1 - OPERATING AND SAFETY INSTRUCTIONS

2 - DESCRIPTION

3 - MAINTENANCE

4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE

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

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.

On the basis of experience, there are a number of possible situations in which operating the lift truck is contra-indicated. Such foreseeable abnormal uses, the main ones being listed below, are strictly forbidden.

- The foreseeable abnormal behaviour resulting from ordinary neglect, but does not result from any wish to put the machinery to any improper use.
- The reflex reactions of a person in the event of a malfunction, incident, fault, etc. during operation of the lift truck.
- Behaviour resulting from application of the «principle of least action» when performing a task.
- For certain machines, the foreseeable behaviour of such persons as: apprentices, teenagers, handicapped persons, trainees tempted to drive a lift truck, operator tempted to operate a truck 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 LIFT TRUCK'S SUITABILITY FOR THE JOB

- MANITOU has ensured that this lift truck is suitable for use under the standard operating conditions defined in this operator's manual, with a **STATIC TEST COEFFICIENT OF 1.33** and a **DYNAMIC TEST COEFFICIENT OF 1**, as specified in harmonised norm **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, flashing 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 signalling and lighting equipment. Contact your dealer.
- Take into account climatic and atmospheric conditions of the site of utilisation.
  . Protection against frost (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
  . Adaptation of lubricants (ask your dealer for information).
  . I.C. engine filtration (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

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. It is the same 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.

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 inflammable 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 norm 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 norm (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 can therefore be measured only under actual operating conditions at the user's premises.
- The following are some tips for minimizing these vibration doses:
  • Select the most suitable lift truck and attachment for the intended use.
  • 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.

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C - MODIFICATION OF THE LIFT TRUCK

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

THE INSTRUCTIONS

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

THE MAINTENANCE

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

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.

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INSTRUCTIONS FOR THE OPERATOR

PREAMBULE

WHENEVER YOU SEE THIS SYMBOL IT MEANS:

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

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

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

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

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 - AUTHORIZATION FOR USE IN FRANCE

(or see current legislation in other countries)

- Only qualified, authorized personnel may use the lift truck. This authorization is given in writing by the appropriate person in the company, in charge of using the lift truck, and must be permanently carried by the operator.
- The operator is not competent to authorise the driving of the lift truck by another person.

C - MAINTENANCE

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

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

D - MODIFICATION OF THE LIFT TRUCK

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

E - LIFTING PEOPLE

- The use of working equipment and load lifting attachments to lift people is:
  - • either forbidden
  - • or authorized exceptionally and under certain conditions (see current regulations in the country in which the lift truck is used).

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A - BEFORE STARTING THE LIFT TRUCK

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

B - DRIVER'S OPERATING INSTRUCTIONS

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

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

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

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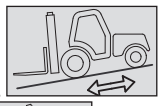
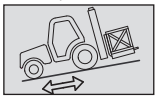
C - ENVIRONMENT

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

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 case, 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).

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E - STARTING THE LIFT TRUCK

SAFETY NOTICE

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

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

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).
- For lift trucks operating on gas carburisation, open the gas bottle.
- Check that the forward/reverse selector is in neutral.
- Turn the ignition key to the position I to activate the electrical system and the preheat.
- Check the fuel level on the indicator.
- Turn the ignition key fully: the I.C. engine should then start. Release the ignition key and let the I.C. 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 I.C. 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 I.C. engine and immediately carry out the necessary operations.

F - DRIVING THE LIFT TRUCK

SAFETY NOTICE

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 300 mm from the ground and the carriage sloping backwards.
- Only carry loads which are balanced and properly anchored to avoid any risk of a load falling off.
- Ensure that palettes, cases, etc, are in good order and suitable for the load to be lifted.
- Familiarise yourself with the lift truck on the terrain where it will be used.
- Ensure that the service brakes are working properly.
- The loaded lift truck must not travel at speeds in excess of 12 km/h.
- Drive smoothly at an appropriate speed for the operating conditions (land configuration, load on the lift truck).
- Do not use the hydraulic mast controls when the lift truck is moving.
- Do not manoeuvre 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.

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- 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 300 mm from the ground and the carriage sloping backwards.
- For lift trucks with gearboxes, use the recommended gear (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Release the parking 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 NOTICE
- 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 put 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…).

INSTRUCTIONS
- Park the lift truck on flat ground or on an incline lower than 15 %.
- Place the forward/reverse selector in neutral.
- Apply the parking brake.
- For lift trucks with gearboxes, place the gear lever in neutral.
- Lower the forks or attachment to rest on the ground.
- When using an attachment with a grab or jaws, or a bucket with hydraulic opening, close the attachment fully.
- Before stopping the lift truck after a long working period, leave the I.C. engine idling for a few moments, to allow the coolant liquid and oil to lower the temperature of the I.C. engine and transmission. Do not forget this precaution, in the event of frequent stops or warm stalling of the I.C. engine, or else the temperature of certain parts will rise significantly due to the stopping of the cooling system, with the risk of badly damaging such parts.
- Stop the I.C. engine with the ignition switch.
- Remove the ignition key.
- Lock all the accesses to the lift truck (doors, windows, cowls…).
- For lift trucks operating on gas carburisation, shut the LPG bottle. For a long lasting stop, let the engine stop naturally by shutting the LPG bottle before switching off the ignition, so as to eliminate all the fuel in the feed tube.

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H - DRIVING THE LIFT TRUCK ON THE PUBLIC HIGHWAY

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.
- Check the good working order and cleanness of lights, indicators and windscreen wiper.
- Switch off the working headlights if the lift truck is fitted with them.
- Put the attachment at 300 mm from the ground.

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

DRIVING THE LIFT TRUCK WITH A FRONT-MOUNTED ATTACHMENT

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

OPERATING THE LIFT TRUCK WITH A TRAILER

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

IF NECESSARY, CONSULT YOUR DEALER.

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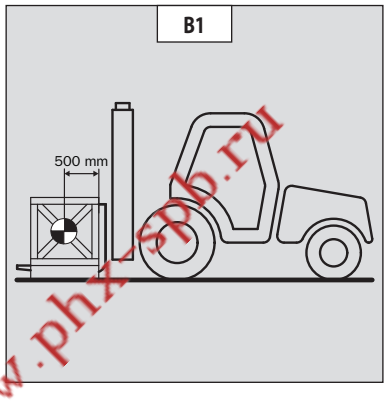
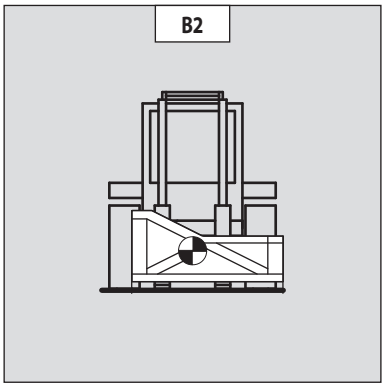
A - CHOICE OF ATTACHMENTS

- 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 - MASS OF LOAD AND CENTRE OF GRAVITY

- Before taking up a load, you must know its mass and its centre of gravity.
- The load chart for your lift truck is valid for a load in which the longitudinal position of the centre of gravity is 500 or 600 mm from the base of the forks (as model of lift truck) (fig. B1). For a higher centre of gravity, contact your dealer.
- For irregular loads, determine the transverse centre of gravity before any movement (fig. B2) and set it in the longitudinal axis of the lift truck.





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

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

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C - TRANSVERSE ATTITUDE OF THE LIFT TRUCK

The transverse attitude is the transverse slope of the chassis with respect to the horizontal.
Raising the load 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).

D - TAKING UP A LOAD ON THE GROUND

- Approach the lift truck perpendicular to the load, with the the forks in a horizontal position (fig. D1).
- Adjust the fork spread and centering in connection with the load (fig. D2) (optional solutions exist, consult your dealer).
- Never lift a load with a single fork.

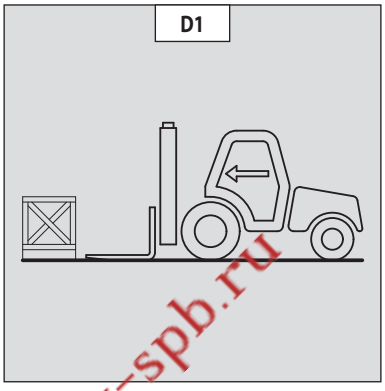
Beware of the risks of trapping or squashing limbs when manually adjusting the forks.

- Move the lift truck forward slowly (1) and bring the forks to stop in front of the load (fig. D3), if necessary, slightly lift the mast (2) while taking up the load.
- Bring the load into the transport position.
- Tilt the load far enough backwards to ensure stability (loss of load on braking or going downhill).

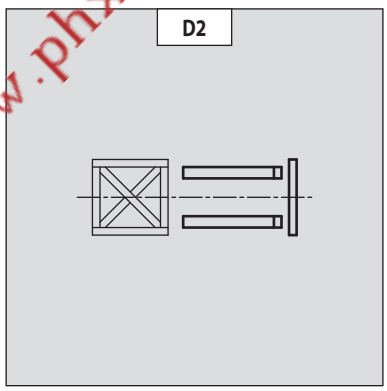
FOR A NON-PALLETIZED LOAD

- Tilt the carriage (1) forwards and move the lift truck slowly forwards (2), to insert the fork under the load (fig. D4) (block the load if necessary).
- Continue to move the lift truck forwards (2) tilting the carriage (3) (fig. D4) backwards to position the load on the forks and check the load's longitudinal and lateral stability.

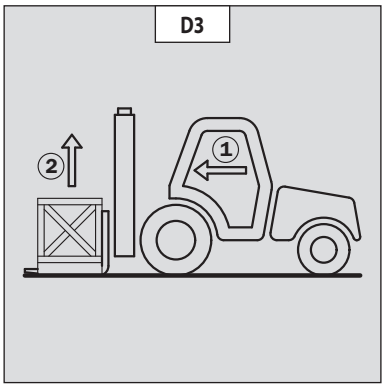
D1



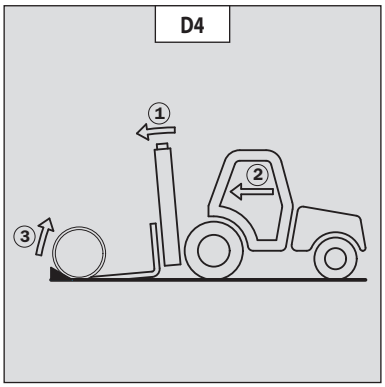
D2



D3



D4



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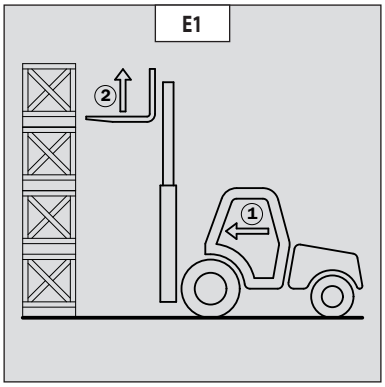
E - TAKING UP AND LAYING A HIGH LOAD ON TYRES

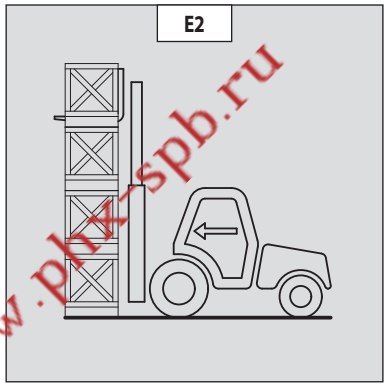
You must not raise the mast if you have not checked the transverse attitude of the lift truck (see: INSTRUCTIONS FOR HANDLING A LOAD: C - TRANSVERSE ATTITUDE OF THE LIFT TRUCK).

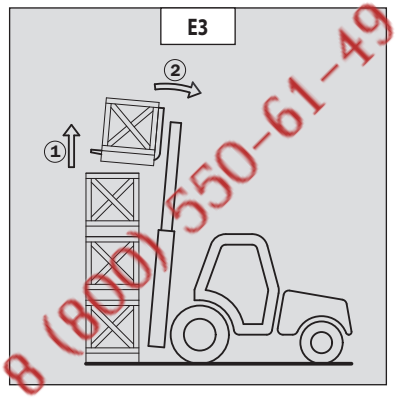
REMINDER: Make sure that the following operations can be performed with good visibility (see: OPERATIONS INSTRUCTIONS UNLADEN AND LADEN: D - VISIBILITY).

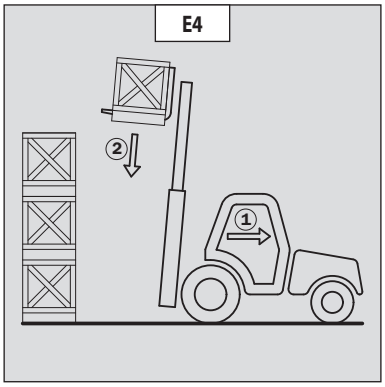
TAKING UP A HIGH LOAD ON TYRES

- Ensure that the forks will easily pass under the load.
- Keeping the mast vertical (1), advance the lift truck and raise the forks to level with the load (2) (fig. E1).
- Manoeuvre carefully and gently to bring the forks to the stop in front of the load (fig. E2). Put the handbrake on and set the forward/reverse selector to neutral.
- Slightly lift the load (1) and incline the carriage (2) backwards to stabilize the load (fig. E3).
- Tilt the load sufficiently backwards to ensure its stability.
- Reverse the lift truck (1) very carefully and gently to free the load. Lower the mast (2) to bring the load into transport position (fig. E4).



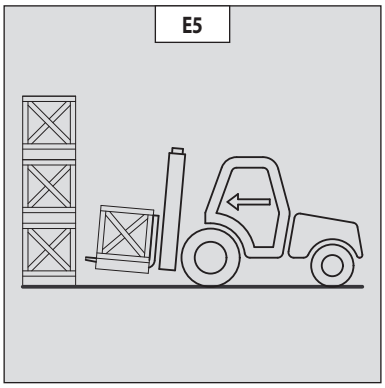


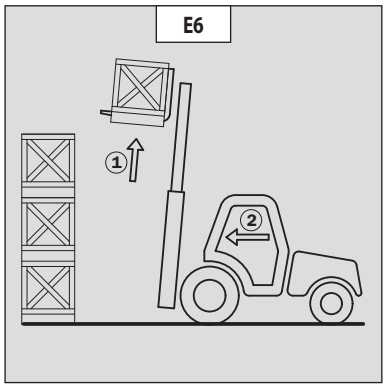


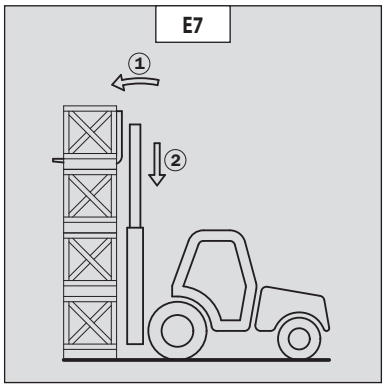


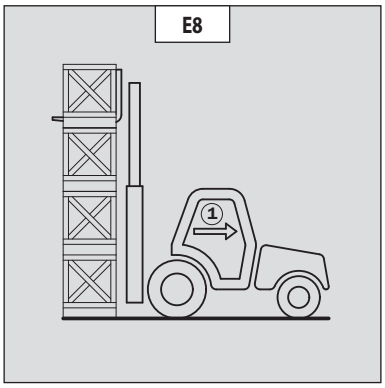
LAYING A HIGH LOAD ON TYRES

- Approach the load in the transport position in front of the pile (fig. E5).
- Raise the mast (1) until the load is higher than the pile and move the lift truck forward (2) (fig. E6) very carefully and gently, until the load is over the pile. Put the handbrake on and set the forward/reverse selector to neutral.
- Place the load in a horizontal position by tilting the mast forwards (1) and lay it down on the pile (2) while checking the correct positioning of the load (fig. E7).
- Reverse the lift truck (1) very slowly and carefully to release the forks (fig. E8). Then set them into transport position.









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MAINTENANCE INSTRUCTIONS OF THE LIFT TRUCK

GENERAL INSTRUCTIONS

- Ensure the area is sufficiently ventilated before starting the lift truck.
- Wear clothes suitable for the maintenance of the lift truck, avoid wearing jewellery and loose clothes. Tie and protect your hair, if necessary.
- Stop the I.C. engine and remove the ignition key, when an intervention is necessary.
- Read the operator's manual carefully.
- Carry out all repairs immediately, even if the repairs concerned are minor.
- Repair all leaks immediately, even if the leak concerned is minor.
- Make sure that the disposal of process materials and of spare parts is carried out in total safety and in a ecological way.
- Be careful of the risk of burning and splashing (exhaust, radiator, I.C. 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 the recommended lubricants (never use contaminated lubricants).
- Do not fill the fuel tank when the I.C. engine is running.
- Only fill up the fuel tank in areas specified for this purpose.
- Do not fill the fuel tank to the maximum level.
- Do not smoke or approach the lift truck with a flame, when the fuel tank is open or is being filled.

HYDRAULIC

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

BALANCING VALVE: It is dangerous to change the setting and remove the balancing valves or safety valves which may be fitted to your lift truck cylinders. These operations must only be performed by approved personnel (consult your dealer).

The HYDRAULIC ACCUMULATORS that may be fitted on your lift truck are pressurised units. Removing these accumulators and their pipework is a dangerous operation and must only be performed by approved personnel (consult your dealer).

ELECTRICITY

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

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WELDING

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

WASHING THE LIFT TRUCK

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

FOR ANY INTERVENTION OTHER THAN REGULAR MAINTENANCE, CONSULT YOUR DEALER.

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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.

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 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 retracted position.
- Release the pressure in the hydraulic circuits.

PROTECTING THE I.C. ENGINE

- Fill the tank with fuel (see: 3 - MAINTENANCE: A - DAILY OR EVERY 10 HOURS SERVICE).
- Empty and replace the cooling liquid (see: 3 - MAINTENANCE: F - EVERY 2000 HOURS SERVICE).
- Leave the I.C. engine running at idling speed for a few minutes, then switch off.
- Replace the I.C. engine oil and oil filter (see: 3 - MAINTENANCE: D - EVERY 500 HOURS SERVICE).
- 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 tyres are not in contact with the ground and release the handbrake.
- Protect cylinder rods which will not be retracted, from corrosion.
- Wrap the tyres.

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

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BRINGING THE LIFT TRUCK BACK INTO SERVICE

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

Make sure the area is adequately ventilated before starting up 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.

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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 - B.P. 10 249 - 44 158 - 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* :

MI 15 D / MI 15 G
MI 18 D / MI 18 G
MI 20 D / MI 20 G
MI 25 D / MI 25 G
MI 30 D / MI 30 G
MI 35 D / MI 35 G

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 : **31/03/2014**

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

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

21) Signature, *Signature* :

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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 thuairisctear 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 techninės specifikacijas, 17) Pasirašyta, 18) Data, 19) Pasirašiusio asmens vardas ir pavardė, 20) Pareigos, 21) Parašas.

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

mt : 1) Dikjarazzjoni ta' Konformità KE (originali), 2) Il-kumpannija, 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-ligijiet 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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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.

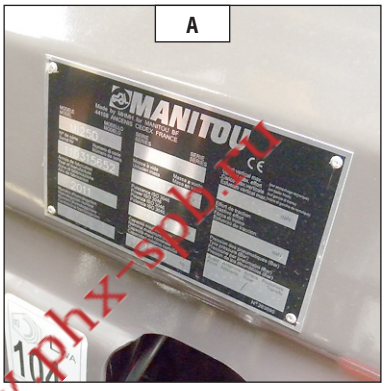
When you order parts, or when you require any technical information, always specify:

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 (FIG. A)

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

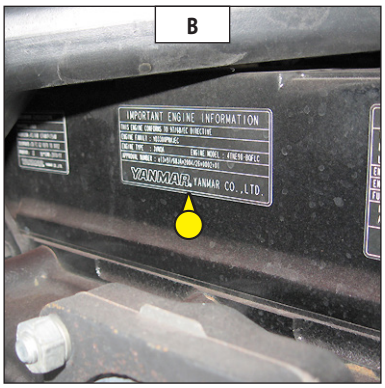
For any further technical information regarding your lift truck refer to chapter: 2 - DESCRIPTION: CHARACTERISTICS.



ENGINE (FIG. B)

MI 15 D
MI 18 D
MI 20 D
MI 25 D
MI 30 D
MI 35 D

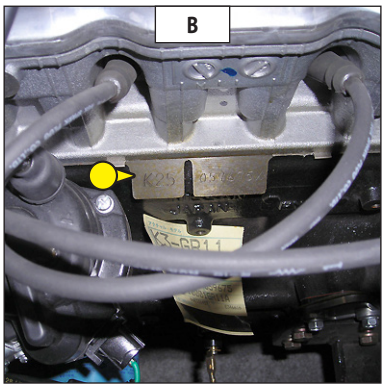
- Model .....
- Engine Nr .....



ENGINE (FIG. B)

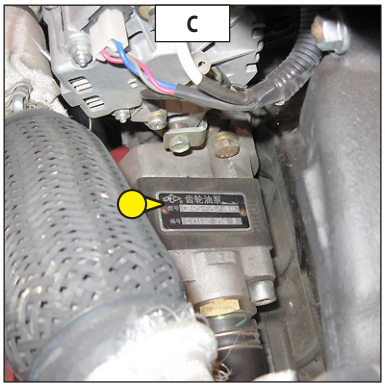
MI 15 G
MI 18 G
MI 20 G
MI 25 G
MI 30 G
MI 35 G

- Engine Nr .....



HYDRAULIC POMP (FIG. C)

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



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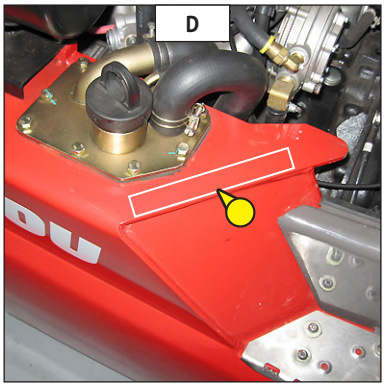
CHASSIS (FIG. D)

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



MAST (FIG. E)

- Mast identification Nr .....

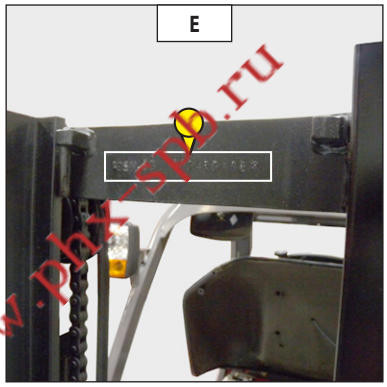
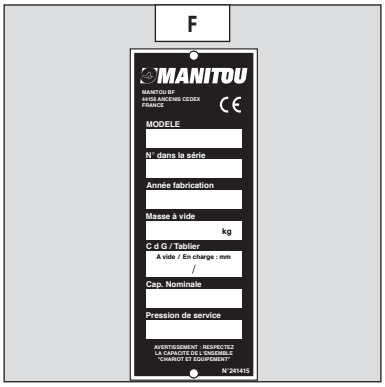


PLATE MANUFACTURER OF THE ATTACHMENT (FIG. F)

- Model .....
- Serial no. .....
- Year of manufacture .....



