Original instructions

STILL
ELECTRONIC
DOCUMENTATION
SYSTEM

COP-L-07

CE

1062

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1 Introduction

2 Safety

1

Introduction

Forklift data

We recommend that you record the principal forklift data in the following table so that they are available if required by the sales network or authorised service centre.

Type	
Serial number	
Date of delivery	

General information

- This manual contains "Original Instructions" provided by the manufacturer.
- The "operator" is defined as the person driving the forklift.
- The "user" is the physical or legal person who has the forklift truck used by the operators.
- For correct use of the forklift and in order to avoid accidents, the operator is obliged to read, understand and apply the contents of this manual, the "Rules for the use of industrial vehicles" and the labels and plates applied to the forklift.
- This manual and the attached "Rules for the use of industrial vehicles" must be kept carefully and must always be on the forklift for fast consultation.
- The manufacturer assumes no responsibility for any accidents to persons or damage to things due to the failure to observe the instructions in this manual, in the "Rules for the use of industrial vehicles" and on the labels and adhesive supplied to the forklift.
- The forklift may not be put to any use other that than indicated in this manual.
- The forklift must be used by appropriately trained operators only. For the necessary operator training, contact the authorised sales network.
- Persons working near the forklift must also be instructed in the risks associated with use of the forklift.
- In the interests of clear information, some illustrations in this manual show the forklift without the safety equipment (guards, panels, etc.). The forklift may not be used without safety equipment.

How to Consult the Manual

There is a table of contents at the beginning of the manual for ease of use. The manual is divided into chapters with specific topics. The name and title of the chapter are given at the top of each page The following is found at the bottom of each page: the type of manual, the identifying code, the language and the manual version.

Some general information is provided in this manual. Please only consider the information relevant for your specific forklift.

The following symbols have been used to highlight some parts of this manual.

⚠ DANGER

Failure to observe the instructions highlighted with this symbol may jeopardise safety.

⚠ CAUTION

Failure to observe the instructions highlighted with this symbol may cause damage to the forklift and, in some cases, result in warranty invalidity.

ENVIRONMENT NOTE

Failure to observe the instructions highlighted with this symbol may cause environmental damage.

NOTE

This symbol is used to provide additional information.

Delivery of the forklift and documentation

Ensure that the forklift has all of the options requested and that it has been delivered with the following documentation:

- Instruction and maintenance manual;
- Rules for the compliant use industrial vehicles;
- EC Declaration of Compliance;
- Spare parts catalogue CD.

If the forklift has been delivered with a traction battery and/or an external battery charger, ensure that such products conform to the order and that the relevant instructions for operation and maintenance are included, as well as the EC declaration for the external battery charger.

If applied equipment, other equipment or devices are present, ensure that they conform to the order and that the relative use and maintenance manual and of the relative EC declaration (if provided by regulations in effect) are included.

All of the above documentation must be kept for the entire operative life of the forklift. In the event that the documentation is lost or damaged, contact the authorised sales network for copies of the original documentation.

EC declaration of conformity in accordance with Machinery Directive

Declaration

STILL GmbH
Berzeliusstraße 10
D-22113 Hamburg Germany

We declare that the

Industrial truck	**according to these operating instructions**
Model	**according to these operating instructions**

conforms to the latest version of the Machinery Directive 2006/42/EC.

Personnel authorised to compile the technical documents:

See EC compliance declaration

STILL GmbH

Technical service and spare parts

For scheduled maintenance and any repairs to the forklift, contact only the authorised service network.

The authorised service network has personnel trained by the manufacturer, original spare parts and the tools necessary to carry out maintenance and repairs.

Servicing by the authorised service network and the use of original spare parts maintain the technical characteristics of the forklift over time.

Only original spare parts provided by the manufacturer may be used for forklift maintenance and repairs. The use of non-original spare parts invalidates the warranty and renders the user responsible for any accidents due to the inappropriateness of the non-original parts.

Warranty

The product is delivered with a Warranty Book specifying the conditions that regulate service under warranty.

Normative References

This forklift complies with:

- The most recent version of Machine Directive 2006/42/EC in effect
- Electromagnetic Compatibility Directive 2004/108/EC and subsequent amendments, relative to forklifts for handling in accordance with the EN 12895 standard

The noise tests regarding the sound pressure level at the driver's seat were carried out in accordance with the EN 12053 standard and declared according to the EN ISO 4871 standard

The vibration tests were carried out in accordance with standard EN 13059 and declared in accordance with standard EN 12096.

The limit values for the electromagnetic emissions and immunity relative to the forklift are those set out in the EN 12895 standard.

Type of use

"Normal use conditions" of the forklift understood as:

- lifting and/or transport of loads using forks with weight and centre of gravity within the values provided (see Chapter 6 - Technical Data).
- transport and/or lifting on smooth, flat and compact surfaces;
- transport and/or lifting of stable loads uniformly distributed on the forks;
- transport and/or lifting with the load centre of gravity approximately on the forklift's median longitudinal plane.

⚠ DANGER

The forklift must not be used for other purposes.

Any other use renders the user solely responsible for injury/damage to persons and/or objects and voids the warranty.

The following scenarios are examples of improper use of the forklift truck:

- Transportation on uneven ground (irregular or non-compacted surfaces)
- loads that exceed the weight and/or centre of weight limits;
- transporting non-stable loads
- transporting loads not equally distributed on the forks;
- transporting swinging loads;
- transporting loads whose centre of gravity is considerably displaced with respect to the forklift's longitudinal median plane;
- transporting loads of dimensions such as to block the view of the operator when driving;
- transporting loads piled so high that they could fall on the operator;
- travelling with a load over 500 mm off the ground;
- transporting and/or lifting people;
- pushing or pulling loads;
- moving upwards or downwards on a slope with the load facing downwards;
- turning at high speed;
- turning and/or moving in an oblique direction on slopes (upwards or downwards);
- colliding with stationary and/or movable structures;
- inclining the lift unit forwards with the forks lifted, except during the lifting and/or depositing of the load.

⚠ DANGER

Improper use of the forklift could cause it and/or at the load to overturn.

Working conditions

The forklift has been designed and built for internal transport.

Do not use beyond the limits of the climatic conditions indicated below:

- Maximum ambient temperature: +40°C
- Minimum ambient temperature: +5°C
- Altitude up to 2000 m
- Relative humidity between 30% and 95% (without condensation).

⚠ CAUTION

Do not use the forklift in dusty areas.

Using the forklift in environments with high concentrations of salty air or water could interfere with its proper operation and cause corrosion of metallic parts.

If the forklift must be used in conditions that exceed the limits indicated or, in any case, under extreme conditions (extreme weather, cold-storage rooms, presence of strong magnetic fields etc), appropriate equipment and/or use precautions are necessary. Contact the authorised sales network for more information.

⚠ DANGER

The forklift may not be used in environments in which there is a risk of explosion. It may not be used to handle explosive loads.

For forklifts that must operate in environments in which there is a risk of explosion or must handle explosive loads, appropriate equipment is necessary and must be accompanied by a specific EC Declaration of Compliance which replaces that of the standard forklift, and by the relevant User and maintenance manual.

Contact the authorised sales network for more information.

Modifications to Forklift

No modifications may be made to the forklift, otherwise the EC certificate and the warranty will become invalid, with the exception of:

- assembly of the options provided by the manufacturer
- assembly of applied equipment

for which it is necessary to refer exclusively to the authorised sales network

⚠ DANGER

If the forklift is equipped at the factory or later with devices that emit non-ionising radiation (such as radio transmitters, RFID players, data terminals, scanners, etc), the compatibility of such devices must be verified with the presence of operators using medical devices (such as heart pacemakers).

Applied equipment

To use equipment that has not been applied, please contact the authorised sales network, in order to:

- verify feasibility
- install the equipment
- add a label with the new residual capacity is
- provide documentation on the equipment (user and maintenance manual and EC certificate).

User obligations

Users must comply with applicable local legislation governing forklift use and maintenance.

Environmental considerations

Disposal of components and batteries

The truck is composed of different materials. If components or batteries need to be replaced and disposed of, they must be:

- disposed of,
- treated or
- recycled in accordance with regional and national regulations.

NOTE

The documentation provided by the battery manufacturer must be observed when disposing of batteries.

Environmental considerations

ENVIRONMENT NOTE

We recommend working with a waste management company for disposal purposes.

Packaging

During delivery of the truck, certain parts are packaged to provide protection during transport. This packaging must be removed completely prior to initial start-up.

ENVIRONMENT NOTE

The packaging material must be disposed of properly after delivery of the truck.

2

Safety

Safety regulations

General Precautions

NOTE

Some safety regulations to be followed when using the forklift are listed below. These regulations integrate those in the manual "**Rules for approved use of industrial vehicles**".

General Safety Rules

- Only allow qualified, trained and authorized personnel to use the forklift.
- Do not install equipment on the forklift unless supplied or indicated by the manufacturer.
- Maintain the forklift in full working efficiency in order to limit any type of risk to the minimum.
- Do not use the truck with bonnets or doors open or with guards removed.
- The data plates found on the forklift must be kept in good condition and replaced if damaged.
- Carefully read and follow all of the safety indications found on the forklift.
- Make sure that the forklift has sufficient overhead clearance.
- Do not park the forklift in front of fire-fighting devices or fire escapes or anywhere that it blocks traffic.
- If the forklift shows signs of failure or breakage and there is reason to consider it unsafe, stop, park it, and notify the maintenance manager.
- Maintain appropriate distances from high voltage overhead cables. Comply with the safety distances established by the competent authorities.
- Never raise the load using just one fork.
- Place the load on the fork carriage or in such a way that the centre of gravity of the load is as close as possible to the fork carriage.
- The load must be placed on the fork arms so that the centre of gravity falls lengthwise on the mid point between the fork arms.
- Do not drive with loads off-centre laterally with respect to the forklift's median axis. Lack of compliance with this regulation can compromise forklift stability.
- Make sure that the surface on which the load rests is able to support its weight.
- Always use safety clothing compliant with current regulations and any personal protective equipment that may be applicable.
- Do not travel on loose or hilly ground or on steps.
- Do not drive with loads raised more than 300 mm from ground level.
- Do not turn or stack on slopes.
- Reduce speed on slopes.
- Do not overload the forklift beyond the capacity limits indicated on the capacity plates.

Flooring requirements

The forklifts do not have a shock absorbing system; therefore, the work floor must be even and without holes, which can be difficult to get around. Any stairs must be equipped with accompanying ramps to prevent impacts with the wheels, which affect the entire structure of the forklift.

⚠ CAUTION

DO NOT pass over cracks or damaged parts of the floor with the forklift. Dirt and any objects in the work path must be removed immediately.

Battery connection cables

⚠ CAUTION

Using sockets with NON-ORIGINAL battery connection cables can be dangerous (see purchase references in the parts catalogue)

Requirements for the traction-battery charging area

When the traction battery is being charged, the area must be sufficiently ventilated in order to download or eliminate the gases produced (EN 50272-3).

Safety Regulations Relative to Forklift Use

- The operator must familiarize himself with the forklift to be able to better describe any defects and assist maintenance personnel. The operator, trained and authorized to use the forklift, must be familiar with the controls and performances of the forklift.
- Any defect (squeaking, leaks, etc.) must be promptly reported because, if neglected, it could cause more serious failures/defects.
- Carry out the inspections indicated in the chapter on "Daily Inspections".

ENVIRONMENT NOTE

Report any oil and/or battery fluid leaks: they are dangerous and highly polluting.

⚠ CAUTION

If you notice a burning smell, stop the forklift and turn off the engine, then disconnect the battery.

Safety Regulations Relative to Operating Materials

Rules for handling and disposing of operating materials

ENVIRONMENT NOTE

Improper use and disposal of operating and cleaning materials can cause serious damage to the environment.

Always use and handle the operating materials in a suitable manner and follow the manufacturer's instructions for the product's use.

Keep the operating materials only in containers intended for this purpose and in a location that satisfies the requirements.

The operating materials may be flammable, so avoid contact with hot objects or open flames.

When topping up the operating materials, only clean containers should be used.

Follow the manufacturer's safety and disposal instructions regarding the operating and cleaning materials.

Do not disperse oils or other operating liquids! Any spilt liquid must be immediately collected and neutralised with a binding material (such as an oil binder) and then disposed of in accordance with current regulations.

Always comply with anti-pollution regulations!

Before carrying out work that involves lubrication, filter replacement or hydraulic equipment interventions, the area in question must be thoroughly cleaned.

The replaced parts must always be disposed of in accordance with the anti-pollution laws.

ENVIRONMENT NOTE

The incorrect or unlawful use of brake fluid is harmful to people's health and the environment.

Oils

- Do not allow to come into contact with the skin.
- Do not inhale oil vapors.
- Wear appropriate means of individual protection during forklift maintenance operations (gloves, goggles, etc.) to prevent the oil from coming into contact with your skin.

ENVIRONMENT NOTE

The used oils and relative filters contain substances that are hazardous to the environment and must be disposed of according to current regulations. We advise you to contact the authorised service network.

DANGER

The penetration in the skin of hydraulic oil that has leaked under pressure from the forklift's hydraulic system is dangerous. If this type of lesion should occur, contact a doctor immediately.

DANGER

Small high pressure jets of oil can penetrate the skin. Look for any leaks using a piece of cardboard.

Battery Acid

- Do not inhale the vapor: it is poisonous.
- Use adequate means of individual protection to prevent contact with the skin.
- Battery acid is corrosive: if it should come into contact with your skin, rinse abundantly with water.
- Explosive gas mixtures can form when charging the battery; therefore, the rooms in which the battery is charged must be in compliance with the specific regulations on the subject (e.g. EN 50272-3 etc.).
- DO NOT smoke or use open flames and lights within a 2 m radius from the charged battery and in the battery charging area.

NOTE

For greater information, consult the specific battery manual that comes with the battery.

ENVIRONMENT NOTE

The batteries contain substances that are hazardous to the environment. The replacement and disposal of the life-expired battery must be carried out as required by law. We advise you to contact the authorised service network that is equipped for eco-friendly disposal in accordance with current regulations.

Residual risks

Residual dangers, residual risks

Despite careful use and compliance with standards and regulations, the possibility of other risks occurring when using the truck cannot be entirely excluded.

The truck and all other system components comply with current safety requirements. Nevertheless, even when the truck is used for its proper purpose and all instructions are followed, some residual risks cannot be excluded.

Even outside the defined danger areas of the truck, residual risk cannot be excluded. Persons in this area around the truck must exercise a heightened degree of awareness, so that they can react immediately in the event of any malfunction, incident or breakdown etc.

WARNING

All persons that are in the vicinity of the truck must be instructed regarding the risks that arise through use of the truck.

In addition, we draw your attention to the Safety Guidelines in these operating instructions.

Risks can include:

- Escape of consumables due to leakages, rupture of lines and containers etc.
- Risk of accidents when driving on ramps or in conditions of poor visibility, etc.
- Falling, tripping etc. when moving the truck, especially in wet or icy conditions or when consumables are leaking.

- Fire and explosion risks due to batteries and electrical voltages.
- Human error resulting from failure to observe the safety guidelines.
- Unrepaired damage or defective and worn components.
- Insufficient maintenance and testing
- Use of incorrect consumables
- Maintenance intervals exceeded

The manufacturer shall not be held responsible for accidents involving the truck caused by the failure of the operating company to comply with these regulations either intentionally or due to negligence.

