Always maintain the oil level at maximum as cooling depends on the oil flowing through the tank.



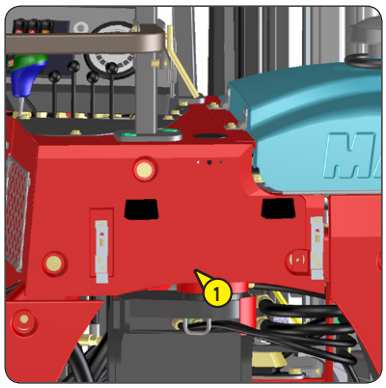


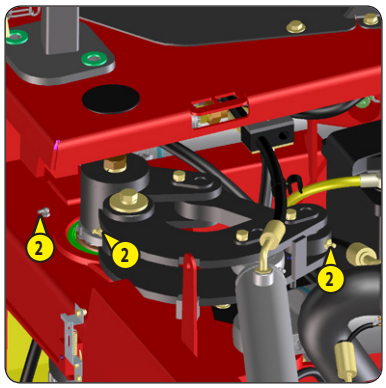
B7 – REAR WHEEL STEERING PIVOT PIN

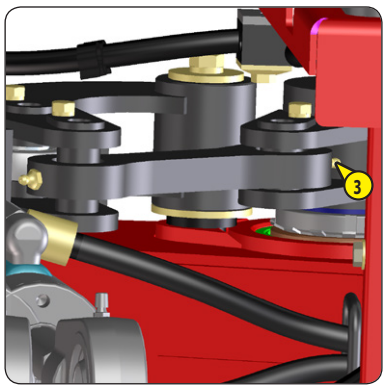
GREASE

Clean and lubricate points 2 and 3 (4 nipples) with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

- Remove the pivot pin casing 1.
- Open the engine bonnet.
- Grease the three points 2.
- Grease the fourth point 3.







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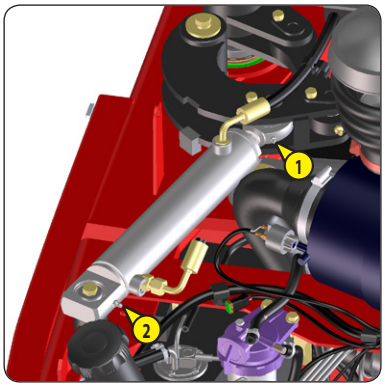
B8 – REAR WHEEL STEERING CYLINDER



GREASE

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

1 - Steering cylinder head axle lubricator (1 lubricator).

2 - Steering cylinder foot axle lubricator (1 lubricator).

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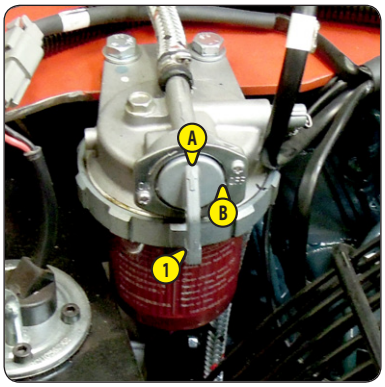
C - EVERY 250 HOURS OF SERVICE

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

C1 – FUEL FILTER

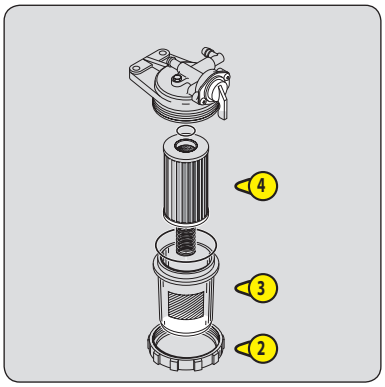
CLEAN



⚠ IMPORTANT ⚠

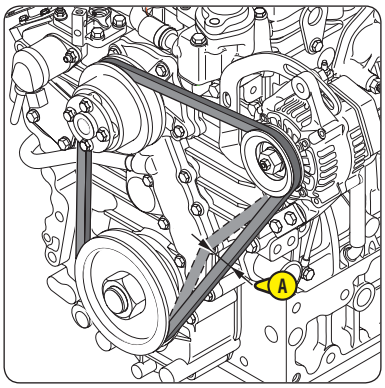
Dust and impurities in the fuel will cause the injection pump and injectors to wear more quickly. To avoid this, regularly clean the fuel filter housing.