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CHARACTERISTICS

MI 15 D
MI 18 D

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 15 D	MI 18 D
	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)	1,5	1,8
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	405	405
	1.9	Wheelbase	y (mm)	1 420	1 420
WEIGHT	2.1	Kerb weight of truck	kg	2 905	3 100
	2.2	Front axle load laden	kg	3 820	4 260
	2.2.1	Rear axle load laden	kg	585	640
	2.3	Front axle load unladen	kg	1 325	1 315
	2.3.1	Rear axle load unladen	kg	1 580	1 785
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	6.50-10 10PR	6.50-10 10PR
	3.3	Size of rear wheels	" or mm	5.00-8 8PR	5.00-8 8PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	900	900
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	920	920
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 145	2 145
	4.3	Normal free lift	h2 (mm)	155	155
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 255	4 255
	4.7	Height of driver protection (cab)	h6 (mm)	2 090	2 090
	4.8	Height of seat	h7 (mm)	1 160	1 160
	4.12	Height of towing coupling	h10 (mm)	315	315
	4.19	Total length	l1 (mm)	3 310	3 350
	4.20	Length of forks at heel	l2 (mm)	2 240	2 280
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 080/1 500	1 080/1 500
	4.22	Section of fork arms	s (mm)	35	35
	4.22.1	Width of fork arms	e (mm)	100	100
	4.22.2	Length of fork arms	l (mm)	1 070	1 070
	4.23	Fork carriage to DIN 15 173 A/B		FEM2A	FEM2A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 000	1 000
	4.31	Ground clearance of mast	m1 (mm)	115	115
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	150	150
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	3 590	3 615
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	3 790	3 815
	4.35	Turning radius (raised/lowered position)	Wa (mm)	1 985	2 010
	4.36	Inner turning radius	b13 (mm)	55	55

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PERFORMANCE	5.1	Speed of travel laden	km/h	18,5	18,6
	5.1.1	Speed of travel unladen	km/h	19	19,3
	5.2	Speed of rise laden	m/s	0,50	0,50
	5.2.1	Speed of rise unladen	m/s	0,55	0,55
	5.3	Speed of lowering laden	m/s	0,50	0,50
	5.3.1	Speed of lowering unladen	m/s	0,55	0,55
	5.5	Nominal towing power laden	N	14 500	14 400
	5.5.1	Nominal towing power unladen	N	7 600	7 950
	5.7	Slope laden	%	>20	>20
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		YANMAR 4TNE92-HRJ	YANMAR 4TNE92-HRJ
	7.2	Power delivery	kW	32,8	32,8
	7.3	Rated speed	Rpm	2 450	2 450
	7.4	Number of pistons / Capacity	cm^3	4/2 659	4/2 659
	7.5	Fuel consumption (according to VDI cycle)	l/h		
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments	L/mn	56	56
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	88	88
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,83	0,83

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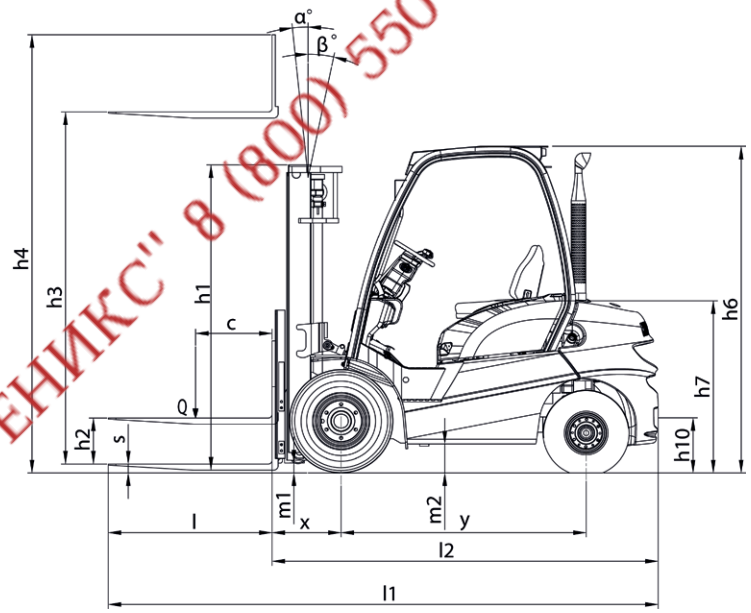

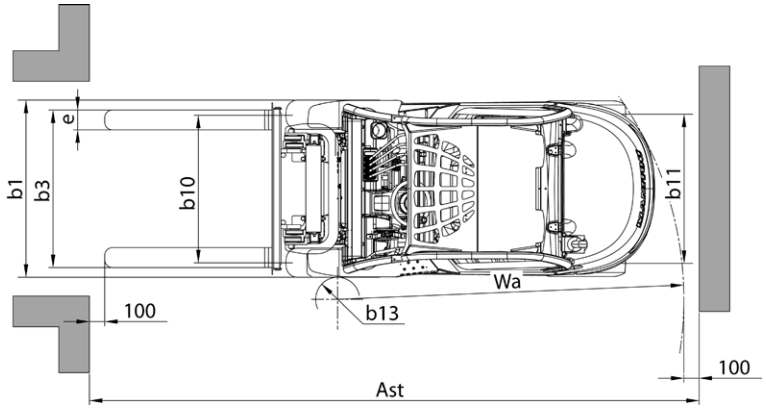

CHARACTERISTICS

MI 15 G
MI 18 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 15 G	MI 18 G
	1.3	Propulsion: battery, diesel, petrol, LPG, mains		GPL	GPL
	1.4	Type of operation: manual, pedestrian, standing, seated		Seated	Seated
	1.5	Rated capacity/load on forks (basic capacity)	Q (t)	1,5	1,8
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	405	405
	1.9	Wheelbase	y (mm)	1 420	1 420
WEIGHT	2.1	Kerb weight of truck	kg	2 710	2 905
	2.2	Front axle load laden	kg	3 640	4 160
	2.2.1	Rear axle load laden	kg	570	545
	2.3	Front axle load unladen	kg	1 230	1 215
	2.3.1	Rear axle load unladen	kg	1 480	1 690
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	6.50-10 10PR	6.50-10 10PR
	3.3	Size of rear wheels	" or mm	5.00-8 8PR	5.00-8 8PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	900	900
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	920	920
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 145	2 145
	4.3	Normal free lift	h2 (mm)	155	155
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 255	4 255
	4.7	Height of driver protection (cab)	h6 (mm)	2 090	2 090
	4.8	Height of seat	h7 (mm)	1 160	1 160
	4.12	Height of towing coupling	h10 (mm)	315	315
	4.19	Total length	l1 (mm)	3 310	3 350
	4.20	Length of forks at heel	l2 (mm)	2 240	2 280
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 080/1 500	1 080/1 500
	4.22	Section of fork arms	s (mm)	35	35
	4.22.1	Width of fork arms	e (mm)	100	100
	4.22.2	Length of fork arms	l (mm)	1 070	1 070
	4.23	Fork carriage to DIN 15 173 A/B		FEM2A	FEM2A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 000	1 000
	4.31	Ground clearance of mast	m1 (mm)	115	115
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	150	150
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	3 590	3 615
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	3 790	3 815
	4.35	Turning radius (raised/lowered position)	Wa (mm)	1 985	2 010
	4.36	Inner turning radius	b13 (mm)	55	55

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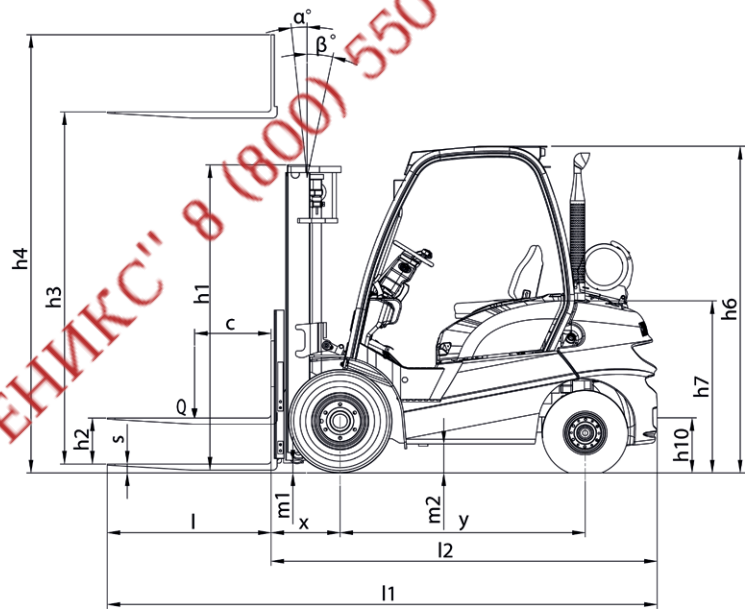
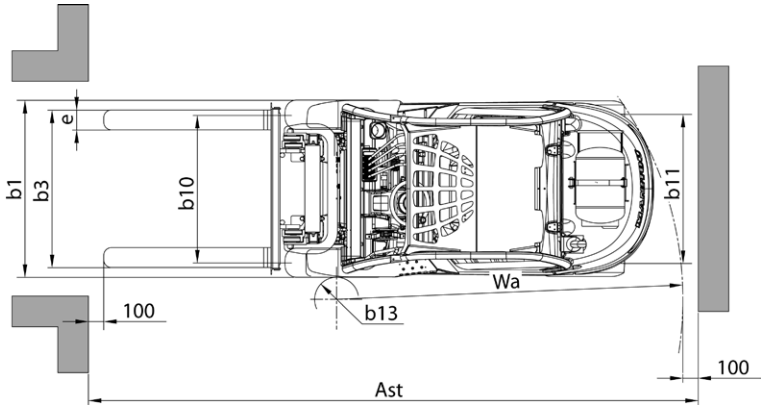
PERFORMANCE	5.1	Speed of travel laden	km/h	17,5	17,5
	5.1.1	Speed of travel unladen	km/h	18	18
	5.2	Speed of rise laden	m/s	0,45	0,45
	5.2.1	Speed of rise unladen	m/s	0,55	0,55
	5.3	Speed of lowering laden	m/s	0,50	0,50
	5.3.1	Speed of lowering unladen	m/s	0,55	0,55
	5.5	Nominal towing power laden	N	14 600	14 500
	5.5.1	Nominal towing power unladen	N	7 700	8 000
	5.7	Slope laden	%	>20	>20
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		NISSAN K21	NISSAN K21
	7.2	Power delivery Up to machine N°856887 From machine N°856888	kW	31,5 29	31,5 29
	7.3	Rated speed Up to machine N°856887 From machine N°856888	Rpm	2 300 2250	2 300 2250
	7.4	Number of pistons / Capacity	cm^3	4/2 065	4/2 065
	7.5	Fuel consumption (according to VDI cycle)	l/h		
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments Up to machine N°856887 From machine N°856888	L/mn	53 52	53 52
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	86	86
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,83	0,83





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CHARACTERISTICS

MI 20 D
MI 25 D

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 20 D	MI 25 D
	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)	2,0	2,5
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	465	465
	1.9	Wheelbase	y (mm)	1 600	1 600
WEIGHT	2.1	Kerb weight of truck	kg	3 725	4 000
	2.2	Front axle load laden	kg	5 005	5 735
	2.2.1	Rear axle load laden	kg	720	765
	2.3	Front axle load unladen	kg	1 765	1 710
	2.3.1	Rear axle load unladen	kg	1 960	2 290
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	7.00-12 12PR	7.00-12 12PR
	3.3	Size of rear wheels	" or mm	6.00-9 10PR	6.00-9 10PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	965	965
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	973	973
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 185	2 185
	4.3	Normal free lift	h2 (mm)	140	140
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 345	4 345
	4.7	Height of driver protection (cab)	h6 (mm)	2 115	2 115
	4.8	Height of seat	h7 (mm)	1190	1190
	4.12	Height of towing coupling	h10 (mm)	355	360
	4.19	Total length	l1 (mm)	3 615	3 685
	4.20	Length of forks at heel	l2 (mm)	2 465	2 535
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 155/1 595	1 155/1 595
	4.22	Section of fork arms	s (mm)	40	40
	4.22.1	Width of fork arms	e (mm)	122	122
	4.22.2	Length of fork arms	l (mm)	1 150	1 150
	4.23	Fork carriage to DIN 15 173 A/B		FEM2A	FEM2A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 038	1 038
	4.31	Ground clearance of mast	m1 (mm)	115	115
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	175	175
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	3 865	3 930
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	4 065	4 130
	4.35	Turning radius (raised/lowered position)	Wa (mm)	2 200	2 265
	4.36	Inner turning radius	b13 (mm)	145	145

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PERFORMANCE	5.1	Speed of travel laden	km/h	18	18
	5.1.1	Speed of travel unladen	km/h	18,5	18,6
	5.2	Speed of rise laden	m/s	0,56	0,56
	5.2.1	Speed of rise unladen	m/s	0,58	0,58
	5.3	Speed of lowering laden	m/s	0,48	0,50
	5.3.1	Speed of lowering unladen	m/s	0,55	0,55
	5.5	Nominal towing power laden	N	19 000	19 400
	5.5.1	Nominal towing power unladen	N	10 200	10 250
	5.7	Slope laden	%	>20	>20
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		YANMAR 4TNE98-BQFLC	YANMAR 4TNE98-BQFLC
	7.2	Power delivery	kW	42,1	42,1
	7.3	Rated speed	Rpm	2 300	2 300
	7.4	Number of pistons / Capacity	cm^3	4/3 319	4/3 319
	7.5	Fuel consumption (according to VDI cycle)	l/h	3,94	3,94
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments	L/mn	69	69
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	89	89
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,78	0,78

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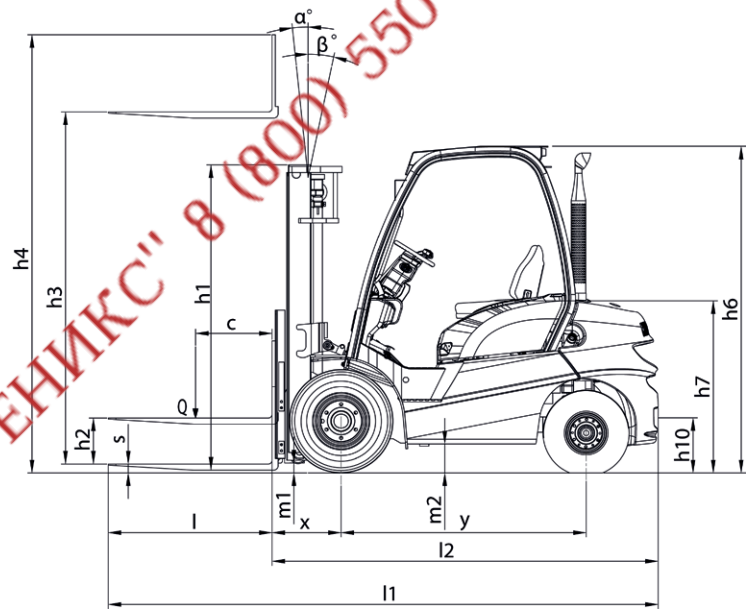

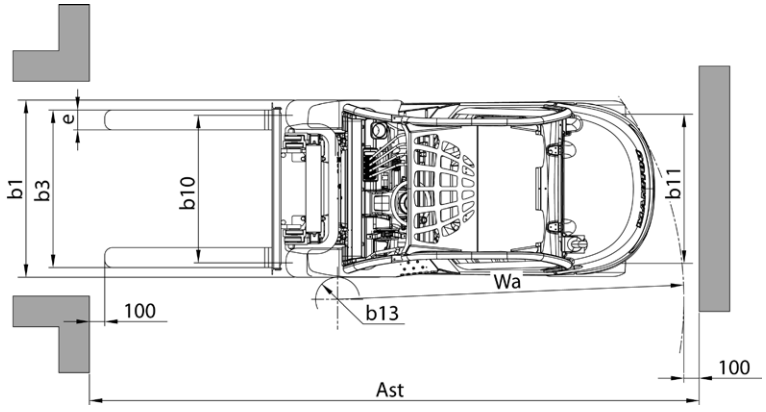

CHARACTERISTICS

MI 20 G
MI 25 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 20 G	MI 25 G
	1.3	Propulsion: battery, diesel, petrol, LPG, mains		GPL	GPL
	1.4	Type of operation: manual, pedestrian, standing, seated		Seated	Seated
	1.5	Rated capacity/load on forks (basic capacity)	Q (t)	2,0	2,5
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	465	465
	1.9	Wheelbase	y (mm)	1 600	1 600
WEIGHT	2.1	Kerb weight of truck	kg	3 620	3 895
	2.2	Front axle load laden	kg	4 930	5 665
	2.2.1	Rear axle load laden	kg	690	730
	2.3	Front axle load unladen	kg	1 720	1 665
	2.3.1	Rear axle load unladen	kg	1 900	2 230
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	7.00-12 12PR	7.00-12 12PR
	3.3	Size of rear wheels	" or mm	6.00-9 10PR	6.00-9 10PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	965	965
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	973	973
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 185	2 185
	4.3	Normal free lift	h2 (mm)	140	140
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 345	4 345
	4.7	Height of driver protection (cab)	h6 (mm)	2 115	2 115
	4.8	Height of seat	h7 (mm)	1190	1190
	4.12	Height of towing coupling	h10 (mm)	355	360
	4.19	Total length	l1 (mm)	3 615	3 685
	4.20	Length of forks at heel	l2 (mm)	2 465	2 535
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 155/1 595	1 155/1 595
	4.22	Section of fork arms	s (mm)	40	40
	4.22.1	Width of fork arms	e (mm)	122	122
	4.22.2	Length of fork arms	l (mm)	1 150	1 150
	4.23	Fork carriage to DIN 15 173 A/B		FEM2A	FEM2A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 038	1 038
	4.31	Ground clearance of mast	m1 (mm)	115	115
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	175	175
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	3 865	3 930
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	4 065	4 130
	4.35	Turning radius (raised/lowered position)	Wa (mm)	2 200	2 265
	4.36	Inner turning radius	b13 (mm)	145	145

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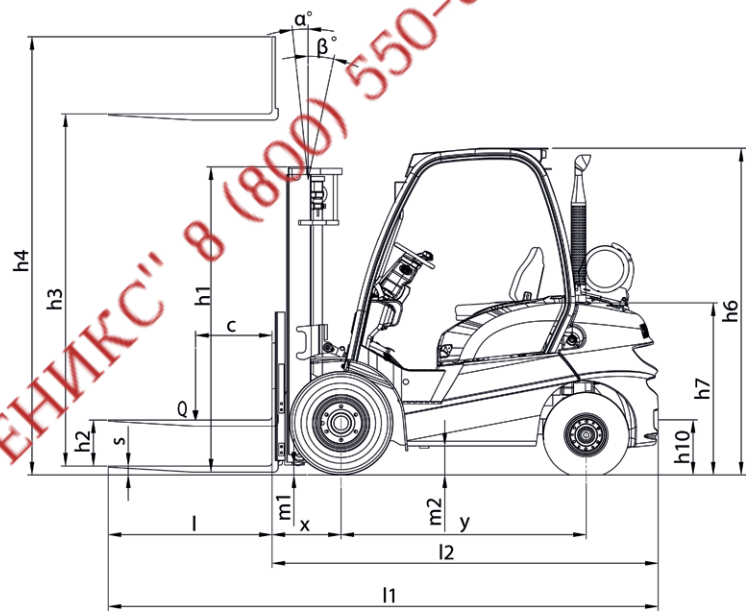
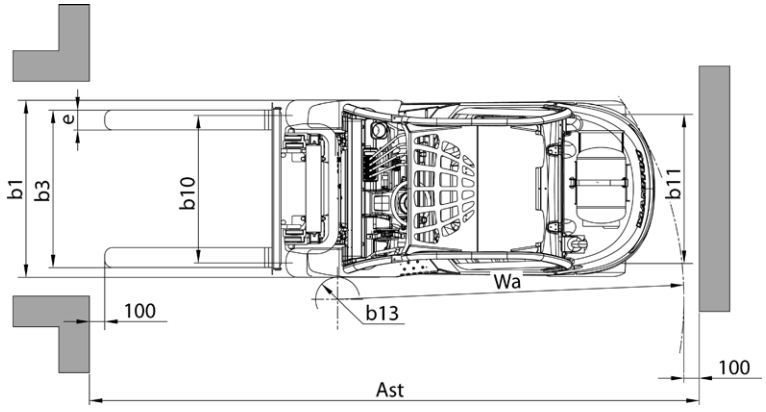
PERFORMANCE	5.1	Speed of travel laden	km/h	18,8	19,4
	5.1.1	Speed of travel unladen	km/h	19,4	19,7
	5.2	Speed of rise laden	m/s	0,56	0,56
	5.2.1	Speed of rise unladen	m/s	0,55	0,55
	5.3	Speed of lowering laden	m/s	0,48	0,50
	5.3.1	Speed of lowering unladen	m/s	0,50	0,50
	5.5	Nominal towing power laden	N	16 800	17 000
	5.5.1	Nominal towing power unladen	N	10 400	10 400
	5.7	Slope laden	%	>20	>20
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		NISSAN K25	NISSAN K25
	7.2	Power delivery Up to machine N°856887 From machine N°856888	kW	38 35	38 35
	7.3	Rated speed	Rpm	2 400	2 400
	7.4	Number of pistons / Capacity	cm^3	4/2 488	4/2 488
	7.5	Fuel consumption (according to VDI cycle)	l/h	6,3	6,3
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments	L/mn	72	72
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	86	86
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,78	0,78





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CHARACTERISTICS

MI 30 D
MI 35 D

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 30 D	MI 35 D
	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)	3,0	3,5
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	480	485
	1.9	Wheelbase	y (mm)	1 700	1 700
WEIGHT	2.1	Kerb weight of truck	kg	4 610	4 860
	2.2	Front axle load laden	kg	6 650	7 360
	2.2.1	Rear axle load laden	kg	960	1 000
	2.3	Front axle load unladen	kg	1 860	1 825
	2.3.1	Rear axle load unladen	kg	2 750	3 035
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	28x9-15 12PR	28x9-15 12PR
	3.3	Size of rear wheels	" or mm	6.50-10 10PR	6.50-10 10PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	1 005	1 005
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	975	975
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 200	2 315
	4.3	Normal free lift	h2 (mm)	145	145
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 445	4 445
	4.7	Height of driver protection (cab)	h6 (mm)	2 130	2 130
	4.8	Height of seat	h7 (mm)	1 215	1 215
	4.12	Height of towing coupling	h10 (mm)	355	360
	4.19	Total length	l1 (mm)	3 865	3 935
	4.20	Length of forks at heel	l2 (mm)	2 715	2 785
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 225/1 725	1 225/1 725
	4.22	Section of fork arms	s (mm)	45	50
	4.22.1	Width of fork arms	e (mm)	122	122
	4.22.2	Length of fork arms	l (mm)	1 150	1 150
	4.23	Fork carriage to DIN 15 173 A/B		FEM3A	FEM3A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 100	1 100
	4.31	Ground clearance of mast	m1 (mm)	130	130
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	200	200
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	4 140	4 195
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	4 340	4 395
	4.35	Turning radius (raised/lowered position)	Wa (mm)	2 460	2 510
	4.36	Inner turning radius	b13 (mm)	160	160

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PERFORMANCE	5.1	Speed of travel laden	km/h	18	18
	5.1.1	Speed of travel unladen	km/h	18,5	18,5
	5.2	Speed of rise laden	m/s	0,45	0,39
	5.2.1	Speed of rise unladen	m/s	0,52	0,40
	5.3	Speed of lowering laden	m/s	0,43	0,40
	5.3.1	Speed of lowering unladen	m/s	0,48	0,35
	5.5	Nominal towing power laden	N	20 000	20 500
	5.5.1	Nominal towing power unladen	N	10 600	10 800
	5.7	Slope laden	%	>20	>18
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		YANMAR 4TNE98-BQFLC	YANMAR 4TNE98-BQFLC
	7.2	Power delivery	kW	42,1	42,1
	7.3	Rated speed	Rpm	2 300	2 300
	7.4	Number of pistons / Capacity	cm^3	4/3 319	4/3 319
	7.5	Fuel consumption (according to VDI cycle)	l/h	3,94	3,94
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments	L/mn	69	69
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	89	89
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,5	0,5

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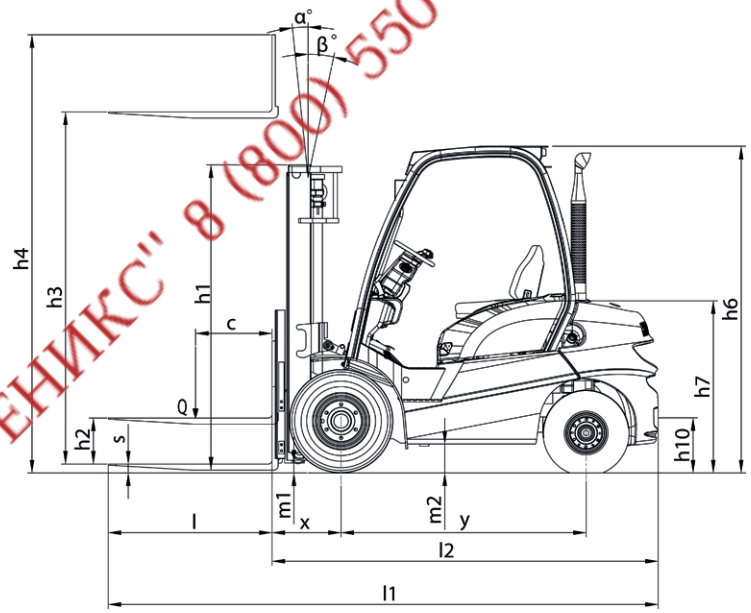