Stability

The stability of the truck has been tested in accordance with up-to-date technical regulations and is guaranteed if the truck is used correctly and in line with the intended purpose. These standards only take into account the static and dynamic tipping forces that can arise during use in accordance with the operating standards and intended purpose. In extreme cases there is a risk of exceeding the moment of tilt due to improper use or incorrect operation, which will affect stability.

Risks can include:

- loss of stability due to unstable or sliding loads etc.;
- turns at excessive speeds;
- moving with the load raised;
- moving with a load that is projecting to the side (e.g. side shift);
- turning and driving diagonally across slopes;
- driving on slopes with the load pointing downhill;
- oversized loads;
- swinging loads;
- steps or ramp edges.

Special risks associated with using the truck and attachments

Approval from the manufacturer and attachment manufacturer must be obtained each time the truck is used in a manner that falls outside the scope of normal use, and in cases where the driver is not certain that he can use the truck correctly and without the risk of accidents.

Electromagnetic radiation

The limit values for electromagnetic emissions and for immunity relative to the forklift are those provided by the EN 12895 standard.

Non-ionised radiation

If the forklift is equipped at the factory or later with devices that emit non-ionising radiation (such as radio transmitters, RFID players, data terminals, scanners, etc), the compatibility of such devices must be verified with the presence of operators using medical devices (such as heart pacemakers).

Safety tests

Regular safety inspection of the truck ▷

Safety inspection based on time and extraordinary incidents

The operating company must ensure that the truck is checked at least once a year, or following noteworthy incidents.

As part of this inspection, a complete check of the technical condition of the truck must be performed with regard to accident safety. In addition, the truck must be thoroughly checked for damage that could potentially have been caused by improper use. A test log must be created. The results from the inspection must be retained until a further two inspections have been carried out.

The inspection date is indicated by an adhesive label on the truck.

– Arrange for the service centre to perform periodic safety inspections on the truck.

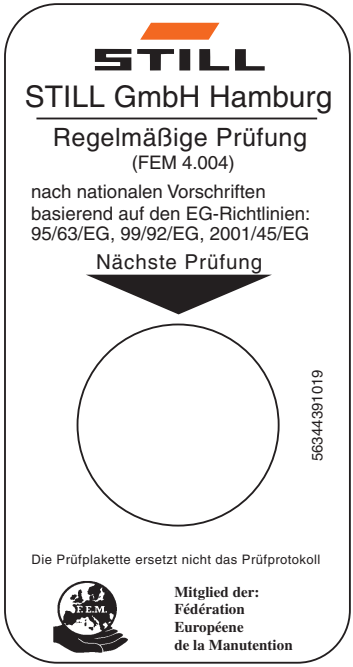
– Observe guidelines for checks carried out on the truck in accordance with FEM 4.004.

The operator is responsible for ensuring any defects are remedied without delay.

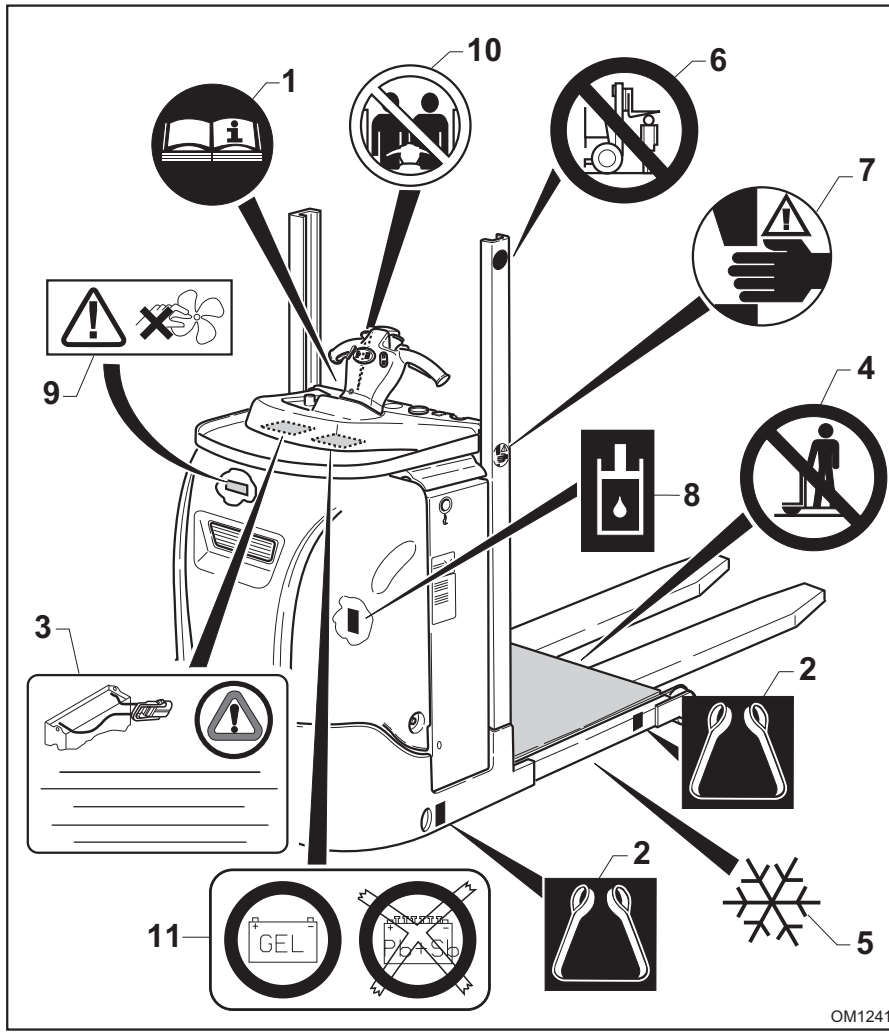
– Contact your service centre.

NOTE

Observe the national regulations for your country!



Placement of data plates and labels



1	Read the use and maintenance manual	7	Danger of cutting hands
2	Forklift lifting points	8	Oil top up point
3	Battery warning	9	Danger of cutting hands
4	Prohibition against carrying people	10	One operator on board
5	Cold-storage room version (optional)	11	Version set up for gel batteries
6	Fork safety plate		

Description of data plates and labels

(1) This label indicates you should consult the user and maintenance manual before using the truck or performing any maintenance work on it.

(2) This label indicates where to insert the slings for lifting the truck.

(3) This plate indicates that only the on-board battery should be connected.

(4) This label indicates that it is prohibited to carry people on the truck.

(5) This symbol, where present, indicates that the truck is designed for the cold-storage room version.

(6) This label means that it is prohibited to stand or walk under the raised fork arms.

(7) This symbol indicates the danger of cutting.

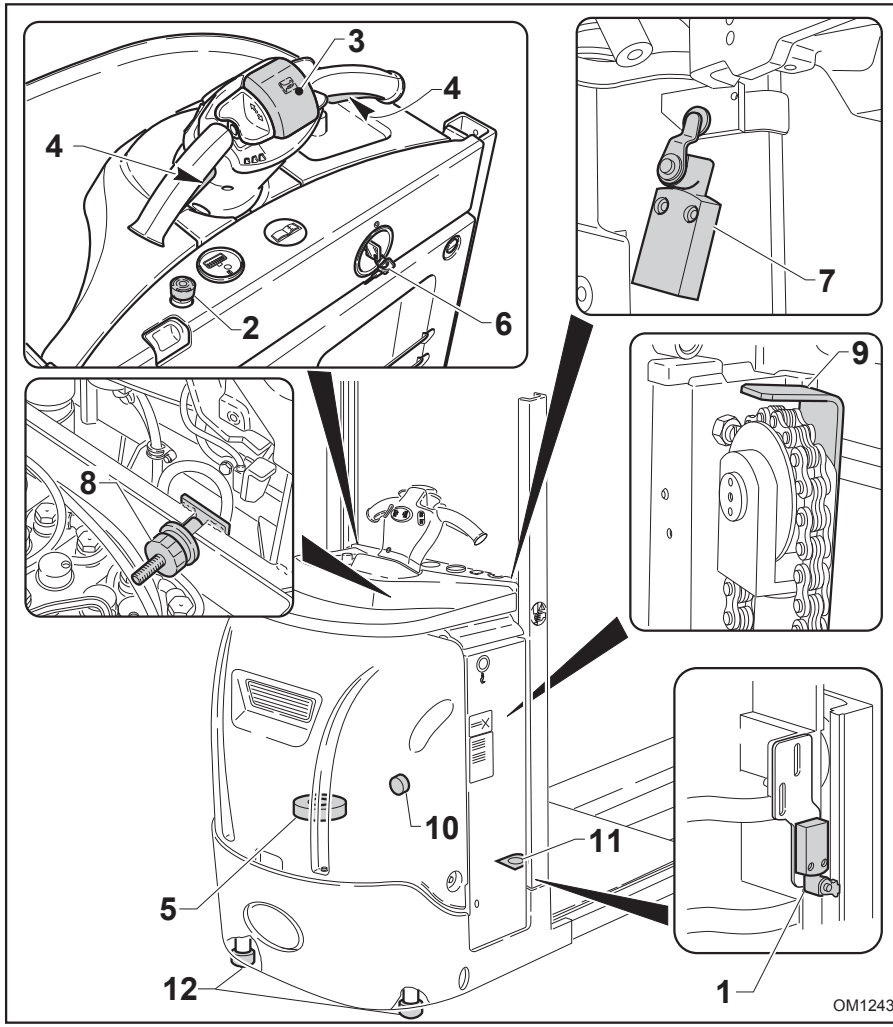
(8) This label indicates where to top up the hydraulic oil.

(9) This symbol indicates the danger of unprotected fans.

(10) This label indicates that only one operator is permitted on board the truck

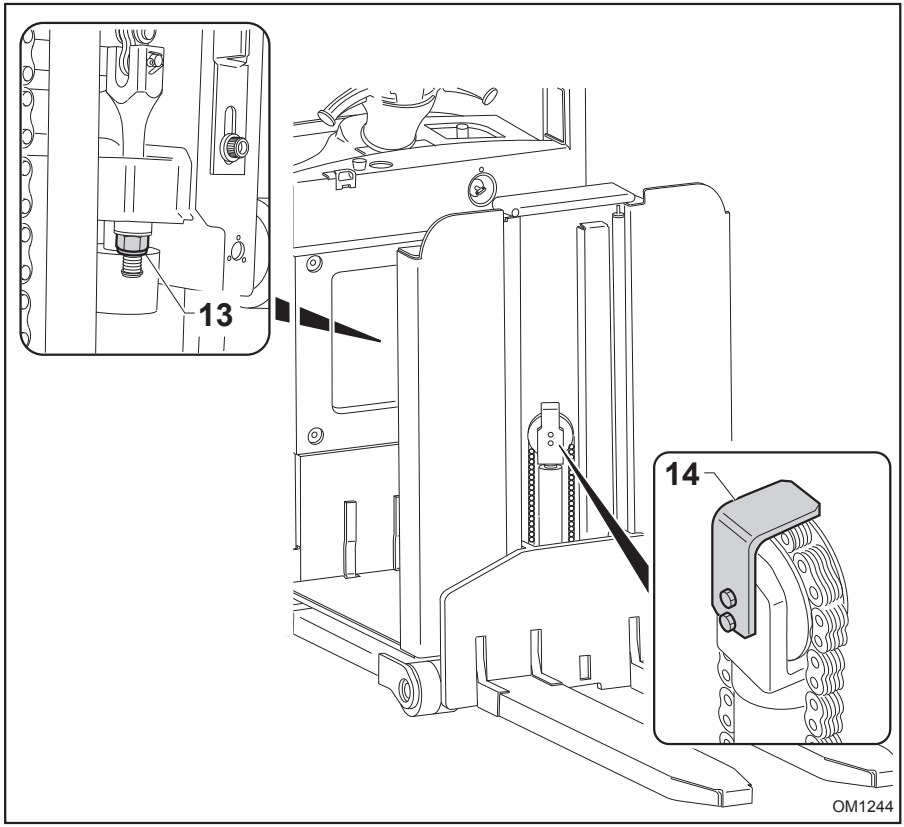
(11) This symbol, where present, indicates that the truck is set up for the gel battery version. Do not use other types of battery.

Safety devices



The operator must be aware of the presence of the following safety devices

1 Device for slowing down the forklift once the forks have been raised more than 160mm from the ground
2 EMERGENCY pushbutton
3 Horn
4 Forklift operation authorisation levers
5 Electromagnetic brake
6 Start/stop key
7 Microswitch to block forklift operation when the battery compartment hood is open
8 Battery holddowns
9 Platform raising chain holding bracket
10 Warning buzzer to signal forklift in operation - fork side (optional)
11 Operator presence pedal
12 Roll-over pads



13 Tie-rod retaining self-locking nut
14 Fork raising chain holding bracket (only for the version with levelled forks)

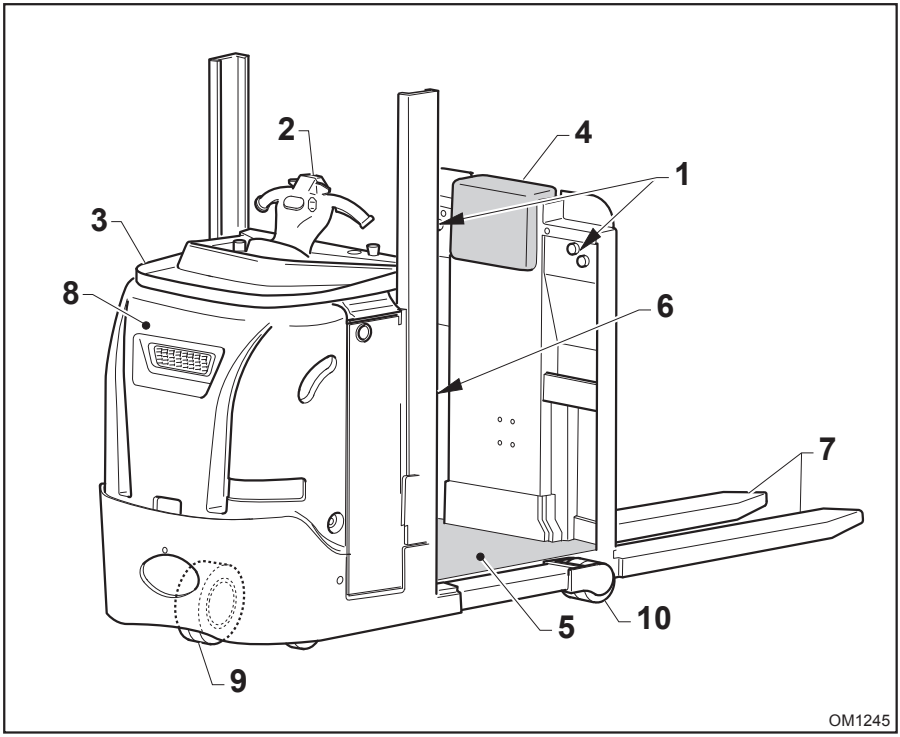
NOTE

These devices most be checked daily, as described in Chapter 4.

