



## OPERATOR MANUAL

# MT-X 1440 / 1840

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Manufacturer: Manitou

Manual 647813 | EN / 28/04/2025

### MODELS LISTED BY MANITOU

MT-X 1440 100P ST3A S2

MT-X 1840 100P ST3A S2

### SUPPLIED BY FORKLIFT CO

Confirm the full model, engine / emissions variant, series and serial applicability against the machine plate before use.

All original Manitou pages follow this cover, including the original publication details, warnings, illustrations and operating instructions.

Forklift Co cover added 22 September 2026.

The manufacturer edition date has not been changed.



**647813 EN (28/04/2025)**

MT-X 1440 100P ST3A S2  
MT-X 1840 100P ST3A S2

**OPERATOR'S MANUAL**  
*(ORIGINAL MANUAL)*

### **IMPORTANT**

*Carefully read and understand this operator's manual before operating this machine.*

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

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

**WHENEVER YOU SEE THIS SYMBOL, IT MEANS:**



**CAUTION! BE CAREFUL! YOUR SAFETY, THAT OF OTHERS, OR THE SAFETY OF THE MACHINE IS AT RISK.**

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

| 1 <sup>st</sup> EDITION | 16/11/2020                                                                          |
|-------------------------|-------------------------------------------------------------------------------------|
| UPDATED                 | 06/03/2021    1-6; 1-10; 1-15; 1-25; 1-26<br>2-4; 2-5<br>3-8; 3-9; 3-40; 3-41; 3-42 |
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*Head office: 430 rue de l'Aubinière - 44150 Ancenis - France*

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*Tel.: +33 (0) 2 40 09 10 11*

*www.manitou.com*

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## **2 - DESCRIPTION**

## **3 - MAINTENANCE**

## **4 - ATTACHMENTS THAT CAN BE ADAPTED TO THE RANGE**





# ***1 - OPERATING AND SAFETY INSTRUCTIONS***

# 1 - OPERATING AND SAFETY INSTRUCTIONS

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# INSTRUCTIONS TO THE COMPANY MANAGER

## THE SITE

Proper management of the machine'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 machine. This authorization is given in writing by the appropriate person in the establishment where the machine is to be used and must be carried permanently by the operator.

### ⚠ IMPORTANT ⚠

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

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

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

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

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

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

## THE MACHINE

### A - SUITABILITY OF THE MACHINE FOR THE TASK

- MANITOU has ensured that this machine is suitable for use under the standard operating conditions defined in this operator's manual, with a **STATIC TEST COEFFICIENT OF 1.25** and a **DYNAMIC TEST COEFFICIENT OF 1**, as specified in harmonized standard **EN 1459** for variable reach machines.
- Before commissioning, the facility manager must make sure that the machine is appropriate for the work to be done, and perform certain tests (in accordance with applicable legislation).

### B - ADAPTING THE MACHINE TO USUAL ENVIRONMENTAL CONDITIONS

### ⚠ IMPORTANT ⚠

*Lubricants are filled in the factory for average climatic use, i.e.: -15°C to 35°C.*

*For operation under more severe climatic conditions, before starting up, drain all circuits then fill using lubricants suitable for the ambient temperatures.*

*The same applies to the coolant.*

### ⚠ IMPORTANT ⚠

*The machines are designed for outdoor use under normal atmospheric conditions and indoor use in suitably aerated and ventilated premises. It is prohibited to operate the machine in areas which presents a risk of fire or which are potentially explosive (e.g. refineries, fuel or gas depots, stores of flammable products, etc.).*

*Specialized equipment is available when operating in these areas (ask your dealer for information).*

- Our machines are designed to be used within a temperature range of -18 °C to +43 °C.
- In addition to the standard equipment fitted on your machine, many options are available, such as: road lighting, stop lights, rotating beacon light, reverse lights, front worklight, rear worklight, lifting structure worklight, etc. (depending on machine model).
- The operator must take into account the operating conditions to specify the machine's signaling and lighting equipment. Consult your dealer.
- Take into account the climatic and atmospheric conditions of the operation site. Consult your dealer for the suitability of lubricants and frost protection.
- Take into account the fire risk associated with use in dusty and flammable conditions (e.g. straw, flour, sawdust, organic waste, etc.).
- A machine operating in an area without fire extinguishing equipment must be equipped with an individual extinguisher. Solutions exist, consult your dealer.

Our machines comply with Directive 2014/30/EU (2015/208/EU for our type-approved "TRACTOR" machines) concerning electromagnetic compatibility (EMC), (UK : Electromagnetic Compatibility Regulations 2016) and with the corresponding harmonized standard EN 12895. Their correct operation is no longer guaranteed if they are used within areas in which the electromagnetic fields exceed the limit specified by this standard (20 V/m).

- Directive 2002/44/EC requires company managers to not expose their employees to excessive vibration doses. There is no recognized code of measurement for comparing the machines of different manufacturers. The actual doses received cannot therefore be measured under actual operating conditions at the user's premises.
- The following are some tips for minimizing these vibration doses:
  - Select the most suitable machine and attachment for the intended use.
  - Adapt the seat adjustment to the operator's weight (*depending on machine model*) and maintain it in good condition, as well as the cab suspensions. Inflate the tires in accordance with recommendations.
  - The seat is an essential way of reducing the vibrations transmitted to the operator. In the event of seat replacement, please contact MANITOU.
  - Ensure that the operators adapt their operating speed to suit the conditions on site.
  - As far as possible, arrange the site in such a way as to provide a flat running surface and remove obstacles and harmful potholes.

## C - MODIFYING THE MACHINE

### **⚠ IMPORTANT ⚠**

*Modifying the structure and settings of the various components of your machine (hydraulic pressure, taring of limiters, engine speed, sensors, addition of extra equipment, addition of counterweights, unapproved and unauthorized attachments, alarm systems, etc.) yourself is strictly prohibited. In this case, the manufacturer cannot be held responsible.*

## D - FRENCH ROAD TRAFFIC RULES

(or see current legislation in other countries)

- Only one EC declaration of conformity is issued. It must be kept in a safe place.
- The road traffic rules for the machines are subject to the provisions of the highway code, according to the following categories:
  - Construction machinery (MT range): public works vehicle not predominantly for use on roads (point 6.9 of Article R.311-1 of the French Highway Code). The machine must have a 25 disc displayed on the rear of the machine and an operating license plate.
  - Non-type-approved "Tractor" machinery for agricultural work: (point 6.2 of Article R.311-1 of the French Highway Code). The machine must be fitted with an operating license plate.
  - Type-approved "Tractor" machinery for agricultural work: Agricultural tractor type T1a (point 5.1.1 of Article R.311-1 of the French Highway Code). The machine must be licensed.

## SPECIAL INSTRUCTIONS APPLICABLE TO TYPE-APPROVED "TRACTOR" MACHINES

- All approved machines are supplied with a "Tractor" certificate of compliance with Regulation 167/2013, to be retained by the owner, and a page of administrative details together with a CNIT number (national type approval code) for registration at the prefecture.
- The owner of the machine is responsible for carrying out the necessary procedures for obtaining the vehicle registration document within the time limit defined by the regulations.
- The operator must hold a category B driver's license, unless granted an exemption.
- The machine must be driven on the public highway in accordance with the instructions given in the manual supplied with the machine (Gross weight, Gross combination weight, towing load, axle loads, maximum speeds, etc. according to the type/version). The operator must be in possession of the machine's registration document.

### **⚠ IMPORTANT ⚠**

*When towing a trailer or agricultural equipment, the traveling speed of the machine is limited to 25 km/h.*

*In this case, a "25" disc must be affixed to the rear of the convoy.*

## E - MACHINE CAB PROTECTION

- All machines comply with standard ISO 3471 Roll-over Protective Structures (ROPS)
- All machines comply with standard ISO 3449 Falling-Object Protective Structures (FOPS) (Level I or II) (↖ 2 - DESCRIPTION OF STICKERS AND PLATES)
- The windows used on our machines comply with standard ECE-R43 Operator Protective Structures (OPS).
- Approved "TRACTOR" machines also comply with the regulations:
  - (appendix 1322/2014-OCDE Code 4).
  - (appendix 1322/2014-OCDE Code 10).

### **⚠ IMPORTANT ⚠**

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

*Do not perform welding or drilling on the cab structure.*

*Consult your dealer to determine the limits of this structure without canceling its compliance.*

## INSTRUCTIONS

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- The operator's manual must always be in good condition, in the language of the operator and placed in the storage compartment provided.
- The operator's manual and any plates or stickers which are no longer legible or are damaged, must be replaced immediately.

## MAINTENANCE

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### **⚠ IMPORTANT ⚠**

*Refer to chapter: MACHINE MAINTENANCE INSTRUCTIONS.*

### **⚠ IMPORTANT ⚠**

*Your machine must be periodically inspected to ensure its continued compliance.*

*The frequency of this inspection is defined by the legislation in force in the country in which the machine is used.*

- Maintenance or repairs other than those detailed in Part: 3 - MAINTENANCE must be carried out by qualified personnel (consult your dealer) and in the necessary safety conditions to preserve the health of the operator and any third party.
- Example for France "The manager in charge of the establishment using a machine must open and maintain a maintenance log for each machine (order of March 2, 2004) and undergo a general periodic inspection every 6 months (order of March 1, 2004)".



# INSTRUCTIONS FOR THE OPERATOR

## FOREWORD

### **IMPORTANT**

*The risk of accident while using, servicing or repairing this machine can be reduced if you follow the safety instructions and preventive measures detailed in this instruction manual.*

*Failure to respect the safety and operating instructions, or the instructions for repairing or servicing your machine may lead to serious, even fatal accidents.*

### **IMPORTANT**

*In order to reduce or prevent any danger with a MANITOU-approved attachment, follow the instructions in paragraph: 4 - ADAPTABLE ATTACHMENTS AVAILABLE ON THE RANGE: INTRODUCTION.*

- Only the operations and maneuvers 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 machine itself are not exhaustive.
- At all times, as an operator, you must envisage, within reason, the possible risk to yourself, to others or to the machine when you use it.
- The operator is responsible for the machine in all circumstances, regardless of whether he is present in the driver's cab.

## GENERAL INSTRUCTIONS

### A – OPERATOR'S MANUAL

#### **IMPORTANT**

*Carefully read and understand this operator's manual before operating this machine.*

- The operator's manual must always be in good condition, in the language of the operator and placed in the storage compartment provided.
- Any operations or maneuvers not described in the operator's manual are proscribed.
- Follow the safety advice and the instructions described on the machine's stickers.
- Familiarize yourself with the machine on the ground where it will be operated.
- You must replace the instruction manual, as well as any plates or stickers, if they are no longer legible or are missing or damaged.

### B - AUTHORIZATION FOR USE IN FRANCE

*(or see current legislation in other countries).*

- Only qualified, authorized personnel can use the machine. This authorization is given in writing by the appropriate person in the establishment where the machine is to be used and must be carried permanently by the operator.
- The operator is not empowered to authorize the driving of the machine by another person.

### C - MAINTENANCE

- If the operator sees that the machine is not in good working order or does not comply with the safety instructions, he must inform his manager of this immediately.
- The operator is prohibited from carrying out any repairs or adjustments himself, unless he has been trained for this purpose. He must keep the machine properly cleaned if this is his responsibility.
- The operator must carry out the daily maintenance ( 3 - MAINTENANCE) before using the machine in his place of work.
- The operator is responsible for deciding and adjusting the frequency and type of the cleaning needed to prevent the risk of fire ensuing from the build-up of flammable material(s). The operator should pay special attention to all the areas of the machine where these high-risk materials are likely to accumulate (e.g. engine compartment, under the lifting structure, above the axles, inside the chassis, etc.).

## D - TIRES

### ⚠ IMPORTANT ⚠

*Do not use the machine if the wheels are damaged or excessively worn, because this could put your own safety or that of others at risk, or cause damage to the machine.*

- The operator must ensure tires are suitable for the nature of the ground (see contact surface with the ground for the tires in the chapter: 2 - DESCRIPTION: TIRES). Optional solutions are available, please consult your dealer.
  - SAND tires.
  - FARM tires.
  - Snow chains.
- The machine's four tires must be the same brand, the same dimensions, the same structure (radial or diagonal) and the same usage category (normal, snow or special), and must have the same degree of tread wear.
- In the event of tire replacement, use tires authorized by MANITOU that are the same type and dimensions. Using different tires voids the machine's type approval and you may be liable.
- If you are replacing just one of the machine's tires (e.g. because it is damaged), we recommend choosing a tire with the same degree of wear as the remaining tires so as not to damage the transmission's kinematic chain.

### ⚠ IMPORTANT ⚠

*Do not use the machine if the tires are damaged or excessively worn, because this could put your own safety or that of others at risk, or cause damage to the machine itself.*

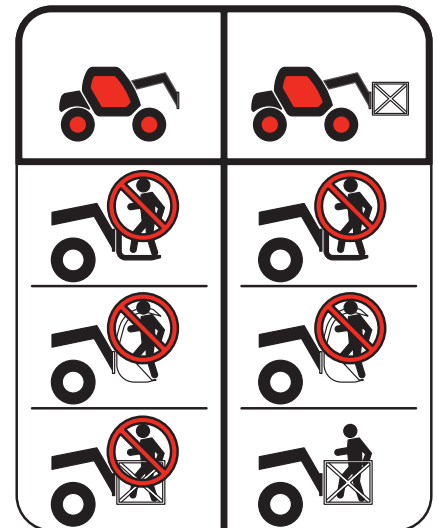
*The fitting of foam inflated tires is prohibited and is not guaranteed by the manufacturer unless with prior authorization.*

## E - MODIFYING THE MACHINE

- ⚠ INSTRUCTIONS TO THE COMPANY MANAGER: ⚠ C - MODIFYING THE MACHINE.

## F - LIFTING PEOPLE

- The use of working equipment and load lifting attachments to lift people is:
  - either forbidden
  - or authorized exceptionally and under certain conditions (⚠ regulations in force in the country in which the machine is used).
- The pictogram posted at the operator station reminds you that:
  - Left-hand column
    - It is forbidden to lift people, with any kind of attachment, using a non PLATFORM-fitted machine.
  - Right-hand column
    - With a PLATFORM-fitted machine, people can only be lifted using platforms designed by MANITOU for this purpose.
- MANITOU sells equipment specifically designed for lifting people (OPTION PLATFORM-fitted machine; contact your dealer).



### A - BEFORE STARTING UP THE MACHINE

- Perform the daily maintenance operations (⇐ 3 - MAINTENANCE).
- Make sure that the driver's cab is clean, particularly the floor and floor mat. Check that no movable object may hinder the operation of the machine.
- Make sure the lights, turn signals and windshield wipers are working properly.
- Make sure the rear-view mirrors are in good condition, clean and properly adjusted.
- Make sure the horn works.

### B - AVAILABLE IN THE DRIVER'S CAB

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

#### **⚠ IMPORTANT ⚠**

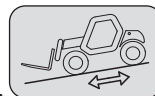
*Under no circumstances must the seat be adjusted while the machine is moving.*

- The operator must always be in his normal position in the driver's cab: Arms and legs, and generally any part of the body, should be kept inside the driver's cab of the machine.
- The safety belt must be worn and adjusted to the operator's size.
- The control units must never be used for any other than their intended purposes (e.g. Climbing onto or down from the machine, coat hanger, 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 machine or in the cab.

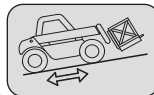
### C - ENVIRONMENT

- Comply with site safety regulations.
- If you have to use the machine in a dark area or work at night, make sure it is equipped with work lights.
- During handling operations, make sure that no one is in the way of the machine and its load.
- Do not allow anybody to come near the working area of the machine or pass beneath an elevated load.
- The maximum slope on which the machine can be used in relation to the capacity of the brake is 20%.
- When using the lift truck on a transverse slope, before lifting the lifting structures, observe the instructions given in the paragraph: INSTRUCTIONS FOR HANDLING A LOAD: D - TRANSVERSE ATTITUDE OF THE MACHINE.
- 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 machine's dimensions and its load before trying to negotiate a narrow or low passageway.
- Never move onto a load bridge without having first checked:
  - That it is suitably positioned and made fast.
  - That the unit to which it is connected (wagon, truck, etc.) will not shift.
  - That this bridge is prescribed for the total weight of the machine, laden or unladen.
  - That this bridge is prescribed for the size of the machine.

- Never move onto a foot bridge, floor or freight lift, without being certain that they are suitable for the weight and size of the machine, laden or otherwise, and without having checked that they are in sound working order.
- Be careful in the area of loading bays, trenches, scaffolding, soft ground and manholes.
- Make sure the ground is stable and firm under the wheels and/or stabilizers before lifting or removing the load. If necessary, add appropriate wedging under the stabilizers.
- Make sure that the scaffolding, loading platform, pilings or ground is capable of bearing the load.
- Never stack loads on uneven ground, they may tip over.

**⚠ IMPORTANT ⚠**

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

*To eliminate this risk:*

- *Regularly check the distance between the load or the attachment and the structure and readjust this if necessary.*
- *If possible use the machine at an oil temperature as close as possible to ambient temperature.*

- In the case of work near to overhead lines, ensure that the safety distance is sufficient between the machine's working area and the overhead line.

**⚠ IMPORTANT ⚠**

*Do not operate this machine during thunderstorms, snowstorms, periods of frost, or in hazardous weather conditions.*

**⚠ IMPORTANT ⚠**

*You must consult your local electrical supplier.*

*You could be electrocuted or seriously injured if you operate or park the machine too close to power lines.*

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

- Prevent the fire risk associated with use in dusty and flammable conditions (e.g. straw, flour, sawdust, organic waste, etc.).

## **D - VISIBILITY**

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

## E - STARTING THE MACHINE

### SAFETY INSTRUCTIONS

#### **⚠ IMPORTANT ⚠**

*The machine must only be started up or maneuvered when the operator is sitting in the driver's cab with seat belt fastened and adjusted.*

- Never try to start the machine by pushing or towing it. Such an operation may cause severe damage to the transmission. If necessary, towing requires the transmission to be put in neutral (➡ 3 - MAINTENANCE).
- If using an emergency battery for start-up, use a battery with the same characteristics and respect battery polarity when connecting it. Connect at first the positive terminals before the negative terminals.

#### **⚠ IMPORTANT ⚠**

*Failure to respect polarity between batteries can cause serious damage to the electrical circuit.*

*The electrolyte in the battery may produce an explosive gas. Avoid flames and generation of sparks close to the batteries.*

*Never disconnect a battery while it is in charge.*

### INSTRUCTIONS

- Check the closing and locking of the hood(s).
- Check that the cab door is closed.
- Firmly press and hold down the brake pedal.
- Turn the ignition key to position (I) to switch on the machine and the engine preheat system.
- Check that the forward/reverse selector is in neutral, and that the manual parking brake is on.
- Check the fuel level on the dashboard gauge.
- Check the DEF (diesel exhaust fluid) level on the dashboard gauge. (depending on machine model)
- Turn the ignition key to position (III) for no longer than 15 seconds. The engine should then start. Release the ignition key and let the engine run at idling speed.
- Preheat the engine between each start attempt.
- Make sure all the signal lights on the control instrument panel are off.
- Check the longitudinal stability limiter and warning device (➡ 3 - MAINTENANCE).
- Do not use a machine that is non-compliant.
- Check all control instruments when the engine is warm and at regular intervals during use, so as to quickly detect any faults and to be able to correct them without any delay.
- If an instrument does not show the correct display, stop the engine and immediately carry out the necessary operations.

## F - OPERATING THE MACHINE

### SAFETY INSTRUCTIONS

#### **⚠ IMPORTANT ⚠**

*We would like to draw the operators' attention to the risks involved in using the machine, in particular:*

*- Risk of losing control.*

*- Risk of loss of lateral and frontal stability of the machine.*

*The operator must remain in control of the machine.*

*In the event of the machine overturning, do not try to leave the cab during the incident.*

**YOUR BEST PROTECTION IS TO STAY FASTENED IN THE CAB.**

- Observe the company's traffic regulations or, by default, the public highway code.
- Do not carry out operations which exceed the capacities of your machine or attachment.
- Always drive the machine with the forks or attachment in the transport position, i.e., 300 mm from the ground, the boom retracted and the forks carriage sloping backwards.
- Only carry loads which are balanced and properly anchored to avoid any risk of a load falling off.
- Ensure that pallets, cases, etc. are in good order and suitable for the load to be lifted.
- Familiarize yourself with the machine on the terrain where it will be used.
- Ensure that the brakes are working properly.
- The loaded machine 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 machine).
- Do not use the hydraulic boom controls when the machine is moving.
- Never change the steering mode whilst driving.
- Ensure that visibility is adequate.
- Do not maneuver the machine with the boom in the raised position unless under exceptional circumstances and then with extreme caution, at very low speed and using gentle braking.
- 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 machine's forward/reverse selector from a stationary position and never do so abruptly.
- Do not drive with your foot on the brake pedal.
- Always remember that hydrostatic type steering is extremely sensitive to movement of the steering wheel, so turn it gently and not jerkily.
- Never leave the engine on when the lift truck is unattended.
- Do not leave the cab when the machine has a raised load.
- Look where you are going and always make sure you have good visibility along the route.
- Use the rear-view mirrors frequently.
- Drive around obstacles.
- Never drive on the edge of a ditch or steep slope.
- It is dangerous to use two machines simultaneously to handle heavy or bulky loads, since this operation requires particular precautions to be taken. It must only be used exceptionally and after risk analysis.
- The ignition switch has an emergency stop mechanism in case of an operating anomaly occurring in the case of machines not fitted with a punch-operated cut-out.

## INSTRUCTIONS

- Always drive the machine with the forks or attachment in the transport position, i.e., 300 mm from the ground, the telescopic arm retracted and the forks carriage sloping backward.
- For machines with gearboxes, use the recommended gear (↩ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
- Select the steering mode appropriate for the use and/or working conditions (↩ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) (depending on machine model).
- Deactivate the parking brake.
- Shift the forward/reverse selector to the selected direction of travel and accelerate gradually until the machine moves off.

### **⚠ IMPORTANT ⚠**

*Starting and moving the machine on a slope may be a real hazard.*

*If the machine is parked or stopped, adhere scrupulously to the following instructions for moving it:*

*- Press the brake pedal.*

*- Release the parking brake.*

*- Engage the appropriate gear. (depending on machine model)*

*- Select forward or reverse direction.*

*- Ensure that there is no one or anything impeding the movement of the machine.*

*- Release the brake pedal and accelerate the engine.*

*The use of the machine loaded or with a trailer increases the risk. In this case, remain extremely vigilant.*

*Each braking system operates independently.*

*In an emergency, use the brake pedal and/or the manual parking brake to immobilize the machine.*

*With the engine off, release the manual parking brake only after restarting the engine and making sure that the brake pedal is functional.*

## G - STOPPING THE MACHINE

### SAFETY INSTRUCTIONS

- Never leave the ignition key in the machine during the operator's absence.
- When the machine is stationary, or if the operator has to leave his cab (even for a moment), place the forks or attachment on the ground, apply the parking brake and place the forward/reverse selector in neutral.
- Make sure that the machine 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 machine from bad weather, particularly from frost (check the level of antifreeze), and close and lock all the machine accesses (doors, windows, cowls, etc.).

### INSTRUCTIONS

- Park the machine on level ground.
- When parking on slopes of less than 15%, position the machine perpendicular to the slope.
- The slope must not exceed 15%.
- Press and hold the brake pedal.
- Set the forward/reverse selector to neutral.
- Activate the parking brake.
- Release the brake pedal.
- The machine must be stationary before leaving the driver's cab.
- Fully retract the telescopic arm.
- 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 machine after intensive work, leave the engine idling for a few moments to allow the coolant and oil to lower the temperature of the engine and transmission. Do not forget this precaution, in the event of frequent stops or warm stalling of the engine, or else the temperature of certain parts will rise significantly due to the stopping of the cooling system, with the risk of badly damaging such parts.
- Stop the engine with the ignition switch and remove the key.
- Lock all the openings to the machine (doors, windows, cowls, etc.).
- Turn the battery cut-off to the "OFF" position in accordance with the recommendations (➤ 2 - DESCRIPTION).

## H - DRIVING THE MACHINE ON THE PUBLIC HIGHWAY

(or see current legislation in other countries)

### FRENCH ROAD TRAFFIC RULES

- The driving of non-type-approved "Tractor" machines on the public highway is subject to the provisions of the French Highway Code relating to special machines, defined in Article R.311-1 of the French Highway Code, in category B of the Equipment Order of November 20, 1969, which determines the procedures applicable to special machines. The machine must be fitted with an operating license plate.
- The driving of type-approved "Tractor" machines on the public highway is subject to the provisions of the French Highway Code relating to agricultural tractors, defined in Article R.311-1 of the French Highway Code. The machine must be licensed.
- The machine must be driven on the public highway in accordance with the instructions given in the manual supplied with the machine (Gross weight, Gross combination weight, towing load, axle loads, maximum speeds, etc. according to the type/version). The operator must be in possession of the machine's registration document.
- The operator must hold an HGV license, unless granted an exemption.
- When towing a trailer or agricultural equipment, the travel speed of the machine is limited to 25 km/h. In this case, a "25" disc must be affixed to the rear of the convoy.

### GERMAN ROAD TRAFFIC RULES

#### **⚠ IMPORTANT ⚠**

*For machines with the "Allgemeine Betriebserlaubnis" (general operating permit or ABE, in accordance with Article 20 of the StVZO "Straßenverkehrs-Zulassungsordnung"), follow the instructions below:*

- Disconnect the reversing sound alarm before using a machine with a general operating permit (ABE) on the public highway.

#### **⚠ IMPORTANT ⚠**

*Always reconnect the sound alarm before handling on private roads.*

- Before you use the machine for handling operations on private roads:
  - Make sure that the machine's reversing sound alarm is connected and working properly.
  - Perform a functional test by putting the machine into reverse gear.
  - The audible alarm sounds.
  - Do not use the machine if the audible alarm is not working. Check the audible alarm's connection and repeat the test. Consult your dealer if the problem persists.

### SAFETY INSTRUCTIONS

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

### INSTRUCTIONS

- Make sure the revolving light is in place, switch it on and verify its operation.
- Make sure the lights, turn signals and windshield wipers are working properly.
- Check the cleanliness of the machine's mudguards.
- Check the general cleanliness of the machine before driving on public roads.
- Switch off the worklights if the machine is fitted with them.
- Select the steering mode "HIGHWAY TRAFFIC" (➤ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) (depending on machine model).
- Fully retract the telescopic arm and set the attachment approximately 300 mm off the ground.
- Put the frame leveling in the central position, i.e., the transverse axis of the axles parallel to the frame (depending on the machine model).
- Fully raise the stabilizers and turn the shoes inwards (depending on the machine model).

#### **⚠ IMPORTANT ⚠**

*Never coast in neutral (forward/reverse selector or gear lever in neutral or transmission cut-off button pressed) to preserve the machine's engine brake.*

*Failure to observe this instruction on a slope will lead to excessive speed, which may make the machine uncontrollable (steering, brakes) and cause serious mechanical damage.*

#### DRIVING THE MACHINE 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 machine.
- 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 (➤ 4 - ADAPTABLE ATTACHMENTS AVAILABLE ON THE RANGE).
  - 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 MACHINE 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 machine.
- The trailer's braking system must comply with current legislation.
- If pulling a trailer with assisted braking, the tractor machine must be equipped with a trailer braking mechanism. In this case, do not forget to connect the trailer braking equipment to that of the machine.
- The vertical force on the towing hook must not exceed the maximum authorized by the manufacturer (consult the manufacturer's plate on your machine).
- The authorized gross vehicle weight must not exceed the maximum weight authorized by the manufacturer (➤ 2 - DESCRIPTION: SPECIFICATIONS).

**IF NECESSARY, CONSULT YOUR DEALER.**



### A - CHOICE OF ATTACHMENTS

- Only attachments approved and authorized by MANITOU can be used on its machines.
- Make sure the attachment is suitable for the work to be done (◀ 4 - ADAPTABLE ATTACHMENTS AS OPTIONS ON THE RANGE).
- If the machine is equipped with the single sideshift attachment OPTION (TSDL), use only the authorized attachments (◀ 4 - ADAPTABLE ATTACHMENTS AS OPTIONS ON THE RANGE).
- Make sure the attachment is correctly installed and locked onto the machine carriage.
- Make sure that your machine attachments are working properly.
- Comply with the load chart limits for the machine for the attachment used.
- Do not exceed the rated capacity of the attachment.
- Never lift a slung load without the attachment provided for the purpose, as there is a risk of the sling slipping (◀ INSTRUCTIONS FOR HANDLING A LOAD: H - PICKING UP AND PUTTING DOWN A SUSPENDED LOAD).
- Do not handle loads suspended by straps directly on the forks (e.g.: big bags), as there is a risk of shearing on sharp edges. Use an attachment designed for this purpose.

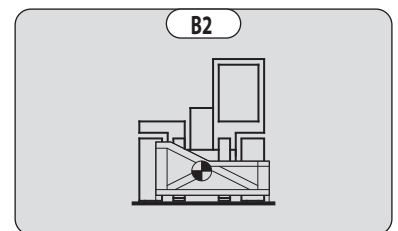
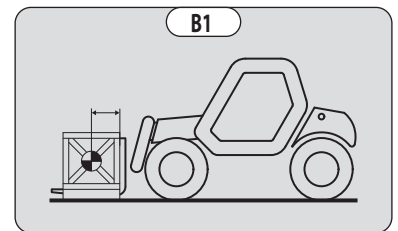
### B - WEIGHT OF LOAD AND CENTER OF GRAVITY

- Before picking up a load, you must know its weight and its center of gravity.
- The longitudinal position of the center of gravity in relation to the heel of the forks (Fig. B1) is defined on the load chart for your machine (◀ 2 - DESCRIPTION: DIMENSIONS AND LOAD CHARTS). For loads with center of gravity exceeding this distance, contact your dealer.
- For irregular loads, determine the transverse center of gravity before any handling (fig. B2) and set it in the longitudinal axis of the machine.



*It is forbidden to handle a load heavier than the effective capacity defined on the machine load chart.*

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



### C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE

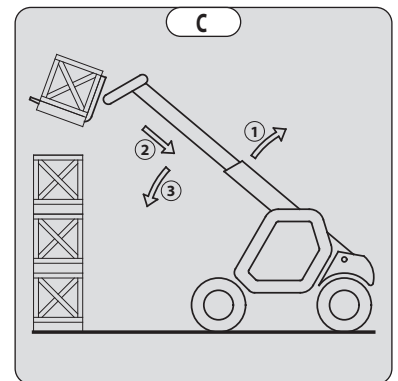
This device gives an indication of the longitudinal stability of the machine, and limits hydraulic movements in order to ensure this stability, at least under the following operating conditions:

- when the machine is at a standstill,
  - when the machine is on firm, stable and consolidated ground,
  - when the machine is performing handling and placing operations.
- Move the boom very carefully when approaching the authorized load limit (◀ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).
  - Always watch this device during handling operations.
  - If the "AGGRAVATING" hydraulic movements are cut off, perform only de-aggravating hydraulic movements in the following order (Fig. C): if necessary, raise the boom (1), retract the boom as far as possible (2) and lower the boom (3) to put down the load.



*The instrument reading may be erroneous when the steering is at full lock or the rear axle is oscillated to its maximum extent.*

*Before lifting a load, ensure that the machine is not in any of these situations.*



## D - TRANSVERSE ATTITUDE OF THE MACHINE

Depending on machine model

The transverse attitude is the transverse slope of the frame with respect to the horizontal. Raising the boom reduces the machine's lateral stability. The machine's transverse attitude must be set with the boom in the down position as follows:

### 1 - MACHINE WITHOUT FRAME LEVELING USED ON TIRES

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

### 2 - MACHINE WITH FRAME LEVELING USED ON TIRES

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

### 3 - MACHINE USED ON STABILIZERS

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

## E - PICKING UP A LOAD ON THE GROUND

- Approach the machine perpendicular to the load, with the boom retracted and the forks in a horizontal position (fig. E1).
- Adjust the fork spacing and centering relative to the load to ensure stability (Fig. E2) (optional solutions exist, consult your dealer).
- Never lift a load with a single fork.

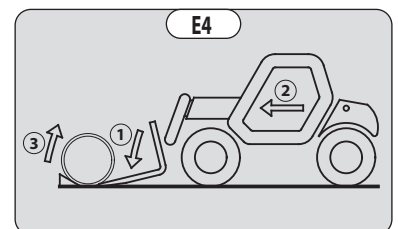
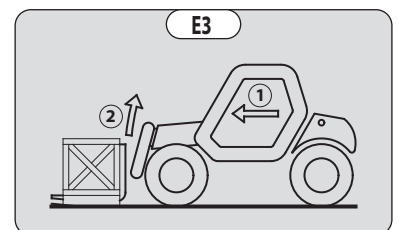
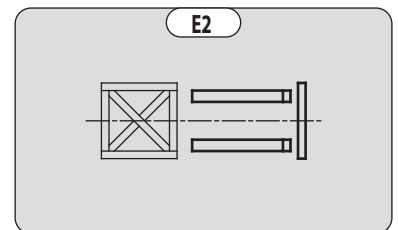
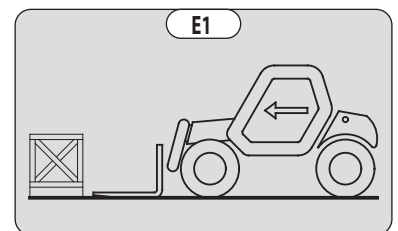
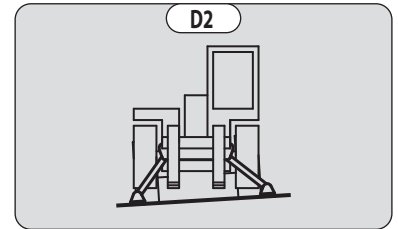
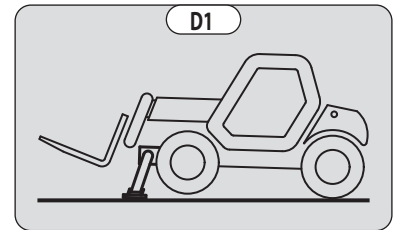
### ⚠ IMPORTANT ⚠

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

- Move the machine forward slowly (1) and bring the forks up to the stop in front of the load (Fig. E3). If necessary, slightly lift the boom (2) while picking up the load.
- Bring the load into the transport position.
- Tilt the load far enough backward to ensure stability (loss of load on braking or going downhill).

### FOR A NON-PALLETIZED LOAD

- Tilt the carriage (1) forwards and move the machine slowly forwards (2), to insert the fork under the load (Fig. E4) (chock the load if necessary).
- Continue to move the machine (2) forward, tilting the carriage (3) (fig. E4) backward to position the load on the forks and check the load's longitudinal and lateral stability.



## F - PICKING UP AND PUTTING DOWN A HIGH LOAD ON TIRES

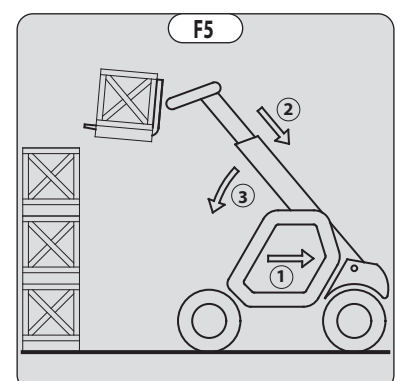
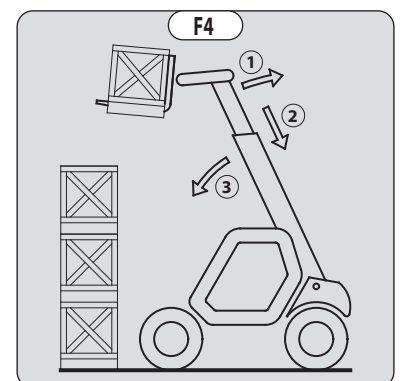
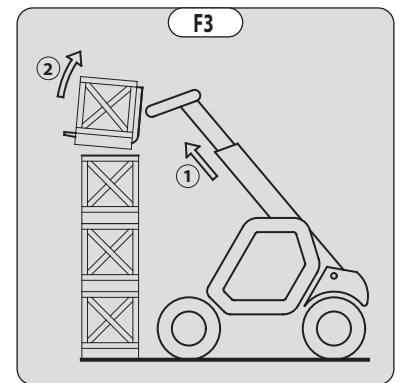
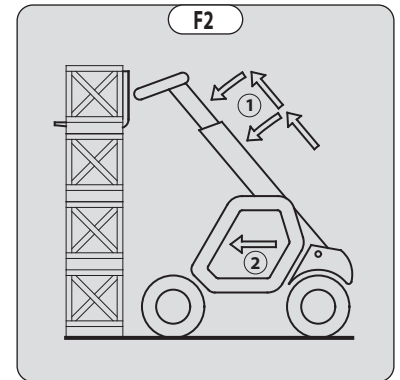
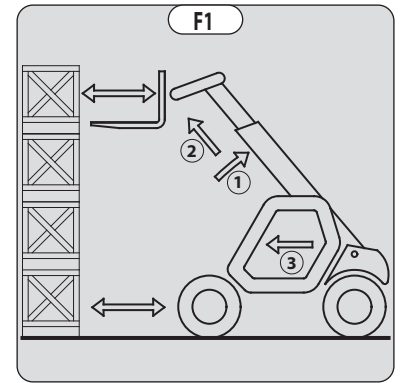
### ⚠ IMPORTANT ⚠

*You must not raise the boom if you have not checked the transverse attitude of the machine (➤ INSTRUCTIONS FOR HANDLING A LOAD D - TRANSVERSE ATTITUDE OF THE MACHINE).*

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

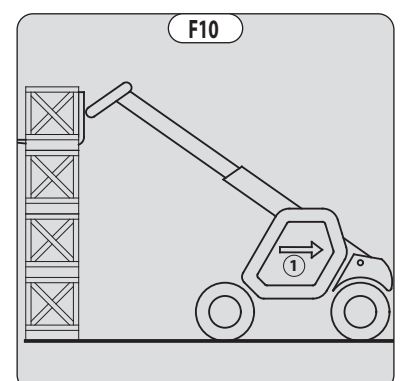
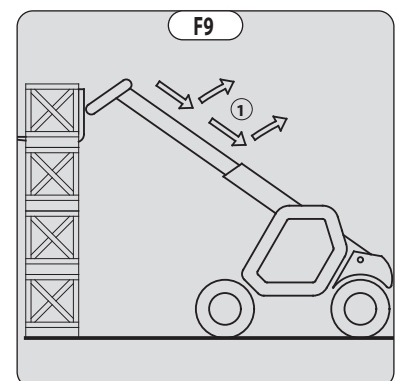
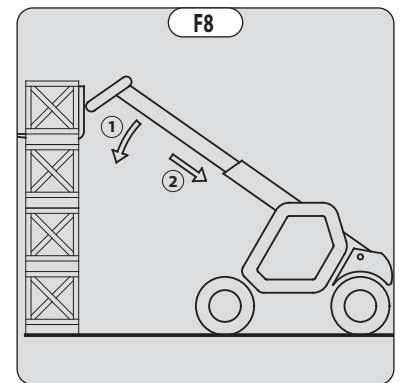
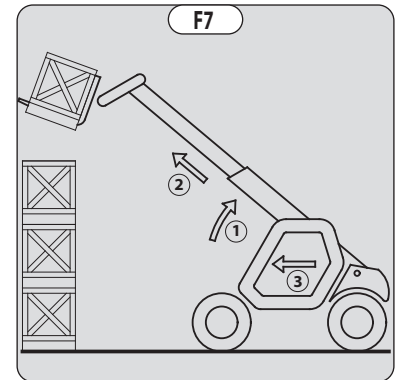
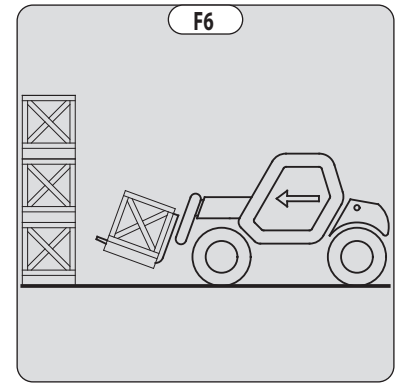
#### PICKING UP A HIGH LOAD ON TIRES

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



## PUTTING DOWN A HIGH LOAD ON TIRES

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



## G - PICKING UP AND PUTTING DOWN A HIGH LOAD ON STABILIZERS

Depending on machine model

### ⚠ IMPORTANT ⚠

*You must not raise the boom if you have not checked the transverse attitude of the machine (➡ INSTRUCTIONS FOR HANDLING A LOAD D - TRANSVERSE ATTITUDE OF THE MACHINE).*

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

The stabilizers are used to optimize the machine's lifting performance (➡ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).

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

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

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

- Raise both stabilizers fully and at the same time.