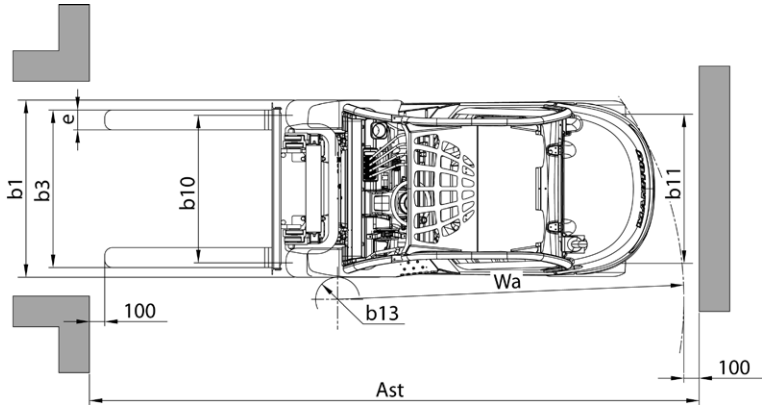

CHARACTERISTICS

MI 30 G
MI 35 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

DESIGNATION	1.1	Manufacturer		MANITOU	MANITOU
	1.2	Model type		MI 30 G	MI 35 G
	1.3	Propulsion: battery, diesel, petrol, LPG, mains		GPL	GPL
	1.4	Type of operation: manual, pedestrian, standing, seated		Seated	Seated
	1.5	Rated capacity/load on forks (basic capacity)	Q (t)	3,0	3,5
	1.6	Centre of gravity of the load	c (mm)	500	500
	1.8	Distance from the load bearing surface to the centre of the front axle	x (mm)	480	485
	1.9	Wheelbase	y (mm)	1 700	1 700
WEIGHT	2.1	Kerb weight of truck	kg	4 490	4 740
	2.2	Front axle load laden	kg	6 560	7 260
	2.2.1	Rear axle load laden	kg	930	980
	2.3	Front axle load unladen	kg	1 805	1 775
	2.3.1	Rear axle load unladen	kg	2 685	2 965
RUNNING CARRIAGE	3.1	Tyre equipment: bandage (V), super-elastic (SE), pneumatic (L)		SE	SE
	3.2	Size of front wheels	" or mm	28x9-15 12PR	28x9-15 12PR
	3.3	Size of rear wheels	" or mm	6.50-10 10PR	6.50-10 10PR
	3.5	Number of front wheels (x = drive wheel)		2x	2x
	3.5.1	Number of rear wheels (x = drive wheel)		2	2
	3.6	Front wheel gauge (middle of wheels)	b10 (mm)	1 005	1 005
	3.7	Rear wheel gauge (middle of wheels)	b11 (mm)	975	975
DIMENSIONS	4.1	Tilt of mast forward	α (°)	6	6
	4.1.1	Tilt of mast backward	β (°)	12	12
	4.2	Height of mast lowered	h1 (mm)	2 200	2 315
	4.3	Normal free lift	h2 (mm)	145	145
	4.4	Lift height	h3 (mm)	3 300	3 300
	4.5	Height mast extended	h4 (mm)	4 445	4 445
	4.7	Height of driver protection (cab)	h6 (mm)	2 130	2 130
	4.8	Height of seat	h7 (mm)	1 215	1 215
	4.12	Height of towing coupling	h10 (mm)	355	360
	4.19	Total length	l1 (mm)	3 865	3 935
	4.20	Length of forks at heel	l2 (mm)	2 715	2 785
	4.21	Total width, wheels Single / dual wheels (overall)	b1 (mm)	1 225/1 725	1 225/1 725
	4.22	Section of fork arms	s (mm)	45	50
	4.22.1	Width of fork arms	e (mm)	122	122
	4.22.2	Length of fork arms	l (mm)	1 150	1 150
	4.23	Fork carriage to DIN 15 173 A/B		FEM3A	FEM3A
	4.24	Width of fork carriage (with load back-rest)	b3 (mm)	1 100	1 100
	4.31	Ground clearance of mast	m1 (mm)	130	130
	4.32	Ground clearance at centre of wheel-base	m2 (mm)	200	200
	4.33	Aisle width for palette 1000x1200 widthways	Ast (mm)	4 140	4 195
	4.34	Aisle width for palette 800x1200 lengthways	Ast (mm)	4 340	4 395
	4.35	Turning radius (raised/lowered position)	Wa (mm)	2 460	2 510
	4.36	Inner turning radius	b13 (mm)	160	160

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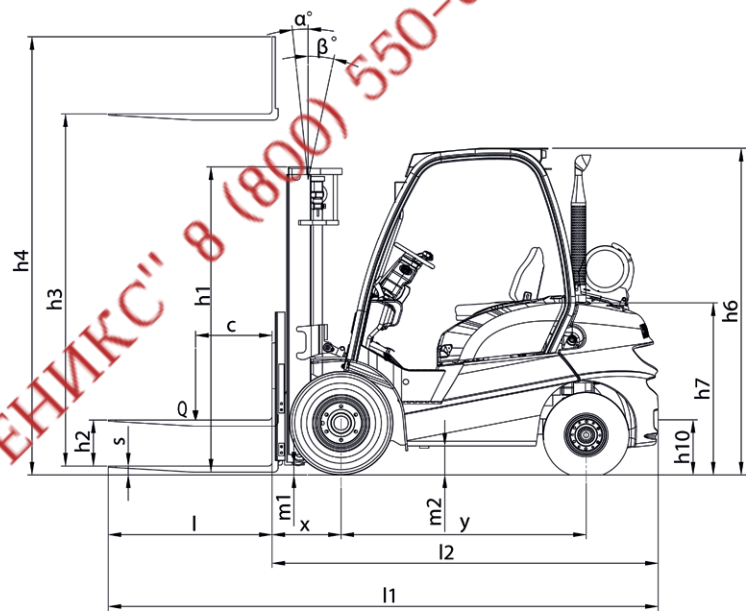
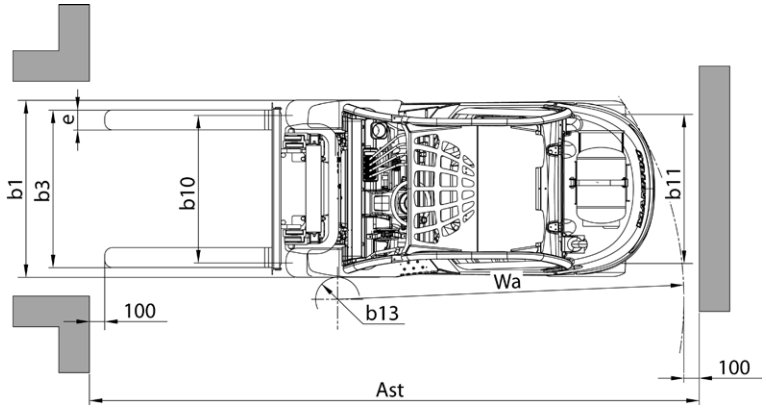
PERFORMANCE	5.1	Speed of travel laden	km/h	18	17
	5.1.1	Speed of travel unladen	km/h	18,5	17,5
	5.2	Speed of rise laden	m/s	0,45	0,40
	5.2.1	Speed of rise unladen	m/s	0,55	0,52
	5.3	Speed of lowering laden	m/s	0,48	0,47
	5.3.1	Speed of lowering unladen	m/s	0,50	0,38
	5.5	Nominal towing power laden	N	17 400	17 500
	5.5.1	Nominal towing power unladen	N	10 800	11 000
	5.7	Slope laden	%	>20	>18
	5.7.1	Slope unladen	%	>20	>20
	5.9	Acceleration time laden	s		
	5.9.1	Acceleration time unladen	s		
	5.10	Service brake		Hydraulic	Hydraulic
ENGINE	7.1	Engine manufacturer/Type		NISSAN K25	NISSAN K25
	7.2	Power delivery Up to machine N°856887 From machine N°856888	kW	38 35	38 35
	7.3	Rated speed	Rpm	2 400	2 400
	7.4	Number of pistons / Capacity	cm^3	4/2 488	4/2 488
	7.5	Fuel consumption (according to VDI cycle)	l/h	6,3	6,3
MISCELLANEOUS	8.2	Working hydraulic pressure for attachments	Bar	160	160
	8.3	Oil flow rate for attachments	L/mn	72	72
	8.4	Measured/guaranteed mean noise level at the ear of the operator (when travelling) (according to standard EN 12053)	db (A)	86	86
	8.5	Towing hook / DIN type			
		Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s^2	0,5	0,5





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CHARACTERISTICS OF MASTS WITH ROLLERS AND LOAD CHARTS

MI 15 D MI 15 G
MI 18 D MI 18 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

MI 15 D MI 15 G MI 18 D MI 18 G	LIFTING MAST	FREE LIFT	HEIGHT OF MAST		TILT ANGLE		VALUES ON FORKS			VALUES WITH TDL			VALUES WITH PDF			
							Height at max. capacity		Height at max. capacity CoG at 500mm (kg)	Height at max. capacity		Height at max. capacity CoG at 500mm (kg)	Height at max. capacity		Height at max. capacity CoG at 500mm (kg)	
	mm	h2	h1 lowered	h4 extended with back-rest	h4 extended without back-rest	α Front	α Rear	1,5 t	1,8 t	1,5 t	1,8 t	1,5 t	1,8 t	1,5 t	1,8 t	1,5 t	1,8 t	1,5 t	1,8 t
DUPLEX TOTAL VISIBILITY	3300 std	155	2145	4255	3865	6°	12°	3300	3300	1500	1800	3300	1750kg to 3300	1500	1750	1400kg to 3300	1650kg to 3300	1400	1650
	3700	155	2395	4655	4265	6°	12°	3700	3700	1500	1800	3700	1750kg to 3700	1500	1750	1400kg to 3700	1650kg to 3700	1400	1650
	4000	155	2595	4955	4600	6°	12°	4000	1700kg to 4000	1500	1700	4000	1650kg to 4000	1500	1650	1400kg to 4000	1550kg to 4000	1400	1550
	3300	1575	2160	4245	3885	6°	12°	3300	3300	1500	1800	3300	1750kg to 3300	1500	1750	1400kg to 3300	1650kg to 3300	1400	1650
DUPLEX FREE LIFT	3700	1775	2360	4646	4285	6°	12°	3700	3700	1500	1800	3700	1750kg to 3700	1500	1750	1400kg to 3700	1650kg to 3700	1400	1650
	4000	1975	2560	4945	4585	6°	12°	4000	1700kg to 4000	1500	1700	4000	1650kg to 4000	1500	1650	1400kg to 4000	1550kg to 4000	1400	1550
TRIPLEX FREE LIFT	4500	1500	2120	5455	5130	6°	6°	1450kg to 4000	1700kg to 4000	1300	1700	1400kg to 4000	1700kg to 4000	1300	1600	1350kg to 4000	1650kg to 4000	1200	1500
	4700	1585	2170	5705	5380	6°	6°	1450kg to 4000	1700kg to 4000	1250	1650	1400kg to 4000	1650kg to 4000	1150	1550	1300kg to 4000	1600kg to 4000	1050	1450
	4800	1600	2220	5755	5430	6°	6°	1400kg to 4000	1700kg to 4000	1250	1650	1350kg to 4000	1600kg to 4000	1150	1550	1250kg to 4000	1550kg to 4000	1050	1450
	5000	1685	2270	5955	5595	6°	6°	1400kg to 4000	1600kg to 4000	1200	1350	1350kg to 4000	1500kg to 4000	1100	1250	1250kg to 4000	1450kg to 4000	1000	1150
	5500	1885	2470	6455	6095	3°	6°	1350kg to 4000	1500kg to 4000	950	1050	1300kg to 4000	1450kg to 4000	850	950	1200kg to 4000	1400kg to 4000	750	900
	6000	2100	2720	7055	6730	3°	6°	1350kg to 4000	1500kg to 4000	700	750	1300kg to 4000	1450kg to 4000	600	650	1200kg to 4000	1400kg to 4000	500	600
	6500	2200	2870	7455	7180	3°	6°	-	-	-	-	-	-	-	-	-	-	-	-

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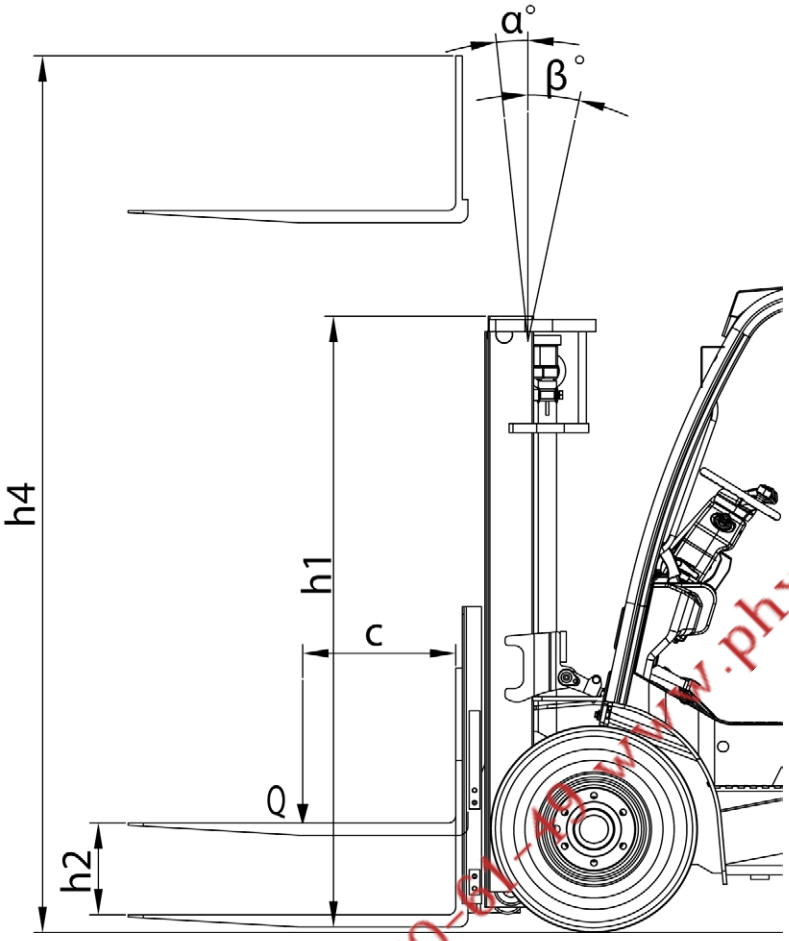

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RATED CAPACITY ▶

ACTUAL CAPACITIES ▶
(according to standard EN 1726-1)

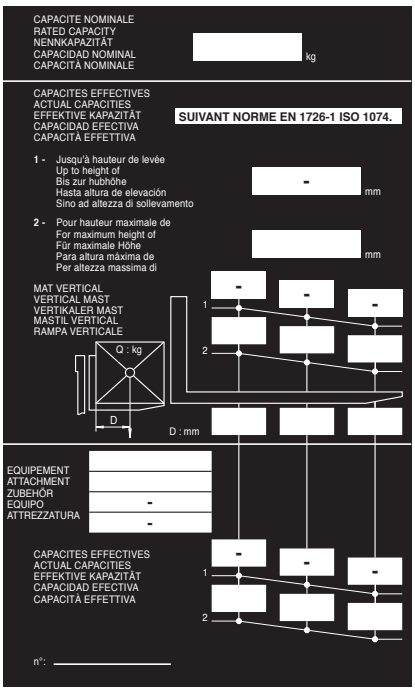
1 - Up to height of ▶

2 - For maximum height of ▶

VERTICAL MAST ▶

ATTACHMENT ▶

ACTUAL CAPACITIES ▶



CHARACTERISTICS OF MASTS WITH ROLLERS AND LOAD CHARTS

MI 20 D MI 20 G
MI 25 D MI 25 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

MI 20 D MI 20 G MI 25 D MI 25 G	LIFTING MAST	FREE LIFT	HEIGHT OF MAST		TILT ANGLE		VALUES ON FORKS				VALUES WITH TDL				VALUES WITH PDF			
							Height at max. capacity		Height at max. capacity CoG at 500mm (kg)		Height at max. capacity		Height at max. capacity CoG at 500mm (kg)		Height at max. capacity		Height at max. capacity CoG at 500mm (kg)	
	mm	h2	h1 lowered	h4 extended with back-rest	h4 extended without back-rest	α Front	α Rear	2 t	2,5 t	2 t	2,5 t	2 t	2,5 t	2 t	2,5 t	2 t	2,5 t	2 t	2,5 t
DUPLEX TOTAL VISIBILITY	3300 std	140	2185	4345	3960	6°	12°	3300	3300	2000	2500	3300	3300	2000	2500	3300	3300	1900	2500
	3700	140	2435	4745	4360	6°	12°	3700	3700	2000	2500	3700	3700	2000	2500	3700	3700	1900	2500
	4000	140	2635	5045	4660	6°	12°	4000	4000	2000	2500	4000	4000	2000	2500	4000	4000	1900	2450
DUPLEX FREE LIFT	3300	1480	2160	4345	3980	6°	12°	3300	3300	2000	2500	3300	3300	2000	2500	3300	3300	1900	2500
	3700	1680	2360	4745	4330	6°	12°	3700	3700	2000	2500	3700	3700	2000	2500	3700	3700	1900	2500
	4000	1880	2560	5045	4680	6°	12°	4000	4000	2000	2500	4000	4000	2000	2500	4000	4000	1900	2450
TRIPLEX FREE LIFT	4500	1470	2150	5595	5230	6°	6°	1900kg to 4000	4000	1800	2350	1900kg to 4000	4000	1700	2300	1850kg to 4000	2400kg to 4000	1700	2250
	4700	1520	2200	5745	5380	6°	6°	1900kg to 4000	4000	1750	2200	1900kg to 4000	4000	1650	2150	1850kg to 4000	2400kg to 4000	1650	2100
	4800	1570	2250	5845	5480	6°	6°	1900kg to 4000	4000	1750	2200	1900kg to 4000	4000	1650	2150	1850kg to 4000	2400kg to 4000	1650	2100
	5000	1620	2300	6045	5680	6°	6°	1850kg to 4000	4000	1700	1950	1850kg to 4000	4000	1600	1900	1800kg to 4000	2400kg to 4000	1600	1850
	5500	1820	2500	6545	6180	3°	6°	1800kg to 4000	4000	1300	1650	1800kg to 4000	4000	1200	1600	1750kg to 4000	2400kg to 4000	1200	1550
	6000	2070	2750	7095	6730	3°	6°	1800kg to 4000	4000	900	1050	1800kg to 4000	4000	800	1000	1750kg to 4000	2400kg to 4000	800	950
	6500	2200	2900	7545	7200	3°	6°	-	-	-	-	-	-	-	-	-	-	-	-

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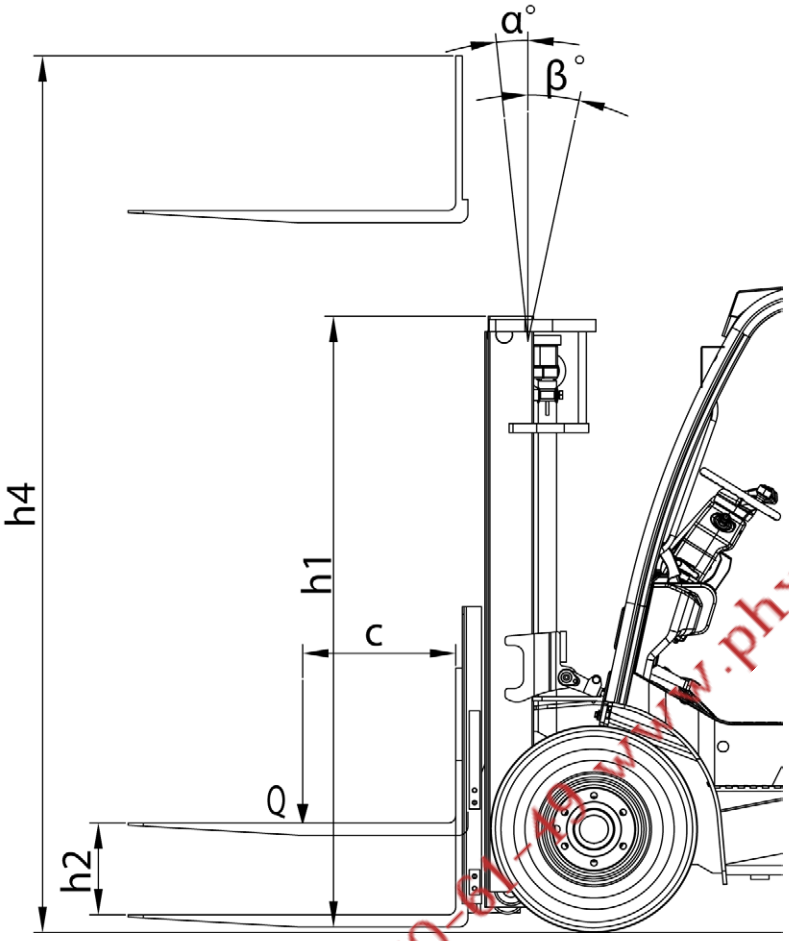

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RATED CAPACITY ▶

ACTUAL CAPACITIES ▶
(according to standard EN 1726-1)

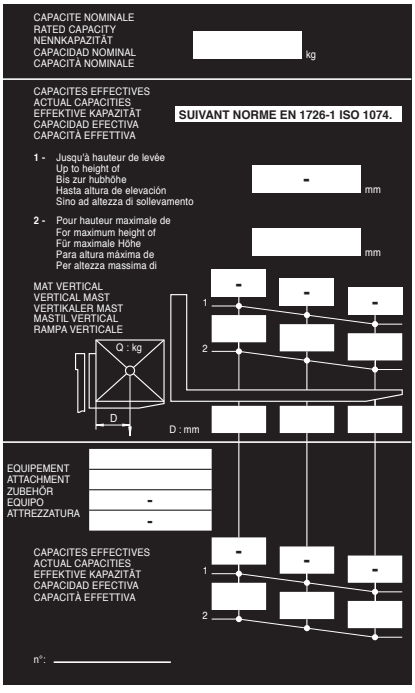
1 - Up to height of ▶

2 - For maximum height of ▶

VERTICAL MAST ▶

ATTACHMENT ▶

ACTUAL CAPACITIES ▶



CHARACTERISTICS OF MASTS WITH ROLLERS AND LOAD CHARTS

MI 30 D MI 30 G
MI 35 D MI 35 G

NOTE: The specifications given are not binding on the manufacturer and can be modified without prior notification.