- Open the engine bonnet.
- Close the fuel valve 1 by setting to position B.
- Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.
- Unscrew the retaining ring 2, remove the housing 3 and clean the inside using a brush immersed in clean diesel oil.
- Remove the cartridge filter 4 and dip in diesel oil to rinse.
- Reassemble the unit.
- Open the fuel valve 1 by setting to position A.
- Bleed the fuel circuit (see: 3 - MAINTENANCE: G1 - FUEL SYSTEM).



C2 – ALTERNATOR/FAN/CRANKSHAFT BELT TENSION

CHECK - ADJUST

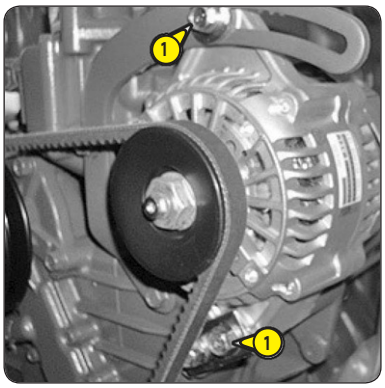


⚠ IMPORTANT ⚠

If the alternator belt has to be changed, check the tension again after the first 20 hours of operation.

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

- Open the engine bonnet.
- Check the belt for signs of wear and cracks and change if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Check the belt tension between the pulleys of the crankshaft and of the alternator.
- With normal thumb pressure (98 N), the tension A should be between 7 and 9 mm.
- Adjust if necessary.
- Loosen screws 1 by two to three turns.
- Swivel the alternator assembly so as to obtain the required belt tension.
- Retighten the screws 1.



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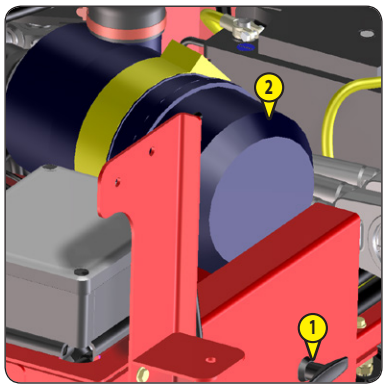
D - EVERY 500 HOURS OF SERVICE OR EVERY YEAR

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

D1 – 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 a removed or damaged air filter.

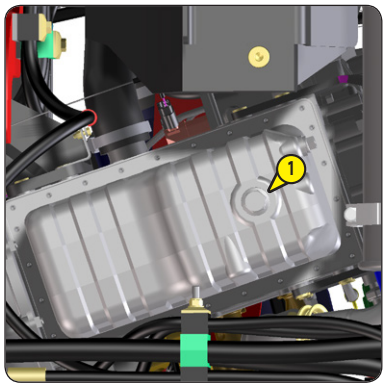
- Open the engine bonnet.
- Open panel 1.
- Loosen the bolts and remove cover 2.
- Carefully remove the cartridge, taking care to avoid spilling the dust.
- Leave the safety cartridge in place.
- The following parts must be cleaned with a damp, clean lint-free cloth.
  - The inside of the filter and cover.
  - The inside of the filter inlet bellows.
  - 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 in the filter axis and push it home, pressing against the outer edge and not the center.
- Reassemble the cover, guiding the valve downwards.

D2 – ENGINE OIL

DRAIN

D3 – ENGINE OIL FILTER

CHANGE



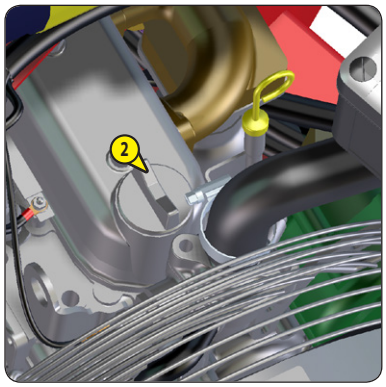
Place the lift truck on level ground, let the engine run at idle for a few minutes, then stop the engine.

⚠ IMPORTANT ⚠

USE THE RECOMMENDED LUBRICANTS: MANITOU GOLD oil "API CI-4; ACEA E9"
Dispose of used oil in an ecological manner.