3

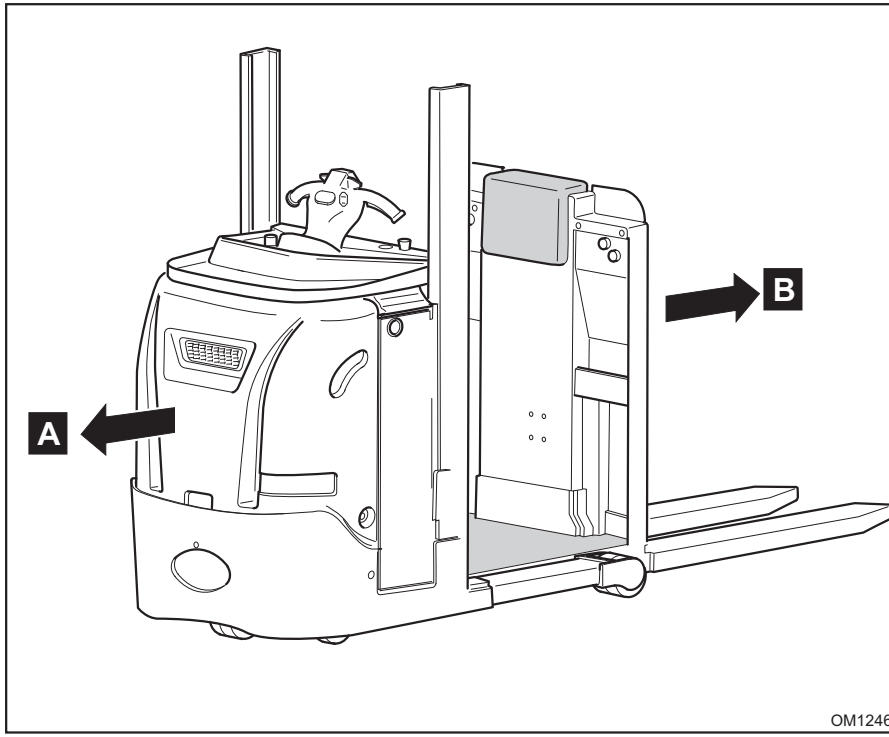
Knowledge of the Truck

General Forklift View



1	Fork raising pushbuttons group (only for version with levelled forks)	5	Operator platform
2	Handlebar	6	Document holder
3	Battery compartment hood	7	Fork arms
4	Seat back with backrest (only for version with levelled forks)	8	Motor compartment hood
		9	Traction Wheel
		10	Load wheels

Definition of Direction of Travel



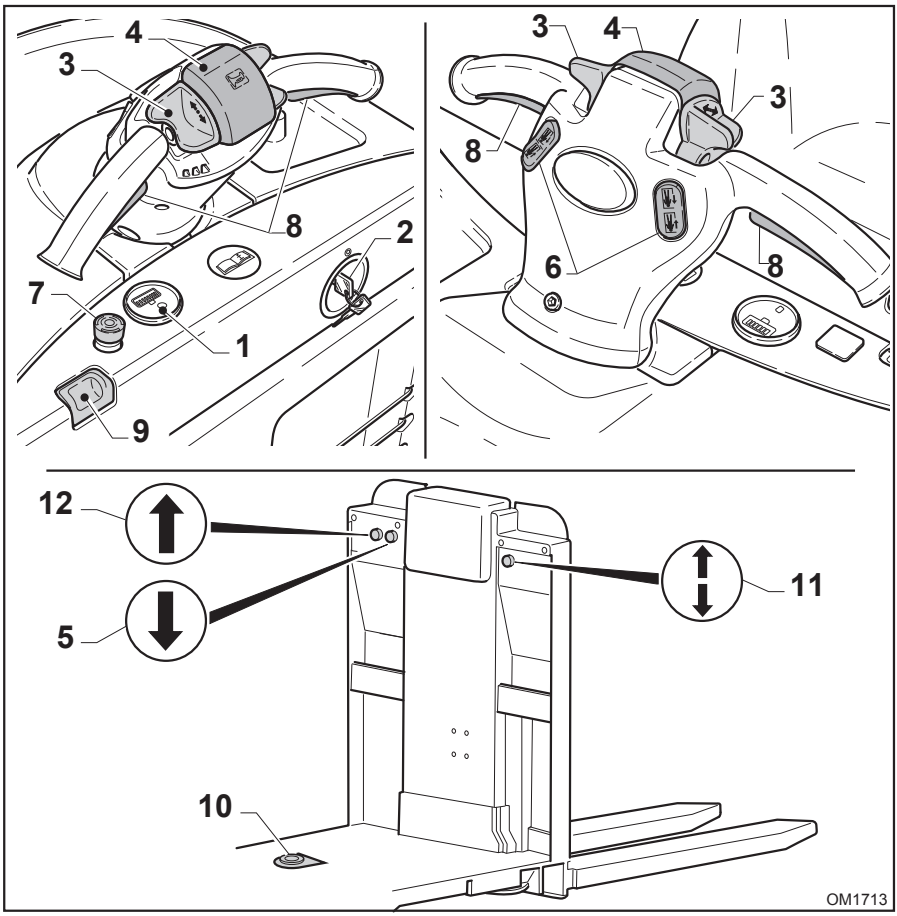
The direction of travel is defined in the following manner:

A = Direction of travel toward motors (forward)
B = Direction of travel toward forks (backward)

"**A**" is the preferred direction of travel

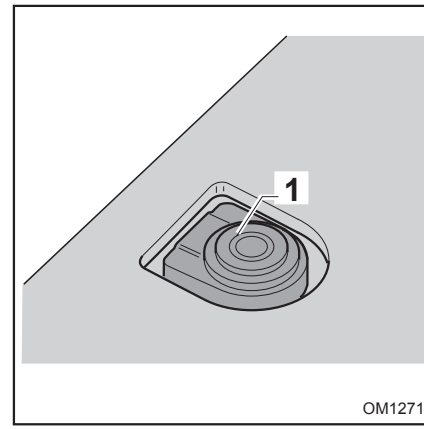
Instrumentation and Controls

General view of instrumentation and controls



1	Battery status indicator and hours counter	7	**EMERGENCY stop** button
2	Start/stop key	8	Truck operation authorization levers
3	Traction control throttle	9	Battery cover release pushbutton
4	Horn button	10	Operator presence pedal
5	Fork lowering pushbutton (only for versions with levelled forks)	11	Fork raising/lowering consent pushbutton (only for versions with levelled forks)
6	Operator platform raising/lowering pushbutton	12	Fork raising pushbutton (only for versions with levelled forks)

Operator presence pedal



DANGER

Do not keep the operator presence pedal blocked with equipment or weights.

- Pressing the pedal (1) enables forklift operation and prepares the machine for all movements.

Battery status indicator and hour counter

The instrument is subdivided into two zones as follows:

Zone A

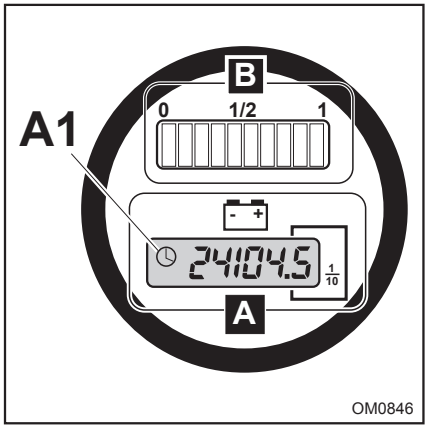
- Indicates the actual forklift operation time, expressed in hours.
- When the counter is working, clock "**A1**" blinks; five numbers plus one decimal digit are displayed. The hours are counted progressively and start from zero.

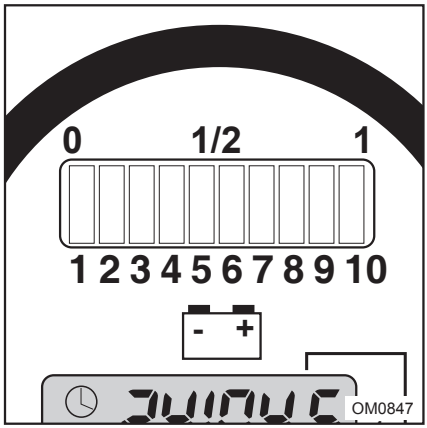
Zone B

- Indicates the battery charge level; it is subdivided into ten sectors with respective colored LEDS.
- When the battery is 100% charged, LED **10** remains lit up.
- As the battery discharges, the LEDS light up one at a time from right to left, starting from LED **10**, which indicates the completely charged battery status.
- When the battery is 70% discharged, LED **2** blinks, indicating that the battery is on reserve and must be charged. **Bring the forklift to the charging area and charge the battery.**
- When the battery is 80% discharged, LEDS **1 e 2** blink alternately. **Lifting is blocked at this discharge threshold.**

⚠ CAUTION

Recharge the battery at the latest before it is 70% discharged (LED **2** blinking); the forklift does not lift below this threshold.





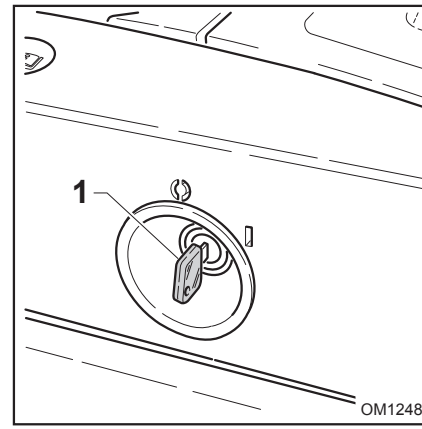
LED Colors:
1 - 2 Red LEDS
3 - 4 - 5 Orange LEDS
6 - 7 - 8 - 9 - 10 Green LEDS

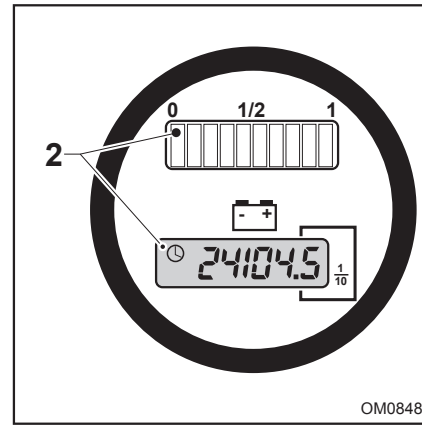
Start/stop key

Key **1** has two positions:

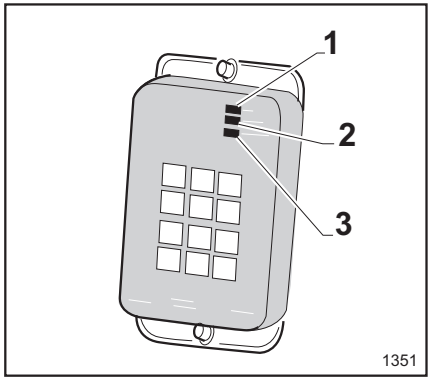
0 =No live circuit (Key removal position)

I =Live circuit
In position "**I**", the display lights up and the clock blinks (the display and the clock are indicated in the picture to the side with the reference "**2**").





Numerical keypad for switching on and off (optional)



The start/stop numerical keypad allows the truck to be switched on and off using a 4-digit user code.

User code

- The user code is set by means of a 4-digit supervisor code ("Supervisor Code").
- Each keypad, identifiable by the serial number on the back, has its own supervisor code. The supervisor code is provided in the specific use and maintenance manual of the numerical keypad.

⚠ CAUTION

Carefully preserve the use and maintenance manual of the numerical keypad.

Procedure for setting user code:

- Type in the 4-digit supervisor code.
  The red lamp indicator (3) comes on, indicating the programming mode.
- Type in the new 4-digit user code.
  The yellow lamp indicator (2) comes on, indicating that the new user code has been accepted.

NOTE

The user code must not contain the keys "ON" and "OFF".

To start the truck:

- Type in the 4-digit user code.
  The yellow lamp indicator (2) comes on to indicate that the code has been accepted.
  The keypad makes a short sound each time a key is pressed; if the keypad emits a long sound, this means that a typing error has been made and it is necessary to enter the code again starting from the first digit.
- Press the "ON" button.
  The green lamp indicator (1) comes on, indicating that all the electrical circuits are live: the hour meter display lights up and the clock flashes, and the driving wheel position indicator (optional) lights up.

To turn off the truck:

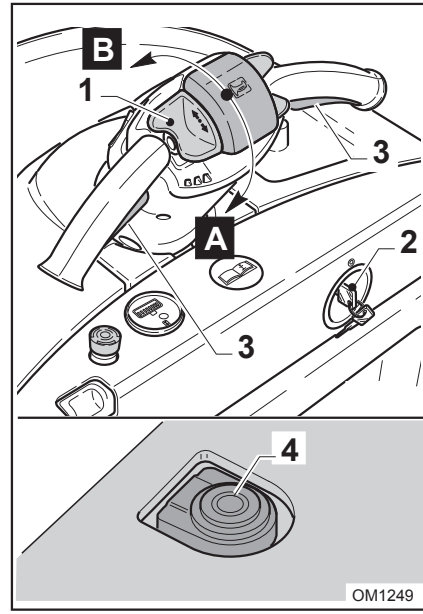
- Press the OFF button and all the lamp indicators turn off.
  All the lamp indicators turn off.

Traction control throttle

- When the throttle (1) is turned in direction “**A**”, the forklift starts moving in the direction of the forks; when it is turned in direction "**B**" it starts moving in the direction of the motors. The release of the throttle causes braking (electric release braking) and subsequently the stopping of the forklift.
- The forklift speed increases as a function of the angular position of the throttle.

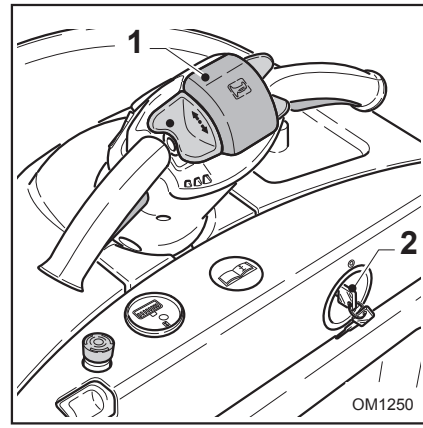
NOTE

*The operation of the traction is enabled with the key (2) in position "**I**", the engagement of one or both levers (3) and the operator presence pedal (4) pressed.*



Alarm horn button

Press pushbutton (1) to operate the warning horn. This device allows the driver to signal his presence when necessary. It works with the start/stop key (2) in position "**I**"

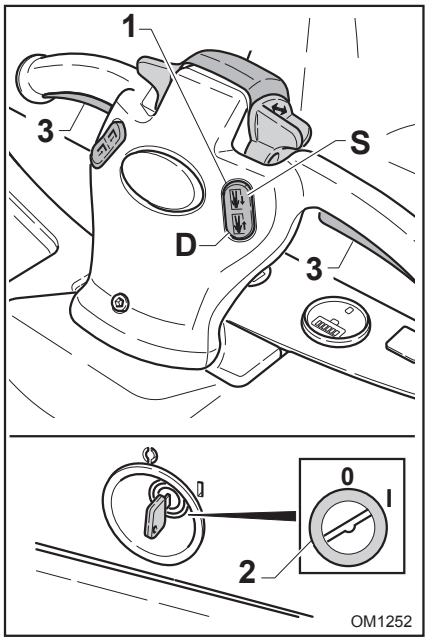


Operator platform raising/lowering pushbutton

- Press pushbutton (1) on side "**S**" to raise the platform and pushbutton (1) on side "**D**" to lower it. Release the pushbutton to stop platform movement.