MI 30 D MI 30 G MI 35 D MI 35 G	LIFTING MAST	FREE LIFT		HEIGHT OF MAST						TILT ANGLE		VALUES ON FORKS		VALUES WITH TDL				VALUES WITH PDF			
				h1 lowered		h4 extended with back-rest		h4 extended without back-rest		α Front	β Rear	Height at max. capacity	Height at max. CoG at 500mm (kg)	Height at max. capacity		Height at max. capacity CoG at 500mm (kg)		Height at max. capacity		Height at max. capacity CoG at 500mm (kg)	
	mm	h2										3 t	3,5 t	3 t	3,5 t	3 t	3,5 t	3 t	3,5 t	3 t	3,5 t
		3t	3.5t	3t	3.5t	3t	3.5t	3t	3.5t												
DUPLEX TOTAL VISIBILITY	3300 std	145	145	2200	2315	4445	4445	4035	4115	6°	12°	3300	3000	3300	3500	3000	3500	3300	3300	2900	3400
	3700	145	145	2450	2565	4845	4845	4435	4515	6°	12°	3700	3000	3700	3500	3000	3500	3700	3700	2900	3400
	4000	145	145	2650	2715	5145	5145	4735	4815	6°	12°	4000	3000	4000	3500	3000	3500	4000	4000	2900	3400
DUPLEX FREE LIFT	3300	1475	1500	2230	2330	4445	4445	4055	4130	6°	12°	3300	3000	3300	3500	3000	3500	3300	3300	2900	3400
	3700	1675	1700	2430	2530	4845	4845	4455	4530	6°	12°	3700	3000	3700	3500	3000	3500	3700	3700	2900	3400
	4000	1825	1850	2580	2680	5145	5145	4755	4830	6°	12°	4000	3000	4000	3500	3000	3500	4000	4000	2900	3400
TRIPLEX FREE LIFT	4500	1410	1435	2165	2265	5695	5695	5305	5380	6°	6°	4000	2900	4000	3400	2800	3300	4000	4000	2700	3200
	4700	1460	1485	2215	2315	5895	5895	5455	5530	6°	6°	4000	2800	4000	3300	2700	3200	4000	3400kg to 4000	2600	3100
	4800	1510	1535	2265	2365	5945	5945	5555	5630	6°	6°	4000	2800	4000	3300	2700	3200	2900kg to 4000	3300kg to 4000	2600	3100
	5000	1560	1585	2315	2415	6145	6145	5755	5830	6°	6°	4000	2500	2900kg to 4000	3000	2700	2900	2800kg to 4000	3250kg to 4000	2300	2800
	5500	1760	1735	2515	2565	6645	6645	6255	6330	3°	6°	4000	1850	2900kg to 4000	2200	2700	2100	2700kg to 4000	3250kg to 4000	1650	2000
	6000	2010	1985	2765	2815	7195	7195	6805	6880	3°	6°	4000	1400	2800kg to 4000	1600	1300	1500	2700kg to 4000	3150kg to 4000	1200	1400
	6500	2160	2135	2915	2965	7645	7645	7255	7330	3°	6°	-	-	-	-	-	-	-	-	-	-

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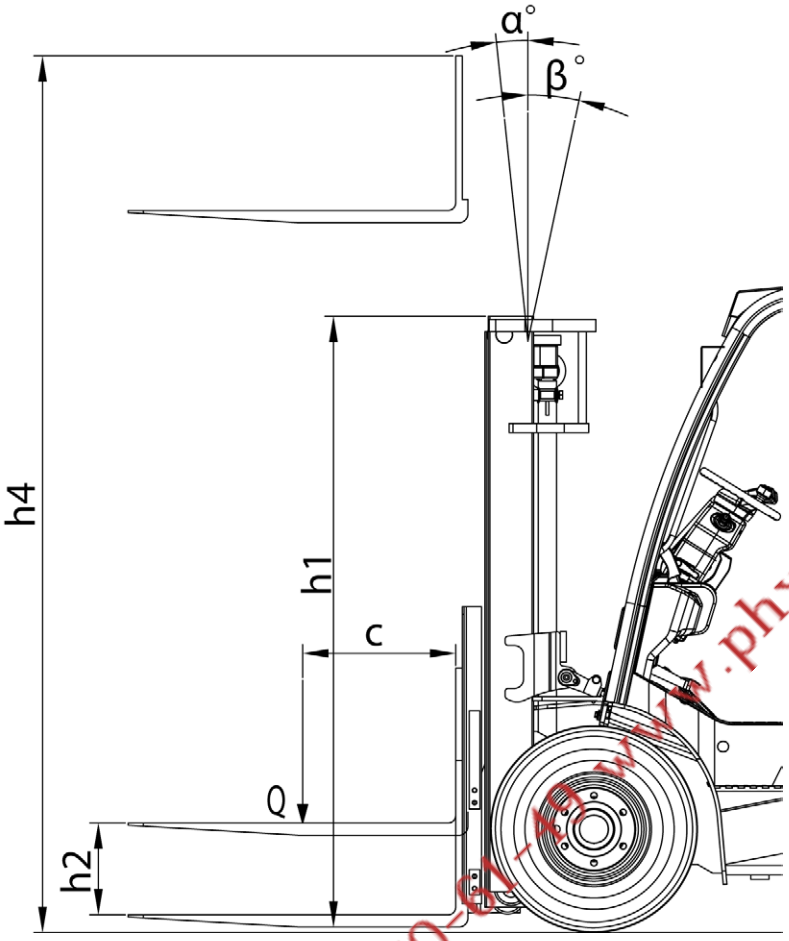

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RATED CAPACITY ▶

ACTUAL CAPACITIES
(according to standard EN 1726-1) ▶

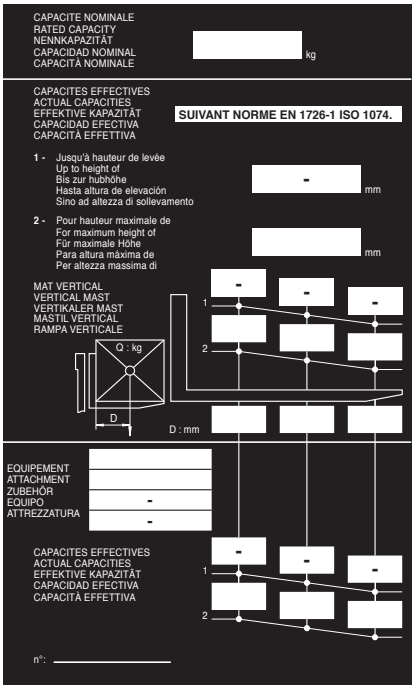
1 - Up to height of ▶

2 - For maximum height of ▶

VERTICAL MAST ▶

ATTACHMENT ▶

ACTUAL CAPACITIES ▶



FRONT AND REAR TIRES

FRONT		PRESSURE (bar) / TYRE LOAD (kg)	MI 15 D	MI 15 G	MI 18 D	MI 18 G	MI 20 D	MI 20 G	MI 25 D	MI 25 G	MI 30 D	MI 30 G	MI 35 D	MI 35 G
ADVANCE	6.50-10	PRESSURE	SOLID	SOLID	SOLID	SOLID								
		unladen												
		laden												
	7.00-12	PRESSURE					SOLID	SOLID	SOLID	SOLID				
		unladen												
		laden												
	28x9-15	PRESSURE									SOLID	SOLID	SOLID	SOLID
		unladen												
		laden												

REAR		PRESSURE (bar) / TYRE LOAD (kg)	MI 15 D	MI 15 G	MI 18 D	MI 18 G	MI 20 D	MI 20 G	MI 25 D	MI 25 G	MI 30 D	MI 30 G	MI 35 D	MI 35 G
ADVANCE	5.00-8	PRESSURE	SOLID	SOLID	SOLID	SOLID								
		unladen												
		laden												
	6.00-9	PRESSURE					SOLID	SOLID	SOLID	SOLID				
		unladen												
		laden												
	6.50-10	PRESSURE									SOLID	SOLID	SOLID	SOLID
		unladen												
		laden												

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		PRESSURE (bar)	LOAD (kg)	GROUND CONTACT PRESSURE (kg/cm2)		GROUND CONTACT AREA (cm2)	
				HARD SOIL	LOOSE SOIL	HARD SOIL	LOOSE SOIL
ADVANCE	5.00-8	SOLID					
	6.00-9	SOLID					
	6.50-10	SOLID					
	7.00-12	SOLID					
	28x9-15	SOLID					

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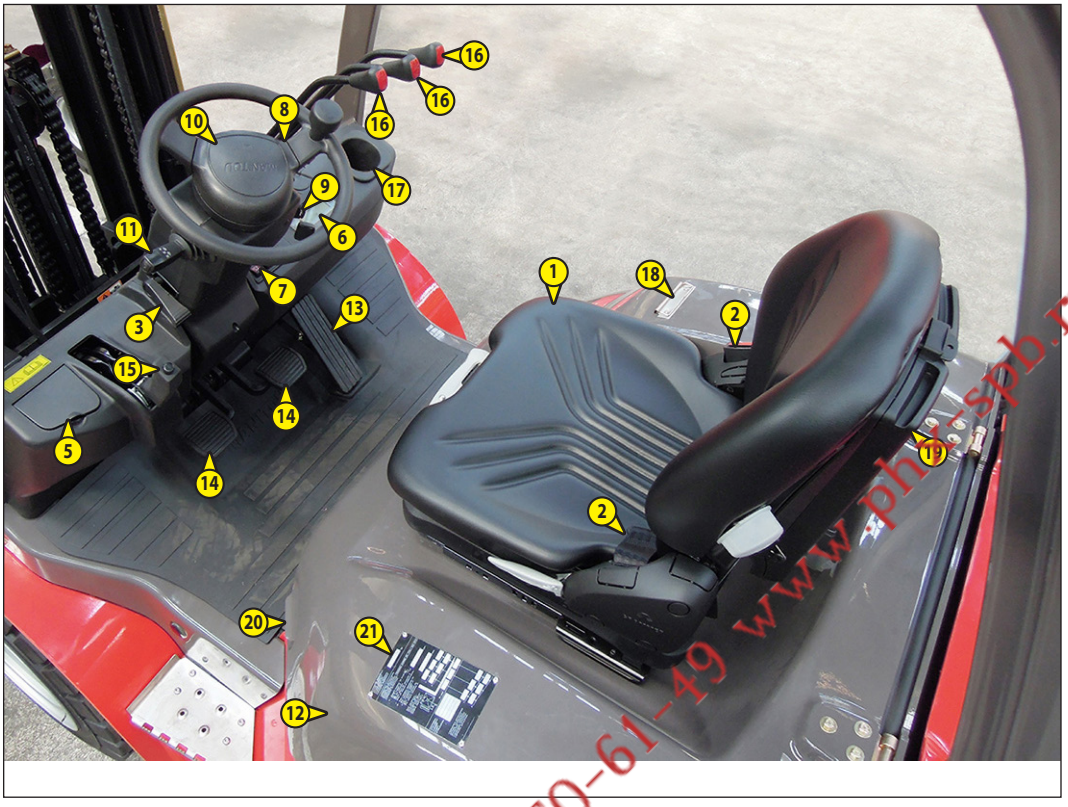

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1 - DRIVER'S SEAT
2 - SAFETY BELT
3 - STEERING WHEEL TILTING KNOB
4 - Driving seat access handle
5 - BRAKING OIL TANK ACCESS PANEL
6 - CONTROL AND SIGNAL LIGHTS PANEL
7 - SWITCHES
8 - LIGHT AND INDICATOR SWITCH
9 - IGNITION SWITCH
10 - HORN
11 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION
12 - FUSES AND RELAYS UNDER THE ENGINE COVER
13 - ACCELERATOR PEDAL
14 - SERVICE BRAKE PEDALS AND TRANSMISSION CUT-OFF
15 - PARKING BRAKE LEVER
16 - HYDRAULIC CONTROLS
17 - STORAGE TRAY
18 - DOCUMENT CLIP
19 - DOCUMENT HOLDER
20 - ENGINE COVER OPENING HANDLE
21 - CHARTS
22 - REAR-VIEW MIRROR
23 - FRONT LIGHTS
24 - WORKING TAIL LIGHT
25 - REAR LIGHTS
26 - REVOLVING LIGHT
27 - FRONT WINDSCREEN WIPER AND WINDSCREEN WASHER (OPTION)
28 - REAR WINDSCREEN WIPER (OPTION)
29 - DOOR OPEN LEVER (OPTION)
30 - DOOR HANDLE (OPTION)
31- CAB DOOR SLIDING WINDOW (OPTION)
32 - SLIDING REAR WINDOW OPENING (OPTION)

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

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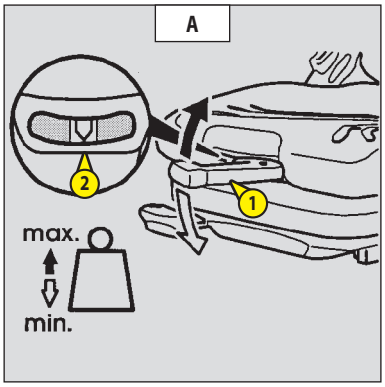
1 - DRIVER'S SEAT (depending on model)

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

WEIGHT ADJUSTMENT (FIG. A)

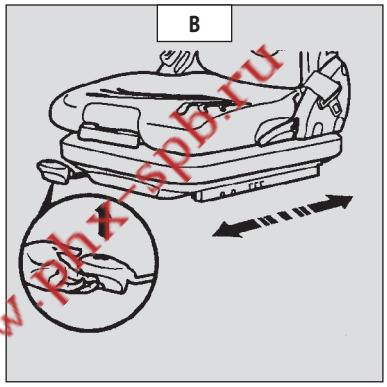
Adjust the weight when the driver is sitting on the seat.
- Pull the weight adjustment lever 1 fully out.
- Move the weight adjustment lever 1 up to increase the weight or down to reduce it.
- There are ten possible positions between the min and max weights. Before each run, return the lever to the central position. The max. or min. position is indicated by a freely travelling lever.
- The driver's weight is correctly adjusted when the jib is in the centre 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)
- Adjust the locking lever until you reach the position required. This then locks and the seat will not shift into another position.

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

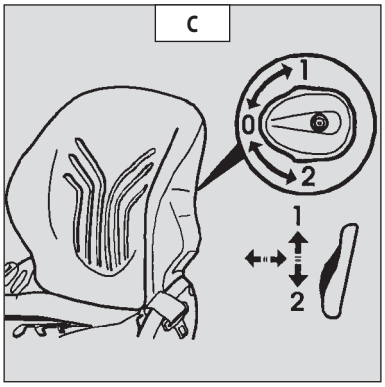


LUMBAR ADJUSTMENT (FIG. C)

This increases the comfort of the seat and the driver's freedom of movement.
- Turn the knob to 1 to adjust the height and depth of the lumbar support of the upper part of the back-rest.
- Turn the 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.

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

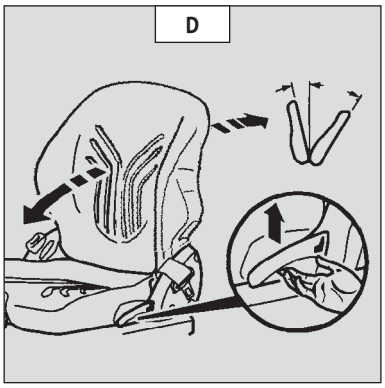


MAINTENANCE

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.

A rocking head-rest 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.



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1 - DRIVER'S SEAT (depending on model)

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

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

ANGLE ADJUSTMENT OF THE BACK-REST
- Pull the locking lever 2 upwards.
- Tilt the back-rest into one of the three possible positions.
- Release the lever and be sure it returns to the lock position.

WEIGHT ADJUSTMENT

It is advised that the weight be adjusted when the driver is not sitting in the cab.
- Turn handle 3 to set the driver's weight.
- Refer to the seat's graduation A.

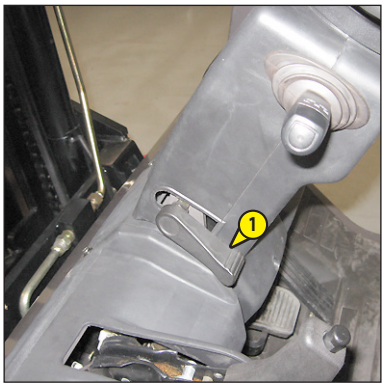
NOTE: To avoid any health problems, it is recommended that the weight should be checked and adjusted before starting up the lift truck.

2 - SAFETY BELT

- Sit correctly on the seat.
- Check that the seat belt is not twisted.
- Place the seat belt at hip level.
- Attach the seat belt and check that it locks.

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

3 - STEERING WHEEL TILTING KNOB



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

- Pull handle 1 to adjust the steering wheel.
- Push in handle 1 to lock the steering wheel in the desired position.

4 - DRIVING SEAT ACCESS HANDLE

5 - BRAKING OIL TANK ACCESS PANEL

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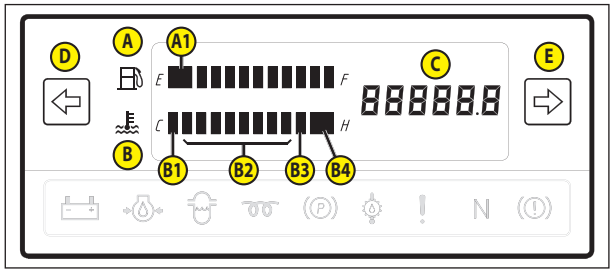
6 - CONTROL AND SIGNAL LIGHTS PANEL

CONTROL INSTRUMENTS



A - FUEL LEVEL

Only for MI .. D

Zone A1 indicates that you are using the reserve supply and that time of use is limited.

B - ENGINE WATER TEMPERATURE

Zone B1 (0° to 50°) Use the lift truck with moderation, wait for temperature to increase before normal operation.

Zone B2 (55° to 105°) Use lift truck normally.

Zone B3 (110°) Use lift truck with moderation, monitor the temperature.

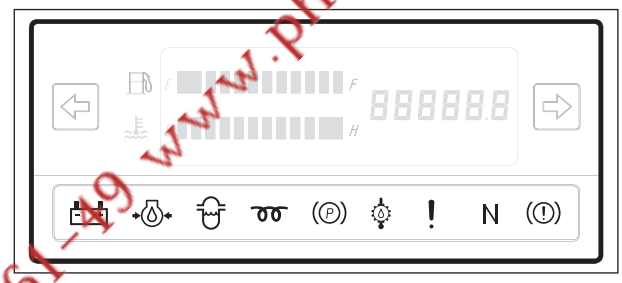
Zone B4 (120°) Stop the lift truck, look for the cause of overheating.

C - HOUR METER

D - GREEN LEFT-HAND INDICATOR LIGHT

E - GREEN RIGHT-HAND INDICATOR LIGHT

SIGNAL LIGHTS



NOTE: , Only for MI .. D

When activating the electrical system of the lift truck, all the , , , and N indicator lamps must light to indicate their correct operation. If one of the red lamps or the buzzer is not working, carry out the necessary repairs.

BATTERY LOAD LAMP

If this lamp comes on while the lift truck is in operation, switch off the engine immediately, seek the cause of the electrical system fault and check the alternator belt. Consult your dealer if necessary.

ENGINE OIL PRESSURE LAMP

If this lamp comes on while the lift truck is in operation, switch off the engine immediately, seek the cause of the engine fault and check the engine's oil level. Consult your dealer if necessary.

WATER IN FUEL FILTER LAMP (Only for MI .. D)

If this lamp comes on while the lift truck is in operation, switch off the engine immediately and carry out the necessary repairs. (see: 3 - MAINTENANCE: SERVICING SCHEDULE).

ENGINE PREHEATING LAMP (Only for MI .. D)

Preheating is necessary. When the lift truck is switched on, the lamp comes on for a few seconds and goes out as soon as preheating is ended. Start the lift truck's engine.

PARKING BRAKE LAMP

This lamp comes on when the parking brake is applied.

TRANSMISSION OIL TEMPERATURE LAMP

If this lamp comes on while the lift truck is in operation, switch off the engine immediately, seek the cause of the transmission fault and check the transmission oil level. Consult your dealer if necessary.

FAULT WARNING LAMP

If this lamp comes on while the lift truck is in operation, a diagnostic fault has been detected.
E.g.: The lamp will light if the driver vacates the driver's seat while the forward/reverse selector is engaged.

NEUTRAL INDICATOR LAMP

The lamp will light when the forward/reverse selector is in neutral and the lift truck is stationary. This lamp must be lit in order to start the engine.

UNUSED LAMP

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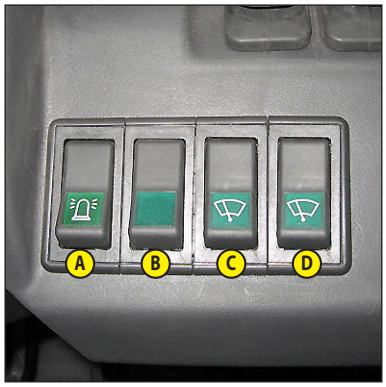
7 - SWITCHES



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

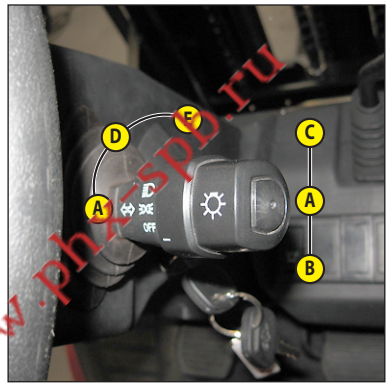
A - REVOLVING LIGHT

B - WORKING TAIL LIGHT

C - OPTION FRONT WINDSCREEN WIPER + FRONT WINDSCREEN WASHER

D - OPTION REAR WINDSCREEN WIPER

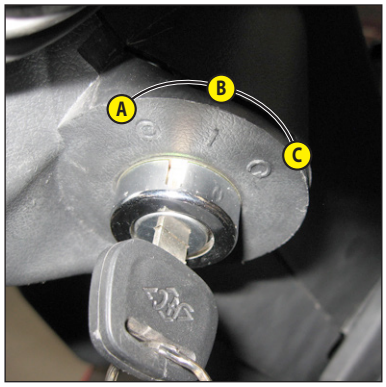
8 - LIGHT AND INDICATOR SWITCH



A - OFF Lights off, direction indicators not flashing.
B - Flashing right hand direction indicators.
C - Flashing left hand direction indicators.
D - Sidelights and rear lights on.
E - Headlights and rear lights on.

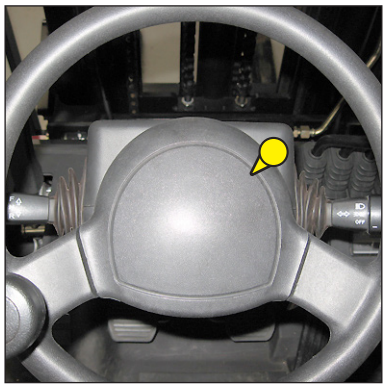
NOTE: Positions D - E can be used without switching on the ignition

9 - IGNITION SWITCH



This switch has 3 positions:
A - Ignition off, parking position.
B - Ignition.(Only for MI .. G)
Ignition and pre-heating. (Only for MI .. D)
C - The engine starts, and returns to position B as soon as the key is released.

10 - HORN



This push button sounds the horn.

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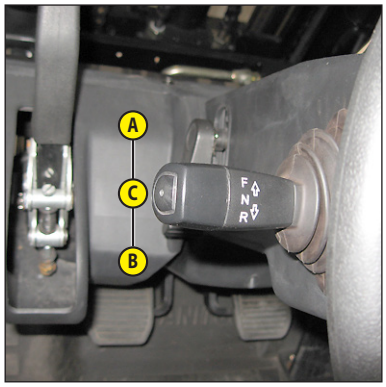
11 - FORWARD/NEUTRAL/REVERSE GEAR SELECTION



When operating this control, the lift truck should be travelling at slow speed (less than 2 km/h) and not accelerating. When the reverser is in the neutral position a mechanical lock prevents an accidental shifting movement.

FORWARD: Lift slightly and push the lever forwards (position A).
REVERSE: Lift slightly and pull the lever backwards (position B).
NEUTRAL: To start the lift truck, the lever must be in neutral (position C).

NOTE: Reversing lights and an acoustic reversing alarm indicate that the lift truck is running in reverse.

SAFETY FOR MOVING THE LIFT TRUCK

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

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

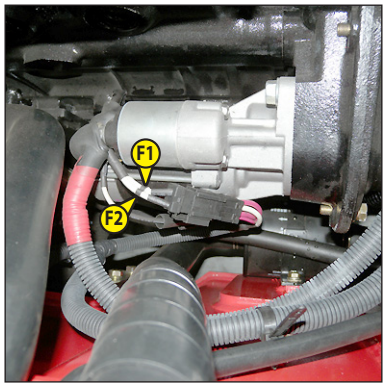
To stop the lift truck, he must observe the following sequence:

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

NOTE: If the operator leaves the driving cab with forward or reverse engaged the lift truck will stop after a short time. The operator must then sit back in the seat, place the forward/reverse selector back in neutral and select forward or reverse in order to continue advancing or reversing.
The lift truck can continue its movement if the operator sits back down before the lift truck stops.

12 - FUSES AND RELAYS UNDER THE ENGINE COVER

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



- Open the engine cover.
  F1 - Starter (55A).
  - Pre-heating (55A). **(Only for MI .. D)**
  F2 - Fuse box (55A).

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- Remove cover 1 to access fuses F3 to F14 and to relays JQ1 to JQ8 and SG.

F3 - Revolving light (15A).
- Working tail light (15A).

F4 - Rear sidelights (20A).
- Front headlights (20A).

F5 - Horn (10A).

F6 - Stop lights (10A).
- Flashing unit (10A).

