MANITOU

HANDLING YOUR WORLD

647895EN-USM1(C-03/2023)
(EUROPEAN UNION)

OPERATORS MANUAL
(NOTICE ORIGINALE)

MI 40 D D ST5 S1
MI 45 D D ST5 S1
MI 50 D D ST5 S1
MI 55 D D ST5 S1

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MANITOU BF S.A. Public limited company with a board of directors.

Head Office: 430 rue de l’Aubinière - 44150 Ancenis - France

Share capital: 39.668.399,00 euros

Entered in the Nantes Trade and Companies Register under No. 857 802 508.

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

www.manitou-group.com

00. EXPLANATION OF SYMBOLS

⚠ DANGER

Indicates an imminent hazardous situation which, if not avoided will result in death or serious injury.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor injury or damage to property. It is also used to warn users of unsafe practices.

NOTICE

Indicates a practice not related to a physical injury which, if not avoided, may damage the machine.

Indicates a message to draw attention to important information regarding environmental protection.

Indicates special tools for performing a task.

Indicates the value of tightening torque to be applied.

Indicates the weight of an item.

e.g. it helps to anticipate an action linked to a person's health or the choice of lifting equipment.

1. SAFETY

1.1. REDUCE RISKS

Figure 1: Reduce risks program

1.2. INSTRUCTIONS TO THE COMPANY MANAGER

1.2.1 THE SITE

Proper management of the lift truck's area of travel will reduce the risk of accidents, so follow the precautions:

- Make sure that the ground is not unnecessarily uneven or obstructed.
- Make sure that there are no excessive slopes.
- Make sure that the pedestrian traffic is controlled, etc.

1.2.2 THE OPERATOR

Only qualified, authorized personnel can use the lift truck. This authorization is given in writing by the competent manager in the establishment for the use of lift trucks and must be carried permanently by the operator.

⚠ WARNING

Experience has shown that there are a number of inappropriate ways in which the lift truck might be used. Such foreseeable misuse, of which the main examples are listed below, is strictly not permitted

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

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

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

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

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

1.2.3 THE LIFT TRUCK

THE TRUCK'S SUITABILITY FOR THE JOB

- MANITOU has ensured that this lift truck is suitable for use under the standard operating conditions defined in this operator's manual, with a **STATIC TEST COEFFICIENT OF 1.33** and a **DYNAMIC TEST COEFFICIENT OF 1**, as specified in harmonised standard **ISO 3691-1** for mast trucks.
- Before commissioning, the company manager must make sure that the lift truck is appropriate for the work to be done, and perform certain tests (in accordance with current legislation).

ADAPTATION OF THE LIFT TRUCK TO STANDARD ENVIRONMENTAL CONDITIONS

- In addition to series equipment mounted on your lift truck, many options are available, such as: road lighting, stop lights, revolving light, reverse lights, reverse buzzer alarm, front light, rear light, etc.
- The operator must take into account the operating conditions to specify the lift truck's signalling and lighting equipment. Contact your dealer.
- Take into account climatic and atmospheric conditions of the site of use.
  - Protection against frost
  - Adaptation of lubricants (ask your dealer for information).
  - Engine filtration .

NOTICE

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

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

The same applies to the cooling liquid.

- Preventing fire risks associated with use in dusty and flammable conditions (e.g. straw, flour, sawdust, organic waste, etc.).
- A lift truck operating in an area without fire extinguishing equipment must be equipped with an individual extinguisher. There are solutions, consult your dealer.

⚠ WARNING

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

It is forbidden to use the lift truck in areas where there is a risk of fire or potential explosion (e.g. Refineries, fuel or gas depots, stores of flammable products, etc.).

Special equipment is available for use in such areas (ask your dealer for information).

- Our trucks comply with Directive 2004/108/EC concerning electromagnetic compatibility (EMC), and with the corresponding harmonised standard EN 12895. Their proper operation is no longer guaranteed if they are used within areas in which the electromagnetic fields exceed the limit specified by that standard (10 V/m).
- Directive 2002/44/EC requires company managers to not expose their employees to excessive vibration doses. There is no recognised code of measurement for comparing the machines of different manufacturers. The actual doses received cannot therefore be measured under actual operating conditions at the user's premises.
- The following are some tips for minimizing these vibration doses:
  - Select the most suitable lift truck and attachment for the intended use.
  - Adapt the seat adjustment to the operator's weight (according to lift truck model) and maintain it in good condition, as well as the cab suspension. Inflate the tyres in accordance with recommendations.
  - Ensure that the operators adapt their operating speed to suit the conditions on site.
  - As far as possible, arrange the site in such a way as to provide a flat running surface and remove obstacles and harmful potholes.

MODIFICATION OF THE LIFT TRUCK

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

FRENCH ROAD TRAFFIC RULES

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

1.2.4 INSTRUCTIONS

- The operator's manual must always be in good condition and kept in the place provided on the lift truck and in the language used by the operator.
- The operator's manual and any plates or stickers which are no longer legible or are damaged must be replaced immediately.
- When handling bulky loads, which restrict your vision, operate the machine in reverse or have a guide.

1.2.5 MAINTENANCE

- Maintenance or repairs other than those detailed in section - 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.

NOTICE

Your lift truck must be inspected periodically to make sure that it remains in compliance.

The frequency of this inspection is defined by current legislation in the country in which the lift truck is used.

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

1.3. INSTRUCTIONS FOR THE OPERATOR

1.3.1 FOREWORD

⚠ WARNING

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

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

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

⚠ WARNING

In order to reduce or prevent any danger with a MANITOU-approved attachment, follow the instructions in the section - ADAPTABLE ATTACHMENTS AS OPTIONS ON THE RANGE: INTRODUCTION.

1.3.2 GENERAL INSTRUCTIONS

OPERATOR'S MANUAL

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

AUTHORISATION FOR USE IN FRANCE

(or see current legislation in other countries)

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

MAINTENANCE

- The operator must immediately advise his superior if his lift truck is not in good working order or does not obey the safety notice.
- The operator is prohibited from carrying out any repairs or adjustments himself, unless he has been trained for this purpose. He must keep the lift truck properly cleaned if this is among his responsibilities.
- The operator is responsible for carrying out daily maintenance
- The operator is responsible for deciding and adjusting the frequency of cleaning necessary to prevent the risk of fire ensuing from the build-up of flammable material(s). The operator must pay special attention to all the areas of the lift truck where these risk materials are likely to accumulate.

TYRES

⚠ DANGER

Do not use the lift truck if the tyres are incorrectly inflated, damaged or excessively worn, because this could put your own safety or that of others at risk, or cause damage to the lift truck itself.

The fitting of foam inflated tyres is prohibited and is not guaranteed by the manufacturer, excepting prior authorization.

- The operator must ensure tyres are adapted to the nature of the ground. There are optional solutions, consult your dealer.
  - SAND tyres.
  - Farm Tyres.
  - Snow chains.
- The lift truck's four tyres must be of the same brand and of the same usage category (normal, snow or special), have the same structure (radial or diagonal) and have the same degree of tread wear.
- In the event of tyre replacement, use tyres authorized by MANITOU that are of the same type and dimensions. Using different tyres voids the lift truck's type approval and you may be liable.
- If you are replacing just one of the lift truck's tyres (e.g. because it is damaged), we recommend choosing a tyre with the same degree of wear as the remaining tyres so as not to damage the transmission's kinematic chain.

MODIFICATION OF THE LIFT TRUCK

For your safety and that of others, you must not change the structure and settings of the various components used in your lift truck (hydraulic pressure, calibrating limiters, engine speed, addition of extra equipment,

addition of counterweight, unapproved attachments, alarm systems, etc.) yourself. In this event, the manufacturer cannot be held responsible.

Lifting People

It is forbidden to lift or carry people.

1.4. LIFT TRUCK MAINTENANCE INSTRUCTIONS

1.4.1 GENERAL INSTRUCTIONS

- Ensure that the area is sufficiently ventilated before starting the lift truck.
- Wear clothes suitable for the maintenance of the lift truck. Do not wear jewelry and loose clothes. Tie back and protect your hair, if necessary.
- Before carrying out any work on the lift truck:
  - Switch off the engine.
  - Apply the parking brake
  - Remove the ignition key.
- Read the operator's manual carefully.
- Carry out all repairs immediately, even if the repairs concerned are minor.
- Repair all leaks immediately, even if the leak concerned is minor.
- Ensure that process materials and of spare parts are disposed in all safely and in an ecological manner.
- Be careful of the risk of burns and splashing (exhaust, radiator, engine, etc.).

1.4.2 MAINTENANCE

Perform the periodic service to keep your lift truck in good working condition. Failure to perform the periodic service may cancel the contractual guarantee.

MAINTENANCE LOGBOOK

The maintenance operations carried out in accordance with the recommendations given in section - MAINTENANCE and the other inspection, servicing or repair operations or modifications performed on the lift truck or its attachments are recorded in a maintenance logbook. The entry for each operation must 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. The part numbers of any lift truck components that are replaced are indicated.

1.4.3 LUBRICANT AND FUEL LEVELS

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

1.4.4 HYDRAULICS

- Any work on the load handling hydraulic circuit is not permitted except for the operations described in 4 - MAINTENANCE.
- Do not attempt to loosen connections, hoses or a hydraulic component with the circuit under pressure.

⚠ DANGER

It is dangerous to change the setting and remove the balancing valves or safety valves which may be fitted to your lift truck cylinders.

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

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

1.4.5 ELECTRICITY

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

1.4.6 WELDING

- Disconnect the battery before carrying out any welding operations on the lift truck.
- When carrying out electric welding work on the lift truck, connect the negative cable from the equipment directly to the part being welded to avoid high tension current passing through the alternator.
- Never carry out welding or any work which gives off heat on an assembled tyre. The heat will increase the pressure which can cause the tyre to explode.

- If the lift truck is equipped with an electronic control unit, disconnect this before starting to weld to avoid the risk of causing irreparable damage to electronic components.

1.4.7 WASHING THE LIFT TRUCK

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

1.4.8 TRANSPORTING THE LIFT TRUCK

⚠ WARNING

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

Towing, winching, slinging or transporting the lift truck, see Maintenance, Occasional operation.

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

1.5.1 INTRODUCTION

The following recommendations are intended to prevent the lift truck from being damaged when it is withdrawn from service for an extended period.

NOTICE

Procedures to follow if the lift truck is not to be used for a long time, and for starting it up again afterward must be performed by your dealership. This period of long-term stoppage must not exceed 12 months.

1.5.2 PROTECTING THE LIFT TRUCK

- Set the lift truck on axle stands so that the tyres are off the ground.
- Release the parking brake (depending on the model of lift truck).
- Protect cylinder rods which will not be retracted, from corrosion.
- Wrap the tyres.

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

1.5.3 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 .
- Drain and replace the coolant .
- Leave the engine running at idling speed for a few minutes, then switch off.
- Replace the engine oil and oil filter .
- Run the engine for a short time so that the oil and cooling liquid circulate inside.
- Disconnect the battery and store it in a safe place away from the cold after charging it to a maximum
- 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.

1.5.4 PREPARING THE LIFT TRUCK

- Clean the lift truck thoroughly.
- Check and repair any fuel, oil, water or air leaks.
- Replace or repair any worn or damaged parts.
- Wash the painted surfaces of the lift truck in clear and cold water and wipe them.
- Touch up the paint work if necessary.
- Stop the lift truck.
- Make sure the mast cylinder rods are all in the retracted position.
- Release the pressure in the hydraulic circuits.

1.5.5 BRINGING THE LIFT TRUCK BACK INTO SERVICE

⚠ WARNING

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

- Remove the waterproof adhesive tape from all the holes.

- Refit and reconnect the battery.
- Remove the protection from the cylinder rods.
- Perform the daily maintenance operations .
- Put the handbrake on and remove the axle stands.
- Drain and clean the fuel tank .
- Fill the fuel tank with clean diesel filtered through the filler port.
- Replace the fuel filter .
- Replace the fuel pre-filter (depending on the model of lift truck)
- Drain and rinse the DEF tank (depending on the model of lift truck)
- Top up, slowly fill the tank with new "DEF" (Diesel Exhaust Fluid) up to the bottom of the filler neck (depending on the model of lift truck)
- Refit the drive belts and adjust the tension .
- Turn the engine over with the starter, to allow the oil pressure to rise.
- Reconnect the engine cut-off solenoid.
- Lubricate the lift truck completely .
- Start up the lift truck, following the safety instructions and regulations.
- Carry out all the boom hydraulic movements, concentrating on the ends of travel for each cylinder.

1.6. LIFT TRUCK DISPOSAL

1.6.1 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 are used to simplify the recycling process.
- Most of the plastic components are made up of "thermoplastic" that are easily recycled by melting, granulating or grinding.

Rubber

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

Glass

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

1.6.2 ENVIRONMENTAL PROTECTION

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

Worn or Damaged Parts

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

Used Oil

- The MANITOU network organizes the collection and processing of used oil.
- 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.

MANITOU seeks to manufacture lift trucks providing the best performance and limiting polluting emissions.

1.7. DECALS

1.7.1 DECALS LOCATION — MI 40→55 D D ST5 S1

Figure 2: Decals location

Table 1. List of decals

Marker	Reference	Description	Option
1	828045	Slinging point	
2	828054	Crushing hazard	
3	828046	Slinging warning	
4	828044	Safety instructions for mast trucks	
5	952462	Acoustic plate 107 dB	
6	53201972	Diesel ULSD	
7	896744	Safety instructions	
8	52761126	Parked DPF regeneration	
9	53203006	DPF inside	
10	828062	Tie-down point	
11	52759172	Warning risk of misuse (for UK only)	

2. SPECIFICATIONS & DESCRIPTION

2.1. “EC” DECLARATION OF CONFORMITY — MI 40→55 D D ST5 S1

This document is a specimen of the “EC” declaration of conformity mirroring the content of the original declaration provided with the machine.

This specimen and the original document may contain data fields which does not apply to the machine. These fields are left blank if not relevant.

See the original certificates for all relevant values for your machine.

1) **DÉCLARATION «CE» DE CONFORMITÉ (originale)**

«EC» DECLARATION OF CONFORMITY (original)

2) Constructeur, *Manufacturer :* **MANITOU BF**
3) Adresse, *Address :* **430, RUE DE L'AUBINIÈRE - B.P 10249**
44158 - ANCENIS - CEDEX - FRANCE
4) Titulaire du dossier technique, *Holder of the technical file :* **MANITOU BF**
3) Adresse, *Address :* **430, RUE DE L'AUBINIÈRE - B.P 10249**
44158 - ANCENIS - CEDEX - FRANCE
5) Le constructeur déclare que la machine décrite ci-après, *The manufacturer declares that the machine described below :*

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6) Est conforme aux directives suivantes et à leurs transpositions en droit national (si applicables), *Complies with the following directives and their transpositions into national law (if applicable) :*

2006/42/CE

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

2000/14/CE + 2005/88/CE

10) Procédure appliquée, *Applied procedure :*
9) Organisme notifié, *Notified body :*

11) Niveau de puissance acoustique, *Sound power level :*
12) Mesuré, *Measured :* dB (A)
13) Garanti, *Guaranteed :* dB (A)

2014/30/UE

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

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

16) Fait à, *Done at :* *17)* Date, *Date :*
18) Nom du signataire, *Name of signatory :*
19) Fonction, *Function :*
20) Société, *Company :*
21) Signature, *Signature :*

Figure 3: “EC” declaration of conformity — MI 40→55 D D ST5 S1 (specimen) page 1/2

Figure 4: “EC” declaration of conformity — MI 40→55 D D ST5 S1 (specimen) page 2/2

2.2. “UKCA” DECLARATION OF CONFORMITY — MI 40→55 D D ST5 S1

This document is a specimen of the “UKCA” declaration of conformity mirroring the content of the original declaration provided with the machine.

This specimen and the original document may contain data fields which does not apply to the machine. These fields are left blank if not relevant.

See the original certificates for all relevant values for your machine.

UKCA DECLARATION OF CONFORMITY

Manufacturer: **MANITOU BF**
Address: **430, RUE DE L'AUBINIÈRE - BP 10249**
44158 ANCENIS CEDEX - FRANCE
Authorized representative: **MANITOU UK**
Ebblake Industrial Estate - Dorset BH 31 6BB
Verwood - United Kingdom

The manufacturer declares that the below described machinery:

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Complies with the following legislation:

The supply of Machinery (Safety) Regulations 2008, as amended

The machine is designed for the lifting of persons:

Applied procedure: Non applicable
Certificate number: Non applicable
Dated:
Approved body: Non applicable

Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001, as amended

Applied procedure:
Approved body:

Sound power level:
Measured: dB (A)
Guaranteed: dB (A)

Electromagnetic Compatibility Regulations 2016, as amended

The following designated standards have been addressed:
EN 12895
The following standards or technical guidance have been addressed:
-

At: Date:
Name of signatory:
Position:
Company:
Signature:

Figure 5: "UKCA" declaration of conformity — MI 40→55 D D ST5 S1 (specimen)

2.3. MACHINE MANUFACTURER PLATE

"Designation" Designation	
"Series" Series	
"Power" Power	
"Year of manufacture" Year of manufacture	
"Model year" Model year	
"Max vertical force (on trailer hook)" Max vertical force (on trailer hook)	
"Serial number / Product identification number" Serial number / Product identification number	
"Authorized grass vehicle weight" Authorized grass vehicle weight	
"Unladen mass" Unladen weight	

“Rated capacity” Rated capacity	
“Drag strain” Pulling force	

2.4. ATTACHMENT MANUFACTURER PLATE

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

2.5. MACHINE SPECIFICATIONS

2.5.1 TECHNICAL DATASHEET MI 40 D D ST5 S1

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

Specifications

Table 2. Specifications

	Designation	***Unit***	***Value***
1.1	Manufacturer		MANITOU
1.2	Type of model		MI 40 D D ST5 S1
1.3	Drive : battery, diesel, gasoline, LPG, mains		Diesel
1.4	Driving position : manuel, walking alongside, standing, seated		Seated
1.5	Nominal load / Load on forks (basic capacity)	Q (t)	4
1.6	Load center of gravity	c (mm)	500
1.7	Distance from the load-bearing surface to centre of front axle	x (mm)	550
1.8	Wheelbase	y (mm)	2000

Weights

Table 3. Weights

	Designation	***Unit***	***Value***
2.1	Weight of truck in working order	kg	6430
2.2	Front axle load on loaded truck	kg	9330
2.2.1	Rear axle load on loaded truck	kg	1100
2.3	Front axle load on unloaded truck	kg	3000
2.3.1	Rear axle load on unloaded truck	kg	3430

Tyres

Table 4. Tyres

	Designation	Unit	Value
3.1	Tyre equipment : bandage (V), superelastic (SE), pneumatic (L)		SE
3.2	Size of front wheels	" / mm	8.25-15 14PR
3.3	Size of rear wheels	" / mm	7.00-12 12PR
3.4	Number of front wheels (x = drive wheels)		2x
3.4.1	Number of rear wheels (x = drive wheels)		2
3.5	Front wheel gauge (middle of wheels)	b10 (mm)	1160
3.6	Rear wheel gauge (middle of wheels)	b11 (mm)	1130

Dimensions

Table 5. Dimensions

	Designation	Unit	Value
4.1	Tilt of mast forward	α(°)	6
4.1.1	Tilt of mast backward	β (°)	12
4.2	Height mast lowered	h1 (mm)	2245
4.3	Normal free lift	h2 (mm)	160
4.4	Height of lift	h3 (mm)	3000
4.5	Height mast extended	h4 (mm)	4170
4.6	Height of standard overhead guard or cab or cab with air conditioning	h6 (mm)	2390
4.7	Seat height	h7 (mm)	1370
4.8	Height of towing bar	h10 (mm)	445
4.9	Overall length	l1 (mm)	4285
4.10.	Length to face of forks	l2 (mm)	3065
4.11	Total width (overall) – Single tires / Dual tyres	b1 (mm)	1395 / 1940
4.12	Thickness of fork arms	s (mm)	50
4.12.1	Width of fork arms	e (mm)	122
4.12.2	Fork arms length	l (mm)	1220
4.13	Fork carriage to DIN 15173 A/B		FEM3A
4.14	Fork carriage width	b3 (mm)	1250
4.15	Ground clearance of mast	m1 (mm)	170
4.16	Ground clearance at centre of wheelbase	m2 (mm)	230
4.17	Width of aisle for pallet 1000x1200 crossways	Ast (mm)	4530
4.18	Width of aisle for pallet 800x1200 lengthways	Ast (mm)	4330
4.19	Turning radius (position down/up)	Wa (mm)	2780
4.20.	Inner turning radius	b13 (mm)	135

Performances

Table 6. Performances

	Designation	Unit	Value
5.1	Travelling speed laden	km/h	13 / 22
5.1.1	Travelling speed unladen 2WD / 4WD	km/h	13 / 23
5.2	Lifting speed laden	m/s	0.49
5.2.1	Lifting speed unladen	m/s	0.52
5.3	Lowering speed laden	m/s	0.5
5.3.1	Lowering speed unladen	m/s	0.5
5.4	Nominal towing power laden	N	38000
5.4.1	Nominal towing power unladen	N	20000
5.5	Gradeability laden	%	20
5.5.1	Gradeability unladen	%	20
5.6	Acceleration time laden	s	-
5.7	Service brake		Hydraulic

Motors

Table 7. Motors

	Designation	Unit	Value
6.1	Engine manufacture / type		DEUTZ /TCD2.9L4 (EU Stage V)
6.2	Engine power acc. To ISO 1585	KW	55.4
6.3	Rated speed	tr/min	2200
6.4	No. Of cylinders / displacement	cm3	4/2920
6.5	Fuel consumption acc. To VDI cycle	L/h	6.85

Miscellaneous

Table 8. Miscellaneous

	Designation	Unit	Value
7.1	Hydraulic pressure for attachments	Bar	190
7.2	Oil volume for attachments	L/min	50
7.3	Sound level at driver's ear according to DIN 12053 (overhead guard / cab)	dB (A)	84
7.4	Towing coupling design / DIN type	-	-
7.5	Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s²	1

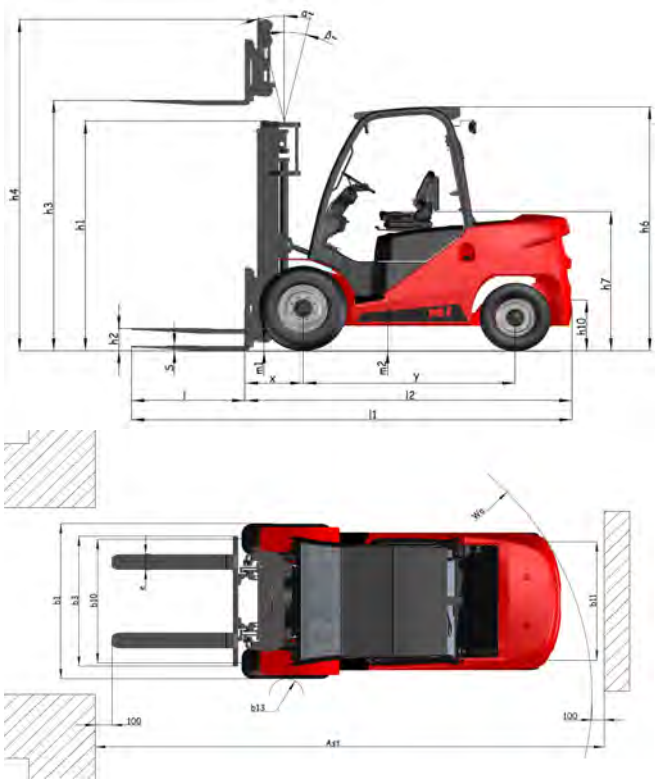


Figure 6: Dimensions diagram

2.5.2 TECHNICAL DATASHEET MI 45 D D ST5 S1

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

Specifications

Table 9. Specifications

	Designation	Unit	Value
1.1	Manufacturer		MANITOU
1.2	Type of model		MI 45 D D ST5 S1
1.3	Drive : battery, diesel, gasoline, LPG, mains		Diesel
1.4	Driving position : manuel, walking alongside, standing, seated		Seated
1.5	Nominal load / Load on forks (basic capacity)	Q (t)	4.5
1.6	Load center of gravity	c (mm)	500
1.7	Distance from the load-bearing surface to centre of front axle	x (mm)	550
1.8	Wheelbase	y (mm)	2000