LOWERING THE STABILIZERS WITH JIB UP (UNLADEN AND LADEN)

### ⚠ IMPORTANT ⚠

*This operation must be exceptional and performed with great care.*

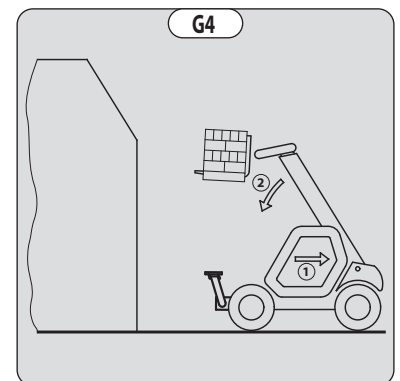
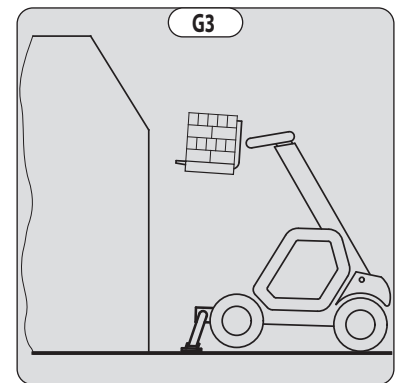
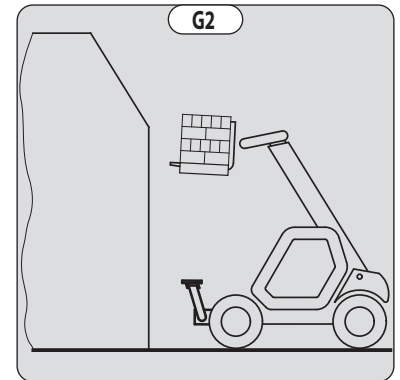
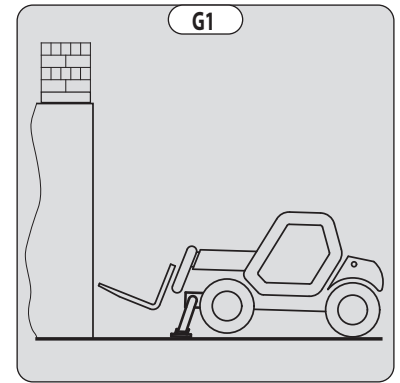
- Raise the boom and retract the telescopes completely.
- Set the machine in position in front of the elevation (fig. G2), moving very slowly and carefully.
- Activate the parking brake and place the forward/reverse selector in neutral.
- Move the stabilizers very slowly and gradually as soon as they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

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

### ⚠ IMPORTANT ⚠

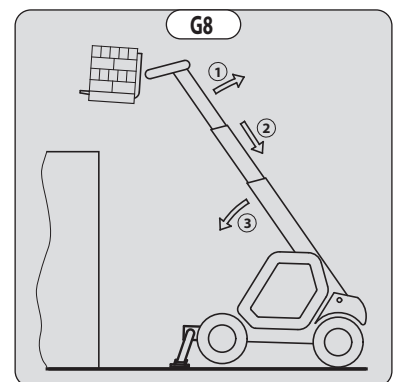
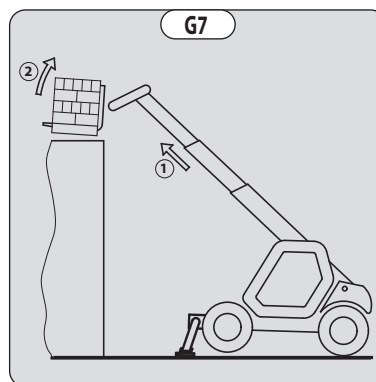
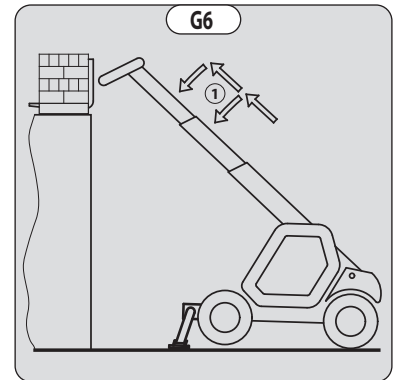
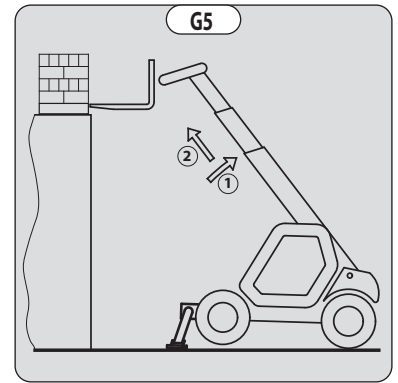
*This operation must be exceptional and performed with great care.*

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



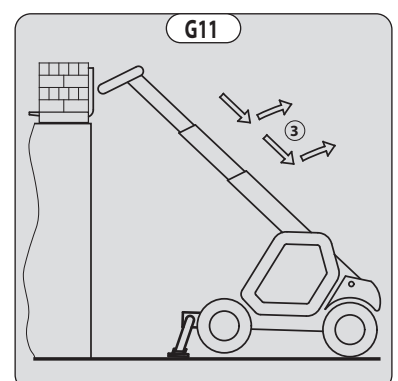
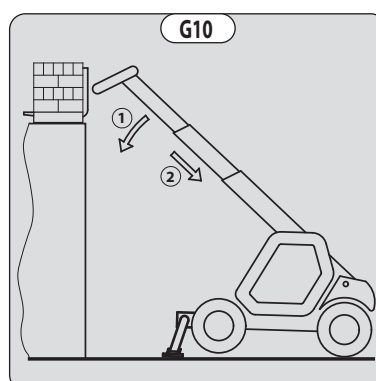
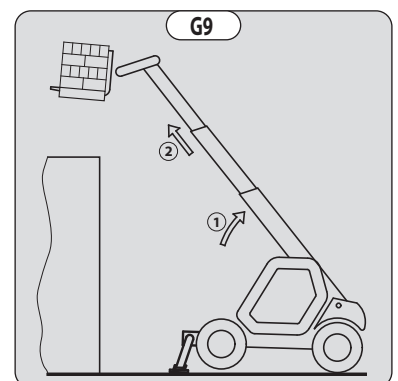
## PICKING UP A HIGH LOAD ON STABILIZERS

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



## SETTING DOWN A HIGH LOAD ON STABILIZERS

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



## H - PICKING UP AND PUTTING DOWN A SUSPENDED LOAD

### **IMPORTANT**

*Failure to follow the above instructions may lead the machine to lose stability and overturn.*

*MUST be used with a machine equipped with an operational hydraulic movement cut-off device.*

#### CONDITIONS OF USE

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

#### HANDLING WITHOUT MOVING THE MACHINE

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

#### I - TRAVELING WITH A SUSPENDED LOAD

- Before moving, inspect the terrain in order to avoid excessive slopes and cross-falls, bumps and potholes, or soft ground.
- Ensure that the wind speed is not higher than 36 km/h.
- The machine must not travel at more than 0.4 m/s (1.4 km/h, i.e. one quarter walking speed).
- Drive and stop the machine gently and smoothly to minimize swinging of the load.
- Carry the load a few centimeters above the ground (max. 30 cm) the shortest possible jib length. Do not exceed the offset indicated on the load chart. If the load begins to swing excessively, do not hesitate to stop and lower the jib to set down the load.
- Before moving the machine, check the longitudinal stability limiter and warning device ( 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS), only the green LEDs and possible the yellow LEDs should be lit
- During transport, the lift truck operator must be assisted by a person on the ground (standing a minimum of 3 m from the load), who will limit swinging of the load using a bar or a rope. Ensure that this person is always clearly in view.
- The lateral attitude must not exceed 5%: the bubble in the level must be kept between the two "MAX" marks.
- The longitudinal attitude must not exceed 15% with the load facing uphill and 10% with the load facing downhill.
- The boom angle must not exceed 45°.
- If the first red LED of the longitudinal stability limiter and warning device ( 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) comes on while traveling, gently bring the machine to a halt and stabilize the load. Retract the telescope to reduce the offset of the load.

## INSTRUCTIONS FOR USE AS A LOADER

For agricultural-type machines (MLT range)

### A - LOADING

#### ⚠ IMPORTANT ⚠

*You must not raise the boom if you have not checked the transverse attitude of the machine (➡ INSTRUCTIONS FOR HANDLING A LOAD D - TRANSVERSE ATTITUDE OF THE MACHINE).*

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

#### FILLING THE BUCKET

- Place the bottom of the bucket in a horizontal position, just in contact with the ground (1) (Fig. A1).
- Move forward gradually (2) while simultaneously raising the boom and tilting the bucket backwards (3), for improved filling and breakout (Fig. A1).
- Reverse the machine (1) very carefully and gently to free the bucket. Lower the boom (2) into the transport position (Fig. A2).

#### ⚠ IMPORTANT ⚠

*Tilt the bucket sufficiently back to avoid spilling product and ensure its stability (loss of product under braking).*

#### LOADING A TRAILER

- Approach the side of the trailer in the transport position (Fig. A3).
- Raise and extend the boom (1) (2) until the bucket is above the trailer, while monitoring the longitudinal stability limiter and warning device (➡ INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE) (Fig. A4).
- Drive the machine forward (3) very carefully and gently so that the bucket empties its load in the center of the trailer (Fig. A4).
- Immobilize the machine with the brake pedal and put the reversing shift lever in neutral.

N.B.: Immobilizing the machine with the brake pedal means that the transmission should be in neutral. Failure to follow this recommendation may lead to overheating and damage to the brakes.

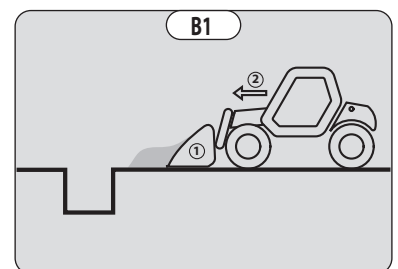
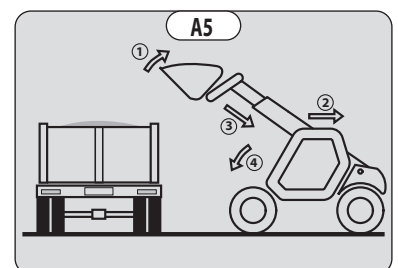
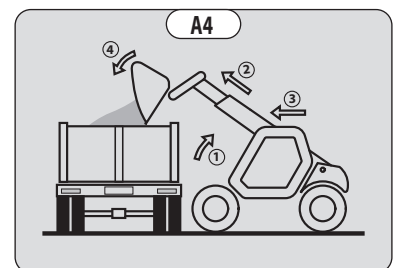
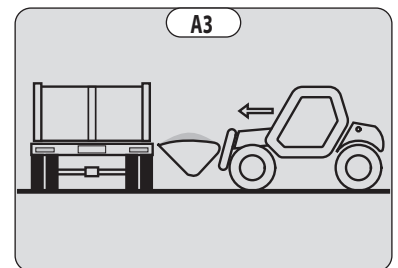
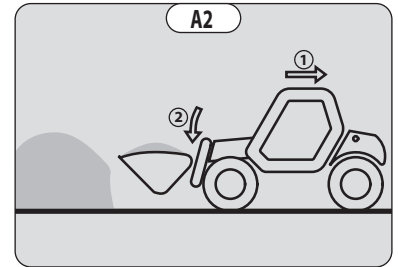
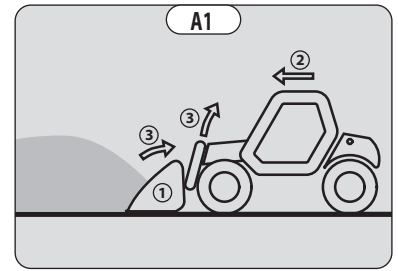
- Slowly discharge the product (4) (Fig. A4).
- Tilt the bucket backwards (1) and reverse the machine (2) very carefully and gently (Fig. A5).
- Retract (3) and lower the boom (4) into the transport position (Fig. A5).

### B - BACKFILLING

- Place the bottom of the bucket in a horizontal position, just in contact with the ground (1) (Fig. B1).
- Drive forward gradually (2). Once filled, the bucket will act as a leveling blade (Fig. B1).

#### ⚠ IMPORTANT ⚠

*When driving, beware of trenches as well as recently excavated and/or backfilled ground.*



## INSTRUCTIONS FOR USING THE MOBILE ELEVATING WORK PLATFORM

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For machines equipped with a MOBILE ELEVATING WORK PLATFORM

### A - AUTHORIZATION FOR USE

- Operation of the platform requires further authorization in addition to that of the machine.

### B - SUITABILITY OF THE PLATFORM FOR THE JOB

- Our machines fitted with mobile elevating work platforms are compliant with standard **EN 280** for Europe and standard **AS/NZS 1418.10:2011** for Australia, corresponding to the classification of Group C1 to C3 in accordance with this standard.
- MANITOU has ensured that this platform is suitable for use under the normal operating conditions provided in this operator's manual, with a STATIC test coefficient of 1.25 and a DYNAMIC test coefficient of 1.1 as specified in harmonized European standard **EN 280** for mobile elevating work platforms.
- Before commissioning, the company manager must make sure that the platform is appropriate for the work to be done, and perform certain tests (in accordance with current legislation).

### C - PROVIDED ON THE PLATFORM

- Wear suitable clothing when using the platform, avoid loose-fitting garments.
- Never use the platform with hands or shoes that are wet or soiled with greasy substances.
- Remain alert at all times when using the platform. Do not listen to the radio or music using headphones or earphones.
- MANITOU strongly recommends wearing a safety harness attached to an attachment point in the platform. Wearing a safety harness or other personal protection equipment against falls may be compulsory. Comply with local, government and national regulations in force, employer's safety rules and work site regulations .
- The safety harness or other personal protection equipment against falls must comply with local, government, and national regulations in force. They must be inspected in accordance with the regulations in force.
- The control units must never be used for any other than their intended purposes (e.g. Climbing onto or down from the machine, coat hanger, etc.).
- Safety helmets must be worn.
- 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, outside the platform.
- Ensure that materials loaded onto the platform (pipes, cables, containers, etc.) cannot fall out. Do not pile these materials to the point where it is necessary to step over them.

## D - USING THE PLATFORM

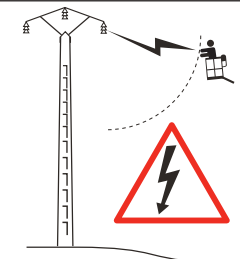
- However experienced they may be, operators must acquaint themselves with the emplacement and operation of all control instruments prior to operating the platform.
- Check before use that the platform has been correctly assembled and locked onto the machine.
- Do not enter or exit the platform unless it is fully lowered.
- Always enter and exit the platform through the gate or using the sliding mid rails (depending on the model).
- Always enter and exit facing the interior of the platform.
- Always use both hands and one foot or both feet and one hand to enter and exit the platform.
- Make sure that the sliding intermediate cross members (depending on the model) are in the lower position and that the gate is properly closed (depending on the model) before using this platform.
- Do not attach the sliding mid rails in the high position.
- The platform should be operated in an area free of any obstructions or danger when it is lowered to the ground.
- The operator using the platform must be aided by someone on the ground with adequate training.
- You should stay within the limits set out in the platform load chart.
- The lateral constraints are limited (➤ 2 - DESCRIPTION: SPECIFICATIONS).
- It is strictly forbidden to suspend a load from the platform or the machine's boom without an attachment provided for the purpose (➤ INSTRUCTIONS FOR HANDLING A LOAD: H - PICKING UP AND PUTTING DOWN A SUSPENDED LOAD).
- The platform cannot be used as a crane or a lift for permanently transporting people or materials, nor as jacks or supports.
- The machine must not be moved with one (or more) person(s) on the platform.
- It is forbidden to transport people on the platform using the hydraulic controls in the machine's cab (except in case of rescue).
- The operator must not climb onto or off the platform when it is not on ground level (jib retracted and in the down position).
- The machine must not be fitted with unauthorized attachments that increase the windage of the assembly.
- Do not use ladders or improvised structures on the platform to gain extra height.
- Do not climb onto the rails of the platform to gain extra height.
- It is forbidden to use the platform on forks. The fork slots are only to be used for storing the platform and not for lifting people under any circumstances.

## E - ENVIRONMENT

- Respect a safety distance between power lines or live components and any part of the body, any conductive object or any part of the machine, unless the local, government and national applicable regulations, the safety rules of the employer or construction site regulations are more strict in terms of distance required.
- Allow for platform movement and swaying or sagging power lines.

### ⚠ IMPORTANT ⚠

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

| RATED VOLTAGE (VOLTS) | SAFETY DISTANCE (METERS) |                                                                                     |
|-----------------------|--------------------------|-------------------------------------------------------------------------------------|
| $50 < U < 1000$       | 2,30 M                   |  |
| $1000 < U < 30000$    | 2,50 M                   |                                                                                     |
| $30000 < U < 45000$   | 2,60 M                   |                                                                                     |
| $45000 < U < 63000$   | 2,80 M                   |                                                                                     |
| $63000 < U < 90000$   | 3,00 M                   |                                                                                     |
| $90000 < U < 150000$  | 3,40 M                   |                                                                                     |
| $150000 < U < 225000$ | 4,00 M                   |                                                                                     |
| $225000 < U < 400000$ | 5,30 M                   |                                                                                     |
| $400000 < U < 750000$ | 7,90 M                   |                                                                                     |

### ⚠ IMPORTANT ⚠

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

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

| BEAUFORT scale (wind speed at a height of 10 m on a flat site) |                 |               |              |             |                                                                                              |                                                                                                             |
|----------------------------------------------------------------|-----------------|---------------|--------------|-------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Force                                                          | Type of wind    | Speed (knots) | Speed (km/h) | Speed (m/s) | Effects on Land                                                                              | Sea conditions                                                                                              |
| 0                                                              | Calm            | 0 - 1         | 0 - 1        | < 0.3       | Smoke rises vertically.                                                                      | Sea is like a mirror.                                                                                       |
| 1                                                              | Light air       | 1 - 3         | 1 - 5        | 0.3 - 1.5   | Smoke indicates direction of wind.                                                           | Ripples with appearance of scale, no foam crests.                                                           |
| 2                                                              | Light breeze    | 4 - 6         | 6 - 11       | 1.6 - 3.3   | Wind felt on face, leaves rustle.                                                            | Short wavelets, but pronounced.                                                                             |
| 3                                                              | Gentle breeze   | 7 - 10        | 12 - 19      | 3.4 - 5.4   | Leaves and small twigs in constant motion.                                                   | Very small waves, crests begin to break.                                                                    |
| 4                                                              | Moderate breeze | 11 - 16       | 20 - 28      | 5.5 - 7.9   | Wind raises dust and loose pieces of paper; small branches are moved.                        | Small waves, becoming longer, numerous whitecaps.                                                           |
| 5                                                              | Fresh breeze    | 17 - 21       | 29 - 38      | 8 - 10.7    | Small trees in leaf begin to sway.                                                           | Wavelets form on inland waters; moderate waves, taking longer form.                                         |
| 6                                                              | Strong breeze   | 22 - 27       | 39 - 49      | 10.8 - 13.8 | Large branches in motion, whistling heard in overhead wires, umbrella use becomes difficult. | Larger waves forming, whitecaps everywhere, some spray.                                                     |
| 7                                                              | Near gale       | 28 - 33       | 50 - 61      | 13.9 - 17.1 | Whole trees in motion, inconvenience felt when walking against the wind.                     | Sea heaps up; white foam from breaking waves begins to be blown in streaks along the direction of the wind. |
| 8                                                              | Gale            | 34 - 40       | 62 - 74      | 17.2 - 20.7 | Wind breaks twigs off trees; impedes progress.                                               | Moderately high waves of greater length; edges of crests begin to break into spindrift.                     |
| 9                                                              | Strong gale     | 41 - 47       | 75 - 88      | 20.8 - 24.4 | Wind damages roofs (chimneys, slates, etc.).                                                 | High waves, crests of waves begin to topple, streaks of foam; reduced visibility.                           |
| 10                                                             | Storm           | 48 - 55       | 89 - 102     | 24.5 - 28.4 | Seldom experienced inland; trees uprooted; considerable structural damage occurs.            | Very high waves; white streaks of foam; reduced visibility.                                                 |
| 11                                                             | Violent storm   | 56 - 63       | 103 - 117    | 28.5 - 32.6 | Very rare, widespread damage.                                                                | Exceptionally high waves able to hide medium sized ships from view, reduced visibility.                     |
| 12                                                             | Hurricane       | 64 +          | 118 +        | 32.7 +      | Devastating damage.                                                                          | Sea completely white; air filled with foam and spray, very reduced visibility.                              |

## F - MAINTENANCE

### ⚠ IMPORTANT ⚠

*Your platform must be periodically inspected to ensure its continued compliance.*

*The frequency of this inspection is defined by the legislation in force in the country in which the platform is used.*

*In France, a general periodic inspection every 6 months (Decree of March 1, 2004).*

## INSTRUCTIONS FOR USING THE RADIO-CONTROL

For machines with RC radio control

### HOW TO USE THE RADIO-CONTROL

#### SAFETY INSTRUCTIONS

#### **⚠ IMPORTANT ⚠**

*It is prohibited to lift people in the platform using the radio-control.*

*It is prohibited to use the radio-control from the platform:*

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

#### **⚠ IMPORTANT ⚠**

*If it is used improperly or incorrectly, there is a risk of danger to:*

*- The physical and mental health of the user or others.*

*- The machine and other neighboring items.*

*Everyone working with this radio-control:*

*- Must be qualified in line with current regulations and trained accordingly.*

*- Must follow this instruction manual as closely as possible.*

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

#### **⚠ IMPORTANT ⚠**

*Never drive the machine if it is not continuously and perfectly within view of the operator.*

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

#### INSTRUCTIONS

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

#### **⚠ IMPORTANT ⚠**

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

#### PROTECTIVE DEVICES

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

#### **⚠ IMPORTANT ⚠**

*In an emergency, press the transmitter emergency stop button immediately; then follow the manual's instructions (<1 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS).*

# MACHINE MAINTENANCE INSTRUCTIONS

## GENERAL INSTRUCTIONS

### ⚠ IMPORTANT ⚠

Carefully read and understand this operator's manual before any operation on this machine.

Carry out all repairs immediately, even if the repairs concerned are minor.

Repair all leaks immediately, even if the leak concerned is minor.

Be careful of the risk of burns and splashing (exhaust, radiator, engine, hydraulic oil, etc.).

- Make sure the area is adequately ventilated before starting up the machine.
- Wear clothes suitable for the maintenance of the machine. Avoid wearing jewelry and loose clothes. Tie back and protect your hair, if necessary.
- Stop the engine and remove the ignition key before carrying out any work.

## PLACING THE JIB SAFETY WEDGE

- The machine is equipped with a boom safety wedge (➤ 2 - DESCRIPTION: INSTRUMENTS AND CONTROLS) that must be installed on the lifting cylinder rod when working beneath the boom.
- Boom retracted without forks or attachments.

ACCORDING TO INSTALLATION

### FITTING THE WEDGE

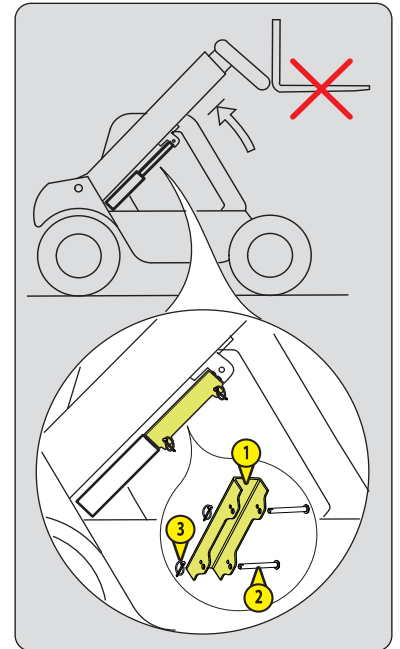
- Fully raise the jib.
- Place the safety wedge 1 on the rod of the lifting cylinder and secure with the rod 2 and the pin 3.
- Slowly lower the jib then stop the hydraulic movements before it comes into contact with the wedge.

### REMOVING THE WEDGE

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

### ⚠ IMPORTANT ⚠

Only use the wedge supplied with the machine.



ACCORDING TO INSTALLATION

### FITTING THE WEDGE

- Fully raise the jib.
- Loosen the thumbwheels 1.
- Assemble the parts of the safety wedge 2 around the cylinder rod and lock with the pins 3.

NOTE: the stop flats 4 of the safety wedge must be located towards the bottom of the lifting cylinder 5.

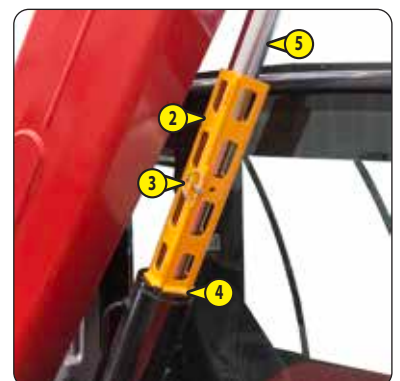
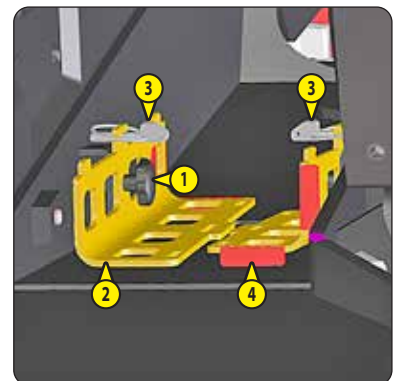
- Slowly lower the jib then stop the hydraulic movements before it comes into contact with the wedge.

### REMOVING THE WEDGE

- Fully raise the jib.
- Remove the pins 3.
- Put the parts of the safety wedge 2 back on the machine and lock them with the thumbwheels 1.
- Replace the pins 3 on the parts of the safety wedge.

### ⚠ IMPORTANT ⚠

Only use the wedge supplied with the machine.



## MAINTENANCE

---

- Perform the periodic service (↩ 3 - MAINTENANCE) to keep your machine in good working order. Failure to perform periodic maintenance may invalidate the contractual warranty.

### MAINTENANCE LOGBOOK

- The maintenance operations carried out in accordance with the recommendations given in section 3 - MAINTENANCE and the other inspection, servicing or repair operations or modifications performed on the machine shall be recorded in a maintenance logbook.
- The entry for each operation should include the date of the work, the names of the individuals or companies having performed them, the type of operation and its frequency, if applicable.
- If machine elements are replaced, the part numbers of these elements shall be indicated.

## LUBRICANT AND FUEL LEVELS

---

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

## HYDRAULICS

---

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



**COUNTERBALANCE VALVE:** *it is dangerous to change the setting or remove the counterbalance valves or safety valves which may be fitted to the cylinders of your machine.*

**HYDRAULIC ACCUMULATOR:** *dismantling hydraulic accumulators and their pipes which may be fitted on your machine is dangerous. Such operations must only be performed by approved personnel (consult your dealer).*

## ELECTRICITY

---

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

## WELDING ON THE MACHINE

---



**Welding operations on the machine for the purposes of maintenance or repairs must only be carried out by people authorized by MANITOU.**

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

## WASHING THE MACHINE

---

### **IMPORTANT**

*When washing with a high pressure cleaner, avoid the engine air intakes, the cylinder rod wiper seals, the hinges, the structural components and the electrical connections, etc.*

- Clean the machine or at least the area concerned before any intervention.
- Remember to close and lock all openings on the machine (doors, windows, cowls, etc.).
- 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 machine of any traces of fuel, oil or grease.

## TRANSPORTING THE MACHINE

---

### **IMPORTANT**

*Transporting the machine involves real risks for the operator and others involved.*

- Towing, winching, slinging or transporting the machine (⇐ 3 - MAINTENANCE).

## PROLONGED MACHINE SHUTDOWN

### INTRODUCTION

---

#### **IMPORTANT**

*Procedures to follow for long duration standstill and for bringing back the machine into service must be performed by your dealership.*

*This period of long duration standstill must not exceed 12 months.*

*After 12 months, repeat the procedures for putting the machine back into service and long-term shutdown.*

The recommendations below are intended to prevent the machine from being damaged when it is not used for a period of more than 3 months.

### PREPARATION OF THE MACHINE

---

- Clean the machine thoroughly.
- Check and repair any fuel, oil, water or air leaks.
- Replace or repair any worn or damaged parts.
- Wash the painted surfaces of the machine in clear and cold water and wipe them.
- Touch up the paintwork if necessary.
- Lower the lifting structure fully.
- Retract the telescopic arms.
- Release the pressure in the hydraulic circuits.
- Shut down the machine.

### DEF (Diesel Exhaust Fluid) TANK

---

Depending on machine model

- Drain down and rinse the DEF (Diesel Exhaust Fluid) tank.
- Replace the "DEF" (Diesel Exhaust Fluid) feed pump filter (⇐ 3 - MAINTENANCE).
- Slowly fill the tank with new DEF up to the bottom of the filler neck.
- Start up the machine to pressurize the circuit and bring it up to working temperature, then shut down the engine.
- If necessary, top up the tank.

## PROTECTING THE ENGINE

---

- Contact your dealer to obtain the procedure for protecting the inside of the engine (use of protection product).
- Fill the tank with fuel (➤ 3 - MAINTENANCE).
- Replace the engine oil and oil filter (➤ 3 - MAINTENANCE).
- Replace the coolant (➤ 3 - MAINTENANCE).
- Leave the engine running at idling speed for a few minutes, then switch off.
- Run the engine for a short time so that the oil and cooling liquid circulate inside.
- Disconnect the battery and store it in a safe place away from the cold, after charging it to maximum capacity.
- Block the outlet with 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.

## MACHINE PROTECTION

---

Place the machine on level ground.

- Set the machine on axle stands so that the tires are off the ground.
- Deactivate the parking brake (depending on machine model).
- Protect cylinder rods which will not be retracted from corrosion.
- Wrap the wheels.

N.B.: If the machine is to be stored outdoors, cover it with a waterproof tarpaulin.

## RETURNING THE MACHINE TO SERVICE

---

### **IMPORTANT**

*Make sure the area is adequately ventilated before starting up the machine.*

- Remove the waterproof adhesive tape from all the orifices.
- Remove the protection from the cylinder rods and wheels.
- Refit and reconnect the battery.
- Activate the parking brake and remove the axle stands.
- Perform the daily maintenance operations (➤ 3 - MAINTENANCE).
- Perform the weekly maintenance operations (➤ 3 - MAINTENANCE).
- Drain and clean the fuel tank (➤ 3 - MAINTENANCE).
- Fill the fuel tank with clean diesel filtered through the filler port.
- Replace the fuel filter (➤ 3 - MAINTENANCE).
- Replace the fuel pre-filter (➤ 3 - MAINTENANCE) (depending on the model of machine).
- Drain and rinse the DEF tank (depending on the machine model).
- Top up, slowly fill the tank with new "DEF" (Diesel Exhaust Fluid) up to the bottom of the filler neck (depending on the machine model).
- Refit and set the tension in the belts. (➤ 3 - MAINTENANCE).
- Turn the engine over with the starter, to allow the oil pressure to rise.
- Reconnect the engine cut-off solenoid.
- Lubricate the machine completely (➤ 3 - MAINTENANCE).
- Start up the machine, following the operating and safety instructions (➤ OPERATING INSTRUCTIONS UNLADEN AND LADEN).
- Perform all the lifting structure's hydraulic movements up to the end position for each cylinder.

## DISPOSING OF THE MACHINE



*Consult your dealer before disposing of the machine.*

### RECYCLING OF MATERIALS

---

#### METALS

- Metals are 100% recoverable and recyclable.

#### PLASTICS

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

#### RUBBER

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

#### GLASS

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

### ENVIRONMENTAL PROTECTION

---

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

#### WORN OR DAMAGED PARTS

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

#### USED OIL

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

#### USED BATTERIES

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

N.B.: MANITOU aims to manufacture machines that provide the best performance and limit polluting emissions.

# 2 - DESCRIPTION



## 2 - DESCRIPTION

|                                                      |                    |
|------------------------------------------------------|--------------------|
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| <b><u>IDENTIFICATION OF THE LIFT TRUCK</u></b>       | <b><u>2-8</u></b>  |
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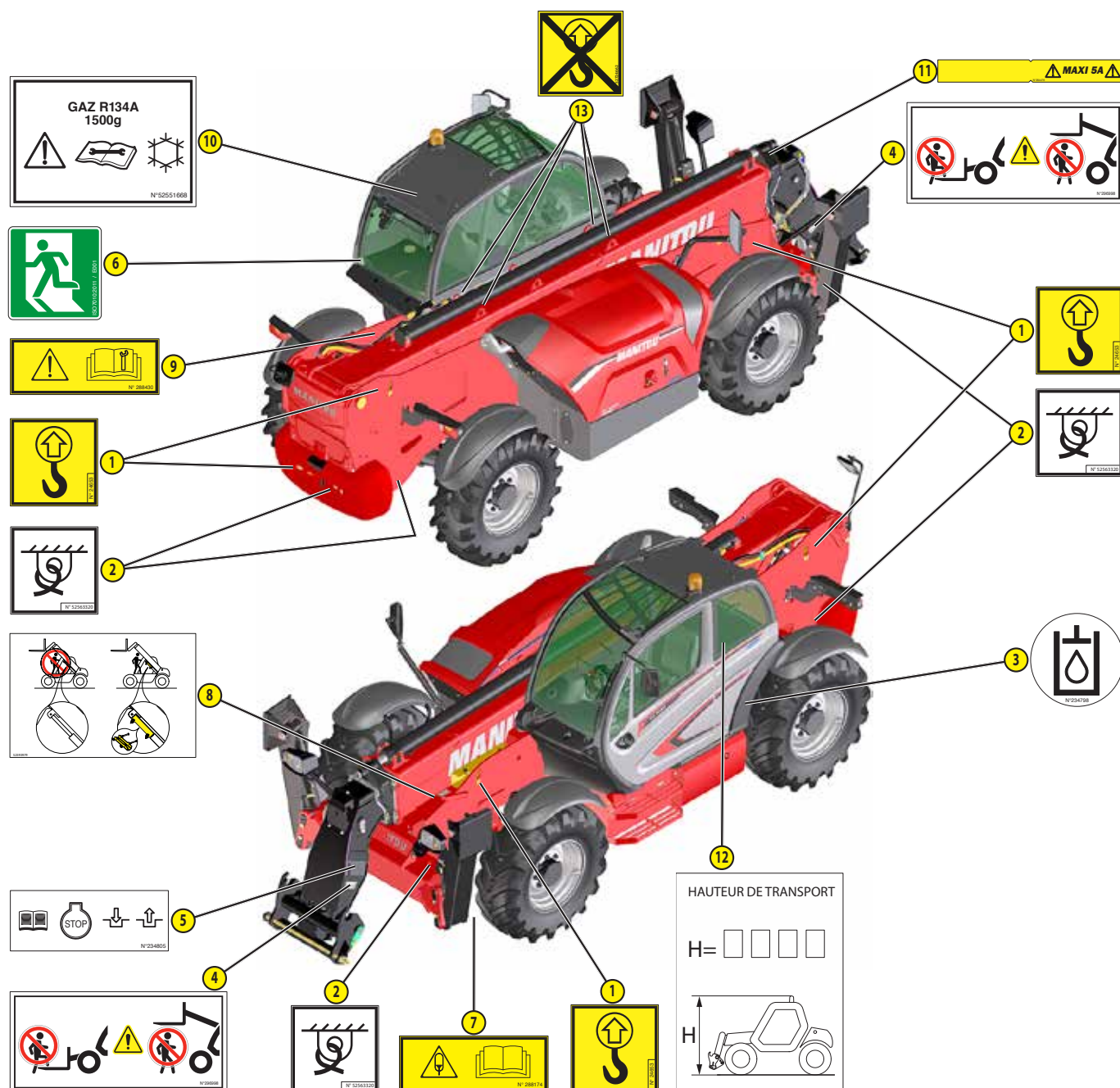
## SAFETY PLATES AND STICKERS

### ⚠ IMPORTANT ⚠

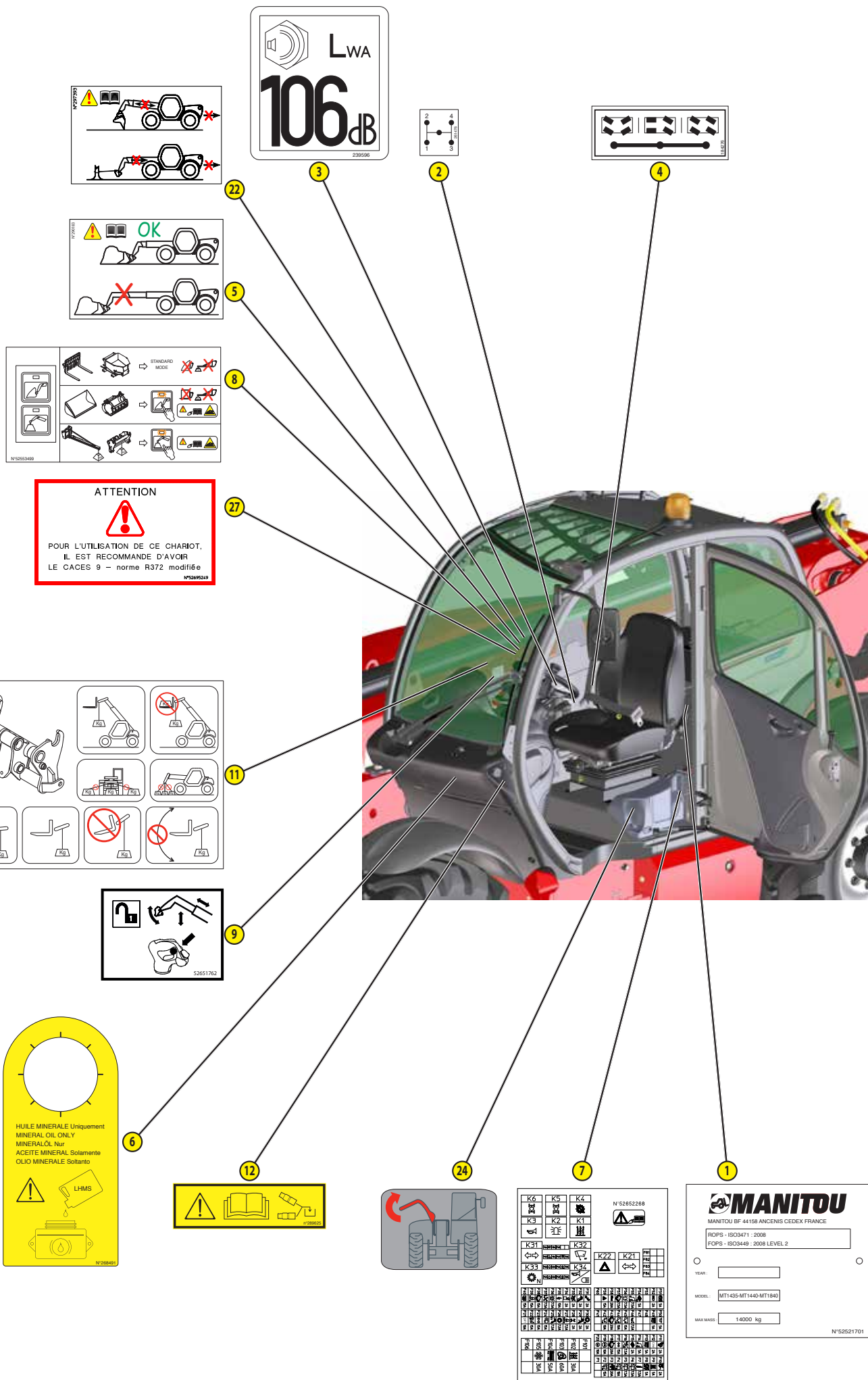
Clean all stickers and safety plates so that they are legible.  
Any safety plates and stickers which are illegible or damaged must be replaced.  
Check that stickers and safety plates are present after replacing any spare parts.

### EXTERNAL PLATES AND STICKERS

| REF. | REFERENCE | DESCRIPTION                                         |
|------|-----------|-----------------------------------------------------|
| 1    | 24653     | - Slings point (DEPENDENT ON ASSEMBLY)              |
| 2    | 52563320  | - Lashing point (DEPENDENT ON ASSEMBLY)             |
| 3    | 234798    | - Hydraulic fluid                                   |
| 4    | 296998    | - Safety instruction                                |
| 5    | 234805    | - Hydraulic coupling instruction (OPTION)           |
| 6    | 52567646  | - Emergency output                                  |
| 7    | 288174    | - Accumulator instructions                          |
| 8    | 52593979  | - Boom safety                                       |
| 9    | 288430    | - Repair instruction                                |
| 10   | 52551668  | - Air conditioning (OPTION)                         |
| 11   | 264476    | - Boom electrical predisposition (OPTION) MT-X 1440 |
| 12   | 52527898  | - Overall height (OPTION)                           |
| 13   | 52724662  | - Slings prohibited (DEPENDENT ON ASSEMBLY)         |

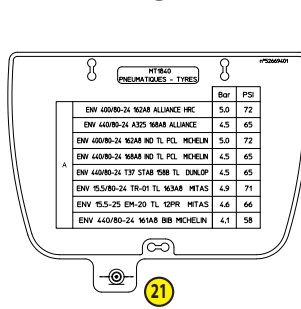
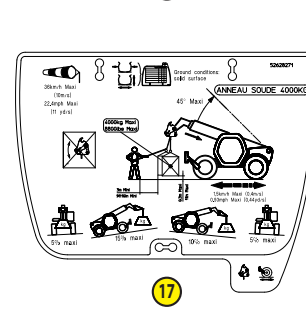
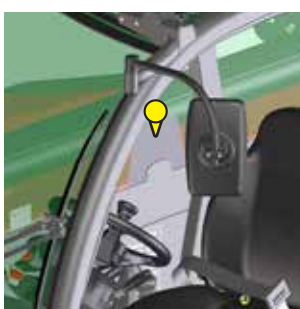
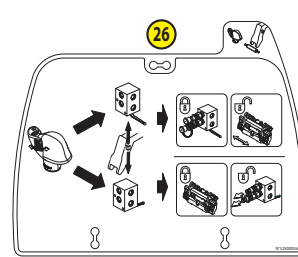
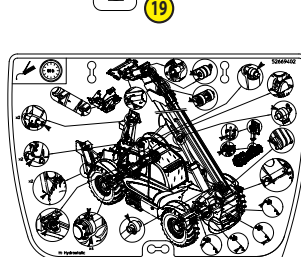
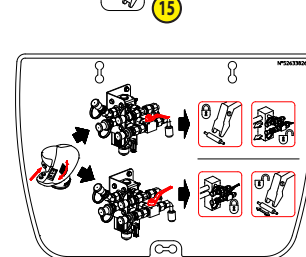
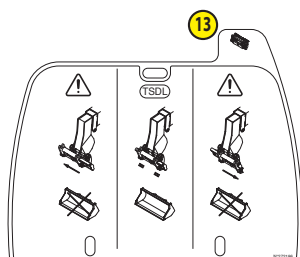
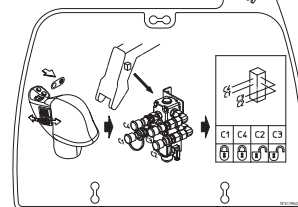
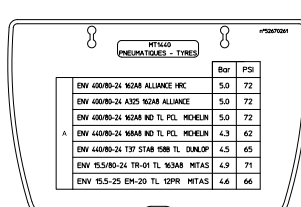
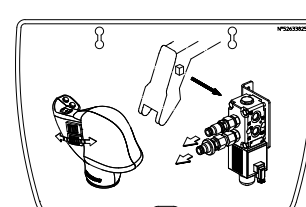
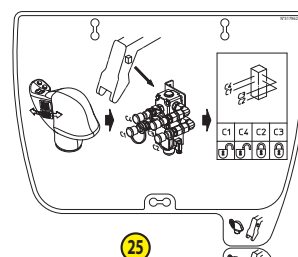
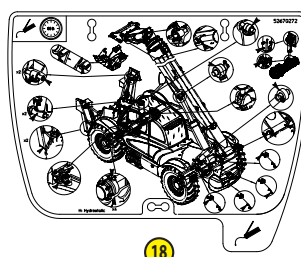
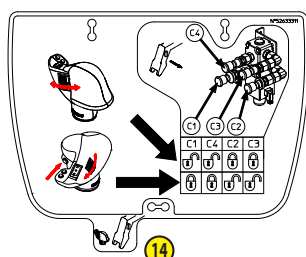
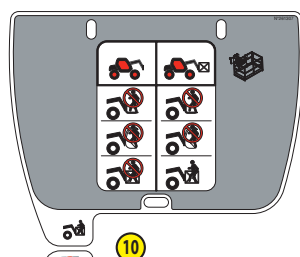






## PLATES AND STICKERS IN THE CAB

| REF. | REFERENCE | DESCRIPTION                                                             |
|------|-----------|-------------------------------------------------------------------------|
| 1    | 52521701  | - Cab compliance                                                        |
| 2    | 261476    | - Gear selection                                                        |
| 3    | 239596    | - Sound power level 106 dB                                              |
| 4    | 184276    | - Steering selection control                                            |
| 5    | 290183    | - Bucket instruction on telescope                                       |
| 6    | 268491    | - Brake fluid instruction                                               |
| 7    | 52652268  | - Fuses                                                                 |
| 8    | 52553499  | - Operating mode management instruction                                 |
| 9    | 52651762  | - Hydraulic controls activation                                         |
| 10   | 261307    | - Reach chart sheet                                                     |
| 11   | 265284    | - Lifting ring on single carriage (OPTION)                              |
| 12   | 289625    | - Easy attachment connection (OPTION)                                   |
| 13   | 272186    | - Using bucket on TSDL (OPTION)                                         |
| 14   | 52633311  | - Boom head electrovalve joystick function (OPTION)                     |
| 15   | 52633825  | - Boom head electrovalve joystick function + hydraulic locking (OPTION) |
| 16   | 52633826  | - Boom head electrovalve joystick function + hydraulic locking (OPTION) |
| 17   | 52628271  | - Load chart for lifting ring on single carriage (OPTION)               |
| 18   | 52670272  | - Lubrication sheet MT-X 1440                                           |
| 19   | 52670261  | - Pressure lines MT-X 1440                                              |
| 20   | 52669402  | - Lubrication sheet MT-X 1840                                           |
| 21   | 52669401  | - Pressure lines MT-X 1840                                              |
| 22   | 297393    | - Back scraping prohibited MT-X 1840                                    |
| 24   | 268254    | - Hood opening                                                          |
| 25   | 317962    | - Manipulator function sheet (OPTION)                                   |
| 26   | 52500036  | - Manipulator function sheet (OPTION) MT-X 1840                         |
| 27   | 52695249  | - Uses CACES 9 (OPTION)                                                 |



## IDENTIFICATION OF THE LIFT TRUCK

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

When you order parts, or when you require any technical information, always specify the following information.