F7 - Forward/neutral/reverse selector (10A).
- Power governor (10A).
- Engine stop electrovalve (10A). **Only for MI .. D**

F9 - Control panel (10A).

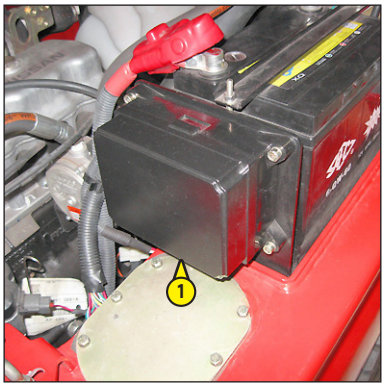
F10 - Engine control unit (10A).

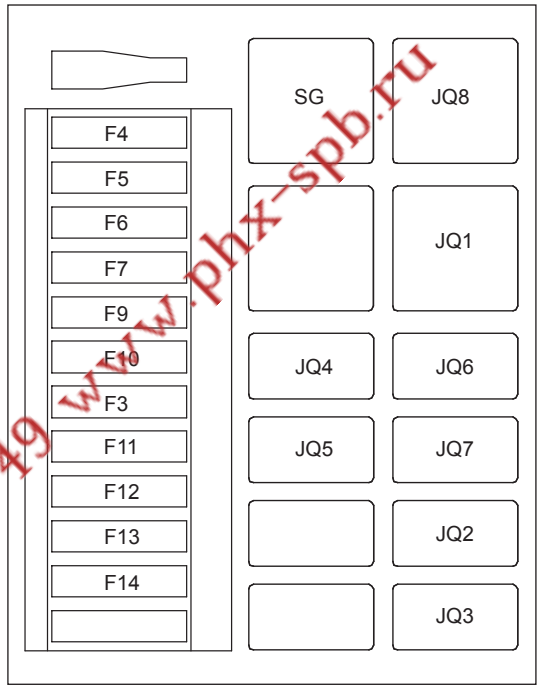
F11 - FREE (20A).

F12 - FREE (10A).

F13 - FREE (10A).

F14 - FREE (10A).





JQ1 - Starting relay.
JQ2 - Starter control relay.
JQ3 - Forward drive relay.
JQ4 - Reverse drive relay.
JQ5 - Electrovalve relay.
JQ6 - Sidelight relay.
JQ7 - Front headlight relays.
JQ8 - Ignition relay.
SG - Revolving light relay.

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13 - ACCELERATOR PEDAL

14 - SERVICE BRAKE PEDALS AND TRANSMISSION CUT-OFF

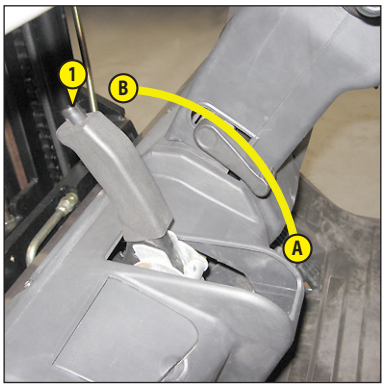
Foot pedal A acts on the front wheels by means of a hydraulic brake system, to slow down and stop the lift truck.

Foot pedal B gradually cuts off the transmission before acting on the front wheels by means of a hydraulic brake system to slow down and stop the lift truck.

NOTE: In order to stop the lift truck with forward or reverse gear engaged, keep foot pedal A or B depressed.

Prolonged use of the service brake and transmission cut off pedals causes overheating and can damage the transmission.

15 - PARKING BRAKE LEVER



- To apply the parking brake, press on the service brake pedal and pull the lever backwards (position A).
- To loosen the parking brake, press button 1 and push the lever forwards (position B).

NOTE: If the parking brake is released without the presence of the driver, an intermittent audible signal sounds..

16 - HYDRAULIC CONTROLS

Do not attempt to alter the hydraulic system pressure. In the event of suspected malfunction, contact your dealer. ANY MODIFICATION MAY RENDER THE WARRANTY NULL AND VOID.

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

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

TILTING THE MAST
- The lever B backward for backward tilting.
- The lever B forwards for forward tilting.

OPTION ATTACHMENT
- The lever C forwards or backwards.

OPTION ADDITIONAL ACCESSORY
- Lever D forwards or backwards.

Only for ISO3691 (Hydraulic movements cut-off)

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

17 - STORAGE TRAY

18 - DOCUMENT CLIP

19 - DOCUMENT HOLDER

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

suivant modèle

20 - ENGINE COVER OPENING HANDLE

LIFTING THE ENGINE COVER
- If necessary tilt the steering wheel forward to lift the engine cover.
- Lift handle 1, keep in the raised position and gently lift the engine cover until the safety catch of gas strut 2 locks in place.

LOWERING THE ENGINE COVER
- Release the safety catch 2 and gently lower the engine cover.
- Check that the engine cover is properly closed.

NOTE: On the cab version, open the side doors and the rear sliding widow before lifting the engine cover.

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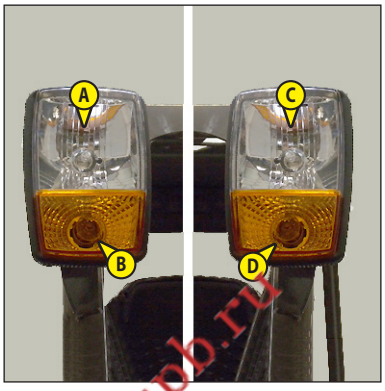
21 - CHARTS

22 - REAR-VIEW MIRROR

23 - FRONT LIGHTS

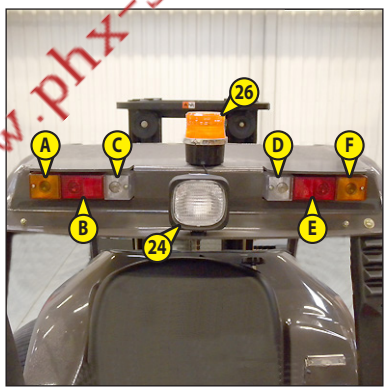
A - Front right-hand headlight.
B - Right-hand indicator.
C - Front left-hand headlight.
D - Left-hand indicator.



24 - WORKING TAIL LIGHT

25 - REAR LIGHTS

A - Left-hand indicator.
B - Left-hand sidelight.
Left-hand stop light
C - Left-hand reversing light.
D - Right-hand reversing light.
E - Right-hand sidelight.
Right-hand stop light
F - Right-hand indicator



26 - REVOLVING LIGHT

27 - FRONT WINDSCREEN WIPER AND WINDSCREEN WASHER (OPTION)

28 - REAR WINDSCREEN WIPER (OPTION)

29 - DOOR OPEN LEVER (OPTION)

30 - DOOR HANDLE (OPTION)

31- CAB DOOR SLIDING WINDOW (OPTION)

32 - SLIDING REAR WINDOW OPENING (OPTION)

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TOWING PIN AND HOOK

Located at the rear of the lift truck, this device is used to attach a trailer. Its capacity is limited for each lift truck by the Authorized Gross Vehicle Weight, tractive force and maximum vertical force on the coupling point.

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

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

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

A - TOWING PIN

COUPLING AND UNCOUPLING THE TRAILER

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

Be careful not to get your fingers caught or crushed during this operation. When uncoupling, make sure that the trailer is supported independently.

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3 - MAINTENANCE

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MANITOU ORIGINAL SPARE PARTS AND EQUIPMENT

OUR LIFT TRUCKS MUST BE SERVICED USING ORIGINAL MANITOU PARTS.

IF YOU USE PARTS WHICH ARE NOT ORIGINAL MANITOU PARTS,

YOU RISK

- Legally - to be held responsible in the event of an accident.

- Technically - to generate operating failure or shorten the life of the lift truck.

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

BY USING ORIGINAL MANITOU PARTS FOR MAINTENANCE OPERATIONS,

YOU BENEFIT EXPERTISE

Through its network, MANITOU provides the user with

- Know-how and competence.

- The guarantee of high-quality work.

- Original replacement components.

- 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.

ORIGINAL REPLACEMENT PARTS ARE DISTRIBUTED EXCLUSIVELY BY MANITOU AND ITS DEALER NETWORK.
the dealer network list is available on manitou web site www.manitou.com

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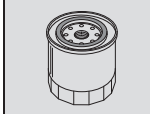
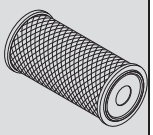
FILTERS CARTRIDGES AND BELTS

MI 15 D MI 18 D
MI 20 D MI 25 D
MI 30 D MI 35 D

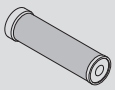
ENGINE



ENGINE OIL FILTER
Part number: 827148
Change: 500 H



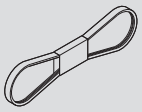
DRY AIR FILTER CARTRIDGE
Part number: 827630 only for MI 15/18 D
Part number: 827575 except for MI 15/18 D
Clean: 50 H*
Change: 500 H*



SAFETY DRY AIR FILTER CARTRIDGE
Part number: 827576 except for MI 15/18 D
Change: 1000 H*

FUEL FILTER
Part number: 827224
Change: 1000 H

FUEL PRE-FILTER
Part number: 827229
Change: 1000 H

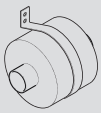


ALTERNATOR BELT
Part number: 827155

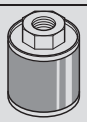
*: This periodicity is given for information only (see: 3 - MAINTENANCE: SERVICING SCHEDULE) for cleaning and changing.

HYDRAULIC

Up to machine n° 856629



HYDRAULIC RETURN OIL FILTER
Part number: 827578
Change: 1000 H



SUCTION STRAINER FOR HYDRAULIC OIL TANK
Part number: 827577
Clean: 1000 H

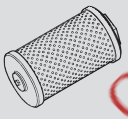
CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 828238**
Clean: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 896250**
Clean: 1000 H

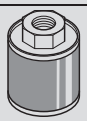
**: according to model.

HYDRAULIC

From machine n° 856630



HYDRAULIC RETURN OIL FILTER
Part number: 898540
Change: 1000 H



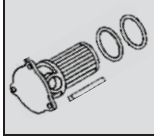
SUCTION STRAINER FOR HYDRAULIC OIL TANK
Part number: 898568
Clean: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 828238**
Clean: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 896250**
Clean: 1000 H

**: according to model.

TRANSMISSION



TRANSMISSION METAL OIL FILTER
Part number: 827306
Clean: 1000 H

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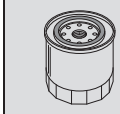
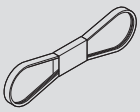
FILTERS CARTRIDGES AND BELTS

MI 15 G MI 18 G
MI 20 G MI 25 G
MI 30 G MI 35 G

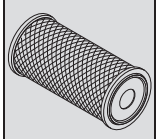
ENGINE



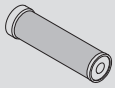
ENGINE OIL FILTER
Part number: 826575
Change: 500 H



ALTERNATOR BELT
Part number: 826638



DRY AIR FILTER CARTRIDGE
Part number: 827630 only for MI 15/18 G
Part number: 827575 except for MI 15/18 G
Clean: 50 H*
Change: 500 H*



SAFETY DRY AIR FILTER CARTRIDGE
Part number: 827576 except for MI 15/18 G
Change: 1000 H*

Up to machine n° 856887
FILTER VALVE REPAIR KIT
Part number: 554709
Change: 1000 H

From machine n° 856888
FILTER VALVE REPAIR KIT
Part number:
Clean: 500 H
Change: 2000 H

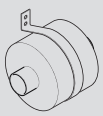
Up to machine n° 856887
PRESSURE REGULATOR REPAIR KIT
Part number: 550524

Up to machine n° 856887
CARBURETTOR REPAIR KIT
Part number: 588670

*: This periodicity is given for information only (see: 3 - MAINTENANCE. SERVICING SCHEDULE) for cleaning and changing.

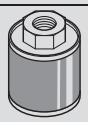
HYDRAULIC

Up to machine n° 856629



HYDRAULIC RETURN OIL FILTER
Part number: 827578
Change: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 828238**
Clean: 1000 H



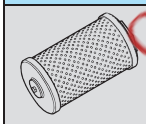
SUCTION STRAINER FOR HYDRAULIC OIL TANK
Part number: 827577
Clean: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 896250**
Clean: 1000 H

**: according to model.

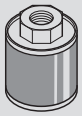
HYDRAULIC

From machine n° 856630



HYDRAULIC RETURN OIL FILTER
Part number: 898540
Change: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 828238**
Clean: 1000 H

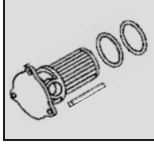


SUCTION STRAINER FOR HYDRAULIC OIL TANK
Part number: 898568
Clean: 1000 H

CAP FILTER FOR HYDRAULIC FLUID TANK
Part number: 896250**
Clean: 1000 H

**: according to model.

TRANSMISSION



TRANSMISSION METAL OIL FILTER
Part number: 827306
Clean: 1000 H

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LUBRICANTS AND FUEL

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 organised with the dealer, a diagnostic analysis of engine, gear box and axle oils may be requested depending on the rate of use.

(*) RECOMMENDED FUEL SPECIFICATION:

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

Type of diesel fuel EN590

ENGINE				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
ENGINE MI . . D MI . . G	7,5 Litres 3,8 Litres	MANITOU Oil API CH4	5 l 20 l 55 l 209 l 1000 l	661706 582357 582358 582359 490205
COOLING CIRCUIT	11 Litres	Cooling fluid (protection - 25°)	2 l 5 l 20 l	473076 470077 470078
		Cooling fluid (protection - 35°)	2 l 5 l 20 l	554002 554003 554004
FUEL TANK MI 15 D / MI 18 D MI 20 D / MI 25 D / MI 30 D / MI 35 D GAS CYLINDER MI . . G	 45 Litres 60 Litres 13 kg	 Diesel fuel (*) Diesel fuel (*) LPG		

MAST			
ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
MAST LIFTING CHAINS	MANITOU Lubricant Chain special (aerosol)	400 Ml.	554271
GREASING OF THE MAST	MANITOU Grease BLACK multi-purpose	400 g. 1 Kg. 5 Kg.	545996 161590 499235

HYDRAULIC				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
HYDRAULIC OIL TANK MI 15 .. / MI 18 .. MI 20 .. / MI 25 .. / MI 30 .. / MI 35 ..	 40 Litres 50 Litres	MANITOU Oil Hydraulic ISO VG 32	5 l 20 l 209 l	744638 744637 744636

TRANSMISSION				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
TRANSMISSION MI 15 .. / MI 18 .. MI 20 .. / MI 25 .. / MI 30 .. / MI 35 ..	4 Litres	MANITOU Oil DEXRON-III Automatic transmission	1 l 20 l 209 l	781630 781631 781632
DIFFERENTIAL MI 15 .. / MI 18 .. MI 20 .. / MI 25 .. / MI 30 .. / MI 35 ..	5,8 Litres 6,5 Litres	MANITOU Oil SAE80W90 Mechanical transmission	2 l 20 l 55 l 209 l	499237 546330 546221 546220

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BRAKE				
ORGANS TO BE LUBRICATED	CAPACITY	RECOMMENDATION	PACKAGING	PART NUMBER
BRAKE SYSTEM	1,5 Litres	Mineral brake fluid DOT3	1 l	473014

REAR AXLE			
ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
SWIVEL PINS STEERING CONNECTING ROD REAR AXLE OSCILLATION REAR WHEEL BEARINGS	MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161589 720683 554974 499233 489670

CAB (OPTION)			
ORGANS TO BE LUBRICATED	RECOMMENDATION	PACKAGING	PART NUMBER
CAB DOOR	MANITOU Grease BLUE multi-purpose	400 g 1 kg 5 kg 20 kg 50 kg	161589 720683 554974 499233 489670
WINDSCREEN WASHER TANK	Windscreen washer fluid	1 L. 5 L.	490402 486424

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SERVICING SCHEDULE

(1): MANDATORY 500 HOUR OR 6 MONTH SERVICE.

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

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 6 MONTHS	EVERY 1000 HOURS OF SERVICE OR EVERY YEAR	EVERY 2000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 4000 HOURS OF SERVICE	OCCASIONALLY
ENGINE										
Engine oil level	3-12	C	C	<<<	<<<	<<<	<<<	<<<	<<<	
Cooling fluid level	3-13	C	C	<<<	<<<	<<<	<<<	<<<	<<<	
Fuel level MI .. D	3-13	C	C	<<<	<<<	<<<	<<<	<<<	<<<	
Dry air filter cartridge	3-16/3-22	R		N	<<<	R	<<<	<<<	<<<	
Radiator core	3-16	N		N	<<<	<<<	<<<	<<<	<<<	
Engine oil MI .. D	3-23	V				V	<<<	<<<	<<<	
Engine oil filter MI .. D	3-23	R				R	<<<	<<<	<<<	
Engine oil MI .. G	3-24	V				V***	<<<	<<<	<<<	
Engine oil filter MI .. G	3-24	R				R***	<<<	<<<	<<<	
Fuel water trap MI .. D	3-24	V				V	<<<	<<<	<<<	
Alternator/fan/crankshaft belt tension	3-25	C/A				C/A***	<<<	<<<	<<<	
Engine idling MI .. G		C				C*	<<<	<<<	<<<	
Ignition timing MI .. G		C				C*	<<<	<<<	<<<	
Spark plug MI .. G		C				C*	<<<	<<<	<<<	
Rotor and ignition head MI .. G		C				C*	<<<	<<<	<<<	
LPG vacuum valve filter From machine n° 856888		N/C				N/C*	<<<	R*	<<<	
LPG vacuum valve From machine n° 856888		C				C*	<<<	<<<	<<<	
LPG vaporiser pressure regulator From machine n° 856888		V/C				V/C*	<<<	<<<	<<<	
LPG carburettor From machine n° 856888		C				C*	<<<	<<<	<<<	
Fuel filter MI .. D	3-26	R					R	<<<	<<<	
Fuel pre-filter MI .. D	3-26	R					R	<<<	<<<	
Safety dry air filter cartridge (**)	3-26						R	<<<	<<<	
LPG vacuum valve filter Up to machine n° 856887		C					R*	<<<	<<<	
LPG vacuum valve Up to machine n° 856887		C					C*	<<<	<<<	
LPG vaporiser pressure regulator Up to machine n° 856887		C					C*	<<<	<<<	
LPG carburettor Up to machine n° 856887		C					C*	<<<	<<<	
Valve clearances		C					C*	<<<	<<<	
Engine silent blocks							C*	<<<	<<<	
Engine speeds							C*	<<<	<<<	
Cooling fluid MI .. D	3-32							V	<<<	
Cooling fluid MI .. G	3-33							V	<<<	
Fuel tank	3-34							N	<<<	
Injection pump								C*	<<<	
Injectors								C*	<<<	
Radiator								C*	<<<	
Water pump and the thermostat								C*	<<<	
Alternator and the starter motor								C*	<<<	
Fuel circuit MI .. D	3-36									P
LPG cylinder MI .. G	3-36/3-37									R
TRANSMISSION										
Transmission oil level	3-20	C			C	<<<	<<<	<<<	<<<	
Differential oil level	3-20	C			C	<<<	<<<	<<<	<<<	
Transmission oil	3-27	V					V	<<<	<<<	
Transmission metal oil filter	3-27	N					N	<<<	<<<	
Differential oil	3-34	V						V	<<<	
Brake wear									C*	
TYRES										
Wheel nuts torque	3-16	C		C	<<<	<<<	<<<	<<<	<<<	
Wheel nuts tightening torque	3-34							C	<<<	
MAST										
Tension and alignment of the mast lifting chains	3-16	C/A		C/A	<<<	<<<	<<<	<<<	<<<	
Mast	3-17	G		G	<<<	<<<	<<<	<<<	<<<	
Mast lifting chains	3-25	N/C/G				N/C/G	<<<	C*	<<<	
Condition of mast unit						C*	<<<	<<<	<<<	
Attachment carriage								C*	<<<	
Chain rollers								C*	<<<	
Mast guide rollers								C*	<<<	
Mast bearing rollers								C*	<<<	
Thickness of the mast wearing plates								C*	<<<	

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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 6 MONTHS	EVERY 1000 HOURS OF SERVICE OR EVERY YEAR	EVERY 2000 HOURS OF SERVICE OR EVERY TWO YEARS	EVERY 4000 HOURS OF SERVICE	OCCASIONALLY
HYDRAULIC										
Hydraulic oil level	3-14	C	C	<<<	<<<	<<<	<<<	<<<	<<<	
Speeds of hydraulic movements						C*	<<<	<<<	<<<	
Condition of hoses and flexible pipes						C*	<<<	<<<	<<<	
Condition of cylinders (leakage, shafts)						C*	<<<	<<<	<<<	
Hydraulic oil	3-28/3-29						V	<<<	<<<	
Filter cap for hydraulic oil tank	3-28/3-29						N	<<<	<<<	
Suction strainer for hydraulic oil tank	3-28/3-29						N	<<<	<<<	
Hydraulic return filter	3-28/3-29	R					R	<<<	<<<	
Hydraulic circuit pressures								C*	<<<	
Hydraulic circuit outputs								C*	<<<	
Hydraulic oil tank								N*	<<<	
BRAKE										
Brake fluid level	3-14	C	C	<<<	<<<	<<<	<<<	<<<	<<<	
Brake pedal axle	3-30						G	<<<	<<<	
Brake							C/A*	<<<	<<<	
Brake oil							V/P*	<<<	<<<	
OVERHEAD GUARD										
Seat belt	3-30						C	<<<	<<<	
Condition of the rear view mirrors							C*	<<<	<<<	
Structure							C*	<<<	<<<	
CAB (OPTION)										
Windscreen washer liquid level	3-18	C		C	<<<	<<<	<<<	<<<	<<<	
Cab door	3-18	G		G	<<<	<<<	<<<	<<<	<<<	
Seat belt	3-32						C	<<<	<<<	
Condition of the rear view mirrors							C*	<<<	<<<	
Structure							C*	<<<	<<<	
ELECTRICITY										
Condition of wiring harness and cables							C*	<<<	<<<	
Lights and signals							C*	<<<	<<<	
Warning indicators							C*	<<<	<<<	
REAR AXLE										
Swivel pins	3-18	G		G	<<<	<<<	<<<	<<<	G/C*	
Steering connecting rod	3-18	G		G	<<<	<<<	<<<	<<<	<<<	
Rear axle oscillation	3-18	G		G	<<<	<<<	<<<	G/C*	<<<	
Steering								C*	<<<	
Rear axle									C*	
CHASSIS										
Structure							C*	<<<	<<<	
Bearings and articulation rings								C*	<<<	
ATTACHMENTS										
Fork wear		C				C*	<<<	<<<	<<<	
Condition of attachments						C*	<<<	<<<	<<<	
LIFT TRUCK										
Towing the lift truck	3-37									XXX
Slinging the lift truck	3-37									XXX
Transporting the lift truck on a flatbed	3-38									XXX

(*): Consult your dealer.
(**): Only for MI 20/25/30/35 D
MI 20/25/30/35 G
(***): To be performed after the first 50 hours of operation and then every 500 hours.

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A - DAILY OR EVERY 10 HOURS OF SERVICE

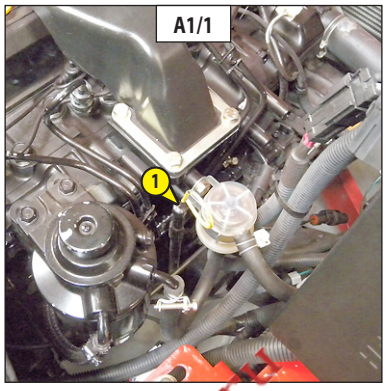
A1 - ENGINE OIL LEVEL

CHECK

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove the dipstick 1 (fig. A1/1).
- Wipe the dipstick and check the correct level between the MINI and MAXI marks.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2 (fig. A1/2).
- Check visually that there is no leakage or seepage of oil in the engine.



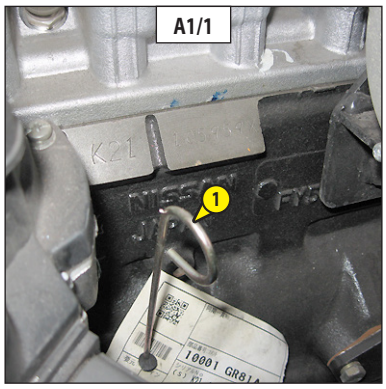
A1 - ENGINE OIL LEVEL

CHECK

MI 15 G / MI 18 G
MI 20 G / MI 25 G
MI 30 G / MI 35 G

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove the dipstick 1 (fig. A1/1).
- Wipe the dipstick and check the correct level between the MINI and MAXI marks.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2 (fig. A1/2).
- Check visually that there is no leakage or seepage of oil in the engine.