Weights

Table 10. Weights

	Designation	Unit	Value
2.1	Weight of truck in working order	kg	6630
2.2	Front axle load on loaded truck	kg	9850

	Designation	Unit	Value
2.2.1	Rear axle load on loaded truck	kg	1280
2.3	Front axle load on unloaded truck	kg	3000
2.3.1	Rear axle load on unloaded truck	kg	3630

Tyres

Table 11. Tyres

	Designation	Unit	Value
3.1	Tyre equipment : bandage (V), superelastic (SE), pneumatic (L)		SE
3.2	Size of front wheels	" / mm	300-15 18PR
3.3	Size of rear wheels	" / mm	7.00-12 12PR
3.4	Number of front wheels (x = drive wheels)		2x
3.4.1	Number of rear wheels (x = drive wheels)		2
3.5	Front wheel gauge (middle of wheels)	b10 (mm)	1190
3.6	Rear wheel gauge (middle of wheels)	b11 (mm)	1130

Dimensions

Table 12. Dimensions

	Designation	Unit	Value
4.1	Tilt of mast forward	α(°)	6
4.1.1	Tilt of mast backward	β (°)	12
4.2	Height mast lowered	h1 (mm)	2245
4.3	Normal free lift	h2 (mm)	160
4.4	Height of lift	h3 (mm)	3000
4.5	Height mast extended	h4 (mm)	4170
4.6	Height of standard overhead guard or cab or cab with air conditioning	h6 (mm)	2390
4.7	Seat height	h7 (mm)	1370
4.8	Height of towing bar	h10 (mm)	445
4.9	Overall length	l1 (mm)	4315
4.10.	Length to face of forks	l2 (mm)	3095
4.11	Total width (overall) – Single tires / Dual tyres	b1 (mm)	1490 / 1940
4.12	Thickness of fork arms	s (mm)	50
4.12.1	Width of fork arms	e (mm)	150
4.12.2	Fork arms length	l (mm)	1220
4.13	Fork carriage to DIN 15173 A/B		FEM3A
4.14	Fork carriage width	b3 (mm)	1250
4.15	Ground clearance of mast	m1 (mm)	170
4.16	Ground clearance at centre of wheelbase	m2 (mm)	230
4.17	Width of aisle for pallet 1000x1200 crossways	Ast (mm)	4550
4.18	Width of aisle for pallet 800x1200 lengthways	Ast (mm)	4350
4.19	Turning radius (position down/up)	Wa (mm)	2800
4.20.	Inner turning radius	b13 (mm)	100

Performances

Table 13. Performances

	Designation	Unit	Value
5.1	Travelling speed laden	km/h	13 / 22
5.1.1	Travelling speed unladen 2WD / 4WD	km/h	13 / 23
5.2	Lifting speed laden	m/s	0.49
5.2.1	Lifting speed unladen	m/s	0.52
5.3	Lowering speed laden	m/s	0.5
5.3.1	Lowering speed unladen	m/s	0.5
5.4	Nominal towing power laden	N	38000
5.4.1	Nominal towing power unladen	N	20000
5.5	Gradeability laden	%	20
5.5.1	Gradeability unladen	%	20
5.6	Acceleration time laden	s	-
5.7	Service brake		Hydraulic

Motors

Table 14. Motors

	Designation	Unit	Value
6.1	Engine manufacture / type		DEUTZ /TCD2.9L4 (EU Stage V)
6.2	Engine power acc. To ISO 1585	KW	55.4
6.3	Rated speed	tr/min	2200
6.4	No. Of cylinders / displacement	cm3	4/2920
6.5	Fuel consumption acc. To VDI cycle	L/h	6.85

Miscellaneous

Table 15. Miscellaneous

	Designation	Unit	Value
7.1	Hydraulic pressure for attachments	Bar	190
7.2	Oil volume for attachments	L/min	50
7.3	Sound level at driver's ear according to DIN 12053 (overhead guard / cab)	dB (A)	84
7.4	Towing coupling design / DIN type	-	-
7.5	Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s²	1

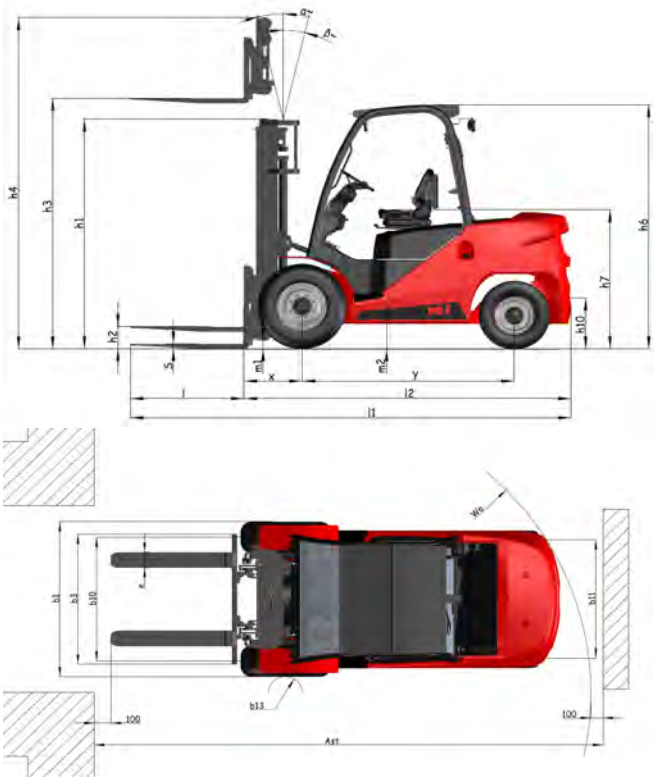


Figure 7: Dimensions diagram

2.5.3 TECHNICAL DATASHEET MI 50 D D ST5 S1

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

Specifications

Table 16. Specifications

	Designation	Unit	Value
1.1	Manufacturer		MANITOU
1.2	Type of model		MI 50 D D ST5 S1
1.3	Drive : battery, diesel, gasoline, LPG, mains		Diesel
1.4	Driving position : manuel, walking alongside, standing, seated		Seated
1.5	Nominal load / Load on forks (basic capacity)	Q (t)	4.999
1.6	Load center of gravity	c (mm)	500
1.7	Distance from the load-bearing surface to centre of front axle	x (mm)	555
1.8	Wheelbase	y (mm)	2150

Weights

Table 17. Weights

	Designation	Unit	Value
2.1	Weight of truck in working order	kg	6930
2.2	Front axle load on loaded truck	kg	10510

	Designation	Unit	Value
2.2.1	Rear axle load on loaded truck	kg	1420
2.3	Front axle load on unloaded truck	kg	3100
2.3.1	Rear axle load on unloaded truck	kg	3830

Tyres

Table 18. Tyres

	Designation	Unit	Value
3.1	Tyre equipment : bandage (V), superelastic (SE), pneumatic (L)		SE
3.2	Size of front wheels	" / mm	300-15 18PR
3.3	Size of rear wheels	" / mm	7.00-12 12PR
3.4	Number of front wheels (x = drive wheels)		2x
3.4.1	Number of rear wheels (x = drive wheels)		2
3.5	Front wheel gauge (middle of wheels)	b10 (mm)	1190
3.6	Rear wheel gauge (middle of wheels)	b11 (mm)	1130

Dimensions

Table 19. Dimensions

	Designation	Unit	Value
4.1	Tilt of mast forward	α(°)	6
4.1.1	Tilt of mast backward	β (°)	12
4.2	Height mast lowered	h1 (mm)	2245
4.3	Normal free lift	h2 (mm)	160
4.4	Height of lift	h3 (mm)	3000
4.5	Height mast extended	h4 (mm)	4370
4.6	Height of standard overhead guard or cab or cab with air conditioning	h6 (mm)	2390
4.7	Seat height	h7 (mm)	1370
4.8	Height of towing bar	h10 (mm)	445
4.9	Overall length	l1 (mm)	4470
4.10.	Length to face of forks	l2 (mm)	3250
4.11	Total width (overall) – Single tires / Dual tyres	b1 (mm)	1490 / 1940
4.12	Thickness of fork arms	s (mm)	55
4.12.1	Width of fork arms	e (mm)	150
4.12.2	Fork arms length	l (mm)	1220
4.13	Fork carriage to DIN 15173 A/B		FEM3A
4.14	Fork carriage width	b3 (mm)	1250
4.15	Ground clearance of mast	m1 (mm)	170
4.16	Ground clearance at centre of wheelbase	m2 (mm)	230
4.17	Width of aisle for pallet 1000x1200 crossways	Ast (mm)	4675
4.18	Width of aisle for pallet 800x1200 lengthways	Ast (mm)	4475
4.19	Turning radius (position down/up)	Wa (mm)	2920
4.20.	Inner turning radius	b13 (mm)	130

Performances

Table 20. Performances

	Designation	Unit	Value
5.1	Travelling speed laden	km/h	13 / 22
5.1.1	Travelling speed unladen 2WD / 4WD	km/h	13 / 23
5.2	Lifting speed laden	m/s	0.43
5.2.1	Lifting speed unladen	m/s	0.46
5.3	Lowering speed laden	m/s	0.5
5.3.1	Lowering speed unladen	m/s	0.5
5.4	Nominal towing power laden	N	38000
5.4.1	Nominal towing power unladen	N	20000
5.5	Gradeability laden	%	20
5.5.1	Gradeability unladen	%	20
5.6	Acceleration time laden	s	-
5.7	Service brake		Hydraulic

Motors

Table 21. Motors

	Designation	Unit	Value
6.1	Engine manufacture / type		DEUTZ /TCD2.9L4 (EU Stage V)
6.2	Engine power acc. To ISO 1585	KW	55.4
6.3	Rated speed	tr/min	2200
6.4	No. Of cylinders / displacement	cm3	4/2920
6.5	Fuel consumption acc. To VDI cycle	L/h	6.85

Miscellaneous

Table 22. Miscellaneous

	Designation	Unit	Value
7.1	Hydraulic pressure for attachments	Bar	190
7.2	Oil volume for attachments	L/min	50
7.3	Sound level at driver's ear according to DIN 12053 (overhead guard / cab)	dB (A)	84
7.4	Towing coupling design / DIN type	-	-
7.5	Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s²	1

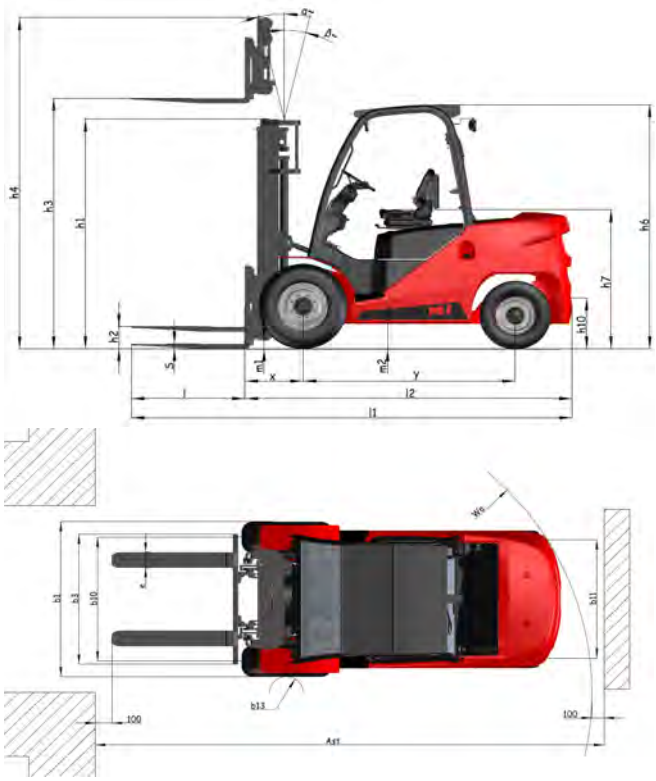


Figure 8: Dimensions diagram

2.5.4 TECHNICAL DATASHEET MI 55 D D ST5 S1

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

Specifications

Table 23. Specifications

	Designation	Unit	Value
1.1	Manufacturer		MANITOU
1.2	Type of model		MI 55 D D ST5 S1
1.3	Drive : battery, diesel, gasoline, LPG, mains		Diesel
1.4	Driving position : manuel, walking alongside, standing, seated		Seated
1.5	Nominal load / Load on forks (basic capacity)	Q (t)	5.5
1.6	Load center of gravity	c (mm)	500
1.7	Distance from the load-bearing surface to centre of front axle	x (mm)	585
1.8	Wheelbase	y (mm)	2150

Table 24. Weights

	Designation	Unit	Value
2.1	Weight of truck in working order	kg	7250
2.2	Front axle load on loaded truck	kg	11000
2.2.1	Rear axle load on loaded truck	kg	1750

	Designation	Unit	Value
2.3	Front axle load on unloaded truck	kg	3300
2.3.1	Rear axle load on unloaded truck	kg	3950

Tyres

Table 25. Tyres

	Designation	Unit	Value
3.1	Tyre equipment : bandage (V), superelastic (SE), pneumatic (L)		SE
3.2	Size of front wheels	" / mm	300-15 18PR
3.3	Size of rear wheels	" / mm	7.00-12 12PR
3.4	Number of front wheels (x = drive wheels)		2x
3.4.1	Number of rear wheels (x = drive wheels)		2
3.5	Front wheel gauge (middle of wheels)	b10 (mm)	1190
3.6	Rear wheel gauge (middle of wheels)	b11 (mm)	1130

Dimensions

Table 26. Dimensions

	Designation	Unit	Value
4.1	Tilt of mast forward	α(°)	6
4.1.1	Tilt of mast backward	β (°)	12
4.2	Height mast lowered	h1 (mm)	2495
4.3	Normal free lift	h2 (mm)	170
4.4	Height of lift	h3 (mm)	3000
4.5	Height mast extended	h4 (mm)	4080
4.6	Height of standard overhead guard or cab or cab with air conditioning	h6 (mm)	2390
4.7	Seat height	h7 (mm)	1370
4.8	Height of towing bar	h10 (mm)	445
4.9	Overall length	l1 (mm)	4530
4.10.	Length to face of forks	l2 (mm)	3330
4.11	Total width (overall) – Single tires / Dual tyres	b1 (mm)	1490 / 1940
4.12	Thickness of fork arms	s (mm)	60
4.12.1	Width of fork arms	e (mm)	150
4.12.2	Fork arms length	l (mm)	1220
4.13	Fork carriage to DIN 15173 A/B		FEM4A
4.14	Fork carriage width	b3 (mm)	1250
4.15	Ground clearance of mast	m1 (mm)	170
4.16	Ground clearance at centre of wheelbase	m2 (mm)	230
4.17	Width of aisle for pallet 1000x1200 crossways	Ast (mm)	4755
4.18	Width of aisle for pallet 800x1200 lengthways	Ast (mm)	4555
4.19	Turning radius (position down/up)	Wa (mm)	2970
4.20.	Inner turning radius	b13 (mm)	130

Performances

Table 27. Performances

	Designation	Unit	Value
5.1	Travelling speed laden	km/h	13 / 22
5.1.1	Travelling speed unladen 2WD / 4WD	km/h	13 / 22
5.2	Lifting speed laden	m/s	0.43
5.2.1	Lifting speed unladen	m/s	0.46
5.3	Lowering speed laden	m/s	0.5
5.3.1	Lowering speed unladen	m/s	0.5
5.4	Nominal towing power laden	N	38000
5.4.1	Nominal towing power unladen	N	21000
5.5	Gradeability laden	%	20
5.5.1	Gradeability unladen	%	20
5.6	Acceleration time laden	s	-
5.7	Service brake		Hydraulic

Motors

Table 28. Motors

	Designation	Unit	Value
6.1	Engine manufacture / type		DEUTZ /TCD2.9L4 (EU Stage V)
6.2	Engine power acc. To ISO 1585	KW	55.4
6.3	Rated speed	tr/min	2200
6.4	No. Of cylinders / displacement	cm3	4/2920
6.5	Fuel consumption acc. To VDI cycle	L/h	6.85

Miscellaneous

Table 29. Miscellaneous

	Designation	Unit	Value
7.1	Hydraulic pressure for attachments	Bar	190
7.2	Oil volume for attachments	L/min	50
7.3	Sound level at driver's ear according to DIN 12053 (overhead guard / cab)	dB (A)	84
7.4	Towing coupling design / DIN type	-	-
7.5	Average weighted acceleration on driver's body (according to standard NF EN 13059)	m/s²	1

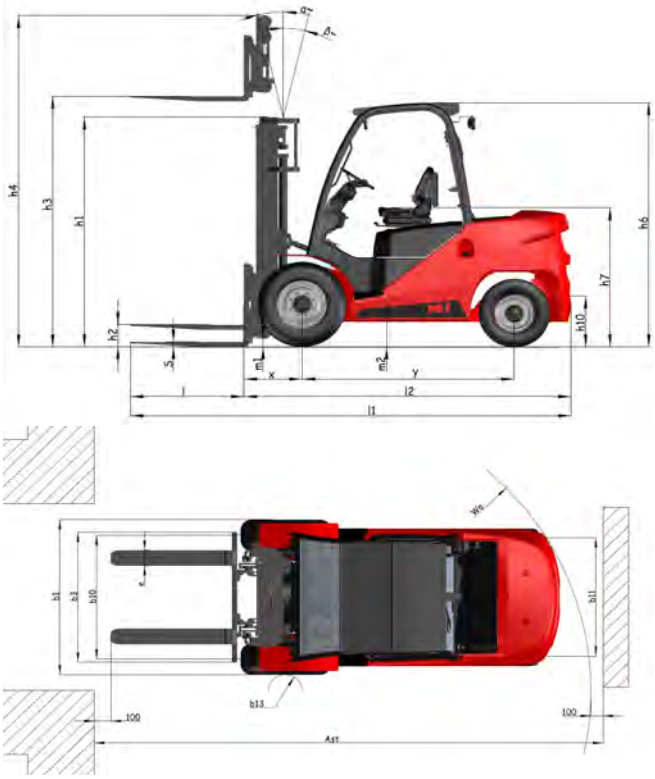


Figure 9: Dimensions diagram

2.5.5 MAST TECHNICAL DATASHEET - MI 40→55 D D ST5 S1

Mast specifications MI 40→55 ST5 S1

Table 30. Mast specifications MI 40→55 ST5 S1

	Mast fork height (mm)	Free lift H2			Height - mast lowered H1	Height mast extended without backrest H4			Height - mast extended with backrest H4			Tilt range - AV	Tilt range - AR - RWD
		4T - 4.5T	5T	5.5T		4T - 4.5T	5T	5.5T	4T - 4.5T	5T	5.5T		
2 Stage wide-view	3000	160		170	2245	3830	3830	4080	4170	4365	4400	6°	12°
	3300	160		170	2395	4130	4130	4380	4470	4665	4700	6°	12°
	3500	160		170	2495	4330	4330	4580	4670	4865	4900	6°	12°
	3700	160		170	2595	4530	4530	4780	4870	5065	5100	6°	12°
	4000	160		170	2795	4830	4830	5080	5170	5365	5400	6°	12°
	4500	160		170	3070	5330	5330	5580	5670	5865	5900	6°	6°
	5000	160		170	3345	5830	5830	6080	6170	6365	6400	6°	6°
2 Stage full-free-lift	3000	1364		1362	2226	3865	3865	4115	4170	4365	4400	6°	12°
	3300	1514		1512	2376	4165	4165	4415	4470	4665	4700	6°	12°
	3500	1614		1612	2476	4365	4365	4615	4670	4865	4900	6°	12°
	3700	1714		1712	2576	4565	4565	4815	4870	5065	5100	6°	12°
3 Stage full-free-lift	4000	1229	1222	1195	2080	4850	4860	5110	5170	5365	5400	6°	12°
	4300	1329	1322	1295	2180	5155	5160	5410	5470	5665	5700	6°	6°
	4500	1395	1390	1360	2248	5365	5370	5610	5685	5880	5900	6°	6°

	Mast fork height (mm)	Free lift H2			Heig-ht - mast low-er-ed H1	Height mast extended without backrest H4			Height - mast extended with backrest H4			Tilt range - AV	Tilt range - AR - RWD
		4T - 4.5T	5T	5.5T		4T - 4.5T	5T	5.5T	4T - 4.5T	5T	5.5T		
	4700	1459	1452	1425	2310	5550	5560	5810	5870	6070	6100	6°	6°
	5000	1559	1552	1525	2410	5855	5860	6110	6170	6370	6400	6°	6°
	5500	1724	1718	1695	2575	6355	6360	6610	6670	6870	6900	3°	6°
	6000	1939	1932	1910	2790	6865	6870	7110	7180	7380	7400	3°	6°

Capacity with forks MI 40→55 ST5 S1

Table 31. Capacity with forks MI 40→55 ST5 S1

	Height at max capacity (mm)				Load capacity at 500mm (KG)			
	4T	4.5T	5T	5.5T	4T	4.5T	5T	5.5T
2 Stage wide-view	3000	3000	3000	3000	4000	4500	4999	5500
	3300	3300	3300	3300	4000	4500	4999	5500
	3500	3500	3500	3500	4000	4500	4999	5500
	3700	3700	3700	3700	4000	4500	4999	5500
	4000	4000	4000	4000	4000	4500	4999	5500
	4000	4000	4000	4000	3700	4100	4700	5000
	4000	4000	4000	4000	3200	3700	4100	4400
2 Stage full-free-lift	3000	3000	3000	3000	4000	4500	4999	5500
	3300	3300	3300	3300	4000	4500	4999	5500
	3500	3500	3500	3500	4000	4500	4999	5500
	3700	3700	3700	3700	4000	4500	4999	5500
3 Stage full-free-lift	4000	4450kg at 4000	4850kg at 4000	4000	4000	4450	4850	5500
	3900kg at 4300	4300kg at 4300	4700kg at 4300	4000	3900	4300	4700	5000
	4000	4450kg at 4500	4850kg at 4500	4000	3500	4100	4600	4750
	4000	4450kg at 4700	4850kg at 4700	4000	3300	3900	4300	4600
	4000	4400kg at 5000	4800kg at 5000	4000	3100	3600	3900	4200
	3900kg at 4000	4300kg at 5500	4700kg at 5500	4000	2800	3100	3400	3850
	3500kg at 4000	4100kg at 6000	4600kg at 6000	4000	2300	2500	2700	3050