DRAINING THE OIL

- Open the engine bonnet.
- Access the drainage pug from the underside of the truck.
- Place a container under drain plug 1 and unscrew the plug.
- Remove filling plug 2 to ensure that the oil is drained properly.

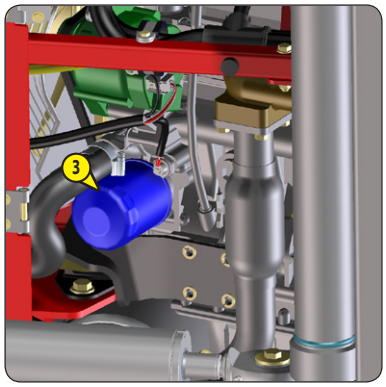


REPLACEMENT OF THE FILTER

- Open the panel.
- Remove engine oil filter 3 discard the filter and the filter seal.
- Clean the filter bracket with a clean, lint-free cloth.
- Lightly grease the oil filter seal and fit the new oil filter (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS) on the filter bracket.

⚠ IMPORTANT ⚠

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

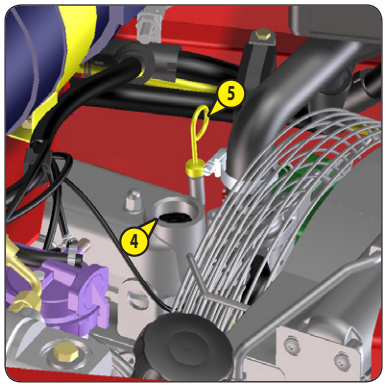


FILLING UP THE OIL

- Refit and tighten the drain plug 1 (tightening torque 45 to 53 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 4.

NOTE: For this operation, we recommend you use a funnel fitted with a hose.

- 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 at the drain plug and the engine oil filter.
- Stop the engine, wait a few minutes and check the level between the MAX and MIN marks on the dipstick 5.
- Top up if necessary.
- Close the engine bonnet.



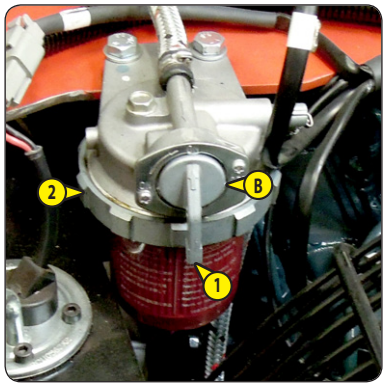
D4 – FUEL FILTER CARTRIDGE

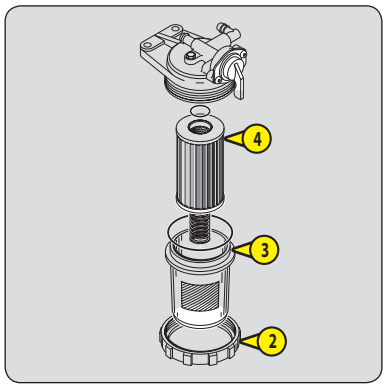
CHANGE

⚠ IMPORTANT ⚠

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

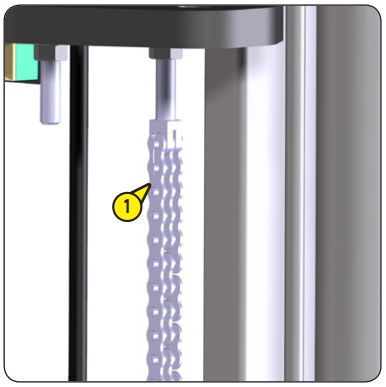
- Open the engine bonnet.
- Close the fuel valve 1 by setting to position B.
- Unscrew the retaining ring 2, remove the housing 3 and clean the inside using a brush immersed in clean diesel oil.
- Discard the filter cartridge 4.
- Refit the assembly with a new cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).





D5 – MAST LIFTING CHAINS

CLEAN - CHECK - GREASE



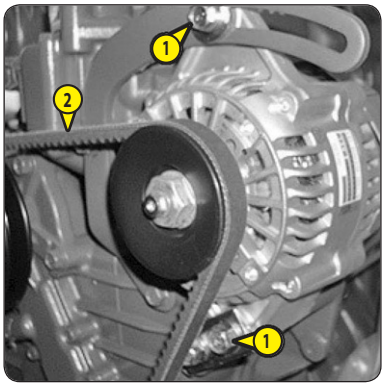
⚠ IMPORTANT ⚠

In case of technical faults, consult your dealer.