N.B.: For the owner's convenience, it is recommended that these numbers be entered in the spaces provided, at the time of the delivery of the lift truck.

For any further technical information regarding your lift truck, refer to: CHARACTERISTICS.

### LIFT TRUCK MANUFACTURER'S PLATE

|                                                                                               |  |
|-----------------------------------------------------------------------------------------------|--|
| "Designation" Designation                                                                     |  |
| "Series" Series                                                                               |  |
| "Year of manufacture" Year of manufacture                                                     |  |
| "Model year" Model year                                                                       |  |
| "Serial Number / Product Identification Number" Serial number / Product Identification Number |  |
| "Unladen mass" Unladen weight                                                                 |  |
| "Power" Power                                                                                 |  |
| "Authorized gross vehicle weight" Authorized gross vehicle weight                             |  |
| "Rated capacity" Rated capacity                                                               |  |
| "Max vertical force (on trailer hook)" Maximum vertical force (on trailer hook)               |  |
| "Drag strain" Tractive force                                                                  |  |



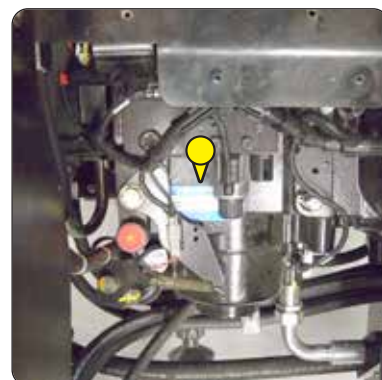
### ENGINE

|                                      |  |
|--------------------------------------|--|
| "TPL N°" Temporary parts list number |  |
| "LIST N°" List number                |  |
| "SERIAL N°" Serial number            |  |
| "TYPE" Type                          |  |



### GEARBOX

|                   |  |
|-------------------|--|
| Type              |  |
| Serial number     |  |
| MANITOU reference |  |



647813 (28/04/2025)  
MT-X 1440 100P ST3A S2  
MT-X 1840 100P ST3A S2

## FRONT AXLE

|                   |  |
|-------------------|--|
| Type              |  |
| Serial number     |  |
| MANITOU reference |  |



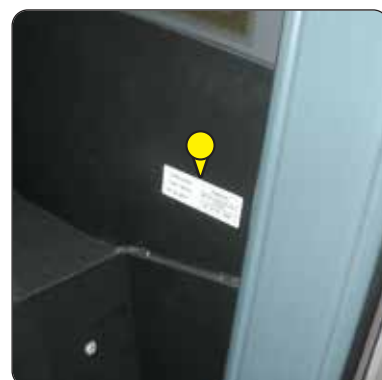
## REAR AXLE

|                   |  |
|-------------------|--|
| Type              |  |
| Serial number     |  |
| MANITOU reference |  |



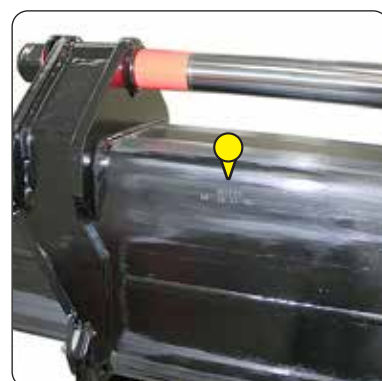
## CAB

|                             |  |
|-----------------------------|--|
| "Constructeur" Manufacturer |  |
| "Type Cabine" Cab type      |  |
| "N° de série" Serial number |  |



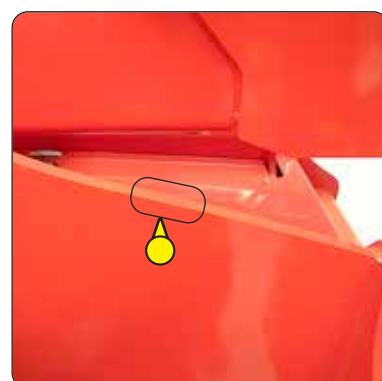
## BOOM

|                                      |  |
|--------------------------------------|--|
| MANITOU reference                    |  |
| Date of manufacture and manufacturer |  |



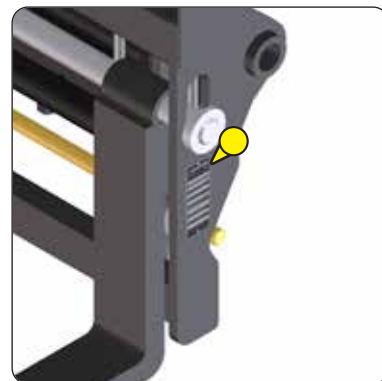
## CHASSIS

|                                               |  |
|-----------------------------------------------|--|
| Serial number / Product Identification Number |  |
|-----------------------------------------------|--|



## ATTACHMENT MANUFACTURER'S PLATE

|                                         |  |
|-----------------------------------------|--|
| "MODELE" Model                          |  |
| "N° série" Serial number                |  |
| "Année Fabrication" Year of manufacture |  |
| "Masse à vide" Unladen weight           |  |
| "Centre de gravité" Center of gravity   |  |
| "Capacité Nominale" Rated capacity      |  |
| "Pression service" Working pressure     |  |





| ENGINE                      |                 |                            |
|-----------------------------|-----------------|----------------------------|
| Type                        |                 | PERKINS 1104D-44TA RP52117 |
| Fuel                        |                 | Diesel                     |
| Number of cylinders         |                 | 4 in line                  |
| Suction                     |                 | Supercharged               |
| Injection system            |                 | Direct                     |
| Ignition sequence           |                 | 1.3.4.2                    |
| Displacement                | cm <sup>3</sup> | 4400                       |
| Bore and stroke             | mm              | 105 x 127                  |
| Compression ratio           |                 | 18,2:1                     |
| Nominal speed laden         | rpm             | 2200                       |
| Min. rpm unladen            | rpm             | 850                        |
| Max. rpm unladen            | rpm             | 2350                       |
| Power ISO/TR 14396          | hp - kW         | 101 - 74,5                 |
| Power SAE J 1995            | hp - kW         | 101 - 74,5                 |
| Maximum torque ISO/TR 14396 | Nm              | 400 at 1400 rpm            |
| Air filtration efficiency   | %               | 99,9                       |
| Type of cooling             |                 | Coolant                    |
| Fan                         |                 | Suction                    |

| TRANSMISSION               |     |                     |
|----------------------------|-----|---------------------|
| Gearbox                    |     | DANA                |
| - Type                     |     | Mechanics           |
| - Shuttle lever            |     | Electro-hydraulics  |
| - Torque converter         |     | DANA                |
| - Number of forward speeds |     | 4                   |
| - Number of reverse speeds |     | 4                   |
| Front axle                 |     | DANA                |
| - Differential             |     | Without locking     |
| Rear axle                  |     | DANA                |
| - Differential             |     | Without locking     |
| Drive wheels               |     | Permanent 4 WD      |
| - 2/4 wheel drive control  |     | no                  |
| Front tires                |     | ALLIANCE            |
| - Size                     |     | 400/80-24 162A8 HRC |
| - Pressure                 | bar | 5                   |
| Rear tires                 |     | ALLIANCE            |
| - Size                     |     | 400/80-24 162A8 HRC |
| - Pressure                 | bar | 5                   |

| ELECTRIC CIRCUIT |          |                          |
|------------------|----------|--------------------------|
| Battery          | STANDARD | 12 V - 110 Ah - 900 A EN |
|                  | OPTION   | 12 V - 180 Ah - 900 A EN |
| Alternator       |          | 12 V - 85 A              |
| - Type           |          | DENSO A115i              |
| Starter          |          | 12 V - 3,2 kW            |
| - Type           |          | ISKRA AZE                |

| BRAKE SYSTEM    |  |                                            |
|-----------------|--|--------------------------------------------|
| Service brake   |  | Hydraulic power brake                      |
| - Type of brake |  | Oil-immersed multi-disc                    |
| - Type of order |  | Foot-operated for the front and rear axles |
| Parking brake   |  | Low pressure brake                         |
| - Type of brake |  | Disk on gearbox output                     |
| - Type of order |  | Electro-hydraulics                         |

| HYDRAULIC CIRCUIT              |                 |                                        |             |
|--------------------------------|-----------------|----------------------------------------|-------------|
| Hydraulic pump                 |                 |                                        |             |
| - Type                         |                 | Gears with flow divider on 2nd housing |             |
|                                |                 | 1st housing                            | 2nd housing |
| - Displacement                 | cm <sup>3</sup> | 44                                     | 27          |
| - Max. rating capacity unladen | ℓ/min           | 103                                    | 63          |
| - Flow at 1600 rpm             | ℓ/min           | 70                                     | 43          |
| Filtration                     |                 |                                        |             |
| - Back                         | μm              | 16                                     | 16          |
| - Suction                      | μm              | 135                                    | 135         |
| Maximum working pressure       |                 | 270                                    |             |
| - Telescoping circuit          | bar             | 180 / 270                              |             |
| - Lift circuit                 | bar             | 210 / 270                              |             |
| - Tilt circuit                 | bar             | 270 / 200                              |             |
| - Circuit stabilizers          | bar             | 270                                    |             |
| - Frame leveling circuit       | bar             | 270                                    |             |
| - Attachment circuit (OPTION)  | bar             | 270                                    |             |
| - Steering circuit             | bar             | 140                                    |             |

| HYDRAULIC MOVEMENTS                               |           |             |  |
|---------------------------------------------------|-----------|-------------|--|
| Longitudinal stability limiter and warning device |           | Electronics |  |
| Lifting motions (boom retracted)                  |           |             |  |
| - Unladen lifting                                 | s - m/min | 15,5 - 24,1 |  |
| - Laden lifting                                   | s - m/min | 15 - 29,4   |  |
| - Unladen lowering                                | s - m/min | 11,6 - 32,2 |  |
| - Laden lowering                                  | s - m/min | 11,2 - 33,3 |  |
| Telescoping motions (boom raised)                 |           |             |  |
| - Unladen extending                               | s - m/min | 16,5 - 27,6 |  |
| - Laden extending                                 | s - m/min | 16,5 - 27,6 |  |
| - Unladen retracting                              | s - m/min | 11,9 - 38,3 |  |
| - Laden retracting                                | s - m/min | 11,8 - 38,6 |  |
| Tilting movements                                 |           |             |  |
| - Crowd unladen                                   | s - °/s   | 3,9 - 32,3  |  |
| - Unladen dump                                    | s - °/s   | 4 - 31,5    |  |

| SOUND AND VIBRATION                                                                                                         |                  |                                                      |  |
|-----------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------|--|
| Sound pressure level in the driver's cab LpA<br>(according to standard NF EN 12053)                                         | dB(A)            | 82 (cab closed); xx (cab open)                       |  |
| Sound pressure (according to Directive 2009/76)                                                                             | dB(A)            | xx (cab closed); xx (cab open)                       |  |
| Guaranteed sound power level in the environment LwA<br>(according to Directive 2000/14/EC modified by Directive 2005/88/EC) | dB(A)            | 105 (measured); 106 (guaranteed)                     |  |
| Sound level in motion (according to Directive 2009/63)                                                                      | dB(A)            | xx                                                   |  |
| Average weighted acceleration on driver's body<br>(according to standard NF EN 13059)                                       | m/s <sup>2</sup> | 0,985                                                |  |
| The average weighted acceleration transmitted to the driver's hand/<br>arm system (according to standard ISO 5349-2)        | m/s <sup>2</sup> | < 2,5                                                |  |
| Standard seat vibration                                                                                                     | m/s <sup>2</sup> | xx (lightweight operator); xx (heavyweight operator) |  |

## SPECIFICATIONS AND WEIGHTS

|                                                                                                |   |                    |                |
|------------------------------------------------------------------------------------------------|---|--------------------|----------------|
| Speed of movement for lift truck in standard configuration on flat ground                      |   |                    |                |
| - Front unladen                                                                                | 1 | km/h               | 5,1            |
|                                                                                                | 2 | km/h               | 8,1            |
|                                                                                                | 3 | km/h               | 15,1           |
|                                                                                                | 4 | km/h               | 25             |
| - Rear unladen                                                                                 | 1 | km/h               | 5,1            |
|                                                                                                | 2 | km/h               | 8,1            |
|                                                                                                | 3 | km/h               | 15,1           |
|                                                                                                | 4 | km/h               | 25             |
| Standard attachment                                                                            |   |                    | TFF 45 MT 1040 |
| - Weight of attachment (without forks)                                                         |   | kg                 | 228            |
| - Weight of forks (each)                                                                       |   | kg                 | 71             |
| Rated capacity with standard attachment                                                        |   | kg                 | 4000           |
| Tipping load at maximum reach on stabilizers                                                   |   | kg                 | 1950           |
| Distance from the center of gravity of the load to the base of the forks                       |   | mm                 | 500            |
| Standard lifting height                                                                        |   | mm                 | 13530          |
| Lift truck weight without attachment                                                           |   | kg                 | 10745          |
| Weight of lift truck with standard attachment                                                  |   |                    |                |
| - Unladen                                                                                      |   | kg                 | 11115          |
| - At rated load                                                                                |   | kg                 | 15115          |
| Weight per axle with standard attachment (transport position)                                  |   |                    |                |
| - Front unladen                                                                                |   | kg                 | 5355           |
| - Rear unladen                                                                                 |   | kg                 | 5760           |
| - Front rated load                                                                             |   | kg                 | 12615          |
| - Rear rated load                                                                              |   | kg                 | 2500           |
| Weight per axle with standard attachment (boom extended)                                       |   |                    |                |
| - Front rated load                                                                             |   | kg                 | 10995          |
| - Rear rated load                                                                              |   | kg                 | 420            |
| Contact pressure on the ground of the total surface of each stabilizer at maximum tipping load |   | kg/cm <sup>2</sup> | 5,57           |
| Tractive effort on the coupling hook                                                           |   |                    |                |
| - Unladen (sliding)                                                                            |   | daN                | 6250           |
| - At rated load (transmission setting)                                                         |   | daN                | 8250           |
| Break-out force with bucket (according to standard ISO 8313)                                   |   | daN                | 8000           |



| ENGINE                      |                 |                            |
|-----------------------------|-----------------|----------------------------|
| Type                        |                 | PERKINS 1104D-44TA RP52117 |
| Fuel                        |                 | Diesel                     |
| Number of cylinders         |                 | 4 in line                  |
| Suction                     |                 | Supercharged               |
| Injection system            |                 | Direct                     |
| Ignition sequence           |                 | 1.3.4.2                    |
| Displacement                | cm <sup>3</sup> | 4400                       |
| Bore and stroke             | mm              | 105 x 127                  |
| Compression ratio           |                 | 18,2:1                     |
| Nominal speed laden         | rpm             | 2200                       |
| Min. rpm unladen            | rpm             | 850                        |
| Max. rpm unladen            | rpm             | 2350                       |
| Power ISO/TR 14396          | hp - kW         | 101 - 74,5                 |
| Power SAE J 1995            | hp - kW         | 101 - 74,5                 |
| Maximum torque ISO/TR 14396 | Nm              | 400 at 1400 rpm            |
| Air filtration efficiency   | %               | 99,9                       |
| Type of cooling             |                 | Coolant                    |
| Fan                         |                 | Suction                    |

| TRANSMISSION               |     |                     |
|----------------------------|-----|---------------------|
| Gearbox                    |     | DANA                |
| - Type                     |     | Mechanics           |
| - Shuttle lever            |     | Electro-hydraulics  |
| - Torque converter         |     | DANA                |
| - Number of forward speeds |     | 4                   |
| - Number of reverse speeds |     | 4                   |
| Front axle                 |     | DANA                |
| - Differential             |     | Without locking     |
| Rear axle                  |     | DANA                |
| - Differential             |     | Without locking     |
| Drive wheels               |     | Permanent 4 WD      |
| - 2/4 wheel drive control  |     | no                  |
| Front tires                |     | ALLIANCE            |
| - Size                     |     | 400/80-24 162A8 HRC |
| - Pressure                 | bar | 5                   |
| Rear tires                 |     | ALLIANCE            |
| - Size                     |     | 400/80-24 162A8 HRC |
| - Pressure                 | bar | 5                   |

| ELECTRIC CIRCUIT |          |                          |
|------------------|----------|--------------------------|
| Battery          | STANDARD | 12 V - 110 Ah - 900 A EN |
|                  | OPTION   | 12 V - 180 Ah - 900 A EN |
| Alternator       |          | 12 V - 85 A              |
| - Type           |          | DENSO A115i              |
| Starter          |          | 12 V - 3,2 kW            |
| - Type           |          | ISKRA AZE                |

| BRAKE SYSTEM    |  |                                            |
|-----------------|--|--------------------------------------------|
| Service brake   |  | Hydraulic power brake                      |
| - Type of brake |  | Oil-immersed multi-disc                    |
| - Type of order |  | Foot-operated for the front and rear axles |
| Parking brake   |  | Low pressure brake                         |
| - Type of brake |  | Disk on gearbox output                     |
| - Type of order |  | Electro-hydraulics                         |

| HYDRAULIC CIRCUIT              |                 |                                        |             |
|--------------------------------|-----------------|----------------------------------------|-------------|
| Hydraulic pump                 |                 |                                        |             |
| - Type                         |                 | Gears with flow divider on 2nd housing |             |
|                                |                 | 1st housing                            | 2nd housing |
| - Displacement                 | cm <sup>3</sup> | 44                                     | 27          |
| - Max. rating capacity unladen | ℓ/min           | 103                                    | 63          |
| - Flow at 1600 rpm             | ℓ/min           | 70                                     | 43          |
| Filtration                     |                 |                                        |             |
| - Back                         | μm              | 16                                     | 16          |
| - Suction                      | μm              | 135                                    | 135         |
| Maximum working pressure       |                 | 270                                    |             |
| - Telescoping circuit          | bar             | 210/ 270                               |             |
| - Lift circuit                 | bar             | 210/ 270                               |             |
| - Tilt circuit                 | bar             | 270/ 200                               |             |
| - Circuit stabilizers          | bar             | 270                                    |             |
| - Frame leveling circuit       | bar             | 270                                    |             |
| - Attachment circuit (OPTION)  | bar             | 270                                    |             |
| - Steering circuit             | bar             | 140                                    |             |

| HYDRAULIC MOVEMENTS                               |           |             |  |
|---------------------------------------------------|-----------|-------------|--|
| Longitudinal stability limiter and warning device |           | Electronics |  |
| Lifting motions (boom retracted)                  |           |             |  |
| - Unladen lifting                                 | s - m/min | 17,3 - 23,2 |  |
| - Laden lifting                                   | s - m/min | 17,3 - 23,2 |  |
| - Unladen lowering                                | s - m/min | 12,7 - 31,7 |  |
| - Laden lowering                                  | s - m/min | 12,6 - 31,9 |  |
| Telescoping motions (boom raised)                 |           |             |  |
| - Unladen extending                               | s - m/min | 16,1 - 13,6 |  |
| - Laden extending                                 | s - m/min | 16,5 - 13,9 |  |
| - Unladen retracting                              | s - m/min | 15,6 - 14,3 |  |
| - Laden retracting                                | s - m/min | 15 - 14,9   |  |
| Tilting movements                                 |           |             |  |
| - Crowd unladen                                   | s - °/s   | 5 - 25,2    |  |
| - Unladen dump                                    | s - °/s   | 4 - 31,5    |  |

| SOUND AND VIBRATION                                                                                                         |                  |                                                      |  |
|-----------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------|--|
| Sound pressure level in the driver's cab LpA<br>(according to standard NF EN 12053)                                         | dB(A)            | 82 (cab closed); xx (cab open)                       |  |
| Sound pressure (according to Directive 2009/76)                                                                             | dB(A)            | xx (cab closed); xx (cab open)                       |  |
| Guaranteed sound power level in the environment LwA<br>(according to Directive 2000/14/EC modified by Directive 2005/88/EC) | dB(A)            | 105 (measured); 106 (guaranteed)                     |  |
| Sound level in motion (according to Directive 2009/63)                                                                      | dB(A)            | xx                                                   |  |
| Average weighted acceleration on driver's body<br>(according to standard NF EN 13059)                                       | m/s <sup>2</sup> | 0,985                                                |  |
| The average weighted acceleration transmitted to the driver's hand/<br>arm system (according to standard ISO 5349-2)        | m/s <sup>2</sup> | < 2,5                                                |  |
| Standard seat vibration                                                                                                     | m/s <sup>2</sup> | xx (lightweight operator); xx (heavyweight operator) |  |

## SPECIFICATIONS AND WEIGHTS

|                                                                                                |   |                    |                |
|------------------------------------------------------------------------------------------------|---|--------------------|----------------|
| Speed of movement for lift truck in standard configuration on flat ground                      |   |                    |                |
| - Front unladen                                                                                | 1 | km/h               | 5,1            |
|                                                                                                | 2 | km/h               | 8,1            |
|                                                                                                | 3 | km/h               | 15             |
|                                                                                                | 4 | km/h               | 25             |
| - Rear unladen                                                                                 | 1 | km/h               | 5,4            |
|                                                                                                | 2 | km/h               | 8,1            |
|                                                                                                | 3 | km/h               | 15             |
|                                                                                                | 4 | km/h               | 25             |
| Standard attachment                                                                            |   |                    | TFF 45 MT 1040 |
| - Weight of attachment (without forks)                                                         |   | kg                 | 228            |
| - Weight of forks (each)                                                                       |   | kg                 | 71             |
| Rated capacity with standard attachment                                                        |   | kg                 | 4000           |
| Tipping load at maximum reach on stabilizers                                                   |   | kg                 | 1110           |
| Distance from the center of gravity of the load to the base of the forks                       |   | mm                 | 500            |
| Standard lifting height                                                                        |   | mm                 | 17550          |
| Lift truck weight without attachment                                                           |   | kg                 | 11260          |
| Weight of lift truck with standard attachment                                                  |   |                    |                |
| - Unladen                                                                                      |   | kg                 | 11630          |
| - At rated load                                                                                |   | kg                 | 15630          |
| Weight per axle with standard attachment (transport position)                                  |   |                    |                |
| - Front unladen                                                                                |   | kg                 | 5480           |
| - Rear unladen                                                                                 |   | kg                 | 6150           |
| - Front rated load                                                                             |   | kg                 | 12930          |
| - Rear rated load                                                                              |   | kg                 | 2700           |
| Weight per axle with standard attachment (boom extended)                                       |   |                    |                |
| - Front rated load                                                                             |   | kg                 | 11450          |
| - Rear rated load                                                                              |   | kg                 | 580            |
| Contact pressure on the ground of the total surface of each stabilizer at maximum tipping load |   | kg/cm <sup>2</sup> | 4,97           |
| Tractive effort on the coupling hook                                                           |   |                    |                |
| - Unladen (sliding)                                                                            |   | daN                | 7400           |
| - At rated load (transmission setting)                                                         |   | daN                | 10000          |
| Break-out force with bucket (according to standard ISO 8313)                                   |   | daN                | 7500           |



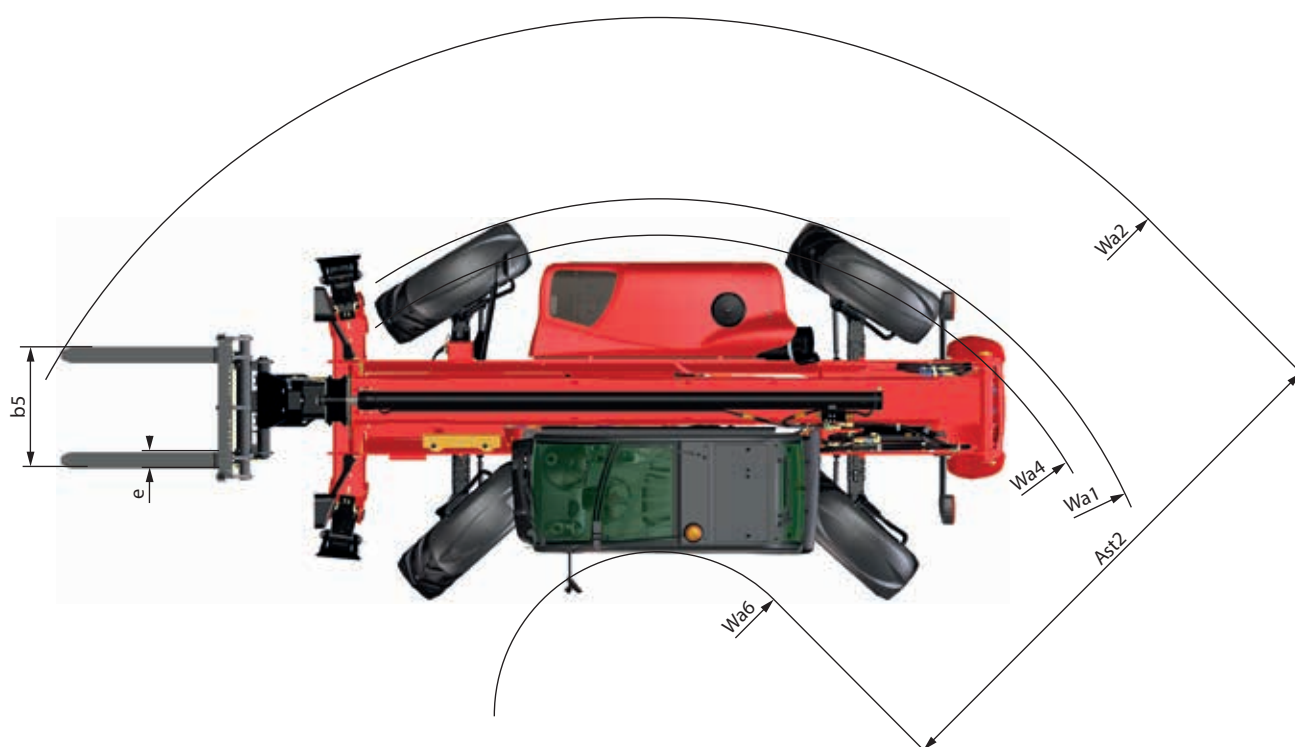
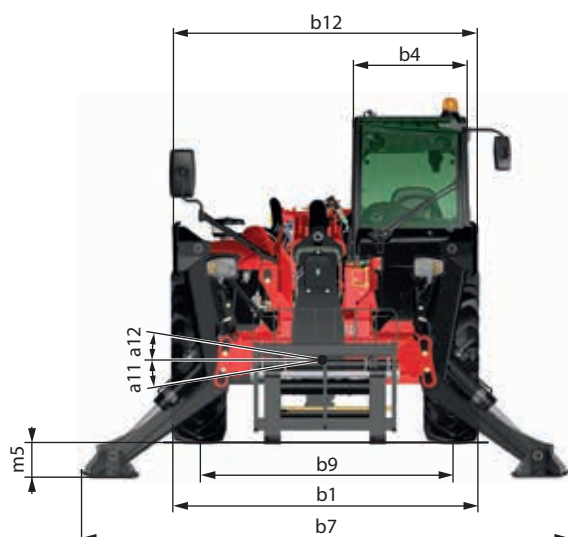
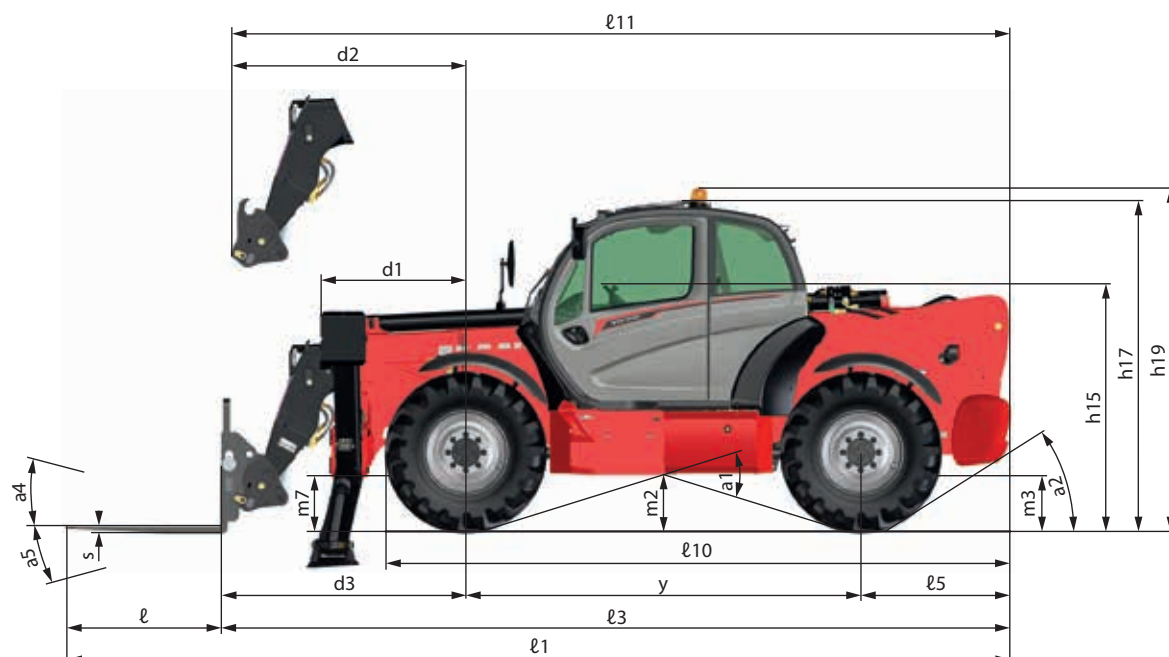
## TIRES

| MT-X 1440 100P ST3A S2 |                                 | PRESSURE<br>(bar) | LOAD PER TIRE<br>(kg) |               |                |              |
|------------------------|---------------------------------|-------------------|-----------------------|---------------|----------------|--------------|
|                        |                                 |                   | FRONT UNLADEN         | FRONT (LADEN) | REAR (UNLADEN) | REAR (LADEN) |
| ALLIANCE               | 400/80-24 A325 162A8 TOUGH TRAC | 5                 | 2650                  | 6300          | 2900           | 1250         |
| MICHELIN               | 400/80-24 162A8 IND TL PCL      | 5                 |                       |               |                |              |
|                        | 440/80-24 168A8 IND TL PCL      | 4.3               |                       |               |                |              |

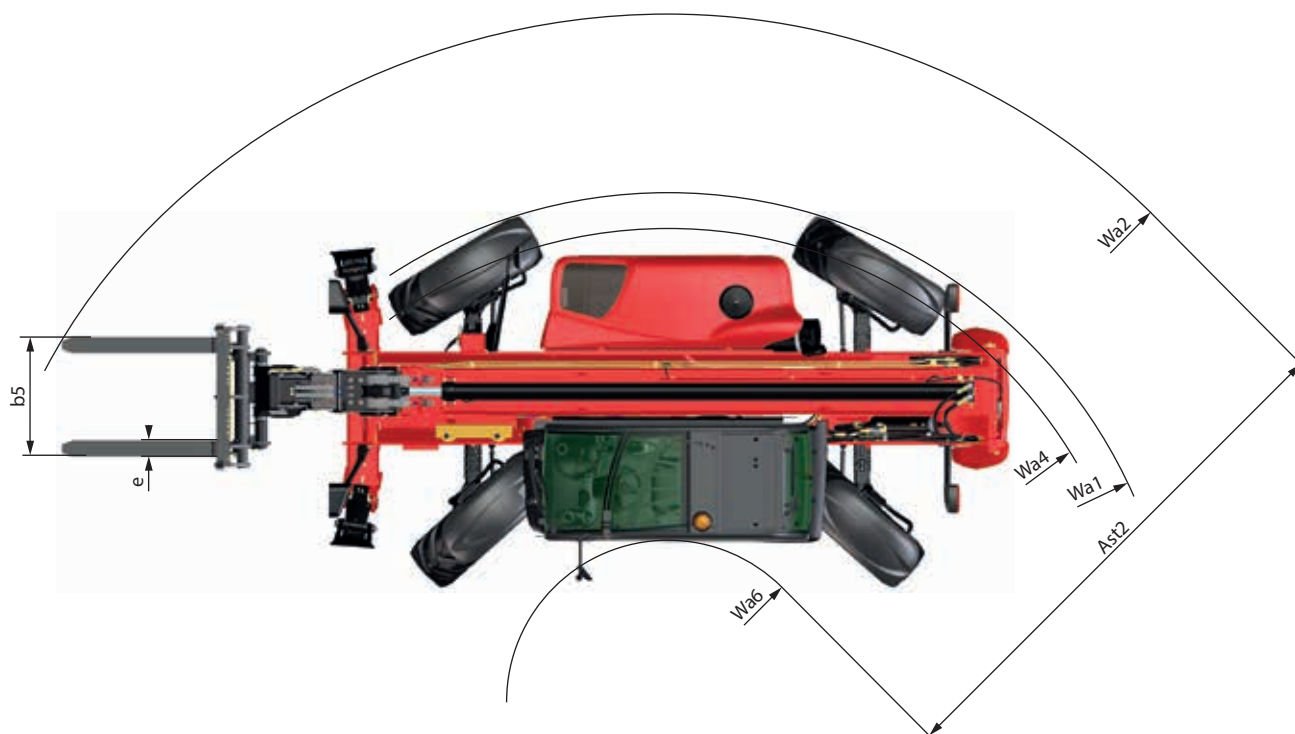
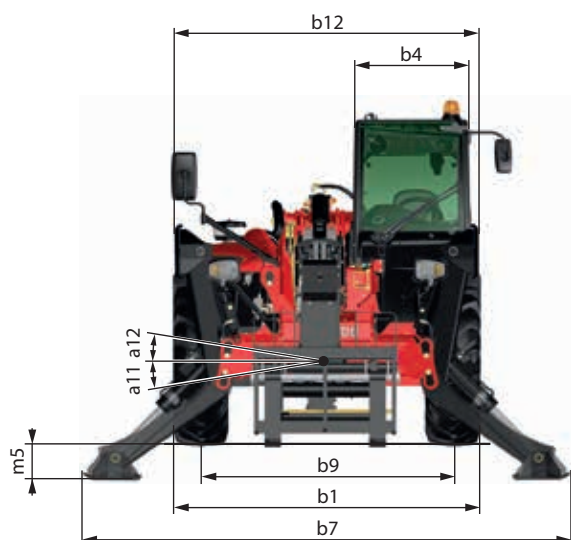
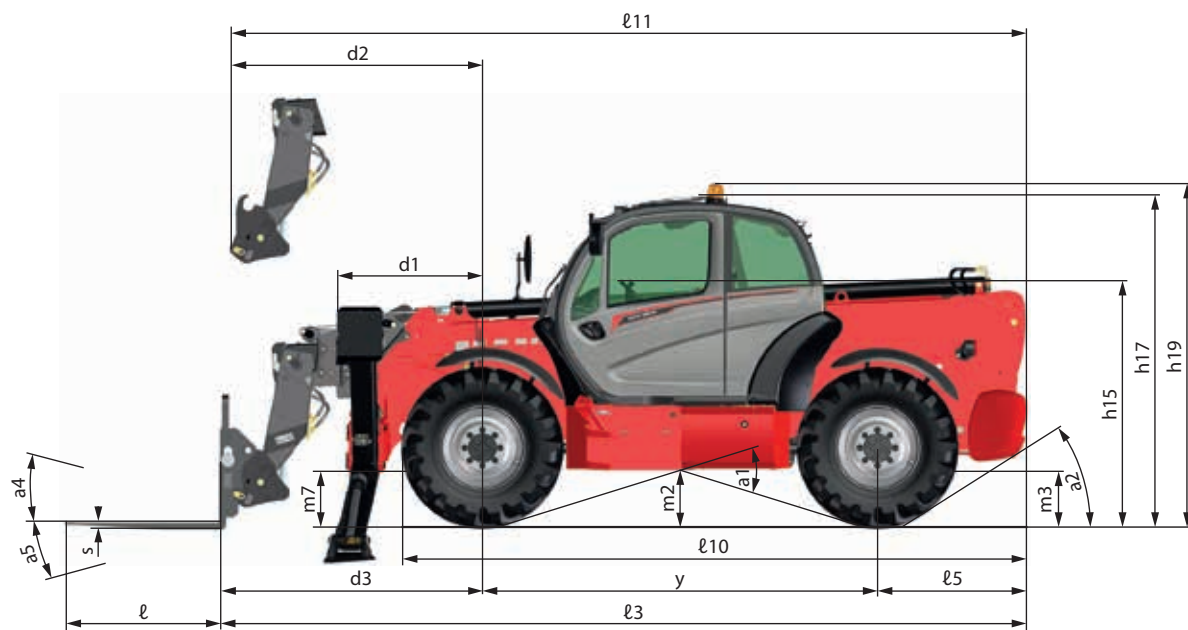
| MT-X 1440 100P ST3A S2 |                                 | PRESSURE<br>(bar) | LOAD<br>(kg) | GROUND CONTACT PRESSURE<br>(kg/cm <sup>2</sup> ) |             | GROUND CONTACT AREA<br>(cm <sup>2</sup> ) |             |
|------------------------|---------------------------------|-------------------|--------------|--------------------------------------------------|-------------|-------------------------------------------|-------------|
|                        |                                 |                   |              | HARD GROUND                                      | SOFT GROUND | HARD GROUND                               | SOFT GROUND |
| ALLIANCE               | 400/80-24 A325 162A8 TOUGH TRAC | 5                 | 1250         | 6.52                                             | 2.49        | 191                                       | 501         |
|                        |                                 |                   | 2650         | 7.64                                             | 3.02        | 347                                       | 877         |
|                        |                                 |                   | 2900         | 7.78                                             | 3.06        | 373                                       | 948         |
|                        |                                 |                   | 6300         | 10.25                                            | 4.24        | 614                                       | 1483        |
| MICHELIN               | 400/80-24 162A8 IND TL PCL      | 5                 | 1250         | 7.23                                             | 0.78        | 173                                       | 1593        |
|                        |                                 |                   | 2650         | 9.39                                             | 1.33        | 282                                       | 2000        |
|                        |                                 |                   | 2900         | 9.70                                             | 1.41        | 299                                       | 2055        |
|                        |                                 |                   | 6300         | 12.73                                            | 2.03        | 495                                       | 3100        |
|                        | 440/80-24 168A8 IND TL PCL      | 4.3               | 1250         | 6.73                                             | 0.76        | 183                                       | 1609        |
|                        |                                 |                   | 2650         | 8.85                                             | 1.30        | 301                                       | 2044        |
|                        |                                 |                   | 2900         | 9.08                                             | 1.32        | 317                                       | 2122        |
|                        |                                 |                   | 6300         | 11.90                                            | 2.00        | 528                                       | 3179        |

| MT-X 1840 100P ST3A S2 |                                                      | PRESSURE<br>(bar) | LOAD PER TIRE<br>(kg) |               |                |              |
|------------------------|------------------------------------------------------|-------------------|-----------------------|---------------|----------------|--------------|
|                        |                                                      |                   | FRONT UNLADEN         | FRONT (LADEN) | REAR (UNLADEN) | REAR (LADEN) |
| ALLIANCE               | 400/80-24 A325 162A8 TOUGH TRAC                      | 5                 | 2750                  | 6450          | 3050           | 1350         |
|                        | 440/80-24 A325 168A8 ATG                             | 4.5               |                       |               |                |              |
| MICHELIN               | 400/80-24 162A8 IND TL PCL                           | 5                 |                       |               |                |              |
|                        | 440/80-24 168A8 IND TL PCL                           | 4.5               |                       |               |                |              |
|                        | 440/80 R24 161A8/161B IND TL<br>BIBLOAD HARD SURFACE | 4.1               |                       |               |                |              |

| MT-X 1840 100P ST3A S2 |                                                      | PRESSURE<br>(bar) | LOAD<br>(kg) | GROUND CONTACT PRESSURE<br>(kg/cm2) |             | GROUND CONTACT AREA<br>(cm2) |             |
|------------------------|------------------------------------------------------|-------------------|--------------|-------------------------------------|-------------|------------------------------|-------------|
|                        |                                                      |                   |              | HARD GROUND                         | SOFT GROUND | HARD GROUND                  | SOFT GROUND |
| ALLIANCE               | 400/80-24 A325 162A8 TOUGH TRAC                      | 5                 | 1350         | 6.68                                | 2.56        | 202                          | 528         |
|                        |                                                      |                   | 2750         | 7.31                                | 2.81        | 376                          | 979         |
|                        |                                                      |                   | 3050         | 7.69                                | 3.06        | 397                          | 998         |
|                        |                                                      |                   | 6450         | 10.21                               | 4.25        | 632                          | 1516        |
|                        | 440/80-24 A325 168A8 ATG                             | 4.5               | 1350         | 7.69                                | 2.96        | 176                          | 456         |
|                        |                                                      |                   | 2750         | 7.81                                | 3.06        | 352                          | 900         |
|                        |                                                      |                   | 3050         | 8.04                                | 3.06        | 379                          | 996         |
|                        |                                                      |                   | 6450         | 9.61                                | 3.90        | 671                          | 1655        |
| MICHELIN               | 400/80-24 162A8 IND TL PCL                           | 5                 | 1350         | 7.40                                | 0.83        | 181                          | 1616        |
|                        |                                                      |                   | 2750         | 9.52                                | 1.37        | 289                          | 2007        |
|                        |                                                      |                   | 3050         | 9.85                                | 1.44        | 309                          | 2116        |
|                        |                                                      |                   | 6450         | 12.82                               | 2.05        | 503                          | 3145        |
|                        | 440/80-24 168A8 IND TL PCL                           | 4.5               | 1350         | 7.02                                | 0.82        | 191                          | 1645        |
|                        |                                                      |                   | 2750         | 8.50                                | 1.26        | 322                          | 2166        |
|                        |                                                      |                   | 3050         | 8.78                                | 1.34        | 347                          | 2268        |
|                        |                                                      |                   | 6450         | 11.01                               | 1.88        | 585                          | 3428        |
|                        | 440/80 R24 161A8/161B IND TL<br>BIBLOAD HARD SURFACE | 4.1               | 1350         |                                     |             |                              |             |
|                        |                                                      |                   | 2750         |                                     |             |                              |             |
|                        |                                                      |                   | 3050         |                                     |             |                              |             |
|                        |                                                      |                   | 6450         |                                     |             |                              |             |