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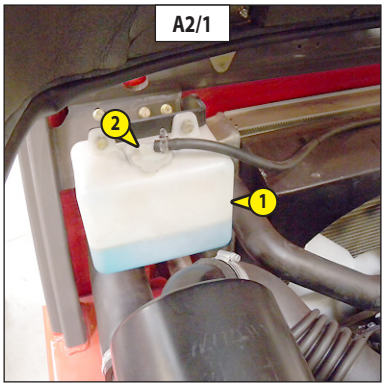
A2 - COOLING FLUID LEVEL

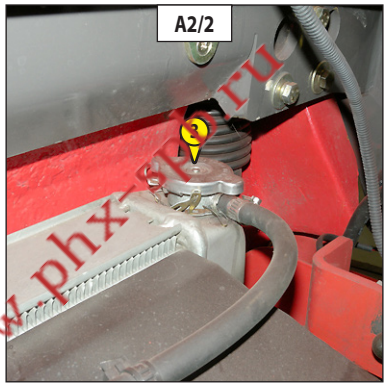
CHECK



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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- The fluid must be at the MAX level on the expansion tank 1 (fig. A2/1).
- If necessary, add cooling fluid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 2 (fig. A2/1).
- Visually check that there is no leakage in the radiator and pipes.

When the expansion tank is empty, check the level in the radiator before filling the expansion tank.

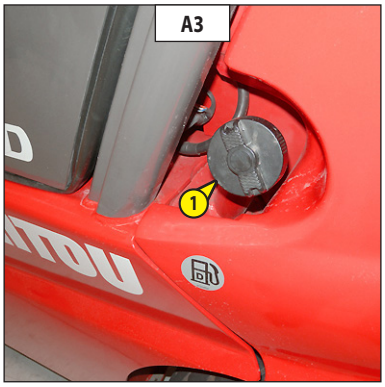


- Slowly turn the cap of the radiator 3 (fig. A2/2) up to the safety stop.
- Allow the pressure and the steam to escape.
- Press down and turn the cap so as to release it.
- Add cooling fluid through the filler port (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Lubricate slightly the filler neck in order to facilitate the setting and the removal of the radiator cap.

To avoid any risk of spraying or scalding, wait until the engine has cooled down before removing the cooling system filler plug. If the cooling fluid is very hot, add only hot cooling fluid (80°C). In an emergency, you can use water as a coolant. In such a case, the cooling system fluid should be changed soon as possible (see 3 - MAINTENANCE: F – EVERY 2000 HOURS OF SERVICE).

A3 - FUEL LEVEL

CHECK



MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

NOTE: The fuel level is shown by a fuel gauge.

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

- Remove cap 1 (fig. A3).
- Fill the fuel tank with clean diesel filtered through the filling port (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Put back the cap 1 (fig. A3).
- Visually check that there is no leakage in the tank and pipes.

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

The fuel tank is degassed via the filler plug. When changing it, always use an original part, with degassing hole.

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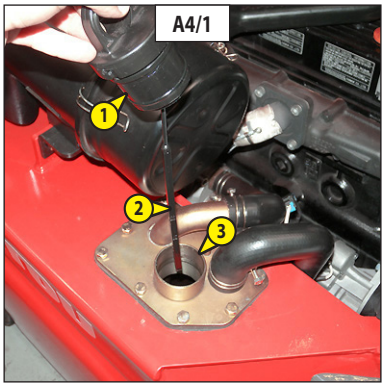
A4 – HYDRAULIC FLUID LEVEL

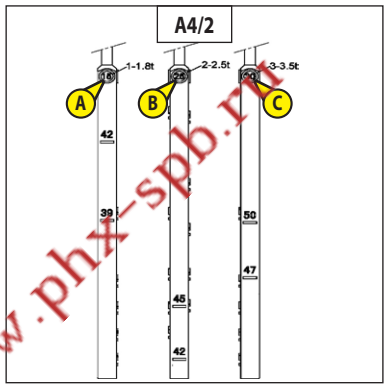
CHECK



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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove cap 1 (fig. A4/1).
- Refer to the dipstick 2 (fig. A4/1 and A4/2): A MI 15 D / MI 15 G / MI 18 D / MI 18 G
  B MI 20 D / MI 20 G / MI 25 D / MI 25 G
  C MI 30 D / MI 30 G / MI 35 D / MI 35 G
- The level is correct when it is between the MIN and MAX markings on the dipstick.
- Top up if necessary (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Add fluid through filler port 3 (fig. A4/1).

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



- Put back the cap 1 (fig. A4/1).
- Visually check that there is no leakage in the tank and pipes.

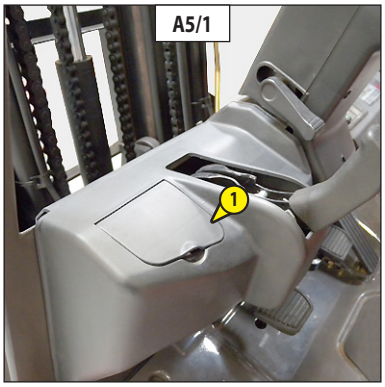
NOTE: Always maintain the fluid level at maximum as cooling depends on the fluid flowing through the reservoir.

- Check the operation of the hydraulic controls (see: 2 - DESCRIPTION: 15 – PARKING BRAKE LEVER).

Consult your dealer in case of abnormal operation of the hydraulic controls.

A5 – BRAKE FLUID LEVEL

CHECK



Place the lift truck on level ground.

- Lift up the braking fluid reservoir access panel 1 (fig. A5/1).
- Visually check the level.
- The level is correct when it is at the MAX level on the tank.
- If necessary, add fluid through filler port 2 (fig. A5/2) (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Visually check that there is no leakage in the tank and pipes.

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

- Check the operation of the service brakes (see: 2 - DESCRIPTION: 14 – SERVICE BRAKE AND TRANSMISSION CUT OFF PEDALS).
- Check the proper operation of the parking brake (see: 2 - DESCRIPTION: 15 – PARKING BRAKE LEVER).

Consult your dealer in case of abnormal operation of the brakes.

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B - EVERY 50 HOURS OF SERVICE

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

B1 - DRY AIR FILTER CARTRIDGE

CLEAN

In case of use in a heavily dust laden atmosphere, the cartridge inspection and cleaning frequency must be reduced.

The cartridge must not be cleaned more than seven times, after which the cartridge must be changed. Never operate the lift truck with the air filter removed or damaged.

- For the disassembly and reassembly of the cartridge, see: 3 - MAINTENANCE: D – EVERY 500 HOURS OF SERVICE.
- 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.

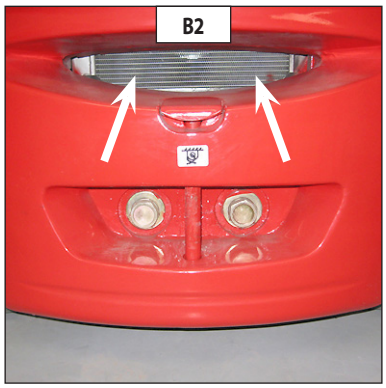
Respect the safety distance of 30mm between the air jet and the cartridge to avoid tearing or making a hole in the cartridge. The cartridge must not be blown anywhere near the air filter box. Never clean the cartridge by tapping it against a hard surface. Your eyes must be protected during this intervention.

- 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.

Do not clean the dry air filter cartridge by washing it in liquid. Do not clean by any means the safety cartridge located inside the filter cartridge, change it for a new one if it is dirty or damaged.

B2 - RADIATOR CORE

CLEAN



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.

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

In order to prevent the radiator becoming clogged, clean it with a compressed air jet directed from inside to outside. This is the only effective way of removing the impurities.

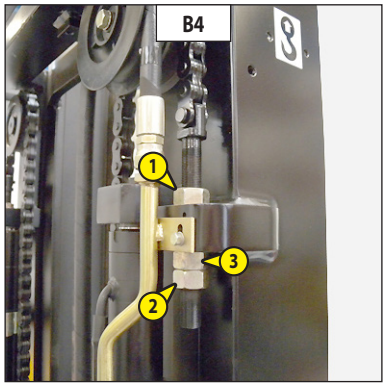
B3 – WHEEL NUT TORQUES

CHECK

- Check the condition of the tyres, 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.

B4 – TENSION AND ALIGNMENT OF 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.

- Visually check the state of the mast and the forks.
- Check the alignment of the mast lifting chains between the carriage's chain fasteners and the chain rollers.
- Manually verify the chain tension, if necessary adjust as following while ensuring that the carriage is perpendicular to the mast.
- Loosen the nut 1 (fig. B4).
- Loosen the lock nut 2 (fig. B4) of the chain tension adjuster.
- Adjust the tension by tightening or loosening the nut 3 (fig. B4) while checking the alignment of the lifting chains.
- Then block the lock nut 2 and the nut 3 (fig. B4).
- Retighten the nut 1 (fig. B4).

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

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B5 - MAST

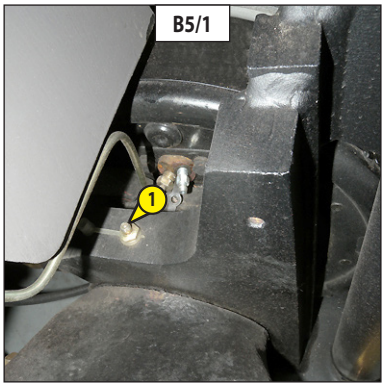
GREASE

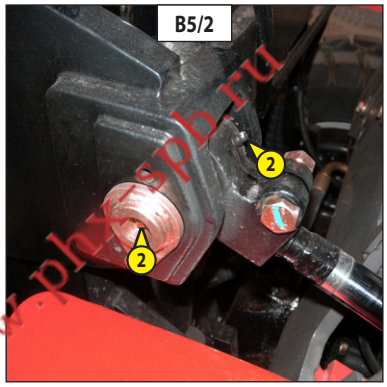
To be carried out weekly, if the lift truck has been operated for less than 50 hours during the week.

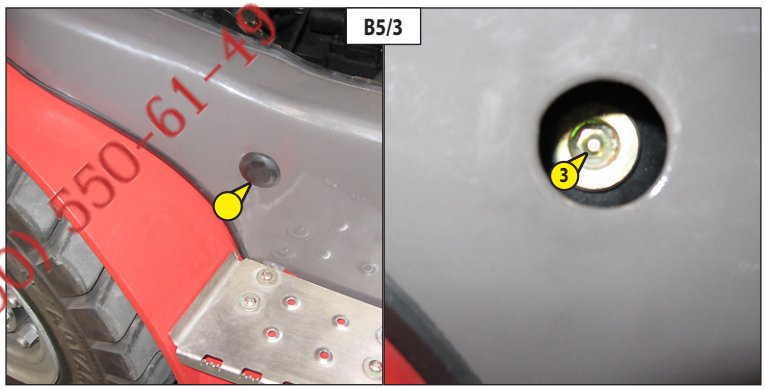
In the event of prolonged use in an extremely dusty or oxidising atmosphere, reduce this interval to 10 working hours or every day.

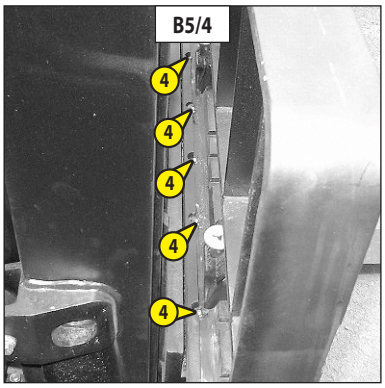
Clean and lubricate the following points with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

1 - Lubricators of the hinge axles at the foot of the mast (2 lubricators) (fig. B5/1).
2 - Lubricators of the tilt cylinder head axles (4 lubricators) (fig. B5/2).
3 - Lubricators of the tilt cylinder foot axles (2 lubricators) (fig. B5/3).
4 - Lubricators of the side-shift carriage (5 lubricators) (fig. B5/4).









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B6 - WINDSCREEN WASHER LIQUID LEVEL (OPTION)

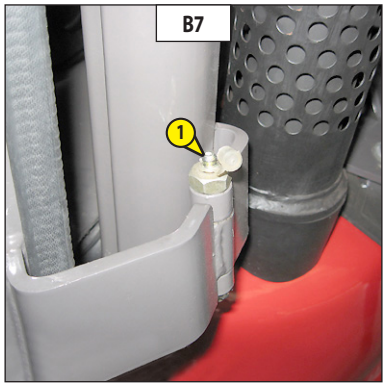
CHECK

- Remove the storage tray 1 (fig. B6/1).
- Visually check the level (fig. B6/2).
- If necessary add windscreen washer liquid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 2 (fig. B6/2).

B7 - CAB DOOR (OPTION)

GREASE

- Clean and lubricate the points 1 (4 lubricators) (fig. B7) with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

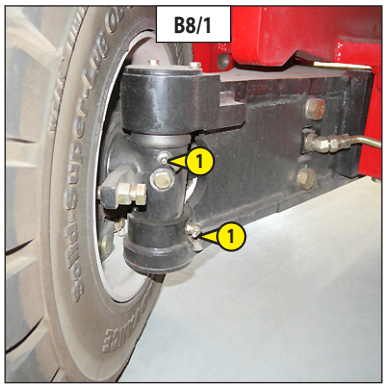


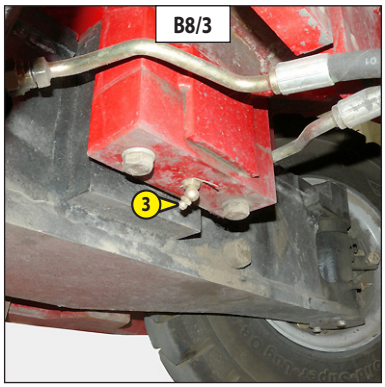
B8 - REAR AXLE

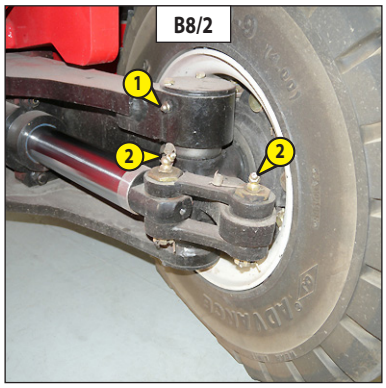
GREASE

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

  1 - Swivel pin lubricators (6 lubricators) (fig. B8/1 and B8/2).
  2 - Steering rod lubricators (4 lubricators) (fig. B8/2).
  3 - Rear axle oscillation pin lubricators (2 lubricators) (fig. B8/3).







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C - EVERY 250 HOURS OF SERVICE

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

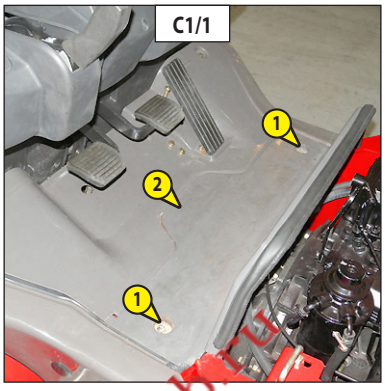
C1 - TRANSMISSION OIL LEVEL

CHECK

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

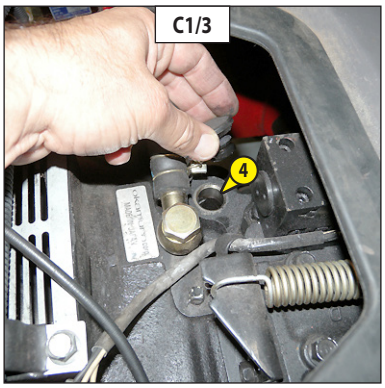
- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove the floor mat.
- Undo screws 1 (fig. C1/1) to remove the floor 2 (fig. C1/1).
- Remove dipstick 3 (fig. C1/2).
- Wipe the dipstick and check the correct level between the MINI and MAXI marks.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 4 (fig. C1/3).
- Visually check that there is no leakage or seepage of oil from the transmission.

C1/1



C1/2

C1/3



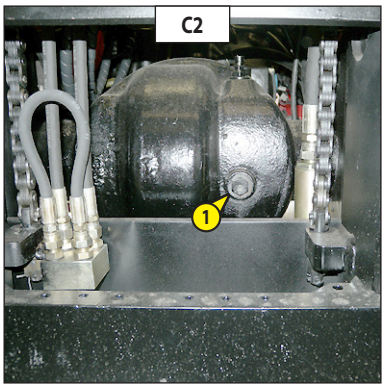
C2 – DIFFERENTIAL OIL LEVEL

CHECK

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

- Remove level plug 1 (fig. C2). The oil should be flush with the edge of the hole.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the same hole.
- Replace and tighten the level plug 1 (fig. C2).

C2



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D - EVERY 500 HOURS OF SERVICE

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

D1 - DRY AIR FILTER CARTRIDGE

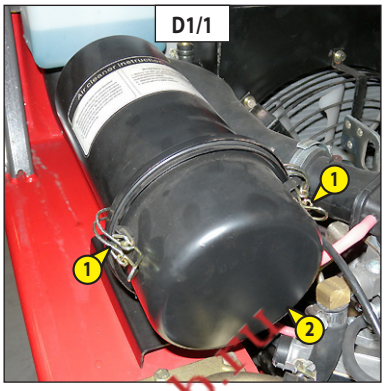
CHANGE

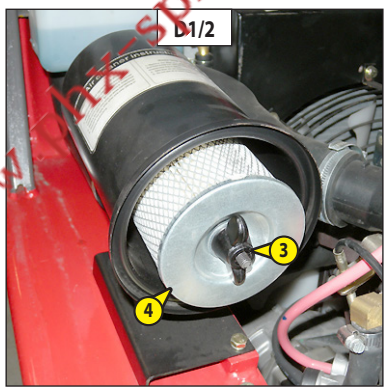
MI 15/18 D
MI 15/18 G

Pre-filtration cartridges are available for use in a heavily dust laden atmospheres (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS). The cartridge checking and cleaning interval must also be reduced (to 250 hours in a heavily laden dust atmosphere and with pre-filtration).

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Release the bolts 1 (fig. D1/1) and remove cover 2 (fig. D1/1).
- Untighten the nut 3 (fig. D1/2) and free the filter cartridge 4 (fig. D1/2).
- The following parts must be cleaned with a damp, clean lint-free cloth.
  - The inside of the filter and cover.
  - The inside of the filter inlet hose.
  - The gasket surfaces in the filter and in the cover.
- Check pipes and connections between the air filter and the engine.
- Before mounting check the state of the new cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Insert the cartridge in the filter and refit the cover.





D1 - DRY AIR FILTER CARTRIDGE

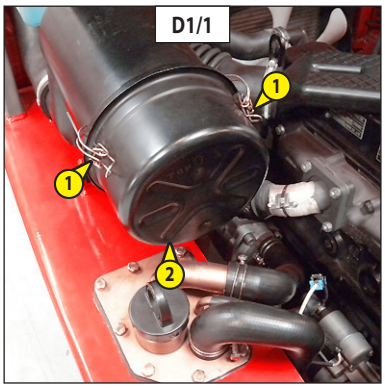
CHANGE

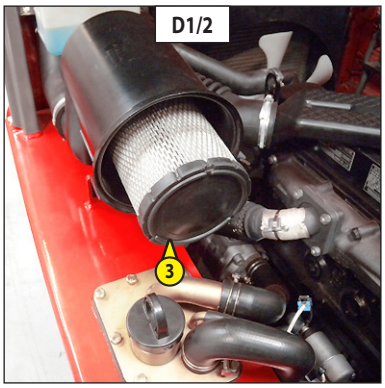
MI 20/25/30/35 D
MI 20/25/30/35 G

Pre-filtration cartridges are available for use in a heavily dust laden atmospheres (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS). The cartridge checking and cleaning interval must also be reduced (to 250 hours in a heavily laden dust atmosphere and with pre-filtration).

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Release the bolts 1 (fig. D1/1) and remove cover 2 (fig. D1/1).
- Gently remove the cartridge 3 (fig. D1/2), taking care to avoid spilling the dust.
- Leave the safety cartridge in place.
- The following parts must be cleaned with a damp, clean lint-free cloth.
  - The inside of the filter and cover.
  - The inside of the filter inlet hose.
  - The gasket surfaces in the filter and in the cover.
- Check pipes and connections between the air filter and the engine.
- Before mounting check the state of the new cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Introduce the cartridge into the filter axis and push it in, pressing the edges and not the middle.
- Refit the cover 2 (fig. D1/1).





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D2 - ENGINE OIL

DRAIN

D3 - ENGINE OIL FILTER

CHANGE

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

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

DRAINING THE OIL

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Place a container under drain plug 1 (fig. D2/1) and unscrew the plug.
- Remove filling plug 2 (fig. D2/2) in order to ensure that the oil is drained properly.

Dispose of the drain oil in an ecological manner.

REPLACEMENT OF THE FILTER

- Remove engine oil filter 3 (fig. D2/3) and discard the filter and the filter seal.
- Clean the filter mount with a clean, lint-free cloth.
- Lightly grease the new oil filter seal and fit the new oil filter (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS) on the filter bracket.

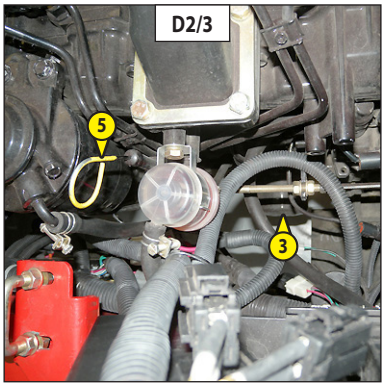
Tighten the oil filter by hand pressure only and lock the filter in place by a quarter turn.

FILLING UP THE OIL

- Refit and tighten drain plug 1 (fig. D2/1).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) by filler port 4 (fig. D2/2).

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 oil filter.
- Stop the engine, wait a few minutes and check the level between the MAX and MIN marks on dipstick 5 (fig. D2/3).
- Top up the level if necessary.



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D2 - ENGINE OIL

DRAIN

D3 - ENGINE OIL FILTER

CHANGE

MI 15 G / MI 18G
MI 20 G / MI 25 G
MI 30 G / MI 35 G

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

DRAINING THE OIL

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Place a container under drain plug 1 (fig. D2/1) and unscrew the plug.
- Remove filling plug 2 (fig. D2/2) in order to ensure that the oil is drained properly.

Dispose of the drain oil in an ecological manner.

REPLACEMENT OF THE FILTER

- Remove engine oil filter 3 (fig. D2/3) and discard the filter and the filter seal.
- Clean the filter mount with a clean, lint-free cloth.
- Lightly grease the new oil filter seal and fit the new oil filter (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS) on the filter bracket.

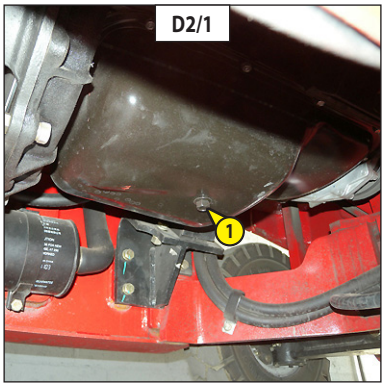
Tighten the oil filter by hand pressure only and lock the filter in place by a quarter turn.

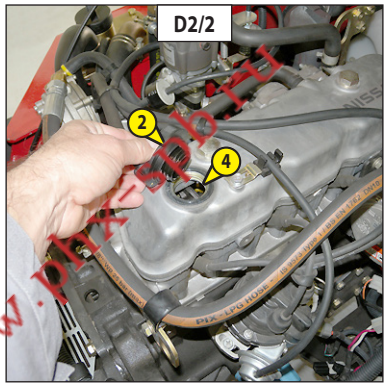
FILLING UP THE OIL

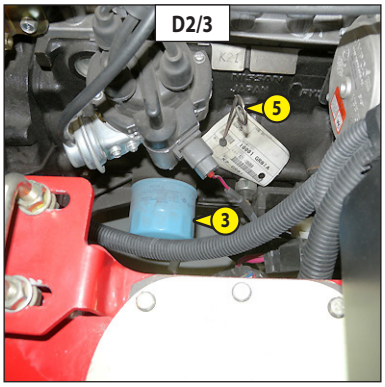
- Refit and tighten drain plug 1 (fig. D2/1).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) by filler port 4 (fig. D2/2).