- Wipe the mast lifting chains 1 with a clean, lint-free cloth, then examine them closely so as to detect any signs of wear.
- Vigorously brush the chains to get rid of any foreign matter, with a hard nylon brush and clean diesel fuel.
- Rinse the chains by means of a paint brush impregnated with clean diesel fuel and dry them with a compressed air jet.
- Moderately lubricate the chains (see: 3- MAINTENANCE: LUBRICANTS AND FUEL).

D6 – ALTERNATOR/FAN/CRANKSHAFT BELT

CHANGE

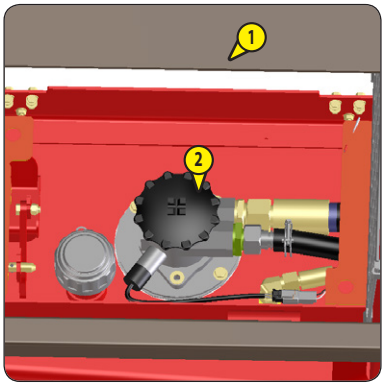


Place the lift truck on level ground with the engine stopped and cold.

- Open the engine bonnet.
- Loosen screws 1 by two to three turns.
- Swivel the alternator assembly so as to free the belt 2 and replace with a new one (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Adjust the belt tension between the crankshaft and alternator pulleys.
- With normal thumb pressure (98 N), the tension should be between 7 and 9 mm.
- Retighten the screws 1.

D7 – HYDRAULIC RETURN OIL FILTER CARTRIDGE

CHANGE



⚠ IMPORTANT ⚠

Thoroughly clean the outside of the filter and its surroundings before any operation to prevent any risk of polluting the hydraulic system.

Do not operate the lift truck without the cartridge in place, as this would immediately damage the hydraulic transmission system, the pump and the hydrostatic wheel motors.

Stop the engine and on level ground and relieve the pressure in the circuits by operating the hydraulic controls.

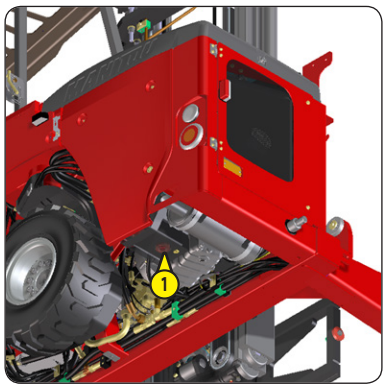
- Lift seat access panel 1.
- Unscrew the filter head 2 with a wrench.
- Remove the hydraulic oil filter cartridge and replace with a new one (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Make sure that the cartridge is correctly positioned.

E - EVERY 1000 HOURS OF SERVICE OR TWO YEARS

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

E1 – FUEL TANK

CLEAN

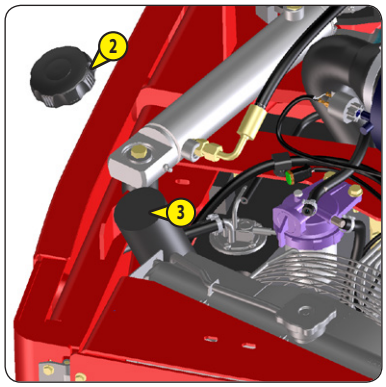


Place the lift truck on level ground with the engine stopped.

⚠ IMPORTANT ⚠

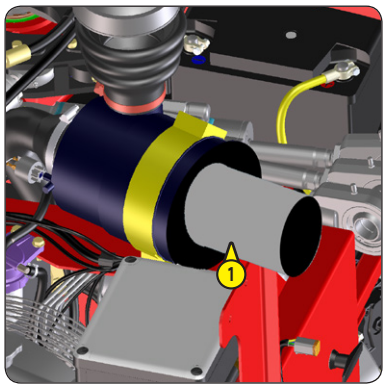
Do not smoke or approach with a flame during this operation.
Never attempt to carry out welding or any other operation by yourself, as this could cause an explosion or a fire.