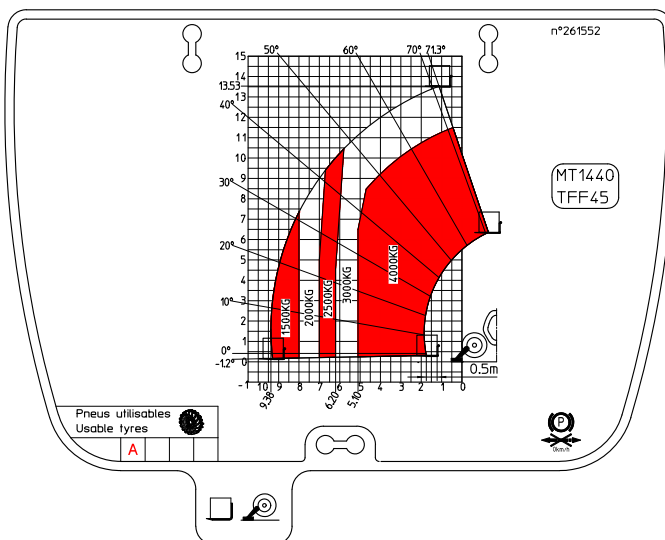
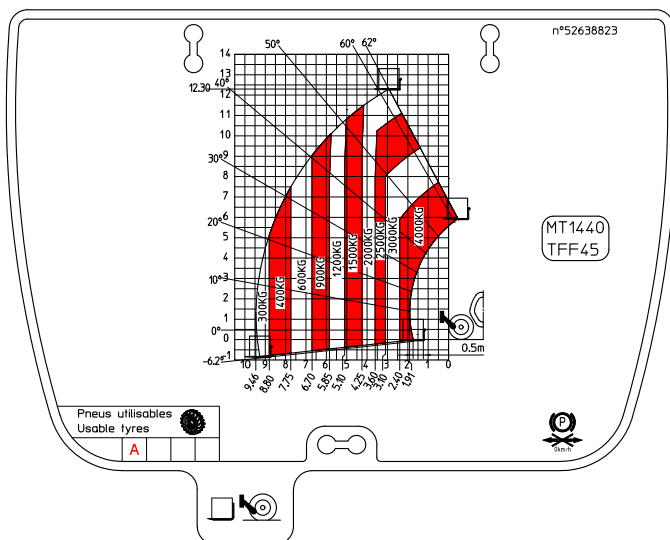


|                  |             |    |      |
|------------------|-------------|----|------|
| MACHINE LENGTH   | <b>ℓ1</b>   | mm | 7335 |
|                  | <b>ℓ3</b>   | mm | 6135 |
|                  | <b>ℓ5</b>   | mm | 1160 |
|                  | <b>ℓ10</b>  | mm | 4859 |
|                  | <b>ℓ11</b>  | mm | 6020 |
| MACHINE WIDTH    | <b>b1</b>   | mm | 2364 |
|                  | <b>b4</b>   | mm | 892  |
|                  | <b>b5</b>   | mm | 1040 |
|                  | <b>b7</b>   | mm | 3793 |
|                  | <b>b9</b>   | mm | 1960 |
|                  | <b>b10</b>  | mm | 1960 |
| MACHINE HEIGHT   | <b>b12</b>  | mm | 2422 |
|                  | <b>h15</b>  | mm | 1855 |
|                  | <b>h17</b>  | mm | 2452 |
|                  | <b>h19</b>  | mm | 2640 |
| DISTANCE         | <b>d1</b>   | mm | 1134 |
|                  | <b>d2</b>   | mm | 1790 |
|                  | <b>d3</b>   | mm | 1905 |
| AISLE WIDTH      | <b>Ast2</b> | mm | 4310 |
| ATTACHMENT       | <b>ℓ</b>    | mm | 1200 |
|                  | <b>s</b>    | mm | 50   |
|                  | <b>e</b>    | mm | 125  |
| TURNING RADIUS   | <b>Wa1</b>  | mm | 3940 |
|                  | <b>Wa2</b>  | mm | 5410 |
|                  | <b>Wa4</b>  | mm | 3738 |
|                  | <b>Wa6</b>  | mm | 1100 |
| GROUND CLEARANCE | <b>m2</b>   | mm | 367  |
|                  | <b>m3</b>   | mm | 380  |
|                  | <b>m5</b>   | mm | 355  |
|                  | <b>m7</b>   | mm | 384  |
| ANGLE            | <b>a1</b>   | °  | 34   |
|                  | <b>a2</b>   | °  | 33   |
|                  | <b>a4</b>   | °  | 12   |
|                  | <b>a5</b>   | °  | 114  |
|                  | <b>a11</b>  | °  | 9    |
|                  | <b>a12</b>  | °  | 9    |
| WHEELBASE        | <b>y</b>    | mm | 3070 |

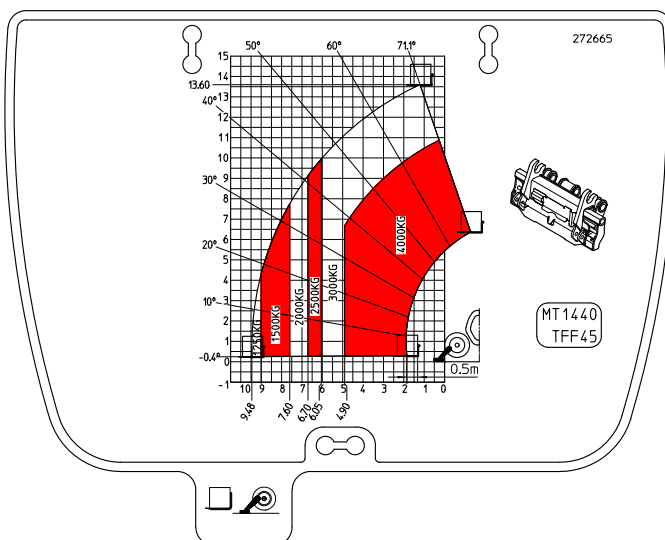
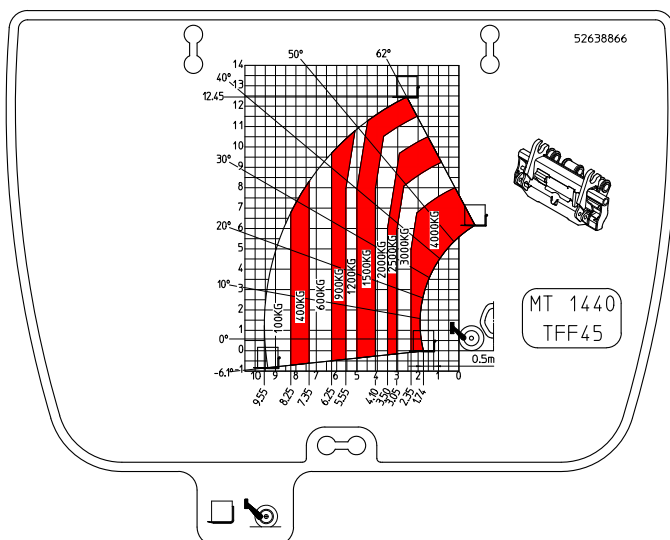


|                  |             |    |      |
|------------------|-------------|----|------|
| MACHINE LENGTH   | <b>ℓ1</b>   | mm | 7474 |
|                  | <b>ℓ3</b>   | mm | 6274 |
|                  | <b>ℓ5</b>   | mm | 1160 |
|                  | <b>ℓ10</b>  | mm | 4859 |
|                  | <b>ℓ11</b>  | mm | 6159 |
| MACHINE WIDTH    | <b>b1</b>   | mm | 2364 |
|                  | <b>b4</b>   | mm | 892  |
|                  | <b>b5</b>   | mm | 1040 |
|                  | <b>b7</b>   | mm | 3793 |
|                  | <b>b9</b>   | mm | 1960 |
|                  | <b>b10</b>  | mm | 1960 |
| MACHINE HEIGHT   | <b>b12</b>  | mm | 2422 |
|                  | <b>h15</b>  | mm | 1855 |
|                  | <b>h17</b>  | mm | 2452 |
|                  | <b>h19</b>  | mm | 2640 |
| DISTANCE         | <b>d1</b>   | mm | 1134 |
|                  | <b>d2</b>   | mm | 1929 |
|                  | <b>d3</b>   | mm | 2044 |
| AISLE WIDTH      | <b>Ast2</b> | mm | 4360 |
| ATTACHMENT       | <b>ℓ</b>    | mm | 1200 |
|                  | <b>s</b>    | mm | 50   |
|                  | <b>e</b>    | mm | 125  |
| TURNING RADIUS   | <b>Wa1</b>  | mm | 3940 |
|                  | <b>Wa2</b>  | mm | 5460 |
|                  | <b>Wa4</b>  | mm | 3738 |
|                  | <b>Wa6</b>  | mm | 1100 |
| GROUND CLEARANCE | <b>m2</b>   | mm | 367  |
|                  | <b>m3</b>   | mm | 380  |
|                  | <b>m5</b>   | mm | 355  |
|                  | <b>m7</b>   | mm | 384  |
| ANGLE            | <b>a1</b>   | °  | 34   |
|                  | <b>a2</b>   | °  | 33   |
|                  | <b>a4</b>   | °  | 16   |
|                  | <b>a5</b>   | °  | 110  |
|                  | <b>a11</b>  | °  | 9    |
|                  | <b>a12</b>  | °  | 9    |
| WHEELBASE        | <b>y</b>    | mm | 3070 |

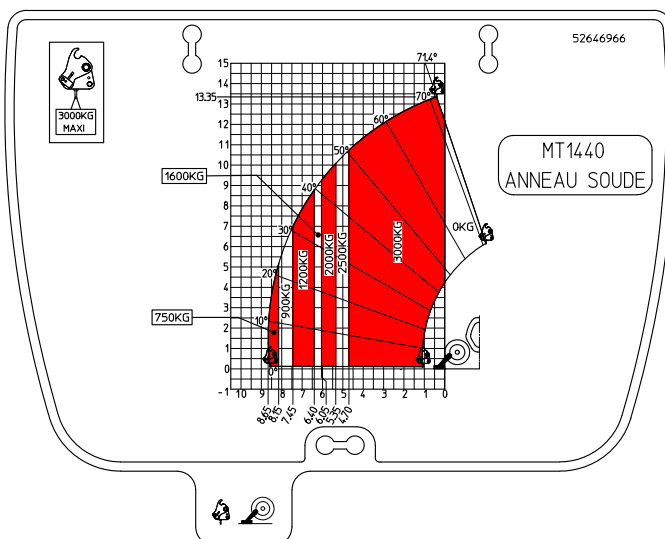
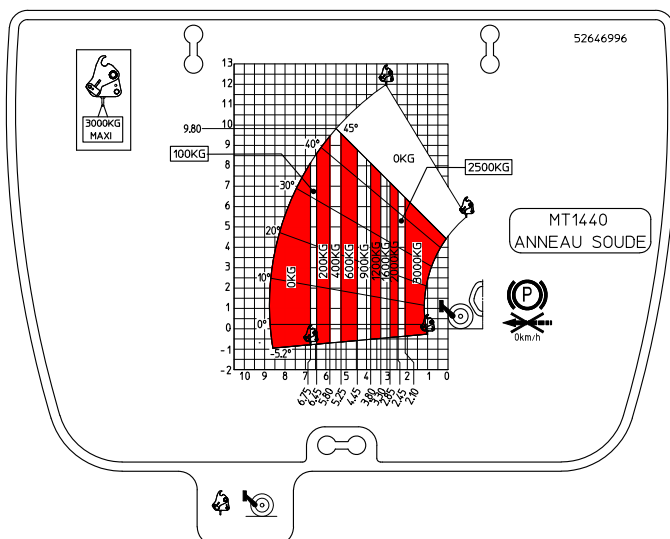
## STANDARD



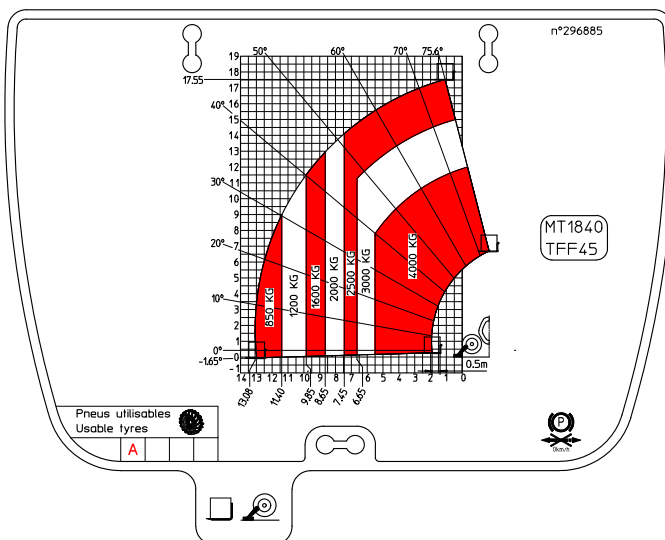
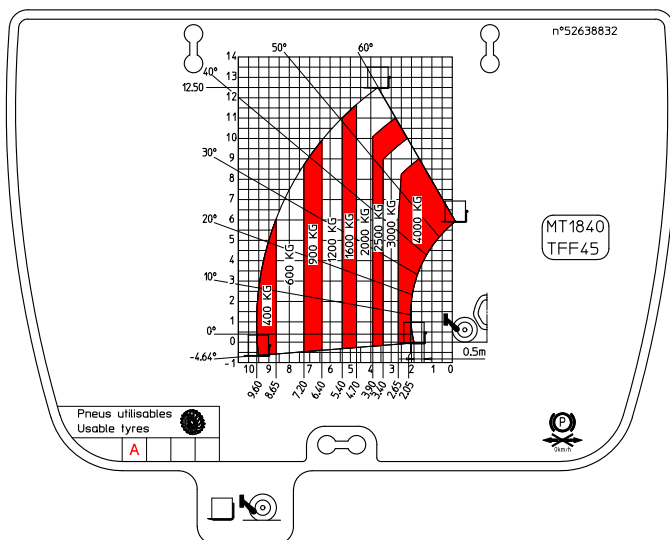
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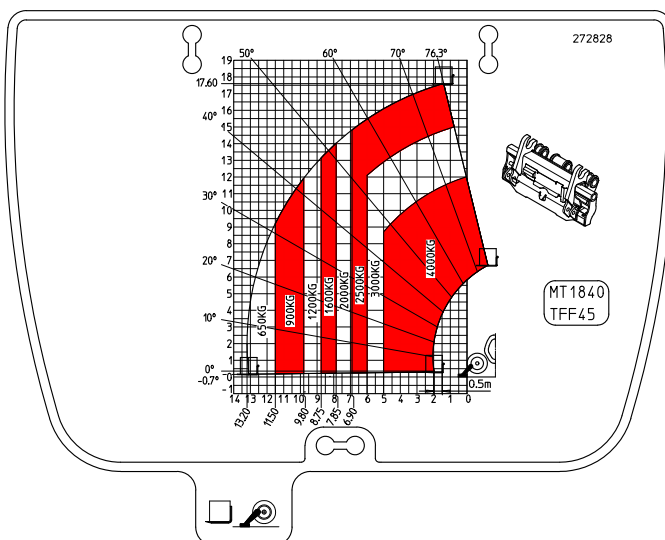
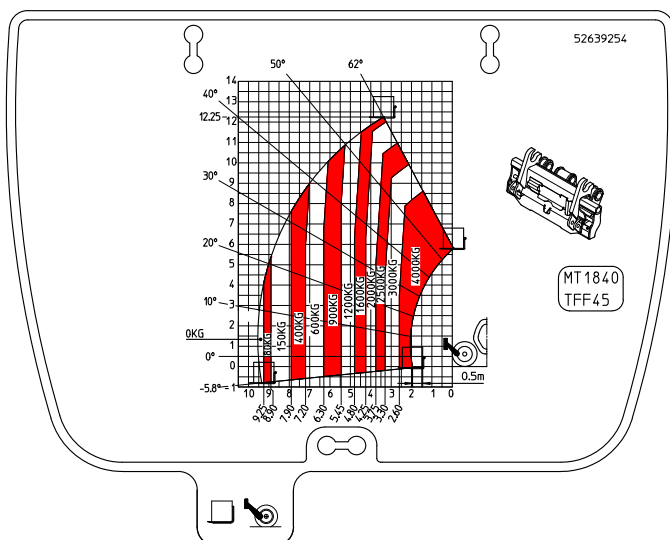
## LIFTING RING ON SINGLE CARRIAGE (OPTION)



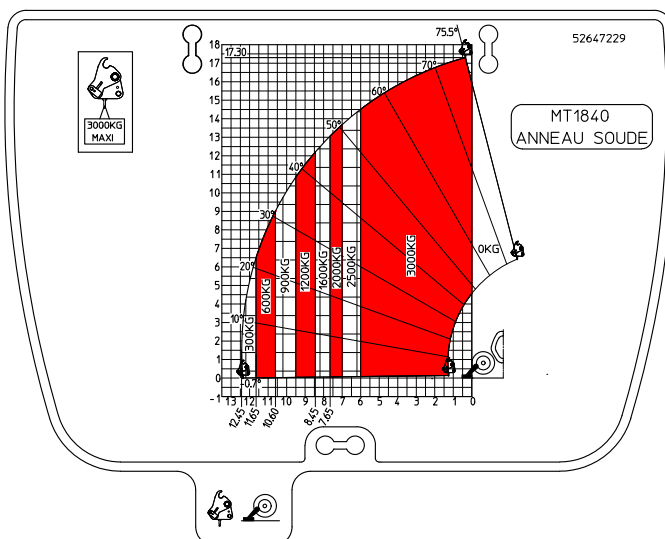
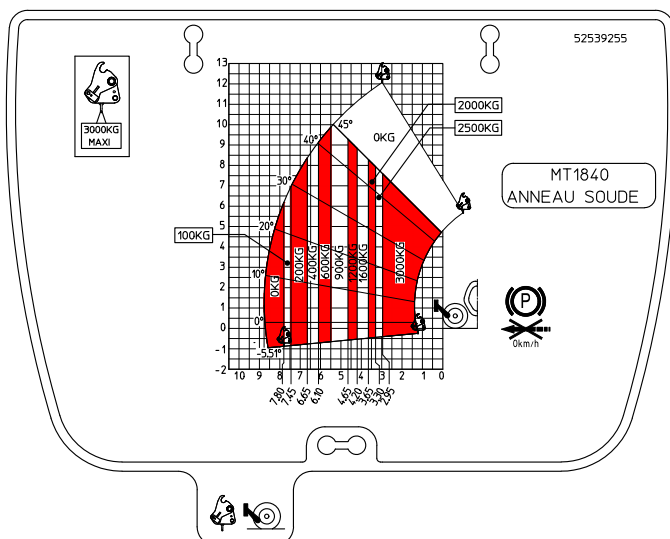
## STANDARD



## LATERAL SIMPLE ATTACHMENT CARRIAGE (OPTION)



## LIFTING RING ON SINGLE CARRIAGE (OPTION)



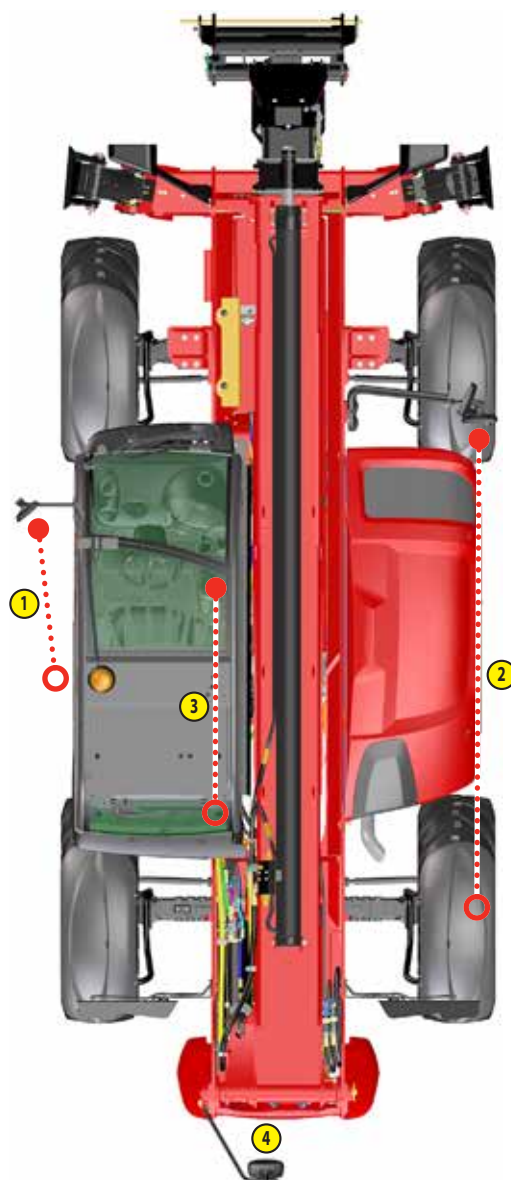
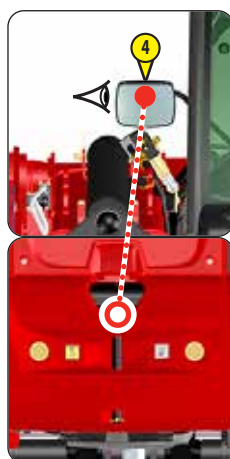
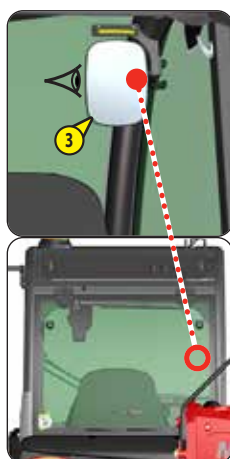
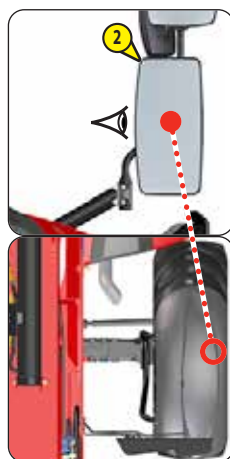
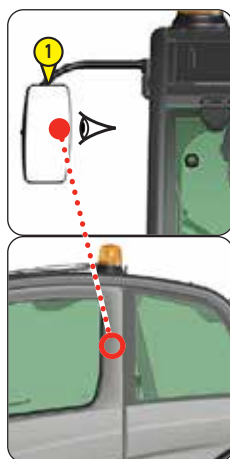
We use European standard EN15830 relating to operator visibility.

- Adhere to the instructions for optimizing operator visibility in the immediate vicinity (≤ 1 - OPERATING AND SAFETY INSTRUCTIONS: OPERATOR INSTRUCTIONS: OPERATING INSTRUCTIONS WITH AND WITHOUT LOAD: D - VISIBILITY).

## DESCRIPTION AND ADJUSTMENT OF REAR-VIEW MIRRORS

- 1 - LEFT REAR-VIEW MIRROR
- 2 - MAIN RIGHT REAR-VIEW MIRROR
- 3 - INSIDE REAR-VIEW MIRROR (OPTION)
- 4 - REAR-VIEW MIRROR (OPTION)

- Place the lift truck on level ground with the engine stopped, and the boom retracted and lowered as far as possible.
- Note the position of the reference points ●...○ in the illustrations, to see and correctly adjust the rear-view mirrors.



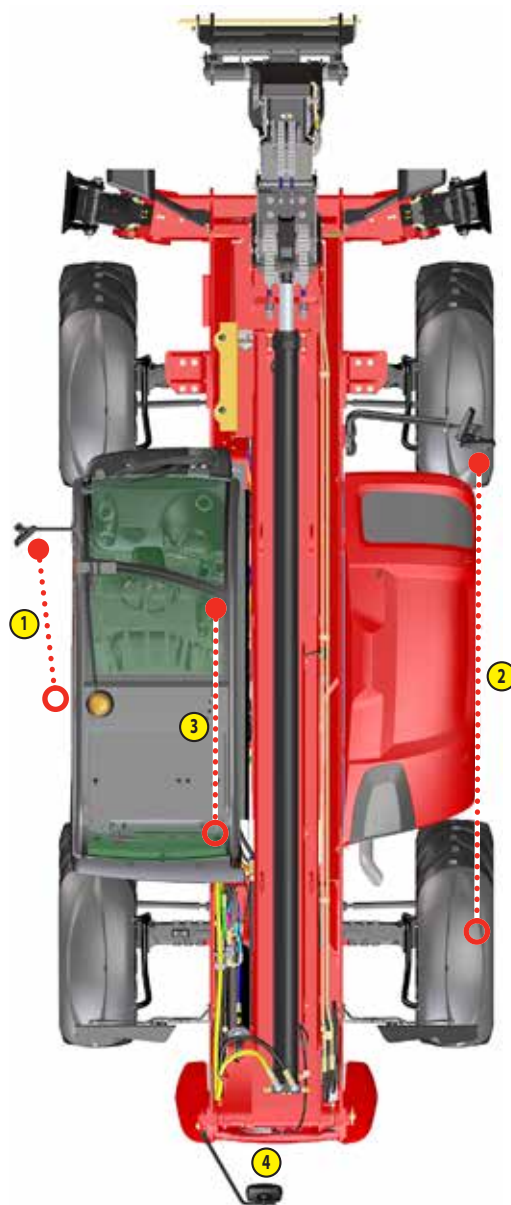
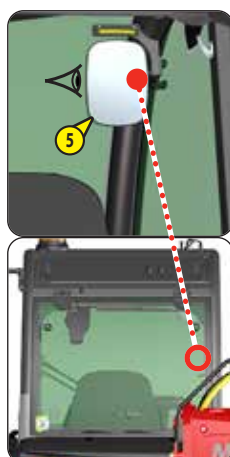
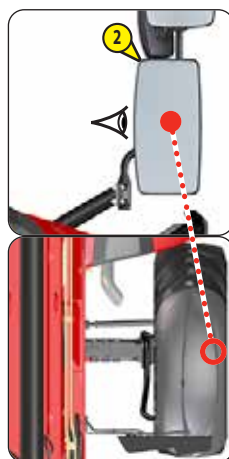
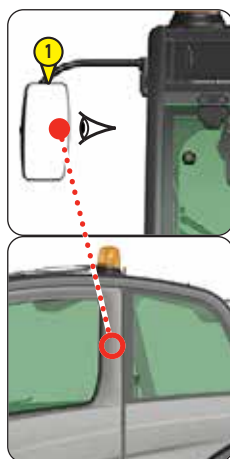
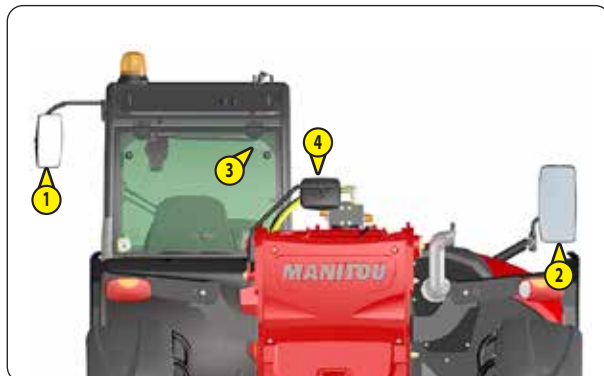
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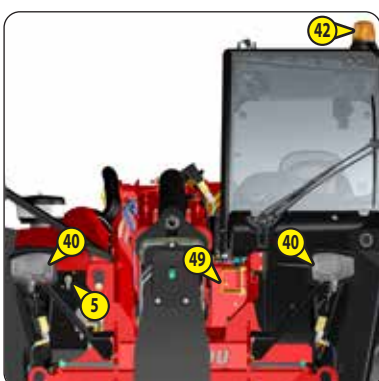
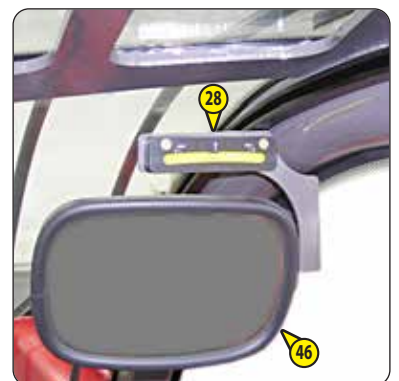


## INSTRUMENTS AND CONTROLS

### DESCRIPTION

N.B.: All the terms such as: RIGHT, LEFT, FRONT, REAR are as seen by an observer occupying the driver's seat and looking straight ahead.

|                                                                |      |
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## 1 - DRIVER'S CAB ACCESS

- Face the driver's cab access to get in and out, and always use the three support points provided for this purpose.
  - 1 - Left handle.
  - 2 - Right handle.
  - 3 - Step.



## 2 - DRIVER'S SEAT

### DRIVER'S SEAT (STANDARD)

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

#### LONGITUDINAL ADJUSTMENT

- Unlock the locking lever 1.
- Slide the seat to the desired position.
- Release the lever and be sure it returns to the lock position.

#### SEAT HEIGHT ADJUSTMENT

- Sit down correctly in the seat.
- Turn the knob 2 according to the desired height, clockwise to raise, counterclockwise to lower.



#### SEAT SUSPENSION ADJUSTMENT

- Make sure that the indicator 3 is in the green zone.

#### BACKREST ANGLE ADJUSTMENT

- Hold the backrest, push the lever 4 backward and tilt the backrest to the desired position.

**⚠ IMPORTANT ⚠**

*If you do not support the backrest when making adjustments, it swings completely forward.*

### DRIVER'S SEAT (OPTION)

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

#### SEAT HEIGHT ADJUSTMENT

- Sit down correctly in the seat.
- Turn the knob 1 according to the desired height, clockwise to raise, counterclockwise to lower, ensuring that the green indicator lamp 2 remains visible.
- If indicator lamp 2 is red, re-adjust the height.

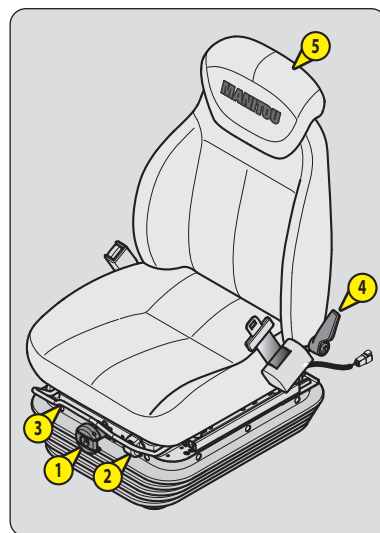
N.B.: The seat is designed so as not to require adjustment according to the driver's weight.

#### LONGITUDINAL ADJUSTMENT

- Pull lever 3 upward.
- Slide the seat to the desired position.
- Release the lever and be sure it returns to the lock position.

#### BACKREST ANGLE ADJUSTMENT

- Hold the backrest, push the lever 4 backward and tilt the backrest to the desired position.



**⚠ IMPORTANT ⚠**

*If you do not support the backrest when making adjustments, it swings completely forward.*

#### HEADREST

- The height of the headrest 5 can be adjusted by pulling it upward (the notches will click) up to the stop.
- The headrest can be removed by applying sufficient pressure to pull it off the stop.

### LOW FREQUENCY DRIVER'S PNEUMATIC SEAT (OPTION)

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

#### **SEAT HEIGHT ADJUSTMENT**

- Sit down correctly in the seat.
- Switch on lift truck ignition.
- Pull or push lever 1 according to the desired height, making sure that the green indicator lamp 2 remains visible.
- If indicator lamp 2 is red, re-adjust the height.

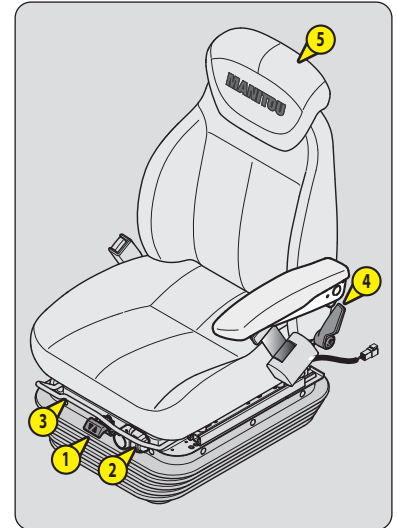
N.B.: The seat is designed so as not to require adjustment according to the driver's weight.

#### **LONGITUDINAL ADJUSTMENT**

- Pull lever 3 upward.
- Slide the seat to the desired position.
- Release the lever and be sure it returns to the lock position.

#### **BACKREST ANGLE ADJUSTMENT**

- Hold the backrest, push the lever 4 backward and tilt the backrest to the desired position.



#### **⚠ IMPORTANT ⚠**

*If you do not support the backrest when making adjustments, it swings completely forward.*

#### **HEADREST**

- The height of the headrest 5 can be adjusted by pulling it upward (the notches will click) up to the stop.
- The headrest can be removed by applying sufficient pressure to pull it off the stop.

### DRIVER'S SEAT (OPTION)

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

#### **WEIGHT ADJUSTMENT (FIG. A)**

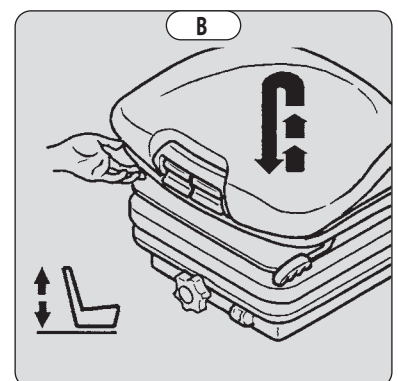
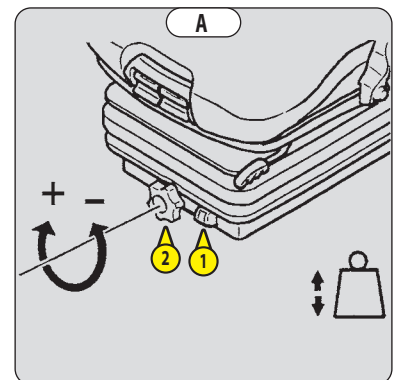
It is recommended to adjust the weight when the driver is not in the seat.

- Refer to graduation 1 of the seat.
- Turn handle 2 according to the driver's weight.

N.B.: To avoid health problems, it is recommended that the weight setting is checked and adjusted before starting the lift truck.

#### **SEAT HEIGHT ADJUSTMENT (FIG. B)**

- Raise the seat to the desired position, until you hear the ratchet click. If you raise the seat above the last notch (stop), the seat returns to the lowest position.



### SEAT BACKREST ANGLE ADJUSTMENT (FIG. C)

The backrest angle of the seat may be adjusted to suit the individual.

- Press the left-hand button while pushing on the seat or relaxing pressure on the seat to find a comfortable position.

### SEAT DEPTH ADJUSTMENT (FIG. D)

The seat depth can be individually adjusted.

- Press the right-hand button while raising or lowering the seat to find the desired position.

### HEADREST (FIG. E)

- The height of the headrest can be adjusted by pulling it upwards (the notches will click) up to the stop.
- The headrest can be removed by applying sufficient pressure to pull it off the stop.

### LUMBAR ADJUSTMENT (FIG. F)

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

- Turn the handle either left or right to adjust the height and depth of the lumbar support.

### BACKREST ANGLE ADJUSTMENT (FIG. G)

#### ⚠ IMPORTANT ⚠

*If you do not support the backrest when making adjustments, it swings completely forward.*

- Support the backrest, pull the lever and tilt the backrest to the desired position.

### LONGITUDINAL ADJUSTMENT (FIG. H)

- Adjust the locking lever until you reach the position required. Once locked, you can no longer move the seat into another position.

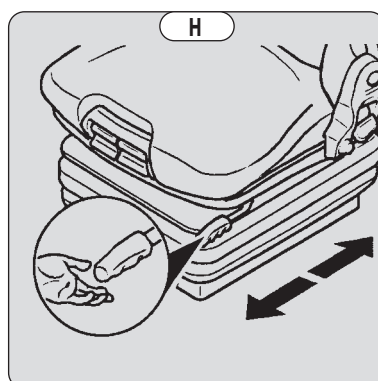
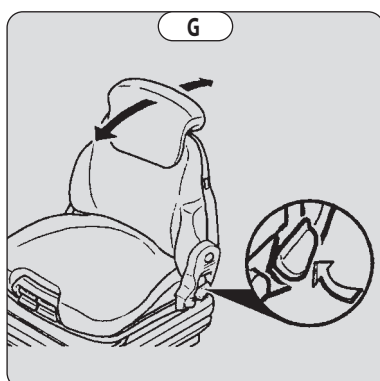
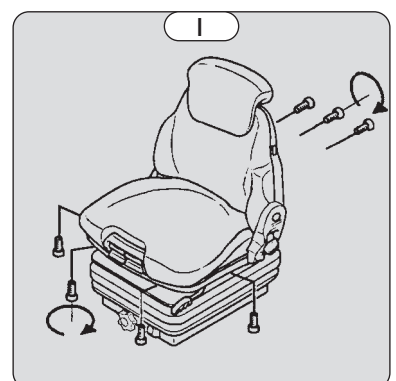
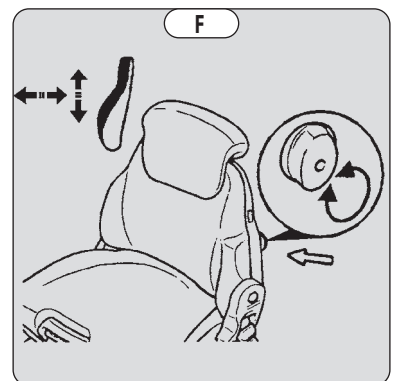
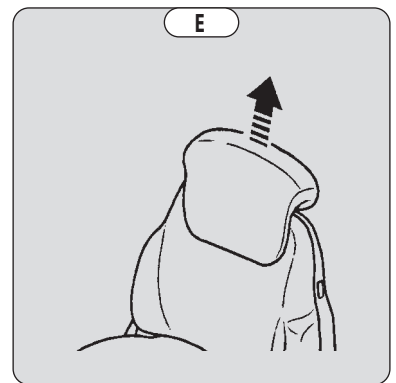
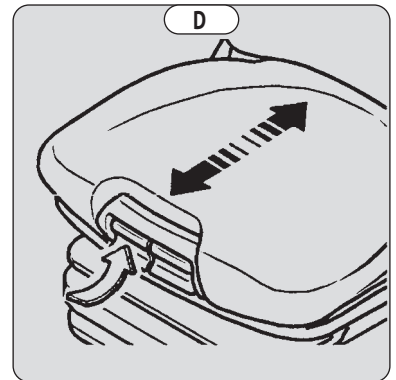
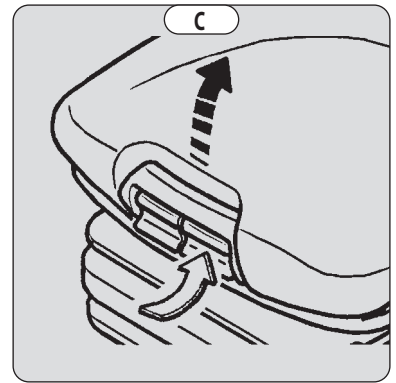
### MAINTENANCE (FIG. I)

#### ⚠ IMPORTANT ⚠

*A moving backrest increases the risk of an accident!*

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

- To clean or change the cushions, simply remove them from the seat frame.
- Avoid wetting the cushion fabric when cleaning it. Firstly check the resistance of the fabric on a small hidden area before using any fabric or plastic cleaner.



### 3 - SEAT BELT

#### **⚠ IMPORTANT ⚠**

*Under no circumstances must the lift truck be used if the seat belt is defective (fixing, locking, cuts, tears, etc.).  
Immediately repair or replace the seat 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.
- Adjust the seat belt to your body shape without compressing your pelvis and without excessive slack.

### 4 - IGNITION SWITCH

This key switch has 5 positions:

- P - Not used.
- O - Ignition cut-off and engine stop.
- I - Ignition + preheat.
- II - Not used.
- III - Start-up and returns to position I as soon as the key is released.

### 5 - BATTERY CUT-OFF

For quickly disconnecting the battery when working on the electric circuit or when soldering, for example.

#### **⚠ IMPORTANT ⚠**

*Operate the battery cut-off for a minimum of 30 seconds after having switched off the ignition with the ignition key.*



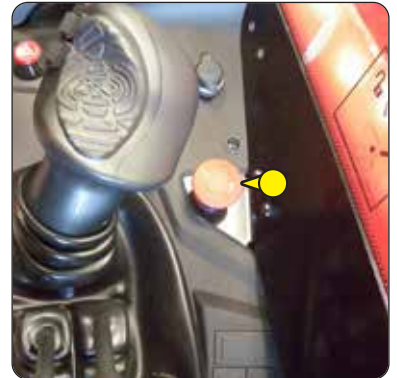
### 6 - EMERGENCY STOP

In the event of danger, it enables the engine to be shut down, thereby cutting-off all hydraulic movements.

#### **⚠ IMPORTANT ⚠**

*Be ready for hydraulic movements suddenly stopping when you press this button.  
Caution when traveling, sudden stopping of the lift truck by engagement of the parking brake.  
If possible stop the lift truck before using the emergency stop button.*

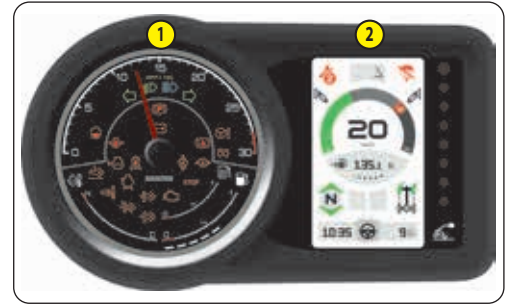
- Turn the knob to deactivate it before restarting the lift truck.



## 7 - DASHBOARD "HARMONY"

### 1 - INSTRUMENTS AND INDICATORS

#### 2 - INFORMATION SCREEN



### 1 - INSTRUMENTS AND INDICATORS

#### A - TACHOMETER

#### B - ENGINE WATER TEMPERATURE

The indicator lamps on the gauge are not used.

The indicator lamp  lights up red when the coolant temperature is too high. If the lamp comes on when the lift truck is running, stop the engine immediately and search the cooling circuit for the cause of the malfunction.

#### C - FUEL LEVEL

The indicator lamps on the gauge go on and off depending on the machine's fuel level.

The indicator lamp  lights up red when the machine switches to the fuel reserve. The machine's operating time is limited.