NOTE

*The raising and lowering of the platform is enabled with the key (2) in position "**I**", the engagementof both levers (3) and the operator presence pedal pressed.*

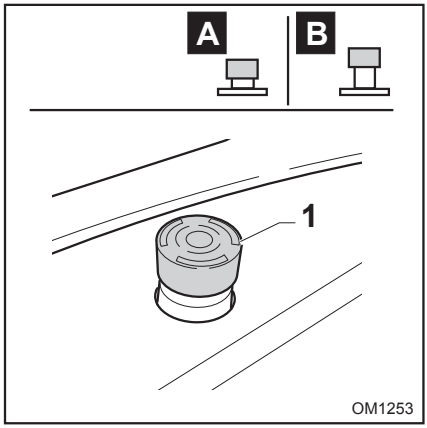


EMERGENCY pushbutton

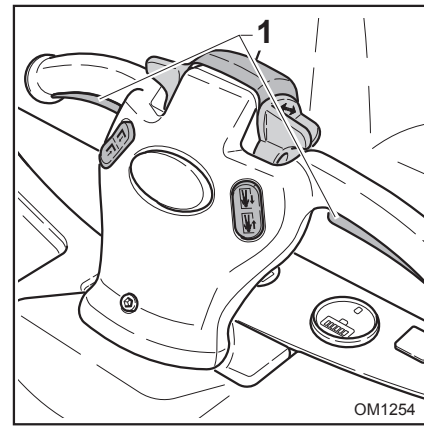
CAUTION

The EMERGENCY pushbutton (1) should be activated only and exclusively when truly necessary. If the pushbutton (1) is activated while the forklift is moving, the forklift brakes and slows down until it stops.

- Press the emergency pushbutton (1) (position A) to block all forklift functions.
- To restore operating conditions, eliminate the causes of the emergency, then release the emergency pushbutton (1) (position B), turning it clockwise and lifting it.



Forklift operation authorization levers



Press one or both levers (1) to enable forklift operation:

- If only a single lever is pressed, the drive is at reduced speed in both directions; the raising/lowering of the operator platform and the fork raising/lowering (for versions with levelled forks) is disabled;
- If both levers are pressed, the operator platform raising/lowering and the fork raising/lowering (for versions with levelled forks) are enabled and the drive is at a reduced speed only in the direction of the forks.

NOTE

With the levers (1) released, only the fork lifting controls located on the seat backrest are enabled (only for versions with levelled forks).

NOTE

The operation of the levers is enabled when the start key is in position "I " and the operator presence pedal is pressed.

NOTE

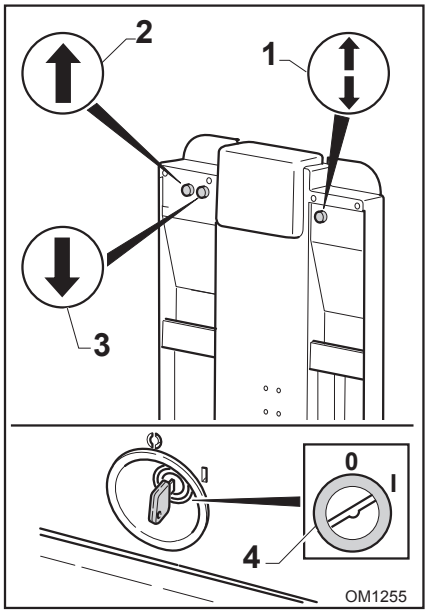
If, during movement with both authorization levers pressed, one authorization lever is released, the forklift will proceed at a reduced speed.

Fork raising/lowering buttons on the seat backrest (only for the version with levelled forks)

- To raise the forks press the consent button (1) and continue pressing it, then press the button (2); if one of the two buttons is released, the forks stop in the position attained.
- To lower the forks press the consent button (1) and continue pressing it, then press the button (3); if one of the two buttons is released, the forks stop in the position attained.

NOTE

The operation of the buttons is enabled with the key (4) in position "I" and the operator presence pedal pressed.

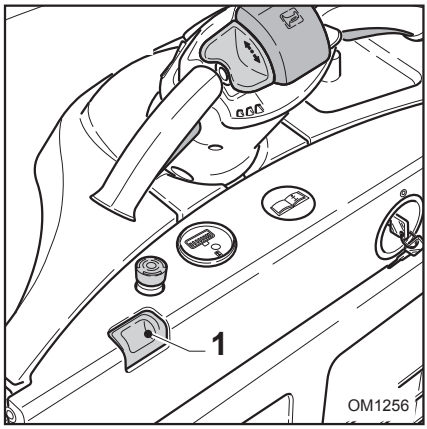


Battery hood release pushbutton

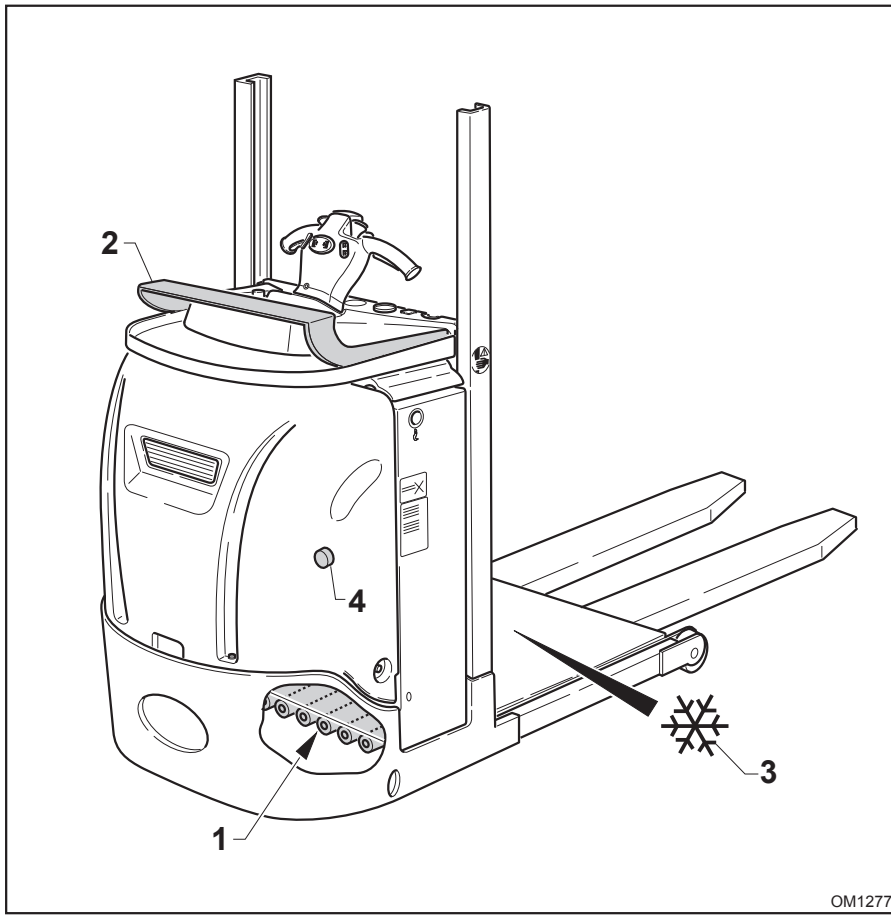
- Press pushbutton (1) to open the battery compartment hood.
- To open, push down lightly on the battery compartment hood, press pushbutton (1) and raise the hood at the same time.
- To close, lower the battery compartment hood and make sure that it closes correctly.

NOTE

The opening of the hood disables the drive.



List of Available Optionals



- Version with rollers for lateral battery removal **(1)**. This option makes it easy to remove the battery, sliding it on the rollers for lateral extraction.
- Buzzer **(4)** to signal forklift in operation - fork side. The buzzer warns of the forklift's presence when travelling in the direction of the forks (backward).
- Universal support with outlet for data terminal **(2)**.
- Equipping for cold climates/cold-storage room **(3)**. Refer to Chapter 4 to additional information on the use of this version of the forklift.
- Extra outlet set for double shifts.
- Battery change stand
- Control panel
- Numerical keypad

⚠ CAUTION

Contact the technical service network authorised by the manufacturer for information on the assembly of the options.

NOTE

Contact the authorized sales network for more information.

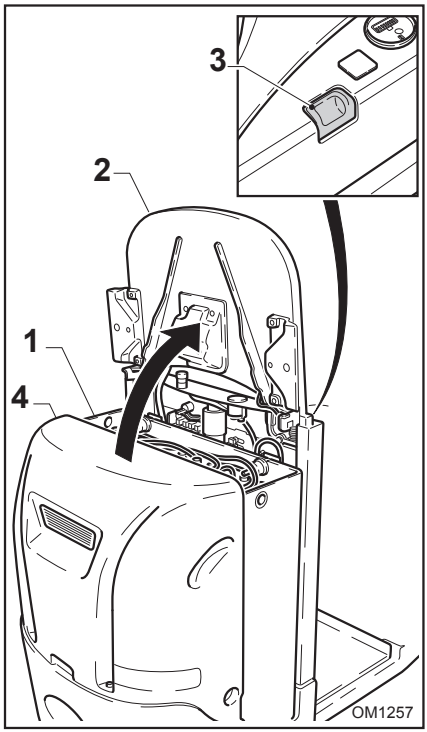
Internal accessibility

- To access the battery (1) and relative plug/outlet, press down lightly on the battery compartment cover (2), at the same time pressing pushbutton (3), then raise the battery compartment cover (2).
- To access the inner parts of the forklift (electronic, electric and mechanical parts), remove the hood (4) by unscrewing the relative screws.

DANGER

Before accessing the inner parts of the forklift, carefully follow the instructions given in Chapter 5, entitled "Maintenance".

Access to the inner parts of the forklift by personnel not authorized by the manufacturer is forbidden.

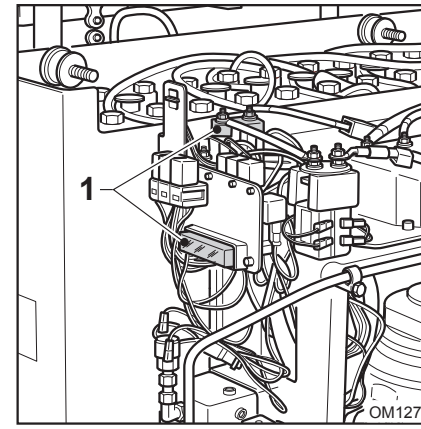


Location of Fuses

The fuses (1) are located under the motor compartment hood; to access them, remove the hood as indicated in the section on "**Internal Accessibility**".

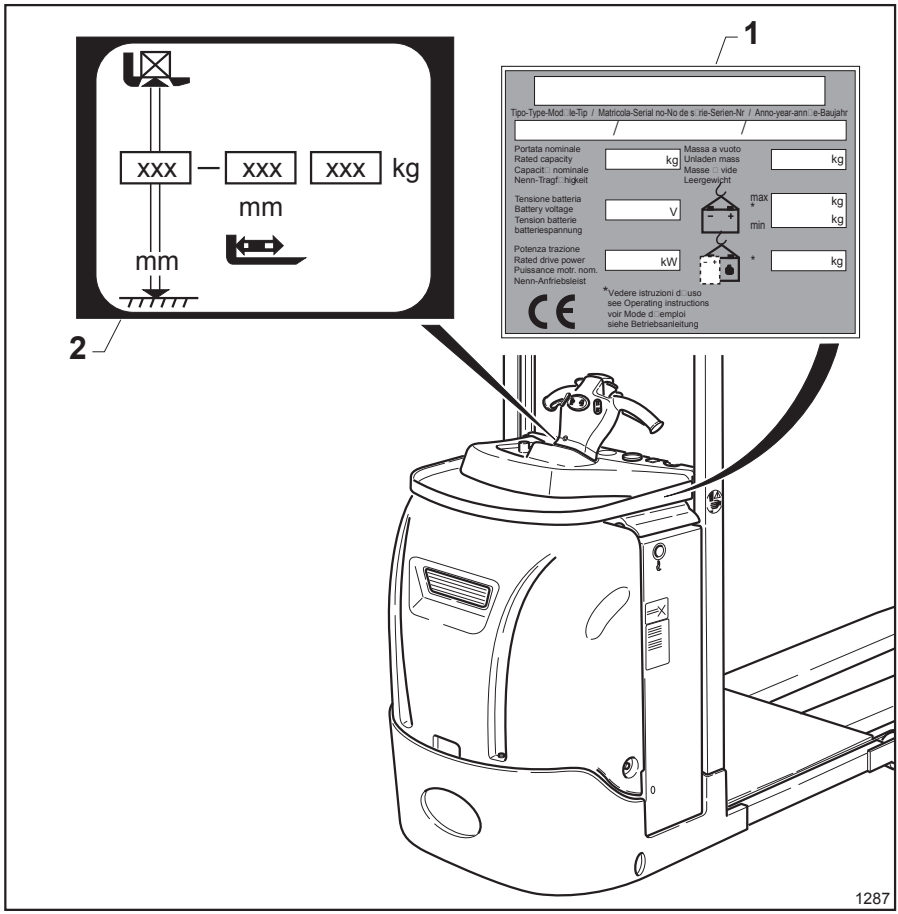
⚠ CAUTION

See the "**Maintenance**" chapter for fuse values and replacement operations.



Truck Identification

Location of Data Plates



1 Truck identification plate

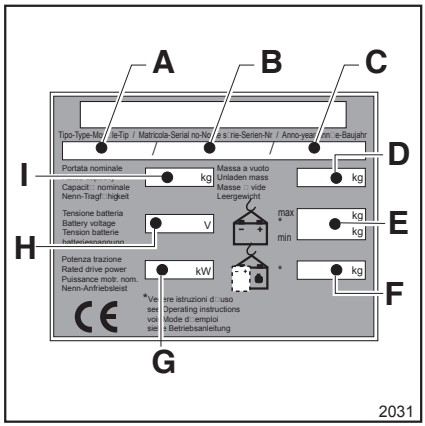
2 Capacity Plate

Forklift Identification Plate

– The identification plate indicates the following data:

- **A** = Type of forklift
- **B** = Serial number
- **C** = Year of manufacture
- **D** = Empty mass without traction battery
- **E** = Min - Max mass - traction battery
- **F** = Indication of added weight only in the case of traction batteries that are too lightweight to guarantee stability.
- **G** =Traction motor power
- **H** = Traction battery voltage
- **I** = Nominal capacity

▷

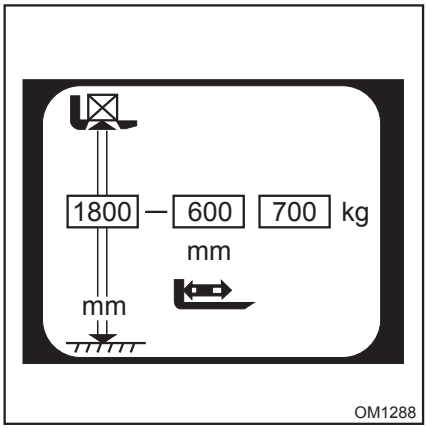


Capacity Plate

– The capacity plate indicates the following data:

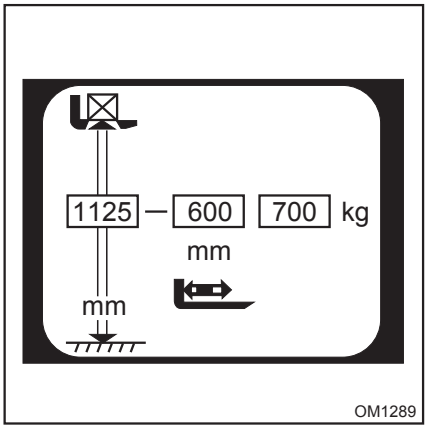
For the version with levelled forks ▷

– The forklift capacity is 700 kg when the load on the forks is 1800 mm from the ground and the center of gravity of the load is 600 mm from the shoulder of the forks.