Capacity with integrated side shift MI 40→55 ST5 S1

Table 32. Capacity with integrated side shift MI 40→55 ST5 S1

	Height at max capacity (mm)				Load capacity at 500mm (KG)			
	4T	4.5T	5T	5.5T	4T	4.5T	5T	5.5T
2 Stage wide-view	3000	3000	3000	3000	4000	4500	4999	5400
	3300	3300	3300	3300	4000	4500	4999	5400
	3500	3500	3500	3500	4000	4500	4999	5400
	3700	3700	3700	3700	4000	4500	4999	5400

	Height at max capacity (mm)				Load capacity at 500mm (KG)			
	4T	4.5T	5T	5.5T	4T	4.5T	5T	5.5T
	4000	4000	4000	4000	4000	4500	4999	5400
	4000	4000	4000	4000	3600	4000	4600	4900
	4000	4000	4000	4000	3100	3600	4000	4300
2 Stage full-free-lift	3000	3000	3000	3000	4000	4500	4999	5400
	3300	3300	3300	3300	4000	4500	4999	5400
	3500	3500	3500	3500	4000	4500	4999	5400
	3700	3700	3700	3700	4000	4500	4999	5400
3 Stage full-free-lift	3900kg at 4000	4350kg at 4000	4750kg at 4000	4000	3900	4350	4750	5400
	3800kg at 4300	4200kg at 4300	4600kg at 4300	4000	3800	4200	4600	4900
	3900kg at 4000	4350kg at 4000	4750kg at 4000	4000	3400	4000	4500	4650
	3900kg at 4000	4350kg at 4000	4750kg at 4000	4000	3200	3800	4200	4500
	3900kg at 4000	4300kg at 4000	4700kg at 4000	4000	3000	3500	3800	4100
	3800kg at 4000	4200kg at 4000	4600kg at 4000	4000	2700	3000	3300	3750
	3400kg at 4000	4000kg at 4000	4500kg at 4000	4000	2200	2400	2600	2950

2.5.6 TIRES – MI 40 D D ST5 S1

Table 33. Front tires

		Pressure (bar)	Load per tire (Kg)	
			Unladen	Laden
ADVANCE	8.25-15	SOLID	-	-
	8.25-15-14PR non-marking	-		
CHENG SHIN	8.25-15-14PR	-	-	-

Table 34. Rear tires

		Pressure (bar)	Load per tire (Kg)	
			Unladen	Laden
ADVANCE	7.00-12	SOLID	-	-
	7.00-12-12PR non-marking	-		
CHENG SHIN	7.00-12-12PR	-	-	-

2.5.7 TIRES – MI 45→55 D D ST5 S1

Table 35. Front tires

		Pressure (bar)	Load per tire (Kg)	
			Unladen	Laden
ADVANCE	300–15	SOLID	-	-
	300–15 non-marking	-		
CHENG SHIN	300–15–18PR	-	-	-

Table 36. Rear tires

		Pressure (bar)	Load per tire (Kg)	
			Unladen	Laden
ADVANCE	7.00-12	SOLID	-	-

		Pressure (bar)	Load per tire (Kg)	
			Unladen	Laden
	Non-marking TYRE	-		
CHENG SHIN	7.00-12-12PR	-	-	-

2.5.8 GROUND CONTACT PRESSURE - MI 40 →55 D D ST5 S1

Table 37. ADVANCE tires

	Pressure (bar)	Load (Kg)	Ground contact pressure (Kg/cm²)		Ground contact area (cm²)	
			Hard ground	Soft ground	Hard ground	Soft ground
7.00-12	-					
7.00-12-12PR non-marking	-					
8.25-15	-					
8.25-15-14PR non-marking	-					
300–15	-					
300–15 non-marking	-					

Table 38. CHENG SHIN tires

	Pressure (bar)	Load (Kg)	Ground contact pressure (Kg/cm²)		Ground contact area (cm²)	
			Hard ground	Soft ground	Hard ground	Soft ground
7.00-12-12PR	-					
8.25-15-14PR	-					

	Pressure (bar)	Load (Kg)	Ground contact pressure (Kg/cm²)		Ground contact area (cm²)	
			Hard ground	Soft ground	Hard ground	Soft ground
300–15–18PR	-					

2.5.9 LOAD CHART

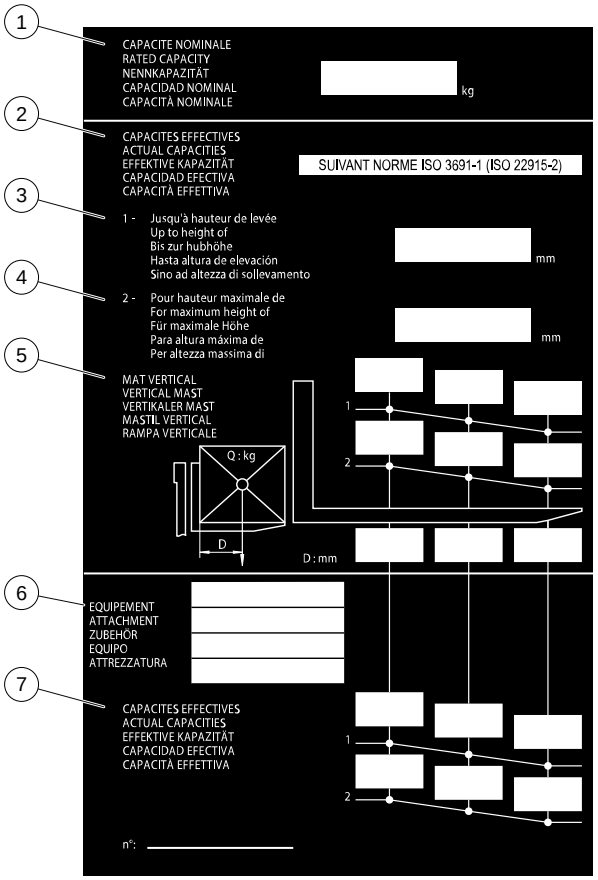


Figure 10: Load chart informations

Marker	Description
1	Rated capacity
2	Actual capacities According to standard ISO 3691-1 (ISO 22915-2)
3	Up to lift height
4	For maximum height of
5	Vertical mast
6	Equipment
7	Actual capacities

2.6. MACHINE COMPONENTS

2.6.1 COMPONENTS LOCATION — MI 40→55 D D ST5 S1

Figure 11: Components location — MI 40→55 D DST5 S1

Table 39. List of components — MI 40→55 D D ST5 S1

Marker	Description	Option
1	Mast	
2	Overhead guard	
3	Driver’s cab	•
4	Fork carriage	
5	Driving seat access handle	
6	Leftside step	
7	Front headlights	
8	Front windscreen wiper	•
9	Exhaust pipe	
10	Rear lights	
11	Rear working light	
12	Rotating beacon light	
13	Rear windscreen wiper	•
14	Rightside step	

2.6.2 DRIVER'S CAB COMPONENTS LOCATION — MI 40→55 D D ST5 S1

Figure 12: Driver's cab components location — MI 40→55 D D ST5 S1

Table 40. List of driver's cab components — MI 40→55 D D ST5 S1

Marker	Description	Option
1	Steering wheel	
2	Horn	
3	Lighting and indicator switch	
4	Forward/Neutral/Reverse gear selector	
5	Ignition switch	
6	Lifting hydraulic control lever	
7	Tilting hydraulic control lever	

Marker	Description	Option
8	Fork carriage side-shift hydraulic control or Attachment hydraulic control	
9	Attachment hydraulic control	●
10	Cup holder	
11	Switches	
12	Parking brake lever	
13	Steering wheel adjustment lever	
14	Transmission cut-off pedal	
15	Service brake	
16	Accelerator pedal	
17	Internal rear-view mirror	
18	Display	●
19	Mini-lever armrest	●
20	Driver's seat	
21	Heating control components	●
22	Air conditioning control components	●
23	Driving seat access handle	

2.7. DISPLAY & CONTROLS

2.7.1 MACHINE SWITCHES AND INDICATOR LIGHTS

Table 41. List of machine switches and indicator lights

Pictogram	Description	Option
	Rotating beacon	
	Working tail light	
	Front windscreen wiper	●
	Front windscreen washer	●
	Rear windscreen wiper	●
	Seatbelt	

2.7.2 MINI-LEVERS CONTROLS

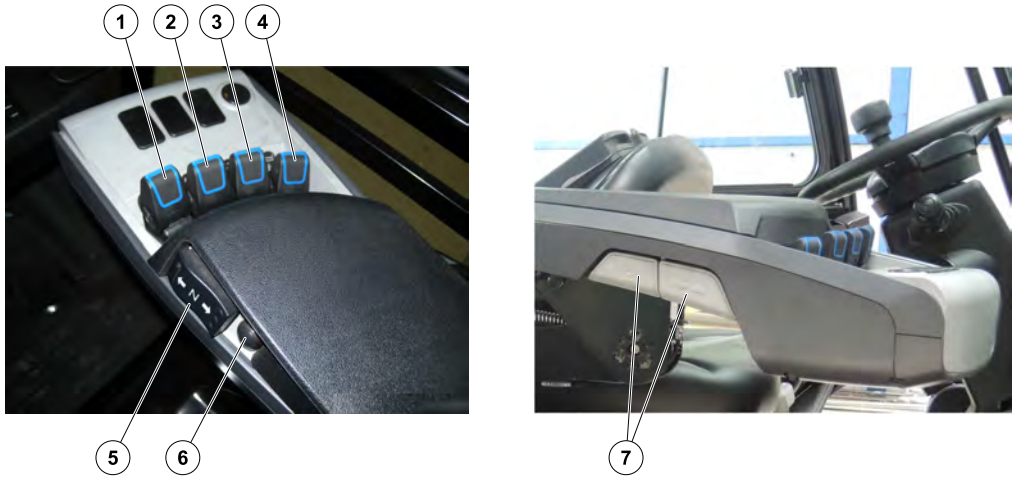


Figure 13: Mini-levers controls

Table 42. List of mini-levers controls

Marker	Description	Option
1	Fork lifting hydraulic	•
2	Mast tilting hydraulic	•
3	Fork carriage side-shift hydraulic	•
4	Hydraulic attachment	•
5	Forward/Neutral/Reverse gear selector	•
6	Horn	•
7	Armrest adjustment	•

2.7.3 PV380 CONTROL PANEL

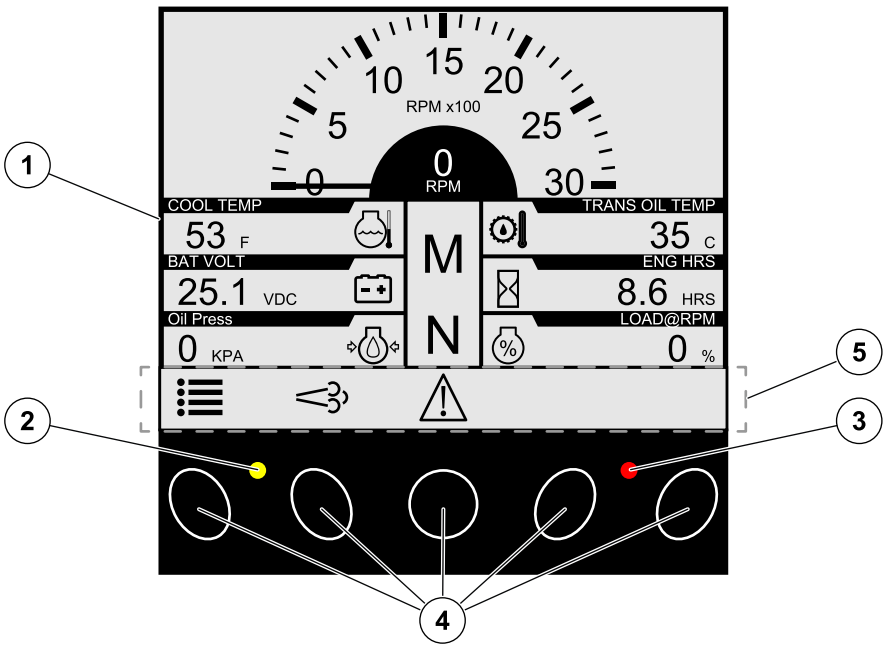


Figure 14: Control panel's components location

Table 43. List of control panel's components

Marker	*Designation*		*Description*
1	**Display screen**		Turned on : machine powered
2	**Yellow indicator light**		Turned on / Flashing : fault alert
3	**Red indicator light**		Turned on / Flashing : major fault alert ; engine must be shutdown
4	**Display screen control keys**		Briefly pressed : activate the control corresponding to the pictogram displayed on the **Navigation & control bar** (6)
5	**Navigation & control bar**		Briefly press a **display screen control key** to display **Navigation & control bar**
5	**Yes**		Confirm the request
5	**Ok**		Confirm the selection
5	**Inhibit**		Not active
5	**Cancel**		Cancel the request
5	**Settings menu**		Access to dashboard settings adjustment menu
5	**Next**		Access to next page/row
5	**DPF menu**		Access to “DPF” regeneration menu
5	**Previous**		Access to previous page/row
5	**Faults menu**		Access to fault code display menu
5	**Plus**	+	Adjust the setting
5	**Minus**	–	Adjust the setting
5	**Exit**		Return to work page

2.7.4 PV380 WORK PAGE

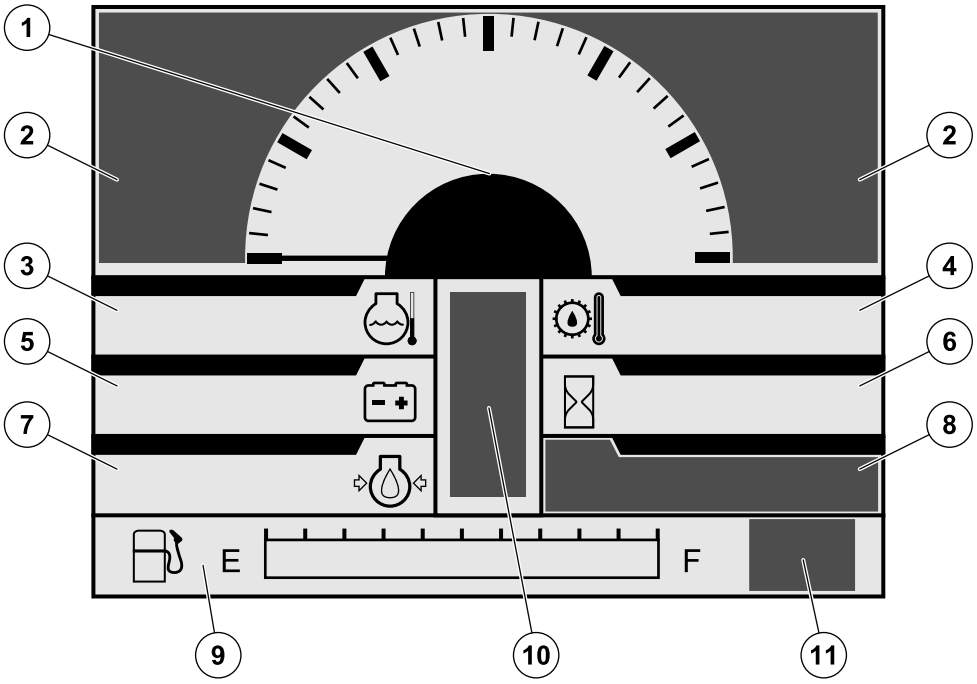


Figure 15: Indicator lights & pictograms location

Table 44. List of indicator lights & pictograms location

Marker	Designation		Description
1	Rev counter		Engine speed (RPM)
2	Engine fault indicator light		Turned on : engine fault
2	"DEF" fault indicator light		Turned on : Low "DEF" (Diesel Exhaust Fluid) level *Not used for the machines MI 40→55 D D ST5 S1*
2	Preheat indicator light		Turned on : diesel engine preheat in progress
2	Brake system low pressure indicator light		Turned on : brake system low pressure fault
2	STOP indicator light	STOP	Turned on : major engine fault ; engine must be powered down
2	Restricted DPF regeneration indicator light		Turned on : DPF (Diesel Particulate Filter) regeneration cannot be started
2	Regeneration "SCR" fault indicator light		Turned on : Regeneration "SCR" (Selective Catalytic Reduction) fault ; engine must be powered down *Not used for the machines MI 40→55 D D ST5 S1*
2	Gas temperature fault indicator light		Turned on : gas temperature fault
2	Air filter clogging indicator light		Turned on : air filter clogging fault

Marker	Designation		Description
2	DPF saturation indicator light		Turned on : DPF (Diesel Particulate Filter) saturation fault
2	"SCR" saturation indicator light		Turned on : "SCR" (Selective Catalytic Reduction) saturation fault *Not used for the machines MI 40→55 D D ST5 S1*
2	Regeneration "SCR" shutdown indicator light		Turned on : Regeneration "SCR" (Selective Catalytic Reduction) fault ; engine must be powered down *Not used for the machines MI 40→55 D D ST5 S1*
3	Engine coolant temperature		Temperature value (°C or °F)
4	Transmission oil temperature		Temperature value (°C or °F)
5	Battery charge level		Battery voltage value (Vdc)
6	Hour meter		Engine operating hours (Hrs)
7	Engine oil pressure		Pressure value (Bar or PSI)
8	Engine load		Engine load rate (%)
8	Diesel Exhaust Fluid "DEF" level		"DEF" tank filling rate (%) *Not used for the machines MI 40→55 D D ST5 S1*
9	Fuel level		• E : Tank empty • F : Tank full
10	Manual transmission mode	M	Displayed : mode activated
10	Automatic transmission mode	A	Displayed : mode activated
10	Forward slow speed gear mode	F1	Displayed : mode activated
10	Forward intermediate speed gear mode	F2	Displayed : mode activated
10	Forward fast speed gear mode	F3	Displayed : mode activated
10	Neutral gear mode	N	Displayed : mode activated
10	Reverse slow speed gear mode	R1	Displayed : mode activated
10	Reverse intermediate speed gear mode	R2	Displayed : mode activated
10	Reverse fast speed gear mode	R3	Displayed : mode activated
11	Parking brake		Turned on : parking brake activated
	Warning indicator light	!	Turned on : critical value

2.7.5 PV380 DASHBOARD SETTING ADJUSTMENT MENU

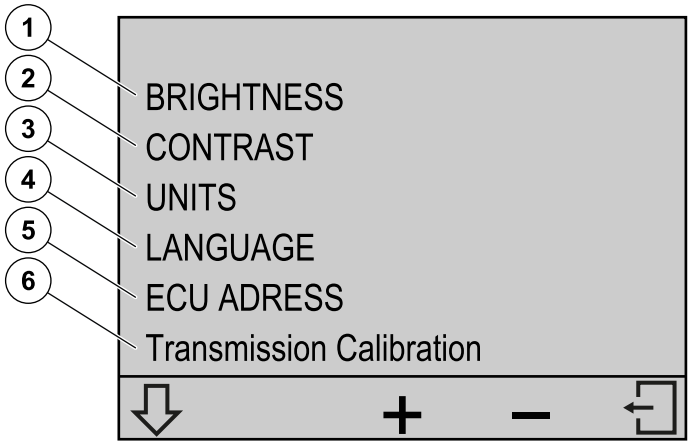


Figure 16: Dashboard setting adjustment menu page

Table 45. List of setting

Marker	Designation	Description
1	BRIGHTNESS	Screen brightness adjustment
2	CONTRAST	Screen contrast adjustment
3	UNITS	Choice of the screen unit
4	LANGUAGE	Choice of the screen language
5	ECU ADRESS	ECU address Information (cannot be changed)
6	Transmission calibration	Calibration menu access denied, consult your dealer

2.7.6 PV380 FAULTS DISPLAY MENU

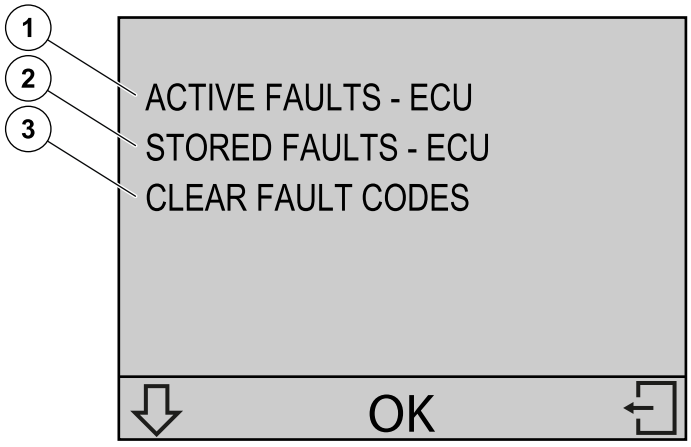


Figure 17: Faults display menu page

Table 46. List of controls

Marker	Designation	Description
1	ACTIVE FAULTS – ECU	Access to list of active faults
2	STORED FAULTS – ECU	Access to list of stored faults
3	CLEAR FAULT CODES	Clear fault codes

3. MACHINE OPERATION

3.1. INSTALLATION AT THE DRIVER'S CAB

3.1.1 GETTING ON/OFF THE MACHINE

⚠ CAUTION

Risk of injury

Do not jump out of the lift truck.

NOTICE

Risk of machine damage

Do not use the steering wheel as point of support.

Always face the lift truck when getting into and out of the driver's cab.

Always enter the driver's cab on the left side of the machine.

Make sure that you always have 3 points of support when getting in and out of the driver's cab.

- Use the driving seat access handle.
- Use the step.
- Use either the engine cover, the driver's seat or the overhead guard as third point of support.

3.1.2 ADJUSTING THE ARMREST

The armrest is adjustable in height and length.

- Press the button (1) to adjust in height.
- Press the button (2) to adjust in length.

Figure 18: Buttons to adjust the armrest

3.1.3 ADJUSTING THE SEAT

⚠ CAUTION

Risk of injury and crushing the hand

Support the back-rest when adjusting the seat.

Be careful when adjusting the seat.

The driver is sitting on the driver's seat.

Weight adjustment

1. Pull the weight adjustment lever fully out.

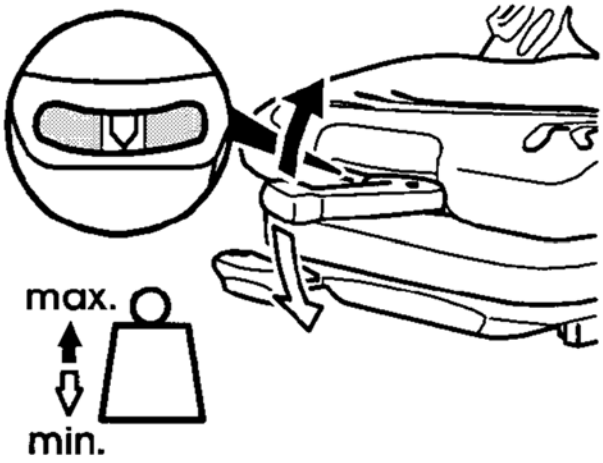


Figure 19: Driver's seat weight adjustment

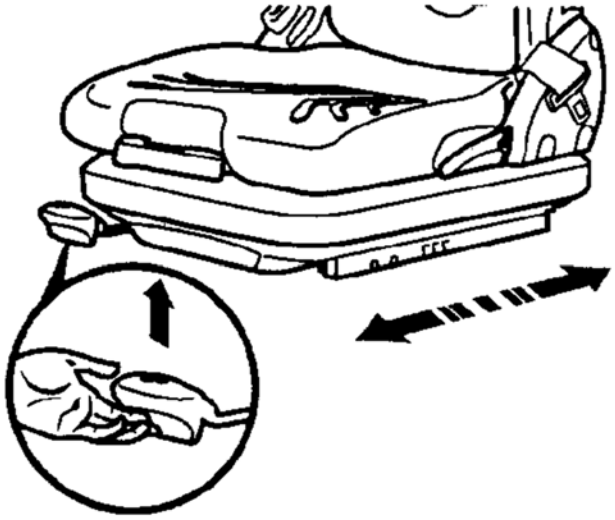


Figure 20: Driver's seat longitudinal adjustment

2. Move the weight adjustment lever up to increase the weight or down to reduce it.

   There are ten possible positions between the min. and max. weights.