#### D - NOT USED



**MAIN BEAM INDICATOR LAMP**



**LOW BEAM INDICATOR LAMP**



**TURN SIGNAL INDICATOR LAMP**



**PARKING BRAKE INDICATOR LAMP**

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



**BATTERY LOAD FAULT INDICATOR**

If the indicator and the buzzer come on when the lift truck is running, stop the engine immediately and determine the cause (electric circuit, alternator belt, alternator, etc.).



**STEERING SYSTEM OIL PRESSURE FAULT INDICATOR**

If the indicator comes on when the lift truck is running, stop the engine immediately and determine the cause (possible leak, etc.).



**WATER IN FUEL PRE-FILTER FAULT INDICATOR**

The indicator light will come on when water is detected in the fuel pre-filter. Stop the lift truck and carry out the necessary repairs.



**BRAKE FLUID LEVEL WARNING INDICATOR**

If the indicator lamp and buzzer come on when the lift truck is running, stop the engine immediately and determine the cause (brake fluid level, possible leak, etc.). If the brake fluid level is abnormal, consult your dealer.





### **ENGINE OIL PRESSURE FAULT INDICATOR**

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

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



### **ENGINE PREHEATING INDICATOR**

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



### **GEARBOX OIL PRESSURE WARNING INDICATOR LAMP**

This light comes on when there is an abnormal drop in gearbox pressure. Stop the forklift truck and look for the cause (low oil level in the gearbox, internal leak in the gearbox, etc.).



### **GEARBOX OIL TEMPERATURE FAULT INDICATOR**

This light comes on when the temperature of the gear box oil is abnormally high. In this case, place the forward/reverse selector in neutral and leave the engine to idle for a few minutes. If the light remains on, stop the forklift truck and contact your dealer.

N.B.: Abnormal heating of the oil may be linked to incorrect use of the gear box ratios (◀ GEAR LEVER).



### **HYDRAULIC RETURN FILTER CLOGGING FAULT INDICATOR**

The indicator light and buzzer come on when the hydraulic return oil filter cartridge is clogged. If this indicator lamp comes on and stays on, the cartridge needs replacing. Stop the lift truck and carry out the necessary repairs (◀ 3 - MAINTENANCE: FILTER CARTRIDGES AND BELTS).

N.B.: This lamp may come on when starting the forklift truck, and it should go off when the hydraulic fluid reaches its operating temperature.



### **ENGINE COOLANT LEVEL FAULT INDICATOR**

If the indicator light and buzzer come on when the lift truck is in operation, stop the engine immediately and determine the cause (coolant level, possible leak, radiator, etc.).



### **ENGINE STOPPED FAULT INDICATOR**

If the indicator lights up or flashes when the lift truck is in operation, stop the engine immediately and consult your dealer.



### **AIR FILTER CLOGGING FAULT INDICATOR**

The light and the buzzer come on when the air filter cartridge is clogged. Stop the engine and carry out the necessary repairs (◀ 3 - MAINTENANCE: FILTER CARTRIDGES AND BELTS).

## 2 - INFORMATION SCREEN

 **BOOM ANGLE**

 **MAINTENANCE REQUIRED**

 **MAINTENANCE REQUIRED + ERROR CODE NUMBER**

 **HYDRAULIC MOVEMENT NEUTRALIZATION**

 **DISABLING "AGGRAVATING" HYDRAULIC MOVEMENT CUT-OFF**

 **STABILIZER POSITION INDICATORS**

 **GEAR RATIO**

 **WHEEL STEERING INDICATOR**

 **CLOCK**

 **DRIVING**

 **EXTERNAL TEMPERATURE**

 **HOUR METER**

 **SPEEDOMETER**

    **POP UP**

- Blue POP UP: information message.
- Grey POP UP: operating message.
- Orange POP UP: warning message.
- Red POP UP: fault message, consult your dealer.

 **INFORMATION SCREEN**

- Hold down the  or  button to choose.

-  Total hour meter.
-  Partial hour meter.
-  Instantaneous fuel consumption.
-  Average fuel consumption.
-  Fuel autonomy.
-  Tachometer.



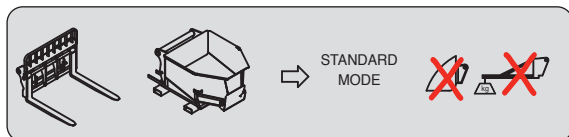
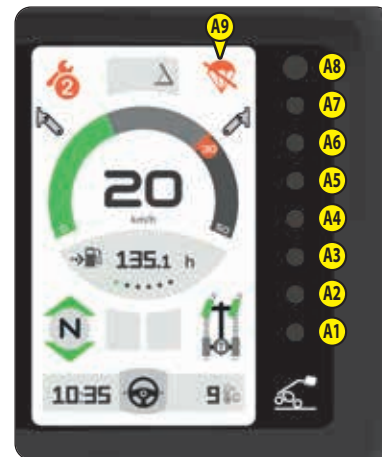
## 8 - LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE

### ⚠ IMPORTANT ⚠

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

This device warns the operator of the forklift truck's longitudinal stability limits. However, lateral stability can reduce the load chart in the upper part, and this reduction is not detected by the device.

Depending on the type of work required, the operating modes of the longitudinal stability limiter and warning device allow the operator to operate the lift truck in complete safety.

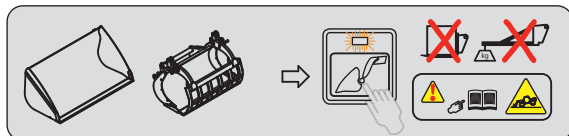


### "HANDLING" MODE

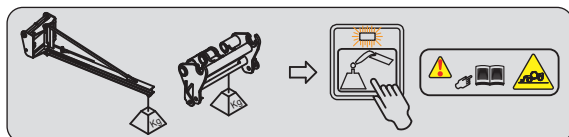
#### USE ON FORKS

- By default, the device is in "HANDLING MODE" each time the lift truck is started.
- Protection against tilting forward during aggravating movements is guaranteed, except when the telescope is retracted.

| STATUS OF THE DEVICE                                                                                                                                                      |                                                                                     |                  |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------|-------------------------------------------|
| HALTED                                                                                                                                                                    | SLOW SPEED 1 to 5 km/h                                                              | SPEED > 5 km/h   | TELESCOPE(S) RETRACTED                    |
| A4-A5 : Very slow intermittent sound alarm.<br>A6 : Slow intermittent sound alarm.<br>A7 : Fast intermittent audible alarm.<br>A8 : Very fast intermittent audible alarm. | A7 : Fast intermittent audible alarm.<br>A8 : Very fast intermittent audible alarm. | -No sound alarm. | -No sound alarm.<br>-Indicator light  on. |



### "BUCKET" MODE (NOT USED)



### "SUSPENDED LOAD" MODE

#### USE WITH LIFTING DEVICE (offering a higher margin of safety)

- Place the lift truck in the transport position.
- Press the button; the "SUSPENDED LOAD" MODE is confirmed by an audible signal and by the indicator lamp coming on. Hydraulic tilting movements are neutralized, as well as the lifting movement when the longitudinal stability limit is reached (indicator lamp A8 on).
- Press this button again or switch off the ignition with the ignition key to return to "HANDLING" MODE.
- Protection against tilting forward during aggravating movements is guaranteed, except when the telescope is retracted.

| STATUS OF THE DEVICE |                                                                                                                                                                           |                |                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|
| HALTED               | SLOW SPEED 1 to 5 km/h                                                                                                                                                    | SPEED > 5 km/h | TELESCOPE(S) RETRACTED                    |
|                      | A4-A5 : Very slow intermittent sound alarm.<br>A6 : Slow intermittent sound alarm.<br>A7 : Fast intermittent audible alarm.<br>A8 : Very fast intermittent audible alarm. |                | -No sound alarm.<br>-Indicator light  on. |

## A - VISUAL ALARMS

- A1 - A2 - A3: There is a significant reserve of longitudinal stability.
- A4 - A5: The lift truck is nearing the limit of longitudinal stability. Maneuver with care.
- A6: The lift truck is close to the longitudinal stability limit. Maneuver with care.
- A7: The lift truck is very close to the longitudinal stability limit. Manoeuvre with extreme caution.
- A8: The lift truck is at the authorized limit of longitudinal stability.
- A9: The "AGGRAVATING" hydraulic movement cut-off is disabled.

## B - HYDRAULIC MOVEMENT CUT-OFF

### "HANDLING" MODE

- A8: All "AGGRAVATING" hydraulic movements are cut off. Only perform de-aggravating hydraulic movements in the following order: retract and raise the boom.

### "SUSPENDED LOAD" MODE

- A8: All "AGGRAVATING" and boom raising hydraulic movements are cut off. Only the boom retraction hydraulic movement is available.

## C - DISABLING "AGGRAVATING" HYDRAULIC MOVEMENT CUT-OFF

### ⚠ IMPORTANT ⚠

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

In certain cases, in order to get out of a difficult situation, the operator can bypass this safety device. The  button temporarily disables the cutting-off of "AGGRAVATING" hydraulic movements.

- Hold down the  button; the indicator lamp will light (60 second time delay), and the  pictogram will appear on the information screen. Simultaneously perform the necessary "AGGRAVATING" hydraulic movement with extreme care.

## D - STRAIN GAGE

### ⚠ IMPORTANT ⚠

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



## 9 - INFORMATION SCREEN CONTROL BUTTONS



### INFORMATION MENU

- Press the button to display the "INFORMATION" menu
- Press the button  to select from the menus and sub-menus.
- Press knob  to confirm.

|             |   |                   |
|-------------|---|-------------------|
| REPAIR      | > | FAULT             |
| MAINTENANCE | > | MAINTENANCE RESET |
| GENERAL     | > | IDENTIFICATION    |
|             | > | SOFTWARE VERSION  |



### PREFERENCES MENU

- Press the button to display the "PREFERENCES" menu
- Press the button  to select from the menus and sub-menus.
- Press knob  to confirm.

|            |   |                          |
|------------|---|--------------------------|
| SYSTEM     | > | DATE AND TIME            |
|            | > | LANGUAGES                |
|            | > | UNITS                    |
|            | > | SCREEN                   |
|            | > | POP UPS                  |
|            | > | DIGICODE                 |
| HYDRAULICS | > | STABILITY TEST           |
|            | > | STABILITY REBALANCING    |
|            | > | EASY CONNECT SYSTEM      |
|            | > | CONFIGURATION            |
| EXPERT     | > | STABILITY CALIBRATION    |
|            | > | BOOM ANGLE CALIBRATION   |
|            | > | INCLINOMETER CALIBRATION |
|            | > | DISTRIBUTOR CALIBRATION  |

(menu reserved for your dealer)  
(menu reserved for your dealer)  
(menu reserved for your dealer)  
(menu reserved for your dealer)



### BACK

- Press the button to return to the previous stage.



### CONFIRMATION

- Press the button to move on to the next step.



### MOVE UP

- Press the button to change menu.



### MOVE DOWN

- Press the button to change menu.



## 10 - PUSH BUTTON PANEL

### BUTTON FUNCTIONS

- Red button: Safety.
- Orange button: Transmission/Engine.
- Blue button: Hydraulics.
- Black button: Other.

### BUTTON DIAGNOSTICS

- If all buttons are unlit, there is a power supply problem. Contact your dealer.
- If all buttons are flashing, there is a connection problem. Contact your dealer.



#### HYDRAULIC MOVEMENT NEUTRALIZATION

When driving on the road, it is highly recommended (mandatory in Germany) that you disconnect all hydraulic movement. The indicator lamp and  image on the information screen indicate use.



#### ROTATING BEACON LIGHT

The indicator lamp indicates it is in use.



#### AUTOMATIC PARKING BRAKE

The function is used to engage the parking brake when the lift truck is stopped and to release the parking brake when the lift truck movement conditions are met.

- Press the  button to activate. The indicator light will come on, showing that it is in use.
- Press the button again to deactivate.



#### "MANUAL MODE" AUTOMATIC PARKING BRAKE

- Press the  button to activate. The indicator light will come on, showing that it is in use.
- Press the button again to deactivate.



#### "BUCKET" MODE (NOT USED)



#### "SUSPENDED LOAD" MODE

⚠ LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE





#### **ATTACHMENT CIRCUIT LOCKING (OPTION)**

- Press the button to shut off the attachment circuit hydraulic movements. The indicator lamp indicates it is in use.



#### **NOT USED**



#### **DISABLING "AGGRAVATING" HYDRAULIC MOVEMENT CUT-OFF**

- ◀ LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE



## **11 - SWITCHES**

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



#### **WORKLIGHTS ON BOOM (OPTION)**



#### **FRONT WORKLIGHTS (OPTION)**



#### **FRONT AND REAR WORKLIGHTS (OPTION)**



#### **ROOF WINDSHIELD WIPER**



#### **SIDE WINDSHIELD WIPER (OPTION)**



#### **REAR WINDOW DEFROSTER (OPTION)**



#### **REAR FOG LIGHTS**



#### **BOOM ELECTRICAL PREDISPOSITION (OPTION) MT-X 1440 100P ST3A S2**

- ◀ DESCRIPTION AND USE OF THE OPTIONS



#### **OPTION SINGLE OR DUAL EFFECT REAR HYDRAULIC PREDISPOSITION**

- ◀ DESCRIPTION AND USE OF THE OPTIONS



## 12 - HAZARD WARNING LIGHTS

## 13 - USB RECHARGING SOCKET



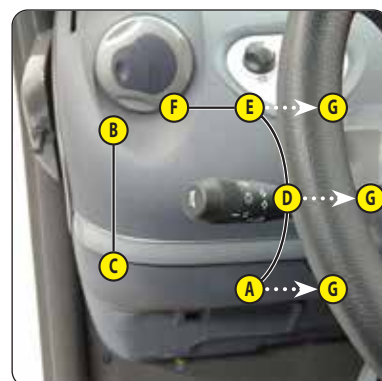
## 14 - LIGHTING, HORN AND INDICATOR SWITCH

The switch controls the visual and sound alarms.

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

Pressing the end of the switch sounds the horn.

N.B.: Positions D - E - F - G can be used without switching on the ignition.



## 15 - FRONT AND REAR WIPER SWITCH

FRONT WINDSHIELD WIPER

- A - Front windshield wiper off.
- B - Front windshield wiper low speed setting.
- C - Front windshield wiper high speed setting.
- D - Front windshield wiper intermittent operation.
- E - Front windshield wiper pulse driven.

REAR WINDSHIELD WIPER

- F - Rear windshield wiper off.
- G - Rear windshield wiper on.
- H - Rear windshield washer by pressing.

N.B.: These functions will only work when the ignition is switched on.



## 16 - 12V SOCKET

For 12 V appliance and max. amperage 10A.



## 17 - FUSES AND RELAYS IN THE CAB

A sticker on the inside of the access hatch provides a quick view of the use of the electric plate's components described below.

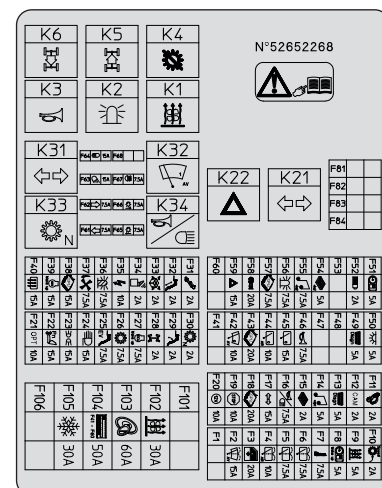
- Remove access panel 1 to gain access to the fuses and relays. Replace a blown fuse with a new fuse of the same quality and rating. Never use a repaired fuse.



|     |       |                                                  |
|-----|-------|--------------------------------------------------|
| F1  |       | Unused.                                          |
| F2  | 15 A  | Front windscreen wiper + washer.<br>Relay (K32). |
| F3  | 20 A  | Window wind up.                                  |
| F4  | 10 A  | Rear windscreen wiper + windscreen washer.       |
| F5  | 7,5 A | Side windshield wiper + washer (OPTION).         |
| F6  | 7,5 A | Roof windscreen wiper + washer.                  |
| F7  |       | Unused.                                          |
| F8  | 5 A   | Screen wake.                                     |
| F9  | 5 A   | Relay (K1).                                      |
| F10 | 2 A   | Gear lever cut-off + speed sensor.               |
| F11 | 2 A   | JSM joystick.                                    |
| F12 |       | Unused.                                          |
| F13 | 5 A   | Diagnostics plug.                                |
| F14 | 5 A   | Car radio (OPTION).                              |
| F15 | 2 A   | Immobilizer (OPTION).                            |
| F16 | 7,5 A | Relay (K34).                                     |
| F17 | 15 A  | Flashing light unit (K21) + relay (K31).         |
| F18 | 20 A  | Main ECU SPU 40-26.                              |
| F19 | 10 A  | Brake lights.                                    |
| F20 | 10 A  | 12 V plug.                                       |

|     |       |                                                                 |
|-----|-------|-----------------------------------------------------------------|
| F21 | 10 A  | Dual effect rear hydraulic predisposition (OPTION).             |
| F22 | 15 A  | Pneumatic seat (OPTION).                                        |
| F23 | 15 A  | Front work lights (OPTION).<br>Rear work lights (OPTION).       |
| F24 | 15 A  | Worklights on boom (OPTION).                                    |
| F25 | 7,5 A | Boom head solenoid valve (OPTION).                              |
| F26 | 7,5 A | Relay (K4).                                                     |
| F27 | 7,5 A | Engine ECU wake-up.<br>Diagnostics plug.                        |
| F28 | 2 A   | Wheel alignment.<br>Negative brake.                             |
| F29 | 2 A   | Boom angular sensor.                                            |
| F30 | 2 A   | Relay (K33).                                                    |
| F31 | 2 A   | Stabilizer pressure sensors + elevated position.                |
| F32 | 2 A   | Boom sensors.                                                   |
| F33 |       | Unused.                                                         |
| F34 |       | Unused.                                                         |
| F35 | 10 A  | Boom electrical predisposition (OPTION). MT-X 1440 100P ST3A S2 |
| F36 |       | Unused.                                                         |
| F37 |       | Unused.                                                         |
| F38 | 15 A  | Auxiliary ECU SPU 40-26 or SPU 25-15.                           |
| F39 | 15 A  | Engine computer.                                                |
| F40 | 15 A  | Rear window defroster (OPTION).                                 |

|     |       |                                                                                    |
|-----|-------|------------------------------------------------------------------------------------|
| F41 |       | Unused.                                                                            |
| F42 | 10 A  | Front windshield wiper automatic return.                                           |
| F43 | 20 A  | Main ECU SPU 40-26.                                                                |
| F44 | 10 A  | Rear windshield wiper automatic return.<br>Roof windshield wiper automatic return. |
| F45 | 15 A  | Side windshield wiper automatic return (OPTION).                                   |
| F46 | 7,5 A | Horn.                                                                              |
| F47 |       | Unused.                                                                            |
| F48 |       | Unused.                                                                            |
| F49 | 5 A   | Diagnostics plug.                                                                  |
| F50 | 5 A   | Roof light.                                                                        |
| F51 | 5 A   | "HARMONY" dashboard                                                                |
| F52 |       | Unused.                                                                            |
| F53 |       | Unused.                                                                            |
| F54 | 5 A   | Immobilizer (OPTION).                                                              |
| F55 | 7,5 A | Car radio (OPTION).                                                                |
| F56 | 7,5 A | Relay (K2).                                                                        |
| F57 | 7,5 A | Auxiliary ECU SPU 40-26 or SPU 25-15.                                              |



|     |      |                                      |
|-----|------|--------------------------------------|
| F58 | 20 A | Lighting, horn and indicator switch. |
| F59 | 15 A | Relay (K31).                         |
| F60 |      | Unused.                              |

|     |       |                         |
|-----|-------|-------------------------|
| F61 | 7.5 A | Left-hand turn signal.  |
| F62 | 7.5 A | Right-hand turn signal. |
| F63 | 15 A  | Dipped beam headlights. |
| F64 | 15 A  | Main beam headlights.   |
| F65 | 7.5 A | Left parking lights.    |
| F66 | 7.5 A | Right parking lights.   |
| F67 | 7.5 A | Rear fog lights.        |
| F68 |       | Unused.                 |

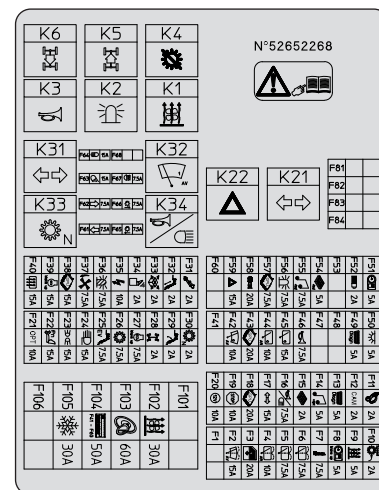
|     |  |         |
|-----|--|---------|
| F81 |  | Unused. |
| F82 |  | Unused. |
| F83 |  | Unused. |
| F84 |  | Unused. |

|      |     |                             |
|------|-----|-----------------------------|
| F101 |     | Unused.                     |
| F102 | 30A | Relay (K1).                 |
| F103 | 60A | Ignition switch.            |
| F104 | 50A | Module fuses 4 (F41 - F60). |
| F105 | 30A | Air conditioning (OPTION).  |
| F106 |     | Unused.                     |

|    |                       |
|----|-----------------------|
| K1 | Fan/heating.          |
| K2 | Rotating beacon.      |
| K3 | Unused.               |
| K4 | Transmission cut-off. |
| K5 | Forward gear.         |
| K6 | Reverse gear.         |

|     |                        |
|-----|------------------------|
| K21 | Flashing light unit.   |
| K22 | Hazard warning lights. |

|     |                                               |
|-----|-----------------------------------------------|
| K31 | Flashing light unit power supply.             |
| K32 | Front windshield wiper speed 1 intermittence. |
| K33 | Engine neutral.                               |
| K34 | Backup lights and backup alarm.               |

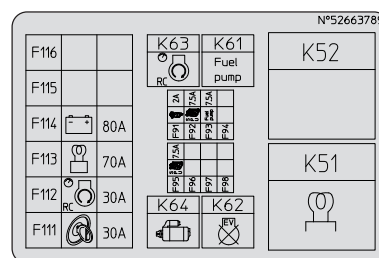


## 18 - FUSES AND RELAYS UNDER THE ENGINE HOOD

- Open the engine hood, remove cover 1 to gain access to the fuses and relays. Replace a blown fuse with a new fuse of the same quality and rating. Never use a repaired fuse.

|      |      |                            |
|------|------|----------------------------|
| F91  | 2A   | Unused.                    |
| F92  | 7.5A | Relay (K51).               |
| F93  | 7.5A | Engine control power unit. |
| F94  |      | Unused.                    |
| F95  | 7.5A | Engine ECU wake-up.        |
| F96  |      | Unused.                    |
| F97  |      | Unused.                    |
| F98  |      | Unused.                    |
| F111 | 30A  | Ignition switch.           |
| F112 | 30A  | Engine start.              |
| F113 | 70A  | Relay (K51).               |
| F114 | 80A  | Alternator.                |
| F115 |      | Unused.                    |
| F116 |      | Unused.                    |

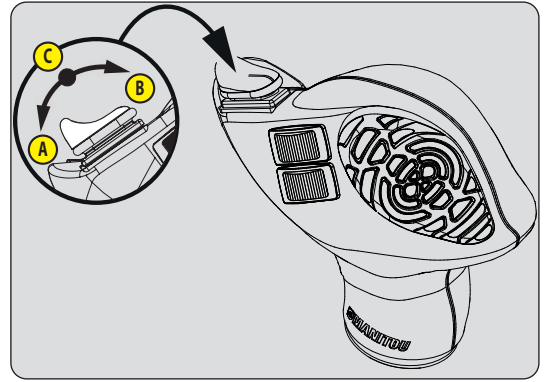
|     |                     |
|-----|---------------------|
| K51 | Preheat relay.      |
| K52 | Unused.             |
| K61 | Fuel pump.          |
| K62 | Starter safety.     |
| K63 | Engine start relay. |
| K64 | Starter             |



## 19 - FORWARD/NEUTRAL/REVERSE SELECTOR

When changing the direction of travel, the lift truck should be traveling at slow speed and not accelerating.

- FORWARD: Push the switch forward (position A).
- REVERSE: Push the switch backward (position B). Reversing lights and a backup alarm indicate that the lift truck is traveling in reverse.
- NEUTRAL: The switch must be in the neutral position (position C) to start the lift truck.



### SAFETY FOR MOVING THE LIFT TRUCK

The operator must observe the following sequence to move the truck forward or backward:

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

N.B.: The alternate display of the forward or reverse section arrow  on the information screen requires the selector to be set to neutral.

To stop the forklift truck without switching off the ignition, the following sequence must be followed:

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

N.B.: A discontinuous audible signal and a message on the screen will inform the driver if he has left the driver's cab without applying the parking brake.

## 20 - GEAR LEVER AND TRANSMISSION CUT-OFF

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

### CONDITION OF USE OF GEARBOX RATIOS

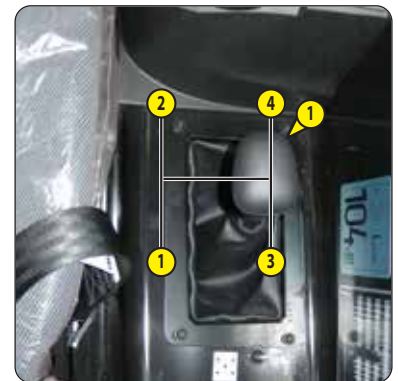
On lift trucks such as these, equipped with torque converters, it is not necessary to systematically set off in first gear and work up through the gears.

#### **IMPORTANT**

*The gearbox ratio selection should be made carefully depending on the work to be performed.*

*A poor choice may result in the extremely rapid rise of the gearbox oil temperature through excessive slipping of the converter, which could lead to serious gearbox damage (it is essential to stop and change the working conditions if the gearbox oil temperature indicator light comes on).*

*This poor choice may also result in the forklift truck's performance deteriorating in forward gear: When the forward force increases, the forward speed in the r ratio (for example, in 3rd gear) may be lower than the forward speed that could be obtained with the gear below (in 2nd instead of 3rd).*



In general, we would advise you to use the following gears according to the nature of the work being carried out.

- ON THE ROAD: Set off in 3rd gear and change up to 4th if the conditions and state of the road permit it. In hilly areas, set off in 2nd gear and change up to 3rd if the conditions and state of the road permit it.
- WITH A TRAILER ON THE ROAD: Set off in 2nd gear and change up to 3rd if the conditions and state of the road permit it.
- WHEN HANDLING: Use 3rd gear. In confined spaces use 2nd gear.
- LOADING (picking-up with bucket, manure fork, etc.): Use 2nd gear.
- EARTH MOVING: Use 1st gear.

## 21 - STEERING SELECTION

### ⚠ IMPORTANT ⚠

*Before selecting one of the three steering possibilities, align the 4 wheels in relation to the lift truck axis.  
Never change the steering mode whilst driving.*



The green indicator lights on the information screen  come on to indicate the alignment of the wheels relative to the lift truck.

### A - STEERING SELECTION LEVER

- A1 - Front steering wheels (road mode).
- A2 - Front and rear steering wheels in opposite directions (short steering).
- A3 - Front and rear steering wheels in the same direction (crab steering).

### WHEEL ALIGNMENT CONTROL

#### ⚠ IMPORTANT ⚠

*Check the alignment of the front and rear wheels each time the lift truck is started.*

*Regularly check the alignment of the wheels when using the lift truck.*

*The wheels must be aligned and the lift truck must be in front steering wheels mode when used on public roads.*

*A green light illuminates on the dashboard when the wheels are aligned.*

*Contact your dealer if you have any questions.*

- Select "short steering" (position A2).



- Turn the steering wheel and bring the rear wheels into alignment until the indicator lamps light on the rear wheels.

- Select "road driving" (position A1).



- Turn the steering wheel and bring the rear wheels into alignment until the  indicator lamps light on the front wheels.
- Then select the required steering mode



## 22 - ACCELERATOR PEDAL

## 23 - SERVICE BRAKE PEDAL

The pedal applies on the front and rear wheels by an hydraulic brake system, and allows the lift truck to be slowed down and stopped.



## 24 - FUNCTION FILES

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



## 25 - HYDRAULIC BOOM CONTROLS

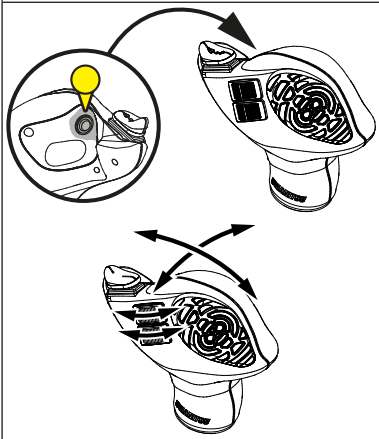
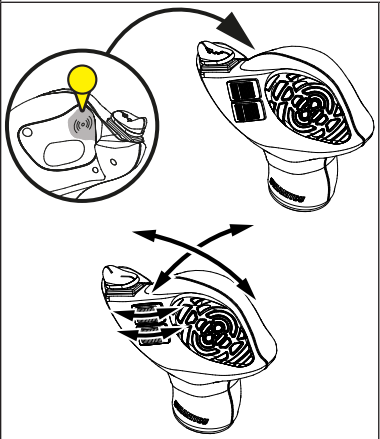
### ⚠ IMPORTANT ⚠

*Do not try to modify the hydraulic pressure of the system. If it malfunctions contact your dealer.  
ANY MODIFICATION INVALIDATES THE WARRANTY AND YOU WILL BE CRIMINALLY LIABLE IN THE EVENT OF AN ACCIDENT.  
Use the hydraulic controls gently without jerking, to avoid incidents caused by shaking the lift truck.*

N.B.: When driving on the road, it is highly recommended (mandatory in Germany) that you cut off all the hydraulic movements (⏏ PUSH BUTTON PANEL).

### HYDRAULIC CONTROLS ACTIVATION

This safety device prevents accidental operation of the hydraulic lifting, tilting, telescoping and attachment controls.

| USING THE BUTTON                                                                                                                                           | USING THE CAPACITIVE SENSOR                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                           |                                                              |
| <p>- Place your hand on the lever, activate the hydraulic controls by pressing the button and perform the hydraulic movement.</p>                          | <p>- Place your hand on the lever, activate the hydraulic controls by contact on the capacitive sensor and perform the hydraulic movement.</p> |
| <p>- Hydraulic controls activation is maintained on a timer while the lift truck is being used.<br/>- If necessary, reactivate the hydraulic controls.</p> |                                                                                                                                                |

#### A1 - LIFTING

#### A2 - LOWERING

#### B1 - CROWD

#### B2 - DUMP

#### C1 - TELESCOPIC BOOM EXTENSION

N.B.: Complete extension of the telescopes can only be carried out if the stabilizers are lowered and exercising pressure on the ground. MT-X 1840 100P ST3A S2

#### C2 - TELESCOPIC BOOM RETRACTION

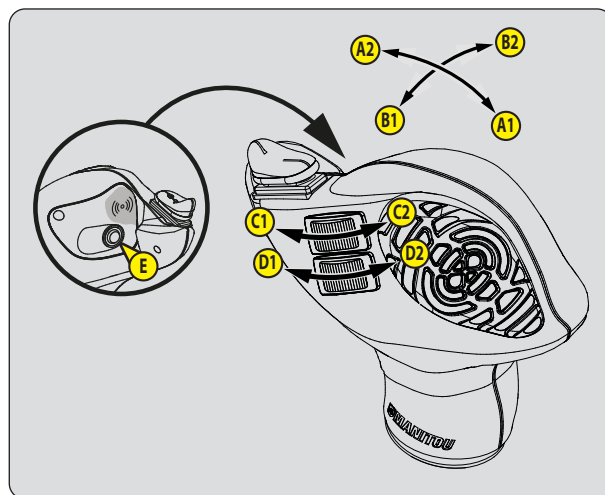
N.B.: When completely retracting the telescopes, insistently operate the control so as to allow all the telescopes to retract fully.

#### D1 - ATTACHMENT (OPTION)

#### D2 - ATTACHMENT (OPTION)

#### E - BOOM HEAD SOLENOID VALVE (OPTION)

⏏ DESCRIPTION AND USE OF THE OPTIONS



## 26 - HYDRAULIC STABILIZER CONTROLS

### A1 - LEFT STABILIZER LIFTING

### A2 - LEFT STABILIZER LOWERING

### B1 - RIGHT STABILIZER LIFTING

### B2 - RIGHT STABILIZER LOWERING

N.B.: The stabilizers can only be raised if the telescopes are retracted and the lifting angle of the boom is less than 62°.



## 27 - HYDRAULIC FRAME LEVELING CONTROLS

### A1 - FRAME LEVELING ON LEFT

### A2 - FRAME LEVELING ON RIGHT

N.B.: The tilt correction may only be performed if the lifting angle for the boom is less than 34°.



## 28 - LEVEL INDICATOR

### A - SPIRIT LEVEL

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

### B - TILT INDICATOR

When the two marks are aligned, the chassis is parallel with the front axle.



## 29 - HEATER CONTROL

### A - FAN CONTROL

This 4-speed control allows the air to be ventilated through the air vents.

### B - TEMPERATURE CONTROL

Adjusts the temperature inside the cab.

- B1 - The fan pumps in the air at ambient temperature.
- B2 - The fan pumps in warm air.

The intermediate positions allow the temperature to be adjusted.



## 30 - AIR CONDITIONING CONTROLS (AIR CONDITIONING OPTION)

### ⚠ IMPORTANT ⚠

*The air conditioning only works if the lift truck has been started.*

*When using your air conditioning, it is essential to work with the cab closed.*

*In winter: So as to ensure that the air conditioning unit is correctly operated and completely efficient, start up the compressor once a week, even for a short period of time, in order to lubricate the internal seals.*

*In cold weather: Warm the engine before switching on the compressor, in order to allow the coolant that has collected in the liquid state at the lowest point of the compressor's circuit to turn into gas under the effect of the heat given off by the engine, as the compressor is liable to be damaged by coolant in the liquid state.*

*If it seems to you that the air conditioning is not working properly, have it inspected by your dealer.*

*Never try to repair any faults yourself.*

### A - FAN CONTROL

This 3-speed control allows the air to be ventilated through the air vents.

### B - TEMPERATURE CONTROL

Adjusts the temperature inside the cab.

- B1 - The fan pumps in cold air.
- B2 - The fan pumps in warm air.

The intermediate positions allow the temperature to be adjusted.

### C - AIR CONDITIONING CONTROL

This control with a pilot light allows the air conditioning unit to be switched on.

#### HEATING MODE

- The controls must be adjusted in the following way:
  - C - Control with pilot light off.
  - B - At the desired temperature.
  - A - At the desired speed: 1, 2 or 3.

#### AIR CONDITIONING MODE

- The controls must be adjusted in the following way:
  - C - Control with indicator lamp on.
  - B - At the desired temperature.
  - A - At the desired speed: 1, 2 or 3.

#### DEFROST MODE

- The controls must be adjusted in the following way:
  - C - Control with indicator lamp on.
  - B - At the desired temperature.
  - A - At speed 2 or 3.
- For optimum effectiveness, close the heating vents.



## 31 - HEATING VENTS

These swiveling heating vents, which can be shut off, allow you to direct and adjust the flow inside the cab.

## 32 - DEMIST VENTS

These vents allow the windshield and side windows to be demisted. For optimum effectiveness, close the heating vents.

### **33 - DOOR OPENING HANDLE**

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

- Pull on the handle to open the door.



### **34 - DOOR OPEN LEVER**

### **35 - DOOR CLOSE HANDLE**

### **36 - WINDOW WINDER SWITCH**

### **37 - SIDE STORAGE SPACE**



### **38 - HANDLE FOR REAR WINDOW OPENING**

#### **EMERGENCY EXIT**

- Use the rear window as an emergency exit, in the event that it is impossible to leave the cab by the door or by opening the windshield.



### **39 - DOCUMENT STORAGE NET**

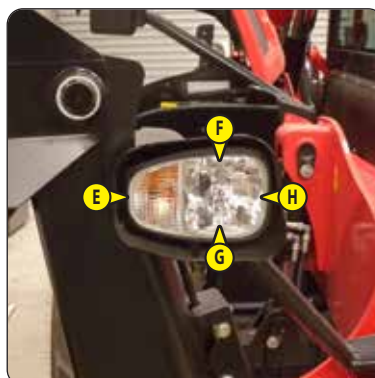
Make sure that the operator's manual is in the right place, i.e. in the document holder net.

N.B.: An OPTIONAL waterproof document-holder is available.



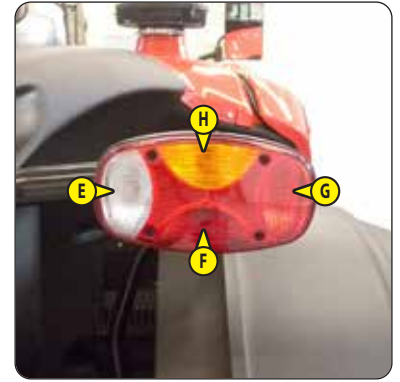
### **40 - FRONT HEADLIGHTS**

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



#### **41 - REAR LIGHTS**

- A - Rear left-hand indicator light.
- B - Rear left-hand stop light.
- C - Left rear light.
- D - Rear fog light.
- E - Rear reversing light.
- F - Right rear light.
- G - Rear right-hand stop light.
- H - Rear right-hand indicator light.



#### **42 - ROTATING BEACON LIGHT**

The magnetic rotating beacon light must be clearly visible on the roof of the cab and plugged into socket 1.



#### **43 - ROOF LIGHT**

#### **44 - COAT HOOK**

#### **45 - SUN VISOR (OPTION)**



#### **46 - INSIDE REAR-VIEW MIRROR (OPTION)**



#### **47 - STEERING WHEEL ADJUSTMENT LEVER (OPTION)**

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

- Pull the knob backward.
- Adjust the steering wheel to the desired position.
- Push the knob back to lock the steering wheel in position.



## 48 - STORAGE COMPARTMENT



## 49 - BOOM SAFETY WEDGE

### ⚠ IMPORTANT ⚠

*Only use the wedge supplied with the lift truck.*

The lift truck is equipped with a boom safety wedge which must be installed on the rod of the lifting cylinder when working beneath the boom (➤ 1 - OPERATING AND SAFETY INSTRUCTIONS).



## 50 - FUEL TANK

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

### ⚠ IMPORTANT ⚠

*Never smoke or approach with a flame during filling operations or when the tank is open.*

*Never refill while the engine is running.*

- Check the fuel gage on the dashboard.
- If necessary, add diesel (➤ 3 - MAINTENANCE: LUBRICANTS AND FUEL).
- Open the access panel for hydraulic oil filling.
- Remove the cap 1 using the ignition key.
- Fill the fuel tank with clean diesel filtered through the filler port 2.
- Refit the cap.
- Visually check that there is no leakage in the tank and pipes.

NOTE: there is an OPTION for a filling sieve.





## TOWING DEVICE

### ⚠ IMPORTANT ⚠

*Do not tow a trailer or an attachment that is not in perfect working condition.*

*Using a trailer in poor condition may affect the lift truck's steering and braking, and hence the safety of the assembly.*

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

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 effort and maximum vertical force on the coupling point. This information is given on the manufacturer's plate fixed to each lift truck (➤ IDENTIFICATION OF THE LIFT TRUCK).

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

### 1 - TOWING PIN

#### ⚠ IMPORTANT ⚠

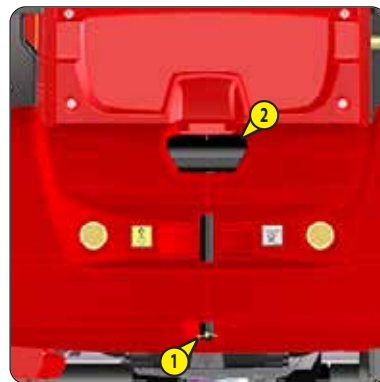
*Be careful not to get your fingers caught or crushed during this operation.*

*Do not forget to put the cotter pin back in place.*

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

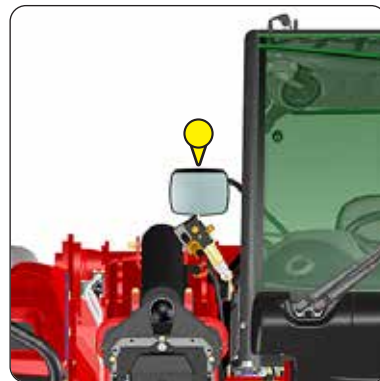
#### COUPLING AND UNCOUPLING THE TRAILER

- To couple the trailer, position the lift truck as close as possible to the trailer ring.
- Stop the engine.
- Remove the pin 1, lift the towing pin 2 and place or remove the trailer ring.



### 2 - REAR-VIEW MIRROR (OPTION)

The rear-view mirror allows the lift truck to approach the trailer ring more precisely.



### 3 - ADJUSTABLE PROTRUDING HOOK (OPTION)

#### ⚠ IMPORTANT ⚠

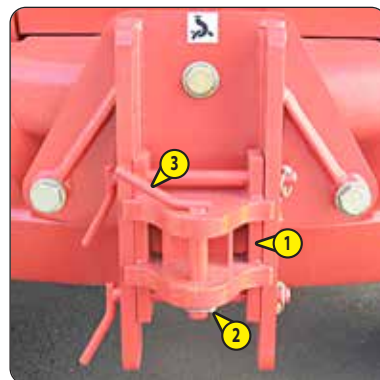
*Be careful not to get your fingers caught or crushed during this operation.*

*Do not forget to put the cotter pin back in place.*

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

#### COUPLING AND UNCOUPLING THE TRAILER

- To couple the trailer, position the lift truck as close as possible to the trailer ring.
- Stop the engine.
- Set the coupling fitting 1 according to the height of the trailer ring.
- Remove the pin 2, lift the towing pin 3 and place or remove the trailer ring.



#### **4 - REAR ELECTRIC SOCKET (OPTION)**

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



## DESCRIPTION AND USE OF THE OPTIONS

|                                                                        |      |
|------------------------------------------------------------------------|------|
| 1 - WINDSHIELD GRILLE .....                                            | 2-59 |
| 2 - WATERPROOF DOCUMENT HOLDER .....                                   | 2-59 |
| 3 - ANGULAR SECTOR ON BOOM .....                                       | 2-59 |
| 4 - MARKS ON BOOM .....                                                | 2-59 |
| 5 - REFLECTIVE BANDS .....                                             | 2-59 |
| 6 - LICENSE PLATE LIGHT .....                                          | 2-60 |
| 7 - FRONT HEADLIGHTS (OPTION) .....                                    | 2-60 |
| 8 - ENGINE BLOCK HEATER .....                                          | 2-60 |
| 9 - PIN PAD "EasyMANAGER" .....                                        | 2-61 |
| 10 - BOOM ELECTRICAL PREDISPOSITION .....                              | 2-61 |
| 11 - ATTACHMENT CIRCUIT WITH QUICK-RELEASE COUPLERS .....              | 2-61 |
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| 19 - SINGLE OR DUAL EFFECT REAR HYDRAULIC CONTROL PREDISPOSITION ..... | 2-65 |

## 1 - WINDSHIELD GRILLE

### DESCRIPTION

The windshield grille provides additional protection for the operator from any external elements spattered on the windshield.