- Open the engine bonnet.
- 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.
- Replace and tighten the drain plug 1.
- Fill the fuel tank with clean diesel filtered through the filler port.
- Refit the filler plug 2.
- If necessary, bleed the fuel supply system (see: 3 - MAINTENANCE: G1 - FUEL SUPPLY SYSTEM).



E2 – SAFETY DRY AIR FILTER CARTRIDGE

CHANGE



- For the disassembly and reassembly of the cartridge, see: 3 - MAINTENANCE: D1 - DRY 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).
- Introduce the cartridge into the filter axis and push it in, pressing the edges and not the middle.

NOTE: The safety cartridge replacement frequency is given for information only. The safety cartridge must be changed for every two changes of the air filter cartridge.

E3 – HYDRAULIC OIL

DRAIN

E4 – SUCTION STRAINER FOR HYDRAULIC OIL TANK

CLEAN

E5 – FILTER CAP FOR HYDRAULIC FLUID TANK

CHANGE

Place the lift truck on level ground with the engine stopped, the mast tilted backward and lowered as far as possible.

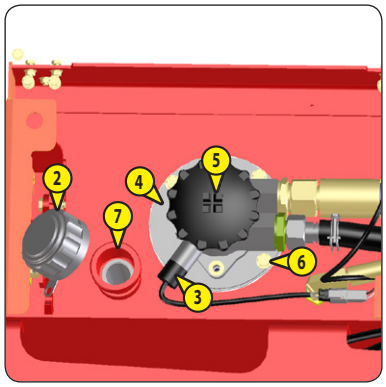
⚠ IMPORTANT ⚠

Dispose of the drain oil in an ecological manner.

Before any intervention, thoroughly clean the area surrounding the drain plug and the suction cover on the hydraulic tank.

DRAINING THE OIL

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

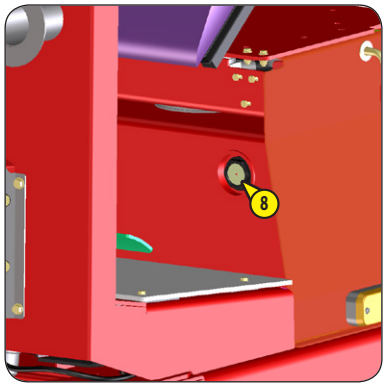


CLEANING THE STRAINER

- Disconnect clogging indicator 3.
- Disconnect the hoses at the filter.
- Unscrew the four screws 6 from plate 4 and remove the complete filter 5.
- Unscrew the suction strainer at the bottom of the tank, clean it with the help of a compressed air jet, check its condition and change it, if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the strainer, the plate and the filter, making sure that the seal is properly in place, and reconnect the hoses and the clogging indicator.

FILLING UP THE OIL

- Clean and refit the drain plug 1 (tightening torque 85 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 7.



⚠ IMPORTANT ⚠

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

- 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 plug.
- Replace filler plug with a new filler plug 2 (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

HYDRAULIC CIRCUIT DECONTAMINATION

- Let the engine run (accelerator pedal at halfway travel) for 5 minutes without using anything on the lift truck, then for 5 more minutes while using completely the hydraulic movements (except the steering system).
- Accelerate the engine at full speed for 1 minute, then activate the steering system.
- This operation makes a pollution abatement of the circuit possible through the hydraulic return oil filter.

⚠ IMPORTANT ⚠

It is sometimes necessary to bleed the circuits at the pump inlets when an air bubble has formed during draining. In this case, refer to your dealer.

E6 – SEAT BELT

CHECK

⚠ IMPORTANT ⚠

You must not, under any circumstances use the lift truck 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.

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

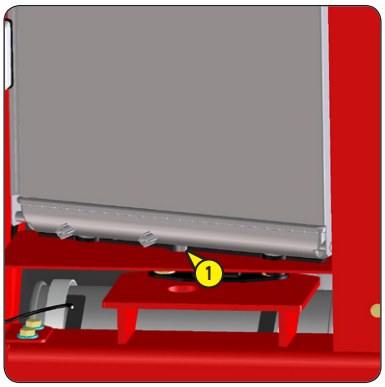
These operations are to be carried out as required or every two years at the beginning of winter. Place the lift truck on level ground with the engine stopped and cold.

⚠ 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.