   Before each run, return the lever to the central position.

   The max. or min. position is indicated by a freely traveling lever.

   The driver's weight is correctly adjusted when the arrow is in the center of indicator.

3. After completing weight adjustment, fully lower the lever.

Longitudinal adjustment

- Adjust the locking lever until you reach the position required.

Lumbar adjustment

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

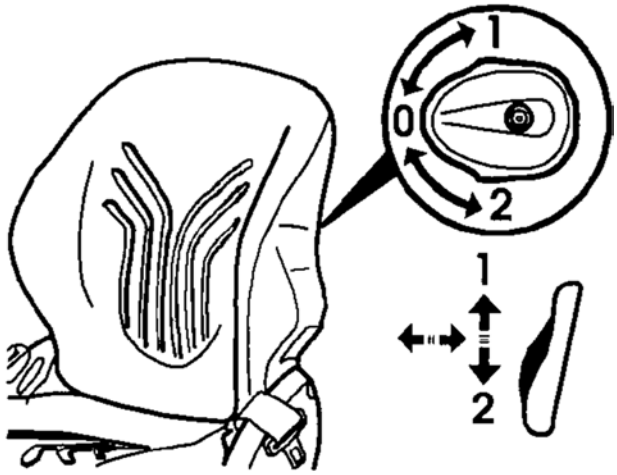


Figure 21: Driver's seat lumbar adjustment

Angle adjustment of the back-rest

1. Support the back-rest.
2. Pull the lever and adjust the back-rest to find the desired position.

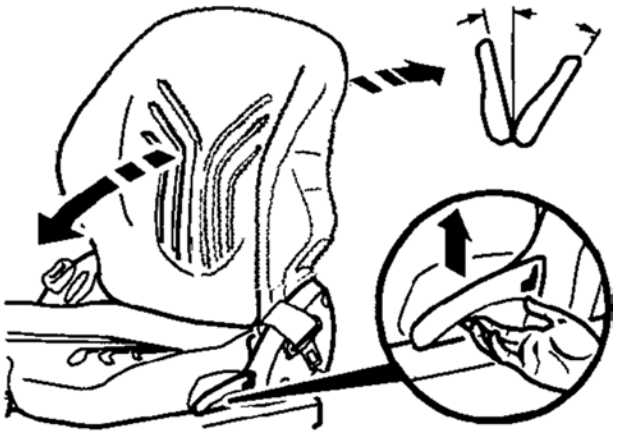


Figure 22: Driver's seat angle adjustment of the back-rest

3.1.4 ADJUSTING THE STEERING WHEEL

1. Pull out the steering wheel tilting knob to adjust the position of the steering wheel.
2. Push back in the steering wheel tilting knob to lock the steering wheel in the desired position.

3.1.5 FASTENING THE SEAT BELT

⚠ DANGER

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

Repair or replace the seat belt immediately.

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

3.2. OPERATING THE MACHINE

3.2.1 OPERATING THE MACHINE WITH THE OPERATOR PRESENCE SYSTEM

If the parking brake is released without operator on the seat, a sound alarm will be heard.

If the operator leaves the seat over 2 seconds in the process of handling, a sound alarm will be heard and the handling operation will automatically stop.

Lift truck from 2023–04–15:
If the operator has not fastened the seatbelt when the parking brake is released or in the process of handling, a sound alarm will be heard.
If the operator unfastens the seatbelt and leaves the seat in the process of handling, a sound alarm will be heard and the handling operation will automatically stop.

- Moving the machine forwards or backwards:
  1. Sit down correctly in the driver's seat and fasten the seatbelt
  2. Release the parking brake
  3. Engage forward or reverse movement
- Stopping the machine:
  1. Set the forward/reverse selector to neutral
  2. Apply the parking brake
  3. Unfasten the seatbelt and get off the machine

3.2.2 POWERING UP THE MACHINE

The forward/reverse selector is in neutral position (lamp is lit), the ignition switch is in position (1) and the machine is stationary.

1. Turn the ignition switch to the preheating position (2) for a few seconds until the lamp goes out.

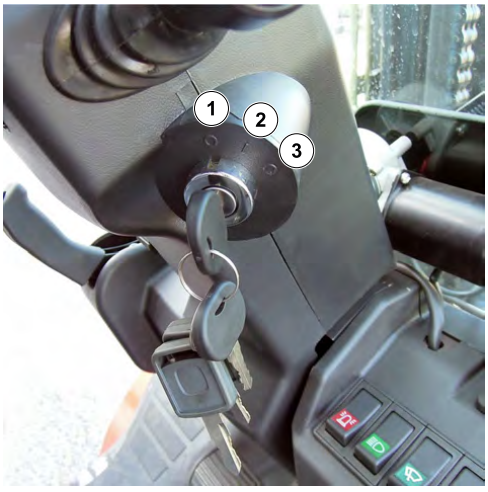


Figure 23: Ignition switch positions

2. Turn the ignition switch to the position (3) to start the engine.

The machine is powered up and the ignition switch is in position (2).

3.2.3 POWERING DOWN THE MACHINE

The forward/reverse selector is in neutral position (lamp is lit), the ignition switch is in position (2) and the machine is stationary.

1. Turn the ignition switch to position (1).

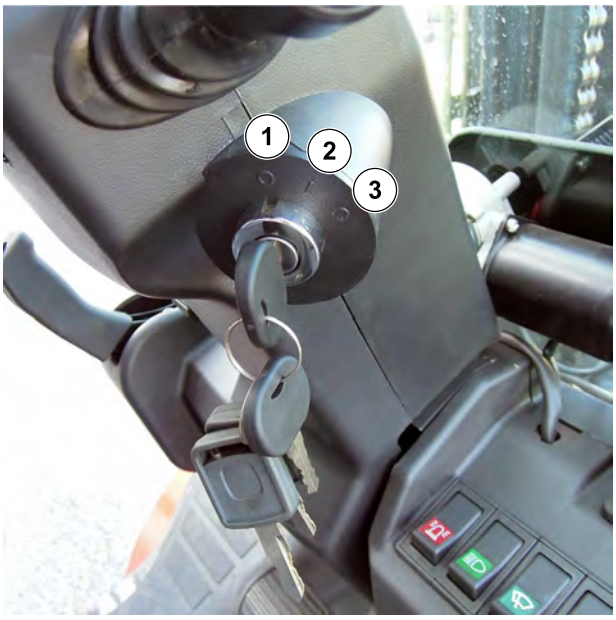


Figure 24: Ignition switch positions

2. Operate the emergency stop button.

The machine is powered down.

3.2.4 OPERATING THE HORN

- Press in the center of the steering wheel.
- Press the red button on the driving seat access handle.

In both cases, the horn will sound.

3.2.5 OPERATING THE HORN ON THE MINI-LEVERS

- Press on the button on the side of the mini-lever armrest.

The horn will sound.

3.2.6 OPERATING THE ROTATING BEACON

- Press on the rotating beacon switch to turn the light on and off.

3.2.7 OPERATING THE HEATER

- Press on the heater switch to turn the heating on and off.

3.2.8 OPERATING THE AIR CONDITIONING

1. Slide the fan switch (1) to the desired position.

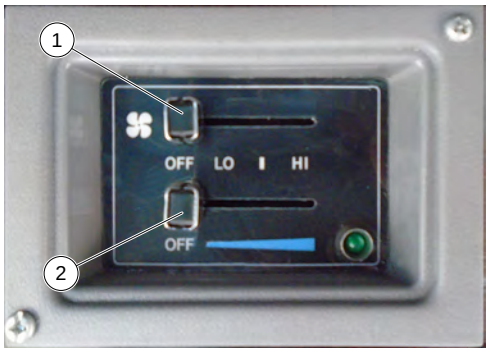


Figure 25: Fan and temperature switches positions

2. Slide the temperature switch (2) to the desired position.

3.2.9 DRIVING THE MACHINE

3.2.9.1 Operating the gear selector

NOTICE

Risk of transmission damage

Do not accelerate while changing gears.

Change gears at speeds below 2km/h.

The gear selector will not work unless the OPS system prerequisites are met.

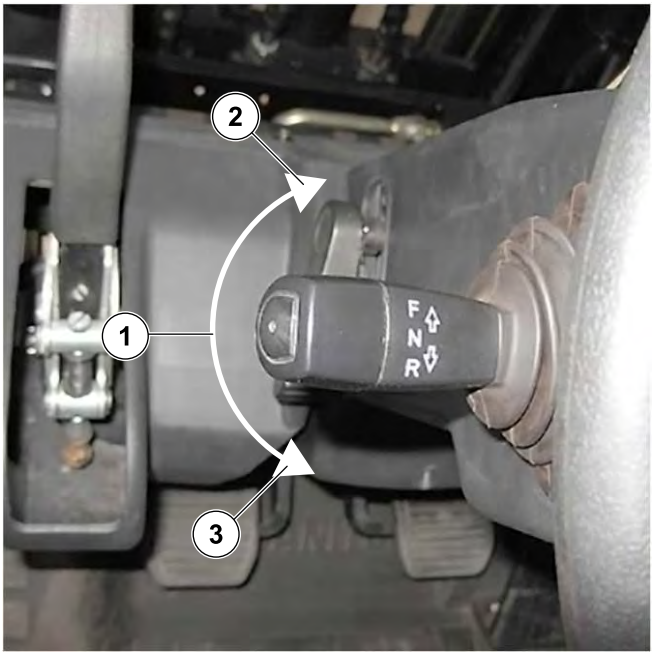


Figure 26: Gear selector

- Neutral position
  1. Stop the machine.
  2. Move the lever to position (1).
- Forward drive position
  1. Stop the machine.
  2. Move the lever to position (2).
- Reverse drive position
  1. Stop the machine.
  2. Move the lever to position (3).

     The reversing lights are on and the audible reverse warning is on.

3.2.1 *Operating the machine with the operator presence system*, page 51

3.2.9.2 Operating the gear selector on the mini-levers

NOTICE

Risk of transmission damage

Do not accelerate while changing gears.

Change gears at speeds below 2km/h.

The gear selector will not work unless the OPS system prerequisites are met.

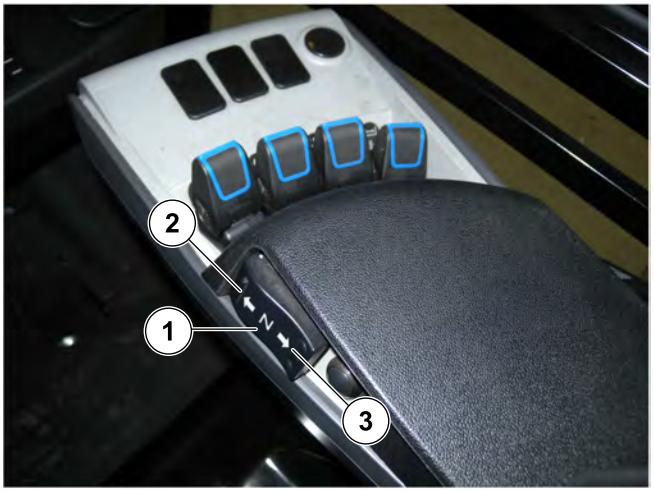


Figure 27: Gear selector on the mini-levers

- Neutral position
  1. Stop the machine.
  2. Move the switch to position (1).
- Forward drive position
  1. Stop the machine.
  2. Move the switch to position (2).
- Reverse drive position
  1. Stop the machine.
  2. Move the switch to position (3).

     The reversing lights are on and the audible reverse warning is on.

3.2.1 *Operating the machine with the operator presence system*, page 51

3.2.9.3 Driving the machine

1. Get on the machine
2. Adjust the seat
3. Adjust the steering wheel
4. Fasten the seat belt
5. Release the parking brake
6. Power up the machine
7. Operate the gear selector to move forwards or backwards

3.2.9.4 Operating the lights and indicators

Positions (2) and (3) can be used without switching on the ignition

- Put the Switch in position (1) and the lever in central position

Figure 28: Lights and indicators

- The lights and indicators are off
- Put the switch in position (2)
- The sidelights and the rear lights are on
- Put the switch in position (3)
- The headlights and the rear lights are on
- Push the lever (4) upwards
- The left hand indicator lights flash
- Push the lever (4) downwards
- The right hand indicator lights flash

3.2.9.5 Operating the windscreen wipers

- Press on the desired windscreen wiper switch

The location of the switches may vary depending on the options

The desired windscreen wipers are working

3.2.10 HANDLING A LOAD

3.2.10.1 Instructions for Handling a Load

Choice of Attachments

- Only attachments approved by MANITOU can be used on its lift trucks.
- Make sure the attachment is appropriate for the work to be done.
- Make sure the attachment is correctly installed and locked onto the lift truck carriage.
- Make sure that your lift truck attachments work properly.
- Comply with the load chart limits for the lift truck for the attachment used.
- Do not exceed the rated capacity of the attachment.
- Never lift a load in a sling without the attachment provided for the purpose. There are optional solutions; contact your

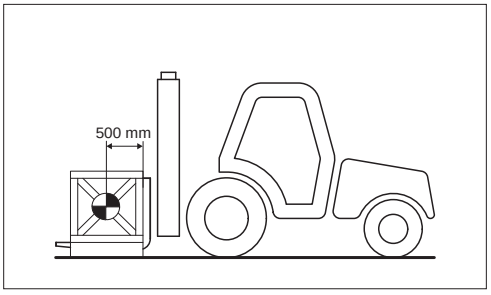
Weight of Load and Centre of Gravity

⚠ WARNING

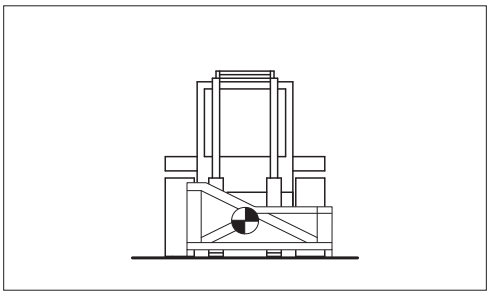
It is forbidden to move a load heavier than the effective capacity defined on the lift truck load chart.

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

- Before taking up a load, you must know its mass and its centre of gravity.
- The load chart for your lift truck is valid for a load in which the longitudinal position of the centre of gravity is 500 mm or 600 mm from the base of the forks (according to the model of lift truck) . For a higher centre of gravity, contact your dealer



- For irregular loads, determine the transverse centre of gravity before any movement and set it in the longitudinal axis of the lift truck.



Transverse Attitude of the Lift Truck

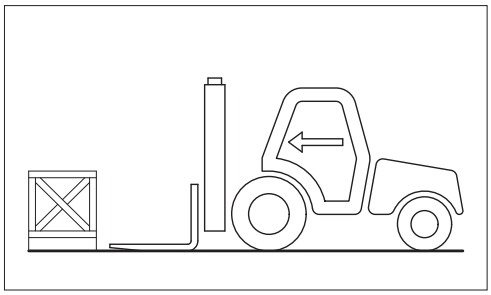
The transverse attitude is the transverse slope of the chassis with respect to the horizontal.

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

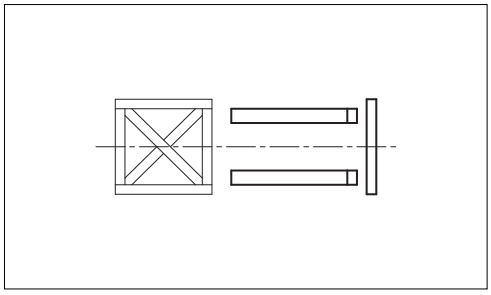
- Position the lift truck so that the bubble in the level is between the two lines.

Picking up a load on the ground

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



2. Approach the lift truck perpendicular to the load, with the forks in a horizontal position.

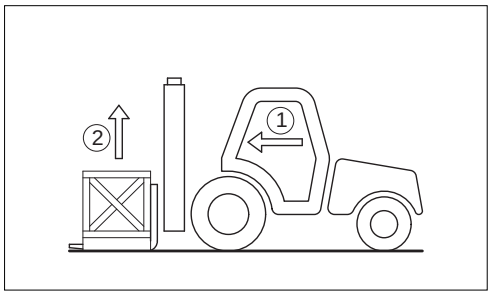


3. Adjust the fork spread and centring in connection with the load (optional solutions exist, consult your dealer).
4. Never lift a load with a single fork.

⚠ WARNING

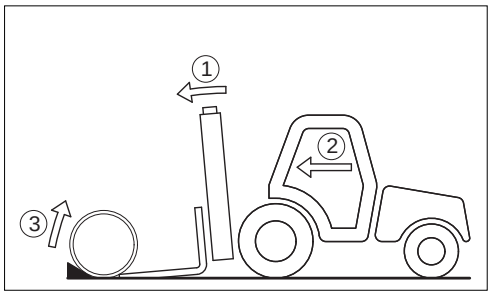
Beware of the risks of trapping or crushing limbs when manually adjusting the forks.

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



FOR A NON-PALLETISED LOAD

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



Picking up and laying down a high load on tires

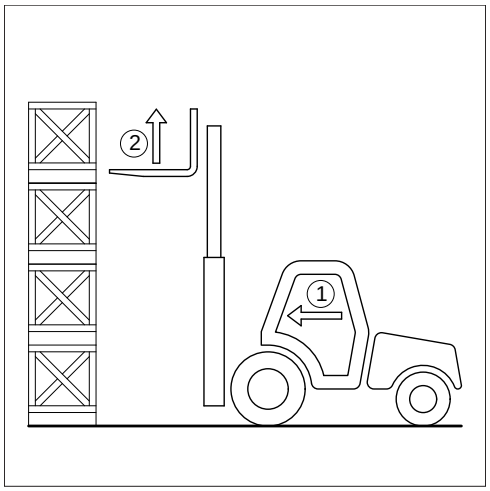
⚠ DANGER

You must not raise the boom if you have not checked the transverse attitude of the lift truck.

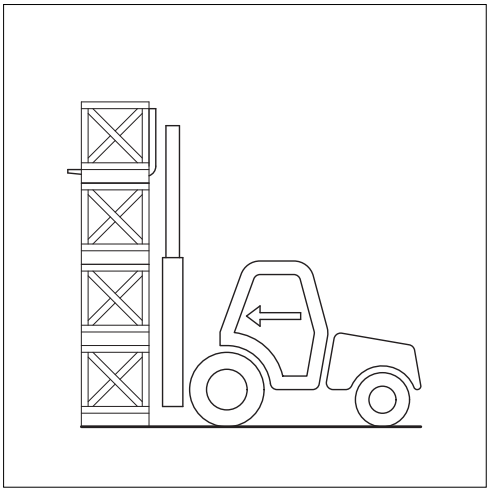
Remember: Make sure that the following operations can be performed with good visibility.

PICKING UP A HIGH LOAD ON TIRES

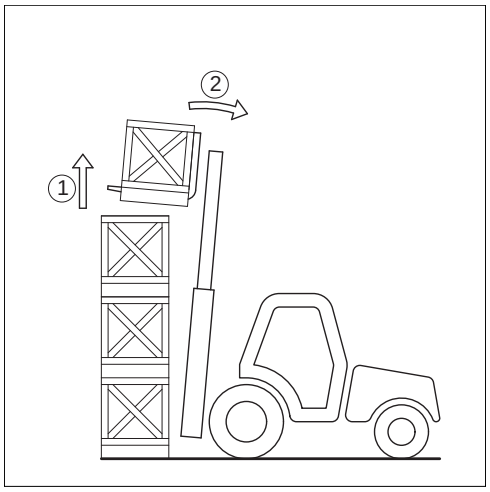
1. Ensure that the forks will easily pass under the load.
2. Keeping the mast vertical (1), advance the lift truck and raise the forks to level with the load (2) .



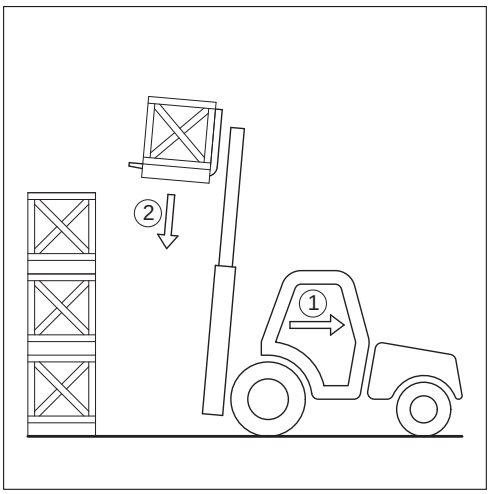
3. Manoeuvre carefully and gently to bring the forks to the stop in front of the load. Set the handbrake and place the forward/reverse selector to neutral.



4. Slightly raise the load (1) and tilt the carriage (2) backwards to stabilise the load.

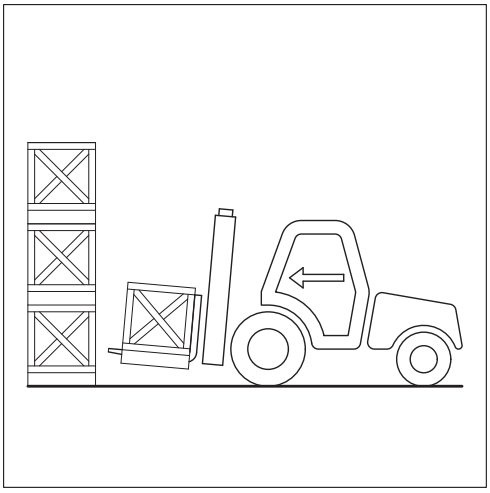


5. Tilt the load sufficiently backwards to ensure its stability.
6. Reverse the lift truck (1) very carefully and gently to free the load. Lower the mast (2) to bring the load into transport position.