For the version without levelled forks ▷

– The forklift capacity is 700 kg when the load on the forks is 1125 mm from the ground and the center of gravity of the load is 600 mm from the shoulder of the forks.



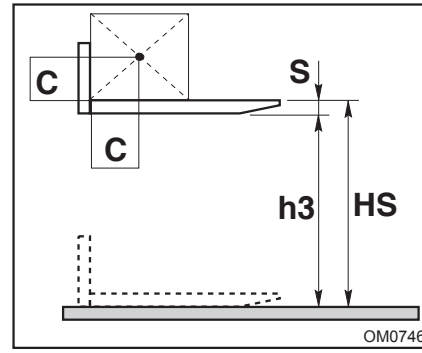
–

C= center of mass of the load
HS= height above ground

⚠ DANGER

The values indicated on the capacity plate refer to compact and homogeneous loads and must not be exceeded - otherwise the stability of the forklift and the resistance of the structures may be compromised.

▷



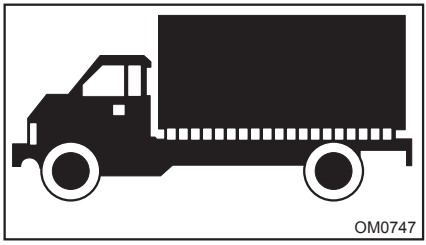
4

Use and Operation

Truck Transport and Lifting

Transporting the truck

▷

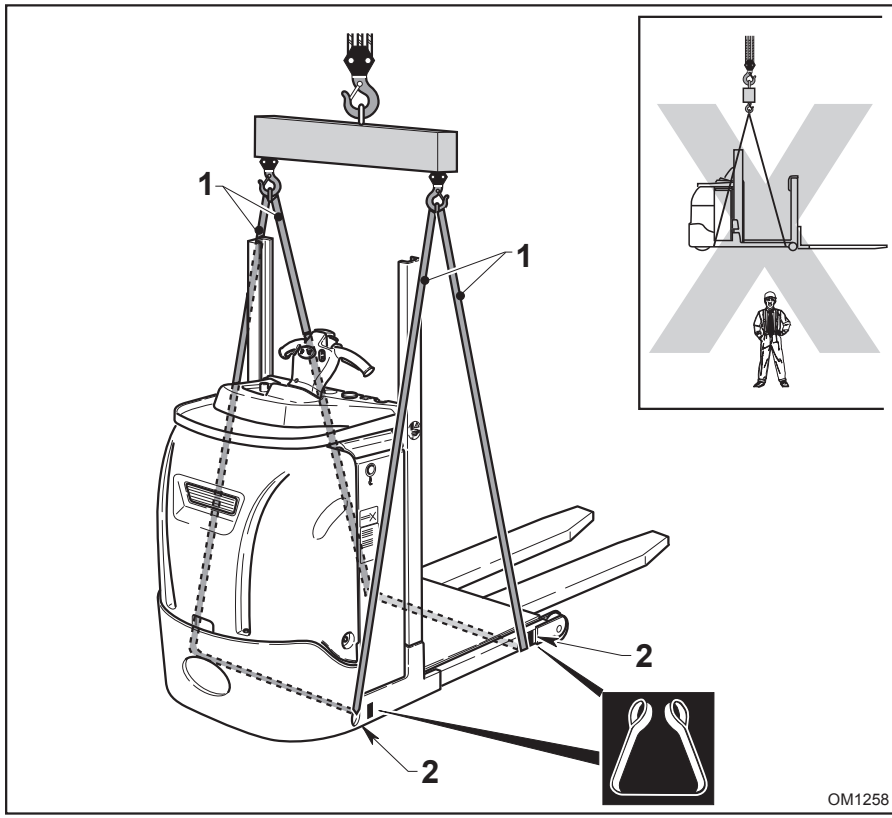


The forklift is normally transported by road and rail. If the forklift's dimensions exceed the max. clearance size allowed, it is transported disassembled. The sales network is in charge of the disassembly and reassembly operations. The forklift must be secured to the transport means during transport using appropriate restraint systems. Block the wheels with wedges to prevent even the slightest movement.

Climatic Conditions for Transport and Storage

The forklift must be protected from atmospheric agents during transport and storage.

Forklift loading and unloading



Use a lifting crane to load and unload the forklift, or use an inclined plane or a movable platform (with a slope and structural strength compatible with the specifications stated by the manufacturer, which must be suitably positioned and anchored).

⚠ DANGER

Use a crane with a suitable lifting capacity for the weight of the forklift, indicated on its identification plate. Also take into account the weight of the mounted battery (if applicable), consulting the relevant designation plate. The lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the forklift. Use NON METALLIC cables. Make sure that the capacity of the cables is suitable for the weight of the forklift.

To lift the forklift, hook cables (1) suitable for the weight of the forklift into points (2) on the body, then connect the other end of the cables to the hook of a crane.

⚠ CAUTION

The cables should have a suitable length so as to not graze the casing or any additional equipment during lifting. Use a lifting beam if necessary. The cables must be pulled vertically.

⚠ DANGER

Any other lifting and transport method of the forklift is forbidden.

Breaking-In

This type of forklift does not require special breaking-in operations.

Daily Checks Before Use.

The following checks should be performed on a daily basis to keep your forklift in good condition and to operate safely. These checks supplement and do not replace the scheduled maintenance operations.

- Visually check that the various forklift components are in good condition
- Make sure that the forks are in good condition
- Make sure that the pushbuttons, throttles and forklift operation authorization levers located on the control handlebar, as well as any pushbuttons located on the backrest, work correctly
- Make sure that when the handlebar tiller is released, it returns automatically to the central position
- Make sure that the battery hood release pushbutton works correctly
- Make sure that the battery plug/outlet is positioned correctly and in good condition
- Make sure that the wheels (drive and load wheels) are in good condition
- Check that the roll-over protection pads are not worn
- Make sure that the buzzer that signals forklift in operation - fork side works correctly (if present)
- Make sure that the emergency pushbutton works correctly
- Make sure that the warning horn works correctly
- Make sure that the start/stop key works correctly
- Make sure that the forklift brakes until stopping when the operation authorization levers are released
- Make sure that the electromagnetic brake works effectively
- Make sure that the battery hood is correctly fastened
- Make sure that forklift operation is blocked when the battery hood is opened
- Make sure that the battery holddowns are correctly positioned and fastened
- Check that the lift chain holding bracket is in good condition and properly fastened
- Check that the forklift travels slowly in the following cases:

  - when turning with an angle greater than 10° to one side or the other with respect to the forklift's centre;

  - when travelling in the direction of the forks;

  - when the platform is raised;
- The daily checks listed below are explained in detail on the following pages:

  - Electrolyte level and density check

  - Wheel tightening check

  - Tyre wear check

  - Roll-over pads wear check

⚠ DANGER

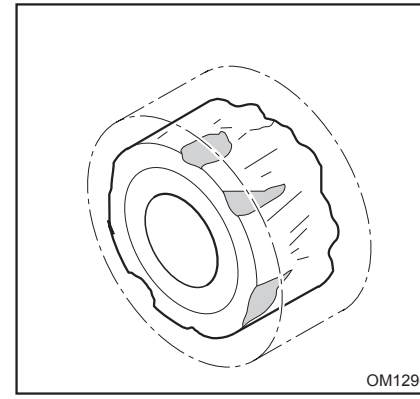
If you notice any malfunctions or have any doubts on the forklift's functionality, DO NOT use the forklift, but call the technical service department.

Wheel Wear Check

The forklift's wheels and rollers should be replaced when there are signs of wear.

NOTE

Contact the service network authorised by the manufacturer for replacement of the wheels and rollers.

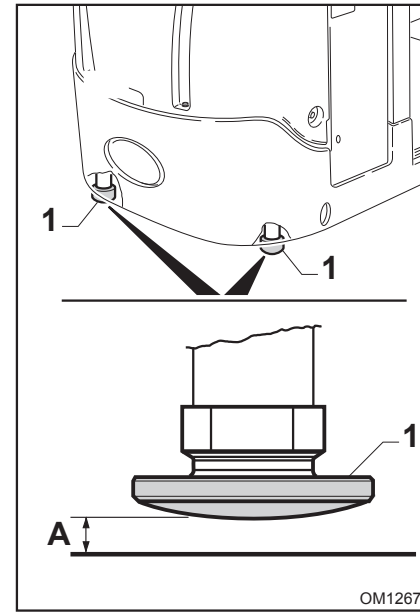


Roll-over pads wear check

Check that the side roll-over protection pads (1) are not worn and that the height "**A**" is not more than 21 mm from the ground.

NOTE

If the pads are worn, call the Technical Service Department authorized by the manufacturer in order to have them replaced.



Use of the Truck

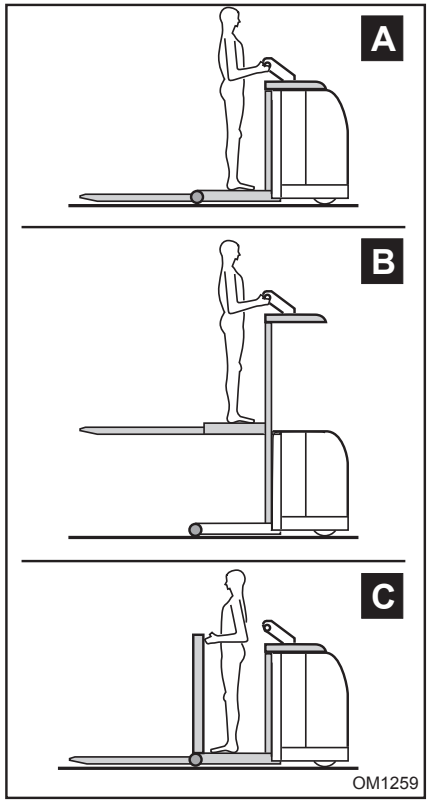
Operator Position

- The operator's position is on the step plate on board the machine facing the handlebar, whether the step plate is completely raised "**B**" or completely lowered "**A**".
- For the version with levelled forks, the operator is also allowed to be turned towards the seat back "**C**" in order to use the fork raising/lowering pushbuttons.

⚠ DANGER

During operation, the operator must maintain the correct driving position on the forklift:

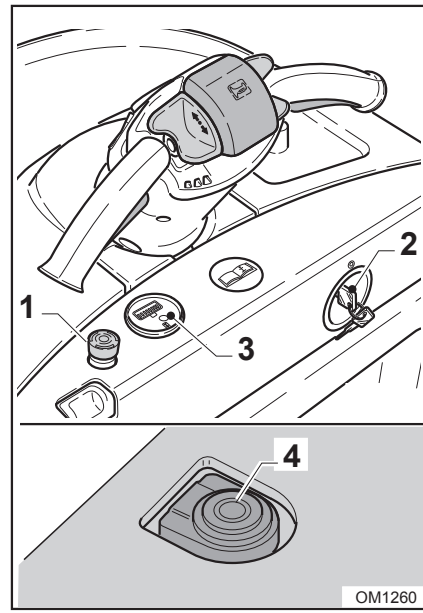
- Keep a tight hold on control handlebar.
- Do not lean out from the profile of the forklift.



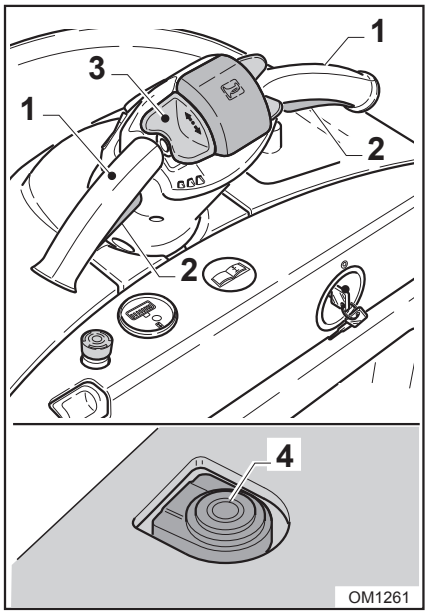
Start-up

After having performed the daily checks, carry out the following operations to start the forklift:

- Climb onto the platform;
- Make sure that the emergency button (1) is not pressed;
- Insert the key (2) and turn it to position "**I**"; instrument (3) lights up, indicating that the electric circuits are operating;
- Press the operator presence pedal (4).



Forklift operation



- Place your hands on the handlebar (1).
- Press the lever or levers (2) to enable the drive and keep them pressed for the entire time the forklift is moving.

NOTE

While the forklift is moving, releasing the levers (2) or releasing the operator presence pedal (4) causes the forklift to brake until coming to a stop.

- Select the desired direction of travel using the throttle (3); the forklift speed is proportional to the angular position of the throttle (3).

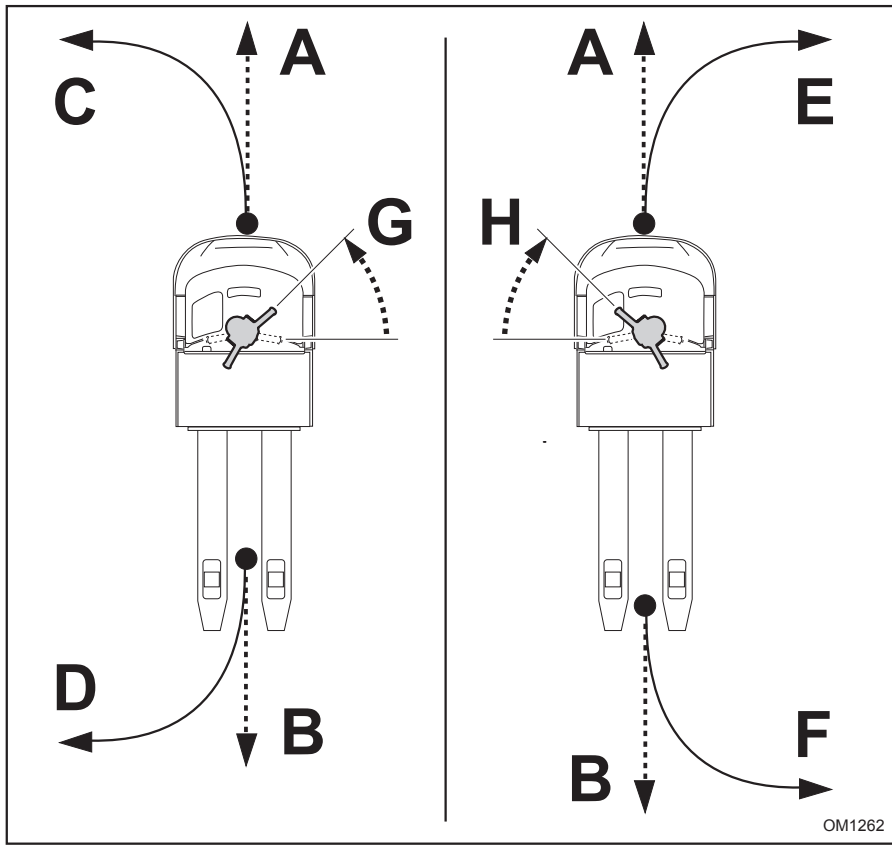
⚠ CAUTION

If there are difficulties starting the forklift, do not insist but look for the cause.