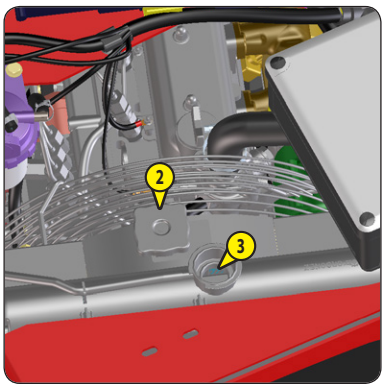
DRAINING THE LIQUID

- Open the engine bonnet.
- Open the radiator side door 1.
- Place a container under the radiator drain plug and unscrew the plug.
- Remove radiator filler cap 2.
- 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

- Retighten drain plug 1 (tightening torque 40 N.m).
- Slowly fill the circuit with the cooling liquid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 3.
- Refit the filler plug 2.
- Run the engine at idle for a few minutes.
- Check for any possible leaks.
- Check the level and refill if necessary.



F2 – WHEEL NUTS TIGHTENING TORQUE

CHECK

- Check the condition of the tires, to detect cuts, protuberances, wear, etc.
- Check the tightening torque of the wheel nuts with a torque wrench.
  - Front wheels: 250 N.m
  - Rear wheels: 250 N.m

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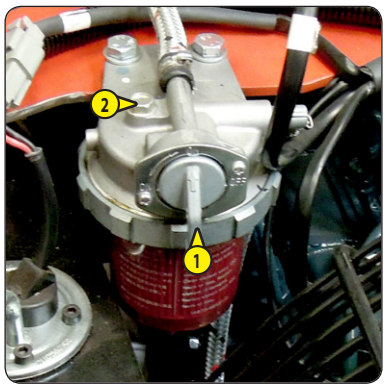
G – OCCASIONAL MAINTENANCE

G1 – FUEL SYSTEM

BLEED



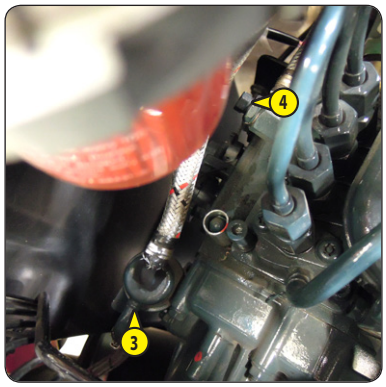
These operations are to be carried out only in the following cases:

- A component of the fuel system replaced or drained.
- A drained tank.
- Running out of fuel.

⚠ IMPORTANT ⚠

Fuel under high pressure that comes into contact with the skin can penetrate the skin and cause burns.
Spraying fuel under high pressure can cause a fire.
Failure to follow the inspection and maintenance instructions may result in serious injury.

Never work on the high pressure system.
Failure to follow this instruction may result in serious damage to the engine.
The high pressure fuel system must be adjusted and repaired only by approved and suitably trained technicians.



Ensure that the level of fuel in the tank is sufficient and bleed in the following order:

BLEEDING THE FUEL FILTER

- Open the engine bonnet.
- Fill the tank.
- Open the fuel valve 1.
- Loosen the fuel filter vent plug 2 a little.
- Manually operate the fuel pump with lever 3.
- Re-tighten the plug when there are no more bubbles.
- Open the vent plug on the top of the injection pump 4.
- Manually operate the fuel pump with lever 3.
- Re-tighten the plug when there are no more bubbles.

CHANGE

⚠ 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.
- To pass on stop of lift truck (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: DRIVING INSTRUCTIONS UNLADEN AND LADEN).
- Switch on the hazard warning lights (Option).

FRONT WHEEL

For this operation, we advise you to use the hydraulic jack MANITOU Reference 505507.

- Immobilize the lift truck in both directions by blocking the wheel opposite the wheel to be changed.
- Loosen the nuts of the wheel to be changed.
- Place the jack.
- Lower the stabilizers.
- 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.
- Raise the stabilizers and remove the wedge.
- Tighten the wheel nuts with a torque wrench (see: 3 - MAINTENANCE: F2 - WHEEL NUT TIGHTENING TORQUES).