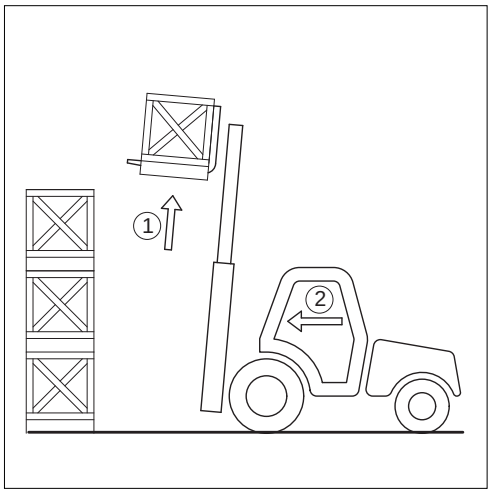


LAYING A HIGH LOAD ON TYRES

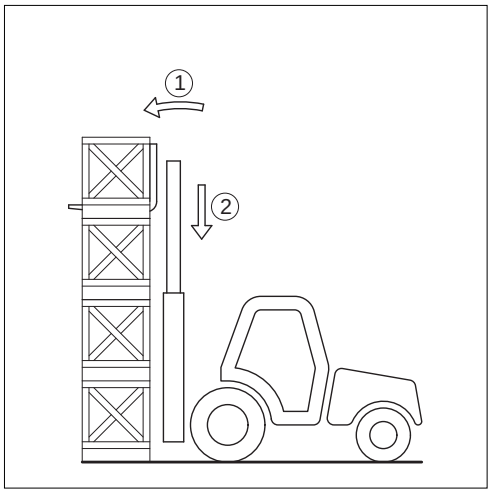
1. Approach the load in the transport position in front of the pile.



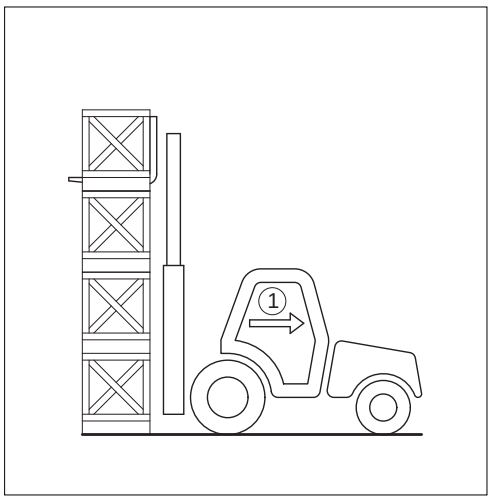
2. Raise the mast (1) until the load is higher than the pile and move the lift truck forward (2) very carefully and gently, until the load is over the pile. Put the handbrake on and set the forward/reverse selector to neutral.



3. Place the load in a horizontal position by tilting the mast forwards (1) and lay it down on the pile (2) while checking the correct positioning of the load .



4. Reverse the lift truck (1) very slowly and carefully to release the forks. Then set them into transport position.



3.2.10.2 Using the hydraulic controls

⚠ WARNING

Machine shaking

Risk of accident

Use the hydraulic controls without jerking

The gear selector will not work unless the OPS system prerequisites are met.

The driver is sat on the seat

Lifting the load

- Move the lever (1) backwards to lift the load

Figure 29: Hydraulic controls

- Move the lever (1) forwards to lower the load

Tilting the mast

- Move the lever (2) backwards to tilt the mast backwards
- Move the lever (2) forwards to tilt the mast forwards

Carriage side-shift

- Move the lever (3) backwards to move sideways to the right
- Move the lever (3) forwards to move sideways to the left

Attachment

- Move the lever (3) forwards or backwards

Additional accessory

- Move the lever (4) forwards or backwards

3.2.1 *Operating the machine with the operator presence system*, page 51

3.2.10.3 Using the hydraulic controls on the mini-levers

⚠ WARNING

Machine shaking

Risk of accident

Use the hydraulic controls without jerking

The gear selector will not work unless the OPS system prerequisites are met.

The driver is sat on the seat

Lifting the load

- Move the mini-lever (1) backwards to lift the load

Figure 30: Mini-lever hydraulic controls

- Move the mini-lever (1) forwards to lower the load

Tilting the mast

- Move the mini-lever (2) backwards to tilt the mast backwards
- Move the mini-lever (2) forwards to tilt the mast forwards

Carriage side-shift

- Move the mini-lever (3) backwards to move sideways to the right
- Move the mini-lever (3) forwards to move sideways to the left

Attachment

- Move the mini-lever (3) forwards or backwards

Additional accessory

- Move the mini-lever (4) forwards or backwards

3.2.1 *Operating the machine with the operator presence system*, page 51

3.2.10.4 Adjusting the fork spacing

The machine must be unloaded

1. Pull up the adjusting knob and turn it 180 degrees to unlock the fork

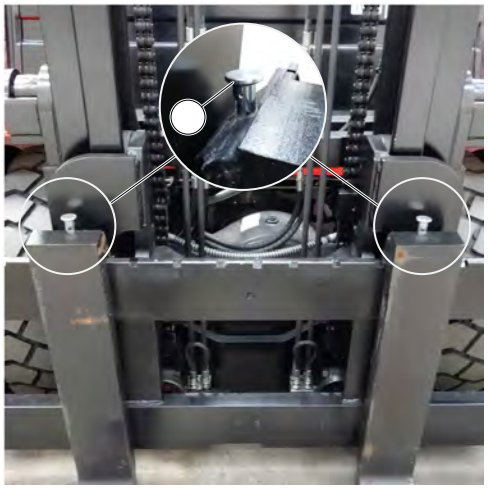


Figure 31: Fork spacing adjustment

2. Slide the forks to the left or the right to adjust them
3. Turn the adjusting knob 180 degrees and push it down to lock the fork

3.3. MANAGEMENT OF THE POLLUTION CONTROL SYSTEM

3.3.1 STARTING THE PARKED REGENERATION

⚠ DANGER

Risk of suffocation

Park the machine in a safe and adequately ventilated place

NOTICE

Risk of engine damage

Do not stop the exhaust regeneration unless it's absolutely necessary

Do not use any machine functions while the exhaust regeneration is in progress

The DPF saturation indicator light is lit on the work page

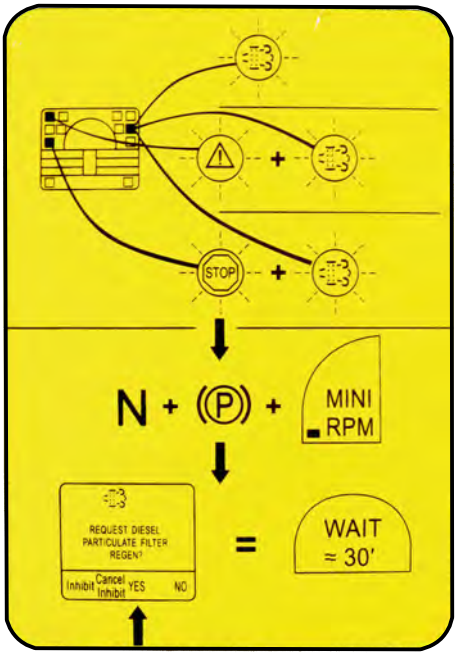


Figure 32: Parked DPF regeneration decal

The fuel is at sufficient level

1. Put the gear selector in neutral position
2. Apply the parking brake
3. Rest the forks on the ground
4. Put the engine in idling speed
5. Access to "DPF" regeneration menu on the control panel
6. Press on **"Request diesel particulate filter regen"** then on **"Yes"** to launch the "DPF" regeneration

Stay close to the machine during the exhaust regeneration

The duration of the regeneration procedure is approximately 30 minutes

When finished, the remaining hours before next regeneration will appear on the screen

3.4. PARKING AND STORING THE MACHINE

3.4.1 PARKING THE MACHINE

1. Move the machine to an approved parking location.
2. Set the wheels straight.

   Block the wheels if the parking location is on a slope.
3. Put the gear selector to neutral.
4. Set the parking brake on.
5. Lower the forks to the ground.
6. Turn off the engine and remove the key.

3.4.2 STORING THE MACHINE FOR A SHORT DURATION

1. Wait for the machine to cool down.
2. Check the general state of the machine.

   Report any damage to the machine.
3. Check the lubricants levels. Top-up the lubricants levels if necessary.

3.5. TRANSPORT AND LIFTING OF THE MACHINE

3.5.1 LOADING/UNLOADING THE MACHINE

⚠ WARNING

Ensure that the safety instructions connected to the platform are respected before the loading of the machine and that the driver of the means of transport is informed about the dimensions and the weight of the machine.

⚠ WARNING

Ensure that the platform is of sufficient size and load capacity for transporting the machine. Check also the allowable ground contact pressure of the platform relative to the machine.

- Loading the machine
  1. Block the wheels of the platform.

2. Attach the loading ramps to the platform in such a way as to give the shallowest possible ramp angle for the machine.
3. Load the machine parallel to the platform.
4. Stop the machine.

- Unloading the machine

1. Block the wheels of the platform.
2. Attach the loading ramps to the platform in such a way as to give the shallowest possible ramp angle for the machine.
3. Power up the machine.
4. Unload the machine parallel to the platform.

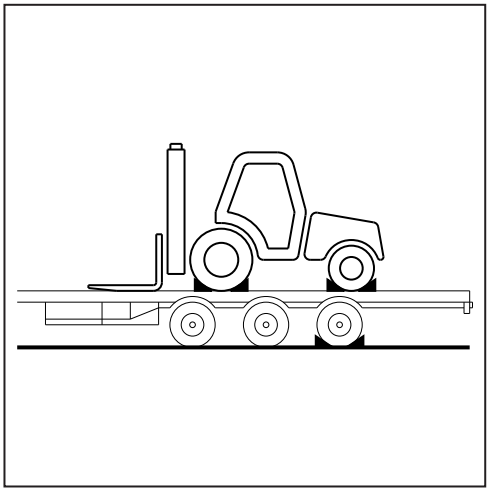
3.5.2 TYING DOWN THE MACHINE

⚠ WARNING

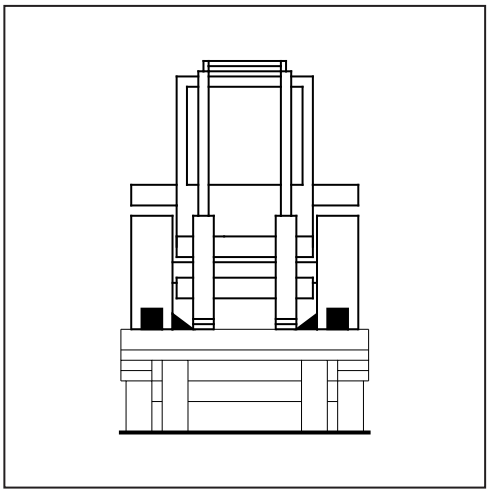
Risk of machine falling during transport

Stow the machine onto the semi-trailer with sufficiently strong ropes.

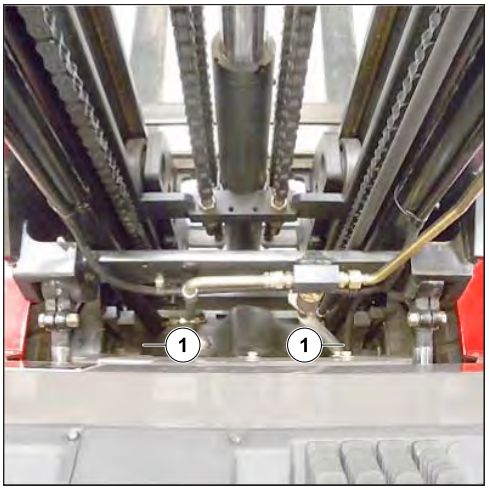
1. Fix the chocks to the platform at the front and at the back of each tyre.



2. Also fix the chocks to the platform on the inside of each tyre.



3. Stow the machine onto the semi-trailer with sufficiently strong ropes to the front by passing above the articulation fittings (1) of the mast and to the back onto the towing pin (2).



4. Tighten the ropes.

4. MAINTENANCE

4.1. MAINTENANCE COMPONENTS LOCATION - MI 40→55 D D ST5 S1

Figure 33: Maintenance components location - MI 40→55 D D ST5 S1

Table 47. Maintenance components location - MI 40→55 D D ST5 S1

Marker	Description
1	Floor mat and floor engine cover
2	Engine cover key and button
3	Engine cover

Marker	Description
4	Fuel tank cap
5	Mast slinging points
6	Rear slinging points
7	Counterweight
8	Radiator core
9	Brake fluid tank
10	Air conditioning unit

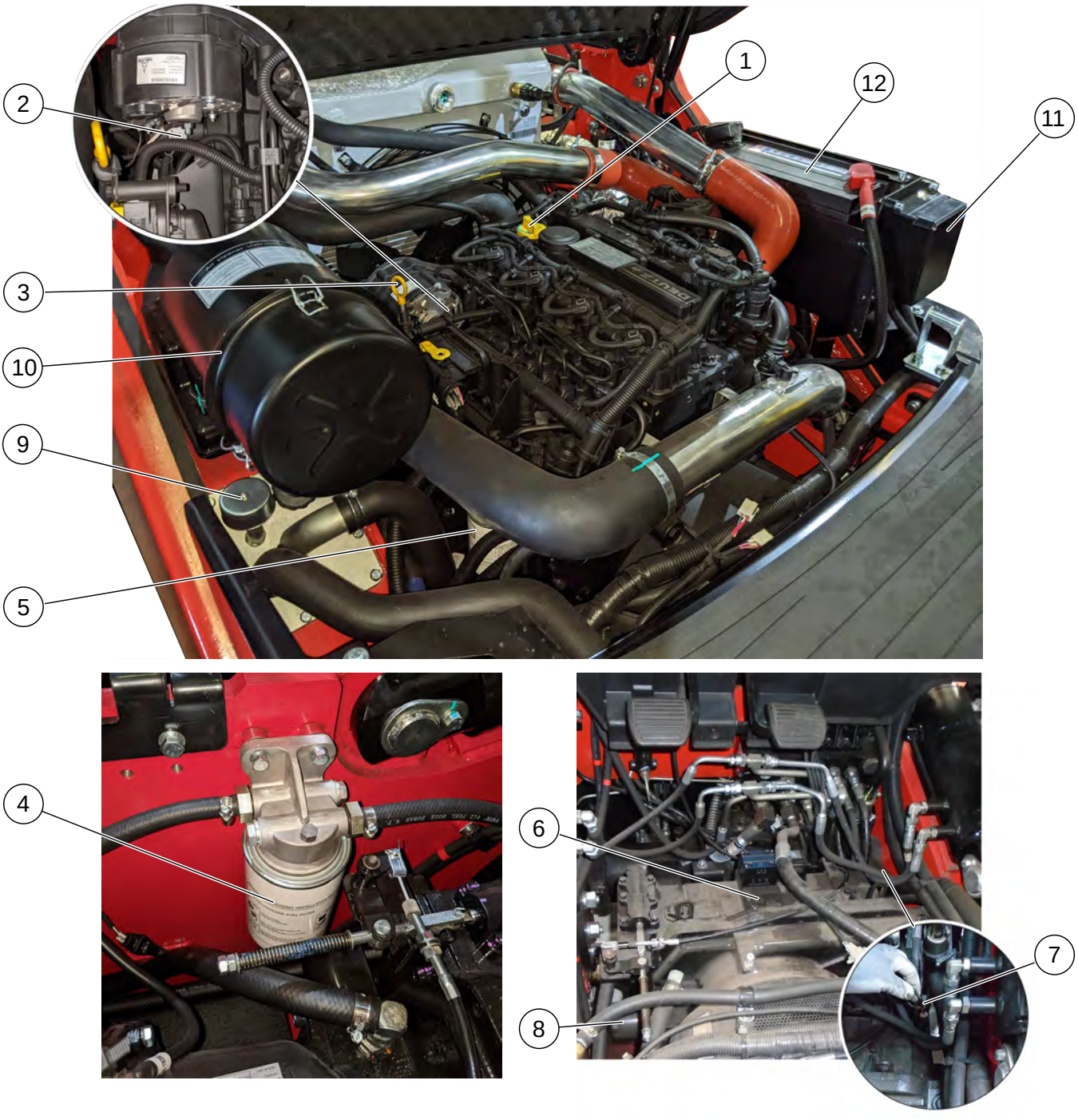


Figure 34: Maintenance components location under the engine cover - MI 40→55 D D ST5 S1

Table 48. Maintenance components location under the engine cover - MI 40→55 D D ST5 S1

Marker	Description
1	Engine oil cap
2	Engine oil filter
3	Engine oil gauge
4	Fuel pre-filter
5	Fuel filter
6	Transmission oil filler plug
7	Transmission oil gauge
8	Transmission oil filter
9	Hydraulic fluid tank filler cap
10	Dry air filter
11	Fuse and relay box
12	Battery

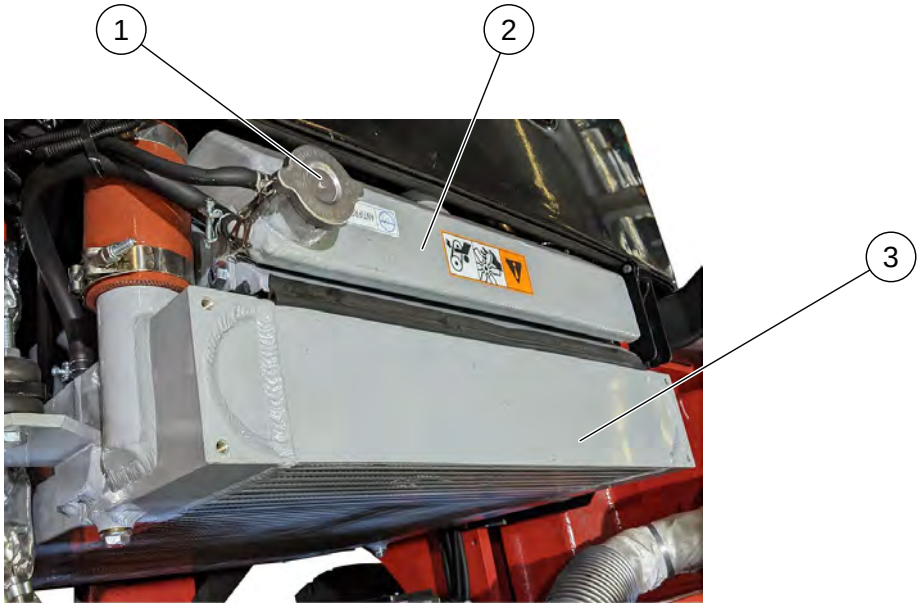


Figure 35: Maintenance components location under the rear cover - MI 40→55 D D ST5 S1

Table 49. Maintenance components location under the rear cover - MI 40→55 D D ST5 S1

Marker	Description
1	Coolant tank filler cap
2	Coolant tank
3	Radiator core

4.2. OPENING THE ENGINE COVER

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

Figure 36: Cab version engine cover opening

If the machine is equipped with mini-levers, retract the armrest.

- Lifting the engine cover
  1. Turn the key (1) counterclockwise.

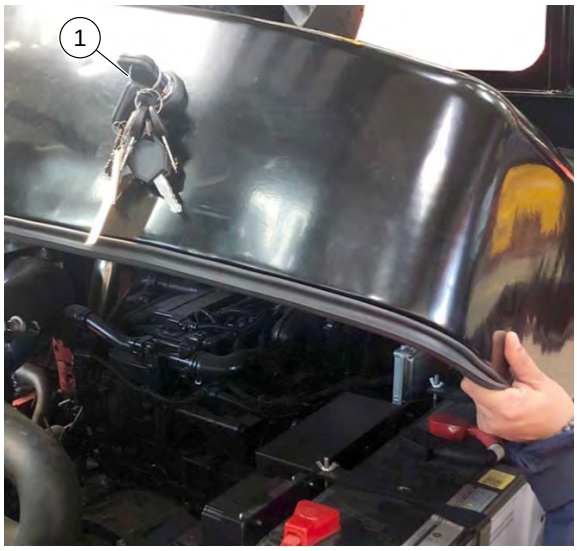


Figure 37: Key in engine cover lock

  2. Push the button on the lock.
  3. Keep the button pushed in and gently lift the engine cover until the gas strut safety catch (2) locks in place.

Figure 38: Gas strut safety catch

- Lowering the engine cover
  1. Release the safety catch (2) and gently lower the engine cover.
  2. Check that the engine cover is properly closed.

4.3. ORIGINAL MANITOU SPARE PARTS AND EQUIPMENT

4.3.1 ORIGINAL MANITOU SPARE PARTS AND EQUIPMENT

Our lift trucks must be serviced using original Manitou parts.

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

The use of counterfeit parts or components not approved by the Manufacturer, means you lose the benefit of the contractual guarantee

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

4.3.3 BY USING ORIGINAL MANITOU PARTS, YOU BENEFIT FROM

Through its network, MANITOU provides the user with the following,

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

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

4.4. MACHINE MAINTENANCE

4.4.1 DAILY AND WEEKLY MAINTENANCE

The operator is authorized to carry out this maintenance

These maintenance operations enables the operator to maintain the machine in a clean and safe condition.

4.4.2 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).

4.4.3 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 machine by notifying the total number of hours of operation and the date of the service performed by the professional approved by the MANITOU network.

4.4.4 OCCASIONAL MAINTENANCE AND OPERATION

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

4.5. MAINTENANCE LOGBOOK

- ❶ List of maintenance procedures to be carried out every 500 hours.
- ❷ List of maintenance procedures to be carried out every 1,000 hours of service or every 2 years.
- ❸ List of maintenance procedures to be carried out every 2,000 hours of service or every 4 years.

SCHEDULE	10 hours or daily	50 hours or weekly	First 6 months	First 500 hours	500 hours or 1 year	1,000 hours or 2 years
PERIODIC MAINTENANCE	See: Daily maintenance or every 10 hours of service.	See: Weekly maintenance or every 50 hours of service.	Mandatory service	Mandatory service + ❶	❶	❶+❷
MACHINE COUNTER						
DATE OF SERVICING						
OBSERVATION						

SCHEDULE	1,500 hours or 3 years	2,000 hours or 4 years	2,500 hours or 5 years	3,000 hours or 6 years	3,500 hours or 7 years	4,000 hours or 8 years
PERIODIC MAINTENANCE	❶	❶+❷+❸	❶	❶+❷	❶	❶+❷+❸
MACHINE COUNTER						
DATE OF SERVICING						
OBSERVATION						

SCHEDULE	4,500 hours or 9 years	5,000 hours or 10 years	5,500 hours or 11 years	6,000 hours or 12 years	6,500 hours or 13 years	7,000 hours or 14 years
PERIODIC MAINTENANCE	❶	❶+❷	❶	❶+❷+❸	❶	❶+❷
MACHINE COUNTER						
DATE OF SERVICING						
OBSERVATION						

4.6. SERVICING PROGRAM

4.6.1 DAILY AND WEEKLY MAINTENANCE

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

The operator is authorised to carry out this maintenance.

10 hours of service or daily maintenance

Table 50. 10 hours of service or daily maintenance

Operation	Description	Note
Check	Lift truck environment	
Check	Fuel level	
Check	Engine oil level	
Check	Cooling liquid level	
Check	Fuel prefilter	
Check	Brake fluid level	

50 hours of service or weekly maintenance

Carry out the daily maintenance procedures as well.