NOTE

*The speed of the forklift depends on the direction of travel and on the use of the forklift operation authorization levers located on the handlebar. For more information on the forklift speed, see "**Chapter 3**", the section regarding "**forklift operation authorization levers**".*

Steering the forklift

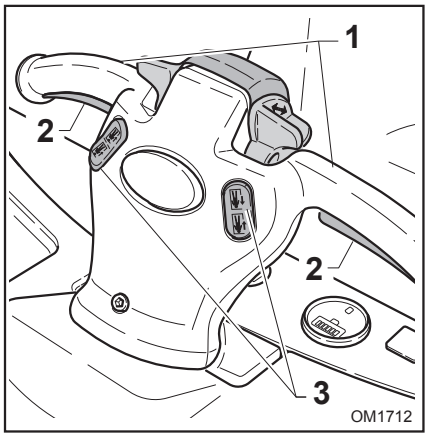


Use the handlebar to steer during forklift operation.

- Rotate the handlebar counter-clockwise (G) in forward gear (A) to turn the forklift to the left (C).
- Rotate the handlebar counter-clockwise (G) in reverse gear (B) to turn the forklift to the left (D).
- Rotate the handlebar clockwise (H) in forward gear (A) to turn the forklift to the right (E).
- Rotate the handlebar clockwise (H) in reverse gear (B) to turn the forklift to the right (E).

Platform lifting

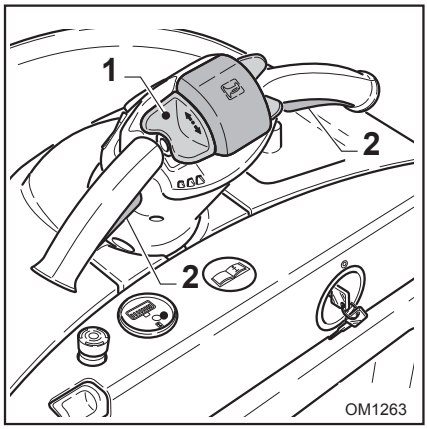
- Place your hands on the handlebar (1);
- Press both the levers (2);
- Raise and lower the platform using the pushbutton (3).



Reverse drive

Reverse of direction without load on forks

- It is possible to reverse direction quickly when travelling without a load on the forks without the aid of the service brake; to do so, turn the throttle (1) in the opposite direction of travel. The forklift will stop with energetic but gradual braking and will start to move again in the opposite direction.



Reverse of direction with load on forks

- To change direction with a load on the fork arms, release the traction control throttle (1)and wait for the truck to come to a stop.
- Change direction using the throttle (1).

⚠ DANGER

Reversing direction with load without completely stopping the forklift can lead to the loss of the load.

Speed Restrictions

Speed reduction systems are routinely installed on all forklift versions, which cut in in the following cases:

- when the direction of travel is towards the forks;
- when turning with an angle greater than 10° to one side or the other with respect to the forklift's centre;

- when the platform is raised;
- when both authorisation levers are not pressed.

Using the truck on inclines, loading bridges and lifts.

Driving on inclines

When driving the truck up or down inclines, you must not exceed the values for inclines indicated in the chapter "Technical data".

The operator must check that the ground is clear with a good grip.

⚠ WARNING

Drive at a reduced speed on descending slopes.

⚠ DANGER

Risk of tipping!

When driving up inclines, do not turn, reverse and/or travel diagonally.

Using the truck on an incline

⚠ WARNING

When driving on an incline with a load, you must keep the load facing upwards.

⚠ DANGER

Risk of accident

Keep the truck at a safe distance from the edges of ramps, tailboards etc.

⚠ CAUTION

In certain cases, it is permitted to drive with the forks pointing towards the top of the incline even if the truck is not loaded.

In these cases, drive with the utmost care and avoid turning until all the wheels are on a flat surface.

⚠ DANGER

Risk of accident

Do not park on an incline: if, in the event of an emergency, you have to do so, apply the parking brake and block the wheels with chocks.

Using the truck on a lift

Using the truck on lifts is only allowed if the lift has sufficient load capacity (check the maximum weight of the truck including the traction battery) and only with appropriate authorisation.

Slowly drive the truck onto the lift load-first.

Secure the truck in the lift so that no part comes into contact with the walls of the lift. A minimum distance of 100 mm from the walls of the lift must always be observed.

⚠ WARNING

The truck must be correctly immobilised so that it cannot move inadvertently.

⚠ CAUTION

Personnel accompanying the truck onto the lift may only enter the lift once the truck is secure and must exit the lift first after transit.

Using the truck on loading bridges

⚠ DANGER

Risk of accident

Before driving on to a loading bridge, the operator must check that it has been properly fitted and secured and has sufficient load capacity.

You must drive onto the loading bridge slowly and carefully.

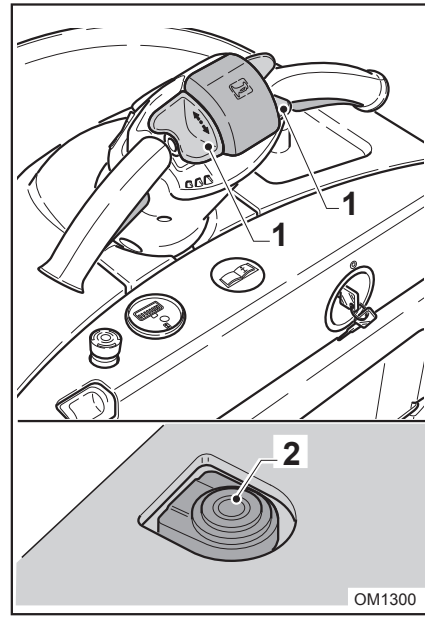
The operator must check that the vehicle to be loaded or unloaded is sufficiently secure so that it will not move and that it is suitable to support the strain of the truck.

The lorry driver and the forklift truck operator must agree on the time of departure of the lorry.

Forklift Braking/Stopping

The forklift can be braked by:

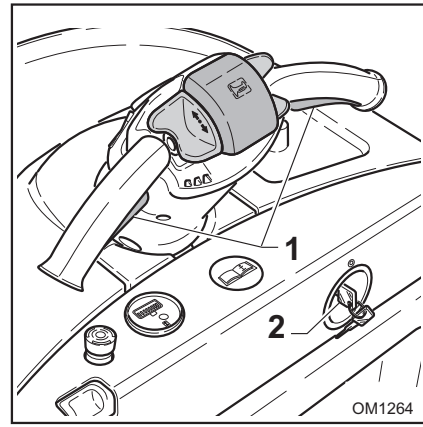
- releasing the throttle (1) to activate the counter-current braking.
- reversing the throttle (1) to activate stronger counter-current braking.
- releasing the operator presence pedal (2) to obtain maximum braking action.



Leaving the truck

Follow the operations listed below in the order given when leaving the forklift:

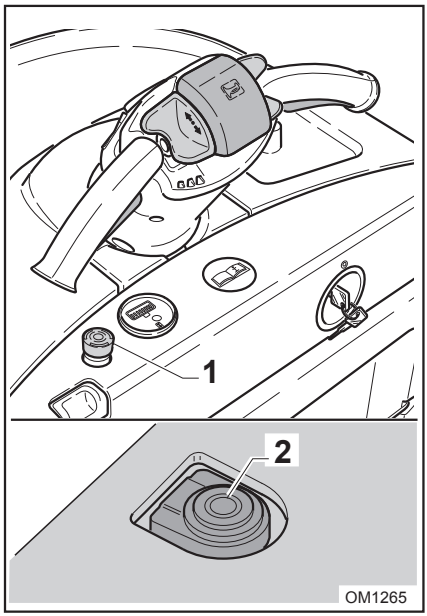
- Lower the forks to the ground.
- Release the levers (1) to activate the parking brake.
- Turn the forklift off by turning the key (2) to position "0" and remove it from the panel.



Stopping the Forklift in an Emergency

In the case of emergency, press the push-button (1). Press the emergency pushbutton (1) to block all forklift functions; the forklift will brake and stop.

For more information on how touse the emergency pushbutton and reset the operating conditions, see "**Chapter 3**".



Forklift Use in Cold-Storage Rooms.

A truck specifically equipped for cold-storage rooms must be used when working at temperatures below +5°C.

Forklifts equipped for working in cold climates and cold-storage rooms may be used at a minimum temperature of -5°C for continuous service in cold-storage rooms and at -32°C for non-continuous service in cold-storage rooms.

⚠ CAUTION

The forklift must always be turned off and parked outside the cold area/cold-storage room.

⚠ CAUTION

If the truck has been working in environments at temperatures below -5°C and it is taken outside the cold-storage room, let it stand either for a sufficiently long time to allow evaporation of any condensation (at least 30 minutes) or a sufficiently short time to prevent the formation of any condensation (less than 10 minutes).

Avoid the formation of ice on the forklift.

⚠ CAUTION

NEVER drive the truck into the cold-storage room when condensation has formed on it

Load Placement

Load removal

DANGER

Before removing the load, make sure that its dimensions and weight fall within the forklift specifications, as indicated in the "TECHNICAL DATA" chapter.

DANGER

The loads must be arranged so that they cannot slip or overturn and fall to the ground.

DANGER

DO NOT stand or walk under the raised load. Make sure that nobody stands under the raised load and in the forklift's area of operation.

DANGER

Never leave the forklift with the forks raised whether there is a load or not.

NOTE

Further information on the general rules of forklift use and load removal and deposit is provided in the "Safety Regulations for Industrial Forklift Use" manual attached to this manual.

- Approach the load with caution and as carefully as possible.
- Raise the fork to the height required to remove the load.
- Slowly insert the forks at the center of the load to be lifted.
- Slightly lift the load from the carrying surface.
- If necessary, back up the forklift as required to perform the manoeuvres freely.
- Lower the forks with the load to the minimum distance from the ground to be able to travel.

Deposit the load.

- Approach the load deposit area.
- Raise and/or lower the forks until the load is deposited in the desired area and release the forks from the load.
- Back up with the forklift.

DANGER

Never leave the forklift with the forks raised whether there is a load or not.

NOTE

Further information on the general rules of forklift use and load removal and deposit are given in the "Safety Regulations for Industrial Forklift Use" manual attached to this manual.

Towing trailers

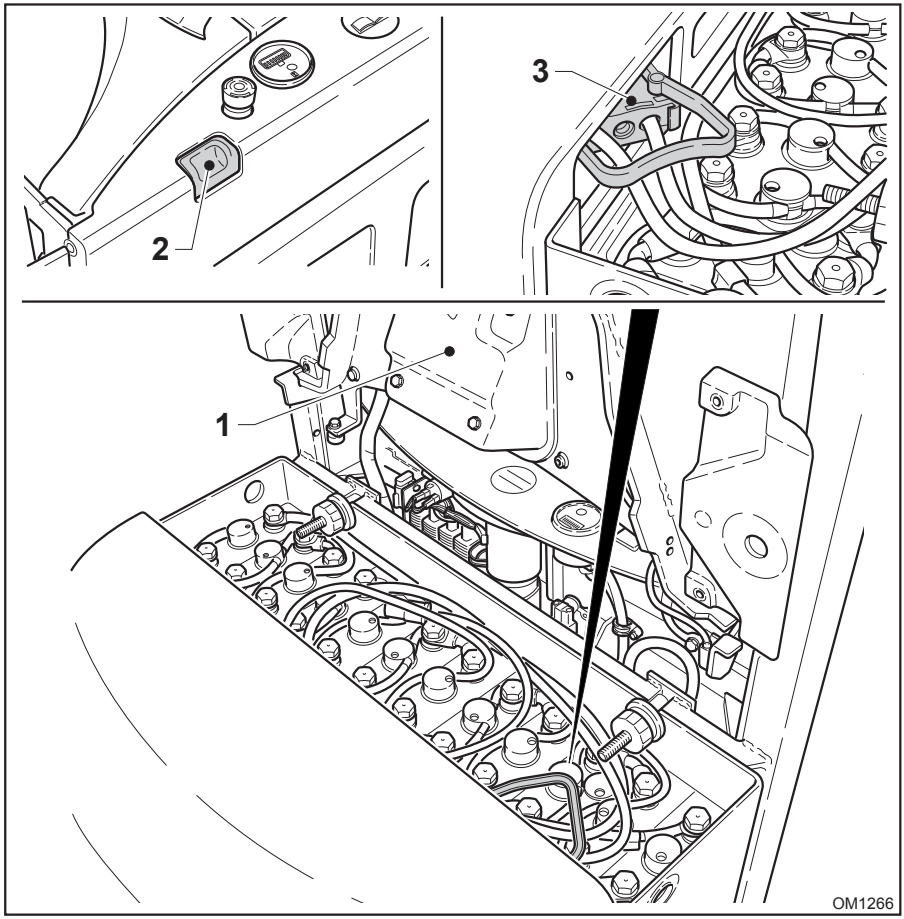
The forklift is not qualified to tow trailers.

Forklift Towing

The forklift may not be towed in the case of breakdown.

The forklift must be lifted with due caution, as described on the preceding pages.

Battery Recharging



⚠ CAUTION

Charge the battery with the forklift turned off and the ignition key removed.

⚠ DANGER

The battery must be charged in rooms that comply with the specific regulations on the subject. Refer to the battery manual and the manual of the battery charger used to see about the charging methods, level checks, etc., making sure of the voltage delivered. As far as the safety precautions are concerned, follow the instructions given in the battery manual and those included in the "Safety regulations" section of this manual.

- Press pushbutton (2) to raise the battery compartment hood (1).
- Disconnect the battery outlet (3) from the plug of the forklift's electronic equipment.
- Remove the battery caps (if indicated in the battery maintenance booklet).
- Connect outlet (3) to the battery charger to begin charging.
- Turn on the external battery charger.
- After the battery charging operation is completed, turn off the battery charger.
- Disconnect the outlet (3) from the battery charger.
- Replace the battery caps (if removed previously).
- Reconnect the battery outlet (3) to the plug.
- Lower the battery compartment hood (1).

5

Maintenance

General Information

To keep your forklift in good condition, carry out the servicing indicated regularly, within the times indicated and using the consumption materials provided for that purpose, as specified on the following pages. Please make sure that you keep a record of work done; this is the only way for the guarantee to remain valid.

Maintenance is divided into:

- scheduled (to be done by the service network authorised by the manufacturer)
- as required (done by the user)

⚠ DANGER

Scheduled maintenance and repairs must be done by the service network authorised by the manufacturer in order to maintain the machine in perfect condition and compliant with technical specifications.

NOTE

Contact the authorised service network for a maintenance contract appropriate to your forklift.

⚠ CAUTION

When the forklift is used in dusty environments, at below zero temperatures and for especially heavy uses, it is necessary to reduce the interval between the various scheduled maintenance operations.

Operations Preliminary to Maintenance

Do the following before performing maintenance operations:

- Place the truck on a flat surface and make sure that it cannot move accidentally.
- Lower the forks fully.
- Switch off the vehicle.
- Press the emergency stop button.

⚠ DANGER

Before performing any intervention on the electric system, disconnect the battery outlet from the relative plug.