This grille must be removable from inside the cab to enable an emergency exit.

### EMERGENCY EXIT

- After breaking the windshield with the emergency hammer, push (with force) on the windshield grille at A to remove it.



## 2 - WATERPROOF DOCUMENT HOLDER



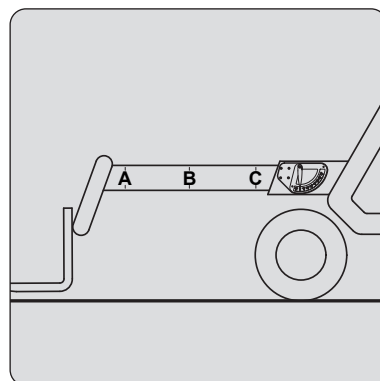
## 3 - ANGULAR SECTOR ON BOOM

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

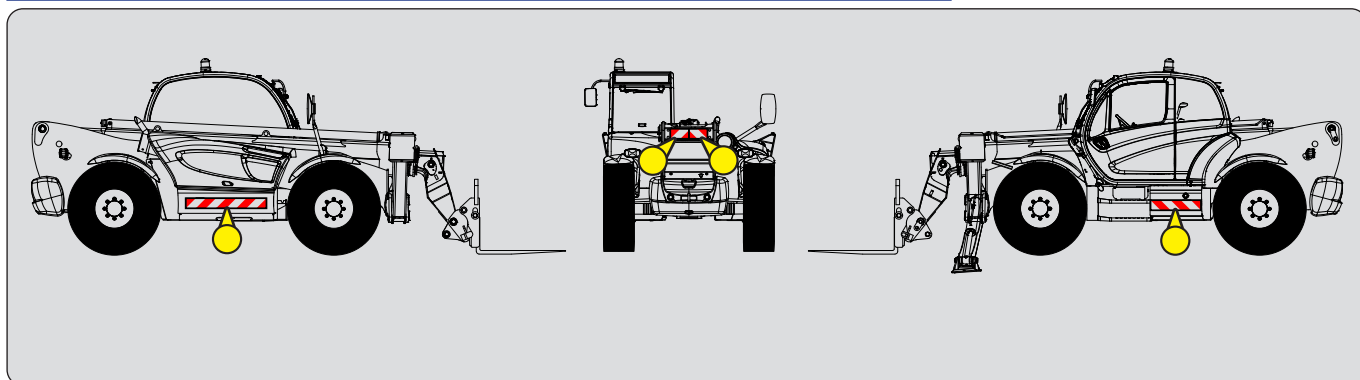


## 4 - MARKS ON BOOM

The marking indicates the outreach of the boom and therefore improves reading of the load charts.



## 5 - REFLECTIVE BANDS



## 6 - LICENSE PLATE LIGHT



## 7 - FRONT HEADLIGHTS (OPTION)



## 8 - ENGINE BLOCK HEATER

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

### ENVIRONMENTAL CONDITIONS FOR USE:

- Maximum ambient temperature for using preheat: + 25 °C.

### CONDITIONS FOR CONNECTION AND USE OF PREHEATING:

- The preheating system should not be used for an external ambient temperature higher than + 25 °C.
- It is essential that the power supply to the preheating system:
  - Is effected with a cable that conforms to the installation standards in force and contains a protective earth conductor.
  - Contains an appropriate sectioning system.
  - Include an appropriate short-circuit protection system (fuses or circuit breaker) and a ground-fault circuit breaker, sensitive to 30 mA.
- Only connect to and disconnect from the power supply while the unit is switched off and the engine is stopped.



### ⚠ IMPORTANT ⚠

*Make sure that the electrical extension is still correctly stored in its place in the document holder net.*

## 9 - PIN PAD "EasyMANAGER"

A code must be created for the operator via the "EasyMANAGER" portal. For more information, contact your dealer.

### OPERATION

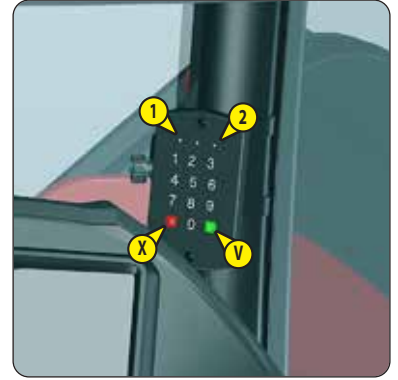
#### BY ID CODE

- Switch on lift truck ignition, LED 1 comes on.
- Enter your ID code and confirm by pressing the "V" key.
- LED 2 comes on to confirm the operator's identification.
- Immediately start the lift truck, otherwise the identification process is canceled and LED 2 turns red.

N.B.: In case of an input error, LED 2 lights up red, press the "X" key, and wait 10 seconds before entering the correct identification code.

#### BY ID CARD

- Switch on lift truck ignition, LED 1 comes on.
- Present your ID card; an audible beep confirms that the card has been read.
- LED 2 comes on to confirm the operator's identification.
- Immediately start the lift truck, otherwise the identification process is canceled and LED 2 turns red.



## 10 - BOOM ELECTRICAL PREDISPOSITION

MT-X 1440 100P ST3A S2

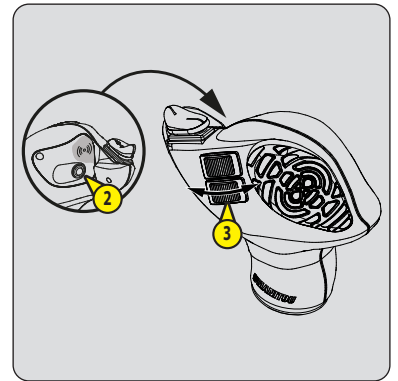
Enables an electrical function to be used at the boom head.

### ATTACHMENT LINE CONTROL

- Put switch 1 to position A (indicator lamp off).
- Push switch 3 forward or backward.

### BOOM ELECTRIC FUNCTION CONTROL

- Set switch 1 to position B (indicator lamp on).
- Hold down button 2 and operate button 3 forward or backward.



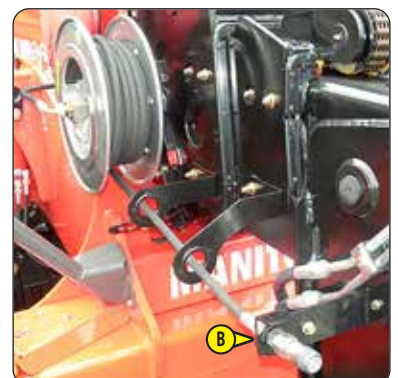
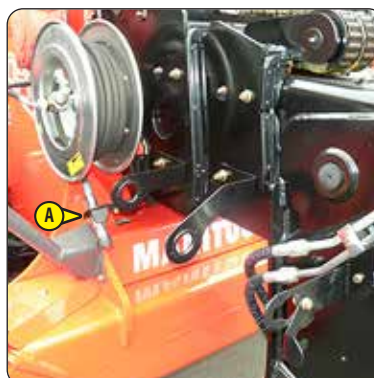
## 11 - ATTACHMENT CIRCUIT WITH QUICK-RELEASE COUPLERS



## 12 - EXTERIOR DRAIN-BACK

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

- A - Fixed position, drain back not connected.
- B - Mobile position, leak return connected.



### 13 - ATTACHMENT EASY HYDRAULIC CONNECTION

For easy connection and disconnection of hydraulic attachments.

#### PUSH BUTTON OPERATION

- Switch on lift truck ignition.
- Press for two seconds on pushbutton 1 to release the attachment circuit hydraulic pressure.
- Connect or disconnect the quick couplers of the hydraulic attachment (⇐ 4 - ADAPTABLE ATTACHMENTS AS AN OPTION ON THE RANGE: PICKING UP THE ATTACHMENTS).

#### PREFERENCES MENU BUTTON OPERATION

- Switch on lift truck ignition.
- Press the button  to display the "PREFERENCES" menu.
- Press the button  to select from the menus and sub-menus.

|            |   |                     |
|------------|---|---------------------|
| HYDRAULICS | > | EASY CONNECT SYSTEM |
|------------|---|---------------------|

- Press knob  to confirm.
- Connect or disconnect the quick couplers of the hydraulic attachment (⇐ 4 - ADAPTABLE ATTACHMENTS AS AN OPTION ON THE RANGE: PICKING UP THE ATTACHMENTS).



### 14 - ATTACHMENT HYDRAULIC LOCKING

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

#### ⚠ IMPORTANT ⚠

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

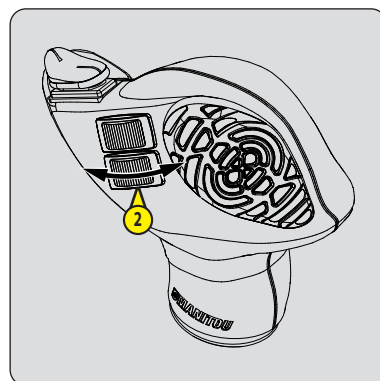
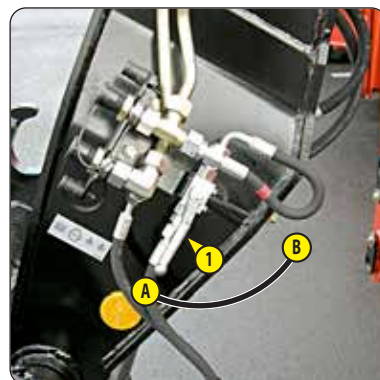
*Press the button  to shut off the attachment circuit hydraulic movements. The indicator lamp indicates it is in use.*

#### ATTACHMENT LOCKING CONTROL

- Set valve 1 to position A.
- Push switch 2 forward to lock the attachment and backward to release it.
- Set valve 1 to position B.

#### HYDRAULIC ATTACHMENT CONTROL

- Set valve 1 to position B.
- Push switch 2 forward or backward.



## 15 - BOOM HEAD ELECTROVALVE

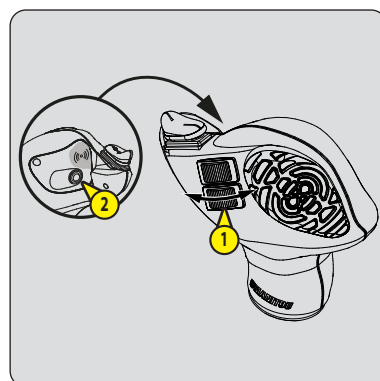
Enables use of two hydraulic functions on the attachment circuit.

### ATTACHMENT LINE L1 CONTROL

- Push switch 1 forward or backward.

### ATTACHMENT LINE L2 CONTROL

- Hold down button 2 and operate button 1 forward or backward.



## 16 - BOOM HEAD ELECTROVALVE + HYDRAULIC ATTACHMENT LOCKING

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

### ⚠ IMPORTANT ⚠

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

### ATTACHMENT LINE L1 CONTROL

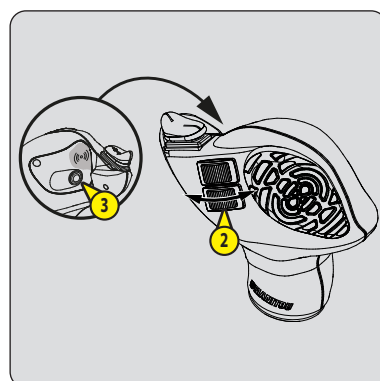
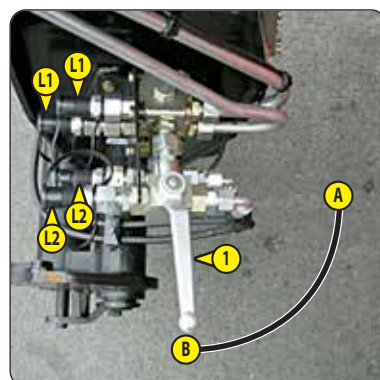
- Set valve 1 to position A.
- Push switch 2 forward or backward.

### ATTACHMENT LINE L2 CONTROL

- Set valve 1 to position A.
- Hold down button 3 and operate button 2 forward or backward.

### ATTACHMENT LOCKING CONTROL

- Set valve 1 to position B.
- Hold down button 3 and push button 2 forward to lock the attachment and backward to release it.



## 17 - SINGLE SIDE-SHIFT CARRIAGE (TSDL)

### ⚠ IMPORTANT ⚠

*The single side-shift carriage (TSDL) is only compatible with the following attachments:*

- floating fork carriage (TFF)
- tilting fork carriage (PFB)
- loading bucket (CBR)
- concrete bucket (BB, BBG)
- chute bucket (GL)
- crane boom and crane boom with winch (P, PT, PO, PC)
- winch (H)
- fixed platform, swiveling platform, roofer's platform.

*The use of any other attachment on the TSDL is forbidden.*

*If it is being used with a loading bucket (CBR), the single side-shift carriage MUST be centered and no side-shift operations performed.*

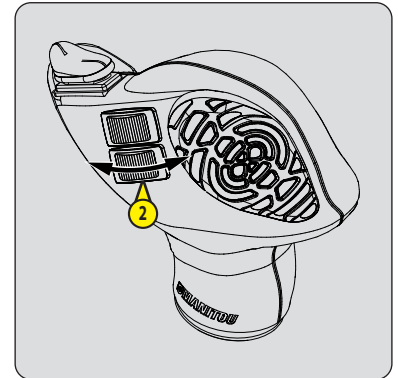
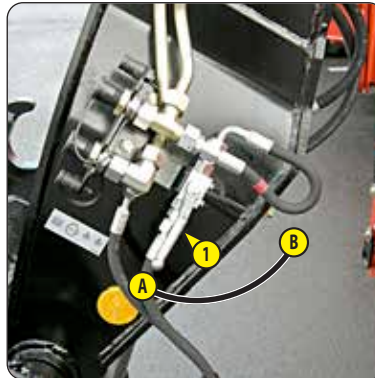
### WITH BOOM HEAD COUPLER

#### ATTACHMENT LINE CONTROL

- Set valve 1 to position A.
- Push switch 2 forward or backward.

#### TSDL CONTROL

- Set valve 1 to position B.
- Push button 2 forward to move sideways to the right, and backward to move sideways to the left.



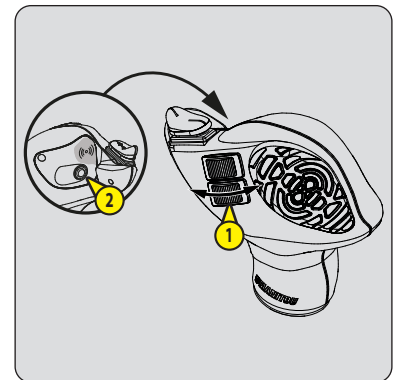
### WITH BOOM HEAD ELECTROVALVE

#### TSDL LINE L1 CONTROL

- Push button 2 forward to move sideways to the right, and backward to move sideways to the left.

#### ATTACHMENT LINE L2 CONTROL

- Hold down button 3 and operate button 2 forward or backward.



### WITH BOOM HEAD ELECTROVALVE + PREARRANGED HYDRAULIC ATTACHMENT LOCKING

### ⚠ IMPORTANT ⚠

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

#### TSDL LINE L1 CONTROL

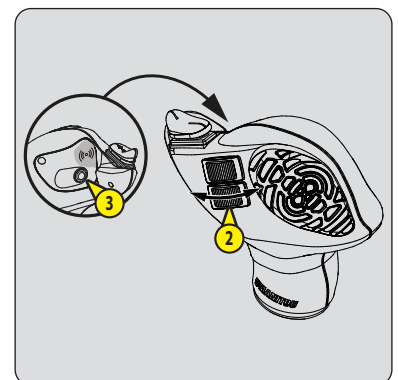
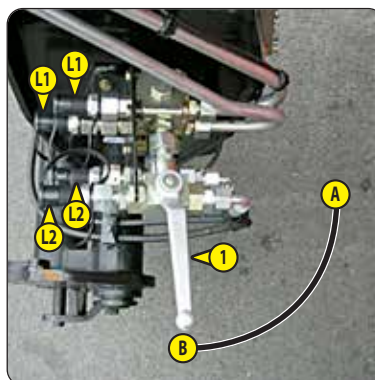
- Push button 2 forward to move sideways to the right, and backward to move sideways to the left.

#### ATTACHMENT LINE L2 CONTROL

- Set valve 1 to position A.
- Hold down button 3 and operate button 2 forward or backward.

#### ATTACHMENT LOCKING CONTROL

- Set valve 1 to position B.
- Hold down button 3 and push button 2 forward to lock the attachment and backward to release it.



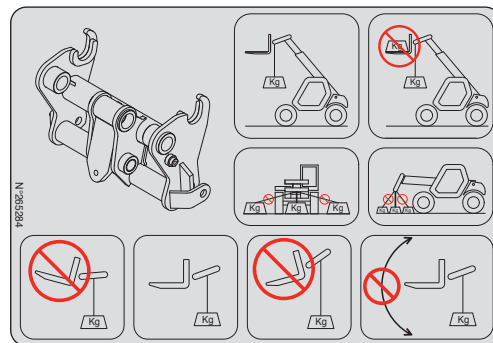
## 18 - LIFTING RING ON SINGLE CARRIAGE

### CONDITIONS OF USE

#### ⚠ IMPORTANT ⚠

Follow the instructions given in the instruction manual (➔ 1 - OPERATING AND SAFETY INSTRUCTIONS: INSTRUCTIONS FOR HANDLING LOADS).

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



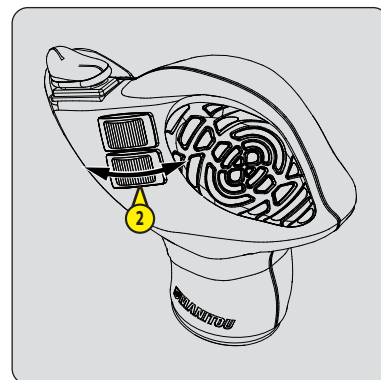
#### ⚠ IMPORTANT ⚠

The load charts are calculated for use with forks or attachments (➔ LOAD CHARTS).

## 19 - SINGLE OR DUAL EFFECT REAR HYDRAULIC CONTROL PREDISPOSITION

Enables the use of a hydraulic attachment at the rear of the lift truck (e.g. a trailer with hydraulic tipping).

- Press down on switch 1 (indicator lamp on) to power the hydraulic control at the rear of the lift truck.
- Push switch 2 forward or backward.





# ***3 - MAINTENANCE***

### 3 - MAINTENANCE

|                                                                                        |             |
|----------------------------------------------------------------------------------------|-------------|
| <b>ORIGINAL MANITOU SPARE PARTS AND EQUIPMENT</b>                                      | <b>3-3</b>  |
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## ORIGINAL MANITOU SPARE PARTS AND EQUIPMENT

OUR LIFT TRUCKS MUST BE SERVICED USING ORIGINAL MANITOU PARTS.

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

#### **⚠ IMPORTANT ⚠**

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

- Legally, incurring liability in the event of an accident.
- Technically - to cause operating malfunctions or shorten the life of the lift truck.

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

Through its network, MANITOU provides the user with,

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

#### **⚠ IMPORTANT ⚠**

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

*The dealer network list is available on the MANITOU web site: [www.manitou.com](http://www.manitou.com)*

## FORKLIFT TRUCK MAINTENANCE

### DAILY AND WEEKLY MAINTENANCE



**THE OPERATOR IS AUTHORIZED TO CARRY OUT THIS MAINTENANCE.**

These maintenance operations enable the operator to maintain the lift truck in a clean and safe condition.

### MANDATORY FIRST 500 HOURS OR 6 MONTHS OF SERVICE



**THIS SERVICE MUST BE CARRIED OUT AFTER THE FIRST 500 HOURS OF SERVICE OR WITHIN THE 6 MONTHS FOLLOWING PUTTING THE MACHINE INTO SERVICE (WHICHEVER OCCURS FIRST).**

### PERIODIC MAINTENANCE



**THE PERIODIC MAINTENANCE MUST BE CARRIED OUT BY A PROFESSIONAL APPROVED BY THE MANITOU NETWORK**

### MAINTENANCE SCHEDULE

This schedule enables the operator to keep up with the periodic maintenance of the lift truck by notifying the total number of hours of operation and the date of the service performed by the professional approved by the MANITOU network.

### OCCASIONAL MAINTENANCE AND OPERATION

These maintenance tasks and operations are to be performed as required for the safety and upkeep of the lift truck.

## DAILY AND WEEKLY MAINTENANCE

### ➡ 10H - DAILY SERVICE OR EVERY 10 HOURS OF SERVICE

|         |                                                        |      |
|---------|--------------------------------------------------------|------|
| - CHECK | Lift truck environment .....                           | 3-12 |
| - CHECK | Engine oil level.....                                  | 3-12 |
| - CHECK | Coolant level.....                                     | 3-12 |
| - CHECK | Fuel pre-filter .....                                  | 3-13 |
| - CHECK | Longitudinal stability limiter and warning device..... | 3-13 |
| - CLEAN | Cyclonic pre-filter .....                              | 3-13 |

### ➡ 50H - WEEKLY MAINTENANCE OR EVERY 50 HOURS OF SERVICE

|             |                                                   |      |
|-------------|---------------------------------------------------|------|
| - CHECK     | Gearbox oil level .....                           | 3-14 |
| - CHECK     | Tire pressure.....                                | 3-14 |
| - CHECK     | Wheel nut tightening .....                        | 3-14 |
| - CHECK     | Front axle differential seal .....                | 3-14 |
| - CHECK     | Rear axle differential seal .....                 | 3-14 |
| - CHECK     | Front wheel reducer seals .....                   | 3-14 |
| - CHECK     | Rear wheel reducer seals .....                    | 3-14 |
| - CHECK     | Brake fluid level.....                            | 3-15 |
| - CHECK     | Boom pad slide pathways .....                     | 3-15 |
| - CHECK     | Hydraulic fluid level.....                        | 3-16 |
| - CHECK     | Windshield washer fluid level.....                | 3-16 |
| - CLEAN     | Radiator cores .....                              | 3-16 |
| - CLEAN     | Dry air filter cartridge .....                    | 3-17 |
| - CLEAN     | Condenser harness (Air conditioning OPTION) ..... | 3-17 |
| - CHECK     | Parking brake efficiency.....                     | 3-17 |
| - LUBRICATE | General lubrication .....                         | 3-18 |

**MANDATORY FIRST 500 HOURS OR 6 MONTHS OF SERVICE**

### FIRST 500 HOURS BEFORE THE FIRST 6 MONTHS

- If the lift truck has reached the first 500 hours of operation before the first 6 months have expired, perform both the mandatory maintenance and periodic 500 H maintenance (➤➡➡ 500H - PERIODIC MAINTENANCE - EVERY 500 HOURS OF service OR 1 YEAR).

### FIRST 6 MONTHS BEFORE THE FIRST 500 HOURS

- If the lift truck has not completed 500 hours of service in the first 6 months, just carry out the mandatory service.

 **MANDATORY SERVICE**

|             |                                                         |                                      |
|-------------|---------------------------------------------------------|--------------------------------------|
| - CHECK     | Gearbox oil level .....                                 | 3-14                                 |
| - CHECK     | Tire pressure .....                                     | 3-14                                 |
| - CHECK     | Wheel nut tightening .....                              | 3-14                                 |
| - CHECK     | Front axle differential seal .....                      | 3-14                                 |
| - CHECK     | Rear axle differential seal .....                       | 3-14                                 |
| - CHECK     | Front wheel reducer seals .....                         | 3-14                                 |
| - CHECK     | Rear wheel reducer seals .....                          | 3-14                                 |
| - CHECK     | Brake fluid level .....                                 | 3-15                                 |
| - CHECK     | Boom pad slide pathways .....                           | 3-15                                 |
| - CHECK     | Hydraulic fluid level .....                             | 3-16                                 |
| - CHECK     | Windshield washer fluid level .....                     | 3-16                                 |
| - CLEAN     | Radiator cores .....                                    | 3-16                                 |
| - CLEAN     | Dry air filter cartridge .....                          | 3-17                                 |
| - CLEAN     | Condenser harness (Air conditioning OPTION) .....       | 3-17                                 |
| - LUBRICATE | General lubrication .....                               | 3-18                                 |
| - CHECK     | Alternator belt tension .....                           | 3-20                                 |
| - CHECK     | Compressor belt tension (Air conditioning option) ..... | 3-20                                 |
| - CHECK     | Alternator belt tension (Air conditioning option) ..... | 3-20                                 |
| - CHECK     | Tension of boom outer chains .....                      | 3-21                                 |
| - CLEAN     | Boom outer chains .....                                 | 3-21                                 |
| - CHECK     | Hydraulic oil .....                                     | 3-22                                 |
| - CHECK     | Fork wear * .....                                       | 3-25                                 |
| - ADJUST    | Service brake and parking brake * .....                 | 3-25                                 |
|             |                                                         | <b><i>* Consult your dealer.</i></b> |
| - CHECK     | Boom outer chain wear .....                             | 3-26                                 |
| - CHECK     | Seat belt .....                                         | 3-27                                 |
| - CHECK     | Engine shock mounts * .....                             | 3-30                                 |
| - CHECK     | Valve lash * .....                                      | 3-30                                 |
| - CHECK     | Gearbox silent blocks * .....                           | 3-30                                 |
| - CHECK     | Gear box controls * .....                               | 3-30                                 |
| - CHECK     | Brake system pressure * .....                           | 3-30                                 |
| - CHECK     | Boom pad wear * .....                                   | 3-30                                 |
| - CHECK     | Condition of wiring harnesses and cables * .....        | 3-30                                 |
| - CHECK     | Lights and signals * .....                              | 3-30                                 |
| - CHECK     | Warning indicators * .....                              | 3-30                                 |
| - CHECK     | Condition of the rear view mirrors * .....              | 3-30                                 |
| - CHECK     | Cab structure * .....                                   | 3-30                                 |
| - CHECK     | Chassis structure * .....                               | 3-30                                 |
| - CHECK     | Attachment mounting system * .....                      | 3-30                                 |
| - CHECK     | Condition of attachments * .....                        | 3-30                                 |

**\* Consult your dealer.**

## PERIODIC MAINTENANCE

### MAINTENANCE SCHEDULE

|                        |       | ↺ OR ↻            |                          |                    |       |                      |
|------------------------|-------|-------------------|--------------------------|--------------------|-------|----------------------|
| SCHEDULE ↻             | 250 H | FIRST 6 MONTHS    | FIRST 500 HOURS          | 500 H<br>or 1 YEAR | 750 H | 1000 H<br>or 2 YEARS |
| PERIODIC MAINTENANCE ↻ | ❶     | MANDATORY SERVICE | MANDATORY SERVICE<br>+ ❷ | ❶ + ❷              | ❶     | ❶ + ❷ + ❸            |
| MACHINE COUNTER ↻      |       |                   |                          |                    |       |                      |
| DATE OF SERVICING ↻    |       |                   |                          |                    |       |                      |

| SCHEDULE ↻             | 1250 H | 1500 H<br>or 3 YEARS | 1750 H | 2000 H<br>or 4 YEARS | 2250 H | 2500 H<br>or 5 YEARS | 2750 H |
|------------------------|--------|----------------------|--------|----------------------|--------|----------------------|--------|
| PERIODIC MAINTENANCE ↻ | ❶      | ❶ + ❷                | ❶      | ❶ + ❷ + ❸ + ❹        | ❶      | ❶ + ❷                | ❶      |
| MACHINE COUNTER ↻      |        |                      |        |                      |        |                      |        |
| DATE OF SERVICING ↻    |        |                      |        |                      |        |                      |        |

| SCHEDULE ↻             | 3000 H<br>or 6 YEARS | 3250 H | 3500 H<br>or 7 YEARS | 3750 H | 4000 H<br>or 8 YEARS | 4250 H | 4500 H<br>or 9 YEARS |
|------------------------|----------------------|--------|----------------------|--------|----------------------|--------|----------------------|
| PERIODIC MAINTENANCE ↻ | ❶ + ❷ + ❸            | ❶      | ❶ + ❷                | ❶      | ❶ + ❷ + ❸<br>+ ❹ + ❺ | ❶      | ❶ + ❷                |
| MACHINE COUNTER ↻      |                      |        |                      |        |                      |        |                      |
| DATE OF SERVICING ↻    |                      |        |                      |        |                      |        |                      |

| SCHEDULE ↻             | 4750 H | 5000 H<br>or 10 YEARS | 5250 H | 5500 H<br>or 11 YEARS | 5750 H | 6000 H<br>or 12 YEARS | 6250 H |
|------------------------|--------|-----------------------|--------|-----------------------|--------|-----------------------|--------|
| PERIODIC MAINTENANCE ↻ | ❶      | ❶ + ❷ + ❸             | ❶      | ❶ + ❷                 | ❶      | ❶ + ❷ + ❸ + ❹         | ❶      |
| MACHINE COUNTER ↻      |        |                       |        |                       |        |                       |        |
| DATE OF SERVICING ↻    |        |                       |        |                       |        |                       |        |

## ➔ ① 250H - PERIODIC MAINTENANCE - EVERY 250 HOURS OF SERVICE

|         |                                                         |      |
|---------|---------------------------------------------------------|------|
| - CHECK | Alternator belt tension .....                           | 3-20 |
| - CHECK | Compressor belt tension (Air conditioning option) ..... | 3-20 |
| - CHECK | Alternator belt tension (Air conditioning option) ..... | 3-20 |
| - CHECK | Tension of boom outer chains .....                      | 3-21 |
| - CLEAN | Boom outer chains .....                                 | 3-21 |

## ➔ ② 500H - PERIODIC MAINTENANCE - EVERY 500 HOURS OF SERVICE OR 1 YEAR

|           |                                             |      |
|-----------|---------------------------------------------|------|
| - CHECK   | Hydraulic oil .....                         | 3-22 |
| - REPLACE | Engine oil .....                            | 3-22 |
| - REPLACE | Engine oil filter .....                     | 3-22 |
| - REPLACE | Fuel pre-filter cartridge .....             | 3-23 |
| - REPLACE | Fuel filter cartridge .....                 | 3-23 |
| - REPLACE | Front axle differential oil .....           | 3-24 |
| - REPLACE | Rear axle differential oil .....            | 3-24 |
| - REPLACE | Hydraulic return oil filter cartridge ..... | 3-24 |
| - REPLACE | Cab ventilation filters .....               | 3-25 |
| - CHECK   | Fork wear * .....                           | 3-25 |
| - ADJUST  | Service brake and parking brake * .....     | 3-25 |

*\* Consult your dealer.*

## ➔ ③ 1000H - PERIODIC MAINTENANCE - EVERY 1000 HOURS OF SERVICE OR EVERY 2 YEARS

### ALSO CARRY OUT THE PERIODIC MAINTENANCE FOR 500 HOURS OF SERVICE.

|           |                                                  |      |
|-----------|--------------------------------------------------|------|
| - CHECK   | Boom outer chain wear .....                      | 3-26 |
| - CHECK   | Seat belt .....                                  | 3-27 |
| - CLEAN   | Fuel tank .....                                  | 3-27 |
| - REPLACE | Fuel tank breather .....                         | 3-27 |
| - REPLACE | Coolant .....                                    | 3-28 |
| - REPLACE | Dry air filter cartridge .....                   | 3-29 |
| - REPLACE | Gearbox oil .....                                | 3-29 |
| - REPLACE | Gearbox oil filter .....                         | 3-29 |
| - REPLACE | Front wheel reducer oil .....                    | 3-30 |
| - REPLACE | Rear wheel reducer oil .....                     | 3-30 |
| - CHECK   | Engine shock mounts * .....                      | 3-30 |
| - CHECK   | Valve lash * .....                               | 3-30 |
| - CHECK   | Gearbox silent blocks * .....                    | 3-30 |
| - CHECK   | Gear box controls * .....                        | 3-30 |
| - CHECK   | Brake system pressure * .....                    | 3-30 |
| - CHECK   | Boom pad wear * .....                            | 3-30 |
| - CHECK   | Condition of wiring harnesses and cables * ..... | 3-30 |
| - CHECK   | Lights and signals * .....                       | 3-30 |
| - CHECK   | Warning indicators * .....                       | 3-30 |
| - CHECK   | Condition of the rear view mirrors * .....       | 3-30 |
| - CHECK   | Cab structure * .....                            | 3-30 |
| - CHECK   | Chassis structure * .....                        | 3-30 |
| - CHECK   | Attachment mounting system * .....               | 3-30 |
| - CHECK   | Condition of attachments * .....                 | 3-30 |
| - REPLACE | Brake fluid * .....                              | 3-30 |
| - BLEED   | Braking system * .....                           | 3-30 |

## ➡ ④ 2000H - PERIODIC MAINTENANCE - EVERY 2000 HOURS OF SERVICE OR EVERY 4 YEARS

### ALSO PERFORM THE 500 HOUR AND 1000 HOUR PERIODIC MAINTENANCE.

|           |                                                |                               |
|-----------|------------------------------------------------|-------------------------------|
| - CHECK   | Wheel nut tightening torque .....              | 3-32                          |
| - CLEAN   | Air conditioning (OPTION) * .....              | 3-32                          |
|           |                                                | <i>* Consult your dealer.</i> |
| - REPLACE | Dry air filter safety cartridge .....          | 3-32                          |
| - REPLACE | Hydraulic oil .....                            | 3-33                          |
| - REPLACE | Breather for the hydraulic oil tank .....      | 3-33                          |
| - CLEAN   | Hydraulic oil tank suction strainer .....      | 3-33                          |
| - REPLACE | Brake accumulator unit filter .....            | 3-33                          |
| - CHECK   | Radiator * .....                               | 3-34                          |
| - CHECK   | Water pump and thermostat * .....              | 3-34                          |
| - CHECK   | Alternator and starter * .....                 | 3-34                          |
| - CHECK   | Turbocharger * .....                           | 3-34                          |
| - CHECK   | Transmission pressures * .....                 | 3-34                          |
| - CHECK   | Steering * .....                               | 3-34                          |
| - CHECK   | Steering swivel joints * .....                 | 3-34                          |
| - CHECK   | Brake pad and brake disk wear * .....          | 3-34                          |
| - CHECK   | Condition of boom assembly * .....             | 3-34                          |
| - CHECK   | Bearings and bushings of the boom * .....      | 3-34                          |
| - CHECK   | Condition of hoses and flexible pipes * .....  | 3-34                          |
| - CHECK   | Condition of cylinders (leakage, rods) * ..... | 3-34                          |
| - CHECK   | Hydraulic circuit pressures * .....            | 3-34                          |
| - CHECK   | Chassis bearings and bushings* .....           | 3-34                          |
| - CLEAN   | Hydraulic pump tubular filter * .....          | 3-34                          |

*\* Consult your dealer.*

## ➡ ⑤ 4000H - PERIODIC MAINTENANCE - EVERY 4000 HOURS OF SERVICE OR EVERY 8 YEARS

|         |                             |      |
|---------|-----------------------------|------|
| - CHECK | Boom inner chain wear ..... | 3-35 |
|---------|-----------------------------|------|

## OCCASIONAL MAINTENANCE AND OPERATION

### ➡ OCCASIONAL MAINTENANCE

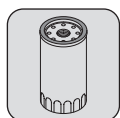
|           |                                                         |      |
|-----------|---------------------------------------------------------|------|
| - REPLACE | Wheels .....                                            | 3-36 |
| - REPLACE | Battery .....                                           | 3-36 |
| - BLEED   | Fuel supply system .....                                | 3-37 |
| - ADJUST  | Front headlights .....                                  | 3-37 |
| - RESET   | Longitudinal stability limiter and warning device ..... | 3-38 |

### ➡ OCCASIONAL OPERATION

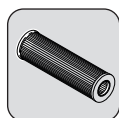
|                |                            |      |
|----------------|----------------------------|------|
| - TOW OR WINCH | Lift truck .....           | 3-40 |
| - SLING        | Lift truck (1st FIT) ..... | 3-41 |
| - SLING        | Lift truck (2nd FIT) ..... | 3-41 |
| - TRANSPORT    | Lift truck .....           | 3-42 |

## FILTER CARTRIDGES AND BELTS

### ➔ 2 500H - PERIODIC MAINTENANCE - EVERY 500 HOURS OF SERVICE OR 1 YEAR



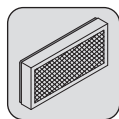
ENGINE OIL FILTER



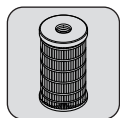
HYDRAULIC RETURN OIL FILTER CARTRIDGE



FUEL PRE-FILTER CARTRIDGE



EXTERIOR CAB VENTILATION FILTER



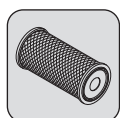
FUEL FILTER CARTRIDGE



INTERIOR CAB VENTILATION FILTER

### ➔ 3 1000H - PERIODIC MAINTENANCE - EVERY 1000 HOURS OF SERVICE OR EVERY 2 YEARS

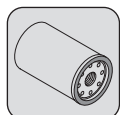
*ALSO ADD THE FILTER CARTRIDGES FROM THE PERIODIC MAINTENANCE FOR 500 HOURS OF SERVICE.*



DRY AIR FILTER CARTRIDGE



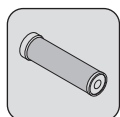
FUEL TANK BREATHER



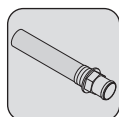
GEARBOX OIL FILTER

### ➔ 4 2000H - PERIODIC MAINTENANCE - EVERY 2000 HOURS OF SERVICE OR EVERY 4 YEARS

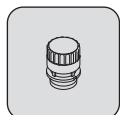
*ALSO ADD FILTER ELEMENTS FOR PERIODIC MAINTENANCE AT 500 HOURS AND 1,000 HOURS OF SERVICE.*



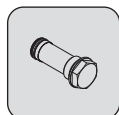
SAFETY DRY AIR FILTER CARTRIDGE



SUCTION STRAINER FOR HYDRAULIC OIL TANK



BREATHER FOR HYDRAULIC OIL TANK



BRAKE ACCUMULATOR UNIT FILTER

### ➔ OCCASIONAL MAINTENANCE



ALTERNATOR BELT



CYCLONIC PRE-FILTER



COMPRESSOR BELT  
(AIR CONDITIONING OPTION)



SELF-CLEANING PRE-FILTER (OPTION)



ALTERNATOR BELT  
(AIR CONDITIONING OPTION)

## LUBRICANTS AND FUEL

### ⚠ IMPORTANT ⚠

USE THE RECOMMENDED LUBRICANTS AND FUEL:

- For topping up, oils may not be miscible.

- For oil changes, MANITOU oils are perfectly appropriate.

Halve the engine maintenance intervals when using biodiesel B11 or above.

Replace the water separator O-ring when switching from diesel fuel to biodiesel fuel such as HVO, B11 or higher.

Pay special attention to the seals and fuel hoses when using HVO.

### DIAGNOSTIC ANALYSIS OF OILS

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

### (\*) REQUIRED FUEL SPECIFICATION

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

- Type of diesel fuel EN590 (sulfur content < 10 ppm)
- Type of diesel fuel ASTM D975 (sulfur content < 15 ppm)
- Biodiesel B8 to B20 EN16709
- Biodiesel HVO100 EN15940

### RECOMMENDATION

| ENGINE                           |            |                                              |        |     |     |     |   |     |     |     |     |        |  |
|----------------------------------|------------|----------------------------------------------|--------|-----|-----|-----|---|-----|-----|-----|-----|--------|--|
| DESCRIPTION                      | CAPACITY   | RECOMMENDATION                               | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| ENGINE                           | 10,9 ℓ     | 0W20                                         |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 0W30                                         |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 0W40                                         |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 5W30                                         |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 5W40                                         |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 10W30                                        |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | 10W40                                        |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            | MANITOU OIL 500 15W40 API CH4                |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| COOLING CIRCUIT                  | 20 ℓ       | COOLANT -35 °C                               |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FUEL TANK                        | 140 ℓ      | HP NON-ROAD DIESEL (GNR) *                   |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| TRANSMISSION                     |            |                                              |        |     |     |     |   |     |     |     |     |        |  |
| DESCRIPTION                      | CAPACITY   | RECOMMENDATION                               | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| GEARBOX                          | 21,1 ℓ     | MANITOU DX IIIG AUTOMATIC TRANSMISSION OIL   |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FRONT AXLE                       |            |                                              |        |     |     |     |   |     |     |     |     |        |  |
| DESCRIPTION                      | CAPACITY   | RECOMMENDATION                               | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FRONT AXLE DIFFERENTIAL          | 7,2 ℓ      | SPECIAL MANITOU OIL FOR IMMersed BRAKES      |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FRONT WHEEL REDUCING GEAR        | 2 x 0,75 ℓ | MANITOU SAE80W90 MECHANICAL TRANSMISSION OIL |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FRONT WHEEL REDUCING GEAR PIVOTS |            | MANITOU BLACK MULTI-PURPOSE LUBRICANT        |        |     |     |     |   |     |     |     |     |        |  |
|                                  |            |                                              | -40 °C | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| FRONT AXLE OSCILLATION (OPTION)  |            | MANITOU BLUE MULTI-PURPOSE LUBRICANT         |        |     |     |     |   |     |     |     |     |        |  |

| REAR AXLE                       |            |                                              |     |     |     |   |     |     |     |     |        |
|---------------------------------|------------|----------------------------------------------|-----|-----|-----|---|-----|-----|-----|-----|--------|
| DESCRIPTION                     | CAPACITY   | RECOMMENDATION                               |     |     |     |   |     |     |     |     |        |
| REAR AXLE DIFFERENTIAL          | 7,2 ℓ      | SPECIAL MANITOU OIL FOR IMMERSER BRAKES      |     |     |     |   |     |     |     |     |        |
|                                 |            | -40 °C                                       | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| REAR WHEEL REDUCING GEAR        | 2 x 0,75 ℓ | MANITOU SAE80W90 MECHANICAL TRANSMISSION OIL |     |     |     |   |     |     |     |     |        |
|                                 |            | -40 °C                                       | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| REAR WHEEL REDUCING GEAR PIVOTS |            | MANITOU BLACK MULTI-PURPOSE LUBRICANT        |     |     |     |   |     |     |     |     |        |
|                                 |            | -40 °C                                       | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| REAR AXLE OSCILLATION           |            | MANITOU BLUE MULTI-PURPOSE LUBRICANT         |     |     |     |   |     |     |     |     |        |

| BRAKES       |          |                             |  |  |  |  |  |  |  |  |  |
|--------------|----------|-----------------------------|--|--|--|--|--|--|--|--|--|
| DESCRIPTION  | CAPACITY | RECOMMENDATION              |  |  |  |  |  |  |  |  |  |
| BRAKE SYSTEM | 1 ℓ      | MANITOU MINERAL BRAKE FLUID |  |  |  |  |  |  |  |  |  |

| BOOM                               |                                       |     |     |     |   |     |     |     |     |        |  |
|------------------------------------|---------------------------------------|-----|-----|-----|---|-----|-----|-----|-----|--------|--|
| DESCRIPTION                        | RECOMMENDATION                        |     |     |     |   |     |     |     |     |        |  |
|                                    | -40 °C                                | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| BOOM PAD SLIDE PATHWAYS            | MANITOU BLACK MULTI-PURPOSE LUBRICANT |     |     |     |   |     |     |     |     |        |  |
|                                    | -40 °C                                | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| GREASING OF THE BOOM               | MANITOU BLUE MULTI-PURPOSE LUBRICANT  |     |     |     |   |     |     |     |     |        |  |
|                                    | -40 °C                                | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |  |
| BOOM CHAINS MT-X 1840 100P ST3A S2 | MANITOU SPECIAL CHAINS LUBRICANT      |     |     |     |   |     |     |     |     |        |  |

| HYDRAULICS         |          |                |     |     |     |   |     |     |     |     |        |
|--------------------|----------|----------------|-----|-----|-----|---|-----|-----|-----|-----|--------|
| DESCRIPTION        | CAPACITY | RECOMMENDATION |     |     |     |   |     |     |     |     |        |
|                    |          | -40 °C         | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| HYDRAULIC OIL TANK | 115 ℓ    |                |     |     |     |   |     |     |     |     |        |
|                    |          |                |     |     |     |   |     |     |     |     |        |
|                    |          |                |     |     |     |   |     |     |     |     |        |
|                    |          |                |     |     |     |   |     |     |     |     |        |
|                    |          |                |     |     |     |   |     |     |     |     |        |

| CAB                                  |          |                         |  |  |  |  |  |  |  |  |  |
|--------------------------------------|----------|-------------------------|--|--|--|--|--|--|--|--|--|
| DESCRIPTION                          | CAPACITY | RECOMMENDATION          |  |  |  |  |  |  |  |  |  |
| WINDSHIELD WASHER TANK               | 8 ℓ      | WINDSHIELD WASHER FLUID |  |  |  |  |  |  |  |  |  |
| COMPRESSOR (AIR CONDITIONING OPTION) | 0,24 ℓ   | R12 MINERAL OIL         |  |  |  |  |  |  |  |  |  |

| CHASSIS                                |          |                                      |     |     |     |   |     |     |     |     |        |
|----------------------------------------|----------|--------------------------------------|-----|-----|-----|---|-----|-----|-----|-----|--------|
| DESCRIPTION                            | CAPACITY | RECOMMENDATION                       |     |     |     |   |     |     |     |     |        |
|                                        |          | -40 °C                               | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| STABILIZERS<br>FRAME LEVELING (OPTION) |          | MANITOU BLUE MULTI-PURPOSE LUBRICANT |     |     |     |   |     |     |     |     |        |

| ATTACHMENT                                 |          |                                      |     |     |     |   |     |     |     |     |        |
|--------------------------------------------|----------|--------------------------------------|-----|-----|-----|---|-----|-----|-----|-----|--------|
| DESCRIPTION                                | CAPACITY | RECOMMENDATION                       |     |     |     |   |     |     |     |     |        |
|                                            |          | -40 °C                               | -30 | -20 | -10 | 0 | +10 | +20 | +30 | +40 | +50 °C |
| SINGLE SIDE-SHIFT CARRIAGE (TSDL) (OPTION) |          | MANITOU BLUE MULTI-PURPOSE LUBRICANT |     |     |     |   |     |     |     |     |        |

## CHECK

## Lift truck environment

Carry out a general inspection around the lift truck:

- Fluid leaks or stains on the ground.
- Additional objects on the lift truck and in the cab.
- Mounting and locking of the attachment.
- Mounting and adjustment of rear-view mirrors.
- Condition of the tires to detect cuts, blisters, wear, etc.