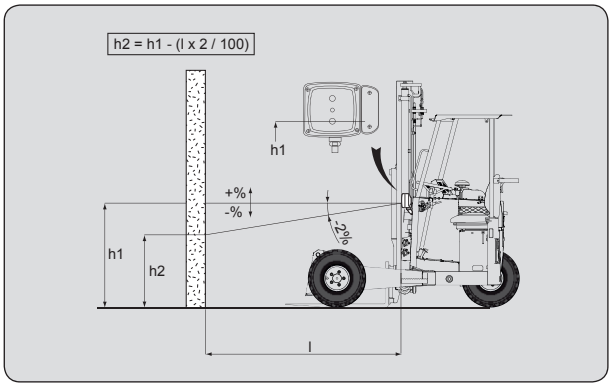
REAR WHEEL

For this operation, we advise you to use the hydraulic jack MANITOU Reference 505507.

- Immobilize the front wheels of the lift truck in both directions.
- Loosen the nuts of the wheel to be changed.
- Place the jack under the rear pivot.
- Raise the wheel until it is clear of the ground and insert safety blocks.
- 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 wedges and lower the lift truck with the jack.
- Tighten the wheel nuts with a torque wrench (see: 3 - MAINTENANCE: F2 - WHEEL NUT TIGHTENING TORQUES).

G3 – FRONT HEADLIGHTS (OPTION)

ADJUST



RECOMMENDED SETTING

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

Set dipped beam to -2 % relative to the headlight's horizontal axis.

ADJUSTING PROCEDURE

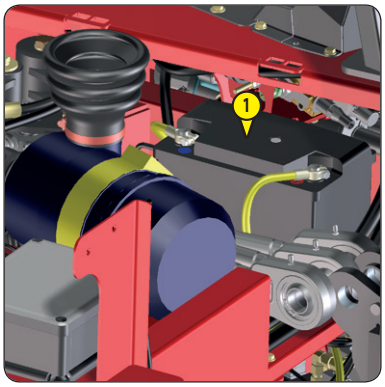
- Place the unladen lift truck in the transport position and perpendicular to a white wall on flat, level ground.
- Check the tyre pressures (see: 2 - DESCRIPTION: FRONT AND REAR TYRES).
- Place the forward/reverse selector in neutral.

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.

G4 – BATTERY

CHANGE



PROCEDURE IN THE EVENT OF BATTERY FAILURE

⚠ IMPORTANT ⚠

Operate the battery cut-off no less than 30 seconds after turning 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.

- Open the side bonnet.
- Bring a back-up battery of the same type as the one used for the lift truck, together with battery cables.
- Connect the back-up battery, respecting the polarity (-) (+).
- Start the lift truck and remove the cables as soon as the engine is running.
- Change the battery 1.

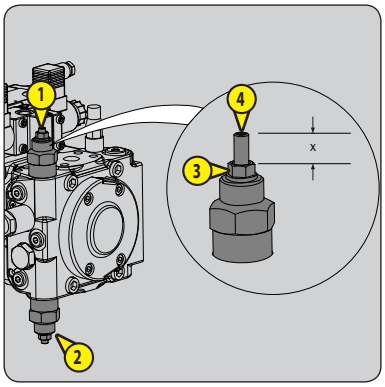
⚠ IMPORTANT ⚠

The lift truck must be towed very slowly (less than 5 km/h) and for as short a distance as possible (less than 100 m).

- Set the gear reverser switch to neutral and immobilize the truck.

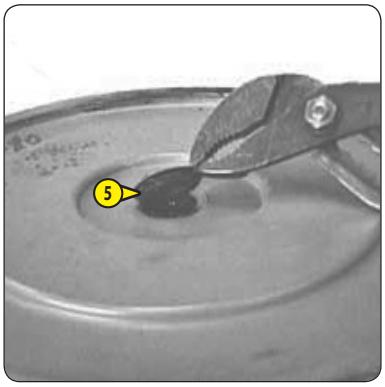
Hydrostatic disengagement (at the pump):

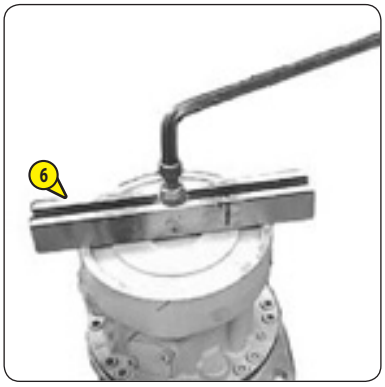
- Open the engine bonnet.
- Unscrew the high pressure limiters 1 and 2.
- Make a note of the clearance on the two high pressure limiters.
- Release the locknut 3.
- Tighten screw 4 until it is flush with the lock-nut 3.