Maintenance as required

Cleaning the Forklift

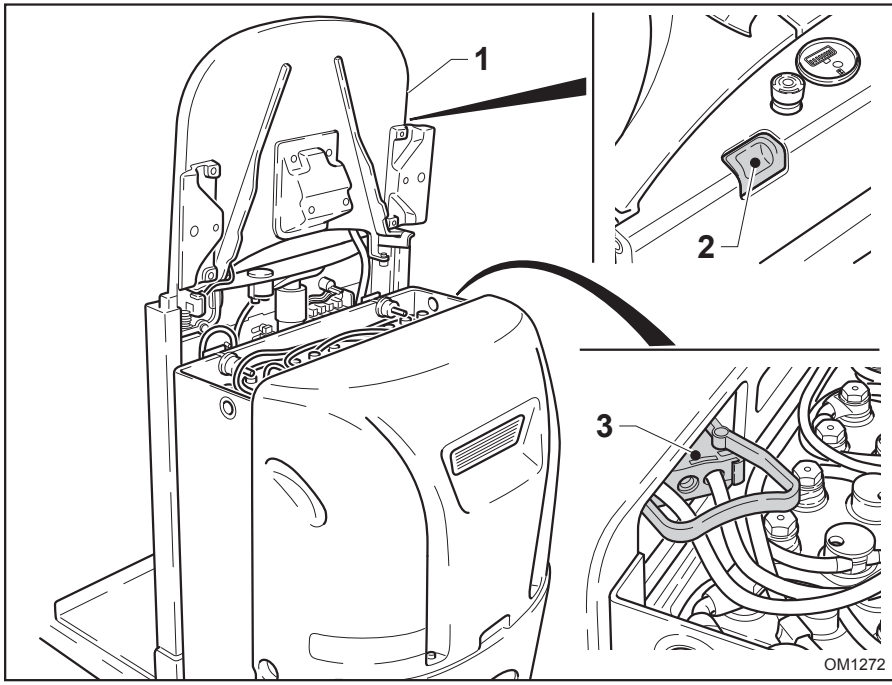
Cleaning depends on the type of use and the workplace. Should the truck come into contact with highly aggressive elements such as salt water, fertilizers, chemical products, cement, etc., it should be cleaned as carefully as possible after every work cycle. It is preferable to use cold compressed air and detergents.

Use water-dampened rags to clean the parts of the body.

⚠ CAUTION

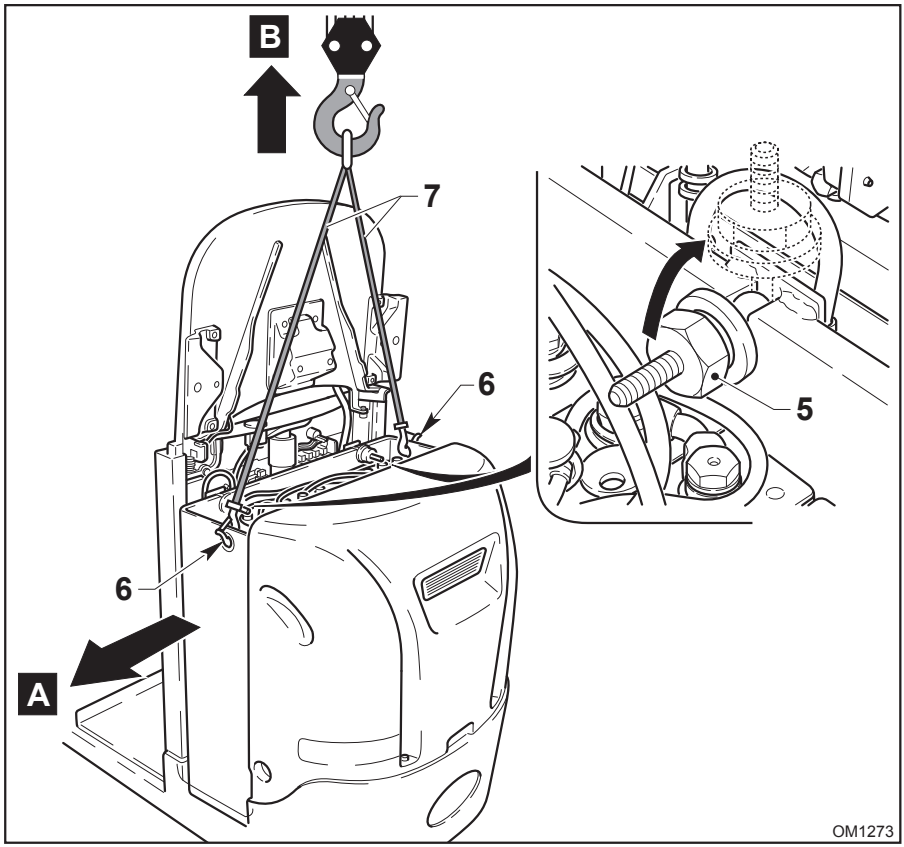
Do not clean the truck with direct jets of water; DO NOT use solvents and petrols that could damage parts of the truck.

Battery Replacement



- Turn off the forklift and perform the operations preliminary to maintenance.
- Raise the battery compartment hood (1) by pressing pushbutton (2).
- Disconnect the battery outlet (3) from the relative plug.
- Follow the battery replacement instructions relative to the setup of your forklift (version without battery extraction rollers or version with battery extraction rollers) provided below.

Battery Replacement for Versions Without Battery Extraction Rollers



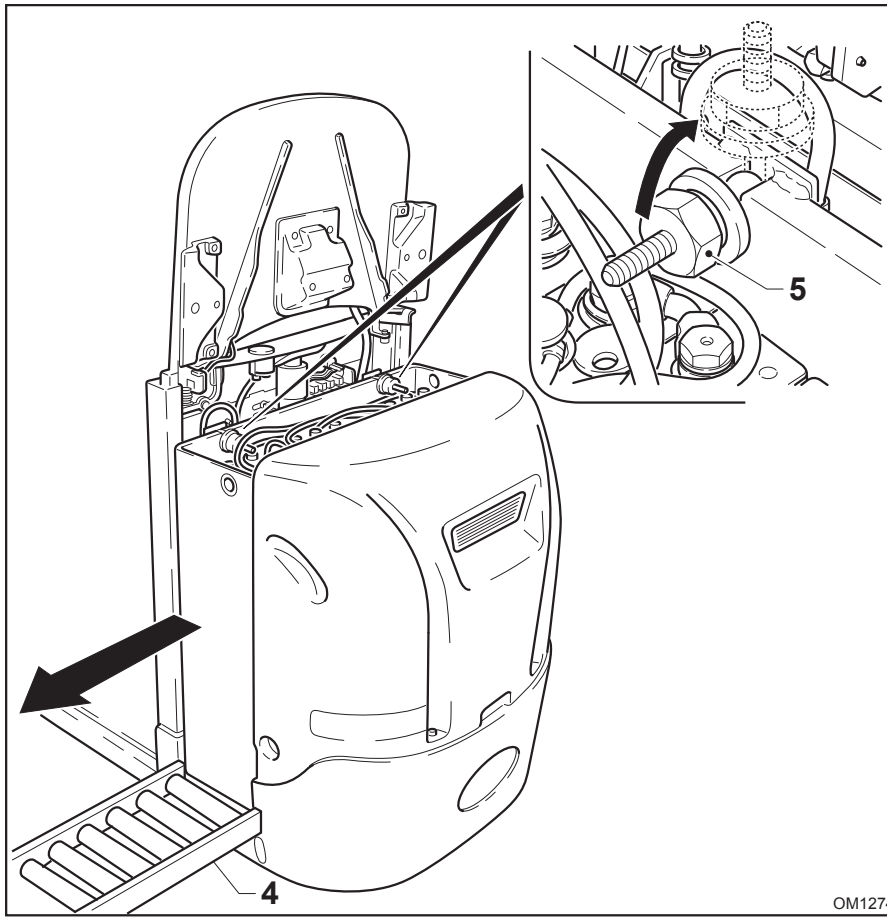
- Loosen the nuts (5) of the battery hold-downs and turn the holddowns upwards to release the battery.
- Hook the battery in the two points (6) with a non-metallic cable (7) of an adequate size for the weight of the battery.
- Lift the battery upwards "**B**" 2-3 centimeters, using a suitably sized hoist, then extract it laterally towards direction "**A** ".

⚠ DANGER

Replace the battery and reassemble it following the instructions provided above in reverse order, making sure that the battery is locked in place with the relative holddowns and that the nuts (5) are correctly tightened.

To decide which type of battery to use, check the battery characteristics provided in the "TECHNICAL DATA" chapter.

Battery Replacement for Versions with Battery Extraction Rollers



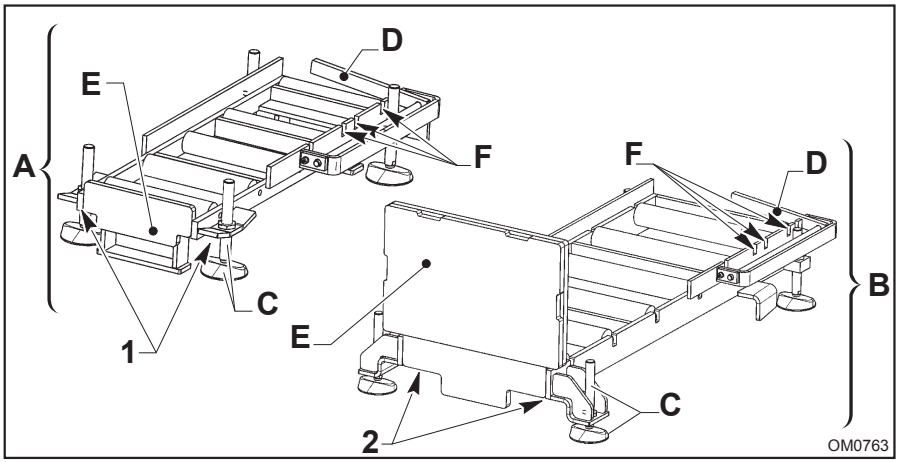
- Place the battery extraction roller unit (4) next to the forklift, on the side indicated in the figure (see the relative section for information on how to use the roller unit).
- Loosen the nuts (5) of the battery hold-downs and turn the holddowns upwards to release the battery.
- Slide the battery on the roller unit (4).

⚠ DANGER

Replace the battery and reassemble it following the instructions provided above in reverse order, making sure that the battery is locked in place with the relative holddowns and that the nuts (5) are correctly tightened.

To decide which type of battery to use, check the battery characteristics provided in the "TECHNICAL DATA" chapter.

Stands with rollers for lateral battery extraction (option)



There are two versions of stands for lateral battery extraction:

A - A stand for batteries between 624 mm and 835 mm long and between 170 mm and 284 mm wide.

B - A stand for batteries between 835 mm and 1223 mm long and between 283 mm and 443 mm wide.

Height-adjustable supports **C** are supplied for both versions.

Handling the Battery Stands:

Stand "A":
Remove the adjustable supports **C** and insert the forks of a pallet truck between 200 - 240 mm wide in positions (1).

Stand "B":
Insert the forks of a pallet truck between 520-560 mm wide in positions (2).

The battery extraction phases are as follows:

1) Place the appropriate battery extraction stand level with the battery extraction point.

2) Raise battery holddown **D**.

3) Release the battery from its holddown and pull it out until reaching the first roller of the roller unit..

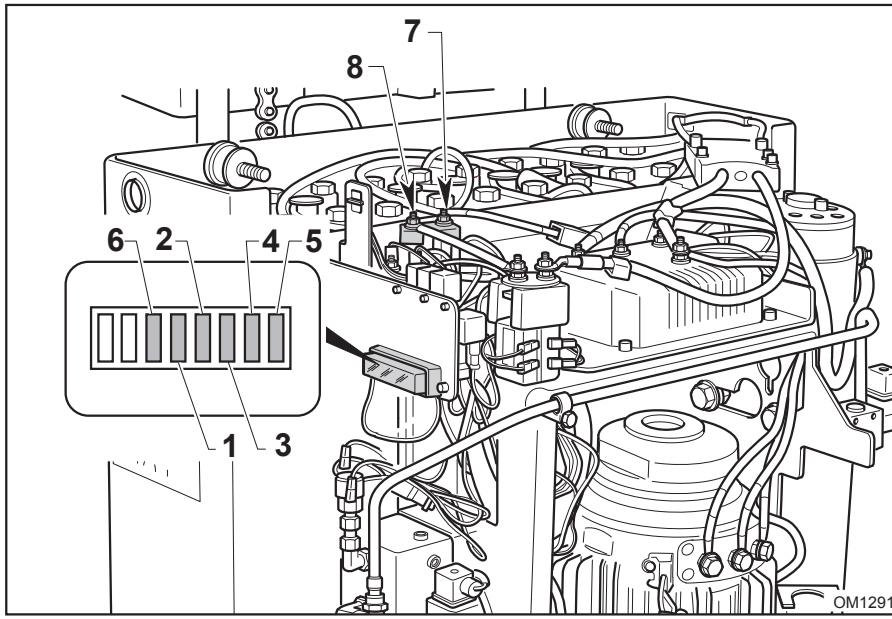
4) Lift the roller unit until the roller rests on the bottom of the battery.

5) If you are using a manual pallet truck, turn its tiller 90°.

6) Pull out the battery until reaching the mechanical stop of roller unit **E**.

7) Slide battery holddown **D** and insert it into the most appropriate slot of those available **F** to lock the battery into place.

Fuse Replacement



- Turn off the forklift and perform the operations preliminary to maintenance.

⚠ DANGER

This operation must be performed by qualified, trained technical personnel.

⚠ CAUTION

Before replacing the fuse, eliminate the cause that led to its burnout. The burned out fuse must only be replaced with a fuse of the same amperage. Do not tamper with the forklift's electrical system.

- Access the fuses as indicated in the "**Fuse Location**" section.
- Power fuses (7) and (8) are located near the contactors, the service fuses are located in the relative fuse box (fuses 1,2,3,4,5,6).

Power Fuses

- Loosen the screws, replace fuses (7), (8) and retighten the screws.

Service and Auxiliary Fuses

- Remove the cover and replace the blown fuse, then replace the cover.

Fuse Values

- **1** = Fan safety fuse **9F1**= 5A
- **2** = Warning horn safety fuse **4F1**= 2A
- **3** = Safety fuse **F2**= 10A
- **4** = Safety fuse **F1**= 2A
- **5** = Steering safety fuse **3 F1**= 30A
- **6** = Data terminal safety fuse (optional) **F3**= 8A
- **7** = Drive safety fuse **1F1**= 250A
- **8** = Lifting safety fuse **2F1** = 200A

Scheduled Maintenance

General

In order to keep the forklift safe and in good condition, have it serviced according to the scheduled maintenance operations indicated in the following "synoptic table of maintenance intervals".

⚠ CAUTION

When the forklift is used in dusty environments, at below zero temperatures and for especially heavy uses, it is necessary to reduce the interval between the various scheduled maintenance operations.

Synoptic Table of Maintenance Operations

Operations	Intervals in hours		
	1000	2000	3000
Check and adjust chains	●■		
Check and lubricate the fork carriage and slide guides	●		
Fork wear check	●□		
Clean the steering and lift electric motors	●		
Check the steering and lift motor manifolds	●		
Check insulation between chassis and any electric motors	●		
Check power cables are securely fixed	●		
Check insulation between chassis and electronic control	●		
Check the condition of the piping	●		
Check hydraulic equipment oil level	●		
Check reducer oil level	●		
Check and adjust cab bearings	●		
Check the adjustment of the lateral retaining pads for versions with "levelled forks"	●		
Replace the lift and steering motor brushes			●
Change the hydraulic equipment oil			●

■ = To be carried out absolutely every 3 months or according to current legislation.