### ⚠ IMPORTANT ⚠

Follow the operator instructions (➡ 1 - OPERATING AND SAFETY INSTRUCTIONS: OPERATOR INSTRUCTIONS).

## CLEANLINESS OF THE FORKLIFT

- Cleanliness of lights and rear-view mirror.
- Excess dirt or build-up of material (e.g. straw, flour, sawdust, organic waste, etc.).
- On a daily basis, according to the conditions of use and the environment, the operator should ensure that the forklift truck is kept in a clean condition.
- Particular attention should be paid to accumulations of flammable materials (e.g. straw, flour, sawdust, organic waste, etc.) and fuel or lubricant leaks, as these significantly increase the risk of fire outbreaks.
- A regular inspection of the whole lift truck, especially the engine housing and the central part of the chassis, is necessary to see how frequently it needs to be cleaned to prevent these potential accumulations of material or leakages.

## CHECK

## Engine oil level

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

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



## CHECK

## Coolant level

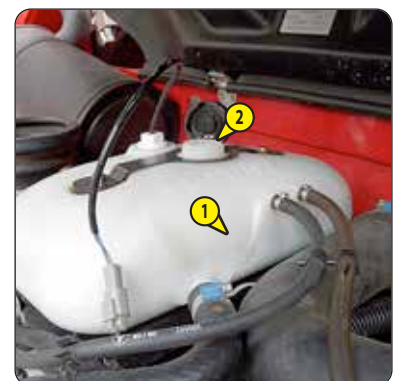
Place the lift truck on level ground with the engine stopped, and allow the engine to cool.

### ⚠ IMPORTANT ⚠

To avoid any risk of spraying or scalding, wait until the engine has cooled down before removing the cooling circuit filler plug.

In the event of an emergency, it is possible to use water as the coolant, but then proceed to drain the coolant circuit as quickly as possible.

- Open the engine hood.
- The liquid must be at the MAX. level on the expansion tank 1.
- If necessary, add coolant (➡ LUBRICANTS AND FUEL) through the filler hole 2.
- Visually check that there is no leakage or seepage.



## CHECK

### Fuel pre-filter

#### ⚠ IMPORTANT ⚠

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

- Open the engine hood.
- Check for the presence of water in pre-filter tank 1 and drain if necessary.
- Place a receptacle under the drain plug 2 and unscrew it by two thread turns.
- Allow the diesel fuel to flow out until it is free from impurities and water.
- Retighten the drain plug while the diesel fuel is flowing out.



## CHECK

### Longitudinal stability limiter and warning device

Place the lift truck on flat, level ground with the wheels straight.

- Press the button  to display the "PREFERENCES" menu.
- Press the button  to select from the menus and sub-menus.

HYDRAULICS > STABILITY TEST

- Press knob  to confirm.
- Follow the steps described on the information screen (OK = press button ).

#### ⚠ IMPORTANT ⚠

*If an error code is displayed, recalibrating the longitudinal stability limiter and warning device may resolve the problem (⚠ OCCASIONAL MAINTENANCE).*

## CLEAN

### Cyclonic pre-filter

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

#### ⚠ IMPORTANT ⚠

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

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



## ➡ 50H - WEEKLY MAINTENANCE OR EVERY 50 HOURS OF SERVICE

### CHECK

### Gearbox oil level

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

#### ⚠ IMPORTANT ⚠

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

- Remove dipstick 1 by unscrewing it.
- Wipe the dipstick and check the correct level against the MAX mark.
- If necessary, add oil (➡ LUBRICANTS AND FUEL) through the same hole.
- Retighten the gage 1.
- Visually check that there is no leakage or seepage.



### CHECK

### Tire pressure

### CHECK

### Wheel nut tightening

#### ⚠ IMPORTANT ⚠

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

- Check the wheel nut torque. Non-compliance with this instruction can lead to deterioration and breakage of the wheel lugs and distortion of the wheels.
- Check and restore tire pressure, if necessary (➡ 2 - DESCRIPTION: TIRES).

N.B.: An OPTIONAL wheel tool kit is available.

### CHECK

### Front axle differential seal

### CHECK

### Rear axle differential seal

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

- Visually check that there is no leakage or seepage.
- If there is any leakage or seepage, check the level:
  - Remove the level plug 1, the oil should be flush with the edge of the hole.
  - If necessary, add oil (➡ LUBRICANTS AND FUEL) through the filler hole 2.
  - Refit and tighten the level plug (tightening torque 34 - 49 N.m).



### CHECK

### Front wheel reducer seals

### CHECK

### Rear wheel reducer seals

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

- Visually check that there is no leakage or seepage.
- If there is any leakage or seepage, check the level:
  - Place level plug 1 in a horizontal position.
  - Remove the level plug; the oil should be flush with the edge of the opening.
  - If necessary, add oil (➡ LUBRICANTS AND FUEL) through the same hole.
  - Refit and tighten the level plug (tightening torque 34 - 49 N.m).



## CHECK

### Brake fluid level

Place the lift truck on level ground.

#### **⚠ IMPORTANT ⚠**

*If the brake fluid level is abnormal, consult your dealer.*

- Open the protective casing 1 with the ignition key.
- Check tank 2. The correct level should be at the MAX. level on the tank.
- Visually check that there is no leakage or seepage.
- If necessary, add oil (⚠ LUBRICANTS AND FUEL).
- Remove the cap 3.
- Add oil through filler port.
- Refit the cap.



## CHECK

### Boom pad slide pathways

To preserve optimum operation, the pad slide pathways should be correctly lubricated:

#### **⚠ IMPORTANT ⚠**

**MANDATORY GREASING OF THE BOOM AFTER:**  
*Cleaning the boom, especially after using high pressure cleaner.*  
*The forklift has been unused for a long period of time.*

- Fully extend the boom.
- Check the condition of the surface of the pad slide pathways, surface run in (steel whitened) without traces of corrosion.
- If necessary lubricate the pad slide pathways (⚠ LUBRICANTS AND FUEL).
- Telescope the boom several times in order to spread the lubricant evenly.
- Remove the surplus lubricant.



#### **⚠ IMPORTANT ⚠**

*If the lift truck is used in an abrasive environment (dust, sand, coal) use lubricating varnish (MANITOU Part No.: 483536).  
Consult your dealer.*

## CHECK

### Hydraulic fluid level

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

#### ⚠ IMPORTANT ⚠

*Use a very clean funnel and clean the top of the oil can before filling.*

- Check dipstick 1, the correct level must be at the level of the red dot.
- If necessary, add oil (⚠ LUBRICANTS AND FUEL).
- Remove the protective casing 2.
- Remove the cap 3.
- Add oil through filler port.
- Refit the cap.
- Visually check that there is no leakage or seepage.
- Refit the protective casing.



## CHECK

### Windshield washer fluid level

Place the lift truck on level ground.

- Open the protective casing 1 with the ignition key.
- Visually check the level in the tank.
- If necessary, add windshield washer fluid (⚠ LUBRICANTS AND FUEL).
- Remove the cap 2.
- Add windshield washer liquid through filler port.
- Refit the cap.



## CLEAN

### Radiator cores

#### ⚠ IMPORTANT ⚠

*In a polluting atmosphere, clean the radiator cores every day.*

*Do not use a water jet or high pressure steam as this could damage the fins.*

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



## CLEAN

## Dry air filter cartridge

Prefiltration elements are available for use in very dusty conditions (< FILTER CARTRIDGES AND BELTS). The cartridge checking and cleaning interval must also be reduced.

### ⚠ IMPORTANT ⚠

*If the clogging indicator lamp comes on, this operation should be performed as soon as possible (maximum 1 hour).*

*Never operate the lift truck without an air filter or with an air filter that is damaged.*

*Maintain a safety distance of 30 mm between the jet of air and the cartridge to avoid tearing or piercing the cartridge.*

*The cartridge must not be blown through close to the air filter casing.*

*Never clean the cartridge by tapping it on a hard surface.*

*Protect your eyes during this operation.*

*Do not clean the dry air filter cartridge by washing it in liquid.*

*Never clean the safety cartridge located inside the filter cartridge. Change it for a new one if it is clogged or damaged.*

- For the dismantling and refitting of the cartridge (< 1000H: REPLACE Air filter cartridge).
- Clean the filter cartridge using a compressed air jet (max. pressure 3 bars) directed from the top to the bottom and from the inside towards the outside at a minimum distance of 30 mm from the cartridge wall.
- Cleaning is completed when there is no more dust on the cartridge.
- Clean the cartridge seal surface with a damp, clean lint-free cloth and grease with a silicone lubricant (MANITOU part no.: 479292).
- Visually inspect the external condition of the air filter and its mounts. Check also the condition of the hoses and their attachments.

## CLEAN

## Condenser harness (Air conditioning OPTION)

### ⚠ IMPORTANT ⚠

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

- Visually check whether the condenser is clean and clean it if necessary.
- Clean the condenser using a compressed air jet aimed in the same direction as the air flow.
- To optimize cleaning, perform this operation with the fans running.



## CHECK

## Parking brake efficiency

- Place the lift truck on a 15% slope.
- Activate the parking brake.
- Check that the lift truck is held on the slope.

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

**⚠ IMPORTANT ⚠**

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

Clean, then lubricate the following points with grease (☞ LUBRICANTS AND FUEL) and remove the surplus.

**BOOM**

- 1 - Lubricators of the boom pin (2 lubricators).
- 2 - Lubricators of the carriage pin (2 lubricators).
- 3 - Lubricator of the tilting cylinder foot pin (1 lubricator).
- 4 - Lubricator of the tilting cylinder head pin (1 lubricator).
- 5 - Lubricator of the lifting cylinder foot pin (1 lubricator).
- 6 - Lubricator of the lifting cylinder head pin (1 lubricator).
- 7 - Lubricator of the compensating cylinder foot pin (1 lubricator).
- 8 - Lubricator of the compensating cylinder head pin (1 lubricator).
- 9 - Lubricator of the chain pulley shaft of telescope 2 at the boom head (1 lubricator). MT-X 1840 100P ST3A S2
- 10 - Lubricator of the chain pulley shaft of telescope 1 at the boom head (1 lubricator). MT-X 1840 100P ST3A S2
- 11 - Lubricator of the chain pulley shaft of telescope 1 at the boom foot (1 lubricator). MT-X 1840 100P ST3A S2
- 12 - Lubricator of the hose pulley shaft at the boom foot (1 lubricator). MT-X 1840 100P ST3A S2

**FRONT AND REAR WHEEL REDUCTION GEAR PIVOTS**

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

**AXLE OSCILLATION**

- 14 - Front axle oscillation lubricators (2 lubricators) (OPTION).
- 15 - Rear axle oscillation lubricators (2 lubricators).

**FRAME LEVELING**

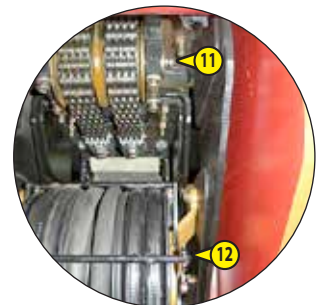
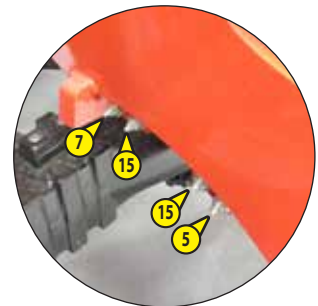
- 16 - Lubricator of the tilting corrector cylinder foot pin (1 lubricator).
- 17 - Lubricator of the tilting corrector cylinder head pin (1 lubricator).

**STABILIZERS**

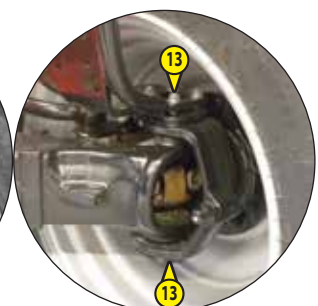
- 18 - Lubricators of the stabilizer cylinder foot pin (2 lubricators).
- 19 - Lubricators of the stabilizer cylinder head pin (2 lubricators).
- 20 - Lubricators of the stabilizer shafts (2 lubricators).

**SINGLE SIDE-SHIFT CARRIAGE (TSDL) (OPTION)**

- 21 - Wear plate lubricators (8 lubricators).



OPTION



647813 (28/04/2025)  
MT-X 1440 100P ST3A S2  
MT-X 1840 100P ST3A S2



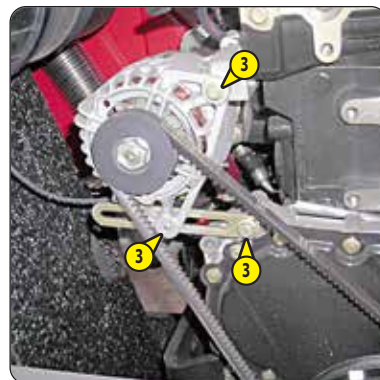
### CHECK

### Alternator belt tension

#### ⚠ IMPORTANT ⚠

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

- Open the engine hood.
- Unscrew the fastening screws 1.
- Remove the protective casing 2.
- Check the belt for signs of wear and cracks, and change if necessary (⚡ FILTERS CARTRIDGES AND BELTS).
- Check the tension between the crankshaft and alternator pulleys.
- Under a normal pressure exerted with the thumb (45 N), the clearance should be approximately 10 mm.
- Adjust if necessary.
- Loosen screws 3 by two to three thread turns.
- Swivel the alternator assembly so as to obtain the belt tension required.
- Retighten screws 3 (tightening torque 22 N.m).
- Refit the protective casing 2.



### CHECK

### Compressor belt tension (Air conditioning option)

### CHECK

### Alternator belt tension (Air conditioning option)

#### ⚠ IMPORTANT ⚠

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

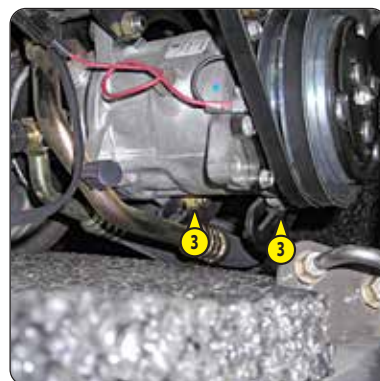
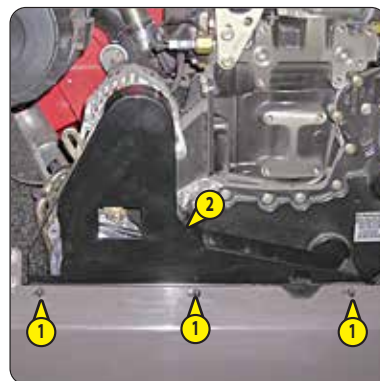
- Open the engine hood.
- Unscrew the fastening screws 1.
- Remove the protective casing 2.

#### ⚠ IMPORTANT ⚠

*After adjusting the compressor belt, you must carry out the adjustment of the alternator belt.*

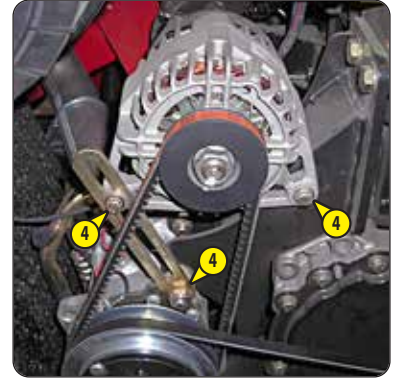
### COMPRESSOR BELT

- Check the belt for signs of wear and cracks, and change if necessary (⚡ FILTERS CARTRIDGES AND BELTS).
- Check the belt tension between the pulleys of the crankshaft and of the compressor
- Under a normal pressure exerted with the thumb (45 N), the clearance should be approximately 10 mm.
- Adjust if necessary.
- Loosen screws 3 by two to three turns.
- Swivel the compressor assembly so as to obtain the belt tension required.
- Retighten screws 3 (tightening torque 22 N.m).



## ALTERNATOR BELT

- Check the belt for signs of wear and cracks, and change if necessary (➤ FILTERS CARTRIDGES AND BELTS).
- Check the belt tension between the pulleys of the alternator and the compressor.
- Under a normal pressure exerted with the thumb (45 N), the clearance should be approximately 10 mm.
- Adjust if necessary.
- Loosen screws 4 by two to three turns.
- Swivel the alternator assembly so as to obtain the required belt tension.
- Retighten screws 4 (tightening torque 22 N.m).
- Refit the protective casing.



## CHECK

### Tension of boom outer chains

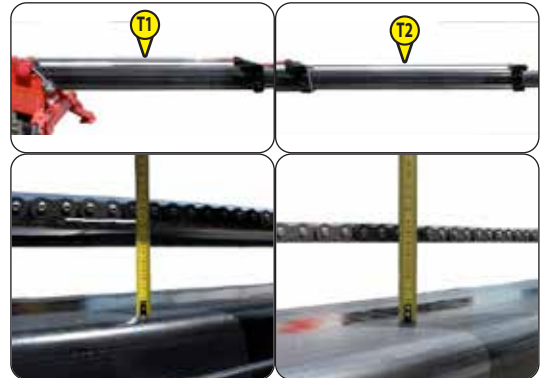
MT-X 1840 100P ST3A S2

Set the lift truck on its stabilizers, with the boom horizontal.

### ⚠ IMPORTANT ⚠

*These checks are important for the proper operation of the boom. In case of technical faults, consult your dealer.*

- Fully extend the telescopes, then retract the boom 200 mm.
- At the centre of both telescopes (T1) and (T2), use a ruler to measure the perpendicular distance between the top of the telescope and the underside of the chain, this distance must be identical for both chains.
  - Telescope (T1): between 117 mm and 97 mm
  - Telescope (T2): between 85 mm and 65 mm



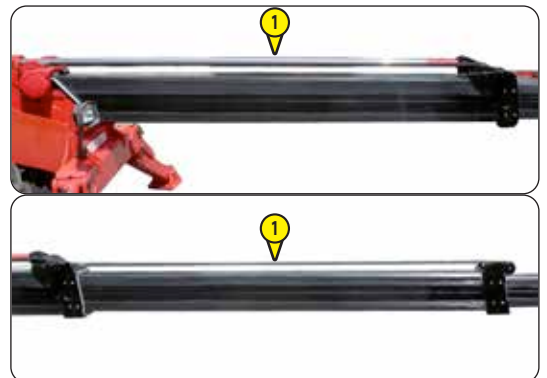
## CLEAN

### Boom outer chains

MT-X 1840 100P ST3A S2

Set the lift truck on its stabilizers, with the boom horizontal.

- Fully extend the telescopes.
- Protect the underside of the telescopes.
- Wipe the outer boom chains 1 with a clean, lint-free cloth, then examine them closely for 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.
- Lightly lubricate the chains (➤ LUBRICANTS AND FUEL), and perform a number of telescoping movements to check the behaviour of the chains.



### CHECK

### Hydraulic oil

MANITOU offers a hydraulic fluid analysis kit which might make it possible to delay the recommended deadline in the periodic maintenance schedule (2,000 hours). In this case, we recommend an analysis of the hydraulic oil every 500 hours of service.

The oil analysis kit also makes it possible to confirm the oil quality so as to obtain a deadline of 2,000 hours for specific uses causing constraints on the hydraulic circuit: extreme environmental conditions, use of the attachments with a very high hydraulic flow rate (such as a sweeper, or a concrete mixer).

- Order an oil analysis kit from your dealer.
- Upon receiving the kit, take a sample of oil and follow the instructions shown on the kit.
- According to the results, keep the analysis report or replace the hydraulic fluid.

Oil analysis kit (MANITOU Part No.: 958162)



### REPLACE

### Engine oil

### REPLACE

### Engine oil filter

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



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

### DRAINING THE OIL

- Open the engine hood.
- Remove access panel 1.

N.B.: When removing cover plates and hatches, clean the surrounding area and remove any accumulations of flammable materials.

- Place a container under the drain hole and unscrew the drain plug 2.
- Take drain hose 3.
- Place the end of the drain hose in the container and screw the hose fully to the drain connector 2.
- Remove the filler plug 4 to ensure correct drainage.

### REPLACEMENT OF THE FILTER

- Unscrew and discard the engine oil filter 5, together with its seal.
- Clean the filter bracket with a clean, lint-free cloth.
- Lightly grease the seal before refitting the new oil filter (⇐ FILTERS, CARTRIDGES AND BELTS) on its bracket.

### FILLING WITH OIL

- Remove, clean and refit drain hose 3.
- Refit and tighten the drain plug 2.
- Fill up with oil (⇐ LUBRICANTS AND FUEL) through filler port 4.
- Wait a few minutes to allow the oil to flow into the sump.
- Start the engine and let it run for a few minutes.
- Check for possible leaks from the drain plug and the oil filter.
- Stop the engine, wait a few minutes and check the correct level between the two marks on the dipstick 6.
- Top up the level, if necessary.
- Refit access panel 1.



## REPLACE

### Fuel pre-filter cartridge

#### ⚠ IMPORTANT ⚠

*Make sure the electrical contact on the lift truck is cut, otherwise fuel will be released if the lift pump is on.*

- Open the engine hood.
- Carefully clean the outside of the pre-filter and its holder, to prevent dust from getting into the system.
- Place a receptacle under the pre-filter and empty using drain plug 1.
- Open bleed screw 2 to ensure proper emptying.
- Unscrew locking screw 3.
- Remove the housing 4 and discard the pre-filter 5 as well as its seals.
- Clean the inside of the pre-filter head and the housing, using a brush immersed in clean diesel oil.
- Refit the assembly with a new pre-filter and new seals (➤ FILTERS, CARTRIDGES AND BELTS).
- If necessary, bleed the fuel supply system (➤ OCCASIONAL MAINTENANCE).



## REPLACE

### Fuel filter cartridge

#### ⚠ IMPORTANT ⚠

*Make sure the electrical contact on the lift truck is cut, otherwise fuel will be released if the lift pump is on.*

- Open the engine hood.
- Unscrew the fastening screws 1.
- Remove the protective casing 2.
- Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.
- Place a receptacle under the filter and empty using drain plug 3.
- Undo the filter housing 4.
- Remove the filter cartridge by pressing cartridge 5 down against the pressure of the spring and turn it to the left to extract it.
- Insert a new cartridge (➤ FILTERS, CARTRIDGES AND BELTS), by pressing cartridge 5 down against the pressure of the spring and turning it to the right to lock it into the body of the filter.
- Place the new seal 6 onto the body of the filter and lightly lubricate the contact surface of the seal using clean motor oil.
- Remount the body of the filter onto its holder, hand-tighten it only and lock it with a quarter-turn.
- Close drain plug 3 and remove the receptacle.
- Before starting the engine, leave the ignition on for three minutes on the lift truck, to give the lift pump time to release air from the filter.
- Start up the I.C. engine and make sure there is no leakage.
- If necessary, bleed the fuel supply system (➤ OCCASIONAL MAINTENANCE).



## REPLACE

### Front axle differential oil

## REPLACE

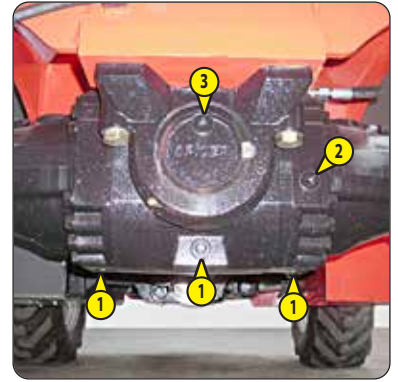
### Rear axle differential oil

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

#### ⚠ IMPORTANT ⚠

*Dispose of the used oil in an ecological manner.*

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



## REPLACE

### Hydraulic return oil filter cartridge

Stop the engine and release the pressure from the systems by operating the hydraulic controls.

#### ⚠ IMPORTANT ⚠

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

- Remove the protective casing 1.
- Remove the filler plug 2 and unscrew cover 3 by two or three thread turns.
- Wait a few moments while the oil flows into the tank.
- Remove the cover and slowly take out the filter cartridge assembly 4.
- Place the assembly in a clean container.
- Pinch the head 5 and separate it from the tank 6.
- Replace the cartridge 7 with a new one (⇐ FILTER CARTRIDGES AND BELTS).
- Put back the assembly then retighten the cover.
- Refit the filler plug 2.
- Refit the protective casing 1.



## **REPLACE**

### ***Cab ventilation filters***

#### **EXTERNAL CAB VENTILATION FILTER**

- Remove protective casing 1 using the ignition key.
- Remove the cab ventilation filter 2 and replace it with a new one (➤ **FILTER CARTRIDGES AND BELTS**).
- Refit the protective casing.



#### **INTERNAL CAB VENTILATION FILTER**

- Remove the protective grid 3.
- Remove the cab ventilation filter 4 and replace it with a new one (➤ **FILTER CARTRIDGES AND BELTS**).
- Refit the protective grid.



## **CHECK**

### ***Fork wear \****

## **ADJUST**

### ***Service brake and parking brake \****

***\* Consult your dealer.***

## 🔧 1000H - PERIODIC MAINTENANCE - EVERY 1000 HOURS OF SERVICE OR EVERY 2 YEARS

ALSO CARRY OUT THE PERIODIC MAINTENANCE FOR 500 HOURS OF SERVICE.

### CHECK

### Boom outer chain wear

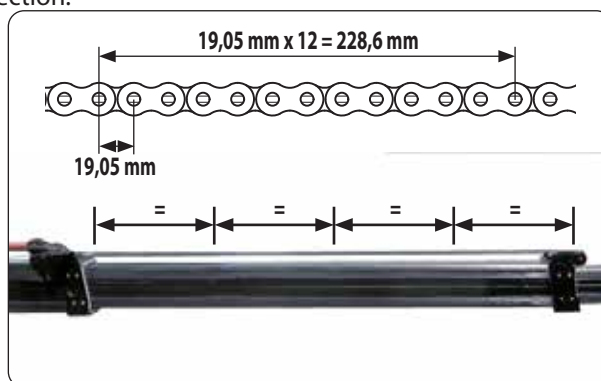
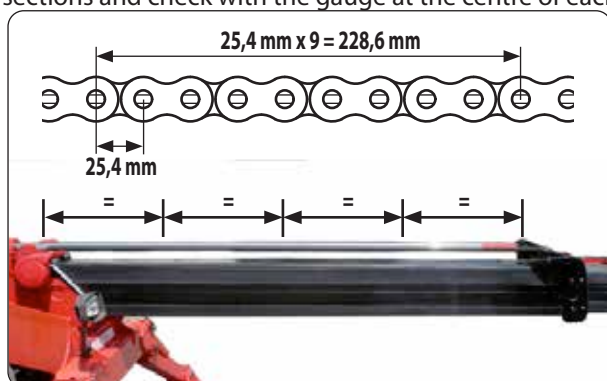
MT-X 1840 100P ST3A S2

- Chain wear occurs at a number of locations.
  - On the joints, which leads to elongation of the chain.
  - On the edge of link plates through contact with the pulleys.
  - On the sides of the plates and the protruding pins through contact with the pulley flanges.
  - On the alignment of the flats of the extended pins.

### CHAIN ELONGATION

We recommend that you perform this operation using the chain checking gauge (MANITOU Part No.: 161583).

- Set the lift truck on its stabilizers, with the boom horizontal.
- Fully extend the telescopes and continue operating the control for a few moments to properly tension the chains.
- As the chain is likely to wear unevenly over its length, divide the chain into 4 equal sections and check with the gauge at the centre of each section.



#### ⚠ IMPORTANT ⚠

If the maximum dimension ( $228,6 \text{ mm} + 2\% = 233,2 \text{ mm}$ ) is exceeded, replace the pair of chains (contact your dealer).

### PLATE EDGE WEAR

As for chain elongation, perform a check in the middle of each equal section using a caliper gage.

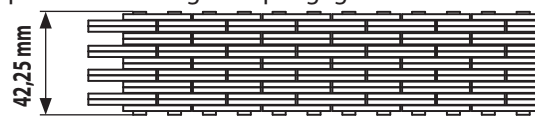


#### ⚠ IMPORTANT ⚠

If the minimum dimension ( $24 \text{ mm} - 2\% = 23,5 \text{ mm}$  et  $15,5 \text{ mm} - 2\% = 15,2 \text{ mm}$ ) is exceeded, replace the pair of chains (contact your dealer).

### EXTENDED PIN WEAR

As for chain elongation, perform a check in the middle of each equal section using a caliper gage.



#### ⚠ IMPORTANT ⚠

If the minimum dimension ( $53,6 \text{ mm} - 2\% = 52,5 \text{ mm}$  et  $42,25 \text{ mm} - 2\% = 41,4 \text{ mm}$ ) is exceeded, replace the pair of chains (contact your dealer).

- In addition to wear, the high pressures between the side of the plates and the pulleys may force out material, causing the articulations to jam. Replace the pair of chains in this case also.

### ALIGNMENT OF EXTENDED PIN FLATS

Check the chains over their entire length.

- High friction between the plates and the extended pins may cause the pins to turn within the outer plates and thus come out of their housing.



#### ⚠ IMPORTANT ⚠

If the flats are not aligned in the longitudinal direction of the chain, replace the pair of chains (contact your dealer).

**⚠ IMPORTANT ⚠**

*Under no circumstances must the lift truck be used if the seat belt is defective (fixing, locking, cuts, tears, etc.).  
Immediately repair or replace the seat belt.*

**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.

N.B.: Replace the seat belt after an accident.

**CLEAN****Fuel tank****REPLACE****Fuel tank breather**

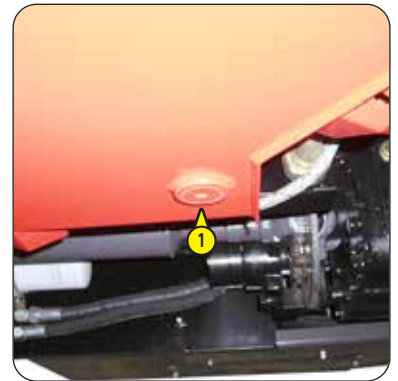
Place the lift truck on level ground with the engine stopped.

**⚠ IMPORTANT ⚠**

*Do not smoke or approach with a flame during this operation.*

*Never attempt to carry out welding or any other operation by yourself, as this could cause an explosion or a fire.*

- Inspect the parts of the fuel circuit and the tank liable to leak, both visually and by touch.
- In the event of a leak, contact your dealer.
- Place a container under drain plug 1 and unscrew the plug.
- Remove the filler plug 2 to ensure correct drainage.
- Rinse with ten liters of clean diesel through the filler hole 3.
- Refit and tighten the drain plug 1 (tightening torque 72 - 88 N.m).
- Open storage compartment 4.
- Unscrew the breather 5 and replace with a new one (⇐ FILTER CARTRIDGES AND BELTS) (tightening torque 3 - 7 N.m).
- Fill the fuel tank with clean diesel filtered through the filler port.
- Refit the filler plug.



These operations are to be carried out as necessary or every 2 years at the beginning of winter. Place the lift truck on level ground with the engine stopped and cold.

## ⚠ IMPORTANT ⚠

*The engine does not contain any anti-corrosion elements and must be filled throughout the year with a mixture containing 25% ethylene glycol-based antifreeze.*

### DRAINING THE LIQUID

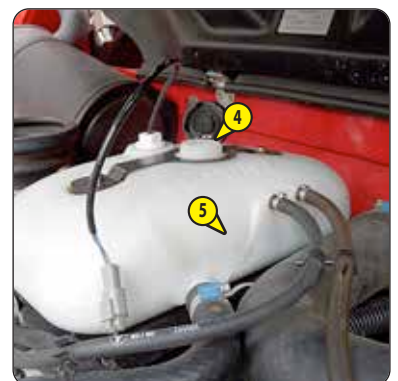
- Open the engine hood.
- Remove access panel 1.

N.B.: When removing cover plates and hatches, clean the surrounding area and remove any accumulations of flammable materials.

- Place a container under drain valve 2 on the radiator and drain plug 3 of the engine block and loosen the plugs.
- Remove filler plug 4 from the expansion tank and fully open the heating control to ensure correct drainage.
- 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 WITH COOLANT

- Tighten the drain valve 2 and drain plug 3 (tightening torque 40 N.m).
- Slowly fill the circuit with coolant (⚠ LUBRICANTS AND FUEL) up to the middle of the expansion tank 5 by the filler hole.
- Refit the filler plug 4.
- Run the engine at idle for a few minutes.
- Check for any possible leaks.
- Refit access panel 1.
- Check the level and top up if necessary.



## REPLACE

### Dry air filter cartridge

Prefiltration elements are available for use in very dusty conditions (⇐ FILTER CARTRIDGES AND BELTS). Also, the checking and cleaning periodicity of the cartridge must be reduced (up to 250 hours in a very dusty atmosphere and with pre-filtration).

#### ⚠ IMPORTANT ⚠

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

- Open the engine hood.
- Remove the cover 1.
- Gently remove the cartridge 2 to reduce dust falling as far as possible.
- Leave the safety cartridge in place.
- Carefully clean the following parts with a damp, clean lint-free cloth.
  - The inside of the filter and cover.
  - The inside of the filter inlet hose.
  - The gasket surfaces in the filter and in the cover.
- Check pipes and connections between the air filter and the engine and the connection and state of the clogging indicator on the filter.
- Before fitting check the condition of the new cartridge (⇐ FILTER CARTRIDGES AND BELTS).
- Insert the cartridge in the filter axis and push the cartridge pressing against the outer edge and not in the center.
- Reassemble the cover, guiding the valve downwards.



## REPLACE

### Gearbox oil

## REPLACE

### Gearbox oil filter

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

#### ⚠ IMPORTANT ⚠

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

*Dispose of the used oil in an ecological manner.*

*Hand-tighten the oil filter and lock in place with a quarter turn.*

### DRAINING THE OIL

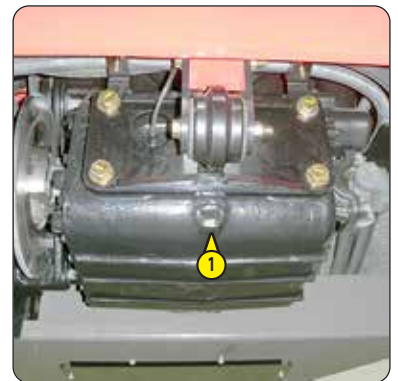
- Place a container under drain plug 1 and unscrew the plug.
- Remove gage 2 to ensure proper emptying.

### REPLACEMENT OF THE FILTER

- Unscrew and discard gearbox oil filter 3, together with its seal.
- Clean the filter bracket with a clean, lint-free cloth.
- Lightly grease the seal before refitting the new oil filter (⇐ FILTER CARTRIDGES AND BELTS) on its bracket.

### FILLING WITH OIL

- Refit and tighten the drain plug 1 (tightening torque 34 - 54 N.m).
- Fill up with oil (⇐ LUBRICANTS AND FUEL) through filler hole 2.
- Start the engine and leave it at idle.
- Check for possible leaks from the drain plug and the oil filter.
- Check the correct level against the MAX mark on the dipstick 2.
- Top up the level, if necessary.



**REPLACE**

**Front wheel reducer oil**

**REPLACE**

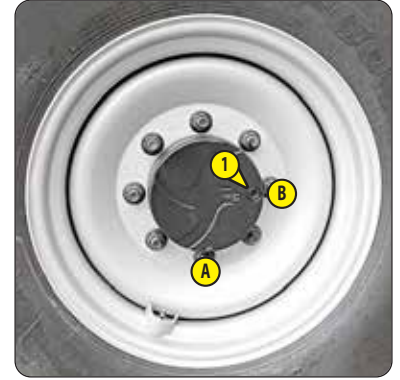
**Rear wheel reducer oil**

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



**Dispose of the used oil in an ecological manner.**

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



**CHECK**

**Engine shock mounts \***

**CHECK**

**Valve lash \***

**CHECK**

**Gearbox silent blocks \***

**CHECK**

**Gear box controls \***

**CHECK**

**Brake system pressure \***

**CHECK**

**Boom pad wear \***

**CHECK**

**Condition of wiring harnesses and cables \***

**CHECK**

**Lights and signals \***

**CHECK**

**Warning indicators \***

**CHECK**

**Condition of the rear view mirrors \***

**CHECK**

**Cab structure \***

**CHECK**

**Chassis structure \***

**CHECK**

**Attachment mounting system \***

**CHECK**

**Condition of attachments \***

**REPLACE**

**Brake fluid \***

**BLEED**

**Braking system \***



## ➡ ④ 2000H - PERIODIC MAINTENANCE - EVERY 2000 HOURS OF SERVICE OR EVERY 4 YEARS

ALSO PERFORM THE 500 HOUR AND 1000 HOUR PERIODIC MAINTENANCE.

### CHECK

### Wheel nut tightening torque

- Check the condition of the tires to detect cuts, blisters, wear, etc.
- Check the tightening torque of the wheel nuts with a torque wrench:
  - Front wheels = 630 N.m  $\pm$  94 N.m
  - Rear wheels = 630 N.m  $\pm$  94 N.m

### CLEAN

### Air conditioning (OPTION) \*

#### CLEANING CONDENSER AND EVAPORATOR COILS

#### CLEANING CONDENSATE TRAY AND RELIEF VALVE

#### COLLECTING COOLANT TO REPLACE DRIER FILTER

#### REFILLING WITH COOLANT AND CHECKING THE THERMOSTATIC CONTROL AND PRESSURE SWITCHES

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

#### ⚠ IMPORTANT ⚠

**NEVER TRY TO REPAIR ANY FAULTS YOURSELF. WHEN REFILLING CIRCUITS, ALWAYS REFER TO A DEALER WHO HAS THE CORRECT SPARE PARTS AND THE TECHNICAL KNOWLEDGE AND TOOLS REQUIRED.**

*In any of the following circumstances, call a doctor.*

*If inhaled, take the victim to fresh air.*

*If there is contact with the skin, wash immediately with plenty of water.*

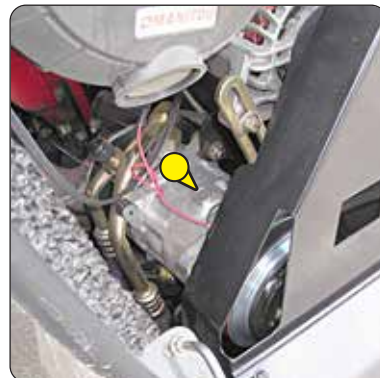
*If there is frostbite, apply a sterile dressing.*

*If there is contact with the eyes, rinse with clear water for 15 minutes.*

#### IMPORTANT INFORMATION REGARDING THE COOLANT USED

- This product contains fluorinated greenhouse gases covered by the Kyoto Protocol.
- Coolant type: R134A; it is colorless and odorless and heavier than air. Its GWP (Global Warming Potential) is 1430.
- Do not allow the gases to escape into the atmosphere. Do not open the system under any circumstances, as this could cause refrigerant to escape.
- The compressor has a fluid level gage; never unscrew this gage because it would depressurize the system. The fluid level should only be checked when draining the system.

*\* Consult your dealer.*



### REPLACE

### Dry air filter safety cartridge

#### ⚠ IMPORTANT ⚠

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

- For the dismantling and refitting of the cartridge (⇐ 1000H: REPLACE Air filter cartridge).
- Carefully remove the dry air filter safety cartridge 1 to reduce dust fall as much as possible.
- Clean the gasket surface on the filter with a damp, clean lint-free cloth.
- Check the condition of the new safety cartridge before fitting (⇐ FILTER CARTRIDGES AND BELTS).
- Insert the cartridge in the filter axis and push the cartridge pressing against the outer edge and not the center.