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 oil filter.
- Stop the engine, wait a few minutes and check the level between the MAX and MIN marks on dipstick 5 (fig. D2/3).
- Top up the level if necessary.







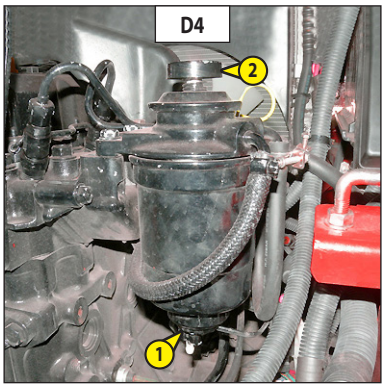
D4 - FUEL WATER TRAP

DRAIN

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

The water trap serves to stop the water contained in the fuel, it is incorporated within the fuel filter.

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Place a container under the fuel filter.
- Undo valve 1 (fig. D4) by two or three turns and operate the hand pump 2 (fig. D4) to empty the water from the water trap.
- Retighten valve 1 (fig. D4).



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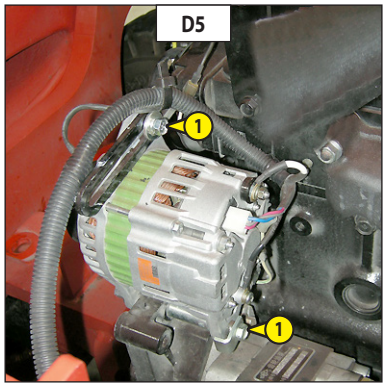
D5 - ALTERNATOR/FAN/CRANKSHAFT BELT TENSION

CHECK - ADJUST



- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- 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.

  MI 15 D / MI 18 D
- Under pressure applied by the thumb (98 N), the tension should be between 8 et 12 mm.

  MI 20 D / MI 25 D

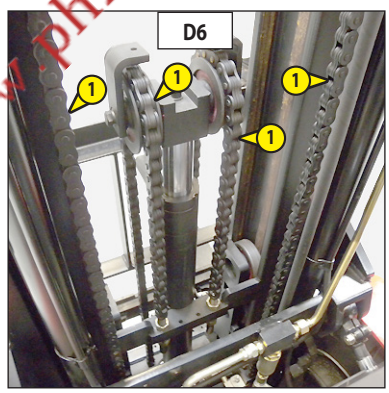
  MI 30 D / MI 35 D
- Under pressure applied by the thumb (98 N), the tension should be between 10 et 14 mm.

  MI .. G
- Under pressure applied by the thumb (98 N), the tension should be between 11 et 13 mm.
- Carry out adjustments if necessary.
- Undo screws 1 (fig. D5) by two to three thread turns.
- Swivel the alternator assembly so as to obtain the belt tension required.
- Retighten screws 1 (fig. D5).

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

D6 - MAST LIFTING CHAINS

CLEAN - CHECK – GREASE



- Wipe the mast lifting chains 1 (fig. D6) 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).

In case of technical faults, consult your dealer.

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E - EVERY 1000 HOURS OF SERVICE

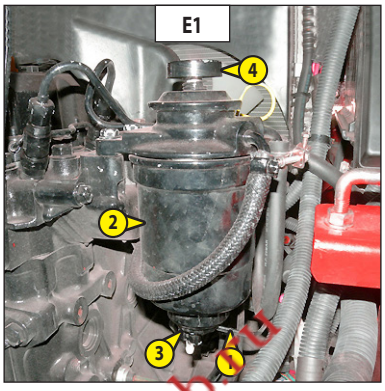
Carry out the operations described previously as well as the following operations.

E1 - FUEL FILTER

CHANGE

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.
- Disconnect the electrical harness 1 (fig. E1) from the fuel water trap.
- Remove and empty the fuel filter 2 (fig. E1).
- Unscrew the fuel water trap 3 (fig. E1).
- Discard the fuel filter cartridge and its seals.
- Clean the inside of the filter head using a brush immersed in clean diesel oil.
- Refit the assembly with a new cartridge and new seals (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Reconnect the harness 1 (fig. E1).
- Pressurise the circuit by means of the hand pump 4 (fig. E1).
- If necessary, bleed the fuel system (see: 3 - MAINTENANCE: G – OCCASIONAL MAINTENANCE).

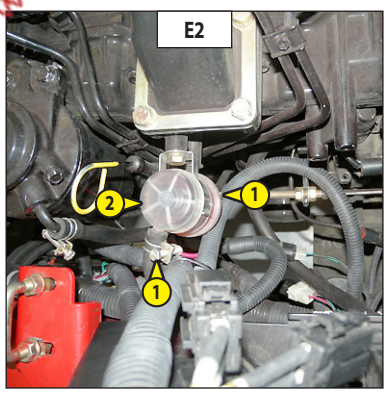


E2 - FUEL PRE-FILTER

CHANGE

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Carefully clean the outside of the fuel filter, to prevent dust from getting into the system.
- Re-connect the hoses 1 (fig. E2).
- Replace the fuel pre-filter with a new one (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Re-connect the hoses.



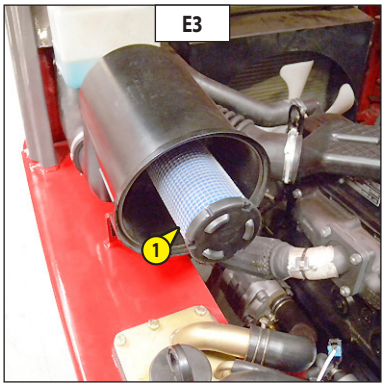
E3 - SAFETY DRY AIR FILTER CARTRIDGE

CHANGE

Only for MI 20/25/30/35 D
MI 20/25/30/35 G

- For the disassembly and reassembly of the dry air filter cartridge, see: 3 - MAINTENANCE: D - EVERY 500 HOURS OF SERVICE.
- Gently remove the dry air filter safety cartridge 1 (fig. E3), taking care to avoid spilling the dust.
- Clean the gasket surface on the filter with a damp, clean lint-free cloth.
- Before mounting, check the state of the new safety cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Insert the cartridge within the axis of the filter and push it home, pressing against the outer edge and not the centre.

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



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E4 - TRANSMISSION OIL

DRAIN

E5 - TRANSMISSION METAL OIL FILTER

CLEAN

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove the floor mat.
- Undo the screws 1 (fig. E4/1) to remove the floor 2 (fig. E4/1).

DRAINING THE OIL

- Place a container under drain plug 3 (fig. E4/2) and unscrew the plug.
- Remove filler cap 4 (fig. E4/4) in order to ensure that the oil is drained properly.

Dispose of the drain oil in an ecological manner.

CLEANING THE METAL FILTER

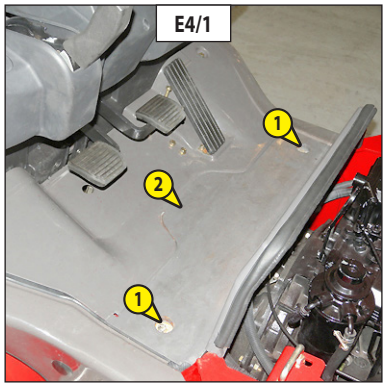
- Remove cover 5 (fig. E4/2) and set aside the O-ring joint 6 (fig. E4/3) and sealing washers 7 (fig. E4/3).
- Allow the rest of the oil to drain away.
- Clean the metal filter 8 (fig. E4/3) using a compressed air jet.
- Clean the magnetic sections 9 (fig. E4/3).
- Refit the assembly.

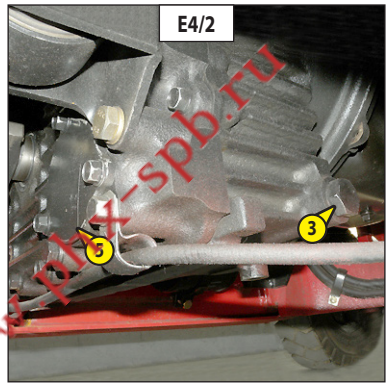
FILLING UP THE OIL

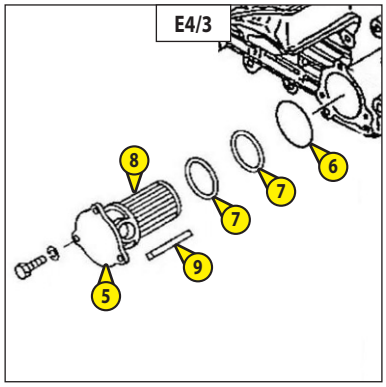
- Refit and tighten drain plug 3 (fig. E4/2).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 10 (fig. E4/4).

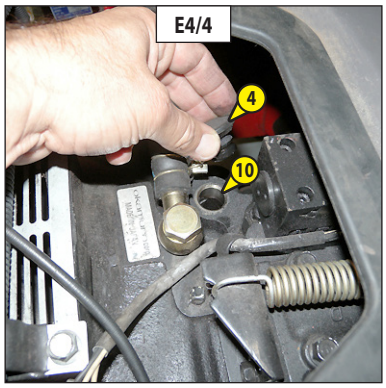
NOTE: For this operation, we recommend you use a funnel fitted with a hose.

- 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 any possible leaks from the oil filter drain plug.
- Stop the engine, wait a few minutes and check the level between the MAX and MIN marks on dipstick 11 (fig. E4/5).
- Top up the level if necessary.









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E6 - HYDRAULIC OIL

DRAIN

E7 - FILTER CAP FOR HYDRAULIC OIL TANK

CLEAN

E8 - SUCTION STRAINER FOR HYDRAULIC OIL TANK

CLEAN

E9 - HYDRAULIC RETURN OIL FILTER

CHANGE

Up to machine n° 856629

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

Before any intervention, thoroughly clean the area surrounding the drain plugs and the plate on the hydraulic tank.

DRAINING THE OIL

- Place a container under drain plug 1 (fig. E6/1) and unscrew the plug.
- Remove filler plug 2 (fig. E6/2) in order to ensure that the oil is drained properly.

Dispose of the drain oil in an ecological manner.

CLEANING G OF FILTER PLUG

- Remove the filler plug cover 3 (fig. E6/3) by twisting through a quarter turn.
- Remove and clean the filter 4 (fig. E6/3).
- Clean the filter holder 5 (fig. E6/3).
- Put the filter and the cover back in place on the holder.

CLEANING THE STRAINER

- Disconnect the hoses 6 (fig. E6/4).
- Undo the screws 7 (fig. E6/4) and remove the holder 8 (fig. E6/4).
- Unscrew suction strainer 9 (fig. E6/5), clean it using a compressed air jet, check its condition and replace it, if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the strainer, the holder and reconnect the hoses.

REPLACEMENT OF THE OIL FILTER

NOTA: Carefully clean the outside of the oil filter and its hoses to prevent dust from getting into the hydraulic system.

- Place a container under the hydraulic return oil filter.
- Remove the hose clamps 10 (fig. E6/6).
- Unscrew the hydraulic return oil filter clamp 11 (fig. E6/6).
- Refit the assembly with a new oil filter (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).

FILLING UP THE OIL

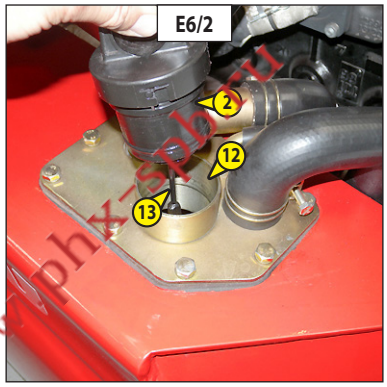
- Clean and refit drain plug 1 (fig. E6/1) (tightening torque 29 to 39 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 12 (fig. E6/2).

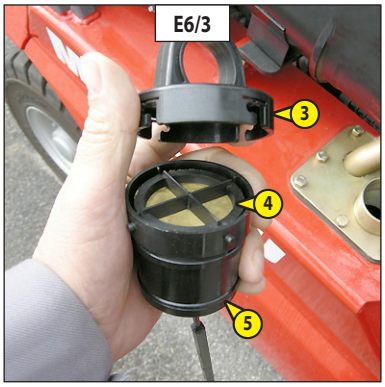
Use a clean container and funnel and clean the underside of the oil drum before filling.

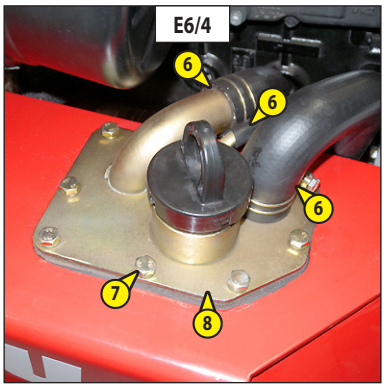
- Check the oil level on the dipstick 13 (fig. E6/2) (see: 3 - MAINTENANCE: A – DAILY OR EVERY 10 HOURS OF SERVICE).
- Check for any possible leaks at the drain plug.

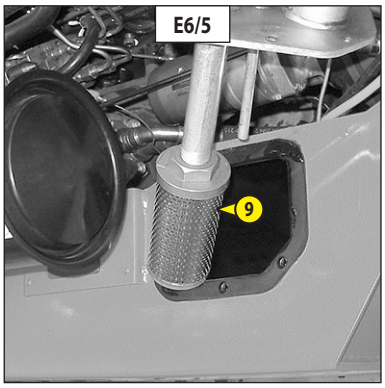
HYDRAULIC CIRCUIT DECONTAMINATION

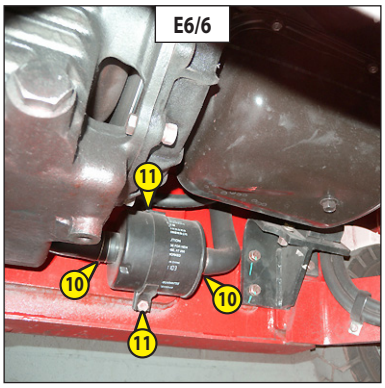
- Let the engine run (accelerator pedal at halfway travel) for 5 minutes without using anything on the lift truck, then for 5 more minutes while using completely the hydraulic movements (except the steering system).
- Accelerate the engine at full speed for 1 minute, then activate the steering system.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











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E6 - HYDRAULIC OIL

DRAIN

E7 - FILTER CAP FOR HYDRAULIC OIL TANK

CLEAN

E8 - SUCTION STRAINER FOR HYDRAULIC OIL TANK

CLEAN

E9 - HYDRAULIC RETURN OIL FILTER

CHANGE

From machine n° 856630

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

Before any intervention, thoroughly clean the area surrounding the drain plugs and the plate on the hydraulic tank.

DRAINING THE OIL
- Place a container under drain plug 1 (fig. E6/1) and unscrew the plug.
- Remove filler plug 2 (fig. E6/2) in order to ensure that the oil is drained properly.

Dispose of the drain oil in an ecological manner.

CLEANING G OF FILTER PLUG
- Remove the filler plug cover 3 (fig. E6/3) by twisting through a quarter turn.
- Remove and clean the filter 4 (fig. E6/3).
- Clean the filter holder 5 (fig. E6/3).
- Put the filter and the cover back in place on the holder.

CLEANING THE STRAINER
- Disconnect the hoses 6 (fig. E6/4).
- Undo the screws 7 (fig. E6/4) and remove the holder 8 (fig. E6/4).
- Unscrew suction strainer 9 (fig. E6/5), clean it using a compressed air jet, check its condition and replace it, if necessary (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Refit the suction strainer.

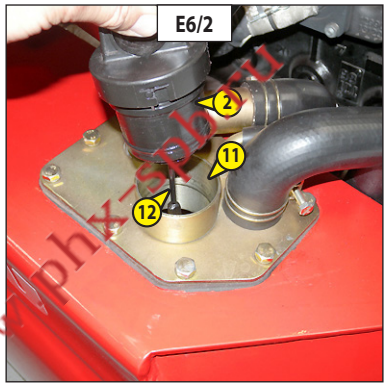
REPLACEMENT OF THE OIL FILTER
- Unscrew the hydraulic return oil filter 10 (fig. E6/5) and replace with a new one (see: 3 - MAINTENANCE: FILTERS AND CARTRIDGES).
- Refit the access panel 8 (fig. E6/4).
- Re-connect the hoses 6 (fig. E6/4).

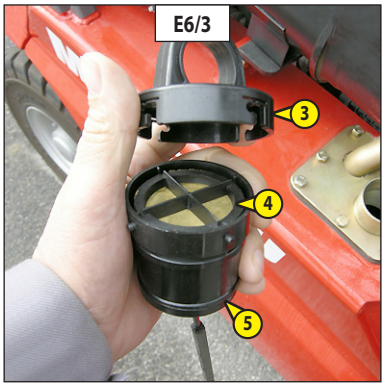
FILLING UP THE OIL
- Clean and refit drain plug 1 (fig. E6/1) (tightening torque 29 to 39 N.m).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filler port 11 (fig. E6/2).

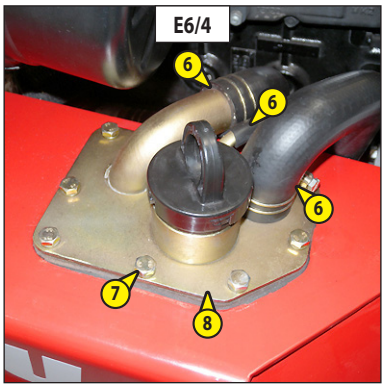
Use a clean container and funnel and clean the underside of the oil drum before filling.

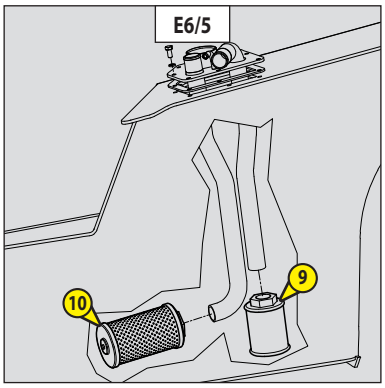
- Check the oil level on the dipstick 12 (fig. E6/2) (see: 3 - MAINTENANCE: A – DAILY OR EVERY 10 HOURS OF SERVICE)
- Check for any possible leaks at the drain plug.

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.









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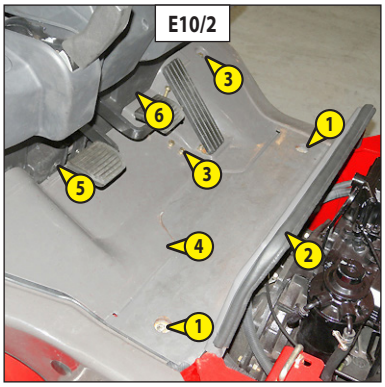
E10 – BRAKE PEDAL AXLES

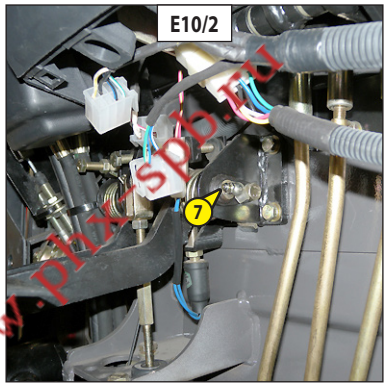
GREASE



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

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

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Remove the floor mat.
- Undo the screws 1 (fig. E10/1) to remove the floor 2 (fig. E10/1).
- Unscrew screws 3 (fig. E10/1) to remove the floor 4 (fig. E10/1).
- Unscrew screws 5 (fig. E10/1) to remove the casing 6 (fig. E10/1).
- Clean, then lubricate the lubricator 7 (fig. E10/2) located at the end of the brake pedal axle (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove any excess grease.



E11 - SEAT BELT

CHECK

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.

Under no circumstances should you use the lift truck if the seat belt is faulty (fixing, locking, it has cuts or tears, etc). Repair or replace the seat belt immediately.

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

F1 - COOLING FLUID

DRAIN

MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

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

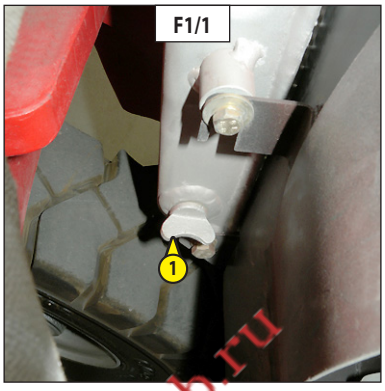
DRAINING THE LIQUID

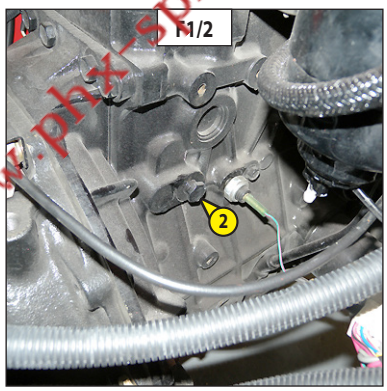
- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Open radiator drain valve 1 (fig. F1/1).
- Undo engine block drain plug 2 (fig. F1/2).
- Remove expansion tank filling plug 3 (fig. F1/3) and empty the tank.
- Remove radiator filler cap 4 (fig. F1/4).
- Let the cooling circuit 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.

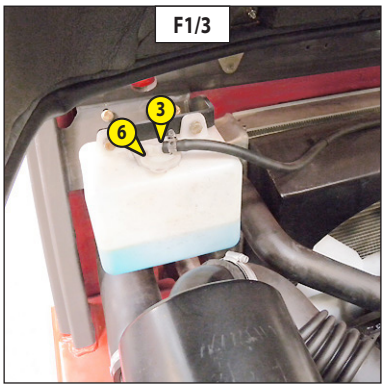
FILLING THE LIQUID

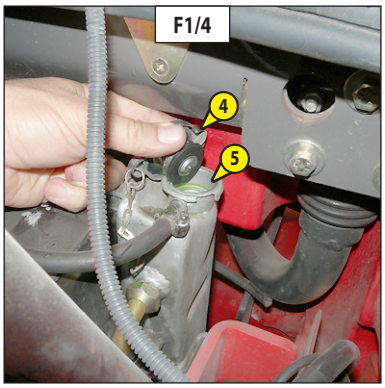
- Close radiator drain valve 1 (fig. F1/1).
- Retighten engine block drain plug 2 (fig. F1/2).
- Slowly fill the circuit with the cooling fluid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 5 (fig. F1/4).
- Fill the expansion tank to the maximum level through the filler port 6 (fig. F1/3).
- Run the engine at idle for a few minutes.
- Check for any possible leaks.
- Check the level and refill if necessary.
- Refit radiator filler plug 4 (fig. F1/4).
- Refit expansion tank filler plug 3 (fig. F1/3).

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.









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F1 - COOLING FLUID

DRAIN

MI 15 G / MI 18G
MI 20 G / MI 25 G
MI 30 G / MI 35 G

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

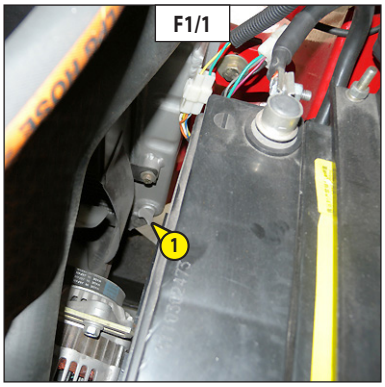
DRAINING THE LIQUID

- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Open radiator drain valve 1 (fig. F1/1).
- Undo engine block drain plug 2 (fig. F1/2).
- Remove expansion tank filling plug 3 (fig. F1/3) and empty the tank.
- Remove radiator filler cap 4 (fig. F1/4).
- 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.