Table 51. 50 hours of service or weekly maintenance

Operation	Description	Note
Check	Gear box seal	
Check	Front axle differential seal	
Check	Tires and wheels	
Check	Hydraulic fluid level	
Check	Windscreen washer liquid level	
Clean	Dry air filter cartridge	
Clean	Radiator core	
Clean	Condenser core	
Grease	Machine	
Adjust	Tension and alignment of mast lifting chains	

4.6.2 FIRST MANDATORY SERVICING

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

Mandatory servicing

Table 52. Mandatory servicing

Operation	Description	Note
Check	Engine oil level	
Check	Cooling liquid level	
Check	Fuel prefilter	
Check	Gear box seal	
Check	Front axle differential seal	
Check	Tires and wheels	
Check	Hydraulic fluid level	
Check	Windscreen washer liquid level	
Clean	Dry air filter cartridge	
Clean	Radiator core	
Clean	Condenser core	
Grease	Machine	
Adjust	Tension and alignment of mast lifting chains	
Grease	Mast lifting chains	
Replace	Engine oil	
Check	Speeds of hydraulic movements	Consult your dealer
Check	Condition of hoses and flexible pipes	Consult your dealer
Check	Condition of cylinders (leakage, rods)	Consult your dealer
Check	Fork wear	Consult your dealer
Check	Condition of attachments	Consult your dealer
Check	Seat belt	
Replace	Fuel filter	
Replace	Fuel prefilter	
Check	Engine speeds	Consult your dealer
Check	Engine valve clearances	Consult your dealer

Operation	Description	Note
Check	Engine silent blocks	Consult your dealer
Check	Gear box silent blocks	Consult your dealer
Check	Condition of wheels and tyres	Consult your dealer
Check	Brake	Consult your dealer
Check	Condition of wiring harnesses and cables	Consult your dealer
Check	Lights and signals	Consult your dealer
Check	Warning indicators	Consult your dealer
Check	Condition of the rear view mirrors	Consult your dealer
Check	Cab structure	Consult your dealer
Check	Frame structure	Consult your dealer

4.6.3 PERIODIC SERVICING

The periodic maintenance must be carried out by a professional approved by the Manitou network.

500 hours of service or 1 year

Carry out the daily and weekly maintenance.

Table 53. 500 hours of service or 1 year

Operation	Description	Note
Grease	Mast lifting chains	
Replace	Engine oil	
Check	Speeds of hydraulic movements	Consult your dealer
Check	Condition of hoses and flexible pipes	Consult your dealer
Check	Condition of cylinders (leakage, rods)	Consult your dealer
Check	Fork wear	Consult your dealer
Check	Condition of attachments	Consult your dealer

1000 hours of service or 2 years

Carry out the 500 hours service.

Table 54. 1000 hours of service or 2 years

Operation	Description	Note
Check	Seat belt	
Grease	Brake pedal axles	
Replace	Fuel filter	
Replace	Fuel prefilter	
Replace	Dry air filter cartridge	
Replace	Transmission oil	
Replace	Hydraulic oil	
Check	Engine speeds	Consult your dealer
Check	Engine valve clearances	Consult your dealer
Check	Engine silent blocks	Consult your dealer
Check	Gear box silent blocks	Consult your dealer
Check	Condition of wheels and tyres	Consult your dealer
Check	Brake	Consult your dealer

Operation	Description	Note
Check	Condition of wiring harnesses and cables	Consult your dealer
Check	Lights and signals	Consult your dealer
Check	Warning indicators	Consult your dealer
Check	Condition of the rear view mirrors	Consult your dealer
Check	Cab structure	Consult your dealer
Check	Frame structure	Consult your dealer

2000 hours of service or 4 years

Carry out the 500 and 1000 hours service.

Table 55. 2000 hours of service or 4 years

Operation	Description	Note
Check	Wheel nuts tightening	
Clean	Fuel tank	
Replace	Cooling fluid	
Replace	Safety dry air cartridge	
Replace	Front axle differential oil	
Check	Radiator	Consult your dealer
Check	Water pump and thermostat	Consult your dealer
Check	Alternator and starter	Consult your dealer
Check	Alternator belt	Consult your dealer
Check	Turbocharger	Consult your dealer
Check	Injection pump	Consult your dealer
Check	Injectors	Consult your dealer
Check	Swivel pins	Consult your dealer
Check	Rear axle oscillation	Consult your dealer
Check	Steering	Consult your dealer
Check	Rear axle	Consult your dealer
Check	Brake wear	Consult your dealer
Check	Mast lifting chains	Consult your dealer
Check	Condition of boom assembly	Consult your dealer
Check	Mast lifting chain pulleys	Consult your dealer
Check	Mast guide rollers	Consult your dealer
Check	Mast bearing rollers	Consult your dealer
Check	Thickness of the mast wearing plates	Consult your dealer
Check	Attachment carriage	Consult your dealer
Check	Hydraulic circuit pressures	Consult your dealer
Check	Hydraulic circuit flow rates	Consult your dealer
Check	Bearings and bushings	Consult your dealer
Check	Hydraulic oil tank and strainer	Consult your dealer
Check	Air-conditioning (option)	Consult your dealer

4.7. 10 HOURS OF SERVICE OR DAILY MAINTENANCE

4.7.1 CHECK LIFT TRUCK ENVIRONMENT

⚠ CAUTION

Follow the operator instructions.

⚠ WARNING

Particular attention should be paid to accumulations of flammable materials and fuel or lubricant leaks. These significantly increase the risk of fire outbreaks.

1. Carry out a general inspection of the lift truck:
   1.1. Fluid leaks or stains on the ground.
   1.2. Additional objects on the lift truck and in the driver protection or the cab.
   1.3. Mounting and adjustment of lights and rear view mirrors.
   1.4. Mounting and locking of the attachment.
   1.5. Condition of the tyres, to detect cuts, blisters, wear, etc.
2. According to the conditions of use and the environment, ensure that the lift truck is clean.
   2.1. Cleanliness of lights, rear view mirrors, windows and the driver's cab.
   2.2. Cleanliness of the engine housing and inside the frame to prevent leaks and build-up of materials (e.g. straw, flour, sawdust, organic waste, etc.).

4.7.2 CHECKING THE FUEL LEVEL

⚠ DANGER

Risk of explosion

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

Never refill the fuel tank while the engine is running.

NOTICE

Risk of engine and fuel system damage

Keep the fuel tank well filled to minimise condensation due to atmospheric conditions.

Check fuel level

- Visually check the fuel level on the work page

If the level is low, fill up the fuel tank

Fill fuel tank

1. Remove the fuel tank cap.
2. Fill the tank with clean, filtered diesel.
3. Put back the fuel tank cap.
4. Visually check that there is no leakage in the tank and pipes.

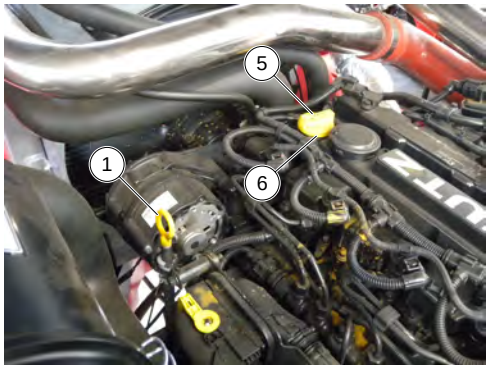
2.7.4 *PV380 work page*, page 45

5.1.1 *Lubricants & fuel - MI 40→55 D D ST5 S1*, page 90

4.7.3 CHECK ENGINE OIL LEVEL

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

1. Open the engine cover.
2. Pull out and clean the dipstick (1).



3. Reinsert the dipstick and remove it again.
4. Check the correct level between the two notches.
5. If necessary, remove filler cap (5) and add oil through filler port (6) .
6. Visually check that there is no leakage or seepage of oil in the engine.

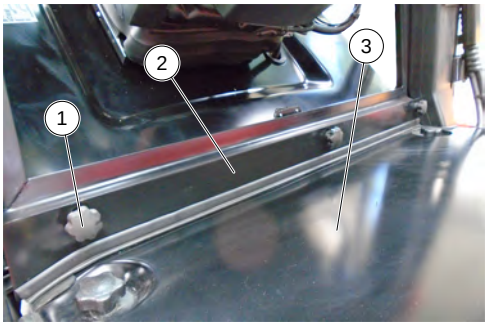
4.7.4 CHECK COOLANT LEVEL

⚠ DANGER

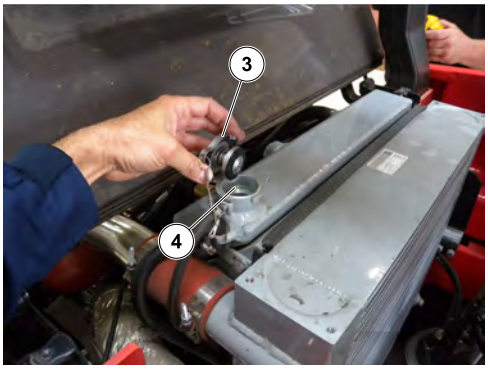
To avoid any risk of spraying or burning, wait until the engine has cooled down before removing the cooling circuit filler plug. If the coolant is very hot, add only hot coolant (80 °C). In an emergency, you can use water as a coolant, then change the cooling circuit liquid as soon as possible.

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

1. Unscrew the 5 thumbscrews (1) and remove the housings (2) and (3).



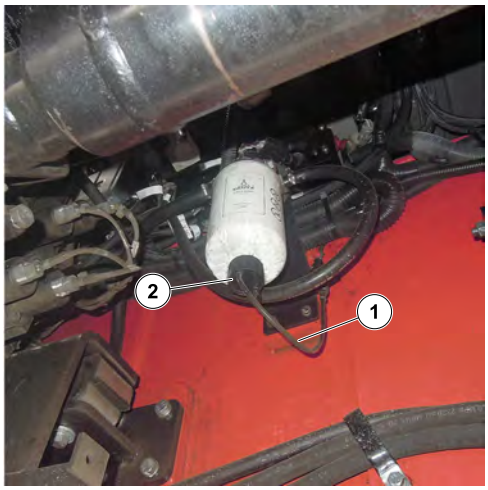
2. Slowly turn the cap of the radiator (3) up to the safety stop.



3. Allow the pressure and the steam to escape.
4. Press down and turn the cap so as to release it.
5. Check the correct level up to 15 mm below the filler port (4) .
6. If necessary, add coolant through the filler port (4) .
7. Lubricate slightly the filler neck in order to facilitate the setting and the removal of the radiator cap.
8. Visually check that there is no leakage in the radiator and pipes.

4.7.5 CHECK FUEL PREFILTER

1. Switch off the lift truck's ignition.
2. Open the engine cover.
3. Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.
4. Disconnect electrical wiring harness (1) from the fuel pre-filter.



5. Place a container under the drain plug (2).
6. Unscrew the drain plug (2) by two turns.
7. Allow the diesel fuel to flow out until it is free from impurities and water.
8. Re-tighten drain plug (2) and reconnect the wiring harness (1).
9. Turn on the ignition to power the boost pump and release air from the pre-filter.

4.7.6 CHECK BRAKE FLUID LEVEL

⚠ WARNING

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

⚠ DANGER

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

Place the lift truck on level ground.

1. Lift up the braking fluid reservoir access panel (1).

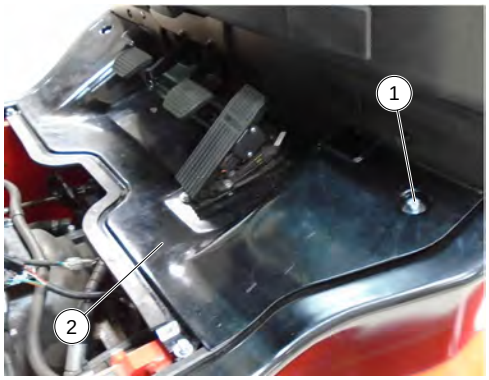
2. Visually check the level.
3. The level is correct when it is at the MAX level on the tank.
4. If necessary, add fluid through filler port (2).

5. Visually check that there is no leakage in the tank and pipes.
6. Check the operation of the service brakes.
7. Check the proper operation of the parking brake.

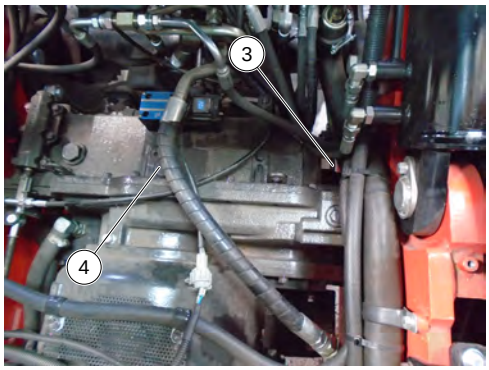
4.8. 50 HOURS OF SERVICE OR WEEKLY MAINTENANCE

4.8.1 CHECK GEAR BOX SEAL

1. Open the engine cover.
2. Remove the floor mat.
3. Unscrew the screws (1) and remove the front cover (2) .



4. Visually check for seepage and leaks.
5. If there are any, check the level.
6. Pull out and clean the dipstick (3).



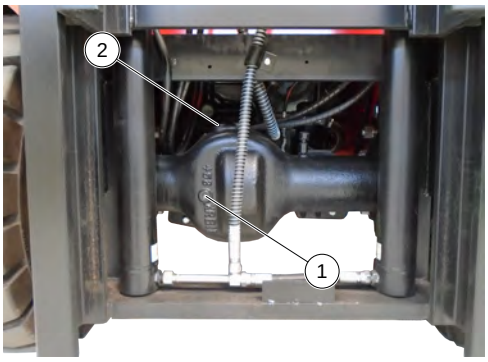
7. Reinsert the dipstick and remove it again.
8. Check the correct level between the two notches.
9. If necessary, add oil through the filler port (4).

4.8.2 CHECK FRONT AXLE DIFFERENTIAL SEAL

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

1. Visually check for seepage and leaks.
2. If there are any, check the level.
3. Raise the mast to gain access to the plug.

4. Remove the level plug (1), the oil should be flush with the edge of the opening.



5. If necessary, add oil through the filler port (2) .
6. Refit and tighten the plugs (tightening torque 34 to 49 N.m).

4.8.3 CHECK TIRES AND WHEELS

⚠ CAUTION

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

1. Check the torque load of the wheel nuts. Non-compliance with this instruction can lead to damage and failure of the wheel bolts and distortion of the wheels.
2. Check and restore tyre pressures if necessary.

There is an OPTIONAL wheel toolkit.

4.8.4 CHECK HYDRAULIC FLUID LEVEL

NOTICE

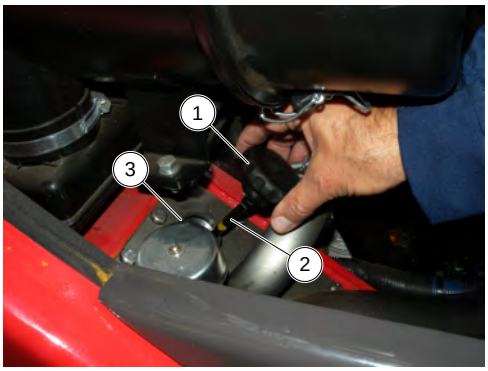
Use a clean funnel and clean the underside of the oil drum before filling.

⚠ WARNING

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

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

1. Open the engine cover.
2. Remove cap (1).

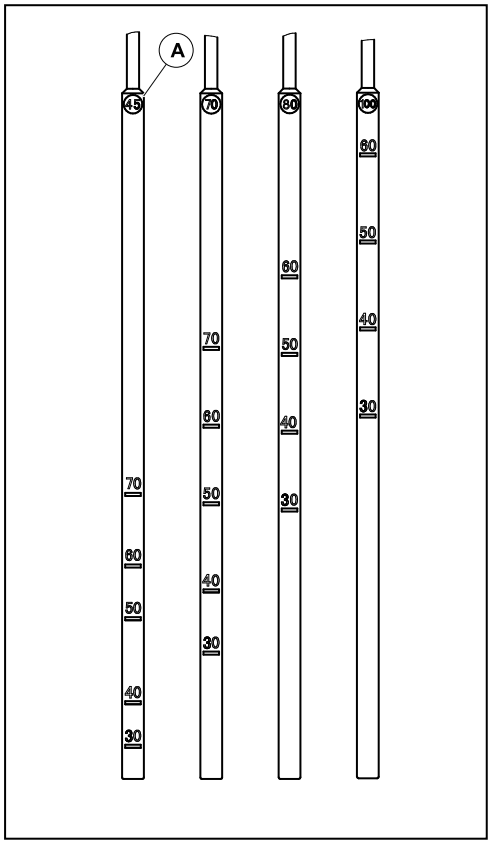


3. Refer to dipstick(2)and the table below.

MAST raising height (mm)	*MARKING*	*Filling level*
≤ 3000	45	70 (*)
> 3000 ≤ 4000	45	70 (*)
> 4000 ≤ 5000	45	70 (*)
> 5000 ≤ 6000	45	74 (*)
> 6000 ≤ 7000	45	74 (*)

(*) For lift trucks fitted with a hydraulic attachment (side shift carriage, positioner, etc.) add the equivalent of 25 mm of oil on the dipstick.

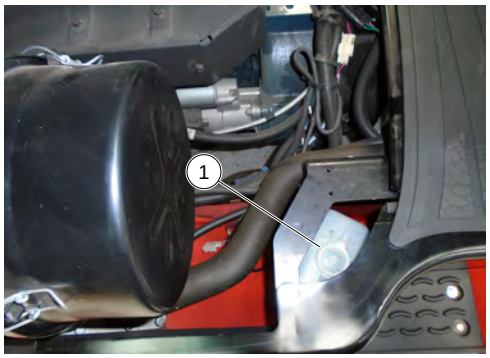
Always maintain the oil level at a maximum as cooling depends on the oil flowing through the tank.



4. If necessary, add oil through the filler port (3) .
5. Put the cap (1) back.
6. Visually check that there is no leakage in the tank and pipes.
7. Check the operation of the hydraulic controls.

4.8.5 CHECK WINDSCREEN WASHER LIQUID LEVEL

1. Open the engine cover.
2. Visually check the level.
3. If necessary, add windscreen washer fluid through filler port (1) .



4.8.6 CLEAN DRY AIR FILTER CARTRIDGE

NOTICE

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

NOTICE

The cartridge must not be blown anywhere near the air filter box. Never clean the cartridge by tapping it against a hard surface. Never wash the dry air filter cartridge. Never clean the air filter security cartridge; replace it with a new one if it is dirty or damaged.

In very dusty atmospheres, the cartridge cleaning frequency must be reduced to 10 hours.

However, there are pre-filtration elements ; if necessary, contact your dealer.

1. Open the engine cover.
2. Release the locks (1) and remove the cover (2) .

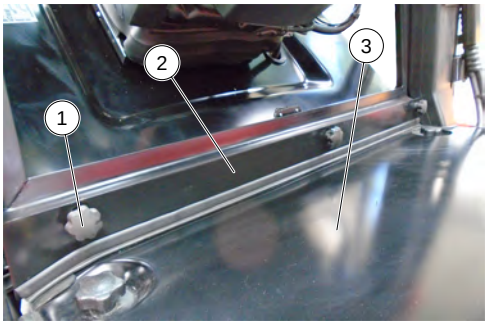
3. Gently remove the cartridge (3) taking care to avoid spilling the dust.
4. Leave the safety cartridge in place.
5. Using a compressed air jet (max. 3 bar), clean the filter cartridge from the top to the bottom and from the inside towards the outside, maintaining a minimum safety distance of 30 mm to avoid damaging the cartridge. Cleaning is completed when there is no more dust escaping from the cartridge.
6. Clean the cartridge seal surfaces with a damp, clean lint-free cloth and grease with a silicone lubricant (MANITOU part no.: 479292).
7. Check visually the outer condition of the air filter and its attachments.
8. Check also the condition of the hoses and their attachments.

4.8.7 CLEAN RADIATOR CORE

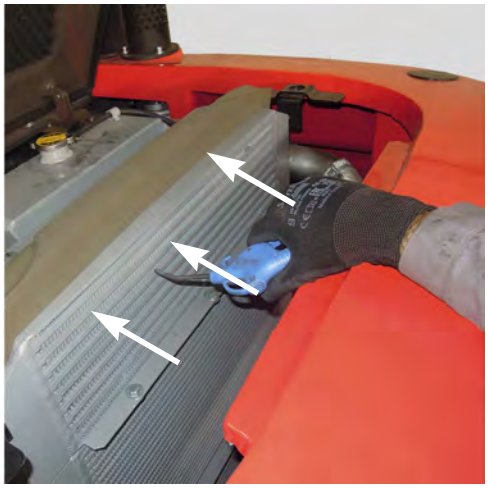
NOTICE

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

1. Unscrew the 5 thumbscrews (1) and remove the housings (2) and (3).



2. Using a soft cloth, clean the radiator in order to remove as much dirt as possible.
3. Clean the radiator with jet of compressed air directed from the inside towards the outside. This is the only effective way of removing impurities (opposite direction to the cooling air flow).



4.8.8 CLEAN CONDENSER CORE (OPTION)

NOTICE

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

1. Visually check whether the condenser is clean and clean it if necessary.
2. Clean the condenser using a compressed air jet aimed in the same direction as the air flow.

3. Clean with the fans running for best results.

4.8.9 GREASE MACHINE

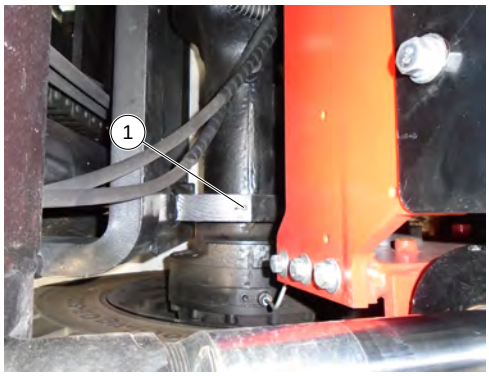
NOTICE

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

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

1. Clean, then lubricate the following points with grease and remove the surplus of grease.
2. Grease mast

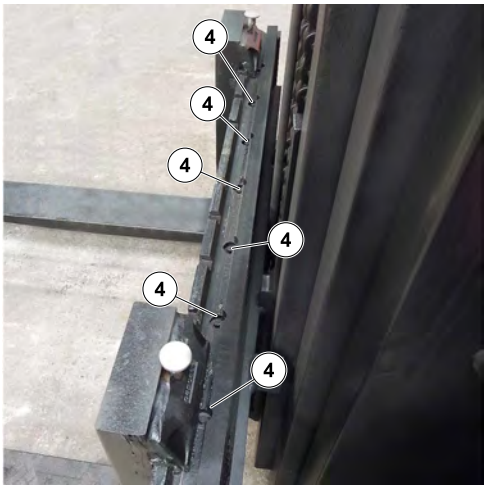
2.1.Articulation axles at the foot of the mast (2 lubricators).



2.2.Tilt cylinder head axles (2 lubricators).

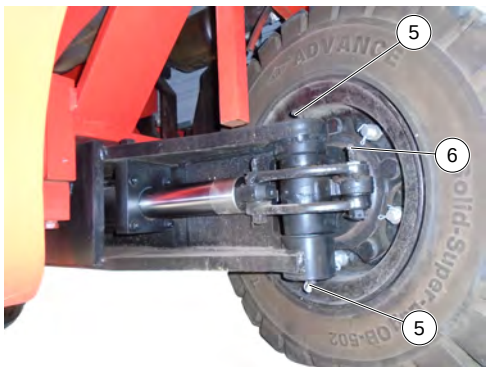
2.3.Tilt cylinder foot axles (2 lubricators).