□ = Every 1000 hours or at least every 12 months

ENVIRONMENT NOTE

Proceed as follows at each lubrication operation:

- **Follow the safety precautions for the lubricant**
- **Before lubricating, carefully clean the component to be lubricated**
- **Use suitable binders in case the lubricant spills**

- **Keep the product in a suitable place, in accordance with the instructions supplied with the product**
- **Dispose of the lubricating product in compliance with the current laws.**

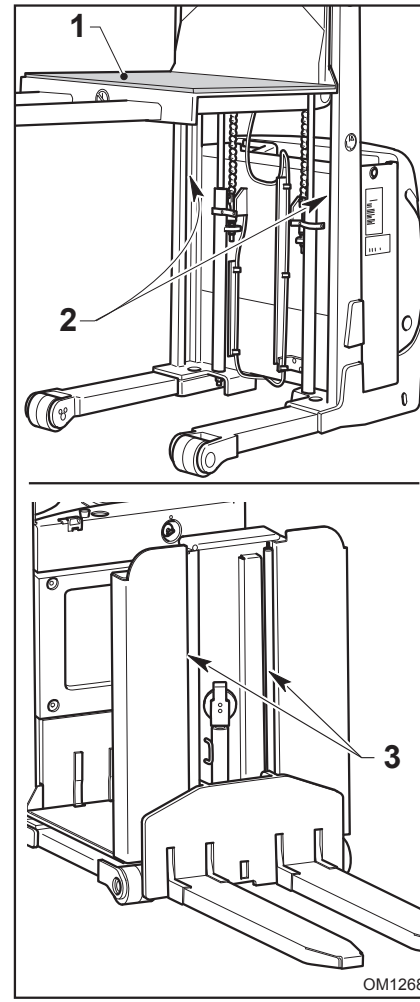
Every 1000 hours

Lubrication of the slide guides.

- Raise the step plate (1) and secure its position with chocks or using a hoist.
- Turn off the forklift, press the emergency button and remove the key.
- Use a brush to spread the grease on the operator step plate slide guides (2) and on the fork slide guides (3) (only for the version with levelled forks).

NOTE

Lubricate using the type of grease indicated in the supply table.

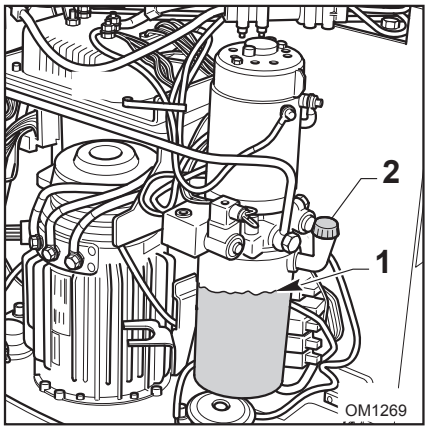


Hydraulic System Oil Level Check

- Check the hydraulic oil level by placing the forklift on a flat surface with the forks completely lowered.
- Turn off the forklift and remove the keys.
- Remove the motor hood as indicated in the "**Internal Accessibility**" section.
- Visually check that the hydraulic oil level is level with notch (1); if necessary, top up by removing cap (2) and pouring oil into the tank.

NOTE

Use the type of oil indicated in the supply table.



Decommissioning

General Information

The operations to be performed for "**Temporary decommissioning**" and "**Permanent decommissioning**" are listed in this chapter.

Temporary Putting Out of Commission

The following operations must be performed when the forklift is not going to be used for a long time:

- Clean the forklift as indicated in the "**Maintenance**" chapter and put it in a dust-free and dry room. -
- Lower the forks.
- Lightly grease all of the unpainted parts with oil or grease.
- Perform the lubrication operations indicated in the maintenance chapter.
- Remove the battery and put it in a room where there is no danger of freezing. Charge the battery at least once a month.
- Raise the forklift so that the wheels do not touch the ground; otherwise, the wheels will become flat at the point of contact with the floor.
- Cover the forklift with a **NON**-plastic sheet.

Checks and Inspections After a Long Period of Inactivity

⚠ DANGER

Perform the following operations before using the forklift:

- Clean forklift truck thoroughly.
- Check the battery charge level and re-assemble it in the forklift, making sure to spread Vaseline on the terminals.
- Lubricate all of the parts provided with lubricating nipples and the chains.
- Carry out the fluid level checks.
- Perform all of the functional maneuvers of the forklift and of its safety devices both loaded and unloaded.

⚠ DANGER

Follow the instructions provided in the maintenance chapter for the operations indicated previously.

Permanent Putting Out of Commission (Demolition)

The forklift must be demolished in compliance with local legislation. Contact the authorised service network or authorised companies to scrap the forklift according to local legislation.

ENVIRONMENT NOTE

In particular, batteries, fluids (oils, fuels, lubricants, etc, electrical and electronic components and rubber components must be disposed of in compliance with specific local legislation for each type of material.

⚠ DANGER

Disassembly of the forklift for scrapping is extremely hazardous.

Disposal of harmful substances

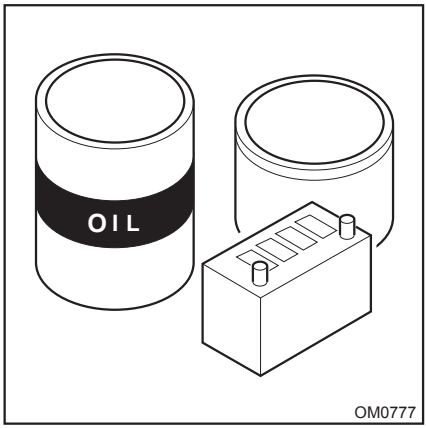
When disposing of harmful substances, such as lubricants, batteries, etc., consult the current legislation in the relative country and operate accordingly.

NOTE

Consult the specific battery manual for further information.

NOTE

The customer is solely responsible for any irregularities with regard to the interpretation and application of current legislation on the subject, committed by him before, during or after scrapping and disposal of the truck parts.



Supply Table

Drive reduction unit oil	Tutela Matrix
	Tutela Matrix *
Quantity (lt)	1.5
Oil for hydraulic lifting system	Idraulicar AP31
	Tutela GI/M *
Quantity (lt)	2.5
Generic Lubricant	Tutela MP 02
	Tutela JOTA1 *
Chain lubricant	Kluber / Structovis EHD
	Kluber / Structovis FHD *

* For Cold-Storage Room version

Resolution of Operating Defects

The operating defects which can occur during forklift use are indicated in this section, with relative causes and solutions. If the defects should persist even after having carried out all of the checks indicated, contact the Technical Service Department authorized by the manufacturer.

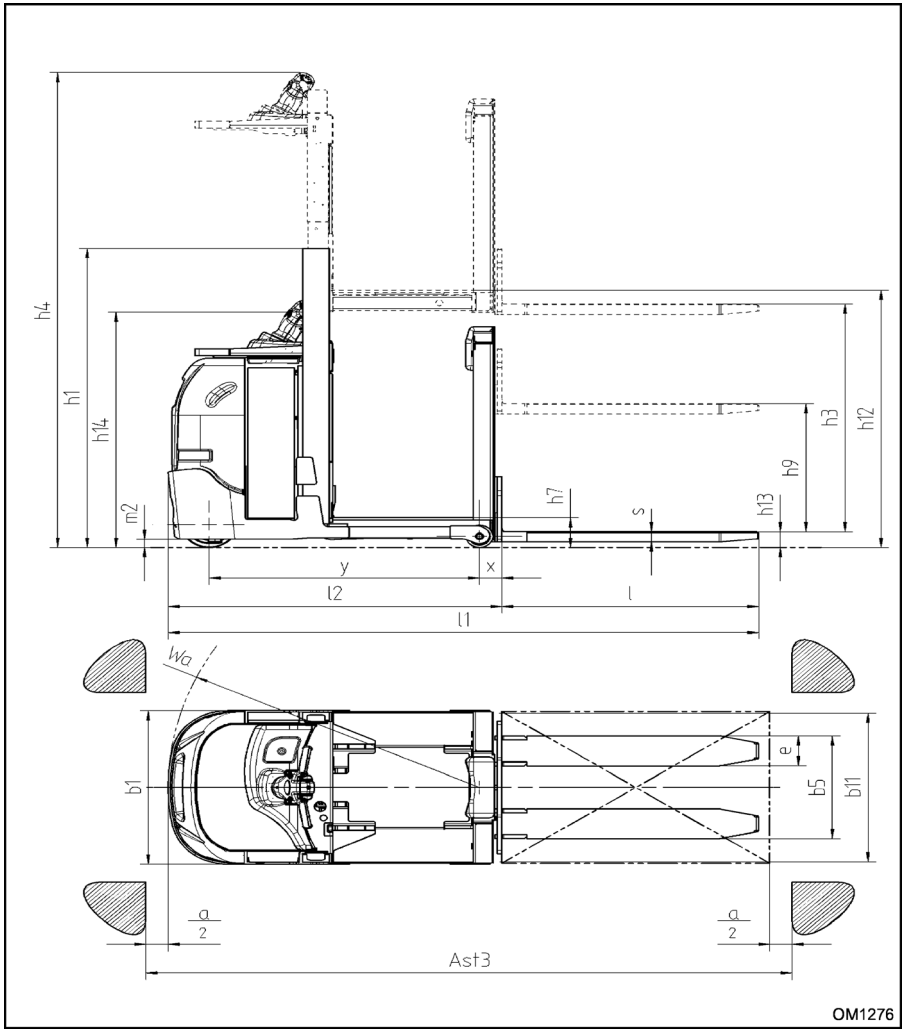
Defect: THE FORKLIFT DOES NOT START OR MOVE.	
POSSIBLE CAUSES	**SOLUTIONS**
The emergency stop pushbutton is pressed.	Release the emergency pushbutton and then turn the forklift off and on again in sequence using the start/stop key.
Battery outlet not connected or connected incorrectly.	Check the battery outlet and, if necessary, connect it correctly.
Battery is discharged.	Check the battery charge level and, if necessary, charge it.
The drive control throttle is not turned.	Turn the drive control throttle in the desired direction of travel.
The key ignition switch is set to position "0" (forklift off).	Turn the switch to "I" (forklift on).
The levers for enabling forklift operation are not engaged.	Engage the levers on the control handlebar.
Operator presence pedal is not pressed	Press the pedal

Defect: THE FORKLIFT IS NOT ABLE TO LIFT THE LOAD.	
POSSIBLE CAUSES	**SOLUTIONS**
Load too heavy.	Make sure the weight of the load to be lifted is less than or equal to the forklift's maximum capacity.
The forklift is not ready for service.	Perform all of the checks indicated for "the forklift does not start or move".
The hydraulic oil level is too low.	Restore the level as indicated in the Maintenance chapter.
Battery is discharged.	Check the battery charge level and, if necessary, charge it.

6

Technical data

Technical specification



Characteristics					
1.2	Model		Version without levelled forks	Version with fixed levelled forks	Version with movable levelled forks
1.3	Power unit: electr., diesel, petrol, gas, mains electr.		Electric		

1.4	Driving: tiller, accompanied, standing, sitting, order picker		Tiller		
1.5	Load capacity / Load	Q (t)	0.7		
1.6	Centre of gravity	c (mm)	600		
1.8	Load distance from load wheel axle	x (mm)	105	100	140
1.9	Wheelbase	y (mm)	1210		
Weights					
2.1	Tare weight (without battery)	kg	1193	1297	1330
2.2	Load per axle when loaded (front/rear)	kg	417 / 1476 (1)	409 / 1588 (1)	374 / 1656 (1)
2.3	Load per axle when empty (front / rear)	kg	821 / 372(1)	813 / 484(1)	804 / 526 (1)
Wheels, Chassis					
3.1	Full set of tyres, superelastic, pneumatic, polyurethane		Polyurethane		
3.2	Front wheel dimensions	mm	ø 250 x 80		
3.3	Rear wheel size	mm	ø 120 x 50		
3.5	Wheels: front / rear number (x=drive wheel)		1x / 4		
3.6	Front track width	b_{10}(mm)	-		
3.7	Rear track width	b_{11}(mm)	780		
Dimensions					
4.2	Height with lift mast retracted	h_1(mm)	1577		
4.4	Lifting	h_3(mm)	1040		
4.5	Height of upper extremity of handlebar with step plate raised	h_4(mm)	2343		
4.8	Operator step plate height	h_7(mm)	160		
4.9	Tiller height in operating position	h_{14}(mm)	1245		
4.10	Total free elevation	h_9(mm)	/	674	712

4.14	Operator step plate height when raised	h_{12}(mm)	1200		
4.15	Lowered forks height	h_{13}(mm)	85	85	45
4.19	Total length	l_1(mm)	2648	2643	2683
4.20	Length including shoulder of forks	l_2(mm)	1498	1493	1533
4.21	Total width	b_1(mm)	810		
4.22	Fork dimensions	s/e/l [mm]	50x160x1150	55x160x1150	35x100x1150
4.25	External fork arm gauge	b_5(mm)	540	540	300/680
4.32	Clear span below lifting mast	m_1(mm)	45		
4.34	Working aisle with pallet 800 x 1200 fork insertion 800	Ast3 (mm)	2899	2894	2934
4.35	Turning radius	Wa (mm)	1395		
Performance					
5.1	Drive speed (loaded / empty)	km/h	8.5/8.5		
5.2	Cab lifting speed (loaded/empty)	m/s	0.18/0.26		
5.3	Cab descent speed (loaded/empty)	m/s	0.24/0.24		
5.7	Surmountable gradient KB 30[I] (loaded/empty)	%	-		
5.8	Max. surmountable gradient with/without load	%	-		
5.9	Acceleration time with/without load	s	/		
5.10	Service brake		Electric		
Electric motor					
6.1	Traction motor, performance KB 60[I]	kW	3		
6.2	Lifting motor, performance 15% ED	kW	2.2		
6.3	Battery in accordance with DIN 43531/35/36 A, B, C		DIN elements		
6.4	Voltage / Nominal capacity	V / Ah	24/465		

6.5	Battery weight (+/- 5%)	kg	390
6.6	Energy consumption according to VDI cycle	kWh / h	/
Other			
8.1	Control type		Electronic
8.4	Operating noise in driver's ear	dB(A)	<70

1) Without an operator on board

Version d005

Battery dimensions and weights

General battery characteristics					DIN references	EN 60254-2 references		
Voltage **V**	Capacity **Ah**±5%	Dimensions **mm**	Weight **kg**±5%	Colour **RAL**	Component code	Component series and type	Component length **mm**	Terminals
24	465	790 x 210 x 790	390	7021	-------	---- --	65	screw type

Noise

Sound pressure level in driver's seat	L_{pAZ} < 70 dB (A)
Uncertainty factor	K_{pA}=4 dB (A)

The value is determined in a test cycle in accordance with Harmonized European Standard EN 12053 and declared according to EN ISO 4871 with weighted time percentages of the Translation, Lifting and Idling modes. It can only be used as a comparison value for various forklifts.

NOTE

Noise values that are lower or higher than those indicated above can occur during actual forklift use, for example, following different operating modes, different environmental conditions, additional noise sources.

Vibrations

Value of the vibrations to which the body is exposed:

$\bar{a}_{w,zF}$= 1.6 m/s^2, with uncertainty k = 0.5 m/s^2

Value of the vibrations to which the hands/arms are exposed:

$\bar{a}_w$< 2.5 m/s^2

The value "for the body" has been calculated and declared to conform with the Harmonised European Standards EN 13059 and EN 12096 and is based on the Translation mode, the only mode that exposes the driverto significant vibrations. The aforesaid standard is not applicable to the vibration measurement "for hands/arms"; in fact it has been shown that the relative value is generally less than 2.5m/s^2.

⚠ CAUTION

The value expressed above can be used to compare forklift trucks of the same category. It cannot be assumed that this equals the daily vibration exposure of the operator during real operation of the forklift; these vibrations depend on the conditions of use (floor conditions, method of use etc.) and thus the daily exposure must be calculated with the relative workplace data.

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