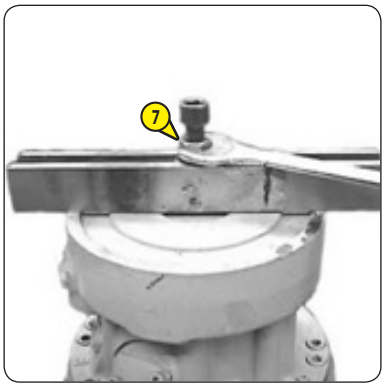


Mechanical disengagement (at the wheel motors):

- All lift truck wheel motor brakes are applied.
- Remove the plug 5 from the brake cover.
- Take a jig 6 and an M12 nut. Screw a screw into the piston.
- Tighten nut 7 until the motor shaft turns freely.
- Switch on the warning lights (option).
- After towing, proceed in the reverse order to lock the high pressure limiters.
- Do not forget to fit a new plug 5.



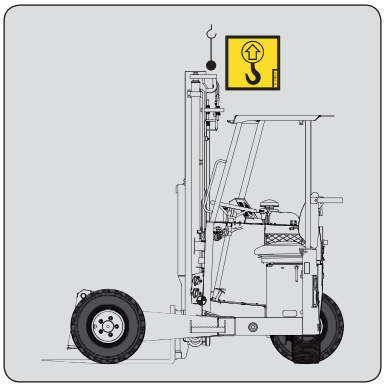


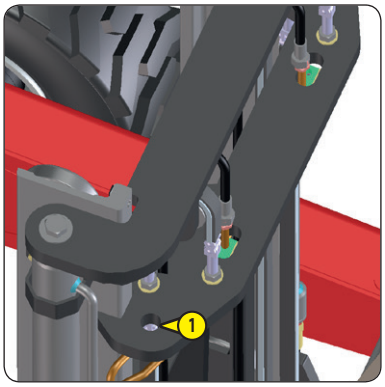


G6 – LIFT TRUCK

SLINGING

- Place the hooks in the fastening points 1 provided.





G7 – LIFT TRUCK ON A PLATFORM

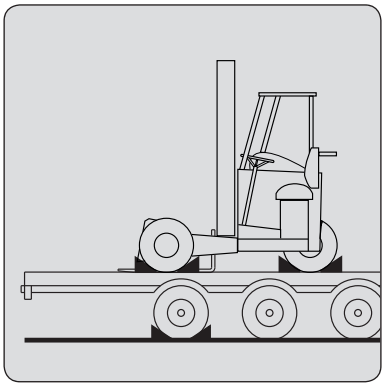
TRANSPORTING

⚠ IMPORTANT ⚠

Ensure that the platform safety instructions are correctly applied before the loading of the lift truck and that the driver of the means of transport is informed about the dimensions and the weight of the lift truck (see: 2 - DESCRIPTION: CHARACTERISTICS).

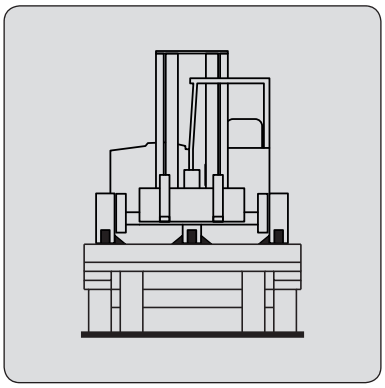
Ensure that the platform is of sufficient size and load capacity for transporting the lift truck.

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



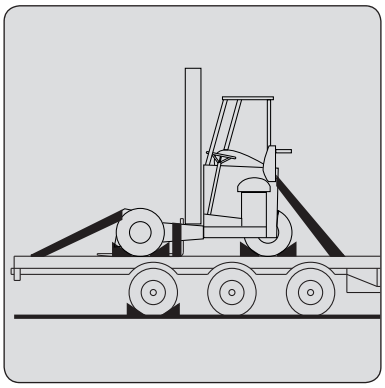
LOADING THE LIFT TRUCK

- 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 at the back 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 straps, to the front of the lift truck, on the wheel arms and to the rear.
- Tighten the straps.



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