2.4.Fork carriage (according to model)

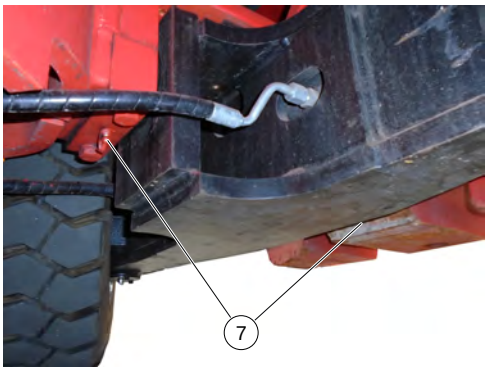


3. Grease rear axle

3.1.Swivel pins (4 lubricators).



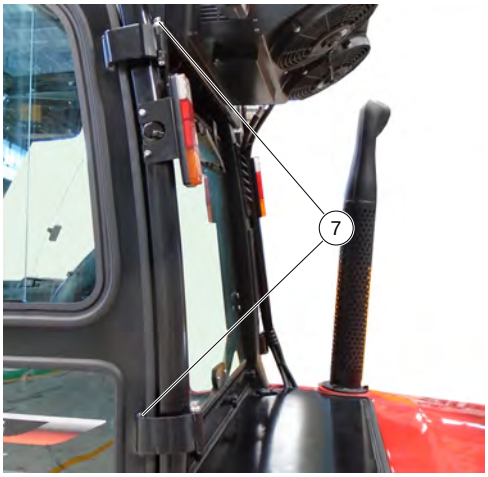
3.2.Steering connecting rods (2 lubricators).



3.3.Rear axle oscillation (2 lubricators).

4. Grease cab doors (option)

4.1.Cab door articulation axles (4 lubricators).



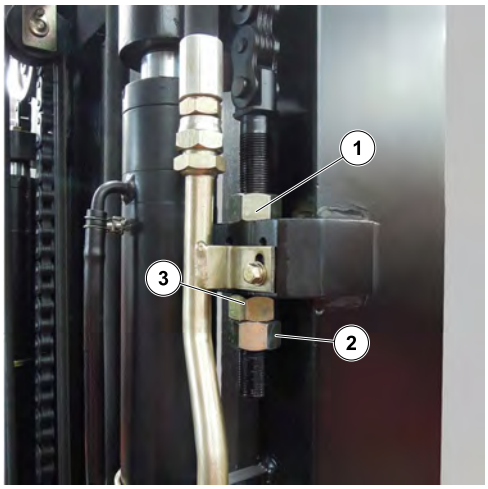
4.8.10 ADJUST TENSION AND ALIGNMENT OF MAST LIFTING CHAINS

⚠ WARNING

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

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

1. Visually check the state of the mast and the forks.
2. Check the alignment of the mast lifting chains between the carriage chain fasteners and the chain rollers.
3. Manually verify the chain tension and, if necessary, adjust as indicated below while ensuring that the carriage is perpendicular to the mast.
4. Loosen nut (1).



5. Loosen the chain tensioner lock nut (2) .
6. Adjust the tension by tightening or loosening the nut (3) while checking the alignment of the lifting chains.
7. Then tighten lock nut (2) and nut (3) .
8. Retighten the nut (1).

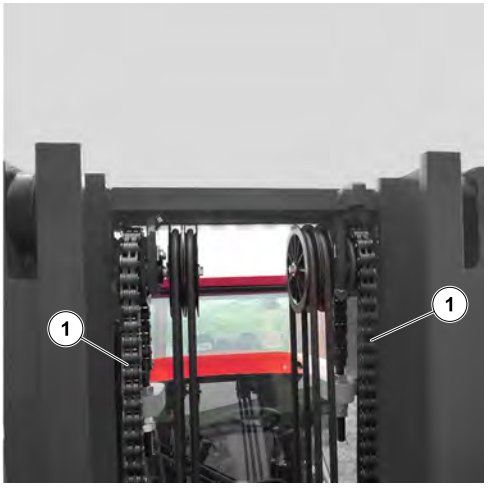
4.9. 500 HOURS OF SERVICE OR 1 YEAR

4.9.1 GREASE MAST LIFTING CHAINS

⚠ WARNING

In case of technical faults, consult your dealer.

1. Wipe the mast lifting chains with a clean, lint-free cloth.



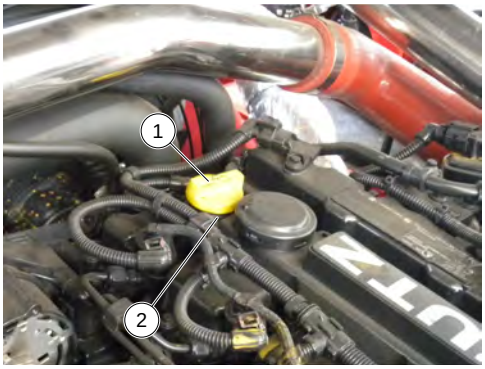
2. Vigorously brush the chains to get rid of any foreign matter, with a hard nylon brush and clean diesel fuel.
3. Rinse the chains by means of a paint brush impregnated with clean diesel fuel and dry them with a compressed air jet.
4. Carefully check each chain for any signs of wear.
5. Grease the chains sparingly.

4.9.2 REPLACE ENGINE OIL

Dispose of the drain oil in an ecological manner.

1. Open the engine cover.
2. Clean the areas around the plugs and oil filter.
3. Draining the oil

3.1. Remove the filler plug (1) to ensure that the oil is drained properly.



3.2. Place a container under drain plug (3) and unscrew the plug.

4. Replacing the engine oil filter

4.1. Unscrew and discard the filter (4) , together with its seal.

4.2. Clean the filter holder with a clean, lint-free cloth.

4.3. Lightly oil the seal before refitting the new filter on its bracket.

4.4. Tighten the oil filter (tightening torque 15 to 17 N. m).

5. Filling with oil

5.1. Refit and tighten the drain plug (3) (tightening torque 30 to 40 N.m).

5.2. Fill up with oil through filler port (2) .

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

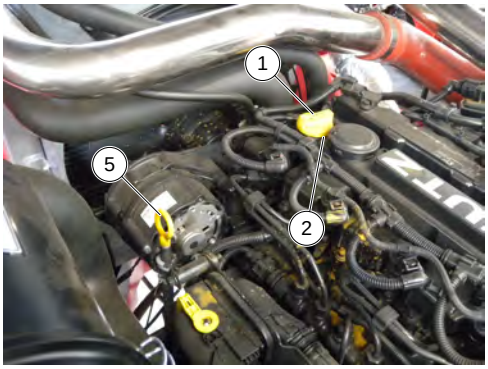
5.3. Wait a few minutes to allow the oil to flow into the sump.

5.4. Start the engine and let it run for a few minutes.

5.5. Check for possible leaks from the drain plug and the oil filter.

5.6.Stop the engine; wait a few minutes.

5.7.Check the correct level between the two notches on dipstick (5) .



5.8.Top up the level if necessary.

4.10. 1000 HOURS OF SERVICE OR 2 YEARS

4.10.1 CHECK SEAT BELT

⚠ DANGER

If the seat belt is defective (fixing, locking, cuts, tears, etc.), the lift truck must not be used. Repair or replace the seat belt immediately.

1. Check fixing of the anchoring points on the seat.
2. Check cleanness of the strap and the locking mechanism.
3. Check triggering of the locking mechanism.
4. Check condition of the strap (cuts, curled edges).
5. Check the correct winding of the belt. (Reeled seat belt with two anchoring points)
6. Check condition of the reel guards. (Reeled seat belt with two anchoring points)
7. Check roller locking mechanism when the strap is given a sharp tug. (Reeled seat belt with two anchoring points)

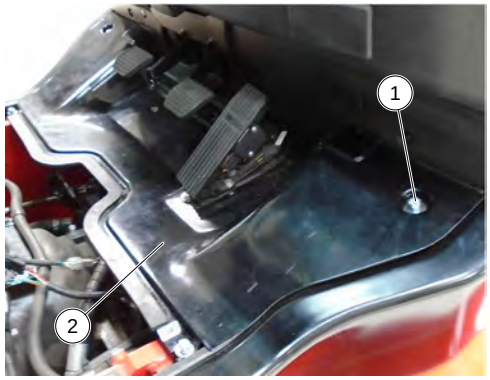
After an accident, replace the seat belt.

4.10.2 GREASE BRAKE PEDAL AXLES

⚠ WARNING

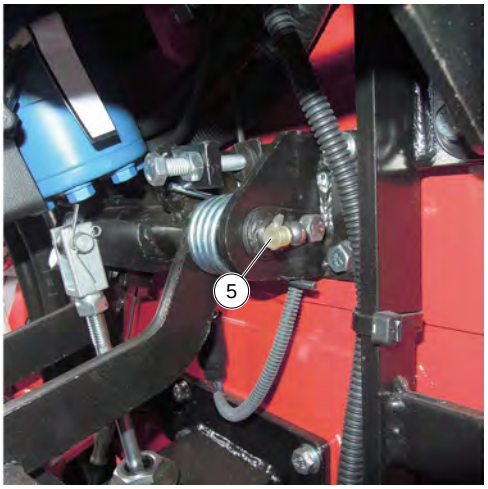
In the event of prolonged use in an extremely dusty or oxidizing atmosphere, reduce this interval to 500 hours of service or every year. In case of technical faults, consult your dealer.

1. Open the engine cover.
2. Remove the floor mat.
3. Unscrew the screws (1) and remove the front cover (2) .



4. Remove the clips(3) in order to remove the casing (4) .

5. Clean, then lubricate the lubricator (5) located at the end of the brake pedal axle and remove any excess grease.



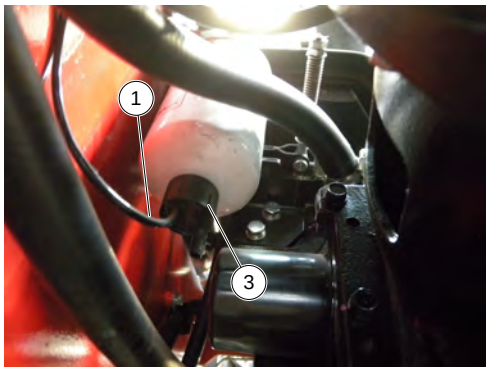
4.10.3 REPLACE FUEL FILTER

1. Switch off the lift truck's ignition.
2. Open the engine cover.
3. Carefully clean the outside of the filter and its holder, to prevent dust from getting into the system.
4. Unscrew and discard the filter (1), together with its seal.

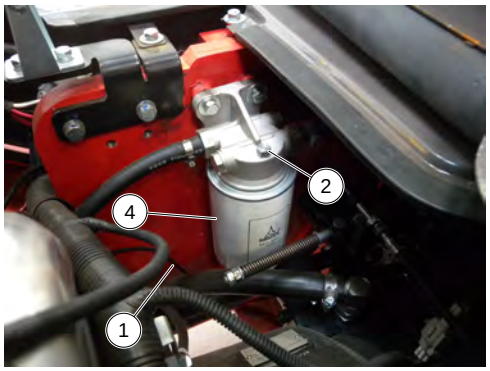
5. Clean the inside of the filter head using a brush immersed in clean diesel oil.
6. Lubricate the seal of the new filter.
7. Refit the new filter onto its support bracket, hand-tighten it only and lock it with a quarter-turn.
8. Then replace the fuel pre-filter.

4.10.4 REPLACE FUEL PREFILTER

1. Carefully clean the outside of the pre-filter and its holder, to prevent dust from getting into the system.
2. Disconnect the wiring harness (1).



3. Open bleed screw (2) to ensure proper emptying.



4. Place a receptacle under the drain plug (3) and unscrew by two to three turns.
5. Re-tighten bleed screw (2) once the pre-filter is emptied.
6. Unscrew and discard the pre-filter (4) , together with its seal. - Clean the inside of the filter head using a brush immersed in
7. Clean the inside of the filter head using a brush immersed in clean diesel oil.
8. Lubricate the seal of the new filter.
9. Refit the new filter onto its support bracket, hand-tighten it only and lock it with a quarter-turn.
10. Reconnect the wiring harness (1).
11. Turn on the lift truck's ignition and wait for the boost pump to stop to bleed the fuel supply system.
12. Start up the engine and check for leaks.

4.10.5 REPLACE DRY AIR FILTER CARTRIDGE

NOTICE

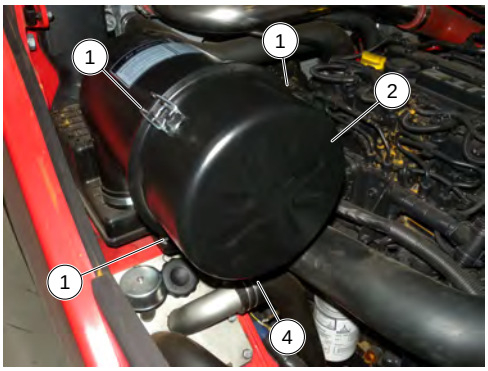
Change the cartridge in a clean location, with the engine stopped.

Never operate the lift truck with the air filter removed or damaged.

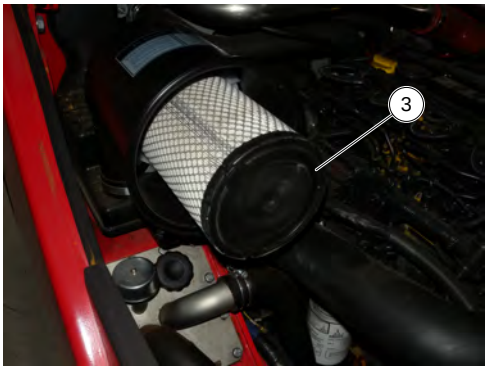
In very dusty atmospheres, the cartridge replacement frequency must be reduced to 250 hours.

However, there are pre-filtration element); if necessary., contact your dealer.

1. Open the engine cover.
2. Release the locks (1) and remove the cover (2) .



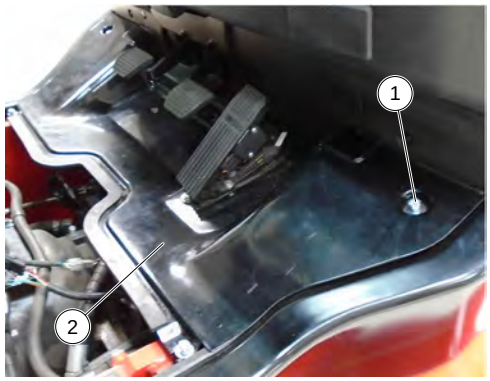
3. Gently remove the cartridge (3) taking care to avoid spilling the dust.



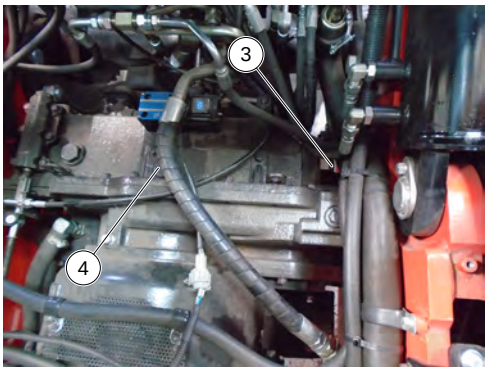
4. Leave the safety cartridge in place.
5. Carefully clean the following parts with a clean, damp, lint-free cloth:
   5.1. The inside of the filter and its cover and the inlet hose.
   5.2. The gasket surfaces of the filter and the cover.
6. Check the condition and attachment of the hoses between the air filter and the engine.
7. Check the condition and connection of the clogging indicator on the filter.
8. Check the condition of the new filter cartridge.
9. Introduce the cartridge into the filter axis, pressing on the edges and not the middle.
10. Refit the cover, with the valve (4) directed downwards.

4.10.6 REPLACE TRANSMISSION OIL

1. Open the engine cover.
2. Remove the floor mat.
3. Unscrew the screws (1) and remove the front cover (2) .



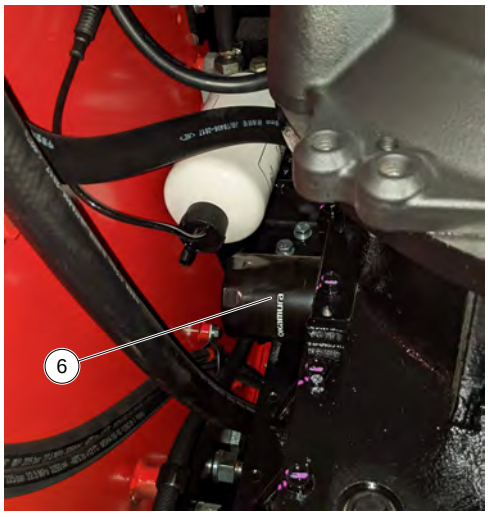
4. Draining the oil
   4.1. Remove gauge (3) to ensure proper emptying.



4.2.Place a container under drain plug (5) and unscrew the plug.

5. Replacing the oil filter

5.1.Unscrew and discard the filter (6) , together with its seal.



5.2.Lubricate the seal of the new filter.

5.3.Refit the new filter onto its support bracket, hand-tighten it only and lock it with a quarter-turn.

6. Filling with oil

6.1.Fill up with oil through filler port (5) .

6.2.Wait a few minutes to allow the oil to flow into the sump.

6.3.Reinsert dipstick (1) and remove it again.

6.4.Check the correct level between the two marks on the dipstick.

6.5.Start the engine and let it run for a few minutes.

6.6.Check for possible leaks.

6.7.Stop the engine, wait a few minutes and check the level on the dipstick.

6.8.Top up the level if necessary.

4.10.7 REPLACE HYDRAULIC OIL

NOTICE

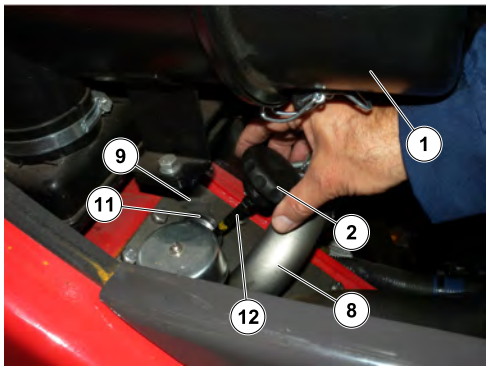
Before carrying out any work, thoroughly clean the area surrounding the drain plug and the suction cover on the hydraulic tank.

Discard the waste oil in an ecological manner.

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

1. Open the engine cover.
2. Remove the air intake housing (1) to gain access to the inspection cover.
3. Draining the oil

3.1.Remove the filler plug (2) to ensure that the oil is drained properly.

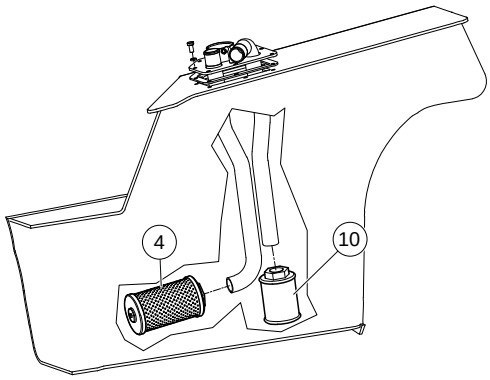


3.2.Place a container under drain plug (3) and unscrew the plug.

4. Replacing the oil filter

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

4.2.Unscrew and discard the filter (4) , together with its seal.



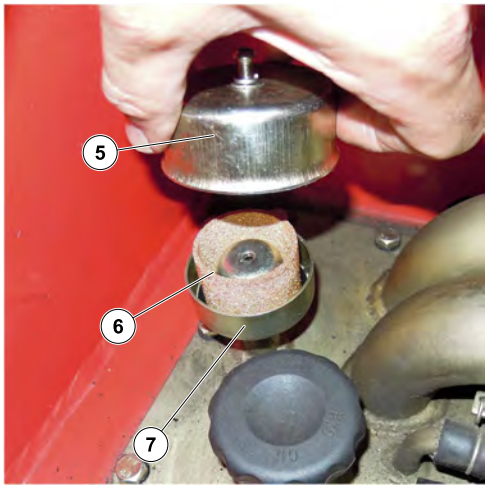
4.3.Clean the inside of the filter head.

4.4.Lubricate the seal of the new filter.

4.5.Refit the new filter onto its support bracket, hand-tighten it only and lock it with a quarter-turn.

5. Filter plug cleaning

5.1.Remove the cover (5) of filler plug (2) by twisting through a quarter turn.



5.2.Remove and clean the filter (6) .

5.3.Clean the filter mounting (7) .

5.4.Refit the unit.

6. Cleaning of strainers

6.1.Disconnect the hoses (8) .

6.2.Remove the access panel (9) .

6.3.Unscrew the suction strainers.

6.4.10 in the bottom of the tank.

6.5.Clean the strainers with a compressed air jet.

6.6. Check the condition of the strainers and replace if necessary.

6.7.Refit the unit.

7. Filling up the oil

7.1.Clean and refit the drain plug (3) (tightening torque 29 to 39 N.m).

7.2.Fill up with oil through filler port (11) .

7.3.Check the oil level on dipstick (12) .

7.4.Check for any possible leaks at the drain plug.

8. Hydraulic circuit decontamination

8.1.Let the engine run (accelerator pedal at mid position) for 5 minutes without using any accessories on the lift truck, then for 5 more minutes while using all the hydraulic movements (except the steering system and the service brakes).

8.2.Accelerate the engine at full speed for 1 minute, then activate the steering system and the service brakes.

8.3. This operation allows the circuit to be decontaminated by the hydraulic oil filter.

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

4.11. 2000 HOURS OF SERVICE OR 4 YEARS

4.11.1 CHECK WHEEL NUTS TIGHTENING

1. Check the condition of the tyres, to detect cuts, blisters, wear, etc.
2. Check the tightening torque of the wheel nuts with a torque wrench.

Front wheels: 441 to 588 N.m

Rear wheels: 441 to 588 N.m

4.11.2 CLEAN FUEL TANK

⚠ DANGER

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.

1. Place the lift truck on level ground with the engine stopped.
2. Check any possible leaks in the fuel system and tank.
3. In the event of a leak, never carry out any welding or other operation yourself; contact your dealer.
4. Remove the filler plug (1) to ensure that the oil is drained properly.

5. Place a container under drain plug (2) and unscrew the plug.

6. Rinse out with ten litres of clean diesel through filler port (3) .
7. Refit and tighten the drain plug (2) (tightening torque 29 to 39 N.m).
8. Fill the fuel tank with clean, filtered diesel.
9. Refit the filler plug (1).
10. If necessary, bleed the fuel supply system.

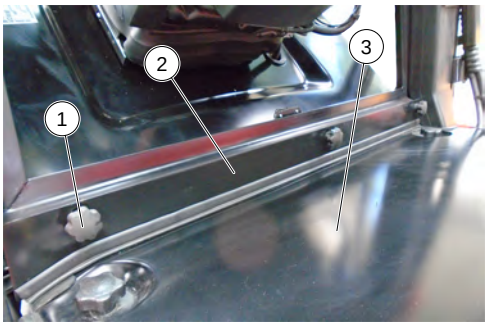
4.11.3 REPLACE COOLING FLUID

NOTICE

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

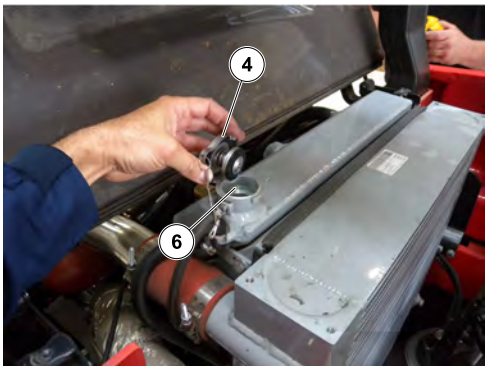
These operations are to be carried out as necessary or every two years at the beginning of winter.