## REPLACE

## Hydraulic oil

### REPLACE

### Breather for the hydraulic oil tank

### CLEAN

### Hydraulic oil tank suction strainer

### REPLACE

### Brake accumulator unit filter

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

#### **⚠ IMPORTANT ⚠**

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

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

*Dispose of the used oil in an ecological manner.*



## **DRAINING THE OIL**

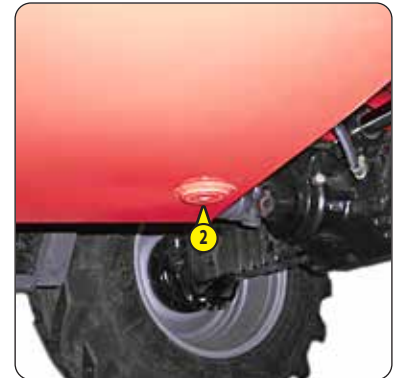
- Remove the protective casing 1.
- Place a container under drain plug 2 and unscrew the plug.
- Remove the filler plug 3 to ensure correct drainage.

## **REPLACING THE BREATHER**

- Unscrew the breather 4 and replace it with a new one (⇐ FILTER CARTRIDGES AND BELTS).

## **CLEANING THE SUCTION STRAINER**

- Disconnect hose 5.
- Remove and clean the suction strainer 6 using a compressed air jet, check its condition and replace if necessary (⇐ FILTER CARTRIDGES AND BELTS).
- Refit the suction strainer making sure the seal is in the correct position.



## **REPLACING THE BRAKE ACCUMULATOR UNIT FILTER**

### **INSTALLATION WITH REMOTE ACCUMULATOR**

- Unscrew plug 7, remove the filter and replace with a new one.
- Refit and tighten the plug 7 (tightening torque 70 - 80 N.m).

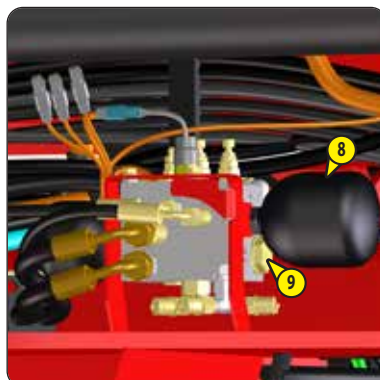
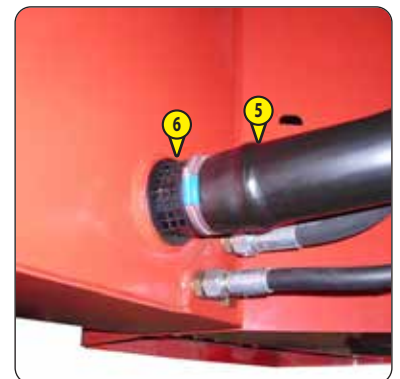
### **INSTALLATION WITH DIRECTLY CONNECTED ACCUMULATOR**

- Depress the brake pedal twenty times to release the pressure in the brake accumulator.
- Unscrew the accumulator 8.
- Unscrew plug 9, remove the filter and replace with a new one.
- Refit and tighten the plug 9 (tightening torque 70 N.m).
- Refit and tighten the accumulator 8 (tightening torque 49,5 - 60,5 N.m).



## **FILLING WITH OIL**

- Refit and tighten the drain plug 2 (tightening torque 72 - 88 N.m).
- Fill up with oil (⇐ LUBRICANTS AND FUEL) through filler hole 10.
- Observe the oil level on dipstick 11, the oil level should be at the level of the red dot.
- Check for any possible leaks at the drain plug.
- Refit the filler plug 3.



|              |                                                 |
|--------------|-------------------------------------------------|
| <u>CHECK</u> | <u>Radiator *</u>                               |
| <u>CHECK</u> | <u>Water pump and thermostat *</u>              |
| <u>CHECK</u> | <u>Alternator and starter *</u>                 |
| <u>CHECK</u> | <u>Turbocharger *</u>                           |
| <u>CHECK</u> | <u>Transmission pressures *</u>                 |
| <u>CHECK</u> | <u>Steering *</u>                               |
| <u>CHECK</u> | <u>Steering swivel joints *</u>                 |
| <u>CHECK</u> | <u>Brake pad and brake disk wear *</u>          |
| <u>CHECK</u> | <u>Condition of boom assembly *</u>             |
| <u>CHECK</u> | <u>Bearings and bushings of the boom *</u>      |
| <u>CHECK</u> | <u>Condition of hoses and flexible pipes *</u>  |
| <u>CHECK</u> | <u>Condition of cylinders (leakage, rods) *</u> |
| <u>CHECK</u> | <u>Hydraulic circuit pressures *</u>            |
| <u>CHECK</u> | <u>Chassis bearings and bushings*</u>           |
| <u>CLEAN</u> | <u>Hydraulic pump tubular filter *</u>          |

*\* Consult your dealer.*

## 4000H - PERIODIC MAINTENANCE - EVERY 4000 HOURS OF SERVICE OR EVERY 8 YEARS

### CHECK

### Boom inner chain wear

MT-X 1840 100P ST3A S2

#### **IMPORTANT**

*Checking of the boom's inner chains requires the telescopes to be disassembled (contact your dealer).*

### REPLACE

### Wheels

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

#### ⚠ IMPORTANT ⚠

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

- Stop the lift truck, if possible on firm, level ground.
- Stop the lift truck (⚠ 1 - SAFETY INSTRUCTIONS: DRIVING INSTRUCTIONS UNLADEN AND LADEN).
- Switch on the hazard warning lights.
- Immobilize the lift truck in both directions on the axle opposite to the wheel to be changed.
- Unlock the nuts of the wheel to be changed.
- Place the jack under the flared axle tube, as near as possible to the wheel, and adjust the jack.
- Raise the wheel until it is clear of the ground and place the safety support under the axle.
- Completely unscrew the wheel nuts and remove them.
- Free the wheel using back and forth movements and roll it to the side.
- Slip the new wheel on the wheel hub.
- Hand-tighten the nuts, grease them if necessary.
- Remove the safety support and lower the lift truck with the jack.
- Tighten the wheel nuts to the prescribed torque value (⚠ 2000H - PERIODIC MAINTENANCE - EVERY 2,000 HOURS OF SERVICE OR EVERY 4 YEARS) using a torque wrench.



### REPLACE

### Battery

#### ⚠ IMPORTANT ⚠

*Handling and servicing a battery can be dangerous. Take the following precautions:*

- Wear protective goggles.
- Keep the battery horizontal.
- Never smoke or work near a naked flame.
- Work in a well-ventilated area.

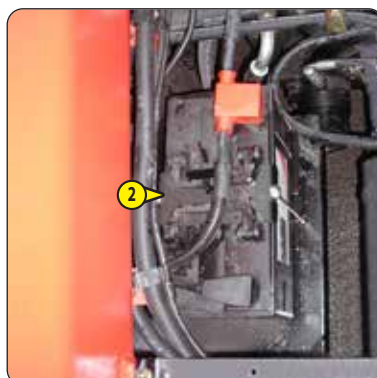
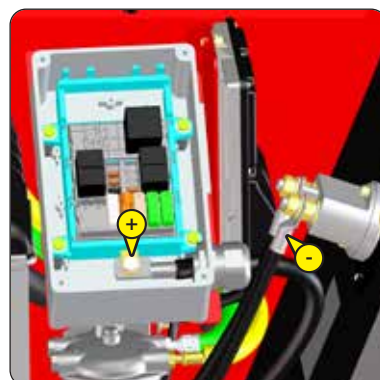
*- In the event of electrolyte being spilled onto the skin or splashed in the eyes, rinse thoroughly with cold water for 15 minutes and call a doctor.*

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

#### ⚠ IMPORTANT ⚠

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

- Remove the protective casing 1.
- Change the battery 2.



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

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

**⚠ IMPORTANT ⚠**

*Do not engage the starter motor on a continual basis for more than 30 seconds and let it cool for 2 minutes between unsuccessful attempts.*

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

- Open the engine hood.
- Switch on the lift truck ignition on for three minutes to give the lift pump time to release the air from the filter.
- Switch off the ignition with the ignition key.

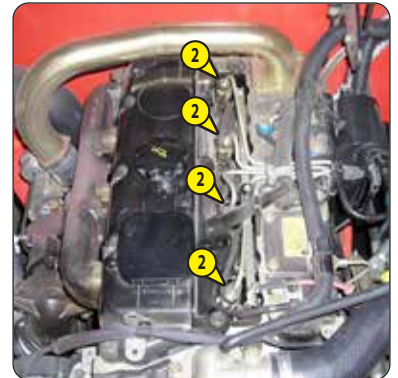
**BLEEDING THE INJECTORS**

- Remove the injector cover 1.
- Loosen the high pressure connectors 2 of all the injectors.
- Activate the starter until the diesel fuel flows free of air from the high pressure connectors 2.
- Tighten the connections while the diesel fuel is flowing (tightening torque 30 N.m).

The engine is now ready to be started.

- Run the engine at idle for 5 minutes immediately after bleeding the fuel feed circuit, in order to ensure that the injection pump has been bled thoroughly.

N.B.: If the engine runs correctly for a short time then stops or runs erratically, check for possible leaks in the low pressure circuit. If in doubt, consult your dealer.



**RECOMMENDED SETTING**

(according to standard ECE-76/756 76/761 ECE20)

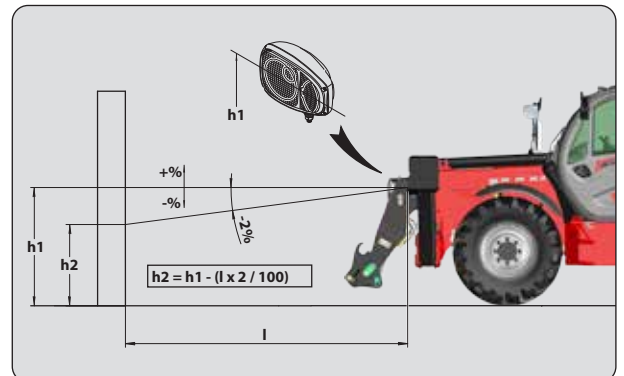
Adjustment of -2 % of the dipped beam harness relative to the horizontal axis of the headlight.

**ADJUSTMENT PROCEDURE**

- Place the unladen lift truck in the transport position and perpendicular to a white wall on flat, level ground.
- Check the tire pressures (< 2 - DESCRIPTION: TIRES).
- Put the gearshift lever in neutral.

**CALCULATING THE HEIGHT OF THE DIPPED BEAM (H2)**

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



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

This operation can be easily performed by means of the following procedure.

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

**⚠ IMPORTANT ⚠**

*Carefully follow the boom positioning instructions.*

*When the reset is completed, check the operation of the longitudinal stability limiter and warning device (⚠ 10H - DAILY MAINTENANCE OR EVERY 10 HOURS OF SERVICE).*

*If in doubt, consult your dealer.*

- Place the lift truck on flat, level ground with the wheels straight.
- Press the button  to display the "PREFERENCES" menu.
- Press the button  to select from the menus and sub-menus.

|            |   |                       |
|------------|---|-----------------------|
| HYDRAULICS | > | STABILITY REBALANCING |
|------------|---|-----------------------|

- Press knob  to confirm.
- Follow the steps described on the information screen (OK = press button ).



### TOW OR WINCH

### Lift truck

#### ⚠ IMPORTANT ⚠

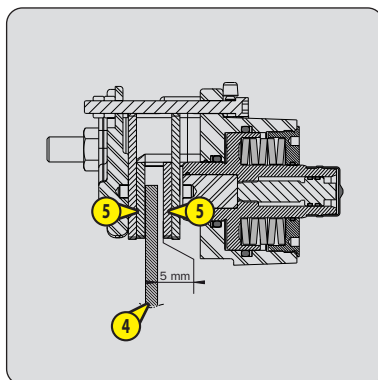
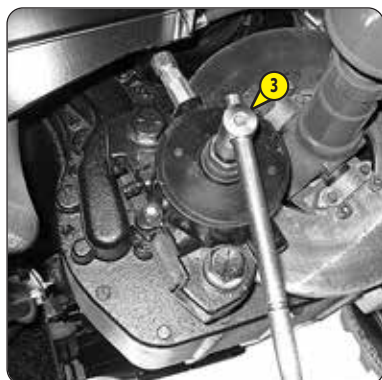
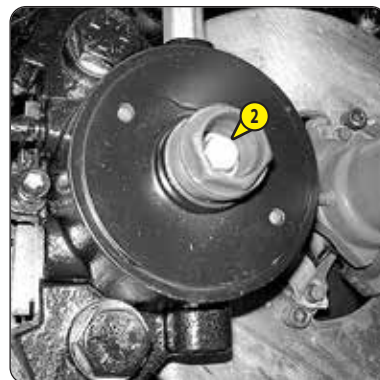
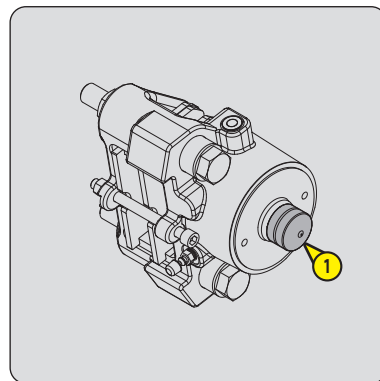
*Do not tow the lift truck at a speed exceeding 6 km/h. over a maximum distance of 5 km. This is a dangerous maneuver.  
Carefully chock the lift truck before towing, as the parking brake system is inoperative.*

- Place the forward/reverse selection lever and gear lever in neutral.
- Chock the lift truck.
- Remove the cap 1.
- Loosen screw 2 with a pin wrench 3 to release the brake disk. Leave a minimum clearance of 5 mm between the disk 4 and the brake pads 5.
- Put the towing device in place.
- Remove the chocks.
- Switch on the hazard warning lights.

N.B.: Since there will be no power steering or hydraulic brake assistance, operate the steering and controls slowly and forcefully. Avoid sudden or jerky movements.

#### ⚠ IMPORTANT ⚠

*For adjusting the parking brake, please contact your dealer.*



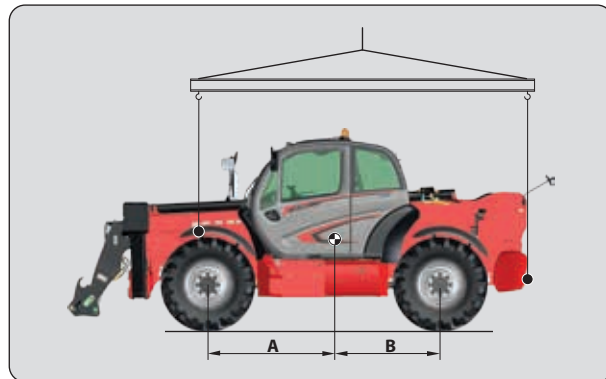
## SLING

### Lift truck (1st FIT)

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

|             |             |                        |
|-------------|-------------|------------------------|
| A = 1590 mm | B = 1480 mm | MT-X 1440 100P ST3A S2 |
| A = 1625 mm | B = 1445 mm | MT-X 1840 100P ST3A S2 |

- Place the hooks in the anchoring points 1 provided.



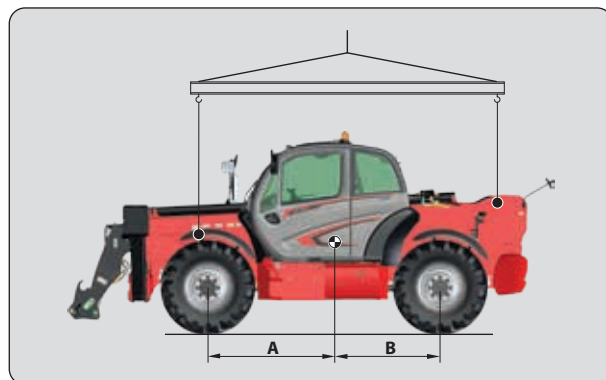
## SLING

### Lift truck (2nd FIT)

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

|             |             |                        |
|-------------|-------------|------------------------|
| A = 1590 mm | B = 1480 mm | MT-X 1440 100P ST3A S2 |
| A = 1625 mm | B = 1445 mm | MT-X 1840 100P ST3A S2 |

- Place the hooks in the anchoring points 1 provided.



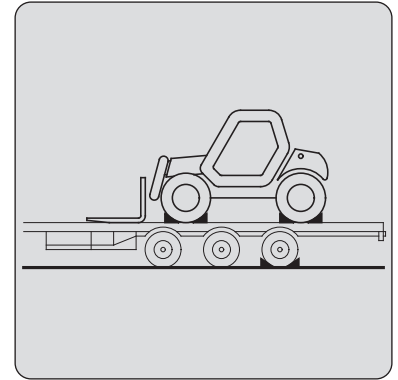
**⚠ IMPORTANT ⚠**

Ensure that the safety instructions associated with the flatbed are complied with before loading the lift truck and that the driver of the carrier vehicle is informed of the dimensions and the weight of the lift truck (<12 - DESCRIPTION: SPECIFICATIONS).

Make sure that the flatbed is large enough and has sufficient loading capacity to carry the lift truck.  
Check also the allowable ground contact pressure of the platform relative to the lift truck.

**⚠ IMPORTANT ⚠**

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

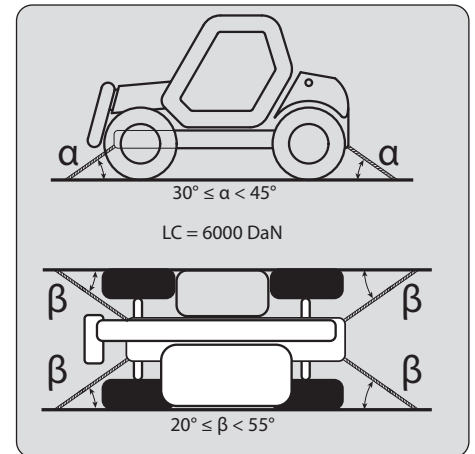


**LOADING THE LIFT TRUCK**

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

**STOWING THE LIFT TRUCK**

- Fix the chocks to the flatbed at the front and at the back of each tire.
- Also fix the chocks to the flatbed on the inside of each tire.
- Secure the lift truck to the flatbed with straps, in the anchoring points 1 provided.
- In order to ensure the lift truck is securely lashed to the flatbed, observe the lashing angles ( $\alpha$ ) and ( $\beta$ ) and the resistance (LC) of the straps.
- Tighten the straps.



# ***4 - ATTACHMENTS THAT CAN BE ADAPTED TO THE RANGE***

## 4 - ATTACHMENTS THAT CAN BE ADAPTED TO THE RANGE

|                                                |             |
|------------------------------------------------|-------------|
| <u>INTRODUCTION</u>                            | <u>4-3</u>  |
| <u>PICKING UP THE ATTACHMENTS</u>              | <u>4-4</u>  |
| <u>TECHNICAL SPECIFICATIONS OF ATTACHMENTS</u> | <u>4-6</u>  |
| <u>ATTACHMENT GUARDS</u>                       | <u>4-12</u> |

## INTRODUCTION

- Your lift truck must be used with interchangeable equipment. These items are called: ATTACHMENTS.
- A wide range of attachments is available, guaranteed by MANITOU and designed to fit your lift truck perfectly.

### ⚠ IMPORTANT ⚠

*Only attachments approved by MANITOU can be used on its lift trucks (➤ TECHNICAL SPECIFICATIONS OF ATTACHMENTS).  
The manufacturer cannot be held responsible for any modifications or adaptations to attachments without its knowledge.*

- 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.

### ⚠ IMPORTANT ⚠

*Maximum loads are defined by the capacity of a lift truck taking account of the attachment's weight and center of gravity.  
Should the attachment have a lower capacity than the lift truck, never exceed this limit.*

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

### ⚠ IMPORTANT ⚠

*Depending on their size, certain attachments may, when the boom is lowered and retracted, come into contact with the front tires and cause damage to them if excavation is activated in the direction of the discharge.*

*TO PREVENT THIS RISK, EXTEND THE TELESCOPE TO A SUFFICIENT EXTENT FOR THE PARTICULAR LIFT TRUCK AND ATTACHMENT SO THAT THIS CONTACT IS NOT POSSIBLE.*

## SUSPENDED LOAD

### ⚠ IMPORTANT ⚠

*Suspended loads MUST be handled with a lift truck designed for that purpose (➤ 1 - OPERATING AND SAFETY INSTRUCTIONS: INSTRUCTIONS FOR HANDLING LOADS: H PICKING UP AND PUTTING DOWN A SUSPENDED LOAD).*

## USE WITH SINGLE SIDE-SHIFT CARRIAGE

### ⚠ IMPORTANT ⚠

*The single side-shift carriage (TSDL) is only compatible with the following attachments:*

- floating fork carriage (TFF)
- tilting fork carriage (PFB)
- loading bucket (CBR)
- concrete skip (BB, BBG)
- chute bucket (GL)
- crane boom and crane boom with winch (P, PT, PO, PC)
- winch (H)
- fixed platform, swiveling platform, roofer's platform.

*The use of any other attachment on the TSDL is forbidden.*

*If it is being used with a loading bucket (CBR), the single side-shift carriage MUST be centered and no side-shift operations performed.*

*The attachments permitted on the TSDL must be used in strict compliance with their intended applications.*

*Their use for any other application (e.g., earth moving, excavation, desurfacing, back scraping, etc. for the loading bucket CBR) or any application placing abnormal stress on the structure of the TSDL is forbidden: risk of deformation which could cause the load to fall.*

## USE OF BUCKETS

### ⚠ IMPORTANT ⚠

*MT-X 1440/1840... lift trucks are essentially intended for handling, for which occasional use with the buckets CBC/CBR/CB4x1 is authorized (only with the boom fully retracted, in order to reduce stresses on the boom head), but under no circumstances for difficult applications (quarry, waste, cereals, agriculture, etc.). Back-scraping is also prohibited with the MT-X 1840... lift trucks to avoid additional stresses on the inner boom chains.*

## PICKING UP THE ATTACHMENTS

### 1 - ATTACHMENT WITHOUT HYDRAULICS AND HAND LOCKING DEVICE

#### FITTING AN ATTACHMENT

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

#### MANUAL LOCKING

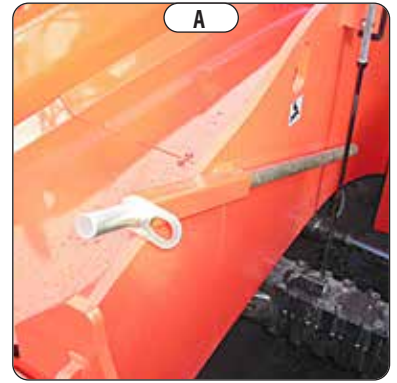
- Take the locking pin on the bracket (Fig. A) and lock the attachment (Fig. D). Do not forget to fit the pin.

#### MANUAL UNLOCKING

- Proceed in the reverse order to MANUAL LOCKING, taking care to refit the locking pin in the bracket (Fig. A).

#### REMOVING THE ATTACHMENT

- Proceed in the reverse order to FITTING AN ATTACHMENT, taking care to store the attachment flat on the ground and in the closed position.



## 2 - HYDRAULIC ATTACHMENT AND MANUAL LOCKING DEVICE

### FITTING AN ATTACHMENT

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

### MANUAL LOCKING AND CONNECTION OF THE ATTACHMENT

#### ⚠ IMPORTANT ⚠

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

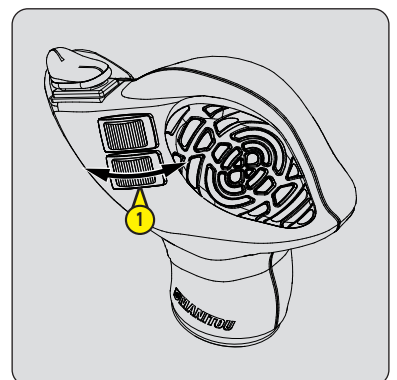
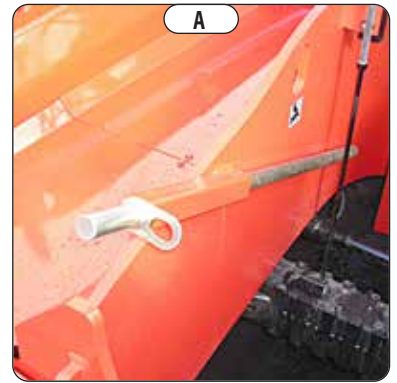
- Take the locking pin on the bracket and lock the attachment (fig. D). Do not forget to fit the pin.
- Stop the engine and keep the ignition on the lift truck.
- Release the pressure in the attachment hydraulic circuit by operating switch 1 on the distributor lever backward and forward 4 or 5 times.
- Connect the quick-release couplers according to the logic of the attachment's hydraulic movements.

### MANUAL RELEASE AND DISCONNECTION OF THE ATTACHMENT

- Proceed in the reverse order of paragraph MANUAL LOCKING AND CONNECTION OF THE ATTACHMENT, taking care to refit the locking pin in the bracket.

### REMOVING THE ATTACHMENT

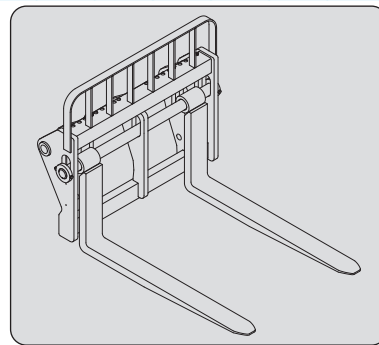
- Proceed in the reverse order to FITTING AN ATTACHMENT, taking care to store the attachment flat on the ground and in the closed position.



## TECHNICAL SPECIFICATIONS OF ATTACHMENTS

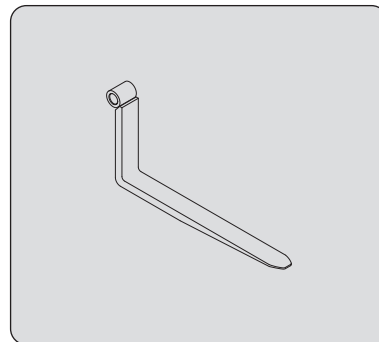
### FLOATING FORK CARRIAGE

| REFERENCE      | TFF 45 MT-1040    | TFF 45 MT-1300    |
|----------------|-------------------|-------------------|
| Rated capacity | 653344<br>4500 kg | 653345<br>4500 kg |
| Width          | 1040 mm           | 1300 mm           |
| Weight         | 370 kg            | 400 kg            |



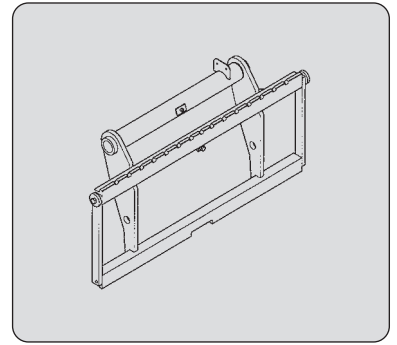
### FLOATING FORK

| REFERENCE     | 211922         |
|---------------|----------------|
| Cross-section | 125x50x1200 mm |
| Weight        | 71 kg          |



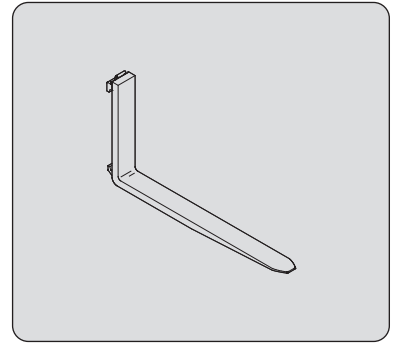
## STANDARDIZED TILTING FORK CARRIAGE

| REFERENCE      | PFB 45 N MT-1260 S2<br>654407 | PFB 45 N MT-1670 S2<br>653747 | PFB 45 N MT-2000 S2<br>653748 |
|----------------|-------------------------------|-------------------------------|-------------------------------|
| Rated capacity | 4500 kg                       | 4500 kg                       | 4500 kg                       |
| Width          | 1260 mm                       | 1670 mm                       | 2000 mm                       |
| Weight         | 200 kg                        | 255 kg                        | 300 kg                        |



## STANDARDIZED FORK

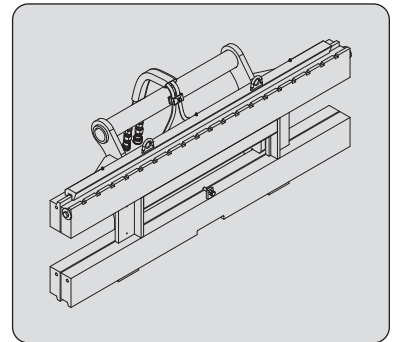
| REFERENCE     | 415652         |
|---------------|----------------|
| Cross-section | 125x50x1200 mm |
| Weight        | 78 kg          |



## STANDARDIZED TILTING FORK CARRIAGE + STANDARDIZED SIDE-SHIFT CARRIAGE

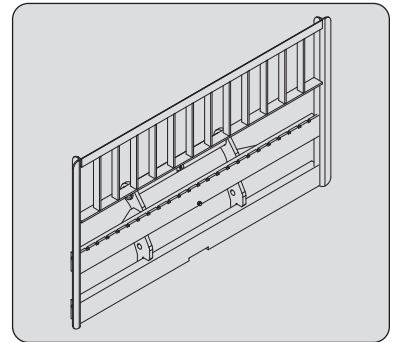
*Use is prohibited with the optional single side-shift carriage (TSDL).*

| REFERENCE      | PFB 45 N 1670 DL<br>52000103 |
|----------------|------------------------------|
| Rated capacity | 4300 kg                      |
| Side-shift     | 2x100 mm                     |
| Width          | 1670 mm                      |
| Weight         | 530 kg                       |



## STANDARDIZED TILTING FORK CARRIAGE + LOAD BACK REST

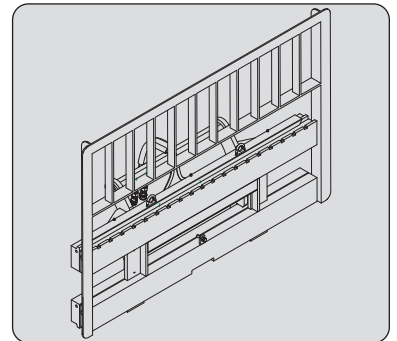
| REFERENCE      | PFB 45 N 1670 LB<br>52000202 | PFB 45 N 2000 LB<br>52000203 |
|----------------|------------------------------|------------------------------|
| Rated capacity | 4500 kg                      | 4500 kg                      |
| Width          | 1670 mm                      | 2000 mm                      |
| Weight         | 310 kg                       | 360 kg                       |



## STANDARDIZED TILTING FORK CARRIAGE + STANDARDIZED SIDE-SHIFT CARRIAGE + LOAD BACK REST

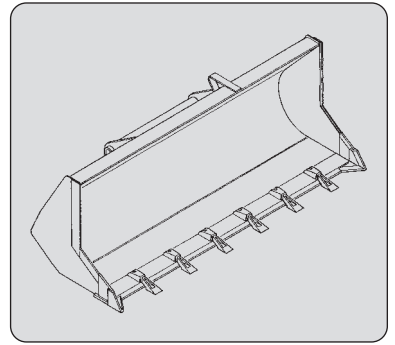
*Use is prohibited with the optional single side-shift carriage (TSDL).*

| REFERENCE      | PFB 45 N 1670 DL/LB<br>52000206 |
|----------------|---------------------------------|
| Rated capacity | 4300 kg                         |
| Side-shift     | 2x100 mm                        |
| Width          | 1670 mm                         |
| Weight         | 585 kg                          |



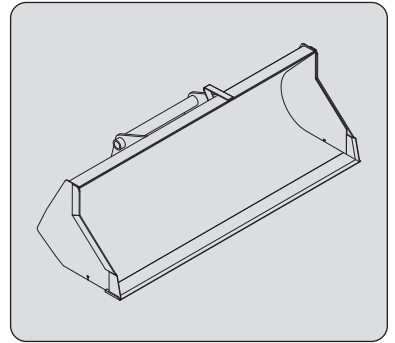
## BUILDING BUCKET

| REFERENCE      | CBC 800 L2250 S3<br>654471 | CBC 900 L2450 S3<br>654470 |
|----------------|----------------------------|----------------------------|
| Rated capacity | 814 ℓ                      | 893 ℓ                      |
| Width          | 2250 mm                    | 2450 mm                    |
| Weight         | 385 kg                     | 410 kg                     |



## LOADING BUCKET

| REFERENCE      | CBR 900 L2250 S2<br>653749 | CBR 1000 L2450 S2<br>654716 |
|----------------|----------------------------|-----------------------------|
| Rated capacity | 904 ℓ                      | 990 ℓ                       |
| Width          | 2250 mm                    | 2450 mm                     |
| Weight         | 390 kg                     | 410 kg                      |

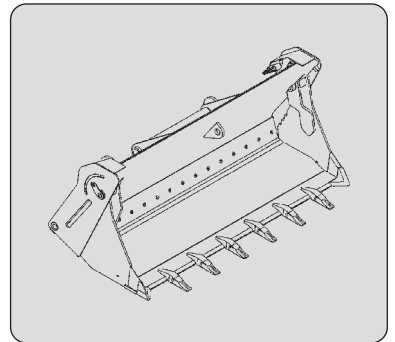


## BUCKET 4X1

MT-X 1440 100P ST3A S2

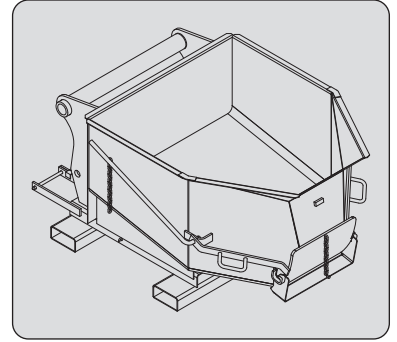
*Use is prohibited with the optional single side-shift carriage (TSDL).*

| REFERENCE      | CB4X1-700 L1950<br>751402 | CB4X1-850 L2300<br>751401 | CB4X1-900 L2450<br>751465 |
|----------------|---------------------------|---------------------------|---------------------------|
| Rated capacity | 700 ℓ                     | 850 ℓ                     | 900 ℓ                     |
| Width          | 1950 mm                   | 2300 mm                   | 2450 mm                   |
| Weight         | 640 kg                    | 735 kg                    | 765 kg                    |



## CONCRETE BUCKET (ADAPTABLE ON FORKS)

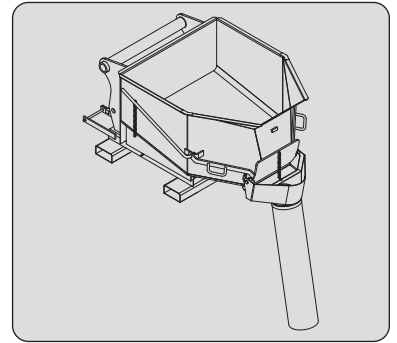
| REFERENCE      | BB 500 S4<br>654409 | BBH 500 S4<br>751462 |
|----------------|---------------------|----------------------|
| Rated capacity | 500 l/1300 kg       | 500 l/1300 kg        |
| Width          | 1100 mm             | 1100 mm              |
| Weight         | 205 kg              | 220 kg               |



## CONCRETE BUCKET WITH SPOUT (ADAPTABLE ON FORKS)

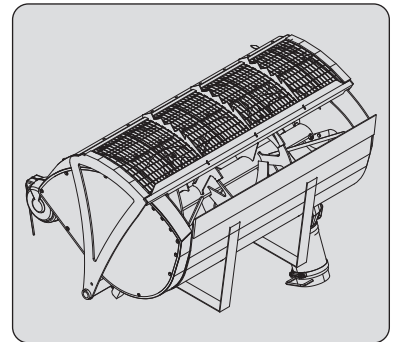
MT-X 1440 100P ST3A S2

| REFERENCE      | BBG 500 S4<br>654411 | BBHG 500 S4<br>751464 |
|----------------|----------------------|-----------------------|
| Rated capacity | 500 l/1300 kg        | 500 l/1300 kg         |
| Width          | 1100 mm              | 1100 mm               |
| Weight         | 220 kg               | 235 kg                |



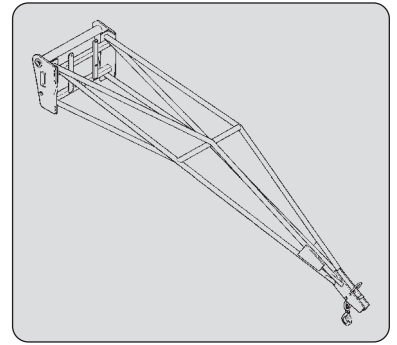
## MIXER BUCKET

| REFERENCE      | MBM 500<br>757637 |
|----------------|-------------------|
| Rated capacity | 300 l             |
| Weight         | 753 kg            |



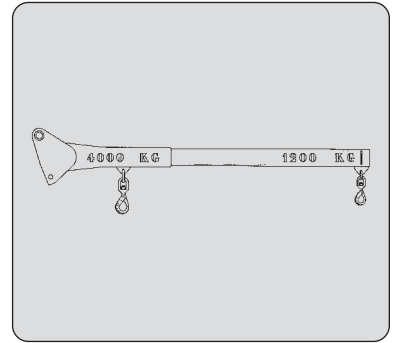
## CRANE

| REFERENCE      | P 600 MT S3<br>653228 |
|----------------|-----------------------|
| Rated capacity | 600 kg                |
| Weight         | 170 kg                |



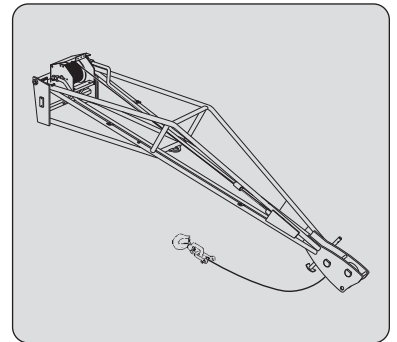
## CRANE

| REFERENCE      | P 4000 MT S2<br>653226 |
|----------------|------------------------|
| Rated capacity | 4000 kg/1200 kg        |
| Weight         | 210 kg                 |



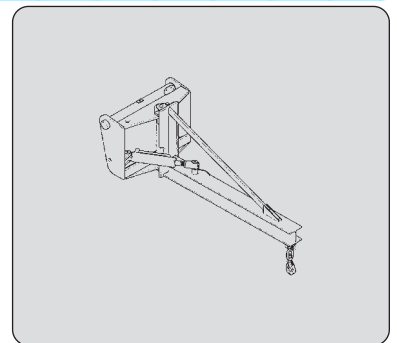
## CRANE JIB WITH WINCH

| REFERENCE      | PT 600 MT S6<br>708538 |
|----------------|------------------------|
| Rated capacity | 600 kg                 |
| Weight         | 288 kg                 |



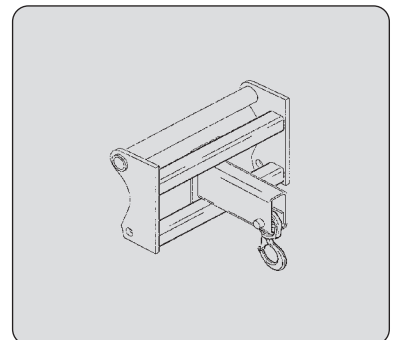
## 15°/15° MULTI-DIRECTIONAL CRANE JIB

| REFERENCE      | PO 600 L2500<br>784641 | PO 1000 L1500<br>784642 | PO 2000 L1000<br>784643 |
|----------------|------------------------|-------------------------|-------------------------|
| Rated capacity | 600 kg                 | 1000 kg                 | 2000 kg                 |
| Weight         | 320 kg                 | 275 kg                  | 255 kg                  |



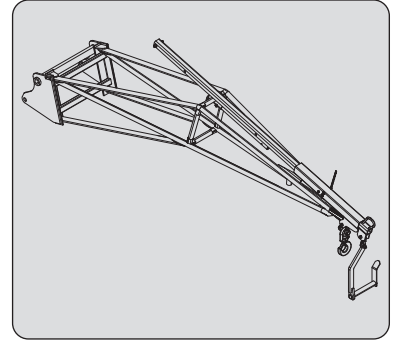
## CRANE

| REFERENCE      | PC 50<br>708544 |
|----------------|-----------------|
| Rated capacity | 5000 kg         |
| Weight         | 120 kg          |



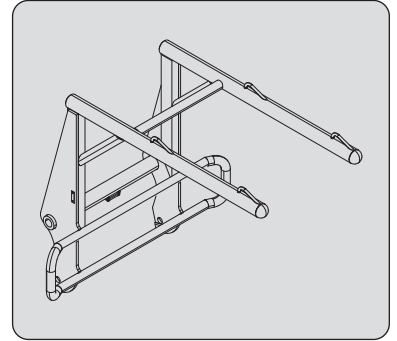
## CRANE

| REFERENCE      | JE 6000/600<br>939995 |
|----------------|-----------------------|
| Rated capacity | 600 kg                |
| Weight         | 182 kg                |



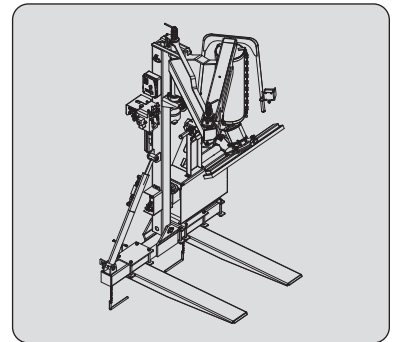
## BOOM CRANE WITH BIG BAG

| REFERENCE      | HBB 1500/2400<br>931627 |
|----------------|-------------------------|
| Rated capacity | 2400 kg                 |
| Weight         | 186 kg                  |



## POSITIONING THE EDGE

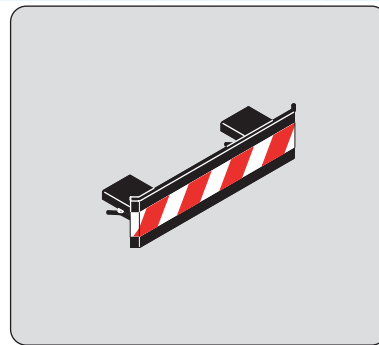
| REFERENCE      | PBA<br>790523 |
|----------------|---------------|
| Rated capacity | 1500 kg       |
| Weight         | 450 kg        |



## ATTACHMENT GUARDS

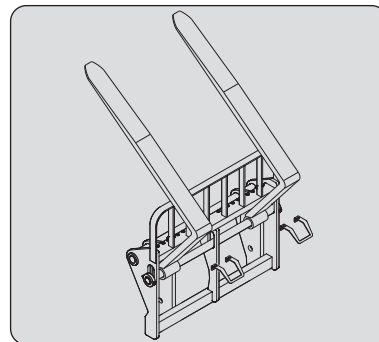
### FORK GUARD

REFERENCE 227801



### FORK BLOCK FOR FLOATING FORK CARRIAGE

REFERENCE 261210



### BUCKET PROTECTOR

*Always ensure that the width of the protector you choose is less than or equal to the width of the bucket.*

|       |           |         |         |         |
|-------|-----------|---------|---------|---------|
|       | REFERENCE | 206734  | 206732  | 206730  |
| Width |           | 1375 mm | 1500 mm | 1650 mm |
|       | REFERENCE | 235854  | 206728  | 206726  |
| Width |           | 1850 mm | 1950 mm | 2000 mm |
|       | REFERENCE | 223771  | 223773  | 206724  |
| Width |           | 2050 mm | 2100 mm | 2150 mm |
|       | REFERENCE | 206099  | 206722  | 223775  |
| Width |           | 2250 mm | 2450 mm | 2500 mm |