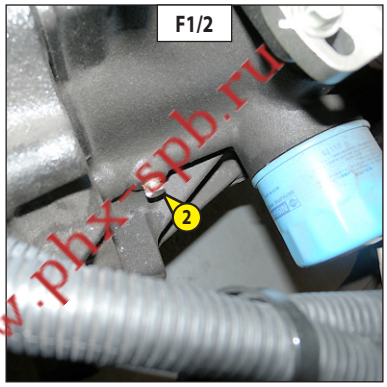
FILLING THE LIQUID

- Close radiator drain valve 1 (fig. F1/1).
- Retighten engine block drain plug 2 (fig. F1/2).
- Remove bleeder screw 5 (fig.F1/5).
- Slowly fill the circuit with the cooling fluid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through the filler port 6 (fig. F1/4).
- Replace bleeder screw 5 (fig.F1/5) when the liquid comes out of this hole.
- Refit radiator filler plug 4 (fig. F1/4).
- Fill the expansion tank to the maximum level through the filler port 7 (fig. F1/3).
- Run the engine at idle for a few minutes.
- Check for any possible leaks.
- Check the level and refill if necessary.
- Refit expansion tank filler plug 3 (fig. F1/3).

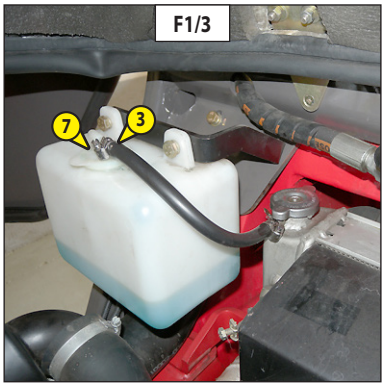
The engine does not contain any corrosion resistor and must be filled during the whole year with a mixture containing 25% of ethylene glycol-based antifreeze.



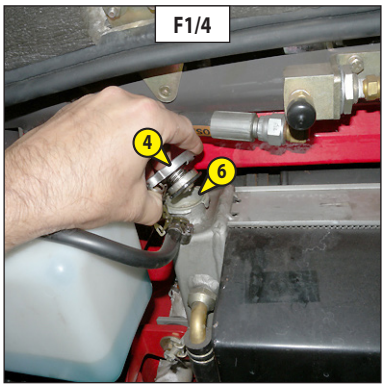
F1/1



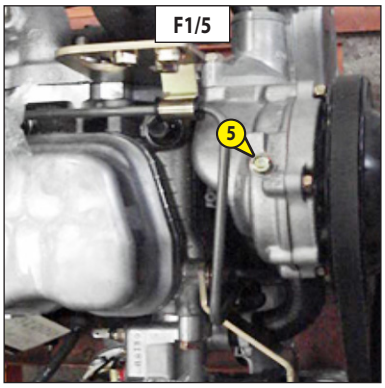
F1/2



F1/3



F1/4



F1/5

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F2 - FUEL TANK

CLEAN

While carrying out these operations, do not smoke or work near a flame.

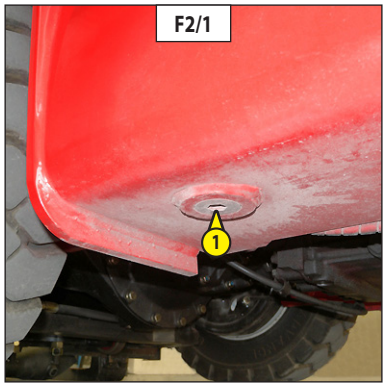
Place the lift truck on level ground with the engine stopped.

- Inspect the parts susceptible to leaks in the fuel circuit and in the tank.
- In the event of a leak, contact your dealer.

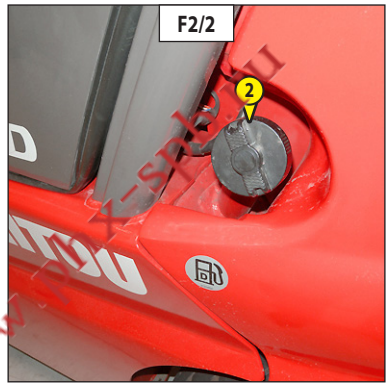
Never try to carry out a weld or any other operation by yourself, this could provoke an explosion or a fire.

- Place a container under drain plug 1 (fig. F2/1) and unscrew the plug.
- Remove filling plug 2 (fig. F2/2) in order to ensure that the oil is drained properly.
- Rinse out with ten litres of clean diesel through the filler port.
- Refit and tighten the drain plug (tightening torque 29 to 39N.m).
- Fill the fuel tank with clean diesel filtered through the filling port (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Refit the filler plug.
- If necessary, bleed the fuel system (see: 3 - MAINTENANCE: G – OCCASIONAL MAINTENANCE).

F2/1



F2/2



F3 - DIFFERENTIAL OIL

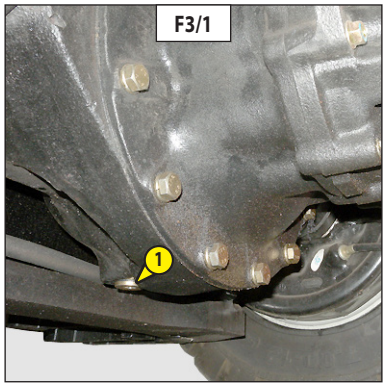
DRAIN

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

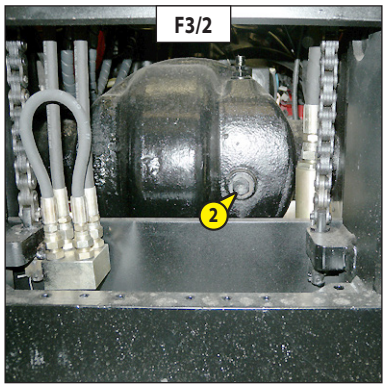
Dispose of the drain oil in an ecological manner.

- Place a container under drain plug 1 (fig. F3/1) and unscrew the plug.
- Remove level and filling plug 2 (fig. F3/2) in order to ensure that the oil is drained properly.
- Refit and tighten drain plug 1 (fig. F3/1).
- Fill up with oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) through filling port 2 (fig. F3/2).
- The level is correct when the oil level is flush with the edge of the hole.
- Check for any possible leaks at the drain plug.
- Refit and tighten level and filling plug 2 (fig. F3/2).

F3/1



F3/2



F4 - WHEEL NUTS TIGHTENING TORQUE

CHECK

- Check the tightening torque of the wheel nuts with a torque wrench.

Wheel nut tightening torques

• Front wheels:	157-176 N.m	MI 15 D / MI 15 G / MI 18 D / MI 18 G
	441-588 N.m	MI 20 D / MI 20 G / MI 25 D / MI 25 G / MI 30 D / MI 30 G / MI 35 D / MI 35 G
• Rear wheels:	157-176 N.m	

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G - OCCASIONAL MAINTENANCE

G1 - FUEL SYSTEM

BLEEDING

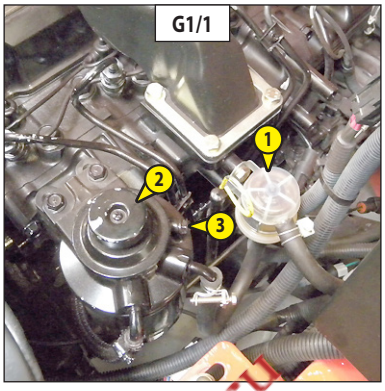
MI 15 D / MI 18 D
MI 20 D / MI 25 D
MI 30 D / MI 35 D

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.

NOTE: Ensure that the level of fuel in the tank is sufficient.

Perform bleeding in the following order:

BLEEDING FROM THE FUEL FILTER
- Raise the engine cover (see: 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Check the presence of diesel in pre-filter 1 (fig. G1/1).
- Activate feed pump 2 (fig. G1/1) until the diesel fuel flows out free from air at the bleed screw 3 (fig. G1/1).

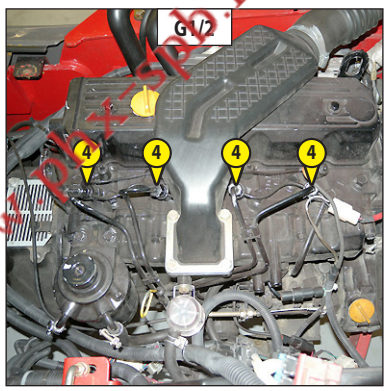


G1/1

BLEEDING FROM THE INJECTORS
- Loosen the high pressure connectors 4 (fig. G1/2) of all the injectors.
- Activate the starter until the diesel fuel flows out free of air at high pressure connectors 4 (fig. G1/2).

Do not engage the starter motor on a continual basis for more than 30 seconds and let it cool between unsuccessful attempts.

- Tighten the connections while the diesel fuel is flowing out (tightening torque 30 N m).



G1/2

- So the engine is ready to be started up.
- Turn the engine over slowly for 5 minutes immediately after bleeding the fuel feed circuit, in order to ensure that the injection pump has been bled thoroughly.

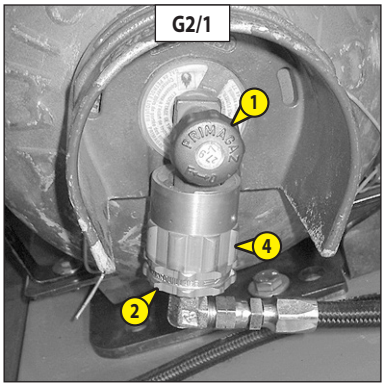
NOTE: If the engine functions correctly for a short time then stops or functions irregularly, check for possible leaks in the low pressure circuit. If in doubt, contact your dealer.

G2 - LPG CYLINDER

CHANGE

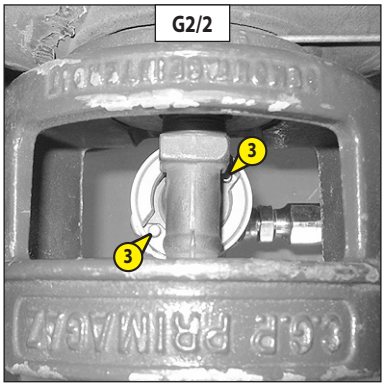
MI 15 G / MI 18G
MI 20 G / MI 25 G
MI 30 G / MI 35 G

Comply with the following instructions when changing the LPG cylinder::
- Choose a well ventilated location provided for this purpose.
- Do not leave the truck next to a source of heat, a flame or an electrical appliance in operation.
- Switch off the truck's ignition and switch off its lights.
- Do not smoke.
- Wear gloves.



G2/1

REMOVING THE LPG CYLINDER
- Close the LPG cylinder valve 1 (fig. G2/1).
- Allow the engine to stop of its own accord before switching off the ignition, so as to remove all fuel from the supply system.
- Switch off the ignition.
- Unscrew the lower ring 2 (fig. G2/1) clockwise until the pins 3 (fig. G2/2) are lowered, then unlock the upper ring 4 (fig. G2/1) by turning in the same direction.
- Pull the safety lock 5 (fig. G2/3) and get down the swivel bracket 6 (fig. G2/3) of the LPG cylinder.
- Loosen the strap and remove the LPG cylinder.



G2/2

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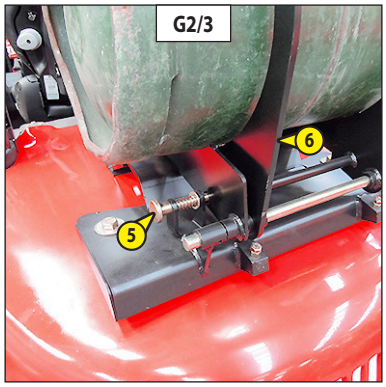
INSTALLATION OF THE LPG CYLINDER

- Install the full cylinder on its support with the valve facing down.
- Tighten the strap around the cylinder.
- Take up the swivel bracket 6 (fig. G2/3) of the LPG cylinder and lock for secure the bracket.
- Attach the quick coupler to the cylinder by turning the upper ring 4 (fig. G2/1) anti-clockwise.
- Hold the upper ring and tighten the lower ring in the same direction until the pins 3 (fig. G2/2) are fully raised.
- Ensure that the supply hose is correctly positioned.
- Open the LPG cylinder valve.
- Check the circuit for leaks, I particular at connections.
- Check that no gas can be smelt in the vicinity of the lift truck before starting the engine.



The engine is then ready to be started up.

NOTE: If the engine will not start or falters, check for possible leaks in the system. If in doubt, contact your dealer.
When stopping the engine for a long period of time, allow the engine to stop of its own accord by shutting-off the LPG cylinder before switching off the ignition, in order to eliminate all fuel from the supply system.

In case of fire, close the LPG cylinder valve before any intervention.

G3 - LIFT TRUCK

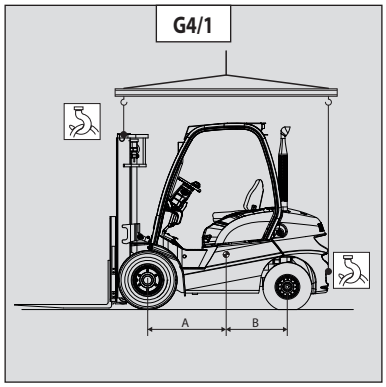
TOWING

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

- Place the reversing gear in neutral
- Release the hand brake.
- Switch on the warning lights.
- If the engine is not running there will be no steering or braking assistance. Operate the steering and pedal slowly avoiding sudden jerky movements.

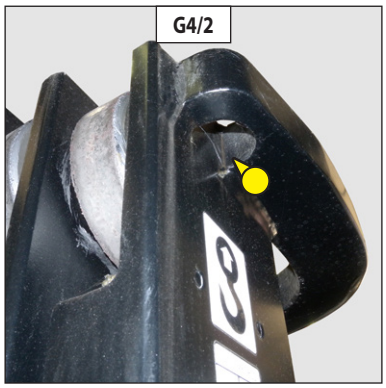
G4 - LIFT TRUCK

SLINGING

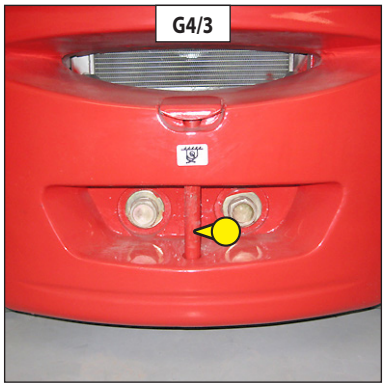


- Take into account the position of the lift truck centre of gravity for lifting (fig. G4/1).

A = 648 mm	B = 772 mm	MI 15 D
A = 776 mm	B = 644 mm	MI 15 G
A = 818 mm	B = 602 mm	MI 18 D
A = 826 mm	B = 594 mm	MI 18 G
A = 842 mm	B = 758 mm	MI 20 D
A = 840 mm	B = 760 mm	MI 20 G
A = 916 mm	B = 684 mm	MI 25 D
A = 916 mm	B = 684 mm	MI 25 G
A = 1 014 mm	B = 684 mm	MI 30 D
A = 1 017 mm	B = 683 mm	MI 30 G
A = 1 062 mm	B = 638 mm	MI 35 D
A = 1 063 mm	B = 637 mm	MI 35 G



- Place the hooks in the fastening points provided (fig. G4/2) and around the uprights of the guard (fig. G4/3).



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Ensure that the safety instructions connected to the platform are respected 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.

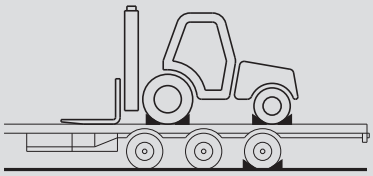
LOADING THE LIFT TRUCK

- 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.
- Stop the lift truck (see: 1 - OPERATING AND SAFETY INSTRUCTIONS: DRIVING INSTRUCTIONS UNLADEN AND LADEN).

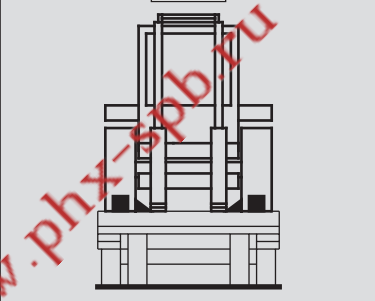
STOWING THE LIFT TRUCK

- Fix the chocks to the platform at the front and at the back of each tyre (fig. G5/1).
- Also fix the chocks to the platform on the inside of each tyre (fig. G5/2).
- Stow the lift truck onto the semi-trailer with sufficiently strong ropes. To the front by passing above the articulation fittings 1 (fig. G5/3) of the mast and to the back onto the towing pin 2 (fig. G5/4).
- Tighten the ropes (fig. G5/5).

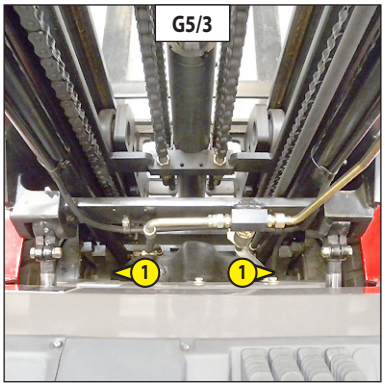
G5/1



G5/2

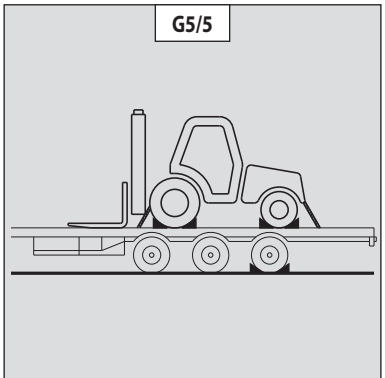


G5/3



G5/4

G5/5



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4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE

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INTRODUCTION

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

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

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

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

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

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

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

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TECHNICAL SPECIFICATIONS OF ATTACHMENTS

*: Double Mast With All-Round Vision (DVT)
**: Double Mast With Total Free-Acting Lift (DLL)
***: Triple Mast With Free-Acting Lift (TLL)

STANDARDISED SIDE-SHIFT CARRIAGE			
MI 15 D / MI 15 G MI 18 D / MI 18 G			
	HC 15/18 *	**HC 15/18 ****	**HC 15/18 *****
PART NUMBER			
Rated capacity	1800 kg	1800 kg	1800 kg
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm
Width	950 mm	950 mm	950 mm
Weight	42 kg	42 kg	42 kg

STANDARDISED SIDE-SHIFT CARRIAGE			
MI 20 D / MI 20 G MI 25 D / MI 25 G			
	HC 20/25 *	**HC 20/25 ****	**HC 20/25 *****
PART NUMBER			
Rated capacity	2500 kg	2500 kg	2500 kg
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm
Width	988 mm	988 mm	988 mm
Weight	44 kg	44 kg	44 kg

STANDARDISED SIDE-SHIFT CARRIAGE			
MI 30 D / MI 30 G MI 35 D / MI 35 G			
	HC 30/35 *	**HC 30/35 ****	**HC 30/35 *****
PART NUMBER			
Rated capacity	3500 kg	3500 kg	3500 kg
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm
Width	1050 mm	1050 mm	1050 mm
Weight	68 kg	68 kg	68 kg

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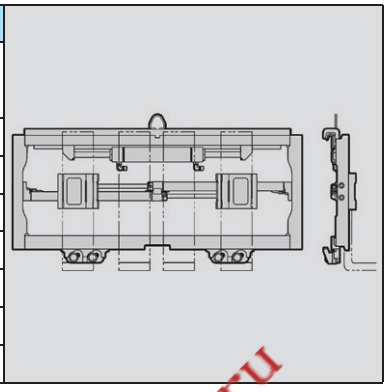
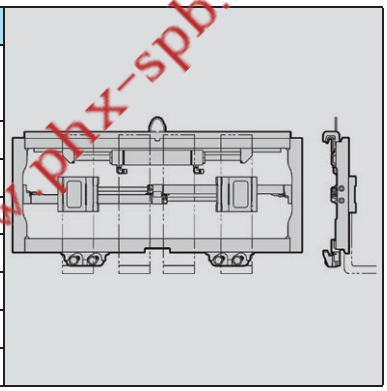
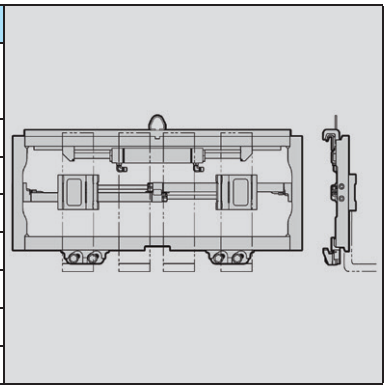
*: Double Mast With All-Round Vision (DVT)
**: Double Mast With Total Free-Acting Lift (DLL)
***: Triple Mast With Free-Acting Lift (TLL)

FORK POSITIONER WITH SIDE-SHIFT MI 15 D / MI 15 G MI 18 D / MI 18 G				
	55K-FPS-A253 *	**55K-FPS-A253 ****	**55K-FPS-A253 *****	
PART NUMBER	**916212**	**916213**	**916214**	
Rated capacity	2500 kg	2500 kg	2500 kg	
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm	
Spacing	50 - 912	50 - 912	50 - 912	
Width	1040 mm	1040 mm	1040 mm	
Weight	66 kg	66 kg	66 kg	

FORK POSITIONER WITH SIDE-SHIFT MI 20 D / MI 20 G MI 25 D / MI 25 G				
	55K-FPS-A253 *	**55K-FPS-A253 ****	**55K-FPS-A253 *****	
PART NUMBER	**916212**	**916213**	**916214**	
Rated capacity	2500 kg	2500 kg	2500 kg	
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm	
Spacing	50 - 912	50 - 912	50 - 912	
Width	1040 mm	1040 mm	1040 mm	
Weight	66 kg	66 kg	66 kg	

FORK POSITIONER WITH SIDE-SHIFT MI 30 D / MI 30 G MI 35 D / MI 35 G				
	65K-FPS-B198 *	**65K-FPS-B198 ****	**65K-FPS-B198 *****	
PART NUMBER	**916215**	**916216**	**916217**	
Rated capacity	3500 kg	3500 kg	3500 kg	
Side-shift	2 x 100 mm	2 x 100 mm	2 x 100 mm	
Spacing	50 - 975	50 - 975	50 - 975	
Width	1038 mm	1038 mm	1038 mm	
Weight	82 kg	82 kg	82 kg	

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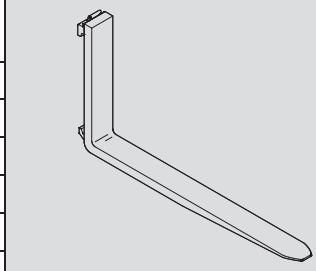
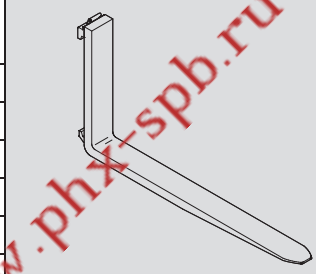
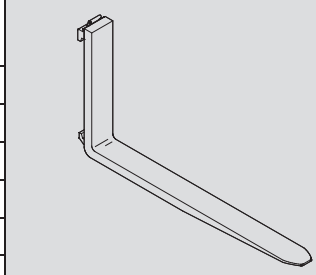
STANDARDISED FORK			
MI 15 D / MI 15 G MI 18 D / MI 18 G			
PART NUMBER	**916182**		
Section	100x35x1070		
Weight	39 kg		



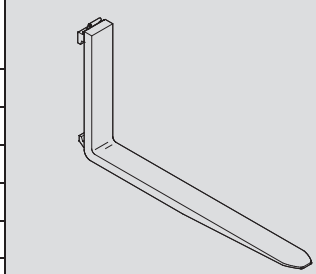
STANDARDISED FORK			
MI 20 D / MI 20 G MI 25 D / MI 25 G			
PART NUMBER	**916183**		
Section	122x40x1150		
Weight	58 kg		



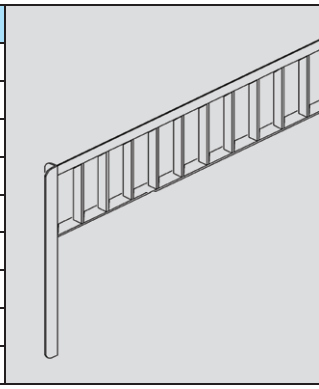
STANDARDISED FORK			
MI 30 D / MI 30 G			
PART NUMBER	**916184**		
Section	125x45x1150		
Weight	71 kg		



STANDARDISED FORK			
MI 35 D / MI 35 G			
PART NUMBER	**916185**		
Section	125x50x1150		
Weight	80 kg		



LOAD BACK REST			
PART NUMBER	**916197**	**916198**	**916199**
Width	1000 mm	1038 mm	1100 mm
Weight			



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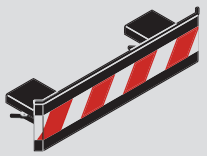
ATTACHMENT SHIELDS

FORK PROTECTOR			
PART NUMBER	227801		



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