1. Place the lift truck on level ground with the engine stopped and cold.
2. Open the engine cover.
3. Unscrew the 5 thumbscrews (1) and remove the housings (2) and (3).



4. Draining the liquid

4.1. Remove the filler plug (4) to ensure that the coolant is drained properly.



4.2. Place a container under the lower radiator hose (5) and remove it.

4.3. Let the cooling circuit drain entirely while ensuring that the ports do not get clogged.

4.4. Check the condition of the hoses as well as the fasteners and change them if necessary.

4.5. Rinse the circuit with clean water and use a cleaning agent if necessary.

5. Filling with liquid

5.1. Refit the radiator hose (5) .

5.2. Slowly fill the system with the coolant through the filler port (6) .

5.3. Run the engine at idle for a few minutes.

5.4. Check for any possible leaks.

5.5. Check the coolant level (up to 15 mm below the filler port opening (6)).

5.6. Lubricate slightly the filler neck in order to facilitate the setting and the removal of the radiator cap.

5.7. Put back the radiator filler cap (4) .

4.11.4 REPLACE SAFETY DRY AIR CARTRIDGE

NOTICE

The safety cartridge replacement frequency is given for information only

It must be changed every second time the dry air filter cartridge is changed.

1. For disassembly of the dry air filter cartridge.
2. Carefully remove the dry air filter safety cartridge (1), taking care to avoid spilling the dust.

3. Clean the gasket surface of the safety cartridge with a clean, damp, lint-free cloth.
4. Check the condition of the new safety cartridge.
5. Introduce the safety cartridge into the filter axis, pressing on the edges and not the middle.

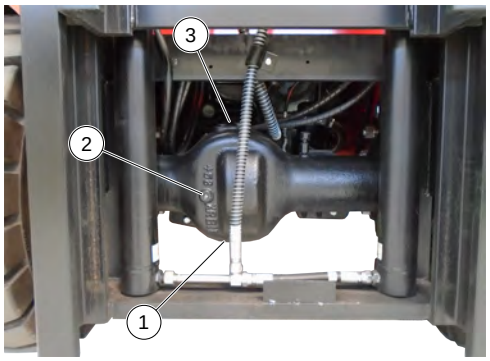
6. For reassembly of the dry air filter cartridge.

4.11.5 REPLACE FRONT AXLE DIFFERENTIAL OIL

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

Dispose of the drain oil in an ecological manner.

1. Raise the mast to gain access to the plugs.
2. Place a container under drain plug (1) and unscrew the plug.
3. Remove level plug (2) and filling plug (3) to ensure that the oil is drained properly.



4. Refit and tighten the drain plug (1) (tightening torque 34 to 49 N.m).
5. Fill up with oil through filler port (3) .
6. The level is correct when the oil level is flush with the edge of opening (2) .
7. Check for any possible leaks at the drain plug.
8. Refit and tighten the level and filling plugs (2) and (3) (tightening torque 34 to 49 N.m).

4.12. OCCASIONAL MAINTENANCE

4.12.1 REPLACE WHEEL

⚠ WARNING

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

1. Stop the lift truck, if possible on firm, level ground.
2. Shut down the lift truck.
3. Switch on the warning lights (option).
4. Immobilise the lift truck in both directions on the axle opposite to the wheel to be changed.
5. Unlock the nuts of the wheel to be changed.
6. Rear wheel

For this operation, we advise you to use the hydraulic jack (MANITOU Part no. 505507).

6.1. Place the jack under the counterweight. It must be situated in the middle and under the flat part of the counterweight.

6.2. Lift the wheel until it comes off the ground and put in place the safety block under the axle.

6.3. Completely unscrew the wheel nuts and remove them.

6.4. Free the wheel by reciprocating movements and roll it to the side.

6.5. Slip the new wheel on the wheel hub.

6.6. Hand-tighten the nuts, grease them if necessary.

6.7. Remove the security block and lower the lift truck with the jack.

6.8. Tighten the wheel nuts using a torque wrench for the tightening torque.

7. Front wheel

7.1. Lift the carriage and tilt the mast backwards.

7.2. Immobilise under the foot of the mast on the side where the wheel is being changed.

7.3. Tilt the mast forwards to lift the wheel.

7.4. Place wedges under the chassis as near as possible to the wheel.

7.5. Completely unscrew the wheel nuts and remove them.

7.6. Free the wheel by reciprocating movements and roll it to the side.

7.7. Slip the new wheel on the wheel hub.

7.8. Hand-tighten the nuts, grease them if necessary.

7.9. Remove the wedges under the axle and lower the lift truck.

7.10. Tighten the wheel nuts using a torque wrench for the tightening torque.

4.12.2 REPLACE BATTERY

⚠ WARNING

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

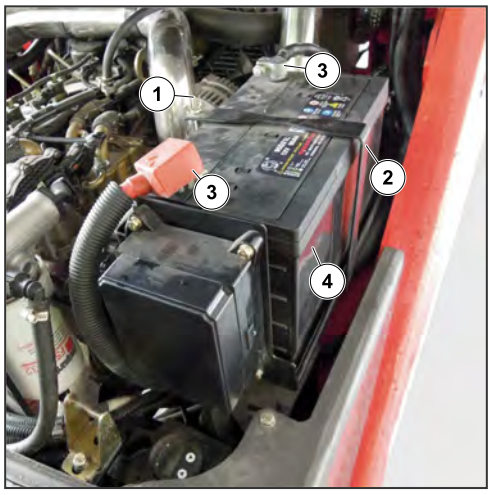
Work in a well-ventilated area.

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.

1. Replacing the battery

1.1. Open the engine cover.

1.2. Unscrew the nut (1) to release the battery retaining strap (2) .



1.3. Disconnect the battery terminals (3) .

1.4. Remove the battery.

1.5. Place a new battery of the same type as the one used for the lift truck, observing the (+) and (-) polarity.

1.6. Refit the retaining strap (2) .

2. Breakdown repair using a back-up battery

2.1. Open the engine cover.

2.2. Bring a back-up battery of the same type as the one used for the lift truck, together with battery cables.

2.3. the back-up battery with the battery cables, observing the (-) and (+) polarity.

2.4. Start the lift truck and remove the cables as soon as the engine is running.

4.13. OCCASIONAL OPERATION

4.13.1 WINCHING/TOWING THE MACHINE

NOTICE

Risk of excessive machine wear

While towing, steering and hydraulic assistance are disabled.

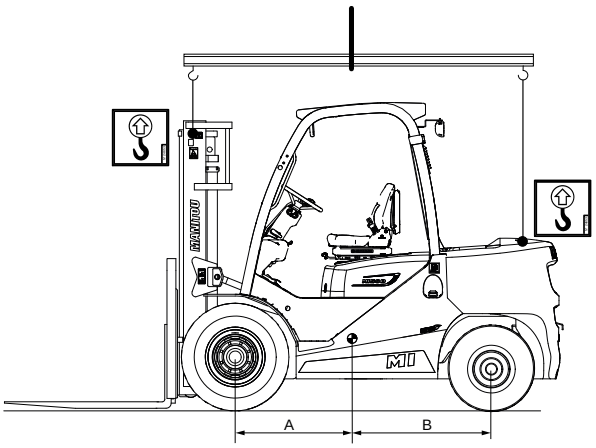
Do not tow the machine at more than 25 km/h.

Operate the steering wheel and pedal slowly avoiding sudden or jerky movements.

1. Place the gear selector in neutral position.
2. Release the parking brake.
3. Switch on the hazard warning lights.
4. Since there will be no steering or braking hydraulic assistance, operate the steering wheel and pedal slowly avoiding sudden or jerky movements.

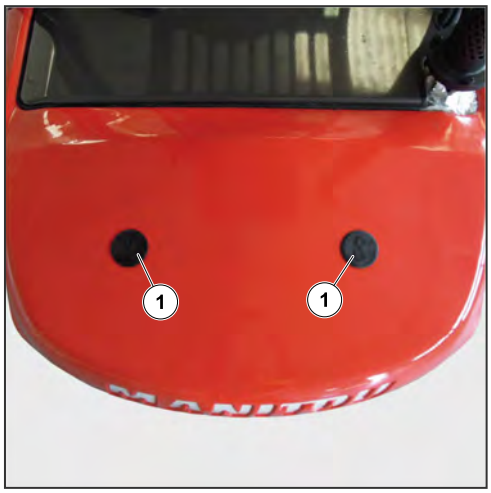
4.13.2 LIFTING THE MACHINE - MI 40→55 D D ST5 S1

1. Take into account the position of the machine center of gravity when lifting.



Machine	A mm (in)	B mm (in)
MI 40 D D ST5 S1	-	-
MI 45 D D ST5 S1	-	-
MI 50 D D ST5 S1	-	-
MI 55 D D ST5 S1	-	-

2. Place the hooks in the fastening points provided and around the uprights of the guard.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5. REFERENCES & ATTACHMENTS

5.1. REFERENCES

5.1.1 LUBRICANTS & FUEL - MI 40→55 D D ST5 S1

Recommended lubricants and fluids

NOTICE

Use the recommended lubricants and fuel:

For topping up, oils may not be miscible.

For oil changes, MANITOU oils are perfectly appropriate.

Diagnostic analysis of oils and Diesel Exhaust Fluid "DEF"

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.

If the machine is not used for up to 4 months, check the "DEF" quality.

The Diesel Exhaust Fluid quality can be measured using a refractometer (MANITOU Part number 959709).

Beyond 4 months, replace the "DEF".

Recommended fuel specification:

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

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

Recommended Diesel Exhaust Fluid "DEF" specification:

- The Diesel Exhaust Fluid must comply with standard ISO 22241–1 with a urea concentration of 32.5%

Machine oils and lubricants

Table 56. Engine

Description	Capacity	Recommendation	Temperature range
Engine	- Litres	MANITOU Oil API CJ4 10W40	
Cooling circuit	- Litres	Cooling fluid (protection - 25°)	-25 °C / +55 °C
		Cooling fluid (protection - 35°)	-35 °C / +55 °C
Fuel tank MI 40–50 D D ST5	110 Litres	Diesel fuel	-20 °C / +55 °C
Fuel tank MI 55 D D ST5	116 Litres		

Table 57. Mast

Description	Recommendation	Temperature range
Mast lifting chains	MANITOU Lubricant Chain special (aerosol)	-20 °C / +55 °C
Greasing of the mast	MANITOU Grease BLACK multi-purpose	-20 °C / +55 °C

Table 58. Hydraulics

Description	Capacity	Recommendation	Temperature range
Hydraulic oil tank	72 +/- 2 Litres	MANITOU Oil Hydraulic ISO VG 32	-25 °C / +20 °C

Table 59. Transmission

Description	Capacity	Recommendation	Temperature range
Transmission	13 Litres	MANITOU Oil DEXRON-III Automatic transmission	-25 °C / +50 °C
Differential	10 Litres	MANITOU Oil TRANS MECA	-45 °C / +55 °C

Table 60. Brake

Description	Capacity	Recommendation	Temperature range
Brake system	1 Litre	Brake fluid DOT3	

Table 61. Rear axle

Description	Recommendation	Temperature range
Swivel pins	MANITOU Grease BLUE multi-purpose	-25 °C / +55 °C
Steering connecting rod		
Rear axle oscillation		
Rear wheel bearings		

Table 62. Cab

Description	Recommendation	Temperature range
Cab door	MANITOU Grease BLUE multi-purpose	-25 °C / +55 °C
Windscreen washer tank	Windscreen washer liquid	-45 °C / +55 °C

5.1.2 FILTER ELEMENTS & BELTS - MI 40 L→55 D D ST5 S1

Table 63. Periodicities of filters and belts

Description	❶ 500H	❷ 1000H	❸ 2000H
Air filter cartridge		●	
Safety air filter cartridge			●
Fuel filter		●	
Fuel pre-filter		●	
Engine oil filter	●		
Main circuit strainer		●	
Fan belt			●
Hydraulic filter		●	
Hydraulic return oil filter cartridge		●	

5.1.3 FUSES & RELAYS - MI 40→55 D D ST5 S1

To access fuses and relays,4.2. Opening the engine cover, page 63.

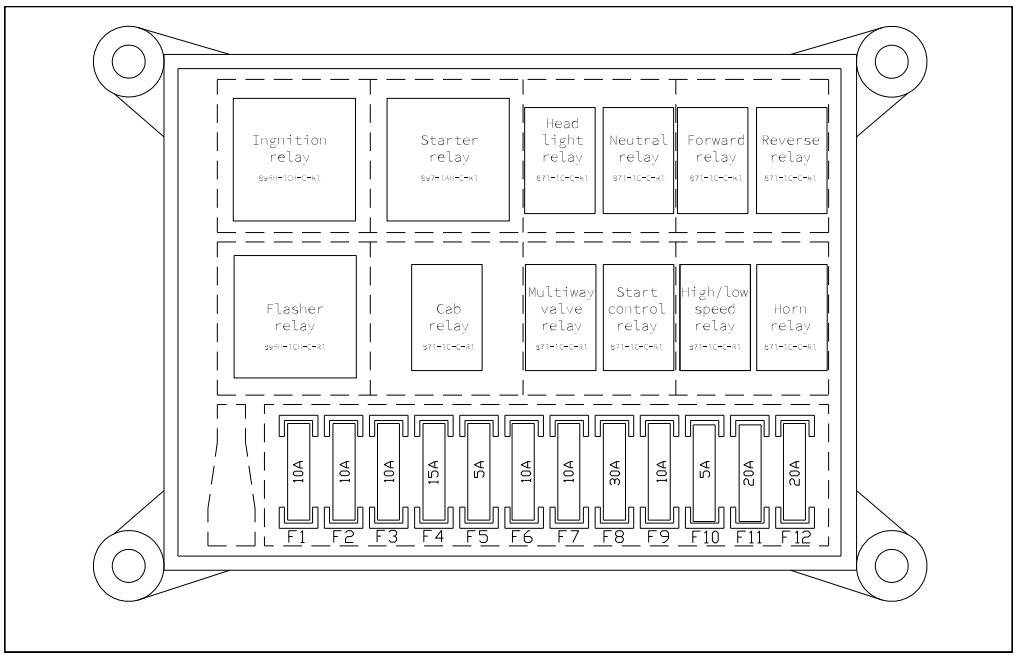

Figure 39: Fuses and relays placement (before 2023–04–15)

Table 64. List of fuses - MI 40→55 D D ST5 S1 (before 2023–04–15)

Fuse	Rating	Description
F1	10 A	Light switch (power supply)
F2	10 A	Horn power supply
F3	10 A	Warning lamp□Brake lamp
F4	15 A	Combination switch
F5	5 A	ECU switch power supply
F6	10 A	Power supply of instrument and indicator light
F7	10 A	Alternator
F8	30 A	Ecu94 pin power supply
F9	10 A	1939 bus power supply
F10	5 A	Seat switch power
F11	20 A	Reserve power supply
F12	20 A	Reserve power supply

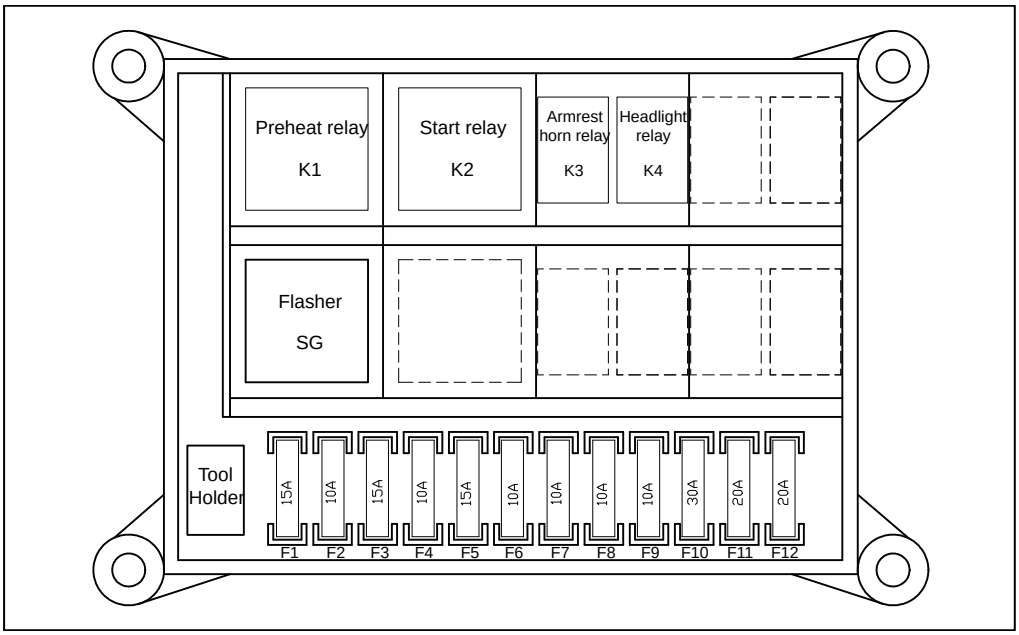

Figure 40: Fuses and relays placement (after 2023–04–15)

Table 65. List of fuses - MI 40→55 D D ST5 S1 (after 2023–04–15)

Fuse	Rating	Description
F1	15 A	Light switch power supply
F2	10 A	Horn power supply
F3	10 A	Warning lamp□Brake lamp
F4	10 A	OPS power ACC
F5	10 A	Instrument and indicator light power supply
F6	10 A	Alternator IG
F7	10 A	Reserved fuse 2
F8	20 A	Reserved fuse 1
F9	30 A	ECU
F10	20 A	Fuel pump
F11	20 A	Reserved fuse 3
F12	15 A	OPS power B+

5.2. OPTIONAL ADAPTABLE ATTACHMENTS FOR THE RANGE

5.2.1 USAGE AND INSTALLATION OF ATTACHMENT AND SAFETY RULES

Manitou will choose attachment that is in accordance with International standard ISO2328 (Forklift pothook fork and install size of carriage), such as clamp, rotator, paper roll clamp, carrying ram, side-shifter etc.

5.2.2 USE OF ATTACHMENT

1. Know well the content of nameplate on attachment, and read the instruction manual before use. (Especially the manual from professional attachment company) Before operating the attachment, people must be trained and obtain the qualification.
2. One must understand the basic capability and operating methods of attachment, especially the admitted load, lift height, size of cargo and adapted range of attachment.
3. Operate the multi-functional attachment, such as with side-shifter, clamp or rotator. It is not permitted to do two actions at one time. Operate one action and then do another one.
4. Forklift with attachment is not permitted to travel with the cargo at a high position. If the size of cargo is too big, prohibit the truck to move on. When transporting the cargo, make sure that the distance of bottom of cargo is 300 mm off the ground and mast tilts backward.
5. The weight of cargo cannot exceed the limited value of combination load capacity of forklift and attachment. Partial load is not permitted at high position. It is a short time work for attachment with side-shifter. Partial load is around 100 mm (Above 5 ton, including 5 ton), the side-shifter shift level is about 150mm.
6. In the range of the projection forth 2 m of the lower of attachment and cargo, besides driver’s position with overhead guard protection, it is not permitted to stand to avoid accidents.
7. Do not apply hard brake to the forklift with attachment during traveling. It is required to move slowly if with loads.
8. Protect attachment being impacted by outside force. Attachment is not permitted to be used in incorrect situation and work over the normal working scope.
9. When the attachment occurs to fail, prohibit the use without checking.

Do the following checks and maintenance frequently:

1. Do a check if the clearance between carriage beam and down attachment hook meets requirement of attachment manual.
2. Do a check if the upper hook is right in the flute of fork carriage.
3. Use the auto general lithium grease per 500 hours to bearing surface.
4. Do a check if the fastening pieces become flexible.
5. Do a check if each connector of hydraulic return line loosens or the tube damages. Never use before repairing the damage.
6. Do a check if the drive or turning component of attachment frays or blocks. Change the damaged part in time.
7. Under loading condition, do a check if each working element, working pressure and working condition of attachment is normal. If not, do a check of the hydraulic return line, and find out the leaked part. Change the sealing article or the whole return line.

5.2.3 ATTACHMENT ASSEMBLY

Warning

1. Without technology licensing of our company, any refit at safety and capability to attachment is strictly not permitted.
2. Actual rating load capacity must be the least of rated load capacity, the load capacity of attachment, colligate load capacity of truck. Generally, the colligate load capacity of truck is the least. Attachment load capacity is just a count value of attachment pressure.
3. Assembly must be reasonable, reliable and safe to avoid the attachment gliding around the carriage when using.
4. After hanging attachment, embed the rise catch block to the gap of top beam. Let the offset of centerline of attachment and carriage be less than 50 mm. Otherwise, it may affect the forklift lateral stability.
5. To this attachment with rotating function, such as paper roll clamp, bale clamp, multi-purpose clamp, drum clamp, it is necessary to weld chock block in the joint of carriage beam and attachment to prevent moving from side to side in the operation.
6. Assemble the attachment with below catch orientation. It is necessary to adjust the clearance between the below catch and beam of carriage.

5.3. ATTACHMENT SPECIFICATIONS

5.3.1 INTRODUCTION

Your lift truck must be used with interchangeable equipment. These items are called: ATTACHMENTS. A wide range of attachments, specially designed and perfectly suitable for your lift truck is available and guaranteed by MANITOU.

NOTICE

Only attachments approved by MANITOU are to be used on our lift trucks The manufacturer's liability will be denied in case of modification or of attachment adaptation carried out without his knowing it.

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.

⚠ WARNING

Maximum loads are defined by the capacity of a lift truck taking account of the attachment's mass and centre of gravity. In the event of the attachment having less capacity than the lift truck, never exceed this limit. All attachments with a suspended load (winch, crane jib, crane jib with winch, hook, etc.) MUST be used with a lift truck equipped with a hydraulic movement cut-out device. In this case, the movement cut-out must be switched on and the transverse attitude perfectly horizontal.

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

5.3.2 TECHNICAL SPECIFICATIONS OF ATTACHMENTS

Standardized forks for MI 40/45 ST5 S1

Table 66. Standardized forks specifcations for MI 40/45 ST5 S1

PART NUMBER	***52536056***	***52533638***	
Section	150 X 50 X 1220 mm	150 X 50 X 1520 mm	
Weight	100 kg	100 kg	

Standardized forks for MI 50/55 ST5 S1

Table 67. Standardized forks specifcations for MI 50/55 ST5 S1

PART NUMBER	52536057	52523282	
Section	150 X 55 X 1220 mm	150 X 55 X 1520 mm	
Weight	115kg	115 kg	

Load back rest for MI 40/45 ST5 S1

Table 68. Load back rest specifcations for MI 40/45 ST5 S1

PART NUMBER	52523346	
Width	1250 mm	
Weight	40 kg	

Load back rest for MI 50/55 ST5 S1

Table 69. Load back rest specifcations for MI 50/55 ST5 S1

PART NUMBER	52523347	
Width	1250 mm	
Weight	40 kg	

Fork protector

Table 70. Fork protector specifcations

PART NUMBER	227801	
		

For Support and Service, Contact Your Dealer

MANITOU

HANDLING YOUR WORLD